

[MS-NCNBI-Diff]:

Network Controller Northbound Interface

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation (“this documentation”) for protocols, file formats, data portability, computer languages, and standards support. Additionally, overview documents cover inter-protocol relationships and interactions.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you can make copies of it in order to develop implementations of the technologies that are described in this documentation and can distribute portions of it in your implementations that use these technologies or in your documentation as necessary to properly document the implementation. You can also distribute in your implementation, with or without modification, any schemas, IDLs, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications documentation.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that might cover your implementations of the technologies described in the Open Specifications documentation. Neither this notice nor Microsoft's delivery of this documentation grants any licenses under those patents or any other Microsoft patents. However, a given Open Specifications document might be covered by the Microsoft [Open Specifications Promise](#) or the [Microsoft Community Promise](#). If you would prefer a written license, or if the technologies described in this documentation are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **License Programs.** To see all of the protocols in scope under a specific license program and the associated patents, visit the [Patent Map](#).
- **Trademarks.** The names of companies and products contained in this documentation might be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit [-www.microsoft.com/trademarks](http://www.microsoft.com/trademarks).
- **Fictitious Names.** The example companies, organizations, products, domain names, email addresses, logos, people, places, and events that are depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than as specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications documentation does not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments, you are free to take advantage of them. Certain Open Specifications documents are intended for use in conjunction with publicly available standards specifications and network programming art and, as such, assume that the reader either is familiar with the aforementioned material or has immediate access to it.

Support. For questions and support, please contact dochelp@microsoft.com.

Revision Summary

Date	Revision History	Revision Class	Comments
7/14/2016	1.0	New	Released new document.
9/26/2016	2.0	Major	Significantly changed the technical content.
2/14/2017	3.0	Major	Significantly changed the technical content.
<u>6/1/2017</u>	<u>34.0</u>	<u>None</u>	<u>No changes to the meaning, language, or formatting of the technical content.</u>

Table of Contents

1	Introduction	20
1.1	Glossary	20
1.2	References	22
1.2.1	Normative References	22
1.2.2	Informative References	23
1.3	Overview	23
1.3.1	Client-Server Interactions	23
1.3.1.1	ETag usage	23
1.3.1.2	Idempotency	24
1.3.2	Asynchronous Operations	25
1.3.2.1	POST and DELETE Operations	26
1.3.2.2	PUT Operation	27
1.3.2.3	Differences between operations and operationResults	27
1.3.2.4	properties.provisioningState usage	27
1.3.2.5	State Diagrams for Synchronous Operations	28
1.3.2.6	State Diagrams for Asynchronous Operations	28
1.3.3	Concurrent Operations	30
1.3.3.1	Concurrent operations on the same resource	30
1.3.3.2	Concurrent operations when there are dependent resources	32
1.3.3.3	Network Controller dependent resources	32
1.4	Relationship to Other Protocols	33
1.5	Prerequisites/Preconditions	33
1.6	Applicability Statement	33
1.7	Versioning and Capability Negotiation	34
1.8	Vendor-Extensible Fields	34
1.9	Standards Assignments	34
2	Messages	35
2.1	Transport	35
2.2	Common Data Types	35
2.2.1	HTTP Headers	35
2.2.1.1	Content-Type	35
2.2.1.2	Request Headers	35
2.2.1.2.1	Accept-Language	36
2.2.1.2.2	if-match	36
2.2.1.2.3	Referrer	36
2.2.1.2.4	x-ms-client-ip-address	36
2.2.1.2.5	x-ms-client-request-id	36
2.2.1.2.6	x-ms-return-client-request-id	36
2.2.1.3	Response Headers	37
2.2.1.3.1	Azure-AsyncOperation	37
2.2.1.3.2	Content-Length	37
2.2.1.3.3	Date	37
2.2.1.3.4	ETag	37
2.2.1.3.5	HTTP/1.1 Header	38
2.2.1.3.6	Location	38
2.2.1.3.7	Retry-After	38
2.2.1.3.8	Server	38
2.2.1.3.9	x-ms-request-id	38
2.2.2	Common JSON Elements	38
2.2.3	Common URI Parameters	39
2.2.3.1	grandParentResourceID	40
2.2.3.2	operationID	40
2.2.3.3	parentResourceID	40
2.2.3.4	resourceID	41

2.2.3.5	url.....	42
2.2.4	Data Structures.....	42
3	Protocol Details.....	50
3.1	Server Details.....	50
3.1.1	Abstract Data Model.....	50
3.1.2	Timers.....	50
3.1.3	Initialization.....	50
3.1.4	Higher-Layer Triggered Events.....	50
3.1.5	Message Processing Events and Sequencing Rules.....	50
3.1.5.1	accessControlLists.....	55
3.1.5.1.1	HTTP Methods.....	56
3.1.5.1.1.1	PUT.....	56
3.1.5.1.1.1.1	Request Body.....	56
3.1.5.1.1.1.2	Response Body.....	57
3.1.5.1.1.1.3	Processing Details.....	57
3.1.5.1.1.2	GET.....	57
3.1.5.1.1.2.1	Request Body.....	58
3.1.5.1.1.2.2	Response Body.....	58
3.1.5.1.1.2.3	Processing Details.....	59
3.1.5.1.1.3	GET (All).....	60
3.1.5.1.1.3.1	Request Body.....	60
3.1.5.1.1.3.2	Response Body.....	60
3.1.5.1.1.3.3	Processing Details.....	74
3.1.5.1.1.4	DELETE.....	74
3.1.5.1.1.4.1	Request Body.....	75
3.1.5.1.1.4.2	Response Body.....	75
3.1.5.1.1.4.3	Processing Details.....	75
3.1.5.1.2	aclRules.....	75
3.1.5.1.2.1	HTTP Methods.....	76
3.1.5.1.2.1.1	PUT.....	76
3.1.5.1.2.1.1.1	Request Body.....	77
3.1.5.1.2.1.1.2	Response Body.....	77
3.1.5.1.2.1.1.3	Processing Details.....	77
3.1.5.1.2.1.2	GET.....	77
3.1.5.1.2.1.2.1	Request Body.....	78
3.1.5.1.2.1.2.2	Response Body.....	78
3.1.5.1.2.1.2.3	Processing Details.....	78
3.1.5.1.2.1.3	GET (All).....	78
3.1.5.1.2.1.3.1	Request Body.....	79
3.1.5.1.2.1.3.2	Response Body.....	79
3.1.5.1.2.1.3.3	Processing Details.....	80
3.1.5.1.2.1.4	DELETE.....	80
3.1.5.1.2.1.4.1	Request Body.....	80
3.1.5.1.2.1.4.2	Response Body.....	80
3.1.5.1.2.1.4.3	Processing Details.....	80
3.1.5.2	credentials.....	80
3.1.5.2.1	HTTP Methods.....	81
3.1.5.2.1.1	PUT.....	82
3.1.5.2.1.1.1	Request Body.....	82
3.1.5.2.1.1.2	Response Body.....	82
3.1.5.2.1.1.3	Processing Details.....	82
3.1.5.2.1.2	GET.....	82
3.1.5.2.1.2.1	Request Body.....	83
3.1.5.2.1.2.2	Response Body.....	83
3.1.5.2.1.2.3	Processing Details.....	83
3.1.5.2.1.3	GET (All).....	83
3.1.5.2.1.3.1	Request Body.....	84

3.1.5.2.1.3.2	Response Body	84
3.1.5.2.1.3.3	Processing Details	84
3.1.5.2.1.4	DELETE.....	85
3.1.5.2.1.4.1	Request Body.....	85
3.1.5.2.1.4.2	Response Body	85
3.1.5.2.1.4.3	Processing Details	85
3.1.5.3	gatewayPools	85
3.1.5.3.1	HTTP Methods.....	86
3.1.5.3.1.1	PUT.....	87
3.1.5.3.1.1.1	Request Body.....	87
3.1.5.3.1.1.2	Response Body	87
3.1.5.3.1.1.3	Processing Details	88
3.1.5.3.1.2	GET.....	88
3.1.5.3.1.2.1	Request Body.....	88
3.1.5.3.1.2.2	Response Body	88
3.1.5.3.1.2.3	Processing Details	90
3.1.5.3.1.3	GET (All).....	90
3.1.5.3.1.3.1	Request Body.....	90
3.1.5.3.1.3.2	Response Body	90
3.1.5.3.1.3.3	Processing Details	92
3.1.5.3.1.4	DELETE.....	92
3.1.5.3.1.4.1	Request Body.....	92
3.1.5.3.1.4.2	Response Body	92
3.1.5.3.1.4.3	Processing Details	92
3.1.5.4	gateways	92
3.1.5.4.1	HTTP Methods.....	94
3.1.5.4.1.1	PUT.....	94
3.1.5.4.1.1.1	Request Body.....	94
3.1.5.4.1.1.2	Response Body	95
3.1.5.4.1.1.3	Processing Details	95
3.1.5.4.1.2	GET.....	95
3.1.5.4.1.2.1	Request Body.....	95
3.1.5.4.1.2.2	Response Body	96
3.1.5.4.1.2.3	Processing Details	101
3.1.5.4.1.3	GET (All).....	102
3.1.5.4.1.3.1	Request Body.....	102
3.1.5.4.1.3.2	Response Body	102
3.1.5.4.1.3.3	Processing Details	108
3.1.5.4.1.4	DELETE.....	108
3.1.5.4.1.4.1	Request Body.....	108
3.1.5.4.1.4.2	Response Body	108
3.1.5.4.1.4.3	Processing Details	108
3.1.5.5	loadBalancers	109
3.1.5.5.1	HTTP Methods.....	110
3.1.5.5.1.1	PUT.....	110
3.1.5.5.1.1.1	Request Body.....	111
3.1.5.5.1.1.2	Response Body	112
3.1.5.5.1.1.3	Processing Details	112
3.1.5.5.1.2	GET.....	113
3.1.5.5.1.2.1	Request Body.....	113
3.1.5.5.1.2.2	Response Body	113
3.1.5.5.1.2.3	Processing Details	116
3.1.5.5.1.3	GET (All).....	117
3.1.5.5.1.3.1	Request Body.....	117
3.1.5.5.1.3.2	Response Body	117
3.1.5.5.1.3.3	Processing Details	123
3.1.5.5.1.4	DELETE.....	123
3.1.5.5.1.4.1	Request Body.....	123

3.1.5.5.1.4.2	Response Body	123
3.1.5.5.1.4.3	Processing Details	123
3.1.5.5.2	backendAddressPools.....	124
3.1.5.5.2.1	HTTP Methods	124
3.1.5.5.2.1.1	PUT	124
3.1.5.5.2.1.1.1	Request Body.....	125
3.1.5.5.2.1.1.2	Response Body.....	125
3.1.5.5.2.1.1.3	Processing Details.....	125
3.1.5.5.2.1.2	GET	126
3.1.5.5.2.1.2.1	Request Body.....	126
3.1.5.5.2.1.2.2	Response Body.....	126
3.1.5.5.2.1.2.3	Processing Details.....	127
3.1.5.5.2.1.3	GET (All)	127
3.1.5.5.2.1.3.1	Request Body.....	127
3.1.5.5.2.1.3.2	Response Body.....	127
3.1.5.5.2.1.3.3	Processing Details.....	128
3.1.5.5.2.1.4	DELETE	128
3.1.5.5.2.1.4.1	Request Body.....	128
3.1.5.5.2.1.4.2	Response Body.....	128
3.1.5.5.2.1.4.3	Processing Details.....	128
3.1.5.5.3	frontendIpConfigurations.....	128
3.1.5.5.3.1	HTTP Methods	130
3.1.5.5.3.1.1	PUT	130
3.1.5.5.3.1.1.1	Request Body.....	130
3.1.5.5.3.1.1.2	Response Body.....	131
3.1.5.5.3.1.1.3	Processing Details.....	131
3.1.5.5.3.1.2	GET	131
3.1.5.5.3.1.2.1	Request Body.....	131
3.1.5.5.3.1.2.2	Response Body.....	131
3.1.5.5.3.1.2.3	Processing Details.....	132
3.1.5.5.3.1.3	GET (All)	132
3.1.5.5.3.1.3.1	Request Body.....	132
3.1.5.5.3.1.3.2	Response Body.....	133
3.1.5.5.3.1.3.3	Processing Details.....	134
3.1.5.5.3.1.4	DELETE	134
3.1.5.5.3.1.4.1	Request Body.....	134
3.1.5.5.3.1.4.2	Response Body.....	134
3.1.5.5.3.1.4.3	Processing Details.....	134
3.1.5.5.4	inboundNatRules	134
3.1.5.5.4.1	HTTP Methods	135
3.1.5.5.4.1.1	PUT	135
3.1.5.5.4.1.1.1	Request Body.....	136
3.1.5.5.4.1.1.2	Response Body.....	136
3.1.5.5.4.1.1.3	Processing Details.....	136
3.1.5.5.4.1.2	GET	137
3.1.5.5.4.1.2.1	Request Body.....	137
3.1.5.5.4.1.2.2	Response Body.....	137
3.1.5.5.4.1.2.3	Processing Details.....	138
3.1.5.5.4.1.3	GET (All)	138
3.1.5.5.4.1.3.1	Request Body.....	138
3.1.5.5.4.1.3.2	Response Body.....	138
3.1.5.5.4.1.3.3	Processing Details.....	139
3.1.5.5.4.1.4	DELETE	139
3.1.5.5.4.1.4.1	Request Body.....	140
3.1.5.5.4.1.4.2	Response Body.....	140
3.1.5.5.4.1.4.3	Processing Details.....	140
3.1.5.5.5	loadBalancingRules.....	140
3.1.5.5.5.1	HTTP Methods	141

3.1.5.5.5.1.1	PUT	142
3.1.5.5.5.1.1.1	Request Body	142
3.1.5.5.5.1.1.2	Response Body	142
3.1.5.5.5.1.1.3	Processing Details	143
3.1.5.5.5.1.2	GET	143
3.1.5.5.5.1.2.1	Request Body	143
3.1.5.5.5.1.2.2	Response Body	143
3.1.5.5.5.1.2.3	Processing Details	144
3.1.5.5.5.1.3	GET (All)	144
3.1.5.5.5.1.3.1	Request Body	144
3.1.5.5.5.1.3.2	Response Body	144
3.1.5.5.5.1.3.3	Processing Details	145
3.1.5.5.5.1.4	DELETE	145
3.1.5.5.5.1.4.1	Request Body	145
3.1.5.5.5.1.4.2	Response Body	145
3.1.5.5.5.1.4.3	Processing Details	145
3.1.5.5.6	outboundNatRules	146
3.1.5.5.6.1	HTTP Methods	146
3.1.5.5.6.1.1	PUT	146
3.1.5.5.6.1.1.1	Request Body	147
3.1.5.5.6.1.1.2	Response Body	147
3.1.5.5.6.1.1.3	Processing Details	147
3.1.5.5.6.1.2	GET	147
3.1.5.5.6.1.2.1	Request Body	148
3.1.5.5.6.1.2.2	Response Body	148
3.1.5.5.6.1.2.3	Processing Details	148
3.1.5.5.6.1.3	GET (All)	149
3.1.5.5.6.1.3.1	Request Body	149
3.1.5.5.6.1.3.2	Response Body	149
3.1.5.5.6.1.3.3	Processing Details	150
3.1.5.5.6.1.4	DELETE	150
3.1.5.5.6.1.4.1	Request Body	150
3.1.5.5.6.1.4.2	Response Body	150
3.1.5.5.6.1.4.3	Processing Details	150
3.1.5.5.7	probes	150
3.1.5.5.7.1	HTTP Methods	151
3.1.5.5.7.1.1	PUT	151
3.1.5.5.7.1.1.1	Request Body	152
3.1.5.5.7.1.1.2	Response Body	152
3.1.5.5.7.1.1.3	Processing Details	152
3.1.5.5.7.1.2	GET	152
3.1.5.5.7.1.2.1	Request Body	153
3.1.5.5.7.1.2.2	Response Body	153
3.1.5.5.7.1.2.3	Processing Details	153
3.1.5.5.7.1.3	GET (All)	153
3.1.5.5.7.1.3.1	Request Body	154
3.1.5.5.7.1.3.2	Response Body	154
3.1.5.5.7.1.3.3	Processing Details	154
3.1.5.5.7.1.4	DELETE	154
3.1.5.5.7.1.4.1	Request Body	155
3.1.5.5.7.1.4.2	Response Body	155
3.1.5.5.7.1.4.3	Processing Details	155
3.1.5.6	loadBalancerManager	155
3.1.5.6.1	HTTP Methods	156
3.1.5.6.1.1	PUT	156
3.1.5.6.1.1.1	Request Body	157
3.1.5.6.1.1.2	Response Body	157
3.1.5.6.1.1.3	Processing Details	157

3.1.5.6.1.2	GET	157
3.1.5.6.1.2.1	Request Body	158
3.1.5.6.1.2.2	Response Body	158
3.1.5.6.1.2.3	Processing Details	158
3.1.5.7	loadBalancerMux	158
3.1.5.7.1	HTTP Methods	160
3.1.5.7.1.1	PUT	160
3.1.5.7.1.1.1	Request Body	160
3.1.5.7.1.1.2	Response Body	161
3.1.5.7.1.1.3	Processing Details	161
3.1.5.7.1.2	GET	161
3.1.5.7.1.2.1	Request Body	162
3.1.5.7.1.2.2	Response Body	162
3.1.5.7.1.2.3	Processing Details	163
3.1.5.7.1.3	GET (All)	164
3.1.5.7.1.3.1	Request Body	164
3.1.5.7.1.3.2	Response Body	164
3.1.5.7.1.3.3	Processing Details	165
3.1.5.7.1.4	DELETE	165
3.1.5.7.1.4.1	Request Body	165
3.1.5.7.1.4.2	Response Body	166
3.1.5.7.1.4.3	Processing Details	166
3.1.5.8	logicalNetworks	166
3.1.5.8.1	HTTP Methods	166
3.1.5.8.1.1	PUT	166
3.1.5.8.1.1.1	Request Body	167
3.1.5.8.1.1.2	Response Body	168
3.1.5.8.1.1.3	Processing Details	168
3.1.5.8.1.2	GET	168
3.1.5.8.1.2.1	Request Body	168
3.1.5.8.1.2.2	Response Body	168
3.1.5.8.1.2.3	Processing Details	169
3.1.5.8.1.3	GET (All)	170
3.1.5.8.1.3.1	Request Body	170
3.1.5.8.1.3.2	Response Body	170
3.1.5.8.1.3.3	Processing Details	171
3.1.5.8.1.4	DELETE	171
3.1.5.8.1.4.1	Request Body	172
3.1.5.8.1.4.2	Response Body	172
3.1.5.8.1.4.3	Processing Details	172
3.1.5.8.2	logicalSubnets	172
3.1.5.8.2.1	HTTP Methods	173
3.1.5.8.2.1.1	PUT	173
3.1.5.8.2.1.1.1	Request Body	174
3.1.5.8.2.1.1.2	Response Body	174
3.1.5.8.2.1.1.3	Processing Details	174
3.1.5.8.2.1.2	GET	174
3.1.5.8.2.1.2.1	Request Body	175
3.1.5.8.2.1.2.2	Response Body	175
3.1.5.8.2.1.2.3	Processing Details	175
3.1.5.8.2.1.3	GET (All)	176
3.1.5.8.2.1.3.1	Request Body	176
3.1.5.8.2.1.3.2	Response Body	176
3.1.5.8.2.1.3.3	Processing Details	177
3.1.5.8.2.1.4	DELETE	177
3.1.5.8.2.1.4.1	Request Body	178
3.1.5.8.2.1.4.2	Response Body	178
3.1.5.8.2.1.4.3	Processing Details	178

3.1.5.8.2.2	ipPools	178
3.1.5.8.2.2.1	HTTP Methods	179
3.1.5.8.2.2.1.1	PUT	179
3.1.5.8.2.2.1.1.1	Request Body	179
3.1.5.8.2.2.1.1.2	Response Body	180
3.1.5.8.2.2.1.1.3	Processing Details	180
3.1.5.8.2.2.1.2	GET	180
3.1.5.8.2.2.1.2.1	Request Body	180
3.1.5.8.2.2.1.2.2	Response Body	180
3.1.5.8.2.2.1.2.3	Processing Details	181
3.1.5.8.2.2.1.3	GET (All).....	181
3.1.5.8.2.2.1.3.1	Request Body	181
3.1.5.8.2.2.1.3.2	Response Body	181
3.1.5.8.2.2.1.3.3	Processing Details	182
3.1.5.8.2.2.1.4	DELETE	182
3.1.5.8.2.2.1.4.1	Request Body	182
3.1.5.8.2.2.1.4.2	Response Body	182
3.1.5.8.2.2.1.4.3	Processing Details	182
3.1.5.8.2.3	routes	183
3.1.5.8.2.3.1	HTTP Methods	183
3.1.5.8.2.3.1.1	PUT	183
3.1.5.8.2.3.1.1.1	Request Body	184
3.1.5.8.2.3.1.1.2	Response Body	184
3.1.5.8.2.3.1.1.3	Processing Details	184
3.1.5.8.2.3.1.2	GET	184
3.1.5.8.2.3.1.2.1	Request Body	185
3.1.5.8.2.3.1.2.2	Response Body	185
3.1.5.8.2.3.1.2.3	Processing Details	185
3.1.5.8.2.3.1.3	GET (All).....	185
3.1.5.8.2.3.1.3.1	Request Body	186
3.1.5.8.2.3.1.3.2	Response Body	186
3.1.5.8.2.3.1.3.3	Processing Details	186
3.1.5.8.2.3.1.4	DELETE	186
3.1.5.8.2.3.1.4.1	Request Body	187
3.1.5.8.2.3.1.4.2	Response Body	187
3.1.5.8.2.3.1.4.3	Processing Details	187
3.1.5.9	macPools	187
3.1.5.9.1	HTTP Methods	188
3.1.5.9.1.1	PUT	188
3.1.5.9.1.1.1	Request Body.....	189
3.1.5.9.1.1.2	Response Body	189
3.1.5.9.1.1.3	Processing Details	189
3.1.5.9.1.2	GET.....	189
3.1.5.9.1.2.1	Request Body.....	190
3.1.5.9.1.2.2	Response Body	190
3.1.5.9.1.2.3	Processing Details	190
3.1.5.9.1.3	GET (All).....	190
3.1.5.9.1.3.1	Request Body.....	191
3.1.5.9.1.3.2	Response Body	191
3.1.5.9.1.3.3	Processing Details	191
3.1.5.9.1.4	DELETE.....	191
3.1.5.9.1.4.1	Request Body.....	192
3.1.5.9.1.4.2	Response Body	192
3.1.5.9.1.4.3	Processing Details	192
3.1.5.10	routeTables	192
3.1.5.10.1	HTTP Methods	193
3.1.5.10.1.1	PUT	193
3.1.5.10.1.1.1	Request Body.....	193

3.1.5.10.1.1.2	Response Body	194
3.1.5.10.1.1.3	Processing Details	194
3.1.5.10.1.2	GET.....	194
3.1.5.10.1.2.1	Request Body.....	194
3.1.5.10.1.2.2	Response Body	194
3.1.5.10.1.2.3	Processing Details	195
3.1.5.10.1.3	GET (All).....	195
3.1.5.10.1.3.1	Request Body.....	196
3.1.5.10.1.3.2	Response Body	196
3.1.5.10.1.3.3	Processing Details	196
3.1.5.10.1.4	DELETE.....	196
3.1.5.10.1.4.1	Request Body.....	197
3.1.5.10.1.4.2	Response Body	197
3.1.5.10.1.4.3	Processing Details	197
3.1.5.10.2	routes.....	197
3.1.5.10.2.1	HTTP Methods	198
3.1.5.10.2.1.1	PUT	198
3.1.5.10.2.1.1.1	Request Body.....	199
3.1.5.10.2.1.1.2	Response Body.....	199
3.1.5.10.2.1.1.3	Processing Details.....	199
3.1.5.10.2.1.2	GET	199
3.1.5.10.2.1.2.1	Request Body.....	200
3.1.5.10.2.1.2.2	Response Body.....	200
3.1.5.10.2.1.2.3	Processing Details.....	200
3.1.5.10.2.1.3	GET (All)	200
3.1.5.10.2.1.3.1	Request Body.....	200
3.1.5.10.2.1.3.2	Response Body.....	201
3.1.5.10.2.1.3.3	Processing Details.....	201
3.1.5.10.2.1.4	DELETE	201
3.1.5.10.2.1.4.1	Request Body.....	202
3.1.5.10.2.1.4.2	Response Body.....	202
3.1.5.10.2.1.4.3	Processing Details.....	202
3.1.5.11	networkInterfaces	202
3.1.5.11.1	HTTP Methods.....	205
3.1.5.11.1.1	PUT.....	205
3.1.5.11.1.1.1	Request Body.....	205
3.1.5.11.1.1.2	Response Body	206
3.1.5.11.1.1.3	Processing Details	206
3.1.5.11.1.2	GET.....	206
3.1.5.11.1.2.1	Request Body.....	206
3.1.5.11.1.2.2	Response Body	207
3.1.5.11.1.2.3	Processing Details	208
3.1.5.11.1.3	GET (All).....	209
3.1.5.11.1.3.1	Request Body.....	209
3.1.5.11.1.3.2	Response Body	209
3.1.5.11.1.3.3	Processing Details	222
3.1.5.11.1.4	DELETE.....	222
3.1.5.11.1.4.1	Request Body.....	222
3.1.5.11.1.4.2	Response Body	222
3.1.5.11.1.4.3	Processing Details	222
3.1.5.11.2	ipConfigurations	222
3.1.5.11.2.1	HTTP Methods	224
3.1.5.11.2.1.1	PUT	224
3.1.5.11.2.1.1.1	Request Body.....	225
3.1.5.11.2.1.1.2	Response Body.....	226
3.1.5.11.2.1.1.3	Processing Details.....	226
3.1.5.11.2.1.2	GET	226
3.1.5.11.2.1.2.1	Request Body.....	226

3.1.5.11.2.1.2.2	Response Body	226
3.1.5.11.2.1.2.3	Processing Details	227
3.1.5.11.2.1.3	GET (All)	227
3.1.5.11.2.1.3.1	Request Body	227
3.1.5.11.2.1.3.2	Response Body	227
3.1.5.11.2.1.3.3	Processing Details	228
3.1.5.11.2.1.4	DELETE	228
3.1.5.11.2.1.4.1	Request Body	228
3.1.5.11.2.1.4.2	Response Body	228
3.1.5.11.2.1.4.3	Processing Details	229
3.1.5.12	operations	229
3.1.5.12.1	HTTP Methods	230
3.1.5.12.1.1	GET	230
3.1.5.12.1.1.1	Request Body	230
3.1.5.12.1.1.2	Response Body	230
3.1.5.12.1.1.3	Processing Details	230
3.1.5.13	operationResults	231
3.1.5.13.1	HTTP Methods	232
3.1.5.13.1.1	GET	232
3.1.5.13.1.1.1	Request Body	232
3.1.5.13.1.1.2	Response Body	232
3.1.5.13.1.1.3	Processing Details	233
3.1.5.14	publicIpAddresses	233
3.1.5.14.1	HTTP Methods	234
3.1.5.14.1.1	PUT	234
3.1.5.14.1.1.1	Request Body	235
3.1.5.14.1.1.2	Response Body	235
3.1.5.14.1.1.3	Processing Details	235
3.1.5.14.1.2	GET	235
3.1.5.14.1.2.1	Request Body	236
3.1.5.14.1.2.2	Response Body	236
3.1.5.14.1.2.3	Processing Details	236
3.1.5.14.1.3	GET (All)	236
3.1.5.14.1.3.1	Request Body	237
3.1.5.14.1.3.2	Response Body	237
3.1.5.14.1.3.3	Processing Details	237
3.1.5.14.1.4	DELETE	238
3.1.5.14.1.4.1	Request Body	238
3.1.5.14.1.4.2	Response Body	238
3.1.5.14.1.4.3	Processing Details	238
3.1.5.15	servers	238
3.1.5.15.1	HTTP Methods	240
3.1.5.15.1.1	PUT	240
3.1.5.15.1.1.1	Request Body	240
3.1.5.15.1.1.2	Response Body	241
3.1.5.15.1.1.3	Processing Details	241
3.1.5.15.1.2	GET	241
3.1.5.15.1.2.1	Request Body	241
3.1.5.15.1.2.2	Response Body	241
3.1.5.15.1.2.3	Processing Details	243
3.1.5.15.1.3	GET (All)	243
3.1.5.15.1.3.1	Request Body	243
3.1.5.15.1.3.2	Response Body	243
3.1.5.15.1.3.3	Processing Details	245
3.1.5.15.1.4	DELETE	245
3.1.5.15.1.4.1	Request Body	245
3.1.5.15.1.4.2	Response Body	245
3.1.5.15.1.4.3	Processing Details	245

3.1.5.15.2	networkInterfaces	245
3.1.5.15.2.1	HTTP Methods	247
3.1.5.15.2.1.1	PUT	247
3.1.5.15.2.1.1.1	Request Body	247
3.1.5.15.2.1.1.2	Response Body	248
3.1.5.15.2.1.1.3	Processing Details	248
3.1.5.15.2.1.2	GET	248
3.1.5.15.2.1.2.1	Request Body	248
3.1.5.15.2.1.2.2	Response Body	248
3.1.5.15.2.1.2.3	Processing Details	249
3.1.5.15.2.1.3	GET (All)	249
3.1.5.15.2.1.3.1	Request Body	249
3.1.5.15.2.1.3.2	Response Body	249
3.1.5.15.2.1.3.3	Processing Details	250
3.1.5.15.2.1.4	DELETE	250
3.1.5.15.2.1.4.1	Request Body	250
3.1.5.15.2.1.4.2	Response Body	250
3.1.5.15.2.1.4.3	Processing Details	250
3.1.5.16	serviceInsertions	250
3.1.5.16.1	HTTP Methods	252
3.1.5.16.1.1	PUT	252
3.1.5.16.1.1.1	Request Body	253
3.1.5.16.1.1.2	Response Body	253
3.1.5.16.1.1.3	Processing Details	253
3.1.5.16.1.2	GET	253
3.1.5.16.1.2.1	Request Body	254
3.1.5.16.1.2.2	Response Body	254
3.1.5.16.1.2.3	Processing Details	255
3.1.5.16.1.3	GET (All)	255
3.1.5.16.1.3.1	Request Body	255
3.1.5.16.1.3.2	Response Body	255
3.1.5.16.1.3.3	Processing Details	257
3.1.5.16.1.4	DELETE	258
3.1.5.16.1.4.1	Request Body	258
3.1.5.16.1.4.2	Response Body	258
3.1.5.16.1.4.3	Processing Details	258
3.1.5.17	virtualGateways	258
3.1.5.17.1	HTTP Methods	260
3.1.5.17.1.1	PUT	260
3.1.5.17.1.1.1	Request Body	260
3.1.5.17.1.1.2	Response Body	264
3.1.5.17.1.1.3	Processing Details	264
3.1.5.17.1.2	GET	264
3.1.5.17.1.2.1	Request Body	265
3.1.5.17.1.2.2	Response Body	265
3.1.5.17.1.2.3	Processing Details	271
3.1.5.17.1.3	GET (All)	272
3.1.5.17.1.3.1	Request Body	272
3.1.5.17.1.3.2	Response Body	272
3.1.5.17.1.3.3	Processing Details	310
3.1.5.17.1.4	DELETE	311
3.1.5.17.1.4.1	Request Body	311
3.1.5.17.1.4.2	Response Body	311
3.1.5.17.1.4.3	Processing Details	311
3.1.5.17.2	bgpRouters	311
3.1.5.17.2.1	HTTP Methods	312
3.1.5.17.2.1.1	PUT	312
3.1.5.17.2.1.1.1	Request Body	313

3.1.5.17.2.1.1.2	Response Body	314
3.1.5.17.2.1.1.3	Processing Details	314
3.1.5.17.2.1.2	GET	314
3.1.5.17.2.1.2.1	Request Body	314
3.1.5.17.2.1.2.2	Response Body	314
3.1.5.17.2.1.2.3	Processing Details	317
3.1.5.17.2.1.3	GET (All)	317
3.1.5.17.2.1.3.1	Request Body	318
3.1.5.17.2.1.3.2	Response Body	318
3.1.5.17.2.1.3.3	Processing Details	320
3.1.5.17.2.1.4	DELETE	321
3.1.5.17.2.1.4.1	Request Body	321
3.1.5.17.2.1.4.2	Response Body	321
3.1.5.17.2.1.4.3	Processing Details	321
3.1.5.17.2.2	bgpPeers	321
3.1.5.17.2.2.1	HTTP Methods	324
3.1.5.17.2.2.1.1	PUT	324
3.1.5.17.2.2.1.1.1	Request Body	324
3.1.5.17.2.2.1.1.2	Response Body	324
3.1.5.17.2.2.1.1.3	Processing Details	325
3.1.5.17.2.2.1.2	GET	325
3.1.5.17.2.2.1.2.1	Request Body	325
3.1.5.17.2.2.1.2.2	Response Body	325
3.1.5.17.2.2.1.2.3	Processing Details	326
3.1.5.17.2.2.1.3	GET (All)	326
3.1.5.17.2.2.1.3.1	Request Body	326
3.1.5.17.2.2.1.3.2	Response Body	326
3.1.5.17.2.2.1.3.3	Processing Details	329
3.1.5.17.2.2.1.4	DELETE	329
3.1.5.17.2.2.1.4.1	Request Body	329
3.1.5.17.2.2.1.4.2	Response Body	329
3.1.5.17.2.2.1.4.3	Processing Details	330
3.1.5.17.3	policyMaps	330
3.1.5.17.3.1	HTTP Methods	331
3.1.5.17.3.1.1	PUT	331
3.1.5.17.3.1.1.1	Request Body	331
3.1.5.17.3.1.1.2	Response Body	332
3.1.5.17.3.1.1.3	Processing Details	332
3.1.5.17.3.1.2	GET	332
3.1.5.17.3.1.2.1	Request Body	333
3.1.5.17.3.1.2.2	Response Body	333
3.1.5.17.3.1.2.3	Processing Details	333
3.1.5.17.3.1.3	GET (All)	333
3.1.5.17.3.1.3.1	Request Body	334
3.1.5.17.3.1.3.2	Response Body	334
3.1.5.17.3.1.3.3	Processing Details	335
3.1.5.17.3.1.4	DELETE	335
3.1.5.17.3.1.4.1	Request Body	335
3.1.5.17.3.1.4.2	Response Body	335
3.1.5.17.3.1.4.3	Processing Details	335
3.1.5.17.4	networkConnections	335
3.1.5.17.4.1	HTTP Methods	339
3.1.5.17.4.1.1	PUT	339
3.1.5.17.4.1.1.1	Request Body	340
3.1.5.17.4.1.1.2	Response Body	341
3.1.5.17.4.1.1.3	Processing Details	341
3.1.5.17.4.1.2	GET	341
3.1.5.17.4.1.2.1	Request Body	342

3.1.5.17.4.1.2.2	Response Body	342
3.1.5.17.4.1.2.3	Processing Details	344
3.1.5.17.4.1.3	GET (All)	344
3.1.5.17.4.1.3.1	Request Body	344
3.1.5.17.4.1.3.2	Response Body	345
3.1.5.17.4.1.3.3	Processing Details	346
3.1.5.17.4.1.4	DELETE	346
3.1.5.17.4.1.4.1	Request Body	347
3.1.5.17.4.1.4.2	Response Body	347
3.1.5.17.4.1.4.3	Processing Details	347
3.1.5.18	virtualNetworks	347
3.1.5.18.1	HTTP Methods	348
3.1.5.18.1.1	PUT	348
3.1.5.18.1.1.1	Request Body	349
3.1.5.18.1.1.2	Response Body	349
3.1.5.18.1.1.3	Processing Details	349
3.1.5.18.1.2	GET	349
3.1.5.18.1.2.1	Request Body	350
3.1.5.18.1.2.2	Response Body	350
3.1.5.18.1.2.3	Processing Details	352
3.1.5.18.1.3	GET (All)	352
3.1.5.18.1.3.1	Request Body	353
3.1.5.18.1.3.2	Response Body	353
3.1.5.18.1.3.3	Processing Details	357
3.1.5.18.1.4	DELETE	357
3.1.5.18.1.4.1	Request Body	357
3.1.5.18.1.4.2	Response Body	357
3.1.5.18.1.4.3	Processing Details	357
3.1.5.18.2	subnets	357
3.1.5.18.2.1	HTTP Methods	358
3.1.5.18.2.1.1	PUT	358
3.1.5.18.2.1.1.1	Request Body	359
3.1.5.18.2.1.1.2	Response Body	360
3.1.5.18.2.1.1.3	Processing Details	360
3.1.5.18.2.1.2	GET	360
3.1.5.18.2.1.2.1	Request Body	360
3.1.5.18.2.1.2.2	Response Body	360
3.1.5.18.2.1.2.3	Processing Details	361
3.1.5.18.2.1.3	GET (All)	361
3.1.5.18.2.1.3.1	Request Body	361
3.1.5.18.2.1.3.2	Response Body	361
3.1.5.18.2.1.3.3	Processing Details	363
3.1.5.18.2.1.4	DELETE	363
3.1.5.18.2.1.4.1	Request Body	363
3.1.5.18.2.1.4.2	Response Body	363
3.1.5.18.2.1.4.3	Processing Details	363
3.1.5.19	virtualNetworkManager	363
3.1.5.19.1	HTTP Methods	364
3.1.5.19.1.1	PUT	364
3.1.5.19.1.1.1	Request Body	364
3.1.5.19.1.1.2	Response Body	365
3.1.5.19.1.1.3	Processing Details	365
3.1.5.19.1.2	GET	365
3.1.5.19.1.2.1	Request Body	365
3.1.5.19.1.2.2	Response Body	365
3.1.5.19.1.2.3	Processing Details	366
3.1.5.20	virtualServers	366
3.1.5.20.1	HTTP Methods	367

3.1.5.20.1.1	PUT	367
3.1.5.20.1.1.1	Request Body	367
3.1.5.20.1.1.2	Response Body	368
3.1.5.20.1.1.3	Processing Details	368
3.1.5.20.1.2	GET	368
3.1.5.20.1.2.1	Request Body	368
3.1.5.20.1.2.2	Response Body	368
3.1.5.20.1.2.3	Processing Details	369
3.1.5.20.1.3	GET (All)	369
3.1.5.20.1.3.1	Request Body	370
3.1.5.20.1.3.2	Response Body	370
3.1.5.20.1.3.3	Processing Details	371
3.1.5.20.1.4	DELETE	371
3.1.5.20.1.4.1	Request Body	372
3.1.5.20.1.4.2	Response Body	372
3.1.5.20.1.4.3	Processing Details	372
3.1.5.21	Diagnostics	372
3.1.5.21.1	Diagnostics ConnectivityCheck	372
3.1.5.21.1.1	HTTP Methods	373
3.1.5.21.1.1.1	PUT	373
3.1.5.21.1.1.1.1	Request Body	374
3.1.5.21.1.1.1.2	Response Body	374
3.1.5.21.1.1.1.3	Processing Details	374
3.1.5.21.2	Diagnostics ConnectivityCheckResults	374
3.1.5.21.2.1	HTTP Methods	376
3.1.5.21.2.1.1	GET	376
3.1.5.21.2.1.1.1	Request Body	376
3.1.5.21.2.1.1.2	Response Body	376
3.1.5.21.2.1.1.3	Processing Details	377
3.1.5.21.2.1.2	GET (All)	377
3.1.5.21.2.1.2.1	Request Body	378
3.1.5.21.2.1.2.2	Response Body	378
3.1.5.21.2.1.2.3	Processing Details	379
3.1.5.21.3	Diagnostics SibState	379
3.1.5.21.3.1	HTTP Methods	379
3.1.5.21.3.1.1	PUT	379
3.1.5.21.3.1.1.1	Request Body	380
3.1.5.21.3.1.1.2	Response Body	380
3.1.5.21.3.1.1.3	Processing Details	380
3.1.5.21.4	Diagnostics SibStateResults	380
3.1.5.21.4.1	HTTP Methods	381
3.1.5.21.4.1.1	GET	381
3.1.5.21.4.1.1.1	Request Body	382
3.1.5.21.4.1.1.2	Response Body	382
3.1.5.21.4.1.1.3	Processing Details	384
3.1.5.21.4.1.2	GET (All)	384
3.1.5.21.4.1.2.1	Request Body	384
3.1.5.21.4.1.2.2	Response Body	384
3.1.5.21.4.1.2.3	Processing Details	386
3.1.5.21.5	Diagnostics NetworkControllerState	386
3.1.5.21.5.1	HTTP Methods	386
3.1.5.21.5.1.1	PUT	386
3.1.5.21.5.1.1.1	Request Body	387
3.1.5.21.5.1.1.2	Response Body	387
3.1.5.21.5.1.1.3	Processing Details	387
3.1.5.22	networkControllerStatistics	387
3.1.5.22.1	HTTP Methods	389
3.1.5.22.1.1	GET	389

3.1.5.22.1.1.1	Request Body.....	389
3.1.5.22.1.1.2	Response Body	389
3.1.5.22.1.1.3	Processing Details	390
3.1.5.23	internalResourceInstances	390
3.1.5.23.1	HTTP Methods.....	391
3.1.5.23.1.1	GET.....	391
3.1.5.23.1.1.1	Request Body.....	391
3.1.5.23.1.1.2	Response Body	391
3.1.5.23.1.1.3	Processing Details	392
3.1.5.23.1.2	GET (All).....	392
3.1.5.23.1.2.1	Request Body.....	392
3.1.5.23.1.2.2	Response Body	392
3.1.5.23.1.2.3	Processing Details	393
3.1.5.24	iDnsServer.....	393
3.1.5.24.1	HTTP Methods.....	393
3.1.5.24.1.1	PUT.....	393
3.1.5.24.1.1.1	Request Body.....	394
3.1.5.24.1.1.2	Response Body	394
3.1.5.24.1.1.3	Processing Details	394
3.1.5.24.1.2	GET.....	394
3.1.5.24.1.2.1	Request Body.....	395
3.1.5.24.1.2.2	Response Body	395
3.1.5.24.1.2.3	Processing Details	395
3.1.5.25	virtualSwitchManager	395
3.1.5.25.1	HTTP Methods.....	396
3.1.5.25.1.1	PUT.....	396
3.1.5.25.1.1.1	Request Body.....	396
3.1.5.25.1.1.2	Response Body	397
3.1.5.25.1.1.3	Processing Details	397
3.1.5.25.1.2	GET.....	397
3.1.5.25.1.2.1	Request Body.....	397
3.1.5.25.1.2.2	Response Body	397
3.1.5.25.1.2.3	Processing Details	398
3.1.5.26	networkControllerBackup	398
3.1.5.26.1	HTTP Methods.....	399
3.1.5.26.1.1	PUT.....	399
3.1.5.26.1.1.1	Request Body.....	399
3.1.5.26.1.1.2	Response Body	400
3.1.5.26.1.1.3	Processing Details	400
3.1.5.26.1.2	GET.....	400
3.1.5.26.1.2.1	Request Body.....	400
3.1.5.26.1.2.2	Response Body	400
3.1.5.26.1.2.3	Processing Details	401
3.1.5.27	networkControllerRestore.....	401
3.1.5.27.1	HTTP Methods.....	402
3.1.5.27.1.1	PUT.....	402
3.1.5.27.1.1.1	Request Body.....	403
3.1.5.27.1.1.2	Response Body	403
3.1.5.27.1.1.3	Processing Details	403
3.1.5.27.1.2	GET.....	403
3.1.5.27.1.2.1	Request Body.....	403
3.1.5.27.1.2.2	Response Body	404
3.1.5.27.1.2.3	Processing Details	404
3.1.5.28	Response Content for Errors.....	405
3.1.6	Timer Events.....	411
3.1.7	Other Local Events.....	411
4	Protocol Examples.....	412

4.1	Example of the JSON used to create a default ACL for both inbound and outbound ..	412
4.2	macPools usage	412
5	Security	413
5.1	Security Considerations for Implementers	413
5.2	Index of Security Parameters	413
6	Appendix A: Full JSON Schema	414
6.1	accessControllists	414
6.1.1	PUT Schema	414
6.1.2	GET Schema	416
6.1.3	GET ALL schema	419
6.1.4	aclRules.....	423
6.1.4.1	PUT schema	423
6.1.4.2	GET schema	424
6.1.4.3	GET ALL schema	426
6.2	credentials	428
6.2.1	PUT schema	428
6.2.2	GET schema	429
6.2.3	GET ALL schema	431
6.3	gatewayPools	433
6.3.1	PUT schema	433
6.3.2	GET schema	435
6.3.3	GET ALL schema	437
6.4	gateways	439
6.4.1	PUT schema	439
6.4.2	GET schema	441
6.4.3	GET ALL schema	445
6.5	loadBalancers	449
6.5.1	PUT schema	449
6.5.2	GET schema	454
6.5.3	GET ALL schema	460
6.5.4	backendAddressPools	467
6.5.4.1	PUT schema	467
6.5.4.2	GET schema	468
6.5.4.3	GET ALL schema	469
6.5.5	frontendIpConfigurations	470
6.5.5.1	PUT schema	470
6.5.5.2	GET schema	472
6.5.5.3	GET ALL schema	473
6.5.6	inboundNatRules	475
6.5.6.1	PUT schema	475
6.5.6.2	GET schema	476
6.5.6.3	GET ALL schema	477
6.5.7	loadBalancingRules	479
6.5.7.1	PUT schema	479
6.5.7.2	GET schema	480
6.5.7.3	GET ALL schema	482
6.5.8	outboundNatRules	483
6.5.8.1	PUT schema	483
6.5.8.2	GET schema	484
6.5.8.3	GET ALL schema	486
6.5.9	probes.....	487
6.5.9.1	PUT schema	487
6.5.9.2	GET schema	488
6.5.9.3	GET ALL schema	489
6.6	loadBalancerManager.....	491
6.6.1	PUT schema	491
6.6.2	GET schema	492

6.7	loadBalancerMux	493
6.7.1	PUT schema	493
6.7.2	GET schema	495
6.7.3	GET ALL schema	498
6.8	logicalNetworks	502
6.8.1	PUT schema	502
6.8.2	GET schema	504
6.8.3	GET ALL schema	509
6.8.4	logicalSubnets	513
6.8.4.1	ipPools	513
6.8.4.1.1	PUT schema	513
6.8.4.1.2	GET schema	514
6.8.4.1.3	GET ALL schema	515
6.9	macPools	515
6.9.1	PUT schema	515
6.9.2	GET schema	516
6.9.3	GET ALL schema	517
6.10	routeTables	519
6.10.1	PUT schema	519
6.10.2	GET schema	520
6.10.3	GET ALL schema	523
6.10.4	routes	525
6.10.4.1	PUT schema	525
6.10.4.2	GET schema	526
6.10.4.3	GET ALL schema	527
6.11	networkInterfaces	529
6.11.1	PUT schema	529
6.11.2	GET schema	532
6.11.3	GET ALL schema	536
6.11.4	ipConfigurations	540
6.11.4.1	GET schema	540
6.11.4.2	GET ALL schema	542
6.12	publicIpAddresses	544
6.12.1	PUT schema	544
6.12.2	GET schema	545
6.12.3	GET ALL schema	546
6.13	servers	548
6.13.1	PUT schema	548
6.13.2	GET schema	550
6.13.3	GET ALL schema	555
6.14	serviceInsertions	560
6.14.1	PUT schema	560
6.14.2	GET schema	562
6.14.3	GET ALL schema	565
6.15	virtualGateways	569
6.15.1	PUT schema	569
6.15.2	GET schema	576
6.15.3	GET ALL schema	587
6.15.4	bgpRouters	599
6.15.4.1	PUT schema	599
6.15.4.2	GET schema	600
6.15.4.3	GET ALL schema	604
6.15.4.4	bgpPeers	609
6.15.4.4.1	PUT schema	609
6.15.4.4.2	GET schema	609
6.15.4.4.3	GET ALL schema	612
6.15.5	policyMaps	616
6.15.5.1	PUT schema	616

6.15.5.2	GET schema	617
6.15.5.3	GET ALL schema	618
6.16	virtualNetworks	620
6.16.1	PUT schema	620
6.16.2	GET schema	622
6.16.3	GET ALL schema	625
6.16.4	subnets	629
6.16.4.1	PUT schema	629
6.16.4.2	GET schema	630
6.16.4.3	GET ALL schema	632
6.17	virtualNetworkManager	633
6.17.1	PUT schema	633
6.17.2	GET schema	634
6.18	virtualServers	635
6.18.1	PUT schema	635
6.18.2	GET schema	636
6.18.3	GET ALL schema	638
6.19	Diagnostics	640
6.19.1	Diagnostics ConnectivityCheck	640
6.19.1.1	PUT Schema Request	640
6.19.1.2	PUT Schema Response	641
6.19.2	Diagnostics ConnectivityCheckResults	642
6.19.2.1	GET Schema	642
6.19.2.2	GET ALL Schema	644
6.19.3	Diagnostics SlbState	646
6.19.3.1	PUT Schema	646
6.19.4	Diagnostics SlbStateResults	647
6.19.4.1	GET Schema	647
6.19.4.2	GET ALL Schema	649
6.19.5	Diagnostics NetworkControllerState	652
6.19.5.1	PUT Schema	652
6.20	networkControllerStatistics	653
6.20.1	GET Schema	653
6.21	internalResourceInstances	654
6.21.1	GET schema	654
6.21.2	GET ALL schema	655
6.22	iDnsServer	656
6.22.1	PUT schema	656
6.22.2	GET schema	657
6.23	virtualSwitchManager	658
6.23.1	PUT Schema	658
6.23.2	GET Schema	659
6.24	networkControllerBackup	661
6.24.1	PUT Schema	661
6.24.2	GET Schema	662
6.25	networkControllerRestore	664
6.25.1	PUT Schema	664
6.25.2	GET Schema	665
6.26	Schema for Error Response	667
7	Appendix B: Product Behavior	668
8	Change Tracking	669
9	Index	673

1 Introduction

This document specifies the Northbound API (NBI) definition of the Microsoft Network Controller. The NBI is a RESTful API using JSON as the message format. The first sections of this document provide an overview of the API and common usage of it. The bulk of this document is the design of the resources that make up the NBI. The resources are in order of the top-level resources with their respective descendant resources defined in conjunction with their ancestor resource.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

1.1 Glossary

This document uses the following terms:

access control list (ACL): A list of access control entries (ACEs) that collectively describe the security rules for authorizing access to some resource; for example, an object or set of objects.

ancestor: In a tree structure, an element from which other elements inherit attributes.

asynchronous operation: An operation executed on the server side. The client continues executing and does not check whether a response is available from the server.

Border Gateway Protocol (BGP): An interautonomous system routing protocol designed for TCP/IP routing.

certification authority (CA): A third party that issues public key certificates. Certificates serve to bind public keys to a user identity. Each user and certification authority (CA) can decide whether to trust another user or CA for a specific purpose, and whether this trust should be transitive. For more information, see [RFC3280].

classless inter-domain routing (CIDR): An alternate method for allocating IP addresses and routing IP packets, known as supernetting, that organizes IP addresses into subnetworks that are independent of the address values. It enables multiple subnets to be grouped together for network routing to reduce the growth of Internet routing tables and preserve available IPv4 addresses.

create retrieve update delete (CRUD): The four basic functions of persistent storage. The "C" stands for create, the "R" for retrieve, the "U" for update, and the "D" for delete. CRUD is used to denote these conceptual actions and does not imply the associated meaning in a particular technology area (such as in databases, file systems, and so on) unless that associated meaning is explicitly stated.

descendant: A member that is below the current member in a hierarchy.

Domain Name System (DNS): A hierarchical, distributed database that contains mappings of domain names to various types of data, such as IP addresses. DNS enables the location of computers and services by user-friendly names, and it also enables the discovery of other information stored in the database.

Dynamic Host Configuration Protocol (DHCP): A protocol that provides a framework for passing configuration information to hosts on a TCP/IP network, as described in [RFC2131].

Encapsulating Security Payload (ESP): An Internet Protocol security (IPsec) encapsulation mode that provides authentication, data confidentiality, and message integrity. For more information, see [RFC4303] section 1.

encryption: In cryptography, the process of obscuring information to make it unreadable without special knowledge.

Hypertext Transfer Protocol (HTTP): An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

Hypertext Transfer Protocol Secure (HTTPS): An extension of HTTP that securely encrypts and decrypts web page requests. In some older protocols, "Hypertext Transfer Protocol over Secure Sockets Layer" is still used (Secure Sockets Layer has been deprecated). For more information, see [SSL3] and [RFC5246].

inbound: The network traffic flowing from the client to the server.

Internet Protocol security (IPsec): A framework of open standards for ensuring private, secure communications over Internet Protocol (IP) networks through the use of cryptographic security services. IPsec supports network-level peer authentication, data origin authentication, data integrity, data confidentiality (encryption), and replay protection. The Microsoft implementation of IPsec is based on standards developed by the Internet Engineering Task Force (IETF) IPsec working group.

Internet Protocol version 4 (IPv4): An Internet protocol that has 32-bit source and destination addresses. IPv4 is the predecessor of IPv6.

Internet Protocol version 6 (IPv6): A revised version of the Internet Protocol (IP) designed to address growth on the Internet. Improvements include a 128-bit IP address size, expanded routing capabilities, and support for authentication and privacy.

JavaScript Object Notation (JSON): A text-based, data interchange format that is used to transmit structured data, typically in Asynchronous JavaScript + XML (AJAX) web applications, as described in [[RFC4627](#)][[RFC7159](#)]. The JSON format is based on the structure of ECMAScript (Jscript, JavaScript) objects.

Media Access Control (MAC) address: A hardware address provided by the network interface vendor that uniquely identifies each interface on a physical network for communication with other interfaces, as specified in [IEEE802.3]. It is used by the media access control sublayer of the data link layer of a network connection.

NetBIOS: A particular network transport that is part of the LAN Manager protocol suite. NetBIOS uses a broadcast communication style that was applicable to early segmented local area networks. ~~The LAN Manager protocols were the default in Windows NT operating system environments prior to Windows 2000 operating system.~~ A protocol family including name resolution, datagram, and connection services. For more information, see [RFC1001] and [RFC1002].

network address translation (NAT): The process of converting between IP addresses used within an intranet, or other private network, and Internet IP addresses.

opaque: Data that the client does not use and data (or, more often, a handle) for use on the server on behalf of the client. Opaque data is sent to the client and returned to the server and used to access data or state information needed to process client calls/requests.

outbound: Network traffic flowing from the server to the client.

Representational State Transfer (REST): A class of web services that is used to transfer domain-specific data by using HTTP, without additional messaging layers or session tracking, and returns textual data, such as XML.

resource: An entity that can be identified by a URI. This term is used as specified in [RFC2616] section 1.3.

Secure Sockets Layer (SSL): A security protocol that supports confidentiality and integrity of messages in client and server applications that communicate over open networks. SSL uses two

keys to encrypt data—a public key known to everyone and a private or secret key known only to the recipient of the message. SSL supports server and, optionally, client authentication (2) using X.509 certificates (2). For more information, see [X509]. The SSL protocol is precursor to Transport Layer Security (TLS). The TLS version 1.0 specification is based on SSL version 3.0 [SSL3].

Singleton SAO: An SAO that is created the first time a method on its server type is called; subsequent calls to the remote methods on the server type reuse the existing SAO unless it expires. For shorter-lived SAOs, see single-call SAO.

top-level resource: A resource that has no ancestors.

tracing: A mechanism used to write out diagnostic information.

Transmission Control Protocol (TCP): A protocol used with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. TCP handles keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

Uniform Resource Identifier (URI): A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [RFC3986].

Uniform Resource Locator (URL): A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [RFC1738].

User Datagram Protocol (UDP): The connectionless protocol within TCP/IP that corresponds to the transport layer in the ISO/OSI reference model.

virtual private network (VPN): A network that provides secure access to a private network over public infrastructure.

Windows Management Instrumentation (WMI): The Microsoft implementation of Common Information Model (CIM), as specified in [DMTF-DSP0004]. WMI allows an administrator to manage local and remote machines and models computer and network objects using an extension of the CIM standard.

XML: The Extensible Markup Language, as described in [XML1.0].

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as defined in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the Errata.

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dohelp@microsoft.com. We will assist you in finding the relevant information.

[MSKB-3216755] Microsoft Corporation, "January 26, 2017—KB 3216755 (OS Build 14393.726)", <https://support.microsoft.com/en-us/help/4011347/windows-10-update-kb3216755>

[RFC1123] Braden, R., "Requirements for Internet Hosts - Application and Support", RFC 1123, October 1989, <http://www.ietf.org/rfc/rfc1123.txt>

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.rfc-editor.org/rfc/rfc2119.txt>

[RFC2616] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, <http://www.rfc-editor.org/rfc/rfc2616.txt>

[RFC7231] Fielding, R., and Reschke, J., Eds., "Hypertext Transfer Protocol -- HTTP/1.1: Semantics and Content", RFC7231, June 2014, <http://www.rfc-editor.org/rfc/rfc7231.txt>

1.2.2 Informative References

[RFC1034] Mockapetris, P., "Domain Names - Concepts and Facilities", STD 13, RFC 1034, November 1987, <http://www.ietf.org/rfc/rfc1034.txt>

1.3 Overview

This document provides the Northbound API (NBI) definition of the Microsoft Network Controller. The NBI is a RESTful API using JSON as the message format. The first sections of this document provide an overview of the API and common usage of it. The bulk of this document is the design of the resources that make up the NBI.

1.3.1 Client-Server Interactions

This section details the client-server interactions between the Network Controller (as the server) and any clients that call into its Northbound REST APIs.

1.3.1.1 ETag usage

The ETag is a response header field that is defined by the W3C organization (See [RFC2616] section 14.19). The Network Controller supports the behavior of ETag as defined by W3C. In addition, the following section outlines the behavior of the ETag element that a client can expect from the Network Controller when nested resources are updated.

Case 1: A parent resource is updated.

- ETag of the parent is updated.
- ETag of all child resources are updated.
- Recursively the ETag of all child resources of the parent's child resources are updated.

Example 1: If a **networks** resource is updated then its ETag is updated along with all **logicalSubnets** resources under it and all **ipPools** resources under all **logicalSubnets** resources under the original **networks** resource.

Case 2: A child resource is updated.

- Recursively the ETag of the parent resource of the child resource is updated.
- ETag of the child resource is updated.
- ETag of all child resources of the specific child resource are updated.
- ETag of any other child resources of the parent are not updated.

Example 1: If a **logicalSubnets** resource is updated then its ETag is updated along with the ETag of the parent **networks** resource and all **ipPools** resources under the specific **logicalSubnets** resource. Any other **logicalSubnets** resources under the original **networks** resource will not have their ETag updated.

Example 2: If an **ipPools** resource is updated then its ETag is updated along with the ETag of the parent **logicalSubnets** resource and the ETag of the **logicalSubnets'** parent **networks** resource. But if there are any other **logicalSubnets** resources under the **networks** resource and **ipPools** resources under these **logicalSubnets** resources their ETags will not be updated.

Case 3: A resource with dependencies is updated

- ETag of resource is updated.
- ETag of the dependent resource is not updated.

Example 3: A **gateways** resource takes a dependency on a **gatewayPools** resource. Then the **gatewayPools** resource is updated. The **gatewayPools** resource's ETag is updated but the **gateways** resource's ETag is not updated.

This is the table of response codes related to Etags.

PUT	Resource does not exist	Resource exists
If-Match = "" / absent	201 Created	200 OK
If-Match = "*"	412 Precondition Failed	200 OK
If-Match = "xyz"	412 Precondition Failed	200 OK / 412 Precondition Failed
If-None-Match = "*"	201 Created	412 Precondition Failed

PATCH	Resource does not exist	Resource exists
If-Match = "" / absent	404 Not Found	200 OK
If-Match = "*"	404 Not Found	200 OK
If-Match = "xyz"	404 Not Found	200 OK / 412 Precondition Failed

DELETE	Resource does not exist	Resource exists
If-Match = "" / absent	204 No Content	200 OK
If-Match = "*"	204 No Content	200 OK
If-Match = "xyz"	204 No Content	200 OK / 412 Precondition Failed

1.3.1.2 Idempotency

All requests coming from clients are expected to contain an x-ms-client-request-id header. If the client needs to retry a request due to intermittent network issues, the same value will be sent in the header. This allows the Network Controller to ignore the retry if it has already been processed. Note that even if the request is ignored, the same response will be returned, since the client needs the values in the response.

If the retry arrives while the original request is still being processed, the Network Controller is responsible for identifying the situation and handling it by either cancelling the original request, waiting until it completes or returning 202 (Accepted) in case of asynchronous operations.

1.3.2 Asynchronous Operations

All operations that mutate resources can potentially take a long time to complete. The Network Controller provides the **operations** and **operationsResults** resources for determining the status of any asynchronous operations.

Because the Network Controller is a distributed service made up of a number of services, it handles transient failures internally. It does this by having a retry loop that will continue retrying the operation a number of times while keeping the resource in the "Updating" state. If the operation succeeded, the retry loop will be stopped and the resource will be put in the "Succeeded" state. If after the retry limit is reached in the retry loop, then the retries will stop and the resource will be put in the failed state.

For understanding the current state of the specific resource (as opposed to the state of a specific operation on the resource) the **properties.provisioningState** element is used.

For asynchronous operations, the valid states are Deleting, Failed, Succeeded, and Updating.

In the following diagram, the client makes a **PUT** operation on an asynchronous resource, and receives an operationId which is used to monitor the provisioning state of the operation, including failure details if a failure occurs.

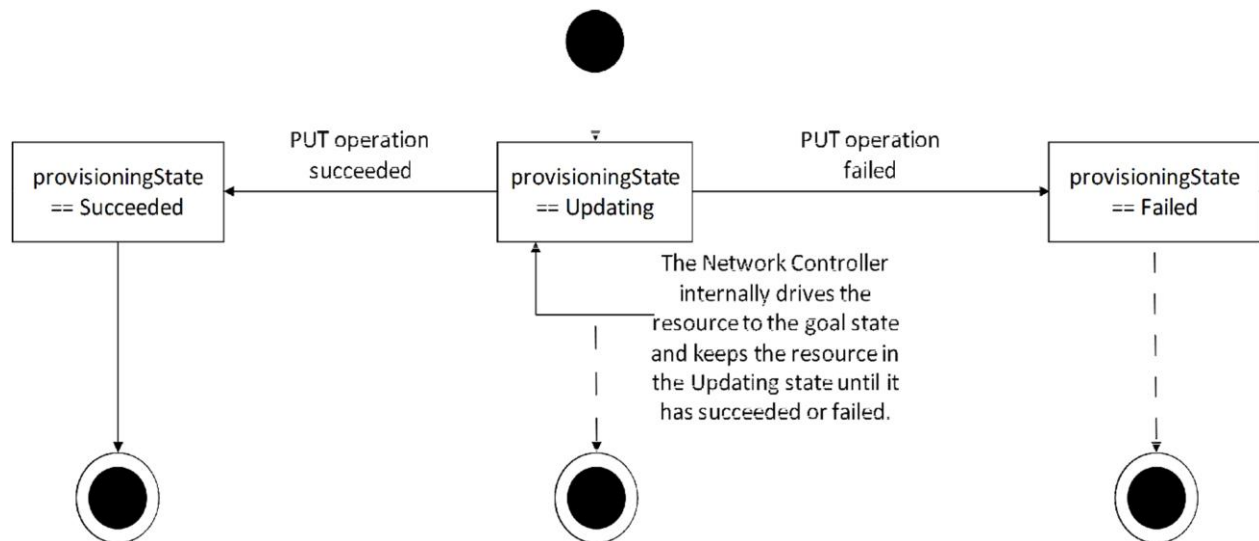


Figure 1: State Diagram for Asynchronous PUT Operations

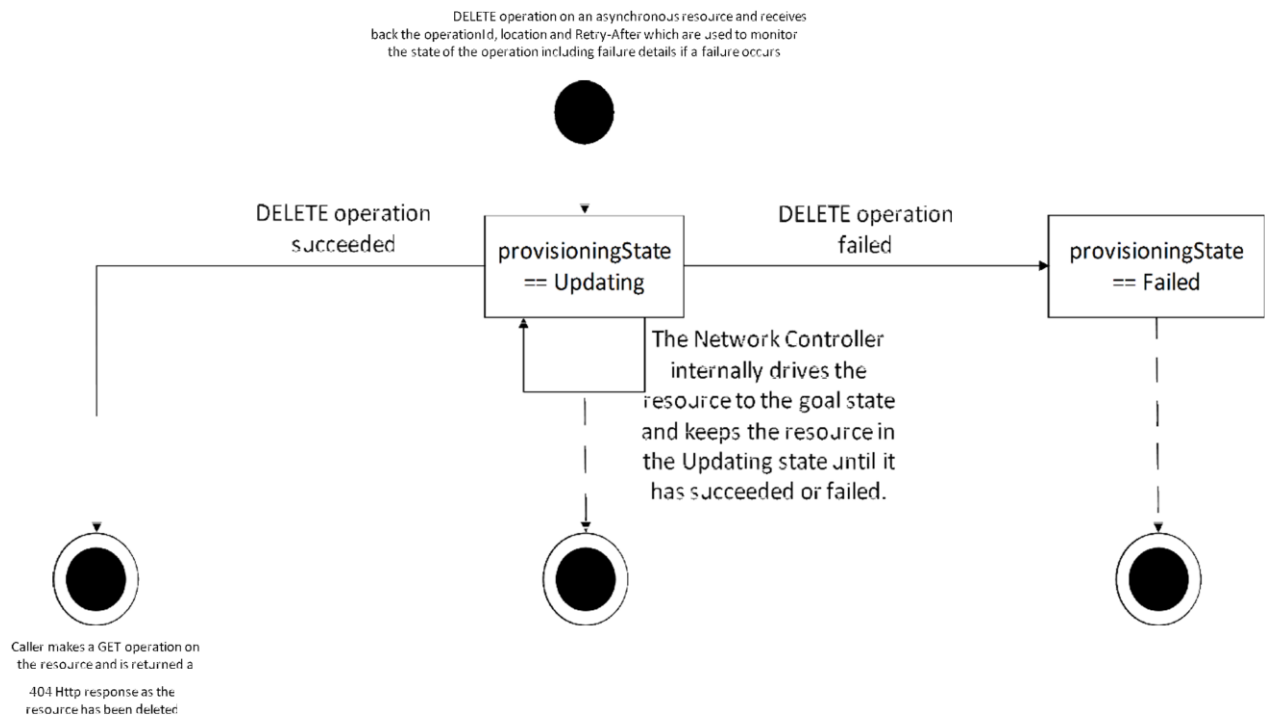


Figure 2: State Diagram for Asynchronous DELETE Operations

1.3.2.1 POST and DELETE Operations

For **POST** and **DELETE** operations, the following pattern is to be used to execute the operation asynchronously:

1. The client initiates a **POST** or **DELETE** operation.
2. The Network Controller returns HTTP code 202 (Accepted) with a Location header, an Azure-AsyncOperation header, and, optionally, a Retry-After header. The time interval in the Retry-After header can only be specified in seconds, with a minimum of 15 seconds and a maximum of 15 minutes.
3. The client waits for the Retry-After interval, if it was specified, or the default of 60 seconds if it wasn't, as specified in section 2.2.1.3.7.
4. Client invokes the URI specified in the Location header using the **GET** verb.
5. If the operation is not complete, the Network Controller returns 202 (Accepted) again, optionally with a Retry-After header.
6. If the operation is complete, the Network Controller returns the exact same response that would have been returned had the operation been executed synchronously.
7. As per the protocol for asynchronous operations described in section 1.3.2, a consumer can query the status of an asynchronous operation by initiating **GET** requests on the HTTP resource as specified in the Location header or Azure-AsyncOperation header. The Location header returned by the Network Controller is of the following form, where operation-id is the value of the x-ms-request-id header returned by the resource provider.

`https://<url>/networking/v1/operationResults/{operation-id}`

1.3.2.2 PUT Operation

The following process executes the **PUT** operation asynchronously:

1. The client initiates a **PUT** operation.
2. The Network Controller returns HTTP code 200 (OK) or 201 (Created) with an Azure-AsyncOperation and the **provisioningState** element of the resource is set to "Updating".

Note If the **provisioningState** is set to "Succeeded" or "Failed" in the Http response to the original **PUT** operation, then the operation was not an asynchronous operation.

3. The client periodically polls the **operations** resource to determine the state of the operation.
 - If the **operations** resource returns "InProgress" in the status element and a **GET** operation is performed on the actual resource will show the **provisioningState** element set to "Updating".
 - If the **operations** resource returns "Succeeded" in the status element, then the operation has succeeded. Performing a **GET** operation on the actual resource will show the **provisioningState** element set to "Succeeded" if no additional operations have been started on the resource.
 - If the **operations** resource returns "Failed" in the **status** element, then client knows the operation has failed and the response also includes the error message related to the failure. Performing a **GET** operation on the actual resource will show the **provisioningState** element set to "Failed" if no additional operations have been started on the resource.

Note For **PUT** operations, the **operations** resource is used to determine the state of the operations and not the **provisioningState** element on the actual resource, because concurrent operations could change the **provisioningState** while the **operations** resource will always return the state of the specific operation. See section 1.3.3, Concurrent Operations, for more details on how the client handles concurrent operations.

PUT operations do not return the Location header because the result of the operation is returned synchronously. The **Azure-AsyncOperation** header value has the following format:

```
https://<url>/networking/v1/operations/{operation-id}
```

1.3.2.3 Differences between operations and operationResults

The **GET** <location header value> returns either HTTP 202 (Accept) if operation did not complete yet, or 204 (No Content) and no body (if succeeded), or HTTP status indicating an error (for example, 500 (Internal Server Error)) and a body containing error information.

The **GET** <AsyncOperation header value> always returns HTTP 200 (OK) and "Async Operation" resource.

The Location header is more common, but is ambiguous because when **GET** <Location> returns status code 500 (Internal Server Error), it is not clear if **DELETE** or **GET** failed.

The AsyncOperation is better in that regard, because it does not return HTTP Status for the asynchronous part of the **DELETE** operation.

1.3.2.4 properties.provisioningState usage

For asynchronous operations, the **operations** and **operationsResults** resources are the recommended approach to determining the state of a specific operation. For understanding the current state of the specific resource (as opposed to the state of a specific operation on the resource) the

properties.provisioningState element is used. This section describes the state machine that underlies transitioning between provisioningStates and how the Network Controller makes changes to the **properties.provisioningState** element of parent/child resources or dependent resources. The valid provisioning states are the following (see Common JSON Elements, section 2.2.2, for a detailed definition of each):

- Deleting
- Failed
- Succeeded
- Updating

There are two valid state diagrams: one for synchronous and one for asynchronous operations.

1.3.2.5 State Diagrams for Synchronous Operations

For synchronous operations, the only valid states are Failed or Succeeded.

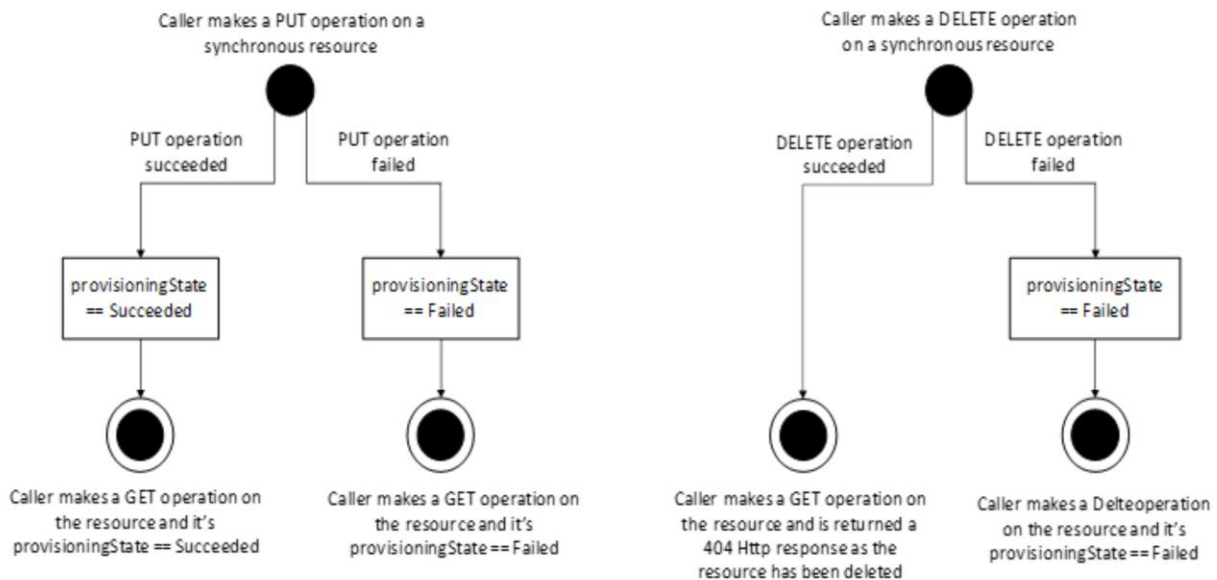


Figure 3: State Diagrams for Synchronous Operations

1.3.2.6 State Diagrams for Asynchronous Operations

For asynchronous operations, the valid states are Deleting, Failed, Succeeded, and Updating.

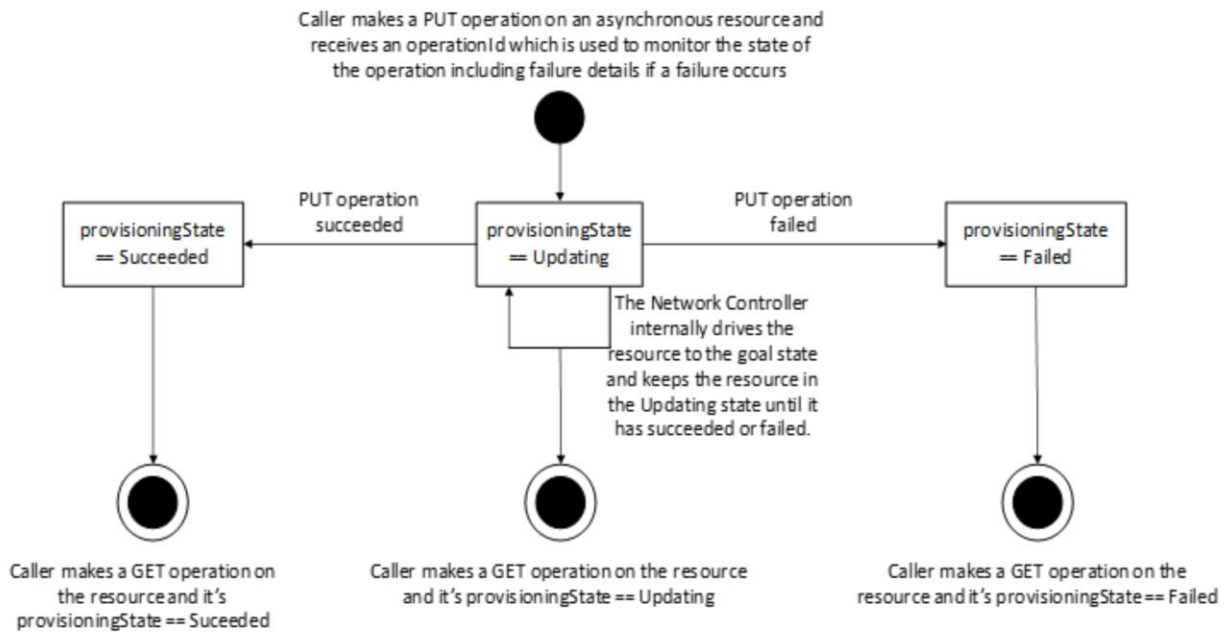


Figure 4: State Diagrams for Asynchronous PUT and GET Operations

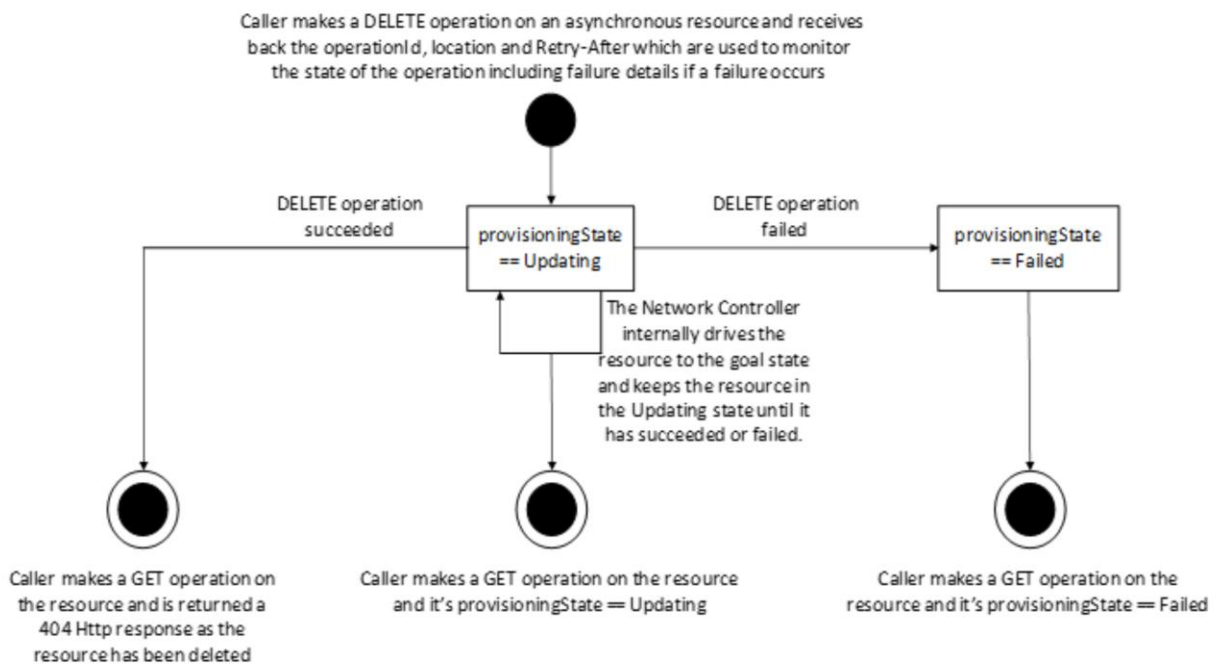


Figure 5: State Diagrams for Asynchronous Delete Operation

Provisioning State changes for Parent/Child resources or dependent resources

Case 1: A parent resource is updated.

- The **property.provisioningState** element of the ancestor resource is in the Updating state until it succeeds or fails, and then is moved to the appropriate final state.
- The **property.provisioningState** element of all descendant resources will be in the same state.

- Recursively the **property.provisioningState** element of all descendant resources of the parent's child resources are updated.

Example 1: If a **networks** resource is updated then its **property.provisioningState** element is updated along with all **logicalSubnets** resources under it and all **ipPools** resources under all **logicalSubnets** resources under the original **networks** resource.

Case 2: A descendant resource is updated.

- Recursively the **property.provisioningState** element of the ancestor resource of the descendant resource is updated.
- The **property.provisioningState** element of the descendant resource is updated.
- The **property.provisioningState** element of all descendant resources of the specific descendant resource are updated.
- The **property.provisioningState** element of any other descendant resources of the parent are not updated.

Example 1: If a **logicalSubnets** resource is updated then its **property.provisioningState** element is updated along with the **property.provisioningState** element of the parent **networks** resource and all **ipPools** resources under the specific **logicalSubnets** resource. Any other **logicalSubnets** under the original **networks** resource will not have their **property.provisioningState** element updated.

Example 2: If an **ipPools** resource is updated then its **property.provisioningState** element is updated along with the **property.provisioningState** element of the parent **logicalSubnets** resource and the **property.provisioningState** element of the **logicalSubnets'** parent **networks** resource. But if there are any other **logicalSubnets** resources under the **networks** resource and **ipPools** resources under these **logicalSubnets** resources, their **property.provisioningState** elements will not be updated.

Note Deleting a child resource is a special case because the child object will have its **property.provisioningState** element set to "Deleting" while its ancestor resource will be set to "Updating" until the **DELETE** operation has succeeded or failed.

Case 3: An asynchronous operation on a resource with dependencies is updated

- The **property.provisioningState** element of the resource is in the Updating state until it succeeds or fails and then is moved to the appropriate final state.
- The **property.provisioningState element** of the dependent resource is not updated.

Example 1: A **gateways** resource takes a dependency on a **gatewayPools** resource. Then the **gatewayPools** resource is updated. The **gatewayPools** resource's **property.provisioningState** element will be in the updating state until the asynchronous operation has succeeded for failed but the **gateways** resource's **property.provisioningState** is not changed from the current state.

1.3.3 Concurrent Operations

1.3.3.1 Concurrent operations on the same resource

The Network Controller allows for concurrent operations on the same resource. Clients of the Network Controller's Northbound Interface have to be aware that concurrent operations from different clients will happen and therefore interactions with the Network Controller have to be developed with this assumption in mind.

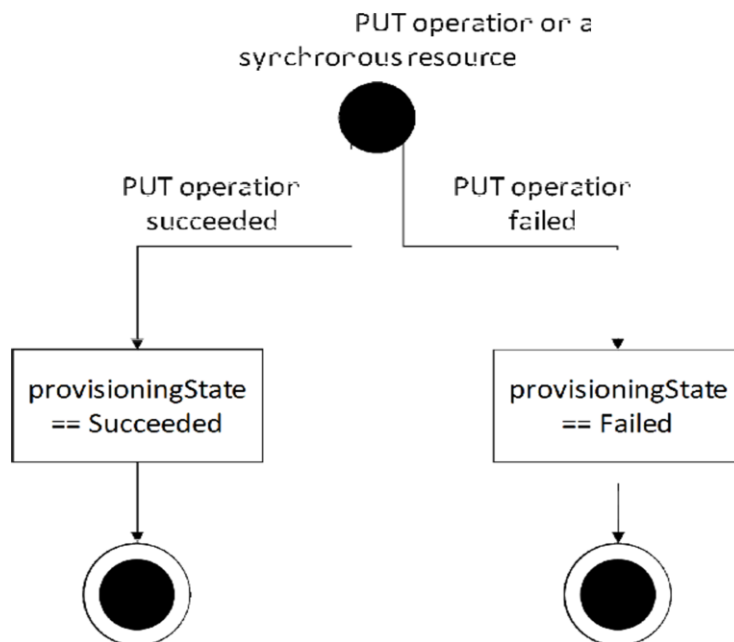
Because the Network Controller is a distributed service made up of a number of services, it handles transient failures internally. It does this by having a retry loop that the Software-Defined Networking

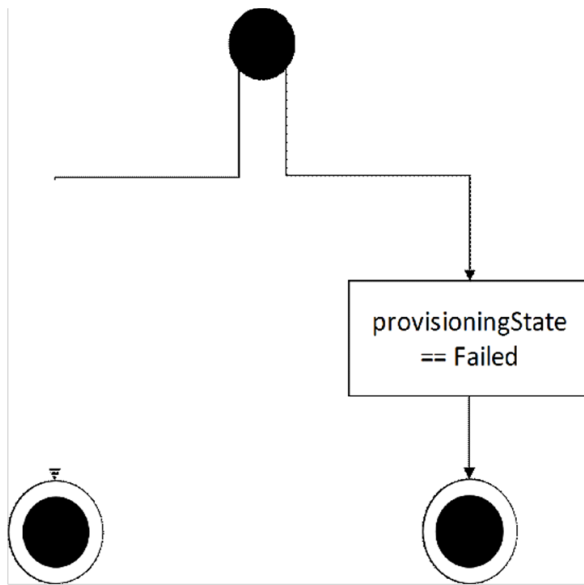
API (SDNAPI) service uses for communicating with the other services. The SDNAPI service is the component in the network controller that listens for HTTP/HTTPS web requests, parses them and forwards them on to the appropriate service module for handling. This retry loop will continue retrying the operation a number of times while keeping the resource in the "Updating" state. If the operation succeeded the retry loop will be stopped and the resource will be put in the "Succeeded" state. If after the retry limit is reached in the retry loop then the retries will stop and the resource will be put in the failed state. The Network Controller internally handles asynchronous operations when there aren't concurrent operations on the same resource.

The Network Controller can have only one operation in progress at a time for all resources in a parent-child tree. The rules for concurrent operations on the same resource are as follows:

1. **PUT** on top-level resource moves parent and all children (descendants) into updating state
2. **PUT** on top-level resource cancels **PUT** on itself and any **PUT/DELETE** on its children (descendants)
3. **DELETE** on top-level resource moves top level resource and its entire set of descendants into deleting state.
4. **DELETE** of top-level resources cancels **PUT/DELETE** on itself and any descendants.
5. **PUT** on a descendant resource moves ancestor state to Updating.
6. **PUT** on descendant resource cancels **PUT** on any parent or a **PUT** on itself. It does not cancel **PUT** on its sibling.
7. **DELETE** of descendant resource moves ancestors to updating state and itself to deleting state.
8. **DELETE** of descendant resource cancels **PUT** of ancestors or **PUT/DELETE** on itself.

For synchronous operations, the only valid states are Failed or Succeeded. The following diagrams shows states for synchronous operations.





Caller makes a GET operation on the resource and is returned a 404 HTTP response because the resource has been deleted

Figure 6: States for synchronous operations

If an operation cannot cancel another operation in progress on the resource, its child, sibling, or parent, the request is rejected with HTTP 409 – Conflict. The error details are as follows:

Error code: AnotherOperationInProgress

Error message: Another operation on this or dependent resource is in progress. To retrieve the status of the operation, use uri: {0}.

Note **PUT** or **DELETE** of descendant resource updates ETag of itself and the ancestors. **PUT** on top-level resource updates ETags of all descendants.

For more information about how the Network Controller internally handles asynchronous operations, see section 1.3.2.

1.3.3.2 Concurrent operations when there are dependent resources

In the Network Controller's Northbound API there are a number of resources that depend on other resources, or dependee resources. This occurs when a resource has a required or optional element that is a **resourceRef** to a different resource. One example is that a **gateways** resource is dependent on a **gatewayPools** resource. A **gateways** resource is a dependee resource for a **gatewayPools** resource.

1.3.3.3 Network Controller dependent resources

This section provides a complete list of all the dependencies between resources and how concurrent operations are handled. In addition, the sections on each resource provides its dependency information.

Read-only elements that are a **resourceRef** to a different resource will indicate that the resource has a different resource that has taken a dependency on it (ex. **gatewayPools** has a read-only **resourceRef** to one or more **gateways** resources).

There are 4 scenarios that are relevant for concurrent operations when there are dependent resources.

DELETE descendant resource: When a **DELETE** operation is performed on a descendant resource while its **property.provisioningState** is in the updating, deleting or failed state, that the **DELETE** operation will be processed.

PUT descendant resource: When a **PUT** operation is performed on a descendant resource while its **property.provisioningState** is in the updating, deleting or failed state, the **PUT** operation returns a 409 (Conflict) HTTP response. See the error code section in each resource for error response content details.

DELETE dependent resource: When a **DELETE** operation is performed on a dependent resource that has resources depending on it, the **DELETE** operation will return a 409 (Conflict) HTTP response. See the error code section in each resource for error response content details.

PUT dependent resource: When a **PUT** operation is performed on a dependee resource while there are dependent resources, the **PUT** operation will be processed.

1.4 Relationship to Other Protocols

The following figure illustrates the relationship of this protocol to industry-standard protocols.

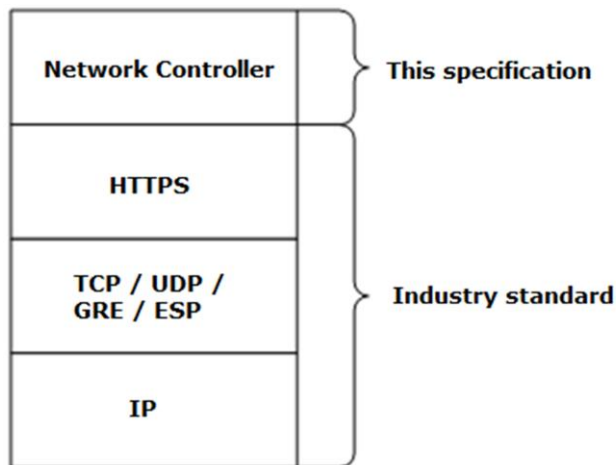


Figure 7: Relationship of the Network Controller to industry-standard protocols

1.5 Prerequisites/Preconditions

The certificate that allows communications between the Network Controller and the client **MUST** be present on the Network Controller.

1.6 Applicability Statement

This protocol defines a set of server and REST APIs. This protocol is applicable to both Internet and intranet client-server scenarios.

1.7 Versioning and Capability Negotiation

This protocol does not provide any mechanism for capability negotiation.

1.8 Vendor-Extensible Fields

This protocol does not provide any vendor-extensible fields.

1.9 Standards Assignments

This protocol has not been assigned any standard parameters.

2 Messages

2.1 Transport

This protocol consists of a set of RESTful (representational state transfer) web services.

HTTPS over TCP/IP, as specified in [RFC2616].

All client messages to the server MUST use HTTPS.

Protocol messages MUST be formatted as specified either in XML or in JavaScript Object Notation (JSON). Protocol server faults MUST be returned by using HTTP status codes as specified in [RFC2616], section 10, "Status Code Definitions".

2.2 Common Data Types

2.2.1 HTTP Headers

The methods in this protocol use the following HTTP headers as part of the information exchanged, prior to any requests or responses that are included in the exchange.

2.2.1.1 Content-Type

The **content-type** header is a response header that is common to all requests and responses. It contains the content type of the payload. This header is provided by clients in HTTP requests to the Network Controller, and it is also provided by the provided by the Network Controller in HTTP responses to the client. This header is optional for responses that do not contain content, otherwise it is required. The only valid type is:

```
application/json
```

The following error will be returned if the content-type does not contain the appropriate value.

```
{
  "Message": "The request entity's media type 'application/text' is not supported for this
resource.", "ExceptionMessage": "No MediaTypeFormatter is available to read an object of type
'NetworkInterface' from content with media type 'application/text'.", "ExceptionType":
"System.Net.Http.UnsupportedMediaTypeException", "StackTrace": " at
System.Net.Http.HttpContentExtensions.ReadAsAsync<T>(HttpContent content, Type type,
IEnumerable<IFormatter> formatters, IFormatterLogger formatterLogger, CancellationToken
cancellationTokentoken)\r\n at System.Web.Http.ModelBinding.FormatterParameterBin
ding.ReadContentAsync(HttpRequestMessage request,
}
```

2.2.1.2 Request Headers

The following HTTP headers are provided by clients in HTTP requests to the Network Controller, in addition to the existing set of standard HTTP headers.

Header	Section	Type	Description
Accept-Language	2.2.1.2.1	Optional	The language in which error messages are returned.

Header	Section	Type	Description
Content-Type	2.2.1.1		The content type of the payload.
if-match	2.2.1.2.2	Optional	An etag that can be obtained by executing a GET command on a resource or collection of resources, or an etag that is contained in the output of a PUT or PATCH command.
Referrer	2.2.1.2.3	Optional	Specifies the hostname of the computer of the end user.
x-ms-client-ip-address	2.2.1.2.4	Optional	IP address of the client. This is recorded in the tracing logs for every Network Controller Northbound operation for audit.
x-ms-client-request-id	2.2.1.2.5	Optional	A unique ID provided by the client that the service uses to identify the specific request.
x-ms-return-client-request-id	2.2.1.2.6	Optional	Determines whether the Network Controller will echo the x-ms-client-request-id.

2.2.1.2.1 Accept-Language

Optional. Specifies language in which error messages are returned. The default is en-us.

2.2.1.2.2 if-match

Optional. The client can provide this header in **PUT** and **PATCH** requests. Specifies an etag that can be obtained by executing a **GET** command on a resource or collection of resources, or from the output of a **PUT** or **PATCH** command.

2.2.1.2.3 Referrer

Optional. Specifies the hostname of the client, or the hostname of the computer of the end user.

2.2.1.2.4 x-ms-client-ip-address

Optional. Specifies IP address of the client. This is recorded in the trace logs for every Network Controller Northbound operation.

2.2.1.2.5 x-ms-client-request-id

Optional. Contains a unique ID provided by the client to identify the specific request. If two subsequent write requests (two **PUTs**, **POSTs**, or **DELETEs**) have the same id, the Network Controller assumes that last request is a retry and returns the same result it returned for the previous request. The Network Controller also returns the same x-ms-client-request-id value with the response, unless the response is explicitly disabled by using request header x-ms-return-client-request-id and setting the value to false.

This value is echoed in the response if the x-ms-return-client-request-id header is set to "true".

2.2.1.2.6 x-ms-return-client-request-id

Optional. Specifies whether the Network Controller will return the x-ms-client-request-id to the client.

2.2.1.3 Response Headers

The following HTTP headers are provided by the Network Controller in HTTP responses to the client in addition to the existing set of standard HTTP headers.

Header	Section	Description
Azure-AsyncOperation	2.2.1.3.1	Contains URL to enable monitoring of asynchronous operations.
Content-Length	2.2.1.3.2	The length of the content that is returned.
Content-Type	2.2.1.1	Required. The content type of the payload. This header is not required in responses that do not contain content.
Date	2.2.1.3.3	The date that the request was processed, in [RFC1123] format.
ETag	2.2.1.3.4	An opaque string representing the state of the resource at the time the response was generated.
HTTP/1.1	2.2.1.3.5	Indicates the HTTP status code of the request.
Location	2.2.1.3.6	Header for long-running operations. Contains the URL where the status of the long running operation can be checked.
Retry-After	2.2.1.3.7	Header for long-running operations. Set to the delay that the client uses when checking for the status of the operation.
Server	2.2.1.3.8	Indicates the HTTP server that is returning the Http response. For the Network Controller, the value will be "Microsoft-HTTPAPI/2.0".
x-ms-request-id	2.2.1.3.9	A unique identifier for the current operation, service generated.

2.2.1.3.1 Azure-AsyncOperation

This is a common response header that contains the URL that can be used to monitor the progress of asynchronous operations. See section 1.3.2, for more details.

2.2.1.3.2 Content-Length

This contains the length of the content that is returned, as a byte value.

2.2.1.3.3 Date

This contains the date that the request was processed, in [RFC1123] format.

2.2.1.3.4 ETag

This is a common response header that contains an opaque string representing the state of the resource at the time the response was generated. This header is returned for requests that target a single entity. The Network Controller will also always return an **etag** in the response body, as the **etag** property of an entity.

If the request does not include an **if-match** request header, then the Network Controller returns an error response code. Other status codes that are associated with the **etag** header are as follows.

Status code	Description
200 (OK)	Operation completed successfully.

Status code	Description
201 (Created)	Resource completed successfully.
204 (No Content)	Resource to delete does not exist
412 (Precondition Failed)	Parent resource is unavailable
404 (Not Found)	Resource was not found.

2.2.1.3.5 HTTP/1.1 Header

This is a common response header that contains the HTTP status code of the request. The Network Controller will return the appropriate status code.

2.2.1.3.6 Location

This specifies that the operation is a long-running operation. It is set to the URL that contains the status of the long running operation.

2.2.1.3.7 Retry-After

Header for long-running operations. Set to the delay that the client uses when checking for the status of the operation. This value is an integer and represents the seconds. By default this is set for all delete operations.

2.2.1.3.8 Server

This contains a reference to the Http server that is returning the HTTP response. For the Network Controller, the value is "Microsoft-HTTPAPI/2.0".

2.2.1.3.9 x-ms-request-id

This is a common response header that contains a unique identifier for the current operation, service generated.

2.2.2 Common JSON Elements

Every resource that supports CRUD operations uses common JSON elements in any request or response. The following table summarizes the set of common URI parameters defined by this specification.

JSON Element	Type	Description
resourceId		The resource ID for the resource. The value MUST be unique in the context of the resource if it is a top-level resource, or in the context of the direct parent resource if it is a child resource.
resourceRef		A relative URI to an associated resource.
instanceId	Read-only	This is the globally unique Id generated and used internally by the Network Controller. This value is a GUID in the form of "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX". It is possible to do a reverse mapping from instanceId to resourceId with the internalResourceInstances resource, section 3.1.5.23. The <i>instanceId</i> element cannot

JSON Element	Type	Description
		be used directly in the API.
tags	Optional	Key-value pairs of arbitrary data that the client stores with the resource on the controller.
resourceMetadata	Optional	Structured data that the client provides to the server. This is an optional element but it is suggested that all clients fill in the data that is applicable to them.
resourceMetadata.client	Optional	Indicates the client that creates or updates the resource. Although this element is optional, it is strongly recommended that it contain an appropriate value.
resourceMetadata.tenantId	Optional	The identifier of the tenant in the client environment. Provides linkage between the resource in the Network Controller and the tenant in the client network.
resourceMetadata.groupId	Optional	The identifier of the group that the tenant belongs to within the client environment. This is usually used in environments that contain multiple tenants that are aggregated into groups that the client manages. This provides linkage between the resource in the Network Controller and the group that the tenant belongs to in the client network.
resourceMetadata.resourceName	Optional	Indicates the globally unique name of the resource. If it is not assigned a value, then it will be blank.
resourceMetadata.originalHref	Optional	Optional for resourceMetadata. The original URI of the resource if the client uses a URI based system to organize resources.
properties	Optional	Optional array of structured data. The structure of this data is unique to each resource except two common read-only elements - etag and provisioningState .
properties.etag		An opaque string representing the state of the resource at the time the response was generated. This header is returned for requests that target a single entity. The Network Controller will also always return an etag in the response body. The etag is updated every time the resource is updated.
properties.provisioningState		Indicates the various states of the resource. Valid values are Deleting, Failed, Succeeded, and Updating.

2.2.3 Common URI Parameters

Every resource that supports CRUD operations uses common JSON elements in any request or response. The following table summarizes the set of common URI parameters defined by this specification.

URI parameter	Section	Description
<url>	2.2.3.5	The URL of the Network Controller.

URI parameter	Section	Description
<i>grandParentResourceID</i>	2.2.3.1	The user-defined resource ID of the network resource that is the ancestor of the resource that is the ancestor of the descendant resource.
<i>operation-id</i>	2.2.3.2	The value of the x-ms-request-id header returned by the resource provider.
<i>parentResourceID</i>	2.2.3.3	The user-defined resource ID of the network resource that is the ancestor of the descendant resource. Depending on the type of resource, it can be: <ul style="list-style-type: none"> ▪ User-defined, system-defined, or both ▪ Unique across all resources of the same type ▪ Unique across all resources of the same type in the context of the specific grandparent resource.
<i>resourceId</i>	2.2.3.4	The resource ID of the network resource to create, retrieve, update or delete. Depending on the type of resource, it can be: <ul style="list-style-type: none"> ▪ User-defined, system-defined, or both ▪ Unique across all resources of the same type ▪ Unique across all resources of the same type in the context of the specific ancestor resource. When the resourceId is optional for an ancestor resource, it is required for the descendant resources.
<i>instanceId</i>	3.1.5.23	The globally unique Id generated and used internally by the Network Controller. The mapping resource that enables the client to map between the instanceId and the resourceId.

2.2.3.1 grandParentResourceID

The *grandParentResourceID* parameter contains the resource ID that is associated with network objects that are ancestors of the parent of the necessary resource. When the relationship is specified on the Network Controller, it is created as a top-level resource prior to its usage as the parent of another resource.

It is user-defined for the following grandchild resources: **ipPools**, **routes**.

The grandParentResourceID is user-defined as the parent of the following descendant resources: the **logicalSubnets** resource when it is parent for the **ipPools** resource, the **logicalSubnets** resource when it is parent for the **routes** resource, the **logicalNetworks** resource when it is parent for the **logicalSubnets** resource.

2.2.3.2 operationID

The *operationID* parameter contains the resource ID that is associated with network objects that contain or point to the necessary resource.

2.2.3.3 parentResourceID

The *parentResourceID* parameter contains the resource ID that is associated with network objects that are ancestors of the necessary resource. When the relationship is specified on the Network Controller, it is created as a top-level resource prior to its usage as the parent of another resource.

The parentResourceID is user-defined for the following descendant resources: **aclRules**, **backendAddressPools**, **bgpPeers**, **bgpRouters**, **frontendIPConfigurations**, **networkInterfaces**, **inboundNatRules**, **ipConfigurations**, **ipPools**, **loadBalancingRules**,

logicalSubnets, networkConnections, outboundNatRules, policyMaps, probes, routes, and subnets.

2.2.3.4 resourceID

The *resourceID* parameter contains the resource ID that is associated with various network resources and containers. The value cannot be changed after the resource is created. It is a constant for singleton resources and other specific resources. The resources that use constants and their values are as follows.

Resource	Value
diagnostics	connectivityCheck
diagnostics	slbState
diagnostics	networkcontrollerstate
iDnsServer	configuration
loadBalancerManager	config
monitoring	NetworkControllerStatistics
virtualNetworkManager	configuration
virtualSwitchManager	configuration

The *resourceID* parameter is user-defined for the following resources: **accessControlLists, aclRules, backendAddressPools, bgpPeers, bgpRouters, credentials, frontendIPConfigurations, gatewayPools, gateways, inboundNatRules, ipConfigurations, ipPools, loadBalancerMux, loadBalancers, loadBalancingRules, logicalNetworks, logicalSubnets, macPools, networkConnections, outboundNatRules, networkInterfaces, policyMaps, probes, publicIpAddresses, routes, routeTables, servers, serviceInsertions, virtualGateways, virtualNetworks, and virtualServers.**

The *resourceID* parameter is system-defined for the following resources: **Diagnostics connectivityChecksResults, Diagnostics slbStateResults, operations, and operationResults.**

The *resourceID* parameter is user-defined or system generated for the following resource: **subnets.**

The *resourceID* parameter MUST be unique within its context if it is a top-level resource. The server will send an error response of 400 (Bad Request) to the client if there are conflicts in the uniqueness of the *resourceID*. This means that the *resourceID* parameter MUST be unique across all of the resources of the same type for the following resources: **accessControlLists, bgpPeers, credentials, gatewayPools, gateways, loadBalancerMux, loadBalancers, logicalNetworks, macPools, policyMaps, publicIpAddresses, routeTables, servers, serviceInsertions, virtualGateways, virtualNetworks, and virtualServers.**

A resource that is the child within a parent-child relationship MUST be unique within the context of the specific ancestor interfacesresource. For example, two **aclRules** resources can have the same *resourceId* if their parent **accessControlLists** resources are different; however, two **aclRules** resources can not have the same *resourceId* if they have the same parent.

The resources that MUST be unique in the context of the parent are:

- **loadBalancers** ancestor resource: **backendAddressPools, frontendIPConfigurations, inboundNatRules, loadBalancingRules, outboundNatRules, probes**
- **logicalSubnets** ancestor resource: **ipPools, routes**

- **networkInterfaces** ancestor resource: **ipConfigurations**
- **logicalNetworks** ancestor resource: **logicalSubnets**
- **servers** ancestor resource: **networkInterfaces**
- **virtualGateways** ancestor resource: **bgpPeers, bgpRouters, networkConnections, policyMaps**
- **virtualNetworks** ancestor resource: **subnets**

The parent resource of a **PUT** request is an optional element and can be retrieved from the URL in cases where it is not supplied. For all descendant resources this is a required element. If it is not supplied, the server sends a 400 (Bad Request) response to the client.

2.2.3.5 url

The *url* parameter contains the universal resource locator for the Network Controller. It identifies the server that is running the Network Controller. It MUST be one of the values in the following table.

Value	Meaning
networkController	
<url>/networking	The URL MUST be the remainder of the address of the computer on which the Network Controller is running, in addition to other services.

2.2.4 Data Structures

The following table summarizes the set of common data structures that are consumed or produced by this protocol. Common structure definitions are included in this section, whereas those that are specific to a particular request/response body are defined within its corresponding sections.

Data structure	Section	Description
accessControlLists	The ipConfigurations resource, section 3.1.5.5.3.	Contains an accessControlLists resource that defines the ACLs in and out of the IP Configuration.
aclRules	The aclRules resource, section 3.1.5.1.2.	Indicates the rules in an access control list, Indicates the action the ACL Rule will take.
addressPrefixes	The addressSpace resource in the virtualNetworks resource, section 3.1.5.18.	Indicates the valid list of address prefixes that can make up this virtual network.
addressSpace	The virtualNetworks resource, section 3.1.5.18.	Required. Indicates the address space of the virtual network.
backendAddressPools	The outboundNatRules resource, section 3.1.5.5.6. The loadBalancingRules resource, section 3.1.5.5.5.	Indicates an array of references to a backendAddressPools resource. Inbound traffic is randomly load balanced across IPs in the backend pool. Indicates a reference to the pool of IP addresses where outbound traffic originates.

Data structure	Section	Description
backendIPConfigurations	The backendAddress Pools resource, section 3.1.5.5.2.	An array of references to ipConfiguration Resources. There is no restriction on having the same IP configurations in multiple backendAddressPools .
bgpPeers	The bgpPeers resource in the bgpRouters resource in the virtualGateways resource, section 3.1.5.17.2.2.	A collection of BGP peers associated with the BGP bgpRouters resource.
bgpRouters	The virtualGateways resource, section 3.1.5.17.	An array of bgpRouters on the physical switch.
connections	The gateways resource, section 3.1.5.4.	A collection of all the connections on the gateway.
connections	The servers resource, section 3.1.5.15. The loadBalancerMux resource, section 3.1.5.7. The iDnsServers resource, section 3.1.5.24. The virtualServers resource, section 3.1.5.20.	An array of connections that specify the information needed to connect to the specific device to manage and control it.
destinationSubnets	The rules resource in the serviceInsertions resource, section 3.1.5.16.	An array of subnets to match as the destination subnet.
details	The operations resource, section 3.1.5.12. The operationResults resource, section 3.1.5.13.	Contains detailed information about the error.
dhcpOptions	The virtualNetworks resource, section 3.1.5.18.	Indicates the DHCP options used by servers in the virtual network.
dnsRecord	The publicIpAddresses resource, section 3.1.5.14.	Properties of a DNS record associated with this public IP address. This field is not supported.
dnsServers	The logicalSubnets resource, section 3.1.5.8.2. The dhcpOptions resource in the virtualNetworks resource, section 3.1.5.18.	An an array of IP Addresses for the DNS servers that this resource uses to resolve DNS queries by devices or hosts.
dnsSettings	The virtualNetworks Interfaces resource, section 3.1.5.13.	Indicates the DNS settings of this network interface.
error	The operations resource, section 3.1.5.12. The operationResults resource, section 3.1.5.13.	A group of elements that contain information about an error and its cause when the request was in error or could not be processed.
eTag	The Etag header, section 2.2.1.3.4	The Network Controller returns an etag in the response body as the etag property of the resource.
externalIPAddress	The gateways resource, section	A collection of IP address information.

Data structure	Section	Description
	3.1.5.4.	
frontendIPConfigurations	The loadBalancers resource, section 3.1.5.5. The frontEndIP Configurations resource, section 3.1.5.5.3.	Indicates the frontend IP addresses of the load balancer.
frontendIPConfigurations	The inboundNatRules resource, section 3.1.5.5.4. The outboundNatRules , section 3.1.5.5.6. The loadBalancingRules resource, section 3.1.5.5.5.	Indicates an array of references to frontendIPConfigurations resources.
frontendIpPools	The loadBalancerManager resource, section 3.1.5.6.	An array of references to ipPools resources to use for the frontend IP Addresses.
gatewayCapacityKiloBits PerSecond	The gatewayPools resource, section 3.1.5.4.	Indicates the total capacity of the gateway pool in kilobits per second.
GatewayPools	The virtualGateways resource, section 3.1.5.17.	The collection of references to gatewayPools resources in which connections can be created. This information is populated at the time of subscription and can be changed only by using the Service administrator portal.
gateways	The gatewayPools resource, section 3.1.5.4.	An array that contains references to the gateways resources in the gateway pool.
gatewaySubnets	The virtualGateways resource, section 3.1.5.17.	Indicates collection of references to IPv4/IPv6 subnet of the VSID/gateway subnet that contains the specified gateway.
greConfiguration	The networkConnections resource, section 3.1.5.17.4.	Indicates details of GRE configuration
IcmpProtocolConfig	The Diagnostics ConnectivityCheck resource, section 3.1.5.21.1. The Diagnostics ConnectivityCheckResults resource, section 3.1.5.21.2.	Contains the details of an ICMP Protocol specific configuration.
iDnsServer	The iDnsServer resource, section 3.1.5.24.	Indicates the configuration details for the DNS server in the internal DNS service.
inboundNatRules	The loadBalancers resource, section 3.1.5.5. The inboundNatRules resource, section 3.1.5.5.4.	Indicates an array of inbound NAT rules configured for the load balancer.
internalIpAddresses	The networkConnections resource, section 3.1.5.17.4.	Indicates collection of Internal IP Addresses of the connection.
internalPeerIpAddresses	The networkConnections resource, section 3.1.5.17.4.	Indicates collection of Internal IP Addresses of the peer.

Data structure	Section	Description
IPConfiguration	The network Interfaces resource, section 3.1.5.15.2.	Indicates an array of IP configurations
ipConfigurations	The accessControlLists resource, section 3.1.5.1.	Indicates references to the IP addresses of networkInterfaces resources that are associated with an accessControlLists resource.
ipConfigurations	The subnets resource in the virtualNetworks resource, section 3.1.5.18.2.	Indicates an array of references of networkInterfaces resources that are connected to the subnet.
ipPools	The ipPools resource, section 3.1.5.8.2.2. The logicalSubnets resource, section 3.1.5.8.2.	Indicates the IP Pools that are contained in the logical subnet.
ipsecConfiguration	The networkConnections resource, section 3.1.5.17.4.	Details of IPsec configuration.
IPv4AddressPrefixes	The vpnConfiguration in the virtualGateways resource, section 3.1.5.17.	Indicates collection of IPv4 address pools from which VPN clients are assigned addresses
I3Configuration	The networkConnections resource, section 3.1.5.17.4.	Indicates details of L3 configuration.
loadBalancerMux	The virtualServers resource, section 3.1.5.20.	Indicates the Loadbalancer MUX running on this virtualServer.
loadBalancers	The loadBalancer resource, section 3.1.5.5.	Contains information about the frontend and backend configurations for load balancing.
loadBalancing Rules	The loadBalancer resource, section 3.1.5.5.	Contains a list of load balancing configurations.
loadBalancing Rules	The backendAddress Pools resource, section 3.1.5.5.2. The probes resource, section 3.1.5.5.7.	an array of references to loadBalancingRules resources.
logicalSubnets	The network Interfaces resource, section 3.1.5.15.2.	Indicates an array of logicalSubnets resource that the network interface is connected to.
mainMode	The ipsecConfiguration resource in the networkConnections resource, section 3.1.5.17.4.	in the networkConnections resource. Main mode IPsec configuration details
ManagementAddresses	The loadBalancerMux resource, section 3.1.5.7.	The management address used to connect to the server.
networkConnections	The networkConnections resource, section 3.1.5.17.4. The virtualGateways resource, section 3.1.5.17.	Indicates list of network connections that are configured for this virtualGateways resource.
networkInterfaces	The gateways resource, section 3.1.5.4. The logicalSubnets resource, section	An array of references to networkInterfaces resources that are used by a gateway or a logical subnet.

Data structure	Section	Description
	3.1.5.8.2.	
networkInterfaces[]	The networkInterfaces resource in the servers resource, section 3.1.5.15.2.	An array of references to networkInterfaces resources that represent the physical network interface cards of the server. These resources are automatically created.
networks	The bgpRouters resource in the virtualGateways resource, section 3.1.5.17.2	Collection of network prefixes in "IP address/prefix" format that identifying the networks that are to be announced by the router.
outboundNatRules	The backendAddress Pools resource, section 3.1.5.5.2. The loadBalancers resource, section 3.1.5.5.	An array of references to the outboundNatRules resources
output.DataGroups	The Diagnostics slbStateResults resource, section 3.1.5.21.4.	The hierarchical output of this diagnostics operation. Data group as level 1, data section as level 2 and data unit as level 3
peerIpAddresses	The networkConnections resource, section 3.1.5.17.4.	Array of IP Addresses of the destination (S2S IP)
peerRouter Configurations	The routerConfiguration structure in the loadBalancerMux resource, section 3.1.5.7..	The BGP settings that are used to establish and maintain BGP peering with one or more peers.
peerTrafficSelector	The ipsecConfiguration resource in the networkConnections resource, section 3.1.5.17.4.	Indicates collection of IPSec TrafficSelectors on the enterprise side
policyMaps	The virtualGateways resource, section 3.1.5.17.	A collection of policyMaps resources for the virtualGateways resource.
probes	The probes resource, section 3.1.5.5.7. The loadBalancers resource, section 3.1.5.5.	Indicates an array of probes configured for the load balancer.
properties	The Properties in Common JSON Elements, section 2.2.2.	An array of structured data. The structure of this data is unique to each resource except two common read-only elements: etag and provisioningState . If properties is not included this will cause the resource to be created but have no properties
publicIpAddresses	The gatewayPools resource, section 3.1.5.4.	A collection of public IP address to which external connections connect.
portSettings	The networkInterfaces resource, section 3.1.5.11.	Contains a reference to quality of service settings to apply to virtual network interface.
redundantGatewayCount	The gatewayPools resource, section 3.1.5.4.	Indicates the number of redundant gateway VMs that will be used for each virtualGateways instance to ensure its availability.

Data structure	Section	Description
resourceMetadata	Specified in Common JSON Elements, section 2.2.2.	An array of structured data that client sends to the server.
routerConfiguration	The loadBalancerMux resource, section 3.1.5.7.	Provides the BGP router configuration to the MUX to ensure that it peers with the datacenter routing infrastructure and properly advertises routes.
routerIpAddress	The bgpRouters resource in the virtualGateways resource, section 3.1.5.17.2	Indicates IP addresses to which BGP peering can be established.
routes	The routeTables resource, section 3.1.5.10.	The routes that are contained in a route table.
routes	The routes resource in the logicalSubnets resource, section 3.1.5.8.2.3.	The routes that are contained in the logical subnet.
routes	The networkConnections resource, section 3.1.5.17.4.	All the routes (static and those learned via BGP) on the network Interface. Traffic that matches the routes is transmitted on the network Interface.
rules	The serviceInsertions resource, section 3.1.5.16.	Indicates an array of rules that define what traffic goes through the service insertion.
configurationState	<p>This is a common data structure that can be present on resources. Currently the networkInterface, VirtualNetwork, LoadBalancerMux and Server resources contain an instance of this structure.</p> <p>The networkInterface resource, The virtualNetwork resource, The gateways resource, section 3.1.5.4. The virtualGateways resource, section 3.1.5.17. The bgpRouters resource in the virtualGateways resource, section 3.1.5.17.2. The bgpPeers resource in the bgpRouters resource in the virtualGateways resource, section 3.1.5.17.2.2. The networkConnections resource in the virtualGateways resource, section 3.1.5.17.4. The LoadBalancerMux resource, section 3.1.5.7.</p>	<p>Configuration state indicates any failures in processing goal state corresponding to the resource it is contained in. In absence of failures it can note that the configuration corresponding to the resource was successful.</p> <p>Multiple failures can be noted against the same resource. The overall severity of these failures is reflected on the status field of the configurationState structure.</p> <p>Information pertaining to each failure is collected in the detailedInfo field. Please see definition of detailedInfo field.</p> <p>Running state update time is noted within the running state structure. The LastUpdateTime stores this information.</p>
configurationState.detailedInfo	configurationState structures can contain one or more detailedInfo fields to reflect fine grained success or failure information in processing operations related to the resource which the configuration state field is contained in.	The detailedInfo has 3 fields: 0. Source: The source field identifies the component within the SDN stack that encountered a failure while processing this resource.

Data structure	Section	Description
		<p>Possible values are: ResourceGlobal, SoftwareLoadBalancerManager, VirtualNetwork, VirtualSwitch, Firewall.</p> <ol style="list-style-type: none"> Code: This field contains somewhat fine grained classification of the error encountered while processing this resource. Message: A friendly message that describes the encountered error. <p>Note Some codes and Messages correspond to success cases as well.</p>
configurationState.status	Resources where configurationState might be present.	The value MUST be one of the following: Uninitialized, InProgress, Success, Warning, Failure.
configurationState.lastUpdatedTime	Resources where configurationState might be present.	A timestamp that is used to order the sequence of events. The representation is implementation-specific.
configurationState.id	Resources where configurationState might be present.	Certain resources use the id field. It is discussed in the section where it is applicable. The id is an instance ID for a resource. See the following sections for definitions of instance IDs.
serviceInsertionElements	The networkInterfaces resource, section 3.1.5.11.	Indicates an array of serviceInsertions resources that contains this networkInterfaces resource.
serviceInsertionElements	The serviceInsertions resource, section 3.1.5.16.	Indicates an array of service insertion elements through which to send packets that match the rules.
sourceSubnets	The rules resource in the serviceInsertions resource, section 3.1.5.16.	Indicates an array of subnets to match as source subnet. For a single source ip address match specify as a /32 subnet.
statistics	<p>The networkConnections resource, section 3.1.5.17.4.</p> <p>The bgpPeers resource in the bgpRouters resource in the virtualGateways resource, section 3.1.5.17.2.2.</p>	Statistics of the connection
subnets	The accessControllists resource, section 3.1.5.1.	An array of references to subnets resources that are associated with the access control list.
subnets	<p>The logicalNetworks resource, section 3.1.5.8.</p> <p>The virtualNetworks resource, section 3.1.5.18.</p>	Indicates the subnets that are on the virtual network or are contained in the logical network.

Data structure	Section	Description
subnets	The serviceInsertions resource, section 3.1.5.16.	Indicates an array of references to subnets resources this serviceInsertions resource is associated with.
subnets	The routeTables resource, section 3.1.5.10.	Indicates an array of references to subnets resources this routeTables configuration is associated with.
tags	most resources	Key-value pairs of arbitrary data that the client stores with the resource.
TrafficSelector	The ipsecConfiguration resource in the networkConnections resource, section 3.1.5.17.4.	Indicates collection of IPsec TrafficSelectors on the hoster side.
usage	The ipPools resource, section 3.1.5.8.2.2. The macPools resource, section 3.1.5.9.	Indicates the usage statistics of the IP pool or the MAC address pool.
virtualGateways	The gateways resource, section 3.1.5.4. The gatewayPools resource, section 3.1.5.3.	A collection of virtual gateways for a tenant. This enumerates the tenants that are dependent on this gateway.
virtualNetworks	The logicalNetworks resource, section 3.1.5.8.	An array of virtualNetworks resources that are using the network.
virtualServers[]	The virtualServer resource.	Indicates an array of virtual servers that are on the server and being managed by the Network Controller.
vlanIds	The network Interfaces resource, section 3.1.5.11.	Indicates the ID of the VLANs to which the network interface is connected.
vlan	The IpConfigurations resource in the network Interfaces resource, section 3.1.5.11.	Vlan IDs associated with the IP address on the interface
vpnConfiguration	The virtualGateways resource, section 3.1.5.17.	Indicates details of remote access for VPN client configuration

3 Protocol Details

3.1 Server Details

Besides PUT/GET/DELETE operations on resources, the server supports the ability to enumerate all resources of a certain kind, if these resources are not singletons. For example, `virtualnetworkmanager/configuration` is a singleton. Details about the Get All enumeration are provided in the subsections of each resource. In general, the response for Get All follows this pattern.

```
{
  "value": [
    resource1,
    resource2,
    resourceN
  ],
  "nextLink": ""
}
```

`Resource1` to `ResourceN` are valid resources of the same kind. "value" is a JSON array of objects. "nextLink" is a link for the client to retrieve the next page of the response, in case the server paginates the response.<1>

Error response

The server MUST return the error response as JSON content in the response when it fails to complete the GET/PUT/DELETE operation. There is commonality of responses for the various resources, so this topic is treated in detail in section 3.1.5.28.

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

3.1.2 Timers

None.

3.1.3 Initialization

The Network Controller MUST be installed and configured prior to using the **macPools** resource. The **macPools** resource SHOULD be created prior to the creation of any **servers**.

The certificate that allows communications between the NC and the client MUST be present on the NC.

3.1.4 Higher-Layer Triggered Events

None.

3.1.5 Message Processing Events and Sequencing Rules

The following resources are required to create and maintain a proper network configuration between the NC and its clients. A policy or policies is a synonym for network configuration settings such as IP or MAC addresses.

Resources are processed one at a time. However, the **GET** method can act on all the resources at once when the resourceId is omitted. The following table lists all the resources.

Resource	Section	Description
accessControlLists	3.1.5.1	Contains a list of ACL rules that can be assigned to subnets or individual NICs and IP addresses.
aclRules	3.1.5.1.2	Describes the network traffic that is allowed or denied for a network interface of a virtual machine.
backendAddressPools	3.1.5.5.2	This resource represents the list of IPs that can receive network traffic that comes via the front-end IPs. The Load Balancing MUX handles incoming traffic via the front-end IPs and distributes them to backend IPs based on load balancing configuration.
bgpPeers	3.1.5.17.2.2	The bgpPeers resource of the bgpRouters resource of the virtualGateways resource. Configures BGP peers of the virtualGateways resource.
bgpRouters	3.1.5.17.2	The bgpRouters resource of the virtualGateways resource. Contains the configuration for the Border Gateway Protocol (BGP) router in the virtual gateway.
credentials	3.1.5.2	Contains the credential information needed to connect to a southbound device, with the appropriate permissions to manage the device, or enabling the Network Controller to connect to and configure a device in the network.
diagnostics/ConnectivityCheck	3.1.5.21.1	This resource initiates a diagnostics action to check data path connectivity between two endpoints.
diagnostics/ConnectivityCheckResults	3.1.5.21.2	This resource queries the result of a previously initiated diagnostics action between two endpoints.
diagnostics/ NetworkControllerState	3.1.5.21.5	This resource creates a dump of internal server data that can be used for troubleshooting.
diagnostics/SlbState	3.1.5.21.3	This resource initiates a diagnostics action to collect internal state for the software load-balancer.
diagnostics/SlbStateResults	3.1.5.21.4	This resource queries the result of a previously initiated diagnostics slbState action
frontendIpConfigurations	3.1.5.5.3	This resource represents the frontend IP addresses of the load balancer.
gatewayPools	3.1.5.3	Contains an array of gateways that provide the infrastructure for virtualGateways resources for tenant virtual networks.
gateways	3.1.5.4	Provides gateway services to one or more virtualNetworks resources.
iDnsServer	3.1.5.24	Contains the configuration details for the DNS

Resource	Section	Description
		server in the internal DNS service.
inboundNatRules	3.1.5.5.4	This resource is used to configure the load balancer to apply Network Address Translation of inbound traffic.
internalResourceInstances	3.1.5.23	This resource provides a means to map instance IDs to resource IDs or to get all the mappings.
ipConfigurations	3.1.5.11.2	This resource represents configuration information for IP addresses: allocation method, actual IP address, membership of a logical or virtual subnet, load balancing and access control information.
ipPools	3.1.5.8.2.2	The ipPools resource represents the range from which IP addresses will be allocated for nodes within a subnet. The start and end IP addresses of the pool for a virtual subnet are based on the IP prefix of the virtual subnet.
loadBalancerManager	3.1.5.6	The loadBalancerManager resource is a singleton resource that configures the load balancing service of the Network Controller.
loadBalancerMux	3.1.5.7	The loadBalancerMux resource represents a MUX VM deployed in the Network Controller's stamp.
loadBalancers	3.1.5.5	Consists of a frontend and a backend configuration. The frontend configuration exposes the IP address of the load balancer. The backend configuration specifies the distribution of traffic across VM instances and how to determine the health of VM instances or endpoints.
loadBalancingRules	3.1.5.5.5	This resource is used to configure load balancing policies. The policies dictate the kind of traffic that is load-balanced, and port mapping between frontend IPs and backend Ips.
logicalNetworks	3.1.5.8	A collection of logical subnets or a logical partition of physical network that is dedicated for a specific purpose.
logicalSubnets	3.1.5.8.2	A logicalSubnets resource consists of a subnet/VLAN pair. The vIans resource is required; however, it MAY contain a value of zero if the subnet is not associated with a vlan.
macPools	3.1.5.9	Specifies a range of MAC addresses, which are used internally by the Network Controller service modules for various service modules in both CA and PA space including VNET, VSM, and GWM. Specifically, these MAC Pools are used for the PAHost vNIC(s), the HNV Distributed Router (DR) Host vNIC (used for health probes), and the HNV Virtual MAC (to route traffic to the HNV Distributed Router).
monitoring/NetworkControllerStatistics	3.1.5.22	This resource provides a means to get usage

Resource	Section	Description
		and health information for a few resources
networkConnections	3.1.5.17.4	Specifies a connection from a virtual network to external networks.
networkInterfaces	3.1.5.11	Specifies the configuration of either a host virtual interface (host vNIC) or a virtual server NIC (VMNIC).
operationResults	3.1.5.13	Provides the status of a specific asynchronous operation. The URL for a specific operations resource is returned in the location header of that operation.
operations	3.1.5.12	Provides the status of a specific asynchronous operation. The URL for a specific operations resource is returned in the AsyncOperation header of that operation.
outboundNatRules	3.1.5.5.6	This resource is used to configure the load balancer to apply Network Address Translation of outbound traffic.
policyMaps	3.1.5.17.3	The policyMaps resource of the virtualGateways resource. Contains the routing policies that enable the Border Gateway Protocol (BGP) routers in the virtual gateway to exchange information as specified with peers. A routing policy consists of match criteria and actions that are executed when the conditions specified in the match criteria are satisfied.
probes	3.1.5.5.7	Configures the mechanism of detection of connectivity issues with load balanced IPs.
publicIpAddresses	3.1.5.14	Specifies an IP Address that can be used to communicate with the virtual network from outside it. This address is publically available for use by the virtualGateways resource and the loadBalancer resource.
routes	3.1.5.10.2	Create routes under a tenant's Route Table.
routes	3.1.5.8.2.3	Represents a provider route that the host uses to route traffic to a specific destination. If a host connects to a logical subnet as part of hosting a virtual network, then all routes in that logical subnet are applied to the host.
routeTables	3.1.5.10	Contains a list of tenant routes that can be assigned to virtual subnets to control routing within a virtual network.
servers	3.1.5.15	Represents a physical server that is being controlled by the Network Controller.
serviceInsertions	3.1.5.16	Specifies the relationship between the service insertion and the service insertion rule.
subnets	3.1.5.18.2	Contains Virtual Subnets (VSIDs) under a tenant's Virtual Network (RDID). User can specify the addressPrefix to use for the subnets, the accessControl Lists to protect the subnets,

Resource	Section	Description
		the routeTable to apply to the subnet, and optionally service insertions to use within the subnet.
virtualGateways	3.1.5.17	A logical entity that runs on multiple gateways in the gatewayPools resource, the virtualGateways resource describes the gateway used for cross-premises connectivity from the virtual network.
virtualNetworkManager	3.1.5.19	A singleton resource that configures the virtual network service of the Network Controller. The properties in this resource are global for all virtual networks managed by the Network Controller.
virtualNetworks	3.1.5.18	Creates a Virtual Network using HNV for tenant overlays.
virtualServers	3.1.5.20	A resource that corresponds to a Virtual Machine. Such resources need to be created for VMs that correspond to gateway (section 3.1.5.4) and MUX resources (section 3.1.5.7).
virtualSwitchManager	3.1.5.25	Configures the virtual switch properties on every server managed by the Network Controller.

The responses to all the resources can result in the following status codes.

Status Code	Description
200 (OK)	Indicates that the operation was successful. The server MUST return this status code when the operation was performed on an existing REST resource.
201 (Created)	Indicates that the operation was successful. The server MUST return this status code when a new REST resource was created on the server due to execution and completion of the operation.
202 (Accept)	Indicates that the request has been accepted and is being processed. See Asynchronous Operations, section 1.3.2, to understand how the client handles responses with 202 (Accept).
204 (No Content)	Indicates that the resource with the specified resourceId could not be found.
404 (Not Found)	Indicates that the resource does not exist.
409 (Conflict)	An operation cannot cancel another operation in progress on the resource, its child, sibling, or parent.
412 (Precondition Failed)	Indicates that the resource's ETag doesn't match one specified in the If-Match header.
500 (Internal Server Error)	Indicates that the validation on the resource has failed. See the message body of the response for more details.

3.1.5.1 accessControlLists

An **accessControlLists** resource contains a list of ACL rules. Access control list resources can be assigned to virtual subnets or IP configurations.

An ACL can be associated with:

- Subnets of a virtual or logical network. This means that all network interfaces (NICs) with IP configurations created in the subnet inherit the ACL rules in the Access Control List. Often, subnets are used for a specific architectural tier (frontend, middle tier, backend) in more complex applications. Assigning an ACL to subnets can thus be used to control the network flow between the different tiers.
- IP configuration of a NIC. This means that the ACL will be applied to the parent network interface of the specified IP configuration.

It is invoked through the following URI.

```
https://<URL>/networking/v1/accessControlLists/{resourceId}
```

url: the address of the computer on which the Network Controller is running.

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, resourceId.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.1.1.1	Create a new accessControlLists resource or update an existing accessControlLists resource.
GET	3.1.5.1.1.2	Get one accessControlLists resource.
GET (All)	3.1.5.1.1.3	List all accessControlLists resources in the Network Controller.
DELETE	3.1.5.1.1.4	Delete an accessControlLists resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
aclRules	Optional	Indicates the rules in an access control list. See section 3.1.5.1.2, for full details on this element.
inboundDefaultAction	Optional	Indicates the default action for Inbound Rules. Valid values are Permit or Deny. The default value is Permit.
ipConfigurations	Read-only	Indicates references to IP addresses of network interfaces resources this access control list is associated with.
outboundDefaultAction	Optional	Indicates the default action for Outbound Rules. Valid values are Permit or Deny. The default value is Permit.
subnets	Read-only	Indicates an array of references to subnets resources this access control list is associated with.

Element name	Type	Description
configurationState	Optional Read-only	See configurationState in section 2.2.4.
configurationState.id		This is the instance ID of the access control list.
virtualNetworkInterfaceErrors		An array of configurationState objects as defined in section 2.2.4

3.1.5.1.1 HTTP Methods

3.1.5.1.1.1 PUT

This method creates a new **accessControlLists** resource or updates an existing **accessControlLists** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.1.1.1.1 Request Body

The format for the request body for the **accessControlLists PUT** method is as follows.

```
{
  "properties": {
    "aclRules": [
      {
        "resourceId": "port2003",
        "properties": {
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "2003",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "13.168.100.21",

```



```

        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
    }
},
{
    "resourceId": "port5100",
    "properties": {
        "description": "Port 5100 over tcp",
        "protocol": "Tcp",
        "sourcePortRange": "0-65535",
        "destinationPortRange": "5100",
        "action": "Allow",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "13.168.100.22",
        "priority": "201",
        "type": "Inbound",
        "logging": "Enabled"
    }
}
]
}
}

```

The JSON schema for the **accessControlLists PUT** method is located in section 6.1.1.

3.1.5.1.1.1.2 Response Body

The format for the **accessControlLists PUT** response body is the same as the format for the **accessControlLists GET** response body (section 3.1.5.1.1.2.2). The JSON schema is located in section 6.1.2.

3.1.5.1.1.1.3 Processing Details

This method creates a new **accessControlLists** resource or updates an existing **accessControlLists** resource.

3.1.5.1.1.2 GET

This method retrieves an **accessControlLists** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.1.1.2.1 Request Body

None.

3.1.5.1.1.2.2 Response Body

The format for the response body for the **accessControlLists GET** method is as follows.

```
{
  "resourceRef": "/accessControlLists/ff285019-45d6-4afa-a109-9faca0fda415",
  "resourceId": "ff285019-45d6-4afa-a109-9faca0fda415",
  "etag": "W/\"9b5305e6-3cf4-45d6-a108-6bce0411f0ab\"",
  "instanceId": "99d5c41e-fba5-4bbd-aa63-2c6ba3da7553",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/ff285019-45d6-4afa-a109-9faca0fda415/aclRules/b5bfc35d-423a-4c2f-9cf0-5f2c5aa4482e",
        "resourceId": "b5bfc35d-423a-4c2f-9cf0-5f2c5aa4482e",
        "etag": "W/\"9b5305e6-3cf4-45d6-a108-6bce0411f0ab\"",
        "instanceId": "4a36c357-33df-41bd-b5a4-a7fdc57af257",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "2003",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "13.168.100.23",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled",
          "description": "CTS rule"
        }
      }
    ],
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/6ebf2132-2871-4535-b412-b6e255bcafa2/ipConfigurations/74fe0850-09a0-4526-9d43-906cd4e6f52a"
      }
    ],
    "subnets": [ ],
    "configurationState": {
      "status": "Failure",
      "lastUpdatedTime": "2016-06-14T19:11:54.416138-07:00",
      "id": "c08b3aec-be27-4be2-ab5e-19e1705ca555",
      "virtualNetworkInterfaceErrors": [
        {
          "status": "Failure",
          "detailedInfo": [
            {
              "source": "Firewall",
              "message": "The Firewall Service encountered an error in pushing the rules to the Virtual machine host, through Ovsdb protocol. Error Code : 80131500",
              "code": "PolicyConfigurationFailure"
            }
          ]
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:11:54.416138-07:00",
      "id": "4058b793-6c28-43d4-a957-937d453075d7"
    }
  ]
},
  "tags": {
    "good": "0",
    "full": "empty"
  }
}
```

```
}  
}
```

The JSON schema for the **accessControlLists GET** method is located in section 6.1.2.

3.1.5.1.1.2.3 Processing Details

The server uses the resourceID contained in the body of the message to locate the accessControlList resource to send to the client. The server MUST return a status code of 200 (OK) if the operation succeeds, and the server MUST return a status code of 404 (Not Found) if the resource does not exist.

The properties that are associated with the **accessControlList** resource are in section 3.1.5.1.

The server returns configuration state only if it has already attempted to configure settings according to the REST resource properties that were created or updated by using the **PUT** method.

configurationState.id MUST be set to the access control list resource identifier.

configurationState.lastUpdatedTime is set to a value that is implementation-specific.

The server returns a configuration state property **configurationState.status** set to "Success" if there were no errors. The following is an example.

```
"configurationState": {  
  "status": "Success",  
  "lastUpdatedTime": "2016-12-01T13:58:11.8350187-08:00",  
  "id": "98a05ec0-62ef-45ce-9540-da8dc6ffddde"  
}
```

The server returns a configuration state property **configurationState.status** set to "Failure" if there were errors during configuration of settings. The property **configurationState.virtualNetworkInterfaceErrors** MUST contain **configurationState** content as defined in section 2.2.4. Acceptable code values for this inner **configurationState** are in the following table.

configurationState.status	Code	Description
Failure	Unknown	An unknown error occurred while configuring policies.
Failure	PolicyConfigurationFailure	The server failed to send settings to lower layer components.
Failure	PolicyConfigurationFailureOnVfp	The server sent settings to the lower layer components, but the they could not be configured.

The following is an example of failures.

```
"configurationState": {  
  "status": "Failure",  
  "lastUpdatedTime": "2016-12-01T13:58:11.8350187-08:00",  
  "id": "98a05ec0-62ef-45ce-9540-da8dc6ffddde",  
  "virtualNetworkInterfaceErrors": [  
    {  
      "status": "Failure",  
      "detailedInfo": [  
        {  
          "source": "Firewall",  
          "message": "The Firewall Service encountered an error in adding the  
rules to the Virtual Network Interface. Error Code : 80070002",  
          "code": "PolicyConfigurationFailureOnVfp"  
        }  
      ]  
    }  
  ]  
}
```

```

    }
  ],
  "lastUpdatedTime": "2016-12-01T13:58:11.8350187-08:00",
  "id": "aaebdfd8-ed06-43fd-96be-1773ad6Ec750"
}
]
}

```

3.1.5.1.1.3 GET (All)

This operation retrieves a list of all **accessControlLists** resources in the Network Controller.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

3.1.5.1.1.3.1 Request Body

None.

3.1.5.1.1.3.2 Response Body

The format for the **accessControlLists GET All** response body is as follows.

```

{
  "value": [
    {
      "resourceRef": "/accessControlLists/049460a0-3d29-48a5-92fe-1b418287f2a1",
      "resourceId": "049460a0-3d29-48a5-92fe-1b418287f2a1",
      "etag": "W/\"736b0e54-7976-42fd-a89e-c7d00e9fbcf0\"",
      "instanceId": "12053554-2e17-4389-8667-c3b9c7eb4d6f",
      "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
          {
            "resourceRef": "/accessControlLists/049460a0-3d29-48a5-92fe-1b418287f2a1/aclRules/1d62b477-9992-400b-bfbb-411c8c91ed9d",
            "resourceId": "1d62b477-9992-400b-bfbb-411c8c91ed9d",
            "etag": "W/\"736b0e54-7976-42fd-a89e-c7d00e9fbcf0\"",
            "instanceId": "985c5ee5-e275-4006-8cba-5fd704ef4c62",
            "properties": {
              "provisioningState": "Succeeded",
              "protocol": "All",
              "sourcePortRange": "0-65535",
              "destinationPortRange": "31267",
              "action": "Allow",
              "sourceAddressPrefix": "*"
            }
          }
        ]
      }
    }
  ]
}

```

```
        "destinationAddressPrefix": "20.169.0.22",
        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
    }
},
"ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/418eefd9-82b4-46ba-acda-
354bb4559b23/ipConfigurations/601917dc-cd8c-4561-8de7-4161085bf0ac"
    }
],
"subnets": [
],
"configurationState": {
    "status": "Failure",
    "lastUpdatedTime": "2016-06-14T19:11:54.416138-07:00",
    "id": "c08b3aec-be27-4be2-ab5e-19e1705ca555",
    "virtualNetworkInterfaceErrors": [
        {
            "status": "Failure",
            "detailedInfo": [
                {
                    "source": "Firewall",
                    "message": "The Firewall Service encountered an error in pushing the rules
to the Virtual machine host, through Ovsdb protocol. Error Code : 80131500",
                    "code": "PolicyConfigurationFailure"
                }
            ],
            "lastUpdatedTime": "2016-06-14T19:11:54.416138-07:00",
            "id": "4058b793-6c28-43d4-a957-937d453075d7"
        }
    ]
}
},
{
    "resourceRef": "/accessControlLists/0b8d785b-bd56-4cd3-9fda-317ec3211cac",
    "resourceId": "0b8d785b-bd56-4cd3-9fda-317ec3211cac",
    "etag": "W/\"f4497264-84c9-489e-a37f-5b687b888351\"",
    "instanceId": "fff90af7-631a-45d0-a965-0491067f2941",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
            {
                "resourceRef": "/accessControlLists/0b8d785b-bd56-4cd3-9fda-
317ec3211cac/aclRules/b7eb9623-4ce3-4687-bf0b-9a9cf3245208",
                "resourceId": "b7eb9623-4ce3-4687-bf0b-9a9cf3245208",
                "etag": "W/\"f4497264-84c9-489e-a37f-5b687b888351\"",
                "instanceId": "b4ab908b-caba-4728-a147-555f15e4a0cb",
                "properties": {
                    "provisioningState": "Succeeded",
                    "protocol": "All",
                    "sourcePortRange": "0-65535",
                    "destinationPortRange": "31267",
                    "action": "Allow",
                    "sourceAddressPrefix": "*",
                    "destinationAddressPrefix": "20.168.0.25",
                    "priority": "200",
                    "type": "Inbound",
                    "logging": "Enabled"
                }
            }
        ]
    },
    "ipConfigurations": [
        {
            "resourceRef": "/networkInterfaces/b33b9c69-32f9-4ef9-83cf-
d42c3510cea7/ipConfigurations/0115d4cc-e5a9-43fd-a729-41a791e540fb"
        }
    ]
}
```

```

    }
  ],
  "subnets": [
  ]
}
},
{
  "resourceRef": "/accessControlLists/1253aa5c-6de6-41ef-b4cf-a36a2ac8abb1",
  "resourceId": "1253aa5c-6de6-41ef-b4cf-a36a2ac8abb1",
  "etag": "W/\\"6a4601fd-e427-44cc-87b3-403e7d434c65\\"",
  "instanceId": "f22df31d-822d-479c-9fb6-30f4237b39d4",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/1253aa5c-6de6-41ef-b4cf-a36a2ac8abb1/aclRules/bd36daaa-e337-4185-838f-dae07e251e8b",
        "resourceId": "bd36daaa-e337-4185-838f-dae07e251e8b",
        "etag": "W/\\"6a4601fd-e427-44cc-87b3-403e7d434c65\\"",
        "instanceId": "99588a06-08c7-468e-acf7-1c76e62a514a",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.168.0.26",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ]
  },
  "ipConfigurations": [
    {
      "resourceRef": "/networkInterfaces/2325bf87-8f25-4187-9796-3a568946cf13/ipConfigurations/14c78c28-7104-417b-b57c-068a431c9649"
    }
  ],
  "subnets": [
  ]
}
},
{
  "resourceRef": "/accessControlLists/14604ca7-8079-4c0a-a5f7-91a460b7e547",
  "resourceId": "14604ca7-8079-4c0a-a5f7-91a460b7e547",
  "etag": "W/\\"77daffcc-dc38-4fc4-9c08-2d111a40941f\\"",
  "instanceId": "31c647f3-72ec-4947-8e8d-d4d023f63b5e",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/14604ca7-8079-4c0a-a5f7-91a460b7e547/aclRules/df034f28-6492-4577-a80f-0a7009c55c97",
        "resourceId": "df034f28-6492-4577-a80f-0a7009c55c97",
        "etag": "W/\\"77daffcc-dc38-4fc4-9c08-2d111a40941f\\"",
        "instanceId": "af13fd31-79a0-432c-97cd-339c6be0bfb1",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.170.0.21",
          "priority": "200",
          "type": "Inbound",
        }
      }
    ]
  }
}
}

```

```

        "logging": "Enabled"
    }
}
],
"ipConfigurations": [
{
    "resourceRef": "/networkInterfaces/24599f61-01ef-484d-98d3-
dcbb81d2d076/ipConfigurations/bdc7dbe5-bb40-44c4-ae9e-6d37c2558647"
}
],
"subnets": [
]
}
},
{
"resourceRef": "/accessControlLists/162ac5f0-7b18-4aee-a470-1764aa9e068f",
"resourceId": "162ac5f0-7b18-4aee-a470-1764aa9e068f",
"etag": "W/\"3db28c51-0c6d-48f8-bfa1-14263ef3f17b\"",
"instanceId": "a7c0b162-46ef-4c5c-bbc3-266cd7c8d4cb",
"properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
    {
        "resourceRef": "/accessControlLists/162ac5f0-7b18-4aee-a470-
1764aa9e068f/aclRules/f15507e8-5d46-45d3-9efb-30c28a78dc9c",
        "resourceId": "f15507e8-5d46-45d3-9efb-30c28a78dc9c",
        "etag": "W/\"3db28c51-0c6d-48f8-bfa1-14263ef3f17b\"",
        "instanceId": "df2d3959-e471-4a14-9f56-071058dbd5ff",
        "properties": {
            "provisioningState": "Succeeded",
            "protocol": "All",
            "sourcePortRange": "0-65535",
            "destinationPortRange": "31267",
            "action": "Allow",
            "sourceAddressPrefix": "*",
            "destinationAddressPrefix": "20.168.0.21",
            "priority": "200",
            "type": "Inbound",
            "logging": "Enabled"
        }
    }
    ],
    "ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/c088c35a-cd91-4352-a33a-
e513bfd6f169/ipConfigurations/4cbf96c7-56d3-4aea-a2b0-617ea3c45d42"
    }
    ],
    "subnets": [
    ]
    }
    },
    {
    "resourceRef": "/accessControlLists/1e05607b-7524-491f-a703-4399a6799090",
    "resourceId": "1e05607b-7524-491f-a703-4399a6799090",
    "etag": "W/\"9bad685c-42eb-4497-a0b9-dbca466e0cb9\"",
    "instanceId": "483b4be9-f338-4517-81f9-219fb018ef45",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
        {
            "resourceRef": "/accessControlLists/1e05607b-7524-491f-a703-
4399a6799090/aclRules/1fe29735-e639-459c-bc53-5dc1a7129039",
            "resourceId": "1fe29735-e639-459c-bc53-5dc1a7129039",
            "etag": "W/\"9bad685c-42eb-4497-a0b9-dbca466e0cb9\"",
            "instanceId": "4ab0800e-e776-46a0-a093-863c4a66940e",
            "properties": {
                "provisioningState": "Succeeded",

```

```

        "protocol": "All",
        "sourcePortRange": "0-65535",
        "destinationPortRange": "31267",
        "action": "Allow",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "20.169.0.21",
        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
    }
}
],
"ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/6c28c3f6-0a1e-42a6-bec7-fdec4885c52f/ipConfigurations/ba2f6b90-c63e-4203-9199-e6cffa41986c"
    }
],
"subnets": [
]
}
},
{
    "resourceRef": "/accessControlLists/28ecc664-74e0-41fc-81f8-b38a4c6975c7",
    "resourceId": "28ecc664-74e0-41fc-81f8-b38a4c6975c7",
    "etag": "W/\"c3562a19-9845-428d-9609-f9ea0995e72a\"",
    "instanceId": "523fc8ce-503f-41c3-9c85-de506192afd2",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
            {
                "resourceRef": "/accessControlLists/28ecc664-74e0-41fc-81f8-b38a4c6975c7/aclRules/d9f12865-ec9a-4b64-9ba1-899bc0c17b72",
                "resourceId": "d9f12865-ec9a-4b64-9ba1-899bc0c17b72",
                "etag": "W/\"c3562a19-9845-428d-9609-f9ea0995e72a\"",
                "instanceId": "2c2137e6-b9f1-4fb8-a96c-d28299a76240",
                "properties": {
                    "provisioningState": "Succeeded",
                    "protocol": "All",
                    "sourcePortRange": "0-65535",
                    "destinationPortRange": "31267",
                    "action": "Allow",
                    "sourceAddressPrefix": "*",
                    "destinationAddressPrefix": "20.168.0.27",
                    "priority": "200",
                    "type": "Inbound",
                    "logging": "Enabled"
                }
            }
        ],
        "ipConfigurations": [
            {
                "resourceRef": "/networkInterfaces/4e435410-a0e6-450a-a582-40fa7382d474/ipConfigurations/5c4c0c3c-336b-4a49-8566-8b861f4dcb49"
            }
        ],
        "subnets": [
        ]
    }
}
},
{
    "resourceRef": "/accessControlLists/2d151145-53f0-49a1-b980-7f68adc79c89",
    "resourceId": "2d151145-53f0-49a1-b980-7f68adc79c89",
    "etag": "W/\"756ac992-bf88-4329-bf46-676b630400f8\"",
    "instanceId": "0018cb4e-596e-4503-8847-5c1c871b4fda",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [

```



```

    {
      "resourceRef": "/accessControlLists/2d151145-53f0-49a1-b980-7f68adc79c89/aclRules/de76ee71-6749-4c5b-bcf6-651a697f1fa4",
      "resourceId": "de76ee71-6749-4c5b-bcf6-651a697f1fa4",
      "etag": "W/\"756ac992-bf88-4329-bf46-676b630400f8\"",
      "instanceId": "b8bac4d9-6b5e-400b-8a4d-45f0ef83b94f",
      "properties": {
        "provisioningState": "Succeeded",
        "protocol": "All",
        "sourcePortRange": "0-65535",
        "destinationPortRange": "0-65535",
        "action": "Allow",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "*",
        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
      }
    }
  ],
  "ipConfigurations": [
    ],
    "subnets": [
      {
        "resourceRef": "/virtualNetworks/b1fd9f9-a2a9-49e2-a207-0e210fac77ba/subnets/2010829e-7c10-4b6a-aab8-0332f9bb6fb7"
      }
    ]
  },
  {
    "resourceRef": "/accessControlLists/44870ad0-cf6d-4c0b-9eb2-1de4b0b45342",
    "resourceId": "44870ad0-cf6d-4c0b-9eb2-1de4b0b45342",
    "etag": "W/\"94dbc080-32a3-40a7-aa51-fela8cd026c1\"",
    "instanceId": "be445606-97cb-43af-a961-9afed9ecd85a",
    "properties": {
      "provisioningState": "Succeeded",
      "aclRules": [
        {
          "resourceRef": "/accessControlLists/44870ad0-cf6d-4c0b-9eb2-1de4b0b45342/aclRules/3ec50e18-a66d-4daf-b70f-2cf1ce997a45",
          "resourceId": "3ec50e18-a66d-4daf-b70f-2cf1ce997a45",
          "etag": "W/\"94dbc080-32a3-40a7-aa51-fela8cd026c1\"",
          "instanceId": "09a7e3c7-6f51-43ea-be31-f25174eb4066",
          "properties": {
            "provisioningState": "Succeeded",
            "protocol": "All",
            "sourcePortRange": "0-65535",
            "destinationPortRange": "31267",
            "action": "Allow",
            "sourceAddressPrefix": "*",
            "destinationAddressPrefix": "20.170.0.26",
            "priority": "200",
            "type": "Inbound",
            "logging": "Enabled"
          }
        }
      ]
    },
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/3b2f21f0-fd38-40b4-8c53-e6f648f1ba25/ipConfigurations/ff715733-de86-4dd1-a3ee-70afedf49b38"
      }
    ],
    "subnets": [
    ]
  }
},

```

```

{
  "resourceRef": "/accessControlLists/47ad53ea-cf60-4266-8e89-1e8be8234f61",
  "resourceId": "47ad53ea-cf60-4266-8e89-1e8be8234f61",
  "etag": "W/\"e92706a1-717a-4c8c-9c04-96ed5ad47b45\"",
  "instanceId": "8849536d-5460-419f-a036-370846ef410e",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/47ad53ea-cf60-4266-8e89-1e8be8234f61/aclRules/dba8f86e-25ea-4702-9628-962732cb4984",
        "resourceId": "dba8f86e-25ea-4702-9628-962732cb4984",
        "etag": "W/\"e92706a1-717a-4c8c-9c04-96ed5ad47b45\"",
        "instanceId": "585efbff-d269-465e-8a49-85b018f01466",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.170.0.24",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ],
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/1a5800e4-bd4e-474a-bfe9-b154e7174dc9/ipConfigurations/e011114a-b631-4eb3-9422-d4c7e3f1e959"
      }
    ],
    "subnets": [
    ]
  }
},
{
  "resourceRef": "/accessControlLists/4e387fd0-a83d-46f1-af14-257f2676a7b7",
  "resourceId": "4e387fd0-a83d-46f1-af14-257f2676a7b7",
  "etag": "W/\"bbf3cf36-14c7-42f3-97a6-2437818f48ae\"",
  "instanceId": "61e5e84a-e205-43ec-9e92-ebd8571e98d6",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/4e387fd0-a83d-46f1-af14-257f2676a7b7/aclRules/f0f5f438-09ac-4acd-958d-586d5fe0230c",
        "resourceId": "f0f5f438-09ac-4acd-958d-586d5fe0230c",
        "etag": "W/\"bbf3cf36-14c7-42f3-97a6-2437818f48ae\"",
        "instanceId": "39e68201-4d43-44ed-befc-f1be6a0e736a",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "0-65535",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "*",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ],
    "ipConfigurations": [
  ],

```

```

    "subnets": [
      {
        "resourceRef": "/virtualNetworks/fccc1c28-6e3a-4d9f-b32a-4d460d0bf21f/subnets/227326db-f68e-40c6-8f7b-d2c5a15695f3"
      }
    ]
  },
  {
    "resourceRef": "/accessControlLists/507106e7-36cf-42d5-b831-0114de8e6ac2",
    "resourceId": "507106e7-36cf-42d5-b831-0114de8e6ac2",
    "etag": "W/\"68668a39-27aa-45a3-a578-b6e285529483\"",
    "instanceId": "a8842acd-f995-4a54-b659-76dc31d99d44",
    "properties": {
      "provisioningState": "Succeeded",
      "aclRules": [
        {
          "resourceRef": "/accessControlLists/507106e7-36cf-42d5-b831-0114de8e6ac2/aclRules/442c895c-8013-4cb2-b96f-4f6b9b90924b",
          "resourceId": "442c895c-8013-4cb2-b96f-4f6b9b90924b",
          "etag": "W/\"68668a39-27aa-45a3-a578-b6e285529483\"",
          "instanceId": "446443c0-9d06-4cf6-8ec4-2efe8a97602a",
          "properties": {
            "provisioningState": "Succeeded",
            "protocol": "All",
            "sourcePortRange": "0-65535",
            "destinationPortRange": "0-65535",
            "action": "Allow",
            "sourceAddressPrefix": "*",
            "destinationAddressPrefix": "*",
            "priority": "200",
            "type": "Inbound",
            "logging": "Enabled"
          }
        }
      ]
    },
    "ipConfigurations": [
      ],
    "subnets": [
      {
        "resourceRef": "/virtualNetworks/1b04d9e5-c435-4aea-8ea3-365250e9ff7b/subnets/18cd3cf0-5507-4876-8232-3175f3f020af"
      }
    ]
  },
  {
    "resourceRef": "/accessControlLists/5a7e4538-43fd-4519-9305-ed3e51a4449d",
    "resourceId": "5a7e4538-43fd-4519-9305-ed3e51a4449d",
    "etag": "W/\"6c029bf6-94b3-429c-9714-218aca49b06a\"",
    "instanceId": "626a1625-4ae2-42a9-8c4e-5f97d3dcbc3d",
    "properties": {
      "provisioningState": "Succeeded",
      "aclRules": [
        {
          "resourceRef": "/accessControlLists/5a7e4538-43fd-4519-9305-ed3e51a4449d/aclRules/933b7d87-fde0-413e-b387-2e843a4080ff",
          "resourceId": "933b7d87-fde0-413e-b387-2e843a4080ff",
          "etag": "W/\"6c029bf6-94b3-429c-9714-218aca49b06a\"",
          "instanceId": "9ff29ca5-a86c-4365-a8f5-17ca1072c1b1",
          "properties": {
            "provisioningState": "Succeeded",
            "protocol": "All",
            "sourcePortRange": "0-65535",
            "destinationPortRange": "31267",
            "action": "Allow",
            "sourceAddressPrefix": "*",
            "destinationAddressPrefix": "20.170.0.25",
            "priority": "200",

```

```

        "type": "Inbound",
        "logging": "Enabled"
    }
}
],
"ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/57f32f39-07d8-4f6c-9014-270d5af96b50/ipConfigurations/eed8e42e-17e7-46b8-80fd-c580f7a37d54"
    }
],
"subnets": [
]
}
},
{
"resourceRef": "/accessControlLists/5cd7c188-a510-40de-ae59-d8f338f638eb",
"resourceId": "5cd7c188-a510-40de-ae59-d8f338f638eb",
"etag": "W/\"a47e550c-526f-4dba-9b58-a650500f489c\"",
"instanceId": "31305b92-68bc-473f-a91c-cc6efc743b44",
"properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
        {
            "resourceRef": "/accessControlLists/5cd7c188-a510-40de-ae59-d8f338f638eb/aclRules/bab91fb0-ce4a-4fff-a0b7-a545d7ed41cb",
            "resourceId": "bab91fb0-ce4a-4fff-a0b7-a545d7ed41cb",
            "etag": "W/\"a47e550c-526f-4dba-9b58-a650500f489c\"",
            "instanceId": "73f052fc-96e9-4a5d-992b-f16ad5f766c2",
            "properties": {
                "provisioningState": "Succeeded",
                "protocol": "All",
                "sourcePortRange": "0-65535",
                "destinationPortRange": "31267",
                "action": "Allow",
                "sourceAddressPrefix": "*",
                "destinationAddressPrefix": "20.169.0.25",
                "priority": "200",
                "type": "Inbound",
                "logging": "Enabled"
            }
        }
    ]
},
"ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/1c4f0be6-0ba9-417c-9f66-c4a4c1163029/ipConfigurations/28ba9be8-4d21-4829-91dd-dc88f964507c"
    }
],
"subnets": [
]
}
},
{
"resourceRef": "/accessControlLists/673519cb-f22d-432e-bae0-e8d5f3da5a17",
"resourceId": "673519cb-f22d-432e-bae0-e8d5f3da5a17",
"etag": "W/\"2885d50c-8053-46e1-9350-dfe9241c4f34\"",
"instanceId": "0df2783a-0f30-46dc-a133-faad53335a1c",
"properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
        {
            "resourceRef": "/accessControlLists/673519cb-f22d-432e-bae0-e8d5f3da5a17/aclRules/3d2080b2-2fca-4ccb-8b97-3337e92aeb5e",
            "resourceId": "3d2080b2-2fca-4ccb-8b97-3337e92aeb5e",
            "etag": "W/\"2885d50c-8053-46e1-9350-dfe9241c4f34\"",
            "instanceId": "5a25bbbd-df7a-4cbd-8c2a-55736dbdc4cd",
            "properties": {

```

```

        "provisioningState": "Succeeded",
        "protocol": "All",
        "sourcePortRange": "0-65535",
        "destinationPortRange": "31267",
        "action": "Allow",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "20.169.0.23",
        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
    }
}
],
"ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/80f93684-4711-4319-beac-
dfb81c2cef23/ipConfigurations/cdcedf7f-e216-406a-971a-cbd553e3020e"
    }
],
"subnets": [
]
}
},
{
    "resourceRef": "/accessControlLists/782332ab-9736-49c7-a5a2-71e31bd7c898",
    "resourceId": "782332ab-9736-49c7-a5a2-71e31bd7c898",
    "etag": "W/\"225175df-cddf-4752-88e0-94bf2f302ce2\"",
    "instanceId": "9e26e2f7-32c6-4f29-85a8-344660df17b1",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
            {
                "resourceRef": "/accessControlLists/782332ab-9736-49c7-a5a2-
71e31bd7c898/aclRules/1eb3767c-40fd-4ef4-bcb5-b6e40e3d4eb9",
                "resourceId": "1eb3767c-40fd-4ef4-bcb5-b6e40e3d4eb9",
                "etag": "W/\"225175df-cddf-4752-88e0-94bf2f302ce2\"",
                "instanceId": "1163eda6-c64a-4f8d-8490-6609bfc3e6fb",
                "properties": {
                    "provisioningState": "Succeeded",
                    "protocol": "All",
                    "sourcePortRange": "0-65535",
                    "destinationPortRange": "31267",
                    "action": "Allow",
                    "sourceAddressPrefix": "*",
                    "destinationAddressPrefix": "20.168.0.22",
                    "priority": "200",
                    "type": "Inbound",
                    "logging": "Enabled"
                }
            }
        ]
    },
    "ipConfigurations": [
        {
            "resourceRef": "/networkInterfaces/9aca78f4-dbdb-4201-8199-
1e530a38b1c2/ipConfigurations/4a1870d8-6c53-4e6c-afdb-9f490e9a8f18"
        }
    ],
    "subnets": [
]
}
},
{
    "resourceRef": "/accessControlLists/942b2145-982f-47d1-b360-e65d589c200c",
    "resourceId": "942b2145-982f-47d1-b360-e65d589c200c",
    "etag": "W/\"6b22bafe-ac18-4fd9-b468-8efc4c8bc684\"",
    "instanceId": "f9bf6580-e1a0-4fd7-a32d-ee55f13e7998",
    "properties": {
        "provisioningState": "Succeeded",

```

```

    "aclRules": [
      {
        "resourceRef": "/accessControlLists/942b2145-982f-47d1-b360-
e65d589c200c/aclRules/8bb9cd37-ed88-4486-bff1-57ff54d86cd0",
        "resourceId": "8bb9cd37-ed88-4486-bff1-57ff54d86cd0",
        "etag": "W/\"6b22baf8-ac18-4fd9-b468-8efc4c8bc684\"",
        "instanceId": "07818909-bba2-4500-8d93-852e33332ea6",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.169.0.24",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ],
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/bb78e9a2-3949-4d93-81e8-
8ba5bd01c0d1/ipConfigurations/d8685944-e3f5-45e5-ac4b-162a9431b70f"
      }
    ],
    "subnets": [
    ]
  }
},
{
  "resourceRef": "/accessControlLists/969e7826-44ef-4a11-baa9-98cd6414fb45",
  "resourceId": "969e7826-44ef-4a11-baa9-98cd6414fb45",
  "etag": "W/\"9a819856-6e87-46d6-92e8-e92e3b114b86\"",
  "instanceId": "9a5e1f25-0cbc-43b4-b185-7f84c2291205",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/969e7826-44ef-4a11-baa9-
98cd6414fb45/aclRules/a5b6bf1d-91ce-4879-ad35-e783a20e88a1",
        "resourceId": "a5b6bf1d-91ce-4879-ad35-e783a20e88a1",
        "etag": "W/\"9a819856-6e87-46d6-92e8-e92e3b114b86\"",
        "instanceId": "764ac2e7-9fa7-4c33-b6cd-d0b84b553476",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.170.0.27",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ]
  },
  "ipConfigurations": [
    {
      "resourceRef": "/networkInterfaces/7d855a76-7be7-4681-8710-
cff77f67fbcd/ipConfigurations/8f26861a-3a97-4564-8fc0-7b40553c954a"
    }
  ],
  "subnets": [
  ]
}
}

```

```

},
{
  "resourceRef": "/accessControlLists/994ea3d0-43a5-4bbf-baae-fa72bc87a7b5",
  "resourceId": "994ea3d0-43a5-4bbf-baae-fa72bc87a7b5",
  "etag": "W/\"ba590e2a-3ba9-4964-b2d4-9bfce3fc1f71\"",
  "instanceId": "4dded1f2-af8f-4c2b-9400-357f73fadd96",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/994ea3d0-43a5-4bbf-baae-fa72bc87a7b5/aclRules/ef188f68-79d6-4e37-8cbc-2e55e0554167",
        "resourceId": "ef188f68-79d6-4e37-8cbc-2e55e0554167",
        "etag": "W/\"ba590e2a-3ba9-4964-b2d4-9bfce3fc1f71\"",
        "instanceId": "9c4f2ed9-9ec5-4c31-b0b3-12f32474f83b",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.169.0.26",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ]
  },
  "ipConfigurations": [
    {
      "resourceRef": "/networkInterfaces/10ad4e45-26a5-4dc1-85a5-618525b940df/ipConfigurations/e016f4e6-766e-4ac7-a9d8-ef1881d4e824"
    }
  ],
  "subnets": [
  ]
}
},
{
  "resourceRef": "/accessControlLists/b3430b40-f6ab-4bb7-9587-17adfc8d258f",
  "resourceId": "b3430b40-f6ab-4bb7-9587-17adfc8d258f",
  "etag": "W/\"8804d8e1-b8e2-4581-a132-4e66997a8780\"",
  "instanceId": "bda54313-903f-4623-92c7-7923e1984f91",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/b3430b40-f6ab-4bb7-9587-17adfc8d258f/aclRules/7cb584e8-a018-4061-a95b-1263fef7c861",
        "resourceId": "7cb584e8-a018-4061-a95b-1263fef7c861",
        "etag": "W/\"8804d8e1-b8e2-4581-a132-4e66997a8780\"",
        "instanceId": "38737310-2a72-454e-a7f3-aedc56bae055",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.168.0.23",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ]
  },
  "ipConfigurations": [
  ]
}

```

```

        "resourceRef": "/networkInterfaces/f2a23d03-ea52-43a9-8c1f-7921b4621ddf/ipConfigurations/9a9b2039-f578-43bd-b761-2de4f5b10e18"
    }
  ],
  "subnets": [
  ]
}
},
{
  "resourceRef": "/accessControlLists/bd8ae3b4-5f4b-4a1d-ab58-b30e15932af0",
  "resourceId": "bd8ae3b4-5f4b-4a1d-ab58-b30e15932af0",
  "etag": "W/\"f841ece6-95de-4390-8c5a-da803c179cb1\"",
  "instanceId": "35ff4cd3-f4c2-446b-a8d6-dddd81d37231",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/bd8ae3b4-5f4b-4a1d-ab58-b30e15932af0/aclRules/e37cbf9a-83f5-4f2b-831a-c316cf71f3a5",
        "resourceId": "e37cbf9a-83f5-4f2b-831a-c316cf71f3a5",
        "etag": "W/\"f841ece6-95de-4390-8c5a-da803c179cb1\"",
        "instanceId": "1458c402-bb13-4a6a-a551-7bc464db60ba",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.169.0.27",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ]
  },
  "ipConfigurations": [
    {
      "resourceRef": "/networkInterfaces/c996e4c2-d062-4e8f-a9b9-30f63cc36fffb/ipConfigurations/6e3bcf32-5af0-4b33-b6f6-1b8f902ea0e3"
    }
  ],
  "subnets": [
  ]
}
},
{
  "resourceRef": "/accessControlLists/dd2481a6-51b7-42d8-b22d-b87c191c7c70",
  "resourceId": "dd2481a6-51b7-42d8-b22d-b87c191c7c70",
  "etag": "W/\"cb1703c4-9a53-4989-b843-23f2790db01b\"",
  "instanceId": "8ec4262d-62f7-4970-b931-f53acd198678",
  "properties": {
    "provisioningState": "Succeeded",
    "aclRules": [
      {
        "resourceRef": "/accessControlLists/dd2481a6-51b7-42d8-b22d-b87c191c7c70/aclRules/35479197-05fb-4292-a88f-e02f74ce5133",
        "resourceId": "35479197-05fb-4292-a88f-e02f74ce5133",
        "etag": "W/\"cb1703c4-9a53-4989-b843-23f2790db01b\"",
        "instanceId": "3bd79d27-8791-4149-b88d-a856e2ddcaa0",
        "properties": {
          "provisioningState": "Succeeded",
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "31267",
          "action": "Allow",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "20.170.0.23",

```



```

        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
    }
},
"ipConfigurations": [
    {
        "resourceRef": "/networkInterfaces/balb152b-2671-4dd1-9069-763eb77ae259/ipConfigurations/3980df14-989b-4f0c-adaa-1be54b78b5e1"
    }
],
"subnets": [
]
}
},
{
    "resourceRef": "/accessControlLists/e8920953-c894-4eac-9cf7-ca79ee8412dc",
    "resourceId": "e8920953-c894-4eac-9cf7-ca79ee8412dc",
    "etag": "W/\"7fa32fec-62bb-4659-a6b8-48951f615ecc\"",
    "instanceId": "6d641dab-a2a4-44fb-871c-e286ebb4ae95",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
            {
                "resourceRef": "/accessControlLists/e8920953-c894-4eac-9cf7-ca79ee8412dc/aclRules/e4f6b8a9-a8d8-46a3-b5f6-4c6948edcdd3",
                "resourceId": "e4f6b8a9-a8d8-46a3-b5f6-4c6948edcdd3",
                "etag": "W/\"7fa32fec-62bb-4659-a6b8-48951f615ecc\"",
                "instanceId": "196dc2b8-c44c-4627-acb4-f600e9bbfcaa",
                "properties": {
                    "provisioningState": "Succeeded",
                    "protocol": "All",
                    "sourcePortRange": "0-65535",
                    "destinationPortRange": "31267",
                    "action": "Allow",
                    "sourceAddressPrefix": "*",
                    "destinationAddressPrefix": "20.170.0.22",
                    "priority": "200",
                    "type": "Inbound",
                    "logging": "Enabled"
                }
            }
        ],
        "ipConfigurations": [
            {
                "resourceRef": "/networkInterfaces/fe79110d-7075-478c-975c-79f362791a88/ipConfigurations/268203d3-bffc-4d82-a402-6e274d3dce28"
            }
        ],
        "subnets": [
        ]
    }
},
{
    "resourceRef": "/accessControlLists/eae828ec-2c50-426f-90db-97449b187d3f",
    "resourceId": "eae828ec-2c50-426f-90db-97449b187d3f",
    "etag": "W/\"1c2e4e25-7b2c-48f5-b9a2-660351e17097\"",
    "instanceId": "3dab675e-62f6-42c9-a929-a31dfe28c3c0",
    "properties": {
        "provisioningState": "Succeeded",
        "aclRules": [
            {
                "resourceRef": "/accessControlLists/eae828ec-2c50-426f-90db-97449b187d3f/aclRules/dafb0eaf-446d-4d22-a05d-b4fc6182a419",
                "resourceId": "dafb0eaf-446d-4d22-a05d-b4fc6182a419",
                "etag": "W/\"1c2e4e25-7b2c-48f5-b9a2-660351e17097\"",
                "instanceId": "530ea20d-95d3-43a4-83f0-053a556ed638",

```

```

    "properties": {
      "provisioningState": "Succeeded",
      "protocol": "All",
      "sourcePortRange": "0-65535",
      "destinationPortRange": "31267",
      "action": "Allow",
      "sourceAddressPrefix": "*",
      "destinationAddressPrefix": "20.168.0.24",
      "priority": "200",
      "type": "Inbound",
      "logging": "Enabled"
    }
  ],
  "ipConfigurations": [
    {
      "resourceRef": "/networkInterfaces/6a5e50b8-9662-4645-b5cc-
f4bb19e14202/ipConfigurations/5092e884-f118-453a-842b-9c0242e55588"
    }
  ],
  "subnets": [
  ]
}
],
"nextLink": ""
}

```

The JSON schema for the **accessControlLists GET ALL** method is located in section 6.1.3.

3.1.5.1.1.3.3 Processing Details

The server locates the **accessControlLists** resource. The server MUST return a status code of 200 (OK) if the operation succeeds. If no **accessControlList** resources are defined, the server MUST return the result as an empty array.

3.1.5.1.1.4 DELETE

This method deletes an **accessControlLists** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.1.1.4.1 Request Body

None.

3.1.5.1.1.4.2 Response Body

None.

3.1.5.1.1.4.3 Processing Details

Deletes an **accessControlList** resource.

3.1.5.1.2 aclRules

The **aclRules** resource describes the network traffic that is allowed or denied for a network interface of a virtual machine. Currently, only inbound rules are expressed.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{parentResourceId}/aclRules/{resourceId}
```

url: the address of the computer on which the Network Controller is running.

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.1.2.1.1	Create a new aclRules resource or update an existing aclRules resource.
GET	3.1.5.1.2.1.2	Get one aclRules resource.
GET (All)	3.1.5.1.2.1.3	List all aclRules resources in the Network Controller.
DELETE	3.1.5.1.2.1.4	Delete an aclRules resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
action	Required	Indicates the action the ACL Rule will take. Valid values are Allow or Deny. There is no default value since it is a required element.
description	Optional	Indicates a description of the ACL rule.
destinationAddressPrefix	Required	Indicates the CIDR value of destination IP or a pre-defined tag to which traffic is destined. You can specify 0.0.0.0/0 for IPv4 all and ::/0 for IPv6 all traffic.

Element name	Type	Description
		<p>Pre-defined tags can also be used within <code>aclRules</code> which are being applied to virtual subnets or ip configurations of virtual subnets. Pre-defined tags cannot be applied to ip configurations of logical subnets. Valid pre-defined TAG values are <code>VIRTUALNETWORK</code> <code>INTERNET</code> <code>AZURELOADBALANCER</code></p> <p><code>VIRTUALNETWORK</code> - This tag denotes all your virtual network address space.</p> <p><code>INTERNET</code> - This tag denotes the IP address space that is outside the virtual network and reachable by public Internet.</p> <p><code>AZURELOADBALANCER</code> - This tag denotes the datacenter IP addresses from which the load balancer health probes originate.</p>
destinationPortRange	Required	<p>Indicates the destination ports that will trigger this ACL rule. Valid values include a single port, port range (separated by hyphen "-"), or asterisk "*" for all ports. All numbers are inclusive. Example: 80, 80-80, 80-81, *</p> <p>The port value MUST be between 1 and 65535.</p>
logging	Required	<p>Indicates whether logging will be turned on for when this rule gets triggered. Valid values are <code>Enable</code> or <code>Disabled</code>. The default value is enabled.</p>
priority	Required	<p>Indicates the priority of the rule relative to the priority of other ACL rules. This is a unique numeric value in the context of an accessControlLists resource. Value from 101 - 65000 are user defined. Values 1- 100 and 65001 - 65535 are reserved.</p>
protocol	Required	<p>Indicates the protocol to which the ACL rule will apply. Valid values are <code>TCP</code> <code>UDP</code> .</p>
sourceAddressPrefix	Required	<p>Indicates the CIDR value of source IP or a pre-defined TAG from which traffic is originating. You can specify <code>0.0.0.0/0</code> for IPv4 all and <code>::/0</code> for IPv6 all traffic.</p> <p>Valid pre-defined TAG values are <code>VIRTUALNETWORK</code> <code>INTERNET</code> <code>AZURELOADBALANCER</code></p> <p><code>VIRTUALNETWORK</code> - This tag denotes all your virtual network address space.</p> <p><code>INTERNET</code> - This tag denotes the IP address space that is outside the virtual network and reachable by public Internet.</p> <p><code>AZURELOADBALANCER</code> - This tag denotes the datacenter IP addresses from which the load balancer health probes originate.</p>
sourcePortRange	Required	<p>Indicates the source ports that will trigger this ACL rule. Valid values include a single port, port range (separated by hyphen "-"), or asterisk "*" for all ports. All numbers are inclusive. Example: 80, 80-80, 80-81, *</p> <p>The value MUST be between 1 and 65535.</p>
type	Required	<p>Indicates whether the rule is to be evaluated against ingress traffic (Inbound) or egress traffic (Outbound). Valid values are <code>Inbound</code> <code>Outbound</code>. There is no default value since it is a required element.</p>

3.1.5.1.2.1 HTTP Methods

3.1.5.1.2.1.1 PUT

This method creates a new **aclRules** resource or updates an existing **aclRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{parentResourceId}/aclRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.1.2.1.1.1 Request Body

The format for the response body for the **aclRules PUT** method is as follows.

```
{
  "resourceId": "1d62b477-9992-400b-bfbb-411c8c91ed9d",
  "resourceMetadata": {
  },
  "properties": {
    "provisioningState": "Succeeded",
    "protocol": "All",
    "sourcePortRange": "0-65535",
    "destinationPortRange": "31267",
    "action": "Allow",
    "sourceAddressPrefix": "*",
    "destinationAddressPrefix": "20.169.0.22",
    "priority": "200",
    "type": "Inbound",
    "logging": "Enabled"
  }
}
```

The JSON schema for the **aclRules PUT** method is located in section 6.1.4.1.

3.1.5.1.2.1.1.2 Response Body

The format for the **PUT aclRules** response body is the same as the format for the **GET aclRules** response body (section 3.1.5.1.2.1.2). The JSON schema is located in section 6.1.4.2.

3.1.5.1.2.1.1.3 Processing Details

Describes the network traffic that is allowed or denied for a network interface of a virtual machine.

3.1.5.1.2.1.2 GET

This method retrieves an **aclRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{parentResourceId}/aclRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.1.2.1.2.1 Request Body

None.

3.1.5.1.2.1.2.2 Response Body

The format for the response body for the **aclRules GET** method is as follows.

```
{
  "resourceRef": "/accessControlLists/049460a0-3d29-48a5-92fe-1b418287f2a1/aclRules/1d62b477-9992-400b-bfbb-411c8c91ed9d",
  "resourceId": "1d62b477-9992-400b-bfbb-411c8c91ed9d",
  "etag": "W/\"736b0e54-7976-42fd-a89e-c7d00e9fbcf0\"",
  "instanceId": "985c5ee5-e275-4006-8cba-5fd704ef4c62",
  "properties": {
    "provisioningState": "Succeeded",
    "protocol": "All",
    "sourcePortRange": "0-65535",
    "destinationPortRange": "31267",
    "action": "Allow",
    "sourceAddressPrefix": "*",
    "destinationAddressPrefix": "20.169.0.22",
    "priority": "200",
    "type": "Inbound",
    "logging": "Enabled"
  }
}
```

The JSON schema for the **aclRules GET** method is located in section 6.1.4.2.

3.1.5.1.2.1.2.3 Processing Details

This method retrieves an **aclRules** resource.

3.1.5.1.2.1.3 GET (All)

This method retrieves all **aclRules** resources that belong to an **accessControlLists** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{parentResourceId}/aclRules
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.1.2.1.3.1 Request Body

None.

3.1.5.1.2.1.3.2 Response Body

The format for the response body for the **aclRules GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/accessControlLists/049460a0-3d29-48a5-92fe-1b418287f2a1/aclRules/1d62b477-9992-400b-bfbb-411c8c91ed9d",
      "resourceId": "1d62b477-9992-400b-bfbb-411c8c91ed9d",
      "etag": "W/\"736b0e54-7976-42fd-a89e-c7d00e9fbcf0\"",
      "instanceId": "985c5ee5-e275-4006-8cba-5fd704ef4c62",
      "properties": {
        "provisioningState": "Succeeded",
        "protocol": "All",
        "sourcePortRange": "0-65535",
        "destinationPortRange": "31267",
        "action": "Allow",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "20.169.0.22",
        "priority": "200",
        "type": "Inbound",
        "logging": "Enabled"
      }
    },
    {
      "resourceRef": "/accessControlLists/049460a0-3d29-48a5-92fe-1b418287f2a1/aclRules/1d62b477-9992-400b-bfbb-411c8c91ed9d",
      "resourceId": "1d62b477-9992-400b-bfbb-411c8c91ed9d",
      "etag": "W/\"736b0e54-7976-42fd-a89e-c7d00e9fbcf0\"",
      "instanceId": "985c5ee5-e275-4006-8cba-5fd704ef4c62",
      "properties": {
        "provisioningState": "Succeeded",
        "protocol": "All",
        "sourcePortRange": "0-65535",
        "destinationPortRange": "31267",
        "action": "Allow",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "20.169.0.22",
        "priority": "200",
        "type": "Inbound",

```

```

        "logging": "Enabled"
      }
    },
    "nextLink": ""
  }
}

```

The JSON schema for the **aclRules GET** method is located in section 6.1.4.3.

3.1.5.1.2.1.3.3 Processing Details

Retrieves all **aclRules** resources that belong to an **accessControlLists** resource.

3.1.5.1.2.1.4 DELETE

This method deletes an **aclRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/accessControlLists/{parentResourceId}/aclRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.1.2.1.4.1 Request Body

None.

3.1.5.1.2.1.4.2 Response Body

None.

3.1.5.1.2.1.4.3 Processing Details

Deletes an **aclRules** resource.

3.1.5.2 credentials

The **credentials** resource contains the credential information needed to connect to a southbound device with the appropriate permissions to manage the device. This resource is referenced by one or more southbound device resources combining the credential information with the connection

information, therefore allowing the network controller to connect to and configure a device in the network.

A **credentials** resource can be referenced by one or more resources. **Credentials** resources are stored in encrypted form. Encryption is done using the SSL certificate provisioned on the Network Controller nodes. If the credential type is usernamepassword, the credentials value (password) is not provided in the **GET** response. If a **credentials** resource is referenced by one or more devices and is deleted, the reference will be removed from all devices.

The URI for the **credentials** resource is as follows.

```
https://<url>/networking/v1/credentials/{resourceId}
```

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.2.1.1	Create a new credentials resource or update an existing credentials resource.
GET	3.1.5.2.1.2	Get one credentials resource.
GET (All)	3.1.5.2.1.3	List all credentials resources in the Network Controller.
DELETE	3.1.5.2.1.4	Delete a credentials resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
type	Required	Indicates the type of the credential. Valid values are: usernamePassword x509Certificate snmpCommunityString GroupManagedServiceAccount
userName	Optional	If the credential resource is of type usernamePassword, then this username used for the credential. If the credential resource is of type GroupManagedServiceAccount, this contains the name of the account. For all other types, this field will be ignored.
value	Required	Indicates the value of the credentials resources type. The actual value will depend on the type field: UsernamePassword: this element represents the password. X509Certificate: this element represents the certificate subject name. SNMPCommunityString: this element represents the community string. GroupManagedServiceAccount: this element is expected to be empty.

3.1.5.2.1 HTTP Methods

3.1.5.2.1.1 PUT

This method creates a new **credentials** resource or updates an existing **credentials** resource. It is invoked through the following URI.

```
https://<url>/networking/v1/credentials/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.2.1.1.1 Request Body

The format for the request body for the **credentials PUT** method is as follows.

```
{
  "properties": {
    "type": "usernamePassword",
    "userName": "localhost\\administrator",
    "value": "SeMmFe1bh3f2ZgGRs6XHR+"
  }
}
```

The JSON schema for the **credentials PUT** method is located in section 6.2.1.

3.1.5.2.1.1.2 Response Body

The format for the **credentials PUT** response body is the same as the format for the **credentials GET** response body (section 3.1.5.2.1.2.2). The JSON schema is located in section 6.2.2.

3.1.5.2.1.1.3 Processing Details

Creates a new **credentials** resource or updates an existing **credentials** resource. For **credentials** resources of type GroupManagedServiceAccount, **PUT** is not allowed. When Network Controller is deployed using Install-NetworkController cmdlet, the GMSA account provided there will automatically be added to the credentials resource.

3.1.5.2.1.2 GET

This method retrieves a **credentials** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/credentials/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.2.1.2.1 Request Body

None.

3.1.5.2.1.2.2 Response Body

The format for the response body for the **credentials GET** method is as follows.

```
{
  "etag": "W/\"858c6520-f861-4ab0-9e18-8a11822bbafd\"",
  "instanceId": "0a83672d-08d1-4ce3-92f8-8cb3efcaf60e",
  "properties": {
    "provisioningState": "Succeeded",
    "type": "X509Certificate",
    "value": "DED5163DBA00F32C842B35B6250B852464BA7978"
  },
  "resourceId": "5eda8dd3-9fad-4f73-bb46-fa696b2ca894",
  "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894"
}
```

The JSON schema for the **credentials GET** method is located in section 6.2.2.

3.1.5.2.1.2.3 Processing Details

Retrieves a **credentials** resource.

3.1.5.2.1.3 GET (All)

This method retrieves all **credentials** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/credentials/
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.2.1.3.1 Request Body

None.

3.1.5.2.1.3.2 Response Body

The format for the response body for the **credentials GET ALL** method is as follows.

```
"value": [
  {
    "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894",
    "resourceId": "5eda8dd3-9fad-4f73-bb46-fa696b2ca894",
    "etag": "W/\"858c6520-f861-4ab0-9e18-8a11822bbafd\"",
    "instanceId": "0a83672d-08d1-4ce3-92f8-8cb3efcaf60e",
    "properties": {
      "provisioningState": "Succeeded",
      "type": "X509Certificate",
      "value": "DED5163DBA00F32C842B35B6250B852464BA7978"
    }
  },
  {
    "resourceRef": "/credentials/SA21n28-3-credentials",
    "resourceId": "SA21n28-3-credentials",
    "etag": "W/\"e5bc80c8-7013-42ce-b1e9-c2df34f73999\"",
    "instanceId": "3dcf5684-63b4-4577-b6da-ffbf46f435d",
    "properties": {
      "provisioningState": "Succeeded",
      "type": "usernamePassword",
      "userName": "localhost\\localadminuser",
      "value": "VZZfCgilTXfcm7axGvzpUztMsPnKQTPn152CFcxKmFk="
    }
  },
  {
    "resourceRef": "/credentials/SA21n28-4-credentials",
    "resourceId": "SA21n28-4-credentials",
    "etag": "W/\"dd2d880b-8dd5-4f44-b0d1-0e32f2027c9d\"",
    "instanceId": "6c5d30d4-dce4-47c8-b9f3-8ad2b233c1d6",
    "properties": {
      "provisioningState": "Succeeded",
      "type": "usernamePassword",
      "userName": "localhost\\localadminuser",
      "value": "tpmR2o32hkahVfw4VchYkReo3I9gjfuHQwOCZkgBw="
    }
  }
],
"nextLink": ""
}
```

The JSON schema for the **credentials GET ALL** method is located in section 6.2.3.

3.1.5.2.1.3.3 Processing Details

This method retrieves all **credentials** resources.

3.1.5.2.1.4 DELETE

This method deletes a **credentials** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/credentials/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.2.1.4.1 Request Body

None.

3.1.5.2.1.4.2 Response Body

None.

3.1.5.2.1.4.3 Processing Details

Deletes a **credentials** resource.

3.1.5.3 gatewayPools

The **gatewayPools** resource aggregates a set of **gateways** resources into a single pool. It contains an array of gateways that provide the infrastructure needed to service **virtualGateways** instances with differentiated services for tenant virtual networks.

A gateway pool usually consists of gateways that provide services, such as IPsec, GRE or Forwarding gateway. A gateway pool can also be created for different categories of customers or resellers. After a gateway pool is created, gateways of identical type and capacity can be added to the pool. Each tenant can be assigned one or more gateway pools from which its connections are serviced. Gateways in a gateway pool can service multiple tenants.

The URI for the resource is as follows.

```
https://<url>/networking/v1/gatewayPools/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.3.1.1	Create a new gatewayPools resource or update an existing gatewayPools resource.
GET	3.1.5.3.1.2	Get one gatewayPools resource.
GET (All)	3.1.5.3.1.3	List all gatewayPools resources in the Network Controller.
DELETE	3.1.5.3.1.4	Delete a gatewayPools resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
Type	Required	Indicates the type of the role of gateway VMs in the pool. The following are valid string values: "s2sIPsec" "s2sGre" "forwarding" "ALL"
greVipSubnets	Read/write. Required if Type is equal to "s2sGre" or "ALL".	Indicates the logical subnet from which VIPs for gateways providing "GRE" based network connections.
publicIpAddresses	Read/write Optional	Indicates collection of public IP address references. These are the IPs to which external connections connect to. This is optional in case Type is "s2sGre".
redundantGatewayCount	Read/write	Indicates the number of redundant gateway VMs that will be used for each virtualGateways instance to ensure its availability. For example, in a 3+1 gateway deployment, 1 will be redundant gateway count.
gatewayCapacityKiloBitsPerSecond	Read/write	Indicates the total capacity of each gateway in the pool in kilobits per second.
Gateways	Read-only	Indicates references to collection of gateways that comprise the gateway pool.
VirtualGateways	Read-only	Indicate references to collection of VirtualGateways (that contains subscription connection information) that are dependent on the pool.

3.1.5.3.1 HTTP Methods

3.1.5.3.1.1 PUT

This method creates a new **gatewayPools** resource or updates an existing **gatewayPools** resource. It is invoked through the following URI.

```
https://<url>/networking/v1/gatewayPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.3.1.1.1 Request Body

The format for the request body for the **gatewayPools PUT** method is as follows.

```
{
  "resourceId": "default",
  "properties": {
    "ipConfiguration": {
      "greVipSubnets": [
        {
          "resourceRef": "/LogicalNetworks/00000000-2222-0000-9999-000000000000/Subnets/00000000-2222-1111-9999-000000000003"
        }
      ],
      "publicIPAddresses": [
        {
          "resourceRef": "/PublicIpAddresses/00000000-5555-0000-0001-000000000000"
        }
      ]
    },
    "redundantGatewayCount": 0,
    "gatewayCapacityKiloBitsPerSecond": 104857600,
    "RadiusServer": "1.2.3.4",
    "RadiusSecret": "111_aaa",
    "type": "All"
  }
}
```

The JSON schema for the **gatewayPools PUT** method is located in section 6.3.1.

3.1.5.3.1.1.2 Response Body

The same as the format for the **gatewayPools GET** response body (section 3.1.5.3.1.2.2). The JSON schema is located in section 6.3.2.

3.1.5.3.1.1.3 Processing Details

Creates a new **gatewayPools** resource or updates an existing **gatewayPools** resource.

3.1.5.3.1.2 GET

This method retrieves a **gatewayPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/gatewayPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.3.1.2.1 Request Body

None.

3.1.5.3.1.2.2 Response Body

The format for the **gatewayPools GET** response body is as follows.

```
{
  "resourceRef": "/GatewayPools/default",
  "resourceId": "default",
  "etag": "W/\"0800327a-f275-4fb7-a8ac-9db9f9b74dfa\"",
  "instanceId": "d3bc394b-0779-4e87-a5c2-44f48091ecc2",
  "properties": {
    "provisioningState": "Succeeded",
    "type": "All",
    "ipConfiguration": {
      "greVipSubnets": [
        {
          "resourceRef": "/logicalnetworks/00000000-2222-0000-9999-000000000000/subnets/00000000-2222-1111-9999-000000000003"
        }
      ],
      "publicIPAddresses": [
        {
          "resourceRef": "/publicIPAddresses/00000000-5555-0000-0001-000000000000"
        }
      ]
    },
    "redundantGatewayCount": 0,
  }
}
```



```
"gatewayCapacityKiloBitsPerSecond": 104857600,
"gateways": [
  {
    "resourceRef": "/Gateways/CloudGw1"
  }
],
"virtualGateways": [
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_1"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_2"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_3"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_4"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_5"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_6"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_7"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_8"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_9"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_10"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_11"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_12"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_13"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_14"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_15"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_16"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_17"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_18"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_19"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_20"
  }
]
}
```

}

The JSON schema for the **gatewayPools GET** method is located in section 6.3.2.

3.1.5.3.1.2.3 Processing Details

Retrieves a **gatewayPools** resource.

3.1.5.3.1.3 GET (All)

This method retrieves all **gatewayPools** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/gatewayPools
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.3.1.3.1 Request Body

None.

3.1.5.3.1.3.2 Response Body

The format for the **gatewayPools GET All** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/GatewayPools/default",
      "resourceId": "default",
      "etag": "W/\"0800327a-f275-4fb7-a8ac-9db9f9b74dfa\"",
      "instanceId": "d3bc394b-0779-4e87-a5c2-44f48091ecc2",
      "properties": {
        "provisioningState": "Succeeded",
        "type": "All",
        "ipConfiguration": {
          "greVipSubnets": [
            {
              "resourceRef": "/logicalnetworks/00000000-2222-0000-9999-000000000000/subnets/00000000-2222-1111-9999-000000000003"
            }
          ],
          "publicIPAddresses": [
            {
              "resourceRef": "/publicIPAddresses/00000000-5555-0000-0001-000000000000"
            }
          ]
        }
      }
    }
  ]
}
```

```
},
"redundantGatewayCount": 0,
"gatewayCapacityKiloBitsPerSecond": 104857600,
"gateways": [
  {
    "resourceRef": "/Gateways/CloudGw1"
  }
],
"virtualGateways": [
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_1"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_2"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_3"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_4"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_5"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_6"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_7"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_8"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_9"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_10"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_11"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_12"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_13"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_14"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_15"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_16"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_17"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_18"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_19"
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_20"
  }
]
]
```

```
    }  
  },  
  "nextLink": ""  
}
```

The JSON schema for the **gatewayPools GET ALL** method is located in section 6.3.3.

3.1.5.3.1.3.3 Processing Details

Retrieves all **gatewayPools** resources.

3.1.5.3.1.4 DELETE

This method deletes a **gatewayPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/gatewayPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.3.1.4.1 Request Body

None.

3.1.5.3.1.4.2 Response Body

None.

3.1.5.3.1.4.3 Processing Details

Deletes a **gatewayPools** resource.

3.1.5.4 gateways

A **gateways** resource is the computing resource that provides gateway services to one or more **virtualNetworks** resources. The configuration in this resource is the generic configuration that provides gateway services to the virtualNetwork resources.

The URI for a **gateways** resource is as follows.

https://<url>/networking/v1/gateways/{resourceId}

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.4.1.1	Create a new gateways resource or update an existing gateways resource.
GET	3.1.5.4.1.2	Get one gateways resource.
GET (All)	3.1.5.4.1.3	List all gateways resources in the Network Controller.
DELETE	3.1.5.4.1.4	Delete a gateways resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
virtualGateways	Read-only	Reference to collection of tenants' virtual gateways. This helps in enumerating the tenants that are dependent on this gateway.
configurationState	Optional Read-only	Indicates the last known running state of this gateway. See configurationState specification in section 2.2.4. More details are given in the section for the GET operation section 3.1.5.4.1.2.
virtualServer	Read-only	Reference to the virtual server that acts as a gateway.
totalCapacity	Read-only	Indicates total bandwidth capacity of the gateway when it was provisioned. This value indicates plain-text processing capacity. For example, for a 6 core VM the value will be 6 Gbps.
connections	Read/write	Indicates a reference to collection of all the connections on the gateway.
pool	Required	Indicates a reference to the gatewayPools resource the gateway is part of.
networkInterfaces	Required Read/write	Indicates the external and internal network interfaces that the gateways resource operates on. Both references MUST be present on both read and write. The references cannot be changed after the gateways resource is created.
networkInterfaces.externalNetworkInterface	Read/Write	A resource reference to a network interface with precisely one IP configuration on a logical network.
networkInterfaces.internalNetworkInterface	Read/Write	A resource reference to a network interface without any IP configurations.
type	Read-only	Indicates the type of pool – all, IKEv2, GRE or forwarding
bgpConfig	Read/write	Indicates the BGP peering information required for peering with ToR router for GRE Gateway.

Element name	Type	Description
bgpConfig.extASNumber	Read/write	Extended (4-byte) ASN of the local BGP Router in XX.YY format.
bgpConfig.bgpPeer	Read/write	Indicates information of the BGP peer.
bgpConfig.bgpPeer.peerIP	Read/write	IP address of the peer, in this case the ToR.
bgpConfig.bgpPeer.peerExtASNumber	Read/write	Extended (4-byte) ASN of the peer BGP router in XX.YY format.

3.1.5.4.1 HTTP Methods

3.1.5.4.1.1 PUT

This method creates a new **gateways** resource or updates an existing **gateways** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/gateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.4.1.1.1 Request Body

The format for the request body for the **gateways PUT** method is as follows.

```
{
  "resourceId": "CloudGw1",
  "properties": {
    "pool": {
      "resourceRef": "/GatewayPools/default"
    },
    "types": [
      "s2sipsec",
      "s2sgre",
      "forwarding",
      "vpn"
    ]
  }
}
```

```

    "virtualServer": {
      "resourceRef": "/VirtualServers/CloudGw1"
    },
    "networkInterfaces": {
      "externalNetworkInterface": {
        "resourceRef": "/NetworkInterfaces/00000000-3333-0000-1111-000000000001"
      },
      "internalNetworkInterface": {
        "resourceRef": "/NetworkInterfaces/00000000-3333-0000-0000-000000000001"
      }
    },
    "bgpConfig": {
      "extASNumber": "0.1",
      "bgpPeer": [
        {
          "peerIP": "11.0.1.100",
          "peerExtAsNumber": "0.1"
        }
      ]
    }
  }
}

```

The JSON schema for the **gateways PUT** method is located in section 6.4.1.

3.1.5.4.1.1.2 Response Body

The same as the format for the **gateways GET** response body (section 3.1.5.4.1.2.2). The JSON schema is located in section 6.4.2.

3.1.5.4.1.1.3 Processing Details

Creates or updates a **gateways** resource.

3.1.5.4.1.2 GET

This method retrieves a **gateways** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/gateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.4.1.2.1 Request Body

None.

3.1.5.4.1.2.2 Response Body

The format for the **gateways GET** response body is as follows.

```
{
  "resourceRef": "/Gateways/CloudGw1",
  "resourceId": "CloudGw1",
  "etag": "W/\"367c9147-5186-4ff5-99f6-712d9b73d022\"",
  "instanceId": "956d2556-57db-4f53-ac05-cd4f01563a6e",
  "properties": {
    "provisioningState": "Succeeded",
    "virtualGateways": [
      {
        "virtualGateway": {
          "resourceRef": "/VirtualGateways/VirtualGateway_1"
        },
        "networkConnections": [
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_IPSEC_1"
          },
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_Gre_1"
          },
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_L3_1"
          }
        ],
        "bgpRouter": {
          "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1"
        }
      },
      {
        "virtualGateway": {
          "resourceRef": "/VirtualGateways/VirtualGateway_2"
        },
        "networkConnections": [
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_2/NetworkConnections/VirtualGateway_2_IPSEC_1"
          }
        ],
        "bgpRouter": {
          "resourceRef":
"/VirtualGateways/VirtualGateway_2/BgpRouters/BGP_VirtualGateway_2_83e43f34-c516-46ac-ad48-755ee9clf665"
        }
      },
      {
        "virtualGateway": {
          "resourceRef": "/VirtualGateways/VirtualGateway_3"
        },
        "networkConnections": [
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_3/NetworkConnections/VirtualGateway_3_IPSEC_1"
          }
        ],
        "bgpRouter": {
          "resourceRef":
"/VirtualGateways/VirtualGateway_3/BgpRouters/BGP_VirtualGateway_3_366d5a41-19c9-4ec8-bd82-01a2fb9fef37"
        }
      }
    ]
  }
}
```



```

{
  "virtualGateway": {
    "resourceRef": "/VirtualGateways/VirtualGateway_4"
  },
  "networkConnections": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_4/NetworkConnections/VirtualGateway_4_IPSEC_1"
    }
  ],
  "bgpRouter": {
    "resourceRef":
"/VirtualGateways/VirtualGateway_4/BgpRouters/BGP_VirtualGateway_4_b73ef149-6db2-4d60-abfc-1fc7bf6c2271"
  }
},
{
  "virtualGateway": {
    "resourceRef": "/VirtualGateways/VirtualGateway_5"
  },
  "networkConnections": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_5/NetworkConnections/VirtualGateway_5_IPSEC_1"
    }
  ],
  "bgpRouter": {
    "resourceRef":
"/VirtualGateways/VirtualGateway_5/BgpRouters/BGP_VirtualGateway_5_7d561f64-09e0-4338-be20-49d5e812c94d"
  }
},
{
  "virtualGateway": {
    "resourceRef": "/VirtualGateways/VirtualGateway_6"
  },
  "networkConnections": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_6/NetworkConnections/VirtualGateway_6_IPSEC_1"
    }
  ],
  "bgpRouter": {
    "resourceRef":
"/VirtualGateways/VirtualGateway_6/BgpRouters/BGP_VirtualGateway_6_78c53fcf-ac05-4e8b-ae03-775d4875fad4"
  }
},
{
  "virtualGateway": {
    "resourceRef": "/VirtualGateways/VirtualGateway_7"
  },
  "networkConnections": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_7/NetworkConnections/VirtualGateway_7_IPSEC_1"
    }
  ],
  "bgpRouter": {
    "resourceRef":
"/VirtualGateways/VirtualGateway_7/BgpRouters/BGP_VirtualGateway_7_351ddc6d-d68c-40b1-94db-d2a5939c4eb0"
  }
},
{
  "virtualGateway": {
    "resourceRef": "/VirtualGateways/VirtualGateway_8"
  },
  "networkConnections": [
    {

```

```

        "resourceRef":
"/VirtualGateways/VirtualGateway_8/NetworkConnections/VirtualGateway_8_IPSEC_1"
    },
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_8/BgpRouters/BGP_VirtualGateway_8_f4c1d9a5-b3b8-4aa0-8b7e-
c7cec321a0de"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_9"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_9/NetworkConnections/VirtualGateway_9_IPSEC_1"
        }
    ],
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_9/BgpRouters/BGP_VirtualGateway_9_6c2433ae-410f-4eb2-bd38-
3c6a4c170079"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_10"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_10/NetworkConnections/VirtualGateway_10_IPSEC_1"
        }
    ],
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_10/BgpRouters/BGP_VirtualGateway_10_b04b21a5-eab4-49e2-9770-
d98a63662c17"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_11"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_11/NetworkConnections/VirtualGateway_11_IPSEC_1"
        }
    ],
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_11/BgpRouters/BGP_VirtualGateway_11_6e83f798-f561-4f45-844e-
e6a0585930d8"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_12"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_12/NetworkConnections/VirtualGateway_12_IPSEC_1"
        }
    ],
    "bgpRouter": {

```

```

        "resourceRef":
"/VirtualGateways/VirtualGateway_12/BgpRouters/BGP_VirtualGateway_12_ef8630d4-8aac-46df-b037-
0d93eb8b6a82"
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_13"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_13/NetworkConnections/VirtualGateway_13_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_13/BgpRouters/BGP_VirtualGateway_13_d6efc0cd-c388-475c-b3ae-
45ce38d213c9"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_14"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_14/NetworkConnections/VirtualGateway_14_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_14/BgpRouters/BGP_VirtualGateway_14_424d5a1c-654d-4279-ae22-
bd2e61d050ca"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_15"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_15/NetworkConnections/VirtualGateway_15_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_15/BgpRouters/BGP_VirtualGateway_15_8f4ea52f-b2b1-4641-b554-
454ef27ae9e3"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_16"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_16/NetworkConnections/VirtualGateway_16_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_16/BgpRouters/BGP_VirtualGateway_16_42df86d7-6a36-42fc-a558-
9f9110b8288d"
        }
    },
    {

```

```

    "virtualGateway": {
      "resourceRef": "/VirtualGateways/VirtualGateway_17"
    },
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_17/NetworkConnections/VirtualGateway_17_IPSEC_1"
      }
    ],
    "bgpRouter": {
      "resourceRef":
"/VirtualGateways/VirtualGateway_17/BgpRouters/BGP_VirtualGateway_17_6ec56965-4f32-4146-9413-aeacfdel8626"
    }
  },
  {
    "virtualGateway": {
      "resourceRef": "/VirtualGateways/VirtualGateway_18"
    },
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_18/NetworkConnections/VirtualGateway_18_IPSEC_1"
      }
    ],
    "bgpRouter": {
      "resourceRef":
"/VirtualGateways/VirtualGateway_18/BgpRouters/BGP_VirtualGateway_18_0d2b38e7-79fd-4eb2-a445-8214c0da5d05"
    }
  },
  {
    "virtualGateway": {
      "resourceRef": "/VirtualGateways/VirtualGateway_19"
    },
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_19/NetworkConnections/VirtualGateway_19_IPSEC_1"
      }
    ],
    "bgpRouter": {
      "resourceRef":
"/VirtualGateways/VirtualGateway_19/BgpRouters/BGP_VirtualGateway_19_19b87991-6ec7-4e79-8b25-b5bbac60baf6"
    }
  },
  {
    "virtualGateway": {
      "resourceRef": "/VirtualGateways/VirtualGateway_20"
    },
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_20/NetworkConnections/VirtualGateway_20_IPSEC_1"
      }
    ],
    "bgpRouter": {
      "resourceRef":
"/VirtualGateways/VirtualGateway_20/BgpRouters/BGP_VirtualGateway_20_557cfc53-e621-4559-bcb1-e1f2045f56"
    }
  }
],
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T21:34:32.1843967-07:00"
},
"virtualServer": {
  "resourceRef": "/virtualServers/CloudGw1"
}

```

```

    },
    "networkInterfaces": {
      "externalNetworkInterface": {
        "resourceRef": "/networkInterfaces/00000000-3333-0000-1111-000000000001"
      },
      "internalNetworkInterface": {
        "resourceRef": "/networkInterfaces/00000000-3333-0000-0000-000000000001"
      }
    },
    "type": "All",
    "state": "Active",
    "healthState": "Healthy",
    "totalCapacity": 104857600,
    "availableCapacity": 18636800,
    "bgpConfig": {
      "extASNumber": "0.1",
      "bgpPeer": [
        {
          "peerIP": "11.0.1.100",
          "peerExtAsNumber": "0.1"
        }
      ]
    },
    "connections": [],
    "externalIPAddress": [
      {
        "ipAddress": "27.1.1.15",
        "prefixLength": 24
      }
    ],
    "pool": {
      "resourceRef": "/GatewayPools/default"
    }
  }
}

```

The JSON schema for the **gateways GET** method is located in section 6.4.2.

3.1.5.4.1.2.3 Processing Details

Retrieves a **gateways** resource.

The server returns a configuration state only if it has already attempted to configure settings according to the REST resource properties that were created or updated by using the **PUT** method. **configurationState.lastUpdatedTime** is set to a value that is implementation-specific.

The server MUST return a configuration state property **configurationState.status** set to "Success" if there were no errors. The server MUST return a configuration state property **configurationState.status** set to "Failure" if there were errors during the configuration of settings. **configurationState.detailedInfo** contains an array of objects per the definition in section 2.2.4. The following table contains acceptable values in the response.

configurationState.status	Code inside the configurationState.detailedInfo array	Description
Failure	Failure	Unable to fetch properties from the virtual switch.
InProgress	HostUnreachable	Gateway cleanup is in progress.
Failure	HostUnreachable	Could not connect to the gateway.

configurationState.status	Code inside the configurationState.detailedInfo array	Description
Failure	PolicyConfigurationFailure	Could not configure policies on the gateway.

3.1.5.4.1.3 GET (All)

Retrieves all **gateway** resources. Lists all gateway resources in the Network Controller.

It is invoked through the following URI.

```
https://<url>/networking/v1/gateways
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.4.1.3.1 Request Body

None.

3.1.5.4.1.3.2 Response Body

The format for the **gateways GET All** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/Gateways/CloudGw1",
      "resourceId": "CloudGw1",
      "etag": "W/\"367c9147-5186-4ff5-99f6-712d9b73d022\"",
      "instanceId": "956d2556-57db-4f53-ac05-cd4f01563a6e",
      "properties": {
        "provisioningState": "Succeeded",
        "virtualGateways": [
          {
            "virtualGateway": {
              "resourceRef": "/VirtualGateways/VirtualGateway_1"
            },
            "networkConnections": [
              {
                "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_IPSEC_1"
              },
              {

```

```

        "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_Gre_1"
    },
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_L3_1"
    }
],
"bgpRouter": {
    "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1"
}
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_2"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_2/NetworkConnections/VirtualGateway_2_IPSEC_1"
        }
    ],
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_2/BgpRouters/BGP_VirtualGateway_2_83e43f34-c516-46ac-ad48-755ee9clf665"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_3"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_3/NetworkConnections/VirtualGateway_3_IPSEC_1"
        }
    ],
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_3/BgpRouters/BGP_VirtualGateway_3_366d5a41-19c9-4ec8-bd82-01a2fb9fef37"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_4"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_4/NetworkConnections/VirtualGateway_4_IPSEC_1"
        }
    ],
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_4/BgpRouters/BGP_VirtualGateway_4_b73ef149-6db2-4d60-abfc-1fc7bf6c2271"
    }
},
{
    "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_5"
    },
    "networkConnections": [
        {
            "resourceRef":
"/VirtualGateways/VirtualGateway_5/NetworkConnections/VirtualGateway_5_IPSEC_1"
        }
    ]
},

```

```

        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_5/BgpRouters/BGP_VirtualGateway_5_7d561f64-09e0-4338-be20-49d5e812c94d"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_6"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_6/NetworkConnections/VirtualGateway_6_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_6/BgpRouters/BGP_VirtualGateway_6_78c53fcf-ac05-4e8b-ae03-775d4875fad4"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_7"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_7/NetworkConnections/VirtualGateway_7_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_7/BgpRouters/BGP_VirtualGateway_7_351ddc6d-d68c-40b1-94db-d2a5939c4eb0"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_8"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_8/NetworkConnections/VirtualGateway_8_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_8/BgpRouters/BGP_VirtualGateway_8_f4c1d9a5-b3b8-4aa0-8b7e-c7cec321a0de"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_9"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_9/NetworkConnections/VirtualGateway_9_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_9/BgpRouters/BGP_VirtualGateway_9_6c2433ae-410f-4eb2-bd38-3c6a4c170079"
        }
    }
},

```



```

    {
      "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_10"
      },
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_10/NetworkConnections/VirtualGateway_10_IPSEC_1"
        }
      ],
      "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_10/BgpRouters/BGP_VirtualGateway_10_b04b21a5-eab4-49e2-9770-
d98a63662c17"
      }
    },
    {
      "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_11"
      },
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_11/NetworkConnections/VirtualGateway_11_IPSEC_1"
        }
      ],
      "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_11/BgpRouters/BGP_VirtualGateway_11_6e83f798-f561-4f45-844e-
e6a0585930d8"
      }
    },
    {
      "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_12"
      },
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_12/NetworkConnections/VirtualGateway_12_IPSEC_1"
        }
      ],
      "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_12/BgpRouters/BGP_VirtualGateway_12_ef8630d4-8aac-46df-b037-
0d93eb8b6a82"
      }
    },
    {
      "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_13"
      },
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_13/NetworkConnections/VirtualGateway_13_IPSEC_1"
        }
      ],
      "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_13/BgpRouters/BGP_VirtualGateway_13_d6efc0cd-c388-475c-b3ae-
45ce38d213c9"
      }
    },
    {
      "virtualGateway": {
        "resourceRef": "/VirtualGateways/VirtualGateway_14"
      },
      "networkConnections": [
        {

```

```

        "resourceRef":
"/VirtualGateways/VirtualGateway_14/NetworkConnections/VirtualGateway_14_IPSEC_1"
    },
    "bgpRouter": {
        "resourceRef":
"/VirtualGateways/VirtualGateway_14/BgpRouters/BGP_VirtualGateway_14_424d5a1c-654d-4279-ae22-
bd2e61d050ca"
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_15"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_15/NetworkConnections/VirtualGateway_15_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_15/BgpRouters/BGP_VirtualGateway_15_8f4ea52f-b2b1-4641-b554-
454ef27ae9e3"
        },
        {
            "virtualGateway": {
                "resourceRef": "/VirtualGateways/VirtualGateway_16"
            },
            "networkConnections": [
                {
                    "resourceRef":
"/VirtualGateways/VirtualGateway_16/NetworkConnections/VirtualGateway_16_IPSEC_1"
                }
            ],
            "bgpRouter": {
                "resourceRef":
"/VirtualGateways/VirtualGateway_16/BgpRouters/BGP_VirtualGateway_16_42df86d7-6a36-42fc-a558-
9f9110b8288d"
            },
            {
                "virtualGateway": {
                    "resourceRef": "/VirtualGateways/VirtualGateway_17"
                },
                "networkConnections": [
                    {
                        "resourceRef":
"/VirtualGateways/VirtualGateway_17/NetworkConnections/VirtualGateway_17_IPSEC_1"
                    }
                ],
                "bgpRouter": {
                    "resourceRef":
"/VirtualGateways/VirtualGateway_17/BgpRouters/BGP_VirtualGateway_17_6ec56965-4f32-4146-9413-
aeacfdel18626"
                },
                {
                    "virtualGateway": {
                        "resourceRef": "/VirtualGateways/VirtualGateway_18"
                    },
                    "networkConnections": [
                        {
                            "resourceRef":
"/VirtualGateways/VirtualGateway_18/NetworkConnections/VirtualGateway_18_IPSEC_1"
                        }
                    ],
                    "bgpRouter": {

```

```

        "resourceRef":
"/VirtualGateways/VirtualGateway_18/BgpRouters/BGP_VirtualGateway_18_0d2b38e7-79fd-4eb2-a445-8214c0da5d05"
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_19"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_19/NetworkConnections/VirtualGateway_19_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_19/BgpRouters/BGP_VirtualGateway_19_19b87991-6ec7-4e79-8b25-b5bbac60baf6"
        }
    },
    {
        "virtualGateway": {
            "resourceRef": "/VirtualGateways/VirtualGateway_20"
        },
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_20/NetworkConnections/VirtualGateway_20_IPSEC_1"
            }
        ],
        "bgpRouter": {
            "resourceRef":
"/VirtualGateways/VirtualGateway_20/BgpRouters/BGP_VirtualGateway_20_557cfc53-e621-4559-bcb1-e1f2045fbe56"
        }
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T21:34:32.1843967-07:00"
},
"virtualServer": {
    "resourceRef": "/virtualServers/CloudGw1"
},
"networkInterfaces": {
    "externalNetworkInterface": {
        "resourceRef": "/networkInterfaces/00000000-3333-0000-1111-000000000001"
    },
    "internalNetworkInterface": {
        "resourceRef": "/networkInterfaces/00000000-3333-0000-0000-000000000001"
    }
},
"type": "All",
"state": "Active",
"healthState": "Healthy",
"totalCapacity": 104857600,
"availableCapacity": 18636800,
"bgpConfig": {
    "extASNumber": "0.1",
    "bgpPeer": [
        {
            "peerIP": "11.0.1.100",
            "peerExtAsNumber": "0.1"
        }
    ]
},
"connections": [],
"externalIPAddress": [
    {

```

```

        "ipAddress": "27.1.1.15",
        "prefixLength": 24
    }
  ],
  "pool": {
    "resourceRef": "/GatewayPools/default"
  }
}
  ],
  "nextLink": ""
}

```

The JSON schema for the **gateways GET All** method is located in section 6.4.3.

3.1.5.4.1.3.3 Processing Details

Retrieves all **gateways** resources.

3.1.5.4.1.4 DELETE

This method deletes a **gateways** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/gateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.4.1.4.1 Request Body

None.

3.1.5.4.1.4.2 Response Body

None.

3.1.5.4.1.4.3 Processing Details

Deletes a **gateways** resource.

3.1.5.5 loadBalancers

The **loadBalancers** resource allows fine-grained configuration of the distribution of incoming traffic across VM instances that are hosted in the environment managed by the server. This resource has two main parts: a frontend and a backend configuration.

The frontend configuration exposes the IP address of the load balancer. For example, this address can be a reserved public or private IP address previously provided to the client, or it can be an IP address that is dynamically allocated from a subnet of a virtual network.

The backend configuration identifies the tenant workload VMs to which the traffic will be delivered.

Probes define how the loadBalancer determines the health of a specific VM instance or endpoint of that instance. The loadBalancer sends traffic to a VM instance or endpoint only if the VM instance or endpoint was determined to be healthy.

A load balancing rule refers to a frontend configuration, a backend configuration and optionally to a probe resource to create a mapping between Virtual IP and a set of workload VMs. Traffic directed to the VIP is then load-balanced onto one of the workload VMs.

The loadBalancer uses a distribution algorithm to map traffic to available servers. The algorithm is a 5-tuple hash based on source IP, source port, destination IP, destination port, and protocol type. It provides stickiness only within a transport session, which is a feature that routes the requests for a specific session to the same physical machine that serviced the first request for that session.

Packets in the same TCP or UDP session will be directed to the same datacenter IP instance behind the load balanced endpoint. When the client closes and re-opens the connection, or starts a new session from the same source IP, the source port changes and causes the traffic to go to a different datacenter IP endpoint.

The loadBalancer can be configured to use a 2-tuple (Source IP, Destination IP) or 3-tuple (Source IP, Destination IP, Protocol) to map traffic to the available servers. By using SourceIPProtocol, connections initiated from the same client computer go to the same datacenter IP endpoint.

Linkage to Other Resources

When a port of a specific frontend IP address sends traffic to the **loadBalancers** resource, the **loadBalancers** resource distributes the traffic to a specific port of a set of backend IP addresses. The backend IP addresses are associated with network interface cards (NICs) of VMs. Backend IP addresses in the **loadBalancers** resource are specified as references to these private IPs.

A public IP address can be associated with the private frontend IP of the **loadBalancers** resource by setting an ipConfigurationRef on the **publicIPAddresses** resource.

The resources that MUST be unique in the context of the parent **loadBalancers** resource are: **backendAddressPools**, **frontendIPConfigurations**, **inboundNatRules**, **loadBalancingRules**, **outboundNatRules**, **probe**.

The URI for the **loadBalancers** resource is as follows.

```
https://<url>/networking/v1/loadBalancers/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.1.4	Create a new loadBalancers resource or update an existing loadBalancers resource.
GET	3.1.5.5.1.2	Get one loadBalancers resource
GET (All)	3.1.5.5.1.3	List all loadBalancers resources in the Network Controller.
DELETE	3.1.5.5.1.1	Delete a loadBalancers resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
backendAddressPools	Optional	Indicates the backend Address Pool of the load balancer, see section 3.1.5.5.2, for full details on this element.
frontendIPConfigurations	Required	Indicates the frontend IP addresses of the load balancer, see section 3.1.5.5.3, for full details on this element.
loadBalancingRules	Optional	A list of load balancing configurations. Each configuration describes what traffic and how it gets load balanced between backend Ips.
inboundNatRules	Optional	Indicates an array of inbound NAT rules configured for the load balancer, see section 3.1.5.5.4, for full details on this element.
outboundNatRules	Optional	Indicates an array of outbound NAT rules configured for the load balancer, see section 3.1.5.5.6, for full details on this element.
probes	Optional	Indicates an array of probes configured for the load balancer, see section 3.1.5.5.7, for full details on this element.

3.1.5.5.1 HTTP Methods

3.1.5.5.1.1 PUT

This method creates a new **loadBalancers** resource or updates an existing **loadBalancers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{resourceID}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.1.1.1 Request Body

The format for the request body for the **loadBalancers PUT** method is as follows.

```
{
  "resourceRef": "/loadBalancers/",
  "resourceId": "ee396509-27d3-44f9-849c-f6ed28d59f66",
  "instanceId": "00000000-0000-0000-0000-000000000000",
  "properties": {
    "provisioningState": "Succeeded",
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/frontendIPConfigurations/30951b82-73dc-4223-9fd6-c11676fdcde0",
        "resourceId": "30951b82-73dc-4223-9fd6-c11676fdcde0",
        "instanceId": "60fff655-907b-41f7-9ea4-623cdb261137",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.0.21.22",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/4b14f3a1-ed8d-4647-b370-2ae3ff227b9a/subnets/6d290ba5-f642-49bc-9cab-1478d76a8565"
          },
          "loadBalancingRules": [],
          "inboundNatRules": [],
          "outboundNatRules": []
        }
      }
    ],
    "backendAddressPools": [
      {
        "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/backendAddressPools/ab3e87bd-6d7a-4204-b895-5953cc52edd7",
        "resourceId": "ab3e87bd-6d7a-4204-b895-5953cc52edd7",
        "instanceId": "85ae7f16-8e2d-430c-88f0-5f77e4209098",
        "properties": {
          "provisioningState": "Succeeded",
          "backendIPConfigurations": [],
          "outboundNatRules": [],
          "loadBalancingRules": []
        }
      }
    ],
    "loadBalancingRules": [
      {
        "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/loadBalancingRules/2ea746ea-968f-41f2-8bfa-71d2391ef752",
        "resourceId": "2ea746ea-968f-41f2-8bfa-71d2391ef752",
        "instanceId": "2844edde-b297-429f-927a-f2de89e0ff3b",
        "properties": {
          "provisioningState": "Succeeded",
          "frontendIPConfigurations": [
            {

```

```

        "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-
f6ed28d59f66/frontendIPConfigurations/30951b82-73dc-4223-9fd6-c11676fdcde0"
    }
    ],
    "protocol": "Tcp",
    "frontendPort": 2003,
    "backendPort": 2003,
    "enableFloatingIP": false,
    "idleTimeoutInMinutes": 4,
    "backendAddressPool": {
        "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-
f6ed28d59f66/backendAddressPools/ab3e87bd-6d7a-4204-b895-5953cc52edd7"
    },
    "loadDistribution": "Default"
}
}
],
"probes": [
{
    "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/probes/9a73ea99-
99be-4ca6-8f20-f9b070477742",
    "resourceId": "9a73ea99-99be-4ca6-8f20-f9b070477742",
    "instanceId": "0ca5aae2-ec9a-4fdc-9bd1-963f609e5ff7",
    "properties": {
        "provisioningState": "Succeeded",
        "protocol": "Tcp",
        "port": 55555,
        "intervalInSeconds": 30,
        "numberOfProbes": 1,
        "loadBalancingRules": []
    }
}
],
"outboundNatRules": [
{
    "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-
f6ed28d59f66/outboundNatRules/5cf81a74-9922-4f0d-8a05-b3a9d6f0db9d",
    "resourceId": "5cf81a74-9922-4f0d-8a05-b3a9d6f0db9d",
    "instanceId": "429ea927-d1c0-4e10-9ce7-c27fb57302a5",
    "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
            {
                "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-
f6ed28d59f66/frontendIPConfigurations/30951b82-73dc-4223-9fd6-c11676fdcde0"
            }
        ],
        "protocol": "All",
        "backendAddressPool": {
            "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-
f6ed28d59f66/backendAddressPools/ab3e87bd-6d7a-4204-b895-5953cc52edd7"
        }
    }
}
]
}
}
}

```

The JSON schema for the **loadBalancers PUT** method is located in section 6.5.1.

3.1.5.5.1.1.2 Response Body

The format for the PUT **loadBalancers** response body is the same as the format for the **GET loadBalancers** response body (section 3.1.5.5.1.2.2). The JSON schema is located in section 6.5.2.

3.1.5.5.1.1.3 Processing Details

Create a new **loadBalancers** resource or update an existing **loadBalancers** resource.

3.1.5.5.1.2 GET

This method retrieves a **loadBalancers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{resourceID}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.5.1.2.1 Request Body

None.

3.1.5.5.1.2.2 Response Body

The format for the response body for the **loadBalancers GET** method is as follows.

```
{
  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098",
  "resourceId": "0cac5f8a-9d5c-455a-a971-2682d597e098",
  "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
  "instanceId": "d91f4951-faf7-4a15-a84a-8a9f6dffaff8",
  "properties": {
    "provisioningState": "Succeeded",
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57",
        "resourceId": "5187779d-c61c-44d2-87be-fa69ac2d9d57",
        "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
        "instanceId": "3902a530-9639-4759-9bbf-9bab6675593a",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "22.0.0.22",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
          },
          "loadBalancingRules": [
            {
              "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/loadBalancingRules/2ea746ea-968f-41f2-8bfa-71d2391ef752"
            }
          ]
        }
      }
    ],
  }
}
```

```

        "inboundNatRules": [
            {
                "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9"
            }
        ],
        "outboundNatRules": [
            {
                "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
            }
        ]
    },
    {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018",
        "resourceId": "94c568d8-d839-431a-aed4-a5c178356018",
        "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
        "instanceId": "d896da12-37f2-4e36-b229-7278a672a0ac",
        "properties": {
            "provisioningState": "Succeeded",
            "privateIPAddress": "22.0.0.23",
            "privateIPAllocationMethod": "Static",
            "subnet": {
                "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
            },
            "loadBalancingRules": [ ],
            "inboundNatRules": [
                {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000"
                }
            ],
            "outboundNatRules": [
                {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
                }
            ]
        }
    }
],
"backendAddressPools": [
    {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71",
        "resourceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
        "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
        "instanceId": "f980604c-258c-4d60-8be4-559edd085384",
        "properties": {
            "provisioningState": "Succeeded",
            "backendIPConfigurations": [
                {
                    "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
                },
                {
                    "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
                }
            ],
            "outboundNatRules": [
                {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
                }
            ],
            "loadBalancingRules": [

```

```

        {
          "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-
f6ed28d59f66/loadBalancingRules/2ea746ea-968f-41f2-8bfa-71d2391ef752"
        }
      ]
    }
  ],
  "probes": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/probes/9f940e29-
1d25-44fc-88d3-c81151a0344e",
      "resourceId": "9f940e29-1d25-44fc-88d3-c81151a0344e",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "0da65588-247b-475b-bd1a-7ead0bala182",
      "properties": {
        "provisioningState": "Succeeded",
        "protocol": "Tcp",
        "port": 55555,
        "intervalInSeconds": 30,
        "numberOfProbes": 1,
        "loadBalancingRules": [ ]
      }
    }
  ],
  "inboundNatRules": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9",
      "resourceId": "fc44af15-be82-46c5-b75a-3e89ccd792a9",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "a748c5db-e2fd-4335-8c89-280b78d2511c",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
          }
        ],
        "protocol": "Tcp",
        "frontendPort": 2003,
        "backendPort": 2003,
        "enableFloatingIP": false,
        "idleTimeoutInMinutes": 4,
        "backendIPConfiguration": {
          "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-
993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
        }
      }
    },
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000",
      "resourceId": "0e5ed8cf-60fb-40f4-b02a-90932d4de000",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "e8c59538-e641-4796-968d-50c4e11225e7",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018"
          }
        ],
        "protocol": "Tcp",
        "frontendPort": 2003,
        "backendPort": 2003,
        "enableFloatingIP": false,
        "idleTimeoutInMinutes": 4,

```

```

        "backendIPConfiguration": {
            "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
        }
    },
    "outboundNatRules": [
        {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160",
            "resourceId": "49053c15-2d0f-45a2-8148-be8615282160",
            "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
            "instanceId": "c4000c95-7f90-4bb4-b68d-b2bc9c1dfc3e",
            "properties": {
                "provisioningState": "Succeeded",
                "frontendIPConfigurations": [
                    {
                        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
                    },
                    {
                        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018"
                    }
                ],
                "protocol": "All",
                "backendAddressPool": {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71"
                }
            }
        }
    ],
    "loadBalancingRules": [
        {
            "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/loadBalancingRules/2ea746ea-968f-41f2-8bfa-71d2391ef752",
            "resourceId": "2ea746ea-968f-41f2-8bfa-71d2391ef752",
            "instanceId": "2844edde-b297-429f-927a-f2de89e0ff3b",
            "properties": {
                "provisioningState": "Succeeded",
                "frontendIPConfigurations": [
                    {
                        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
                    }
                ],
                "protocol": "Tcp",
                "frontendPort": 2003,
                "backendPort": 2003,
                "enableFloatingIP": false,
                "idleTimeoutInMinutes": 4,
                "backendAddressPool": {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71"
                },
                "loadDistribution": "Default"
            }
        }
    ]
}

```

The JSON schema for the **loadBalancers GET** method is located in section 6.5.2.

3.1.5.5.1.2.3 Processing Details

Retrieves a **loadBalancers** resource.

3.1.5.5.1.3 GET (All)

This method retrieves all **loadBalancers** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.1.3.1 Request Body

None.

3.1.5.5.1.3.2 Response Body

The format for the response body for the **loadBalancers GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098",
      "resourceId": "0cac5f8a-9d5c-455a-a971-2682d597e098",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "d91f4951-faf7-4a15-a84a-8a9f6dffaff8",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57",
            "resourceId": "5187779d-c61c-44d2-87be-fa69ac2d9d57",
            "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
            "instanceId": "3902a530-9639-4759-9bbf-9bab6675593a",
            "properties": {
              "provisioningState": "Succeeded",
              "privateIPAddress": "22.0.0.22",
              "privateIPAllocationMethod": "Static",
              "subnet": {
                "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
              },
              "loadBalancingRules": [],
              "inboundNatRules": [
                {
                  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9"
                }
              ]
            }
          }
        ]
      }
    }
  ]
}
```

```

    ],
    "outboundNatRules": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
      }
    ]
  },
  {
    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018",
    "resourceId": "94c568d8-d839-431a-aed4-a5c178356018",
    "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
    "instanceId": "d896da12-37f2-4e36-b229-7278a672a0ac",
    "properties": {
      "provisioningState": "Succeeded",
      "privateIPAddress": "22.0.0.23",
      "privateIPAllocationMethod": "Static",
      "subnet": {
        "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
      },
      "loadBalancingRules": [],
      "inboundNatRules": [
        {
          "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000"
        }
      ],
      "outboundNatRules": [
        {
          "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
        }
      ]
    }
  }
],
"backendAddressPools": [
  {
    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71",
    "resourceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
    "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
    "instanceId": "f980604c-258c-4d60-8be4-559edd085384",
    "properties": {
      "provisioningState": "Succeeded",
      "backendIPConfigurations": [
        {
          "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
        },
        {
          "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
        }
      ],
      "outboundNatRules": [
        {
          "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
        }
      ],
      "loadBalancingRules": []
    }
  }
],
"probes": [
  {

```

```

        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/probes/9f940e29-1d25-44fc-88d3-c81151a0344e",
        "resourceId": "9f940e29-1d25-44fc-88d3-c81151a0344e",
        "etag": "W/\fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
        "instanceId": "0da65588-247b-475b-bd1a-7ead0bala182",
        "properties": {
            "provisioningState": "Succeeded",
            "protocol": "Tcp",
            "port": 55555,
            "intervalInSeconds": 30,
            "numberOfProbes": 1,
            "loadBalancingRules": []
        }
    },
    "inboundNatRules": [
        {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9",
            "resourceId": "fc44af15-be82-46c5-b75a-3e89ccd792a9",
            "etag": "W/\fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
            "instanceId": "a748c5db-e2fd-4335-8c89-280b78d2511c",
            "properties": {
                "provisioningState": "Succeeded",
                "frontendIPConfigurations": [
                    {
                        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
                    }
                ],
                "protocol": "Tcp",
                "frontendPort": 2003,
                "backendPort": 2003,
                "enableFloatingIP": false,
                "idleTimeoutInMinutes": 4,
                "backendIPConfiguration": {
                    "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-
993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
                }
            }
        },
        {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000",
            "resourceId": "0e5ed8cf-60fb-40f4-b02a-90932d4de000",
            "etag": "W/\fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
            "instanceId": "e8c59538-e641-4796-968d-50c4e11225e7",
            "properties": {
                "provisioningState": "Succeeded",
                "frontendIPConfigurations": [
                    {
                        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018"
                    }
                ],
                "protocol": "Tcp",
                "frontendPort": 2003,
                "backendPort": 2003,
                "enableFloatingIP": false,
                "idleTimeoutInMinutes": 4,
                "backendIPConfiguration": {
                    "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-
64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
                }
            }
        }
    ],
    "outboundNatRules": [
        {

```

```

        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160",
        "resourceId": "49053c15-2d0f-45a2-8148-be8615282160",
        "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
        "instanceId": "c4000c95-7f90-4bb4-b68d-b2bc9c1dfc3e",
        "properties": {
            "provisioningState": "Succeeded",
            "frontendIPConfigurations": [
                {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57",
                },
                {
                    "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018",
                }
            ],
            "protocol": "All",
            "backendAddressPool": {
                "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71"
            }
        }
    },
    {
        "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42cce1",
        "resourceId": "d2251a0d-32d2-457e-b3aa-e0fe1f42cce1",
        "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
        "instanceId": "b32d0db3-13db-431a-a265-32185aa5a905",
        "properties": {
            "provisioningState": "Succeeded",
            "frontendIPConfigurations": [
                {
                    "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42cce1/frontendIPConfigurations/9f37a479-7d60-489a-aab6-d7eb2200306f",
                    "resourceId": "9f37a479-7d60-489a-aab6-d7eb2200306f",
                    "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
                    "instanceId": "51b57d2a-80da-464a-988a-4a805bd1d875",
                    "properties": {
                        "provisioningState": "Succeeded",
                        "privateIPAddress": "21.0.0.23",
                        "privateIPAllocationMethod": "Static",
                        "subnet": {
                            "resourceRef": "/logicalnetworks/9c1b2b61-dec2-49e3-b573-c2ecff57893d/subnets/a4f7c90b-6056-4dff-97fb-f46211ecdc10"
                        }
                    },
                    "loadBalancingRules": [],
                    "inboundNatRules": [
                        {
                            "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42cce1/inboundNatRules/d076eae7-926a-457a-a60c-0a713a02977d"
                        }
                    ],
                    "outboundNatRules": [
                        {
                            "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42cce1/outboundNatRules/f3f3291d-b26c-44d3-8d55-99b644b70388"
                        }
                    ]
                }
            ],
            "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42cce1/frontendIPConfigurations/ab5ccbe7-2ce9-4cdf-a0da-e4e5d81479d8",
            "resourceId": "ab5ccbe7-2ce9-4cdf-a0da-e4e5d81479d8",
            "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
            "instanceId": "fe6adbed-8b73-4fc2-82cd-191143753c4a",

```



```

    "properties": {
      "provisioningState": "Succeeded",
      "privateIPAddress": "21.0.0.24",
      "privateIPAllocationMethod": "Static",
      "subnet": {
        "resourceRef": "/logicalnetworks/9c1b2b61-dec2-49e3-b573-
c2ecff57893d/subnets/a4f7c90b-6056-4dff-97fb-f46211ecdc10"
      },
      "loadBalancingRules": [],
      "inboundNatRules": [
        {
          "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/inboundNatRules/425eea91-5a9e-4777-b2c3-0442dfc20344"
        }
      ],
      "outboundNatRules": [
        {
          "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/outboundNatRules/f3f3291d-b26c-44d3-8d55-99b644b70388"
        }
      ]
    }
  ],
  "backendAddressPools": [
    {
      "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/backendAddressPools/db1fa644-bd00-4c05-b11b-f5f07bfed86b",
      "resourceId": "db1fa644-bd00-4c05-b11b-f5f07bfed86b",
      "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
      "instanceId": "b638b320-5569-444f-9adf-78a683072269",
      "properties": {
        "provisioningState": "Succeeded",
        "backendIPConfigurations": [
          {
            "resourceRef": "/networkInterfaces/add9dac6-ddcc-4108-8543-
e167c0a8d9dc/ipConfigurations/2e8a0316-66a6-4a3e-bd86-89b0e43b080f"
          },
          {
            "resourceRef": "/networkInterfaces/b3dc7295-7144-4f6e-8235-
35d88b917482/ipConfigurations/581ab448-8e6f-436c-9dec-43366a9817dd"
          }
        ],
        "outboundNatRules": [
          {
            "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/outboundNatRules/f3f3291d-b26c-44d3-8d55-99b644b70388"
          }
        ],
        "loadBalancingRules": []
      }
    }
  ],
  "probes": [
    {
      "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/probes/ddb4dab8-b1eb-4476-90ca-948697240317",
      "resourceId": "ddb4dab8-b1eb-4476-90ca-948697240317",
      "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
      "instanceId": "18336b2f-8b2e-4bf2-a196-99009ec8feb8",
      "properties": {
        "provisioningState": "Succeeded",
        "protocol": "Tcp",
        "port": 55555,
        "intervalInSeconds": 30,
        "numberOfProbes": 1,
        "loadBalancingRules": []
      }
    }
  ],

```

```

    "inboundNatRules": [
      {
        "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/inboundNatRules/d076eae7-926a-457a-a60c-0a713a02977d",
        "resourceId": "d076eae7-926a-457a-a60c-0a713a02977d",
        "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
        "instanceId": "4be2c156-cbcb-466d-a8fe-865bc9f0045d",
        "properties": {
          "provisioningState": "Succeeded",
          "frontendIPConfigurations": [
            {
              "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/frontendIPConfigurations/9f37a479-7d60-489a-aab6-d7eb2200306f"
            }
          ],
          "protocol": "Tcp",
          "frontendPort": 2003,
          "backendPort": 2003,
          "enableFloatingIP": false,
          "idleTimeoutInMinutes": 4,
          "backendIPConfiguration": {
            "resourceRef": "/networkInterfaces/b3dc7295-7144-4f6e-8235-
35d88b917482/ipConfigurations/581ab448-8e6f-436c-9dec-43366a9817dd"
          }
        }
      },
      {
        "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/inboundNatRules/425eea91-5a9e-4777-b2c3-0442dfc20344",
        "resourceId": "425eea91-5a9e-4777-b2c3-0442dfc20344",
        "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
        "instanceId": "ae841775-a3b2-454e-bd69-b78a298ca7bF",
        "properties": {
          "provisioningState": "Succeeded",
          "frontendIPConfigurations": [
            {
              "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/frontendIPConfigurations/ab5ccbe7-2ce9-4cdf-a0da-e4e5d81479d8"
            }
          ],
          "protocol": "Tcp",
          "frontendPort": 2003,
          "backendPort": 2003,
          "enableFloatingIP": false,
          "idleTimeoutInMinutes": 4,
          "backendIPConfiguration": {
            "resourceRef": "/networkInterfaces/add9dac6-ddcc-4108-8543-
e167c0a8d9dc/ipConfigurations/2e8a0316-66a6-4a3e-bd86-89b0e43b080f"
          }
        }
      }
    ],
    "outboundNatRules": [
      {
        "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/outboundNatRules/f3f3291d-b26c-44d3-8d55-99b644b70388",
        "resourceId": "f3f3291d-b26c-44d3-8d55-99b644b70388",
        "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
        "instanceId": "f5065c75-ab45-4e5b-bb76-fb69667bf5d6",
        "properties": {
          "provisioningState": "Succeeded",
          "frontendIPConfigurations": [
            {
              "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/frontendIPConfigurations/9f37a479-7d60-489a-aab6-d7eb2200306f"
            },
            {
              "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/frontendIPConfigurations/ab5ccbe7-2ce9-4cdf-a0da-e4e5d81479d8"
            }
          ]
        }
      }
    ]
  }
}

```

```

    ],
    "protocol": "All",
    "backendAddressPool": {
      "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/backendAddressPools/db1fa644-bd00-4c05-b11b-f5f07bfed86b"
    }
  }
]
}
],
"nextLink": ""
}

```

The JSON schema for the **loadBalancers GET ALL** method is located in section 6.5.3.

3.1.5.5.1.3.3 Processing Details

Retrieves all **loadBalancers** resources.

3.1.5.5.1.4 DELETE

This method deletes a **loadBalancers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{resourceID}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.1.4.1 Request Body

None.

3.1.5.5.1.4.2 Response Body

None.

3.1.5.5.1.4.3 Processing Details

Deletes a **loadBalancers** resource.

3.1.5.5.2 backendAddressPools

A **backendAddressPools** resource represents the list of IPs that can receive network traffic that comes via the front-end IPs. The Load Balancing MUX handles incoming traffic via the front-end IPs and distributes them to backend IPs based on load balancing configuration.

The URI for the resource is as follows.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/backendAddressPools/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.2.1.1	Create a new backendAddressPools resource or update an existing backendAddressPools resource.
GET	3.1.5.5.2.1.2	Get one backendAddressPools resource.
GET (All)	3.1.5.5.2.1.3	List all backendAddressPools resources in the Network Controller.
DELETE	3.1.5.5.2.1.4	Delete a backendAddressPools resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
backendIPConfigurations	Read-only	Indicates an array of references to ipConfiguration Resources. There is no restriction on having the same IP configurations in multiple backendAddressPools. An IpConfiguration can become a part of a backendAddressPool by setting a reference to a backendAddressPool resource in the loadBalancerBackendAddressPools array field on the IpConfiguration resource.
loadBalancingRules	Read-only	Indicates an array of references to the set of loadBalancingRules resources that use this backend address pool.
outboundNatRules	Read-only	Indicates an array of references to the set of outboundNatRules resources that use this backend address pool.

3.1.5.5.2.1 HTTP Methods

3.1.5.5.2.1.1 PUT

This method creates a new **backendAddressPools** resource or updates an existing **backendAddressPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/backendAddressPool/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.2.1.1.1 Request Body

The format for the request body for the **backendAddressPools PUT** method is as follows.

```
{
  "resourceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
  "properties": {
    "backendIPConfigurations": [],
    "outboundNatRules": [
      {
        "resourceRef": "/loadBalancers/6fb51980-ae9f-40c0-a0a0-
bccdea506b0f/outboundNatRules/b056293e-8bf0-4de4-b51c-497422b81433"
      }
    ],
    "loadBalancingRules": [
      {
        "resourceRef": "/loadBalancers/6fb51980-ae9f-40c0-a0a0-
bccdea506b0f/loadBalancingRules/36c02dfc-9462-4484-b539-cb2dfd317f86"
      }
    ]
  }
}
```

The JSON schema for the **backendAddressPools PUT** method is located in section 6.5.4.1.

3.1.5.5.2.1.1.2 Response Body

The format for the **backendAddressPools PUT** response body is the same as the format for the **backendAddressPools GET** response body (section 3.1.5.5.2.1.2.2). The JSON schema is located in section 6.5.4.2.

3.1.5.5.2.1.1.3 Processing Details

Create a new backendAddressPools resource or update an existing backendAddressPools resource.

3.1.5.5.2.1.2 GET

This method retrieves a **backendAddressPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/backendAddressPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.5.2.1.2.1 Request Body

None.

3.1.5.5.2.1.2.2 Response Body

The format for the response body for the **backendAddressPools GET** method is as follows.

```
{
  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71",
  "resourceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
  "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
  "instanceId": "f980604c-258c-4d60-8be4-559edd085384",
  "properties": {
    "provisioningState": "Succeeded",
    "backendIPConfigurations": [
      {
        "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
      },
      {
        "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
      }
    ],
    "outboundNatRules": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
      }
    ],
    "loadBalancingRules": []
  }
}
```

The JSON schema for the **backendAddressPools GET** method is located in section 6.5.4.2.

3.1.5.5.2.1.2.3 Processing Details

Retrieves a **backendAddressPools** resource.

3.1.5.5.2.1.3 GET (All)

This method retrieves all **backendAddressPools** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/backendAddressPools
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.2.1.3.1 Request Body

None.

3.1.5.5.2.1.3.2 Response Body

The format for the response body for the **backendAddressPools GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71",
      "resourceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "f980604c-258c-4d60-8be4-559edd085384",
      "properties": {
        "provisioningState": "Succeeded",
        "backendIPConfigurations": [
          {
            "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
          },
          {
            "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
          }
        ],
        "outboundNatRules": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
          }
        ],
        "loadBalancingRules": []
      }
    }
  ]
}
```

```
    }
  },
  "nextLink": ""
}
```

The JSON schema for the **backendAddressPools GET ALL** method is located in section 6.5.4.3.

3.1.5.5.2.1.3.3 Processing Details

Retrieves all backendAddressPools resources.

3.1.5.5.2.1.4 DELETE

This method deletes a **backendAddressPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/backendAddressPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.2.1.4.1 Request Body

None.

3.1.5.5.2.1.4.2 Response Body

None.

3.1.5.5.2.1.4.3 Processing Details

Deletes a **backendAddressPools** resource.

3.1.5.5.3 frontendIpConfigurations

The **frontendIpConfigurations** resource represents the frontend IP addresses of the load balancer. Either a **publicIpAddress** or a **privateIpAddress** and subnet MUST be configured.

It is invoked through the following URI.

https://<url>/networking/v1/loadBalancers/{parentResourceId}/frontendIpConfigurations/{resourceId}

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.3.1.1	Create a new frontendIpConfigurations resource or update an existing frontendIpConfigurations resource.
GET	3.1.5.5.3.1.2	Get one frontendIpConfigurations resource.
GET (All)	3.1.5.5.3.1.3	List all frontendIpConfigurations resources in the Network Controller.
DELETE	3.1.5.5.3.1.4	Deletes a frontendIpConfigurations resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
inboundNatRules	Read-only	Indicates a reference to the inboundNatRules resource used by the frontEndIpConfiguration.
loadBalancingRules	Read-only	Indicates a reference to the loadBalancingRules resource used by the frontEndIpConfiguration.
outboundNatRules	Read-only	Indicates a reference to the outboundNatRules resource used by the frontEndIpConfiguration.
publicIPAddress	Optional	Indicates a reference to the publicIPAddresses resource used by the frontEndIpConfiguration . If a publicIPAddress is specified, then a privateIPAddress is not specified. When a publicIPAddress is specified, the privateIpAllocationMethod is set to Dynamic.
privateIPAddress	Optional	This is only specified if a specific private IP address identifies an IP address which is statically configured for use with this frontEndIpConfiguration . The privateIPAllocationMethod MUST be allocated static for this case. If a privateIPAddress is specified, a reference to a publicIPaddress cannot be specified at the same time. The private IP address can be either from the infrastructure address space or from a tenant address space, in either case they MUST be accompanied with a valid subnet specified in the subnet element reference.
privateIPAllocationMethod	Optional	Static or Dynamic
subnet	Optional	Indicates a reference to the subnet resource used by the frontEndIpConfiguration resource. MUST be specified if a privateIPAddress is specified.

Element name	Type	Description
		A subnet reference to a logical network subnet is needed if the privateIPAddress is from the infrastructure address space. A subnet reference to a virtual network subnet is needed if the privateIPAddress is from a tenant address space. The subnet MUST include the IP address specified in privateIPAddress .

Either a **privateIPAddress** or a reference to a **PublicIPAddresses** MUST be specified – both these represent VIPs. A **privateIPAddress** can specify a VIP in either the infrastructure space or in the tenant space (depending on the subnet reference). A public IP reference can only specify a VIP in the infrastructure address space. VIPs in the infrastructure space MUST be contained within a VIP pool configured on the **loadbalancerManager** object.

3.1.5.5.3.1 HTTP Methods

3.1.5.5.3.1.1 PUT

This method creates a new **frontendIpConfigurations** resource or updates an existing **frontendIpConfigurations** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/frontendIpConfigurations/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.3.1.1.1 Request Body

The format for the request body for the **frontendIpConfigurations PUT** method is as follows.

```
{
  "properties": {
    "privateIPAllocationMethod": "Dynamic",
    "publicIPAddress": {
      "resourceRef": "/publicIPAddresses/c13bf350-858e-4aa5-9b76-97e3f471d5d8"
    },
    "loadBalancingRules": [
      {
```

```

        "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-c4388c023e32
        /loadBalancingRules/de525f1a-8714-4b73-af18-5461703529d2"
    },
    "inboundNatRules": [],
    "outboundNatRules": [
        {
            "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-c4388c023e32
            /outboundNatRules/18894e88-0238-4e7b-9680-9af237a18bf0"
        }
    ]
}
}
}

```

The JSON schema for the **frontendIpConfigurations PUT** method is located in section 6.5.5.1.

3.1.5.5.3.1.1.2 Response Body

The format for the **frontendIpConfigurations PUT** response body is the same as the format for the **frontendIpConfigurations GET** response body (section 3.1.5.5.3.1.2.2). The JSON schema is located in section 6.5.5.2.

3.1.5.5.3.1.1.3 Processing Details

Create a new frontendIpConfigurations resource or update an existing frontendIpConfigurations resource.

3.1.5.5.3.1.2 GET

This method retrieves a **frontendIpConfiguration** resource.

It is invoked through the following URI.

```

https://<url>/networking/v1/loadBalancers/{parentResourceId}/frontendIpConfigurations/{resourceId}

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.5.3.1.2.1 Request Body

None.

3.1.5.5.3.1.2.2 Response Body

The format for the response body for the **frontendIpConfigurations GET** method is as follows.

```

{
  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018",
  "resourceId": "94c568d8-d839-431a-aed4-a5c178356018",
  "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
  "instanceId": "d896da12-37f2-4e36-b229-7278a672a0ac",
  "properties": {
    "provisioningState": "Succeeded",
    "privateIPAddress": "22.0.0.23",
    "privateIPAllocationMethod": "Static",
    "subnet": {
      "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
    },
    "loadBalancingRules": [],
    "inboundNatRules": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000"
      }
    ],
    "outboundNatRules": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
      }
    ]
  }
}

```

The JSON schema for the **frontendIpConfigurations GET** method is located in section 6.5.5.2.

3.1.5.5.3.1.2.3 Processing Details

Retrieves a **frontendIpConfigurations** resource.

3.1.5.5.3.1.3 GET (All)

This method retrieves all **frontendIpConfigurations** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/frontendIpConfigurations
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.3.1.3.1 Request Body

None.

3.1.5.5.3.1.3.2 Response Body

The format for the response body for the **frontendIpConfigurations GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57",
      "resourceId": "5187779d-c61c-44d2-87be-fa69ac2d9d57",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "3902a530-9639-4759-9bbf-9bab6675593a",
      "properties": {
        "provisioningState": "Succeeded",
        "privateIPAddress": "22.0.0.22",
        "privateIPAllocationMethod": "Static",
        "subnet": {
          "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
        },
        "loadBalancingRules": [],
        "inboundNatRules": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9"
          }
        ],
        "outboundNatRules": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
          }
        ]
      }
    },
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018",
      "resourceId": "94c568d8-d839-431a-aed4-a5c178356018",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "d896da12-37f2-4e36-b229-7278a672a0ac",
      "properties": {
        "provisioningState": "Succeeded",
        "privateIPAddress": "22.0.0.23",
        "privateIPAllocationMethod": "Static",
        "subnet": {
          "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389"
        },
        "loadBalancingRules": [],
        "inboundNatRules": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000"
          }
        ],
        "outboundNatRules": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160"
          }
        ]
      }
    }
  ],
  "nextLink": ""
}
```

}

The JSON schema for the **frontendIpConfigurations GET ALL** method is located in section 6.5.5.3.

3.1.5.5.3.1.3.3 Processing Details

Retrieves all frontendIpConfigurations resources.

3.1.5.5.3.1.4 DELETE

This method deletes a **frontendIpConfigurations** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/frontendIpConfigurations/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.3.1.4.1 Request Body

None.

3.1.5.5.3.1.4.2 Response Body

None.

3.1.5.5.3.1.4.3 Processing Details

Deletes a frontendIpConfigurations resource.

3.1.5.5.4 inboundNatRules

The **inboundNatRules** resource is used to configure the load balancer to apply Network Address Translation of inbound traffic.

It is invoked through the following URI.

https://<url>/networking/v1/loadBalancers/{parentResourceId}/inboundNatRules/{resourceId}

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.4.1.1	Create a new inboundNatRules resource or update an existing inboundNatRules resource.
GET	3.1.5.5.4.1.2	Get one inboundNatRules resource
GET (All)	3.1.5.5.4.1.3	List all inboundNatRules resources in the Network Controller
DELETE	3.1.5.5.4.1.4	Deletes a inboundNatRules resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
backendIPConfiguration	Optional	Indicates a reference to backendAddressPool resource. Traffic sent to frontendPort of each of the frontendIPConfigurations is forwarded to the backend IP.
backendPort	Optional	Indicates a port used for internal connections on the endpoint. The localPort attribute maps the external port on the endpoint to an internal port on a role. This is useful in scenarios where a role has to communicate to an internal component on a port that different from the one that is exposed externally. Possible values range between 1 and 65535, inclusive. This parameter is required if the protocol is TCP or UDP.
frontendIPConfigurations	Required	Indicates an array of references to frontendIPConfigurations resources.
frontendPort	Optional	The port for the external endpoint. Any port number can be specified, but the port numbers specified for each role in the service MUST be unique. Possible values range between 1 and 65535, inclusive. This parameter MUST be specified if protocol is TCP or UDP.
protocol	Required	Indicates the inbound transport protocol for the external endpoint. Valid values include UDP TCP GRE ESP ALL. ALL indicates a wildcard.

3.1.5.5.4.1 HTTP Methods

3.1.5.5.4.1.1 PUT

This method creates a new **inboundNatRules** resource or updates an existing **inboundNatRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/inboundNatRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.4.1.1.1 Request Body

The format for the request body for the **inboundNatRules PUT** method is as follows.

```
{
  "properties": {
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-
c4388c023e32/frontendIPConfigurations/046e56a4-9dca-422f-b3ad-42d4d1174259"
      }
    ],
    "protocol": "Tcp",
    "frontendPort": 36921,
    "backendPort": 56921,
    "backendAddressPool": {
      "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-
c4388c023e32/backendAddressPools/0a4e1f96-1a82-497e-8979-38b96bf9344a"
    }
  }
}
```

The JSON schema for the **inboundNatRules PUT** method is located in section 6.5.6.1.

3.1.5.5.4.1.1.2 Response Body

The format for the PUT **inboundNatRules** response body is the same as the format for the **GET inboundNatRules** response body (section 3.1.5.5.4.1.2.2). The JSON schema is located in section 6.5.6.2.

3.1.5.5.4.1.1.3 Processing Details

Create a new `inboundNatRules` resource or update an existing `inboundNatRules` resource.

3.1.5.5.4.1.2 GET

This method retrieves an `inboundNatRules` resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/inboundNatRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

3.1.5.5.4.1.2.1 Request Body

None.

3.1.5.5.4.1.2.2 Response Body

The format for the response body for the `inboundNatRules GET` method is as follows.

```
{
  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9",
  "resourceId": "fc44af15-be82-46c5-b75a-3e89ccd792a9",
  "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
  "instanceId": "a748c5db-e2fd-4335-8c89-280b78d2511c",
  "properties": {
    "provisioningState": "Succeeded",
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
      }
    ],
    "protocol": "Tcp",
    "frontendPort": 2003,
    "backendPort": 2003,
    "enableFloatingIP": false,
    "idleTimeoutInMinutes": 4,
    "backendIPConfiguration": {
      "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
    }
  }
}
```

The JSON schema for the `inboundNatRules GET` method is located in section 6.5.6.2.

3.1.5.5.4.1.2.3 Processing Details

Retrieves an inboundNatRules resource.

3.1.5.5.4.1.3 GET (All)

This method retrieves all **inboundNatRules** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/inboundNatRules
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.4.1.3.1 Request Body

None.

3.1.5.5.4.1.3.2 Response Body

The format for the response body for the **inboundNatRules GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/inboundNatRules/fc44af15-be82-46c5-b75a-3e89ccd792a9",
      "resourceId": "fc44af15-be82-46c5-b75a-3e89ccd792a9",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "a748c5db-e2fd-4335-8c89-280b78d2511c",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
          }
        ],
        "protocol": "Tcp",
        "frontendPort": 2003,
        "backendPort": 2003,
        "enableFloatingIP": false,
        "idleTimeoutInMinutes": 4,
        "backendIPConfiguration": {
          "resourceRef": "/networkInterfaces/e5ea0c14-ce85-4eb7-909a-993f0477f5ac/ipConfigurations/45af7ff3-555f-43b0-ae74-7fcce88c5197"
        }
      }
    }
  ],
}
```

```

    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/inboundNatRules/0e5ed8cf-60fb-40f4-b02a-90932d4de000",
      "resourceId": "0e5ed8cf-60fb-40f4-b02a-90932d4de000",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "e8c59538-e641-4796-968d-50c4e11225e7",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-
2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018"
          }
        ],
        "protocol": "Tcp",
        "frontendPort": 2003,
        "backendPort": 2003,
        "enableFloatingIP": false,
        "idleTimeoutInMinutes": 4,
        "backendIPConfiguration": {
          "resourceRef": "/networkInterfaces/97c69782-f173-4793-a408-
64074e601dd1/ipConfigurations/1b94ce74-b012-49a7-8e93-9315252c6ab2"
        }
      }
    }
  ],
  "nextLink": ""
}

```

The JSON schema for the **inboundNatRules GET ALL** method is located in section 6.5.6.3.

3.1.5.5.4.1.3.3 Processing Details

Retrieves all inboundNatRules resources.

3.1.5.5.4.1.4 DELETE

This method deletes an **inboundNatRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/inboundNatRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.4.1.4.1 Request Body

None.

3.1.5.5.4.1.4.2 Response Body

None.

3.1.5.5.4.1.4.3 Processing Details

Deletes a inboundNatRules resource.

3.1.5.5.5 loadBalancingRules

The **loadBalancingRules** resource is used to configure load balancing policies. The policies dictate the kind of traffic that is load-balanced, and port mapping between frontend IPs and backend Ips.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/loadBalancingRules/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.5.1.1	Create a new loadBalancingRules resource or update an existing loadBalancingRules resource.
GET	3.1.5.5.5.1.2	Get one loadBalancingRules resource.
GET (All)	3.1.5.5.5.1.3	List all loadBalancingRules resources in the Network Controller.
DELETE	3.1.5.5.5.1.4	Deletes a loadBalancingRules resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
backendAddressPool	Optional	Indicates an array of references to a backendAddressPool resource. Inbound traffic is randomly load balanced across IPs in the backend pool.
backendPort	Optional	Indicates the port used for internal connections on the endpoint. The localPort attribute maps the external port on the endpoint to an internal port on a role. This is useful in scenarios where a role has to communicate to an internal component on a port that different from the one that is exposed externally. If not specified, the value of localPort is the same as the port attribute. Set the value of localPort to "*" asterisk to automatically assign an

Element name	Type	Description
		unallocated port that is discoverable using the runtime API. Possible values range between 1 and 65535, inclusive. This parameter is required if the protocol is TCP or UDP.
frontendIPConfigurations	Required	Indicates an array of references to frontendIpAddress resources.
frontendPort	Optional	Indicates the port for the external endpoint. Possible values range between 1 and 65535, inclusive. This value MUST be unique for the loadbalancer resource. This parameter is required if the protocol is TCP or UDP.
idleTimeoutInMinutes	Optional	Indicates the timeout for the TCP idle connection in the inbound direction, i.e. a connection initiated by an internet client to a VIP. The value can be set between 4 and 30 minutes. The default value is 4 minutes.
protocol	Required	Indicates the inbound transport protocol for the external endpoint. Valid values include UDP TCP GRE ESP ALL.
probe	Optional	Indicates a reference to the probe resource used by this loadBalancingRule.
EnableFloatingIP	Optional	This specifies that a floating IP will be used on the available servers behind a load balancer. Floating IP (VIP) will be forwarded by the load balancer to the backend server. The back-end server will be configured with that VIP, a datacenter IP and weakhost forwarding. Floating IP configuration is required if you are using the SQL AlwaysOn Availability Group feature. This setting can't be changed after you create the endpoint.
LoadDistribution	Optional	This specifies the load balancing distribution type to be used by the load balancer. The loadBalancer uses a distribution algorithm which is a 5-tuple (source IP, source port, destination IP, destination port, protocol type) hash to map traffic to available servers. It provides stickiness only within a transport session, which is a feature that routes the requests for a specific session to the same physical machine that serviced the first request for that session. Packets in the same TCP or UDP session will be directed to the same datacenter IP instance behind the load balanced endpoint. When the client closes and re-opens the connection or starts a new session from the same source IP, the source port changes and causes the traffic to go to a different datacenter IP endpoint. The loadBalancer can be configured to use a 2-tuple (Source IP, Destination IP) or 3-tuple (Source IP, Destination IP, Protocol) to map traffic to the available servers. By using SourceIPProtocol, connections initiated from the same client computer goes to the same datacenter IP endpoint. Default – The load balancer is configured to use a 5-tuple hash to map traffic to available servers. SourceIP – The load balancer is configured to use a 2-tuple hash to map traffic to available servers. SourceIPProtocol – The load balancer is configured to use a 3-tuple hash to map traffic to available servers.

3.1.5.5.5.1 HTTP Methods

3.1.5.5.1.1 PUT

This method creates a new **loadBalancingRules** resource or updates an existing **loadBalancingRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/loadBalancingRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.1.1.1 Request Body

The format for the request body for the **loadBalancingRules PUT** method is as follows.

```
{
  "properties": {
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-c4388c023e32
          /frontendIPConfigurations/046e56a4-9dca-422f-b3ad-42d4d1174259"
      }
    ],
    "protocol": "Tcp",
    "frontendPort": 36920,
    "backendPort": 31267,
    "enableFloatingIP": false,
    "idleTimeoutInMinutes": 4,
    "backendAddressPool": {
      "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-c4388c023e32
        /backendAddressPools/0a4e1f96-1a82-497e-8979-38b96bf9344a"
    },
    "loadDistribution": "Default"
  }
}
```

The JSON schema for the **loadBalancingRules PUT** method is located in section 6.5.7.1.

3.1.5.5.1.1.2 Response Body

The format for the **loadBalancingRules PUT** response body is the same as the format for the **loadBalancingRules GET** response body (section 3.1.5.5.1.2.2). The JSON schema is located in section 6.5.7.2.

3.1.5.5.1.1.3 Processing Details

Create a new loadBalancingRules resource or update an existing loadBalancingRules resource.

3.1.5.5.1.2 GET

This method retrieves a **loadBalancingRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/loadBalancingRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.5.1.2.1 Request Body

None.

3.1.5.5.1.2.2 Response Body

The format for the response body for the **loadBalancingRules GET** method is as follows.

```
{
  "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/loadBalancingRules/6339de0b-5730-4057-b2ee-37e90d3e4470",
  "resourceId": "6339de0b-5730-4057-b2ee-37e90d3e4470",
  "etag": "W/\"87c5f43a-3d37-4955-b6ba-bc3037fcfefd\"",
  "instanceId": "58b176c8-f4d1-4a5f-bfe4-623dcfe3ba2a",
  "properties": {
    "provisioningState": "Succeeded",
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/frontendIPConfigurations/6bad6ea2-eca8-4143-8925-55aa497d3882"
      }
    ],
    "protocol": "Tcp",
    "frontendPort": 2003,
    "backendPort": 2003,
    "enableFloatingIP": false,
    "idleTimeoutInMinutes": 4,
    "backendAddressPool": {
```

```

    "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/backendAddressPools/9827f986-4606-4331-b63f-7cc39665e2c9"
  },
  "loadDistribution": "Default"
}
}
}

```

The JSON schema for the **loadBalancingRules GET** method is located in section 6.5.7.2.

3.1.5.5.5.1.2.3 Processing Details

Retrieves a **loadBalancingRules** resource.

3.1.5.5.5.1.3 GET (All)

This method retrieves all **loadBalancingRules** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/loadBalancingRules
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.5.1.3.1 Request Body

None.

3.1.5.5.5.1.3.2 Response Body

The format for the response body for the **loadBalancingRules GET ALL** method is as follows.

```

{
  "value": [
    {
      "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/loadBalancingRules/6339de0b-5730-4057-b2ee-37e90d3e4470",
      "resourceId": "6339de0b-5730-4057-b2ee-37e90d3e4470",
      "etag": "W/\"87c5f43a-3d37-4955-b6ba-bc3037fcfefed\"",
      "instanceId": "58b176c8-f4d1-4a5f-bfe4-623dcfe3ba2a",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/frontendIPConfigurations/6bad6ea2-eca8-4143-8925-55aa497d3882"
          }
        ],
        "protocol": "Tcp",

```



```

        "frontendPort": 2003,
        "backendPort": 2003,
        "enableFloatingIP": false,
        "idleTimeoutInMinutes": 4,
        "backendAddressPool": {
            "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-
e0fe1f42cce1/backendAddressPools/9827f986-4606-4331-b63f-7cc39665e2c9"
        },
        "loadDistribution": "Default"
    }
}
],
"nextLink": ""
}

```

The JSON schema for the **loadBalancingRules GET ALL** method is located in section 6.5.7.3.

3.1.5.5.5.1.3.3 Processing Details

Retrieves all loadBalancingRules resources.

3.1.5.5.5.1.4 DELETE

This method deletes a **loadBalancingRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/loadBalancingRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.5.1.4.1 Request Body

None.

3.1.5.5.5.1.4.2 Response Body

None.

3.1.5.5.5.1.4.3 Processing Details

Deletes a loadBalancingRules resource.

3.1.5.5.6 outboundNatRules

The **outboundNatRules** resource is used to configure the load balancer to apply Network Address Translation of outbound traffic.

The URI for the resource is as follows.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/outboundNatRules/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.6.1.1	Create a new outboundNatRules resource or update an existing outboundNatRules resource.
GET	3.1.5.5.6.1.2	Get one outboundNatRules resource
GET (All)	3.1.5.5.6.1.3	List all outboundNatRules resources in the Network Controller
DELETE	3.1.5.5.6.1.4	Delete an outboundNatRules resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
frontendIPConfigurations	Required	Indicates an array of frontendIpConfigurations resources. Indicates an array of references to frontendIpAddress resources.
backendAddressPool	Required	Indicates a reference to the backendAddressPool resource. This is the pool of IP addresses where outbound traffic originates.
protocol	Required	Protocol for outbound traffic. For transparent outbound NAT specify "All". Valid values include TCP UDP GRE ESP All

3.1.5.5.6.1 HTTP Methods

3.1.5.5.6.1.1 PUT

This method creates a new **outboundNatRules** resource or updates an existing **outboundNatRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/outboundNatRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.6.1.1.1 Request Body

The format for the request body for the **outboundNatRules PUT** method is as follows.

```
{
  "properties": {
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-
c4388c023e32/frontendIPConfigurations/046e56a4-9dca-422f-b3ad-42d4d1174259"
      }
    ],
    "protocol": "All",
    "backendAddressPool": {
      "resourceRef": "/loadBalancers/0df23cd2-633f-4322-a9e6-
c4388c023e32/backendAddressPools/0a4e1f96-1a82-497e-8979-38b96bf9344a"
    }
  }
}
```

The JSON schema for the **outboundNatRules PUT** method is located in section 6.5.8.1.

3.1.5.5.6.1.1.2 Response Body

The format for the **outboundNatRules PUT** response body is the same as the format for the **outboundNatRules GET** response body (section 3.1.5.5.6.1.2.2). The JSON schema is located in section 6.5.8.2.

3.1.5.5.6.1.1.3 Processing Details

Create a new **outboundNatRules** resource or update an existing **outboundNatRules** resource.

3.1.5.5.6.1.2 GET

This method retrieves an **outboundNatRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/outboundNatRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.5.6.1.2.1 Request Body

None.

3.1.5.5.6.1.2.2 Response Body

The format for the response body for the **outboundNatRules GET** method is as follows.

```
{
  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160",
  "resourceId": "49053c15-2d0f-45a2-8148-be8615282160",
  "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
  "instanceId": "c4000c95-7f90-4bb4-b68d-b2bc9c1dfc3e",
  "properties": {
    "provisioningState": "Succeeded",
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57"
      },
      {
        "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018"
      }
    ],
    "protocol": "All",
    "backendAddressPool": {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71"
    }
  }
}
```

The JSON schema for the **outboundNatRules GET** method is located in section 6.5.8.2.

3.1.5.5.6.1.2.3 Processing Details

Retrieves an **outboundNatRules** resource.

3.1.5.5.6.1.3 GET (All)

This method retrieves all **outboundNatRules** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/outboundNatRules
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.6.1.3.1 Request Body

None.

3.1.5.5.6.1.3.2 Response Body

The format for the response body for the **outboundNatRules GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/outboundNatRules/49053c15-2d0f-45a2-8148-be8615282160",
      "resourceId": "49053c15-2d0f-45a2-8148-be8615282160",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "c4000c95-7f90-4bb4-b68d-b2bc9c1dfc3e",
      "properties": {
        "provisioningState": "Succeeded",
        "frontendIPConfigurations": [
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/5187779d-c61c-44d2-87be-fa69ac2d9d57",
            "resourceId": "5187779d-c61c-44d2-87be-fa69ac2d9d57",
            "instanceId": "5187779d-c61c-44d2-87be-fa69ac2d9d57",
            "properties": {
              "provisioningState": "Succeeded",
              "ipAddress": "10.0.0.1",
              "subnetRef": "/subscriptions/00000000-0000-0000-0000-000000000000/resourceGroups/00000000-0000-0000-0000-000000000000/providers/Microsoft.Network/subnets/00000000-0000-0000-0000-000000000000"
            }
          },
          {
            "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/frontendIPConfigurations/94c568d8-d839-431a-aed4-a5c178356018",
            "resourceId": "94c568d8-d839-431a-aed4-a5c178356018",
            "instanceId": "94c568d8-d839-431a-aed4-a5c178356018",
            "properties": {
              "provisioningState": "Succeeded",
              "ipAddress": "10.0.0.2",
              "subnetRef": "/subscriptions/00000000-0000-0000-0000-000000000000/resourceGroups/00000000-0000-0000-0000-000000000000/providers/Microsoft.Network/subnets/00000000-0000-0000-0000-000000000000"
            }
          }
        ],
        "protocol": "All",
        "backendAddressPool": {
          "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/backendAddressPools/b32b5ef0-5332-49a8-b383-f91090135f71",
          "resourceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
          "instanceId": "b32b5ef0-5332-49a8-b383-f91090135f71",
          "properties": {
            "provisioningState": "Succeeded",
            "ipAddresses": [
              "10.0.0.1",
              "10.0.0.2"
            ]
          }
        }
      }
    }
  ],
  "nextLink": ""
}
```

The JSON schema for the **outboundNatRules GET ALL** method is located in section 6.5.8.3.

3.1.5.5.6.1.3.3 Processing Details

Retrieves all outboundNatRules resources.

3.1.5.5.6.1.4 DELETE

This method deletes an **outboundNatRules** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/outboundNatRules/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.6.1.4.1 Request Body

None.

3.1.5.5.6.1.4.2 Response Body

None.

3.1.5.5.6.1.4.3 Processing Details

Deletes a outboundNatRules resource.

3.1.5.5.7 probes

The **probes** resources are used to configure the mechanism of detection of connectivity issues with load balanced IPs.

The URI for the resource is as follows.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/probes/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.5.7.1.1	Create a new probes resource or update an existing probes resource.
GET	3.1.5.5.7.1.2	Get one probes resource
GET (All)	3.1.5.5.7.1.3	List all probes resources in the Network Controller
DELETE	3.1.5.5.7.1.4	Deletes a probes resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
intervalInSeconds	Optional	Indicates the interval, in seconds, for how frequently to probe the endpoint for health status. Typically, the interval SHOULD<2> be slightly less than half the allocated timeout period (in seconds), which allows two full probes before taking the instance out of rotation.
loadBalancingRules	Read-only	Indicates an array of references to loadBalancingRule resources that use this probe.
numberOfProbes	Optional	Indicates the timeout period, in seconds, applied to the probe where no response will result in stopping further traffic from being delivered to the endpoint. This value allows endpoints to be taken out of rotation faster or slower than the typical times (which are the defaults). The default value is 31, the minimum value is 11.
protocol	Required	Indicates the protocol of the endpoint. Valid values are HTTP or TCP. If TCP is specified, a received ACK is required for the probe to be successful. If HTTP is specified, a 200 (OK) response from the specified URI is required for the probe to be successful.
port	Required	Indicates the port for communicating the probe. Possible values range from 1 to 65535, inclusive.
requestPath	Required	Indicates the URI used for requesting health status from the VM. path is required if protocol is set to HTTP. Otherwise, it is not allowed. There is no default value.

3.1.5.5.7.1 HTTP Methods

3.1.5.5.7.1.1 PUT

This method creates a new **probes** resource or updates an existing **probes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/probes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.5.7.1.1.1 Request Body

The format for the request body for the **probes PUT** method is as follows.

```
{
  "resourceId": "{uniqueString}",
  "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "tags": { "key": "value" },
  "resourceMetadata":
  {
    "client": "WAP Network Resource Provider",
    "tenantId": "{subscriptionid}",
    "groupId": "{groupname}",
    "name": "{name}",
    "originalHref": "https://..."
  },
  "properties": {
    <insertProperties>
  }
}
```

The JSON schema for the **probes PUT** method is located in section 6.5.9.1.

3.1.5.5.7.1.1.2 Response Body

The format for the **probes PUT** response body is the same as the format for the **probes GET** response body (section 3.1.5.5.7.1.2.2). The JSON schema is located in section 6.5.9.2.

3.1.5.5.7.1.1.3 Processing Details

Create a new probes resource or update an existing probes resource.

3.1.5.5.7.1.2 GET

This method retrieves a **probes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/probes/{resourceId}
```


The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.5.7.1.2.1 Request Body

None.

3.1.5.5.7.1.2.2 Response Body

The format for the response body for the **probes GET** method is as follows.

```
{
  "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/probes/9f940e29-1d25-44fc-88d3-c81151a0344e",
  "resourceId": "9f940e29-1d25-44fc-88d3-c81151a0344e",
  "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
  "instanceId": "0da65588-247b-475b-bd1a-7ead0bala182",
  "properties": {
    "provisioningState": "Succeeded",
    "protocol": "Tcp",
    "port": 55555,
    "intervalInSeconds": 30,
    "numberOfProbes": 1,
    "loadBalancingRules": [
      {
        "resourceRef": "/loadBalancers/ee396509-27d3-44f9-849c-f6ed28d59f66/loadBalancingRules/2ea746ea-968f-41f2-8bfa-71d2391ef752"
      }
    ]
  }
}
```

The JSON schema for the **probes GET** method is located in section 6.5.9.2.

3.1.5.5.7.1.2.3 Processing Details

Retrieves a **probes** resource.

3.1.5.5.7.1.3 GET (All)

This method retrieves all **probes** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/probes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.5.7.1.3.1 Request Body

None.

3.1.5.5.7.1.3.2 Response Body

The format for the response body for the **probes GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/loadBalancers/0cac5f8a-9d5c-455a-a971-2682d597e098/probes/9f940e29-1d25-44fc-88d3-c81151a0344e",
      "resourceId": "9f940e29-1d25-44fc-88d3-c81151a0344e",
      "etag": "W/\"fb318cf6-9102-4e34-a684-5e25aee8d3f4\"",
      "instanceId": "0da65588-247b-475b-bd1a-7ead0bala182",
      "properties": {
        "provisioningState": "Succeeded",
        "protocol": "Tcp",
        "port": 55555,
        "intervalInSeconds": 30,
        "numberOfProbes": 1,
        "loadBalancingRules": []
      }
    }
  ],
  "nextLink": ""
}
```

The JSON schema for the **probes GET ALL** method is located in section 6.5.9.3.

3.1.5.5.7.1.3.3 Processing Details

Retrieves all probes resources.

3.1.5.5.7.1.4 DELETE

This method deletes a **probes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancers/{parentResourceId}/probes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.5.7.1.4.1 Request Body

None.

3.1.5.5.7.1.4.2 Response Body

None.

3.1.5.5.7.1.4.3 Processing Details

Deletes a probes resource.

3.1.5.6 loadBalancerManager

The **loadBalancerManager** resource is a singleton resource that configures the load balancing service of the Network Controller.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerManager/config
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.6.1.1	Create a new loadBalancerManager resource or update an existing loadBalancerManager resource.
GET	3.1.5.6.1.2	Get the loadBalancerManager resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
loadBalancerManagerIPAddress	Required	The IP address of the load balancer service. This is part of

Element name	Type	Description
		one of the frontendIP Pools as specified in the frontendIPPool element in this resource.
outboundNatIPExemptions	Required	An array of v4 or v6 subnets masks with prefixes that will not have the source IP and Port changed by being NAT-ed. This is typically used for datacenter services that will communicate with other services within the same datacenter or cluster. Array of strings in the following format: 0.0.0.0/0. Note There is no validation that these IP addresses are known by the network controller.
vipIpPools	Required	An array of references to ipPool resource that will be used for the frontend IP Addresses.

A **loadBalancerManager** is a singleton resource, it cannot be deleted once it is created. However, it can be updated.

The **loadBalancerManager** IP address MUST be part of one of the vipPools configured on the **loadBalancerManager** resource.

In any update removal of an **IPPool** reference from **vipIpPools** MUST only be attempted when no loadbalancers reference IP addresses from that pool in their **frontendIpConfiguration** and no PublicIPs are allocated from that IPPool. Removal of an in use IPPool is disallowed and will place the **loadBalancerManager** resource in a failed provisioning state.

Similarly, if an IPPool is added for use by the **loadBalancerManager**, it MUST have no IPAddress usage prior to being added to the loadBalancerManager.

3.1.5.6.1 HTTP Methods

3.1.5.6.1.1 PUT

This method creates a new **loadBalancerManager** resource or updates the existing **loadBalancerManager** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerManager/config
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.6.1.1.1 Request Body

The format for the request body for the **loadBalancerManager PUT** method is as follows.

```
{
  "resourceRef": "/loadBalancerManager/",
  "resourceId": "config",
  "instanceId": "00000000-0000-0000-0000-000000000000",
  "properties": {
    "provisioningState": "Succeeded",
    "loadBalancerManagerIPAddress": "10.0.21.21",
    "outboundNatIPExemptions": [],
    "vipIpPools": [
      {
        "resourceRef": "/logicalnetworks/4b14f3a1-ed8d-4647-b370-
2ae3ff227b9a/subnets/6d290ba5-f642-49bc-9cab-1478d76a8565/ipPools/843ef1a8-2b23-4496-8be0-
4317fecf5870"
      }
    ]
  }
}
```

The JSON schema for the **loadBalancerManager PUT** method is located in section 6.6.1.

3.1.5.6.1.1.2 Response Body

The format for the **loadBalancerManager PUT** response body is the same as the format for the **loadBalancerManager GET** response body (section 3.1.5.6.1.2.2). The JSON schema is located in section 6.6.2.

3.1.5.6.1.1.3 Processing Details

Updates the existing **loadBalancerManager** resource.

3.1.5.6.1.2 GET

This method retrieves a **loadBalancerManager** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerManager/config
```

There are no query parameters.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.6.1.2.1 Request Body

None.

3.1.5.6.1.2.2 Response Body

The format for the response body for the **loadBalancerManager GET** method is as follows.

```
{
  "resourceRef": "/loadBalancerManager/config",
  "resourceId": "config",
  "etag": "W/\"ea4ce83a-3b5c-4b92-90b4-f1a69aa5935f\"",
  "instanceId": "6a42e935-92bb-4081-ala7-bac1d772671f",
  "properties": {
    "provisioningState": "Succeeded",
    "loadBalancerManagerIPAddress": "21.0.0.21",
    "outboundNatIPExemptions": [ ],
    "vipIpPools": [
      {
        "resourceRef": "/logicalnetworks/ccb732ec-a3b5-4755-99ff-fddb91d50884/subnets/262b479f-0952-49b9-ad20-3d6732729389/ipPools/968917ad-8122-447d-90f7-bee2f95828c8"
      },
      {
        "resourceRef": "/logicalnetworks/9c1b2b61-dec2-49e3-b573-c2ecff57893d/subnets/a4f7c90b-6056-4dff-97fb-f46211ecdc10/ipPools/6b7c0255-c68d-4b2f-9870-9757255b55de"
      }
    ]
  }
}
```

The JSON schema for the **loadBalancerManager GET** method is located in section 6.6.2.

3.1.5.6.1.2.3 Processing Details

Retrieves one loadBalancerManager resource.

3.1.5.7 loadBalancerMux

The **loadBalancerMux** resource represents a MUX VM deployed in the Network Controller's stamp.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerMux/{resourceId}
```

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.6.1.1	Create a new loadBalancerMux resource or update an existing loadBalancerMux resource.
GET	3.1.5.7.1.2	Get one loadBalancerMux resource.
GET (All)	3.1.5.7.1.3	List all loadBalancerMux resources in the Network Controller.

HTTP method	Section	Description
DELETE	3.1.5.7.1.4	Delete a loadBalancerMux resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
connections[]	Optional	Indicates an array of connections that specifies the information needed to connect to the specific device for the purposes of managing and controlling the device.
connections.credential	Optional	Indicates a reference to a credential resource that can be used to connect to the device for management purposes.
connections.credentialType	Optional	Indicates the type of credential, e.g. X509Certificate or UsernamePassword.
connections.managementAddresses	Optional	Indicates the management address used to connect to the server. This is in the form of an IPv4 IP address, an IPv6 IP address, a DNS name or a flat (NetBIOS) name.
routerConfiguration	Required	Provides the BGP router configuration to the MUX to ensure it peers with the datacenter routing infrastructure and properly advertises routes.
routerConfiguration.localASN	Required	Is the BGP autonomous system number of the MUX
routerConfiguration.peerRouterConfigurations	Required	The BGP settings the MUX uses to establish and maintain BGP peering with one or more peers.
routerConfiguration.peerRouterConfigurations.routerName	Required	The friendly name of the peer router.
routerConfiguration.peerRouterConfigurations.peerAsn	Required	The BGP autonomous system number of the peer.
routerConfiguration.peerRouterConfigurations.routerIpAddress	Optional	The IPv4 address of the local interface on the Mux from which peering to BGP will be established. If this is not specified, peering is attempted from the management interface on the mux. If a localIpAddress is specified on a router configuration, the same localIpAddress MUST be specified for every other router configuration in a given Mux resource.
virtualServer	Required	Indicates a reference to the

Element name	Type	Description
		virtualServer resource that the loadbalancer mux runs on.
configurationState	Optional Read-only	See configurationState specification in section 2.2.4. Additional details are in the section for the GET operation section 3.1.5.7.1.2.
networkInterface	Read/Write Optional	Indicates the external and internal interfaces on which the LoadBalancerMux operates.
networkInterfaces.externalNetworkInterface	Read/Write	A resource reference to a network interface.<3>
networkInterfaces.internalNetworkInterface	Read/Write	A resource reference to a network interface.<4>

3.1.5.7.1 HTTP Methods

3.1.5.7.1.1 PUT

This method creates a new **loadBalancerMux** resource or updates an existing **loadBalancerMux** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerMux/{resourceId}
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.7.1.1.1 Request Body

The format for the request body for the **loadBalancerMux PUT** method is as follows.

```
{
  "resourceRef": "/loadBalancerMuxes/",

```



```

"resourceId": "Mux-0",
"instanceId": "00000000-0000-0000-0000-000000000000",
"properties": {
  "provisioningState": "Succeeded",
  "routerConfiguration": {
    "localASN": 2,
    "peerRouterConfigurations": [
      {
        "routerName": "BGPGateway-0",
        "routerIPAddress": "192.169.0.1",
        "peerASN": 1,
        "id": "00000000-0000-0000-0000-000000000000"
      }
    ]
  },
  "virtualServer": {
    "resourceRef": "/virtualServers/b25c83dd-edb9-407d-b54e-27399db3dc70"
  },
  "connections": [
    {
      "managementAddresses": [
        "195.171.120.21",
        "hmv-test22"
      ],
      "credential": {
        "resourceRef": "/credentials/hmv-test22-credentials"
      },
      "credentialType": "usernamePassword",
      "protocol": "tcp",
      "port": "2003"
    }
  ]
}
}
}

```

The JSON schema for the **loadBalancerMux PUT** method is located in section 6.7.1.

3.1.5.7.1.1.2 Response Body

The format for the **loadBalancerMux PUT** response body is the same as the format for the **loadBalancerMux GET** response body (section 3.1.5.7.1.2.2). The JSON schema is located in section 6.7.2.

3.1.5.7.1.1.3 Processing Details

Create a new **loadBalancerMux** resource or update an existing **loadBalancerMux** resource.

3.1.5.7.1.2 GET

This method retrieves a **loadBalancerMux** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerMux/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.7.1.2.1 Request Body

None.

3.1.5.7.1.2.2 Response Body

The format for the response body for the **loadBalancerMux GET** method is as follows.

```
{
  "resourceRef": "/loadBalancerMuxes/Mux-0",
  "resourceId": "Mux-0",
  "etag": "W/\"fac641b5-304d-4578-878f-cb9fe670bbb5\"",
  "instanceId": "68070a20-8434-4885-ae8c-eda27618d4ce",
  "properties": {
    "provisioningState": "Succeeded",
    "routerConfiguration": {
      "localASN": 2,
      "peerRouterConfigurations": [
        {
          "routerName": "BGPGateway-0",
          "routerIPAddress": "195.171.120.1",
          "peerASN": 1,
          "id": "860edle7-b165-4397-a2bf-d78578feb1c9"
        }
      ]
    },
    "virtualServer": {
      "resourceRef": "/virtualServers/8e361faf-e957-4e26-9728-3ab6454543ab"
    },
    "connections": [
      {
        "managementAddresses": [
          "195.171.120.21",
          "hmv-test22"
        ],
        "credential": {
          "resourceRef": "/credentials/hmv-test22-credentials"
        },
        "credentialType": "usernamePassword",
        "protocol": "tcp",
        "port": "2003"
      }
    ],
    "configurationState": {
      "status": "Success",
      "detailedInfo": [
        {
          "source": "SoftwareLoadBalancerManager",
          "message": "Loadbalancer Mux is Healthy.",
          "code": "Success"
        }
      ]
    },
    "lastUpdatedTime": "2016-06-09T17:21:46.3280587-07:00"
  }
}
```

The JSON schema for the **loadBalancerMux GET** method is located in section 6.7.2.

3.1.5.7.1.2.3 Processing Details

Retrieves a **loadBalancerMux** resource.

The server returns a configuration state only if it has already attempted to configure settings according to the REST resource properties that were created or updated by using the **PUT** method. **configurationState.lastUpdatedTime** is set to a value that is implementation-specific.

The server returns a configuration state property **configurationState.status** set to "Success" if there were no errors. The server returns a configuration state property **configurationState.status** set to "Failure" if there were errors during the configuration of settings. **configurationState.detailedInfo** contains an array of objects per the specification in section 2.2.4. Acceptable values in the response are as follows.

configurationState.Status	Code values in configurationState.detailInfo	Description
Success	Success	LoadbalancerMux is healthy.
InProgress	InProgress	Loadbalancer Mux is getting ready to receive Goal States.
Failure	Unknown	Loadbalancer Mux is UnHealthy.
Failure	VirtualServerUnreachable	Loadbalancer Mux is not connected to SLBM.
Failure	VirtualServerUnreachable	Host is not connected.
Failure	CertificateNotTrusted	Loadbalancer Mux is not connected to SLBM due to certificate errors.
Failure	CertificateNotAuthorized	Loadbalancer Mux is not connected to SLBM due to certificate errors.
Failure	RoutePublicationFailure	Loadbalancer Mux is not connected to a BGP router.

The following is an example.

```

"configurationState": {
  "status": "Success",
  "detailedInfo": [
    {
      "source": "SoftwareLoadBalancerManager",
      "message": "Loadbalancer Mux is Healthy.",
      "code": "Success"
    }
  ],
  "lastUpdatedTime": "2017-01-05T16:34:45.2662488-08:00"
}

"configurationState": {
  "status": "Failure",
  "detailedInfo": [
    {
      "source": "SoftwareLoadBalancerManager",
      "message": "Loadbalancer Mux is UnHealthy.",
      "code": "Unknown"
    }
  ],
  "lastUpdatedTime": "2017-01-05T13:22:44.8066949-08:00"
}

```

3.1.5.7.1.3 GET (All)

This method retrieves all **loadBalancerMux** resources.

It is invoked through the following URI.

```
https://<url>/networkng/v1/loadBalancerMux
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.7.1.3.1 Request Body

None.

3.1.5.7.1.3.2 Response Body

The format for the response body for the **loadBalancerMux GET ALL** method is an array of resources that is similar to what **loadBalancerMux GET** returns (section 3.1.5.7.1.2.2).

```
{
  "value": [
    {
      "resourceRef": "/loadBalancerMuxes/Mux-0",
      "resourceId": "Mux-0",
      "etag": "W/\"fac641b5-304d-4578-878f-cb9fe670bbb5\"",
      "instanceId": "68070a20-8434-4885-ae8c-eda27618d4ce",
      "properties": {
        "provisioningState": "Succeeded",
        "routerConfiguration": {
          "localASN": 2,
          "peerRouterConfigurations": [
            {
              "routerName": "BGPGateway-0",
              "routerIPAddress": "195.171.120.1",
              "peerASN": 1,
              "id": "860ed1e7-b165-4397-a2bf-d78578feb1c9"
            }
          ]
        }
      },
      "virtualServer": {
        "resourceRef": "/virtualServers/8e361faf-e957-4e26-9728-3ab6454543ab"
      },
      "connections": [
        {
          "managementAddresses": [
            "195.171.120.21",
            "hnv-test22"
          ],
          "credential": {
            "resourceRef": "/credentials/hnv-test22-credentials"
          }
        }
      ]
    }
  ]
}
```

```

    },
    "credentialType": "usernamePassword",
    "protocol": "tcp",
    "port": "2003"
  }
],
"configurationState": {
  "status": "Success",
  "detailedInfo": [
    {
      "source": "SoftwareLoadBalancerManager",
      "message": "Loadbalancer Mux is Healthy.",
      "code": "Success"
    }
  ]
},
"lastUpdatedTime": "2016-06-09T17:21:46.3280587-07:00"
}
}
],
"nextLink": ""
}

```

The JSON schema for the **loadBalancerMux GET** method is located in section 6.7.3.

3.1.5.7.1.3.3 Processing Details

Retrieves all **loadBalancerMux** resources.

3.1.5.7.1.4 DELETE

This method deletes a **loadBalancerMux** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/loadBalancerMux/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.7.1.4.1 Request Body

None.

3.1.5.7.1.4.2 Response Body

None.

3.1.5.7.1.4.3 Processing Details

Deletes a **loadBalancerMux** resource.

3.1.5.8 logicalNetworks

The **logicalNetworks** resource represents a logical partition of physical network that is dedicated for a specific purpose. A logical network comprises of a collection of logical subnets.

The URI for the resource is as follows.

```
https://<url>/networking/v1/logicalNetworks/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.8.1.1	Create a new logicalNetworks resource or update an existing logicalNetworks resource.
GET	3.1.5.8.1.2	Get one logicalNetworks resource.
GET (All)	3.1.5.8.1.3	List all logicalNetworks resources in the Network Controller.
DELETE	3.1.5.8.1.4	Deletes a logicalNetworks resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
subnets	Optional	Indicates the subnets that are contained in the logical network. See logicalSubnets resource, section 3.1.5.8.2, for full details on this element.
networkVirtualizationEnabled	Optional	Indicates if the network is enabled to be the Provider Address network for one or more virtual networks. Valid values are True False. The default is false.
virtualNetworks	Read-only	Indicates an array of virtualNetwork resources that are using the network.

3.1.5.8.1 HTTP Methods

3.1.5.8.1.1 PUT

This method creates a new **logicalNetworks** resource or updates an existing **logicalNetworks** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.8.1.1.1 Request Body

The format for the request body for the **logicalNetworks PUT** method is as follows.

```
{
  "etag": "W/\"88023c76-85bf-4f3a-82a0-f3385025be23\"",
  "properties": {
    "subnets": [
      {
        "resourceId": "lnsubnet1",
        "etag": "W/\"88023c76-85bf-4f3a-82a0-f3385025be23\"",
        "instanceId": "d99fad69-d311-4a08-bff2-255265dff8aa",
        "properties": {
          "addressPrefix": "192.168.1.0/24",
          "ipConfigurations": [ ],
          "networkInterfaces": [ ],
          "gatewayPools": [ ],
          "networkConnections": [ ],
          "vlanID": "1",
          "routes": [
            {
              "resourceId": "lnroute1",
              "etag": "W/\"88023c76-85bf-4f3a-82a0-f3385025be23\"",
              "properties": {
                "destination": "192.168.1.252/31",
                "nextHop": "192.168.1.1"
              }
            }
          ]
        },
        "dnsServers": [
          "10.0.0.1",
          "10.0.0.2"
        ],
        "defaultGateways": [
          "192.168.1.1",
          "192.168.1.2"
        ]
      }
    ]
  }
}
```

```

    ],
    "isPublic": true
  }
],
"virtualNetworks": [ ],
"networkVirtualizationEnabled": "True"
},
"resourceId": "1b0993ad-9690-4f26-9a99-f4ee1d101c52"
}

```

The JSON schema for the **logicalNetworks PUT** method is located in section 6.8.1.

3.1.5.8.1.1.2 Response Body

The format for the **logicalNetworks PUT** response body is the same as the format for the **logicalNetworks GET** response body (section 3.1.5.8.1.2.2). The JSON schema is located in section 6.8.2.

3.1.5.8.1.1.3 Processing Details

Create a new logicalNetworks resource or update an existing logicalNetworks resource.

3.1.5.8.1.2 GET

This method retrieves a **logicalNetworks** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.8.1.2.1 Request Body

None.

3.1.5.8.1.2.2 Response Body

The format for the response body for the **logicalNetworks GET** method is as follows.

```

{
  "resourceRef": "/logicalnetworks/1b0993ad-9690-4f26-9a99-f4ee1d101c52",
  "resourceId": "1b0993ad-9690-4f26-9a99-f4ee1d101c52",

```



```

    "etag": "W/\\"88023c76-85bf-4f3a-82a0-f3385025be23\\\"",
    "instanceId": "6e383781-d3fe-4925-bfb6-b743f7783674",
    "properties": {
      "provisioningState": "Succeeded",
      "subnets": [
        {
          "resourceRef": "/logicalnetworks/1b0993ad-9690-4f26-9a99-
f4ee1d101c52/subnets/lnsubnet1",
          "resourceId": "lnsubnet1",
          "etag": "W/\\"88023c76-85bf-4f3a-82a0-f3385025be23\\\"",
          "instanceId": "d99fad69-d311-4a08-bff2-255265dff8aa",
          "properties": {
            "provisioningState": "Succeeded",
            "addressPrefix": "192.168.1.0/24",
            "ipConfigurations": [ ],
            "networkInterfaces": [ ],
            "gatewayPools": [ ],
            "networkConnections": [ ],
            "vlanID": "1",
            "ipPools": [
              {
                "resourceRef": "/logicalnetworks/1b0993ad-9690-4f26-9a99-
f4ee1d101c52/subnets/lnsubnet1/ipPools/{1DAED41A-1D11-4DA5-8839-99B89C7C1806}",
                "resourceId": "{1DAED41A-1D11-4DA5-8839-99B89C7C1806}",
                "etag": "W/\\"57d03dea-0e8a-44af-8883-b0f3403de0b9\\\"",
                "instanceId": "52bd179d-a747-4f2d-9608-cce85ca4365a",
                "properties": {
                  "provisioningState": "Succeeded",
                  "startIpAddress": "192.168.1.0",
                  "endIpAddress": "192.168.1.99"
                }
              }
            ]
          },
          "routes": [
            {
              "resourceRef": "/logicalnetworks/1b0993ad-9690-4f26-9a99-
f4ee1d101c52/subnets/lnsubnet1/routes/lnroutel",
              "resourceId": "lnroutel",
              "etag": "W/\\"88023c76-85bf-4f3a-82a0-f3385025be23\\\"",
              "instanceId": "bfb3ddf0-1cb4-413f-bf7d-24649df812ed",
              "properties": {
                "provisioningState": "Succeeded",
                "destination": "192.168.1.252/31",
                "nextHop": "192.168.1.1"
              }
            }
          ],
          "dnsServers": [
            "10.0.0.1"
          ],
          "defaultGateways": [
            "192.168.1.1"
          ],
          "isPublic": true
        }
      ],
      "virtualNetworks": [ ],
      "networkVirtualizationEnabled": "True"
    }
  }
}

```

The JSON schema for the **logicalNetworks GET** method is located in section 6.8.2.

3.1.5.8.1.2.3 Processing Details

Retrieves one logicalNetworks resource.

3.1.5.8.1.3 GET (All)

This method retrieves all **logicalNetworks** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.8.1.3.1 Request Body

None.

3.1.5.8.1.3.2 Response Body

The format for the response body for the **logicalNetworks GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/logicalnetworks/72570539-58a9-43d6-b858-d7ec3f202c6d",
      "resourceId": "72570539-58a9-43d6-b858-d7ec3f202c6d",
      "etag": "W/\"34b565dc-c69e-4165-97ea-6e8ef6c84420\"",
      "instanceId": "b75b250f-f2d1-4a2f-bb2e-57380523b407",
      "properties": {
        "provisioningState": "Succeeded",
        "subnets": [
          {
            "resourceRef": "/logicalnetworks/72570539-58a9-43d6-b858-
d7ec3f202c6d/subnets/3d46ae72-b1d0-48fa-b4fe-ab183e737493",
            "resourceId": "3d46ae72-b1d0-48fa-b4fe-ab183e737493",
            "etag": "W/\"34b565dc-c69e-4165-97ea-6e8ef6c84420\"",
            "instanceId": "78c262d9-de13-4f33-a564-5f168b38a573",
            "properties": {
              "provisioningState": "Succeeded",
              "addressPrefix": "192.83.0.0/16",
              "ipConfigurations": [],
              "networkInterfaces": [
                {
                  "resourceRef": "/servers/27-3145F0416/networkInterfaces/ab055aa1-27d6-4a2e-
a4b7-7916008dd1a4"
                }
              ],
              "gatewayPools": [],
              "networkConnections": [],
              "vlanID": "109",
              "ipPools": [
                {

```

```

        "resourceRef": "/logicalnetworks/72570539-58a9-43d6-b858-
d7ec3f202c6d/subnets/3d46ae72-b1d0-48fa-b4fe-ab183e737493/ipPools/66ce16cb-7c9e-4666-b6b4-
41208a497604",
        "resourceId": "66ce16cb-7c9e-4666-b6b4-41208a497604",
        "etag": "W/\"34b565dc-c69e-4165-97ea-6e8ef6c84420\"",
        "instanceId": "0d68218b-50dc-4cc9-bb36-66324e93b407",
        "properties": {
            "provisioningState": "Succeeded",
            "startIpAddress": "192.83.0.100",
            "endIpAddress": "192.83.255.255"
        }
    },
    {
        "resourceRef": "/logicalnetworks/72570539-58a9-43d6-b858-
d7ec3f202c6d/subnets/3d46ae72-b1d0-48fa-b4fe-ab183e737493/ipPools/small",
        "resourceId": "small",
        "etag": "W/\"34b565dc-c69e-4165-97ea-6e8ef6c84420\"",
        "instanceId": "581b56e7-dfb2-4fc1-833c-1aaf970c91e6",
        "properties": {
            "provisioningState": "Succeeded",
            "startIpAddress": "192.83.0.90",
            "endIpAddress": "192.83.0.98"
        }
    }
],
"dnsServers": [],
"defaultGateways": [
    "192.83.0.1"
],
"isPublic": false,
"usage": {
    "numberOfIPAddresses": 65445,
    "numberOfIPAddressesAllocated": 2,
    "numberOfIPAddressesInTransition": 0
}
}
},
"virtualNetworks": [
    {
        "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
    }
],
"networkVirtualizationEnabled": "True"
}
},
"nextLink": ""
}

```

The JSON schema for the **logicalNetworks GET ALL** method is located in section 6.8.3.

3.1.5.8.1.3.3 Processing Details

Retrieves all logicalNetworks resources.

3.1.5.8.1.4 DELETE

This method deletes a **logicalNetworks** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.8.1.4.1 Request Body

None.

3.1.5.8.1.4.2 Response Body

None.

3.1.5.8.1.4.3 Processing Details

Deletes a logicalNetworks resource.

3.1.5.8.2 logicalSubnets

The **logicalSubnets** resource consists of a subnet/VLAN pair. The vlan resource is required; however, it MAY contain a value of zero if the subnet is not associated with a vlan.

An IP subnet MUST NOT overlap with any other IP subnet in same logical network. An IP subnet MUST NOT span across multiple vlans within a logical network. All nextHops resources that are associated with the routes resource for this logicalSubnet MUST be contained within the logical subnet.

The URI for the resource is as follows.

```
https://<url>/networking/v1/logicalNetworks/{parentResourceId}/logicalSubnets/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.8.2.1.1	Create a new logicalSubnets resource or update an existing logicalSubnets resource.

HTTP method	Section	Description
GET	3.1.5.8.2.1.2	Get one logicalSubnets resource
GET (All)	3.1.5.8.2.1.3	List all logicalSubnets resources in the Network Controller
DELETE	3.1.5.8.2.1.4	Deletes a logicalSubnets resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
addressPrefix	Read/write	Identifies the subnet id in form of ipAddress/prefixlength.
vlanId	Read/write Required	Indicates the VLAN ID associated with the logical subnet. Valid values range from 0 through 4095. The value can be shared across multiple logicalSubnets.
routes	Optional Read/write	Indicates the routes that are contained in the logical subnet. See section 3.1.5.8.2.3, for full details on this element.
ipPools	Optional Read/write	Indicates the IP Pools that are contained in the logical subnet. See section 3.1.5.8.2.2, for full details on this element.
dnsServers	Optional Read/write	Indicates one or more DNS servers that are used for resolving DNS queries by devices or host connected to this logical subnet.
networkInterfaces	Read-only	Indicates an array of references to networkInterfaces resources that are attached to the logical subnet.
isPublic	Read/write	Boolean flag specifying whether the logical subnet is a public subnet.
defaultGateways	Read/write	A collection of one or more gateways for the subnet.

3.1.5.8.2.1 HTTP Methods

3.1.5.8.2.1.1 PUT

This method creates a new **logicalSubnets** resource or updates an existing **logicalSubnets** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{parentResourceId}/logicalSubnets/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.8.2.1.1.1 Request Body

The format for the request body for the **logicalSubnets PUT** method is as follows.

```
{
  "resourceId": "{uniqueString}",
  "tags": { "key": "value" },
  "resourceMetadata":
  {
    "client": "Windows PowerShell",
    "name": "{name}",
    "originalHref": "https://..."
  },
  "properties": {
    "addressPrefix": "192.168.1.0/24",
    "ipConfigurations": [],
    "vlanID": "1",
    "routes": []
    "dnsServers": [ "10.0.0.1", "10.0.0.2" ]
    "defaultGateway": [ "192.168.1.1", "192.168.1.2" ]
    "isPublic": true,
    "ipPools": []
  }
}
```

The JSON schema for the **logicalSubnets PUT** method is contained within the **logicalNetworks PUT** schema in section 6.8.1.

3.1.5.8.2.1.1.2 Response Body

The format for the **logicalSubnets PUT** response body is the same as the format for the **logicalSubnets GET** response body (section 3.1.5.8.2.1.2.2). The JSON schema is contained within the **logicalNetworks GET** schema in section 6.8.2.

3.1.5.8.2.1.1.3 Processing Details

Create a new logicalSubnets resource or update an existing logicalSubnets resource.

3.1.5.8.2.1.2 GET

This method retrieves a **logicalSubnets** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{parentResourceId}/logicalSubnets/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.8.2.1.2.1 Request Body

None.

3.1.5.8.2.1.2.2 Response Body

The format for the response body for the **logicalSubnets GET** method is as follows.

```
{
  "resourceId": "{uniqueString}",
  "etag": "00000000-0000-0000-0000-000000000000",
  "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "tags": { "key": "value" },
  "resourceMetadata":
  {
    "client": "<Insert likely client>",
    "tenantId": "{subscriptionid}",
    "groupId": "{groupname}",
    "name": "{name}",
    "originalHref": "https://..."
  },
  "properties": {
    "provisioningState": "Updating|Deleting|Failed|Succeeded",
    "addressPrefix": "192.168.1.0/24",
    "ipConfigurations": [],
    "networkInterfaces": [],
    "vlanID": "1",
    "routes": []
    "dnsServers": [ "10.0.0.1", "10.0.0.2" ]
    "defaultGateways": [ "192.168.1.1", "192.168.1.2" ]
    "isPublic": true,
    "ipPools":[]
  }
}
```

The JSON schema for the **logicalSubnets GET** method is contained within the **logicalNetworks GET** schema in section 6.8.2.

3.1.5.8.2.1.2.3 Processing Details

Retrieves a **logicalSubnets** resource.

3.1.5.8.2.1.3 GET (All)

This method retrieves all **logicalSubnets** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{parentResourceId}/logicalSubnets
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.8.2.1.3.1 Request Body

None.

3.1.5.8.2.1.3.2 Response Body

The format for the response body for the **logicalSubnets GET ALL** method is as follows.

```
[
  {
    "resourceId": "{uniqueString}",
    "etag": "00000000-0000-0000-0000-000000000000",
    "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
    "tags": { "key": "value" },
    "resourceMetadata":
      {
        "client": "<Insert likely client>",
        "tenantId": "{subscriptionid}",
        "groupId": "{groupname}",
        "name": "{name}",
        "originalHref": "https://..."
      },
    "properties": {
      "provisioningState": "Updating|Deleting|Failed|Succeeded",

      "ipConfigurations": [],
      "networkInterfaces": [],
      "vlanID": "1",
      "routes": []
      "dnsServers": [ "10.0.0.1", "10.0.0.2" ]
      "defaultGateways": [ "192.168.1.1", "192.168.1.2" ]
      "isPublic": true,
      "ipPools": []
    }
  },
  {
    "resourceId": "{uniqueString}",
    "etag": "00000000-0000-0000-0000-000000000000",
```



```

"instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
"tags": { "key": "value" },
"resourceMetadata":
{
  "client": "<Insert likely client>",
  "tenantId": "{subscriptionid}",
  "groupId": "{groupname}",
  "name": "{name}",
  "originalHref": "https://..."
},
"properties":
{
  "provisioningState": "Updating|Deleting|Failed|Succeeded",

  "ipConfigurations": [],
  "networkInterfaces": [],
  "vlanID": "1",
  "routes": []
  "dnsServers": [ "10.0.0.1", "10.0.0.2"]
  "defaultGateways": [ "192.168.1.1", "192.168.1.2"]
  "isPublic": true,
  "ipPools":[]
}
}
]

```

The JSON schema for the **logicalSubnets GET ALL** method is contained within the **logicalNetworks GET ALL** schema in section 6.8.3.

3.1.5.8.2.1.3.3 Processing Details

Retrieves all logicalSubnets resources.

3.1.5.8.2.1.4 DELETE

This method deletes a **logicalSubnets** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{parentResourceId}/logicalSubnets/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)

Status code
412 (Precondition Failed)

3.1.5.8.2.1.4.1 Request Body

None.

3.1.5.8.2.1.4.2 Response Body

None.

3.1.5.8.2.1.4.3 Processing Details

Deletes a logicalSubnets resource.

3.1.5.8.2.2 ipPools

The **ipPools** resource represents the range of IP addresses from which IP addresses will be allocated for nodes within a subnet. The subnet is a logical or physical subnet inside a logical network.

The ipPools for a virtual subnet are implicit. The start and end IP addresses of the pool of the virtual subnet is based on the IP prefix of the virtual subnet.

The URI for the resource is as follows.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/ipPools/{resourceId}
```

grandParentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.1, for more details.

parentResourceId: the identifier for the specific resource that is the descendant of the grandParentResource and the ancestor of the ipPools resource. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific resource within the resource type that is the descendant of the parentResource. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.8.2.2.1.1	Create a new ipPools resource or update an existing ipPools resource.
GET	3.1.5.8.2.2.1.2	Get one ipPools resource.
GET (All)	3.1.5.8.2.2.1.3	List all ipPools resources in the Network Controller.
DELETE	3.1.5.8.2.2.1.4	Deletes an ipPools resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
startIPAddress	Read/write Required	Start IP address of the pool. Note This is an inclusive value so it is a valid IP address from this pool.
endIPAddress	Read/write Required	End IP address of the pool. Note This is an inclusive value so it is a valid IP address from this pool.
usage	Read-only	Statistics of the usage of the IP pool
usage.numberOfWorkIPAddresses	Read-only	Total number of IP Addresses in the IP pool
usage.numberOfWorkIPAddresses Allocated	Read-only	Number of allocated IP addresses in the IP pool
usage.numberOfWorkIPAddresses InTransition	Read-only	Number of IP addresses which are in transition state. These IP addresses are freed but are not yet available for allocation because of a hold-off period.

3.1.5.8.2.2.1 HTTP Methods

3.1.5.8.2.2.1.1 PUT

This method creates a new **ipPools** resource or updates an existing **ipPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/ipPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.8.2.2.1.1.1 Request Body

The format for the request body for the **ipPools PUT** method is as follows.

```

{
  "resourceId": "{1DAED41A-1D11-4DA5-8839-99B89C7C1806}",
  "properties": {
    "startIpAddress": "192.168.1.0",
    "endIpAddress": "192.168.1.99"
  }
}

```

The JSON schema for the **ipPools PUT** method is located in section 6.8.4.1.1.

3.1.5.8.2.2.1.1.2 Response Body

The format for the **ipPools PUT** response body is the same as the format for the **ipPools GET** response body (section 3.1.5.8.2.2.1.2.2). The JSON schema is located in section 6.8.4.1.2.

3.1.5.8.2.2.1.1.3 Processing Details

Create a new ipPools resource or update an existing ipPools resource.

3.1.5.8.2.2.1.2 GET

This method retrieves an **ipPools** resource.

It is invoked through the following URI.

```

https://<url>/networking/v1/networks/{grandparentResourceid}/logicalSubnets/{parentResourceid}/ipPools/{resourceId}

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.8.2.2.1.2.1 Request Body

None.

3.1.5.8.2.2.1.2.2 Response Body

The format for the response body for the **ipPools GET** method is as follows.

```

{
  "resourceRef": "/logicalnetworks/72570539-58a9-43d6-b858-d7ec3f202c6d/subnets/3d46ae72-b1d0-48fa-b4fe-ab183e737493/ipPools/66ce16cb-7c9e-4666-b6b4-41208a497604",
  "resourceId": "66ce16cb-7c9e-4666-b6b4-41208a497604",
  "etag": "W/\"18b36409-81e3-4bc1-8234-cf924de405ce\"",
  "instanceId": "0d68218b-50dc-4cc9-bb36-66324e93b407",
}

```

```

    "properties": {
      "provisioningState": "Succeeded",
      "startIpAddress": "192.83.0.100",
      "endIpAddress": "192.83.255.255",
      "usage": {
        "numberOfIPAddresses": 65436,
        "numberOfIPAddressesAllocated": 2,
        "numberOfIPAddressesInTransition": 0
      }
    }
  }
}

```

The JSON schema for the **ipPools GET** method is located in section 6.8.4.1.2.

3.1.5.8.2.2.1.2.3 Processing Details

Retrieves a **ipPools** resource.

3.1.5.8.2.2.1.3 GET (All)

This method retrieves all **ipPools** resources.

It is invoked through the following URI.

```

https://<url>/networking/v1/networks/{grandparentResourceid}/logicalSubnets/{parentResourceid}/ipPools

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.8.2.2.1.3.1 Request Body

None.

3.1.5.8.2.2.1.3.2 Response Body

The format for the response body for the **ipPools GET ALL** method is as follows.

```

{
  "value": [
    {
      "resourceRef": "/logicalnetworks/a647c7f3-9203-44df-a15e-bffff856c83d7/subnets/d1078059-fe58-4c26-bdce-9bf61e0d2be2/ipPools/9176fa09-48ca-4e0e-b953-c9c065561e03",
      "resourceId": "9176fa09-48ca-4e0e-b953-c9c065561e03",
      "etag": "W/\"fd2b18a6-f142-494c-adee-fb244cd7245d\"",
      "instanceId": "10080cf6-504d-4e6c-bf22-d2b90bd51090",
      "properties": {
        "provisioningState": "Succeeded",

```

```

        "startIpAddress": "15.65.2.100",
        "endIpAddress": "15.65.2.255",
        "usage": {
            "numberOfIPAddresses": 156,
            "numberOfIPAddressesAllocated": 0,
            "numberOfIPAddressesInTransition": 0
        }
    }
}
],
"nextLink": ""
}

```

The JSON schema for the **ipPools GET ALL** method is located in section 6.8.4.1.3.

3.1.5.8.2.2.1.3.3 Processing Details

Retrieves all ipPools resources.

3.1.5.8.2.2.1.4 DELETE

This method deletes an **ipPools** resource.

It is invoked through the following URI.

```

https://<url>/networking/v1/networks/{grandparentResourceid}/logicalSubnets/{parentResourceid}/ipPools/{resourceId}

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.8.2.2.1.4.1 Request Body

None.

3.1.5.8.2.2.1.4.2 Response Body

None.

3.1.5.8.2.2.1.4.3 Processing Details

Deletes an ipPools resource.

3.1.5.8.2.3 routes

The **routes** resource represents a provider route. If a host connects to a logical subnet as part of hosting a virtual network, then all routes in that logical subnet are applied to the host. Consequently, the host can route the traffic to the correct destination.

The URI for the resource is as follows.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/routes/{resourceId}
```

grandParentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.1, for more details.

parentResourceId: the identifier for the specific resource that is the descendant of the grandParentResource and the ancestor of the routes resource. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific resource within the resource type that is the descendant of the parentResource. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.8.2.3.1.1	Create a new routes resource or update an existing routes resource.
GET	3.1.5.8.2.3.1.2	Get one routes resource.
GET (All)	3.1.5.8.2.3.1.3	List all routes resources in the Network Controller.
DELETE	3.1.5.8.2.3.1.4	Delete a routes resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
destination	Required	Indicates the destination subnet that this route applies to. It is specified in the form of 0.0.0.0/0. The destination subnet is of the same type as the subnet that it is created in. Ex. This has to be an IPv4 destination subnet if its parent subnet is an IPv4 subnet, similarly for IPv6 the destination route is the subnet is IPv6.
nextHop	Required	Indicates the next hop IP address for this route. It is specified in the form of 0.0.0.0. The next hop has to be a valid IP address in the subnet.

3.1.5.8.2.3.1 HTTP Methods

3.1.5.8.2.3.1.1 PUT

This method creates a new **routes** resource or updates an existing **routes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/routes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.8.2.3.1.1.1 Request Body

The format for the request body for the **routes PUT** method is as follows.

```
{
  "resourceId": "lnroute2",
  "properties": {
    "destination": "192.168.1.128/31",
    "nextHop": "192.168.1.1"
  }
}
```

The JSON schema for the **routes PUT** method is contained within the **logicalNetworks GET** schema in section 6.8.1.

3.1.5.8.2.3.1.1.2 Response Body

The format for the **routes PUT** response body is the same as the format for the **routes GET** response body (section 3.1.5.8.2.3.1.2.2). The JSON schema is contained within the **logicalNetworks GET** schema in section 6.8.2.

3.1.5.8.2.3.1.1.3 Processing Details

Create a new routes resource or update an existing routes resource.

3.1.5.8.2.3.1.2 GET

This method retrieves a **routes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/routes/{resourceId}
```


The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.8.2.3.1.2.1 Request Body

None.

3.1.5.8.2.3.1.2.2 Response Body

The format for the response body for the **routes GET** method is as follows.

```
{
  "resourceRef": "/logicalnetworks/testln/subnets/lnsubnet1/routes/lnroute1",
  "resourceId": "lnroute1",
  "etag": "W/\"01f97500-620c-4877-868a-2f07833ed040\"",
  "instanceId": "93229775-761a-448e-a9eb-df2ea3878f8a",
  "properties": {
    "provisioningState": "Succeeded",
    "destination": "192.168.1.252/31",
    "nextHop": "192.168.1.1"
  }
}
```

The JSON schema for the **routes GET** method is contained within the **logicalNetworks GET** schema in section 6.8.2.

3.1.5.8.2.3.1.2.3 Processing Details

Retrieves a **routes** resource.

3.1.5.8.2.3.1.3 GET (All)

This method retrieves all **routes** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/routes
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.8.2.3.1.3.1 Request Body

None.

3.1.5.8.2.3.1.3.2 Response Body

The format for the response body for the **routes GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/logicalnetworks/testln/subnets/lnsubnet1/routes/lnroute1",
      "resourceId": "lnroute1",
      "etag": "W/\"6b69784b-5bcc-4724-a2ab-4eab0fafdf7e\"",
      "instanceId": "93229775-761a-448e-a9eb-df2ea3878f8a",
      "properties": {
        "provisioningState": "Succeeded",
        "destination": "192.168.1.252/31",
        "nextHop": "192.168.1.1"
      }
    },
    {
      "resourceRef": "/logicalnetworks/testln/subnets/lnsubnet1/routes/lnroute2",
      "resourceId": "lnroute2",
      "etag": "W/\"6b69784b-5bcc-4724-a2ab-4eab0fafdf7e\"",
      "instanceId": "1ae56b5f-5b8d-49dd-8d52-40cc6b02face",
      "properties": {
        "provisioningState": "Succeeded",
        "destination": "192.168.1.128/31",
        "nextHop": "192.168.1.1"
      }
    }
  ],
  "nextLink": ""
}
```

The JSON schema for the **routes GET ALL** method is contained within the **logicalNetworks GET** schema in section 6.8.2.

3.1.5.8.2.3.1.3.3 Processing Details

Retrieves all routes resources.

3.1.5.8.2.3.1.4 DELETE

This method deletes a **routes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/logicalNetworks/{grandparentResourceId}/logicalSubnets/{parentResourceId}/routes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.8.2.3.1.4.1 Request Body

None.

3.1.5.8.2.3.1.4.2 Response Body

None.

3.1.5.8.2.3.1.4.3 Processing Details

Deletes a routes resource.

3.1.5.9 macPools

The **macPools** resource specifies a range of MAC addresses which are used internally by the Network Controller service modules and are plumbed down to the hosts for items such as Host vNICs.

The MAC address pool resource is a global resource used internally by the Network Controller for various service modules in both CA and PA space including VNET, VSM, and GWM. Specifically, these MAC pools are used for the PA Host vNIC(s), the HNV Distributed Router (DR) Host vNIC (used for health probes), and the HNV Virtual MAC (to route traffic to the HNV Distributed Router).

The MAC pool range is a proper subset from the overall MAC pool used for tenant VMs (CA MAC).

If more than one MAC pool is created by the admin, the ASM service module in the Network Controller MUST determine which MAC to allocate from for the requesting service module (e.g. Vnet). After a MAC pool has been created, the pool cannot be extended or shrunk. MACs from the pool will not be reassigned.

The URI for the resource is as follows.

```
https://<url>/networking/v1/macPools/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The Network Controller MUST be installed and configured prior to using this resource.

In addition, the admin MUST create a dedicated range of MACs, and make non-overlapping subset of those MACs available to the Network Controller for internal use as defined with this resource.

A **macPools** resource SHOULD be created prior to the creation of any server or **networkInterfaces** resources.

IP subnets in the same logical network MUST not overlap. An IP subnet MUST not span across multiple VLANs within a logical network. All next hops in the routes resource (as specified in section 3.1.5.8.2.3) MUST be within the logical subnet.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.9.1.1	Create a new macPools resource or update an existing macPools resource.
GET	3.1.5.9.1.2	Get one macPools resource
GET (All)	3.1.5.9.1.3	List all macPools resources in the Network Controller
DELETE	3.1.5.9.1.4	Deletes a macPools resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
startMacAddress	Required Read/write	This is a string in the form of "AA-BB-CC-DD-EE-FF".
endMacAddress	Required Read/write	This is a string in the form of "UU-VV-WW-XX-YY-ZZ".
usage	Read-only	Usage statistics of the MAC address pool.
usage.numberOfMacAddresses	Read-only	Number of MAC addresses in the address pool.
usage.numberOfMACAddressesAllocated	Read-only	Number of allocated MAC addresses in the address pool.

3.1.5.9.1 HTTP Methods

3.1.5.9.1.1 PUT

This method creates a new **macPools** resource or updates an existing **macPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/macPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.9.1.1.1 Request Body

The format for the request body for the **macPools PUT** method is as follows.

```
{
  "properties": {
    "startMacAddress": "E0-60-F0-0D-FF-FE",
    "endMacAddress": "E0-60-F0-0D-FF-FF",
  }
}
```

The JSON schema for the **macPools PUT** method is located in section 6.9.1.

3.1.5.9.1.1.2 Response Body

The format for the **macPools PUT** response body is the same as the format for the **macPools GET** response body (section 3.1.5.9.1.2.2). The JSON schema is located in section 6.9.2.

3.1.5.9.1.1.3 Processing Details

Create a new **macPools** resource or update an existing **macPools** resource.

3.1.5.9.1.2 GET

This method retrieves a **macPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/macPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

Status code
404 (Not Found)

3.1.5.9.1.2.1 Request Body

None.

3.1.5.9.1.2.2 Response Body

The format for the response body for the **macPools GET** method is as follows.

```
{
  "resourceRef": "/macPools/macPool3",
  "resourceId": "macPool3",
  "etag": "W/\"5785aa19-c76b-44d3-99cf-dbe04db06172\"",
  "instanceId": "5b9f4e36-e483-4408-a928-78c8cca26af4",
  "properties": {
    "provisioningState": "Succeeded",
    "startMacAddress": "B0-60-F0-0D-00-00",
    "endMacAddress": "B0-60-F0-0D-FF-FF",
    "usage": {
      "numberOfMacAddresses": 65536,
      "numberOfMacAddressesAllocated": 0
    }
  }
}
```

The JSON schema for the **macPools GET** method is located in section 6.9.2.

3.1.5.9.1.2.3 Processing Details

Retrieves a **macPools** resource.

3.1.5.9.1.3 GET (All)

This method retrieves all **macPools** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/macPools
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.9.1.3.1 Request Body

None.

3.1.5.9.1.3.2 Response Body

The format for the response body for the **macPools GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/macPools/macPool1",
      "resourceId": "macPool1",
      "etag": "W/\"2ec6925c-71fe-4698-9342-ec0dcd292d84\"",
      "instanceId": "d48f4896-19a8-4553-889f-835dce11bda0",
      "properties": {
        "provisioningState": "Succeeded",
        "startMacAddress": "D0-60-F0-0D-00-00",
        "endMacAddress": "D0-60-F0-0D-FF-FF",
        "usage": {
          "numberOfMacAddresses": 65536,
          "numberOfMacAddressesAllocated": 0
        }
      }
    },
    {
      "resourceRef": "/macPools/macPool2",
      "resourceId": "macPool2",
      "etag": "W/\"e6f5a533-51da-434f-b115-3193f7e2393a\"",
      "instanceId": "47a5eale-586a-4953-ad84-916eed92a0c1",
      "properties": {
        "provisioningState": "Succeeded",
        "startMacAddress": "A0-60-F0-0D-00-00",
        "endMacAddress": "A0-60-F0-0D-FF-FF",
        "usage": {
          "numberOfMacAddresses": 65536,
          "numberOfMacAddressesAllocated": 0
        }
      }
    },
    {
      "resourceRef": "/macPools/macPool3",
      "resourceId": "macPool3",
      "etag": "W/\"5785aa19-c76b-44d3-99cf-dbe04db06172\"",
      "instanceId": "5b9f4e36-e483-4408-a928-78c8cca26af4",
      "properties": {
        "provisioningState": "Succeeded",
        "startMacAddress": "B0-60-F0-0D-00-00",
        "endMacAddress": "B0-60-F0-0D-FF-FF",
        "usage": {
          "numberOfMacAddresses": 65536,
          "numberOfMacAddressesAllocated": 0
        }
      }
    }
  ]
}
```

The JSON schema for the **macPools GET ALL** method is located in section 6.9.3.

3.1.5.9.1.3.3 Processing Details

Retrieves all **macPools** resources.

3.1.5.9.1.4 DELETE

This method deletes a **macPools** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/macPools/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.9.1.4.1 Request Body

None.

3.1.5.9.1.4.2 Response Body

None.

3.1.5.9.1.4.3 Processing Details

Deletes a **macPools** resource.

3.1.5.10 routeTables

The **routeTables** resource contains a list of routes. **routeTables** resources can be applied to subnets of a tenant virtual network to control routing within a virtual network. Once **routeTables** has been associated to a virtual subnet, all tenant VMs created within that subnet will inherit the **routeTables** and will have their traffic routed per the routes contained in the table.

It is invoked through the following URI.

```
https://<URL>/networking/v1/routeTables/{resourceID}
```

url: the address of the computer on which the Network Controller is running.

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.10.1.1	Create a new routeTables resource or update an existing routeTables resource.
GET	3.1.5.10.1.2	Get one routeTables resource
GET ALL	3.1.5.10.1.3	List all routeTables resources in the Network Controller
DELETE	3.1.5.10.1.4	Deletes a routeTables resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
routes	Optional	Indicates the routes in a route table, see routes resource for full details on this element. <5>
subnets	Read-only	Indicates an array of references to subnets resources this route table is associated with.

3.1.5.10.1 HTTP Methods

3.1.5.10.1.1 PUT

This operation creates a new **routeTables** resource or updates an existing routeTables resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/routeTables/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.10.1.1.1 Request Body

The format for the request body for the **routeTables PUT** method is as follows.

```
{
  "properties": {
    "routes": [
      {
        "resourceId": "4f7b9b29-6744-436d-af0e-779fa7093f29",
        "resourceMetadata": {},
        "properties": {
          "addressPrefix": "11.0.0.0/24",
          "nextHopType": "VirtualAppliance",
          "nextHopIpAddress": "12.0.0.21"
        }
      }
    ]
  }
}
```

The JSON schema for the **routeTables PUT** method is located in section 6.10.1.

3.1.5.10.1.1.2 Response Body

The format for the **routeTables PUT** response body is the same as the format for the **routeTables GET** response body. The JSON schema is located in section 6.10.2.

3.1.5.10.1.1.3 Processing Details

Creates a new **routeTables** resource or update an existing **routeTables** resource.

3.1.5.10.1.2 GET

This operation retrieves a **routeTables** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/routeTables/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.10.1.2.1 Request Body

None.

3.1.5.10.1.2.2 Response Body

The format for the response body for the **routeTables GET** is as follows.

```
{
  "resourceRef": "/routeTables/d81c27bd-4be4-438a-8b88-31ca717cfe75",
  "resourceId": "d81c27bd-4be4-438a-8b88-31ca717cfe75",
  "etag": "W/\"7a107f52-a9b3-486e-b8a0-cb85426c1400\"",
  "instanceId": "a6070cef-9db4-439a-a095-1cc5e5b9ed8c",
  "properties": {
    "provisioningState": "Succeeded",
    "routes": [
      {
        "resourceRef": "/routeTables/d81c27bd-4be4-438a-8b88-31ca717cfe75/routes/4f7b9b29-6744-436d-af0e-779fa7093f29",
        "resourceId": "4f7b9b29-6744-436d-af0e-779fa7093f29",
        "etag": "W/\"7a107f52-a9b3-486e-b8a0-cb85426c1400\"",
        "instanceId": "94428b30-47fa-4ba3-b5c5-0fa949eb0ccc",
        "properties": {
          "provisioningState": "Succeeded",
          "addressPrefix": "11.0.0.0/24",
          "nextHopType": "VirtualAppliance",
          "nextHopIpAddress": "12.0.0.21"
        }
      },
      {
        "resourceRef": "/routeTables/d81c27bd-4be4-438a-8b88-31ca717cfe75/routes/4e65fd4c-51bd-4ac5-bbec-c9fad8d66a24",
        "resourceId": "4e65fd4c-51bd-4ac5-bbec-c9fad8d66a24",
        "etag": "W/\"7a107f52-a9b3-486e-b8a0-cb85426c1400\"",
        "instanceId": "1dcd588f-56b9-4807-b818-b1325831684b",
        "properties": {
          "provisioningState": "Succeeded",
          "addressPrefix": "11.0.0.22/32",
          "nextHopType": "VnetLocal",
          "nextHopIpAddress": ""
        }
      }
    ],
    "subnets": [
      {
        "resourceRef": "/virtualNetworks/13b0d711-6db5-4309-b454-595625165034/subnets/4e577d52-e7be-4c45-a369-f0f941f3555a"
      }
    ]
  }
}
```

The JSON schema for the **routeTables GET** method is located in section 6.10.2.

3.1.5.10.1.2.3 Processing Details

Retrieves a **routeTables** resource.

3.1.5.10.1.3 GET (All)

This operation retrieves a list of all **routeTables** resources in the Network Controller.

It is invoked through the following URI.

```
https://<url>/networking/v1/routeTables
```

There are no parameters for this query.

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

3.1.5.10.1.3.1 Request Body

None.

3.1.5.10.1.3.2 Response Body

The format for the response body for the **routeTables GET ALL** is as follows.

```
{
  "value": [
    {
      "resourceRef": "/routeTables/rt",
      "resourceId": "rt",
      "resourceMetadata": {},
      "etag": "W/\"153bce9f-1830-4f13-b90d-a7017119ac24\"",
      "instanceId": "0cbeadb5-6bc8-41b6-9bba-6b96ca010eba",
      "properties": {
        "provisioningState": "Succeeded",
        "routes": [
          {
            "resourceRef": "/routeTables/rt/routes/4f7b9b29-6744-436d-af0e-779fa7093f29",
            "resourceId": "4f7b9b29-6744-436d-af0e-779fa7093f29",
            "resourceMetadata": {},
            "etag": "W/\"153bce9f-1830-4f13-b90d-a7017119ac24\"",
            "instanceId": "cdbf5edf-d288-4d8e-89b9-f45a2a1d59ec",
            "properties": {
              "provisioningState": "Succeeded",
              "addressPrefix": "11.0.0.0/24",
              "nextHopType": "VirtualAppliance",
              "nextHopIpAddress": "12.0.0.21"
            }
          }
        ]
      },
      "subnets": []
    }
  ],
  "nextLink": ""
}
```

The JSON schema for the **routeTables GET ALL** method is located in section 6.10.3.

3.1.5.10.1.3.3 Processing Details

Retrieves all **routeTables** resources.

3.1.5.10.1.4 DELETE

This operation deletes a **routeTables** resource. The operation is transported by a HTTP DELETE and can be invoked through the following URIs:

`https://<url>/networking/v1/routeTables/{resourceId}`

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.10.1.4.1 Request Body

None.

3.1.5.10.1.4.2 Response Body

None.

3.1.5.10.1.4.3 Processing Details

Deletes a **routeTables** resource.

3.1.5.10.2 routes

A **routes** resource is used to create routes under a tenant's Route Table. The tenant can specify the `addressPrefix` of the route, the type of next hop, and the next hop customer IP address.

It is invoked through the following URI.

`https://<url>/networking/v1/routeTables/{parentResourceId}/routes/{resourceId}`

url: the address of the computer on which the Network Controller is running.

parentResourceId: the identifier for the specific ancestor resource within the resource type. See 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.10.2.1.1	Create a new routes resource or update an existing routes resource.

HTTP method	Section	Description
GET	3.1.5.10.2.1.2	Get one routes resource.
GET ALL	3.1.5.10.2.1.3	List all routes resources in the Network Controller.
DELETE	3.1.5.10.2.1.4	Deletes a routes resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
addressPrefix	Required	The destination CIDR to which the route applies, such as 10.1.0.0/16
nextHopType	Required	The type of hop to which the packet is sent. Valid values are <code>VirtualAppliance</code> <code>VnetLocal</code> <code>VirtualNetworkGateway</code> <code>Internet</code> <code>None</code> <code>VirtualAppliance</code> represents a virtual appliance VM within the tenant virtual network. <code>VnetLocal</code> represents the local virtual network. <code>VirtualNetworkGateway</code> represents a virtual network gateway. <code>Internet</code> represents the default internet gateway. <code>None</code> represents a black hole. Packets forwarded to a black hole will not be forwarded out of it.
nextHopIpAddress	Optional	Indicates the next hop to which IP address packets are forwarded, such as 11.0.0.23. This value can only be specified for routes where the next hop type is <code>VirtualAppliance</code> and this value MUST be specified when the next hop type is <code>VirtualAppliance</code> .

3.1.5.10.2.1 HTTP Methods

3.1.5.10.2.1.1 PUT

This method creates a new **routes** resource or updates an existing **routes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/routeTables/{parentResourceId}/routes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.10.2.1.1.1 Request Body

The format for the request body for the **routes PUT** method is as follows.

```
{
  "resourceId": "4f7b9b29-6744-436d-af0e-779fa7093f29",
  "resourceMetadata": {
  },
  "properties": {
    "addressPrefix": "11.0.0.0/24",
    "nextHopType": "VirtualAppliance",
    "nextHopIpAddress": "12.0.0.21"
  }
}
```

The JSON schema for the **routes PUT** method is located in section 6.10.4.1.

3.1.5.10.2.1.1.2 Response Body

The format is the same as in the format for **routes GET** (section 3.1.5.10.2.1.2.2). The JSON schema is located in section 6.10.4.2.

3.1.5.10.2.1.1.3 Processing Details

Create a new **routes** resource or update an existing **routes** resource.

3.1.5.10.2.1.2 GET

This method retrieves a **routes** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/routeTables/{parentResourceId}/routes/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

Status code
404 (Not Found)

3.1.5.10.2.1.2.1 Request Body

None.

3.1.5.10.2.1.2.2 Response Body

The format for the response body for the **routes GET** method is as follows.

```
{
  "resourceRef": "/routeTables/d81c27bd-4be4-438a-8b88-31ca717cfe75/routes/4f7b9b29-6744-436d-af0e-779fa7093f29",
  "resourceId": "4f7b9b29-6744-436d-af0e-779fa7093f29",
  "etag": "W/\"7a107f52-a9b3-486e-b8a0-cb85426c1400\"",
  "instanceId": "94428b30-47fa-4ba3-b5c5-0fa949eb0ccc",
  "properties": {
    "provisioningState": "Succeeded",
    "addressPrefix": "11.0.0.0/24",
    "nextHopType": "VirtualAppliance",
    "nextHopIpAddress": "12.0.0.21"
  }
}
```

The JSON schema for the **routes GET** method is located in section 6.10.4.2.

3.1.5.10.2.1.2.3 Processing Details

Retrieves a **routes** resource.

3.1.5.10.2.1.3 GET (All)

This method retrieves all **routes** resources that belong to a **routeTables** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/routeTables/{parentResourceId}/routes
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.10.2.1.3.1 Request Body

None.

3.1.5.10.2.1.3.2 Response Body

The format for the response body for the **routes GET ALL** method is as follows.

```
[
  {
    "resourceId": "{uniqueString}",
    "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
    "tags": { "key": "value" },
    "resourceMetadata":
      {
        "client": "WAP Network Resource Provider",
        "tenantId": "{subscriptionid}",
        "groupId": "{groupname}",
        "name": "{name}",
        "originalHref": "https://..."
      },
    "properties": {
      "etag": "00000000-0000-0000-0000-000000000000",
      "provisioningState": "Updating|Deleting|Failed|Succeeded",
      "addressPrefix": "10.0.0.0/24",
      "nextHopType": "VirtualAppliance",
      "nextHopIpAddress": "11.0.0.5"
    }
  },
  [
    {
      "resourceId": "{uniqueString}",
      "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
      "tags": { "key": "value" },
      "resourceMetadata":
        {
          "client": "WAP Network Resource Provider",
          "tenantId": "{subscriptionid}",
          "groupId": "{groupname}",
          "name": "{name}",
          "originalHref": "https://..."
        },
      "properties": {
        "etag": "00000000-0000-0000-0000-000000000000",
        "provisioningState": "Updating|Deleting|Failed|Succeeded",
        "addressPrefix": "11.11.0.0/16",
        "nextHopType": "VirtualAppliance",
        "nextHopIpAddress": "11.12.5.5"
      }
    }
  ],
  .
  .
]
```

The JSON schema for the **routes GET ALL** method is located in section 6.10.4.3.

3.1.5.10.2.1.3.3 Processing Details

Retrieves all **routes** resources that belong to a **routeTables** resource.

3.1.5.10.2.1.4 DELETE

This method deletes a **routes** resource.

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.10.2.1.4.1 Request Body

None.

3.1.5.10.2.1.4.2 Response Body

None.

3.1.5.10.2.1.4.3 Processing Details

Deletes a **routes** resource.

3.1.5.11 networkInterfaces

The **networkInterfaces** resource specifies the configuration of either a host virtual interface (host vNIC) or a virtual server NIC (VMNIC).

The URI for the resource is as follows.

```
https://<url>/networking/v1/networkInterfaces/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.11.1.1	Create a new networkInterfaces resource or update an existing networkInterfaces resource.
GET	3.1.5.11.1.2	Get one networkInterfaces resource
GET (All)	3.1.5.11.1.3	List all networkInterfaces resources in the Network Controller
DELETE	3.1.5.11.1.4	Delete a networkInterfaces resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
dnsSettings		Indicates the DNS settings of this network interface.
dnsSettings.dnsServers		Indicates an array of IP Addresses that this network interface resource will use for the DNS servers.
ipConfigurations		Indicates an array of IP configurations that are contained in the network interface. See section 3.1.5.11.2, for full details on this element.
isHostVirtualNetworkInterface		True – this is a host virtual interface (host vNIC). False – this is a virtual server NIC (VMNIC).
internalDnsNameLabel		Determines the name that will be registered in iDNS when the iDnsServer resource is configured. The host address (A) record containing the InternalDnsNameLabel is in addition to that containing the virtual machine host name. The name in the two records are InternalDnsNameLabel and virtual machine hostname, respectively, followed by the virtual network resource ID, which is followed by the global zone name. internalDnsNameLabel can be set only for primary interfaces (meaning interfaces for which the isPrimary property is true).
isPrimary		True – this is the primary interface and the default value if the property is not set. False- this is a secondary interface. The distinction is important if a virtual machine has more than one network interface. This property cannot be changed after the resource is created.
configurationState	Optional Read-only	See specification in section 2.2.4. The configurationState for network interfaces contains an id field that is set to the instance ID of the network interface. More details are given in the section for the GET operation section 3.1.5.11.1.2.
isMultitenantStack		True – Allows the NIC to be part of multiple virtual networks. False – the opposite (this is the default).
server	Read-only	Indicates a reference to the servers resource for the machine that is currently hosting the virtual machine to which this network interface belongs.
portSettings		See following table.
privateMacAddress		Indicates the private MAC address of this network interface.
privateMacAllocationMethod		Indicates the allocation scheme of the MAC for this network interface. Valid values are Static or Dynamic.
serviceInsertionElements	Read-only	Indicates an array of serviceInsertions resources that this networkInterfaces resource is part of.

Port Settings

Element name	Type	Description
macSpoofing	Optional	Specifies whether virtual machines can change the source MAC address in outgoing packets to one not assigned to them. Allowed values are "enabled" (allowing the virtual machine to use a different MAC address) and "disabled" (allowing the virtual machine to use only the MAC address assigned to it).
arpGuard	Optional	Specifies whether ARP guard is enabled or not. ARP guard will allow only addresses specified in ArpFilter to pass through the port. Allowed values are "enabled" or "disabled".
dhcpGuard	Optional	Specifies whether to drop DHCP messages from a virtual machine claiming to be a DHCP server. Allowed values are "enabled", which drops DHCP messages because the virtualized DHCP server is considered untrusted or "disabled", which allows the message to be received because the virtualized DHCP server is considered trustworthy.
stormLimit	Optional	Specifies the number of broadcast, multicast, and unknown unicast packets per second a virtual machine is allowed to send through the specified virtual network adapter. Broadcast, multicast, and unknown unicast packets beyond the limit during that one second interval are dropped. A value of zero (0) means there is no limit.
portFlowLimit	Optional	Specifies the maximum number of flows that can be executed for the port. A value of blank or zero (0) means there is no limit.
vmqWeight	Optional	Specifies whether virtual machine queue (VMQ) is to be enabled on the virtual network adapter. The relative weight describes the affinity of the virtual network adapter to use VMQ. The range of value is typically from 0 through 100. Specify 0 to disable VMQ on the virtual network adapter.
iovWeight	Optional	Specifies whether single-root I/O virtualization (SR-IOV) is to be enabled on this virtual network adapter. The relative weight sets the affinity of the virtual network adapter to the assigned SR-IOV virtual function. The range of the value is typically from 0 through 100. Specify 0 to disable SR-IOV on the virtual network adapter.
iovInterruptModeration	Optional	Specifies the interrupt moderation value for a single-root I/O virtualization (SR-IOV) virtual function assigned to a virtual network adapter. Allowed values are "default", "adaptive", "off", "low", "medium", and "high". If Default is chosen, the value is determined by the physical network adapter vendor's setting. If Adaptive is chosen, the interrupt moderation rate will be based on the runtime traffic pattern.
iovQueuePairsRequested	Optional	Specifies the number of hardware queue pairs to be allocated to an SR-IOV virtual function. If receive-side scaling (RSS) is required, and if the physical network adapter that binds to the virtual switch supports RSS on SR-IOV virtual functions, then more than one queue pair is required. Allowed values range from 1 to 4294967295.
QosSettings	Optional	The following QOS Settings can be configured; all are optional: outboundReservedValue: If outboundReservedMode is "absolute" then the value indicates the bandwidth, in Mbps, guaranteed to the virtual port for transmission (egress). If outboundReservedMode is "weight" then the value indicates

Element name	Type	Description
		<p>the weighted portion of the bandwidth guaranteed.</p> <p>outboundMaximumMbps: Indicates the maximum permitted send-side bandwidth, in Mbps, for the virtual port (egress).</p> <p>InboundMaximumMbps: Indicates the maximum permitted receive-side bandwidth for the virtual port (ingress) in Mbps.</p>
configurationState	Optional Read-only	See specification in section 2.2.4. More details are given in the section for the GET operation section 3.1.5.11.1.2.

3.1.5.11.1 HTTP Methods

3.1.5.11.1.1 PUT

This method creates a new **networkInterfaces** resource or updates an existing **networkInterfaces** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.11.1.1.1 Request Body

The format for the request body for the **networkInterfaces PUT** method is as follows.

```
{
  "properties": {
    "ipConfigurations": [
      {
        "resourceId": "c1fe8acf-cf68-45f0-bc70-f9a1cd8d3953",
        "properties": {
          "privateIPAddress": "20.168.0.126",
          "privateIPAllocationMethod": "Static",

```

```

        "subnet": {
            "resourceRef": "/virtualNetworks/29d028bc-a244-4bec-b3bb-
958ea0c64681/subnets/c0f6d801-ca07-4345-8274-20b13454c51a"
        },
        "accessControlList": {
            "resourceRef": "/accessControlLists/28f4e1fc-2d3a-41c0-97f2-261be40bda77"
        }
    }
},
"privateMacAddress": "003624000005",
"privateMacAllocationMethod": "Static",
"isHostVirtualNetworkInterface": false,
"internalDnsNameLabel": "VM10-Adapter1",
},
"tags": {
    "VirtualMachineId": "a898f3ec-aa8c-49de-bbcf-84f59c5e6a53",
    "VnicId": "7edb10da-bcd1-4d2d-87ca-f17405be5849"
}
}
}

```

The JSON schema for the **networkInterfaces PUT** method is located in section 6.11.1.

3.1.5.11.1.1.2 Response Body

The format is the same as the format for the **networkInterfaces GET** response body (section 3.1.5.11.1.2.2). The JSON schema is located in section 6.11.2.

3.1.5.11.1.1.3 Processing Details

Create a new **networkInterfaces** resource or update an existing **networkInterfaces** resource.

3.1.5.11.1.2 GET

This method retrieves a **networkInterfaces** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.11.1.2.1 Request Body

None.

3.1.5.11.1.2.2 Response Body

The format for the response body for the **networkInterfaces GET** method is as follows.

```
{
  "resourceRef": "/networkInterfaces/81cf4776-e842-421c-9b09-65889177a9ca",
  "resourceId": "81cf4776-e842-421c-9b09-65889177a9ca",
  "etag": "W/\"3146e60f-9760-48fc-a94c-95ed95260504\"",
  "instanceId": "60b36f34-e880-4792-ad0d-df18d4fcfcc7",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/81cf4776-e842-421c-9b09-65889177a9ca/ipConfigurations/983ab5d2-fb70-48d8-90cf-a2af145e019e",
        "resourceId": "983ab5d2-fb70-48d8-90cf-a2af145e019e",
        "etag": "W/\"3146e60f-9760-48fc-a94c-95ed95260504\"",
        "instanceId": "3bc913c4-34c1-4e27-8a42-abbf96070bc6",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "13.168.101.23",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/virtualNetworks/f6d4ce32-0c2c-4b1b-bce1-172e7fce955d/subnets/9ff17bd3-dfel-424c-80c9-claffee9de58"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/454cf89c-c545-43e4-95d1-6a26898cdd02"
          },
          "loadBalancerBackendAddressPools": [],
          "loadBalancerInboundNatRules": []
        }
      }
    ],
    "dnsSettings": {},
    "privateMacAddress": "00155D52E711",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [],
    "portSettings": {
      "macSpoofingEnabled": "Disabled",
      "arpGuardEnabled": "Disabled",
      "dhcpGuardEnabled": "Disabled",
      "stormLimit": 0,
      "portFlowLimit": 0,
      "iovWeight": 0,
      "iovInterruptModeration": "Off",
      "iovQueuePairsRequested": 0,
      "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "runningState": {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ]
    },
    "lastUpdatedTime": "2016-02-22T20:04:54.109219-08:00",
    "id": "60b36f34-e880-4792-ad0d-df18d4fcfcc7"
  },
  "isMultitenantStack": false
}
```

The JSON schema for the **networkInterfaces GET** method is located in section 6.11.2.

3.1.5.11.1.2.3 Processing Details

Retrieves a **networkInterfaces** resource.

The server returns a configuration state only if it has already attempted to configure settings according to the REST resource properties that were created or updated by using the **PUT** method. **configurationState.lastUpdatedTime** is set to a value that is implementation-specific. **configurationState.id** MUST be set to the resource instance ID of the network interface.

The server MUST return a configuration state property **configurationState.status** set to "Success" if there were no errors. The server MUST return a configuration state property **configurationState.status** set to "Failure" if there were errors during the configuration of settings. **configurationState.detailedInfo** contains an array of objects per the specification in section 2.2.4. The following table contains acceptable values in the response when **configurationState.status** is "Failure".

Code inside configurationState.detailedInfo array	Description
Unknown	An unknown error occurred while configuring policies.
HostUnreachable	The host is unreachable.
PAIpAddressExhausted	Failed to assign an IP address on the host.
PAMacAddressExhausted	Failed to assign a Mac address on the host.
PAAAddressConfigurationFailure	Failed to configure IP addresses on the host.
CertificateNotTrusted	The certificate used to establish the connection is not trusted.
CertificateNotAuthorized	The certificate used to establish the connection is not authorized.
PolicyConfigurationFailureOnVfp	Failed to configure the policies on the Virtual Filtering Platform (VFP).
PolicyConfigurationFailure	Failed to configure the policies on the host device.
HostNotConnectedToController	The host has not yet established communication with the Network Controller.
MultipleVfpEnabledSwitches	Multiple switches with the VFP enabled exist on the host, which is unsupported.
DhcpAddressAllocationFailure	Failed to assign DHCP address to the Network Interface.
PortBlocked	The Port is blocked on the host.
DistributedRouterConfigurationFailure	Failed to configure isolation settings on the host.
QosConfigurationFailure	Failed to configure QOS policies on the Virtual Filtering Platform.
InfrastructurePortsBlocked	One or more Infrastructure ports are blocked on this host.
PolicyConfigurationFailureOnVfp	The Firewall Service encountered an error in adding the rules to the Virtual Network Interface.

3.1.5.11.1.3 GET (All)

This method retrieves all **networkInterfaces** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.11.1.3.1 Request Body

None.

3.1.5.11.1.3.2 Response Body

The format for the response body for the **GET ALL** method is similar to the format for the **networkInterfaces GET** method but in an array format.

```
{
  "value": [
    {
      "resourceRef": "/networkInterfaces/00000000-3333-0000-0000-000000000001",
      "resourceId": "00000000-3333-0000-0000-000000000001",
      "etag": "W/\"f2bf845b-a81a-4148-9971-501fc017ffb0\"",
      "instanceId": "2c784cfe-47f4-499c-ab27-905cfad0fb22",
      "properties": {
        "provisioningState": "Succeeded",
        "dnsSettings": {},
        "privateMacAddress": "00FFFF009B80",
        "privateMacAllocationMethod": "Static",
        "serviceInsertionElements": [],
        "portSettings": {
          "macSpoofingEnabled": "Disabled",
          "arpGuardEnabled": "Disabled",
          "dhcpGuardEnabled": "Disabled",
          "stormLimit": 0,
          "portFlowLimit": 0,
          "iovWeight": 0,
          "iovInterruptModeration": "Off",
          "iovQueuePairsRequested": 0,
          "vmqWeight": 100
        },
        "isHostVirtualNetworkInterface": false,
        "configurationState": {
          "status": "Failure",
          "detailedInfo": [
            {

```

```

        "source": "VirtualSwitch",
        "message": "The Port is blocked on the host.",
        "code": "PortBlocked"
    }
  ],
  "lastUpdatedTime": "2016-06-10T17:03:38.1131088-07:00",
  "id": "2c784cfe-47f4-499c-ab27-905cfad0fb22"
},
"isMultitenantStack": false
}
},
{
  "resourceRef": "/networkInterfaces/00000000-3333-0000-0000-000000000002",
  "resourceId": "00000000-3333-0000-0000-000000000002",
  "etag": "W/\"b69c7e1e-a13e-45e5-a5f5-3b7b7da4427a\"",
  "instanceId": "568a9d72-3790-4b99-a8cb-245caeeeffb",
  "properties": {
    "provisioningState": "Succeeded",
    "dnsSettings": {},
    "privateMacAddress": "00FFFF0045FB",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [],
    "portSettings": {
      "macSpoofingEnabled": "Disabled",
      "arpGuardEnabled": "Disabled",
      "dhcpGuardEnabled": "Disabled",
      "stormLimit": 0,
      "portFlowLimit": 0,
      "iovWeight": 0,
      "iovInterruptModeration": "Off",
      "iovQueuePairsRequested": 0,
      "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "configurationState": {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualSwitch",
          "message": "The Port is blocked on the host.",
          "code": "PortBlocked"
        }
      ]
    },
    "lastUpdatedTime": "2016-06-10T17:03:38.1286886-07:00",
    "id": "568a9d72-3790-4b99-a8cb-245caeeeffb"
  },
  "isMultitenantStack": false
}
},
{
  "resourceRef": "/networkInterfaces/12fc43be-402b-4251-9298-f983fc3f5342",
  "resourceId": "12fc43be-402b-4251-9298-f983fc3f5342",
  "etag": "W/\"bc08a698-966b-40e0-924a-47ca7f674a77\"",
  "instanceId": "f54b24e6-4ff8-46f0-88e8-3043087d871a",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/12fc43be-402b-4251-9298-f983fc3f5342/ipConfigurations/5941da25-a39b-43dc-afbe-014b3b105c16",
        "resourceId": "5941da25-a39b-43dc-afbe-014b3b105c16",
        "etag": "W/\"bc08a698-966b-40e0-924a-47ca7f674a77\"",
        "instanceId": "2f9e0add-e89a-4a51-8696-7b5c0ed1a1e3",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.28",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          }
        }
      }
    ]
  }
}
}
}

```

```

    },
    "accessControlList": {
      "resourceRef": "/accessControlLists/R2H06D4-ACS03"
    },
    "loadBalancerBackendAddressPools": [
      {
        "resourceRef": "/loadBalancers/539bd9de-9506-4423-9047-6eb9364c2a84/backendAddressPools/b6fbd9dd-1611-4ab0-ab3a-37176707bb9b"
      }
    ],
    "loadBalancerInboundNatRules": []
  }
},
"dnsSettings": {},
"privateMacAddress": "00FFFF003561",
"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
  "macSpoofingEnabled": "Disabled",
  "arpGuardEnabled": "Disabled",
  "dhcpGuardEnabled": "Disabled",
  "stormLimit": 0,
  "portFlowLimit": 0,
  "iovWeight": 0,
  "iovInterruptModeration": "Off",
  "iovQueuePairsRequested": 0,
  "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"configurationState": {
  "status": "Failure",
  "detailedInfo": [
    {
      "source": "VirtualSwitch",
      "message": "Failed to configure the policies on the Virtual Filtering Platform.",
      "code": "PolicyConfigurationFailureOnVfp"
    }
  ]
},
"lastUpdatedTime": "2016-06-10T17:03:37.7948284-07:00",
"id": "f54b24e6-4ff8-46f0-88e8-3043087d871a"
},
"isMultitenantStack": false
}
},
{
  "resourceRef": "/networkInterfaces/2bebbd8f-e18b-4990-ba88-ed7c9b1892f5",
  "resourceId": "2bebbd8f-e18b-4990-ba88-ed7c9b1892f5",
  "etag": "W/\"e018a8ef-a59c-4dff-9aae-f3f5c8cd24a9\"",
  "instanceId": "38f40abe-9e46-4a00-beb1-3688652d3a4a",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/2bebbd8f-e18b-4990-ba88-ed7c9b1892f5/ipConfigurations/f0131475-1920-40c6-a951-789557254a54",
        "resourceId": "f0131475-1920-40c6-a951-789557254a54",
        "etag": "W/\"e018a8ef-a59c-4dff-9aae-f3f5c8cd24a9\"",
        "instanceId": "11f615e6-5527-4659-8c2c-6dc7104011d1",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.25",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          }
        }
      },
      "accessControlList": {
        "resourceRef": "/accessControlLists/R2H06D4-WAS01"
      }
    ]
  }
}
}

```

```

    },
    "loadBalancerBackendAddressPools": [
      {
        "resourceRef": "/loadBalancers/6e0d8b8d-6b9e-4704-b3a1-098f41ea0468/backendAddressPools/bf7d6edf-540f-4e3f-8984-06a86e89204a"
      },
      {
        "resourceRef": "/loadBalancers/67e54e56-e5e8-4a53-9a4b-cc932704b878/backendAddressPools/457cba88-2301-44cc-bc4a-9de74823ec2d"
      },
      {
        "resourceRef": "/loadBalancers/d1a62bf4-b448-40bb-9ebd-e14507c1a935/backendAddressPools/070493a5-3929-4292-80b5-0fdff61f8d39"
      }
    ],
    "loadBalancerInboundNatRules": []
  }
},
"dnsSettings": {},
"privateMacAddress": "00FFFF0033D3",
"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
  "macSpoofingEnabled": "Disabled",
  "arpGuardEnabled": "Disabled",
  "dhcpGuardEnabled": "Disabled",
  "stormLimit": 0,
  "portFlowLimit": 0,
  "iovWeight": 0,
  "iovInterruptModeration": "Off",
  "iovQueuePairsRequested": 0,
  "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"configurationState": {
  "status": "Failure",
  "detailedInfo": [
    {
      "source": "VirtualSwitch",
      "message": "Failed to configure the policies on the Virtual Filtering Platform.",
      "code": "PolicyConfigurationFailureOnVfp"
    }
  ],
  "lastUpdatedTime": "2016-06-10T17:03:37.9099622-07:00",
  "id": "38f40abe-9e46-4a00-beb1-3688652d3a4a"
},
"isMultitenantStack": false
},
{
  "resourceRef": "/networkInterfaces/5508df81-a766-48d9-a42d-7a9aelf6492d",
  "resourceId": "5508df81-a766-48d9-a42d-7a9aelf6492d",
  "etag": "W/\"cda45dd0-9d32-44cf-af5f-deb74a246c62\"",
  "instanceId": "8372e129-0b4f-43f1-96f7-4bd49b3e6192",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/5508df81-a766-48d9-a42d-7a9aelf6492d/ipConfigurations/e5ae036b-1b35-4529-9291-79522a5563e8",
        "resourceId": "e5ae036b-1b35-4529-9291-79522a5563e8",
        "etag": "W/\"cda45dd0-9d32-44cf-af5f-deb74a246c62\"",
        "instanceId": "4e301a29-a3aa-425e-a3b3-e0be0a3d333c",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.29",
          "privateIPAllocationMethod": "Static",
          "subnet": {

```

```

        "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
    },
    "accessControlList": {
        "resourceRef": "/accessControlLists/R2H06D4-Xrp01"
    },
    "loadBalancerBackendAddressPools": [
        {
            "resourceRef": "/loadBalancers/7c13fef9-2dcd-4561-8b33-
087425c0b519/backendAddressPools/2fd20693-a837-430c-b695-8a1c9323d158"
        },
        {
            "resourceRef": "/loadBalancers/888db9d4-716c-4002-8bee-
fclb933a1457/backendAddressPools/4374e94e-4aef-4f24-bdfa-bf6b51498da5"
        },
        {
            "resourceRef": "/loadBalancers/99bdd85b-f979-4d3f-931e-
48a80a88a885/backendAddressPools/9bfcf3b2-1c25-4360-88d8-0158cd0859bd"
        },
        {
            "resourceRef": "/loadBalancers/c5d4d9c6-5cdd-401f-a08c-
3ac01315036a/backendAddressPools/39eed82a-28b1-4288-be68-631262788785"
        }
    ],
    "loadBalancerInboundNatRules": []
}
},
"dnsSettings": {},
"privateMacAddress": "00FFFF008AE5",
"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
    "macSpoofingEnabled": "Disabled",
    "arpGuardEnabled": "Disabled",
    "dhcpGuardEnabled": "Disabled",
    "stormLimit": 0,
    "portFlowLimit": 0,
    "iovWeight": 0,
    "iovInterruptModeration": "Off",
    "iovQueuePairsRequested": 0,
    "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"configurationState": {
    "status": "Failure",
    "detailedInfo": [
        {
            "source": "VirtualSwitch",
            "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
            "code": "PolicyConfigurationFailureOnVfp"
        }
    ],
    "lastUpdatedTime": "2016-06-10T17:03:38.0193353-07:00",
    "id": "8372e129-0b4f-43f1-96f7-4bd49b3e6192"
},
"isMultitenantStack": false
}
},
{
    "resourceRef": "/networkInterfaces/5ecfd6cf-0792-45c4-8fce-63a201e3f5d9",
    "resourceId": "5ecfd6cf-0792-45c4-8fce-63a201e3f5d9",
    "etag": "W/\"2b58427a-8613-4a16-baa4-3fc7450f4a42\"",
    "instanceId": "c8d172b2-f756-4a25-8bcc-1d54d7d64955",
    "properties": {
        "provisioningState": "Succeeded",
        "ipConfigurations": [
            {

```

```

        "resourceRef": "/networkInterfaces/5ecfd6cf-0792-45c4-8fce-
63a201e3f5d9/ipConfigurations/33b79dbc-8632-439d-bd27-2b85d515f8f4",
        "resourceId": "33b79dbc-8632-439d-bd27-2b85d515f8f4",
        "etag": "W/\\"2b58427a-8613-4a16-baa4-3fc7450f4a42\\"",
        "instanceId": "317ce731-a7cb-4ef9-89fa-5e0f63574be9",
        "properties": {
            "provisioningState": "Succeeded",
            "privateIpAddress": "10.11.20.22",
            "privateIPAllocationMethod": "Static",
            "subnet": {
                "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
            },
            "accessControlList": {
                "resourceRef": "/accessControlLists/R2H06D4-ASq102"
            },
            "loadBalancerBackendAddressPools": [],
            "loadBalancerInboundNatRules": []
        }
    },
    "dnsSettings": {},
    "privateMacAddress": "00FFFF003346",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [],
    "portSettings": {
        "macSpoofingEnabled": "Disabled",
        "arpGuardEnabled": "Disabled",
        "dhcpGuardEnabled": "Disabled",
        "stormLimit": 0,
        "portFlowLimit": 0,
        "iovWeight": 0,
        "iovInterruptModeration": "Off",
        "iovQueuePairsRequested": 0,
        "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "configurationState": {
        "status": "Failure",
        "detailedInfo": [
            {
                "source": "VirtualSwitch",
                "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
                "code": "PolicyConfigurationFailureOnVfp"
            }
        ],
        "lastUpdatedTime": "2016-06-10T17:03:37.847415-07:00",
        "id": "c8d172b2-f756-4a25-8bcc-1d54d7d64955"
    },
    "isMultitenantStack": false
}
},
{
    "resourceRef": "/networkInterfaces/64814d86-8a2e-4a66-b452-f67b5e148a6f",
    "resourceId": "64814d86-8a2e-4a66-b452-f67b5e148a6f",
    "etag": "W/\\"75a9396f-4fc9-47de-8404-eb33e38e0201\\"",
    "instanceId": "35bac936-f071-4644-a6e9-1543054b0e50",
    "properties": {
        "provisioningState": "Succeeded",
        "ipConfigurations": [
            {
                "resourceRef": "/networkInterfaces/64814d86-8a2e-4a66-b452-
f67b5e148a6f/ipConfigurations/6d118103-b6b8-4621-8d67-93101a4770a5",
                "resourceId": "6d118103-b6b8-4621-8d67-93101a4770a5",
                "etag": "W/\\"75a9396f-4fc9-47de-8404-eb33e38e0201\\"",
                "instanceId": "c0bec304-d698-4278-8bcb-521bde580ec5",
                "properties": {
                    "provisioningState": "Succeeded",
                    "privateIpAddress": "10.11.20.31",

```

```

        "privateIPAllocationMethod": "Static",
        "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
        },
        "accessControlList": {
            "resourceRef": "/accessControlLists/R2H06D4-CA01"
        },
        "loadBalancerBackendAddressPools": [],
        "loadBalancerInboundNatRules": []
    }
}
],
"dnsSettings": {},
"privateMacAddress": "00FFFF0036EE",
"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
    "macSpoofingEnabled": "Disabled",
    "arpGuardEnabled": "Disabled",
    "dhcpGuardEnabled": "Disabled",
    "stormLimit": 0,
    "portFlowLimit": 0,
    "iovWeight": 0,
    "iovInterruptModeration": "Off",
    "iovQueuePairsRequested": 0,
    "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"configurationState": {
    "status": "Failure",
    "detailedInfo": [
        {
            "source": "VirtualSwitch",
            "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
            "code": "PolicyConfigurationFailureOnVfp"
        }
    ],
    "lastUpdatedTime": "2016-06-10T17:03:38.0974609-07:00",
    "id": "35bac936-f071-4644-a6e9-1543054b0e50"
},
"isMultitenantStack": false
}
},
{
    "resourceRef": "/networkInterfaces/665d0a8b-00bd-4db8-9a9d-d7a234e58dcd",
    "resourceId": "665d0a8b-00bd-4db8-9a9d-d7a234e58dcd",
    "etag": "W/\"df409b55-8ba2-4540-b274-69f90c09427f\"",
    "instanceId": "08062f05-7d88-4e0b-9ee9-5fd36e367a02",
    "properties": {
        "provisioningState": "Succeeded",
        "ipConfigurations": [
            {
                "resourceRef": "/networkInterfaces/665d0a8b-00bd-4db8-9a9d-
d7a234e58dcd/ipConfigurations/834c1c0a-3880-41b2-a034-58a9143d8853",
                "resourceId": "834c1c0a-3880-41b2-a034-58a9143d8853",
                "etag": "W/\"df409b55-8ba2-4540-b274-69f90c09427f\"",
                "instanceId": "bee20f5a-23ea-491a-9da6-041bfd927344",
                "properties": {
                    "provisioningState": "Succeeded",
                    "privateIPAddress": "10.11.20.30",
                    "privateIPAllocationMethod": "Static",
                    "subnet": {
                        "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
                    },
                    "accessControlList": {
                        "resourceRef": "/accessControlLists/R2H06D4-ADFS01"
                    }
                }
            }
        ]
    }
}

```

```

        "loadBalancerBackendAddressPools": [
          {
            "resourceRef": "/loadBalancers/92b66fb0-c8e4-4f2d-9548-
aab8e70dd59a/backendAddressPools/15a0482e-0b94-4102-adf5-f6efb0c04237"
          },
          {
            "resourceRef": "/loadBalancers/c7672d18-8497-4359-85bf-
e4e0982bf718/backendAddressPools/8b562e63-5b5a-4598-8953-52fd4c2e2f6e"
          }
        ],
        "loadBalancerInboundNatRules": []
      }
    ],
    "dnsSettings": {},
    "privateMacAddress": "00FFFF00DF6A",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [],
    "portSettings": {
      "macSpoofingEnabled": "Disabled",
      "arpGuardEnabled": "Disabled",
      "dhcpGuardEnabled": "Disabled",
      "stormLimit": 0,
      "portFlowLimit": 0,
      "iovWeight": 0,
      "iovInterruptModeration": "Off",
      "iovQueuePairsRequested": 0,
      "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "configurationState": {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualSwitch",
          "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
          "code": "PolicyConfigurationFailureOnVfp"
        }
      ]
    },
    "lastUpdatedTime": "2016-06-10T17:03:38.066241-07:00",
    "id": "08062f05-7d88-4e0b-9ee9-5fd36e367a02"
  },
  "isMultitenantStack": false
},
{
  "resourceRef": "/networkInterfaces/6bfd26f7-c43e-4d25-9d9f-a995faf37e16",
  "resourceId": "6bfd26f7-c43e-4d25-9d9f-a995faf37e16",
  "etag": "W/\"a6c0a639-3182-4c64-bd8f-f21149f471f0\"",
  "instanceId": "ff62cf92-b5bb-4bf2-9259-0704e41a9243",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/6bfd26f7-c43e-4d25-9d9f-
a995faf37e16/ipConfigurations/c4bbe7ab-e201-4fdd-9e97-fb6e11072829",
        "resourceId": "c4bbe7ab-e201-4fdd-9e97-fb6e11072829",
        "etag": "W/\"a6c0a639-3182-4c64-bd8f-f21149f471f0\"",
        "instanceId": "17735903-d811-4c5e-837e-74363be61be9",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.20",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/R2H06D4-Con01"
          }
        }
      }
    ]
  }
}

```



```

    },
    "loadBalancerBackendAddressPools": [],
    "loadBalancerInboundNatRules": []
  }
},
"dnsSettings": {},
"privateMacAddress": "00FFFF00873D",
"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
  "macSpoofingEnabled": "Disabled",
  "arpGuardEnabled": "Disabled",
  "dhcpGuardEnabled": "Disabled",
  "stormLimit": 0,
  "portFlowLimit": 0,
  "iovWeight": 0,
  "iovInterruptModeration": "Off",
  "iovQueuePairsRequested": 0,
  "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"configurationState": {
  "status": "Failure",
  "detailedInfo": [
    {
      "source": "VirtualSwitch",
      "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
      "code": "PolicyConfigurationFailureOnVfp"
    }
  ],
  "lastUpdatedTime": "2016-06-10T17:03:37.8104684-07:00",
  "id": "ff62cf92-b5bb-4bf2-9259-0704e41a9243"
},
"isMultitenantStack": false
},
{
  "resourceRef": "/networkInterfaces/c295951a-a495-41f0-b8ef-84d3317150a3",
  "resourceId": "c295951a-a495-41f0-b8ef-84d3317150a3",
  "etag": "W/\"592569bf-fdfa-4004-b465-5ec46fcdf27b\"",
  "instanceId": "a362889f-e715-4f71-b798-d9530ec27306",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/c295951a-a495-41f0-b8ef-
84d3317150a3/ipConfigurations/e3d8fbc1-a0c2-4583-a3bc-96f59e1a31a3",
        "resourceId": "e3d8fbc1-a0c2-4583-a3bc-96f59e1a31a3",
        "etag": "W/\"592569bf-fdfa-4004-b465-5ec46fcdf27b\"",
        "instanceId": "41b6f512-0224-4953-a7af-09757e1fe94d",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.24",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/R2H06D4-WDS01"
          },
          "loadBalancerBackendAddressPools": [],
          "loadBalancerInboundNatRules": []
        }
      }
    ]
  },
  "dnsSettings": {},
  "privateMacAddress": "00FFFF00DD4F",

```

```

"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
  "macSpoofingEnabled": "Disabled",
  "arpGuardEnabled": "Disabled",
  "dhcpGuardEnabled": "Disabled",
  "stormLimit": 0,
  "portFlowLimit": 0,
  "iovWeight": 0,
  "iovInterruptModeration": "Off",
  "iovQueuePairsRequested": 0,
  "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"configurationState": {
  "status": "Failure",
  "detailedInfo": [
    {
      "source": "VirtualSwitch",
      "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
      "code": "PolicyConfigurationFailureOnVfp"
    }
  ],
  "lastUpdatedTime": "2016-06-10T17:03:37.8787124-07:00",
  "id": "a362889f-e715-4f71-b798-d9530ec27306"
},
"isMultitenantStack": false
},
{
  "resourceRef": "/networkInterfaces/cb30d461-1921-42b3-b8f1-042c02271aa1",
  "resourceId": "cb30d461-1921-42b3-b8f1-042c02271aa1",
  "etag": "W/\"c53edc8f-e195-4dd8-85e2-134c79e3a763\"",
  "instanceId": "1dbd4c42-d37b-472c-a4dc-f3f983078515",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/cb30d461-1921-42b3-b8f1-
042c02271aa1/ipConfigurations/0d1e86b9-2442-43fc-8fdf-7d12f1f152ca",
        "resourceId": "0d1e86b9-2442-43fc-8fdf-7d12f1f152ca",
        "etag": "W/\"c53edc8f-e195-4dd8-85e2-134c79e3a763\"",
        "instanceId": "09f3330e-2fec-41cc-a0f7-47598bbe61a",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.21",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/R2H06D4-ASq101"
          },
          "loadBalancerBackendAddressPools": [],
          "loadBalancerInboundNatRules": []
        }
      }
    ]
  },
  "dnsSettings": {},
  "privateMacAddress": "00FFFF00DDC1",
  "privateMacAllocationMethod": "Static",
  "serviceInsertionElements": [],
  "portSettings": {
    "macSpoofingEnabled": "Disabled",
    "arpGuardEnabled": "Disabled",
    "dhcpGuardEnabled": "Disabled",
    "stormLimit": 0,
    "portFlowLimit": 0,

```

```

        "iovWeight": 0,
        "iovInterruptModeration": "Off",
        "iovQueuePairsRequested": 0,
        "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "configurationState": {
        "status": "Failure",
        "detailedInfo": [
            {
                "source": "VirtualSwitch",
                "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
                "code": "PolicyConfigurationFailureOnVfp"
            }
        ],
        "lastUpdatedTime": "2016-06-10T17:03:37.8359266-07:00",
        "id": "1dbd4c42-d37b-472c-a4dc-f3f983078515"
    },
    "isMultitenantStack": false
},
{
    "resourceRef": "/networkInterfaces/e40e3b34-13fd-42fc-a74e-26fe68999b73",
    "resourceId": "e40e3b34-13fd-42fc-a74e-26fe68999b73",
    "etag": "W/\"7481d801-d103-4c30-a6d2-013df0790946\"",
    "instanceId": "cf89bc5d-32d6-4f35-9cbf-66ae94e5c004",
    "properties": {
        "provisioningState": "Succeeded",
        "ipConfigurations": [
            {
                "resourceRef": "/networkInterfaces/e40e3b34-13fd-42fc-a74e-
26fe68999b73/ipConfigurations/424fb61c-3b12-4c02-82d3-4a36d66d1617",
                "resourceId": "424fb61c-3b12-4c02-82d3-4a36d66d1617",
                "etag": "W/\"7481d801-d103-4c30-a6d2-013df0790946\"",
                "instanceId": "b53ecbbf-b21c-43f1-a606-36b9fe111e80",
                "properties": {
                    "provisioningState": "Succeeded",
                    "privateIPAddress": "10.11.20.26",
                    "privateIPAllocationMethod": "Static",
                    "subnet": {
                        "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
                    },
                    "accessControlList": {
                        "resourceRef": "/accessControlLists/R2H06D4-ACS01"
                    },
                    "loadBalancerBackendAddressPools": [
                        {
                            "resourceRef": "/loadBalancers/539bd9de-9506-4423-9047-
6eb9364c2a84/backendAddressPools/b6fbd9dd-1611-4ab0-ab3a-37176707bb9b"
                        }
                    ],
                    "loadBalancerInboundNatRules": []
                }
            }
        ],
        "dnsSettings": {},
        "privateMacAddress": "00FFFF008A58",
        "privateMacAllocationMethod": "Static",
        "serviceInsertionElements": [],
        "portSettings": {
            "macSpoofingEnabled": "Disabled",
            "arpGuardEnabled": "Disabled",
            "dhcpGuardEnabled": "Disabled",
            "stormLimit": 0,
            "portFlowLimit": 0,
            "iovWeight": 0,
            "iovInterruptModeration": "Off",
            "iovQueuePairsRequested": 0,

```

```

    "vmqWeight": 100
  },
  "isHostVirtualNetworkInterface": false,
  "configurationState": {
    "status": "Failure",
    "detailedInfo": [
      {
        "source": "VirtualSwitch",
        "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
        "code": "PolicyConfigurationFailureOnVfp"
      }
    ],
    "lastUpdatedTime": "2016-06-10T17:03:37.9412444-07:00",
    "id": "cf89bc5d-32d6-4f35-9cbf-66ae94e5c004"
  },
  "isMultitenantStack": false
}
},
{
  "resourceRef": "/networkInterfaces/e9e900f3-8285-4fef-b336-65b4896e09a8",
  "resourceId": "e9e900f3-8285-4fef-b336-65b4896e09a8",
  "etag": "W/\"e248b728-51a2-4be7-91cf-8d894a33dbaf\"",
  "instanceId": "dbd62461-2f1b-434a-aa54-d7fab820cd57",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/e9e900f3-8285-4fef-b336-
65b4896e09a8/ipConfigurations/007efd64-1e3e-4104-97c7-039cc1bd3ec3",
        "resourceId": "007efd64-1e3e-4104-97c7-039cc1bd3ec3",
        "etag": "W/\"e248b728-51a2-4be7-91cf-8d894a33dbaf\"",
        "instanceId": "7f9593e7-c92b-4e63-b1d8-c0bfa3119e2e",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.23",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/R2H06D4-SUS01"
          },
          "loadBalancerBackendAddressPools": [],
          "loadBalancerInboundNatRules": []
        }
      }
    ],
    "dnsSettings": {},
    "privateMacAddress": "00FFFF0089CA",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [],
    "portSettings": {
      "macSpoofingEnabled": "Disabled",
      "arpGuardEnabled": "Disabled",
      "dhcpGuardEnabled": "Disabled",
      "stormLimit": 0,
      "portFlowLimit": 0,
      "iovWeight": 0,
      "iovInterruptModeration": "Off",
      "iovQueuePairsRequested": 0,
      "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "configurationState": {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualSwitch",

```

```

Platform.",
    "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
    "code": "PolicyConfigurationFailureOnVfp"
    },
    "lastUpdatedTime": "2016-06-10T17:03:37.8630807-07:00",
    "id": "dbd62461-2f1b-434a-aa54-d7fab820cd57"
  },
  "isMultitenantStack": false
}
},
{
  "resourceRef": "/networkInterfaces/f5730847-0879-4eab-89de-ce54b217630c",
  "resourceId": "f5730847-0879-4eab-89de-ce54b217630c",
  "etag": "W/\\"0d7aa01f-dd17-48ad-ba7b-cf20de59563b\\"",
  "instanceId": "d0842ac6-36aa-4fae-93ce-98beedaca3ee",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/f5730847-0879-4eab-89de-
ce54b217630c/ipConfigurations/cf2a6356-c9de-4e63-9abe-d4b7759a7181",
        "resourceId": "cf2a6356-c9de-4e63-9abe-d4b7759a7181",
        "etag": "W/\\"0d7aa01f-dd17-48ad-ba7b-cf20de59563b\\"",
        "instanceId": "efce1627-227b-44a7-8bee-83cb578472a8",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "10.11.20.27",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/logicalnetworks/47931036-2874-4d45-b1f1-
b69666088968/subnets/d977fe45-c5d0-43b6-8420-acc441cd15ec"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/R2H06D4-ACS02"
          },
          "loadBalancerBackendAddressPools": [
            {
              "resourceRef": "/loadBalancers/539bd9de-9506-4423-9047-
6eb9364c2a84/backendAddressPools/b6fbd9dd-1611-4ab0-ab3a-37176707bb9b"
            }
          ],
          "loadBalancerInboundNatRules": []
        }
      }
    ],
    "dnsSettings": {},
    "privateMacAddress": "00FFFF00DFDC",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [],
    "portSettings": {
      "macSpoofingEnabled": "Disabled",
      "arpGuardEnabled": "Disabled",
      "dhcpGuardEnabled": "Disabled",
      "stormLimit": 0,
      "portFlowLimit": 0,
      "iovWeight": 0,
      "iovInterruptModeration": "Off",
      "iovQueuePairsRequested": 0,
      "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "configurationState": {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualSwitch",
          "message": "Failed to configure the policies on the Virtual Filtering
Platform.",
          "code": "PolicyConfigurationFailureOnVfp"
        }
      ]
    }
  }
}

```

```

    }
  ],
  "lastUpdatedTime": "2016-06-10T17:03:37.972492-07:00",
  "id": "d0842ac6-36aa-4fae-93ce-98beedaca3ee"
},
"isMultitenantStack": false
}
}
],
"nextLink": ""
}

```

The JSON schema for the **networkInterfaces GET ALL** method is located in section 6.11.3.

3.1.5.11.1.3.3 Processing Details

Retrieves all **networkInterfaces** resources.

3.1.5.11.1.4 DELETE

This method deletes a **networkInterfaces** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.11.1.4.1 Request Body

None.

3.1.5.11.1.4.2 Response Body

None.

3.1.5.11.1.4.3 Processing Details

Deletes a **networkInterfaces** resource.

3.1.5.11.2 ipConfigurations

The **ipConfigurations** resource represents configuration information for IP addresses: allocation method, actual IP address, membership of a logical or virtual subnet, load balancing and access control information.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{parentResourceId}/ipConfigurations/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.11.2.1.1	Create a new ipConfigurations resource or update an existing ipConfigurations resource.
GET	3.1.5.11.2.1.2	Get one ipConfigurations resource.
GET (All)	3.1.5.11.2.1.3	List all ipConfigurations resources in the Network Controller.
DELETE	3.1.5.11.2.1.4	Deletes an ipConfigurations resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
accessControlList	Optional	Indicates a reference to an accessControlList resource that defines the ACLs in and out of the IP configuration.
loadBalancerBackendAddressPool	Optional Read-only	Reference to backendAddressPools child resource of loadBalancers resource.
loadBalancerInboundNatRules	Optional	Reference to inboundNatRules child resource of loadBalancers resource.
privateIPAddress	Optional	Indicates the private IP address of the IP configuration.
privateIPAllocationMethod	Optional	<p>Possible values are: Static, Dynamic, and Unmanged.</p> <p>Static allocation</p> <p>The server MUST validate that there is a privateIPAddress property in the input message and that the IP Address falls within the range of the subnet referenced by the IP configuration REST resource, and that the IP address is not already in use.</p> <p>If the IP is not in the subnet range, the server MUST return an error response with the error code set to "PrivateIPAddressNotInSubnet".</p> <p>If the IP is already in use, the server MUST return an error response with the error code set to</p>

Element name	Type	Description
		<p>"PrivateIPAddressInUse".</p> <p>Dynamic allocation The server SHOULD allocate an IP address from the subnet referenced by the IP configuration. The server SHOULD return an error response with code "SubnetIsFull" if there are no more IP Addresses available. If the server allocates an IP address, then the server MUST return the allocated IP in the privateIPAddress property in GET operations on the resource, see section 3.1.5.11.2.1.2.</p> <p>Unmanaged allocation The server MUST support unmanaged allocation only for IP configurations with references to logical network subnets that have the networkVirtualizationEnabled property set to False. The server MUST return an error response with code "UnmanagedAllocationMethodNotSupported" for references to any other type of subnets. The server MUST apply all applicable policies except IP address to the network interface that contains an IP configuration with unmanaged private IP allocation. Examples of applicable policies are access control lists and QOS.</p>
publicIpAddress	Optional	Indicates the public IP address of the IP configuration.
serviceInsertion	Optional	Indicates a reference to a serviceInsertion resource that defines the service insertion in and out of the IP configuration.
subnet	Read-only	Indicates a reference to the subnet resource that the IP configuration is connected to.

3.1.5.11.2.1 HTTP Methods

3.1.5.11.2.1.1 PUT

This method creates a new **ipConfigurations** resource or updates an existing **ipConfigurations** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{parentResourceId}/ipConfigurations/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.11.2.1.1.1 Request Body

The format for the request body for the **ipConfigurations PUT** method is as follows.

```
{
  "resourceId": "bb36bb47-b8c7-48a8-b868-bc0d695452f7",
  "properties": {
    "ipConfigurations": [
      {
        "resourceId": "2aaa9fe0-2d74-475b-9ecf-a8ce8ad8c919",
        "properties": {
          "privateIPAddress": "13.168.101.21",
          "privateIPAllocationMethod": "Static",
          "subnet": {
            "resourceRef": "/virtualNetworks/69ec2dd0-510f-4e28-b665-54eee2ed41b5/subnets/2e777dcc-7bbd-427f-8f2b-62ab85853de9"
          },
          "accessControlList": {
            "resourceRef": "/accessControlLists/097890d3-b154-46c8-a9ad-c19871e4ecfc",
            "loadBalancerInboundNatRules": [
              {
                "resourceRef": "/loadBalancers/2ea43ab6-cb92-4ad3-854f-bc62092cf4b0/inboundNatRules/inb"
              },
              {
                "resourceRef": "/loadBalancers/2ea43ab6-cb92-4ad3-854f-bc62092cf4b0/inboundNatRules/inb2"
              }
            ]
          }
        }
      }
    ],
    "dnsSettings": {
      "DnsServers": [ "1.2.3.4", "1.2.3.5" ]
    },
    "privateMacAddress": "001F46000004",
    "privateMacAllocationMethod": "Static",
    "serviceInsertionElements": [ ],
    "portSettings": {
      "macSpoofingEnabled": "Disabled",
      "arpGuardEnabled": "Disabled",
      "dhcpGuardEnabled": "Disabled",
      "stormLimit": 0,
      "portFlowLimit": 0,
      "iovWeight": 0,
      "iovInterruptModeration": "Off",
      "iovQueuePairsRequested": 0,
      "vmqWeight": 100
    },
    "isHostVirtualNetworkInterface": false,
    "internalDnsNameLabel": "Tenant0-App0-Tier1-DIP-0_VMAdapter-13",
    "isMultitenantStack": false,
  }
}
```

}

The JSON schema for the **ipConfigurations PUT** method is contained within the schema for its parent resource **networkInterfaces**, in section 6.11.1.

3.1.5.11.2.1.1.2 Response Body

The format for the **ipConfigurations PUT** response body is the same as the format for the **ipConfigurations GET** response body (section 3.1.5.11.2.1.2.2). The JSON schema is located in section 6.11.4.1.

3.1.5.11.2.1.1.3 Processing Details

Create a new ipConfigurations resource or update an existing ipConfigurations resource.

3.1.5.11.2.1.2 GET

This method retrieves a **ipConfigurations** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{parentResourceId}/ipConfigurations/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.11.2.1.2.1 Request Body

None.

3.1.5.11.2.1.2.2 Response Body

The format for the response body for the **ipConfigurations GET** method is as follows.

```
{
  "resourceRef": "/networkInterfaces/ec3ac77e-64be-4bc1-a2e3-7cd6170a4752/ipConfigurations/cbcab016-6c87-4a32-8158-08e0db71635a",
  "resourceId": "cbcab016-6c87-4a32-8158-08e0db71635a",
  "etag": "W/\"5e2e060a-2103-4022-87ee-bf1667bd18eb\"",
  "instanceId": "83283a7e-4885-468a-9a2a-c7c568efd290",
  "properties": {
    "provisioningState": "Succeeded",
    "privateIPAddress": "13.168.101.21",
    "privateIPAllocationMethod": "Static",
```

```

    "subnet": {
      "resourceRef": "/virtualNetworks/740f3670-de42-4345-aaa7-6bb8d423c5df/subnets/da459373-42ee-43d3-b094-6e2176406e4a"
    },
    "accessControlList": {
      "resourceRef": "/accessControlLists/4561e835-128c-44cd-b55f-98bca0d34aba"
    },
    "loadBalancerBackendAddressPools": [
      {
        "resourceRef": "/loadBalancers/2ea43ab6-cb92-4ad3-854f-bc62092cf4b0/backendAddressPools/lcd5d838-b574-4bcb-b6ac-9db3fc5e5f4d"
      }
    ],
    "loadBalancerInboundNatRules": []
  }
}

```

The JSON schema for the **ipConfigurations GET** method is located in section 6.11.4.1.

3.1.5.11.2.1.2.3 Processing Details

Retrieves an **ipConfigurations** resource.

3.1.5.11.2.1.3 GET (All)

This method retrieves all **ipConfigurations** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkInterfaces/{parentResourceId}/ipConfigurations
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.11.2.1.3.1 Request Body

None.

3.1.5.11.2.1.3.2 Response Body

The format for the response body for the **ipConfigurations GET ALL** method is as follows.

```

{
  "value": [
    {
      "resourceRef": "/networkInterfaces/ee9be550-4dd3-43af-9b69-8a45f1ef3569/ipConfigurations/clfe8acf-cf68-45f0-bc70-f9a1cd8d3953",
      "resourceId": "clfe8acf-cf68-45f0-bc70-f9a1cd8d3953",
      "etag": "W/\"d728c292-9499-497b-a328-0216b50e7f21\""
    }
  ]
}

```

```

    "instanceId": "2d254540-9c81-4216-8da6-44d498061040",
    "properties": {
      "provisioningState": "Succeeded",
      "privateIpAddress": "20.168.0.26",
      "privateIPAllocationMethod": "Static",
      "subnet": {
        "resourceRef": "/virtualNetworks/29d028bc-a244-4bec-b3bb-958ea0c64681
          /subnets/c0f6d801-ca07-4345-8274-20b13454c51a"
      },
      "accessControlList": {
        "resourceRef": "/accessControlLists/28f4e1fc-2d3a-41c0-97f2-261be40bda77"
      },
      "loadBalancerBackendAddressPools": [],
      "loadBalancerInboundNatRules": []
    }
  },
  "nextLink": ""
}

```

The JSON schema for the **ipConfigurations GET ALL** method is located in section 6.11.4.2.

3.1.5.11.2.1.3.3 Processing Details

Retrieves all ipConfigurations resources.

3.1.5.11.2.1.4 DELETE

This method deletes an **ipConfigurations** resource.

It is invoked through the following URI.

```

https://<url>/networking/v1/networkInterfaces/{parentResourceId}/ipConfigurations/{resourceId}

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.11.2.1.4.1 Request Body

None.

3.1.5.11.2.1.4.2 Response Body

None.

3.1.5.11.2.1.4.3 Processing Details

Deletes an ipConfigurations resource.

3.1.5.12 operations

The **operations** resource provides the status of a specific asynchronous operation. The URL for a specific operations resource is returned in the AsyncOperation header of that operation.

Note The system currently stores a history of one million operations. If the system reaches more than a million operations, then the oldest ones will be removed from the Network Controller and are stored in the operational logs of the Network Controller.

It is invoked through the following URI.

```
https://<url>/networking/v1/operations/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
GET	3.1.5.12.1	Get an operations resource

See section 1.3.2, for more details on asynchronous operation usage.

The following property elements are valid:

Element name	Type	Description
Status	Read-only	This is the status of the operations. The following are valid values "InProgress Succeeded Failed Canceled".
error	Read-only	Indicates that the request was in error or could not be processed. This element contains the detailed explanation on what the error was and what caused it. It will only be returned when the status element is returned as "Failed".
error.code	Read-only	Indicates the string value of the error code associated with the error being returned. This will always be returned in case of an error response.
error.message	Read-only	Indicates the error message provided to the caller. This is used in diagnosing what caused the error. This will always be returned in case of an error response.
error.details	Read-only	Indicates the detailed information of the error. This is used for advanced diagnostics purposes. It is ideal for diagnostics if all these details are returned but they will not always be returned. It will not be in the error response content if it is not returned.
error.details.code	Read-only	Indicates the detailed error code of the error response. It is ideal for diagnostics if this code is returned but it will not always be returned. It will not be in the error response content if it is not returned.

Element name	Type	Description
error.details.target	Read-only	Indicates the target of the detailed error message in the error response. It is ideal for diagnostics if this code is returned but it will not always be returned. It will not be in the error response content if it is not returned.
error.details.message	Read-only	Indicates the detailed message of the error response. It is ideal for diagnostics if this code is returned but it will not always be returned. It will not be in the error response content if it is not returned.
error.details.innerError	Read-only	Provides the inner error details if any for the error. This can help with more detailed diagnostics of the error.

3.1.5.12.1 HTTP Methods

3.1.5.12.1.1 GET

This method retrieves an **operations** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/operations/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.12.1.1.1 Request Body

None.

3.1.5.12.1.1.2 Response Body

The format for the response body for the **operations GET** method is as follows.

```
{
  "status": "Succeeded"
}
```

3.1.5.12.1.1.3 Processing Details

Retrieves an operations resource.

3.1.5.13 operationResults

The **operationResults** resource provides the status of a specific asynchronous operation. The URL for a specific operations resource is returned in the location header of that operations.

Note: The system currently stores a history of one million operationResults. If the system reaches more than a million operationResults then the oldest ones will be removed from the Network Controller but are still located in the operational logs of the Network Controller.

The URI for the resource is as follows.

```
https://<url>/networking/v1/operationResults/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
GET	3.1.5.13.1	Get an operationResults resource.

See Asynchronous Operations, section 1.3.2, for more details on its usage.

The following property elements are valid:

Element name	Type	Description
Status	Read-only	This is the status of the operations. The following are valid values "InProgress Succeeded Failed Canceled".
error	Read-only	Indicates that the request was in error or could not be processed. This element contains the detailed explanation on what the error was and what caused it. It will only be returned when the status element is returned as "Failed".
error.code	Read-only	Indicates the string value of the error code associated with the error being returned. This will always be returned in case of an error response.
error.message	Read-only	Indicates the error message provided to the caller. This is used in diagnosing what caused the error. This will always be returned in case of an error response.
error.details	Read-only	Indicates the detailed information of the error. This is used for advanced diagnostics purposes. It is ideal for diagnostics if all these details are returned but they will not always be returned. It will not be in the error response content if it is not returned.
error.details.code	Read-only	Indicates the detailed error code of the error response. It is ideal for diagnostics if this code is returned but it will not always be returned. It will not be in the error response content if it is not returned.
error.details.target	Read-only	Indicates the target of the detailed error message in the error response. It is ideal for diagnostics if this code is returned but it will not always be returned. It will not be in the error response content if it is not returned.
error.details.message	Read-only	Indicates the detailed message of the error response. It is ideal for diagnostics if this code is returned but it will not always be returned. It will not be in the error response content if it is not returned.

Element name	Type	Description
error.details.innerError	Read-only	Provides the inner error details if any for the error. This can help with more detailed diagnostics of the error.

3.1.5.13.1 HTTP Methods

3.1.5.13.1.1 GET

This method retrieves an **operationResults** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/operationResults/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.13.1.1.1 Request Body

None.

3.1.5.13.1.1.2 Response Body

The format for the response body for the **operationResults GET** method is as follows.

```
{
  "resourceRef": "/networkInterfaces/VM12interface",
  "resourceId": "VM12interface",
  "etag": "W/\"6cf71bc5-4624-4903-a1d2-89b9c1f0761f\"",
  "instanceId": "75801123-0db8-4927-987a-bbaf6f4b3326",
  "properties": {
    "provisioningState": "Succeeded",
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/VM12interface/ipConfigurations/c1fe8acf-cf68-45f0-
bc70-f9a1cd8d3953",
        "resourceId": "c1fe8acf-cf68-45f0-bc70-f9a1cd8d3953",
        "etag": "W/\"6cf71bc5-4624-4903-a1d2-89b9c1f0761f\"",
        "instanceId": "00802eaf-97bb-4f85-a4f5-dac025d1cf8f",
        "properties": {
          "provisioningState": "Succeeded",
          "privateIPAddress": "20.168.0.126",
          "privateIPAllocationMethod": "Static",
          "subnet": {
```



```

        "resourceRef": "/virtualNetworks/29d028bc-a244-4bec-b3bb-
958ea0c64681/subnets/c0f6d801-ca07-4345-8274-20b13454c51a"
    },
    "accessControlList": {
        "resourceRef": "/accessControlLists/28f4e1fc-2d3a-41c0-97f2-261be40bda77"
    },
    "loadBalancerBackendAddressPools": [],
    "loadBalancerInboundNatRules": []
}
],
"dnsSettings": {},
"privateMacAddress": "003624000005",
"privateMacAllocationMethod": "Static",
"serviceInsertionElements": [],
"portSettings": {
    "macSpoofingEnabled": "Disabled",
    "arpGuardEnabled": "Disabled",
    "dhcpGuardEnabled": "Disabled",
    "stormLimit": 0,
    "portFlowLimit": 0,
    "iovWeight": 0,
    "iovInterruptModeration": "Off",
    "iovQueuePairsRequested": 0,
    "vmqWeight": 100
},
"isHostVirtualNetworkInterface": false,
"internalDnsNameLabel": "VM10-Adapter1",
"configurationState": {
    "status": "Failure",
    "detailedInfo": [
        {
            "source": "VirtualSwitch",
            "message": "The host has not yet established communication with the Network
Controller.",
            "code": "HostNotConnectedToController"
        }
    ],
    "lastUpdatedTime": "2016-06-23T17:39:16.8945892-07:00",
    "id": "75801123-0db8-4927-987a-bbaf6f4b3326"
},
"isMultitenantStack": false
},
"tags": {
    "VirtualMachineId": "a898f3ec-aa8c-49de-bbcf-84f59c5e6a53",
    "VnicId": "7edb10da-bcd1-4d2d-87ca-f17405be5849"
}
}
}

```

3.1.5.13.1.1.3 Processing Details

Retrieves an operationResults resource

3.1.5.14 publicIpAddresses

The **publicIpAddress** resource specifies an IP Address which is publically available. This **publicIpAddress** resource is used by the **virtualGateways** resource and the **loadBalancers** resource to indicate the IP Address that can be used to communicate with the virtual network from outside it.

The URI for the resource is as follows.

```
https://<url>/networking/v1/publicIpAddresses/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.14.1.1	Create a new publicIpAddresses resource or update an existing publicIpAddresses resource.
GET	3.1.5.14.1.2	Get one publicIpAddresses resource.
GET (All)	3.1.5.14.1.3	List all publicIpAddresses resources in the Network Controller.
DELETE	3.1.5.14.1.4	Delete a publicIpAddresses resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
ipAddress	Optional	IP address which is allocated. The caller can pass in a specific public IP address to be allocated or leave it empty.
publicIpAllocationMethod	Optional	Dynamic Static In case of static publicIpAllocationMethod, ipAddress property needs to be passed indicating the specific public IP address which needs to be allocated. In case of Dynamic publicIpAllocationMethod, the ipAddress property is not meaningful in a PUT (allocation request). In case of Dynamic, any free public IP address will be allocated to the caller.
dnsRecord	Optional	Properties of a DNS record associated with this public IP address.
IdleTimeoutInMinutes	Optional	Optional. Specifies the timeout for the TCP idle connection. The value can be set between 4 and 30 minutes. The default is 4 minutes. If public IP is used as a frontend IP of a Load Balancer this value is ignored.
ipConfiguration	Read-only	Reference to an ipConfigurations resource. Relative URI of the private IP address with which this public IP is associated. Private ip can be defined on NIC, loadBalancers, or gateways.

3.1.5.14.1 HTTP Methods

3.1.5.14.1.1 PUT

This method creates a new **publicIpAddresses** resource or updates an existing **publicIpAddresses** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/publicIpAddresses/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.14.1.1.1 Request Body

The format for the request body for the **publicIpAddresses PUT** method is as follows.

```
{
  "resourceId": "{uniqueString}",
  "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "tags": { "key": "value" },
  "resourceMetadata":
  {
    "client": "WAP Network Resource Provider",
    "tenantId": "{subscriptionid}",
    "groupId": "{groupname}",
    "name": "{name}",
    "originalHref": "https://..."
  },
  "properties": {
    "etag": "generated-guid",
    "provisioningState": "Updating|Deleting|Failed|Succeeded|Cancelled",
    "ipAddress": "203.0.113.1", // the given IP address
    "publicIPAllocationMethod": "Static|Dynamic",
    "dnsRecord":
    {
      "fqdn": "my-cloud-service.cloudapp.net"
    }
  }
}
```

The JSON schema for the **publicIpAddresses PUT** method is located in section 6.12.1.

3.1.5.14.1.1.2 Response Body

The format is the same as the format for the **publicIpAddresses GET** response body (section 3.1.5.14.1.2.2). The JSON schema is located in section 6.12.2.

3.1.5.14.1.1.3 Processing Details

Create a new **publicIpAddresses** resource or update an existing **publicIpAddresses** resource.

3.1.5.14.1.2 GET

This method retrieves an **publicIpAddresses** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/publicIpAddresses/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.14.1.2.1 Request Body

None.

3.1.5.14.1.2.2 Response Body

The format for the **publicIpAddresses GET** response body is as follows.

```
{
  "resourceRef": "/publicIPAddresses/pip2",
  "resourceId": "pip2",
  "resourceMetadata": {
    "resourceName": "outbound1"
  },
  "etag": "W/\"90a799f7-549d-44ac-baa9-f7ccf69b1dda\"",
  "instanceId": "018a7e31-cf8e-4292-899d-2f3f4b9b96c5",
  "properties": {
    "provisioningState": "Updating",
    "ipAddress": "12.21.4.51",
    "publicIPAllocationMethod": "Static",
    "idleTimeoutInMinutes": 1
  }
}
```

The JSON schema for the **publicIpAddresses GET** method is located in section 6.12.2.

3.1.5.14.1.2.3 Processing Details

Retrieves a **publicIpAddresses** resource.

3.1.5.14.1.3 GET (All)

This method retrieves all **publicIpAddresses** resources.

It is invoked through the following URI.

https://<url>/networking/v1/publicIpAddresses

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.14.1.3.1 Request Body

None.

3.1.5.14.1.3.2 Response Body

The format for the **publicIpAddresses GET ALL** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/publicIpAddresses/pip1",
      "resourceId": "pip1",
      "etag": "W/\"2b2feb9e-9830-42ed-9923-01d6693fb240\"",
      "instanceId": "b34f7a07-4637-40f2-abc5-075ddfc9b785",
      "properties": {
        "provisioningState": "Succeeded",
        "ipAddress": "12.21.4.5",
        "publicIPAllocationMethod": "Dynamic",
        "idleTimeoutInMinutes": 4
      }
    },
    {
      "resourceRef": "/publicIpAddresses/pip2",
      "resourceId": "pip2",
      "etag": "W/\"c7a95773-8ad3-44a6-b89c-f4a305569e1d\"",
      "instanceId": "018a7e31-cf8e-4292-899d-2f3f4b9b96c5",
      "properties": {
        "provisioningState": "Succeeded",
        "ipAddress": "12.21.4.51",
        "publicIPAllocationMethod": "Static",
        "idleTimeoutInMinutes": 4
      },
      "tags": {
        "a": "b"
      }
    }
  ],
  "nextLink": ""
}
```

The JSON schema for the **publicIpAddresses GET ALL** method is located in section 6.12.3.

3.1.5.14.1.3.3 Processing Details

Retrieves all **publicIpAddresses** resources.

3.1.5.14.1.4 DELETE

This method deletes a **publicIpAddress** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/publicIpAddresses/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.14.1.4.1 Request Body

None.

3.1.5.14.1.4.2 Response Body

None.

3.1.5.14.1.4.3 Processing Details

Deletes a publicIpAddress resource.

3.1.5.15 servers

The **servers** resource represents a physical server that is being controlled by the Network Controller. The network controller controls all the physical servers that the client adds to the network.

The URI for the resource is as follows.

```
https://<url>/networking/v1/servers/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.15.1.1	Create a new servers resource or update an existing servers resource.
GET	3.1.5.15.1.2	Get one servers resource
GET (All)	3.1.5.15.1.3	List all servers resources in the Network Controller
DELETE	3.1.5.15.1.4	Deletes a servers resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
connections		Indicates an array of connections that specifies the information needed to connect to the specific device for the purposes of managing and controlling the device.
connections.credential		Reference to a credential resource that can be used to connect to the device for management purposes.
connections.credentialType		See credentials resource, section 3.1.5.2.
connections.managementAddresses		The management address used to connect to the server. This can be in the form of an IPv4 IP address, an IPv6 IP address, or a DNS name.
model	Optional	Model number of server.
networkInterfaces[]	Optional	An array of network interfaces this server has. See networkInterfaces resource, section 3.1.5.15.2, for more details. These networkInterfaces resources will be automatically created based on the physical network interface cards the server has. They cannot be created or deleted but can have their properties updated.
os	Optional	Identifies the operating system running on the server.
rackSlot	Optional	Indicates the slot in the rack in which the server has been plugged.
serial	Optional	Indicates the serial number of the server.
vendor	Optional	Indicates the name of the server's vendor.
certificate		The encoded representation of the certificate that the Network Controller accepts when the server (host) represented by this REST resource connects to the controller.
configurationState	Optional Read-only	Indicates the configuration state for the server (host). See definition in section 2.2.4. The values are the same as for network interfaces and load balancer MUX.

3.1.5.15.1 HTTP Methods

3.1.5.15.1.1 PUT

This method creates a new server resource or updates an existing server resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.15.1.1.1 Request Body

The format for the request body for the **server PUT** method is as follows.

```
{
  "resourceId": "server1",
  "properties": {
    "connections": [
      {
        "managementAddresses": [
          "servername"
        ],
        "credential": {
          "resourceRef": "/credentials/sn-credentials"
        },
        "credentialType": "usernamePassword"
      },
      {
        "managementAddresses": [
          "servername",
          "altservername"
        ],
        "credential": {
          "resourceRef": "/credentials/9321c52a-3bb5-4553-89a5-4d453b7bcb05"
        },
        "credentialType": "X509Certificate"
      }
    ],
    "certificate": "MIIC",
    "networkInterfaces": [
      {
        "resourceId": "ab055aa1-27d6-4a2e-a4b7-7916008dd1a4",
```



```

    "properties": {
      "interfaceIndex": "0",
      "isBMC": "false",
      "logicalSubnets": [
        {
          "resourceRef": "/logicalnetworks/72570539-58a9-43d6-b858-
d7ec3f202c6d/subnets/3d46ae72-b1d0-48fa-b4fe-ab183e737493"
        }
      ]
    }
  ]
}
}
}
}

```

The JSON schema for the **server PUT** method is located in section 6.13.1.

3.1.5.15.1.1.2 Response Body

The format is the same as the format for the **server GET** response body (section 3.1.5.15.1.2.2). The JSON schema is located in section 6.13.2.

3.1.5.15.1.1.3 Processing Details

Create a new server resource or update an existing server resource.

3.1.5.15.1.2 GET

This method retrieves a server resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.15.1.2.1 Request Body

None.

3.1.5.15.1.2.2 Response Body

The format for the response body for the **servers GET** method is as follows.

```
{
```

```

"resourceRef": "/servers/Server501",
"resourceId": "Server501",
"resourceMetadata": {
  "client": "Test",
  "groupId": "",
  "resourceName": "Server501"
},
"etag": "W/\"61c878ca-fa0b-4509-b736-24d67bb2086c\"",
"instanceId": "64313570-3232-4b5e-914e-8b3b7895e550",
"properties": {
  "provisioningState": "Succeeded",
  "connections": [
    {
      "managementAddresses": [
        "10.1.1.1"
      ],
      "credential": {
        "resourceRef": "/credentials/Administrator"
      },
      "credentialType": "UsernamePassword"
    }
  ],
  "certificate": "",
  "rackSlot": "1",
  "os": "Windows",
  "model": "Minitower",
  "vendor": "Dell",
  "serial": "101010",
  "configurationState": {
    "status": "Warning",
    "detailedInfo": [
      {
        "source": "SoftwareLoadBalancerManager",
        "message": "Host is not Connected.",
        "code": "HostNotConnectedToController"
      }
    ]
  },
  "lastUpdatedTime": "2016-06-15T07:44:00.4342843-07:00"
},
"networkInterfaces": [
  {
    "resourceRef": "/servers/Server501/networkInterfaces/NetworkInterface501",
    "resourceId": "NetworkInterface501",
    "resourceMetadata": {
      "client": "Test",
      "groupId": "",
      "resourceName": "NetworkInterface501"
    },
    "etag": "W/\"61c878ca-fa0b-4509-b736-24d67bb2086c\"",
    "instanceId": "80cb7d15-9a9d-4f17-b3a7-c7d862469a93",
    "properties": {
      "provisioningState": "Succeeded",
      "interfaceName": "NetworkInterface501",
      "mac": "18-03-73-B3-C2-4B",
      "ipConfiguration": [
        {
          "ipAddress": "1.1.1.1",
          "networkPrefix": "23",
          "isDhcpEnabled": "true"
        },
        {
          "ipAddress": "2.2.2.2",
          "networkPrefix": "24",
          "isDhcpEnabled": "false"
        }
      ],
      "vlanIds": [
        "1",
        "2"
      ]
    }
  }
],

```

```

        "adminStatus": "1",
        "operationalStatus": "1",
        "interfaceIndex": "1",
        "interfaceSpeed": "300",
        "isBMC": "false",
        "logicalSubnets": [ ]
    }
}
],
},
"tags": {
    "abc": "abc"
}
}
}

```

The JSON schema for the **servers GET** method is located in section 6.13.2.

3.1.5.15.1.2.3 Processing Details

Retrieves a server resource.

3.1.5.15.1.3 GET (All)

This method retrieves all server resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.15.1.3.1 Request Body

None.

3.1.5.15.1.3.2 Response Body

The format for the **servers GET ALL** response body is as follows.

```

{
  "value": [
    {
      "resourceRef": "/servers/Server501",
      "resourceId": "Server501",
      "resourceMetadata": {
        "client": "Test",
        "groupId": "",
        "resourceName": "Server501"
      }
    }
  ]
}

```

```

},
"etag": "W/\"37ac6989-a791-4bc1-bf80-7b3ccb598d5c\"",
"instanceId": "64313570-3232-4b5e-914e-8b3b7895e550",
"properties": {
  "provisioningState": "Succeeded",
  "connections": [
    {
      "managementAddresses": [
        "10.1.1.1"
      ],
      "credential": {
        "resourceRef": "/credentials/Administrator"
      },
      "credentialType": "UsernamePassword"
    }
  ],
  "certificate": "",
  "rackSlot": "1",
  "os": "Windows",
  "model": "Minitower",
  "vendor": "Dell",
  "serial": "101010",
  "configurationState": {
    "status": "Warning",
    "detailedInfo": [
      {
        "source": "SoftwareLoadBalancerManager",
        "message": "Host is not Connected.",
        "code": "HostNotConnectedToController"
      }
    ]
  },
  "lastUpdatedTime": "2016-06-15T08:08:32.4020758-07:00"
},
"networkInterfaces": [
  {
    "resourceRef": "/servers/Server501/networkInterfaces/NetworkInterface501",
    "resourceId": "NetworkInterface501",
    "resourceMetadata": {
      "client": "Test",
      "groupId": "",
      "resourceName": "NetworkInterface501"
    },
    "etag": "W/\"37ac6989-a791-4bc1-bf80-7b3ccb598d5c\"",
    "instanceId": "80cb7d15-9a9d-4f17-b3a7-c7d862469a93",
    "properties": {
      "provisioningState": "Succeeded",
      "interfaceName": "NetworkInterface501",
      "mac": "18-03-73-B3-C2-4B",
      "ipConfiguration": [
        {
          "ipAddress": "1.1.1.1",
          "networkPrefix": "23",
          "isDhcpEnabled": "true"
        },
        {
          "ipAddress": "2.2.2.2",
          "networkPrefix": "24",
          "isDhcpEnabled": "false"
        }
      ],
      "vlanIds": [
        "1",
        "2"
      ],
      "adminStatus": "1",
      "operationalStatus": "1",
      "interfaceIndex": "1",
      "interfaceSpeed": "300",
      "isBMC": "false",
      "logicalSubnets": [ ]
    }
  }
]

```

```

    }
  }
]
},
"tags": {
  "abc": "abc"
}
}
],
"nextLink": ""
}

```

The JSON schema for the **servers GET ALL** method is located in section 6.13.3.

3.1.5.15.1.3.3 Processing Details

Retrieves all server resources.

3.1.5.15.1.4 DELETE

This method deletes a server resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.15.1.4.1 Request Body

None.

3.1.5.15.1.4.2 Response Body

None.

3.1.5.15.1.4.3 Processing Details

Deletes a server resource.

3.1.5.15.2 networkInterfaces

The **networkInterfaces** resource represents a physical NIC on the host device.

The URI for the resource is as follows.

```
https://<url>/networking/v1/servers/{parentResourceId}/networkInterfaces/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.15.2.1.1	Create a new networkInterfaces resource or update an existing networkInterfaces resource.
GET	3.1.5.15.2.1.2	Get one networkInterfaces resource
GET (All)	3.1.5.15.2.1.3	List all networkInterfaces resources in the Network Controller
DELETE	3.1.5.15.2.1.4	Deletes a networkInterfaces resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
adminStatus	Optional	Indicates the adminStatus of the network interface.
interfaceIndex	Optional	Indicates the interface index of the network interface.
interfaceName	Optional	Indicates the name of the network interface.
interfaceSpeed	Optional	Indicates the speed of the network interface.
IpConfiguration	Optional	Indicates an array of IP configurations.
IpConfiguration.ipAddress	Optional	IP address of the interface.
IpConfiguration.networkPrefix	Optional	Network prefix associated with the interface IP address.
IpConfiguration.defaultGateway	Optional	Default gateway associated with the interface.
IpConfiguration.vlans	Optional	VLAN IDs associated with the IP address on the interface.
IpConfiguration.isDhcpEnabled	Optional	Boolean flag indicating whether the IP address has been obtained using DHCP. True is IP address has been obtained using DHCP and false otherwise. Default is false.
logicalSubnets	Read-only	Indicates an array of logicalSubnets resource that the network interface is connected to.
mac	Optional	Indicates the MAC address of the network interface.
operationalStatus	Optional	Indicates the operational status of the network interface.

Element name	Type	Description
vlanIds	Optional	Indicates the ID of the VLANs that the network interface is connected to.
isBMC	Optional	Boolean flag to indicate whether the interface is a BMC interface. This is True if the interface is a BMC interface, False otherwise.

3.1.5.15.2.1 HTTP Methods

3.1.5.15.2.1.1 PUT

This method creates a new **networkInterfaces** resource or updates an existing **networkInterfaces** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{parentResourceId}/networkInterfaces/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.15.2.1.1.1 Request Body

The format for the request body for the **networkInterfaces PUT** method is as follows.

```
{
  "properties": {
    "interfaceIndex": "0",
    "isBMC": "false",
    "logicalSubnets": [
      {
        "resourceRef": "/logicalnetworks/7d14191e-5b55-4e99-9059-
a42d120da0ce/subnets/33a30080-b71d-4c64-8385-750525216905"
      }
    ]
  }
}
```

The JSON schema for the **networkInterfaces PUT** method is contained within the **servers PUT** method schema in section 6.13.1.

3.1.5.15.2.1.1.2 Response Body

The format is the same as the format for the **networkInterfaces GET** response body (section 3.1.5.15.2.1.2.2). The JSON schema for the **networkInterfaces GET** method is contained within the **servers GET** method schema in section 6.13.2.

3.1.5.15.2.1.1.3 Processing Details

Create or update a **networkInterfaces** resource.

3.1.5.15.2.1.2 GET

This method retrieves a **networkInterfaces** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{parentResourceId}/networkInterfaces/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.15.2.1.2.1 Request Body

None.

3.1.5.15.2.1.2.2 Response Body

The format for the **networkInterfaces GET** response body is as follows.

```
{
  "resourceRef": "/servers/s27/networkInterfaces/2bd6b8e5-d173-4474-a7ab-cc1f60cba579",
  "resourceId": "2bd6b8e5-d173-4474-a7ab-cc1f60cba579",
  "etag": "W/\"a05b0a83-8051-4379-a1f8-e365c57284f5\"",
  "instanceId": "137a1ebe-9ffc-473a-be69-2f6ed84c0463",
  "properties": {
    "provisioningState": "Succeeded",
    "interfaceIndex": "0",
    "isBMC": "false",
    "logicalSubnets": [
      {
        "resourceRef": "/logicalnetworks/7d14191e-5b55-4e99-9059-
a42d120da0ce/subnets/33a30080-b71d-4c64-8385-750525216905"
      }
    ]
  }
}
```



```
    ]
  }
}
```

The JSON schema for the **networkInterfaces GET** method is contained within the **servers GET** method schema in section 6.13.2.

3.1.5.15.2.1.2.3 Processing Details

Retrieves a **networkInterfaces** resource.

3.1.5.15.2.1.3 GET (All)

This method retrieves all **networkInterfaces** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{parentResourceId}/networkInterfaces/
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.15.2.1.3.1 Request Body

None.

3.1.5.15.2.1.3.2 Response Body

The format for the **networkInterfaces GET ALL** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/servers/s27/networkInterfaces/2bd6b8e5-d173-4474-a7ab-cc1f60cba579",
      "resourceId": "2bd6b8e5-d173-4474-a7ab-cc1f60cba579",
      "etag": "W/\"a05b0a83-8051-4379-a1f8-e365c57284f5\"",
      "instanceId": "137alebe-9ffc-473a-be69-2f6ed84c0463",
      "properties": {
        "provisioningState": "Succeeded",
        "interfaceIndex": "0",
        "isBMC": "false",
        "logicalSubnets": [
          {
            "resourceRef": "/logicalnetworks/7d14191e-5b55-4e99-9059-a42d120da0ce/subnets/33a30080-b71d-4c64-8385-750525216905"
          }
        ]
      }
    }
  ]
}
```

```
    ],  
    "nextLink": ""  
  }  
}
```

The JSON schema for the **networkInterfaces GET ALL** method is contained within the **servers GET ALL** method schema in section 6.13.3.

3.1.5.15.2.1.3.3 Processing Details

Retrieves all **networkInterfaces** resources.

3.1.5.15.2.1.4 DELETE

This method deletes a **networkInterfaces** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/servers/{parentResourceId}/networkInterfaces/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.15.2.1.4.1 Request Body

None.

3.1.5.15.2.1.4.2 Response Body

None.

3.1.5.15.2.1.4.3 Processing Details

Deletes a **networkInterfaces** resource.

3.1.5.16 serviceInsertions

The **serviceInsertions** resource specifies the relationship between the service insertion and the service insertion rule.

It is invoked through the following URI.

https://<url>/networking/v1/ServiceInsertions/{resourceId}

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.16.1.1	Create a new serviceInsertions resource or update an existing serviceInsertions resource.
GET	3.1.5.16.1.2	Get one serviceInsertions resource
GET (All)	3.1.5.16.1.3	List all serviceInsertions resources in the Network Controller
DELETE	3.1.5.16.1.4	Deletes a serviceInsertions resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
ipConfiguration	Read-only	Indicate references to ipConfigurations resource this access control list is associated with.
priority	Required	Indicates the relative order in which the policies are processed. Priorities MUST be unique, and a PUT will fail if policies with duplicate priorities are specified.
type	Required	Indicate the type of service insertion. Valid value is PortMirror.
rules	Optional	Indicates an array of rules used to define what traffic will go through the service insertion.
rules.protocol	Optional	Indicates the protocol to match for this rule. Valid values are TCP UDP *. The asterisk * indicates the rule will match for all protocols.
rules.sourcePortStart	Required	Indicates the starting source port to match. This value MUST be between 0 and 65535. Specify 0 to indicate any port.
rules.sourcePortEnd	Optional	Indicates the end of range of source ports to match. This value MUST be greater than the sourcePortStart element. If not specified, then only the start port is matched.
rules.destinationPortStart	Required	Indicates the starting destination port to match. This value MUST be between 0 and 65535. Specify 0 to indicate any port.
rules.destinationPortEnd	Optional	Indicates the end of range of destination ports to match. This value MUST be greater than the destinationPortStart element. If not specified, then only the start destination port is matched.
rules.sourceSubnets	Optional	Indicates an array of subnets to match as source subnet. For a single source ip address match specify as a /32

Element name	Type	Description
		subnet.
rules.destinationSubnets	Optional	Indicates an array of subnets to match as the destination subnet. For a single source ip address match specify as a /32 subnet.
serviceInsertionElements	Optional	Indicates an array of elements in the list of network interfaces to send packets matching rules through. If type is "PortMirror" then the array MUST contain 1 element.
serviceInsertionElements.description	Optional	Indicates the description of the element in the service insertion.
serviceInsertionElements.order	Required	Indicates the position in the service insertion that the element is located. This value MUST be unique in the serviceInsertions resource. The lowest value element will be the first element in the insertion.
serviceInsertionElements.name	Optional	User friendly name of the appliance/element.
serviceInsertionElements.networkInterface	Required	Indicates a networkInterfaces resource that is an element in the service insertion.
subnets	Read-only	Indicates an array of references to ubnets resources with which this serviceInsertions resource is associated.

3.1.5.16.1 HTTP Methods

3.1.5.16.1.1 PUT

This method creates a new **serviceInsertions** resource or updates an existing **serviceInsertions** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/serviceInsertions/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.16.1.1.1 Request Body

The format for the request body for the **serviceInsertions PUT** method is as follows.

```
{
  "resourceId": "80a29b25-0216-4f02-bc9a-ce41fab1b1b9",
  "resourceMetadata": {
  },
  "properties": {
    "serviceInsertionRules": [
      {
        "resourceId": "3b11aaf2-de79-44a3-8f5e-f14f009d3216",
        "resourceMetadata": {
        },
        "properties": {
          "description": "Http Traffic Rule",
          "protocol": "Tcp",
          "sourcePortRangeStart": 0,
          "sourcePortRangeEnd": 65535,
          "destinationPortRangeStart": 80,
          "destinationPortRangeEnd": 80,
          "sourceSubnets": [
            "*"
          ],
          "destinationSubnets": [
            "11.0.0.0/8"
          ]
        }
      }
    ],
    "serviceInsertionElements": [
      {
        "resourceId": "4a9ee40b-aa42-4b31-b8d3-d7fe3508bbb1",
        "resourceMetadata": {
        },
        "properties": {
          "description": "My Appliance",
          "order": 1,
          "networkInterface": {
            "resourceRef": "/networkInterfaces/05e4ff39-ala2-4913-8197-0fe9eaa61eb9"
          }
        }
      }
    ]
  },
  "priority": 1
}
```

The JSON schema for the **serviceInsertions PUT** method is located in section 6.14.1.

3.1.5.16.1.1.2 Response Body

The format is the same as the format for the **serviceInsertions GET** response body (section 3.1.5.16.1.2.2). The JSON schema is located in section 6.14.2.

3.1.5.16.1.1.3 Processing Details

Create a new **serviceInsertions** resource or update an existing **serviceInsertions** resource.

3.1.5.16.1.2 GET

This method retrieves a **serviceInsertions** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/serviceInsertions/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.16.1.2.1 Request Body

None.

3.1.5.16.1.2.2 Response Body

The format for the **serviceInsertions GET** response body is as follows.

```
{
  "resourceRef": "/serviceInsertions/80a29b25-0216-4f02-bc9a-ce41fab1b1b9",
  "resourceId": "80a29b25-0216-4f02-bc9a-ce41fab1b1b9",
  "etag": "W/\"c8336af7-3c74-42af-b23f-6096d8a26628\"",
  "instanceId": "cf8abca3-d5b5-4b40-a6e4-045c9e28763c",
  "properties": {
    "provisioningState": "Succeeded",
    "serviceInsertionRules": [
      {
        "resourceRef": "/serviceInsertions/80a29b25-0216-4f02-bc9a-
ce41fab1b1b9/serviceInsertionRules/3b11aaf2-de79-44a3-8f5e-f14f009d3216",
        "resourceId": "3b11aaf2-de79-44a3-8f5e-f14f009d3216",
        "etag": "W/\"c8336af7-3c74-42af-b23f-6096d8a26628\"",
        "instanceId": "e3b39934-617b-4d8c-b920-af478c1d569f",
        "properties": {
          "provisioningState": "Succeeded",
          "description": "Http Traffic Rule",
          "protocol": "Tcp",
          "sourcePortRangeStart": 0,
          "sourcePortRangeEnd": 65535,
          "destinationPortRangeStart": 80,
          "destinationPortRangeEnd": 80,
          "sourceSubnets": [
            "*"
          ],
          "destinationSubnets": [
            "11.0.0.0/8"
          ]
        }
      }
    ],
    "serviceInsertionElements": [
      {
        "resourceRef": "/serviceInsertions/80a29b25-0216-4f02-bc9a-
ce41fab1b1b9/serviceInsertionElements/4a9ee40b-aa42-4b31-b8d3-d7fe3508bbb1",
```

```

    "resourceId": "4a9ee40b-aa42-4b31-b8d3-d7fe3508bbb1",
    "etag": "W/\"c8336af7-3c74-42af-b23f-6096d8a26628\"",
    "instanceId": "3222b5b5-4019-4917-b857-3198a5145b0e",
    "properties": {
      "provisioningState": "Succeeded",
      "description": "My Appliance",
      "order": 1,
      "networkInterface": {
        "resourceRef": "/networkInterfaces/05e4ff39-ala2-4913-8197-0fe9eaa61eb9"
      }
    }
  ],
  "ipConfigurations": [
    ],
    "subnets": [
      {
        "resourceRef": "/virtualNetworks/ca212a4d-d280-4aef-8144-89c558a55076/subnets/9e8b3d5c-95d5-4cea-8744-8ee55ab709ac"
      }
    ],
    "priority": 1
  }
}

```

The JSON schema for the **serviceInsertions GET** method is located in section 6.14.2.

3.1.5.16.1.2.3 Processing Details

Retrieves a **serviceInsertions** resource.

3.1.5.16.1.3 GET (All)

This method retrieves all **serviceInsertions** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/serviceInsertions
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.16.1.3.1 Request Body

None.

3.1.5.16.1.3.2 Response Body

The format for the **serviceInsertions GET ALL** response body is as follows.

```
[
  {
    "resourceId": "{uniqueString}",
    "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
    "tags": { "key": "value" },
    "resourceMetadata":
    {
      "client": "WAP Network Resource Provider",
      "tenantId": "{subscriptionid}",
      "groupId": "{groupname}",
      "name": "{name}",
      "originalHref": "https://..."
    },
    "properties":
    {
      "priority" : 1,
      "type" : "PortMirror"

      "rules" : [
        {
          "protocol" : "tcp|udp|*",
          "sourcePortRangeStart" : 1000,
          "sourcePortRangeEnd" : 2000,
          "destinationPortRangeStart" : 1000,
          "destinationPortRangeEnd" : 2000,
          "sourceSubnets": ["192.168.0.0/32"],
          "destinationSubnets": ["192.168.1.0/32"]
        },
        {
          "protocol" : "tcp|udp|*",
          "sourcePortRangeStart" : 1000,
          "sourcePortRangeEnd" : 2000,
          "destinationPortRangeStart" : 1000,
          "destinationPortRangeEnd" : 2000,
          "sourceSubnets": ["192.168.0.0/32"],
          "destinationSubnets": ["192.168.1.0/32"]
        }
      ],
    },
    "serviceInsertionElements": [
      {
        "order": 1,
        "name": "My Firewall Service",
        "description": "Provides the firewall service for my tenant workloads.",
        "resourceRef": "~/networkinterfaces/{resourceId}"
      }
    ]
    "ipConfiguration": [
      {
        "resourceRef": "~/networkinterfaces/{resourceId}"
      }
    ],
    "subnets": [
      {
        "resourceRef": "~/subnet/{resourceId}"
      }
    ]
  }
],
{
  "resourceId": "{uniqueString}",
  "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
```



```

"tags": { "key": "value" } ,
"resourceMetadata":
{
  "client": "WAP Network Resource Provider",
  "tenantId": "{subscriptionid}",
  "groupId": "{groupname}",
  "name": "{name}",
  "originalHref": "https://..."
},
"properties":
{
  "priority" : 2,
  "type" : "PortMirror"

  "rules" : [
    {
      "protocol" : "tcp|udp|*",
      "sourcePortRangeStart" : 1000,
      "sourcePortRangeEnd" : 2000,
      "destinationPortRangeStart" : 1000,
      "destinationPortRangeEnd" : 2000,
      "sourceSubnets": ["192.168.0.0/32"],
      "destinationSubnets": ["192.168.1.0/32"]
    },
    {
      "protocol" : "tcp|udp|*",
      "sourcePortRangeStart" : 1000,
      "sourcePortRangeEnd" : 2000,
      "destinationPortRangeStart" : 1000,
      "destinationPortRangeEnd" : 2000,
      "sourceSubnets": ["192.168.0.0/32"],
      "destinationSubnets": ["192.168.1.0/32"]
    }
  ],
  "serviceInsertionElements": [
    {
      "order": 1,
      "name": "My Firewall Service",
      "description": "Provides the firewall service for my tenant workloads.",
      "resourceRef": "~/networkinterfaces/{resourceId}"
    }
  ]
  "ipConfiguration": [
    {
      "resourceRef": "~/networkinterfaces/{resourceId}"
    }
  ],
  "subnets": [
    {
      "resourceRef": "~/subnet/{resourceId}"
    }
  ]
}
.
.
]

```

The JSON schema for the **serviceInsertions GET ALL** method is located in section 6.14.3.

3.1.5.16.1.3.3 Processing Details

Retrieves all serviceInsertions resources.

3.1.5.16.1.4 DELETE

This method deletes a **serviceInsertions** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/serviceInsertions/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.16.1.4.1 Request Body

None.

3.1.5.16.1.4.2 Response Body

None.

3.1.5.16.1.4.3 Processing Details

Deletes a **serviceInsertions** resource.

3.1.5.17 virtualGateways

The **virtualGateways** resource describes the gateway used for cross-premises connectivity from the virtual network. The virtualGateway is a logical entity that runs on multiple gateways in the **gatewayPools** resource.

The Network Controller can create only one instance of the **virtualGateways** resource per subscription. Clients or client tenants can then connect to it.

The URI for the resource is as follows.

```
https://<url>/networking/v1/virtualGateways/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.17.1.1	Create a new virtualGateways resource or update an existing virtualGateways resource.
GET	3.1.5.17.1.2	Get one virtualGateways resource.
GET (All)	3.1.5.17.1.3	List all virtualGateways resources in the Network Controller.
DELETE	3.1.5.17.1.4	Delete a virtualGateways resource.

The following property elements are valid.

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
gatewaySubnets	Required Read/write	Indicates collection of references to IPv4/IPv6 subnet of the VSID /gateway subnet that includes the gateway.
networkConnections	Optional Read/write	Indicates list of network connections that are configured for this virtualGateways resource. See section 3.1.5.17.4, for full details on this element.
vpnConfiguration. IPv4AddressPrefixes	Read/write	Indicates collection of IPv4 address pools from which VPN clients are assigned addresses.
vpnConfiguration. IPv4AddressPrefixes	Read/write	Indicates IPv4 prefix of the pool.
vpnConfiguration. IPv4AddressPrefixes.start	Read/write	Starting IPv4 address of the pool. This is required if the start and end addresses do not form a subnet.
vpnConfiguration. IPv4AddressPrefixes.end	Read/write	Ending IPv4 address of the pool. This is not required if the start and end addresses form a subnet.
vpnConfiguration. IPv6AddressPrefixes	Read/write	Indicates IPv6 prefix advertised to remote access VPN clients.
vpnConfiguration. capacity	Read/write	Aggregate bandwidth capacity of VPN Clients in Kbps.
vpnConfiguration. Realm	Read/write	Realm used to identify tenants. E.g. contoso, Woodgrove.
bgpRouters	Optional Read/write	Indicates the BGP peering information. See section 3.1.5.17.2, for full details on this element.
policyMaps	Optional Read/write	Indicates BGP policy Maps. See section 3.1.5.17.3, for details.
GatewayPools	Required Read/write	Indicates a collection of references to gatewayPools resources in which connections can be created. This information is populated at the time of

Element name	Type	Description
		subscription and can be changed only via the Service administrator portal.
routingType	Read-only	"Dynamic" is the only support value for this field.
configurationState	Optional Read-only	Indicates the last known running state of this virtual gateway. See specification in section 2.2.4. More details are given in the section for the GET operation section 3.1.5.17.1.2.

3.1.5.17.1 HTTP Methods

3.1.5.17.1.1 PUT

This method creates a new **virtualGateways** resource or updates an existing **virtualGateways** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.17.1.1.1 Request Body

The format for the request body for the **virtualGateways PUT** method is as follows.

```
{
  "resourceRef": "/VirtualGateways/VirtualGateway_1",
  "resourceId": "VirtualGateway_1",
  "properties": {
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_IPSEC_1",
```

```

"resourceId": "VirtualGateway_1_IPSEC_1",
"properties": {
  "connectionType": "IPSec",
  "outboundKiloBitsPerSecond": 1000,
  "inboundKiloBitsPerSecond": 1000,
  "ipSecConfiguration": {
    "authenticationMethod": "PSK",
    "quickMode": {
      "perfectForwardSecrecy": "PFS2048",
      "cipherTransformationConstant": "DES3",
      "authenticationTransformationConstant": "SHA256128",
      "idleDisconnectSeconds": 500,
      "saLifetimeSeconds": 1233,
      "saLifetimeKiloBytes": 2000
    },
    "mainMode": {
      "diffieHellmanGroup": "Group2",
      "encryptionAlgorithm": "AES256",
      "integrityAlgorithm": "SHA256",
      "saLifetimeSeconds": 1234,
      "saLifetimeKiloBytes": 2000
    },
    "localVpnTrafficSelector": [],
    "remoteVpnTrafficSelector": []
  },
  "l3Configuration": {},
  "ipAddresses": [],
  "peerIPAddresses": [],
  "routes": [
    {
      "destinationPrefix": "50.1.1.0/24",
      "nextHop": "0.0.0.0",
      "metric": 10,
      "protocol": "Static"
    },
    {
      "destinationPrefix": "40.1.1.4/32",
      "nextHop": "0.0.0.0",
      "metric": 10,
      "protocol": "Static"
    }
  ],
  "connectionStatus": "Enabled",
  "destinationIPAddress": "11.1.0.1",
}
},
{
  "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_Gre_1",
  "resourceId": "VirtualGateway_1_Gre_1",
  "properties": {
    "connectionType": "GRE",
    "outboundKiloBitsPerSecond": 1000,
    "inboundKiloBitsPerSecond": 1000,
    "greConfiguration": {
      "greKey": "1234"
    },
    "l3Configuration": {},
    "ipAddresses": [],
    "peerIPAddresses": [],
    "routes": [
      {
        "destinationPrefix": "50.1.2.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
      },
      {
        "destinationPrefix": "40.1.2.4/32",
        "nextHop": "0.0.0.0",

```

```

        "metric": 10,
        "protocol": "Static"
    }
    ],
    "connectionStatus": "Enabled",
    "destinationIPAddress": "11.1.0.2",
}
},
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_L3_1",
    "resourceId": "VirtualGateway_1_L3_1",
    "properties": {
        "connectionType": "L3",
        "outboundKiloBitsPerSecond": 1000,
        "inboundKiloBitsPerSecond": 1000,
        "l3Configuration": {
            "vlanSubnet": {
                "resourceRef":
"/logicalnetworks/LogicalNetwork_VG_1/subnets/LogicalNetwork_VG_1_Subnet_1"
            }
        },
    },
    "ipAddresses": [
        {
            "ipAddress": "31.1.1.4",
            "prefixLength": 24
        }
    ],
    "peerIPAddresses": [
        "31.1.1.5"
    ],
    "routes": [
        {
            "destinationPrefix": "50.1.3.0/24",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
        },
        {
            "destinationPrefix": "40.1.3.4/32",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
        }
    ],
    "connectionStatus": "Enabled",
}
}
],
"bgpRouters": [
{
    "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1",
    "resourceId": "router1",
    "properties": {
        "isEnabled": true,
        "requireIgpSync": true,
        "extAsNumber": "0.3458",
        "routerId": "10.1.1.1",
        "routerIP": [
            "10.1.1.1"
        ],
        "isGenerated": false,
        "bgpPeers": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
                "resourceId": "Peer1",
                "etag": "w/\\"8d23a02c-3465-41b5-afdb-644272787bae\\"",
                "instanceId": "f7d8724b-7be9-46f4-882f-5c37ef4143e8",
                "properties": {

```

```

        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.1.4",
        "addressFamily": "IPv4",
        "policyMapIn": {
            "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1"
        },
        "policyMapOut": {
            "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1"
        },
        "isGenerated": false
    }
},
],
}
],
}
],
"policyMaps": [
{
    "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1",
    "resourceId": "MAP1",
    "etag": "W/\"e4b527be-c107-4de2-bc83-9985de964168\"",
    "instanceId": "c8b34df3-cc7b-4eab-9ccf-97512e6014a9",
    "properties": {
        "provisioningState": "Succeeded",
        "bgpPeersWithPolicyMapIn": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1"
            }
        ],
        "bgpPeersWithPolicyMapOut": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1"
            }
        ],
        "policyMapEntryList": [
            {
                "action": "Deny",
                "matchCriteria": [
                    {
                        "property": "MatchPrefix",
                        "value": [
                            "5.4.3.2/32",
                            "5.4.3.1/32"
                        ]
                    },
                    {
                        "property": "NextHop",
                        "value": [
                            "4.3.2.1",
                            "6.4.3.1"
                        ]
                    }
                ]
            },
            {
                "setActions": []
            }
        ],
        {
            "action": "Permit",
            "matchCriteria": [
                {
                    "property": "AsnRange",
                    "value": [
                        "123",
                        "345"
                    ]
                }
            ]
        }
    ]
}
]
}

```

```

        "property": "Community",
        "value": [
            "1:1",
            "2:2"
        ]
    },
    "setActions": []
}
]
}
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0001-
000000000000/subnets/00000000-1111-1111-0001-000000000001"
    }
]
}
}
}

```

The JSON schema for the **virtualGateways PUT** method is located in section 6.15.1.

3.1.5.17.1.1.2 Response Body

The format is the same as the format for the **virtualGateways GET** response body (section 3.1.5.17.1.2.2). The JSON schema is located in section 6.15.2.

3.1.5.17.1.1.3 Processing Details

Create a new **virtualGateways** resource or update an existing **virtualGateways** resource.

3.1.5.17.1.2 GET

This method retrieves a **virtualGateways** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.17.1.2.1 Request Body

None.

3.1.5.17.1.2.2 Response Body

The format for the **virtualGateways GET** response body is as follows.

```
{
  "resourceRef": "/VirtualGateways/VirtualGateway_1",
  "resourceId": "VirtualGateway_1",
  "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
  "instanceId": "cc7de412-f5d0-4f0c-83f2-1cabb2e6a3a9",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_IPSEC_1",
        "resourceId": "VirtualGateway_1_IPSEC_1",
        "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
        "instanceId": "21974569-b8b3-4bde-a517-c8f5bb7ae13e",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifetimeSeconds": 3600,
              "saLifetimeKiloBytes": 33552408
            },
            "mainMode": {
              "diffieHellmanGroup": "Group2",
              "encryptionAlgorithm": "DES3",
              "integrityAlgorithm": "SHA1",
              "saLifetimeSeconds": 28800,
              "saLifetimeKiloBytes": 33552408
            },
            "localVpnTrafficSelector": [],
            "remoteVpnTrafficSelector": []
          },
          "l3Configuration": {},
          "ipAddresses": [],
          "peerIPAddresses": [],
          "routes": [
            {
              "destinationPrefix": "50.1.1.0/24",
              "nextHop": "0.0.0.0",
              "metric": 10,
              "protocol": "Static"
            },
            {
              "destinationPrefix": "40.1.1.4/32",
              "nextHop": "0.0.0.0",
              "metric": 10,
              "protocol": "Static"
            }
          ]
        },
        "connectionStatus": "Enabled",

```

```

"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "809",
"unreachabilityReason": "ConnectionFailure",
"statistics": {
  "outboundBytes": 7608457281,
  "inboundBytes": 91940776693,
  "rxTotalPacketsDropped": 0,
  "txTotalPacketsDropped": 0,
  "txRateKbps": 0,
  "rxRateKbps": 0,
  "txRateLimitedPacketsDropped": 0,
  "rxRateLimitedPacketsDropped": 0,
  "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.1.0.1",
"gateway": {
  "resourceRef": "/Gateways/CloudGw1"
}
},
{
  "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_Gre_1",
"resourceId": "VirtualGateway_1_Gre_1",
"etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
"instanceId": "b8102aff-71ae-40ef-a8f6-4d1d2aad7521",
"properties": {
  "provisioningState": "Succeeded",
  "connectionType": "GRE",
  "outboundKiloBitsPerSecond": 307200,
  "inboundKiloBitsPerSecond": 307200,
  "greConfiguration": {
    "greKey": "101"
  },
  "l3Configuration": {},
  "ipAddresses": [],
  "peerIPAddresses": [],
  "routes": [
    {
      "destinationPrefix": "50.2.1.0/24",
      "nextHop": "0.0.0.0",
      "metric": 10,
      "protocol": "Static"
    },
    {
      "destinationPrefix": "40.1.2.4/32",
      "nextHop": "0.0.0.0",
      "metric": 10,
      "protocol": "Static"
    }
  ],
  "connectionStatus": "Enabled",
  "connectionState": "Connected",
  "connectionUpTime": "01:43:04",
  "connectionErrorReason": "",
  "unreachabilityReason": "",
  "statistics": {
    "outboundBytes": 29356,
    "inboundBytes": 0,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,

```

```

        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
    },
    "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "22.1.1.2",
    "destinationIPAddress": "11.1.0.2",
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
},
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_L3_1",
    "resourceId": "VirtualGateway_1_L3_1",
    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
    "instanceId": "92db503f-fa02-445e-96ec-eaefb02bb459",
    "properties": {
        "provisioningState": "Succeeded",
        "connectionType": "L3",
        "outboundKiloBitsPerSecond": 307200,
        "inboundKiloBitsPerSecond": 307200,
        "l3Configuration": {
            "vlanSubnet": {
                "resourceRef":
"/logicalnetworks/LogicalNetwork_VG_1/subnets/LogicalNetwork_VG_1_Subnet_1"
            }
        }
    },
    "ipAddresses": [
        {
            "ipAddress": "31.1.1.4",
            "prefixLength": 24
        }
    ],
    "peerIPAddresses": [
        "31.1.1.5"
    ],
    "routes": [
        {
            "destinationPrefix": "50.3.1.0/24",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
        },
        {
            "destinationPrefix": "40.1.3.4/32",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
        }
    ],
    "connectionStatus": "Enabled",
    "connectionState": "Connected",
    "connectionUpTime": "00:00:00",
    "statistics": {
        "outboundBytes": 0,
        "inboundBytes": 0,
        "rxTotalPacketsDropped": 0,
        "txTotalPacketsDropped": 0,
        "txRateKbps": 0,
        "rxRateKbps": 0,
        "txRateLimitedPacketsDropped": 0,
        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "0001-01-01T00:00:00"
    },
    "configurationState": {
        "status": "Success",

```

```

        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
],
"bgpRouters": [
    {
        "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1",
        "resourceId": "router1",
        "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
        "instanceId": "be8fe6b1-302f-4bbc-97f7-e727b2f533df",
        "properties": {
            "provisioningState": "Succeeded",
            "isEnabled": true,
            "requireIgpSync": true,
            "extAsNumber": "0.3458",
            "routerId": "10.2.2.2",
            "routerIP": [
                "10.2.2.2"
            ],
            "isGenerated": false,
            "bgpPeers": [
                {
                    "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer2",
                    "resourceId": "Peer2",
                    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
                    "instanceId": "6dfc12fb-484a-4771-98f9-6c1d4ffbaala",
                    "properties": {
                        "provisioningState": "Succeeded",
                        "asNumber": "1236",
                        "extAsNumber": "0.1236",
                        "peerIpAddress": "40.1.2.4",
                        "connectionState": "Disconnected",
                        "statistics": {
                            "tcpConnectionClosed": "2016-06-15T23:17:02.419-07:00",
                            "openMessageStats": {
                                "sentCount": 0,
                                "receivedCount": 0
                            },
                            "notificationMessageStats": {
                                "sentCount": 0,
                                "receivedCount": 0
                            },
                            "keepAliveMessageStats": {
                                "sentCount": 0,
                                "receivedCount": 0
                            },
                            "routeRefreshMessageStats": {
                                "sentCount": 0,
                                "receivedCount": 0
                            },
                            "updateMessageStats": {
                                "sentCount": 0,
                                "receivedCount": 0
                            },
                            "ipv4Route": {
                                "updateSentCount": 0,
                                "updateReceivedCount": 0,
                                "withdrawlSentCount": 0,
                                "withdrawlReceivedCount": 0
                            },
                            "ipv6Route": {
                                "updateSentCount": 0,
                                "updateReceivedCount": 0,
                                "withdrawlSentCount": 0,
                                "withdrawlReceivedCount": 0
                            }
                        }
                    }
                }
            ]
        }
    }
]

```

```

    },
    "lastUpdated": "2016-06-16T06:17:26.4229961Z"
  },
  "isGenerated": false
}
},
{
  "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer3",
  "resourceId": "Peer3",
  "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
  "instanceId": "d6bc7e33-4ac9-4f74-a3f2-81c39eb2a85d",
  "properties": {
    "provisioningState": "Succeeded",
    "asNumber": "1236",
    "extAsNumber": "0.1236",
    "peerIpAddress": "40.1.3.4",
    "connectionState": "Disconnected",
    "statistics": {
      "tcpConnectionClosed": "2016-06-15T23:17:07.293-07:00",
      "openMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "notificationMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "keepAliveMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "routeRefreshMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "updateMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "ipv4Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
      },
      "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
      },
      "lastUpdated": "2016-06-16T06:17:26.4229961Z"
    },
    "isGenerated": false
  }
},
{
  "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
  "resourceId": "Peer1",
  "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
  "instanceId": "b9e57199-f352-4121-9842-24c0ba23f3f1",
  "properties": {
    "provisioningState": "Succeeded",
    "asNumber": "1236",
    "extAsNumber": "0.1236",
    "peerIpAddress": "40.1.1.4",
    "connectionState": "Disconnected",
    "statistics": {

```

```

      "tcpConnectionClosed": "2016-06-15T23:17:22.498-07:00",
      "openMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "notificationMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "keepAliveMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "routeRefreshMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "updateMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "ipv4Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
      },
      "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
      },
      "lastUpdated": "2016-06-16T06:17:26.4229961Z"
    },
    "isGenerated": false
  }
},
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
}
],
"policyMaps": [
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1",
    "resourceId": "MAP1",
    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
    "instanceId": "b52840f9-91a9-4a3e-91b3-0383aelea607",
    "properties": {
      "provisioningState": "Succeeded",
      "bgpPeersWithPolicyMapIn": [],
      "bgpPeersWithPolicyMapOut": [],
      "policyMapEntryList": [
        {
          "action": "Deny",
          "matchCriteria": [
            {
              "property": "MatchPrefix",
              "value": [
                "5.4.3.2/32",
                "5.4.3.1/32"
              ]
            }
          ],
          {
            "property": "NextHop",
            "value": [

```


3.1.5.17.1.3 GET (All)

This method retrieves all **virtualGateways** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources, the result is returned as an empty array.

3.1.5.17.1.3.1 Request Body

None.

3.1.5.17.1.3.2 Response Body

The format for the **virtualGateways GET ALL** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/VirtualGateways/VirtualGateway_1",
      "resourceId": "VirtualGateway_1",
      "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
      "instanceId": "cc7de412-f5d0-4f0c-83f2-1cabb2e6a3a9",
      "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_IPSEC_1",
            "resourceId": "VirtualGateway_1_IPSEC_1",
            "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
            "instanceId": "21974569-b8b3-4bde-a517-c8f5bb7ae13e",
            "properties": {
              "provisioningState": "Succeeded",
              "connectionType": "IPSec",
              "outboundKiloBitsPerSecond": 307200,
              "inboundKiloBitsPerSecond": 307200,
              "ipSecConfiguration": {
                "authenticationMethod": "PSK",
                "quickMode": {
                  "perfectForwardSecrecy": "None",
                  "cipherTransformationConstant": "AES128",
                  "authenticationTransformationConstant": "SHA196",
                  "idleDisconnectSeconds": 500,
                  "saLifeTimeSeconds": 3600,
                  "saLifeTimeKiloBytes": 33552408
                },
                "mainMode": {
```



```

        "diffieHellmanGroup": "Group2",
        "encryptionAlgorithm": "DES3",
        "integrityAlgorithm": "SHA1",
        "saLifeTimeSeconds": 28800,
        "saLifeTimeKiloBytes": 33552408
    },
    "localVpnTrafficSelector": [],
    "remoteVpnTrafficSelector": []
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
    {
        "destinationPrefix": "50.1.1.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    },
    {
        "destinationPrefix": "40.1.1.4/32",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "809",
"unreachabilityReason": "ConnectionFailure",
"statistics": {
    "outboundBytes": 7608457281,
    "inboundBytes": 91940776693,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.1.0.1",
"gateway": {
    "resourceRef": "/Gateways/CloudGw1"
}
}
},
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_Gre_1",
    "resourceId": "VirtualGateway_1_Gre_1",
    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
    "instanceId": "b8102aff-71ae-40ef-a8f6-4d1d2aad7521",
    "properties": {
        "provisioningState": "Succeeded",
        "connectionType": "GRE",
        "outboundKiloBitsPerSecond": 307200,
        "inboundKiloBitsPerSecond": 307200,
        "greConfiguration": {
            "greKey": "101"
        },
    },
    "l3Configuration": {},
    "ipAddresses": [],
    "peerIPAddresses": [],

```

```

"routes": [
  {
    "destinationPrefix": "50.2.1.0/24",
    "nextHop": "0.0.0.0",
    "metric": 10,
    "protocol": "Static"
  },
  {
    "destinationPrefix": "40.1.2.4/32",
    "nextHop": "0.0.0.0",
    "metric": 10,
    "protocol": "Static"
  }
],
"connectionStatus": "Enabled",
"connectionState": "Connected",
"connectionUpTime": "01:43:04",
"connectionErrorReason": "",
"unreachabilityReason": "",
"statistics": {
  "outboundBytes": 29356,
  "inboundBytes": 0,
  "rxTotalPacketsDropped": 0,
  "txTotalPacketsDropped": 0,
  "txRateKbps": 0,
  "rxRateKbps": 0,
  "txRateLimitedPacketsDropped": 0,
  "rxRateLimitedPacketsDropped": 0,
  "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "22.1.1.2",
"destinationIPAddress": "11.1.0.2",
"gateway": {
  "resourceRef": "/Gateways/CloudGw1"
}
},
{
  "resourceRef":
"/VirtualGateways/VirtualGateway_1/NetworkConnections/VirtualGateway_1_L3_1",
"resourceId": "VirtualGateway_1_L3_1",
"etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
"instanceId": "92db503f-fa02-445e-96ec-eaefb02bb459",
"properties": {
  "provisioningState": "Succeeded",
  "connectionType": "L3",
  "outboundKiloBitsPerSecond": 307200,
  "inboundKiloBitsPerSecond": 307200,
  "l3Configuration": {
    "vlanSubnet": {
      "resourceRef":
"/logicalnetworks/LogicalNetwork_VG_1/subnets/LogicalNetwork_VG_1_Subnet_1"
    }
  },
  "ipAddresses": [
    {
      "ipAddress": "31.1.1.4",
      "prefixLength": 24
    }
  ],
  "peerIPAddresses": [
    "31.1.1.5"
  ],
  "routes": [
    {
      "destinationPrefix": "50.3.1.0/24",

```

```

        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    },
    {
        "destinationPrefix": "40.1.3.4/32",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Connected",
"connectionUpTime": "00:00:00",
"statistics": {
    "outboundBytes": 0,
    "inboundBytes": 0,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "0001-01-01T00:00:00"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gateway": {
    "resourceRef": "/Gateways/CloudGw1"
}
}
}
],
"bgpRouters": [
    {
        "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1",
        "resourceId": "router1",
        "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
        "instanceId": "be8fe6b1-302f-4bbc-97f7-e727b2f533df",
        "properties": {
            "provisioningState": "Succeeded",
            "isEnabled": true,
            "requireIgpSync": true,
            "extAsNumber": "0.3458",
            "routerId": "10.2.2.2",
            "routerIP": [
                "10.2.2.2"
            ],
            "isGenerated": false,
            "bgpPeers": [
                {
                    "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer2",
                    "resourceId": "Peer2",
                    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
                    "instanceId": "6dfc12fb-484a-4771-98f9-6c1d4ffbaala",
                    "properties": {
                        "provisioningState": "Succeeded",
                        "asNumber": "1236",
                        "extAsNumber": "0.1236",
                        "peerIpAddress": "40.1.2.4",
                        "connectionState": "Disconnected",
                        "statistics": {
                            "tcpConnectionClosed": "2016-06-15T23:17:02.419-07:00",
                            "openMessageStats": {
                                "sentCount": 0,
                                "receivedCount": 0
                            }
                        }
                    }
                }
            ],
        }
    }
],

```

```

        "notificationMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
        },
        "keepAliveMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
        },
        "routeRefreshMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
        },
        "updateMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
        },
        "ipv4Route": {
            "updateSentCount": 0,
            "updateReceivedCount": 0,
            "withdrawalSentCount": 0,
            "withdrawalReceivedCount": 0
        },
        "ipv6Route": {
            "updateSentCount": 0,
            "updateReceivedCount": 0,
            "withdrawalSentCount": 0,
            "withdrawalReceivedCount": 0
        },
        "lastUpdated": "2016-06-16T06:17:26.4229961Z"
    },
    "isGenerated": false
}
},
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer3",
    "resourceId": "Peer3",
    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
    "instanceId": "d6bc7e33-4ac9-4f74-a3f2-81c39eb2a85d",
    "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.3.4",
        "connectionState": "Disconnected",
        "statistics": {
            "tcpConnectionClosed": "2016-06-15T23:17:07.293-07:00",
            "openMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "notificationMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "keepAliveMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "routeRefreshMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "updateMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "ipv4Route": {
                "updateSentCount": 0,
                "updateReceivedCount": 0,
            }
        }
    }
}

```

```

        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T06:17:26.4229961Z"
},
"isGenerated": false
}
},
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
    "resourceId": "Peer1",
    "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
    "instanceId": "b9e57199-f352-4121-9842-24c0ba23f3f1",
    "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.1.4",
        "connectionState": "Disconnected",
        "statistics": {
            "tcpConnectionClosed": "2016-06-15T23:17:22.498-07:00",
            "openMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "notificationMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "keepAliveMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "routeRefreshMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "updateMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "ipv4Route": {
                "updateSentCount": 0,
                "updateReceivedCount": 0,
                "withdrawlSentCount": 0,
                "withdrawlReceivedCount": 0
            },
            "ipv6Route": {
                "updateSentCount": 0,
                "updateReceivedCount": 0,
                "withdrawlSentCount": 0,
                "withdrawlReceivedCount": 0
            },
            "lastUpdated": "2016-06-16T06:17:26.4229961Z"
        },
        "isGenerated": false
    }
}
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
}
}

```

```

    }
  },
  "policyMaps": [
    {
      "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1",
      "resourceId": "MAP1",
      "etag": "W/\\"681f2608-6588-49d2-ba50-85db700a4300\\"",
      "instanceId": "b52840f9-91a9-4a3e-91b3-0383aelea607",
      "properties": {
        "provisioningState": "Succeeded",
        "bgpPeersWithPolicyMapIn": [],
        "bgpPeersWithPolicyMapOut": [],
        "policyMapEntryList": [
          {
            "action": "Deny",
            "matchCriteria": [
              {
                "property": "MatchPrefix",
                "value": [
                  "5.4.3.2/32",
                  "5.4.3.1/32"
                ]
              },
              {
                "property": "NextHop",
                "value": [
                  "4.3.2.1",
                  "6.4.3.1"
                ]
              }
            ],
            "setActions": []
          }
        ]
      }
    },
    {
      "routingType": "Dynamic",
      "gatewayPools": [
        {
          "resourceRef": "/GatewayPools/default"
        }
      ],
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      },
      "gatewaySubnets": [
        {
          "resourceRef": "/virtualNetworks/00000000-1111-0000-0001-000000000000/subnets/00000000-1111-1111-0001-000000000002"
        }
      ]
    }
  ],
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_10",
    "resourceId": "VirtualGateway_10",
    "etag": "W/\\"b185a9f7-abc6-40ec-8800-751f88777d34\\"",
    "instanceId": "5e8cb561-ddcd-475f-87c5-ec182fbd6b53",
    "properties": {
      "provisioningState": "Succeeded",
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_10/NetworkConnections/VirtualGateway_10_IPSEC_1",
          "resourceId": "VirtualGateway_10_IPSEC_1",
          "etag": "W/\\"b185a9f7-abc6-40ec-8800-751f88777d34\\"",
          "instanceId": "4c2ec16e-d110-4dd6-9ab4-69c7d82feb50",

```

```

"properties": {
  "provisioningState": "Succeeded",
  "connectionType": "IPSec",
  "outboundKiloBitsPerSecond": 307200,
  "inboundKiloBitsPerSecond": 307200,
  "ipSecConfiguration": {
    "authenticationMethod": "PSK",
    "quickMode": {
      "perfectForwardSecrecy": "None",
      "cipherTransformationConstant": "AES128",
      "authenticationTransformationConstant": "SHA196",
      "idleDisconnectSeconds": 500,
      "saLifetimeSeconds": 3600,
      "saLifetimeKiloBytes": 33552408
    },
    "mainMode": {
      "diffieHellmanGroup": "Group2",
      "encryptionAlgorithm": "DES3",
      "integrityAlgorithm": "SHA1",
      "saLifetimeSeconds": 28800,
      "saLifetimeKiloBytes": 33552408
    },
    "localVpnTrafficSelector": [],
    "remoteVpnTrafficSelector": []
  },
  "l3Configuration": {},
  "ipAddresses": [],
  "peerIPAddresses": [],
  "routes": [
    {
      "destinationPrefix": "50.10.1.0/24",
      "nextHop": "0.0.0.0",
      "metric": 10,
      "protocol": "Static"
    }
  ],
  "connectionStatus": "Enabled",
  "connectionState": "Disconnected",
  "connectionUpTime": "00:00:00",
  "connectionErrorReason": "0",
  "unreachabilityReason": "",
  "statistics": {
    "outboundBytes": 985135812,
    "inboundBytes": 48811304059,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
  },
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
  },
  "sourceIPAddress": "91.1.1.4",
  "destinationIPAddress": "11.10.0.1",
  "gateway": {
    "resourceRef": "/Gateways/CloudGw1"
  }
}
},
"bgpRouters": [
  {
    "resourceRef":
"/VirtualGateways/VirtualGateway_10/BgpRouters/BGP_VirtualGateway_10_b04b21a5-eab4-49e2-9770-d98a63662c17",
    "resourceId": "BGP_VirtualGateway_10_b04b21a5-eab4-49e2-9770-d98a63662c17",

```

```

      "instanceId": "b04b21a5-eab4-49e2-9770-d98a63662c17",
      "properties": {
        "provisioningState": "Succeeded",
        "extAsNumber": "0.65001",
        "routerId": "10.2.11.2",
        "routerIP": [
          "10.2.11.2"
        ],
        "isGenerated": true,
        "configurationState": {
          "status": "Success",
          "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        }
      }
    },
    "routingType": "Dynamic",
    "gatewayPools": [
      {
        "resourceRef": "/GatewayPools/default"
      }
    ],
    "configurationState": {
      "status": "Success",
      "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "gatewaySubnets": [
      {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0010-000000000000/subnets/00000000-1111-1111-0010-000000000002"
      }
    ]
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_11",
    "resourceId": "VirtualGateway_11",
    "etag": "W/\"37c3b8ec-c329-4383-b1fd-4df96aba70b0\"",
    "instanceId": "a80b5015-f71f-467f-8c2e-747863d5275a",
    "properties": {
      "provisioningState": "Succeeded",
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_11/NetworkConnections/VirtualGateway_11_IPSEC_1",
          "resourceId": "VirtualGateway_11_IPSEC_1",
          "etag": "W/\"37c3b8ec-c329-4383-b1fd-4df96aba70b0\"",
          "instanceId": "0f4a568e-e910-4f97-ad05-eff8b57c94da",
          "properties": {
            "provisioningState": "Succeeded",
            "connectionType": "IPSec",
            "outboundKiloBitsPerSecond": 307200,
            "inboundKiloBitsPerSecond": 307200,
            "ipSecConfiguration": {
              "authenticationMethod": "PSK",
              "quickMode": {
                "perfectForwardSecrecy": "None",
                "cipherTransformationConstant": "AES128",
                "authenticationTransformationConstant": "SHA196",
                "idleDisconnectSeconds": 500,
                "saLifeTimeSeconds": 3600,
                "saLifeTimeKiloBytes": 33552408
              },
              "mainMode": {
                "diffieHellmanGroup": "Group2",
                "encryptionAlgorithm": "DES3",
                "integrityAlgorithm": "SHA1",
                "saLifeTimeSeconds": 28800,
                "saLifeTimeKiloBytes": 33552408
              }
            }
          }
        }
      ]
    }
  },

```



```

        "localVpnTrafficSelector": [],
        "remoteVpnTrafficSelector": []
    },
    "l3Configuration": {},
    "ipAddresses": [],
    "peerIPAddresses": [],
    "routes": [
        {
            "destinationPrefix": "50.11.1.0/24",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
        }
    ],
    "connectionStatus": "Enabled",
    "connectionState": "Disconnected",
    "connectionUpTime": "00:00:00",
    "connectionErrorReason": "0",
    "unreachabilityReason": "",
    "statistics": {
        "outboundBytes": 1444062644,
        "inboundBytes": 72530686817,
        "rxTotalPacketsDropped": 0,
        "txTotalPacketsDropped": 0,
        "txRateKbps": 0,
        "rxRateKbps": 0,
        "txRateLimitedPacketsDropped": 0,
        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
    },
    "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "91.1.1.4",
    "destinationIPAddress": "11.11.0.1",
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
],
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_11/BgpRouters/BGP_VirtualGateway_11_6e83f798-f561-4f45-844e-e6a0585930d8",
        "resourceId": "BGP_VirtualGateway_11_6e83f798-f561-4f45-844e-e6a0585930d8",
        "instanceId": "6e83f798-f561-4f45-844e-e6a0585930d8",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.12.2",
            "routerIP": [
                "10.2.12.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],

```

```

"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
  {
    "resourceRef": "/virtualNetworks/00000000-1111-0000-0011-000000000000/subnets/00000000-1111-1111-0011-000000000002"
  }
]
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_12",
  "resourceId": "VirtualGateway_12",
  "etag": "W/\\"70007e68-6534-48c3-b01d-cca0ae32dbbd\\"",
  "instanceId": "11748d24-b2ef-4e97-8c97-d5bb3bd53109",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_12/NetworkConnections/VirtualGateway_12_IPSEC_1",
        "resourceId": "VirtualGateway_12_IPSEC_1",
        "etag": "W/\\"70007e68-6534-48c3-b01d-cca0ae32dbbd\\"",
        "instanceId": "6296e4dc-ae3c-42ff-a5fa-4b6f2e1b0e8f",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifeTimeSeconds": 3600,
              "saLifeTimeKiloBytes": 33552408
            },
            "mainMode": {
              "diffieHellmanGroup": "Group2",
              "encryptionAlgorithm": "DES3",
              "integrityAlgorithm": "SHA1",
              "saLifeTimeSeconds": 28800,
              "saLifeTimeKiloBytes": 33552408
            },
            "localVpnTrafficSelector": [],
            "remoteVpnTrafficSelector": []
          },
          "l3Configuration": {},
          "ipAddresses": [],
          "peerIPAddresses": [],
          "routes": [
            {
              "destinationPrefix": "50.12.1.0/24",
              "nextHop": "0.0.0.0",
              "metric": 10,
              "protocol": "Static"
            }
          ],
          "connectionStatus": "Enabled",
          "connectionState": "Disconnected",
          "connectionUpTime": "00:00:00",
          "connectionErrorReason": "0",
          "unreachabilityReason": "",
          "statistics": {
            "outboundBytes": 1446425432,
            "inboundBytes": 71394354914,

```

```

        "rxTotalPacketsDropped": 0,
        "txTotalPacketsDropped": 0,
        "txRateKbps": 0,
        "rxRateKbps": 0,
        "txRateLimitedPacketsDropped": 0,
        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
    },
    "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "91.1.1.4",
    "destinationIPAddress": "11.12.0.1",
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
},
],
"bgpRouters": [
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_12/BgpRouters/BGP_VirtualGateway_12_ef8630d4-8aac-46df-b037-0d93eb8b6a82",
    "resourceId": "BGP_VirtualGateway_12_ef8630d4-8aac-46df-b037-0d93eb8b6a82",
    "instanceId": "ef8630d4-8aac-46df-b037-0d93eb8b6a82",
    "properties": {
        "provisioningState": "Succeeded",
        "extAsNumber": "0.65001",
        "routerId": "10.2.13.2",
        "routerIP": [
            "10.2.13.2"
        ],
        "isGenerated": true,
        "configurationState": {
            "status": "Success",
            "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        }
    }
}
],
"routingType": "Dynamic",
"gatewayPools": [
{
    "resourceRef": "/GatewayPools/default"
}
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
{
    "resourceRef": "/virtualNetworks/00000000-1111-0000-0012-000000000000/subnets/00000000-1111-1111-0012-000000000002"
}
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_13",
    "resourceId": "VirtualGateway_13",
    "etag": "W/\"ea80c5b6-8cd5-4925-84b8-4d51f60e68fc\"",
    "instanceId": "cec7ff21-0c58-45cf-afe2-480465abe062",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {

```

```

    "resourceRef":
"/VirtualGateways/VirtualGateway_13/NetworkConnections/VirtualGateway_13_IPSEC_1",
    "resourceId": "VirtualGateway_13_IPSEC_1",
    "etag": "W/\\"ea80c5b6-8cd5-4925-84b8-4d51f60e68fc\\"",
    "instanceId": "1ab3c12b-4591-4d69-8a13-163cc1f8ae2e",
    "properties": {
      "provisioningState": "Succeeded",
      "connectionType": "IPSec",
      "outboundKiloBitsPerSecond": 307200,
      "inboundKiloBitsPerSecond": 307200,
      "ipSecConfiguration": {
        "authenticationMethod": "PSK",
        "quickMode": {
          "perfectForwardSecrecy": "None",
          "cipherTransformationConstant": "AES128",
          "authenticationTransformationConstant": "SHA196",
          "idleDisconnectSeconds": 500,
          "saLifeTimeSeconds": 3600,
          "saLifeTimeKiloBytes": 33552408
        },
        "mainMode": {
          "diffieHellmanGroup": "Group2",
          "encryptionAlgorithm": "DES3",
          "integrityAlgorithm": "SHA1",
          "saLifeTimeSeconds": 28800,
          "saLifeTimeKiloBytes": 33552408
        },
        "localVpnTrafficSelector": [],
        "remoteVpnTrafficSelector": []
      },
      "l3Configuration": {},
      "ipAddresses": [],
      "peerIPAddresses": [],
      "routes": [
        {
          "destinationPrefix": "50.13.1.0/24",
          "nextHop": "0.0.0.0",
          "metric": 10,
          "protocol": "Static"
        }
      ],
      "connectionStatus": "Enabled",
      "connectionState": "Disconnected",
      "connectionUpTime": "00:00:00",
      "connectionErrorReason": "0",
      "unreachabilityReason": "",
      "statistics": {
        "outboundBytes": 1791277084,
        "inboundBytes": 94221208682,
        "rxTotalPacketsDropped": 0,
        "txTotalPacketsDropped": 0,
        "txRateKbps": 0,
        "rxRateKbps": 0,
        "txRateLimitedPacketsDropped": 0,
        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
      },
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      },
      "sourceIPAddress": "91.1.1.4",
      "destinationIPAddress": "11.13.0.1",
      "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
      }
    }
  },
  "bgpRouters": [

```

```

    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_13/BgpRouters/BGP_VirtualGateway_13_d6efc0cd-c388-475c-b3ae-45ce38d213c9",
      "resourceId": "BGP_VirtualGateway_13_d6efc0cd-c388-475c-b3ae-45ce38d213c9",
      "instanceId": "d6efc0cd-c388-475c-b3ae-45ce38d213c9",
      "properties": {
        "provisioningState": "Succeeded",
        "extAsNumber": "0.65001",
        "routerId": "10.2.14.2",
        "routerIP": [
          "10.2.14.2"
        ],
        "isGenerated": true,
        "configurationState": {
          "status": "Success",
          "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        }
      }
    }
  ],
  "routingType": "Dynamic",
  "gatewayPools": [
    {
      "resourceRef": "/GatewayPools/default"
    }
  ],
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
  },
  "gatewaySubnets": [
    {
      "resourceRef": "/virtualNetworks/00000000-1111-0000-0013-000000000000/subnets/00000000-1111-1111-0013-000000000002"
    }
  ]
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_14",
  "resourceId": "VirtualGateway_14",
  "etag": "W/\f5560e3b-0aaa-4780-8235-7c89c66cab36\"",
  "instanceId": "81db5245-cfb7-4324-a2c0-d669ebd55c1a",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_14/NetworkConnections/VirtualGateway_14_IPSEC_1",
        "resourceId": "VirtualGateway_14_IPSEC_1",
        "etag": "W/\f5560e3b-0aaa-4780-8235-7c89c66cab36\"",
        "instanceId": "c41c2b7a-7d09-45e6-aae0-1ed709da63d9",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifetimeSeconds": 3600,
              "saLifetimeKiloBytes": 33552408
            }
          },
          "mainMode": {
            "diffieHellmanGroup": "Group2",

```

```

        "encryptionAlgorithm": "DES3",
        "integrityAlgorithm": "SHA1",
        "saLifetimeSeconds": 28800,
        "saLifetimeKiloBytes": 33552408
    },
    "localVpnTrafficSelector": [],
    "remoteVpnTrafficSelector": []
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
    {
        "destinationPrefix": "50.14.1.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
    "outboundBytes": 1199806611,
    "inboundBytes": 60091390974,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.14.0.1",
"gateway": {
    "resourceRef": "/Gateways/CloudGw1"
}
}
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_14/BgpRouters/BGP_VirtualGateway_14_424d5a1c-654d-4279-ae22-
bd2e61d050ca",
        "resourceId": "BGP_VirtualGateway_14_424d5a1c-654d-4279-ae22-bd2e61d050ca",
        "instanceId": "424d5a1c-654d-4279-ae22-bd2e61d050ca",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.15.2",
            "routerIP": [
                "10.2.15.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",

```

```

    "gatewayPools": [
      {
        "resourceRef": "/GatewayPools/default"
      }
    ],
    "configurationState": {
      "status": "Success",
      "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "gatewaySubnets": [
      {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0014-000000000000/subnets/00000000-1111-1111-0014-000000000002"
      }
    ]
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_15",
    "resourceId": "VirtualGateway_15",
    "etag": "W/\"5e4a60e8-1dbb-4737-8743-3f60338a220d\"",
    "instanceId": "43106c7c-5f04-4a47-a2ab-3eaa90ddd40",
    "properties": {
      "provisioningState": "Succeeded",
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_15/NetworkConnections/VirtualGateway_15_IPSEC_1",
          "resourceId": "VirtualGateway_15_IPSEC_1",
          "etag": "W/\"5e4a60e8-1dbb-4737-8743-3f60338a220d\"",
          "instanceId": "c296a3c8-f038-4afe-8206-689e2a870378",
          "properties": {
            "provisioningState": "Succeeded",
            "connectionType": "IPSec",
            "outboundKiloBitsPerSecond": 307200,
            "inboundKiloBitsPerSecond": 307200,
            "ipSecConfiguration": {
              "authenticationMethod": "PSK",
              "quickMode": {
                "perfectForwardSecrecy": "None",
                "cipherTransformationConstant": "AES128",
                "authenticationTransformationConstant": "SHA196",
                "idleDisconnectSeconds": 500,
                "saLifeTimeSeconds": 3600,
                "saLifeTimeKiloBytes": 33552408
              },
              "mainMode": {
                "diffieHellmanGroup": "Group2",
                "encryptionAlgorithm": "DES3",
                "integrityAlgorithm": "SHA1",
                "saLifeTimeSeconds": 28800,
                "saLifeTimeKiloBytes": 33552408
              },
              "localVpnTrafficSelector": [],
              "remoteVpnTrafficSelector": []
            },
            "l3Configuration": {},
            "ipAddresses": [],
            "peerIPAddresses": [],
            "routes": [
              {
                "destinationPrefix": "50.15.1.0/24",
                "nextHop": "0.0.0.0",
                "metric": 10,
                "protocol": "Static"
              }
            ],
            "connectionStatus": "Enabled",
            "connectionState": "Disconnected",
            "connectionUpTime": "00:00:00",

```

```

        "connectionErrorReason": "0",
        "unreachabilityReason": "",
        "statistics": {
            "outboundBytes": 2171444318,
            "inboundBytes": 116700933274,
            "rxTotalPacketsDropped": 0,
            "txTotalPacketsDropped": 0,
            "txRateKbps": 0,
            "rxRateKbps": 0,
            "txRateLimitedPacketsDropped": 0,
            "rxRateLimitedPacketsDropped": 0,
            "lastUpdated": "2016-06-16T06:17:26.5237938Z"
        },
        "configurationState": {
            "status": "Success",
            "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        },
        "sourceIPAddress": "91.1.1.4",
        "destinationIPAddress": "11.15.0.1",
        "gateway": {
            "resourceRef": "/Gateways/CloudGw1"
        }
    }
}
],
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_15/BgpRouters/BGP_VirtualGateway_15_8f4ea52f-b2b1-4641-b554-454ef27ae9e3",
        "resourceId": "BGP_VirtualGateway_15_8f4ea52f-b2b1-4641-b554-454ef27ae9e3",
        "instanceId": "8f4ea52f-b2b1-4641-b554-454ef27ae9e3",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.16.2",
            "routerIP": [
                "10.2.16.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0015-000000000000/subnets/00000000-1111-1111-0015-000000000002"
    }
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_16",
    "resourceId": "VirtualGateway_16",
    "etag": "W/\\"835a7333-af3f-46d6-a9bf-59395c3d8143\\"",
    "instanceId": "46fd95d9-ff1d-49c2-ae3e-48dbeda29aaf",

```



```

"properties": {
  "provisioningState": "Succeeded",
  "networkConnections": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_16/NetworkConnections/VirtualGateway_16_IPSEC_1",
      "resourceId": "VirtualGateway_16_IPSEC_1",
      "etag": "W/\\"835a7333-af3f-46d6-a9bf-59395c3d8143\\"",
      "instanceId": "aa52df50-0123-4c58-b3b8-d470ac10b18f",
      "properties": {
        "provisioningState": "Succeeded",
        "connectionType": "IPSec",
        "outboundKiloBitsPerSecond": 307200,
        "inboundKiloBitsPerSecond": 307200,
        "ipSecConfiguration": {
          "authenticationMethod": "PSK",
          "quickMode": {
            "perfectForwardSecrecy": "None",
            "cipherTransformationConstant": "AES128",
            "authenticationTransformationConstant": "SHA196",
            "idleDisconnectSeconds": 500,
            "saLifeTimeSeconds": 3600,
            "saLifeTimeKiloBytes": 33552408
          },
          "mainMode": {
            "diffieHellmanGroup": "Group2",
            "encryptionAlgorithm": "DES3",
            "integrityAlgorithm": "SHA1",
            "saLifeTimeSeconds": 28800,
            "saLifeTimeKiloBytes": 33552408
          },
          "localVpnTrafficSelector": [],
          "remoteVpnTrafficSelector": []
        },
        "l3Configuration": {},
        "ipAddresses": [],
        "peerIPAddresses": [],
        "routes": [
          {
            "destinationPrefix": "50.16.1.0/24",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
          }
        ],
        "connectionStatus": "Enabled",
        "connectionState": "Disconnected",
        "connectionUpTime": "00:00:00",
        "connectionErrorReason": "0",
        "unreachabilityReason": "",
        "statistics": {
          "outboundBytes": 1942546566,
          "inboundBytes": 92567236069,
          "rxTotalPacketsDropped": 0,
          "txTotalPacketsDropped": 0,
          "txRateKbps": 0,
          "rxRateKbps": 0,
          "txRateLimitedPacketsDropped": 0,
          "rxRateLimitedPacketsDropped": 0,
          "lastUpdated": "2016-06-16T06:17:26.5237938Z"
        },
        "configurationState": {
          "status": "Success",
          "lastUpdateTime": "2016-06-15T23:13:41.1459839-07:00"
        },
        "sourceIPAddress": "91.1.1.4",
        "destinationIPAddress": "11.16.0.1",
        "gateway": {
          "resourceRef": "/Gateways/CloudGw1"
        }
      }
    }
  ]
}

```

```

    }
  },
  "bgpRouters": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_16/BgpRouters/BGP_VirtualGateway_16_42df86d7-6a36-42fc-a558-9f9110b8288d",
      "resourceId": "BGP_VirtualGateway_16_42df86d7-6a36-42fc-a558-9f9110b8288d",
      "instanceId": "42df86d7-6a36-42fc-a558-9f9110b8288d",
      "properties": {
        "provisioningState": "Succeeded",
        "extAsNumber": "0.65001",
        "routerId": "10.2.17.2",
        "routerIP": [
          "10.2.17.2"
        ],
        "isGenerated": true,
        "configurationState": {
          "status": "Success",
          "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        }
      }
    }
  ],
  "routingType": "Dynamic",
  "gatewayPools": [
    {
      "resourceRef": "/GatewayPools/default"
    }
  ],
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
  },
  "gatewaySubnets": [
    {
      "resourceRef": "/virtualNetworks/00000000-1111-0000-0016-000000000000/subnets/00000000-1111-1111-0016-000000000002"
    }
  ]
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_17",
  "resourceId": "VirtualGateway_17",
  "etag": "W/\"4cc6d29e-faee-47a8-8fd1-53e14a78a0d8\"",
  "instanceId": "7d773cd9-9e9a-4d49-806c-8c2082f5349a",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_17/NetworkConnections/VirtualGateway_17_IPSEC_1",
        "resourceId": "VirtualGateway_17_IPSEC_1",
        "etag": "W/\"4cc6d29e-faee-47a8-8fd1-53e14a78a0d8\"",
        "instanceId": "a3e73063-b6e2-42ea-8510-40b5b47fb462",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifeTimeSeconds": 3600,
            }
          }
        }
      }
    ]
  }
}

```

```

        "saLifeTimeKiloBytes": 33552408
    },
    "mainMode": {
        "diffieHellmanGroup": "Group2",
        "encryptionAlgorithm": "DES3",
        "integrityAlgorithm": "SHA1",
        "saLifeTimeSeconds": 28800,
        "saLifeTimeKiloBytes": 33552408
    },
    "localVpnTrafficSelector": [],
    "remoteVpnTrafficSelector": []
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
    {
        "destinationPrefix": "50.17.1.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
    "outboundBytes": 1043475124,
    "inboundBytes": 51078178327,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.17.0.1",
"gateway": {
    "resourceRef": "/Gateways/CloudGw1"
}
}
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_17/BgpRouters/BGP_VirtualGateway_17_6ec56965-4f32-4146-9413-aeacfdel8626",
        "resourceId": "BGP_VirtualGateway_17_6ec56965-4f32-4146-9413-aeacfdel8626",
        "instanceId": "6ec56965-4f32-4146-9413-aeacfdel8626",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.18.2",
            "routerIP": [
                "10.2.18.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
]

```

```

    }
  ],
  "routingType": "Dynamic",
  "gatewayPools": [
    {
      "resourceRef": "/GatewayPools/default"
    }
  ],
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
  },
  "gatewaySubnets": [
    {
      "resourceRef": "/virtualNetworks/00000000-1111-0000-0017-000000000000/subnets/00000000-1111-1111-0017-000000000002"
    }
  ]
}
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_18",
  "resourceId": "VirtualGateway_18",
  "etag": "W/\\"9db2adb7-7aed-4179-9ef2-086850ca45b6\"",
  "instanceId": "0b0d4416-6189-480e-9e98-3c3e8994dff5",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_18/NetworkConnections/VirtualGateway_18_IPSEC_1",
        "resourceId": "VirtualGateway_18_IPSEC_1",
        "etag": "W/\\"9db2adb7-7aed-4179-9ef2-086850ca45b6\"",
        "instanceId": "38fd724b-05a8-464d-8e8e-69290261bbef",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifeTimeSeconds": 3600,
              "saLifeTimeKiloBytes": 33552408
            },
            "mainMode": {
              "diffieHellmanGroup": "Group2",
              "encryptionAlgorithm": "DES3",
              "integrityAlgorithm": "SHA1",
              "saLifeTimeSeconds": 28800,
              "saLifeTimeKiloBytes": 33552408
            },
            "localVpnTrafficSelector": [],
            "remoteVpnTrafficSelector": []
          },
          "l3Configuration": {},
          "ipAddresses": [],
          "peerIPAddresses": [],
          "routes": [
            {
              "destinationPrefix": "50.18.1.0/24",
              "nextHop": "0.0.0.0",
              "metric": 10,
              "protocol": "Static"
            }
          ]
        }
      }
    ]
  }
}

```

```

    ],
    "connectionStatus": "Enabled",
    "connectionState": "Disconnected",
    "connectionUpTime": "00:00:00",
    "connectionErrorReason": "0",
    "unreachabilityReason": "",
    "statistics": {
      "outboundBytes": 1421356117,
      "inboundBytes": 69812308550,
      "rxTotalPacketsDropped": 0,
      "txTotalPacketsDropped": 0,
      "txRateKbps": 0,
      "rxRateKbps": 0,
      "txRateLimitedPacketsDropped": 0,
      "rxRateLimitedPacketsDropped": 0,
      "lastUpdated": "2016-06-16T06:17:26.5237938Z"
    },
    "configurationState": {
      "status": "Success",
      "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "91.1.1.4",
    "destinationIPAddress": "11.18.0.1",
    "gateway": {
      "resourceRef": "/Gateways/CloudGw1"
    }
  }
},
"bgpRouters": [
  {
    "resourceRef":
"/VirtualGateways/VirtualGateway_18/BgpRouters/BGP_VirtualGateway_18_0d2b38e7-79fd-4eb2-a445-8214c0da5d05",
    "resourceId": "BGP_VirtualGateway_18_0d2b38e7-79fd-4eb2-a445-8214c0da5d05",
    "instanceId": "0d2b38e7-79fd-4eb2-a445-8214c0da5d05",
    "properties": {
      "provisioningState": "Succeeded",
      "extAsNumber": "0.65001",
      "routerId": "10.2.19.2",
      "routerIP": [
        "10.2.19.2"
      ],
      "isGenerated": true,
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      }
    }
  }
],
"routingType": "Dynamic",
"gatewayPools": [
  {
    "resourceRef": "/GatewayPools/default"
  }
],
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
  {
    "resourceRef": "/virtualNetworks/00000000-1111-0000-0018-000000000000/subnets/00000000-1111-1111-0018-000000000002"
  }
]
},
{

```

```

"resourceRef": "/VirtualGateways/VirtualGateway_19",
"resourceId": "VirtualGateway_19",
"etag": "W/\"36077b7b-36cc-404e-b776-6c52eaa581a1\"",
"instanceId": "26ff4542-a4bf-4b51-a241-59d295f39815",
"properties": {
  "provisioningState": "Succeeded",
  "networkConnections": [
    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_19/NetworkConnections/VirtualGateway_19_IPSEC_1",
      "resourceId": "VirtualGateway_19_IPSEC_1",
      "etag": "W/\"36077b7b-36cc-404e-b776-6c52eaa581a1\"",
      "instanceId": "c4bdef1b-9afc-4084-9b07-22a8ab800317",
      "properties": {
        "provisioningState": "Succeeded",
        "connectionType": "IPSec",
        "outboundKiloBitsPerSecond": 307200,
        "inboundKiloBitsPerSecond": 307200,
        "ipSecConfiguration": {
          "authenticationMethod": "PSK",
          "quickMode": {
            "perfectForwardSecrecy": "None",
            "cipherTransformationConstant": "AES128",
            "authenticationTransformationConstant": "SHA196",
            "idleDisconnectSeconds": 500,
            "saLifeTimeSeconds": 3600,
            "saLifeTimeKiloBytes": 33552408
          },
          "mainMode": {
            "diffieHellmanGroup": "Group2",
            "encryptionAlgorithm": "DES3",
            "integrityAlgorithm": "SHA1",
            "saLifeTimeSeconds": 28800,
            "saLifeTimeKiloBytes": 33552408
          },
          "localVpnTrafficSelector": [],
          "remoteVpnTrafficSelector": []
        },
        "l3Configuration": {},
        "ipAddresses": [],
        "peerIPAddresses": [],
        "routes": [
          {
            "destinationPrefix": "50.19.1.0/24",
            "nextHop": "0.0.0.0",
            "metric": 10,
            "protocol": "Static"
          }
        ]
      },
      "connectionStatus": "Enabled",
      "connectionState": "Disconnected",
      "connectionUpTime": "00:00:00",
      "connectionErrorReason": "0",
      "unreachabilityReason": "",
      "statistics": {
        "outboundBytes": 1505920243,
        "inboundBytes": 74271334779,
        "rxTotalPacketsDropped": 0,
        "txTotalPacketsDropped": 0,
        "txRateKbps": 0,
        "rxRateKbps": 0,
        "txRateLimitedPacketsDropped": 0,
        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
      },
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      },
      "sourceIPAddress": "91.1.1.4",

```

```

        "destinationIPAddress": "11.19.0.1",
        "gateway": {
            "resourceRef": "/Gateways/CloudGw1"
        }
    }
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_19/BgpRouters/BGP_VirtualGateway_19_19b87991-6ec7-4e79-8b25-
b5bbac60baf6",
        "resourceId": "BGP_VirtualGateway_19_19b87991-6ec7-4e79-8b25-b5bbac60baf6",
        "instanceId": "19b87991-6ec7-4e79-8b25-b5bbac60baf6",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.20.2",
            "routerIP": [
                "10.2.20.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0019-
000000000000/subnets/00000000-1111-1111-0019-000000000002"
    }
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_2",
    "resourceId": "VirtualGateway_2",
    "etag": "W/\"17d90b70-e0f4-4153-a1b0-f4910bdb46e5\"",
    "instanceId": "b04ee085-fd0d-4267-8b35-35ae504a715f",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_2/NetworkConnections/VirtualGateway_2_IPSEC_1",
                "resourceId": "VirtualGateway_2_IPSEC_1",
                "etag": "W/\"17d90b70-e0f4-4153-a1b0-f4910bdb46e5\"",
                "instanceId": "7aff20cc-d426-4ff0-aaa8-0d6fc5979286",
                "properties": {
                    "provisioningState": "Succeeded",
                    "connectionType": "IPSec",
                    "outboundKiloBitsPerSecond": 307200,
                    "inboundKiloBitsPerSecond": 307200,
                    "ipSecConfiguration": {
                        "authenticationMethod": "PSK",
                        "quickMode": {
                            "perfectForwardSecrecy": "None",

```

```

        "cipherTransformationConstant": "AES128",
        "authenticationTransformationConstant": "SHA196",
        "idleDisconnectSeconds": 500,
        "saLifeTimeSeconds": 3600,
        "saLifeTimeKiloBytes": 33552408
    },
    "mainMode": {
        "diffieHellmanGroup": "Group2",
        "encryptionAlgorithm": "DES3",
        "integrityAlgorithm": "SHA1",
        "saLifeTimeSeconds": 28800,
        "saLifeTimeKiloBytes": 33552408
    },
    "localVpnTrafficSelector": [],
    "remoteVpnTrafficSelector": []
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
    {
        "destinationPrefix": "50.2.1.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
    "outboundBytes": 1104506155,
    "inboundBytes": 54005992110,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.2.0.1",
"gateway": {
    "resourceRef": "/Gateways/CloudGw1"
}
}
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_2/BgpRouters/BGP_VirtualGateway_2_83e43f34-c516-46ac-ad48-755ee9c1f665",
        "resourceId": "BGP_VirtualGateway_2_83e43f34-c516-46ac-ad48-755ee9c1f665",
        "instanceId": "83e43f34-c516-46ac-ad48-755ee9c1f665",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.3.2",
            "routerIP": [
                "10.2.3.2"
            ],
            "isGenerated": true,

```



```

        "configurationState": {
            "status": "Success",
            "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        }
    }
},
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0002-000000000000/subnets/00000000-1111-1111-0002-000000000002"
    }
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_20",
    "resourceId": "VirtualGateway_20",
    "etag": "W/\"2de7077e-d755-4529-8982-6a8baa0cf6ca\"",
    "instanceId": "5a994f0c-b738-43d9-9364-5f19c0ef746e",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_20/NetworkConnections/VirtualGateway_20_IPSEC_1",
                "resourceId": "VirtualGateway_20_IPSEC_1",
                "etag": "W/\"2de7077e-d755-4529-8982-6a8baa0cf6ca\"",
                "instanceId": "8d562ef8-3fd5-412b-98e1-8ccbb2e6adf1",
                "properties": {
                    "provisioningState": "Succeeded",
                    "connectionType": "IPSec",
                    "outboundKiloBitsPerSecond": 307200,
                    "inboundKiloBitsPerSecond": 307200,
                    "ipSecConfiguration": {
                        "authenticationMethod": "PSK",
                        "quickMode": {
                            "perfectForwardSecrecy": "None",
                            "cipherTransformationConstant": "AES128",
                            "authenticationTransformationConstant": "SHA196",
                            "idleDisconnectSeconds": 500,
                            "saLifeTimeSeconds": 3600,
                            "saLifeTimeKiloBytes": 33552408
                        },
                        "mainMode": {
                            "diffieHellmanGroup": "Group2",
                            "encryptionAlgorithm": "DES3",
                            "integrityAlgorithm": "SHA1",
                            "saLifeTimeSeconds": 28800,
                            "saLifeTimeKiloBytes": 33552408
                        },
                        "localVpnTrafficSelector": [],
                        "remoteVpnTrafficSelector": []
                    },
                    "l3Configuration": {},
                    "ipAddresses": [],
                    "peerIPAddresses": [],
                    "routes": [
                        {
                            "destinationPrefix": "50.20.1.0/24",

```

```

        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
    "outboundBytes": 1150643261,
    "inboundBytes": 57801964901,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdateTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.20.0.1",
"gateway": {
    "resourceRef": "/Gateways/CloudGw1"
}
}
}
],
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_20/BgpRouters/BGP_VirtualGateway_20_557cfc53-e621-4559-bcb1-
elf2045f56",
        "resourceId": "BGP_VirtualGateway_20_557cfc53-e621-4559-bcb1-elf2045f56",
        "instanceId": "557cfc53-e621-4559-bcb1-elf2045f56",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.21.2",
            "routerIP": [
                "10.2.21.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdateTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdateTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0020-
000000000000/subnets/00000000-1111-1111-0020-000000000002"
    }
]
}
}

```

```

    ]
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_3",
    "resourceId": "VirtualGateway_3",
    "etag": "W/\"db876b1d-1121-4e57-bf8a-0f7981b00cc1\"",
    "instanceId": "aeff9881-caba-4620-8c11-89d9e0ceaeed",
    "properties": {
      "provisioningState": "Succeeded",
      "networkConnections": [
        {
          "resourceRef":
"/VirtualGateways/VirtualGateway_3/NetworkConnections/VirtualGateway_3_IPSEC_1",
          "resourceId": "VirtualGateway_3_IPSEC_1",
          "etag": "W/\"db876b1d-1121-4e57-bf8a-0f7981b00cc1\"",
          "instanceId": "ea6df5fc-ce09-47ad-9447-8ac6b45397a3",
          "properties": {
            "provisioningState": "Succeeded",
            "connectionType": "IPSec",
            "outboundKiloBitsPerSecond": 307200,
            "inboundKiloBitsPerSecond": 307200,
            "ipSecConfiguration": {
              "authenticationMethod": "PSK",
              "quickMode": {
                "perfectForwardSecrecy": "None",
                "cipherTransformationConstant": "AES128",
                "authenticationTransformationConstant": "SHA196",
                "idleDisconnectSeconds": 500,
                "saLifetimeSeconds": 3600,
                "saLifetimeKiloBytes": 33552408
              },
              "mainMode": {
                "diffieHellmanGroup": "Group2",
                "encryptionAlgorithm": "DES3",
                "integrityAlgorithm": "SHA1",
                "saLifetimeSeconds": 28800,
                "saLifetimeKiloBytes": 33552408
              },
              "localVpnTrafficSelector": [],
              "remoteVpnTrafficSelector": []
            },
            "l3Configuration": {},
            "ipAddresses": [],
            "peerIPAddresses": [],
            "routes": [
              {
                "destinationPrefix": "50.3.1.0/24",
                "nextHop": "0.0.0.0",
                "metric": 10,
                "protocol": "Static"
              }
            ],
            "connectionStatus": "Enabled",
            "connectionState": "Disconnected",
            "connectionUpTime": "00:00:00",
            "connectionErrorReason": "0",
            "unreachabilityReason": "",
            "statistics": {
              "outboundBytes": 1239147857,
              "inboundBytes": 63220805197,
              "rxTotalPacketsDropped": 0,
              "txTotalPacketsDropped": 0,
              "txRateKbps": 0,
              "rxRateKbps": 0,
              "txRateLimitedPacketsDropped": 0,
              "rxRateLimitedPacketsDropped": 0,
              "lastUpdated": "2016-06-16T06:17:26.5237938Z"
            },
            "configurationState": {

```

```

        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "91.1.1.4",
    "destinationIPAddress": "11.3.0.1",
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_3/BgpRouters/BGP_VirtualGateway_3_366d5a41-19c9-4ec8-bd82-01a2fb9fef37",
        "resourceId": "BGP_VirtualGateway_3_366d5a41-19c9-4ec8-bd82-01a2fb9fef37",
        "instanceId": "366d5a41-19c9-4ec8-bd82-01a2fb9fef37",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.4.2",
            "routerIP": [
                "10.2.4.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0003-000000000000/subnets/00000000-1111-1111-0003-000000000002"
    }
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_4",
    "resourceId": "VirtualGateway_4",
    "etag": "W/\"28708f02-8b93-4a31-b265-98c6ba91e95e\"",
    "instanceId": "b3bd4bfb-129b-4a3a-9c4d-120b91c8b82b",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_4/NetworkConnections/VirtualGateway_4_IPSEC_1",
                "resourceId": "VirtualGateway_4_IPSEC_1",
                "etag": "W/\"28708f02-8b93-4a31-b265-98c6ba91e95e\"",
                "instanceId": "afb4b00e-23f3-421b-a524-04f108ffe54e",
                "properties": {
                    "provisioningState": "Succeeded",
                    "connectionType": "IPSec",
                    "outboundKiloBitsPerSecond": 307200,
                    "inboundKiloBitsPerSecond": 307200,

```

```

"ipSecConfiguration": {
  "authenticationMethod": "PSK",
  "quickMode": {
    "perfectForwardSecrecy": "None",
    "cipherTransformationConstant": "AES128",
    "authenticationTransformationConstant": "SHA196",
    "idleDisconnectSeconds": 500,
    "saLifeTimeSeconds": 3600,
    "saLifeTimeKiloBytes": 33552408
  },
  "mainMode": {
    "diffieHellmanGroup": "Group2",
    "encryptionAlgorithm": "DES3",
    "integrityAlgorithm": "SHA1",
    "saLifeTimeSeconds": 28800,
    "saLifeTimeKiloBytes": 33552408
  },
  "localVpnTrafficSelector": [],
  "remoteVpnTrafficSelector": []
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
  {
    "destinationPrefix": "50.4.1.0/24",
    "nextHop": "0.0.0.0",
    "metric": 10,
    "protocol": "Static"
  }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
  "outboundBytes": 1231011513,
  "inboundBytes": 59974878997,
  "rxTotalPacketsDropped": 0,
  "txTotalPacketsDropped": 0,
  "txRateKbps": 0,
  "rxRateKbps": 0,
  "txRateLimitedPacketsDropped": 0,
  "rxRateLimitedPacketsDropped": 0,
  "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.4.0.1",
"gateway": {
  "resourceRef": "/Gateways/CloudGw1"
}
}
],
"bgpRouters": [
  {
    "resourceRef":
"/VirtualGateways/VirtualGateway_4/BgpRouters/BGP_VirtualGateway_4_b73ef149-6db2-4d60-abfc-1fc7bf6c2271",
    "resourceId": "BGP_VirtualGateway_4_b73ef149-6db2-4d60-abfc-1fc7bf6c2271",
    "instanceId": "b73ef149-6db2-4d60-abfc-1fc7bf6c2271",
    "properties": {
      "provisioningState": "Succeeded",
      "extAsNumber": "0.65001",
      "routerId": "10.2.5.2",

```

```

        "routerIP": [
            "10.2.5.2"
        ],
        "isGenerated": true,
        "configurationState": {
            "status": "Success",
            "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
        }
    }
},
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0004-000000000000/subnets/00000000-1111-1111-0004-000000000002"
    }
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_5",
    "resourceId": "VirtualGateway_5",
    "etag": "W/\\"bb807699-0fdc-4e80-ac95-c673eaad0329\\"",
    "instanceId": "a2ff56a2-5755-46f1-a5c9-28c4b88bf0d3",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_5/NetworkConnections/VirtualGateway_5_IPSEC_1",
                "resourceId": "VirtualGateway_5_IPSEC_1",
                "etag": "W/\\"bb807699-0fdc-4e80-ac95-c673eaad0329\\"",
                "instanceId": "c9740314-d444-404c-b057-666b3f97bac9",
                "properties": {
                    "provisioningState": "Succeeded",
                    "connectionType": "IPSec",
                    "outboundKiloBitsPerSecond": 307200,
                    "inboundKiloBitsPerSecond": 307200,
                    "ipSecConfiguration": {
                        "authenticationMethod": "PSK",
                        "quickMode": {
                            "perfectForwardSecrecy": "None",
                            "cipherTransformationConstant": "AES128",
                            "authenticationTransformationConstant": "SHA196",
                            "idleDisconnectSeconds": 500,
                            "saLifeTimeSeconds": 3600,
                            "saLifeTimeKiloBytes": 33552408
                        },
                        "mainMode": {
                            "diffieHellmanGroup": "Group2",
                            "encryptionAlgorithm": "DES3",
                            "integrityAlgorithm": "SHA1",
                            "saLifeTimeSeconds": 28800,
                            "saLifeTimeKiloBytes": 33552408
                        },
                        "localVpnTrafficSelector": [],
                        "remoteVpnTrafficSelector": []
                    },
                    "l3Configuration": {},
                    "ipAddresses": [],

```

```

"peerIPAddresses": [],
"routes": [
  {
    "destinationPrefix": "50.5.1.0/24",
    "nextHop": "0.0.0.0",
    "metric": 10,
    "protocol": "Static"
  }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
  "outboundBytes": 2063901411,
  "inboundBytes": 97287921459,
  "rxTotalPacketsDropped": 0,
  "txTotalPacketsDropped": 0,
  "txRateKbps": 0,
  "rxRateKbps": 0,
  "txRateLimitedPacketsDropped": 0,
  "rxRateLimitedPacketsDropped": 0,
  "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.5.0.1",
"gateway": {
  "resourceRef": "/Gateways/CloudGw1"
}
}
],
"bgpRouters": [
  {
    "resourceRef":
"/VirtualGateways/VirtualGateway_5/BgpRouters/BGP_VirtualGateway_5_7d561f64-09e0-4338-be20-49d5e812c94d",
    "resourceId": "BGP_VirtualGateway_5_7d561f64-09e0-4338-be20-49d5e812c94d",
    "instanceId": "7d561f64-09e0-4338-be20-49d5e812c94d",
    "properties": {
      "provisioningState": "Succeeded",
      "extAsNumber": "0.65001",
      "routerId": "10.2.6.2",
      "routerIP": [
        "10.2.6.2"
      ],
      "isGenerated": true,
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      }
    }
  }
],
"routingType": "Dynamic",
"gatewayPools": [
  {
    "resourceRef": "/GatewayPools/default"
  }
],
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [

```

```

    {
      "resourceRef": "/virtualNetworks/00000000-1111-0000-0005-000000000000/subnets/00000000-1111-1111-0005-000000000002"
    }
  ]
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_6",
  "resourceId": "VirtualGateway_6",
  "etag": "W/\"f89cd8c8-5f5e-4ae4-8154-56f3bd7cc19f\"",
  "instanceId": "bda4dd1d-d1b9-4d49-87aa-0aac445a3a40",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_6/NetworkConnections/VirtualGateway_6_IPSEC_1",
        "resourceId": "VirtualGateway_6_IPSEC_1",
        "etag": "W/\"f89cd8c8-5f5e-4ae4-8154-56f3bd7cc19f\"",
        "instanceId": "355c2da0-07c9-484f-90e0-3a88cdd9598b",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifeTimeSeconds": 3600,
              "saLifeTimeKiloBytes": 33552408
            },
            "mainMode": {
              "diffieHellmanGroup": "Group2",
              "encryptionAlgorithm": "DES3",
              "integrityAlgorithm": "SHA1",
              "saLifeTimeSeconds": 28800,
              "saLifeTimeKiloBytes": 33552408
            },
            "localVpnTrafficSelector": [],
            "remoteVpnTrafficSelector": []
          },
          "l3Configuration": {},
          "ipAddresses": [],
          "peerIPAddresses": [],
          "routes": [
            {
              "destinationPrefix": "50.6.1.0/24",
              "nextHop": "0.0.0.0",
              "metric": 10,
              "protocol": "Static"
            }
          ],
          "connectionStatus": "Enabled",
          "connectionState": "Disconnected",
          "connectionUpTime": "00:00:00",
          "connectionErrorReason": "0",
          "unreachabilityReason": "",
          "statistics": {
            "outboundBytes": 1204267121,
            "inboundBytes": 56474135188,
            "rxTotalPacketsDropped": 0,
            "txTotalPacketsDropped": 0,
            "txRateKbps": 0,
            "rxRateKbps": 0,
            "txRateLimitedPacketsDropped": 0,

```



```

        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
    },
    "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "91.1.1.4",
    "destinationIPAddress": "11.6.0.1",
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_6/BgpRouters/BGP_VirtualGateway_6_78c53fcf-ac05-4e8b-ae03-775d4875fad4",
        "resourceId": "BGP_VirtualGateway_6_78c53fcf-ac05-4e8b-ae03-775d4875fad4",
        "instanceId": "78c53fcf-ac05-4e8b-ae03-775d4875fad4",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.7.2",
            "routerIP": [
                "10.2.7.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0006-000000000000/subnets/00000000-1111-1111-0006-000000000002"
    }
]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_7",
    "resourceId": "VirtualGateway_7",
    "etag": "W/\"f651cd2f-fd67-40b9-8a4d-7709043a2794\"",
    "instanceId": "075d12f6-bc57-4586-80f5-8703e094fb80",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_7/NetworkConnections/VirtualGateway_7_IPSEC_1",
                "resourceId": "VirtualGateway_7_IPSEC_1",
                "etag": "W/\"f651cd2f-fd67-40b9-8a4d-7709043a2794\"",
                "instanceId": "aed01446-a80f-456e-a111-a828fb56ae88",
                "properties": {

```

```

"provisioningState": "Succeeded",
"connectionType": "IPSec",
"outboundKiloBitsPerSecond": 307200,
"inboundKiloBitsPerSecond": 307200,
"ipSecConfiguration": {
  "authenticationMethod": "PSK",
  "quickMode": {
    "perfectForwardSecrecy": "None",
    "cipherTransformationConstant": "AES128",
    "authenticationTransformationConstant": "SHA196",
    "idleDisconnectSeconds": 500,
    "saLifeTimeSeconds": 3600,
    "saLifeTimeKiloBytes": 33552408
  },
  "mainMode": {
    "diffieHellmanGroup": "Group2",
    "encryptionAlgorithm": "DES3",
    "integrityAlgorithm": "SHA1",
    "saLifeTimeSeconds": 28800,
    "saLifeTimeKiloBytes": 33552408
  },
  "localVpnTrafficSelector": [],
  "remoteVpnTrafficSelector": []
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
  {
    "destinationPrefix": "50.7.1.0/24",
    "nextHop": "0.0.0.0",
    "metric": 10,
    "protocol": "Static"
  }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
  "outboundBytes": 1331091986,
  "inboundBytes": 64440380975,
  "rxTotalPacketsDropped": 0,
  "txTotalPacketsDropped": 0,
  "txRateKbps": 0,
  "rxRateKbps": 0,
  "txRateLimitedPacketsDropped": 0,
  "rxRateLimitedPacketsDropped": 0,
  "lastUpdated": "2016-06-16T06:17:26.5237938Z"
},
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.7.0.1",
"gateway": {
  "resourceRef": "/Gateways/CloudGw1"
}
}
},
"bgpRouters": [
  {
    "resourceRef":
"/VirtualGateways/VirtualGateway_7/BgpRouters/BGP_VirtualGateway_7_351ddc6d-d68c-40b1-94db-d2a5939c4eb0",
    "resourceId": "BGP_VirtualGateway_7_351ddc6d-d68c-40b1-94db-d2a5939c4eb0",
    "instanceId": "351ddc6d-d68c-40b1-94db-d2a5939c4eb0",

```

```

    "properties": {
      "provisioningState": "Succeeded",
      "extAsNumber": "0.65001",
      "routerId": "10.2.8.2",
      "routerIP": [
        "10.2.8.2"
      ],
      "isGenerated": true,
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      }
    }
  ],
  "routingType": "Dynamic",
  "gatewayPools": [
    {
      "resourceRef": "/GatewayPools/default"
    }
  ],
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
  },
  "gatewaySubnets": [
    {
      "resourceRef": "/virtualNetworks/00000000-1111-0000-0007-000000000000/subnets/00000000-1111-1111-0007-000000000002"
    }
  ]
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_8",
  "resourceId": "VirtualGateway_8",
  "etag": "W/\"7be191c6-7a9f-43e0-aa04-b5d8c916d815\"",
  "instanceId": "4dad330a-8d7a-42d6-8ab1-8b6d5e85f6bd",
  "properties": {
    "provisioningState": "Succeeded",
    "networkConnections": [
      {
        "resourceRef":
"/VirtualGateways/VirtualGateway_8/NetworkConnections/VirtualGateway_8_IPSEC_1",
        "resourceId": "VirtualGateway_8_IPSEC_1",
        "etag": "W/\"7be191c6-7a9f-43e0-aa04-b5d8c916d815\"",
        "instanceId": "c9781dac-b4b0-4cf3-bd85-951222b669a4",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",
            "quickMode": {
              "perfectForwardSecrecy": "None",
              "cipherTransformationConstant": "AES128",
              "authenticationTransformationConstant": "SHA196",
              "idleDisconnectSeconds": 500,
              "saLifeTimeSeconds": 3600,
              "saLifeTimeKiloBytes": 33552408
            },
            "mainMode": {
              "diffieHellmanGroup": "Group2",
              "encryptionAlgorithm": "DES3",
              "integrityAlgorithm": "SHA1",
              "saLifeTimeSeconds": 28800,
              "saLifeTimeKiloBytes": 33552408
            },
            "localVpnTrafficSelector": [],

```

```

    "remoteVpnTrafficSelector": []
  },
  "l3Configuration": {},
  "ipAddresses": [],
  "peerIPAddresses": [],
  "routes": [
    {
      "destinationPrefix": "50.8.1.0/24",
      "nextHop": "0.0.0.0",
      "metric": 10,
      "protocol": "Static"
    }
  ],
  "connectionStatus": "Enabled",
  "connectionState": "Disconnected",
  "connectionUpTime": "00:00:00",
  "connectionErrorReason": "0",
  "unreachabilityReason": "",
  "statistics": {
    "outboundBytes": 1813010299,
    "inboundBytes": 87629965539,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-06-16T06:17:26.5237938Z"
  },
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
  },
  "sourceIPAddress": "91.1.1.4",
  "destinationIPAddress": "11.8.0.1",
  "gateway": {
    "resourceRef": "/Gateways/CloudGw1"
  }
}
],
"bgpRouters": [
  {
    "resourceRef":
"/VirtualGateways/VirtualGateway_8/BgpRouters/BGP_VirtualGateway_8_f4c1d9a5-b3b8-4aa0-8b7e-c7cec321a0de",
    "resourceId": "BGP_VirtualGateway_8_f4c1d9a5-b3b8-4aa0-8b7e-c7cec321a0de",
    "instanceId": "f4c1d9a5-b3b8-4aa0-8b7e-c7cec321a0de",
    "properties": {
      "provisioningState": "Succeeded",
      "extAsNumber": "0.65001",
      "routerId": "10.2.9.2",
      "routerIP": [
        "10.2.9.2"
      ],
      "isGenerated": true,
      "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
      }
    }
  }
],
"routingType": "Dynamic",
"gatewayPools": [
  {
    "resourceRef": "/GatewayPools/default"
  }
],
"configurationState": {

```

```

        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "gatewaySubnets": [
        {
            "resourceRef": "/virtualNetworks/00000000-1111-0000-0008-000000000000/subnets/00000000-1111-1111-0008-000000000002"
        }
    ]
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_9",
    "resourceId": "VirtualGateway_9",
    "etag": "W/\\"754364d9-2932-4430-bd0c-b0cb7c2560ba\\"",
    "instanceId": "1d681158-0e80-40d5-9842-a8fdad35063b",
    "properties": {
        "provisioningState": "Succeeded",
        "networkConnections": [
            {
                "resourceRef":
"/VirtualGateways/VirtualGateway_9/NetworkConnections/VirtualGateway_9_IPSEC_1",
                "resourceId": "VirtualGateway_9_IPSEC_1",
                "etag": "W/\\"754364d9-2932-4430-bd0c-b0cb7c2560ba\\"",
                "instanceId": "caf7c894-a658-47de-a4b4-68f61ef2db12",
                "properties": {
                    "provisioningState": "Succeeded",
                    "connectionType": "IPSec",
                    "outboundKiloBitsPerSecond": 307200,
                    "inboundKiloBitsPerSecond": 307200,
                    "ipSecConfiguration": {
                        "authenticationMethod": "PSK",
                        "quickMode": {
                            "perfectForwardSecrecy": "None",
                            "cipherTransformationConstant": "AES128",
                            "authenticationTransformationConstant": "SHA196",
                            "idleDisconnectSeconds": 500,
                            "saLifeTimeSeconds": 3600,
                            "saLifeTimeKiloBytes": 33552408
                        },
                    },
                    "mainMode": {
                        "diffieHellmanGroup": "Group2",
                        "encryptionAlgorithm": "DES3",
                        "integrityAlgorithm": "SHA1",
                        "saLifeTimeSeconds": 28800,
                        "saLifeTimeKiloBytes": 33552408
                    },
                    "localVpnTrafficSelector": [],
                    "remoteVpnTrafficSelector": []
                },
                "l3Configuration": {},
                "ipAddresses": [],
                "peerIPAddresses": [],
                "routes": [
                    {
                        "destinationPrefix": "50.9.1.0/24",
                        "nextHop": "0.0.0.0",
                        "metric": 10,
                        "protocol": "Static"
                    }
                ]
            },
            "connectionStatus": "Enabled",
            "connectionState": "Disconnected",
            "connectionUpTime": "00:00:00",
            "connectionErrorReason": "0",
            "unreachabilityReason": "",
            "statistics": {
                "outboundBytes": 1188774461,
                "inboundBytes": 57971114251,
                "rxTotalPacketsDropped": 0,

```

```

        "txTotalPacketsDropped": 0,
        "txRateKbps": 0,
        "rxRateKbps": 0,
        "txRateLimitedPacketsDropped": 0,
        "rxRateLimitedPacketsDropped": 0,
        "lastUpdated": "2016-06-16T06:17:26.5237938Z"
    },
    "configurationState": {
        "status": "Success",
        "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
    },
    "sourceIPAddress": "91.1.1.4",
    "destinationIPAddress": "11.9.0.1",
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}
},
"bgpRouters": [
    {
        "resourceRef":
"/VirtualGateways/VirtualGateway_9/BgpRouters/BGP_VirtualGateway_9_6c2433ae-410f-4eb2-bd38-3c6a4c170079",
        "resourceId": "BGP_VirtualGateway_9_6c2433ae-410f-4eb2-bd38-3c6a4c170079",
        "instanceId": "6c2433ae-410f-4eb2-bd38-3c6a4c170079",
        "properties": {
            "provisioningState": "Succeeded",
            "extAsNumber": "0.65001",
            "routerId": "10.2.10.2",
            "routerIP": [
                "10.2.10.2"
            ],
            "isGenerated": true,
            "configurationState": {
                "status": "Success",
                "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
            }
        }
    }
],
"routingType": "Dynamic",
"gatewayPools": [
    {
        "resourceRef": "/GatewayPools/default"
    }
],
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T23:13:41.1459839-07:00"
},
"gatewaySubnets": [
    {
        "resourceRef": "/virtualNetworks/00000000-1111-0000-0009-000000000000/subnets/00000000-1111-1111-0009-000000000002"
    }
]
}
},
"nextLink": ""
}

```

The JSON schema for the **virtualGateways GET ALL** method is located in section 6.15.3.

3.1.5.17.1.3.3 Processing Details

Retrieves all **virtualGateways** resources.

3.1.5.17.1.4 DELETE

This method deletes a **virtualGateways** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.17.1.4.1 Request Body

None.

3.1.5.17.1.4.2 Response Body

None.

3.1.5.17.1.4.3 Processing Details

Deletes a **virtualGateways** resource.

3.1.5.17.2 bgpRouters

The **bgpRouters** resource contains the configuration needed for the Border Gateway Protocol (BGP) router in the virtual gateway to connect to BGP routers outside the virtual network in order to exchange routing information.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/bgpRouters/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.17.2.1.1	Create or update a bgpRouters resource.
GET	3.1.5.17.2.1.2	Get a bgpRouters resource.
GET (All)	3.1.5.17.2.1.3	List all bgpRouters resources in the Network Controller.
DELETE	3.1.5.17.2.1.4	Deletes a bgpRouters resource.

The following property elements are valid.

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
isGenerated	Read-only	If this BGP router is automatically enabled, without making any REST calls then isGenerated is set to "true".
extAsNumber	Read/write	Extended (4-byte) ASN of the local BGP Router in XX.YY format.
routerId	Read/write	Indicates Router ID.
routerIpAddress[]	Read/write	Indicates IP addresses to which BGP peering can be established.
bgpPeers[]	Read/write	Collection of BGP peers associated with the BGP Routers resource. See section 3.1.5.17.2.2, for details.
configurationState	Optional Read-only	Indicates the last known running state of this router. See specification in section 2.2.4. More details are given in the section for the GET operation section 3.1.5.17.2.1.2.

3.1.5.17.2.1 HTTP Methods

3.1.5.17.2.1.1 PUT

Creates or updates a **bgpRouters** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualgateways/{parentResourceId}/bgpRouters/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.17.2.1.1.1 Request Body

The format for the request body for the **bgpRouters PUT** method is as follows.

```
{
  "resourceId": "router1",
  "etag": "W/\"fe4cd15f-f117-449a-b819-9fd007a1abdf\"",
  "instanceId": "6638f081-a838-43f8-90f9-18bc662c130f",
  "properties": {
    "provisioningState": "Succeeded",
    "isEnabled": "true",
    "requireIGPSync": "true",
    "extASNumber": "0.3458",
    "routerIP": [

  ],
  "bgpNetworks": [

  ],
  "isGenerated": false,
  "bgpPeers": [
    {
      "resourceId": "Peer1",
      "properties": {
        "peerIpAddress": "40.1.1.4",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "policyMapIn": null,
        "policyMapOut": null
      }
    },
    {
      "resourceId": "Peer2",
      "properties": {
        "peerIpAddress": "40.1.2.4",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "policyMapIn": null,
        "policyMapOut": null
      }
    },
    {
      "resourceId": "Peer3",
      "properties": {
        "peerIpAddress": "40.1.3.4",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "policyMapIn": null,
        "policyMapOut": null
      }
    }
  ]
}
```

}

The JSON schema for the **PUT bgpRouters** method is located in section 6.15.4.1.

3.1.5.17.2.1.1.2 Response Body

The format is the same as the format for the **bgpRouters GET** response body (section 3.1.5.17.2.1.2.2). The JSON schema is located in section 6.15.4.2.

3.1.5.17.2.1.1.3 Processing Details

Create a new bgpRouters resource or update an existing bgpRouters resource.

3.1.5.17.2.1.2 GET

This method retrieves a **bgpRouters** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualgateways/{parentResourceId}/bgpRouters/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.17.2.1.2.1 Request Body

None.

3.1.5.17.2.1.2.2 Response Body

The format for the **bgpRouters GET** response body is as follows.

```
{
  "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1",
  "resourceId": "router1",
  "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
  "instanceId": "dc972df1-cce2-44b7-a0e4-df6f882b101a",
  "properties": {
    "provisioningState": "Succeeded",
    "isEnabled": true,
    "requireIgpSync": true,
    "extAsNumber": "0.3458",
    "routerId": "10.2.2.2",
    "routerIP": [
      "10.2.2.2"
    ]
  }
},
```

```

"isGenerated": false,
"bgpPeers": [
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
    "resourceId": "Peer1",
    "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
    "instanceId": "cb4a4eba-9716-4d22-bd51-50998181e3a8",
    "properties": {
      "provisioningState": "Succeeded",
      "asNumber": "1236",
      "extAsNumber": "0.1236",
      "peerIpAddress": "40.1.1.4",
      "connectionState": "Disconnected",
      "statistics": {
        "tcpConnectionClosed": "2016-06-15T21:56:27.063-07:00",
        "openMessageStats": {
          "sentCount": 0,
          "receivedCount": 0
        },
        "notificationMessageStats": {
          "sentCount": 0,
          "receivedCount": 0
        },
        "keepAliveMessageStats": {
          "sentCount": 0,
          "receivedCount": 0
        },
        "routeRefreshMessageStats": {
          "sentCount": 0,
          "receivedCount": 0
        },
        "updateMessageStats": {
          "sentCount": 0,
          "receivedCount": 0
        },
        "ipv4Route": {
          "updateSentCount": 0,
          "updateReceivedCount": 0,
          "withdrawlSentCount": 0,
          "withdrawlReceivedCount": 0
        },
        "ipv6Route": {
          "updateSentCount": 0,
          "updateReceivedCount": 0,
          "withdrawlSentCount": 0,
          "withdrawlReceivedCount": 0
        },
        "lastUpdated": "2016-06-16T04:56:29.6397721Z"
      },
      "isGenerated": false
    }
  },
  {
    "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer2",
    "resourceId": "Peer2",
    "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
    "instanceId": "d85b9574-8d53-4b70-8b4b-4053eaeeba60",
    "properties": {
      "provisioningState": "Succeeded",
      "asNumber": "1236",
      "extAsNumber": "0.1236",
      "peerIpAddress": "40.1.2.4",
      "connectionState": "Disconnected",
      "statistics": {
        "tcpConnectionClosed": "2016-06-15T21:56:12.053-07:00",
        "openMessageStats": {
          "sentCount": 0,
          "receivedCount": 0
        },
        "notificationMessageStats": {

```

```

        "sentCount": 0,
        "receivedCount": 0
    },
    "keepAliveMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "routeRefreshMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "updateMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "ipv4Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T04:56:29.6397721Z"
},
"isGenerated": false
}
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer3",
    "resourceId": "Peer3",
    "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
    "instanceId": "3b7e4db3-c415-4b06-8d0a-b2138142a8ff",
    "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.3.4",
        "connectionState": "Disconnected",
        "statistics": {
            "tcpConnectionClosed": "2016-06-15T21:56:14.232-07:00",
            "openMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "notificationMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "keepAliveMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "routeRefreshMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "updateMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "ipv4Route": {
                "updateSentCount": 0,
                "updateReceivedCount": 0,
                "withdrawlSentCount": 0,
                "withdrawlReceivedCount": 0
            }
        }
    }
}

```

```

    },
    "ipv6Route": {
      "updateSentCount": 0,
      "updateReceivedCount": 0,
      "withdrawlSentCount": 0,
      "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T04:56:29.6397721z"
  },
  "isGenerated": false
}
}
],
"configurationState": {
  "status": "Success",
  "lastUpdatedTime": "2016-06-15T21:34:32.1843967-07:00"
}
}
}

```

The JSON schema for the **GET bgpRouters** method is located in section 6.15.4.2.

3.1.5.17.2.1.2.3 Processing Details

Retrieves a **bgpRouters** resource.

The server returns a configuration state only if it has already attempted to configure settings according to the REST resource properties that were created or updated by using the **PUT** method. **configurationState.lastUpdatedTime** is set to a value that is implementation-specific.

The server MUST return a configuration state property **configurationState.status** set to "Success" if there were no errors. The server MUST return a configuration state property **configurationState.status** set to a value other than "Failure" if there were errors during the configuration of settings. **configurationState.detailedInfo** contains an array of objects per the specification in section 2.2.4. The following table contains acceptable values in the response when status is not "Success".

configurationState.status	Code inside configurationState.detailedInfo array	Description
Failure	HostUnreachable	Unable to configure the bgpRouters resource settings on the gateway.

3.1.5.17.2.1.3 GET (All)

This method retrieves all **bgpRouters** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualgateways/{parentResourceId}/bgpRouters
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.17.2.1.3.1 Request Body

None.

3.1.5.17.2.1.3.2 Response Body

The format for the **bgpRouters GET ALL** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1",
      "resourceId": "router1",
      "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
      "instanceId": "dc972df1-cce2-44b7-a0e4-df6f882b101a",
      "properties": {
        "provisioningState": "Succeeded",
        "isEnabled": true,
        "requireIgpSync": true,
        "extAsNumber": "0.3458",
        "routerId": "10.2.2.2",
        "routerIP": [
          "10.2.2.2"
        ],
        "isGenerated": false,
        "bgpPeers": [
          {
            "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
            "resourceId": "Peer1",
            "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
            "instanceId": "cb4a4eba-9716-4d22-bd51-50998181e3a8",
            "properties": {
              "provisioningState": "Succeeded",
              "asNumber": "1236",
              "extAsNumber": "0.1236",
              "peerIpAddress": "40.1.1.4",
              "connectionState": "Disconnected",
              "statistics": {
                "tcpConnectionClosed": "2016-06-15T22:01:03.186-07:00",
                "openMessageStats": {
                  "sentCount": 0,
                  "receivedCount": 0
                },
                "notificationMessageStats": {
                  "sentCount": 0,
                  "receivedCount": 0
                },
                "keepAliveMessageStats": {
                  "sentCount": 0,
                  "receivedCount": 0
                },
                "routeRefreshMessageStats": {
                  "sentCount": 0,
                  "receivedCount": 0
                },
                "updateMessageStats": {
                  "sentCount": 0,

```

```

        "receivedCount": 0
    },
    "ipv4Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T05:01:33.2899007Z"
},
"isGenerated": false
}
},
{
    "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer2",
    "resourceId": "Peer2",
    "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b0b1b0\"",
    "instanceId": "d85b9574-8d53-4b70-8b4b-4053eaeeba60",
    "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.2.4",
        "connectionState": "Disconnected",
        "statistics": {
            "tcpConnectionClosed": "2016-06-15T22:01:21.091-07:00",
            "openMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "notificationMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "keepAliveMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "routeRefreshMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "updateMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "ipv4Route": {
                "updateSentCount": 0,
                "updateReceivedCount": 0,
                "withdrawlSentCount": 0,
                "withdrawlReceivedCount": 0
            },
            "ipv6Route": {
                "updateSentCount": 0,
                "updateReceivedCount": 0,
                "withdrawlSentCount": 0,
                "withdrawlReceivedCount": 0
            },
            "lastUpdated": "2016-06-16T05:01:33.2899007Z"
        },
        "isGenerated": false
    }
},
}
},

```

```

    {
      "resourceRef":
"/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer3",
      "resourceId": "Peer3",
      "etag": "W/\"5fb62acf-04c7-4071-9f06-c89ea8b01b0\"",
      "instanceId": "3b7e4db3-c415-4b06-8d0a-b2138142a8ff",
      "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.3.4",
        "connectionState": "Disconnected",
        "statistics": {
          "tcpConnectionClosed": "2016-06-15T22:01:27.67-07:00",
          "openMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "notificationMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "keepAliveMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "routeRefreshMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "updateMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "ipv4Route": {
            "updateSentCount": 0,
            "updateReceivedCount": 0,
            "withdrawlSentCount": 0,
            "withdrawlReceivedCount": 0
          },
          "ipv6Route": {
            "updateSentCount": 0,
            "updateReceivedCount": 0,
            "withdrawlSentCount": 0,
            "withdrawlReceivedCount": 0
          },
          "lastUpdated": "2016-06-16T05:01:33.2899007Z"
        },
        "isGenerated": false
      }
    }
  ],
  "configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-06-15T21:34:32.1843967-07:00"
  }
}
],
"nextLink": ""
}

```

The JSON schema for the **GET ALL bgpRouters** method is located in section 6.15.4.3.

3.1.5.17.2.1.3.3 Processing Details

Retrieves all **bgpRouters** resources.

3.1.5.17.2.1.4 DELETE

This method deletes a **bgpRouters** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/bgpRouters/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.17.2.1.4.1 Request Body

None.

3.1.5.17.2.1.4.2 Response Body

None.

3.1.5.17.2.1.4.3 Processing Details

Deletes a **bgpRouters** resource.

3.1.5.17.2.2 bgpPeers

The **bgPeers** resource configures BGP peers of the **virtualGateways** resource.

The peer is identified by `remoteRouterId` and `asNumber`.

A VRF context can be specified on devices that support VRF. The **routeMapIn** and **routeMapOut** properties can specify a policy map that controls the route updates that are associated with the BGP peer.

The URI for the resource is as follows.

```
https://<url>/networking/v1/virtualGateways/{grandParentResourceId}/bgpRouters/  
{parentResourceId}/bgpPeers/{resourceId}
```

grandParentResourceId: the identifier for the specific ancestor of the ancestor resource within the resource type. See section 2.2.3.1, for more details.

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.17.2.2.1.1	Create or update a bgpPeers resource.
GET	3.1.5.17.2.2.1.2	Get a bgpPeers resource
GET (All)	3.1.5.17.2.2.1.3	List all bgpPeers resources in the Network Controller
DELETE	3.1.5.17.2.2.1.4	Deletes a bgpPeers resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
resourceId	Read-only	Indicates identifier of BGP peer
asNumber	Read-only	Indicates the ASN number of the BGP Peer.
extAsNumber	Read/write	Indicates Extended ASN number of the BGP Peer in XX.YY format
peerIpAddress	Read/write	IP address of the peer
connectionState	Read-only	Status of BGP peering for this peer. Possible values are "Connected" and "Disconnected".
statistics	Read-only	Provides statistics for this peer
statistics.tcpConnectionEstablished	Read-only	Timestamp of TCP connection establishment for BGP
statistics.tcpConnectionClosed	Read-only	
statistics.openMessageStats	Read-only	
statistics.openMessageStats.lastsent	Read-only	Last sent timestamp
statistics.openMessageStats.lastReceived	Read-only	Last received timestamp
statistics.openMessageStats.sentCount	Read-only	Sent count
statistics.openMessageStats.receivedCount	Read-only	Received count
statistics.notificationMessageStats	Read-only	
statistics.notificationMessageStats.sentCount	Read-only	Sent count

Element name	Type	Description
statistics.notificationMessageStats.receivedCount	Read-only	Received count
statistics.keepAliveMessageStats	Read-only	Stats for keepalive messages
statistics.keepAliveMessageStats.lastSent	Read-only	Last sent timestamp
statistics.keepAliveMessageStats.lastReceived	Read-only	Last received timestamp
statistics.keepAliveMessageStats.sentCount	Read-only	Sent count
statistics.keepAliveMessageStats.receivedCount	Read-only	Received count
statistics.routeRefreshMessageStats	Read-only	
statistics.routeRefreshMessageStats.sentCount	Read-only	Sent count
statistics.routeRefreshMessageStats.receivedCount	Read-only	Received count
statistics.updateMessageStats	Read-only	
statistics.updateMessageStats.lastReceived	Read-only	Last received timestamp
statistics.updateMessageStats.sentCount	Read-only	Sent count
statistics.updateMessageStats.receivedCount	Read-only	Received count
statistics.ipv4Route	Read-only	Stats for IPv4 routes
statistics.ipv4Route.updateSentCount	Read-only	Route update sent count
statistics.ipv4Route.updateReceivedCount	Read-only	Route update received count
statistics.ipv4Route.withdrawlSentCount	Read-only	Route withdrawal sent count
statistics.ipv4Route.withdrawlReceivedCount	Read-only	Route withdrawal received count
statistics.ipv6Route	Read-only	Stats for IPv6 routes
statistics.ipv6Route.updateSentCount	Read-only	Route update sent count
statistics.ipv6Route.updateReceivedCount	Read-only	Route update received count
statistics.ipv6Route.withdrawlSentCount	Read-only	Route withdrawal sent count
statistics.ipv6Route.withdrawlReceivedCount	Read-only	Route withdrawal received count
Statistics.lastUpdated	Read-only	Time stamp when the stats were last updated
policyMapOut	Read/write	Reference to the policy map object that is used to filter the routing updates sent to the peer.
policyMapIn	Read/write	Reference to the policy map object that is used to filter routing updates received from the peer
isGenerated	Read-only	This flag is set to "True" for iBGP peers.
configurationState	Optional Read-only	See configurationState in section 2.2.4. More details are given in the section for the GET operation section

Element name	Type	Description
		3.1.5.17.2.2.1.2.

3.1.5.17.2.2.1 HTTP Methods

3.1.5.17.2.2.1.1 PUT

This method creates a new **bgpPeers** resource or updates an existing **bgpPeers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{grandParentResourceId}/bgpRouters/{parentResourceId}/bgpPeers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.17.2.2.1.1.1 Request Body

The format for the request body for the **bgpPeers PUT** method is as follows.

```
{
  "resourceId": "Peer1",
  "properties": {
    "peerIpAddress": "40.1.1.4",
    "asNumber": "1236",
    "extAsNumber": "0.1236",
    "policyMapIn": null,
    "policyMapOut": null
  }
}
```

The JSON schema for the **bgpPeers PUT** method is located in section 6.15.4.4.1.

3.1.5.17.2.2.1.1.2 Response Body

The format is the same as the format for the **bgpPeers GET** response body (section 3.1.5.17.2.2.1.2.2). The JSON schema is located in section 6.15.4.4.2.

3.1.5.17.2.2.1.1.3 Processing Details

Create a new **bgpPeers** resource or update an existing **bgpPeers** resource.

3.1.5.17.2.2.1.2 GET

This method retrieves a **bgpPeers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{grandParentResourceId}/bgpRouters/{parentResourceId}/bgpPeers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.17.2.2.1.2.1 Request Body

None.

3.1.5.17.2.2.1.2.2 Response Body

The format for the response body for the **bgpPeers GET** method is as follows.

```
{
  "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
  "resourceId": "Peer1",
  "etag": "W/\"6b3cec3d-d04b-4e4b-828b-355cd29d7ece\"",
  "instanceId": "6f6a0c77-3830-4884-9b22-833f58f13e02",
  "properties": {
    "provisioningState": "Succeeded",
    "asNumber": "1236",
    "extAsNumber": "0.1236",
    "peerIpAddress": "40.1.1.4",
    "connectionState": "Disconnected",
    "statistics": {
      "tcpConnectionClosed": "2016-06-15T22:11:33.395-07:00",
      "openMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "notificationMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      },
      "keepAliveMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
      }
    }
  }
}
```

```

    },
    "routeRefreshMessageStats": {
      "sentCount": 0,
      "receivedCount": 0
    },
    "updateMessageStats": {
      "sentCount": 0,
      "receivedCount": 0
    },
    "ipv4Route": {
      "updateSentCount": 0,
      "updateReceivedCount": 0,
      "withdrawlSentCount": 0,
      "withdrawlReceivedCount": 0
    },
    "ipv6Route": {
      "updateSentCount": 0,
      "updateReceivedCount": 0,
      "withdrawlSentCount": 0,
      "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T05:11:39.7306466Z"
  },
  "isGenerated": false
}
}
}

```

The JSON schema for the **bgpPeers GET** method is located in section 6.15.4.4.2.

3.1.5.17.2.2.1.2.3 Processing Details

Retrieves a **bgpPeers** resource.

3.1.5.17.2.2.1.3 GET (All)

This method retrieves all **bgpPeers** resources.

It is invoked through the following URI.

```

https://<url>/networking/v1/virtualGateways/{grandParentResourceId}/bgpRouters/{parentResourceId}/bgpPeers

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.17.2.2.1.3.1 Request Body

None.

3.1.5.17.2.2.1.3.2 Response Body

The format for the response body for the **bgpPeers GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer1",
      "resourceId": "Peer1",
      "etag": "W/\"6b3cec3d-d04b-4e4b-828b-355cd29d7ece\"",
      "instanceId": "6f6a0c77-3830-4884-9b22-833f58f13e02",
      "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.1.4",
        "connectionState": "Disconnected",
        "statistics": {
          "tcpConnectionClosed": "2016-06-15T22:11:33.395-07:00",
          "openMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "notificationMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "keepAliveMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "routeRefreshMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "updateMessageStats": {
            "sentCount": 0,
            "receivedCount": 0
          },
          "ipv4Route": {
            "updateSentCount": 0,
            "updateReceivedCount": 0,
            "withdrawlSentCount": 0,
            "withdrawlReceivedCount": 0
          },
          "ipv6Route": {
            "updateSentCount": 0,
            "updateReceivedCount": 0,
            "withdrawlSentCount": 0,
            "withdrawlReceivedCount": 0
          },
          "lastUpdated": "2016-06-16T05:11:39.7306466Z"
        },
        "isGenerated": false
      }
    },
    {
      "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer2",
      "resourceId": "Peer2",
      "etag": "W/\"6b3cec3d-d04b-4e4b-828b-355cd29d7ece\"",
      "instanceId": "6dfc12fb-484a-4771-98f9-6c1d4ffbaala",
      "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.2.4",
        "connectionState": "Disconnected",
        "statistics": {
          "tcpConnectionClosed": "2016-06-15T22:11:33.41-07:00",
          "openMessageStats": {
            "sentCount": 0,

```

```

        "receivedCount": 0
    },
    "notificationMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "keepAliveMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "routeRefreshMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "updateMessageStats": {
        "sentCount": 0,
        "receivedCount": 0
    },
    "ipv4Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T05:11:39.7306466Z"
},
"isGenerated": false
}
},
{
    "resourceRef": "/VirtualGateways/VirtualGateway_1/BgpRouters/router1/BgpPeers/Peer3",
    "resourceId": "Peer3",
    "etag": "W/\"6b3cec3d-d04b-4e4b-828b-355cd29d7ece\"",
    "instanceId": "d6bc7e33-4ac9-4f74-a3f2-81c39eb2a85d",
    "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",
        "peerIpAddress": "40.1.3.4",
        "connectionState": "Disconnected",
        "statistics": {
            "tcpConnectionClosed": "2016-06-15T22:11:33.425-07:00",
            "openMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "notificationMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "keepAliveMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "routeRefreshMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "updateMessageStats": {
                "sentCount": 0,
                "receivedCount": 0
            },
            "ipv4Route": {
                "updateSentCount": 0,

```



```

        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawlSentCount": 0,
        "withdrawlReceivedCount": 0
    },
    "lastUpdated": "2016-06-16T05:11:39.7306466Z"
},
"isGenerated": false
}
}
],
"nextLink": ""
}

```

The JSON schema for the **bgpPeers GET ALL** method is located in section 6.15.4.4.3.

3.1.5.17.2.2.1.3.3 Processing Details

Retrieves all **bgpPeers** resources.

3.1.5.17.2.2.1.4 DELETE

This method deletes a **bgpPeers** resource.

It is invoked through the following URI.

```

https://<url>/networking/v1/virtualGateways/{grandParentResourceId}/bgpRouters/{parentResourceId}/bgpPeers/{resourceId}

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.17.2.2.1.4.1 Request Body

None.

3.1.5.17.2.2.1.4.2 Response Body

None.

3.1.5.17.2.2.1.4.3 Processing Details

This method deletes a **bgpPeers** resource.

3.1.5.17.3 policyMaps

The **policyMaps** resource contains the configuration needed for the routing policies for the Border Gateway Protocol (BGP) router in the virtual gateway to be able to exchange routing information with peers. It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/policyMaps/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.17.3.1.1	Create or update a policyMaps .
GET	3.1.5.17.3.1.2	Get a policyMaps resource.
GET (All)	3.1.5.17.3.1.3	List all policyMaps resources in the Network Controller.
DELETE	3.1.5.17.3.1.4	Delete a policyMaps resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
policyMapEntryList[]		Indicates list of policies (objects of type policyMapEntry).
policyMapEntry.policyName	Read/write	Indicates the name of the policy.
policyMapEntry.action	Read/write	Indicates type of policy (Deny Allow ModifyAttribute).
policyMapEntry.matchCriteria[]	Read/write	Indicates criteria to be matched (objects of type policyMapEntryMatchCriteria).
policyMapEntry.matchCriteria.property	Read/write	Indicates clause to be matched (MatchPrefix NextHop IgnorePrefix AsnRange Community).
policyMapEntry.matchCriteria.values	Read/write	Indicates values for the property to be matched with the ingress / egress packet.
policyMapEntry.setActions[]	Read/write	Indicates action to be taken once there is match in criteria (objects of type

Element name	Type	Description
		policyMapEntry.setAction).
policyMapEntry.setActions.property	Read/write	Enum that indicates the property of the egress/ingress data packet to update if match criteria specified in the entry are successfully matched with the data packet (As-Path Add-Community Remove-Community Remove-All-Community MED Clear-MED Weight Local-Pref Next-Hop).
policyMapEntry.setActions.value	Read/write	New value of the property specified in policyMapEntry.setActions.property to updated in the ingress/egress data packet.
bgpPeersWithPolicyMapIn	Read/write	Collection of back references to BGP peers on which this policy map has been set as a route map to filter incoming routes.
bgpPeersWithPolicyMapOut	Read/write	Collection of back references to BGP peers on which this policy map has been set as a route map to filter outgoing routes.

3.1.5.17.3.1 HTTP Methods

3.1.5.17.3.1.1 PUT

This method creates a new policy Map resource or update an existing policy Map resource for a switch. It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/policyMaps/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.17.3.1.1.1 Request Body

The format for the request body for the **policyMaps PUT** method is as follows.

```

{
  "resourceId": "MAP1",
  "etag": "W/\"fe4cd15f-f117-449a-b819-9fd007a1abdf\"",
  "instanceId": "c8b34df3-cc7b-4eab-9ccf-97512e6014a9",
  "properties": {
    "provisioningState": "Succeeded",
    "policyMapEntryList": [
      {
        "policyName": "INPOLICY1",
        "action": "Deny",
        "matchCriteria": [
          {
            "property": "MatchPrefix",
            "value": [
              "5.4.3.2/32",
              "5.4.3.1/32"
            ]
          },
          {
            "property": "NextHop",
            "value": [
              "4.3.2.1",
              "6.4.3.1"
            ]
          }
        ],
        "setActions": [
        ]
      }
    ]
  }
}

```

The JSON schema for the **policyMaps PUT** method is located in section 6.15.5.1.

3.1.5.17.3.1.1.2 Response Body

The format is the same as the format for the **GET policyMaps** response body (section 3.1.5.17.3.1.2.2). The JSON schema is located in section 6.15.5.2.

3.1.5.17.3.1.1.3 Processing Details

Create a new **policyMaps** resource or update an existing **policyMaps** resource.

3.1.5.17.3.1.2 GET

This method retrieves a policyMap resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/portChannels/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.17.3.1.2.1 Request Body

None.

3.1.5.17.3.1.2.2 Response Body

The format for the **policyMaps GET** response body is as follows.

```
{
  "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1",
  "resourceId": "MAP1",
  "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
  "instanceId": "b52840f9-91a9-4a3e-91b3-0383aelea607",
  "properties": {
    "provisioningState": "Succeeded",
    "bgpPeersWithPolicyMapIn": [],
    "bgpPeersWithPolicyMapOut": [],
    "policyMapEntryList": [
      {
        "action": "Deny",
        "matchCriteria": [
          {
            "property": "MatchPrefix",
            "value": [
              "5.4.3.2/32",
              "5.4.3.1/32"
            ]
          }
        ],
        {
            "property": "NextHop",
            "value": [
              "4.3.2.1",
              "6.4.3.1"
            ]
          }
        ]
      },
      "setActions": []
    ]
  }
}
```

The JSON schema for the **policyMaps GET** method is located in section 6.15.5.2.

3.1.5.17.3.1.2.3 Processing Details

Retrieves a policyMap resource.

3.1.5.17.3.1.3 GET (All)

This method retrieves all policyMap resources defined for a switch.

It is invoked through the following URI.

https://<url>/networking/v1/virtualGateways/{parentResourceId}/policyMaps/

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.17.3.1.3.1 Request Body

None.

3.1.5.17.3.1.3.2 Response Body

The format for the **policyMaps GET ALL** method response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/VirtualGateways/VirtualGateway_1/PolicyMaps/MAP1",
      "resourceId": "MAP1",
      "etag": "W/\"681f2608-6588-49d2-ba50-85db700a4300\"",
      "instanceId": "b52840f9-91a9-4a3e-91b3-0383ae1ea607",
      "properties": {
        "provisioningState": "Succeeded",
        "bgpPeersWithPolicyMapIn": [],
        "bgpPeersWithPolicyMapOut": [],
        "policyMapEntryList": [
          {
            "action": "Deny",
            "matchCriteria": [
              {
                "property": "MatchPrefix",
                "value": [
                  "5.4.3.2/32",
                  "5.4.3.1/32"
                ]
              },
              {
                "property": "NextHop",
                "value": [
                  "4.3.2.1",
                  "6.4.3.1"
                ]
              }
            ]
          },
          {
            "setActions": []
          }
        ]
      }
    }
  ],
  "nextLink": ""
}
```

The JSON schema for the **policyMaps GET ALL** method is located in section 6.15.5.3.

3.1.5.17.3.1.3.3 Processing Details

List all **policyMaps** resources in the Network Controller.

3.1.5.17.3.1.4 DELETE

This method deletes a policyMap resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/policyMaps/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.17.3.1.4.1 Request Body

None.

3.1.5.17.3.1.4.2 Response Body

None.

3.1.5.17.3.1.4.3 Processing Details

Deletes a policyMap resource.

3.1.5.17.4 networkConnections

The **networkConnections** resource specifies a connection from virtual network to external networks. Multiple connections can exist for a given virtual network and there are different types of connections.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/networkConnections/{resourceId}
```

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.17.4.1.1	Create or update a networkConnections resource.
GET	3.1.5.17.4.1.2	Get a networkConnections resource.
GET (All)	3.1.5.17.4.1.3	List all networkConnections resources in the Network Controller.
DELETE	3.1.5.17.4.1.4	Delete a networkConnections resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
resourceId	Required	Friendly name of the connection.
connectionType	Read/write	Indicates type of connection. Valid values are IPsec GRE L3 (Forward).
outboundKiloBitsPerSecond	Read/write	Indicates maximum allowed outbound bandwidth in Kbps.
inboundKiloBitsPerSecond	Read/write	Indicates maximum allowed outbound bandwidth in Kbps.
ipsecConfiguration	Read/write	Details of IPsec configuration.
ipsecConfiguration.authenticationMethod	Read/write	Indicates authentication method. PSK is the only valid value.
ipsecConfiguration.sharedsecret	Write	The shared secret used for this NetworkConnection. Note this is write-only property and the value of this field is not shown in the GET of networkconnection.
ipsecConfiguration.mainMode	Read/write	Main mode IPsec configuration details.
ipsecConfiguration.mainMode.diffieHellmanGroup	Read/write	Indicates Diffie Hellman group used during main mode IKE negotiation. Values: Group1 Group2 Group14 ECP256 ECP384 Group24
ipsecConfiguration.mainMode.integrityAlgorithm	Read/write	Indicates Integrity algorithm used during main mode IKE negotiation. Values: MD5 SHA196 SHA256 SHA384
ipsecConfiguration.mainMode.encryptionAlgorithm	Read/write	Indicates cipher algorithm used during main mode IKE negotiation.

Element name	Type	Description
		Values: DES DES3 AES128 AES192 AES256
ipsecConfiguration.mainMode.saLifeTimeSeconds	Read/write	Indicates life time of SA in seconds.
ipsecConfiguration.mainMode.saLifeTimeKilobytes	Read/write	Indicates life time of SA in Kilobytes. Ignored by IPsec.
ipsecConfiguration.quickMode	Read/write	Quick mode IPsec configuration.
ipsecConfiguration.quickMode.perfectForwardSecrecy	Read/write	Indicates whether Perfect Forward Secrecy is enabled or not. If enabled specifies the algorithm. Values: None PFS1 PFS2 PFS2048 PFS14 ECP256 ECP384 PFSMM PFS24
ipsecConfiguration.quickMode.cipherTransformationConstant	Read/write	Indicates the encryption algorithm used for data traffic. Values: None DES CBCDES DES3 CBCDES3 AES128 AES192 AES256 AES128CBC AES192CBC AES256 GCMAES128 GCMAES192 GCMAES256
ipsecConfiguration.quickMode.authenticationTranformationConstant	Read/write	Indicates the authentication transform used for data traffic. Values: None MD596 SHA196 SHA256 GCMAES128 GCMAES192 GCMAES256
ipsecConfiguration.quickMode.saLifeTimeSeconds	Read/write	Indicates life time of SA in seconds.
ipsecConfiguration.quickMode.saLifeTimeKilobytes	Read/write	Indicates life time of SA in Kilobytes.
ipsecConfiguration.quickMode.idleDisconnectSeconds	Read/write	Indicates idle time after which SA is disconnected.
ipsecConfiguration.localVpnTrafficSelector	Read/write	Indicates collection of IPsec TrafficSelectors on the hoster side.
ipsecConfiguration.localVpnTrafficSelector.Type	Read/write	Indicates whether traffic is IPv4 or IPv6.
ipsecConfiguration.localVpnTrafficSelector.ProtocolId	Read/write	Indicates IP protocol ID (such as UDP, TCP, and ICMP).
ipsecConfiguration.localVpnTrafficSelector.PortStart	Read/write	Indicates start of port range.
ipsecConfiguration.localVpnTrafficSelector.PortEnd	Read/write	Indicates end of port range.
ipsecConfiguration.localVpnTrafficSelectorIpAddressStart	Read/write	Indicates start of IP addresses.
ipsecConfiguration.localVpnTrafficSelector.IpAddressEnd	Read/write	Indicates end of IP addresses.
ipsecConfiguration.localVpnTrafficSelector.tsPayloadId	Read/write	??
ipsecConfiguration.	Read/write	Indicates collection of IPsec TrafficSelectors on the

Element name	Type	Description
remoteVpnTrafficSelector		tenant side.
ipsecConfiguration.remoteVpnTrafficSelector.Type	Read/write	Indicates whether traffic is IPv4 or IPv6.
ipsecConfiguration.remoteVpnTrafficSelector.ProtocolId	Read/write	Indicates IP protocol ID (such as UDP, TCP, and ICMP).
ipsecConfiguration.remoteVpnTrafficSelector.PortStart	Read/write	Indicates start of port range.
ipsecConfiguration.remoteVpnTrafficSelector.PortEnd	Read/write	Indicates end of port range.
ipsecConfiguration.remoteVpnTrafficSelector.IpAddressStart	Read/write	Indicates start of IP addresses.
ipsecConfiguration.remoteVpnTrafficSelector.IpAddressEnd	Read/write	Indicates end of IP addresses.
IpAddress	Read/write	Indicates ConnectTo Address to which peers connect to and which is the source IP address in egress direction. This would be the VIP.
ipAddresses	Read/write	IP assigned in the tenant compartment for L3 interface.
ipAddresses.ipAddress	Read/write	IP address for L3 interface in tenant compartment.
ipAddress.prefixLength	Read/write	Prefix length of the IP address.
PeerIpAddress	Read/write	Indicates peer IP address to which connection is made. Used by L3 interface.
SourceIpAddress	Read/write	Indicates sourceIpAddress used by the tunnel. Applicable to IKEv2 and GRE.
destinationIpAddress	Read/write	Indicates destination ip address of the tunnel. Applicable to IKEv2 and GRE.
routes[]	Read/write	List of all the routes (static and those learned via BGP) on the network Interface. Traffic matching the routes is transmitted on the network Interface.
routes.destinationPrefix	Required	Prefix with subnet of the routes.
routes.nextHop	Optional	Next Hop of the routes. Is significant only for L3 connections. Has no significance for point to point connections such as IPsec & GRE.
routes.metric	Optional	Indicates Metric of the route.
routes.protocol	Read-only	Indicates how the route is learnt/added (<code>static</code> <code>BGP</code>)
ConnectionStatus	Read/write	Indicates administrative status of connection. Values: <code>enabled</code> <code>disabled</code>
ConnectionState	Read/write	Indicates operational status of connection. Values: <code>Connected</code> <code>Disconnected</code>
statistics	Read-only	Statistics of the connection.

Element name	Type	Description
statistics.outboundBytes	Read-only	Indicates number of bytes transmitted.
statistics.inboundBytes	Read-only	Indicates number of bytes received.
statistics.rxTotalPacketsDropped	Read-only	Indicates number of packets dropped in ingress direction.
statistics.txTotalPacketsDropped	Read-only	Indicates number of packets dropped in egress direction.
statistics.txRateKbps	Read-only	Indicates rate at which traffic is going out in Kbps.
statistics.rxRateKbps	Read-only	Indicates rate at which traffic is coming in Kbps.
statistics.txRateLimitedPacketsDropped	Read-only	Indicates number of packets dropped in egress direction due to rate limiting.
statistics.rxRateLimitedPacketsDropped	Read-only	Indicates number of packets dropped in ingress direction due to rate limiting.
statistics.lastUpdated	Read-only	Indicates the time the statistics were last updated.
ConnectionUpTime	Read-only	Indicates operations up time of the connection in seconds.
ConnectionErrorReason	Read-only	Indicates the reason for not being able to connect after dialling in the previous attempt.
unreachabilityReason	Read-only	Indicates the reason for not being able to connect/dial in the previous attempt.
greConfiguration	Read/write	Indicates details of GRE configuration.
greConfiguration.greKey	Read/write	Indicates GRE key.
l3Configuration	Read/write	Indicates details of L3 configuration.
l3Configuration.vlanSubnet	Read/write	Reference to a logical subnet of L3 connection.
gateway	ResourceRef	Reference of the gateway on which the connection exists.
configurationState	Optional Read-only	Indicates the last known running state of this connection. See specification in section 2.2.4. More details are given in the section for the GET operation section 3.1.5.17.4.1.2.

3.1.5.17.4.1 HTTP Methods

3.1.5.17.4.1.1 PUT

This method creates a new **networkConnections** resource or updates an existing **networkConnections** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/networkConnections/{resourceId}
}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.17.4.1.1.1 Request Body

The format for the request body for the **networkConnections PUT** method is as follows.

```
"resourceRef":
"/VirtualGateways/VirtualGatewayTenant_1/NetworkConnections/VirtualGatewayTenant_1_IPSEC_1",
"resourceId": "VirtualGatewayTenant_1_IPSEC_1",
"properties": {
  "connectionType": "IPSec",
  "outboundKiloBitsPerSecond": 1000700000,
  "inboundKiloBitsPerSecond": 1000700000,
  "ipSecConfiguration": {
    "authenticationMethod": "PSK",
    "sharedSecret": "123abc",
    "quickMode": {
      "perfectForwardSecrecy": "PFS2048",
      "cipherTransformationConstant": "DES3",
      "authenticationTransformationConstant": "SHA256128",
      "idleDisconnectSeconds": 500,
      "saLifeTimeSeconds": 1233,
      "saLifeTimeKiloBytes": 2000
    },
    "mainMode": {
      "diffieHellmanGroup": "Group2",
      "encryptionAlgorithm": "AES256",
      "integrityAlgorithm": "SHA256",
      "saLifeTimeSeconds": 1234,
      "saLifeTimeKiloBytes": 2000
    }
  },
  "localVpnTrafficSelector": [
    {
      "type": "IPv4",
      "protocolId": 0,
      "portStart": 0,
      "portEnd": 65535,
      "ipAddressStart": "0.0.0.0",
      "ipAddressEnd": "255.255.255.255",
      "tsPayloadId": 0
    }
  ]
}
```

```

    "remoteVpnTrafficSelector": [
      {
        "type": "IPv4",
        "protocolId": 0,
        "portStart": 0,
        "portEnd": 65535,
        "ipAddressStart": "0.0.0.0",
        "ipAddressEnd": "255.255.255.255",
        "tsPayloadId": 0
      }
    ],
    "l3Configuration": {}, { },
    "ipAddresses": [], [ ],
    "peerIPAddresses": [], [ ],
    "routes": [
      {
        "destinationPrefix": "50.1.110.2.3.0/24",
        "nextHop": "": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
      },
      {
        "destinationPrefix": "40.1.1.4/32",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
      }
    ],
    "connectionStatus": "Enabled",
    "destinationIPAddress": "11.1.0.1",
  }
}

```

The JSON schema for the **networkConnections PUT** method is contained within the **virtualGateways PUT** method schema in section 6.15.1.

3.1.5.17.4.1.1.2 Response Body

The format is the same as the format for the **networkConnections GET** response body (section 3.1.5.17.4.1.2.2). The JSON schema for the **networkConnections GET** method is contained within the **virtualGateways GET** method schema in section 6.15.2.

3.1.5.17.4.1.1.3 Processing Details

Create a new **networkConnections** resource or update an existing **networkConnections** resource.

3.1.5.17.4.1.2 GET

This method retrieves a **networkConnections** resource.

It is invoked through the following URI.

```

https://<url>/networking/v1/virtualGateways/{parentResourceId}/networkConnections/{resourceId}

```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.17.4.1.2.1 Request Body

None.

3.1.5.17.4.1.2.2 Response Body

The format for the **networkConnections GET** response body is as follows.

```
{
  "resourceRef":
  "/VirtualGateways/VirtualGatewayTenant_1/NetworkConnections/VirtualGatewayTenant_1_IPSEC_1",

  "resourceId": "VirtualGatewayTenant_1_IPSEC_1",

  "etag": "W/\"8559fe48-df3e-4765-8515-e43151d93cfe\"",
  ae62ald6-alea-48a7-a122-56db52d5e7ee\",
  "instanceId": "a192d851-0849-4d88-a0d5-86647f1b9efc",
  827c5920-ce65-4175-a18f-6dfd84538a14",
  "properties": {
    "provisioningState": "Succeeded",

    "connectionType": "IPSec",
    "outboundKiloBitsPerSecond": 1000, 700000,
    "inboundKiloBitsPerSecond": 1000, 700000,
    "ipSecConfiguration": {
      "authenticationMethod": "PSK",
      "quickMode": {
        "perfectForwardSecrecy": "PFS2048",
        "cipherTransformationConstant": "DES3",
        "authenticationTransformationConstant": "SHA256128",
        "idleDisconnectSeconds": 500,
        "saLifeTimeSeconds": 1233,
        "saLifeTimeKiloBytes": 2000
      },
    },
    "mainMode": {
      "diffieHellmanGroup": "Group2",
      "encryptionAlgorithm": "AES256",
      "integrityAlgorithm": "SHA256",
      "saLifeTimeSeconds": 1234,
      "saLifeTimeKiloBytes": 2000
    },
  },
  "localVpnTrafficSelector": [
    {
      "type": "IPv4",
      "protocolId": 0,
      "portStart": 0,
      "portEnd": 65535,
      "ipAddressStart": "0.0.0.0",
      "ipAddressEnd": "255.255.255.255",
      "tsPayloadId": 0
    }
  ],
  "remoteVpnTrafficSelector": [
    {
      "type": "IPv4",
      "protocolId": 0,

```

```

        "portStart": 0,
        "portEnd": 65535,
        "ipAddressStart": "0.0.0.0",
        "ipAddressEnd": "255.255.255.255",
        "tsPayloadId": 0
    }
}
},
"l3Configuration": {},
"ipAddresses": [],
"peerIPAddresses": [],
"routes": [
    {
        "destinationPrefix": "50.1.1.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    },
    {
        "destinationPrefix": "40.1.1.4/32",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
    "outboundBytes": 0,
    "inboundBytes": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-02-19T10:48:49.9938698Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-02-19T02:48:49.3532316-08:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.1.0.1",
"routes": [
    {
        "destinationPrefix": "10.2.3.0/24",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "809",
"unreachabilityReason": "ConnectionFailure",
"statistics": {
    "outboundBytes": 0,
    "inboundBytes": 0,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-01-14T08:26:37.8964269Z"
},

```

```

    "gateway": {
      "resourceRef": "/Gateways/CloudGw1"CloudGW2"
    }
  }
}
}}

```

The JSON schema for the **networkConnections GET** method is contained within the **virtualGateways GET** method schema in section 6.15.2.

3.1.5.17.4.1.2.3 Processing Details

Get one **networkConnections** resource.

The server returns a configuration state only if it has already attempted to configure settings according to the REST resource properties that were created or updated by using the **PUT** method. **configurationState.lastUpdatedTime** is set to a value that is implementation-specific.

The server **MUST** return a configuration state property **configurationState.status** set to "Success" if there were no errors. The server **MUST** return a configuration state property **configurationState.status** set to a value other than "Failure" if there were errors during configuration of settings. **configurationState.detailedInfo** contains an array of objects per the specification in section 2.2.4. The following table contains acceptable values in the response when status is not "Success".

configurationState.status	Code inside configurationState.detailedInfo array	Description
Failure	HostUnreachable	Unable to configure settings related to connections on gateways.

3.1.5.17.4.1.3 GET (All)

This method retrieves all **networkConnections** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/networkConnections
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.17.4.1.3.1 Request Body

None.

3.1.5.17.4.1.3.2 Response Body

The format for the **networkConnections GET ALL** response body is as follows.

```
{
  "resourceRef":
  "/VirtualGateways/VirtualGatewayTenant_1/NetworkConnections/VirtualGatewayTenant_1_IPSEC_1",
  "resourceId": "VirtualGatewayTenant_1_IPSEC_1",
  "etag": "W/\"8559fe48-df3e-4765-8515-e43151d93cfe\"",
  "instanceId": "a192d851-0849-4d88-a0d5-86647f1b9efc",
  "properties": {
    "provisioningState": "Succeeded",
    "connectionType": "IPSec",
    "outboundKiloBitsPerSecond": 1000,700000,
    "inboundKiloBitsPerSecond": 1000,700000,
    "ipSecConfiguration": {
      "authenticationMethod": "PSK",
      "quickMode": {
        "perfectForwardSecrecy": "PFS2048",
        "cipherTransformationConstant": "DES3",
        "authenticationTransformationConstant": "SHA256128",
        "idleDisconnectSeconds": 500,
        "saLifetimeSeconds": 1233,
        "saLifetimeKiloBytes": 2000
      },
      "mainMode": {
        "diffieHellmanGroup": "Group2",
        "encryptionAlgorithm": "AES256",
        "integrityAlgorithm": "SHA256",
        "saLifetimeSeconds": 1234,
        "saLifetimeKiloBytes": 2000
      }
    },
    "localVpnTrafficSelector": [
      {
        "type": "IPv4",
        "protocolId": 0,
        "portStart": 0,
        "portEnd": 65535,
        "ipAddressStart": "0.0.0.0",
        "ipAddressEnd": "255.255.255.255",
        "tsPayloadId": 0
      }
    ],
    "remoteVpnTrafficSelector": [
      {
        "type": "IPv4",
        "protocolId": 0,
        "portStart": 0,
        "portEnd": 65535,
        "ipAddressStart": "0.0.0.0",
        "ipAddressEnd": "255.255.255.255",
        "tsPayloadId": 0
      }
    ]
  },
  "l3Configuration": {},
  "ipAddresses": [],
  "peerIPAddresses": [],
  "routes": [
    {
      "destinationPrefix": "50.1.1.0/24",
      "nextHop": "0.0.0.0",
    }
  ]
}
```

```

        "metric": 10,
        "protocol": "Static"
    },
    {
        "destinationPrefix": "40.1.1.4/32",
        "nextHop": "0.0.0.0",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionErrorReason": "0",
"unreachabilityReason": "",
"statistics": {
    "outboundBytes": 0,
    "lastUpdated": "2016-02-19T10:48:49.9938698Z"
},
"configurationState": {
    "status": "Success",
    "lastUpdatedTime": "2016-02-19T02:48:49.3532316-08:00"
},
"sourceIPAddress": "91.1.1.4",
"destinationIPAddress": "11.1.0.1",

"routes": [
    {
        "destinationPrefix": "10.2.3.0/24",
        "metric": 10,
        "protocol": "Static"
    }
],
"connectionStatus": "Enabled",
"connectionState": "Disconnected",
"connectionUpTime": "00:00:00",
"connectionErrorReason": "809",
"unreachabilityReason": "ConnectionFailure",

"statistics": {
    "outboundBytes": 0,
    "inboundBytes": 0,
    "rxTotalPacketsDropped": 0,
    "txTotalPacketsDropped": 0,
    "txRateKbps": 0,
    "rxRateKbps": 0,
    "txRateLimitedPacketsDropped": 0,
    "rxRateLimitedPacketsDropped": 0,
    "lastUpdated": "2016-01-14T08:26:37.8964269Z"
},
    "gateway": {
        "resourceRef": "/Gateways/CloudGw1"
    }
}CloudGW2"
}
}

```

The JSON schema for the **networkConnections GET ALL** method is contained within the **virtualGateways GET ALL** method schema in section 6.15.3.

3.1.5.17.4.1.3.3 Processing Details

Retrieves all **networkConnections** resources.

3.1.5.17.4.1.4 DELETE

This method deletes a **networkConnections** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualGateways/{parentResourceId}/networkConnections/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.17.4.1.4.1 Request Body

None.

3.1.5.17.4.1.4.2 Response Body

None.

3.1.5.17.4.1.4.3 Processing Details

Deletes a **networkConnections** resource.

3.1.5.18 virtualNetworks

The **virtualNetworks** resource is used to create a virtual network using HNV for tenant overlays. The default encapsulation for **virtualNetworks** is Virtual Extensible LAN but this can be changed by updating the **virtualNetworkManager** resource. Similarly, the HNV Distributed Router is enabled by default but this can be overridden using the **virtualNetworkManager** resource.

The URI for the resource is as follows.

```
https://<url>/networking/v1/virtualNetworks/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.18.1.1	Create a new virtualNetworks resource or update an existing virtualNetworks resource.
GET	3.1.5.18.1.2	Get one virtualNetworks resource
GET (All)	3.1.5.18.1.3	List all virtualNetworks resources in the Network Controller
DELETE	3.1.5.18.1.4	Deletes a virtualNetworks resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
logicalNetwork	Required	Indicates a reference to the networks resource that is the underlay network which the virtual network runs on.
subnets[]	Optional	Indicates the subnets that are on the virtual network. For more details see section 3.1.5.18.2.
addressSpace	Required	Indicates the address space of the virtual network.
addressSpace.addressPrefixes[]	Required	Indicates the valid list of address prefixes that can make up this virtual network. The value is an array of address prefixes in the format of 0.0.0.0/0. The space cannot be shrunk if addresses are in use in a subnet belonging to the virtual network.
dhcpOptions	Optional	Indicates the DHCP options used by servers in the virtual network.
dhcpOptions.dnsServers	Optional	Indicates an array of DNS servers that are being used by the virtual network.<6>
configurationState	Optional Read-only	See configurationState in section 2.2.4. More details are given in the section for the GET operation section 3.1.5.18.1.2.
configurationState.id		This is the instance ID of the virtual network resource.
configurationState.hostErrors		An array of configurationState objects as specified in section 2.2.4. The values for the various fields are the same as for the network interface configuration state specified in section 3.1.5.11.

3.1.5.18.1 HTTP Methods

3.1.5.18.1.1 PUT

Create a new virtualNetwork resource or update an existing virtualNetwork resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.18.1.1.1 Request Body

The format for the request body for the **virtualNetworks PUT** method is as follows.

```
{
  "properties": {
    "addressSpace": {
      "addressPrefixes": [
        "20.169.0.0/16"
      ]
    },
    "subnets": [
      {
        "resourceId": "919a1273-fb13-4810-b85b-f6474df694a9",
        "properties": {
          "addressPrefix": "20.169.0.0/16",
          "accessControlList": {
            "resourceRef": "/accessControlLists/7165e618-7957-43e9-9727-644b0021da7f"
          }
        }
      }
    ],
    "logicalNetwork": {
      "resourceRef": "/logicalnetworks/7d14191e-5b55-4e99-9059-a42d120da0ce"
    }
  }
}
```

The JSON schema for the **virtualNetworks PUT** method is located in section 6.16.1.

3.1.5.18.1.1.2 Response Body

The format is the same as the format for the **virtualNetworks GET** response body (section 3.1.5.18.1.2.2). The JSON schema is located in section 6.16.2.

3.1.5.18.1.1.3 Processing Details

Create a new virtualNetwork resource or update an existing virtualNetwork resource.

3.1.5.18.1.2 GET

This method retrieves a virtualNetwork resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.18.1.2.1 Request Body

None.

3.1.5.18.1.2.2 Response Body

The format for the **virtualNetworks GET** response body is as follows.

```
{
  "resourceRef": "/virtualNetworks/88e38f44-a55b-4604-af5b-83d44bb32508",
  "resourceId": "88e38f44-a55b-4604-af5b-83d44bb32508",
  "etag": "W/\"f940af0b-194b-4264-b581-cf9ecd02417d\"",
  "instanceId": "77ccbb79-a7a2-432d-af08-cde9b6fbf89c",
  "properties": {
    "provisioningState": "Succeeded",
    "addressSpace": {
      "addressPrefixes": [
        "13.168.100.0/24",
        "13.168.101.0/24"
      ]
    },
    "dhcpOptions": { "DnsServers": [ "2.4.5.6" ] },
    "configurationState": {
      "status": "Failure",
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "368ebe7d-38de-48f8-a0d8-b3b816a4b1ea",
      "virtualNetworkInterfaceErrors": [
        {
          "status": "Failure",
          "detailedInfo": [
            {
              "source": "VirtualNetwork",
              "message": "Failed to configure the policies on the host device.",
              "code": "PolicyConfigurationFailure"
            },
            {
              "source": "VirtualNetwork2",
              "message": "Failed to configure the policies on the host device2.",
              "code": "PolicyConfigurationFailure2"
            }
          ]
        }
      ]
    }
  ]
}
```

```

      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "c7ab848f-e522-47cd-b9f6-5a2c7749a73f"
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "5ef191d3-6ec6-4246-984c-8d6a19da301f"
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "4058b793-6c28-43d4-a957-937d453075d7"
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "2a9e39e6-8258-42b8-9db2-31bb2e3932c4"
    }
  ],
  "hostErrors": [
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "6af6ddf0-cd09-44d8-917f-97de215f7c9d"
    }
  ],
  "subnets": [
    {
      "resourceRef": "/virtualNetworks/88e38f44-a55b-4604-af5b-83d44bb32508/subnets/32e2069d-b05c-4090-9f2a-dd1d9e076c18",
      "resourceId": "32e2069d-b05c-4090-9f2a-dd1d9e076c18",
      "etag": "W/\"f940af0b-194b-4264-b581-cf9ecd02417d\"",
      "instanceId": "30acab53-f9ef-4a8b-b349-5152d4ca0847",
      "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.100.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/00000000-0000-BAAD-F00D-000000000000"
        }
      },
      "ipConfigurations": [
    
```

```

        "resourceRef": "/networkInterfaces/35cd19a9-a47b-457c-a616-
b19dfb80a284/ipConfigurations/36bb234c-3594-486f-bfd8-84aee4f15c55"
    },
    {
        "resourceRef": "/networkInterfaces/6065ddd9-9574-422a-8ff7-
cfb51275ebd5/ipConfigurations/60ce029d-d7ff-482d-88f7-7baca89f6d47"
    },
    {
        "resourceRef": "/networkInterfaces/4f937e27-dbbc-401f-8acf-
60eb1b7f42f2/ipConfigurations/90db0417-9067-449a-bc19-776f07707497"
    },
    {
        "resourceRef": "/networkInterfaces/dda65508-b384-4215-b6cc-
23c442d0b185/ipConfigurations/7bda1749-a1ed-4489-b871-c1378bae5f33"
    }
]
}
},
{
    "resourceRef": "/virtualNetworks/88e38f44-a55b-4604-af5b-
83d44bb32508/subnets/45819314-35b0-47ff-8447-3c78ed3ad8eb",
    "resourceId": "45819314-35b0-47ff-8447-3c78ed3ad8eb",
    "etag": "W/\"f940af0b-194b-4264-b581-cf9ecd02417d\"",
    "instanceId": "ba555875-c564-4987-94a5-a0e260d7e2af",
    "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.101.0/24",
        "accessControlList": {
            "resourceRef": "/accessControlLists/949fc25d-0675-4af4-b989-2bf653b795eb"
        }
    },
    "ipConfigurations": [
        {
            "resourceRef": "/networkInterfaces/e8a7fea7-e4f9-4742-9e89-
aced72ee5a57/ipConfigurations/a9fbf102-6646-442b-8631-6c0c2c193b35"
        },
        {
            "resourceRef": "/networkInterfaces/f94421e8-3efb-42dc-b7dd-
aaa61f1f32e5/ipConfigurations/ea5d80da-70da-4592-8d07-ce31b38808e4"
        },
        {
            "resourceRef": "/networkInterfaces/d9259a46-b685-4b40-ad0d-
2afd74fbf6b3/ipConfigurations/34f81b26-ad6b-4dbf-b5d7-2ca3c5bbf9cf"
        },
        {
            "resourceRef": "/networkInterfaces/9be77260-a529-4162-b2a2-
f04495a200da/ipConfigurations/fff40242-ca47-4e91-a206-3d11f2c49c7e"
        }
    ]
}
}
],
"logicalNetwork": {
    "resourceRef": "/logicalnetworks/dbbd37e2-031e-43b3-a16a-d167caca0067"
}
}
}

```

The JSON schema for the **virtualNetworks GET** method is located in section 6.16.2.

3.1.5.18.1.2.3 Processing Details

Retrieves a virtualNetwork resource.

3.1.5.18.1.3 GET (All)

This method retrieves all **virtualNetworks** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.18.1.3.1 Request Body

None.

3.1.5.18.1.3.2 Response Body

The format for the **virtualNetworks GET ALL** response body is as follows.

```
{
  "value": [
    {
      "resourceRef": "/virtualNetworks/2c40fb79-6488-4804-980a-a178a8e123f4",
      "resourceId": "2c40fb79-6488-4804-980a-a178a8e123f4",
      "etag": "W/\"f183dbae-3908-4a08-b2d3-7f73bae97cab\"",
      "instanceId": "e5a0bb17-f781-4dc2-9f11-f472d61f8470",
      "properties": {
        "provisioningState": "Succeeded",
        "addressSpace": {
          "addressPrefixes": [
            "13.168.100.0/24",
            "13.168.101.0/24"
          ]
        },
        "dhcpOptions": { },
        "configurationState": {
          "status": "Failure",
          "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
          "id": "368ebe7d-38de-48f8-a0d8-b3b816a4b1ea",
          "virtualNetworkInterfaceErrors": [
            {
              "status": "Failure",
              "detailedInfo": [
                {
                  "source": "VirtualNetwork",
                  "message": "Failed to configure the policies on the host device.",
                  "code": "PolicyConfigurationFailure"
                },
                {
                  "source": "VirtualNetwork2",
                  "message": "Failed to configure the policies on the host device2.",
                  "code": "PolicyConfigurationFailure2"
                }
              ]
            },
            {
              "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
              "id": "c7ab848f-e522-47cd-b9f6-5a2c7749a73f"
            }
          ]
        }
      }
    }
  ]
}
```

```

    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "5ef191d3-6ec6-4246-984c-8d6a19da301f"
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "4058b793-6c28-43d4-a957-937d453075d7"
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "2a9e39e6-8258-42b8-9db2-31bb2e3932c4"
    }
  ],
  "hostErrors": [
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ],
      "lastUpdatedTime": "2016-06-14T19:12:06.400512-07:00",
      "id": "6af6ddf0-cd09-44d8-917f-97de215f7c9d"
    }
  ],
  "subnets": [
    {
      "resourceRef": "/virtualNetworks/2c40fb79-6488-4804-980a-a178a8e123f4/subnets/1b466669-3c06-4e34-b0c9-d737591ecc2c",
      "resourceId": "1b466669-3c06-4e34-b0c9-d737591ecc2c",
      "etag": "W/\"f183dbae-3908-4a08-b2d3-7f73bae97cab\"",
      "instanceId": "9db21d13-63ce-4571-9674-930663dafa90",
      "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.100.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/0879bb16-0cdc-435a-88ff-ef24813201d9"
        }
      },
      "ipConfigurations": [
        {
          "resourceRef": "/networkInterfaces/7cc631c8-ca6b-4d21-b1f8-5b0373d32301/ipConfigurations/18e3af43-be4a-4116-882c-d7257a8bc72b"
        }
      ]
    }
  ]
}

```

```

    },
    {
      "resourceRef": "/networkInterfaces/6ebf2132-2871-4535-b412-
b6e255bcafa2/ipConfigurations/74fe0850-09a0-4526-9d43-906cd4e6f52a"
    },
    {
      "resourceRef": "/networkInterfaces/c55a70de-34a7-4260-be7b-
76e4b65f32c6/ipConfigurations/486734ba-5521-4348-81a9-3158e2b7fa6e"
    },
    {
      "resourceRef": "/networkInterfaces/d9a8a624-9356-4f4e-bd88-
fcde1574dba3/ipConfigurations/11aa8ca8-b684-4ca0-b35d-4e7db62e7b6f"
    }
  ]
}
},
{
  "resourceRef": "/virtualNetworks/2c40fb79-6488-4804-980a-
a178a8e123f4/subnets/9c01100a-2bbc-4388-adb2-6cbcdee3447f",
  "resourceId": "9c01100a-2bbc-4388-adb2-6cbcdee3447f",
  "etag": "W/\"f183dbae-3908-4a08-b2d3-7f73bae97cab\"",
  "instanceId": "0ef3bac9-3496-40ec-aeff-3403ea6541ef",
  "properties": {
    "provisioningState": "Succeeded",
    "addressPrefix": "13.168.101.0/24",
    "accessControlList": {
      "resourceRef": "/accessControlLists/0879bb16-0cdc-435a-88ff-ef24813201d9"
    },
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/447843e7-3fe4-4337-aac5-
72e38258d6a4/ipConfigurations/31bb0476-a4d4-4a9a-8d98-3a47dea56f59"
      },
      {
        "resourceRef": "/networkInterfaces/7a4ba9a1-7542-42f9-b718-
80de763001cb/ipConfigurations/833540aa-5037-490f-96b9-6a7d78faa762"
      },
      {
        "resourceRef": "/networkInterfaces/3157a320-6a05-463f-8c32-
5af4759fbf88/ipConfigurations/fe4536ec-8443-4393-b534-2e035bbe6aaf"
      },
      {
        "resourceRef": "/networkInterfaces/125f3909-8fc9-4ab4-b46c-
3e8d39b52de2/ipConfigurations/7cca0ee7-dbcd-4d25-a211-8c26708093ca"
      }
    ]
  }
}
},
{
  "logicalNetwork": {
    "resourceRef": "/logicalnetworks/dbbd37e2-031e-43b3-a16a-d167caca0067"
  }
}
},
{
  "resourceRef": "/virtualNetworks/88e38f44-a55b-4604-af5b-83d44bb32508",
  "resourceId": "88e38f44-a55b-4604-af5b-83d44bb32508",
  "etag": "W/\"f940af0b-194b-4264-b581-cf9ecd02417d\"",
  "instanceId": "77ccbb79-a7a2-432d-af08-cde9b6fbf89c",
  "properties": {
    "provisioningState": "Succeeded",
    "addressSpace": {
      "addressPrefixes": [
        "13.168.100.0/24",
        "13.168.101.0/24"
      ]
    },
    "dhcpOptions": { },
    "subnets": [
      {

```

```

      "resourceRef": "/virtualNetworks/88e38f44-a55b-4604-af5b-83d44bb32508/subnets/32e2069d-b05c-4090-9f2a-dd1d9e076c18",
      "resourceId": "32e2069d-b05c-4090-9f2a-dd1d9e076c18",
      "etag": "W/\"f940af0b-194b-4264-b581-cf9ecd02417d\"",
      "instanceId": "30acab53-f9ef-4a8b-b349-5152d4ca0847",
      "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.100.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/00000000-0000-BAAD-F00D-000000000000"
        }
      },
      "ipConfigurations": [
        {
          "resourceRef": "/networkInterfaces/35cd19a9-a47b-457c-a616-b19dfb80a284/ipConfigurations/36bb234c-3594-486f-bfd8-84aee4f15c55"
        },
        {
          "resourceRef": "/networkInterfaces/6065ddd9-9574-422a-8ff7-cfb51275ebd5/ipConfigurations/60ce029d-d7ff-482d-88f7-7baca89f6d47"
        },
        {
          "resourceRef": "/networkInterfaces/4f937e27-dbbc-401f-8acf-60eb1b7f42f2/ipConfigurations/90db0417-9067-449a-bc19-776f07707497"
        },
        {
          "resourceRef": "/networkInterfaces/dda65508-b384-4215-b6cc-23c442d0b185/ipConfigurations/7bdal749-a1ed-4489-b871-c1378bae5f33"
        }
      ]
    },
    {
      "resourceRef": "/virtualNetworks/88e38f44-a55b-4604-af5b-83d44bb32508/subnets/45819314-35b0-47ff-8447-3c78ed3ad8eb",
      "resourceId": "45819314-35b0-47ff-8447-3c78ed3ad8eb",
      "etag": "W/\"f940af0b-194b-4264-b581-cf9ecd02417d\"",
      "instanceId": "ba555875-c564-4987-94a5-a0e260d7e2af",
      "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.101.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/949fc25d-0675-4af4-b989-2bf653b795eb"
        }
      },
      "ipConfigurations": [
        {
          "resourceRef": "/networkInterfaces/e8a7fea7-e4f9-4742-9e89-aced72ee5a57/ipConfigurations/a9fbf102-6646-442b-8631-6c0c2c193b35"
        },
        {
          "resourceRef": "/networkInterfaces/f94421e8-3efb-42dc-b7dd-aaa61f1f32e5/ipConfigurations/ea5d80da-70da-4592-8d07-ce31b38808e4"
        },
        {
          "resourceRef": "/networkInterfaces/d9259a46-b685-4b40-ad0d-2afd74fbf6b3/ipConfigurations/34f81b26-ad6b-4dbf-b5d7-2ca3c5bbf9cf"
        },
        {
          "resourceRef": "/networkInterfaces/9be77260-a529-4162-b2a2-f04495a200da/ipConfigurations/fff40242-ca47-4e91-a206-3d11f2c49c7e"
        }
      ]
    }
  ],
  "logicalNetwork": {
    "resourceRef": "/logicalnetworks/dbbd37e2-031e-43b3-a16a-d167caca0067"
  }
}
],

```

```
"nextLink": ""
}
```

The JSON schema for the **virtualNetworks GET ALL** method is located in section 6.16.3.

3.1.5.18.1.3.3 Processing Details

Retrieves all virtualNetwork resources.

3.1.5.18.1.4 DELETE

This method deletes a virtualNetwork resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.18.1.4.1 Request Body

None.

3.1.5.18.1.4.2 Response Body

None.

3.1.5.18.1.4.3 Processing Details

Deletes a virtualNetwork resource.

3.1.5.18.2 subnets

The **subnets** resource is used to create Virtual Subnets (VSIDs) under a tenant's virtual network (RDID). The user can specify the addressPrefix to use for the subnets, the accessControl Lists to protect the subnets, the routeTable to be applied to the subnet, and optionally the service insertion to use within the subnet.

It is invoked through the following URI.

`https://<url>/networking/v1/virtualNetworks/{parentResourceId}/subnets/{resourceId}`

parentResourceId: the identifier for the specific ancestor resource within the resource type. See section 2.2.3.3, for more details.

resourceId: the identifier for the specific descendant resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.18.1.1	Create a new subnets resource or update an existing subnets resource.
GET	3.1.5.18.1.2	Get one subnets resource
GET (All)	3.1.5.18.1.3	List all subnets resources in the Network Controller
DELETE	3.1.5.18.1.4	Delete a subnets resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
addressPrefix	Required	Indicates the address prefix that defines the subnet. The value is in the format of 0.0.0.0/0. This value MUST not overlap with other subnets in the virtual network and MUST fall in the addressPrefix defined in the virtual network.
accessControlList	Optional	Indicates a reference to an accessControlLists resource that defines the ACLs in and out of the subnet.
serviceInsertion	Optional	Indicates a reference to a serviceInsertions resource that defines the service insertion to be applied to the subnet.
routeTable	Optional	Indicates a reference to a routeTable resource that defines the tenant routes to be applied to the subnet.
ipConfigurations	Read-only	Indicates an array of references of networkInterfaces resources that are connected to the subnet.

3.1.5.18.2.1 HTTP Methods

3.1.5.18.2.1.1 PUT

This method creates a new subnet resource or updates an existing subnet resource.

It is invoked through the following URI.

`https://<url>/networking/v1/virtualNetworks/{parentResourceId}/subnets/{resourceId}`

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.18.2.1.1.1 Request Body

The format for the request body for the **subnets PUT** method is as follows.

```
{
  "resourceId": "{uniqueString}",
  "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "tags": { "key": "value" },
  "resourceMetadata": {
    {
      "client": "WAP Network Resource Provider",
      "tenantId": "{subscriptionid}",
      "groupId": "{groupname}",
      "name": "{name}",
      "originalHref": "https://..."
    },
    "properties": {
  "addressSpace": {
    "addressPrefixes": ["13.0.0.0/24", "11.1.1.0/24"]
  },
  "logicalNetwork": {
    "resourceRef": "/networks/00000000-0000-0000-0000-001000000000"
  },
  "subnets": [
    {
      "resourceId": "00000000-0000-0000-0001-000000000010",
      "resourceMetadata": {
        "resourceName": "subnet1",
      },
      "properties": {
        "addressPrefix": "13.0.0.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/00000000-0000-0000-0000-000000000001"
        },
        "ipConfigurations": []
      },
    },
    {
      "resourceId": "00000000-0000-0000-0002-000000000010",
      "resourceMetadata": {
        "resourceName": "subnet2",
      },
      "properties": {
        "addressPrefix": "11.1.1.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/00000000-0000-0000-0000-000000000001"
        },
        "ipConfigurations": []
      },
    }
  ]
},
}
```

```
}
}
}
```

The JSON schema for the **subnets PUT** method is located in section 6.16.4.1.

3.1.5.18.2.1.1.2 Response Body

The format is the same as the format for the **GET subnets** response body (section 3.1.5.18.2.1.2.2). The JSON schema is located in section 6.16.4.2.

3.1.5.18.2.1.1.3 Processing Details

Create a new subnet resource or update an existing subnet resource.

3.1.5.18.2.1.2 GET

This method retrieves a subnet resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks/{parentResourceId}/subnets/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.18.2.1.2.1 Request Body

None.

3.1.5.18.2.1.2.2 Response Body

The format for the **subnet GET** response body is as follows.

```
{
  "resourceRef": "/virtualNetworks/740f3670-de42-4345-aaa7-6bb8d423c5df/subnets/da459373-42ee-43d3-b094-6e2176406e4a",
  "resourceId": "da459373-42ee-43d3-b094-6e2176406e4a",
  "etag": "W/\"63e97aed-2900-46d3-8667-ef183d773655\"",
  "instanceId": "b526c5e7-927c-4d74-be86-cd2933ac286d",
  "properties": {
    "provisioningState": "Succeeded",
    "addressPrefix": "13.168.101.0/24",
    "accessControlList": {
      "resourceRef": "/accessControlLists/b79fe2f0-8f27-4521-9c8c-4c02be8c62eb"
```



```

    },
    "ipConfigurations": [
      {
        "resourceRef": "/networkInterfaces/178480e8-cb41-4105-9ce9-
d3c4051b1e16/ipConfigurations/5d24f2a5-557c-4692-86d7-dce921ef7e57"
      },
      {
        "resourceRef": "/networkInterfaces/f7957eeb-55b0-46dd-8ef8-
0bb0127c55d1/ipConfigurations/8dd5a2e6-5d83-43b5-ad5b-c08a2fa26935"
      },
      {
        "resourceRef": "/networkInterfaces/ec3ac77e-64be-4bc1-a2e3-
7cd6170a4752/ipConfigurations/cbcab016-6c87-4a32-8158-08e0db71635a"
      },
      {
        "resourceRef": "/networkInterfaces/caa5e37a-30ce-4c0a-877c-
d21b7c732bce/ipConfigurations/aa0eff2d-00f6-413b-9650-7e13e3d31ead"
      }
    ]
  }
}

```

The JSON schema for the **subnet GET** method is located in section 6.16.4.2.

3.1.5.18.2.1.2.3 Processing Details

Retrieves a subnet resource.

3.1.5.18.2.1.3 GET (All)

This method retrieves all subnet resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks/{parentResourceId}/subnets
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources of this type exist, the result is returned as an empty array.

3.1.5.18.2.1.3.1 Request Body

None.

3.1.5.18.2.1.3.2 Response Body

The format for the response body for the **subnets GET ALL** method is as follows.

```
{
  "value": [
```

```

    {
      "resourceRef": "/virtualNetworks/740f3670-de42-4345-aaa7-6bb8d423c5df/subnets/f144bb56-9868-48f7-af38-73d331e780cc",
      "resourceId": "f144bb56-9868-48f7-af38-73d331e780cc",
      "etag": "W/\"63e97aed-2900-46d3-8667-ef183d773655\"",
      "instanceId": "bd2a55ed-47ad-478a-b7ee-c0ed3e14ca69",
      "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.100.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/b79fe2f0-8f27-4521-9c8c-4c02be8c62eb"
        }
      },
      "ipConfigurations": [
        {
          "resourceRef": "/networkInterfaces/350ab978-a032-402e-96cb-ad48fbdce219/ipConfigurations/340229d1-fb10-46a6-bf83-e752d76871cd"
        },
        {
          "resourceRef": "/networkInterfaces/519d1b64-f99d-430b-b626-347ef7690ee1/ipConfigurations/8420d069-6414-43f7-bbaf-5c1f5cc9b434"
        },
        {
          "resourceRef": "/networkInterfaces/bc0b4ec5-8d40-4b62-bb1c-09181bb1ca57/ipConfigurations/bbda3955-5c56-454b-956c-ab576fealc8d"
        },
        {
          "resourceRef": "/networkInterfaces/1e03dd1d-c4c4-4153-alc8-d692d8e340ab/ipConfigurations/a6d79d5e-b266-47a1-83e1-e61f8784f882"
        }
      ]
    },
    {
      "resourceRef": "/virtualNetworks/740f3670-de42-4345-aaa7-6bb8d423c5df/subnets/da459373-42ee-43d3-b094-6e2176406e4a",
      "resourceId": "da459373-42ee-43d3-b094-6e2176406e4a",
      "etag": "W/\"63e97aed-2900-46d3-8667-ef183d773655\"",
      "instanceId": "b526c5e7-927c-4d74-be86-cd2933ac286d",
      "properties": {
        "provisioningState": "Succeeded",
        "addressPrefix": "13.168.101.0/24",
        "accessControlList": {
          "resourceRef": "/accessControlLists/b79fe2f0-8f27-4521-9c8c-4c02be8c62eb"
        }
      },
      "ipConfigurations": [
        {
          "resourceRef": "/networkInterfaces/178480e8-cb41-4105-9ce9-d3c4051b1e16/ipConfigurations/5d24f2a5-557c-4692-86d7-dce921ef7e57"
        },
        {
          "resourceRef": "/networkInterfaces/f7957eeb-55b0-46dd-8ef8-0bb0127c55d1/ipConfigurations/8dd5a2e6-5d83-43b5-ad5b-c08a2fa26935"
        },
        {
          "resourceRef": "/networkInterfaces/ec3ac77e-64be-4bc1-a2e3-7cd6170a4752/ipConfigurations/cbcab016-6c87-4a32-8158-08e0db71635a"
        },
        {
          "resourceRef": "/networkInterfaces/caa5e37a-30ce-4c0a-877c-d21b7c732bce/ipConfigurations/aa0eff2d-00f6-413b-9650-7e13e3d31ead"
        }
      ]
    }
  ],
  "nextLink": ""
}

```

The JSON schema for the **subnets GET ALL** method is located in section 6.16.4.3.

3.1.5.18.2.1.3.3 Processing Details

Retrieves all subnet resources.

3.1.5.18.2.1.4 DELETE

This method deletes a subnet resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworks/{parentResourceId}/subnets/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.18.2.1.4.1 Request Body

None.

3.1.5.18.2.1.4.2 Response Body

None.

3.1.5.18.2.1.4.3 Processing Details

Deletes a subnet resource.

3.1.5.19 virtualNetworkManager

The **virtualNetworkManager** resource is a singleton resource that configures the virtual network service of the Network Controller. The properties in this resource are global for all virtual networks managed by the Network Controller.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworkManager/configuration
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.19.1.1	Create a new virtualNetworkManager resource or update an existing virtualNetworkManager resource.
GET	3.1.5.19.1.2	Get the virtualNetworkManager resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
distributedRouterState	Optional	Indicates the state of the built-in distributed router of the virtual network. Values can be "Enable" or "Disable". The default value is "Enable".
networkVirtualizationProtocol	Optional	Indicates the encapsulation format String values which can be "NVGRE" or "VXLAN". The default value is "VXLAN".

3.1.5.19.1 HTTP Methods

3.1.5.19.1.1 PUT

This method creates or updates the **virtualNetworkManager** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworkManager/configuration
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.19.1.1.1 Request Body

The format for the request body for the **virtualNetworkManager PUT** method is as follows.

```
{
  "resourceRef": "/virtualNetworkManager/configuration",
  "properties": {
    "distributedRouterState": "Enabled",
    "networkVirtualizationProtocol": "NVGRE"
  }
}
```

The JSON schema for the **virtualNetworkManager PUT** method is located in section 6.17.1.

3.1.5.19.1.1.2 Response Body

The format is the same as the format for the **GET virtualNetworkManager** response body (section 3.1.5.19.1.2.2). The JSON schema is located in section 6.17.2.

3.1.5.19.1.1.3 Processing Details

Create a new virtualNetworkManager resource or update an existing virtualNetworkManager resource.

3.1.5.19.1.2 GET

Retrieves the **virtualNetworkManager** configuration.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualNetworkManager/configuration
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.19.1.2.1 Request Body

None.

3.1.5.19.1.2.2 Response Body

The format for the response body for the **virtualNetworkManager GET** method is as follows.

```
{
  "resourceRef": "/virtualNetworkManager/configuration",
  "resourceId": "configuration",
  "etag": "W/\"5794dfc2-194d-4b07-910f-5eb373c0569a\"",
  "instanceId": "2bb4802e-f894-4337-b048-1abeb8153778",
}
```

```

    "properties": {
      "provisioningState": "Succeeded",
      "distributedRouterState": "Enabled",
      "networkVirtualizationProtocol": "VXLAN"
    }
  }
}

```

The JSON schema for the **virtualNetworkManager GET** method is located in section 6.17.2.

3.1.5.19.1.2.3 Processing Details

Retrieves the **virtualNetworkManager** configuration.

3.1.5.20 virtualServers

The **virtualServers** resource corresponds to a Virtual Machine. Such resources **MUST** be created for VMs that correspond to gateway resources (section 3.1.5.4) and MUX resources (section 3.1.5.7).

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualServers/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.20.1.1	Create a new virtualServers resource or update an existing virtualServers resource.
GET	3.1.5.20.1.2	Get one virtualServers resource
GET (All)	3.1.5.20.1.3	List all virtualServers resources in the Network Controller
DELETE	3.1.5.20.1.4	Deletes a virtualServers resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
connections[]	Optional	Indicates an array of connections that specifies the information needed to connect to the specific device for the purposes of managing and controlling the device.
connections.credential		Indicates a reference to a credential resource that can be used to connect to the device for management purposes.
connections.credentialType		Indicates a reference to a credential resource that specifies the type of credential.
connections.managementAddresses		Indicates the management address used to connect to the server. This is in the form of an IPv4 IP address,

Element name	Type	Description
		an IPv6 IP address, a DNS name or a flat (NetBIOS) name.
gateway	Read-only	Indicates a reference to the gateway resource representing the gateway running on this virtualServer. This element will not be returned if there is not a gateway running on the virtual server.
loadbalancerMux	Read-only	Indicates a reference to the loadbalancerMux resource representing the Loadbalancer MUX running on this virtualServer. This element will not be returned if there is not a Loadbalancer MUX running on the virtual server.
server	Read-only	Indicates a reference to the servers resource this virtualServer is located on. The server reference is automatically created when a corresponding NIC arrival notification from the south bound is handled.
vmGuid	Required	Indicates the GUID of the VM object as found in the Hyper-V WMI.

3.1.5.20.1 HTTP Methods

3.1.5.20.1.1 PUT

This method creates a new **virtualServers** resource or updates an existing **virtualServers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualServers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.20.1.1.1 Request Body

The format for the request body for the **virtualServers PUT** method is as follows.

```

{
  "properties": {
    "connections": [
      {
        "managementAddresses": [
          "192.126.0.39"
        ],
        "credential": {
          "resourceRef": "/credentials/70a57404-967f-41fe-93a5-c309f601b068"
        },
        "credentialType": "X509Certificate"
      }
    ],
    "certificate": "this string must be replaced with valid certificate data",
    "vmGuid": "43613f44-ba4d-4540-8d60-d02d25464478"
  }
}

```

The JSON schema for the **virtualServers PUT** method is located in section 6.18.1.

3.1.5.20.1.1.2 Response Body

The format is the same as the format for the **GET virtualServers** response body (section 3.1.5.20.1.2.2). The JSON schema is located in section 6.18.2.

3.1.5.20.1.1.3 Processing Details

Creates a new **virtualServers** resource or updates an existing **virtualServers** resource.

3.1.5.20.1.2 GET

This method retrieves a **virtualServers** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualServers/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.20.1.2.1 Request Body

None.

3.1.5.20.1.2.2 Response Body

The format for the response body for the **virtualServers GET** is as follows.

```
{
  "resourceRef": "/virtualServers/ffbf0739-7de9-4175-8333-83687fc39653",
  "resourceId": "ffbf0739-7de9-4175-8333-83687fc39653",
  "etag": "W/\\"87b4a1b5-ccdc-42e1-b7bd-897c83340890\\"",
  "instanceId": "46306786-f927-42dc-8d12-9ea869497b26",
  "properties": {
    "provisioningState": "Succeeded",
    "connections": [
      {
        "managementAddresses": [
          "190.218.0.46",
          "foo"
        ],
        "credential": {
          "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894"
        },
        "credentialType": "X509Certificate"
      }
    ],
    "certificate":
    "MIICFjCCAYOgAwIBAgIQNHec33eFI59BpfQhRM5E5jAJBgUrDgMCHQUAMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NjAe
    Fw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBAcFTATBgNVBAMTDDE5MC4yMTguMC40NjCBnzANBmkqhkiG9w0BA
    QEFAAObjQAwwYkCgYEAq1XZ2AakK1/qpxnh6mZjGrza5KpoilcIkdJNHfD61bs7t0DrfZa3PPuWkMAaP9bMMBuN9QFeV
    e3jh0mLnpeAAAX49sNyY1cxtVKtBYaDd2fG1vJQMMce0WQvEDj+yCN/NDoHXtJ8Icr1thqmxlHerMHOOrP/PcA2SjZhWh7
    tzCOCaWEAAANrMGkwhQYDVR01BBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMCEgGAlUdAQRBMD+AEMprq6gkkM6zsBHNK13n
    JK+hGTAXMRUwEwYDVQDEwwxOTAuMjE4LjAuNDACEDR3nN93hSOfQaX0IUTOROYwCQYFKw4DAh0FAAObgQBW6Nj/tzmBW
    +KzmI2+YWiFex1PEVrM7ue7yVwLne1c+uH+5Eu9y1qg4DcgeIwxMYRk4AMXBqG6BBtTE9sID7seG2c01yHyn5ZH0SPkPi
    I6cnMuDLCC9YuUFEh7HN+9Vo1BjQJ7cHMqrke0nlpSuPLYSYQYSyPNE+jQPawypuDY2A==",
    "vmGuid": "051e441c-bd92-4c81-9e3d-167b2e357e60"
  },
  "markServerReadOnly": true,
  "tags": {
    "good": "bad",
    "full": "empty",
    "num": "0"
  }
}
```

The JSON schema for the **virtualServers GET** method is located in section 6.18.2.

3.1.5.20.1.2.3 Processing Details

Retrieves a **virtualServers** resource.

3.1.5.20.1.3 GET (All)

This method retrieves all **virtualServers** resources.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualServers
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

If no resources exist, the result is returned as an empty array.

3.1.5.20.1.3.1 Request Body

None.

3.1.5.20.1.3.2 Response Body

The format for the response body for the **virtualServers GET ALL** is as follows.

```
{
  "value": [
    {
      "resourceRef": "/virtualServers/0dc92d03-5642-420c-8c9a-09df9bf85909",
      "resourceId": "0dc92d03-5642-420c-8c9a-09df9bf85909",
      "etag": "W/\"d5710775-4394-4746-9d38-f8047812aa93\"",
      "instanceId": "5c6146da-97e7-48ce-8484-da3add066acb",
      "properties": {
        "provisioningState": "Succeeded",
        "connections": [
          {
            "managementAddresses": [
              "190.218.0.47"
            ],
            "credential": {
              "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894"
            },
            "credentialType": "X509Certificate"
          }
        ],
        "certificate":
          "MIICFjCCAYOgAwIBAgIQQkEUCk8XN7tDJNjwqcDYQjAJBGuRdGmCHQUAMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NzAeFw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NzCBnzANBghkiG9w0BAQEFAAOBjQAwYkCgYEAwSbVTki5HaelHMDef9ugNfqSGr5ZKcUA3nwh6SQV/pJBe41jfwVUyNhh7SVYv8TPQlB4tNmxfnYbKkWhlSRdKXJ+8DFJDODF9aFfuPUEbi8U9gZhbxtfurWkflhNukAx7vpmi9+mta+POB0F27wsmuFNXwlv/JjIz6SKtuv2cCAwEAAANrMGkwHQYDVR0lBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMEMGGA1UdAQRBMD+AEI0o2+hOxw9qeVual90muehGTAXMRUwEwYDVQQDEwwOTAuMjE4LjAuNDcEEeJBFAPFze7QyTScKnA2EiwCQYFKw4DAh0FAAOBgQBQDD/zN+T4u7UqkuOK90c1i7q99kgolonOv96pUBctKMaNaTPVKNXERii7cedvihGMwSWQCBJlJorpFzrfZ09D+tDok50EYSugx/O6niVcXah4qn+TAFzGsc/N4FpX+NGe0QsLj4YX9uKUKicjsmjfljTsX1TBwRtDOWiHkCwNlg==",
          "vmGuid": "44c1b231-b505-41b6-ac3d-5a3cddb82a5d"
        }
      },
      "markServerReadOnly": true
    },
    {
      "resourceRef": "/virtualServers/1801d562-54ad-43b4-957f-ce739b955c4b",
      "resourceId": "1801d562-54ad-43b4-957f-ce739b955c4b",
      "etag": "W/\"ec2e137a-4cd3-4ec7-ac94-39527249ea13\"",
      "instanceId": "e5331a63-8af1-43dc-bdc0-e60edf36dfa0",
      "properties": {
        "provisioningState": "Succeeded",
        "connections": [
          {
            "managementAddresses": [
              "190.218.0.45"
            ],
            "credential": {
              "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894"
            },
            "credentialType": "X509Certificate"
          }
        ]
      }
    }
  ]
}
```

```

    "certificate":
      "MIICFjCCAYOgAwIBAgIQNdW6IC0WzLROqrW5yBYYNjAJBgUrDgMCHQUAMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NTAe
      Fw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NTCBnzANBGlG9w0BA
      QEFAAOBjQAwgYkCgYEAzSgIbPMq9dWg2hUYBDQfKMuv3MBOCfvmm2WH0e2c0WRexdLR0Q0etIJrv9Gxbo5RW/U53y10ZA
      bgFB58NstEHf1o+8UAJvU+tH/g2/L5KOucYa4YzGOGftJKXkPJ85U1rtdxdfd+MU9K91oQWgHYElmftdq2LdQ33tfI1YFu
      T40MCaWEAAANrMGkwhQYDVR0lBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMCEgGAlUdaQRBMD+AEENepbWjRjtRvYGX3OTZ8
      /lShGTAXMRUwEwYDVQQDEwxxOTAuMjE4LjAuNDWwCCEwXuiAtFsy0Tqq1ucgWGDYwCQYFKw4DAh0FAA0BgQCFR7J+lXzkf
      pLEh6lmWXTquiZJiI2av9zR6M31EKdHYM20gia1UsMEFnxbuFamJ4TtXSM4juHfE9kxJ+K5JAhQ13eRA+z6VQwrWAUKU
      Jmg+PVuIAaatIGe+tpvRpzAEUMIxyPGIC/fTwmqUPDWIB0c0eYKnYDnQ0DvGGBdHCYwA==",
      "vmGuid": "4d258e6b-d058-4b51-ab94-d38af22f9592"
    },
    "markServerReadOnly": true
  },
  {
    "resourceRef": "/virtualServers/ffbf0739-7de9-4175-8333-83687fc39653",
    "resourceId": "ffbf0739-7de9-4175-8333-83687fc39653",
    "etag": "W/\"87b4alb5-ccdc-42e1-b7bd-897c83340890\"",
    "instanceId": "46306786-f927-42dc-8d12-9ea869497b26",
    "properties": {
      "provisioningState": "Succeeded",
      "connections": [
        {
          "managementAddresses": [
            "190.218.0.46"
          ],
          "credential": {
            "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894"
          },
          "credentialType": "X509Certificate"
        }
      ]
    },
    "certificate":
      "MIICFjCCAYOgAwIBAgIQNHec33eFI59BpfQhRM5E5jAJBgUrDgMCHQUAMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NjAe
      Fw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NjCBnzANBGlG9w0BA
      QEFAAOBjQAwgYkCgYEAq1XZZ2AakK1/qpxnh6mZjGrza5KpoilcIkDjNHfD61bs7t0DrfZa3PPuWkMAaP9bMMbUn9QFeV
      e3jh0mLnpeAAAX49sNyY1cxtVKtBYaDd2fG1vJQMMce0WQvEDj+yCN/ND0HXtJ8Icr1thgmx1HerMHOrP/PcA2SJZhWh7
      tzC0CAwEAANrMGkwhQYDVR0lBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMCEgGAlUdaQRBMD+AEmpqrq6gkkm6zsbHnk13n
      JK+hGTAXMRUwEwYDVQQDEwxxOTAuMjE4LjAuNDWwCCEwXuiAtFsy0Tqq1ucgWGDYwCQYFKw4DAh0FAA0BgQBW6Nj/tzmBW
      +KzmI2+YWiFex1PEVrM7ue7yVwLne1c+uH+5Eu9y1qg4DcgeIwxMYRk4AMXBqG6BBtTE9sID7seG2c01yHyn5ZH0SPkPi
      I6cnMuDLCC9YuUFEh7HN+9VolBjQJ7cHMrqkeOnlpSuPLYSYQYSyPNE+jQPawypuDY2A==",
      "vmGuid": "051e441c-bd92-4c81-9e3d-167b2e357e60"
    },
    "markServerReadOnly": true
  }
],
"nextLink": ""
}

```

The JSON schema for the **virtualServers GET ALL** method is located in section 6.18.3.

3.1.5.20.1.3.3 Processing Details

Retrieves all **virtualServers** resources.

3.1.5.20.1.4 DELETE

This method deletes a **virtualServer** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualServer/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
202 (Accept)
204 (No Content)
412 (Precondition Failed)

3.1.5.20.1.4.1 Request Body

None.

3.1.5.20.1.4.2 Response Body

None.

3.1.5.20.1.4.3 Processing Details

Deletes a **virtualServers** resource.

3.1.5.21 Diagnostics

3.1.5.21.1 Diagnostics ConnectivityCheck

The **ConnectivityCheck** resource initiates a diagnostics action to check data path connectivity between two endpoints.

It is invoked through the following URI.

```
https://<url>/networking/v1/diagnostics/ConnectivityCheck
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.21.1.1.1	Initiates a diagnostics action to check data path connectivity between two endpoints.

The following property elements are valid.

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
SenderIdAddress	Required	IP Address of the Sender endpoint from which the diagnostics needs to be initiated.
ReceiverIpAddress	Required	IP Address of the Receiver endpoint to which the

Element name	Type	Description
		diagnostics needs to be initiated.
SenderVirtualNetwork	Optional	Virtual Network reference of the Sender endpoint from which the diagnostics needs to be initiated.
ReceiverVirtualNetwork	Optional	Virtual Network reference of the Receiver endpoint to which the diagnostics needs to be initiated.
SenderLogicalNetwork	Optional	Logical Network reference of the Sender endpoint from which the diagnostics needs to be initiated.
ReceiverLogicalNetwork	Optional	Logical Network reference of the Receiver endpoint to which the diagnostics needs to be initiated.
Protocol	Required	Protocol to be used for diagnostics.
IcmpProtocolConfig	Optional	ICMP Protocol specific configuration.
IcmpProtocolConfig.Length	Optional	Length of the ICMP packet.
IcmpProtocolConfig.SequenceNumber	Optional	Sequence Number of the ICMP packet.
OperationId	Read-only	Operation ID for this diagnostics operation.
ConnectivityCheckResult	Read-only	Resource Reference of the result resource.
SubmitTime	Read-only	Submit Time of this diagnostics operation.

3.1.5.21.1.1 HTTP Methods

3.1.5.21.1.1.1 PUT

Initiates a diagnostics action to check data path connectivity between two endpoints.

The URI for this resource is as follows.

```
https://<url>/networking/v1/diagnostics/ConnectivityCheck
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3 .

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.21.1.1.1.1 Request Body

The format for the **connectivityCheck PUT** request body is as follows.

```
{
  "properties": {
    "senderVirtualNetwork": {
      "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
    },
    "receiverVirtualNetwork": {
      "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
    },
    "senderIpAddress": "13.168.100.21",
    "receiverIpAddress": "13.168.100.22",
    "disableTracing": false,
    "protocol": "Icmp"
  }
}
```

The JSON schema for the **connectivityCheck PUT** method request body is located in section 6.19.1.1.

3.1.5.21.1.1.1.2 Response Body

The format for the **connectivityCheck PUT** response body is as follows.

```
{
  "resourceRef": "/diagnostics/connectivityCheck/Action",
  "resourceId": "Action",
  "etag": "W/\"66a5e77a-3c60-46e6-a9d2-4df34c2636fd\"",
  "instanceId": "178fe70f-c00d-4784-82ac-266e9758d345",
  "properties": {
    "provisioningState": "Updating",
    "senderVirtualNetwork": {
      "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
    },
    "receiverVirtualNetwork": {
      "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
    },
    "senderIpAddress": "13.168.100.21",
    "receiverIpAddress": "13.168.100.22",
    "protocol": "Icmp",
    "operationId": "e5c6e548-9a81-4493-9cad-47e06f830b69",
    "connectivityCheckResult": {
      "resourceRef": "/diagnostics/connectivityCheckResults/e5c6e548-9a81-4493-9cad-47e06f830b69"
    },
    "submitTime": "2016-06-21T03:05:34.2067482Z"
  }
}
```

The JSON schema for the **connectivityCheck PUT** method response body is located in section 6.19.1.2

3.1.5.21.1.1.1.3 Processing Details

Initiates a diagnostics action to check data path connectivity between two endpoints and returns the operationId to query the status using the **GET** operation on Diagnostics ConnectivityCheckResults in section 3.1.5.21.2.1.1.

3.1.5.21.2 Diagnostics ConnectivityCheckResults

The **ConnectivityCheckResults** resource queries the result of a previously initiated diagnostics action between two endpoints.

It is invoked through the following URI.

`https://<url>/networking/v1/diagnostics/ConnectivityCheckResults/{resourceId}`

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
GET	3.1.5.21.2.1.1	Retrieves the result of the previously initiated diagnostics operation.
GET (All)	3.1.5.21.2.1.2	Lists the result of previously initiated diagnostics operation.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
SenderIdAddress	Read-only	IP Address of the Sender endpoint from which the diagnostics needs to be initiated.
ReceiverIpAddress	Read-only	IP Address of the Receiver endpoint to which the diagnostics needs to be initiated.
SenderVirtualNetwork	Read-only	Virtual Network reference of the Sender endpoint from which the diagnostics needs to be initiated.
ReceiverVirtualNetwork	Read-only	Virtual Network reference of the Receiver endpoint to which the diagnostics needs to be initiated.
SenderLogicalNetwork	Read-only	Logical Network reference of the Sender endpoint from which the diagnostics needs to be initiated.
ReceiverLogicalNetwork	Read-only	Logical Network reference of the Receiver endpoint to which the diagnostics needs to be initiated.
Protocol	Read-only	Protocol to be used for diagnostics.
IcmpProtocolConfig	Read-only	ICMP Protocol specific configuration.
IcmpProtocolConfig.Length	Read-only	Length of the ICMP packet.
IcmpProtocolConfig.SequenceNumber	Read-only	Sequence Number of the ICMP packet.
OperationId	Read-only	Operation ID for this diagnostics operation.
SubmitTime	Read-only	Submit Time of this diagnostics operation.
Result	Read-only	Result output of this diagnostics operation.
Result.Status	Read-only	Status of the diagnostics operation.
Result.RoundTripTimeMSec	Read-only	Round trip time in msec.
Result.ErrorMessage	Read-only	Error occurred while executing the operation, if any.
Result.NodeOutput	Read-only	Diagnostics Trace Output.
Result.NodeOutput.NodeType	Read-only	Type of the node: sender, receiver, or transit.

Element name	Type	Description
Result.NodeOutput.NodeSequenceNumber	Read-only	Sequence number of the node in the data path.
Result.NodeOutput.TraceOutput	Read-only	Trace Output from the node.

3.1.5.21.2.1 HTTP Methods

3.1.5.21.2.1.1 GET

Retrieves the status of diagnostics connectivity check action.

The URI for this resource is as follows.

```
https://<url>/networking/v1/diagnostics/ConnectivityCheckResults/{operationId}
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.21.2.1.1.1 Request Body

None.

3.1.5.21.2.1.1.2 Response Body

The format for the response body for the **Diagnostics ConnectivityCheckResults GET** method is as follows.

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for ConnectivityCheck",

  "definitions": {
    "networkReference": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  }
},
```



```

"properties": {
  "properties": {
    "type": "object",
    "properties": {
      "senderLogicalNetwork": { "$ref": "#/definitions/networkReference" },
      "receiverLogicalNetwork": { "$ref": "#/definitions/networkReference" },
      "senderVirtualNetwork": { "$ref": "#/definitions/networkReference" },
      "receiverVirtualNetwork": { "$ref": "#/definitions/networkReference" },
      "senderIpAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "receiverIpAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "disableTracing": {
        "type": "boolean",
        "default": false
      },
      "protocol": {
        "type": "string",
        "enum": [ "Icmp", "Tcp", "Udp" ],
        "default": "Icmp"
      }
    },
    "required": [
      "senderIpAddress",
      "receiverIpAddress"
    ]
  }
},
"required": [
  "properties"
]
}

```

The JSON schema for the **Diagnostics ConnectivityCheckResults GET** method is located in section 6.19.2.1.

3.1.5.21.2.1.1.3 Processing Details

None.

3.1.5.21.2.1.2 GET (All)

Retrieves the status of all available diagnostics connectivity check action.

The URI for this resource is as follows.

```
https://<url>/networking/v1/diagnostics/ConnectivityCheckResults
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

3.1.5.21.2.1.2.1 Request Body

None.

3.1.5.21.2.1.2.2 Response Body

The format for the response body for the **Diagnostics ConnectivityCheckResults GET ALL** resource is as follows.

```
{
  "value": [
    {
      "resourceRef": "/diagnostics/connectivityCheckResults/6f637294-e71c-4f61-b563-d002dadb5111",
      "resourceId": "6f637294-e71c-4f61-b563-d002dadb5111",
      "etag": "W/\"d8364719-f6cf-4f5a-af45-7eb7b5088316\"",
      "instanceId": "fd06886f-1659-409d-8f48-82020cf9a6fe",
      "properties": {
        "provisioningState": "Succeeded",
        "senderVirtualNetwork": {
          "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
        },
        "receiverVirtualNetwork": {
          "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
        },
        "senderIpAddress": "13.168.100.21",
        "receiverIpAddress": "13.168.100.22",
        "protocol": "Icmp",
        "operationId": "6f637294-e71c-4f61-b563-d002dadb5111",
        "submitTime": "2016-06-21T05:10:58.7674039Z",
        "result": {
          "status": "Pending",
          "roundTripTimeMSec": 0
        }
      }
    },
    {
      "resourceRef": "/diagnostics/connectivityCheckResults/7ba38ad6-19a2-4f11-b1ec-5c7fc03ba6a8",
      "resourceId": "7ba38ad6-19a2-4f11-b1ec-5c7fc03ba6a8",
      "etag": "W/\"2b815690-115e-4a8f-b257-38fa87e3eb0f\"",
      "instanceId": "ca18a390-42a0-4298-a4dc-72b5440f59da",
      "properties": {
        "provisioningState": "Succeeded",
        "senderVirtualNetwork": {
          "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
        },
        "receiverVirtualNetwork": {
          "resourceRef": "/virtualNetworks/fcfc99f9-50ce-4644-8a47-a23711c3b704"
        },
        "senderIpAddress": "13.168.100.21",
        "receiverIpAddress": "13.168.100.22",
        "protocol": "Icmp",
        "operationId": "7ba38ad6-19a2-4f11-b1ec-5c7fc03ba6a8",
        "submitTime": "2016-06-21T05:10:42.7213297Z",
        "result": {
          "status": "InProgress",
          "roundTripTimeMSec": 0
        }
      }
    }
  ]
}
```

```

    }
  ],
  "nextLink": ""
}

```

The JSON schema for the **Diagnostics ConnectivityCheckResults GET ALL** method is located in section 6.19.2.2.

3.1.5.21.2.1.2.3 Processing Details

None.

3.1.5.21.3 Diagnostics SlbState

The **SlbState** resource initiates a diagnostics action to collect internal state for the software load-balancer.

It is invoked through the following URI.

```
https://<url>/networking/v1/diagnostics/SlbState
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.21.3.1.1	Initiates a diagnostics action to check data path connectivity between two endpoints.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
OperationId	Read-only	Operation ID for this diagnostics operation.
ConnectivityCheckResult	Read-only	Resource Reference of the result resource.
SubmitTime	Read-only	Submit Time of this diagnostics operation.

3.1.5.21.3.1 HTTP Methods

3.1.5.21.3.1.1 PUT

Initiates a diagnostics action to collect internal state for the software load-balancer.

The URI for this resource is as follows.

```
https://<url>/networking/v1/diagnostics/SlbState
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3 .

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.21.3.1.1.1 Request Body

The **slbState PUT** request body is empty JSON.

```
{}
```

3.1.5.21.3.1.1.2 Response Body

The **slbState PUT** response body is as follows.

```
{
  "resourceRef": "/diagnostics/slbState/Action",
  "resourceId": "Action",
  "etag": "W/\"0ed77291-6ae3-473d-8761-c1bb71369210\"",
  "instanceId": "0e85c90a-2f1f-49e9-9b0c-c24f721846fe",
  "properties": {
    "provisioningState": "Updating",
    "operationId": "f6b8c92c-fd23-4d3e-bdaf-a8375d78a1b4",
    "slbStateResult": {
      "resourceRef": "/diagnostics/slbStateResults/f6b8c92c-fd23-4d3e-bdaf-a8375d78a1b4"
    },
    "submitTime": "2016-06-21T05:00:46.5387407Z"
  }
}
```

The JSON schema for the **slbState PUT** method is located in section 6.19.3.1.

3.1.5.21.3.1.1.3 Processing Details

Initiates a diagnostics action to collect internal state for the software load-balancer and returns the **operationId** to query the status using the **GET** operation on Diagnostics SlbStateResults in section 3.1.5.21.4.1.1.

3.1.5.21.4 Diagnostics SlbStateResults

The **SlbStateResults** resource queries the result of a previously initiated diagnostics **slbState** action.

It is invoked through the following URI.

```
https://<url>/networking/v1/diagnostics/SlbStateResults/{resourceId}
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
GET	3.1.5.21.4.1.1.1	Retrieves the result of the previously initiated diagnostics operation
GET (All)	3.1.5.21.4.1.1.2	Lists the result of previously initiated diagnostics operation

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
OperationId	Read-only	Operation ID for this diagnostics operation.
SubmitTime	Read-only	Submit Time of this diagnostics operation.
Status	Read-only	Status of the diagnostics operation.
Output	Read-only	Result output of this diagnostics operation. The output is hierarchical with data group as level 1, data section as level 2 and data unit as level 3.
Output.DataGroups	Read-only	Result output group.
Output.DataGroups.Name	Read-only	Result output group name.
Output.DataGroups.Description	Read-only	Result output group description.
Output.DataGroups.DataSections	Read-only	Result output section (level 2).
Output.DataGroups.DataSections.Name	Read-only	Result output section name.
Output.DataGroups.DataSections.Description	Read-only	Result output section description.
Output.DataGroups.DataSections.DataRetrievalFailed	Read-only	Flag to indicate if the data section retrieval failed.
Output.DataGroups.DataSections.DataUnits	Read-only	Result output data unit (level 3).
Output.DataGroups.DataSections.DataUnits.Value	Read-only	Result output data unit value.

3.1.5.21.4.1 HTTP Methods

3.1.5.21.4.1.1 GET

Retrieves the status of the **diagnostics slbState** action.

The URI for this resource is as follows.

```
https://<url>/networking/v1/diagnostics/SlbStateResults/{operationId}
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.21.4.1.1.1 Request Body

None.

3.1.5.21.4.1.1.2 Response Body

The format for the response body for the **Diagnostics SlbStateResults GET** method is as follows.

```
{
  "resourceRef": "/diagnostics/slbStateResults/1e40106e-61e9-40ca-892d-6fdefd369249",
  "resourceId": "1e40106e-61e9-40ca-892d-6fdefd369249",
  "etag": "W/\"38d22344-97f3-4284-bf01-e6b13ce121de\"",
  "instanceId": "25c6fa83-e890-4cd4-a808-9cb1aab94d8d",
  "properties": {
    "provisioningState": "Succeeded",
    "submitTime": "2016-06-22T00:01:31.2015235Z",
    "status": "Success",
    "output": {
      "dataGroups": [
        {
          "name": "Fabric",
          "description": "Fabric Slb State",
          "dataSections": [
            {
              "name": "SlbmVips",
              "description": "Slbm Vips",
              "dataRetrievalFailed": false,
              "dataUnits": [
                {
                  "value": [
                    "\"21.0.0.21\""
                  ]
                }
              ]
            },
            {
              "name": "RouterConfiguration",
              "description": "Router Configuration",
              "dataRetrievalFailed": false,
              "dataUnits": [
                {
                  "value": [
                    "{\r\n  \"goalStateId\": \"\", \r\n  \"routerID\": \"BGPGateway-0\", \r\n  \"routerIP\": \"192.216.0.1\", \r\n  \"routerAS\": 1, \r\n  \"bgpSharpAS\": 2\r\n}"
                  ]
                }
              ]
            }
          ]
        }
      ],
      {
        "name": "Tenant",
        "description": "Tenant Slb State",
        "dataSections": [
          {
            "name": "VipConsolidatedState",
            "description": "Vip Consolidated State",
            "dataRetrievalFailed": false,

```

```

    "dataUnits": [
      {
        "name": "21.0.0.21",
        "value": [
          "\r\nProgramming and Connectivity state for VipAddress:
21.0.0.21\r\n=====
SLBM:\r\n\r\nCurrentStatus                : Achieved\r\n\r\nEndpointStateAchieved
: True\r\n\r\nSnatStateAchieved                : True\r\n\r\nRoutingStateAchieved
: True\r\n\r\nNumPendingVipEndpoints            : 0\r\n\r\nCurrentStateId
: 90dc2516-0b52-4ada-a75c-832ede7c3257\r\n\r\nCurrentOwner
: 192.216.0.23\r\n\r\nGoalStateId                : 90dc2516-0b52-4ada-a75c-
832ede7c3257\r\n\r\nGoalStateReceivedTimeStamp    : 6/21/2016 8:29:12
PM\r\n\r\nLastStateChangeTimeStamp            : 6/21/2016 10:20:25 PM\r\n\r\nErrorMessage
: \r\n\r\nProgrammingTime
: 01:51:12.8335361\r\n\r\nEndpointStateProgrammingTime
: 00:00:00\r\n\r\nSnatStateProgrammingTime
: 00:00:00.0468756\r\n\r\nRoutingStateProgrammingTime
: 00:00:00.0156269\r\n\r\n\r\nVip
Route States                : \r\n\r\n\r\nPrefixRouteStateInfo
: \r\n\r\nPrefix                : 21.0.0.21-21.0.0.21\r\n\r\nCidr
: 21.0.0.21/32\r\n\r\nIsEmpty                : False\r\n\r\nIsRoutingEnabled
: True\r\n\r\nIsRouteReady                : True\r\n\r\nIsRoutePending
: False\r\n\r\nIsRouteAchieved            : True\r\n\r\nIsDripEnabled
: False\r\n\r\nDripNextHop                : \r\n\r\nAnnouncedPrefixes
: 1\r\n\r\nAnnouncedPrefixesAggregatedRanges
: \r\n\r\n
: 21.0.0.21-21.0.0.21\r\n\r\nNotYetAnnouncedPrefixesAggregatedRanges
: \r\n\r\n\r\nVipEndpoints:
: \r\n\r\nVipEndpoint                : Tcp:21.0.0.21:8570\r\n\r\nCurrentStatus
: Achieved\r\n\r\nLastStateChangeTimeStamp
: 6/21/2016 10:20:25
PM\r\n\r\nErrorMessage                : \r\n\r\n\r\nDipEndpoints:
: \r\n\r\nDipEndpoint                : [DipEndpoint =
192.216.0.23:8570@Host=1.1.1.1, AdapterId=A29EBC4BBFD0, (not VNet), InService, NA, ,
Type=IPinIP, Info=0|192.216.0.23|A29EBC4BBFD0]\r\n\r\nGoalState
: ConfiguredOnHostAndMuxPool\r\n\r\nAchieved
: True\r\n\r\nAchievedOnHost                : True\r\n\r\nAchievedOnMux
: True\r\n\r\nDipHealthProbeEnabled            : False\r\n\r\nDipMonitoredState
: NA\r\n\r\nErrorMessage                : \r\n\r\n\r\n\r\n\r\nVipEndpoint
: Tcp:21.0.0.21:49001\r\n\r\nCurrentStatus
: Achieved\r\n\r\nLastStateChangeTimeStamp
: 6/21/2016 10:20:25 PM\r\n\r\nErrorMessage
: \r\n\r\n\r\nDipEndpoints:
: \r\n\r\n\r\nDipEndpoint
: [DipEndpoint = 192.216.0.23:49001@Host=1.1.1.1, AdapterId=A29EBC4BBFD0, (not VNet),
InService, NA, , Type=IPinIP, Info=0|192.216.0.23|A29EBC4BBFD0]\r\n\r\nGoalState
: ConfiguredOnHostAndMuxPool\r\n\r\nAchieved
: True\r\n\r\nAchievedOnHost                : True\r\n\r\nAchievedOnMux
: True\r\n\r\nDipHealthProbeEnabled            : False\r\n\r\nDipMonitoredState
: NA\r\n\r\nErrorMessage                : \r\n\r\n\r\n\r\n\r\nSTATE ON MUXs:\r\n\r\n\r\nMUX
info:\r\n\r\nMuxId                : b639057c-9027-445a-8e34-
9d503cf6a344\r\n\r\nMux IPaddress
: 192.216.0.34\r\n\r\nMuxCurrentState
: Up\r\n\r\nIsMuxAlive                : True\r\n\r\nCurrentStateOfMuxInSlbm
: Healthy\r\n\r\nLastIncubationTime
: 6/21/2016 8:36:04
PM\r\n\r\n\r\nVipEndpoint                : Tcp:21.0.0.21:8570\r\n\r\nDipMap:\r\n\r\nDipInfo
: (Address=192.216.0.23, Reachability=Type=IPinIP,
Info=0|192.216.0.23|2AE9CBB4FB0D)\r\n\r\n\r\n\r\nVipEndpoint
:
Tcp:21.0.0.21:49001\r\n\r\nDipMap:\r\n\r\nDipInfo
:
(Address=192.216.0.23, Reachability=Type=IPinIP,
Info=0|192.216.0.23|2AE9CBB4FB0D)\r\n\r\n\r\n\r\nPRUNED HOSTS (Hosts containing any state for
this VIP)\r\n\r\n\r\n\r\nSTATE ON HOSTs:\r\n\r\n\r\n\r\n\r\nOutbound Rules[HOSTs
state]:\r\n\r\n\r\n\r\nOutboundGoalStateKey
:
Tcp:21.0.0.21:0\r\n\r\n\r\n\r\nOutboundGoalStateKey
:
Udp:21.0.0.21:0\r\n\r\n\r\n\r\n\r\nVIP PROBE STATE:\r\n\r\n\r\n\r\nVip Probe not enabled
\r\n\r\n\r\n\r\nSNAT Allocations[IMOS state] for ProtocolEndpoint: Tcp:21.0.0.21:0\r\n\r\n\r\n\r\n\r\nSNAT
Allocations[IMOS state] for ProtocolEndpoint: Udp:21.0.0.21:0\r\n\r\n\r\n\r\n\r\nSNAT Allocations[MUX
state] for ProtocolEndpoint: Tcp:21.0.0.21:0\r\n\r\n\r\n\r\nMux
: 192.216.0.34\r\n\r\nVipEndpoint                : DipAddress\r\n\r\n\r\n\r\n\r\nSNAT
Allocations[MUX state] for ProtocolEndpoint: Udp:21.0.0.21:0\r\n\r\n\r\n\r\nMux
: 192.216.0.34\r\n\r\nVipEndpoint                : DipAddress\r\n\r\n\r\n\r\n\r\nSNAT
Allocations[HOSTs state] for ProtocolEndpoint: Tcp:21.0.0.21:0\r\n\r\n\r\n\r\n\r\nSNAT
Allocations[HOSTs state] for ProtocolEndpoint: Udp:21.0.0.21:0\r\n\r\n\r\n\r\n\r\nPROBE STATE ON
SLBM:\r\n\r\n\r\nProbeId                State Delivery DeliveryTime
LastStateUpdateTime                ProbeDownIgnored\r\n\r\n\r\n\r\nPROBE STATE ON HOSTs:\r\n\r\n\r\nProbeId
State ProbeFlaps \r\n"
        ]
      }
    ]
  }

```



```

{
  "name": "Fabric",
  "description": "Fabric Slb State",
  "dataSections": [
    {
      "name": "SlbmVips",
      "description": "Slbm Vips",
      "dataRetrievalFailed": false,
      "dataUnits": [
        {
          "value": []
        }
      ]
    },
    {
      "name": "MuxState",
      "description": "Mux State",
      "dataRetrievalFailed": false,
      "dataUnits": [
        {
          "value": []
        }
      ]
    },
    {
      "name": "RouterConfiguration",
      "description": "Router Configuration",
      "dataRetrievalFailed": false,
      "dataUnits": [
        {
          "value": []
        }
      ]
    },
    {
      "name": "ConnectedHostInfo",
      "description": "Connected Host Info",
      "dataRetrievalFailed": false,
      "dataUnits": [
        {
          "value": []
        }
      ]
    },
    {
      "name": "VipRanges",
      "description": "Vip Ranges",
      "dataRetrievalFailed": false,
      "dataUnits": [
        {
          "value": []
        },
        {
          "value": []
        }
      ]
    },
    {
      "name": "MuxRoutes",
      "description": "Mux Routes",
      "dataRetrievalFailed": false,
      "dataUnits": []
    }
  ]
},
{
  "name": "Tenant",
  "description": "Tenant Slb State",
  "dataSections": [
    {

```

```

        "name": "VipConsolidatedState",
        "description": "Vip Consolidated State",
        "dataRetrievalFailed": false,
        "dataUnits": []
      }
    ]
  },
  "nextLink": ""
}

```

The JSON schema for the **Diagnostics SlibStateResults GET ALL** method is located in section 6.19.4.2.

3.1.5.21.4.1.2.3 Processing Details

None.

3.1.5.21.5 Diagnostics NetworkControllerState

The **NetworkControllerState** resource is used to create a dump of internal server data that can be useful for troubleshooting. The format and location of the saved data is implementation-specific.

It is invoked through the following URI.

```
https://<url>/networking/v1/diagnostics/networkcontrollerstate
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.21.5.1.1	The server will generate a dump of internal data.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
resourceRef	Read-only	Must be "/networkControllerState/NetworkControllerState".
resourceId	Read-only	Must be "NetworkControllerState".
instanceId	Read-only	Specified in Common JSON Elements, section 2.2.2.
Properties. provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
properties. lastQueryTimeStamp	Read-only	Timestamp of the last query operation in format MMddyyyyHHmmssff.

3.1.5.21.5.1 HTTP Methods

3.1.5.21.5.1.1 PUT

The URI for this resource is as follows.

```
https://<url>/networking/v1/diagnostics/diagnostics/networkcontrollerstate
```

There are no parameters for this operation.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.21.5.1.1.1 Request Body

The body MUST be '{"properties": { }}'.

3.1.5.21.5.1.1.2 Response Body

The format for the response body for the **Diagnostics NetworkControllerState PUT** method is as follows.

```
{
  "resourceRef": "/networkControllerState/NetworkControllerState",
  "resourceId": "NetworkControllerState",
  "etag": "W/\"bc673415-9256-429d-869c-15dc55614616\"",
  "instanceId": "87dabccd-c2db-472e-af07-af92d7ce0283",
  "properties": {
    "provisioningState": "Updating",
    "lastQueryTimeStamp": "06152016163859310"
  }
}
```

The JSON schema for the **Diagnostics NetworkControllerState PUT** method is located in section 6.19.5.1.

3.1.5.21.5.1.1.3 Processing Details

None.

3.1.5.22 networkControllerStatistics

The **NetworkControllerStatistics** resource provides a means to get usage and health information for a few resources:

- Health for **virtualNetworks**, **gateways**, and **loadBalancerMux**.
- Usage for **publicIPAddresses**, loadBalancer backend IPs and **macPools**.

It is invoked through the following URI.

https://<URL>/networking/v1/monitoring/NetworkControllerStatistics

url: the address of the computer on which the Network Controller is running.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
GET	3.1.5.23.1.1	Map one instance ID to resource ID.

The following property elements are valid:

Element name	Type	Description
resourceRef	Read-only	Specified in Common JSON Elements, section 2.2.2. Must be "/monitoring/NetworkControllerStatistics".
instanceId	Read-only	Specified in Common JSON Elements, section 2.2.2.
Properties. provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
Properties. healthStatistics	Read-only	Array of healthStatisticsItem
Properties. usageStatistics	Read-only	Array of usageStatisticsItem

healthStatisticsItem

Element name	Type	Description
resourceType	Read-only	Can be "VirtualNetwork", "Gateway" or "LoadBalancerMux" These correspond to the top-level resources virtualNetworks, Gateways, or LoadBalancerMux.
totalResourceCount	Read-only	Total count of REST resources of the type of resource specified by resourceType.
healthyResourceCount	Read-only	Count of such resources in healthy state.
errorResourceCount	Read-only	Count of such resources in an error state.
warningResourceCount	Read-only	Count of such resources in a warning state.
healthUnknownCount	Read-only	Count of such resources for which the health cannot be assessed.

usageStatisticsItem

Element name	Type	Description
resourceType	Read-only	Can be "PublicIPUtilization", "BackendIPUtilization" or "MacPoolUtilization" corresponding to publicIpAddresses resource, IPs in backendAddressPools , or macPools resource.
totalResourceCount	Read-only	Total count of REST resources of the type of resource specified by resourceType .
inUseResourceCount	Read-only	Count of such resources that are in use.

3.1.5.22.1 HTTP Methods

3.1.5.22.1.1 GET

This method retrieves health and usage information.

It is invoked through the following URI.

```
https://<url>/networking/v1/monitoring/networkControllerStatistics
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.22.1.1.1 Request Body

None.

3.1.5.22.1.1.2 Response Body

The format for the response body for the **monitoring/networkControllerStatistics GET** method is as follows:

```
{
  "resourceRef": "/monitoring/networkControllerStatistics/",
  "instanceId": "00000000-0000-0000-0000-000000000000",
  "properties": {
    "provisioningState": "Succeeded",
    "healthStatistics": [
      {
        "resourceType": "VirtualNetwork",
        "totalResourceCount": 1,
        "healthyResourceCount": 0,
        "errorResourceCount": 0,
        "warningResourceCount": 0,
        "healthUnknownCount": 1
      },
      {
        "resourceType": "Gateway",
        "totalResourceCount": 0,
        "healthyResourceCount": 0,
        "errorResourceCount": 0,
        "warningResourceCount": 0,
        "healthUnknownCount": 0
      },
      {
        "resourceType": "LoadBalancerMux",
        "totalResourceCount": 0,
        "healthyResourceCount": 0,

```

```

        "errorResourceCount": 0,
        "warningResourceCount": 0,
        "healthUnknownCount": 0
    }
],
"usageStatistics": [
    {
        "resourceType": "PublicIPUtilization",
        "totalResourceCount": 0,
        "inUseResourceCount": 0
    },
    {
        "resourceType": "BackendIPUtilization",
        "totalResourceCount": 65436,
        "inUseResourceCount": 2
    },
    {
        "resourceType": "MacPoolUtilization",
        "totalResourceCount": 65536,
        "inUseResourceCount": 4
    }
]
}
}

```

The JSON schema for the **monitoring/networkControllerStatistics GET** method is located in section 6.20.1.

3.1.5.22.1.1.3 Processing Details

This method retrieves a health and usage statistics.

3.1.5.23 internalResourceInstances

The **internalResourceInstances** resource provides a means to map instance IDs to resource IDs or to get all the mappings. It is invoked through the following URI.

```
https://<URL>/networking/v1/internalResourceInstances/{instanceID}
```

url: the address of the computer on which the Network Controller is running.

instanceId: the identifier for the specific resource within the resource type. See section 2.2.2, common JSON Elements.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
GET	3.1.5.23.1.1	Map one instance ID to resource ID.
GET (All)	3.1.5.23.1.2	List all the mappings.

The following property elements are valid:

Element name	Type	Description
resourceRef	Read-only	Specified in Common JSON Elements, section 2.2.2. Reference relative to internalResourceInstances.
resourceId	Read-only	Specified in Common JSON Elements, section 2.2.2.

Element name	Type	Description
instanceId	Read-only	Specified in Common JSON Elements, section 2.2.2.
Properties.provisioningState	Read-only	
Properties.resourceReference	Read-only	Actual resource reference

3.1.5.23.1 HTTP Methods

3.1.5.23.1.1 GET

This method retrieves an instance ID to resource ID mapping.

It is invoked through the following URI.

```
https://<url>/networking/v1/internalResourceInstances/{instanceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.23.1.1.1 Request Body

None.

3.1.5.23.1.1.2 Response Body

The format for the response body for the **internalResourceInstances GET** method is as follows:

```
{
  "resourceRef": "/internalResourceInstances/feaceea7-d230-43a8-8432-dc3ecb82c813",
  "resourceId": "feaceea7-d230-43a8-8432-dc3ecb82c813",
  "instanceId": "866a1b81-e241-41bc-a424-aab75fff9ffb",
  "properties": {
    "provisioningState": "Succeeded",
    "resourceReference": "/loadBalancers/d7574599-9ac8-451b-aadf-
bbd3b5d9d311/outboundNatRules/57140aa8-d782-453d-98bc-1df9fd264e50"
  }
}
```

The JSON schema for the **internalResourceInstances GET** method is located in section 6.21.1.

3.1.5.23.1.1.3 Processing Details

This method retrieves an instance ID to resource ID mapping.

3.1.5.23.1.2 GET (All)

This method retrieves all instance ID to resource ID mappings.

It is invoked through the following URI.

```
https://<url>/networking/v1/internalResourceInstances/
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.23.1.2.1 Request Body

None.

3.1.5.23.1.2.2 Response Body

The format for the response body for the **internalResourceInstances GET ALL** method is as follows.

```
{
  "value": [
    {
      "resourceRef": "/internalResourceInstances/feaceea7-d230-43a8-8432-dc3ecb82c813",
      "resourceId": "feaceea7-d230-43a8-8432-dc3ecb82c813",
      "instanceId": "8666alb81-e241-41bc-a424-aab75ffff9ffb",
      "properties": {
        "provisioningState": "Succeeded",
        "resourceReference": "/loadBalancers/d7574599-9ac8-451b-aadf-
bbd3b5d9d311/outboundNatRules/57140aa8-d782-453d-98bc-1df9fd264e50"
      }
    },
    {
      "resourceRef": "/internalResourceInstances/ffa98c72-fffa-4523-92db-a37bf151074a",
      "resourceId": "ffa98c72-fffa-4523-92db-a37bf151074a",
      "instanceId": "9c5f9ab7-358e-4465-ac0e-ec532761768a",
      "properties": {
        "provisioningState": "Succeeded",
        "resourceReference": "/networkInterfaces/2abde95f-ed76-4245-bcf4-27da32e3a757"
      }
    }
  ],
  "nextLink": ""
}
```


The JSON schema for the **internalResourceInstances GET ALL** method is located in section 6.21.2.

3.1.5.23.1.2.3 Processing Details

This method retrieves all instance ID to resource ID mappings.

3.1.5.24 iDnsServer

The **iDnsServer** resource contains the configuration details for the DNS server in the internal DNS service.

The URI for the **iDnsServer** resource is as follows:

```
https://<url>/networking/v1/iDnsServer/configuration
```

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	section 3.1.5.24.1.1	Create the iDnsServer resource or update the existing iDnsServer resource.
GET	section 3.1.5.24.1.2	Get the iDnsServer resource.

The following property elements are valid.

Element name	Type	Description
Etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
Connections	Required	Indicates a reference to collection of all the connections on the iDNS Server of the deployment.
Zone	Required	Indicates the DNS zone under which the tenant host DNS resource records as described in [RFC1034] section 3.6 are stored.

3.1.5.24.1 HTTP Methods

3.1.5.24.1.1 PUT

This method creates the **iDnsServer** resource or updates the existing **iDnsServer** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/iDnsServer/configuration
```

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes:

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.24.1.1.1 Request Body

The format for the request body for the **iDnsServer PUT** method is as follows.

```
{
  "properties": {
    "connections": [
      {
        "managementAddresses": [
          "192.83.0.23"
        ],
        "credential": {
          "resourceRef": "/credentials/iDnsServer-Credentials"
        },
        "credentialType": "usernamePassword"
      }
    ],
    "zone": "cloudapp.net"
  }
}
```

The JSON schema for the **iDnsServer PUT** method is located in section 6.22.1.

3.1.5.24.1.1.2 Response Body

The format for the response body for the **PUT** method is the same as the **GET iDnsServer** response body (section 3.1.5.24.1.2.2). The JSON schema is located in section 6.22.2.

3.1.5.24.1.1.3 Processing Details

Creates the **iDnsServer** resource or updates an existing **iDnsServer** resource.

3.1.5.24.1.2 GET

This method retrieves the **iDnsServer** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/iDnsServer/configuration
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.24.1.2.1 Request Body

None.

3.1.5.24.1.2.2 Response Body

The format for the response body for the **iDnsServer GET** method is as follows.

```
{
  "resourceRef": "/iDnsServer/configuration",
  "resourceId": "configuration",
  "etag": "W/\"0ba91307-fe4d-4ed1-8e7c-472f77e942ca\"",
  "instanceId": "ae39e307-f8e6-43f6-9264-4a54c43ee33a",
  "properties": {
    "provisioningState": "Succeeded",
    "connections": [
      {
        "managementAddresses": [
          "192.83.0.23"
        ],
        "credential": {
          "resourceRef": "/credentials/iDnsServer-Credentials"
        },
        "credentialType": "usernamePassword"
      }
    ],
    "zone": "cloudapp.net"
  }
}
```

The JSON schema for the **iDnsServer GET** method is located in section 6.22.2.

3.1.5.24.1.2.3 Processing Details

Retrieves the **iDnsServer** resource.

3.1.5.25 virtualSwitchManager

The **virtualSwitchManager** resource is a singleton resource that configures the virtual switch properties on every server managed by the Network Controller (meaning that the NC has server resources for those machines).

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualSwitchManager/configuration
```

The following HTTP methods can be performed on this resource.

HTTP method	Description
PUT	Create a new virtualNetworkManager resource or update an existing virtualGateways resource.
GET	Get one virtualNetworkManager resource

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
QosSettings	Optional	See table below

QosSettings

Element name	Type	Description
reservationMode		Specifies whether outboundReservedValue is applied as the absolute bandwidth (Mbps) or as a weighted value. Allowed values are "absolute" or "weight".
enableSoftwareRevervation		True to enable software QOS reservation.
enableHardwareLimits		Offloads Tx and Rx cap to hardware.
enableHardwareREservation		Offloads bandwidth reservation to hardware.
linkSpeedPercentage		The percentage of the link speed to be used for calculating reservable bandwidth.
defaultReservation		The default value of the reservation to be used for NICs that do not have any reservation specified (0).

3.1.5.25.1 HTTP Methods

3.1.5.25.1.1 PUT

This method updates the **virtualSwitchManager** resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualSwitchManager/configuration
```

3.1.5.25.1.1.1 Request Body

The format for the **virtualSwitchManager PUT** request body is as follows.

```
{
  "resourceId": "configuration",
  "etag": "W/\"14753c1f-5893-45d7-8710-daf66c8dbb1e\"",
  "properties": {
    "qosSettings": {
      "reservationMode": "Weight",
```

```

        "linkSpeedPercentage": 50,
        "defaultReservation": 10,
        "enableHardwareLimits": false,
        "enableHardwareReservations": false,
        "enableSoftwareReservations": true
    }
}
}

```

The JSON schema for the **virtualSwitchManager PUT** method is located in section 6.23.1.

3.1.5.25.1.1.2 Response Body

The format for the response body for the **PUT virtualSwitchManager** method is the same as the format for the **GET virtualSwitchManager** response body (section 3.1.5.25.1.2.2). The JSON schema is located in section 6.23.2.

3.1.5.25.1.1.3 Processing Details

Create or update the global virtual switch settings.

3.1.5.25.1.2 GET

Retrieves the **virtualSwitchManager** configuration

It is invoked through the following URI.

```
https://<url>/networking/v1/virtualSwitchManager/configuration
```

There are no parameters for this query.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)

3.1.5.25.1.2.1 Request Body

None.

3.1.5.25.1.2.2 Response Body

The format for the **virtualSwitchManager GET** response body is as follows.

```

{
  "resourceRef": "/virtualSwitchManager/configuration",
  "resourceId": "configuration",
  "etag": "W/\"ad1807d8-6ba6-4c24-9ad5-771f5e39474f\"",
  "instanceId": "d8ebbd42-6334-4c4a-8a11-5351df46984e",
  "properties": {
    "provisioningState": "Succeeded",

```

```

    "qosSettings": {
      "reservationMode": "Absolute",
      "linkSpeedPercentage": 22,
      "defaultReservation": 0,
      "enableHardwareLimits": false,
      "enableHardwareReservations": false,
      "enableSoftwareReservations": true
    },
    "numInterfacesHavingQos": 0
  }
}

```

The JSON schema for the **virtualSwitchManager GET** method is located in section 6.23.2.

3.1.5.25.1.2.3 Processing Details

Retrieves the **virtualSwitchManager** configuration.

3.1.5.26 networkControllerBackup

The **networkControllerBackup** resource<7> is used to persist to disk all the applicable configuration data for a network controller. The backed-up data can be used to restore the configuration of the network controller. For more details, see section 3.1.5.27, **networkControllerRestore**. The format of the backed-up data is implementation-specific and is treated as opaque data.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkControllerBackup/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.26.1.1	Create a new networkControllerBackup resource or update an existing networkControllerBackup resource.
GET	3.1.5.26.1.2	Get a networkControllerBackup resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
instanceId	Read-only	Specified in Common JSON Elements, section 2.2.2.
backupPath	Required	A path to a location where the backup operation persists files.
credential	Optional	A reference (resourceRef in section 2.2.2) to a credentials resource. The credential MUST be of type usernamePassword. The credential is used to access the backupPath.
errorMessage	Read-only	A string that describes an error, such as, backupPath is not accessible. An empty string can be returned.

Element name	Type	Description
failedResourcesList	Read-only	An array of strings that are references (resourceRef in section 2.2.2) to resources that could not be backed up. An empty array can be returned.
successfulResourcesList	Read-only	An array of strings that are references (resourceRef in section 2.2.2) to resources that were successfully backed up. An empty array can be returned.
inProgressResourcesList	Read-only	An array of strings that are references (resourceRef in section 2.2.2) to resources that are in progress of being backed up. An empty array can be returned.

3.1.5.26.1 HTTP Methods

3.1.5.26.1.1 PUT

This method creates a new `networkControllerBackup` resource or updates an existing `networkControllerBackup` resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkControllerBackup/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.26.1.1.1 Request Body

The format for the request body for the `networkControllerBackup PUT` method is as follows.

```
{
  "properties": {
    "backupPath": "\\cloudshare\backups\09072016",
    "credential": {
      "resourceRef": "/credentials/backuprestore-credential"
    }
  }
}
```

The JSON schema for the **networkControllerBackup PUT** method is located in section 6.24.1.

3.1.5.26.1.1.2 Response Body

The format for the response body for the **PUT networkControllerBackup** method is the same as the format for the **GET networkControllerBackup** response body (section 3.1.5.27.1.2.2). The JSON schema is located in section 6.24.2.

3.1.5.26.1.1.3 Processing Details

Creates a new networkControllerBackup resource or updates an existing networkControllerBackup resource. The network controller begins an internal operation of backing up all the applicable configuration data.

3.1.5.26.1.2 GET

This method retrieves a networkControllerBackup resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkControllerBackup/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.26.1.2.1 Request Body

None.

3.1.5.26.1.2.2 Response Body

The format for the response body for the **networkControllerBackup GET** method is as follows.

```
{
  "resourceRef": "/networkControllerBackup/backup3",
  "resourceId": "backup3",
  "etag": "W/\"a7a81dab-826a-4adb-8176-1e2a8b4658c5\"",
  "instanceId": "90c0dbec-afa2-4378-a277-ffe822fb8288",
  "properties": {
    "provisioningState": "Succeeded",
    "backupPath": "\\cloudshare\\backup\\backup3",
    "credential": {
      "resourceRef": "/credentials/host1-credentials"
    }
  },
  "errorMessage": "",
  "failedResourcesList": [],
}
```



```

"successfulResourcesList": [
  "/networking/v1/credentials/238c0490-71c6-49ea-9189-fb325fa47eb9",
  "/networking/v1/credentials/host1-credentials",
  "/networking/v1/virtualNetworkManager/configuration",
  "/networking/v1/virtualSwitchManager/configuration",
  "/networking/v1/accessControlLists/00269b41-e4c8-4193-a8e3-73a31ad62ebd",
  "/networking/v1/accessControlLists/eb5d4509-f4e5-45ac-befd-05c841d85709",
  "/networking/v1/accessControlLists/f6d79b36-867c-4a8b-9ae7-f7229a511d01",
  "/networking/v1/logicalNetworks/a9ff429f-168c-4ed7-8cca-6fc623dfff9c",
  "/networking/v1/macPools/5baae598-b262-477c-8801-207431a9da6b",
  "/networking/v1/servers/host1",
  "/networking/v1/networkInterfaces/52f2414c-0b95-44ce-afab-e2f8c395fb96",
  "/networking/v1/networkInterfaces/e73f7a7f-adfa-47e2-ad2f-8014c9411902",
  "/networking/v1/virtualNetworks/9119efd6-9a34-4073-ba87-e862b2c60140"
],
"inProgressResourcesList": []
}
}
}

```

The JSON schema for the **networkControllerBackup GET** method is located in section 6.24.2.

The value for the returned properties depends on when the **GET** method is invoked. The value can contain any or all the following lists: a list of resources that are in progress of being backed up, lists of resources that have been successfully backed up, or a list of resources that could not be backed up. An error message can be returned if not all the resources were backed up successfully.

3.1.5.26.1.2.3 Processing Details

Retrieves the status of the backup operation that was launched when the first PUT of the resource occurred.

3.1.5.27 networkControllerRestore

The **networkControllerRestore** resource<8> is used to restore from disk all the applicable configuration data for a network controller. The configuration of the network controller **MUST** first be backed up via a PUT operation on a **networkControllerBackup** resource. For more details, see section 3.1.5.26, **networkControllerBackup**.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkControllerRestore/{resourceId}
```

resourceId: the identifier for the specific resource within the resource type. See section 2.2.3.4, for more details.

The following HTTP methods can be performed on this resource.

HTTP method	Section	Description
PUT	3.1.5.27.1.1	Create a new networkControllerRestore resource or update an existing networkControllerRestore resource.
GET	3.1.5.27.1.2	Get a networkControllerRestore resource.

The following property elements are valid:

Element name	Type	Description
etag	Read-only	Specified in Common JSON Elements, section 2.2.2.
provisioningState	Read-only	Specified in Common JSON Elements, section 2.2.2.
instanceId	Read-only	Specified in Common JSON Elements, section 2.2.2.
restorePath	Required	Location from which to pick up the backup data. The location MUST contain data previously created by a PUT operation on a networkControllerBackup resource.
credential	Required	A reference (resourceRef in section 2.2.2) to a credentials resource. The credential MUST be of type usernamePassword. The credential is used to access the restorePath.
statusMessages	Read-only	An array of strings that describe the current progress of the restore. The messages are implementation-specific. They can provide time stamps or the time that was spent restoring resources. An empty array can be returned.
successfulResourceList	Read-only	Array of strings that represent references (resourceRef in section 2.2.2) for resources that were restored successfully. An empty array can be returned.
failedResourceList	Read-only	Array of strings that represent references (resourceRef in section 2.2.2) for resources that were not restored successfully. An empty array can be returned.

3.1.5.27.1 HTTP Methods

3.1.5.27.1.1 PUT

This method creates a new networkControllerRestore resource or updates an existing networkControllerRestore resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkControllerRestore/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
201 (Created)
412 (Precondition Failed)
500 (Internal Server Error)

3.1.5.27.1.1.1 Request Body

The format for the request body for the **networkControllerRestore PUT** method is as follows.

```
{
  "properties": {
    "restorePath": "\\cloudshare\backups\09072016",
    "credential": {
      "resourceRef": "/credentials/backuprestore-credential"
    }
  }
}
```

The JSON schema for the **networkControllerRestore PUT** method is located in section 6.25.1.

3.1.5.27.1.1.2 Response Body

The format for the response body for the **PUT networkControllerRestore** method is the same as the format for the **GET networkControllerRestore** response body (section 3.1.5.27.1.2.2). The JSON schema is located in section 6.25.1.

3.1.5.27.1.1.3 Processing Details

Creates a new networkControllerRestore resource or updates an existing networkControllerRestore resource. The network controller begins an internal operation of restoring resource configuration from the back-up data on disk. The network controller updates the provisioning state and, optionally, the error message properties depending on the restore status.

3.1.5.27.1.2 GET

This method retrieves a networkControllerRestore resource.

It is invoked through the following URI.

```
https://<url>/networking/v1/networkControllerRestore/{resourceId}
```

The query parameters are specified in section 2.2.3.

The request message for this method contains the HTTP headers defined in section 2.2.1.2.

The response message for this method contains the HTTP headers defined in section 2.2.1.3.

The response message for this method can result in the following status codes.

Status code
200 (OK)
404 (Not Found)

3.1.5.27.1.2.1 Request Body

None.

3.1.5.27.1.2.2 Response Body

The format for the response body for the **networkControllerRestore GET** is as follows.

```
{
  "resourceRef": "/networkControllerRestore/restore09072016",
  "resourceId": "rloc",
  "etag": "W/\"7f448790-3191-46fb-bb80-b13740e1cde1\"",
  "instanceId": "cbfcfdf2-5049-44e9-9776-461029ed78a1",
  "properties": {
    "provisioningState": "Succeeded",
    "restorePath": "\\cloudshare\\backups\\09072016",
    "failedResourceList": [],
    "successfulResourceList": [
      "/networking/v1/credentials/9f205df2-d36b-4b81-a2a6-a0aefcd3e557",
      "/networking/v1/credentials/backuprestore-credential",
      "/networking/v1/virtualNetworkManager/configuration",
      "/networking/v1/virtualSwitchManager/configuration",
      "/networking/v1/accessControlLists/357742e1-9cf9-468a-b33a-994ddaa65939",
      "/networking/v1/accessControlLists/3c916a36-fa6e-470b-a945-d3ab8aa76c28",
      "/networking/v1/accessControlLists/6601cb8d-c7b9-43cf-a156-9c98a4c1a3be",
      "/networking/v1/accessControlLists/c11f6c66-4029-4236-a30f-b80fbcdf0e94",
      "/networking/v1/accessControlLists/c342db3a-83aa-40d4-b905-e72ed2420f87",
      "/networking/v1/logicalnetworks/84188228-6705-4980-b622-be2127d66a5d",
      "/networking/v1/macPools/d7b7e3d4-0308-4328-93ef-5bfb97bc2c3a",
      "/networking/v1/servers/testhost1",
      "/networking/v1/networkInterfaces/64c301dc-b2f4-406e-849d-ef4088337fb5",
      "/networking/v1/networkInterfaces/91f93708-7d06-44ca-b10d-d99956b6b1db",
      "/networking/v1/networkInterfaces/a6e56a93-cfbd-4a83-917e-a7727d9052d9",
      "/networking/v1/networkInterfaces/e1692488-039a-4786-8799-d819724f1fa1",
      "/networking/v1/virtualNetworks/a9ec521a-ee88-4e7d-9200-a74f7c31a3f7"
    ]
  }
  "statusMessages": [
    "OverallStatus:Restore is currenty in Stage: GenerateReport",
    "Service : NamedPropertyStore , Stage : RestoreNamedPropertyStoreCompleted, Status : Success, StartTime : 11/30/2016 11:00:26 AM, EndTime : 11/30/2016 11:00:28 AM",
    "Service : SlbManagerService , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:01:28 AM, EndTime : 11/30/2016 11:01:28 AM",
    "Service : FirewallService , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:01:08 AM, EndTime : 11/30/2016 11:01:08 AM",
    "Service : VSwitchService , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:01:20 AM, EndTime : 11/30/2016 11:01:20 AM",
    "Service : GatewayManager , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:01:01 AM, EndTime : 11/30/2016 11:01:01 AM",
    "Service : ServiceInsertion , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:00:58 AM, EndTime : 11/30/2016 11:00:58 AM",
    "Service : ControllerService , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:01:29 AM, EndTime : 11/30/2016 11:01:29 AM",
    "Service : FnmService , Stage : RestoreKVSCompleted, Status : Success, StartTime : 11/30/2016 11:01:10 AM, EndTime : 11/30/2016 11:01:10 AM",
    "Service : ApiService , Stage : ReplayCompleted, Status : Success, StartTime : 11/30/2016 11:06:04 AM, EndTime : 11/30/2016 11:06:05 AM"
  ]
}
```

The JSON schema for the **networkControllerRestore GET** method is located in section 6.25.2.

3.1.5.27.1.2.3 Processing Details

Retrieves the status of the restore operation that was launched when the first PUT of the resource occurred.

3.1.5.28 Response Content for Errors

If the Network Controller returns an error for any operation, it includes the appropriate HTTP status code (see the [RFC7231], Hypertext Transfer Protocol (HTTP) Status Code Registry, definition of specific response codes) and a response body. The JSON schema for the response body is given in the appendix, section 6.26. The following property elements are valid for the response body:

Element name	Type	Description
error	Read-only	Container for the properties defined following.
error.code	Read-only	A string that is an error identifier. These error identifiers are defined in detail later in this section.
error.message	Read-only	A description of the error. This string is implementation-specific.
error.innerError	Read-only Optional	String description of an error that was the initial cause for a subsequent error (for error.code). This string is implementation-specific.
error.target	Read-only Optional	This string is implementation-specific. It contains extra details about the source of the error.
error.details	Read-only Optional	An array of structures that describe in more detail any errors that happened while the server was processing a REST method call.
error.details.code	Read-only	The same description applies as for error.code above.
error.details.message	Read-only	The same description applies as for error.message above.

Below is an example of a complete error response that include headers and JSON body.

```
HTTP/1.1 400 Bad Request
Content-Length: 1552
Content-Type: application/json; charset=utf-8
Server: Microsoft-HTTPAPI/2.0
x-ms-request-id: 3be9ff32-8097-47ad-8961-8de9caad8475
Date: Thu, 12 Jan 2017 20:11:43 GMT
Connection: close

{
  "error": {
    "code": "InvalidParameterValue",
    "message": "'2221.1.1.0/24' is not a valid argument for 'addressPrefix' of a
subnet.",
    "target": "SubnetAddress",
    "innerError": "Message: '2221.1.1.0/24' is not a valid argument for 'addressPrefix'
of a subnet., Target: SubnetAddress, InnerException: null, Exception:
Microsoft.Windows.Networking.NetworkController.Framework.Utilities.ParameterInvalidException:
'2221.1.1.0/24' is not a valid argument for 'addressPrefix' of a subnet.\r\n at
Microsoft.Windows.Networking.NetworkController.RestApi.Fabric.Fnm.FnmUtility.ParseIpAddressWi
thPrefix(String addressWithPrefix, IPAddress& ipAddress, UInt32& addressPrefix)\r\n at
Microsoft.Windows.Networking.NetworkController.RestApi.Fabric.Fnm.FnmUtility.ValidateLogicalS
ubnet(LogicalSubnet newSubnet, LogicalNetwork logicalNetwork)\r\n at
Microsoft.Windows.Networking.NetworkController.RestApi.Fabric.Fnm.FnmUtility.ValidateLogicalN
etwork(LogicalNetwork logicalNetwork)\r\n at
Microsoft.Windows.Networking.NetworkController.RestApi.Fabric.Fnm.PutLogicalNetworkOperation.
ExecuteInternal(LogicalNetwork logicalNetwork, ITransaction transaction)\r\n at
Microsoft.Windows.Networking.NetworkController.RestApi.Common.Operations.PutResourceDefaultOp
eration`1.DefaultExecuteTopLevelResource()\r\n at
Microsoft.Windows.Networking.NetworkController.RestApi.Common.Operations.PutResourceDefaultOp
eration`1.Execute()\r\n at
Microsoft.WindowsAzure.Networking.Nrp.Frontend.Operations.OperationBase`1.Run()"
  }
}
```

}

The following table contains all possible error codes returned by servers, along with an explanation.

Error.Code value	Explanation
InternalServerError	An unknown error occurred.
Canceled	Operation was canceled by a different, concurrent operation.
NotFound	The specified resource was not found.
BadRequest	The input contains invalid parameters.
RetryableError	A retry-able error occurred. This error is an indication that the client SHOULD retry the previous operation.
PublicIPAddressInUse	A public IP address specified in the request is already in use.
StaticAllocationMethodNotSupported	Static allocation method for public IP addresses is not supported.
PublicIPAddressMissing	Public IP address is required when IPAllocationMethod is static.
SubnetIsFull	The subnet of the virtual or logical network does not have any more available IP addresses.
PrivateIPAddressMissing	Private IP address is required when privateIPAllocationMethod is static.
SubnetIsRequired	IP configuration resources require subnet resource references.
PrivateIPAddressNotInSubnet	The private static IP address specified does not belong to the range of subnet prefix.
PrivateIPAddressInReservedRange	The specified private static IP address falls within reserved IP range of subnet prefix.
InvalidPrivateIPAddressFormat	The private static IP address value is invalid.
PrivateIPAddressInUse	Another IP configuration is already using the specified IP address.
FrontendPrivateIPAddressIsNotNull	Frontend Private IP Address MUST not be specified when Subnet is not specified.
FrontendPrivateIPAllocationMethodIsNotDynamic	The Frontend Private IP Allocation Method MUST be set to Dynamic when subnet is not specified.
InvalidResourceReference	The specified resource reference is invalid.
InvalidRequestFormat	Cannot parse the request. Note This is a top-level error with InvalidJson, InvalidJsonReferenceWrongType used as error details.
InvalidJson	Errors were encountered while parsing the request body.
InvalidJsonReferenceWrongType	An invalid resource reference was encountered.
InvalidJsonReferenceFormat	The resource reference format is invalid.

Error.Code value	Explanation
PublicIPAddressInUseCannotUpdate	The properties for the specified public IP address cannot be updated because the public IP is in use.
MultipleGatewaysUseSameVnet	More than one gateway is associated with subnets of this vnet.
InvalidGatewayIPCount	The specified VpnGateway has more than one IPConfiguration.
DuplicateLocalVpnGatewayAddress	The specified VpnGateway defines two local networks with the same LocalVpnGatewayAddress property, but different address space.
ReferencedResourceNotProvisioned	The referenced resource has not been successfully provisioned.
DnsRecordInUse	The specified DNS record is already in use by another public IP.
InvalidDomainNameLabel	The domain name label is invalid.
DomainNameLabelCannotBeNullOrEmpty	The domain name label for a DNS record specified for the public IP address is null or empty. If a DNS record is specified, its domain name label MUST not be null or empty.
InUseSubnetCannotBeDeleted	The specified subnet is in use and cannot be deleted.
SubnetsOldReferencesNotCleanedUp	Subnets cannot be updated/deleted because old references for following subnets have not been released yet.
InUseSubnetCannotBeUpdated	The subnet is in use and cannot be updated.
VnetInUse	Cannot change properties on the virtual network resource since it is in use.
AnotherOperationInProgress	Another operation on this or dependent resource is in progress.
DnsServerCountLimitReached	Reached limit for the number of DNS servers allowed for a virtual network.<9>
NicInUse	The Network Interface resource is in use.
OperationNotSupported	The specified operation on the specified resource is not supported.
OutboundNatRulesAreNotSupported	Outbound NAT rules are not supported.
RuleNameDuplicate	Two rules of different types use the same name.
InvalidFrontendIPCount	Load Balancer resources MUST have one Frontend IP configuration.
FrontendIPConfigHasNoSubnetOrPublicIP	Frontend IP Configuration MUST reference either a subnet or a public IP address.
FrontendIPConfigHasBothSubnetAndPublicIP	Frontend IP Configuration MUST not reference both a subnet and a public IP address.
RulesUseSameFrontendPort	Multiple load balancer rules cannot use the same frontend port.
RulesUseSameBackendPort	Multiple load balancer rules cannot use the same backend

Error.Code value	Explanation
	port.
InvalidProtocolForProbe	Probe can use only HTTP or TCP protocol.
ProbeRequestPathIsNotNull	Probe request path MUST be null when its protocol is TCP.
ProbeIntervalIsOutOfRange	The Probe Interval is invalid.
ProbeRequestPathIsRequired	Request Path is required for probes that use the HTTP protocol.
PortValueIsOutOfRange	The port value is invalid.
NumberOfProbesIsOutOfRange	The NumberOfProbes value for the probe is invalid.
BackendAndFrontendPortsAreDifferent	The load balancer rule MUST use the same frontend and backend ports, because its enableFloatingIP flag is set to TRUE.
RuleIdleTimeoutIsOutOfRange	The load balancer rule has invalid Idle Timeout.
PublicIPIdleTimeoutIsOutOfRange	The Public IP address has invalid Idle Timeout.
BackendIPConfigurationsDontUseSameVnet	Not all Backend IP Configurations referenced by the Load Balancer use the same Virtual Network.
FrontendIPConfigAndBackendIPConfigsAreInDifferentVnets	Not all Backend IP Configurations referenced by the Load Balancer use the same Virtual Network as Frontend IP Configuration of the Load Balancer.
CannotSwitchLbBetweenAvailabilitySets	Load Balancer cannot be reassigned from one availability set to another.
InvalidResourceName	The resource name is invalid.
InvalidRouteAddressPrefix	The AddressPrefix for the specified route is invalid.
AddressPrefixInRestrictedAddressSpace	The AddressPrefix for the specified route is not allowed.
MissingNextHopIpAddress	The NextHopIpAddress cannot be Null or Empty.
InvalidNextHopIpAddress	The NextHopIpAddress for the specified route is invalid.
AddressPrefixMustBeInPublicAddressSpace	Invalid AddressPrefix for route. The NextHopType MUST have AddressPrefix in Public Address Space.
NextHopIpAddressNotAllowed	NextHopIpAddress for route cannot be specified.
InUseRouteTableCannotBeDeleted	The specified route table is in use and cannot be deleted.
RouteCountLimitReached	The number of allowed routes in a route table has been exceeded.
RouteConflict	Two or more routes cannot have the same AddressPrefix.
InUseFrontendIpConfigurationCannotBeDeleted	The specified Frontend IP configuration is in use and cannot be deleted.
InUseBackendAddressPoolCannotBeDeleted	The specified Backend address pool is in use and cannot be deleted.
InUseProbeCannotBeDeleted	The specified Probe is in use and cannot be deleted.

Error.Code value	Explanation
InUseAccessControlListCannotBeDeleted	The specified AccessControlList resource is in use and cannot be deleted.
InvalidParameterValue	An invalid parameter was specified.
ValidationError	A validation error occurred.
ServiceUnavailable	The Network Controller REST service is unavailable.
InvalidLogicalNetworkReference	A logical network resource is required for creating a virtual network. Specify a valid reference to an existing logical network resource.
InvalidIPAddress	The IPAddress is not in the correct format.
InvalidIPPrefix	The IPPrefix is not in the correct format.
PrivateMacAddressMissing	Private Mac address is required when privateMacAllocationMethod is static.
InvalidPrivateMacAddress	The Private static Mac address is invalid.
InvalidNetworkInterfaceReference	A Network Interface reference is required.
InUseServiceInsertionCannotBeDeleted	The specified ServiceInsertion resource is in use and cannot be deleted.
InUseServerCannotBeDeleted	The specified server resource is in use and cannot be deleted.
InUseVirtualServerCannotBeDeleted	The specified VirtualServer resource is in use and cannot be deleted.
InUseIpPoolCannotBeDeleted	The specified IpPool resource is in use and cannot be deleted.
ResourceInUse	A resource cannot be deleted because a related resource is in use.
IsHostVirtualNetworkInterfaceCannotBeUpdated	The IsHostVirtualNetworkInterface property cannot be updated after the NetworkInterface has been created.
HostVirtualNetworkInterfaceCannotConnectToVirtualNetwork	The Host Virtual NetworkInterface cannot be connected to a Virtual Network.
PrivateMacAllocationMethodCannotBeUpdated	The PrivateMacAllocationMethod property cannot be updated after the NetworkInterface has been created.
InUseQosSettingsCannotBeUpdated	The QOS Settings are referenced by one or more Network Interfaces and cannot be modified.
QosGlobalSettingsNotConfigured	The QOS global settings are not configured. The QOS configuration cannot be specified on the NetworkInterface.
InvalidSubnet	An invalid Subnet was specified.
AclRuleNullOrEmptySourceAddressPrefix	The SourceAddressPrefix property cannot be null or empty.
AclRuleNullOrEmptyDestinationAddressPrefix	The DestinationAddressPrefix property cannot be null or empty.
AclRuleNullOrEmptySourcePortRange	The SourcePortRange property cannot be null or empty.

Error.Code value	Explanation
AclRuleNullOrEmptyDestinationPortRange	The DestinationPortRange property cannot be null or empty.
InvalidAclRuleType	The AclRule Type is invalid.
InvalidAclRuleAction	The AclRule Action is invalid.
InvalidAclRulePriority	The specified priority is invalid.
InvalidAclRuleProtocol	The specified protocol is invalid. Possible values are TCP, UDP, or ALL.
UpgradeInProgress	The operation failed because an internal upgrade is in progress.
NetworkMismatch	Both Networks are not of the same type.
VirtualNetworkMismatch	SenderVirtualNetWork MUST be same as ReceiverVirtualNetwork.
AclRuleTagsNotSupportedOnLogicalNetwork	AclRule does not support Tags on Network Interfaces with an IpConfiguration in a Logical Subnet.
RouteNextHopIpAddressNotFound	The NextHopIpAddress was not found within Virtual Network to which the RouteTable is connected.
UnmanagedAllocationMethodNotSupported	Unmanaged IP allocation is not supported on virtual network or logical networks where virtualization is enabled.
InUseVipPoolCannotBeRemoved	A pool that has VIPs allocated from it cannot be removed from the load balancer manager.
LbManagerResourceNotConfigured	The Load Balancer Manager Resource MUST be configured before a load balancer resource can be configured.
FrontEndIpNotInVipPool	The specified Frontend IP Address is not part of a VIP Pool.
FrontendPrivateIpAllocationMethodIsNotStatic	Frontend Private IP Allocation Method MUST be set to Static when Subnet is specified.
VipRangeTooLarge	The maximum number of addresses allowed in a single VIP range has been exceeded.
PrimaryNicPropertyCannotBeUpdated	The Primary NIC property for a network interface resource cannot be updated after the resource has been created.
OnlyPrimaryNetworkInterfaceCanHaveDnsSettings	Only Primary Network Interfaces can have DNS settings.
RestoreOperationInProgress	A restore operation is in progress.
AclRuleInvalidSourcePortRange	The SourcePortRange value is invalid.
BackupFolderNotEmpty	The Backup folder path is not empty.
AclRuleInvalidDestinationPortRange	The DestinationPortRange value is invalid.
AclRuleInvalidSourceAddressPrefix	The SourceAddressPrefix value is invalid.
AclRuleInvalidDestinationAddressPrefix	The DestinationAddressPrefix value is invalid.
TransientError	A retry-able error occurred. This error is an indication that the client SHOULD retry the previous operation.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

4.1 Example of the JSON used to create a default ACL for both inbound and outbound

This example describes the JSON that creates default ACLs for inbound and outbound **aclRules** resources for the **accessControlLists** resource.

```
PUT ~/Networking/v1/accessControlLists/acl3
{
  "properties": {
    "aclRules": [
      {
        "resourceId": "e4dc9ca4-d5b0-459c-a3e2-9212ba1db7af",
        "properties": {
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "0-65535",
          "action": "Allow",
          "sourceAddressPrefix": "13.168.100.0/24",
          "destinationAddressPrefix": "*",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      },
      {
        "resourceId": "a2a19a67-381e-47e9-bdba-8c8e281d303d",
        "properties": {
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "0-65535",
          "action": "Allow",
          "sourceAddressPrefix": "13.168.101.0/24",
          "destinationAddressPrefix": "*",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ]
  }
}
```

4.2 macPools usage

The admin creates a **macPools** resource on the Network Controller.

```
PUT ~/networking/v1/macPools/macPool1
{
  "properties": {
    "startMacAddress": "00-1D-A8-B7-1C-00",
    "endMacAddress": "00-1D-A8-F4-1F-FF"
  }
}
```

5 Security

5.1 Security Considerations for Implementers

This implementation does not have any security considerations.

5.2 Index of Security Parameters

None.

6 Appendix A: Full JSON Schema

6.1 accessControlLists

6.1.1 PUT Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for Access Control Lists",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "aclRules": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              },
              "resourceId": {
                "type": "string"
              },
              "resourceMetadata": {
                "$ref": "#/definitions/resourceMetadata"
              }
            }
          }
        }
      }
    }
  }
}
```

```

    "etag": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "protocol": {
          "enum": [ "ALL", "all", "All", "TCP", "Tcp", "tcp", "UDP", "Udp", "udp",
"HTTP", "Http", "http" ]
        },
        "sourcePortRange": {
          "type": "string"
        },
        "destinationPortRange": {
          "type": "string"
        },
        "action": {
          "enum": [ "Allow", "Deny" ]
        },
        "sourceAddressPrefix": {
          "type": "string"
        },
        "destinationAddressPrefix": {
          "type": "string"
        },
        "priority": {
          "type": "string",
          "pattern": "^[1-9][0-9][0-9]+$"
        },
        "type": {
          "enum": [ "Inbound", "Outbound" ]
        },
        "logging": {
          "enum": [ "Enabled", "Disabled" ]
        },
        "description": {
          "type": "string"
        }
      }
    },
    "required": [
      "protocol",
      "sourcePortRange",
      "destinationPortRange",
      "action",
      "sourceAddressPrefix",
      "destinationAddressPrefix",
      "priority",
      "type",
      "logging"
    ]
  },
  "required": [
    "resourceId",
    "properties"
  ]
}
},
"required": [
  "aclRules"
]
}
},
"required": [
  "properties"
]
}

```

6.1.2 GET Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for Access Control Lists",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "detailedInfo": {
    "type": "array",
    "items": {
      "additionalProperties": false,
      "properties": {
        "status": {
          "enum": [ "Success", "Failure" ]
        },
        "id": {
          "$ref": "#/definitions/GUID"
        },
        "lastUpdatedTime": {
          "type": "string"
        },
        "detailedInfo": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "source": {
                "type": "string"
              },
              "message": {
                "type": "string"
              },
              "code": {
                "type": "string"
              }
            }
          }
        }
      }
    }
  },
  "required": [ "status", "id", "lastUpdatedTime" ]
}
```



```

    },
    "configurationState":
    {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "status": {
          "enum": [ "Success", "Failure" ]
        },
        "id": {
          "$ref": "#/definitions/GUID"
        },
        "lastUpdatedTime": {
          "type": "string"
        },
        "virtualNetworkInterfaceErrors": {
          "$ref": "#/definitions/detailedInfo"
        }
      },
      "required": [
        "status",
        "id",
        "lastUpdatedTime"
      ]
    }
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "aclRules": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              },
              "resourceId": {
                "type": "string"
              },
              "resourceMetadata": {
                "$ref": "#/definitions/resourceMetadata"
              },
              "etag": {
                "type": "string"
              },
              "instanceId": {

```

```

    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "protocol": {
        "enum": [ "All", "TCP", "UDP", "HTTP" ]
      },
      "sourcePortRange": {
        "type": "string"
      },
      "destinationPortRange": {
        "type": "string"
      },
      "action": {
        "enum": [ "Allow", "Deny" ]
      },
      "sourceAddressPrefix": {
        "type": "string"
      },
      "destinationAddressPrefix": {
        "type": "string"
      },
      "priority": {
        "type": "string",
        "pattern": "^[1-9][0-9][0-9]+$"
      },
      "type": {
        "enum": [ "Inbound", "Outbound" ]
      },
      "logging": {
        "enum": [ "Enabled", "Disabled" ]
      },
      "description": {
        "type": "string"
      }
    }
  },
  "required": [
    "provisioningState",
    "protocol",
    "sourcePortRange",
    "destinationPortRange",
    "action",
    "sourceAddressPrefix",
    "destinationAddressPrefix",
    "priority",
    "type",
    "logging"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"ipConfigurations": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  }
}

```

```

    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"subnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"configurationState": {
  "$ref": "#/definitions/configurationState"
}
},
"required": [
  "provisioningState",
  "aclRules"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.1.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for Access Control Lists",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {

```

```

        "type": "string"
    }
},
},
"provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"detailedInfo": {
    "type": "array",
    "items": {
        "additionalProperties": false,
        "properties": {
            "status": {
                "enum": [ "Success", "Failure" ]
            },
            "id": {
                "$ref": "#/definitions/GUID"
            },
            "lastUpdatedTime": {
                "type": "string"
            },
            "detailedInfo": {
                "type": "array",
                "items": {
                    "type": "object",
                    "properties": {
                        "source": {
                            "type": "string"
                        },
                        "message": {
                            "type": "string"
                        },
                        "code": {
                            "type": "string"
                        }
                    }
                }
            }
        }
    },
    "required": [ "status", "id", "lastUpdatedTime" ]
},
},
"configurationState": {
    {
        "type": "object",
        "additionalProperties": false,
        "properties": {
            "status": {
                "enum": [ "Success", "Failure" ]
            },
            "id": {
                "$ref": "#/definitions/GUID"
            },
            "lastUpdatedTime": {
                "type": "string"
            },
            "virtualNetworkInterfaceErrors": {
                "$ref": "#/definitions/detailedInfo"
            }
        }
    },
    "required": [
        "status",
        "id",
        "lastUpdatedTime"
    ]
},
},
"AccessControlList": {
    "type": "object",
    "properties": {
        "resourceRef": {

```

```

    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "aclRules": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "resourceMetadata": {
              "$ref": "#/definitions/resourceMetadata"
            },
            "etag": {
              "type": "string"
            },
            "instanceId": {
              "$ref": "#/definitions/GUID"
            },
            "properties": {
              "type": "object",
              "properties": {
                "provisioningState": {
                  "$ref": "#/definitions/provisioningState"
                },
                "protocol": {
                  "enum": [ "All", "TCP", "UDP", "HTTP" ]
                },
                "sourcePortRange": {
                  "type": "string"
                },
                "destinationPortRange": {
                  "type": "string"
                },
                "action": {
                  "enum": [ "Allow", "Deny" ]
                },
                "sourceAddressPrefix": {
                  "type": "string"
                },
                "destinationAddressPrefix": {
                  "type": "string"
                },
                "priority": {
                  "type": "string",
                  "pattern": "^[1-9][0-9][0-9]+$"
                }
              }
            }
          }
        }
      }
    }
  }
}

```

```

    },
    "type": {
      "enum": [ "Inbound", "Outbound" ]
    },
    "logging": {
      "enum": [ "Enabled", "Disabled" ]
    },
    "description": {
      "type": "string"
    }
  },
  "required": [
    "provisioningState",
    "protocol",
    "sourcePortRange",
    "destinationPortRange",
    "action",
    "sourceAddressPrefix",
    "destinationAddressPrefix",
    "priority",
    "type",
    "logging"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"ipConfigurations": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"subnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"configurationState": {
  "$ref": "#/definitions/configurationState"
}
},
"required": [
  "provisioningState",
  "aclRules"
]
]

```

```

    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
},
"AccessControlListArray": {
  "type": "array",
  "minItems": 0,
  "uniqueItems": true,
  "items": { "$ref": "#/definitions/AccessControlList" }
}
},
"properties": {
  "value": { "$ref": "#/definitions/AccessControlListArray" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": ["nextLink"]
}

```

6.1.4 aclRules

6.1.4.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for Access Control List Rules",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },

  "properties": {
    "resourceId": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    }
  },

```

```

    "properties": {
      "type": "object",
      "properties": {
        "protocol": {
          "enum": [ "ALL", "all", "All", "TCP", "Tcp", "tcp", "UDP", "Udp", "udp", "HTTP",
"Http", "http" ]
        },
        "sourcePortRange": {
          "type": "string"
        },
        "destinationPortRange": {
          "type": "string"
        },
        "action": {
          "enum": [ "Allow", "Deny" ]
        },
        "sourceAddressPrefix": {
          "type": "string"
        },
        "destinationAddressPrefix": {
          "type": "string"
        },
        "priority": {
          "type": "string",
          "pattern": "^[1-9][0-9][0-9]+$"
        },
        "type": {
          "enum": [ "Inbound", "Outbound" ]
        },
        "logging": {
          "enum": [ "Enabled", "Disabled" ]
        },
        "description": {
          "type": "string"
        }
      }
    },
    "required": [
      "protocol",
      "sourcePortRange",
      "destinationPortRange",
      "action",
      "sourceAddressPrefix",
      "destinationAddressPrefix",
      "priority",
      "type",
      "logging"
    ]
  }
},
"required": [
  "properties"
]
}

```

6.1.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for Access Control List Rules",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {

```



```

    "properties": {
      "client": {
        "type": "string"
      },
      "tenantId": {
        "type": "string"
      },
      "groupId": {
        "type": "string"
      },
      "resourceName": {
        "type": "string"
      },
      "originalHref": {
        "type": "string"
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "protocol": {
        "enum": [ "All", "TCP", "UDP", "HTTP" ]
      },
      "sourcePortRange": {
        "type": "string"
      },
      "destinationPortRange": {
        "type": "string"
      },
      "action": {
        "enum": [ "Allow", "Deny" ]
      },
      "sourceAddressPrefix": {
        "type": "string"
      },
      "destinationAddressPrefix": {
        "type": "string"
      },
      "priority": {
        "type": "string",
        "pattern": "^[1-9][0-9][0-9]+$"
      },
      "type": {
        "enum": [ "Inbound", "Outbound" ]
      }
    }
  },

```

```

    "logging": {
      "enum": [ "Enabled", "Disabled" ]
    },
    "description": {
      "type": "string"
    }
  },
  "required": [
    "provisioningState",
    "protocol",
    "sourcePortRange",
    "destinationPortRange",
    "action",
    "sourceAddressPrefix",
    "destinationAddressPrefix",
    "priority",
    "type",
    "logging"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.1.4.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for Access Control List Rules",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "aclRule": {
    "type": "object",
    "properties": {

```

```

"resourceRef": {
  "type": "string"
},
"resourceId": {
  "type": "string"
},
"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"etag": {
  "type": "string"
},
"instanceId": {
  "$ref": "#/definitions/GUID"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "protocol": {
      "enum": [ "All", "TCP", "UDP", "HTTP" ]
    },
    "sourcePortRange": {
      "type": "string"
    },
    "destinationPortRange": {
      "type": "string"
    },
    "action": {
      "enum": [ "Allow", "Deny" ]
    },
    "sourceAddressPrefix": {
      "type": "string"
    },
    "destinationAddressPrefix": {
      "type": "string"
    },
    "priority": {
      "type": "string",
      "pattern": "^[1-9][0-9][0-9]+$"
    },
    "type": {
      "enum": [ "Inbound", "Outbound" ]
    },
    "logging": {
      "enum": [ "Enabled", "Disabled" ]
    },
    "description": {
      "type": "string"
    }
  }
},
"required": [
  "provisioningState",
  "protocol",
  "sourcePortRange",
  "destinationPortRange",
  "action",
  "sourceAddressPrefix",
  "destinationAddressPrefix",
  "priority",
  "type",
  "logging"
]
}
},
"required": [
  "resourceRef",
  "resourceId",

```

```

        "etag",
        "instanceId",
        "properties"
    ]
},
"aclRuleArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/aclRule" }
}
},
"properties": {
    "value": { "$ref": "#/definitions/aclRuleArray" },
    "nextLink": {
        "type": "string",
        "format": "uri",
        "default": ""
    }
}
},
"required": ["nextLink"]
}

```

6.2 credentials

6.2.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for credentials",
    "type": "object",

    "definitions": {
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                },
                "originalHref": {
                    "type": "string"
                }
            }
        },
        "certType": {
            "type": "object",
            "properties": {
                "type": {
                    "enum": [ "X509Certificate" ]
                },
                "value": {
                    "type": "string"
                }
            }
        },
        "required": [
            "type",
            "value"
        ]
    }
}

```

```

    },
    "usernameType": {
      "type": "object",
      "properties": {
        "type": {
          "enum": [ "usernamePassword" ]
        },
        "userName": {
          "type": "string"
        },
        "value": {
          "type": "string"
        }
      },
      "required": [
        "type",
        "userName",
        "value"
      ]
    }
  },
  "properties": {
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "oneOf": [
        { "$ref": "#/definitions/certType" },
        { "$ref": "#/definitions/usernameType" }
      ]
    }
  },
  "required": [
    "properties"
  ]
}

```

6.2.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for credentials",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        }
      }
    }
  }
}

```

```

    "groupId": {
      "type": "string"
    },
    "resourceName": {
      "type": "string"
    },
    "originalHref": {
      "type": "string"
    }
  }
},
"provisioningState": {
  "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"certType": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "type": {
      "enum": [ "X509Certificate" ]
    },
    "value": {
      "type": "string"
    }
  },
  "required": [
    "provisioningState",
    "type",
    "value"
  ]
},
"usernameType": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "type": {
      "enum": [ "usernamePassword" ]
    },
    "userName": {
      "type": "string"
    },
    "value": {
      "type": "string"
    }
  },
  "required": [
    "provisioningState",
    "type",
    "userName",
    "value"
  ]
}
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  }
}

```

```

    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "oneOf": [
        { "$ref": "#/definitions/certType" },
        { "$ref": "#/definitions/usernameType" }
      ]
    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}

```

6.2.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for credentials",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "certType": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "type": {
          "enum": [ "X509Certificate" ]
        },
        "value": {

```

```

        "type": "string"
    }
},
"required": [
    "provisioningState",
    "type",
    "value"
]
},
"usernameType": {
    "type": "object",
    "properties": {
        "provisioningState": {
            "$ref": "#/definitions/provisioningState"
        },
        "type": {
            "enum": [ "usernamePassword" ]
        },
        "userName": {
            "type": "string"
        },
        "value": {
            "type": "string"
        }
    },
    "required": [
        "provisioningState",
        "type",
        "userName",
        "value"
    ]
},
},
"credential": {
    "type": "object",
    "properties": {
        "resourceRef": {
            "type": "string"
        },
        "resourceId": {
            "type": "string"
        },
        "etag": {
            "type": "string"
        },
        "instanceId": {
            "$ref": "#/definitions/GUID"
        },
        "resourceMetadata": {
            "$ref": "#/definitions/resourceMetadata"
        },
        "tags": {
            "additionalProperties": { "type": "string" }
        },
        "properties": {
            "oneOf": [
                { "$ref": "#/definitions/certType" },
                { "$ref": "#/definitions/usernameType" }
            ]
        }
    },
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
},
},
"credentialArray": {
    "type": "array",

```



```

    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/credential" }
  }
},
"properties": {
  "value": { "$ref": "#/definitions/credentialArray" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": ["nextLink"]
}

```

6.3 gatewayPools

6.3.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for GatewayPools",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "type": "object",
  "properties": {
    "resourceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "ipConfiguration": {
          "type": "object",
          "properties": {

```

```

    "greVipSubnets": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        },
        "required": [
          "resourceRef"
        ]
      }
    },
    "publicIPAddresses": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        },
        "required": [
          "resourceRef"
        ]
      }
    },
    "required": [
      "greVipSubnets",
      "publicIPAddresses"
    ]
  },
  "redundantGatewayCount": {
    "type": "integer"
  },
  "gatewayCapacityKiloBitsPerSecond": {
    "type": "integer"
  },
  "RadiusServer": {
    "type": "string"
  },
  "RadiusSecret": {
    "type": "string"
  },
  "type": {
    "type": "string"
  }
},
"required": [
  "ipConfiguration",
  "redundantGatewayCount",
  "gatewayCapacityKiloBitsPerSecond",
  "RadiusServer",
  "RadiusSecret",
  "type"
]
}
},
"required": [
  "resourceId",
  "properties"
]
}
}

```

6.3.2 GET schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for GatewayPools",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "type": {
          "type": "string"
        },
        "ipConfiguration": {
          "type": "object",
          "properties": {
            "greVipSubnets": {
              "type": "array",
              "items": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}
```

```

    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"publicIPAddresses": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"required": [
  "greVipSubnets",
  "publicIPAddresses"
]
},
"redundantGatewayCount": {
  "type": "integer"
},
"gatewayCapacityKiloBitsPerSecond": {
  "type": "integer"
},
"gateways": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"virtualGateways": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"required": [
  "provisioningState",
  "type",
  "ipConfiguration",
  "redundantGatewayCount",
  "gatewayCapacityKiloBitsPerSecond",
  "gateways",
  "virtualGateways"
]

```

```

    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.3.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for GatewayPools",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "type": "object",
  "properties": {
    "value": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {

```

```

"type": "object",
"properties": {
  "provisioningState": {
    "$ref": "#/definitions/provisioningState"
  },
  "type": {
    "type": "string"
  },
  "ipConfiguration": {
    "type": "object",
    "properties": {
      "greVipSubnets": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "publicIPAddresses": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      }
    }
  },
  "required": [
    "greVipSubnets",
    "publicIPAddresses"
  ]
},
"redundantGatewayCount": {
  "type": "integer"
},
"gatewayCapacityKiloBitsPerSecond": {
  "type": "integer"
},
"gateways": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"virtualGateways": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {

```

```

        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"required": [
    "provisioningState",
    "type",
    "ipConfiguration",
    "redundantGatewayCount",
    "gatewayCapacityKiloBitsPerSecond",
    "gateways",
    "virtualGateways"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"nextLink": {
    "type": "string"
}
},
"required": [
    "value",
    "nextLink"
]
}
}

```

6.4 gateways

6.4.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for Gateways",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                }
            }
        }
    }
}

```

```

    },
    "originalHref": {
      "type": "string"
    }
  },
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},
"type": "object",
"properties": {
  "resourceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "pool": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "types": {
        "type": "array",
        "items": {
          "enum": [ "s2sipsec", "s2sgre", "forwarding", "vpn" ]
        }
      },
      "virtualServer": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "networkInterfaces": {
        "type": "object",
        "properties": {
          "externalNetworkInterface": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              }
            },
            "required": [
              "resourceRef"
            ]
          },
          "internalNetworkInterface": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              }
            },
            "required": [
              "resourceRef"
            ]
          }
        }
      }
    }
  }
}

```



```

    ]
  },
  "required": [
    "externalNetworkInterface",
    "internalNetworkInterface"
  ]
},
"bgpConfig": {
  "type": "object",
  "properties": {
    "extASNumber": {
      "type": "string"
    },
    "bgpPeer": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "peerIP": {
            "type": "string"
          },
          "peerExtASNumber": {
            "type": "string"
          }
        }
      },
      "required": [
        "peerIP",
        "peerExtASNumber"
      ]
    }
  },
  "required": [
    "extASNumber",
    "bgpPeer"
  ]
}
},
"required": [
  "pool",
  "types",
  "virtualServer",
  "networkInterfaces"
]
}
},
"required": [
  "resourceId",
  "properties"
]
}
}

```

6.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for Gateways",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {

```

```

        "type": "string"
      },
      "tenantId": {
        "type": "string"
      },
      "groupId": {
        "type": "string"
      },
      "resourceName": {
        "type": "string"
      },
      "originalHref": {
        "type": "string"
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},
"type": "object",
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "virtualGateways": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "virtualGateway": {
              "type": "object",
              "properties": {
                "resourceRef": {
                  "type": "string"
                }
              }
            },
            "required": [
              "resourceRef"
            ]
          }
        },
        "networkConnections": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              }
            },
            "required": [
              "resourceRef"
            ]
          }
        }
      }
    }
  }
}

```

```

    },
    "bgpRouter": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "required": [
    "virtualGateway",
    "networkConnections",
    "bgpRouter"
  ]
}
},
"configurationState": {
  "type": "object",
  "properties": {
    "status": {
      "type": "string"
    },
    "lastUpdatedTime": {
      "type": "string"
    }
  },
  "required": [
    "status",
    "lastUpdatedTime"
  ]
},
"virtualServer": {
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    }
  },
  "required": [
    "resourceRef"
  ]
},
"networkInterfaces": {
  "type": "object",
  "properties": {
    "externalNetworkInterface": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "internalNetworkInterface": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  }
}

```

```

    }
  },
  "required": [
    "externalNetworkInterface",
    "internalNetworkInterface"
  ]
},
"type": {
  "type": "string"
},
"state": {
  "type": "string"
},
"healthState": {
  "type": "string"
},
"totalCapacity": {
  "type": "integer"
},
"availableCapacity": {
  "type": "integer"
},
"bgpConfig": {
  "type": "object",
  "properties": {
    "extASNumber": {
      "type": "string"
    },
    "bgpPeer": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "peerIP": {
            "type": "string"
          },
          "peerExtAsNumber": {
            "type": "string"
          }
        }
      }
    },
    "required": [
      "peerIP",
      "peerExtAsNumber"
    ]
  }
}
},
"required": [
  "extASNumber",
  "bgpPeer"
]
},
"connections": {
  "type": "array",
  "items": { }
},
"certificate": {
  "type": "string"
},
"externalIPAddress": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "ipAddress": {
        "type": "string"
      },
      "prefixLength": {
        "type": "integer"
      }
    }
  }
}

```

```

    },
    "required": [
      "ipAddress",
      "prefixLength"
    ]
  }
},
"pool": {
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"required": [
  "provisioningState",
  "configurationState",
  "networkInterfaces",
  "type",
  "state",
  "healthState",
  "totalCapacity",
  "availableCapacity",
  "bgpConfig",
  "connections",
  "externalIPAddress",
  "pool"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.4.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for Gateways",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {

```

```

        "type": "string"
    },
    "originalHref": {
        "type": "string"
    }
},
"provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
}
},
"type": "object",
"properties": {
    "value": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                },
                "resourceId": {
                    "type": "string"
                },
                "etag": {
                    "type": "string"
                },
                "instanceId": {
                    "$ref": "#/definitions/GUID"
                },
                "properties": {
                    "type": "object",
                    "properties": {
                        "provisioningState": {
                            "$ref": "#/definitions/provisioningState"
                        },
                        "virtualGateways": {
                            "type": "array",
                            "items": {
                                "type": "object",
                                "properties": {
                                    "virtualGateway": {
                                        "type": "object",
                                        "properties": {
                                            "resourceRef": {
                                                "type": "string"
                                            }
                                        }
                                    },
                                    "required": [
                                        "resourceRef"
                                    ]
                                }
                            },
                            "networkConnections": {
                                "type": "array",
                                "items": {
                                    "type": "object",
                                    "properties": {
                                        "resourceRef": {
                                            "type": "string"
                                        }
                                    },
                                    "required": [
                                        "resourceRef"
                                    ]
                                }
                            },
                            "bgpRouter": {
                                "type": "object",
                                "properties": {

```

```

        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"required": [
    "virtualGateway",
    "networkConnections",
    "bgpRouter"
]
}
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        },
        "lastUpdatedTime": {
            "type": "string"
        }
    },
    "required": [
        "status",
        "lastUpdatedTime"
    ]
},
"virtualServer": {
    "type": "object",
    "properties": {
        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
},
"networkInterfaces": {
    "type": "object",
    "properties": {
        "externalNetworkInterface": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        },
        "internalNetworkInterface": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        }
    },
    "required": [
        "externalNetworkInterface",

```

```

        "internalNetworkInterface"
    ]
},
"type": {
    "type": "string"
},
"state": {
    "type": "string"
},
"healthState": {
    "type": "string"
},
"totalCapacity": {
    "type": "integer"
},
"availableCapacity": {
    "type": "integer"
},
"bgpConfig": {
    "type": "object",
    "properties": {
        "extASNumber": {
            "type": "string"
        },
        "bgpPeer": {
            "type": "array",
            "items": {
                "type": "object",
                "properties": {
                    "peerIP": {
                        "type": "string"
                    },
                    "peerExtAsNumber": {
                        "type": "string"
                    }
                }
            },
            "required": [
                "peerIP",
                "peerExtAsNumber"
            ]
        }
    }
},
"required": [
    "extASNumber",
    "bgpPeer"
]
},
"connections": {
    "type": "array",
    "items": {}
},
"externalIPAddress": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "ipAddress": {
                "type": "string"
            },
            "prefixLength": {
                "type": "integer"
            }
        },
        "required": [
            "ipAddress",
            "prefixLength"
        ]
    }
}
},

```



```

        "pool": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          },
          "required": [
            "resourceRef"
          ]
        },
        "required": [
          "provisioningState",
          "configurationState",
          "type",
          "state",
          "healthState",
          "totalCapacity",
          "availableCapacity",
          "pool"
        ]
      },
      "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
      ]
    },
    "nextLink": {
      "type": "string"
    }
  },
  "required": [
    "value",
    "nextLink"
  ]
}

```

6.5 loadBalancers

6.5.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancers",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "protocol": {
      "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
    }
  }
}

```

```

    },
    "loadDistribution": {
      "enum": [ "Default", "SourceIP", "SourceIPProtocol" ]
    },
    "ipAllocationMethod": {
      "enum": [ "Dynamic", "Static", "Unmanaged" ]
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "frontendIPConfigurations": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              },
              "resourceId": {
                "type": "string"
              },
              "instanceId": {
                "type": "string"
              },
              "properties": {
                "type": "object",
                "properties": {
                  "provisioningState": {
                    "$ref": "#/definitions/provisioningState"
                  },
                  "privateIPAddress": {
                    "type": "string",
                    "format": "ipv4"
                  },
                  "privateIPAllocationMethod": {
                    "$ref": "#/definitions/ipAllocationMethod"
                  },
                  "subnet": {
                    "$ref": "#/definitions/resourceRef"
                  },
                  "loadBalancingRules": {
                    "type": "array",
                    "items": {
                      "$ref": "#/definitions/resourceRef"
                    }
                  },
                  "inboundNatRules": {
                    "type": "array",
                    "items": {
                      "$ref": "#/definitions/resourceRef"
                    }
                  }
                }
              }
            }
          }
        }
      }
    }
  },

```

```

        "outboundNatRules": {
            "type": "array",
            "items": {
                "$ref": "#/definitions/resourceRef"
            }
        }
    },
    "required": [
        "properties"
    ]
},
"backendAddressPools": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "instanceId": {
                "type": "string"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "backendIPConfigurations": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "outboundNatRules": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "loadBalancingRules": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    }
                }
            },
            "required": [
                "backendIPConfigurations"
            ]
        },
        "required": [
            "properties"
        ]
    }
},
"loadBalancingRules": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    }
}

```

```

    },
    "resourceId": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "frontendIPConfigurations": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          }
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "frontendPort": {
          "type": "integer"
        },
        "backendPort": {
          "type": "integer"
        },
        "enableFloatingIP": {
          "type": "boolean"
        },
        "idleTimeoutInMinutes": {
          "type": "integer"
        },
        "backendAddressPool": {
          "$ref": "#/definitions/resourceRef"
        },
        "loadDistribution": {
          "$ref": "#/definitions/loadDistribution"
        }
      }
    },
    "required": [
      "frontendIPConfigurations",
      "protocol",
      "frontendPort"
    ]
  }
},
"required": [
  "properties"
]
}
},
"probes": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "instanceId": {
        "type": "string"
      }
    },
    "properties": {
      "type": "object",
      "properties": {

```

```

        "provisioningState": {
            "$ref": "#/definitions/provisioningState"
        },
        "protocol": {
            "$ref": "#/definitions/protocol"
        },
        "port": {
            "type": "integer"
        },
        "intervalInSeconds": {
            "type": "integer"
        },
        "numberOfProbes": {
            "type": "integer"
        },
        "loadBalancingRules": {
            "type": "array",
            "items": {
                "$ref": "#/definitions/resourceRef"
            }
        }
    },
    "required": [
        "protocol",
        "port"
    ]
}
},
"required": [
    "properties"
]
}
},
"outboundNatRules": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "instanceId": {
                "type": "string"
            }
        },
        "properties": {
            "type": "object",
            "properties": {
                "provisioningState": {
                    "$ref": "#/definitions/provisioningState"
                },
                "frontendIPConfigurations": {
                    "type": "array",
                    "items": {
                        "$ref": "#/definitions/resourceRef"
                    }
                },
                "protocol": {
                    "$ref": "#/definitions/protocol"
                },
                "backendAddressPool": {
                    "$ref": "#/definitions/resourceRef"
                }
            }
        },
        "required": [
            "frontendIPConfigurations",
            "protocol",
            "backendAddressPool"
        ]
    }
}

```

```

        ]
      },
      "required": [
        "properties"
      ]
    }
  },
  "required": [
    "frontendIPConfigurations"
  ]
}
},
"required": [
  "properties"
]
}
}

```

6.5.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "protocol": {
      "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
    },
    "loadDistribution": {
      "enum": [ "Default", "SourceIP", "SourceIPProtocol" ]
    },
    "ipAllocationMethod": {
      "enum": [ "Dynamic", "Static", "Unmanaged" ]
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    }
  },
}

```

```

"instanceId": {
  "$ref": "#/definitions/GUID"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "frontendIPConfigurations": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "$ref": "#/definitions/provisioningState"
              },
              "privateIPAddress": {
                "type": "string",
                "format": "ipv4"
              },
              "privateIPAllocationMethod": {
                "$ref": "#/definitions/ipAllocationMethod"
              },
              "subnet": {
                "$ref": "#/definitions/resourceRef"
              },
              "loadBalancingRules": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              },
              "inboundNatRules": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              },
              "outboundNatRules": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              }
            }
          },
          "required": [
            "provisioningState"
          ]
        }
      },
      "required": [
        "resourceRef",
        "resourceId",
        "etag",

```

```

        "instanceId",
        "properties"
    ]
}
},
"backendAddressPools": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "backendIPConfigurations": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "outboundNatRules": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "loadBalancingRules": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    }
                }
            },
            "required": [
                "provisioningState",
                "backendIPConfigurations"
            ]
        }
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"probes": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
        },
    }
},

```



```

    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "port": {
          "type": "integer"
        },
        "intervalInSeconds": {
          "type": "integer"
        },
        "numberOfProbes": {
          "type": "integer"
        },
        "loadBalancingRules": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          }
        }
      }
    },
    "required": [
      "provisioningState",
      "protocol",
      "port"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"inboundNatRules": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "properties": {
        "type": "object",
        "properties": {

```

```

        "provisioningState": {
            "$ref": "#/definitions/provisioningState"
        },
        "frontendIPConfigurations": {
            "type": "array",
            "items": {
                "$ref": "#/definitions/resourceRef"
            }
        },
        "protocol": {
            "$ref": "#/definitions/protocol"
        },
        "frontendPort": {
            "type": "integer"
        },
        "backendPort": {
            "type": "integer"
        },
        "enableFloatingIP": {
            "type": "boolean"
        },
        "idleTimeoutInMinutes": {
            "type": "integer"
        },
        "backendIPConfiguration": {
            "$ref": "#/definitions/resourceRef"
        }
    },
    "required": [
        "provisioningState",
        "frontendIPConfigurations",
        "protocol",
        "frontendPort",
        "enableFloatingIP"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"outboundNatRules": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "frontendIPConfigurations": {

```

```

        "type": "array",
        "items": {
            "$ref": "#/definitions/resourceRef"
        }
    },
    "protocol": {
        "$ref": "#/definitions/protocol"
    },
    "backendAddressPool": {
        "$ref": "#/definitions/resourceRef"
    }
},
"required": [
    "provisioningState",
    "frontendIPConfigurations",
    "protocol",
    "backendAddressPool"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"loadBalancingRules": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "frontendIPConfigurations": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "protocol": {
                        "$ref": "#/definitions/protocol"
                    },
                    "frontendPort": {
                        "type": "integer"
                    },
                    "backendPort": {
                        "type": "integer"
                    },
                    "enableFloatingIP": {
                        "type": "boolean"
                    },
                    "idleTimeoutInMinutes": {
                        "type": "integer"
                    }
                }
            }
        }
    }
},

```

```

        "backendAddressPool": {
            "$ref": "#/definitions/resourceRef"
        },
        "loadDistribution": {
            "$ref": "#/definitions/loadDistribution"
        }
    },
    "required": [
        "provisioningState",
        "frontendIPConfigurations",
        "protocol",
        "frontendPort",
        "loadDistribution"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "instanceId",
    "properties"
]
}
},
"required": [
    "provisioningState",
    "frontendIPConfigurations"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```

6.5.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for ALL loadbalancers",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^([a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12})$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
}

```

```

"loadDistribution": {
  "enum": [ "Default", "SourceIP", "SourceIPProtocol" ]
},
"ipAllocationMethod": {
  "enum": [ "Dynamic", "Static", "Unmanaged" ]
},
"provisioningState": {
  "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
}
},
"properties": {
  "value": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "$ref": "#/definitions/GUID"
        },
        "properties": {
          "type": "object",
          "properties": {
            "provisioningState": {
              "$ref": "#/definitions/provisioningState"
            },
            "frontendIPConfigurations": {
              "type": "array",
              "items": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  },
                  "resourceId": {
                    "type": "string"
                  },
                  "etag": {
                    "type": "string"
                  },
                  "instanceId": {
                    "$ref": "#/definitions/GUID"
                  },
                  "properties": {
                    "type": "object",
                    "properties": {
                      "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                      },
                      "privateIPAddress": {
                        "type": "string",
                        "format": "ipv4"
                      },
                      "privateIPAllocationMethod": {
                        "$ref": "#/definitions/ipAllocationMethod"
                      },
                      "subnet": {
                        "$ref": "#/definitions/resourceRef"
                      },
                      "loadBalancingRules": {

```

```

        "type": "array",
        "items": {
            "$ref": "#/definitions/resourceRef"
        }
    },
    "inboundNatRules": {
        "type": "array",
        "items": {
            "$ref": "#/definitions/resourceRef"
        }
    },
    "outboundNatRules": {
        "type": "array",
        "items": {
            "$ref": "#/definitions/resourceRef"
        }
    }
},
"required": [
    "provisioningState"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"backendAddressPools": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "backendIPConfigurations": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "outboundNatRules": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "loadBalancingRules": {
                        "type": "array",
                        "items": {

```

```

        "$ref": "#/definitions/resourceRef"
    }
    },
    "required": [
        "provisioningState",
        "backendIPConfigurations"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"probes": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "protocol": {
                        "$ref": "#/definitions/protocol"
                    },
                    "port": {
                        "type": "integer"
                    },
                    "intervalInSeconds": {
                        "type": "integer"
                    },
                    "numberOfProbes": {
                        "type": "integer"
                    },
                    "loadBalancingRules": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    }
                }
            },
            "required": [
                "provisioningState",
                "protocol",
                "port"
            ]
        }
    },
    "required": [
        "resourceRef",

```

```

        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}
},
"inboundNatRules": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "frontendIPConfigurations": {
                        "type": "array",
                        "items": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    },
                    "protocol": {
                        "$ref": "#/definitions/protocol"
                    },
                    "frontendPort": {
                        "type": "integer"
                    },
                    "backendPort": {
                        "type": "integer"
                    },
                    "enableFloatingIP": {
                        "type": "boolean"
                    },
                    "idleTimeoutInMinutes": {
                        "type": "integer"
                    },
                    "backendIPConfiguration": {
                        "$ref": "#/definitions/resourceRef"
                    }
                }
            },
            "required": [
                "provisioningState",
                "frontendIPConfigurations",
                "protocol",
                "frontendPort",
                "enableFloatingIP"
            ]
        }
    },
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}

```



```

    ]
  },
  "outboundNatRules": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "$ref": "#/definitions/GUID"
        },
        "properties": {
          "type": "object",
          "properties": {
            "provisioningState": {
              "$ref": "#/definitions/provisioningState"
            },
            "frontendIPConfigurations": {
              "type": "array",
              "items": {
                "$ref": "#/definitions/resourceRef"
              }
            },
            "protocol": {
              "$ref": "#/definitions/protocol"
            },
            "backendAddressPool": {
              "$ref": "#/definitions/resourceRef"
            }
          }
        },
        "required": [
          "provisioningState",
          "frontendIPConfigurations",
          "protocol",
          "backendAddressPool"
        ]
      }
    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}
},
"loadBalancingRules": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      }
    }
  }
},

```

```

    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "frontendIPConfigurations": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          }
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "frontendPort": {
          "type": "integer"
        },
        "backendPort": {
          "type": "integer"
        },
        "enableFloatingIP": {
          "type": "boolean"
        },
        "idleTimeoutInMinutes": {
          "type": "integer"
        },
        "backendAddressPool": {
          "$ref": "#/definitions/resourceRef"
        },
        "loadDistribution": {
          "$ref": "#/definitions/loadDistribution"
        }
      },
      "required": [
        "provisioningState",
        "frontendIPConfigurations",
        "protocol",
        "frontendPort",
        "loadDistribution"
      ]
    },
    "required": [
      "resourceRef",
      "resourceId",
      "instanceId",
      "properties"
    ]
  },
  "required": [
    "provisioningState",
    "frontendIPConfigurations"
  ]
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"nextLink": {
  "type": "string",
  "format": "uri",

```

```

    "default": ""
  }
},
"required": [
  "nextLink"
]
}

```

6.5.4 backendAddressPools

6.5.4.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancers backendaddresspools",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "backendIPConfigurations": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      },
      "outboundNatRules": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      },
      "loadBalancingRules": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      }
    }
  }
}

```

```

    }
  },
  "required": [
    "backendIPConfigurations"
  ]
},
"required": [
  "properties"
]
}

```

6.5.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers backendaddresspools",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "backendIPConfigurations": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          }
        }
      }
    }
  },
}

```

```

        "outboundNatRules": {
            "type": "array",
            "items": {
                "$ref": "#/definitions/resourceRef"
            }
        },
        "loadBalancingRules": {
            "type": "array",
            "items": {
                "$ref": "#/definitions/resourceRef"
            }
        }
    ],
    "required": [
        "provisioningState",
        "backendIPConfigurations"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
]
}

```

6.5.4.3 GET ALL schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for loadbalancers backendaddresspools",
    "type": "object",

    "definitions": {
        "resourceRef": {
            "type": "object",
            "additionalProperties": false,
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            }
        },
        "required": [
            "resourceRef"
        ]
    },
    "GUID": {
        "type": "string",
        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
        "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
},

"properties": {
    "value": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                },
                "resourceId": {

```

```

        "type": "string"
    },
    "etag": {
        "type": "string"
    },
    "instanceId": {
        "$ref": "#/definitions/GUID"
    },
    "properties": {
        "type": "object",
        "properties": {
            "provisioningState": {
                "$ref": "#/definitions/provisioningState"
            },
            "backendIPConfigurations": {
                "type": "array",
                "items": {
                    "$ref": "#/definitions/resourceRef"
                }
            },
            "outboundNatRules": {
                "type": "array",
                "items": {
                    "$ref": "#/definitions/resourceRef"
                }
            },
            "loadBalancingRules": {
                "type": "array",
                "items": {
                    "$ref": "#/definitions/resourceRef"
                }
            }
        },
        "required": [
            "provisioningState",
            "backendIPConfigurations"
        ]
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
}
},
"required": [
    "nextLink"
]
}
}

```

6.5.5 frontendIpConfigurations

6.5.5.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for loadbalancers frontendipconfigurations",
    "type": "object",

```

```

"definitions": {
  "resourceRef": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "ipAllocationMethod": {
    "enum": [ "Dynamic", "Static", "Unmanaged" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "privateIPAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "privateIPAllocationMethod": {
        "$ref": "#/definitions/ipAllocationMethod"
      },
      "subnet": {
        "$ref": "#/definitions/resourceRef"
      },
      "loadBalancingRules": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      },
      "inboundNatRules": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      },
      "outboundNatRules": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      }
    }
  }
}

```

```

    }
  },
  "required": [
    "properties"
  ]
}

```

6.5.5.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers frontendipconfigurations",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "ipAllocationMethod": {
    "enum": [ "Dynamic", "Static", "Unmanaged" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "privateIPAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "privateIPAllocationMethod": {
        "$ref": "#/definitions/ipAllocationMethod"
      }
    }
  }
}

```



```

    },
    "subnet": {
      "$ref": "#/definitions/resourceRef"
    },
    "loadBalancingRules": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/resourceRef"
      }
    },
    "inboundNatRules": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/resourceRef"
      }
    },
    "outboundNatRules": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/resourceRef"
      }
    }
  },
  "required": [
    "provisioningState"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.5.5.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for ALL loadbalancers frontendipconfigurations",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "ipAllocationMethod": {
    "enum": [ "Dynamic", "Static", "Unmanaged" ]
  },
}

```

```

    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },
  "properties": {
    "value": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "$ref": "#/definitions/provisioningState"
              },
              "privateIPAddress": {
                "type": "string",
                "format": "ipv4"
              },
              "privateIPAllocationMethod": {
                "$ref": "#/definitions/ipAllocationMethod"
              },
              "subnet": {
                "$ref": "#/definitions/resourceRef"
              },
              "loadBalancingRules": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              },
              "inboundNatRules": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              },
              "outboundNatRules": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              }
            }
          },
          "required": [
            "provisioningState"
          ]
        }
      },
      "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
      ]
    }
  }
}

```

```

    }
  },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": [
  "nextLink"
]
}

```

6.5.6 inboundNatRules

6.5.6.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancers inboundnatrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "frontendIPConfigurations": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      }
    }
  },
  "protocol": {
    "$ref": "#/definitions/protocol"
  }
}

```

```

    },
    "frontendPort": {
      "type": "integer"
    },
    "backendPort": {
      "type": "integer"
    },
    "enableFloatingIP": {
      "type": "boolean"
    },
    "idleTimeoutInMinutes": {
      "type": "integer"
    },
    "backendIPConfiguration": {
      "$ref": "#/definitions/resourceRef"
    }
  },
  "required": [
    "frontendIPConfigurations",
    "protocol",
    "frontendPort"
  ]
}
},
"required": [
  "properties"
]
}
}

```

6.5.6.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers outboundnatrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    }
  }
}

```

```

    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "frontendIPConfigurations": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          }
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "frontendPort": {
          "type": "integer"
        },
        "backendPort": {
          "type": "integer"
        },
        "enableFloatingIP": {
          "type": "boolean"
        },
        "idleTimeoutInMinutes": {
          "type": "integer"
        },
        "backendIPConfiguration": {
          "$ref": "#/definitions/resourceRef"
        }
      }
    },
    "required": [
      "provisioningState",
      "frontendIPConfigurations",
      "protocol",
      "frontendPort"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
]
}

```

6.5.6.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers inboundnatrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {

```

```

        "type": "string"
    },
    "required": [
        "resourceRef"
    ]
},
"GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
},
"protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
},
"provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
}
},
"properties": {
    "value": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                },
                "resourceId": {
                    "type": "string"
                },
                "etag": {
                    "type": "string"
                },
                "instanceId": {
                    "$ref": "#/definitions/GUID"
                },
                "properties": {
                    "type": "object",
                    "properties": {
                        "provisioningState": {
                            "$ref": "#/definitions/provisioningState"
                        },
                        "frontendIPConfigurations": {
                            "type": "array",
                            "items": {
                                "$ref": "#/definitions/resourceRef"
                            }
                        },
                        "protocol": {
                            "$ref": "#/definitions/protocol"
                        },
                        "frontendPort": {
                            "type": "integer"
                        },
                        "backendPort": {
                            "type": "integer"
                        },
                        "enableFloatingIP": {
                            "type": "boolean"
                        },
                        "idleTimeoutInMinutes": {
                            "type": "integer"
                        },
                        "backendIPConfiguration": {
                            "$ref": "#/definitions/resourceRef"
                        }
                    }
                },
                "required": [

```

```

        "provisioningState",
        "frontendIPConfigurations",
        "protocol",
        "frontendPort"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
}
},
"required": [
    "nextLink"
]
}
}

```

6.5.7 loadBalancingRules

6.5.7.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancers loadbalancingrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "loadDistribution": {
    "enum": [ "Default", "SourceIP", "SourceIPProtocol" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  }
},

```

```

"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "frontendIPConfigurations": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/resourceRef"
      }
    },
    "protocol": {
      "$ref": "#/definitions/protocol"
    },
    "frontendPort": {
      "type": "integer"
    },
    "backendPort": {
      "type": "integer"
    },
    "enableFloatingIP": {
      "type": "boolean"
    },
    "idleTimeoutInMinutes": {
      "type": "integer"
    },
    "backendAddressPool": {
      "$ref": "#/definitions/resourceRef"
    },
    "loadDistribution": {
      "$ref": "#/definitions/loadDistribution"
    }
  },
  "required": [
    "frontendIPConfigurations",
    "protocol",
    "frontendPort"
  ]
}
},
"required": [
  "properties"
]
}

```

6.5.7.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers loadbalancingrules",
  "type": "object",
  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {

```



```

    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "loadDistribution": {
    "enum": [ "Default", "SourceIP", "SourceIPProtocol" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "frontendIPConfigurations": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      },
      "protocol": {
        "$ref": "#/definitions/protocol"
      },
      "frontendPort": {
        "type": "integer"
      },
      "backendPort": {
        "type": "integer"
      },
      "enableFloatingIP": {
        "type": "boolean"
      },
      "idleTimeoutInMinutes": {
        "type": "integer"
      },
      "backendAddressPool": {
        "$ref": "#/definitions/resourceRef"
      },
      "loadDistribution": {
        "$ref": "#/definitions/loadDistribution"
      }
    }
  },
  "required": [
    "provisioningState",
    "frontendIPConfigurations",
    "protocol",
    "frontendPort"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",

```

```

    "instanceId",
    "properties"
  ]
}

```

6.5.7.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for ALL loadbalancers loadbalancingrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "protocol": {
      "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
    },
    "loadDistribution": {
      "enum": [ "Default", "SourceIP", "SourceIPProtocol" ]
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "value": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "$ref": "#/definitions/provisioningState"
              },
              "frontendIPConfigurations": {
                "type": "array",
                "items": {

```

```

        "$ref": "#/definitions/resourceRef"
      }
    },
    "protocol": {
      "$ref": "#/definitions/protocol"
    },
    "frontendPort": {
      "type": "integer"
    },
    "backendPort": {
      "type": "integer"
    },
    "enableFloatingIP": {
      "type": "boolean"
    },
    "idleTimeoutInMinutes": {
      "type": "integer"
    },
    "backendAddressPool": {
      "$ref": "#/definitions/resourceRef"
    },
    "loadDistribution": {
      "$ref": "#/definitions/loadDistribution"
    }
  },
  "required": [
    "provisioningState",
    "frontendIPConfigurations",
    "protocol",
    "frontendPort"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"nextLink": {
  "type": "string",
  "format": "uri",
  "default": ""
}
},
"required": [
  "nextLink"
]
}
}

```

6.5.8 outboundNatRules

6.5.8.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancers outboundnatrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {

```

```

        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
},
"protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
},
"provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
}
},
"properties": {
    "resourceRef": {
        "type": "string"
    },
    "resourceId": {
        "type": "string"
    },
    "instanceId": {
        "type": "string"
    },
    "properties": {
        "type": "object",
        "properties": {
            "provisioningState": {
                "$ref": "#/definitions/provisioningState"
            },
            "frontendIPConfigurations": {
                "type": "array",
                "items": {
                    "$ref": "#/definitions/resourceRef"
                }
            },
            "protocol": {
                "$ref": "#/definitions/protocol"
            },
            "backendAddressPool": {
                "$ref": "#/definitions/resourceRef"
            }
        },
        "required": [
            "frontendIPConfigurations",
            "protocol",
            "backendAddressPool"
        ]
    }
},
"required": [
    "properties"
]
}
}

```

6.5.8.2 GET schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for loadbalancers outboundnatrules",
    "type": "object",

    "definitions": {
        "resourceRef": {
            "type": "object",
            "additionalProperties": false,

```

```

    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "frontendIPConfigurations": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      },
      "protocol": {
        "$ref": "#/definitions/protocol"
      },
      "backendAddressPool": {
        "$ref": "#/definitions/resourceRef"
      }
    }
  },
  "required": [
    "provisioningState",
    "frontendIPConfigurations",
    "protocol",
    "backendAddressPool"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
]

```

```
}
```

6.5.8.3 GET ALL schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for ALL loadbalancers outboundnatrules",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "resourceRef": {
        "type": "object",
        "additionalProperties": false,
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "protocol": {
      "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "value": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "$ref": "#/definitions/provisioningState"
              },
              "frontendIPConfigurations": {
                "type": "array",
                "items": {
                  "$ref": "#/definitions/resourceRef"
                }
              },
              "protocol": {
                "$ref": "#/definitions/protocol"
              }
            }
          }
        }
      }
    }
  }
}
```

```

        "backendAddressPool": {
            "$ref": "#/definitions/resourceRef"
        }
    },
    "required": [
        "provisioningState",
        "frontendIPConfigurations",
        "protocol",
        "backendAddressPool"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
}
},
"required": [
    "nextLink"
]
}
}

```

6.5.9 probes

6.5.9.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for loadbalancers probes",
    "type": "object",

    "definitions": {
        "resourceRef": {
            "type": "object",
            "additionalProperties": false,
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            }
        },
        "required": [
            "resourceRef"
        ]
    },
    "protocol": {
        "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
    },
    "provisioningState": {
        "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
},

"properties": {
    "resourceRef": {
        "type": "string"
    },
    "resourceId": {

```

```

    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "protocol": {
        "$ref": "#/definitions/protocol"
      },
      "port": {
        "type": "integer"
      },
      "intervalInSeconds": {
        "type": "integer"
      },
      "numberOfProbes": {
        "type": "integer"
      },
      "loadBalancingRules": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/resourceRef"
        }
      }
    }
  },
  "required": [
    "protocol",
    "port"
  ]
}
},
"required": [
  "properties"
]
}
}

```

6.5.9.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancers probes",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  }
}

```



```

    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "port": {
          "type": "integer"
        },
        "intervalInSeconds": {
          "type": "integer"
        },
        "numberOfProbes": {
          "type": "integer"
        },
        "loadBalancingRules": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          }
        }
      }
    },
    "required": [
      "provisioningState",
      "protocol",
      "port"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.5.9.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for ALL loadbalancers probes",

  "definitions": {
    "resourceRef": {

```

```

    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"type": "object",
"properties": {
  "value": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "$ref": "#/definitions/GUID"
        }
      },
      "properties": {
        "type": "object",
        "properties": {
          "provisioningState": {
            "$ref": "#/definitions/provisioningState"
          },
          "protocol": {
            "$ref": "#/definitions/protocol"
          },
          "port": {
            "type": "integer"
          },
          "intervalInSeconds": {
            "type": "integer"
          },
          "numberOfProbes": {
            "type": "integer"
          },
          "loadBalancingRules": {
            "type": "array",
            "items": {
              "$ref": "#/definitions/resourceRef"
            }
          }
        }
      }
    }
  },
  "required": [
    "provisioningState",

```

```

        "protocol",
        "port"
    ]
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
}
},
"required": [
    "nextLink"
]
}
}

```

6.6 loadBalancerManager

6.6.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancerManager",
  "type": "object",

  "definitions": {
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  }
},

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        }
      }
    }
  }
}

```

```

    },
    "loadBalancerManagerIPAddress": {
      "type": "string",
      "format": "ipv4"
    },
    "outboundNatIPExemptions": {
      "type": "array",
      "items": {
        "type": "string",
        "format": "ipv4"
      }
    },
    "vipIpPools": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/resourceRef"
      },
      "minItems": 1
    }
  },
  "required": [
    "loadBalancerManagerIPAddress",
    "outboundNatIPExemptions",
    "vipIpPools"
  ]
}
},
"required": [
  "properties"
]
}
}

```

6.6.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancerManager",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    }
  }
}

```

```

    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "loadBalancerManagerIPAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "outboundNatIPExemptions": {
          "type": "array",
          "items": {
            "type": "string",
            "format": "ipv4"
          }
        },
        "vipIpPools": {
          "type": "array",
          "items": {
            "$ref": "#/definitions/resourceRef"
          },
          "minItems": 1
        }
      }
    },
    "required": [
      "provisioningState",
      "loadBalancerManagerIPAddress",
      "outboundNatIPExemptions",
      "vipIpPools"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.7 loadBalancerMux

6.7.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for loadbalancerMuxes",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    }
  },

```

```

    "required": [
      "resourceRef"
    ]
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "peerRouterConfigurations": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "routerName": {
          "type": "string"
        },
        "routerIPAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "peerASN": {
          "type": "integer"
        },
        "id": {
          "type": "string"
        }
      },
      "required": [
        "routerName",
        "routerIPAddress",
        "peerASN",
        "id"
      ]
    }
  }
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "routerConfiguration": {
        "type": "object",
        "properties": {
          "localASN": {
            "type": "integer"
          },
          "peerRouterConfigurations": {
            "$ref": "#/definitions/peerRouterConfigurations"
          }
        },
        "required": [
          "localASN",
          "peerRouterConfigurations"
        ]
      }
    }
  }
},

```

```

    "virtualServer": {
      "$ref": "#/definitions/resourceRef"
    },
    "connections": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "managementAddresses": {
            "type": "array",
            "items": {
              "type": "string",
              "format": "ipv4"
            }
          },
          "credential": {
            "$ref": "#/definitions/resourceRef"
          },
          "credentialType": {
            "type": "string"
          },
          "protocol": {
            "$ref": "#/definitions/protocol"
          },
          "port": {
            "type": "string"
          }
        }
      },
      "required": [
        "managementAddresses",
        "credential",
        "credentialType"
      ]
    }
  },
  "required": [
    "routerConfiguration",
    "virtualServer"
  ]
}
]
},
"required": [
  "properties"
]
}
}

```

6.7.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancerMuxes",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {

```

```

    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "protocol": {
    "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "peerRouterConfigurations": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "routerName": {
          "type": "string"
        },
        "routerIPAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "peerASN": {
          "type": "integer"
        },
        "id": {
          "type": "string"
        }
      },
      "required": [
        "routerName",
        "routerIPAddress",
        "peerASN",
        "id"
      ]
    }
  },
  "configurationState": {
    "type": "object",
    "items": {
      "additionalProperties": false,
      "properties": {
        "status": {
          "enum": [
            "Uninitialized",
            "InProgress",
            "Success",
            "Warning",
            "Failure"
          ]
        }
      }
    },
    "lastUpdatedTime": {
      "type": "string"
    },
    "detailedInfo": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "source": {
            "enum": [
              "ResourceGlobal",
              "SoftwareLoadBalancerManager",
              "VirtualNetwork",
              "VirtualSwitch",
              "Firewall"
            ]
          }
        }
      },
      "message": {
        "type": "string"
      }
    }
  }
}

```



```

    ]
  },
  "virtualServer": {
    "$ref": "#/definitions/resourceRef"
  },
  "connections": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "managementAddresses": {
          "type": "array",
          "items": {
            "type": "string",
            "format": "ipv4"
          }
        },
        "credential": {
          "$ref": "#/definitions/resourceRef"
        },
        "credentialType": {
          "type": "string"
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "port": {
          "type": "string"
        }
      }
    },
    "required": [
      "managementAddresses",
      "credential",
      "credentialType"
    ]
  },
  "configurationState": {
    "$ref": "#/definitions/configurationState"
  },
  "required": [
    "provisioningState",
    "routerConfiguration",
    "virtualServer",
    "configurationState"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.7.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for loadbalancerMuxes",
  "type": "object",

  "definitions": {
    "resourceRef": {
      "type": "object",

```

```

"additionalProperties": false,
"properties": {
  "resourceRef": {
    "type": "string"
  }
},
"required": [
  "resourceRef"
]
},
"GUID": {
  "type": "string",
  "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
},
"protocol": {
  "enum": [ "Tcp", "Udp", "Http", "Https", "GRE", "ESP", "All" ]
},
"provisioningState": {
  "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"peerRouterConfigurations": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "routerName": {
        "type": "string"
      },
      "routerIPAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "peerASN": {
        "type": "integer"
      },
      "id": {
        "type": "string"
      }
    }
  },
  "required": [
    "routerName",
    "routerIPAddress",
    "peerASN",
    "id"
  ]
}
},
"configurationState": {
  "type": "object",
  "items": {
    "additionalProperties": false,
    "properties": {
      "status": {
        "enum": [
          "Uninitialized",
          "InProgress",
          "Success",
          "Warning",
          "Failure"
        ]
      }
    }
  },
  "lastUpdatedTime": {
    "type": "string"
  },
  "detailedInfo": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {

```

```

        "source": {
            "enum": [
                "ResourceGlobal",
                "SoftwareLoadBalancerManager",
                "VirtualNetwork",
                "VirtualSwitch",
                "Firewall"
            ]
        },
        "message": {
            "type": "string"
        },
        "code": {
            "enum": [
                "Unknown",
                "Success",
                "InProgress",
                "HostUnreachable",
                "PAIpAddressExhausted",
                "PAMacAddressExhausted",
                "PAAddressConfigurationFailure",
                "CertificateNotTrusted",
                "CertificateNotAuthorized",
                "PolicyConfigurationFailureOnVfp",
                "PolicyConfigurationFailure",
                "HostNotConnectedToController",
                "MultipleVfpEnabledSwitches",
                "DhcpAddressAllocationFailure",
                "DistributedRouterConfigurationFailure",
                "PortBlocked",
                "Overloaded",
                "RoutePublicationFailure",
                "VirtualServerUnreachable",
                "QosConfigurationFailure",
                "InfrastructurePortsBlocked"
            ]
        }
    }
}
},
"required": [
    "status",
    "lastUpdatedTime"
]
}
},
},
"properties": {
    "value": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                },
                "resourceId": {
                    "type": "string"
                },
                "etag": {
                    "type": "string"
                },
                "instanceId": {
                    "$ref": "#/definitions/GUID"
                },
                "properties": {
                    "type": "object",

```

```

"properties": {
  "provisioningState": {
    "$ref": "#/definitions/provisioningState"
  },
  "routerConfiguration": {
    "type": "object",
    "properties": {
      "localASN": {
        "type": "integer"
      },
      "peerRouterConfigurations": {
        "$ref": "#/definitions/peerRouterConfigurations"
      }
    },
    "required": [
      "localASN",
      "peerRouterConfigurations"
    ]
  },
  "virtualServer": {
    "$ref": "#/definitions/resourceRef"
  },
  "connections": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "managementAddresses": {
          "type": "array",
          "items": {
            "type": "string",
            "format": "ipv4"
          }
        },
        "credential": {
          "$ref": "#/definitions/resourceRef"
        },
        "credentialType": {
          "type": "string"
        },
        "protocol": {
          "$ref": "#/definitions/protocol"
        },
        "port": {
          "type": "string"
        }
      },
      "required": [
        "managementAddresses",
        "credential",
        "credentialType"
      ]
    }
  },
  "configurationState": {
    "$ref": "#/definitions/configurationState"
  },
  "required": [
    "provisioningState",
    "routerConfiguration",
    "virtualServer",
    "configurationState"
  ]
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",

```

```

        "instanceId",
        "properties"
    ]
}
},
"nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
}
},
"required": [
    "nextLink"
]
}

```

6.8 logicalNetworks

6.8.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for logicalnetworks",
    "type": "object",

    "definitions": {
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                },
                "originalHref": {
                    "type": "string"
                }
            }
        }
    },

    "properties": {
        "resourceRef": {
            "type": "string"
        },
        "resourceId": {
            "type": "string"
        },
        "etag": {
            "type": "string"
        },
        "resourceMetadata": {
            "$ref": "#/definitions/resourceMetadata"
        },
        "tags": {
            "additionalProperties": { "type": "string" }
        },
        "properties": {
            "properties": {
                "subnets": {
                    "type": "array",
                    "items": {

```

```

"type": "object",
"resourceRef": {
  "type": "string"
},
"resourceId": {
  "type": "string"
},
"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"etag": {
  "type": "string"
},
"properties": {
  "type": "object",
  "properties": {
    "addressPrefix": {
      "type": "string"
    },
    "vlanID": {
      "type": "string"
    },
    "routes": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "resourceMetadata": {
            "$ref": "#/definitions/resourceMetadata"
          },
          "etag": {
            "type": "string"
          },
          "properties": {
            "type": "object",
            "properties": {
              "destination": {
                "type": "string"
              },
              "nextHop": {
                "type": "string"
              }
            }
          }
        }
      }
    },
    "required": [
      "resourceId",
      "properties"
    ]
  }
},
"dnsServers": {
  "type": "array",
  "items": {
    "type": "string"
  }
},
"defaultGateways": {
  "type": "array",
  "items": {
    "type": "string"
  }
},
"isPublic": {

```

```

        "type": "boolean"
      }
    },
    "required": [
      "addressPrefix"
    ]
  }
},
"required": [
  "resourceId",
  "properties"
]
}
},
"networkVirtualizationEnabled": {
  "type": "string"
}
}
},
"required": [
  "resourceId",
  "properties"
]
}
}

```

6.8.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for logicalnetworks",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {

```



```

    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "subnets": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "etag": {
              "type": "string"
            },
            "instanceId": {
              "$ref": "#/definitions/GUID"
            },
            "resourceMetadata": {
              "$ref": "#/definitions/resourceMetadata"
            },
            "tags": {
              "additionalProperties": { "type": "string" }
            },
            "properties": {
              "type": "object",
              "properties": {
                "provisioningState": {
                  "$ref": "#/definitions/provisioningState"
                },
                "addressPrefix": {
                  "type": "string"
                },
                "networkInterfaces": {
                  "type": "array",
                  "items": {
                    "type": "object",
                    "properties": {
                      "resourceRef": {
                        "type": "string"
                      }
                    }
                  },
                  "required": [
                    "resourceRef"
                  ]
                }
              }
            },
            "gatewayPools": {
              "type": "array",
              "items": {
                "type": "object",

```

```

    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "networkConnections": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  }
},
"vlanID": {
  "type": "string"
},
"ipPools": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "properties": {
        "type": "object",
        "properties": {
          "provisioningState": {
            "$ref": "#/definitions/provisioningState"
          },
          "startIpAddress": {
            "type": "string"
          },
          "endIpAddress": {
            "type": "string"
          }
        }
      }
    },
    "required": [
      "provisioningState",
      "startIpAddress",
      "endIpAddress"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId"
]

```

```

        "etag",
        "instanceId",
        "properties"
    ]
}
},
"routes": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "resourceMetadata": {
                "$ref": "#/definitions/resourceMetadata"
            },
            "tags": {
                "additionalProperties": { "type": "string" }
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "destination": {
                        "type": "string"
                    },
                    "nextHop": {
                        "type": "string"
                    }
                }
            },
            "required": [
                "provisioningState",
                "destination",
                "nextHop"
            ]
        }
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"dnsServers": {
    "type": "array",
    "items": {
        "type": "string"
    }
},
"defaultGateways": {
    "type": "array",
    "items": {
        "type": "string"
    }
},
},

```

```

        "isPublic": {
            "type": "boolean"
        }
    },
    "required": [
        "provisioningState",
        "addressPrefix",
        "isPublic"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"virtualNetworks": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        },
        "required": [
            "resourceRef"
        ]
    }
},
"networkVirtualizationEnabled": {
    "type": "string"
},
"usage": {
    "type": "object",
    "properties": {
        "numberOfIPAddresses": {
            "type": "string"
        },
        "numberOfIPAddressesAllocated": {
            "type": "string"
        },
        "numberOfIPAddressesInTransition": {
            "type": "string"
        }
    }
},
"required": [
    "provisioningState"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```

6.8.3 GET ALL schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for logicalnetworks",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "logicalnetwork": {
      "type": "object",
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "type": "string"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "tags": {
        "additionalProperties": { "type": "string" }
      },
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "subnets": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceRef": {
                "type": "string"
              },
              "resourceId": {
```

```

    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "addressPrefix": {
        "type": "string"
      },
      "networkInterfaces": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "gatewayPools": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "networkConnections": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "vlanID": {
        "type": "string"
      },
      "ipPools": {
        "type": "array",

```

```

"items": {
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "startIpAddress": {
          "type": "string"
        },
        "endIpAddress": {
          "type": "string"
        }
      },
      "required": [
        "provisioningState",
        "startIpAddress",
        "endIpAddress"
      ]
    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
},
"routes": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "tags": {
        "additionalProperties": { "type": "string" }
      }
    }
  }
}

```

```

        "properties": {
            "type": "object",
            "properties": {
                "provisioningState": {
                    "$ref": "#/definitions/provisioningState"
                },
                "destination": {
                    "type": "string"
                },
                "nextHop": {
                    "type": "string"
                }
            },
            "required": [
                "provisioningState",
                "destination",
                "nextHop"
            ]
        },
        "required": [
            "resourceRef",
            "resourceId",
            "etag",
            "instanceId",
            "properties"
        ]
    },
    "dnsServers": {
        "type": "array",
        "items": {
            "type": "string"
        }
    },
    "defaultGateways": {
        "type": "array",
        "items": {
            "type": "string"
        }
    },
    "isPublic": {
        "type": "boolean"
    },
    "required": [
        "provisioningState",
        "addressPrefix",
        "isPublic"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"virtualNetworks": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    }
},

```



```

        "required": [
            "resourceRef"
        ]
    },
    "networkVirtualizationEnabled": {
        "type": "string"
    },
    "usage": {
        "type": "object",
        "properties": {
            "numberOfIPAddresses": {
                "type": "string"
            },
            "numberOfIPAddressesAllocated": {
                "type": "string"
            },
            "numberOfIPAddressesInTransition": {
                "type": "string"
            }
        }
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"logicalnetworkArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/logicalnetwork" }
}
},
"properties": {
    "value": { "$ref": "#/definitions/logicalnetworkArray" },
    "nextLink": {
        "type": "string",
        "format": "uri",
        "default": ""
    }
}
},
"required": [ "nextLink" ]
}

```

6.8.4 logicalSubnets

6.8.4.1 ipPools

6.8.4.1.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for ippools",
    "type": "object",

    "properties": {
        "resourceId": {
            "type": "string"
        },
        "properties": {

```

```

    "type": "object",
    "properties": {
      "startIpAddress": {
        "type": "string"
      },
      "endIpAddress": {
        "type": "string"
      }
    },
    "required": [
      "startIpAddress",
      "endIpAddress"
    ]
  }
},
"required": [
  "resourceId",
  "properties"
]
}

```

6.8.4.1.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for IpPools",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "startIpAddress": {
          "type": "string"
        },
        "endIpAddress": {
          "type": "string"
        }
      }
    },
    "required": [
      "startIpAddress",
      "endIpAddress",

```

```

        "provisioningState"
      ]
    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}

```

6.8.4.1.3 GET ALL schema

6.9 macPools

6.9.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for macpool",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },

  "properties": {
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "startMacAddress": {
          "type": "string",
          "pattern": "^[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}$"
        }
      }
    }
  }
}

```

```

    },
    "endMacAddress": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}$"
    }
  },
  "required": [
    "startMacAddress",
    "endMacAddress"
  ]
}
},
"required": [
  "properties"
]
}

```

6.9.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for macPools",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    }
  }
}

```

```

    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "startMacAddress": {
          "type": "string",
          "pattern": "^[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}$"
        },
        "endMacAddress": {
          "type": "string",
          "pattern": "^[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}$"
        },
        "usage": {
          "type": "object",
          "properties": {
            "numberOfMacAddresses": {
              "type": "integer"
            },
            "numberOfMacAddressesAllocated": {
              "type": "integer"
            }
          },
          "required": [
            "numberOfMacAddresses",
            "numberOfMacAddressesAllocated"
          ]
        }
      },
      "required": [
        "provisioningState",
        "startMacAddress",
        "endMacAddress",
        "usage"
      ]
    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}

```

6.9.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for macPools",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",

```

```

    "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "resourceMetadata": {
    "properties": {
      "client": {
        "type": "string"
      },
      "tenantId": {
        "type": "string"
      },
      "groupId": {
        "type": "string"
      },
      "resourceName": {
        "type": "string"
      },
      "originalHref": {
        "type": "string"
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "macpool": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "tags": {
        "additionalProperties": { "type": "string" }
      },
      "properties": {
        "type": "object",
        "properties": {
          "provisioningState": {
            "$ref": "#/definitions/provisioningState"
          },
          "startMacAddress": {
            "type": "string",
            "pattern": "[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}$"
          },
          "endMacAddress": {
            "type": "string",
            "pattern": "[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}-[a-fA-F0-9]{2}$"
          },
          "usage": {
            "type": "object",
            "properties": {
              "numberOfMacAddresses": {
                "type": "integer"
              },
              "numberOfMacAddressesAllocated": {
                "type": "integer"
              }
            }
          }
        }
      }
    }
  }
}

```

```

        }
      },
      "required": [
        "numberOfMacAddresses",
        "numberOfMacAddressesAllocated"
      ]
    }
  },
  "required": [
    "provisioningState",
    "startMacAddress",
    "endMacAddress",
    "usage"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
},
"macpoolArray": {
  "type": "array",
  "minItems": 0,
  "uniqueItems": true,
  "items": { "$ref": "#/definitions/macpool" }
}
},
"properties": {
  "value": { "$ref": "#/definitions/macpoolArray" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
}
},
"required": [ "nextLink" ]
}

```

6.10 routeTables

6.10.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for Route Tables",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        }
      }
    },

```

```

        "originalHref": {
            "type": "string"
        }
    }
},
"properties": {
    "resourceId": {
        "type": "string"
    },
    "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
        "type": "object",
        "properties": {
            "routes": {
                "type": "array",
                "items": {
                    "type": "object",
                    "properties": {
                        "resourceId": {
                            "type": "string"
                        },
                        "resourceMetadata": {
                            "$ref": "#/definitions/resourceMetadata"
                        },
                        "properties": {
                            "type": "object",
                            "properties": {
                                "addressPrefix": {
                                    "type": "string"
                                },
                                "nextHopType": {
                                    "enum": [ "VirtualAppliance", "VnetLocal", "Internet",
"VirtualNetworkGateway", "None" ]
                                },
                                "nextHopIpAddress": {
                                    "type": "string"
                                }
                            }
                        },
                        "required": [
                            "addressPrefix",
                            "nextHopType"
                        ]
                    }
                },
                "required": [
                    "resourceId",
                    "properties"
                ]
            }
        },
        "required": [
            "routes"
        ]
    },
    "required": [
        "properties"
    ]
}
}

```

6.10.2 GET schema

```
{
```



```

"$schema": "http://json-schema.org/draft-04/schema#",
"title": "GET JSON Schema for Route Tables",
"type": "object",

"definitions": {
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "resourceMetadata": {
    "properties": {
      "client": {
        "type": "string"
      },
      "tenantId": {
        "type": "string"
      },
      "groupId": {
        "type": "string"
      },
      "resourceName": {
        "type": "string"
      },
      "originalHref": {
        "type": "string"
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "routes": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "resourceMetadata": {
              "$ref": "#/definitions/resourceMetadata"
            }
          }
        }
      }
    }
  }
}

```

```

    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "addressPrefix": {
          "type": "string"
        },
        "nextHopType": {
          "enum": [ "VirtualAppliance", "VnetLocal", "Internet",
"VirtualNetworkGateway", "None" ]
        },
        "nextHopIpAddress": {
          "type": "string"
        }
      },
      "required": [
        "provisioningState",
        "addressPrefix",
        "nextHopType"
      ]
    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}
},
"subnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"required": [
  "provisioningState",
  "routes"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.10.3 GET ALL schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for Route Tables",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "RouteTables": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "type": "string"
        },
        "resourceMetadata": {
          "$ref": "#/definitions/resourceMetadata"
        },
        "properties": {
          "type": "object",
          "properties": {
            "provisioningState": {
              "$ref": "#/definitions/provisioningState"
            },
            "routes": {
              "type": "array",
              "items": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  },
                  "resourceId": {
                    "type": "string"
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}
```

```

    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "addressPrefix": {
          "type": "string"
        },
        "nextHopType": {
          "enum": [ "VirtualAppliance", "VnetLocal", "Internet",
"VirtualNetworkGateway", "None" ]
        },
        "nextHopIpAddress": {
          "type": "string"
        }
      }
    },
    "required": [
      "provisioningState",
      "addressPrefix",
      "nextHopType"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"subnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
}
},
"required": [
  "provisioningState",
  "routes"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]

```

```

    ]
  },
  "RouteTablesArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/RouteTables" }
  }
},
"properties": {
  "value": { "$ref": "#/definitions/RouteTablesArray" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": ["nextLink"]
}

```

6.10.4 routes

6.10.4.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for Route Table Routes",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },

  "properties": {
    "resourceId": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "addressPrefix": {
          "type": "string"
        }
      }
    }
  }
}

```

```

    },
    "nextHopType": {
      "enum": [ "VirtualAppliance", "VnetLocal", "Internet", "VirtualNetworkGateway",
"None" ]
    },
    "nextHopIpAddress": {
      "type": "string"
    }
  ],
  "required": [
    "addressPrefix",
    "nextHopType"
  ]
}
},
"required": [
  "properties"
]
}

```

6.10.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for Route Table Routes",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {

```

```

        "type": "string"
    },
    "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
        "additionalProperties": { "type": "string" }
    },
    "properties": {
        "type": "object",
        "properties": {
            "provisioningState": {
                "$ref": "#/definitions/provisioningState"
            },
            "addressPrefix": {
                "type": "string"
            },
            "nextHopType": {
                "enum": [ "VirtualAppliance", "VnetLocal", "Internet", "VirtualNetworkGateway",
"None" ]
            },
            "nextHopIpAddress": {
                "type": "string"
            }
        },
        "required": [
            "provisioningState",
            "addressPrefix",
            "nextHopType"
        ]
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}

```

6.10.4.3 GET ALL schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET ALL JSON Schema for Route Table Routes",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                }
            },

```

```

        "originalHref": {
            "type": "string"
        }
    },
    "provisioningState": {
        "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "routes": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "resourceMetadata": {
                "$ref": "#/definitions/resourceMetadata"
            },
            "tags": {
                "additionalProperties": { "type": "string" }
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "addressPrefix": {
                        "type": "string"
                    },
                    "nextHopType": {
                        "enum": [ "VirtualAppliance", "VnetLocal", "Internet", "VirtualNetworkGateway",
"None" ]
                    },
                    "nextHopIpAddress": {
                        "type": "string"
                    }
                }
            },
            "required": [
                "provisioningState",
                "addressPrefix",
                "nextHopType"
            ]
        }
    },
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
},
"routesArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/routes" }
}
},
"properties": {

```



```

    "value": { "$ref": "#/definitions/routesArray" },
    "nextLink": {
      "type": "string",
      "format": "uri",
      "default": ""
    }
  },
  "required": ["nextLink"]
}

```

6.11 networkInterfaces

6.11.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for NetworkInterfaces",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "resourceRef": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ],
  "portSettings": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "macSpoofingEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default" : "Disabled"
      },
      "arpGuardEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default" : "Disabled"
      },
      "dhcpGuardEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default" : "Disabled"
      }
    }
  }
}

```

```

    },
    "stormLimit": {
      "type": "integer",
      "default": 0
    },
    "portFlowLimit": {
      "type": "integer",
      "default": 0
    },
    "iovWeight": {
      "type": "integer",
      "default": 0
    },
    "iovInterruptModeration": {
      "enum": [ "On", "Off" ],
      "default" : "Off"
    },
    "iovQueuePairsRequested": {
      "type": "integer",
      "default": 0
    },
    "vmqWeight": {
      "type": "integer",
      "default": 100
    }
  }
},
"ipConfigurations": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceId": {
        "type": "string"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "properties": {
        "type": "object",
        "properties": {
          "privateIPAllocationMethod": {
            "enum": [ "Static", "Dynamic", "Unmanaged" ]
          },
          "privateIPAddress": {
            "type": "string",
            "format": "ipv4"
          },
          "subnet": {
            "$ref": "#/definitions/resourceRef"
          },
          "accessControlList": {
            "$ref": "#/definitions/resourceRef"
          }
        }
      },
      "required": [
        "privateIPAllocationMethod",
        "privateIPAddress",
        "subnet"
      ]
    }
  },
  "required": [
    "resourceId",
    "properties"
  ]
}
},

```

```

"properties": {
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "type": "object",
    "properties": {
      "ipConfigurations": {
        "$ref": "#/definitions/ipConfigurations"
      },
      "isHostVirtualNetworkInterface": {
        "type": "boolean",
        "default" : false
      },
      "isMultitenantStack": {
        "type": "boolean",
        "default": false
      },
      "isPrimary": {
        "type": "boolean",
        "default" : true
      },
      "internalDnsNameLabel": {
        "type": "string"
      },
      "privateMacAddress": {
        "type": "string",
        "pattern": "^[a-fA-F0-9]{12}$"
      },
      "privateMacAllocationMethod": {
        "enum": [ "Static", "Dynamic" ]
      },
      "dnsSettings": {
        "type": "object",
        "properties": {
          "DnsServers": {
            "type": "array",
            "items": {
              "type": "string",
              "format": "ipv4"
            }
          }
        }
      },
      "serviceInsertionElements": {
        "type": "array",
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/resourceRef" }
      },
      "portSettings": {
        "$ref": "#/definitions/portSettings"
      }
    },
    "required": [
      "provisioningState",
      "privateMacAddress",
      "privateMacAllocationMethod"
    ]
  }
},
"required": [
  "properties"
]
}

```

6.11.2 GET schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for NetworkInterfaces",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "resourceRef": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ],
  "portSettings": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "macSpoofingEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default": "Disabled"
      },
      "arpGuardEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default": "Disabled"
      },
      "dhcpGuardEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default": "Disabled"
      },
      "stormLimit": {
        "type": "integer",
        "default": 0
      },
      "portFlowLimit": {
        "type": "integer",

```

```

    "default": 0
  },
  "iovWeight": {
    "type": "integer",
    "default": 0
  },
  "iovInterruptModeration": {
    "enum": [ "On", "Off" ],
    "default" : "Off"
  },
  "iovQueuePairsRequested": {
    "type": "integer",
    "default": 0
  },
  "vmqWeight": {
    "type": "integer",
    "default": 100
  }
}
},
"configurationState":
{
  "type": "object",
  "additionalProperties": false,
  "properties": {
    "status": {
      "enum": [ "Success", "Failure" ]
    },
    "id": {
      "type": "string"
    },
    "lastUpdatedTime": {
      "type": "string"
    },
    "detailedInfo": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "source": {
            "type": "string"
          },
          "message": {
            "type": "string"
          },
          "code": {
            "type": "string"
          }
        }
      }
    }
  }
}
},
"required": [
  "status",
  "id",
  "lastUpdatedTime"
]
},
"ipConfigurations": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "resourceMetadata": {

```

```

    "$ref": "#/definitions/resourceMetadata"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "privateIPAllocationMethod": {
        "enum": [ "Static", "Dynamic", "Unmanaged" ]
      },
      "privateIPAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "subnet": {
        "$ref": "#/definitions/resourceRef"
      },
      "accessControlList": {
        "$ref": "#/definitions/resourceRef"
      },
      "loadBalancerBackendAddressPools": {
        "type": "array",
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/resourceRef" }
      },
      "loadBalancerInboundNatRules": {
        "type": "array",
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/resourceRef" }
      }
    }
  },
  "required": [
    "provisioningState",
    "privateIPAllocationMethod",
    "privateIPAddress",
    "subnet"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  }
},

```

```

"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"tags": {
  "additionalProperties": { "type": "string" }
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "ipConfigurations": {
      "$ref": "#/definitions/ipConfigurations"
    },
    "isHostVirtualNetworkInterface": {
      "type": "boolean",
      "default" : false
    },
    "isMultitenantStack": {
      "type": "boolean",
      "default": false
    },
    "isPrimary": {
      "type": "boolean",
      "default" : true
    },
    "server": {
      "$ref": "#/definitions/resourceRef"
    },
    "internalDnsNameLabel": {
      "type": "string"
    },
    "configurationState": {
      "$ref": "#/definitions/configurationState"
    },
    "privateMacAddress": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{12}$"
    },
    "privateMacAllocationMethod": {
      "enum": [ "Static", "Dynamic" ]
    },
    "dnsSettings": {
      "type": "object",
      "properties": {
        "DnsServers": {
          "type": "array",
          "items": {
            "type": "string",
            "format": "ipv4"
          }
        }
      }
    },
    "serviceInsertionElements": {
      "type": "array",
      "uniqueItems": true,
      "items": { "$ref": "#/definitions/resourceRef" }
    },
    "portSettings": {
      "$ref": "#/definitions/portSettings"
    }
  },
  "required": [
    "provisioningState"
  ]
}
},
"required": [

```

```

    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}

```

6.11.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for NetworkInterfaces",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "portSettings": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "macSpoofingEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default": "Disabled"
      },
      "arpGuardEnabled": {
        "enum": [ "Eanbled", "Disabled" ],
        "default": "Disabled"
      },
      "dhcpGuardEnabled": {

```



```

    "enum": [ "Enabled", "Disabled" ],
    "default" : "Disabled"
  },
  "stormLimit": {
    "type": "integer",
    "default": 0
  },
  "portFlowLimit": {
    "type": "integer",
    "default": 0
  },
  "iovWeight": {
    "type": "integer",
    "default": 0
  },
  "iovInterruptModeration": {
    "enum": [ "On", "Off" ],
    "default" : "Off"
  },
  "iovQueuePairsRequested": {
    "type": "integer",
    "default": 0
  },
  "vmqWeight": {
    "type": "integer",
    "default": 100
  }
}
},
"configurationState":
{
  "type": "object",
  "additionalProperties": false,
  "properties": {
    "status": {
      "enum": [ "Success", "Failure" ]
    },
    "id": {
      "type": "string"
    },
    "lastUpdatedTime": {
      "type": "string"
    },
    "detailedInfo": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "source": {
            "type": "string"
          },
          "message": {
            "type": "string"
          },
          "code": {
            "type": "string"
          }
        }
      }
    }
  }
}
},
"required": [
  "status",
  "id",
  "lastUpdatedTime"
]
},
"ipConfigurations": {
  "type": "array",
  "items": {

```

```

"type": "object",
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "privateIPAllocationMethod": {
        "enum": [ "Static", "Dynamic", "Unmanaged" ]
      },
      "privateIPAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "subnet": {
        "$ref": "#/definitions/resourceRef"
      },
      "accessControlList": {
        "$ref": "#/definitions/resourceRef"
      },
      "loadBalancerBackendAddressPools": {
        "type": "array",
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/resourceRef" }
      },
      "loadBalancerInboundNatRules": {
        "type": "array",
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/resourceRef" }
      }
    },
    "required": [
      "provisioningState",
      "privateIPAllocationMethod",
      "privateIPAddress",
      "subnet"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"networkInterface": {
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    }
  },
},

```

```

"resourceId": {
  "type": "string"
},
"etag": {
  "type": "string"
},
"instanceId": {
  "$ref": "#/definitions/GUID"
},
"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"tags": {
  "additionalProperties": { "type": "string" }
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "ipConfigurations": {
      "$ref": "#/definitions/ipConfigurations"
    },
    "isHostVirtualNetworkInterface": {
      "type": "boolean",
      "default": false
    },
    "isMultitenantStack": {
      "type": "boolean",
      "default": false
    },
    "isPrimary": {
      "type": "boolean",
      "default": true
    },
    "server": {
      "$ref": "#/definitions/resourceRef"
    },
    "internalDnsNameLabel": {
      "type": "string"
    },
    "configurationState": {
      "$ref": "#/definitions/configurationState"
    },
    "privateMacAddress": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{12}$"
    },
    "privateMacAllocationMethod": {
      "enum": [ "Static", "Dynamic" ]
    },
    "dnsSettings": {
      "type": "object",
      "properties": {
        "DnsServers": {
          "type": "array",
          "items": {
            "type": "string",
            "format": "ipv4"
          }
        }
      }
    },
    "serviceInsertionElements": {
      "type": "array",
      "uniqueItems": true,
      "items": { "$ref": "#/definitions/resourceRef" }
    },
    "portSettings": {

```

```

        "$ref": "#/definitions/portSettings"
    }
},
"required": [
    "provisioningState",
    "privateMacAddress",
    "privateMacAllocationMethod"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"networkInterfaceArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/networkInterface" }
}
},
"properties": {
    "value": { "$ref": "#/definitions/networkInterfaceArray" },
    "nextLink": {
        "type": "string",
        "format": "uri",
        "default": ""
    }
},
"required": ["value", "nextLink"]
}
}

```

6.11.4 ipConfigurations

6.11.4.1 GET schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for IP Configurations",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                },
                "originalHref": {

```

```

        "type": "string"
    }
}
},
"provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"resourceRef": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"properties": {
    "resourceRef": {
        "type": "string"
    },
    "resourceId": {
        "type": "string"
    },
    "etag": {
        "type": "string"
    },
    "instanceId": {
        "$ref": "#/definitions/GUID"
    },
    "properties": {
        "type": "object",
        "properties": {
            "provisioningState": {
                "$ref": "#/definitions/provisioningState"
            },
            "privateIPAllocationMethod": {
                "enum": [ "Static", "Dynamic", "Unmanaged" ]
            },
            "privateIPAddress": {
                "type": "string",
                "format": "ipv4"
            },
            "subnet": {
                "$ref": "#/definitions/resourceRef"
            },
            "accessControlList": {
                "$ref": "#/definitions/resourceRef"
            },
            "loadBalancerBackendAddressPools": {
                "type": "array",
                "uniqueItems": true,
                "items": { "$ref": "#/definitions/resourceRef" }
            },
            "loadBalancerInboundNatRules": {
                "type": "array",
                "uniqueItems": true,
                "items": { "$ref": "#/definitions/resourceRef" }
            }
        }
    },
    "required": [
        "provisioningState",
        "privateIPAllocationMethod",
        "privateIPAddress",
        "subnet"
    ]
}
}

```

```

    }
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}

```

6.11.4.2 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for IP Configurations",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "ipConfigurations": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        }
      }
    }
  }
}

```

```

    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "etag": {
      "type": "string"
    },
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        },
        "privateIPAllocationMethod": {
          "enum": [ "Static", "Dynamic", "Unmanaged" ]
        },
        },
        "privateIPAddress": {
          "type": "string",
          "format": "ipv4"
        },
        },
        "subnet": {
          "$ref": "#/definitions/resourceRef"
        },
        },
        "accessControlList": {
          "$ref": "#/definitions/resourceRef"
        },
        },
        "loadBalancerBackendAddressPools": {
          "type": "array",
          "uniqueItems": true,
          "items": { "$ref": "#/definitions/resourceRef" }
        },
        },
        "loadBalancerInboundNatRules": {
          "type": "array",
          "uniqueItems": true,
          "items": { "$ref": "#/definitions/resourceRef" }
        }
      }
    },
    "required": [
      "provisioningState",
      "privateIPAllocationMethod",
      "privateIPAddress",
      "subnet"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"properties": {
  "value": { "$ref": "#/definitions/ipConfigurations" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": ["value", "nextLink"]
}

```

6.12 publicIpAddresses

6.12.1 PUT schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for public IP Addresses",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "staticIP": {
    "type": "object",
    "properties": {
      "ipAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "publicIPAllocationMethod": {
        "enum": [ "Static" ]
      },
      "idleTimeoutInMinutes": {
        "type": "integer",
        "minimum": 1
      }
    },
    "required": [
      "ipAddress",
      "publicIPAllocationMethod"
    ]
  },
  "dynamicIP": {
    "type": "object",
    "properties": {
      "ipAddress": {
        "type": "string",
        "format": "ipv4"
      },
      "publicIPAllocationMethod": {
        "enum": [ "Dynamic" ]
      },
      "idleTimeoutInMinutes": {
        "type": "integer",
        "minimum": 1
      }
    },
    "required": [
      "publicIPAllocationMethod"
    ]
  }
}
```



```

},
"properties": {
  "resourceId": {
    "type": "string"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "oneOf": [
      { "$ref": "#/definitions/staticIP" },
      { "$ref": "#/definitions/dynamicIP" }
    ]
  }
},
"required": [
  "properties"
]
}

```

6.12.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for public IP Addresses",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },

```

```

    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "ipAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "publicIPAllocationMethod": {
          "enum": [ "Static", "Dynamic" ]
        },
        "idleTimeoutInMinutes": {
          "type": "integer",
          "minimum": 1
        }
      }
    },
    "required": [
      "ipAddress",
      "publicIPAllocationMethod",
      "idleTimeoutInMinutes"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.12.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for Access Control Lists",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {

```

```

        "type": "string"
    },
    "resourceName": {
        "type": "string"
    },
    "originalHref": {
        "type": "string"
    }
}
},
"provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"publicIP": {
    "type": "object",
    "properties": {
        "resourceRef": {
            "type": "string"
        },
        "resourceId": {
            "type": "string"
        },
        "etag": {
            "type": "string"
        },
        "instanceId": {
            "$ref": "#/definitions/GUID"
        },
        "resourceMetadata": {
            "$ref": "#/definitions/resourceMetadata"
        },
        "tags": {
            "additionalProperties": { "type": "string" }
        },
        "properties": {
            "type": "object",
            "properties": {
                "provisioningState": {
                    "$ref": "#/definitions/provisioningState"
                },
                "ipAddress": {
                    "type": "string",
                    "format": "ipv4"
                },
                "publicIPAllocationMethod": {
                    "enum": [ "Static", "Dynamic" ]
                },
                "idleTimeoutInMinutes": {
                    "type": "integer",
                    "minimum": 1
                }
            }
        },
        "required": [
            "ipAddress",
            "publicIPAllocationMethod",
            "idleTimeoutInMinutes"
        ]
    }
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"publicIPArray": {
    "type": "array",
    "minItems": 0,

```

```

    "uniqueItems": true,
    "items": { "$ref": "#/definitions/publicIP" }
  }
},
"properties": {
  "value": { "$ref": "#/definitions/publicIPArray" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": ["nextLink"]
}

```

6.13 servers

6.13.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for servers",
  "type": "object",
  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "properties": {
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
      "type": "object",
      "properties": {
        "connections": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "managementAddresses": {
                "type": "array",
                "items": {
                  "type": "string"
                }
              }
            }
          },
          "credential": {
            "type": "object",
            "properties": {
              "resourceRef": {

```

```

        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "credentialType": {
    "type": "string"
  }
},
"required": [
  "managementAddresses",
  "credential",
  "credentialType"
]
}
},
"certificate": {
  "type": "string"
},
"rackSlot": {
  "type": "string"
},
"os": {
  "type": "string"
},
"model": {
  "type": "string"
},
"vendor": {
  "type": "string"
},
"serial": {
  "type": "string"
},
"networkInterfaces": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceId": {
        "type": "string"
      },
      "properties": {
        "type": "object",
        "properties": {
          "interfaceName": {
            "type": "string"
          },
          "mac": {
            "type": "string"
          },
          "ipConfiguration": {
            "type": "array",
            "items": {
              "type": "object",
              "properties": {
                "ipAddress": {
                  "type": "string"
                },
                "networkPrefix": {
                  "type": "string"
                },
                "isDhcpEnabled": {
                  "type": "string"
                }
              }
            }
          }
        }
      }
    }
  }
},
},
},

```

```

        "vlanIds": {
            "type": "array",
            "items": {
                "type": "string"
            }
        },
        "interfaceIndex": {
            "type": "string"
        },
        "interfaceSpeed": {
            "type": "string"
        },
        "isBMC": {
            "type": "string"
        },
        "logicalSubnets": {
            "type": "array",
            "items": {
                "type": "object",
                "properties": {
                    "resourceRef": {
                        "type": "string"
                    }
                }
            },
            "required": [
                "resourceRef"
            ]
        }
    },
    "required": [
        "logicalSubnets"
    ]
}
},
"required": [
    "resourceId",
    "properties"
]
}
},
"required": [
    "connections"
]
},
"tags": {
    "additionalProperties": { "type": "string" }
}
},
"required": [
    "resourceId",
    "properties"
]
}
}

```

6.13.2 GET schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for servers",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        }
    }
}

```

```

    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "connections": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "managementAddresses": {
                "type": "array",
                "items": {
                  "type": "string"
                }
              },
              "credential": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  }
                }
              },
              "required": [
                "resourceRef"
              ]
            }
          }
        }
      }
    }
  }
}

```

```

        "credentialType": {
            "type": "string"
        }
    },
    "required": [
        "managementAddresses",
        "credential",
        "credentialType"
    ]
}
},
"virtualServers": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"virtualSwitches": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"certificate": {
    "type": "string"
},
"rackSlot": {
    "type": "string"
},
"os": {
    "type": "string"
},
"model": {
    "type": "string"
},
"vendor": {
    "type": "string"
},
"serial": {
    "type": "string"
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        }
    },
    "detailedInfo": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "source": {

```



```

        "type": "string"
      },
      "message": {
        "type": "string"
      },
      "code": {
        "type": "string"
      }
    },
    "required": [
      "source",
      "message",
      "code"
    ]
  }
},
"lastUpdatedTime": {
  "type": "string"
}
},
"required": [
  "status",
  "detailedInfo",
  "lastUpdatedTime"
]
},
"networkInterfaces": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "properties": {
        "type": "object",
        "properties": {
          "provisioningState": {
            "$ref": "#/definitions/provisioningState"
          },
          "interfaceName": {
            "type": "string"
          },
          "mac": {
            "type": "string"
          },
          "ipConfiguration": {
            "type": "array",
            "items": {
              "type": "object",
              "properties": {
                "ipAddress": {
                  "type": "string"
                },
                "networkPrefix": {
                  "type": "string"
                },
                "isDhcpEnabled": {

```

```

        "type": "string"
      }
    },
    "required": [
    ]
  }
},
"vlanIds": {
  "type": "array",
  "items": {
    "type": "string"
  }
},
"adminStatus": {
  "type": "string"
},
"operationalStatus": {
  "type": "string"
},
"interfaceIndex": {
  "type": "string"
},
"interfaceSpeed": {
  "type": "string"
},
"isBMC": {
  "type": "string"
},
"logicalSubnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
}
}
},
"required": [
  "provisioningState",
  "interfaceName",
  "mac",
  "ipConfiguration",
  "vlanIds",
  "adminStatus",
  "operationalStatus",
  "interfaceIndex",
  "interfaceSpeed",
  "isBMC",
  "logicalSubnets"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "resourceMetadata",
  "etag",
  "instanceId",
  "properties"
]
},
"required": [
  "provisioningState",

```

```

        "connections",
        "rackSlot",
        "os",
        "model",
        "vendor",
        "serial",
        "configurationState",
        "networkInterfaces"
    ]
},
"tags": {
    "additionalProperties": { "type": "string" }
}
},
"required": [
    "resourceRef",
    "resourceId",
    "resourceMetadata",
    "etag",
    "instanceId",
    "properties",
    "tags"
]
}
}

```

6.13.3 GET ALL schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET ALL JSON Schema for servers",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                },
                "originalHref": {
                    "type": "string"
                }
            }
        }
    },
    "provisioningState": {
        "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "server": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            }
        }
    }
}

```

```

},
"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"etag": {
  "type": "string"
},
},
"instanceId": {
  "$ref": "#/definitions/GUID"
},
},
"properties": {
  "provisioningState": {
    "$ref": "#/definitions/provisioningState"
  },
},
"connections": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "managementAddresses": {
        "type": "array",
        "items": {
          "type": "string"
        }
      },
      "credential": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "credentialType": {
      "type": "string"
    }
  },
  "required": [
    "managementAddresses",
    "credential",
    "credentialType"
  ]
}
},
},
"virtualServers": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  }
},
},
"virtualSwitches": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
},
},

```

```

        "required": [
            "resourceRef"
        ]
    }
},
"certificate": {
    "type": "string"
},
"rackSlot": {
    "type": "string"
},
"os": {
    "type": "string"
},
"model": {
    "type": "string"
},
"vendor": {
    "type": "string"
},
"serial": {
    "type": "string"
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        },
        "detailedInfo": {
            "type": "array",
            "items": {
                "type": "object",
                "properties": {
                    "source": {
                        "type": "string"
                    },
                    "message": {
                        "type": "string"
                    },
                    "code": {
                        "type": "string"
                    }
                }
            },
            "required": [
                "source",
                "message",
                "code"
            ]
        }
    },
    "lastUpdatedTime": {
        "type": "string"
    }
},
"required": [
    "status",
    "detailedInfo",
    "lastUpdatedTime"
]
},
"networkInterfaces": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },

```

```

"resourceId": {
  "type": "string"
},
"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"etag": {
  "type": "string"
},
"instanceId": {
  "$ref": "#/definitions/GUID"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "interfaceName": {
      "type": "string"
    },
    "mac": {
      "type": "string"
    },
    "ipConfiguration": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "ipAddress": {
            "type": "string"
          },
          "networkPrefix": {
            "type": "string"
          },
          "isDhcpEnabled": {
            "type": "string"
          }
        }
      }
    },
    "vlanIds": {
      "type": "array",
      "items": {
        "type": "string"
      }
    },
    "adminStatus": {
      "type": "string"
    },
    "operationalStatus": {
      "type": "string"
    },
    "interfaceIndex": {
      "type": "string"
    },
    "interfaceSpeed": {
      "type": "string"
    },
    "isBMC": {
      "type": "string"
    },
    "logicalSubnets": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        }
      }
    }
  }
}

```

```

        },
        "required": [
            "resourceRef"
        ]
    }
}
},
"required": [
    "provisioningState",
    "interfaceName",
    "mac",
    "ipConfiguration",
    "vlanIds",
    "adminStatus",
    "operationalStatus",
    "interfaceIndex",
    "interfaceSpeed",
    "isBMC",
    "logicalSubnets"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "resourceMetadata",
    "etag",
    "instanceId",
    "properties"
]
},
"required": [
    "provisioningState",
    "connections",
    "rackSlot",
    "os",
    "model",
    "vendor",
    "serial",
    "configurationState",
    "networkInterfaces"
],
"tags": {
    "additionalProperties": { "type": "string" }
}
},
"required": [
    "resourceRef",
    "resourceId",
    "resourceMetadata",
    "etag",
    "instanceId",
    "properties",
    "tags"
]
},
"serverArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/server" }
}
},
"properties": {
    "value": { "$ref": "#/definitions/serverArray" },
    "nextLink": {
        "type": "string",
        "format": "uri",
    }
}

```

```

        "default": ""
    }
},
"required": ["nextLink"]
}

```

6.14 serviceInsertions

6.14.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for Service Insertion",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },

  "properties": {
    "resourceId": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
      "type": "object",
      "properties": {
        "serviceInsertionRules": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceId": {
                "type": "string"
              },
              "resourceMetadata": {
                "$ref": "#/definitions/resourceMetadata"
              },
              "properties": {
                "type": "object",
                "properties": {
                  "description": {
                    "type": "string"
                  }
                }
              },
              "protocol": {
                "enum": [ "All", "Tcp", "Udp", "Http" ]
              }
            }
          }
        }
      }
    }
  }
}

```



```

    },
    "sourcePortRangeStart": {
      "type": "integer"
    },
    "sourcePortRangeEnd": {
      "type": "integer"
    },
    "destinationPortRangeStart": {
      "type": "integer"
    },
    "destinationPortRangeEnd": {
      "type": "integer"
    },
    "sourceSubnets": {
      "type": "array",
      "items": {
        "type": "string"
      }
    },
    "destinationSubnets": {
      "type": "array",
      "items": {
        "type": "string"
      }
    }
  },
  "required": [
    "protocol",
    "sourcePortRangeStart",
    "sourcePortRangeEnd",
    "destinationPortRangeStart",
    "destinationPortRangeEnd",
    "sourceSubnets",
    "destinationSubnets"
  ]
},
"required": [
  "resourceId",
  "properties"
]
},
"serviceInsertionElements": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceId": {
        "type": "string"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "properties": {
        "type": "object",
        "properties": {
          "description": {
            "type": "string"
          },
          "order": {
            "type": "integer"
          }
        }
      },
      "required": [
        "order"
      ]
    }
  }
},
"required": [

```

```

        "resourceId",
        "properties"
    ]
    },
    "priority": {
        "type": "integer"
    }
},
"required": [
    "serviceInsertionRules",
    "serviceInsertionElements",
    "priority"
]
}
},
"required": [
    "resourceId",
    "properties"
]
}
}

```

6.14.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for Service Insertion",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    }
  }
}

```

```

},
"instanceId": {
  "type": "string"
},
"resourceMetadata": {
  "$ref": "#/definitions/resourceMetadata"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "serviceInsertionRules": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "resourceMetadata": {
            "$ref": "#/definitions/resourceMetadata"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "$ref": "#/definitions/provisioningState"
              },
              "description": {
                "type": "string"
              },
              "protocol": {
                "enum": [ "All", "Tcp", "Udp", "Http" ]
              },
              "sourcePortRangeStart": {
                "type": "integer"
              },
              "sourcePortRangeEnd": {
                "type": "integer"
              },
              "destinationPortRangeStart": {
                "type": "integer"
              },
              "destinationPortRangeEnd": {
                "type": "integer"
              },
              "sourceSubnets": {
                "type": "array",
                "items": {
                  "type": "string"
                }
              },
              "destinationSubnets": {
                "type": "array",
                "items": {
                  "type": "string"
                }
              }
            }
          }
        }
      }
    }
  }
},

```

```

        "required": [
            "provisioningState",
            "protocol",
            "sourcePortRangeStart",
            "sourcePortRangeEnd",
            "destinationPortRangeStart",
            "destinationPortRangeEnd",
            "sourceSubnets",
            "destinationSubnets"
        ]
    },
    },
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}
},
"serviceInsertionElements": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "resourceMetadata": {
                "$ref": "#/definitions/resourceMetadata"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "description": {
                        "type": "string"
                    },
                    "order": {
                        "type": "integer"
                    }
                }
            },
            "required": [
                "provisioningState",
                "order"
            ]
        }
    },
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}
},
"priority": {

```

```

        "type": "integer"
    },
    "ipConfigurations": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        }
    },
    "subnets": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        }
    },
    "required": [
        "provisioningState",
        "serviceInsertionRules",
        "serviceInsertionElements",
        "priority"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```

6.14.3 GET ALL schema

```

"$schema": "http://json-schema.org/draft-04/schema#",
"title": "GET ALL JSON Schema for Service Insertion",
"type": "object",

"definitions": {
    "GUID": {
        "type": "string",
        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
        "properties": {
            "client": {
                "type": "string"
            },
            "tenantId": {
                "type": "string"
            }
        }
    }
}

```

```

    },
    "groupId": {
      "type": "string"
    },
    "resourceName": {
      "type": "string"
    },
    "originalHref": {
      "type": "string"
    }
  }
},
"provisioningState": {
  "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"ServiceInsertions": {
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        }
      },
      "serviceInsertionRules": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "resourceMetadata": {
              "$ref": "#/definitions/resourceMetadata"
            },
            "etag": {
              "type": "string"
            },
            "instanceId": {
              "$ref": "#/definitions/GUID"
            },
            "properties": {
              "type": "object",
              "properties": {
                "provisioningState": {
                  "$ref": "#/definitions/provisioningState"
                },
                "description": {
                  "type": "string"
                }
              },
              "protocol": {
                "enum": [ "All", "Tcp", "Udp", "Http" ]
              }
            }
          }
        }
      }
    }
  }
}

```

```

    },
    "sourcePortRangeStart": {
      "type": "integer"
    },
    "sourcePortRangeEnd": {
      "type": "integer"
    },
    "destinationPortRangeStart": {
      "type": "integer"
    },
    "destinationPortRangeEnd": {
      "type": "integer"
    },
    "sourceSubnets": {
      "type": "array",
      "items": {
        "type": "string"
      }
    },
    "destinationSubnets": {
      "type": "array",
      "items": {
        "type": "string"
      }
    }
  },
  "required": [
    "provisioningState",
    "protocol",
    "sourcePortRangeStart",
    "sourcePortRangeEnd",
    "destinationPortRangeStart",
    "destinationPortRangeEnd",
    "sourceSubnets",
    "destinationSubnets"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"serviceInsertionElements": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "properties": {
        "type": "object",
        "properties": {

```

```

        "provisioningState": {
            "$ref": "#/definitions/provisioningState"
        },
        "description": {
            "type": "string"
        },
        "order": {
            "type": "integer"
        }
    },
    "required": [
        "provisioningState",
        "order"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"priority": {
    "type": "integer"
},
"ipConfigurations": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
},
"subnets": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"required": [
    "provisioningState",
    "serviceInsertionRules",
    "serviceInsertionElements",
    "priority"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",

```



```

        "properties"
      ]
    },
    "ServiceInsertionsArray": {
      "type": "array",
      "minItems": 0,
      "uniqueItems": true,
      "items": { "$ref": "#/definitions/ServiceInsertions" }
    }
  },
  "properties": {
    "value": { "$ref": "#/definitions/ServiceInsertionsArray" },
    "nextLink": {
      "type": "string",
      "format": "uri",
      "default": ""
    }
  },
  "required": [ "nextLink" ]
}

```

6.15 virtualGateways

6.15.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for VirtualGateways",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "type": "object",
  "properties": {
    "resourceId": {
      "type": "string"
    },
    "properties": {

```

```

"type": "object",
"properties": {
  "provisioningState": {
    "$ref": "#/definitions/provisioningState"
  },
  "gatewaypool": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
},
"gatewaypools": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
},
"gatewaySubnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ]
},
"vpnClientAddressSpace": {
  "type": "null"
},
"networkConnections": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceId": {
        "type": "string"
      }
    },
    "properties": {
      "type": "object",
      "properties": {
        "connectionType": {
          "enum": [ "IPSec", "GRE", "L3" ]
        },
        "outboundKiloBitsPerSecond": {
          "type": "integer"
        },
        "inboundKiloBitsPerSecond": {
          "type": "integer"
        },
        "outboundBytes": {
          "type": "integer"
        }
      }
    }
  },

```

```

    "inboundBytes": {
      "type": "integer"
    },
    "outboundDroppedPackets": {
      "type": "integer"
    },
    "inboundDroppedPackets": {
      "type": "integer"
    },
  },

  "ipSecConfiguration": {
    "type": "object",
    "properties": {
      "authenticationMethod": {
        "enum": [ "Certificates", "PSK" ]
      },
      "sharedSecret": {
        "type": "string"
      },
      "quickMode": {
        "type": "object",
        "properties": {
          "perfectForwardSecrecy": {
            "enum": [ "None", "PFS1", "PFS2", "PFS2048", "ECP256", "ECP384",
"PFSMM", "PFS24" ]
          },
          "authenticationTransformationConstant": {
            "enum": [ "MD596", "SHA196", "SHA256128", "GCM AES128",
"GCM AES192", "GCM AES256", "None" ]
          },
          "cipherTransformationConstant": {
            "enum": [ "DES", "DES3", "AES128", "AES192", "AES256",
"GCM AES128", "GCM AES192", "GCM AES256" ]
          },
          "saLifeTimeSeconds": {
            "type": "integer"
          },
          "idleDisconnectSeconds": {
            "type": "integer"
          },
          "saLifeTimeKiloBytes": {
            "type": "integer"
          }
        }
      },
      "required": [
        "perfectForwardSecrecy",
        "authenticationTransformationConstant",
        "cipherTransformationConstant",
        "saLifeTimeSeconds",
        "idleDisconnectSeconds",
        "saLifeTimeKiloBytes"
      ]
    },
    "mainMode": {
      "type": "object",
      "properties": {
        "diffieHellmanGroup": {
          "enum": [ "Group1", "Group2", "Group14", "ECP258", "ECP384" ]
        },
        "integrityAlgorithm": {
          "enum": [ "MD5", "SHA1", "SHA256", "SHA384" ]
        },
        "encryptionAlgorithm": {
          "enum": [ "DES", "DES3", "AES128", "AES192", "AES256" ]
        },
        "saLifeTimeSeconds": {
          "type": "integer"
        },
        "saLifeTimeKiloBytes": {

```

```

        "type": "integer"
    }
},
"required": [
    "diffieHellmanGroup",
    "integrityAlgorithm",
    "encryptionAlgorithm",
    "saLifeTimeSeconds",
    "saLifeTimeKiloBytes"
]
}
},
"required": [
    "authenticationMethod",
    "sharedSecret",
    "quickMode",
    "mainMode"
]
},
"greConfiguration": {
    "type": "object",
    "properties": {
        "greKey": {
            "type": "string"
        }
    },
    "required": [
        "greKey"
    ]
},
"l3Configuration": {
    "type": "object",
    "properties": {
        "vlanSubnet": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        }
    },
    "required": [
        "vlanSubnet"
    ]
},
"ipAddresses": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "ipAddress": {
                "type": "string"
            },
            "prefixLength": {
                "type": "integer"
            }
        },
        "required": [
            "ipAddress",
            "prefixLength"
        ]
    }
},

```

```

        "PeerIPAddresses": {
            "type": "array",
            "items": {
                "type": "string"
            }
        },
        "destinationIPAddress": {
            "type": "string"
        },
        "routes": {
            "type": "array",
            "items": {
                "type": "object",
                "properties": {
                    "Metric": {
                        "type": "integer"
                    },
                    "DestinationPrefix": {
                        "type": "string"
                    }
                }
            },
            "required": [
                "Metric",
                "DestinationPrefix"
            ]
        }
    },
    "required": [
        "connectionType",
        "outboundKiloBitsPerSecond",
        "inboundKiloBitsPerSecond",
        "outboundBytes",
        "inboundBytes",
        "outboundDroppedPackets",
        "inboundDroppedPackets"
    ]
}
},
"required": [
    "resourceId",
    "properties"
]
}
},
"bgpRouters": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "type": "string"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "isEnabled": {
                        "type": "string"
                    }
                }
            }
        }
    }
}

```

```

    "requireIGPSync": {
      "type": "string"
    },
    "extASNumber": {
      "type": "string"
    },
    "routerIP": {
      "type": "array",
      "items": { }
    },
    "bgpNetworks": {
      "type": "array",
      "items": { }
    },
    "isGenerated": {
      "type": "boolean"
    },
    "bgpPeers": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceId": {
            "type": "string"
          },
          "properties": {
            "type": "object",
            "properties": {
              "peerIpAddress": {
                "type": "string"
              },
              "asNumber": {
                "type": "string"
              },
              "extAsNumber": {
                "type": "string"
              },
              "policyMapIn": {
                "type": "null"
              },
              "policyMapOut": {
                "type": "null"
              }
            }
          },
          "required": [
            "peerIpAddress",
            "asNumber",
            "extAsNumber",
            "policyMapIn",
            "policyMapOut"
          ]
        }
      },
      "required": [
        "resourceId",
        "properties"
      ]
    },
    "required": [
      "isEnabled",
      "requireIGPSync",
      "extASNumber",
      "routerIP",
      "bgpNetworks",
      "isGenerated",
      "bgpPeers"
    ]
  }
}

```

```

    },
    "required": [
      "resourceId",
      "etag",
      "instanceId",
      "properties"
    ]
  }
},
"policyMaps": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "type": "string"
      },
      "properties": {
        "type": "object",
        "policyMapEntryList": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "policyName": {
                "type": "string"
              },
              "action": {
                "type": "string"
              },
              "matchCriteria": {
                "type": "array",
                "items": {
                  "type": "object",
                  "properties": {
                    "property": {
                      "type": "string"
                    },
                    "value": {
                      "type": "array",
                      "items": {
                        "type": "string"
                      }
                    }
                  }
                }
              },
              "required": [
                "property",
                "value"
              ]
            }
          },
          "setActions": {
            "type": "array",
            "items": { }
          }
        },
        "required": [
          "policyName",
          "action",
          "matchCriteria",
          "setActions"
        ]
      }
    }
  }
}
}

```

```

    }
  },
  "required": [
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
},
"routingType": {
  "type": "string"
}
},
"required": [
"gatewaypool",
"gatewaypools",
"gatewaySubnets",
"networkConnections",
"bgpRouters"
]
}
},
"required": [
"resourceId",
"properties"
]
}
}

```

6.15.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for VirtualGateways",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "type": "object",

```



```

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "networkConnections": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "etag": {
              "type": "string"
            },
            "instanceId": {
              "$ref": "#/definitions/GUID"
            },
            "properties": {
              "type": "object",
              "properties": {
                "provisioningState": {
                  "$ref": "#/definitions/provisioningState"
                },
                "connectionType": {
                  "enum": [ "IPSec", "GRE", "L3" ]
                },
                "outboundKiloBitsPerSecond": {
                  "type": "integer"
                },
                "inboundKiloBitsPerSecond": {
                  "type": "integer"
                },
                "ipSecConfiguration": {
                  "type": "object",
                  "properties": {
                    "authenticationMethod": {
                      "enum": [ "Certificates", "PSK" ]
                    },
                    "quickMode": {
                      "type": "object",
                      "properties": {
                        "perfectForwardSecrecy": {
                          "enum": [ "None", "PFS1", "PFS2", "PFS2048", "ECP256", "ECP384",
"PFSSMM", "PFS24" ]
                        },
                        "cipherTransformationConstant": {
                          "enum": [ "DES", "DES3", "AES128", "AES192", "AES256",
"GCMAES128", "GCMAES192", "GCMAES256" ]
                        },
                        "authenticationTransformationConstant": {

```



```

    }
  },
  "l3Configuration": {
    "type": "object",
    "properties": {
      "vlanSubnet": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        }
      }
    }
  },
  "ipAddresses": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "ipAddress": {
          "type": "string"
        },
        "prefixLength": {
          "type": "integer"
        }
      },
      "required": [
        "ipAddress",
        "prefixLength"
      ]
    }
  },
  "peerIPAddresses": {
    "type": "array",
    "items": {
      "type": "string"
    }
  },
  "routes": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "destinationPrefix": {
          "type": "string"
        },
        "nextHop": {
          "type": "string"
        },
        "metric": {
          "type": "integer"
        },
        "protocol": {
          "type": "string"
        }
      },
      "required": [
        "destinationPrefix",
        "nextHop",
        "metric",
        "protocol"
      ]
    }
  },
  "connectionStatus": {
    "type": "string"
  },
  "connectionState": {

```

```

    "type": "string"
  },
  "connectionUpTime": {
    "type": "string"
  },
  "connectionErrorReason": {
    "type": "string"
  },
  "unreachabilityReason": {
    "type": "string"
  },
  "statistics": {
    "type": "object",
    "properties": {
      "outboundBytes": {
        "type": "integer"
      },
      "inboundBytes": {
        "type": "integer"
      },
      "rxTotalPacketsDropped": {
        "type": "integer"
      },
      "txTotalPacketsDropped": {
        "type": "integer"
      },
      "txRateKbps": {
        "type": "integer"
      },
      "rxRateKbps": {
        "type": "integer"
      },
      "txRateLimitedPacketsDropped": {
        "type": "integer"
      },
      "rxRateLimitedPacketsDropped": {
        "type": "integer"
      },
      "lastUpdated": {
        "type": "string"
      }
    }
  },
  "required": [
    "outboundBytes",
    "inboundBytes",
    "rxTotalPacketsDropped",
    "txTotalPacketsDropped",
    "txRateKbps",
    "rxRateKbps",
    "txRateLimitedPacketsDropped",
    "rxRateLimitedPacketsDropped",
    "lastUpdated"
  ]
},
"configurationState": {
  "type": "object",
  "properties": {
    "status": {
      "type": "string"
    },
    "lastUpdatedTime": {
      "type": "string"
    }
  }
},
"required": [
  "status",
  "lastUpdatedTime"
]
},
"gateway": {

```

```

        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        },
        "required": [
            "resourceRef"
        ]
    }
},
"required": [
    "provisioningState",
    "connectionType",
    "outboundKiloBitsPerSecond",
    "inboundKiloBitsPerSecond",
    "ipAddresses",
    "routes",
    "connectionStatus",
    "connectionState",
    "connectionUpTime",
    "statistics",
    "configurationState",
    "gateway"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"bgpRouters": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "etag": {
                "type": "string"
            },
            "instanceId": {
                "$ref": "#/definitions/GUID"
            },
            "properties": {
                "type": "object",
                "properties": {
                    "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                    },
                    "isEnabled": {
                        "type": "boolean"
                    },
                    "requireIgpSync": {
                        "type": "boolean"
                    },
                    "extAsNumber": {
                        "type": "string"
                    },
                    "routerId": {
                        "type": "string"
                    }
                }
            }
        }
    }
}

```

```

    },
    "routerIP": {
      "type": "array",
      "items": {
        "type": "string"
      }
    },
    "isGenerated": {
      "type": "boolean"
    },
    "bgpPeers": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "$ref": "#/definitions/provisioningState"
              },
              "asNumber": {
                "type": "string"
              },
              "extAsNumber": {
                "type": "string"
              },
              "peerIpAddress": {
                "type": "string"
              },
              "connectionState": {
                "type": "string"
              },
              "statistics": {
                "type": "object",
                "properties": {
                  "tcpConnectionClosed": {
                    "type": "string"
                  },
                  "openMessageStats": {
                    "type": "object",
                    "properties": {
                      "sentCount": {
                        "type": "integer"
                      },
                      "receivedCount": {
                        "type": "integer"
                      }
                    }
                  },
                  "required": [
                    "sentCount",
                    "receivedCount"
                  ]
                }
              },
              "notificationMessageStats": {
                "type": "object",
                "properties": {
                  "sentCount": {

```

```

        "type": "integer"
    },
    "receivedCount": {
        "type": "integer"
    }
},
"required": [
    "sentCount",
    "receivedCount"
]
},
"keepAliveMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"routeRefreshMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"updateMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"ipv4Route": {
    "type": "object",
    "properties": {
        "updateSentCount": {
            "type": "integer"
        },
        "updateReceivedCount": {
            "type": "integer"
        },
        "withdrawlSentCount": {
            "type": "integer"
        },
        "withdrawlReceivedCount": {
            "type": "integer"
        }
    }
}

```

```

    }
  },
  "required": [
    "updateSentCount",
    "updateReceivedCount",
    "withdrawlSentCount",
    "withdrawlReceivedCount"
  ]
},
"ipv6Route": {
  "type": "object",
  "properties": {
    "updateSentCount": {
      "type": "integer"
    },
    "updateReceivedCount": {
      "type": "integer"
    },
    "withdrawlSentCount": {
      "type": "integer"
    },
    "withdrawlReceivedCount": {
      "type": "integer"
    }
  }
},
"required": [
  "updateSentCount",
  "updateReceivedCount",
  "withdrawlSentCount",
  "withdrawlReceivedCount"
]
},
"lastUpdated": {
  "type": "string"
}
},
"required": [
  "tcpConnectionClosed",
  "openMessageStats",
  "notificationMessageStats",
  "keepAliveMessageStats",
  "routeRefreshMessageStats",
  "updateMessageStats",
  "ipv4Route",
  "ipv6Route",
  "lastUpdated"
]
},
"generated": {
  "type": "boolean"
}
},
"required": [
  "provisioningState",
  "asNumber",
  "extAsNumber",
  "peerIpAddress",
  "connectionState",
  "statistics",
  "isGenerated"
]
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```



```

    },
    "configurationState": {
      "type": "object",
      "properties": {
        "status": {
          "type": "string"
        },
        "lastUpdatedTime": {
          "type": "string"
        }
      },
      "required": [
        "status",
        "lastUpdatedTime"
      ]
    },
    "provisioningState": {
      "type": "string"
    },
    "required": [
      "provisioningState",
      "configurationState"
    ]
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
},
"policyMaps": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "properties": {
        "type": "object",
        "properties": {
          "provisioningState": {
            "$ref": "#/definitions/provisioningState"
          },
          "bgpPeersWithPolicyMapIn": {
            "type": "array",
            "items": { }
          },
          "bgpPeersWithPolicyMapOut": {
            "type": "array",
            "items": { }
          },
          "policyMapEntryList": {
            "type": "array",
            "items": {
              "type": "object",
              "properties": {
                "action": {

```

```

        "type": "string"
    },
    "matchCriteria": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "property": {
                    "type": "string"
                },
                "value": {
                    "type": "array",
                    "items": {
                        "type": "string"
                    }
                }
            }
        },
        "required": [
            "property",
            "value"
        ]
    },
    "setActions": {
        "type": "array",
        "items": { }
    },
    "required": [
        "action",
        "matchCriteria",
        "setActions"
    ]
}
},
"required": [
    "provisioningState",
    "bgpPeersWithPolicyMapIn",
    "bgpPeersWithPolicyMapOut",
    "policyMapEntryList"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"routingType": {
    "type": "string"
},
"gatewayPools": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
},

```

```

    "configurationState": {
      "type": "object",
      "properties": {
        "status": {
          "type": "string"
        },
        "lastUpdatedTime": {
          "type": "string"
        }
      },
      "required": [
        "status",
        "lastUpdatedTime"
      ]
    },
    "gatewaySubnets": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        },
        "required": [
          "resourceRef"
        ]
      }
    }
  },
  "required": [
    "provisioningState",
    "networkConnections",
    "bgpRouters",
    "routingType",
    "gatewayPools",
    "configurationState",
    "gatewaySubnets"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.15.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for VirtualGateways",
  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        }
      }
    }
  }
}

```

```

    "tenantId": {
      "type": "string"
    },
    "groupId": {
      "type": "string"
    },
    "resourceName": {
      "type": "string"
    },
    "originalHref": {
      "type": "string"
    }
  }
},
"provisioningState": {
  "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
}
},

```

```

"type": "object",
"properties": {
  "value": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "$ref": "#/definitions/GUID"
        },
        "properties": {
          "type": "object",
          "properties": {
            "provisioningState": {
              "$ref": "#/definitions/provisioningState"
            },
            "networkConnections": {
              "type": "array",
              "items": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  },
                  "resourceId": {
                    "type": "string"
                  },
                  "etag": {
                    "type": "string"
                  },
                  "instanceId": {
                    "$ref": "#/definitions/GUID"
                  },
                  "properties": {
                    "type": "object",
                    "properties": {
                      "provisioningState": {
                        "$ref": "#/definitions/provisioningState"
                      },
                      "connectionType": {
                        "enum": [ "IPSec", "GRE", "L3" ]

```

```

    },
    "outboundKiloBitsPerSecond": {
      "type": "integer"
    },
    "inboundKiloBitsPerSecond": {
      "type": "integer"
    },
    },
    "ipSecConfiguration": {
      "type": "object",
      "properties": {
        "authenticationMethod": {
          "enum": [ "Certificates", "PSK" ]
        },
        "quickMode": {
          "type": "object",
          "properties": {
            "perfectForwardSecrecy": {
              "enum": [ "None", "PFS1", "PFS2", "PFS2048", "ECP256", "ECP384",
"PFSSMM", "PFS24" ]
            },
            "cipherTransformationConstant": {
              "enum": [ "DES", "DES3", "AES128", "AES192", "AES256",
"GCMAES128", "GCMAES192", "GCMAES256" ]
            },
            "authenticationTransformationConstant": {
              "enum": [ "MD596", "SHA196", "SHA256128", "GCMAES128",
"GCMAES192", "GCMAES256", "None" ]
            },
            "idleDisconnectSeconds": {
              "type": "integer"
            },
            "saLifeTimeSeconds": {
              "type": "integer"
            },
            "saLifeTimeKiloBytes": {
              "type": "integer"
            }
          }
        },
        "required": [
          "perfectForwardSecrecy",
          "cipherTransformationConstant",
          "authenticationTransformationConstant",
          "idleDisconnectSeconds",
          "saLifeTimeSeconds",
          "saLifeTimeKiloBytes"
        ]
      }
    },
    "mainMode": {
      "type": "object",
      "properties": {
        "diffieHellmanGroup": {
          "enum": [ "Group1", "Group2", "Group14", "ECP258", "ECP384" ]
        },
        "encryptionAlgorithm": {
          "enum": [ "DES", "DES3", "AES128", "AES192", "AES256" ]
        },
        "integrityAlgorithm": {
          "enum": [ "MD5", "SHA1", "SHA256", "SHA384" ]
        },
        "saLifeTimeSeconds": {
          "type": "integer"
        },
        "saLifeTimeKiloBytes": {
          "type": "integer"
        }
      }
    },
    "required": [
      "diffieHellmanGroup",
      "encryptionAlgorithm",
      "integrityAlgorithm",

```

```

        "saLifeTimeSeconds",
        "saLifeTimeKiloBytes"
    ]
},
"localVpnTrafficSelector": {
    "type": "array",
    "items": {
        "type": "string"
    }
},
"remoteVpnTrafficSelector": {
    "type": "array",
    "items": {
        "type": "string"
    }
}
},
"greConfiguration": {
    "type": "object",
    "properties": {
        "greKey": {
            "type": "string"
        }
    }
},
"l3Configuration": {
    "type": "object",
    "properties": {
        "vlanSubnet": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            }
        }
    }
},
"ipAddresses": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "ipAddress": {
                "type": "string"
            },
            "prefixLength": {
                "type": "integer"
            }
        }
    },
    "required": [
        "ipAddress",
        "prefixLength"
    ]
},
"peerIPAddresses": {
    "type": "array",
    "items": {
        "type": "string"
    }
},
"routes": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {

```

```

        "destinationPrefix": {
            "type": "string"
        },
        "nextHop": {
            "type": "string"
        },
        "metric": {
            "type": "integer"
        },
        "protocol": {
            "type": "string"
        }
    },
    "required": [
        "destinationPrefix",
        "nextHop",
        "metric",
        "protocol"
    ]
}
},
"connectionStatus": {
    "type": "string"
},
"connectionState": {
    "type": "string"
},
"connectionUpTime": {
    "type": "string"
},
"connectionErrorReason": {
    "type": "string"
},
"unreachabilityReason": {
    "type": "string"
},
"statistics": {
    "type": "object",
    "properties": {
        "outboundBytes": {
            "type": "integer"
        },
        "inboundBytes": {
            "type": "integer"
        },
        "rxTotalPacketsDropped": {
            "type": "integer"
        },
        "txTotalPacketsDropped": {
            "type": "integer"
        },
        "txRateKbps": {
            "type": "integer"
        },
        "rxRateKbps": {
            "type": "integer"
        },
        "txRateLimitedPacketsDropped": {
            "type": "integer"
        },
        "rxRateLimitedPacketsDropped": {
            "type": "integer"
        },
        "lastUpdated": {
            "type": "string"
        }
    }
},
"required": [
    "outboundBytes",
    "inboundBytes",

```

```

        "rxTotalPacketsDropped",
        "txTotalPacketsDropped",
        "txRateKbps",
        "rxRateKbps",
        "txRateLimitedPacketsDropped",
        "rxRateLimitedPacketsDropped",
        "lastUpdated"
    ]
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        },
        "lastUpdatedTime": {
            "type": "string"
        }
    },
    "required": [
        "status",
        "lastUpdatedTime"
    ]
},
"gateway": {
    "type": "object",
    "properties": {
        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"required": [
    "provisioningState",
    "connectionType",
    "outboundKiloBitsPerSecond",
    "inboundKiloBitsPerSecond",
    "ipAddresses",
    "routes",
    "connectionStatus",
    "connectionState",
    "connectionUpTime",
    "statistics",
    "configurationState",
    "gateway"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"bgpRouters": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {

```



```

    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "isEnabled": {
        "type": "boolean"
      },
      "requireIgpSync": {
        "type": "boolean"
      },
      "extAsNumber": {
        "type": "string"
      },
      "routerId": {
        "type": "string"
      },
      "routerIP": {
        "type": "array",
        "items": {
          "type": "string"
        }
      },
      "isGenerated": {
        "type": "boolean"
      },
      "bgpPeers": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "etag": {
              "type": "string"
            },
            "instanceId": {
              "$ref": "#/definitions/GUID"
            },
            "properties": {
              "type": "object",
              "properties": {
                "provisioningState": {
                  "$ref": "#/definitions/provisioningState"
                },
                "asNumber": {
                  "type": "string"
                },
                "extAsNumber": {
                  "type": "string"
                },
                "peerIpAddress": {
                  "type": "string"
                },
                "connectionState": {
                  "type": "string"
                }
              }
            }
          }
        }
      }
    }
  }
}

```

```

"statistics": {
  "type": "object",
  "properties": {
    "tcpConnectionClosed": {
      "type": "string"
    },
    "openMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "notificationMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "keepAliveMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "routeRefreshMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "updateMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {

```

```

        "type": "integer"
      },
      "receivedCount": {
        "type": "integer"
      }
    },
    "required": [
      "sentCount",
      "receivedCount"
    ]
  },
  "ipv4Route": {
    "type": "object",
    "properties": {
      "updateSentCount": {
        "type": "integer"
      },
      "updateReceivedCount": {
        "type": "integer"
      },
      "withdrawlSentCount": {
        "type": "integer"
      },
      "withdrawlReceivedCount": {
        "type": "integer"
      }
    },
    "required": [
      "updateSentCount",
      "updateReceivedCount",
      "withdrawlSentCount",
      "withdrawlReceivedCount"
    ]
  },
  "ipv6Route": {
    "type": "object",
    "properties": {
      "updateSentCount": {
        "type": "integer"
      },
      "updateReceivedCount": {
        "type": "integer"
      },
      "withdrawlSentCount": {
        "type": "integer"
      },
      "withdrawlReceivedCount": {
        "type": "integer"
      }
    },
    "required": [
      "updateSentCount",
      "updateReceivedCount",
      "withdrawlSentCount",
      "withdrawlReceivedCount"
    ]
  },
  "lastUpdated": {
    "type": "string"
  }
},
"required": [
  "tcpConnectionClosed",
  "openMessageStats",
  "notificationMessageStats",
  "keepAliveMessageStats",
  "routeRefreshMessageStats",
  "updateMessageStats",
  "ipv4Route",
  "ipv6Route",

```

```

        "lastUpdated"
      ]
    },
    "isGenerated": {
      "type": "boolean"
    }
  },
  "required": [
    "provisioningState",
    "asNumber",
    "extAsNumber",
    "peerIpAddress",
    "connectionState",
    "statistics",
    "isGenerated"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"configurationState": {
  "type": "object",
  "properties": {
    "status": {
      "type": "string"
    },
    "lastUpdatedTime": {
      "type": "string"
    }
  },
  "required": [
    "status",
    "lastUpdatedTime"
  ]
}
},
"required": [
  "provisioningState",
  "configurationState"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "instanceId",
  "properties"
]
}
},
"policyMaps": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "etag": {
        "type": "string"
      }
    }
  }
}
}

```

```

    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "bgpPeersWithPolicyMapIn": {
          "type": "array",
          "items": { }
        },
        "bgpPeersWithPolicyMapOut": {
          "type": "array",
          "items": { }
        },
        "policyMapEntryList": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "action": {
                "type": "string"
              },
              "matchCriteria": {
                "type": "array",
                "items": {
                  "type": "object",
                  "properties": {
                    "property": {
                      "type": "string"
                    },
                    "value": {
                      "type": "array",
                      "items": {
                        "type": "string"
                      }
                    }
                  }
                }
              },
              "required": [
                "property",
                "value"
              ]
            }
          },
          "setActions": {
            "type": "array",
            "items": { }
          },
          "required": [
            "action",
            "matchCriteria",
            "setActions"
          ]
        }
      },
      "required": [
        "provisioningState",
        "bgpPeersWithPolicyMapIn",
        "bgpPeersWithPolicyMapOut",
        "policyMapEntryList"
      ]
    },
    "required": [
      "resourceRef",

```

```

        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}
},
"routingType": {
    "type": "string"
},
"gatewayPools": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        },
        "lastUpdatedTime": {
            "type": "string"
        }
    },
    "required": [
        "status",
        "lastUpdatedTime"
    ]
}
},
"gatewaySubnets": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            }
        }
    },
    "required": [
        "resourceRef"
    ]
}
},
"required": [
    "provisioningState",
    "networkConnections",
    "bgpRouters",
    "routingType",
    "gatewayPools",
    "configurationState",
    "gatewaySubnets"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "instanceId",
    "properties"
]

```

```

    ]
  }
},
"nextLink": {
  "type": "string"
}
},
"required": [
  "value",
  "nextLink"
]
}

```

6.15.4 bgpRouters

6.15.4.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "type": "string"
        },
        "isEnabled": {
          "type": "string"
        },
        "requireIGPSync": {
          "type": "string"
        },
        "extASNumber": {
          "type": "string"
        },
        "routerIP": {
          "type": "array",
          "items": {}
        },
        "bgpNetworks": {
          "type": "array",
          "items": {}
        },
        "isGenerated": {
          "type": "boolean"
        },
        "bgpPeers": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceId": {
                "type": "string"
              },
              "properties": {
                "type": "object",
                "properties": {

```

```

        "peerIpAddress": {
            "type": "string"
        },
        "asNumber": {
            "type": "string"
        },
        "extAsNumber": {
            "type": "string"
        },
        "policyMapIn": {
            "type": "null"
        },
        "policyMapOut": {
            "type": "null"
        }
    },
    "required": [
        "peerIpAddress",
        "asNumber",
        "extAsNumber",
        "policyMapIn",
        "policyMapOut"
    ]
},
    "required": [
        "resourceId",
        "properties"
    ]
}
},
    "required": [
        "provisioningState",
        "isEnabled",
        "requireIGPSync",
        "extASNumber",
        "routerIP",
        "bgpNetworks",
        "isGenerated",
        "bgpPeers"
    ]
}
},
    "required": [
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}
}

```

6.15.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {

```



```

    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "type": "string"
      },
      "isEnabled": {
        "type": "boolean"
      },
      "requireIgpSync": {
        "type": "boolean"
      },
      "extAsNumber": {
        "type": "string"
      },
      "routerId": {
        "type": "string"
      },
      "routerIP": {
        "type": "array",
        "items": {
          "type": "string"
        }
      },
      "isGenerated": {
        "type": "boolean"
      },
      "bgpPeers": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            },
            "resourceId": {
              "type": "string"
            },
            "etag": {
              "type": "string"
            },
            "instanceId": {
              "type": "string"
            },
            "properties": {
              "type": "object",
              "properties": {
                "provisioningState": {
                  "type": "string"
                },
                "asNumber": {
                  "type": "string"
                },
                "extAsNumber": {
                  "type": "string"
                },
                "peerIpAddress": {
                  "type": "string"
                },
                "connectionState": {
                  "type": "string"
                },
                "statistics": {
                  "type": "object",
                  "properties": {
                    "tcpConnectionClosed": {
                      "type": "string"
                    }
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}

```

```

"openMessageStats": {
  "type": "object",
  "properties": {
    "sentCount": {
      "type": "integer"
    },
    "receivedCount": {
      "type": "integer"
    }
  },
  "required": [
    "sentCount",
    "receivedCount"
  ]
},
"notificationMessageStats": {
  "type": "object",
  "properties": {
    "sentCount": {
      "type": "integer"
    },
    "receivedCount": {
      "type": "integer"
    }
  },
  "required": [
    "sentCount",
    "receivedCount"
  ]
},
"keepAliveMessageStats": {
  "type": "object",
  "properties": {
    "sentCount": {
      "type": "integer"
    },
    "receivedCount": {
      "type": "integer"
    }
  },
  "required": [
    "sentCount",
    "receivedCount"
  ]
},
"routeRefreshMessageStats": {
  "type": "object",
  "properties": {
    "sentCount": {
      "type": "integer"
    },
    "receivedCount": {
      "type": "integer"
    }
  },
  "required": [
    "sentCount",
    "receivedCount"
  ]
},
"updateMessageStats": {
  "type": "object",
  "properties": {
    "sentCount": {
      "type": "integer"
    },
    "receivedCount": {
      "type": "integer"
    }
  },
  "required": [
    "sentCount",
    "receivedCount"
  ]
},

```

```

    "required": [
      "sentCount",
      "receivedCount"
    ]
  },
  "ipv4Route": {
    "type": "object",
    "properties": {
      "updateSentCount": {
        "type": "integer"
      },
      "updateReceivedCount": {
        "type": "integer"
      },
      "withdrawlSentCount": {
        "type": "integer"
      },
      "withdrawlReceivedCount": {
        "type": "integer"
      }
    }
  },
  "required": [
    "updateSentCount",
    "updateReceivedCount",
    "withdrawlSentCount",
    "withdrawlReceivedCount"
  ]
},
"ipv6Route": {
  "type": "object",
  "properties": {
    "updateSentCount": {
      "type": "integer"
    },
    "updateReceivedCount": {
      "type": "integer"
    },
    "withdrawlSentCount": {
      "type": "integer"
    },
    "withdrawlReceivedCount": {
      "type": "integer"
    }
  }
},
"required": [
  "updateSentCount",
  "updateReceivedCount",
  "withdrawlSentCount",
  "withdrawlReceivedCount"
]
},
"lastUpdated": {
  "type": "string"
}
},
"required": [
  "tcpConnectionClosed",
  "openMessageStats",
  "notificationMessageStats",
  "keepAliveMessageStats",
  "routeRefreshMessageStats",
  "updateMessageStats",
  "ipv4Route",
  "ipv6Route",
  "lastUpdated"
]
},
"isGenerated": {
  "type": "boolean"
}
}

```

```

        },
        "required": [
            "provisioningState",
            "asNumber",
            "extAsNumber",
            "peerIpAddress",
            "connectionState",
            "statistics",
            "isGenerated"
        ]
    }
},
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties"
    ]
}
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        },
        "lastUpdatedTime": {
            "type": "string"
        }
    },
    "required": [
        "status",
        "lastUpdatedTime"
    ]
}
},
"required": [
    "provisioningState",
    "isEnabled",
    "requireIgpSync",
    "extAsNumber",
    "routerId",
    "routerIP",
    "isGenerated",
    "bgpPeers",
    "configurationState"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```

6.15.4.3 GET ALL schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "type": "object",
    "properties": {
        "value": {
            "type": "array",
            "items": {

```

```

"type": "object",
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "type": "string"
    },
    "isEnabled": {
      "type": "boolean"
    },
    "requireIgpSync": {
      "type": "boolean"
    },
    "extAsNumber": {
      "type": "string"
    },
    "routerId": {
      "type": "string"
    },
    "routerIP": {
      "type": "array",
      "items": {
        "type": "string"
      }
    },
    "isGenerated": {
      "type": "boolean"
    },
    "bgpPeers": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "type": "string"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "type": "string"
              },
              "asNumber": {
                "type": "string"
              },
              "extAsNumber": {
                "type": "string"
              },
            },
          },
        },
      },
    },
  },
},

```

```

"peerIpAddress": {
  "type": "string"
},
"connectionState": {
  "type": "string"
},
"statistics": {
  "type": "object",
  "properties": {
    "tcpConnectionClosed": {
      "type": "string"
    },
    "openMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "notificationMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "keepAliveMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "routeRefreshMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    }
  }
}

```

```

    ],
    },
    "updateMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "ipv4Route": {
      "type": "object",
      "properties": {
        "updateSentCount": {
          "type": "integer"
        },
        "updateReceivedCount": {
          "type": "integer"
        },
        "withdrawlSentCount": {
          "type": "integer"
        },
        "withdrawlReceivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "updateSentCount",
        "updateReceivedCount",
        "withdrawlSentCount",
        "withdrawlReceivedCount"
      ]
    },
    "ipv6Route": {
      "type": "object",
      "properties": {
        "updateSentCount": {
          "type": "integer"
        },
        "updateReceivedCount": {
          "type": "integer"
        },
        "withdrawlSentCount": {
          "type": "integer"
        },
        "withdrawlReceivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "updateSentCount",
        "updateReceivedCount",
        "withdrawlSentCount",
        "withdrawlReceivedCount"
      ]
    },
    "lastUpdated": {
      "type": "string"
    }
  },
  "required": [
    "tcpConnectionClosed",
    "openMessageStats",

```

```

        "notificationMessageStats",
        "keepAliveMessageStats",
        "routeRefreshMessageStats",
        "updateMessageStats",
        "ipv4Route",
        "ipv6Route",
        "lastUpdated"
    ]
},
"isGenerated": {
    "type": "boolean"
}
},
"required": [
    "provisioningState",
    "asNumber",
    "extAsNumber",
    "peerIpAddress",
    "connectionState",
    "statistics",
    "isGenerated"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"configurationState": {
    "type": "object",
    "properties": {
        "status": {
            "type": "string"
        },
        "lastUpdatedTime": {
            "type": "string"
        }
    },
    "required": [
        "status",
        "lastUpdatedTime"
    ]
}
},
"required": [
    "provisioningState",
    "isEnabled",
    "requireIgpSync",
    "extAsNumber",
    "routerId",
    "routerIP",
    "isGenerated",
    "bgpPeers",
    "configurationState"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```



```

    },
    "nextLink": {
      "type": "string"
    }
  },
  "required": [
    "value",
    "nextLink"
  ]
}

```

6.15.4.4 bgpPeers

6.15.4.4.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "resourceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "peerIpAddress": {
          "type": "string"
        },
        "asNumber": {
          "type": "string"
        },
        "extAsNumber": {
          "type": "string"
        },
        "policyMapIn": {
          "type": "null"
        },
        "policyMapOut": {
          "type": "null"
        }
      }
    },
    "required": [
      "peerIpAddress",
      "asNumber",
      "extAsNumber",
      "policyMapIn",
      "policyMapOut"
    ]
  }
},
"required": [
  "resourceId",
  "properties"
]
}

```

6.15.4.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    }
  },
}

```

```

"resourceId": {
  "type": "string"
},
"etag": {
  "type": "string"
},
"instanceId": {
  "type": "string"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "type": "string"
    },
    "asNumber": {
      "type": "string"
    },
    "extAsNumber": {
      "type": "string"
    },
    "peerIpAddress": {
      "type": "string"
    },
    "connectionState": {
      "type": "string"
    },
    "statistics": {
      "type": "object",
      "properties": {
        "tcpConnectionClosed": {
          "type": "string"
        },
        "openMessageStats": {
          "type": "object",
          "properties": {
            "sentCount": {
              "type": "integer"
            },
            "receivedCount": {
              "type": "integer"
            }
          }
        },
        "required": [
          "sentCount",
          "receivedCount"
        ]
      },
      "notificationMessageStats": {
        "type": "object",
        "properties": {
          "sentCount": {
            "type": "integer"
          },
          "receivedCount": {
            "type": "integer"
          }
        },
        "required": [
          "sentCount",
          "receivedCount"
        ]
      },
      "keepAliveMessageStats": {
        "type": "object",
        "properties": {
          "sentCount": {
            "type": "integer"
          },
          "receivedCount": {

```

```

        "type": "integer"
    }
},
"required": [
    "sentCount",
    "receivedCount"
]
},
"routeRefreshMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"updateMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"ipv4Route": {
    "type": "object",
    "properties": {
        "updateSentCount": {
            "type": "integer"
        },
        "updateReceivedCount": {
            "type": "integer"
        },
        "withdrawalSentCount": {
            "type": "integer"
        },
        "withdrawalReceivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "updateSentCount",
        "updateReceivedCount",
        "withdrawalSentCount",
        "withdrawalReceivedCount"
    ]
},
"ipv6Route": {
    "type": "object",
    "properties": {
        "updateSentCount": {
            "type": "integer"
        },
        "updateReceivedCount": {
            "type": "integer"
        }
    },

```

```

        "withdrawlSentCount": {
            "type": "integer"
        },
        "withdrawlReceivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "updateSentCount",
        "updateReceivedCount",
        "withdrawlSentCount",
        "withdrawlReceivedCount"
    ]
},
"lastUpdated": {
    "type": "string"
}
},
"required": [
    "tcpConnectionClosed",
    "openMessageStats",
    "notificationMessageStats",
    "keepAliveMessageStats",
    "routeRefreshMessageStats",
    "updateMessageStats",
    "ipv4Route",
    "ipv6Route",
    "lastUpdated"
]
},
"isGenerated": {
    "type": "boolean"
}
},
"required": [
    "provisioningState",
    "asNumber",
    "extAsNumber",
    "peerIpAddress",
    "connectionState",
    "statistics",
    "isGenerated"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```

6.15.4.4.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "value": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        }
      },
    },
  },
}

```

```

"resourceId": {
  "type": "string"
},
"etag": {
  "type": "string"
},
"instanceId": {
  "type": "string"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "type": "string"
    },
    "asNumber": {
      "type": "string"
    },
    "extAsNumber": {
      "type": "string"
    },
    "peerIpAddress": {
      "type": "string"
    },
    "connectionState": {
      "type": "string"
    },
    "statistics": {
      "type": "object",
      "properties": {
        "tcpConnectionClosed": {
          "type": "string"
        },
        "openMessageStats": {
          "type": "object",
          "properties": {
            "sentCount": {
              "type": "integer"
            },
            "receivedCount": {
              "type": "integer"
            }
          }
        },
        "required": [
          "sentCount",
          "receivedCount"
        ]
      }
    },
    "notificationMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {
          "type": "integer"
        }
      },
      "required": [
        "sentCount",
        "receivedCount"
      ]
    },
    "keepAliveMessageStats": {
      "type": "object",
      "properties": {
        "sentCount": {
          "type": "integer"
        },
        "receivedCount": {

```

```

        "type": "integer"
    }
},
"required": [
    "sentCount",
    "receivedCount"
]
},
"routeRefreshMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"updateMessageStats": {
    "type": "object",
    "properties": {
        "sentCount": {
            "type": "integer"
        },
        "receivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "sentCount",
        "receivedCount"
    ]
},
"ipv4Route": {
    "type": "object",
    "properties": {
        "updateSentCount": {
            "type": "integer"
        },
        "updateReceivedCount": {
            "type": "integer"
        },
        "withdrawlSentCount": {
            "type": "integer"
        },
        "withdrawlReceivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "updateSentCount",
        "updateReceivedCount",
        "withdrawlSentCount",
        "withdrawlReceivedCount"
    ]
},
"ipv6Route": {
    "type": "object",
    "properties": {
        "updateSentCount": {
            "type": "integer"
        },
        "updateReceivedCount": {
            "type": "integer"
        }
    },

```

```

        "withdrawlSentCount": {
            "type": "integer"
        },
        "withdrawlReceivedCount": {
            "type": "integer"
        }
    },
    "required": [
        "updateSentCount",
        "updateReceivedCount",
        "withdrawlSentCount",
        "withdrawlReceivedCount"
    ]
},
"lastUpdated": {
    "type": "string"
}
},
"required": [
    "tcpConnectionClosed",
    "openMessageStats",
    "notificationMessageStats",
    "keepAliveMessageStats",
    "routeRefreshMessageStats",
    "updateMessageStats",
    "ipv4Route",
    "ipv6Route",
    "lastUpdated"
]
},
"isGenerated": {
    "type": "boolean"
}
},
"required": [
    "provisioningState",
    "asNumber",
    "extAsNumber",
    "peerIpAddress",
    "connectionState",
    "statistics",
    "isGenerated"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"nextLink": {
    "type": "string"
}
},
"required": [
    "value",
    "nextLink"
]
}
}

```

6.15.5 policyMaps

6.15.5.1 PUT schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "type": "string"
        },
        "policyMapEntryList": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "policyName": {
                "type": "string"
              },
              "action": {
                "type": "string"
              },
              "matchCriteria": {
                "type": "array",
                "items": {
                  "type": "object",
                  "properties": {
                    "property": {
                      "type": "string"
                    },
                    "value": {
                      "type": "array",
                      "items": {
                        "type": "string"
                      }
                    }
                  }
                }
              },
              "required": [
                "property",
                "value"
              ]
            }
          }
        },
        "setActions": {
          "type": "array",
          "items": {}
        }
      },
      "required": [
        "policyName",
        "action",
        "matchCriteria",
        "setActions"
      ]
    }
  }
}
```



```

    },
    "required": [
      "provisioningState",
      "policyMapEntryList"
    ]
  }
},
"required": [
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.15.5.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "type": "string"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "type": "string"
        },
        "bgpPeersWithPolicyMapIn": {
          "type": "array",
          "items": {}
        },
        "bgpPeersWithPolicyMapOut": {
          "type": "array",
          "items": {}
        },
        "policyMapEntryList": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "action": {
                "type": "string"
              },
              "matchCriteria": {
                "type": "array",
                "items": {
                  "type": "object",
                  "properties": {
                    "property": {
                      "type": "string"
                    },
                    "value": {
                      "type": "array",
                      "items": {
                        "type": "string"
                      }
                    }
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}

```

```

        }
      },
      "required": [
        "property",
        "value"
      ]
    }
  },
  "setActions": {
    "type": "array",
    "items": {}
  }
},
"required": [
  "action",
  "matchCriteria",
  "setActions"
]
}
},
"required": [
  "provisioningState",
  "bgpPeersWithPolicyMapIn",
  "bgpPeersWithPolicyMapOut",
  "policyMapEntryList"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.15.5.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "value": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "etag": {
            "type": "string"
          },
          "instanceId": {
            "type": "string"
          },
          "properties": {
            "type": "object",
            "properties": {
              "provisioningState": {
                "type": "string"
              },
              "bgpPeersWithPolicyMapIn": {

```

```

        "type": "array",
        "items": {}
    },
    "bgpPeersWithPolicyMapOut": {
        "type": "array",
        "items": {}
    },
    "policyMapEntryList": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "action": {
                    "type": "string"
                },
                "matchCriteria": {
                    "type": "array",
                    "items": {
                        "type": "object",
                        "properties": {
                            "property": {
                                "type": "string"
                            },
                            "value": {
                                "type": "array",
                                "items": {
                                    "type": "string"
                                }
                            }
                        }
                    },
                    "required": [
                        "property",
                        "value"
                    ]
                }
            },
            "setActions": {
                "type": "array",
                "items": {}
            },
            "required": [
                "action",
                "matchCriteria",
                "setActions"
            ]
        }
    },
    "required": [
        "provisioningState",
        "bgpPeersWithPolicyMapIn",
        "bgpPeersWithPolicyMapOut",
        "policyMapEntryList"
    ]
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"nextLink": {
    "type": "string"
}
},

```

```

    "required": [
      "value",
      "nextLink"
    ]
  }
}

```

6.16 virtualNetworks

6.16.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for virtualNetworks",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "resourceRef": {
    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    }
  },
  "required": [
    "resourceRef"
  ],
  "subnets": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceId": {
          "type": "string"
        },
        "resourceMetadata": {
          "$ref": "#/definitions/resourceMetadata"
        },
        "etag": {
          "type": "string"
        }
      },
      "properties": {
        "type": "object",
        "properties": {
          "addressPrefix": {
            "type": "string"
          }
        }
      }
    }
  }
}

```

```

        "routeTable": {
            "type": "object",
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        },
        "required": [
            "addressPrefix"
        ]
    }
},
"required": [
    "resourceId",
    "properties"
]
}
},
"properties": {
    "resourceId": {
        "type": "string"
    },
    "etag": {
        "type": "string"
    },
    "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
        "additionalProperties": { "type": "string" }
    },
    "properties": {
        "type": "object",
        "properties": {
            "addressSpace": {
                "type": "object",
                "properties": {
                    "addressPrefixes": {
                        "type": "array",
                        "items": {
                            "type": "string"
                        }
                    },
                    "minItems": 1
                }
            },
            "required": [
                "addressPrefixes"
            ]
        },
        "dhcpOptions": {
            "type": "object",
            "properties": {
                "DnsServers": {
                    "type": "array",
                    "items": {
                        "type": "string",
                        "format": "ipv4"
                    }
                }
            }
        },
        "subnets": {
            "$ref": "#/definitions/subnets"
        }
    }
}
},

```

```

    },
    "logicalNetwork": {
      "$ref": "#/definitions/resourceRef"
    }
  },
  "required": [
    "addressSpace",
    "logicalNetwork"
  ]
}
},
"required": [
  "properties"
]
}

```

6.16.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for virtualNetworks",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "detailedInfo": {
      "type": "array",
      "items": {
        "additionalProperties": false,
        "properties": {
          "status": {
            "enum": [ "Success", "Failure" ]
          },
          "id": {
            "$ref": "#/definitions/GUID"
          },
          "lastUpdatedTime": {
            "type": "string"
          }
        },
        "detailedInfo": {
          "type": "array",
          "items": {

```

```

        "type": "object",
        "properties": {
            "source": {
                "type": "string"
            },
            "message": {
                "type": "string"
            },
            "code": {
                "type": "string"
            }
        }
    }
},
"required": [ "status", "id", "lastUpdatedTime" ]
}
},
"configurationState":
{
    "type": "object",
    "additionalProperties": false,
    "properties": {
        "status": {
            "enum": [ "Success", "Failure" ]
        },
        "id": {
            "$ref": "#/definitions/GUID"
        },
        "lastUpdatedTime": {
            "type": "string"
        },
        "virtualNetworkInterfaceErrors": {
            "$ref": "#/definitions/detailedInfo"
        },
        "hostErrors": {
            "$ref": "#/definitions/detailedInfo"
        }
    },
    "required": [
        "status",
        "id",
        "lastUpdatedTime"
    ]
},
"resourceRef":
{
    "type": "object",
    "additionalProperties": false,
    "properties": {
        "resourceRef": {
            "type": "string"
        }
    },
    "required": [
        "resourceRef"
    ]
},
"subnets": {
    "type": "array",
    "items": {
        "type": "object",
        "properties": {
            "resourceRef": {
                "type": "string"
            },
            "resourceId": {
                "type": "string"
            },
            "resourceMetadata": {

```

```

    "$ref": "#/definitions/resourceMetadata"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "addressPrefix": {
        "type": "string"
      },
      "accessControlList": {
        "$ref": "#/definitions/resourceRef"
      },
      "ipConfigurations": {
        "type": "array",
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/resourceRef" }
      },
      "routeTable": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          }
        }
      },
      "required": [
        "resourceRef"
      ]
    }
  },
  "required": [
    "provisioningState",
    "addressPrefix"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
}

```



```

"tags": {
  "additionalProperties": { "type": "string" }
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "addressSpace": {
      "type": "object",
      "properties": {
        "addressPrefixes": {
          "type": "array",
          "items": {
            "type": "string"
          },
          "minItems": 1
        }
      },
      "required": [
        "addressPrefixes"
      ]
    },
    "dhcpOptions": {
      "type": "object",
      "properties": {
        "DnsServers": {
          "type": "array",
          "items": {
            "type": "string",
            "format": "ipv4"
          }
        }
      }
    },
    "subnets": {
      "$ref": "#/definitions/subnets"
    },
    "logicalNetwork": {
      "$ref": "#/definitions/resourceRef"
    },
    "configurationState": {
      "$ref": "#/definitions/configurationState"
    }
  },
  "required": [
    "addressSpace"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.16.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for virtualNetworks",
  "type": "object",
  "definitions": {

```

```

"GUID": {
  "type": "string",
  "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
},
"resourceMetadata": {
  "properties": {
    "client": {
      "type": "string"
    },
    "tenantId": {
      "type": "string"
    },
    "groupId": {
      "type": "string"
    },
    "resourceName": {
      "type": "string"
    },
    "originalHref": {
      "type": "string"
    }
  }
},
"provisioningState": {
  "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
},
"detailedInfo": {
  "type": "array",
  "items": {
    "additionalProperties": false,
    "properties": {
      "status": {
        "enum": [ "Success", "Failure" ]
      },
      "id": {
        "$ref": "#/definitions/GUID"
      },
      "lastUpdatedTime": {
        "type": "string"
      },
      "detailedInfo": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "source": {
              "type": "string"
            },
            "message": {
              "type": "string"
            },
            "code": {
              "type": "string"
            }
          }
        }
      }
    }
  },
  "required": [ "status", "id", "lastUpdatedTime" ]
},
"configurationState": {
  "type": "object",
  "additionalProperties": false,
  "properties": {
    "status": {
      "enum": [ "Success", "Failure" ]
    }
  }
},

```

```

    "id": {
      "$ref": "#/definitions/GUID"
    },
    "lastUpdatedTime": {
      "type": "string"
    },
    "virtualNetworkInterfaceErrors": {
      "$ref": "#/definitions/detailedInfo"
    },
    "hostErrors": {
      "$ref": "#/definitions/detailedInfo"
    }
  },
  "required": [
    "status",
    "id",
    "lastUpdatedTime"
  ]
},
"resourceRef": {
  "type": "object",
  "additionalProperties": false,
  "properties": {
    "resourceRef": {
      "type": "string"
    }
  }
},
"required": [
  "resourceRef"
]
},
"subnets": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "resourceRef": {
        "type": "string"
      },
      "resourceId": {
        "type": "string"
      },
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "etag": {
        "type": "string"
      },
      "instanceId": {
        "$ref": "#/definitions/GUID"
      },
      "properties": {
        "type": "object",
        "properties": {
          "provisioningState": {
            "$ref": "#/definitions/provisioningState"
          },
          "addressPrefix": {
            "type": "string"
          },
          "accessControlList": {
            "$ref": "#/definitions/resourceRef"
          },
          "ipConfigurations": {
            "type": "array",
            "uniqueItems": true,
            "items": { "$ref": "#/definitions/resourceRef" }
          },
          "routeTable": {
            "type": "object",

```

```

        "properties": {
            "resourceRef": {
                "type": "string"
            }
        },
        "required": [
            "resourceRef"
        ]
    }
},
"required": [
    "provisioningState",
    "addressPrefix"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
},
"virtualNetwork": {
    "type": "object",
    "properties": {
        "resourceRef": {
            "type": "string"
        },
        "resourceId": {
            "type": "string"
        },
        "etag": {
            "type": "string"
        },
        "instanceId": {
            "$ref": "#/definitions/GUID"
        },
        "resourceMetadata": {
            "$ref": "#/definitions/resourceMetadata"
        },
        "tags": {
            "additionalProperties": { "type": "string" }
        },
        "properties": {
            "type": "object",
            "properties": {
                "provisioningState": {
                    "$ref": "#/definitions/provisioningState"
                },
                "addressSpace": {
                    "type": "object",
                    "properties": {
                        "addressPrefixes": {
                            "type": "array",
                            "items": {
                                "type": "string"
                            }
                        },
                        "minItems": 1
                    }
                },
                "required": [
                    "addressPrefixes"
                ]
            },
            "dhcpOptions": {
                "type": "object",
                "properties": {

```

```

        "DnsServers": {
            "type": "array",
            "items": {
                "type": "string",
                "format": "ipv4"
            }
        }
    },
    "subnets": {
        "$ref": "#/definitions/subnets"
    },
    "logicalNetwork": {
        "$ref": "#/definitions/resourceRef"
    },
    "configurationState": {
        "$ref": "#/definitions/configurationState"
    }
},
"required": [
    "addressSpace"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
},
"virtualNetworkArray": {
    "type": "array",
    "minItems": 0,
    "uniqueItems": true,
    "items": { "$ref": "#/definitions/virtualNetwork" }
}
},
"properties": {
    "value": { "$ref": "#/definitions/virtualNetworkArray" },
    "nextLink": {
        "type": "string",
        "format": "uri",
        "default": ""
    }
}
},
"required": ["nextLink"]
}
}

```

6.16.4 subnets

6.16.4.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for subnet",
    "type": "object",

    "definitions": {
        "resourceRef": {
            "type": "object",
            "additionalProperties": false,
            "properties": {
                "resourceRef": {
                    "type": "string"
                }
            }
        }
    }
}

```

```

    }
  },
  "required": [
    "resourceRef"
  ]
}
},
"properties": {
  "resourceId": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "addressPrefix": {
        "type": "string"
      },
      "accessControlList": {
        "$ref": "#/definitions/resourceRef"
      }
    }
  },
  "required": [
    "addressPrefix"
  ]
}
},
"required": [
  "properties"
]
}
}

```

6.16.4.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for subnet",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "resourceRef": {

```

```

    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "addressPrefix": {
          "type": "string"
        },
        "accessControlList": {
          "$ref": "#/definitions/resourceRef"
        },
        "ipConfigurations": {
          "type": "array",
          "uniqueItems": true,
          "items": { "$ref": "#/definitions/resourceRef" }
        },
        "routeTable": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      }
    },
    "required": [
      "provisioningState",
      "addressPrefix"
    ]
  },
  },
  "required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
  ]
}

```

```
]
}
```

6.16.4.3 GET ALL schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for subnets",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "subnets": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "$ref": "#/definitions/GUID"
        },
        "properties": {
          "type": "object",
          "properties": {
            "provisioningState": {
              "$ref": "#/definitions/provisioningState"
            },
            "addressPrefix": {
              "type": "string"
            },
            "accessControlList": {
              "$ref": "#/definitions/resourceRef"
            },
            "ipConfigurations": {
              "type": "array",
              "uniqueItems": true,
              "items": { "$ref": "#/definitions/resourceRef" }
            },
            "routeTable": {
              "type": "object",
              "properties": {
```



```

                "resourceRef": {
                    "type": "string"
                }
            },
            "required": [
                "resourceRef"
            ]
        }
    },
    "required": [
        "provisioningState",
        "addressPrefix"
    ]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}
},
"properties": {
    "value": { "$ref": "#/definitions/subnets" },
    "nextLink": {
        "type": "string",
        "format": "uri",
        "default": ""
    }
},
"required": ["nextLink"]
}
}

```

6.17 virtualNetworkManager

6.17.1 PUT schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for virtualNetworkManager configuration",
    "type": "object",

    "properties": {
        "resourceId": {
            "type": "string"
        },
        "etag": {
            "type": "string"
        },
        "properties": {
            "type": "object",
            "properties": {
                "distributedRouterState": {
                    "enum": [ "Enabled" ]
                },
                "networkVirtualizationProtocol": {
                    "enum": [ "VXLAN", "NVGRE" ],
                    "default": "VXLAN"
                }
            }
        }
    },
    "required": [

```

```

    "properties"
  ]
}

```

6.17.2 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for virtualNetworkManager configuration",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "distributedRouterState": {
          "enum": [ "Enabled" ]
        },
        "networkVirtualizationProtocol": {
          "enum": [ "VXLAN", "NVGRE" ],
          "default": "VXLAN"
        }
      }
    },
    "required": [
      "provisioningState",
      "distributedRouterState",
      "networkVirtualizationProtocol"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.18 virtualServers

6.18.1 PUT schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for Virtual Servers",
  "type": "object",

  "definitions": {
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  },

  "properties": {
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "properties": {
      "type": "object",
      "properties": {
        "connections": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "managementAddresses": {
                "type": "array",
                "items": {
                  "type": "string"
                },
                "minItems": 1
              },
              "credential": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  }
                }
              },
              "required": [
                "resourceRef"
              ]
            },
            "credentialType": {
```

```

        "enum": [ "usernamePassword", "X509Certificate" ]
    }
},
"required": [
    "managementAddresses",
    "credential",
    "credentialType"
]
}
},
"vmGuid": {
    "type": "string"
}
},
"required": [
    "connections",
    "vmGuid"
]
},
"markServerReadOnly": {
    "type": "boolean"
},
"tags": {
    "additionalProperties": { "type": "string" }
}
},
"required": [
    "properties",
    "markServerReadOnly"
]
}
}

```

6.18.2 GET schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for VirtualServers",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                },
                "originalHref": {
                    "type": "string"
                }
            }
        },
        "provisioningState": {
            "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
        }
    },
}

```

```

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "connections": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "managementAddresses": {
              "type": "array",
              "items": {
                "type": "string"
              },
              "minItems": 1
            },
            "credential": {
              "type": "object",
              "properties": {
                "resourceRef": {
                  "type": "string"
                }
              },
              "required": [
                "resourceRef"
              ]
            },
            "credentialType": {
              "enum": [ "usernamePassword", "X509Certificate" ]
            }
          },
          "required": [
            "managementAddresses",
            "credential",
            "credentialType"
          ]
        }
      },
      "vmGuid": {
        "type": "string"
      }
    },
    "required": [
      "provisioningState",
      "connections",
      "vmGuid"
    ]
  },
  "markServerReadOnly": {
    "type": "boolean"
  },
},

```

```

    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "required": [
      "resourceRef",
      "resourceId",
      "etag",
      "instanceId",
      "properties",
      "markServerReadOnly"
    ]
  }
}

```

6.18.3 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for VirtualServers",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "virtualServer": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {
          "type": "string"
        },
        "resourceMetadata": {
          "$ref": "#/definitions/resourceMetadata"
        },
        "markServerReadOnly": {

```

```

        "type": "boolean"
    },
    "tags": {
        "additionalProperties": { "type": "string" }
    },
    "properties": {
        "type": "object",
        "properties": {
            "provisioningState": {
                "$ref": "#/definitions/provisioningState"
            },
            "connections": {
                "type": "array",
                "items": {
                    "type": "object",
                    "properties": {
                        "managementAddresses": {
                            "type": "array",
                            "items": {
                                "type": "string"
                            }
                        },
                        "minItems": 1
                    }
                },
                "credential": {
                    "type": "object",
                    "properties": {
                        "resourceRef": {
                            "type": "string"
                        }
                    }
                },
                "required": [
                    "resourceRef"
                ]
            },
            "credentialType": {
                "enum": [ "usernamePassword", "X509Certificate" ]
            }
        },
        "required": [
            "managementAddresses",
            "credential",
            "credentialType"
        ]
    }
},
    "vmGuid": {
        "type": "string"
    }
},
    "required": [
        "provisioningState",
        "connections",
        "vmGuid"
    ]
}
},
    "required": [
        "resourceRef",
        "resourceId",
        "etag",
        "instanceId",
        "properties",
        "markServerReadOnly"
    ]
}
},
    "virtualServerArray": {
        "type": "array",
        "minItems": 0,
        "uniqueItems": true,
        "items": { "$ref": "#/definitions/virtualServer" }
    }
}

```

```

    }
  },
  "properties": {
    "value": { "$ref": "#/definitions/virtualServerArray" },
    "nextLink": {
      "type": "string",
      "format": "uri",
      "default": ""
    }
  },
  "required": ["nextLink"]
}

```

6.19 Diagnostics

6.19.1 Diagnostics ConnectivityCheck

6.19.1.1 PUT Schema Request

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for ConnectivityCheck",

  "definitions": {
    "networkReference": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "properties": {
    "properties": {
      "type": "object",
      "properties": {
        "senderLogicalNetwork": { "$ref": "#/definitions/networkReference" },
        "receiverLogicalNetwork": { "$ref": "#/definitions/networkReference" },
        "senderVirtualNetwork": { "$ref": "#/definitions/networkReference" },
        "receiverVirtualNetwork": { "$ref": "#/definitions/networkReference" },
        "senderIpAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "receiverIpAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "disableTracing": {
          "type": "boolean",
          "default": false
        },
        "protocol": {
          "type": "string",
          "enum": [ "Icmp", "Tcp", "Udp" ],
          "default": "Icmp"
        }
      }
    },
    "required": [

```



```

        "senderIpAddress",
        "receiverIpAddress"
    ]
}
},
"required": [
    "properties"
]
}
}

```

6.19.1.2 PUT Schema Response

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for ConnectivityCheck",

  "definitions": {
    "networkReference": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    }
  },

  "properties": {
    "properties": {
      "type": "object",
      "properties": {
        "senderLogicalNetwork": { "$ref": "#/definitions/networkReference" },
        "receiverLogicalNetwork": { "$ref": "#/definitions/networkReference" },
        "senderVirtualNetwork": { "$ref": "#/definitions/networkReference" },
        "receiverVirtualNetwork": { "$ref": "#/definitions/networkReference" },
        "senderIpAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "receiverIpAddress": {
          "type": "string",
          "format": "ipv4"
        },
        "disableTracing": {
          "type": "boolean",
          "default": false
        },
        "protocol": {
          "type": "string",
          "enum": [ "Icmp", "Tcp", "Udp" ],
          "default": "Icmp"
        }
      },
      "required": [
        "senderIpAddress",
        "receiverIpAddress"
      ]
    }
  },
  "required": [
    "properties"
  ]
}

```

6.19.2 Diagnostics ConnectivityCheckResults

6.19.2.1 GET Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for ConnectivityCheckResults",

  "definitions": {
    "networkReference": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "senderLogicalNetwork": { "$ref": "#/definitions/networkReference" },
        "receiverLogicalNetwork": { "$ref": "#/definitions/networkReference" },
        "senderVirtualNetwork": { "$ref": "#/definitions/networkReference" },
        "receiverVirtualNetwork": { "$ref": "#/definitions/networkReference" },
      }
    }
  }
}
```

```

"senderIpAddress": {
  "type": "string",
  "format": "ipv4"
},
"receiverIpAddress": {
  "type": "string",
  "format": "ipv4"
},
"disableTracing": {
  "type": "boolean",
  "default": false
},
"protocol": {
  "type": "string",
  "enum": [ "Icmp", "Tcp", "Udp" ]
},
"operationId": {
  "$ref": "#/definitions/GUID"
},
"submitTime": {
  "type": "string"
},
"result": {
  "type": "object",
  "properties": {
    "status": {
      "type": "string",
      "enum": [ "Pending", "InProgress", "Failure", "Success" ]
    },
    "roundTripTimeMSec": {
      "type": "integer",
      "default": 0
    },
    "nodeOutput": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "nodeType": {
            "type": "string",
            "enum": [ "Sender", "Transit", "Receiver" ]
          },
          "nodeSequenceNumber": {
            "type": "integer"
          },
          "errorMessage": {
            "type": "string"
          },
          "traceOutput": {
            "type": "array",
            "items": {
              "type": "string"
            }
          }
        }
      }
    },
    "required": [
      "nodeType",
      "nodeSequenceNumber"
    ]
  }
},
"required": [
  "status",
  "roundTripTimeMSec",
  "nodeOutput"
]
}
},
"required": [

```

```

        "senderIpAddress",
        "receiverIpAddress",
        "provisioningState",
        "protocol",
        "submitTime",
        "result"
    ]
}
},
"required": [
    "properties",
    "resourceRef",
    "etag",
    "instanceId"
]
}
}

```

6.19.2.2 GET ALL Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for connectivityCheckResults",
  "type": "object",

  "definitions": {
    "networkReference": {
      "type": "object",
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    },
    "checkResult": {
      "properties": {
        "resourceRef": {
          "type": "string"
        },
        "resourceId": {
          "type": "string"
        },
        "etag": {
          "type": "string"
        },
        "instanceId": {

```

```

"$ref": "#/definitions/GUID"
},
"properties": {
  "type": "object",
  "properties": {
    "provisioningState": {
      "$ref": "#/definitions/provisioningState"
    },
    "senderLogicalNetwork": { "$ref": "#/definitions/networkReference" },
    "receiverLogicalNetwork": { "$ref": "#/definitions/networkReference" },
    "senderVirtualNetwork": { "$ref": "#/definitions/networkReference" },
    "receiverVirtualNetwork": { "$ref": "#/definitions/networkReference" },
    "senderIpAddress": {
      "type": "string",
      "format": "ipv4"
    },
    "receiverIpAddress": {
      "type": "string",
      "format": "ipv4"
    },
    "disableTracing": {
      "type": "boolean",
      "default": false
    },
    "protocol": {
      "type": "string",
      "enum": [ "Icmp", "Tcp", "Udp" ]
    },
    "operationId": {
      "$ref": "#/definitions/GUID"
    },
    "submitTime": {
      "type": "string"
    },
    "result": {
      "type": "object",
      "properties": {
        "status": {
          "type": "string",
          "enum": [ "Pending", "InProgress", "Failure", "Success" ]
        },
        "roundTripTimeMSec": {
          "type": "integer",
          "default": 0
        },
        "nodeOutput": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "nodeType": {
                "type": "string",
                "enum": [ "Sender", "Transit", "Receiver" ]
              },
              "nodeSequenceNumber": {
                "type": "integer"
              },
              "errorMessage": {
                "type": "string"
              },
              "traceOutput": {
                "type": "array",
                "items": {
                  "type": "string"
                }
              }
            }
          }
        },
        "required": [
          "nodeType",
          "nodeSequenceNumber"
        ]
      }
    }
  }
}

```

```

        ]
      }
    },
    "required": [
      "status"
    ]
  }
},
"required": [
  "senderIpAddress",
  "receiverIpAddress",
  "provisioningState",
  "protocol",
  "submitTime",
  "result"
]
},
"required": [
  "properties",
  "resourceRef",
  "etag",
  "instanceId"
]
},
"checkResultArray": {
  "type": "array",
  "minItems": 0,
  "uniqueItems": true,
  "items": { "$ref": "#/definitions/checkResult" }
}
},
"properties": {
  "value": { "$ref": "#/definitions/checkResultArray" },
  "nextLink": {
    "type": "string",
    "format": "uri",
    "default": ""
  }
},
"required": ["value", "nextLink"]
}

```

6.19.3 Diagnostics SlbState

6.19.3.1 PUT Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for SlbState PUT Response",

  "definitions": {
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {

```

```

        "type" : "string",
        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
        "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
},
"properties": {
    "resourceRef": {
        "type": "string",
        "enum": ["/diagnostics/slbState/Action"]
    },
    "resourceId": {
        "type": "string",
        "enum": ["Action"]
    },
    "etag": {
        "type": "string"
    },
    "instanceId": {
        "$ref": "#/definitions/GUID"
    },
    "properties": {
        "type": "object",
        "properties": {
            "provisioningState": {
                "$ref": "#/definitions/provisioningState"
            },
            "operationId": {
                "$ref": "#/definitions/GUID"
            },
            "slbStateResult": {
                "$ref": "#/definitions/resourceRef"
            },
            "submitTime": {
                "type": "string"
            }
        }
    },
    "required": [
        "operationId",
        "slbStateResult",
        "submitTime"
    ]
}
},
"required": [
    "properties",
    "resourceRef",
    "etag",
    "instanceId",
    "resourceId"
]
}
}

```

6.19.4 Diagnostics SlbStateResults

6.19.4.1 GET Schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for SlbStateResults",

    "definitions": {
        "resourceRef": {

```

```

    "type": "object",
    "additionalProperties": false,
    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  },
  "GUID": {
    "type": "string",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "dataGroups": {
    "type": "array",
    "items": {
      "additionalProperties": false,
      "properties": {
        "name": {
          "enum": [ "Fabric", "Tenant" ]
        },
        "description": {
          "type": "string"
        }
      },
      "dataSections": {
        "type": "array",
        "items": {
          "type": "object",
          "properties": {
            "name": {
              "type": "string",
              "enum": [ "SlbmVips", "MuxState", "RouterConfiguration",
"ConnectedHostInfo", "VipRanges", "MuxRoutes", "VipConsolidatedState" ]
            },
            "description": {
              "type": "string",
              "enum": [ "Slbm Vips", "Mux State", "Router Configuration", "Connected Host
Info", "Vip Ranges", "Mux Routes", "Vip Consolidated State" ]
            },
            "dataRetrievalFailed": {
              "type": "boolean"
            }
          },
          "dataUnits": {
            "type": "array",
            "items": {
              "additionalProperties": false,
              "properties": {
                "name": {
                  "type": "string"
                },
                "value": {
                  "type": "array",
                  "items": {
                    "type": "string"
                  }
                }
              }
            }
          },
          "required": [ "value" ]
        }
      }
    },
    "required": [ "name", "description", "dataRetrievalFailed", "dataUnits" ]
  }
}

```



```

    },
    "required": [ "name", "description", "dataSections" ]
  }
}
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "submitTime": {
        "type": "string"
      },
      "status": {
        "type": "string",
        "enum": [ "Pending", "InProgress", "Failure", "Success" ]
      },
      "output": {
        "type": "object",
        "properties": {
          "dataGroups": {
            "$ref": "#/definitions/dataGroups"
          }
        }
      }
    }
  },
  "required": [
    "provisioningState",
    "status",
    "submitTime"
  ]
}
},
"required": [
  "properties",
  "resourceRef",
  "etag",
  "instanceId",
  "resourceId"
]
}
}

```

6.19.4.2 GET ALL Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for slbStateResults",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",

```

```

    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "resourceMetadata": {
    "properties": {
      "client": {
        "type": "string"
      },
      "tenantId": {
        "type": "string"
      },
      "groupId": {
        "type": "string"
      },
      "resourceName": {
        "type": "string"
      },
      "originalHref": {
        "type": "string"
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  },
  "dataGroups": {
    "type": "array",
    "items": {
      "additionalProperties": false,
      "properties": {
        "name": {
          "enum": [ "Fabric", "Tenant" ]
        },
        "description": {
          "type": "string"
        },
        "dataSections": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "name": {
                "type": "string",
                "enum": [ "SlbmVips", "MuxState", "RouterConfiguration", "ConnectedHostInfo", "VipRanges", "MuxRoutes", "VipConsolidatedState" ]
              },
              "description": {
                "type": "string",
                "enum": [ "Slbm Vips", "Mux State", "Router Configuration", "Connected Host Info", "Vip Ranges", "Mux Routes", "Vip Consolidated State" ]
              },
              "dataRetrievalFailed": {
                "type": "boolean"
              },
              "dataUnits": {
                "type": "array",
                "items": {
                  "additionalProperties": false,
                  "properties": {
                    "name": {
                      "type": "string"
                    },
                    "value": {
                      "type": "array",
                      "items": {
                        "type": "string"
                      }
                    }
                  }
                }
              },
              "required": [ "value" ]
            }
          }
        }
      }
    }
  }
}

```

```

        }
      },
      "required": [ "name", "description", "dataRetrievalFailed", "dataUnits" ]
    }
  },
  "required": [ "name", "description", "dataSections" ]
}
},
"slbState": {
  "type": "object",
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "submitTime": {
          "type": "string"
        },
        "status": {
          "type": "string",
          "enum": [ "Pending", "InProgress", "Failure", "Success" ]
        },
        "output": {
          "type": "object",
          "properties": {
            "dataGroups": {
              "$ref": "#/definitions/dataGroups"
            }
          }
        }
      }
    },
    "required": [
      "provisioningState",
      "status",
      "submitTime"
    ]
  },
  "required": [
    "properties",
    "resourceRef",
    "etag",
    "instanceId",
    "resourceId"
  ]
},
"slbStateArray": {
  "type": "array",
  "minItems": 0,
  "uniqueItems": true,
  "items": { "$ref": "#/definitions/slbState" }
}
},

```

```

    "properties": {
      "value": { "$ref": "#/definitions/slbStateArray" },
      "nextLink": {
        "type": "string",
        "format": "uri",
        "default": ""
      }
    },
    "required": [ "nextLink" ]
  }
}

```

6.19.5 Diagnostics NetworkControllerState

6.19.5.1 PUT Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for networkControllerState",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string",
      "enum": [ "/networkControllerState/NetworkControllerState" ]
    },
    "resourceId": {
      "type": "string",
      "enum": [ "NetworkControllerState" ]
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "lastQueryTimeStamp": {
          "type": "string"
        }
      }
    },
    "required": [
      "provisioningState",
      "lastQueryTimeStamp"
    ]
  }
},

"required": [
  "resourceRef",
  "resourceId",
  "etag",

```

```

    "instanceId",
    "properties"
  ]
}

```

6.20 networkControllerStatistics

6.20.1 GET Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for networkControllerStatistics",
  "type": "object",

  "definitions": {
    "provisioningState": {
      "enum": [ "Succeeded", "Failed" ]
    },
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    }
  },

  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "healthStatistics": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "resourceType": {
                "enum": [ "VirtualNetwork", "Gateway", "LoadBalancerMux" ]
              },
              "totalResourceCount": {
                "type": "integer",
                "minimum": 0
              },
              "healthyResourceCount": {
                "type": "integer",
                "minimum": 0
              },
              "errorResourceCount": {
                "type": "integer",
                "minimum": 0
              },
              "warningResourceCount": {
                "type": "integer",
                "minimum": 0
              },
              "healthUnknownCount": {
                "type": "integer",
                "minimum": 0
              }
            }
          }
        }
      }
    }
  },
}

```

```

        "required": [
            "errorResourceCount",
            "healthUnknownCount",
            "healthyResourceCount",
            "resourceType",
            "totalResourceCount",
            "warningResourceCount"
        ]
    },
    "usageStatistics": {
        "type": "array",
        "items": {
            "type": "object",
            "properties": {
                "resourceType": {
                    "enum": [ "PublicIPUtilization", "BackendIPUtilization", "MacPoolUtilization"
                ]
            },
            "totalResourceCount": {
                "type": "integer",
                "minimum": 0
            },
            "inUseResourceCount": {
                "type": "integer",
                "minimum": 0
            }
        }
    },
    "required": [
        "inUseResourceCount",
        "resourceType",
        "totalResourceCount"
    ]
}
},
"required": [
    "provisioningState",
    "healthStatistics",
    "usageStatistics"
]
}
},
"required": [
    "resourceRef",
    "instanceId",
    "properties"
]
}
}

```

6.21 internalResourceInstances

6.21.1 GET schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for internalResourceInstances",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    }
  }
}

```

```

    }
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "resourceReference": {
          "type": "string"
        }
      }
    },
    "required": [
      "provisioningState",
      "resourceReference"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "instanceId",
  "properties"
]
}

```

6.21.2 GET ALL schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET ALL JSON Schema for internalResourceInstances",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "internalResourceInstances": {
      "type": "array",
      "uniqueItems": true,
      "items": {
        "type": "object",
        "properties": {
          "resourceRef": {
            "type": "string"
          },
          "resourceId": {
            "type": "string"
          },
          "instanceId": {
            "$ref": "#/definitions/GUID"
          }
        }
      }
    }
  }
}

```

```

        "properties": {
          "type": "object",
          "properties": {
            "provisioningState": {
              "$ref": "#/definitions/provisioningState"
            },
            "resourceReference": {
              "type": "string"
            }
          },
          "required": [
            "provisioningState",
            "resourceReference"
          ]
        }
      },
      "required": [
        "resourceRef",
        "resourceId",
        "instanceId",
        "properties"
      ]
    }
  },
  "properties": {
    "value": { "$ref": "#/definitions/internalResourceInstances" },
    "nextLink": {
      "type": "string",
      "format": "uri",
      "default": ""
    }
  },
  "required": ["nextLink"]
}

```

6.22 iDnsServer

6.22.1 PUT schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for iDNSServer/configuration",
  "type": "object",

  "properties": {
    "properties": {
      "type": "object",
      "properties": {
        "connections": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "managementAddresses": {
                "type": "array",
                "items": {
                  "type": "string"
                }
              },
              "credential": {
                "type": "object",
                "properties": {
                  "resourceRef": {
                    "type": "string"
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}

```



```

        },
        "required": [
            "resourceRef"
        ]
    },
    "credentialType": {
        "type": "string",
        "enum": ["X509Certificate", "usernamePassword" ]
    }
}
},
"required": [
    "managementAddresses",
    "credential",
    "credentialType"
]
}
},
"zone": {
    "type": "string"
}
},
"required": [
    "connections",
    "zone"
]
}
},
"required": [
    "properties"
]
}
}

```

6.22.2 GET schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "GET JSON Schema for iDNSServer/configuration",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "provisioningState": {
            "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
        }
    },

    "properties": {
        "resourceRef": {
            "type": "string",
            "enum": ["/iDnsServer/configuration"]
        },
        "resourceId": {
            "type": "string",
            "enum": ["configuration"]
        },
        "etag": {
            "type": "string"
        },
        "instanceId": {
            "$ref": "#/definitions/GUID"
        },
        "properties": {

```

```

"type": "object",
"properties": {
  "provisioningState": {
    "$ref": "#/definitions/provisioningState"
  },
  "connections": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "managementAddresses": {
          "type": "array",
          "items": {
            "type": "string"
          }
        },
        "credential": {
          "type": "object",
          "properties": {
            "resourceRef": {
              "type": "string"
            }
          }
        },
        "required": [
          "resourceRef"
        ]
      },
      "credentialType": {
        "type": "string",
        "enum": ["X509Certificate", "usernamePassword" ]
      }
    },
    "required": [
      "managementAddresses",
      "credential",
      "credentialType"
    ]
  },
  "zone": {
    "type": "string"
  }
},
"required": [
  "connections",
  "provisioningState",
  "zone"
]
}
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}

```

6.23 virtualSwitchManager

6.23.1 PUT Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",

```

```

"title": "GET JSON Schema for virtualSwitchManager configuration",
"type": "object",

"definitions": {
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "numInterfacesHavingQos": {
        "type": "integer"
      },
      "qosSettings": {
        "type": "object",
        "properties": {
          "reservationMode": {
            "enum": [ "Absolute", "Weight" ],
            "default": "Weight"
          },
          "linkSpeedPercentage": {
            "type": "integer",
            "minimum": 0,
            "maximum": 100
          },
          "defaultReservation": {
            "type": "integer"
          },
          "enableHardwareLimits": {
            "type": "boolean"
          },
          "enableHardwareReservations": {
            "type": "boolean"
          },
          "enableSoftwareReservations": {
            "type": "integer"
          }
        }
      }
    }
  },
  "required": [
    "qosSettings"
  ]
},
"required": [
  "properties"
]
}

```

6.23.2 GET Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for virtualSwitchManager configuration",
  "type": "object",

```

```

"definitions": {
  "GUID": {
    "type": "string",
    "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
  },
  "resourceMetadata": {
    "properties": {
      "client": {
        "type": "string"
      },
      "tenantId": {
        "type": "string"
      },
      "groupId": {
        "type": "string"
      },
      "resourceName": {
        "type": "string"
      },
      "originalHref": {
        "type": "string"
      }
    }
  },
  "provisioningState": {
    "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
  }
},

"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "type": "string"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "numInterfacesHavingQos": {
        "type": "integer"
      },
      "qosSettings": {
        "type": "object",
        "properties": {
          "reservationMode": {
            "enum": [ "Absolute", "Weight" ]
          },
          "linkSpeedPercentage": {
            "type": "integer",
            "minimum": 0,
            "maximum": 100
          },
          "defaultReservation": {
            "type": "integer"
          }
        }
      }
    }
  }
}

```

```

        "enableHardwareLimits": {
            "type": "boolean"
        },
        "enableHardwareReservations": {
            "type": "boolean"
        },
        "enableSoftwareReservations": {
            "type": "boolean"
        }
    }
}
},
"required": [
    "provisioningState",
    "qosSettings",
    "numInterfacesHavingQos"
]
}
},
"required": [
    "resourceRef",
    "resourceId",
    "etag",
    "instanceId",
    "properties"
]
}
}

```

6.24 networkControllerBackup

6.24.1 PUT Schema

```

{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "title": "PUT JSON Schema for networkControllerBackup",
    "type": "object",

    "definitions": {
        "GUID": {
            "type": "string",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
        },
        "resourceMetadata": {
            "properties": {
                "client": {
                    "type": "string"
                },
                "tenantId": {
                    "type": "string"
                },
                "groupId": {
                    "type": "string"
                },
                "resourceName": {
                    "type": "string"
                },
                "originalHref": {
                    "type": "string"
                }
            }
        },
        "resourceRef": {
            "type": "object",
            "additionalProperties": false,
            "properties": {
                "resourceRef": {

```

```

        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  }
},
"properties": {
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "type": "object",
    "properties": {
      "backupPath": {
        "type": "string"
      },
      "credential": {
        "$ref": "#/definitions/resourceRef"
      }
    }
  },
  "required": [
    "backupPath",
    "credential"
  ]
}
},
"required": [
  "properties"
]
}
}

```

6.24.2 GET Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for networkControllerBackup",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    }
  }
}

```

```

    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    }
  },
  "properties": {
    "resourceRef": {
      "type": "string"
    },
    "resourceId": {
      "type": "string"
    },
    "etag": {
      "type": "string"
    },
    "instanceId": {
      "$ref": "#/definitions/GUID"
    },
    "resourceMetadata": {
      "$ref": "#/definitions/resourceMetadata"
    },
    "tags": {
      "additionalProperties": { "type": "string" }
    },
    "properties": {
      "type": "object",
      "properties": {
        "provisioningState": {
          "$ref": "#/definitions/provisioningState"
        },
        "backupPath": {
          "type": "string"
        },
        "credential": {
          "$ref": "#/definitions/resourceRef"
        },
        "errorMessage": {
          "type": "string"
        },
        "failedResourcesList": {
          "type": "array",
          "minItems": 0,
          "uniqueItems": true,
          "items": { "type": "string" }
        },
        "successfulResourcesList": {
          "type": "array",
          "minItems": 0,
          "uniqueItems": true,
          "items": { "type": "string" }
        },
        "inProgressResourcesList": {
          "type": "array",
          "minItems": 0,
          "uniqueItems": true,
          "items": { "type": "string" }
        }
      }
    }
  }
}

```

```

    },
    "required": [
      "provisioningState",
      "backupPath",
      "credential",
      "errorMessage",
      "failedResourcesList",
      "successfulResourcesList",
      "inProgressResourcesList"
    ]
  }
},
"required": [
  "resourceRef",
  "resourceId",
  "etag",
  "instanceId",
  "properties"
]
}
}

```

6.25 networkControllerRestore

6.25.1 PUT Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "PUT JSON Schema for networkControllerRestore",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,
      "properties": {
        "resourceRef": {
          "type": "string"
        }
      },
      "required": [
        "resourceRef"
      ]
    }
  }
}

```



```

    },
    "properties": {
      "resourceMetadata": {
        "$ref": "#/definitions/resourceMetadata"
      },
      "tags": {
        "additionalProperties": { "type": "string" }
      },
      "properties": {
        "type": "object",
        "properties": {
          "restorePath": {
            "type": "string"
          },
          "credential": {
            "$ref": "#/definitions/resourceRef"
          }
        },
        "required": [
          "restorePath",
          "credential"
        ]
      }
    },
    "required": [
      "properties"
    ]
  }
}

```

6.25.2 GET Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for networkControllerRestore",
  "type": "object",

  "definitions": {
    "GUID": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
    },
    "resourceMetadata": {
      "properties": {
        "client": {
          "type": "string"
        },
        "tenantId": {
          "type": "string"
        },
        "groupId": {
          "type": "string"
        },
        "resourceName": {
          "type": "string"
        },
        "originalHref": {
          "type": "string"
        }
      }
    },
    "provisioningState": {
      "enum": [ "Succeeded", "Updating", "Deleting", "Failed" ]
    },
    "resourceRef": {
      "type": "object",
      "additionalProperties": false,

```

```

    "properties": {
      "resourceRef": {
        "type": "string"
      }
    },
    "required": [
      "resourceRef"
    ]
  }
},
"properties": {
  "resourceRef": {
    "type": "string"
  },
  "resourceId": {
    "type": "string"
  },
  "etag": {
    "type": "string"
  },
  "instanceId": {
    "$ref": "#/definitions/GUID"
  },
  "resourceMetadata": {
    "$ref": "#/definitions/resourceMetadata"
  },
  "tags": {
    "additionalProperties": { "type": "string" }
  },
  "properties": {
    "type": "object",
    "properties": {
      "provisioningState": {
        "$ref": "#/definitions/provisioningState"
      },
      "restorePath": {
        "type": "string"
      },
      "statusMessages": {
        "type": "array",
        "minItems": 0,
        "uniqueItems": true,
        "items": { "type": "string" }
      },
      "failedResources": {
        "type": "array",
        "minItems": 0,
        "uniqueItems": true,
        "items": { "type": "string" }
      },
      "successfulResources": {
        "type": "array",
        "minItems": 0,
        "uniqueItems": true,
        "items": { "type": "string" }
      }
    }
  },
  "required": [
    "provisioningState",
    "restorePath",
    "statusMessages",
    "failedResources",
    "successfulResources"
  ]
}
},
"required": [
  "resourceRef",
  "resourceId",

```

```

    "etag",
    "instanceId",
    "properties"
  ]
}

```

6.26 Schema for Error Response

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "title": "GET JSON Schema for error responses",
  "type": "object",
  "properties": {
    "error": {
      "type": "object",
      "properties": {
        "code": {
          "type": "string"
        },
        "message": {
          "type": "string"
        },
        "target": {
          "type": "string"
        },
        "innerError": {
          "type": "string"
        },
        "details": {
          "type": "array",
          "items": {
            "type": "object",
            "properties": {
              "code": {
                "type": "string"
              },
              "message": {
                "type": "string"
              }
            },
            "required": [
              "code"
            ]
          }
        },
        "required": [
          "code"
        ]
      }
    },
    "required": [
      "error"
    ]
  }
}

```

7 Appendix B: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs.

Windows Server 2016 operating system

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

<1> Section 3.1.1: In Windows implementations, the server does not paginate, and "nextLink" is always set to "" (empty).

<2> Section 3.1.5.5.7: In Windows, the default value for the probe interval is 15 seconds, the minimum value is 5, and the maximum value is 2147483646.

<3> Section 3.1.5.7: The reference is used only to keep track of REST resource relationships. The server does not do anything with the network interface resource reference.

<4> Section 3.1.5.7: The reference is used only to keep track of REST resource relationships. The server does not do anything with the network interface resource reference.

<5> Section 3.1.5.10: The server limits the number of routes per table to 100.

<6> Section 3.1.5.18: Windows Server operating system limits the number of DNS servers per virtual network to 9.

<7> Section 3.1.5.26: The **networkControllerBackup** resource was introduced in Windows Server 2016 with the [MSKB-3216755] update.

<8> Section 3.1.5.27: The **networkControllerRestore** resource was introduced in Windows Server 2016 with the [MSKB-3216755] update.

<9> Section 3.1.5.28: Windows Server limits the number of DNS servers per virtual network to 9.

8 Change Tracking

This section identifies ~~No table of changes that were made to this is available. The document is either new or has had no changes since theits~~ last release. ~~Changes are classified as Major, Minor, or None.~~

The revision class ~~Major~~ means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- ~~A document revision that incorporates changes to interoperability requirements.~~
- ~~A document revision that captures changes to protocol functionality.~~

The revision class ~~Minor~~ means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class ~~None~~ means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact dochelp@microsoft.com.

Section	Description	Revision class
2.2.4 Data Structures	Added new content for the latest update to this version of Windows Server.	major
3.1 Server Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5 Message Processing Events and Sequencing Rules	7009 : Appended content in the description for the 200 (OK) status code stating when the server must return this status code and included a description for the 201 (Created) status code.	major
3.1.5.1 accessControlLists	Added new content for the latest update to this version of Windows Server.	major
3.1.5.1.1.2.3 Processing Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5.1.2 aclRules	Added new content for the latest update to this version of Windows Server.	major
3.1.5.4 gateways	Removed content and added new content for the latest update to this version of Windows Server.	major
3.1.5.4.1.2.3 Processing Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5.5 loadBalancers	Updated content for the latest update to this version of Windows Server.	major
3.1.5.5.7 probes	Added new product behavior note for the latest update to this version of Windows Server.	major
3.1.5.7 loadBalancerMux	Updated content for the latest update to this version of Windows Server.	major
3.1.5.7.1.2.3 Processing Details	Updated content for the latest update to this version of Windows Server.	major

Section	Description	Revision class
3.1.5.10 routeTables	Added new product behavior note for the latest update to this version of Windows Server.	major
3.1.5.11 networkInterfaces	Added new content for the latest update to this version of Windows Server.	major
3.1.5.11.1.2.3 Processing Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5.11.2 ipConfigurations	Added new content for the latest update to this version of Windows Server.	major
3.1.5.15 servers	Added new content for the latest update to this version of Windows Server.	major
3.1.5.17 virtualGateways	Updated content for the latest update to this version of Windows Server.	major
3.1.5.17.1.2.3 Processing Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5.17.2 bgpRouters	Updated content for the latest update to this version of Windows Server.	major
3.1.5.17.2.1.2.3 Processing Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5.17.2.2 bgpPeers	Updated content for the latest update to this version of Windows Server.	major
3.1.5.17.4 networkConnections	Updated content for the latest update to this version of Windows Server.	major
3.1.5.17.4.1.2.3 Processing Details	Added new content for the latest update to this version of Windows Server.	major
3.1.5.18 virtualNetworks	Added new content for the latest update to this version of Windows Server.	major
3.1.5.18 virtualNetworks	Added product behavior to give the limit number of DNS servers per virtual network.	major
3.1.5.26 networkControllerBackup	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26 networkControllerBackup	Added product behavior for the networkControllerBackup resource availability at the latest update.	major
3.1.5.26.1 HTTP Methods	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.1 PUT	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.1.1 Request Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.1.2 Response Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.1.3 Processing Details	Added section with new content for the latest update to	major

Section	Description	Revision class
	this version of Windows Server.	
3.1.5.26.1.2 GET	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.2.1 Request Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.2.2 Response Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.26.1.2.3 Processing Details	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27 networkControllerRestore	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27 networkControllerRestore	Added product behavior for the networkControllerRestore resource availability at the latest update.	major
3.1.5.27.1 HTTP Methods	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.1 PUT	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.1.1 Request Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.1.2 Response Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.1.3 Processing Details	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.2 GET	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.2.1 Request Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.2.2 Response Body	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.27.1.2.3 Processing Details	Added section with new content for the latest update to this version of Windows Server.	major
3.1.5.28 Response Content for Errors	Added section for the latest update to this version of Windows Server.	major
4.1 Example of the JSON used to create a default ACL for both inbound and outbound	7010 : Updated the example code.	major
4.2 macPools usage	7010 : Updated the example code.	major
6.24 networkControllerBackup	Added section with new content for the latest update to this version of Windows Server.	major
6.24.1 PUT Schema	Added section with new content for the latest update to this version of Windows Server.	major

Section	Description	Revision class
6.24.2 GET Schema	Added section with new content for the latest update to this version of Windows Server.	major
6.25 networkControllerRestore	Added section with new content for the latest update to this version of Windows Server.	major
6.25.1 PUT Schema	Added section with new content for the latest update to this version of Windows Server.	major
6.25.2 GET Schema	Added section with new content for the latest update to this version of Windows Server.	major
6.26 Schema for Error Response	Added new section for the latest update to this version of Windows Server.	major

9 Index

A

- Abstract data model 50
- accessControlLists 55
- aclRules 75
- Applicability 33
- Asynchronous operations 25
 - operations and operationResults differences 27
 - POST and DELETE 26
 - properties.provisioningState 27
 - PUT 27
 - state diagram for asynchronous operations 28
 - state diagram for synchronous operations 28

B

- backendAddressPools 124
- bgpPeers 321
- bgpRouters 311

C

- Capability negotiation 34
- Change tracking 669
- Client-server interactions 23
 - ETag 23
 - idempotency 24
- Common data structures 42
- Common JSON elements 38
- Common URI parameters 39
 - grandParentResourceID 40
 - operationID 40
 - parentResourceID 40
 - resourceID 41
 - url 42
- Communication certificate - initialization 50
- Concurrent operations
 - on same resource 30
 - with dependent resources 32
- ConnectivityCheck - diagnostics 372
- ConnectivityCheckResults - diagnostics 374
- Content-Type header 35
- credentials 80

D

- Data model - abstract 50
- Data structures - common 42
- Diagnostics
 - ConnectivityCheck 372
 - ConnectivityCheckResults 374
 - NetworkControllerState 386
 - SlbState 379
 - SlbStateResults 380
- Diagrams
 - asynchronous (section 1.3.2 25, section 1.3.2.6 28)
 - Network Controller and industry standard protocols 33
 - synchronous (section 1.3.2.5 28, section 1.3.3.1 30)
- Differences between operations and operationResults 27

E

- Enumeration 50
- Etag behavior examples 23
- Examples
 - Example of the JSON used to create a default ACL for both inbound and outbound example 412
 - macPools usage example 412

F

- Fields - vendor-extensible 34
- frontendIpConfigurations 128

G

- gatewayPools 85
- gateways 92
- Get All - response body pattern 50
- Glossary 20
- grandParentResourceID 40

H

- Higher-layer triggered events 50
- HTTP headers 35
 - Content-Type header 35
 - Request headers 35
 - Response headers 37

I

- Idempotency 24
- iDnsServer 393
- Implementer - security considerations 413
- inboundNatRules 134
- Index of security parameters 413
- Informative references 23
- Initialization 50
- internalResourceInstances 390
- Introduction 20
- IP Addresses - configurations 222
- IP configuration 55
- ipConfigurations 222

J

- JSON elements - Common 38
- JSON used to create a default ACL for both inbound and outbound example 412

L

- loadBalancerManager 155
- loadBalancerMux 158
- loadBalancers 109
 - backendAddressPools 124
 - frontendIpConfigurations 128
 - inboundNatRules 134
 - loadBalancingRules 140
 - logicalSubnets 172
 - outboundNatRules 146
 - probes 150
- loadBalancingRules 140
- Local events 411
- logicalNetworks 166
- logicalSubnets 172

M

- macPools
 - initialization 50
 - resource 187
- Message processing events 50
- Messages
 - transport 35
- monitoring/NetworkControllerStatistics 387

N

- Network Controller
 - dependent resources 32
 - error returned by 50
 - initialization 50
- networkConnections 335
- NetworkControllerState - diagnostics 386
- NetworkControllerStatistics 387
- networkInterfaces 202
- Normative references 22

O

- operationID 40
- operationResults 231
- Operations 229
 - asynchronous 25
 - concurrent on same resource 30
 - concurrent with dependent resources 32
 - Network Controller dependent resources - concurrent 32
 - synchronous 28
- outboundNatRules 146
- Overview (synopsis) 23

P

- Parameters - security index 413
- parentResourceID (section 2.2.3.3 40, section 2.2.3.4 41)
- policyMaps 330
- POST and DELETE operations 26
- Preconditions 33
- Prerequisites 33
- probes 150
- Product behavior 668
- properties.provisioningState usage 27
- Protocol Details
 - Server 50
- Protocol examples
 - Example of the JSON used to create a default ACL for both inbound and outbound 412
 - macPools usage 412
- publicIpAddresses 233
- PUT operation 27

R

- References
 - informative 23
 - normative 22
- Relationship to other protocols 33
- Request headers 35
- Resource
 - JSON array 50

- Resource code table 50
- Resource processing - resourceId omitted 50
- resourceID 41
- Response body - Get All format 50
- Response headers 37
- routes 197
- routeTables 192

S

- Security
 - implementer considerations 413
 - parameter index 413
- Sequencing rules 50
 - accessControlLists 55
 - credentials 80
 - Diagnostics
 - ConnectivityCheck 372
 - ConnectivityCheckResults 374
 - NetworkControllerState 386
 - SlbState 379
 - SlbStateResults 380
 - gatewayPools 85
 - gateways 92
 - iDnsServer 393
 - internalResourceInstances 390
 - loadBalancerManager 155
 - loadBalancerMux 158
 - loadBalancers 109
 - logicalNetworks 166
 - macPools 187
 - NetworkControllerStatistics 387
 - networkInterfaces 202
 - operationResults 231
 - operations 229
 - publicIpAddresses 233
 - routeTables 192
 - servers 238
 - serviceInsertions 250
 - virtualGateways 258
 - virtualNetworkManager 363
 - virtualNetworks 347
 - virtualServers 366
 - virtualSwitchManager 395
- Server
 - Abstract data model 50
 - Higher-layer triggered events 50
 - Initialization 50
 - Message processing events and sequencing rules 50
 - Other local events 411
 - Timer events 411
 - Timers 50
 - servers 238
 - serviceInsertions 250
 - Singletons - enumeration 50
 - SlbState - diagnostics 379
 - SlbStateResults - diagnostics 380
 - Standards assignments 34
 - State diagrams for asynchronous operations 28
 - State diagrams for synchronous operations 28
 - Status code
 - definition source 50
 - table 50
 - subnets 357

T

Timer events 411
Timers 50
Tracking changes 669
Transport 35
Triggered events - higher-layer 50

U

URI parameters - common 39

V

Vendor-extensible fields 34
Versioning 34
Virtual subnets 55
virtualGateways 258
virtualNetworkManager 363
virtualNetworks 347
virtualServers 366
virtualSwitchManager 395