

## [MS-NCNBI-Diff]:

# Network Controller Northbound Interface

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## Revision Summary

| Date             | Revision History | Revision Class | Comments  |
|------------------|------------------|----------------|---|
| 7/14/2016        | 1.0              | New            | Released new document.                              |
| <u>9/26/2016</u> | <u>2.0</u>       | <u>Major</u>   | <u>Significantly changed the technical content.</u> |

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# 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 (1). 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 (1) 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 (2) 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]. 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 [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

[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~~

#### 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.

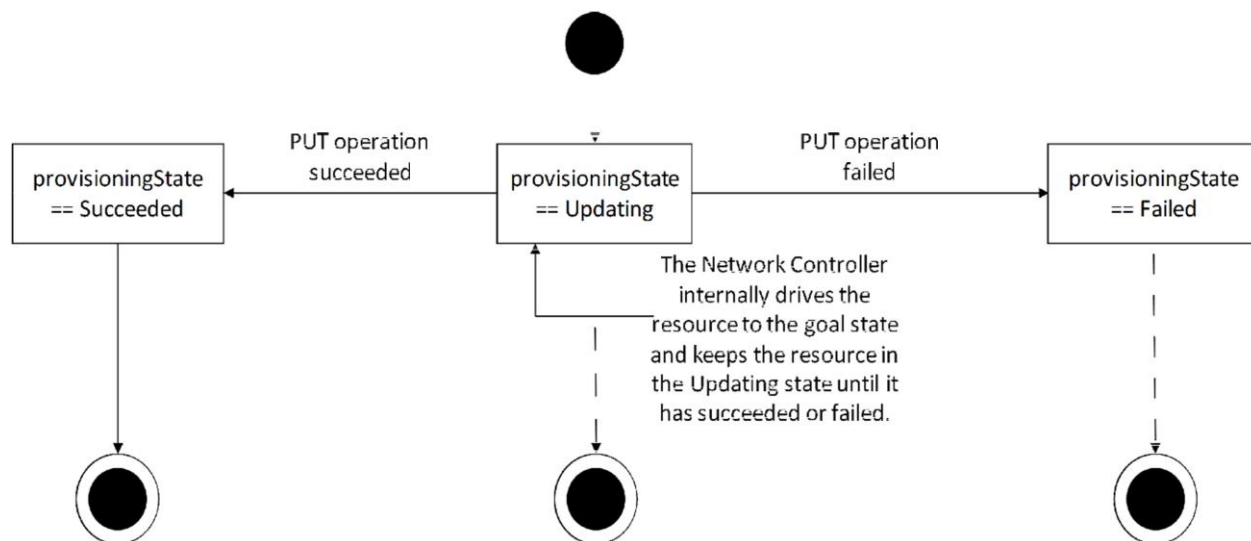
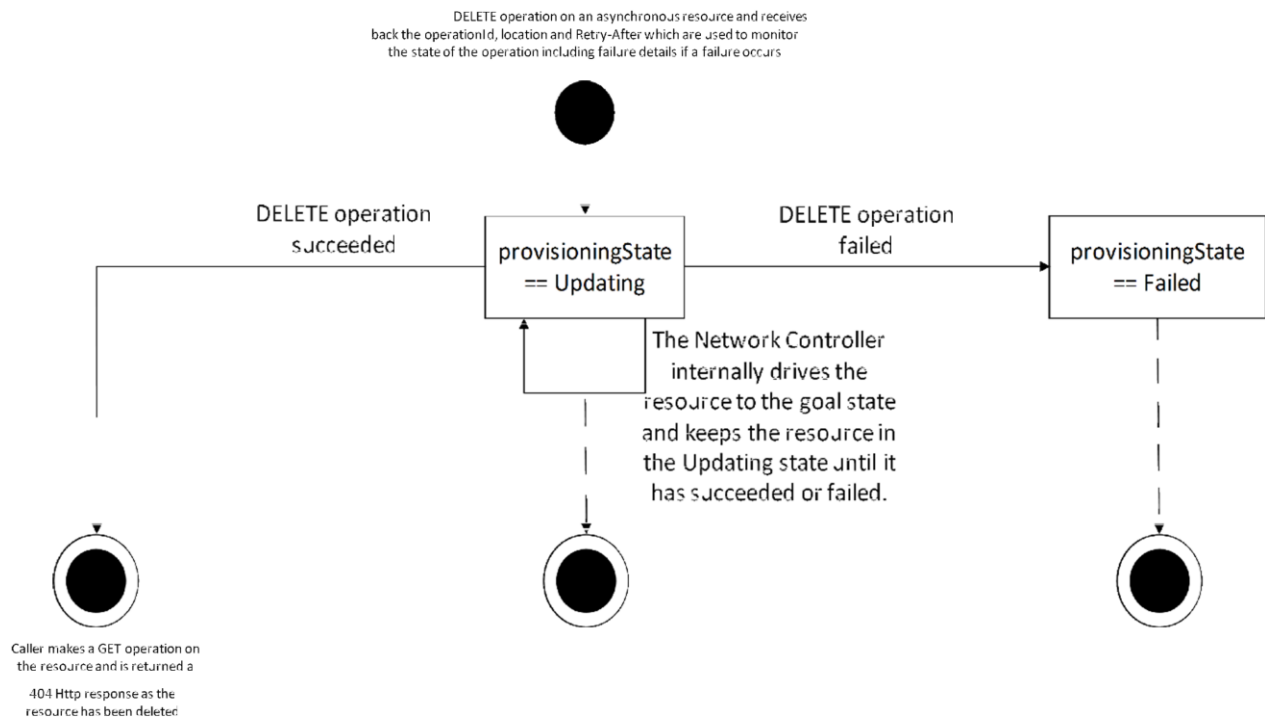


Figure 1: State Diagram for Asynchronous PUT Operations



**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 or 201 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 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 if operation did not complete yet, or 204 and no body (if succeeded), or HTTP status indicating an error (for example, 500) and a body containing error information.

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

The Location header is more common, but is ambiguous because when **GET** <Location> returns status code 500, 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

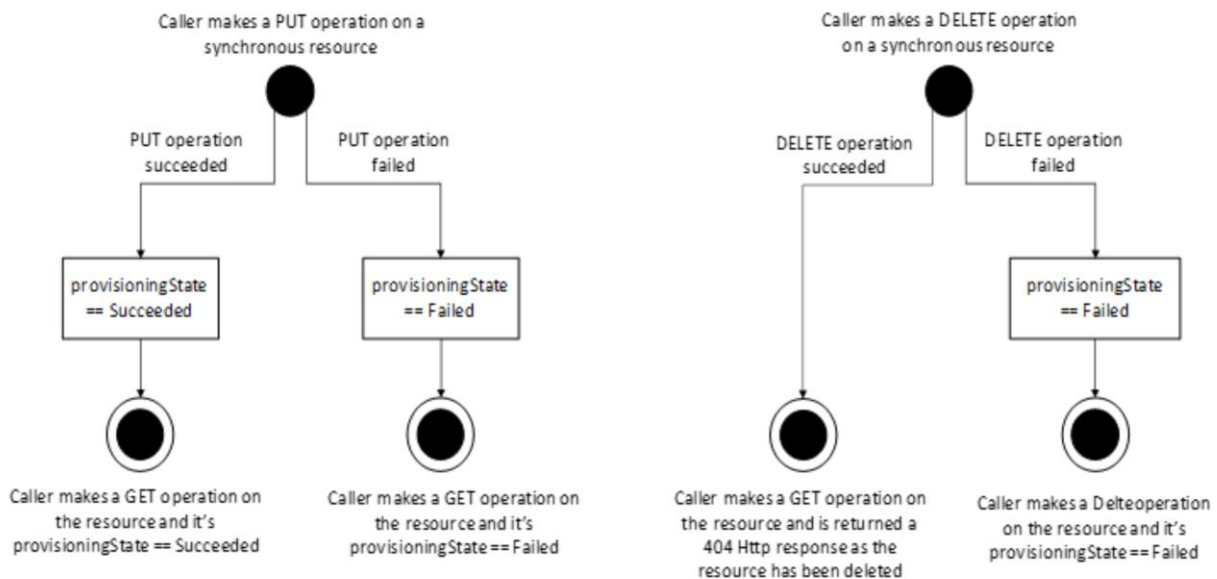
underlies transitioning between provisioningStates and how the Network Controller makes changes to the **properties.provisioningState** element of parent/child resources or dependent resources. The valid provisioning states are the following (see section 2.2.2, Common JSON Elements, for a detailed description 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

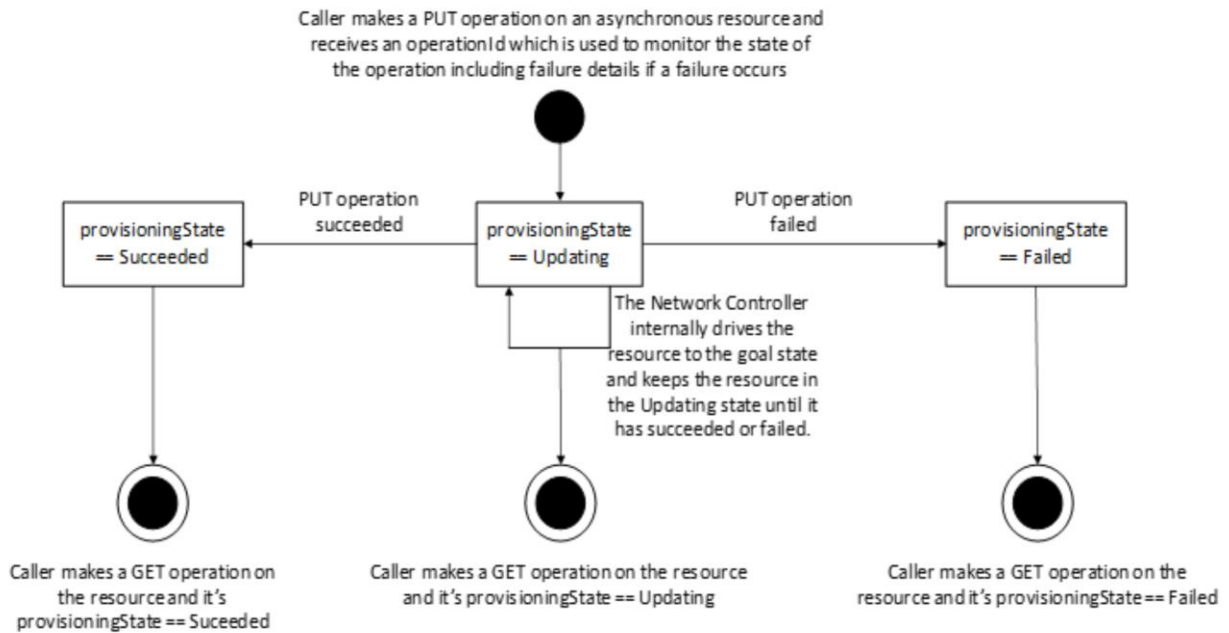
For synchronous operations the only valid states are Failed or Succeeded.



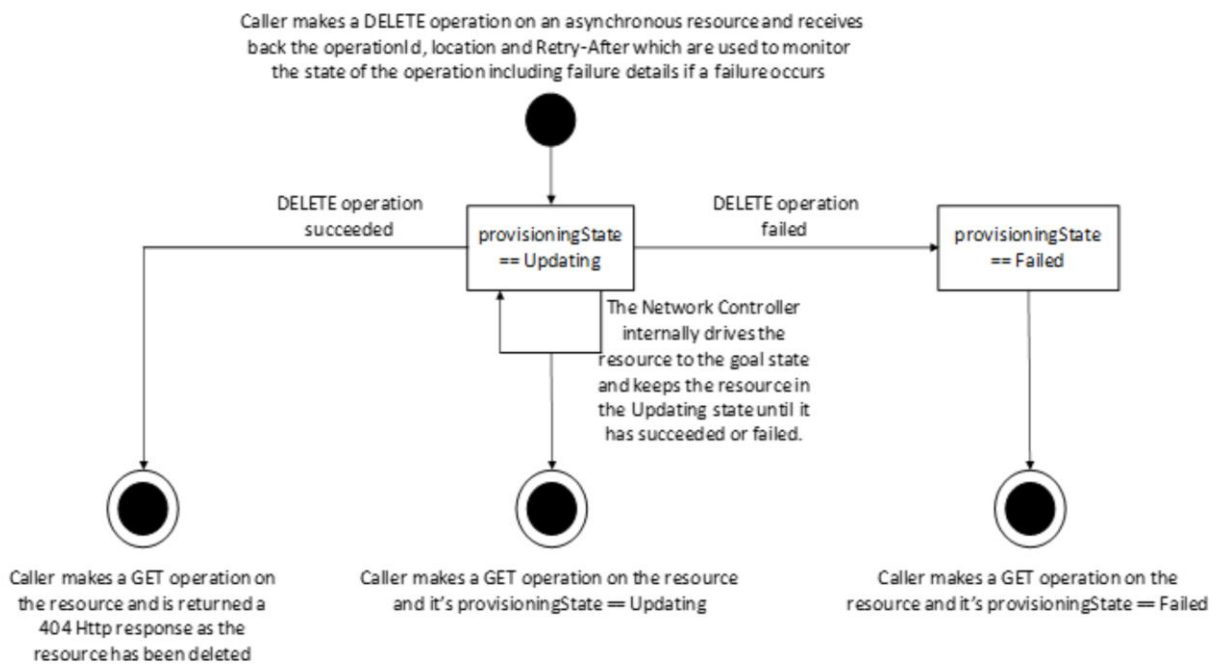
**Figure 3: State Diagrams for Synchronous Operations**

### 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 or 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.

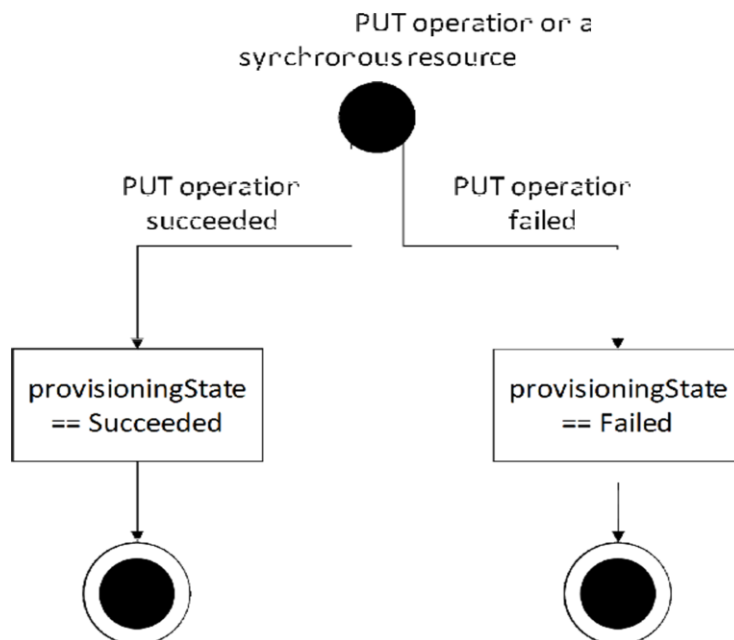
Because the Network Controller is a distributed service made up of a number of services, it handles transient failures internally. It does this by having a retry loop that the Software-Defined Networking

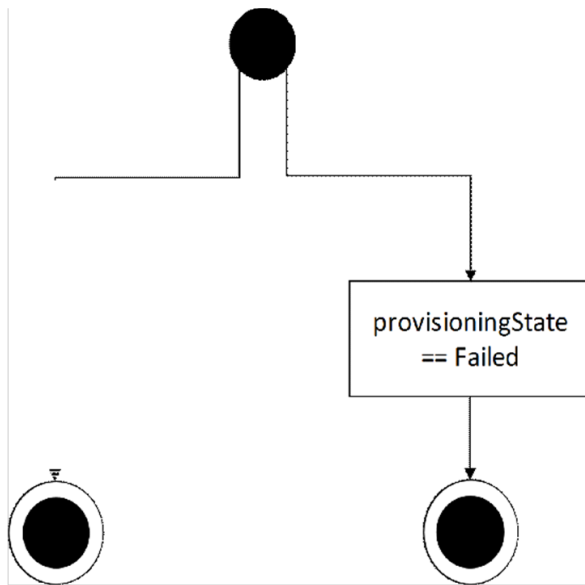
API (SDNAPI) service uses for communicating with the other services. The SDNAPI service is the component in the network controller that listens for HTTP/HTTPS web requests, parses them and forwards them on to the appropriate service module for handling. This retry loop will continue retrying the operation 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 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 Asynchronous Operations, 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.

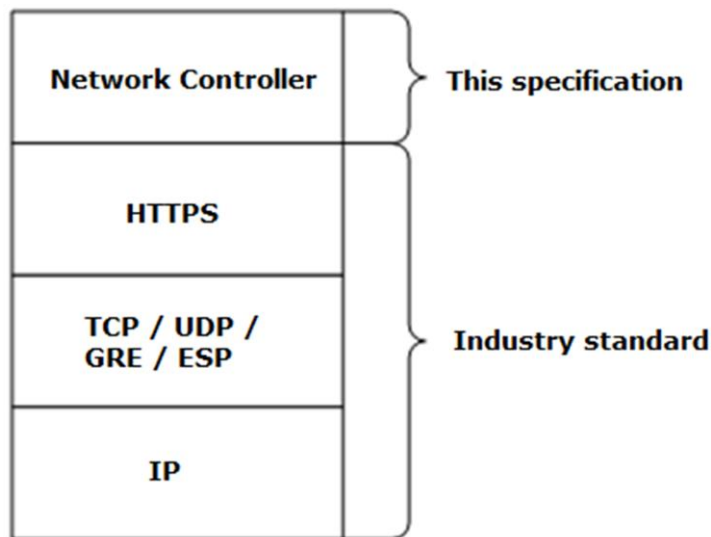
**PUT descendant resource:** When a **PUT** operation is performed on a descendant resource while its **property.provisioningState** is in the updating, deleting or failed state, the **PUT** operation returns a 409 Conflict Http Response. See the error code section in each resource for error response 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`1 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   | Description                           |
|-----------------|-----------|---------------------------------------|
| Accept-Language | 2.2.1.2.1 | Optional. The language in which error |

| Header                        | Section   | Description  |
|-------------------------------|-----------|--|
|                               |           | messages are returned.   |
| 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 <b>GET</b> command on a resource or collection of resources, or an etag that is contained in the output of a <b>PUT</b> or <b>PATCH</b> 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 <b>opaque</b> 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 <b>URL</b> 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 Asynchronous Operations, 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. |
| 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      | Description  |
|-------------------|--|
| <b>resourceId</b> | The resource ID for the resource. The value <b>MUST</b> 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. |

| JSON Element                         | Description   |
|--------------------------------------|---|
| <b>resourceRef</b>                   | A relative URI to an associated resource.   |
| <b>instanceId</b>                    | 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 <b>internalResourceInstances</b> resource, section 3.1.5.23. The <i>instanceId</i> element cannot be used directly in the API. |
| <b>tags</b>                          | Optional. Key-value pairs of arbitrary data that the client stores with the resource on the controller.   |
| <b>resourceMetadata</b>              | 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.   |
| <b>resourceMetadata.client</b>       | 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.  |
| <b>resourceMetadata.tenantId</b>     | 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.   |
| <b>resourceMetadata.groupId</b>      | 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.                            |
| <b>resourceMetadata.resourceName</b> | Optional. Indicates the globally unique name of the resource. If it is not assigned a value then it will be blank.  |
| <b>resourceMetadata.originalHref</b> | Optional for resourceMetadata. The original URI of the resource if the client uses a URI based system to organize resources.  |
| <b>properties</b>                    | Optional array of structured data. The structure of this data is unique to each resource except two common read-only elements - <b>etag</b> and <b>provisioningState</b> .  |
| <b>properties.etag</b>               | 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.  |
| <b>properties.provisioningState</b>  | 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>                 | section 2.2.3.5  | The URL of the Network Controller.  |
| <del>config</del>     |                  | <del>The configuration object containing the properties of the specified resource. The properties are defined by the resource contained in the URI</del>  |
| grandParentResourceID | section 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.  |
| operation-id          | section 2.2.3.2  | The value of the x-ms-request-id header returned by the resource provider.  |
| parentResourceID      | section 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"> <li>User-defined, system-defined, or both</li> <li>Unique across all resources of the same type</li> <li>Unique across all resources of the same type in the context of the specific grandparent resource.</li> </ul>  |
| resourceId            | section 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"> <li>User-defined, system-defined, or both</li> <li>Unique across all resources of the same type</li> <li>Unique across all resources of the same type in the context of the specific ancestor resource.</li> </ul> When the resourceId is optional for an ancestor resource, it is required for the descendant resources. |
| instanceId            | section 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~~

### 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 interfaces resource. 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~~

### 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 described within the corresponding sections.

| Data structure                 | Section  | Description  |
|--------------------------------|--|--|
| <b>accessControlLists</b>      | The <b>ipConfigurations</b> resource, section 3.1.5.5.3.   | Contains an <b>accessControlLists</b> resource that defines the <b>ACLs</b> in and out of the IP Configuration.  |
| <b>aclRules</b>                | The <b>aclRules</b> resource, section 3.1.5.1.2.   | Indicates the rules in an access control list, Indicates the action the ACL Rule will take.  |
| <b>addressPrefixes</b>         | The <b>addressSpace</b> resource in the <b>virtualNetworks</b> resource, section 3.1.5.18.   | Indicates the valid list of address prefixes that can make up this virtual network.  |
| <b>addressSpace</b>            | The <b>virtualNetworks</b> resource, section 3.1.5.18.   | Required. Indicates the address space of the virtual network.  |
| <b>backendAddressPools</b>     | The <b>outboundNatRules</b> resource, section 3.1.5.5.6.<br>The <b>loadBalancingRules</b> resource, section 3.1.5.5.5.   | Indicates an array of references to a <b>backendAddressPools</b> resource. <b>Inbound</b> traffic is randomly load balanced across IPs in the backend pool.<br>Indicates a reference to the pool of IP addresses where <b>outbound</b> traffic originates. |
| <b>backendIPConfigurations</b> | The <b>backendAddress Pools</b> resource, section 3.1.5.5.2.   | An array of references to <b>ipConfiguration</b> Resources. There is no restriction on having the same IP configurations in multiple <b>backendAddressPools</b> .  |
| <b>bgpPeers</b>                | The <b>bgpPeers</b> resource in the <b>bgpRouters</b> resource in the <b>virtualGateways</b> resource, section 3.1.5.17.2.2.   | A collection of <b>BGP</b> peers associated with the <b>BGP bgpRouters</b> resource.   |
| <b>bgpRouters</b>              | The <b>virtualGateways</b> resource, section 3.1.5.17.   | An array of <b>bgpRouters</b> on the physical switch.  |
| <b>connections</b>             | The <b>gateways</b> resource, section 3.1.5.4.   | A collection of all the connections on the gateway.  |
| <b>connections</b>             | The <b>servers</b> resource, section 3.1.5.15.<br>The <b>loadBalancerMux</b> resource, section 3.1.5.7.<br>The <b>iDnsServers</b> resource, section 3.1.5.24.<br>The <b>virtualServers</b> 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.  |
| <b>destinationSubnets</b>      | The <b>rules</b> resource in the <b>serviceInsertions</b>  | An array of subnets to match the destination subnet.   |

| Data structure                           | Section   | Description  |
|--|---|--|
|  | resource, section 3.1.5.16.   |  |
| <b>details</b>                           | The <b>operations</b> resource, section 3.1.5.12.<br>The <b>operationResults</b> resource, section 3.1.5.13.  | Contains detailed information about the error.   |
| <b>dhcpOptions</b>                       | The <b>virtualNetworks</b> resource, section 3.1.5.18.  | Indicates the <b>DHCP</b> options used by servers in the virtual network.  |
| <b>dnsRecord</b>                         | The <b>publicIpAddresses</b> resource, section 3.1.5.14.  | Properties of a <b>DNS</b> record associated with this public IP address. This field is not supported.                             |
| <b>dnsServers</b>                        | The <b>logicalSubnets</b> resource, section 3.1.5.8.2.<br>The <b>dhcpOptions</b> resource in the <b>virtualNetworks</b> resource, section 3.1.5.18.                       | An array of IP Addresses for the DNS servers that this resource uses to resolve DNS queries by devices or hosts.                   |
| <b>dnsSettings</b>                       | The <b>virtualNetworks Interfaces</b> resource, section 3.1.5.13.   | Indicates the DNS settings of this network interface.  |
| <b>error</b>                             | The <b>operations</b> resource, section 3.1.5.12.<br>The <b>operationResults</b> 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. |
| <b>eTag</b>                              | The Etag header, section 2.2.1.3.4  | The Network Controller returns an etag in the response body as the <b>etag</b> property of the resource.                           |
| <b>externalIPAddress</b>                 | The <b>gateways</b> resource, section 3.1.5.4.  | A collection of IP address information.  |
| <b>frontendIPConfigurations</b>          | The <b>loadBalancers</b> resource, section 3.1.5.5.<br>The <b>frontEndIP Configurations</b> resource, section 3.1.5.5.3.  | Indicates the frontend IP addresses of the load balancers.   |
| <b>frontendIPConfigurations</b>          | The <b>inboundNatRules</b> resource, section 3.1.5.5.4.<br>The <b>outboundNatRules</b> , section 3.1.5.5.6.<br>The <b>loadBalancingRules</b> resource, section 3.1.5.5.5. | Indicates an array of references to <b>frontendIPConfiguration</b> resources.  |
| <b>frontendIpPools</b>                   | The <b>loadBalancerManager</b> resource, section 3.1.5.6.   | An array of references to <b>ipPools</b> resources to use for the frontend IP Addresses.   |
| <b>gatewayCapacityKiloBits PerSecond</b> | The <b>gatewayPools</b> resource, section 3.1.5.4.  | Indicates the total capacity of the gateway pool in kilobits per second.   |

| Data structure                 | Section   | Description   |
|--------------------------------|---|---|
| <b>GatewayPools</b>            | The <b>virtualGateways</b> resource, section 3.1.5.17.  | The collection of references to <b>gatewayPools</b> 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. |
| <b>gateways</b>                | The <b>gatewayPools</b> resource, section 3.1.5.4.  | An array that contains references to the <b>gateways</b> resources in the gateway pool.   |
| <b>gatewaySubnets</b>          | The <b>virtualGateways</b> resource, section 3.1.5.17.  | Indicates collection of references to <b>IPv4/IPv6</b> subnet of the VSID/gateway subnet that contains the specified gateway.   |
| <b>greConfiguration</b>        | The <b>networkConnections</b> resource, section 3.1.5.17.4.   | Indicates details of GRE configuration  |
| <b>IcmpProtocolConfig</b>      | The <b>Diagnostics ConnectivityCheck</b> resource, section 3.1.5.21.1.<br>The <b>Diagnostics ConnectivityCheckResults</b> resource, section 3.1.5.21.2. | Contains the details of an ICMP Protocol specific configuration.  |
| <b>iDnsServer</b>              | The <b>iDnsServer</b> resource, section 3.1.5.24.   | Indicates the configuration details for the DNS server in the internal DNS service.   |
| <b>inboundNatRules</b>         | The <b>loadBalancers</b> resource, section 3.1.5.5.<br>The <b>inboundNatRules</b> resource, section 3.1.5.5.4.  | Indicates an array of inbound <b>NAT</b> rules configured for the load balancer.  |
| <b>internalIpAddresses</b>     | The <b>networkConnections</b> resource, section 3.1.5.17.4.   | Indicates collection of Internal IP Addresses of the connection.  |
| <b>internalPeerIpAddresses</b> | The <b>networkConnections</b> resource, section 3.1.5.17.4.   | Indicates collection of Internal IP Addresses of the peer.  |
| <b>IPConfiguration</b>         | The <b>network Interfaces</b> resource, section 3.1.5.15.2.   | Indicates an array of IP configurations   |
| <b>ipConfigurations</b>        | The <b>accessControlLists</b> resource, section 3.1.5.1.  | Indicates references to the IP addresses of <b>networkInterfaces</b> resource that are associated with an <b>accessControlLists</b> resource.   |
| <b>ipConfigurations</b>        | The <b>subnets</b> resource in the virtualNetworks resource, section 3.1.5.18.2.  | Indicates an array of references of <b>networkInterfaces</b> resources that are connected to the subnet.  |

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

| Data structure                   | Section   | Description  |
|----------------------------------|---|--|
|                                  | resource, section 3.1.5.15.2.   | network interface cards of the server. These resources are automatically created.  |
| <b>networks</b>                  | The <b>bgpRouters</b> resource in the virtualGateways resource, section 3.1.5.17.2                                  | Collection of network prefixes "IP address/prefix" format that identifying the networks that are to be announced by the router.  |
| <b>outboundNatRules</b>          | The <b>backendAddress Pools</b> resource, section 3.1.5.5.2.<br>The <b>loadBalancers</b> resource, section 3.1.5.5. | An array of references to the <b>outboundNatRules</b> resource.  |
| <b>output.DataGroups</b>         | The <b>Diagnostics slbStateResults</b> 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   |
| <b>peerIpAddresses</b>           | The <b>networkConnections</b> resource, section 3.1.5.17.4.   | Array of IP Addresses of the destination (S2S IP)  |
| <b>peerRouter Configurations</b> | The <b>routerConfiguration</b> structure in the <b>loadBalancerMux</b> resource, section 3.1.5.7..                  | The BGP settings that are used to establish and maintain BGP peering with one or more peers.   |
| <b>peerTrafficSelector</b>       | The <b>ipsecConfiguration</b> resource in the <b>networkConnections</b> resource, section 3.1.5.17.4.               | Indicates collection of IPSec TrafficSelectors on the enterprise side  |
| <b>policyMaps</b>                | The <b>virtualGateways</b> resource, section 3.1.5.17.  | A collection of <b>policyMaps</b> resources for the <b>virtualGateways</b> resource.   |
| <b>probes</b>                    | The <b>probes</b> resource, section 3.1.5.5.7.<br>The <b>loadBalancers</b> resource, section 3.1.5.5.               | Indicates an array of probes configured for the load balancer.   |
| <b>properties</b>                | The <b>Properties</b> 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: <b>etag</b> and <b>provisioningState</b> . If properties is not included this will cause the resource to be created but have no properties. |
| <b>publicIpAddresses</b>         | The <b>gatewayPools</b> resource, section 3.1.5.4.  | A collection of public IP addresses to which external connections connect.   |
| <b>portSettings</b>              | The <b>networkInterfaces</b> resource, section 3.1.5.11.  | Contains a reference to quality of service settings to apply to virtual network interface.   |

| Data structure               | Section  | Description   |
|------------------------------|--|---|
| <b>redundantGatewayCount</b> | The <b>gatewayPools</b> resource, section 3.1.5.4.   | Indicates the number of redundant gateway VMs that will be used for each virtualGateway instance to ensure its availability.  |
| <b>resourceMetadata</b>      | The Common JSON Elements, section 2.2.2.   | An array of structured data that the client sends to the server.  |
| <b>routerConfiguration</b>   | The <b>loadBalancerMux</b> 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.   |
| <b>routerIpAddress</b>       | The <b>bgpRouters</b> resource in the virtualGateways resource, section 3.1.5.17.2   | Indicates IP addresses to which BGP peering can be established.   |
| <b>routes</b>                | The <b>routeTables</b> resource, section 3.1.5.10.   | The routes that are contained in a route table.   |
| <b>routes</b>                | The <b>routes</b> resource in the <b>logicalSubnets</b> resource, section 3.1.5.8.2.3.   | The routes that are contained in the logical subnet.  |
| <b>routes</b>                | The <b>networkConnections</b> 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.  |
| <b>rules</b>                 | The <b>serviceInsertions</b> resource, section 3.1.5.16.   | Indicates an array of rules that define what traffic goes through the service insertion.  |
| <b>configurationState</b>    | <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,</p> <p>The virtualNetwork resource,</p> <p>The <b>gateways</b> resource, section 3.1.5.4.</p> <p>The <b>virtualGateways</b> resource, section 3.1.5.17.</p> <p>The <b>bgpRouters</b> resource in the <b>virtualGateways</b> resource, section 3.1.5.17.2.</p> <p>The <b>bgpPeers</b> resource in the <b>bgpRouters</b> resource in the <b>virtualGateways</b> resource, section 3.1.5.17.2.2.</p> <p>The <b>networkConnections</b> resource in the <b>virtualGateways</b> resource, section 3.1.5.17.4.</p> | <p>Configuration state indicates any failures in processing goal state corresponding to the resource it is contained in. In the 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 the definition of detailedInfo field.</p> <p>Running state update time is noted within the running state structure. The</p> |



| Data structure                         | Section  | Description   |
|--|--|---|
|  | The <b>LoadBalancerMux</b> resource, section 3.1.5.7.  | LastUpdatedTime stores this information.  |
| <b>configurationState.detailedInfo</b> | 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. | <p>Detailed Info has 3 fields</p> <ul style="list-style-type: none"> <li>▪ Source: The source field identifies the component within the SDN stack that encountered a failure while processing this resource.</li> <li>▪ Code: This field contains somewhat fine grained classification of the error encountered while processing this resource.</li> <li>▪ Message: A friendly message that describes the encountered error.</li> </ul> <p>Note: Some codes and Messages correspond to success cases as well.</p> |
| <b>serviceInsertionElements</b>        | The <b>networkInterfaces</b> resource, section 3.1.5.11.   | Indicates an array of <b>serviceInsertions</b> resources that contains this <b>networkInterfaces</b> resource.  |
| <b>serviceInsertionElements</b>        | The <b>serviceInsertions</b> resource, section 3.1.5.16.   | Indicates an array of service insertion elements through which to send packets that match the rules.  |
| <b>sourceSubnets</b>                   | The <b>rules</b> resource in the <b>serviceInsertions</b> resource, section 3.1.5.16 .   | Indicates an array of subnets match as source subnet. For a single source ip address match specify as a /32 subnet.   |
| <b>statistics</b>                      | <p>The <b>networkConnections</b> resource, section 3.1.5.17.4.</p> <p>The <b>bgpPeers</b> resource in the <b>bgpRouters</b> resource in the <b>virtualGateways</b> resource, section 3.1.5.17.2.2.</p>                                 | Statistics of the connection  |
| <b>subnets</b>                         | The <b>accessControlLists</b> resource, section 3.1.5.1.   | An array of references to <b>subnets</b> resources that are associated with the access control list.  |
| <b>subnets</b>                         | <p>The <b>logicalNetworks</b> resource, section 3.1.5.8.</p> <p>The <b>virtualNetworks</b> resource, section 3.1.5.18.</p>   | Indicates the subnets that are on the virtual network or are contained in the logical network.  |
| <b>subnets</b>                         | The <b>serviceInsertions</b> resource, section 3.1.5.16.   | Indicates an array of references to <b>subnets</b> resources this <b>serviceInsertions</b> resource is associated with.   |

| Data structure          | Section   | Description   |
|-------------------------|---|---|
| <b>subnets</b>          | The <b>routeTables</b> resource, section 3.1.5.10.  | Indicates an array of references to <b>subnets</b> resources this routeTables policy is associated with.      |
| <b>tags</b>             | most resources  | Key-value pairs of arbitrary data that the client stores with the resource.                                   |
| <b>TrafficSelector</b>  | The <b>ipsecConfiguration</b> resource in the <b>networkConnections</b> resource, section 3.1.5.17.4. | Indicates collection of IPSec TrafficSelectors on the hoster side.  |
| <b>usage</b>            | The <b>ipPools</b> resource, section 3.1.5.8.2.2.<br>The <b>macPools</b> resource, section 3.1.5.9.   | Indicates the usage statistics of the IP pool or the <b>MAC address</b> pool.                                 |
| <b>virtualGateways</b>  | The <b>gateways</b> resource, section 3.1.5.4.<br>The <b>gatewayPools</b> resource, section 3.1.5.3.  | A collection of virtual gateway for a tenant. This enumerates the tenants that are dependent on this gateway. |
| <b>virtualNetworks</b>  | The <b>logicalNetworks</b> resource, section 3.1.5.8.   | An array of <b>virtualNetworks</b> resources that are using the network.                                      |
| <b>virtualServers[]</b> | The <b>virtualServer</b> resource.  | Indicates an array of virtual server that are on the server and being managed by the Network Controller.      |
| <b>vlanIds</b>          | The <b>network Interfaces</b> resource, section 3.1.5.11.   | Indicates the ID of the VLANs to which the network interface is connected.                                    |
| <b>vlan</b>             | The <b>IpConfigurations</b> resource in the <b>network Interfaces</b> resource, section 3.1.5.11.     | Vlan IDs associated with the IP address on the interface  |
| <b>vpnConfiguration</b> | The <b>virtualGateways</b> 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 [object objects](#). "nextLink" is a link for the client to retrieve the next page of the response, in case the server paginates the response.<1>

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 the response body as specified in the following section. The message is localized per the Accept-Language header specified in the original request for direct exposure to end-users. The error response is common to all methods from the server.[7.2](#)

The format for the response body is as follows.[7.2](#)

```
{
  "status": "Failed", "error":
  {
    "code": "BadArgument",
    "message": "The provided database 'foo' has an invalid username." "target": "query",
    "details": [
      {
        "code": "301", "target": "$search"
        "message": "$search query option not supported",
      }
    ]
  }
}
```

#### 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.

Resources are processed one at a time; however, the **GET** method can act on all of the same resource at once when the `resourceId` is omitted. The following table lists all of the resources.

| Resource                             | Section  | Description  |
|--------------------------------------|--|--|
| <b>accessControlLists</b>            | section 3.1.5.1  | Contains a list of ACL rules that can be assigned to subnets or individual NICs and IP addresses.  |
| <b>aclRules</b>                      | section 3.1.5.1.2  | Describes the network traffic that is allowed or denied for a network interface of a virtual machine.  |
| <b>backendAddressPools</b>           | section 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. |
| <b>bgpPeers</b>                      | The <b>bgpPeers</b> resource of the <b>bgpRouters</b> resource of the <b>virtualGateways</b> resource, section 3.1.5.17.2.2. | Configures BGP peers of the <b>virtualGateways</b> resource.   |
| <b>bgpRouters</b>                    | The <b>bgpRouters</b> resource of the <b>virtualGateways</b> resource, section 3.1.5.17.2.                                   | Contains the configuration for the Border Gateway Protocol (BGP) router in the virtual gateway.  |
| <b>credentials</b>                   | section 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.                                 |
| <b>diagnostics/ConnectivityCheck</b> | section 3.1.5.21.1   | This resource initiates a diagnostics action to check data path  |

| Resource                                    | Section             | Description   |
|---|---------------------|---|
|   |                     | connectivity between two endpoints.   |
| <b>diagnostics/ConnectivityCheckResults</b> | section 3.1.5.21.2  | This resource queries the result of a previously initiated diagnostics action between two endpoints.  |
| <b>diagnostics/ NetworkControllerState</b>  | section 3.1.5.21.5  | This resource creates a dump of internal server data that can be used for troubleshooting.  |
| <b>diagnostics/SlbState</b>                 | section 3.1.5.21.3  | This resource initiates a diagnostics action to collect internal state for the software load-balancer.  |
| <b>diagnostics/SlbStateResults</b>          | section 3.1.5.21.4  | This resource queries the result of a previously initiated diagnostics slbState action  |
| <b>frontendIpConfigurations</b>             | section 3.1.5.5.3   | This resource represents the frontend IP addresses of the load balancer.  |
| <b>gatewayPools</b>                         | section 3.1.5.3     | Contains an array of gateways that provide the infrastructure for <b>virtualGateways</b> resources for tenant virtual networks.   |
| <b>gateways</b>                             | section 3.1.5.4     | Provides gateway services to one or more <b>virtualNetworks</b> resources.  |
| <b>iDnsServer</b>                           | section 3.1.5.24    | Contains the configuration details for the DNS server in the internal DNS service.  |
| <b>inboundNatRules</b>                      | section 3.1.5.5.4   | This resource is used to configure the load balancer to apply Network Address Translation of inbound traffic.   |
| <b>internalResourceInstances</b>            | section 3.1.5.23    | This resource provides a means to map instance IDs to resource IDs or to get all the mappings.  |
| <b>ipConfigurations</b>                     | section 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.                                    |
| <b>ipPools</b>                              | section 3.1.5.8.2.2 | The <b>ipPools</b> 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. |
| <b>loadBalancerManager</b>                  | section 3.1.5.6     | The <b>loadBalancerManager</b> resource is a singleton resource   |

| Resource                                      | Section   | Description  |
|---|---|--|
|   |   | that configures the load balancing service of the Network Controller.  |
| <b>loadBalancerMux</b>                        | section 3.1.5.7                                   | The <b>loadBalancerMux</b> resource represents a MUX VM deployed in the Network Controller's stamp.  |
| <b>loadBalancers</b>                          | section 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.  |
| <b>loadBalancingRules</b>                     | section 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.   |
| <b>logicalNetworks</b>                        | section 3.1.5.8                                   | A collection of logical subnets or a logical partition of physical network that is dedicated for a specific purpose.   |
| <b>logicalSubnets</b>                         | section 3.1.5.8.2                                 | A <b>logicalSubnets</b> resource consists of a subnet/VLAN pair. The <b>vlan</b> resource is required; however, it MAY contain a value of zero if the subnet is not associated with a vlan.  |
| <b>macPools</b>                               | section 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). |
| <b>monitoring/NetworkControllerStatistics</b> | section 3.1.5.22                                  | This resource provides a means to get usage and health information for a few resources   |
| <b>networkConnections</b>                     | section 3.1.5.17.4                                | Specifies a connection from a virtual network to external networks.  |
| <b>networkInterfaces</b>                      | The networkInterfaces resource, section 3.1.5.11. | Specifies the configuration of either a host virtual interface (host vNIC) or a virtual server NIC (VMNIC).  |

| Resource                 | Section   | Description  |
|--------------------------|---|--|
| <b>operationResults</b>  | section 3.1.5.13  | Provides the status of a specific asynchronous operation. The URL for a specific <b>operations</b> resource is returned in the location header of that operation.  |
| <b>operations</b>        | section 3.1.5.12  | Provides the status of a specific asynchronous operation. The URL for a specific <b>operations</b> resource is returned in the AsyncOperation header of that operation.  |
| <b>outboundNatRules</b>  | section 3.1.5.5.6   | This resource is used to configure the load balancer to apply Network Address Translation of outbound traffic.   |
| <b>policyMaps</b>        | The <b>policyMaps</b> resource of the <b>virtualGateways</b> resource, section 3.1.5.17.3 | 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. |
| <b>probes</b>            | section 3.1.5.5.7   | Configures the mechanism of detection of connectivity issues with load balanced IPs.   |
| <b>publicIpAddresses</b> | section 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 <b>virtualGateways</b> resource and the <b>loadBalancer</b> resource.  |
| <b>routes</b>            | section 3.1.5.10.2  | Create routes under a tenant's Route Table.  |
| <b>routes</b>            | section 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.  |
| <b>routeTables</b>       | section 3.1.5.10  | Contains a list of tenant routes that can be assigned to virtual subnets to control routing within a virtual network.  |
| <b>servers</b>           | section 3.1.5.15  | Represents a physical server that is being controlled by the Network Controller.   |
| <b>serviceInsertions</b> | section 3.1.5.16  | Specifies the relationship between the service insertion and the   |

| Resource                     | Section            | Description   |
|------------------------------|--------------------|---|
|                              |                    | service insertion rule.   |
| <b>subnets</b>               | section 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, the routeTable to apply to the subnet, and optionally service insertions to use within the subnet. |
| <b>virtualGateways</b>       | section 3.1.5.17   | A logical entity that runs on multiple gateways in the <b>gatewayPools</b> resource, the <b>virtualGateways</b> resource describes the gateway used for cross-premises connectivity from the virtual network.   |
| <b>virtualNetworkManager</b> | section 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.  |
| <b>virtualNetworks</b>       | section 3.1.5.18   | Creates a Virtual Network using HNV for tenant overlays.  |
| <b>virtualServers</b>        | section 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).   |
| <b>virtualSwitchManager</b>  | section 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. Is also returned for <b>DELETE</b> operations when the specified resource is not found to delete.                                     |
| 201 (Created)    |  |
| 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.  |



| Status Code                 | Description  |
|-----------------------------|--|
| 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~~

### 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         | section 3.1.5.1.1.1 | Create a new <b>accessControlLists</b> resource or update an existing <b>accessControlLists</b> resource. |
| GET         | section 3.1.5.1.1.2 | Get one <b>accessControlLists</b> resource.   |
| GET (All)   | section 3.1.5.1.1.3 | List all <b>accessControlLists</b> resources in the Network Controller.                                   |
| DELETE      | section 3.1.5.1.1.4 | Delete an <b>accessControlLists</b> resource.   |

The following property elements are valid:

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

### 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.1.1.2.1 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 if the operation succeeds, and the server MUST return a status code of 404 if the resource does not exist.

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

### 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-
dcb81d2d076/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-bfal-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-bfal-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/b1fdf9f9-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-fe1a8cd026c1\"",
  "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-fe1a8cd026c1\"",
        "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-de86-4ddl-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/fccclc28-6e3a-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"
    }
  ]
}
}

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```

    }
  ],
  "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",

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        "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/\"6b22baf8-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",

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```

        "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 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, Common URI 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)                  |
| 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, **parentResourceId**.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.1.2.1.1 | Create a new <b>aclRules</b> resource or update an existing <b>aclRules</b> resource. |

| HTTP method | Section               | Description   |
|-------------|-----------------------|---|
| GET         | section 3.1.5.1.2.1.2 | Get one <b>aclRules</b> resource.                             |
| GET (All)   | section 3.1.5.1.2.1.3 | List all <b>aclRules</b> resources in the Network Controller. |
| DELETE      | section 3.1.5.1.2.1.4 | Delete an <b>aclRules</b> resource.                           |

The following property elements are valid:

| Element name                    | Type      | Description  |
|---------------------------------|-----------|--|
| <b>etag</b>                     | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>        | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>action</b>                   | Required  | Indicates the action the ACL Rule will take. Valid values are: Allow Deny. There is no default value since it is a required element.   |
| <b>description</b>              | Optional  | Indicates a description of the ACL rule.   |
| <b>destinationAddressPrefix</b> | Required  | Indicates the <b>CIDR</b> 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.<br><br>Pre-defined tags can also be used within aclRules 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 VIRTUALNETWORK   INTERNET   AZURELOADBALANCER<br><br>VIRTUALNETWORK - This tag denotes all of your virtual network address space.<br><br>INTERNET - This tag denotes the IP address space that is outside the virtual network and reachable by public Internet.<br><br>AZURELOADBALANCER - This tag denotes the datacenter IP address(es) from which the load balancer health probes originate. |
| <b>destinationPortRange</b>     | Required  | Indicates the destination port(s) that will trigger this ACL rule. Valid values include a single port, port range (separated by "-"), or "*" for all ports. All numbers are inclusive.<br><br>Example: 80, 80-80, 80-81, *   |
| <b>logging</b>                  | Required  | Indicates whether logging will be turned on for when this rule gets triggered. Valid values are Enable   disabled. The default value is enabled.   |
| <b>priority</b>                 | Required  | 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 <b>accessControlLists</b> resource. Value from 101 - 65000 are user defined. Values 1- 100 and 65001 - 65535 are reserved.   |
| <b>protocol</b>                 | Required  | Indicates the protocol to which the ACL rule will apply. Valid values are <b>TCP  UDP</b> .  |

| Element name               | Type     | Description   |
|----------------------------|----------|---|
| <b>sourceAddressPrefix</b> | Required | Indicates the CIDR value of source IP or a pre-defined TAG from which traffic is originating. You can specify 0.0.0.0/0 for IPv4 all and ::/0 for IPv6 all traffic.<br>Valid pre-defined TAG values are VIRTUALNETWORK   INTERNET   AZURELOADBALANCER<br>VIRTUALNETWORK - This tag denotes all of your virtual network address space.<br>INTERNET - This tag denotes the IP address space that is outside the virtual network and reachable by public Internet.<br>AZURELOADBALANCER - This tag denotes the datacenter IP address(es) from which the load balancer health probes originate. |
| <b>sourcePortRange</b>     | Required | Indicates the source port(s) that will trigger this ACL rule. Valid values include a single port, port range (separated by "-"), or "*" for all ports. All numbers are inclusive.<br>Example: 80, 80-80, 80-81, *   |
| <b>type</b>                | Required | Indicates whether the rule is to be evaluated against ingress traffic (Inbound) or egress traffic (Outbound). Valid values are Inbound Outbound. There is no default value since it is a required element.  |

### 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, Common URI 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)                  |
| 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, Common URI 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) |

### 3.1.5.1.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section             | Description   |
|-------------|---------------------|---|
| PUT         | section 3.1.5.2.1.1 | Create a new <b>credentials</b> resource or update an existing <b>credentials</b> resource. |
| GET         | section 3.1.5.2.1.2 | Get one <b>credentials</b> resource.  |
| GET (All)   | section 3.1.5.2.1.3 | List all <b>credentials</b> resources in the Network Controller.                            |

| HTTP method | Section             | Description                           |
|-------------|---------------------|---------------------------------------|
| DELETE      | section 3.1.5.2.1.4 | Delete a <b>credentials</b> resource. |

The following property elements are valid:

| Element name             | Type      | Description  |
|--------------------------|-----------|--|
| <b>etag</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b> | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>type</b>              | Required  | Indicates the type of the credential. Valid values are: <ul style="list-style-type: none"> <li>▪ usernamePassword</li> <li>▪ snmpCommunityString</li> <li>▪ x509Certificate</li> <li>▪ GroupManagedServiceAccount</li> </ul>   |
| <b>userName</b>          | Optional  | If the <b>credential</b> 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.   |
| <b>value</b>             | Required  | Indicates the value of the credential. The actual value will depend on the type field: <p>For <b>credentials</b> resources of type UsernamePassword, this element represents the password.</p> <p>For <b>credentials</b> resources of type SNMPCommunityString, this element represents the community string.</p> <p>For <b>credentials</b> resources of type X509Certificate, this element represents the certificate subject name.</p> <p>For <b>credentials</b> resources of type GroupManagedServiceAccount, this element is expected to be empty.</p> |

### 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, Common URI 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)                    |
| 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, Common URI 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)    |

| Status code     |
|-----------------|
| 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, Common URI 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)                  |
| 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 virtualGateway 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, **resourceId**.

The following HTTP methods can be performed on this resource.

| HTTP method | Section             | Description   |
|-------------|---------------------|---|
| PUT         | section 3.1.5.3.1.1 | Create a new <b>gatewayPools</b> resource or update an existing <b>gatewayPools</b> resource. |
| GET         | section 3.1.5.3.1.2 | Get one <b>gatewayPools</b> resource.   |
| GET (All)   | section 3.1.5.3.1.3 | List all <b>gatewayPools</b> resources in the Network Controller.                             |

| HTTP method | Section             | Description                            |
|-------------|---------------------|--|
| DELETE      | section 3.1.5.3.1.4 | Delete a <b>gatewayPools</b> resource. |

The following property elements are valid:

| Element name                            | Type  | Description   |
|---|---|---|
| <b>etag</b>                             | Read-Only   | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>                | Read-Only   | See the description in section 2.2.2, Common JSON Elements.   |
| <b>Type</b>                             | Required  | Indicates the type of the role of gateway VMs in the pool. The following are valid string values: <ul style="list-style-type: none"> <li>▪ "s2sIPsec"</li> <li>▪ "s2sGre"</li> <li>▪ "forwarding"</li> <li>▪ ALL</li> </ul> |
| <b>greVipSubnets</b>                    | Read-Write<br>Required if Type == "S2SGRE" or "ALL" | Indicates the logical subnet from which VIPs for gateways providing "GRE" based network connections.  |
| <b>publicIpAddresses</b>                | 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".  |
| <b>redundantGatewayCount</b>            | Read-Write  | Indicates the number of redundant gateway VMs that will be used for each virtualGateway instance to ensure its availability. For example, in a 3+1 gateway deployment, 1 will be redundant gateway count.                   |
| <b>gatewayCapacityKiloBitsPerSecond</b> | Read-Write  | Indicates the total capacity of each gateway in the pool in kilobits per second.  |
| <b>Gateways</b>                         | Read-Only   | Indicates references to collection of gateways that comprise the gateway pool.  |
| <b>VirtualGateways</b>                  | 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, Common URI 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)                    |
| 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, Common URI 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) |

#### 3.1.5.3.1.2.1 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, Common URI 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)                  |
| 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~~

### 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         | section 3.1.5.4.1.1 | Create a new <b>gateways</b> resource or update an existing gateways resource. |
| GET         | section 3.1.5.4.1.2 | Get one <b>gateways</b> resource.  |
| GET (All)   | section 3.1.5.4.1.3 | List all <b>gateways</b> resources in the Network Controller.                  |
| DELETE      | section 3.1.5.4.1.4 | Delete a <b>gateways</b> resource.   |

The following property elements are valid:

| Element name                                   | Type       | Description   |
|--|------------|---|
| <b>etag</b>                                    | Read-Only  | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>                       | Read-Only  | See the description in section 2.2.2, Common JSON Elements.   |
| <b>virtualGateways</b>                         | Read-Only  | Reference to collection of tenants' virtual gateway. This helps in enumerating the tenants that are dependent on this gateway.  |
| <b>configurationState</b>                      | Read-only  | Indicates the last known running state of this Gateway.   |
| <b>configurationState.status</b>               | Read-only  | Indicates the last known running state of this Gateway. Possible values are – Uninitialized, InProgress, Success, Warning, Failure  |
| <b>configurationState.DetailedInfo</b>         | Read-only  | Detail information about the status. It is NULL if status is success.   |
| <b>configurationState.DetailedInfo.Code</b>    | Read-only  | Indicates failure code. Can take values – PolicyConfigurationFailure, HostUnreachable   |
| <b>configurationState.DetailedInfo.Message</b> | Read-only  | Contains an error string based on the error   |
| <b>configurationState.lastUpdatedTime</b>      | Read-only  | Indicates the time stamp when the configuration state last changed.   |
| <b>virtualServer</b>                           | Read-Only  | Reference to the virtual server that acts as a gateway.   |
| <b>totalCapacity</b>                           | 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. |
| <b>connections</b>                             | Read-Write | Indicates a reference to collection of all the connections on the gateway.  |
| <b>pool</b>                                    | Required   | Indicates a reference to the gatewayPools resource the gateway is part of.  |
| <b>type</b>                                    | Read-only  | Indicates the type of pool – all, IKEv2, GRE or forwarding  |
| <b>bgpConfig</b>                               | Read-write | Indicates the BGP peering information required for peering with ToR router for GRE Gateway.   |

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

### 3.1.5.4.1.2.1 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-elf2045f56"
    }
  }
],
"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.

#### 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-ad48-755ee9c1f665"
            }
          },
          {
            "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"
}
}
],
"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, Common URI 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)                  |
| 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 a Windows Server and System Center cloud. 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 particular 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 particular 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, `resourceId`.

The following HTTP methods can be performed on this resource.

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

The following property elements are valid:

| Element name                    | Type       | Description   |
|---------------------------------|------------|---|
| <b>etag</b>                     | Read-Only  | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>        | Read-Only  | See the description in section 2.2.2, Common JSON Elements.   |
| <b>backendAddressPools</b>      | Optional** | Indicates the backend Address Pool of the load balancer, see <code>backendAddressPool</code> resource, section 3.1.5.5.2, for full details on this element.       |
| <b>frontendIPConfigurations</b> | Required   | Indicates the frontend IP addresses of the load balancer, see <code>frontEndIPConfiguration</code> resource, section 3.1.5.5.3, for full details on this element. |
| <b>loadBalancingRules</b>       | Optional*  | A list of load balancing configurations. Each configuration describes what traffic and how it gets load balanced between backend Ips.                             |
| <b>inboundNatRules</b>          | Optional*  | Indicates an array of inbound NAT rules configured for the load balancer, see <code>inboundNatRules</code> resource, section 3.1.5.5.4,                           |

| Element name            | Type      | Description  |
|-------------------------|-----------|--|
|                         |           | for full details on this element.  |
| <b>outboundNatRules</b> | Optional* | Indicates an array of outbound NAT rules configured for the load balancer, see <code>outboundNatRules</code> resource , section 3.1.5.5.6, for full details on this element. |
| <b>probes</b>           | Optional  | Indicates an array of probes configured for the load balancer, see <code>probes</code> resource, 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 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, Common URI 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)                  |
| 204 (No Content)          |
| 412 (Precondition Failed) |

##### 3.1.5.5.1.1.1 Request Body

None.

##### 3.1.5.5.1.1.2 Response Body

None.

##### 3.1.5.5.1.1.3 Processing Details

Deletes a `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, Common URI 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) |

### 3.1.5.5.1.2.1 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-7ead0ba1a182",
      "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-ae74-7fce88c5197"
        }
      }
    },
    {
      "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-e0fe1f42ccel",
  "resourceId": "d2251a0d-32d2-457e-b3aa-e0fe1f42ccel",
  "etag": "W/\"72fdfa3d-34f4-4c90-ae94-d97ed73c9cf7\"",
  "instanceId": "b32d0db3-13db-431a-a265-32185aa5a905",
  "properties": {
    "provisioningState": "Succeeded",
    "frontendIPConfigurations": [
      {
        "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42ccel/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-e0fe1f42ccel/inboundNatRules/d076eae7-926a-457a-a60c-0a713a02977d",
            }
          ],
          "outboundNatRules": [
            {
              "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42ccel/outboundNatRules/f3f3291d-b26c-44d3-8d55-99b644b70388",
            }
          ]
        }
      }
    ],
  },
  {
    "resourceRef": "/loadBalancers/d2251a0d-32d2-457e-b3aa-e0fe1f42ccel/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 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, Common URI 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)                    |
| 201 (Created)               |
| 412 (Precondition Failed)   |
| 500 (Internal Server Error) |

#### 3.1.5.5.1.4.1 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-c11676fdcd0"
        }
      ],
      "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-c11676fdcd0"
        }
      ],
      "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.

### 3.1.5.5.1.4.2 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.

### 3.1.5.5.1.4.3 Processing Details

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

### 3.1.5.5.2 backendAddressPools

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.

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, parentResourceId.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.5.2.1.1 | Create a new <b>backendAddressPools</b> resource or update an existing <b>backendAddressPools</b> resource. |
| GET         | section 3.1.5.5.2.1.2 | Get one <b>backendAddressPools</b> resource.  |
| GET (All)   | section 3.1.5.5.2.1.3 | List all <b>backendAddressPools</b> resources in the Network  |

| HTTP method | Section               | Description                                   |
|-------------|-----------------------|---|
|             |                       | Controller.                                   |
| DELETE      | section 3.1.5.5.2.1.4 | Delete a <b>backendAddressPools</b> resource. |

The following property elements are valid:

| Element name                   | Type      | Description   |
|--------------------------------|-----------|---|
| <b>etag</b>                    | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>       | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>backendIPConfigurations</b> | 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. |
| <b>loadBalancingRules</b>      | Read-Only | Indicates an array of references to the set of <b>loadBalancingRules</b> resources that use this backend address pool.  |
| <b>outboundNatRules</b>        | Read-Only | Indicates an array of references to the set of <b>outboundNatRules</b> 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.5.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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

This 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, **parentResourceId**.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.5.3.1.1 | Create a new frontendIpConfigurations resource or update an existing frontendIpConfigurations resource. |
| GET         | section 3.1.5.5.3.1.2 | Get one frontendIpConfigurations resource   |
| GET (All)   | section 3.1.5.5.3.1.3 | List all frontendIpConfigurations resources in the Network Controller                                   |

| HTTP method | Section               | Description                                 |
|-------------|-----------------------|---|
| DELETE      | section 3.1.5.5.3.1.4 | Deletes a frontendIpConfigurations resource |

The following property elements are valid:

| Element name                     | Type      | Description  |
|----------------------------------|-----------|--|
| <b>etag</b>                      | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>         | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>inboundNatRules</b>           | Read-Only | Indicates a reference to the inboundNatRules resource used by the frontEndIpConfiguration.   |
| <b>loadBalancingRules</b>        | Read-Only | Indicates a reference to the loadBalancingRules resource used by the frontEndIpConfiguration.  |
| <b>outboundNatRules</b>          | Read-Only | Indicates a reference to the outboundNatRules resource used by the frontEndIpConfiguration.  |
| <b>publicIPAddress</b>           | 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.  |
| <b>privateIPAddress</b>          | Optional  | This is only specified if a specific private IP address identifies an IP address which is statically configured for use with this frontendIpConfiguration. PrivateIPAllocation method MUST be allocated static for this case.<br>If a privateIPAddress is specified, a reference to a publicIPAddress cannot be specified at the same time.<br>privateIPAddresses 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 subnet element.reference. |
| <b>privateIPAllocationMethod</b> | Optional  | Static or Dynamic  |
| <b>subnet</b>                    | Optional  | Indicates a references to the subnet resource used by the frontendIpConfiguration resource. MUST be specified if a privateIPAddress is specified.<br>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.<br>The subnet MUST include the IP address specified in privateIpAddress   |

Either a privateIPAddress or a reference to a PublicIPAddresses MUST be specified – both of 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.5.3.1.2.1 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, Common URI 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)    |

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": "d896dal2-37f2-4e36-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, Common URI 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)                  |
| 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

This 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, parentResourceId.

**resourceId:** the identifier for the specific descendant 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         | section 3.1.5.5.4.1.1 | Create a new inboundNatRules resource or update an existing inboundNatRules resource. |



| HTTP method | Section               | Description  |
|-------------|-----------------------|--|
| GET         | section 3.1.5.5.4.1.2 | Get one inboundNatRules resource                             |
| GET (All)   | section 3.1.5.5.4.1.3 | List all inboundNatRules resources in the Network Controller |
| DELETE      | section 3.1.5.5.4.1.4 | Deletes a inboundNatRules resource                           |

The following property elements are valid:

| Element name                    | Type      | Description  |
|---------------------------------|-----------|--|
| <b>etag</b>                     | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>        | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>backendIPConfiguration</b>   | Optional  | Indicates a references to backendAddressPool resource. Traffic sent to frontendPort of each of the frontendIPConfigurations is forwarded to the backend IP.  |
| <b>backendPort</b>              | 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. |
| <b>frontendIPConfigurations</b> | Required  | Indicates an array of references to frontendIPConfigurations resources.  |
| <b>frontendPort</b>             | 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.  |
| <b>protocol</b>                 | Required  | Indicates the inbound transport protocol for the external endpoint. Valid values include UDP  TCP  GRE   <b>ESP</b>  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, Common URI 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)                    |
| 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, Common URI 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)    |

### 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, Common URI 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)    |

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, Common URI 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)                  |
| 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

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.

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, parentResourceId.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.5.5.1.1 | Create a new loadBalancingRules resource or update an existing loadBalancingRules resource. |
| GET         | section 3.1.5.5.5.1.2 | Get one loadBalancingRules resource   |
| GET (All)   | section 3.1.5.5.5.1.3 | List all loadBalancingRules resources in the Network Controller                             |
| DELETE      | section 3.1.5.5.5.1.4 | Deletes a loadBalancingRules resource   |

The following property elements are valid:

| Element name                    | Type      | Description   |
|---------------------------------|-----------|---|
| <b>etag</b>                     | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>        | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>backendAddressPool</b>       | Optional  | Indicates an array of references to a backendAddressPool resource. Inbound traffic is randomly load balanced across IPs in the backend pool.  |
| <b>backendPort</b>              | 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 "*" to automatically assign an unallocated port that is discoverable using the runtime API.<br>Possible values range between 1 and 65535, inclusive. This parameter is required if the protocol is TCP or UDP. |
| <b>frontendIPConfigurations</b> | Required  | Indicates an array of references to frontendIpAddress resources.  |
| <b>frontendPort</b>             | Optional  | Indicates the port for the external endpoint. Possible values range between 1 and 65535, inclusive. This  |

| Element name                | Type     | Description   |
|-----------------------------|----------|---|
|                             |          | value MUST be unique for the loadbalancer resource. This parameter is required if the protocol is TCP or UDP.   |
| <b>idleTimeoutInMinutes</b> | 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.  |
| <b>protocol</b>             | Required | Indicates the inbound transport protocol for the external endpoint. Valid values include UDP  TCP  GRE  ESP  ALL.   |
| <b>probe</b>                | Optional | Indicates a reference to the probe resource used by this loadBalancingRule.   |
| <b>EnableFloatingIP</b>     | 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.   |
| <b>LoadDistribution</b>     | Optional | <p>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 particular 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.</p> <p>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.</p> <p>Default – The load balancer is configured to use a 5 tuple hash to map traffic to available servers</p> <p>SourceIP – The load balancer is configured to use a 2 tuple hash to map traffic to available servers</p> <p>SourceIPProtocol – The load balancer is configured to use a 3 tuple hash to map traffic to available servers</p> |

### 3.1.5.5.5.1 HTTP Methods

#### 3.1.5.5.5.1.1 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.5.1.2.1 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, Common URI 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)    |

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-bc3037fcfe4d\"",
      "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, Common URI 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)                  |
| 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

This 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, `parentResourceId`.

**resourceId:** the identifier for the specific descendant 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         | section 3.1.5.5.6.1.1 | Create a new <b>outboundNatRules</b> resource or update an existing <b>outboundNatRules</b> resource. |
| GET         | section 3.1.5.5.6.1.2 | Get one <b>outboundNatRules</b> resource  |
| GET (All)   | section 3.1.5.5.6.1.3 | List all <b>outboundNatRules</b> resources in the Network Controller                                  |
| DELETE      | section 3.1.5.5.6.1.4 | Delete an <b>outboundNatRules</b> resource  |

The following property elements are valid:

| Element name                    | Type      | Description  |
|---------------------------------|-----------|--|
| <b>etag</b>                     | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>        | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>frontendIPConfigurations</b> | Required  | Indicates an array of <b>frontendIpConfigurations</b> resources. Indicates an array of references to <b>frontendIpAddress</b> resources. |
| <b>backendAddressPool</b>       | Required  | Indicates a reference to the <b>backendAddressPool</b> resource. This is the pool of IP addresses where outbound traffic originates.     |
| <b>protocol</b>                 | Required  | Protocol for outbound traffic. For transparent outbound NAT specify "all".<br>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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.5.6.1.2.1 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, Common URI 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)    |

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"
          },
          {
            "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"
        }
      }
    }
  ],
  "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, Common URI 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)                  |
| 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~~

### 3.1.5.5.7 probes

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, parentResourceId.



**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.5.7.1.1 | Create a new probes resource or update an existing probes resource. |
| GET         | section 3.1.5.5.7.1.2 | Get one probes resource   |
| GET (All)   | section 3.1.5.5.7.1.3 | List all probes resources in the Network Controller                 |
| DELETE      | section 3.1.5.5.7.1.4 | Deletes a probes resource   |

The following property elements are valid:

| Element name              | Type      | Description  |
|---------------------------|-----------|--|
| <b>etag</b>               | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>  | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>intervalInSeconds</b>  | Optional  | Indicates the interval, in seconds, for how frequently to probe the endpoint for health status. Typically, the interval is slightly less than half the allocated timeout period (in seconds) which allows two full probes before taking the instance out of rotation. The default value is 15, the minimum value is 5.                     |
| <b>loadBalancingRules</b> | Read-Only | Indicates an array of references to loadBalancingRule resources that use this probe.   |
| <b>numberOfProbes</b>     | 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. |
| <b>protocol</b>           | Required  | Indicates the protocol of the end point. Valid values are HTTP  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.  |
| <b>port</b>               | Required  | Indicates the port for communicating the probe. Possible values range from 1 to 65535, inclusive.  |
| <b>requestPath</b>        | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.5.7.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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         | section 3.1.5.6.1.1 | Create a new loadBalancerManager resource or update an existing loadBalancerManager resource. |
| GET         | section 3.1.5.6.1.2 | Get the loadBalancerManager resource  |

The following property elements are valid:

| Element name                        | Type      | Description  |
|-------------------------------------|-----------|--|
| <b>etag</b>                         | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>            | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>loadBalancerManagerIPAddress</b> | Required  | The IP address of the load balancer service. This is part of one of the frontendIPpools as specified in the frontendIPPool element in this resource.   |
| <b>outboundNatIPExemptions</b>      | 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 communicated with other services within the same datacenter or cluster.<br>Array of strings in the following format:<br>0.0.0.0/0.<br><b>NOTE:</b> There is no validation that these IP addresses are known by the network controller |
| <b>vipIpPools</b>                   | 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 form 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": "000000000-0000-0000-0000-000000000000",
  "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, resourceId.



The following HTTP methods can be performed on this resource.

| HTTP method | Section             | Description   |
|-------------|---------------------|---|
| PUT         | section 3.1.5.6.1.1 | Create a new <b>loadBalancerMux</b> resource or update an existing <b>loadBalancerMux</b> resource. |
| GET         | section 3.1.5.7.1.2 | Get one <b>loadBalancerMux</b> resource.  |
| GET (All)   | section 3.1.5.7.1.3 | List all <b>loadBalancerMux</b> resources in the Network Controller.                                |
| DELETE      | section 3.1.5.7.1.4 | Delete a <b>loadBalancerMux</b> resource.   |

The following property elements are valid:

| Element name  | Type      | Description  |
|---|-----------|--|
| <b>etag</b>   | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>                            | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>connections[]</b>                                | 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.           |
| <b>connections.credential</b>                       | Optional  | Indicates a reference to a credential resource that can be used to connect to the device for management purposes.  |
| <b>connections.credentialType</b>                   | Optional  | Indicates the type of credential, e.g. X509Certificate or UsernamePassword.  |
| <b>connections.managementAddresses</b>              | 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 ( <b>NetBIOS</b> ) name. |
| <b>routerConfiguration</b>                          | Required  | Provides the BGP router configuration to the MUX to ensure it peers with the datacenter routing infrastructure and properly advertises routes.                               |
| <b>routerConfiguration.localASN</b>                 | Required  | Is the BGP autonomous system number of the MUX   |
| <b>routerConfiguration.peerRouterConfigurations</b> | Required  | The BGP settings the MUX uses to establish and   |

| Element name  | Type     | Description  |
|---|----------|--|
|   |          | maintain BGP peering with one or more peers.   |
| <b>routerConfiguration.peerRouterConfigurations.routerName</b>      | Required | The friendly name of the peer router.  |
| <b>routerConfiguration.peerRouterConfigurations.peerAsn</b>         | Required | The BGP autonomous system number of the peer.  |
| <b>routerConfiguration.peerRouterConfigurations.routerIpAddress</b> | 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.<br><br>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.. |
| <b>virtualServer</b>  | Required | Indicates a reference to the virtualServer resource that the loadbalancer mux runs on.   |

### 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) |

| Status code                 |
|-----------------------------|
| 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, Common URI 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) |

### 3.1.5.7.1.2.1 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": "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"
}
}
}

```

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.

#### 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 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",
        "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"
}
}
},
"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, Common URI 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)                  |
| 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section             | Description   |
|-------------|---------------------|---|
| PUT         | section 3.1.5.8.1.1 | Create a new logicalNetworks resource or update an existing logicalNetworks resource. |
| GET         | section 3.1.5.8.1.2 | Get one logicalNetworks resource  |
| GET (All)   | section 3.1.5.8.1.3 | List all logicalNetworks resources in the Network Controller                          |
| DELETE      | section 3.1.5.8.1.4 | Deletes a logicalNetworks resource  |

The following property elements are valid:

| Element name                        | Type      | Description   |
|-------------------------------------|-----------|---|
| <b>etag</b>                         | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>            | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>subnets</b>                      | Optional  | Indicates the subnets that are contained in the logical network. See the logicalSubnets resource, section 3.1.5.8.2, for full details on this element.      |
| <b>networkVirtualizationEnabled</b> | 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. |
| <b>virtualNetworks</b>              | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.8.1.2.1 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/lsubnet1",
        "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/lsubnet1/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/lsubnet1/routes/lroute1",
            "resourceId": "lnroute1",
            "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-laaaf970c91e6",
          "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, Common URI 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)                  |
| 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, parentResourceId.

**resourceId:** the identifier for the specific descendant 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         | section 3.1.5.8.2.1.1 | Create a new logicalSubnets resource or update an existing logicalSubnets resource. |
| GET         | section 3.1.5.8.2.1.2 | Get one logicalSubnets resource   |
| GET (All)   | section 3.1.5.8.2.1.3 | List all logicalSubnets resources in the Network Controller                         |
| DELETE      | section 3.1.5.8.2.1.4 | Deletes a logicalSubnets resource   |

The following property elements are valid:

| Element name             | Type                  | Description   |
|--------------------------|-----------------------|---|
| <b>etag</b>              | Read-Only             | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b> | Read-Only             | See the description in section 2.2.2, Common JSON Elements.   |
| <b>addressPrefix</b>     | Read/Write            | Identifies the subnet id in form of ipAddress/prefixlength  |
| <b>vlanId</b>            | 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. |
| <b>routes</b>            | Read/Write (Optional) | Indicates the routes that are contained in the logical subnet. See the routes resource, section 3.1.5.8.2.3, for full details on this element.            |
| <b>ipPools</b>           | Read/Write (Optional) | Indicates the IP Pools that are contained in the logical subnet. See the ipPools resource, section 3.1.5.8.2.2, for full details on this element.         |
| <b>dnsServers</b>        | Read/Write (Optional) | Indicates one or more DNS servers that are used for resolving DNS queries by devices or host connected to this logical subnet.                            |
| <b>networkInterfaces</b> | Read-Only             | Indicates an array of references to <b>networkInterfaces</b> resources that are attached to the logical subnet.   |
| <b>isPublic</b>          | Read/Write            | Boolean flag specifying whether the logical subnet is a public subnet   |
| <b>defaultGateways</b>   | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.8.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 202 (Accept)              |
| 204 (No Content)          |
| 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, grandParentResourceId.

**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, parentResourceId.

**resourceId:** the identifier for the specific resource within the resource type that is the descendant of the parentResource. See section 2.2.3.4, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section                 | Description   |
|-------------|-------------------------|---|
| PUT         | section 3.1.5.8.2.2.1.1 | Create a new ipPools resource or update an existing ipPools resource. |
| GET         | section 3.1.5.8.2.2.1.2 | Get one ipPools resource  |
| GET (All)   | section 3.1.5.8.2.2.1.3 | List all ipPools resources in the Network Controller                  |
| DELETE      | section 3.1.5.8.2.2.1.4 | Deletes an ipPools resource   |

The following property elements are valid:

| Element name                                  | Type                | Description  |
|---|---------------------|--|
| <b>etag</b>                                   | Read-Only           | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>                      | Read-Only           | See the description in section 2.2.2, Common JSON Elements.  |
| <b>startIPAddress</b>                         | Required/Read-Write | Start IP address of the pool. <b>Note:</b> This is an inclusive value so it is a valid IP address from this pool.  |
| <b>endIPAddress</b>                           | Required/Read-Write | End IP address of the pool. <b>Note:</b> This is an inclusive value so it is a valid IP address from this pool.  |
| <b>usage</b>                                  | Read-Only           | Statistics of the usage of the IP pool   |
| <b>usage.numberOfIPAddresses</b>              | Read-Only           | Total number of IP Addresses in the IP pool  |
| <b>usage.numberOfIPAddresses Allocated</b>    | Read-Only           | Number of allocated IP addresses in the IP pool  |
| <b>usage.numberOfIPAddresses InTransition</b> | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.8.2.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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, **resourceId**.

**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, **resourceId**.

**resourceId**: the identifier for the specific resource within the resource type that is the descendant of the **parentResource**. See section 2.2.3.4, **resourceId**.

The following HTTP methods can be performed on this resource.

| HTTP method | Section                 | Description  |
|-------------|-------------------------|--|
| PUT         | section 3.1.5.8.2.3.1.1 | Create a new <b>routes</b> resource or update an existing routes resource. |
| GET         | section 3.1.5.8.2.3.1.2 | Get one <b>routes</b> resource   |
| GET (All)   | section 3.1.5.8.2.3.1.3 | List all <b>routes</b> resources in the Network Controller                 |
| DELETE      | section 3.1.5.8.2.3.1.4 | Delete a <b>routes</b> resource  |

The following property elements are valid:



| Element name             | Type      | Description  |
|--------------------------|-----------|--|
| <b>etag</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b> | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>destination</b>       | 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. |
| <b>nextHop</b>           | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.8.2.3.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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

### 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, **resourceId**.

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         | section 3.1.5.9.1.1 | Create a new <b>macPools</b> resource or update an existing <b>macPools</b> resource. |
| GET         | section 3.1.5.9.1.2 | Get one <b>macPools</b> resource  |
| GET (All)   | section 3.1.5.9.1.3 | List all <b>macPools</b> resources in the Network Controller                          |
| DELETE      | section 3.1.5.9.1.4 | Deletes a <b>macPools</b> resource  |

The following property elements are valid:

| Element name | Type      | Description   |
|--------------|-----------|---|
| <b>etag</b>  | Read-Only | See the description in section 2.2.2, Common JSON Elements. |

| Element name                               | Type                | Description   |
|--|---------------------|---|
| <b>provisioningState</b>                   | Read-Only           | See the description in section 2.2.2, Common JSON Elements. |
| <b>startMacAddress</b>                     | Required/Read-Write | This is a string in the form of "AA-BB-CC-DD-EE-FF"         |
| <b>endMacAddress</b>                       | Required/Read-Write | This is a string in the form of "UU-VV-WW-XX-YY-ZZ"         |
| <b>usage</b>                               | Read-Only           | Usage statistics of the MAC address pool                    |
| <b>usage.numberOfMacAddresses</b>          | Read-Only           | Number of MAC addresses in the address pool                 |
| <b>usage.numberOfMACAddressesAllocated</b> | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.9.1.2.1 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": "47a5ea1e-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, Common URI 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)                  |
| 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 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, **resourceId**.

The following HTTP methods can be performed on this resource.

| HTTP method | Description   |
|-------------|---|
| PUT         | Create a new <b>routeTables</b> resource or update an existing <b>routeTables</b> resource. |
| GET         | Get one <b>routeTables</b> resource   |
| GET ALL     | List all <b>routeTables</b> resources in the Network Controller                             |
| DELETE      | Deletes a <b>routeTables</b> resource   |

The following property elements are valid:

| Element name             | Type      | Description  |
|--------------------------|-----------|--|
| <b>etag</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.                                  |
| <b>provisioningState</b> | Read-Only | See the description in section 2.2.2, Common JSON Elements.                                  |
| <b>routes</b>            | Optional  | Indicates the routes in a route table, see routes resource for full details on this element. |
| <b>subnets</b>           | 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, Common URI 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)                    |
| 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, Common URI 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) |

#### 3.1.5.10.1.2.1 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, Common URI 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)    |

#### 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-f45a2ald59ec",
      "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, Common URI 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)                  |
| 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, `parentResourceId`.

**resourceId**: the identifier for the specific descendant resource within the resource type. See 2.2.3.4, `resourceId`.

The following HTTP methods can be performed on this resource.

| HTTP method | Description   |
|-------------|---|
| PUT         | Create a new routes resource or update an existing routes resource. |
| GET         | Get one routes resource   |
| GET ALL     | List all routes resources in the Network Controller                 |
| DELETE      | Deletes a routes resource   |

The following property elements are valid:

| Element name                   | Type      | Description   |
|--------------------------------|-----------|---|
| <code>etag</code>              | Read-Only | See the description in the Common JSON Elements page.   |
| <code>provisioningState</code> | Read-Only | See the description in the Common JSON Elements page.   |
| <code>addressPrefix</code>     | Required  | The destination CIDR to which the route applies, such as 10.1.0.0/16  |
| <code>nextHopType</code>       | 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><br><code>VirtualAppliance</code> represents a virtual appliance VM within the tenant virtual network.<br><code>VnetLocal</code> represents the local virtual network.<br><code>VirtualNetworkGateway</code> represents a virtual network gateway. |

| Element name     | Type     | Description   |
|------------------|----------|---|
|                  |          | Internet represents the default internet gateway.<br>None 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<br>This value can only be specified for routes where the next hop type is VirtualAppliance and this value MUST be specified when the next hop type is VirtualAppliance. |

### 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, Common URI 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)                  |
| 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, Common URI 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) |

### 3.1.5.10.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.11.1.1 | Create a new <b>networkInterfaces</b> resource or update an existing <b>networkInterfaces</b> resource. |
| GET         | section 3.1.5.11.1.2 | Get one <b>networkInterfaces</b> resource   |
| GET (All)   | section 3.1.5.11.1.3 | List all <b>networkInterfaces</b> resources in the Network Controller                                   |
| DELETE      | section 3.1.5.11.1.4 | Delete a <b>networkInterfaces</b> resource  |

The following property elements are valid:

| Element name                         | Type      | Description   |
|--------------------------------------|-----------|---|
| <b>etag</b>                          | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>             | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>dnsSettings</b>                   |           | Indicates the DNS settings of this network interface.   |
| <b>dnsSettings.dnsServers</b>        |           | Indicates an array of IP Addresses that this network interface resource will use for the DNS servers.   |
| <b>ipConfigurations</b>              |           | Indicates an array of IP configurations that are contained in the network interface. See the <b>ipConfigurations</b> resource, section 3.1.5.11.2, for full details on this element.  |
| <b>isHostVirtualNetworkInterface</b> |           | True – this is a host virtual interface (host vNIC)<br>False – this is a virtual server NIC (VMNIC).  |
| <b><u>internalDnsNameLabel</u></b>   |           | <u>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. <b>internalDnsNameLabel</b> can be set only for primary interfaces (meaning interfaces for which the <b>isPrimary</b> property is true).</u> |

| Element name                      | Type      | Description  |
|-----------------------------------|-----------|--|
| <b>isPrimary</b>                  |           | <p><u>True – this is the primary interface and the default value if the property is not set.</u></p> <p><u>False- this is a secondary interface.</u></p> <p><u>The distinction is important if a virtual machine has more than one network interface.</u></p> <p><u>This property cannot be changed after the resource is created.</u></p> |
| <b>isMultitenantStack</b>         |           | <p>True – Allows the NIC to be part of multiple virtual networks</p> <p>False – the opposite (this is the default)</p>   |
| <b>server</b>                     | 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.   |
| <b>portSettings</b>               |           | See table below  |
| <b>privateMacAddress</b>          |           | Indicates the private MAC address of this network interface.   |
| <b>privateMacAllocationMethod</b> |           | Indicates the allocation scheme of the MAC for this network interface. Valid values are Static dynamic.  |
| <b>serviceInsertionElements</b>   | Read-Only | Indicates an array of <b>serviceInsertions</b> resources that this <b>networkInterfaces</b> resource is part of.   |

## Port Settings

| Element name         | Type     | Description   |
|----------------------|----------|---|
| <b>macSpoofing</b>   | 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).                                    |
| <b>arpGuard</b>      | 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".   |
| <b>dhcpGuard</b>     | 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 to be trustworthy. |
| <b>stormLimit</b>    | 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.         |
| <b>portFlowLimit</b> | 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   |

| Element name                  | Type     | Description   |
|-------------------------------|----------|---|
| <b>vmqWeight</b>              | 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.   |
| <b>iovWeight</b>              | 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.   |
| <b>iovInterruptModeration</b> | 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".<br><br>If <b>Default</b> is chosen, the value is determined by the physical network adapter vendor's setting.<br><br>If <b>Adaptive</b> is chosen, the interrupt moderation rate will be based on the runtime traffic pattern.   |
| <b>iovQueuePairsRequested</b> | 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.   |
| <b>QosSettings</b>            | Optional | The following Qos Settings can be configured; all are optional:<br><br><b>outboundReservedValue:</b><br><br>If <code>outboundReservedMode</code> is "absolute" then the value indicates the bandwidth, in Mbps, guaranteed to the virtual port for transmission (egress).<br><br>If <code>outboundReservedMode</code> is "weight" then the value indicates the weighted portion of the bandwidth guaranteed.<br><br><b>outboundMaximumMbps:</b><br><br>Indicates the maximum permitted send-side bandwidth, in Mbps, for the virtual port (egress).<br><br><b>InboundMaximumMbps:</b><br><br>Indicates the maximum permitted receive-side bandwidth for the virtual port (ingress) in Mbps. |

### 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, Common URI 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)                    |
| 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, Common URI 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) |

#### 3.1.5.11.1.2.1 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-df18d4fcfc7",
  "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-dfe1-424c-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.

#### 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-245caeeefffb",
      "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-245caeeefffb"
    },
    "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-4a51-8696-7b5c0ed1ale3",
                "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-7a9ae1f6492d",
    "resourceId": "5508df81-a766-48d9-a42d-7a9ae1f6492d",
    "etag": "W/\"cda45dd0-9d32-44cf-af5f-deb74a246c62\"",
    "instanceId": "8372e129-0b4f-43f1-96f7-4bd49b3e6192",
    "properties": {
        "provisioningState": "Succeeded",
        "ipConfigurations": [
            {
                "resourceRef": "/networkInterfaces/5508df81-a766-48d9-a42d-
7a9ae1f6492d/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-
fc1b933a1457/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": "00FFF00DD4F",
    "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-a0f7-47598bbbee61a",
        "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",
        "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, Common URI 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)                  |
| 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

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.

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, **parentResourceId**.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.11.2.1.1 | Create a new <b>ipConfigurations</b> resource or update an existing <b>ipConfigurations</b> resource. |
| GET         | section 3.1.5.11.2.1.2 | Get one <b>ipConfigurations</b> resource  |
| GET (All)   | section 3.1.5.11.2.1.3 | List all <b>ipConfigurations</b> resources in the Network Controller                                  |

| HTTP method | Section                | Description                                 |
|-------------|------------------------|---|
| DELETE      | section 3.1.5.11.2.1.4 | Deletes an <b>ipConfigurations</b> resource |

The following property elements are valid:

| Element name                          | Type                  | Description  |
|---------------------------------------|-----------------------|--|
| <b>etag</b>                           | Read-Only             | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>              | Read-Only             | See the description in section 2.2.2, Common JSON Elements.  |
| <b>accessControlList</b>              | Optional              | Indicates a reference to an <b>accessControlList</b> resource that defines the ACLs in and out of the IP Configuration.            |
| <b>loadBalancerBackendAddressPool</b> | Optional<br>Read-Only | Reference to <b>backendAddressPools</b> child resource of <b>loadBalancers</b> resource  |
| <b>loadBalancerInboundNatRules</b>    | Optional              | Reference to <b>inboundNatRules</b> child resource of <b>loadBalancers</b> resource  |
| <b>privateIpAddress</b>               | Optional              | Indicates the private IP address of the IP Configuration.  |
| <b>publicIpAddress</b>                | Optional              | Indicates the public IP address of the IP Configuration.   |
| <b>serviceInsertion</b>               | Optional              | Indicates a reference to a <b>serviceInsertion</b> resource that defines the service insertion in and out of the IP Configuration. |
| <b>subnet</b>                         | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.11.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section            | Description                |
|-------------|--------------------|----------------------------|
| GET         | section 3.1.5.12.1 | Get an operations resource |

See Asynchronous Operations, section 1.3.2, for more details on its usage.

The following property elements are valid:

| Element name              | Type      | Description  |
|---------------------------|-----------|--|
| <b>Status</b>             | Read-Only | This is the status of the operations. The following are valid values "InProgress   Succeeded   Failed   Canceled".   |
| <b>error</b>              | 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".                                    |
| <b>error.code</b>         | 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.  |
| <b>error.message</b>      | 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.   |
| <b>error.details</b>      | 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. |
| <b>error.details.code</b> | 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  |

| Element name                    | Type      | Description  |
|---------------------------------|-----------|--|
|                                 |           | response content if it is not returned.  |
| <b>error.details.target</b>     | 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. |
| <b>error.details.message</b>    | 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.                     |
| <b>error.details.innerError</b> | 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, Common URI 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) |

#### 3.1.5.12.1.1.1 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section            | Description                              |
|-------------|--------------------|--|
| GET         | section 3.1.5.13.1 | Get an <b>operationResults</b> resource. |

See Asynchronous Operations, section 1.3.2, for more details on its usage.

The following property elements are valid:

| Element name                | Type      | Description  |
|-----------------------------|-----------|--|
| <b>Status</b>               | Read-Only | This is the status of the operations. The following are valid values "InProgress   Succeeded   Failed   Canceled" .  |
| <b>error</b>                | 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".                                    |
| <b>error.code</b>           | 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.  |
| <b>error.message</b>        | 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.   |
| <b>error.details</b>        | 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. |
| <b>error.details.code</b>   | 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.  |
| <b>error.details.target</b> | Read-Only | Indicates the target of the detailed error message in the error response. It is ideal for diagnostics if this code is  |

| Element name                    | Type      | Description  |
|---------------------------------|-----------|--|
|                                 |           | returned but it will not always be returned. It will not be in the error response content if it is not returned.   |
| <b>error.details.message</b>    | 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. |
| <b>error.details.innerError</b> | 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, Common URI 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) |

#### 3.1.5.13.1.1.1 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.14.1.1 | Create a new <b>publicIpAddresses</b> resource or update an existing <b>publicIpAddresses</b> resource. |
| GET         | section 3.1.5.14.1.2 | Get one <b>publicIpAddresses</b> resource.  |
| GET (All)   | section 3.1.5.14.1.3 | List all <b>publicIpAddresses</b> resources in the Network Controller.                                  |
| DELETE      | section 3.1.5.14.1.4 | Delete a <b>publicIpAddresses</b> resource.   |

The following property elements are valid:

| Element name                    | Type      | Description   |
|---------------------------------|-----------|---|
| <b>etag</b>                     | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>        | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>ipAddress</b>                | Optional  | IP address which is allocated. The caller can pass in a specific public IP address to be allocated or leave it empty.   |
| <b>publicIpAllocationMethod</b> | Optional  | Dynamic Static<br>In case of static publicIpAllocationMethod, ipAddress property needs to be passed indicating the specific public IP address which needs to be allocated.<br>In case of Dynamic publicIpAllocationMethod, the ipAddress property is not meaningful in a <b>PUT</b> (allocation request). In case of Dynamic, any free public IP address will be allocated to the caller. |
| <b>dnsRecord</b>                | Optional  | Properties of a DNS record associated with this public IP address.  |
| <b>IdleTimeoutInMinutes</b>     | 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.   |
| <b>ipConfiguration</b>          | Read-Only | Reference to an <b>ipConfigurations</b> resource.<br>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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.14.1.2.1 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, Common URI 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)                  |
| 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

### 3.1.5.15 servers

The server resource represents a physical server that is being controlled by the Network Controller. The network controller controls all of 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.15.1.1 | Create a new <b>servers</b> resource or update an existing <b>servers</b> resource. |
| GET         | section 3.1.5.15.1.2 | Get one <b>servers</b> resource   |
| GET (All)   | section 3.1.5.15.1.3 | List all <b>servers</b> resources in the Network Controller                         |
| DELETE      | section 3.1.5.15.1.4 | Deletes a <b>servers</b> resource   |

The following property elements are valid:

| Element name                           | Type      | Description   |
|--|-----------|---|
| <b>etag</b>                            | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>               | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>connections</b>                     |           | 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.  |
| <b>connections.credential</b>          |           | Reference to a credential resource that can be used to connect to the device for management purposes.   |
| <b>connections.credentialType</b>      |           | See credentials, section 3.1.5.2.   |
| <b>connections.managementAddresses</b> |           | 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.   |
| <b>model</b>                           | Optional  | Model number of server.   |
| <b>networkInterfaces[]</b>             | Optional  | An array of network interfaces this server has. See the 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 |

| Element name       | Type     | Description  |
|--------------------|----------|--|
|                    |          | deleted but can have their properties updated.   |
| <b>os</b>          | Optional | Identifies the operating system running on the server.   |
| <b>rackSlot</b>    | Optional | Indicates the slot in the rack in which the server has been plugged.   |
| <b>serial</b>      | Optional | Indicates the serial number of the server.   |
| <b>vendor</b>      | Optional | Indicates the name of the server's vendor.   |
| <b>certificate</b> |          | The encoded representation of the certificate that the Network Controller accepts when the server (host) represented by this REST resource connects to the controller. |

### 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, Common URI 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)                    |
| 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-a4b7-7916008dda4",
    "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, Common URI 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) |

### 3.1.5.15.1.2.1 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, Common URI 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)                  |
| 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

This 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, `parentResourceId`.

**resourceId:** the identifier for the specific descendant 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         | section 3.1.5.15.2.1.1 | Create a new <b>networkInterfaces</b> resource or update an existing <b>networkInterfaces</b> resource. |
| GET         | section 3.1.5.15.2.1.2 | Get one <b>networkInterfaces</b> resource   |
| GET (All)   | section 3.1.5.15.2.1.3 | List all <b>networkInterfaces</b> resources in the Network Controller                                   |
| DELETE      | section 3.1.5.15.2.1.4 | Deletes a <b>networkInterfaces</b> resource   |

The following property elements are valid:

| Element name | Type      | Description   |
|--------------|-----------|---|
| <b>etag</b>  | Read-Only | See the description in section 2.2.2, Common JSON Elements. |

| Element name                          | Type      | Description   |
|---------------------------------------|-----------|---|
| <b>provisioningState</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>adminStatus</b>                    | Optional  | Indicates the adminStatus of the network interface.   |
| <b>interfaceIndex</b>                 | Optional  | Indicates the interface index of the network interface.   |
| <b>interfaceName</b>                  | Optional  | Indicates the name of the network interface.  |
| <b>interfaceSpeed</b>                 | Optional  | Indicates the speed of the network interface.   |
| <b>IpConfiguration</b>                | Optional  | Indicates an array of IP configurations   |
| <b>IpConfiguration.ipAddress</b>      | Optional  | IP address of the interface   |
| <b>IpConfiguration.networkPrefix</b>  | Optional  | Network prefix associated with the interface IP address   |
| <b>IpConfiguration.defaultGateway</b> | Optional  | Default gateway associated with the interface   |
| <b>IpConfiguration.vlans</b>          | Optional  | VLAN IDs associated with the IP address on the interface  |
| <b>IpConfiguration.isDhcpEnabled</b>  | 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. |
| <b>logicalSubnets</b>                 | Read-Only | Indicates an array of logicalSubnets resource that the network interface is connected to.   |
| <b>mac</b>                            | Optional  | Indicates the MAC address of the network interface.   |
| <b>operationalStatus</b>              | Optional  | Indicates the operational status of the network interface.  |
| <b>vlanIds</b>                        | Optional  | Indicates the ID of the VLANs that the network interface is connected to.   |
| <b>isBMC</b>                          | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.15.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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, **resourceId**.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.16.1.1 | Create a new <b>ServiceInsertions</b> resource or update an existing <b>ServiceInsertions</b> resource. |
| GET         | section 3.1.5.16.1.2 | Get one <b>ServiceInsertions</b> resource   |
| GET (All)   | section 3.1.5.16.1.3 | List all <b>ServiceInsertions</b> resources in the Network Controller                                   |
| DELETE      | section 3.1.5.16.1.4 | Deletes a <b>ServiceInsertions</b> resource   |

The following property elements are valid:

| Element name | Type      | Description   |
|--------------|-----------|---|
| <b>etag</b>  | Read-Only | See the description in section 2.2.2, Common JSON Elements. |

| Element name                      | Type      | Description   |
|-----------------------------------|-----------|---|
| <b>provisioningState</b>          | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>ipConfiguration</b>            | Read-Only | Indicate references to <b>ipConfigurations</b> resource this access control list is associated with.  |
| <b>priority</b>                   | Required  | Indicates the relative order in which the policies are processed. Priorities must be unique, and a <b>PUT</b> will fail if policies with duplicate priorities are specified.                          |
| <b>type</b>                       | Required  | Indicate the type of service insertion. Valid value is PortMirror.  |
| <b>rules</b>                      | Optional  | Indicates an array of rules used to define what traffic will go through the service insertion.  |
| <b>rules.protocol</b>             | Optional  | Indicates the protocol to match for this rule. Valid values are TCP UDP *. * indicates the rule will match for all protocols.   |
| <b>rules.sourcePortStart</b>      | Required  | Indicates the starting source port to match. This value must be between 0 and 65535. Specify 0 to indicate any port.  |
| <b>rules.sourcePortEnd</b>        | 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.                              |
| <b>rules.destinationPortStart</b> | Required  | Indicates the starting destination port to match. This value must be between 0 and 65535. Specify 0 to indicate any port.   |
| <b>rules.destinationPortEnd</b>   | Optional  | Indicates the end of range of destination ports to match. This value must be greater than the <b>destinationPortStart</b> element. If not specified, then only the start destination port is matched. |
| <b>rules.sourceSubnets</b>        | Optional  | Indicates an array of subnets to match as source subnet. For a single source ip address match specify as a /32 subnet.  |
| <b>rules.destinationSubnets</b>   | Optional  | Indicates an array of subnets to match as the destination subnet. For a single source ip address match specify as a /32 subnet.   |
| <b>serviceInsertionElements</b>   | Optional  | Indicates an array of elements in the   |

| Element name                                     | Type      | Description   |
|--|-----------|---|
|  |           | list of network interfaces to send packets matching rules through. If type is "PortMirror" then the array MUST contain 1 element.   |
| <b>serviceInsertionElements.description</b>      | Optional  | Indicates the description of the element in the service insertion.  |
| <b>serviceInsertionElements.order</b>            | Required  | Indicates the position in the service insertion that the element is located. This value must be unique in the <b>serviceInsertions</b> resource. The lowest value element will be the first element in the insertion. |
| <b>serviceInsertionElements.name</b>             | Optional  | User friendly name of the appliance/element.  |
| <b>serviceInsertionElements.networkInterface</b> | Required  | Indicates a <b>networkInterfaces</b> resource that is an element in the service insertion.  |
| <b>subnets</b>                                   | Read-Only | Indicates an array of references to <b>subnets</b> resources with which this <b>serviceInsertions</b> 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.16.1.2.1 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, Common URI 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)                  |
| 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 virtualGateway 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, **resourceId**.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.17.1.1 | Create a new <b>virtualGateways</b> resource or update an existing <b>virtualGateways</b> resource. |
| GET         | section 3.1.5.17.1.2 | Get one <b>virtualGateways</b> resource.  |
| GET (All)   | section 3.1.5.17.1.3 | List all <b>virtualGateways</b> resources in the Network Controller.                                |
| DELETE      | section 3.1.5.17.1.4 | Delete a <b>virtualGateways</b> resource.   |

The following property elements are valid:

| Element name                                       | Type                 | Description   |
|--|----------------------|---|
| <b>etag</b>  | Read-Only            | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>                           | Read-Only            | See the description in section 2.2.2, Common JSON Elements.   |
| <b>gatewaySubnets</b>                              | Read-Write, Required | Indicates collection of references to IPv4/IPv6 subnet of the VSID/gateway subnet that includes the gateway.  |
| <b>networkConnections</b>                          | Read-Write, Optional | Indicates list of network connections that are configured for this <b>virtualGateways</b> resource. See the <b>networkConnections</b> resource, section 3.1.5.17.4, for full details on this element. |
| <b>vpnConfiguration. IPv4AddressPrefixes</b>       | Read-Write           | Indicates collection of IPv4 address pools from which VPN clients are assigned addresses.   |
| <b>vpnConfiguration. IPv4AddressPrefixes</b>       | Read-Write           | Indicates IPv4 prefix of the pool.  |
| <b>vpnConfiguration. IPv4AddressPrefixes.start</b> | Read-Write           | Starting IPv4 address of the pool. This is required if the start and end addresses do not form a subnet.  |
| <b>vpnConfiguration. IPv4AddressPrefixes.end</b>   | Read-Write           | Ending IPv4 address of the pool. This is not required if the start and end addresses form a subnet.   |
| <b>vpnConfiguration. IPv6AddressPrefixes</b>       | Read-Write           | Indicates IPv6 prefix advertised to remote access VPN clients.  |
| <b>vpnConfiguration. capacity</b>                  | Read-Write           | Aggregate bandwidth capacity of VPN Clients in Kbps.  |
| <b>vpnConfiguration. Realm</b>                     | Read-Write           | Realm used to identify tenants. E.g. contoso, Woodgrove.  |
| <b>bgpRouters</b>                                  | Read-Write, Optional | Indicates the BGP peering information. See the <b>bgpRouters</b> resource, section 3.1.5.17.2, for full details on this element.  |
| <b>policyMaps</b>                                  | Read-Write, Optional | Indicates BGP policy Maps. See <b>policyMaps</b> resource, section 3.1.5.17.3, for details.   |

| Element name                                   | Type                 | Description  |
|--|----------------------|--|
| <b>GatewayPools</b>                            | Read-Write, Required | Indicates a collection of references to <b>gatewayPools</b> resources in which connections can be created. This information is populated at the time of subscription and can be changed only via the Service administrator portal. |
| <b>routingType</b>                             | Read-Only            | "Dynamic" is the only support value for this field.  |
| <b>configurationState</b>                      | Read-only            | Indicates the last known running state of this Virtual Gateway.  |
| <b>configurationState.status</b>               | Read-only            | Indicates the last known running state of this Gateway. Possible values are – Uninitialized, InProgress, Success, Warning, Failure   |
| <b>configurationState.DetailedInfo</b>         | Read-only            | Detail information about the status. It is NULL if status is success.  |
| <b>configurationState.DetailedInfo.Code</b>    | Read-only            | Indicates failure code. Can take values – PolicyConfigurationFailure, HostUnreachable  |
| <b>configurationState.DetailedInfo.Message</b> | Read-only            | Contains an error string based on the error  |
| <b>configurationState.lastUpdatedTime</b>      | Read-only            | Indicates the time stamp when the configuration state last changed.  |

### 3.1.5.17.1 HTTP Methods

#### 3.1.5.17.1.1 PUT

This method creates a new virtualGateway resource or updates an existing virtualGateway resource.

It is invoked through the following URI.

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

The query parameters are specified in section 2.2.3, Common URI 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)                  |
| 201 (Created)             |
| 412 (Precondition Failed) |

| Status code                 |
|-----------------------------|
| 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"
              ]
            }
          ]
        }
      ],
    }
  },
],

```





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

The query parameters are specified in section 2.2.3, Common URI 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) |

### 3.1.5.17.1.2.1 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",
    "lastUpdateTime": "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",
    "lastUpdateTime": "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-4771-98f9-6c1d4ffbaa1a",
                "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-91b3-0383ae1ea607",
"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": []
    }
  ]
},
"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"
  }
]
}
}

```

The JSON schema for the **virtualGateway GET** method is located in section 6.15.2.

### 3.1.5.17.1.2.3 Processing Details

Retrieves a virtualGateway resource.

#### 3.1.5.17.1.3 GET (All)

This method retrieves all virtualGateway resources.

It is invoked through the following URI.

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



The query parameters are specified in section 2.2.3, Common URI 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)    |

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",
    "lastUpdateTime": "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": "6dfcl2fb-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"
    },
  }
},

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        "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-91b3-0383ae1ea607",
        "properties": {
            "provisioningState": "Succeeded",

```

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    "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",

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        "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",
    "lastUpdateTime": "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",

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```

        "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,

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        "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"
  }
]
}

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},
{
  "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"
          }
        }
      }
    ]
  }
}

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    },
    "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": "lab3c12b-4591-4d69-8a13-163ccl1f8ae2e",
        "properties": {
          "provisioningState": "Succeeded",
          "connectionType": "IPSec",
          "outboundKiloBitsPerSecond": 307200,
          "inboundKiloBitsPerSecond": 307200,
          "ipSecConfiguration": {
            "authenticationMethod": "PSK",

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    "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",
    "lastUpdateTime": "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"
      ]
    }
  }
]

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    ],
    "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": [

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        {
          "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": [
    {

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        "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-3eaa90dddf40",
    "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,
                    }
                }
            }
        ]
    }
}

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        "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",

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"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",
  "lastUpdatedTime": "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": {

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        "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": []
                }
            }
        ]
    }
}

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    },
    "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",

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    "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,

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        "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",

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"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": [
  {

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        "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-alb0-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-alb0-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",

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        "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": [

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    {
      "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",

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    "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",
      "lastUpdatedTime": "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-elf2045fbe56",
    "resourceId": "BGP_VirtualGateway_20_557cfc53-e621-4559-bcb1-elf2045fbe56",
    "instanceId": "557cfc53-e621-4559-bcb1-elf2045fbe56",
    "properties": {
      "provisioningState": "Succeeded",
      "extAsNumber": "0.65001",
      "routerId": "10.2.21.2",
      "routerIP": [
        "10.2.21.2"
      ],
      "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/00000000-1111-0000-0020-000000000000/subnets/00000000-1111-1111-0020-000000000002"
  }
]
},
{
  "resourceRef": "/VirtualGateways/VirtualGateway_3",
  "resourceId": "VirtualGateway_3",
  "etag": "W/\db876b1d-1121-4e57-bf8a-0f7981b00cc1\"",
  "instanceId": "aeff9881-caba-4620-8c11-89d9e0ceeaed",
  "properties": {

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"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"
      }
    }
  }
]

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    }
  ],
  "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
            }
          }
        }
      }
    ]
  }
}

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    },
    "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"
    }
  }
]
}

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    }
  ],
  "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"
            }
          ]
        }
      }
    ]
  }
}

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        "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",

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"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",

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        "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 **virtualGateway GET ALL** method is located in section 6.15.3.

### 3.1.5.17.1.3.3 Processing Details

Retrieves all virtualGateway resources.

### 3.1.5.17.1.4 DELETE

This method deletes a virtualGateway resource.

It is invoked through the following URI.

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

The query parameters are specified in section 2.2.3, Common URI 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)                  |
| 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 virtualGateway resource.

### 3.1.5.17.2 bgpRouters

The BGP Router 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, parentResourceId.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.17.2.1.1 | Create or update a <b>bgpRouters</b> resource. |
| GET         | section 3.1.5.17.2.1.2 | Get a <b>bgpRouters</b> resource.              |



| HTTP method | Section                | Description   |
|-------------|------------------------|---|
| GET (All)   | section 3.1.5.17.2.1.3 | List all <b>bgpRouters</b> resources in the Network Controller. |
| DELETE      | section 3.1.5.17.2.1.4 | Deletes a <b>bgpRouters</b> resource.                           |

The following property elements are valid:

| Element name                                   | Type       | Description  |
|--|------------|--|
| <b>etag</b>                                    | Read-Only  | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>                       | Read-Only  | See the description in section 2.2.2, Common JSON Elements.  |
| <b>isGenerated</b>                             | Read-only  | If this BGP router is automatically enabled, without making any REST calls then isGenerated is set to "true"                       |
| <b>extAsNumber</b>                             | Read/Write | Extended (4-byte) ASN of the local BGP Router in XX.YY format  |
| <b>routerId</b>                                | Read/Write | Indicates Router ID  |
| <b>routerIpAddress[]</b>                       | Read/Write | Indicates IP addresses to which BGP peering can be established   |
| <b>bgpPeers[]</b>                              | Read/Write | Collection of BGP peers associated with the BGP Routers resource. See <b>bgpPeers</b> resource, section 3.1.5.17.2.2, for details. |
| <b>configurationState</b>                      | Read-only  | Indicates the last known running state of this router.   |
| <b>configurationState.status</b>               | Read-only  | Indicates the last known running state of this router. Possible values are – Uninitialized, InProgres, Success, Warning, Failure   |
| <b>configurationState.DetailedInfo</b>         | Read-only  | Detail information about the status. It is NULL if status is success.  |
| <b>configurationState.DetailedInfo.Code</b>    | Read-only  | Indicates failure code. Can take values – PolicyConfigurationFailure, HostUnreachable  |
| <b>configurationState.DetailedInfo.Message</b> | Read-only  | Contains an error string based on the error  |
| <b>configurationState.lastUpdatedTime</b>      | Read-only  | Indicates the time stamp when the configuration state last changed.  |

### 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.17.2.1.2.1 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.

#### 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, Common URI 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)    |

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-c89ea8b0b1b0\\"",
    "instanceId": "3b7e4db3-c415-4b06-8d0a-b2138142a8ff",
    "properties": {
        "provisioningState": "Succeeded",
        "asNumber": "1236",
        "extAsNumber": "0.1236",

```



```

    "peerIpAddress": "40.1.3.4",
    "connectionState": "Disconnected",
    "statistics": {
      "tcpConnectionClosed": "2016-06-15T22:01:27.67-07:00",
      "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, Common URI 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)                  |
| 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**

This 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, grandParentResourceId.

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

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.17.2.2.1.1 | Create or update a <b>bgpPeers</b> resource.                 |
| GET         | section 3.1.5.17.2.2.1.2 | Get a <b>bgpPeers</b> resource                               |
| GET (All)   | section 3.1.5.17.2.2.1.3 | List all <b>bgpPeers</b> resources in the Network Controller |
| DELETE      | section 3.1.5.17.2.2.1.4 | Deletes a <b>bgpPeers</b> resource                           |

The following property elements are valid:

| Element name   | Type       | Description  |
|--|------------|--|
| <b>etag</b>  | Read-Only  | See the description in section 2.2.2, Common JSON Elements.                              |
| <b>provisioningState</b>                                 | Read-Only  | See the description in section 2.2.2, Common JSON Elements.                              |
| <b>resourceId</b>  | Read-Only  | Indicates identifier of BGP peer   |
| <b>asNumber</b>  | Read-Only  | Indicates the ASN number of the BGP Peer.  |
| <b>extAsNumber</b>                                       | Read/Write | Indicates Extended ASN number of the BGP Peer in XX.YY format                            |
| <b>peerIpAddress</b>                                     | Read/Write | IP address of the peer   |
| <b>connectionState</b>                                   | Read-Only  | Status of BGP peering for this peer. Possible values are "Connected" and "Disconnected". |
| <b>statistics</b>  | Read-Only  | Provides statistics for this peer  |
| <b>statistics.tcpConnectionEstablished</b>               | Read-Only  | Timestamp of TCP connection establishment for BGP  |
| <b>statistics.tcpConnectionClosed</b>                    | Read-Only  |  |
| <b>statistics.openMessageStats</b>                       | Read-Only  |  |
| <b>statistics.openMessageStats.lastsent</b>              | Read-Only  | Last sent timestamp  |
| <b>statistics.openMessageStats.lastReceived</b>          | Read-Only  | Last received timestamp  |
| <b>statistics.openMessageStats.sentCount</b>             | Read-Only  | Sent count   |
| <b>statistics.openMessageStats.receivedCount</b>         | Read-Only  | Received count   |
| <b>statistics.notificationMessageStats</b>               | Read-Only  |  |
| <b>statistics.notificationMessageStats.sentCount</b>     | Read-Only  | Sent count   |
| <b>statistics.notificationMessageStats.receivedCount</b> | Read-Only  | Received count   |

| Element name   | Type       | Description  |
|--|------------|--|
| <b>statistics.keepAliveMessageStats</b>                  | Read-Only  | Stats for keepalive messages   |
| <b>statistics. keepAliveMessageStats.lastSent</b>        | Read-Only  | Last sent timestamp  |
| <b>statistics. keepAliveMessageStats.lastReceived</b>    | Read-Only  | Last received timestamp  |
| <b>statistics. keepAliveMessageStats.sentCount</b>       | Read-Only  | Sent count   |
| <b>statistics. keepAliveMessageStats.receivedCount</b>   | Read-Only  | Received count   |
| <b>statistics.routeRefreshMessageStats</b>               | Read-Only  |  |
| <b>statistics.routeRefreshMessageStats.sentCount</b>     | Read-Only  | Sent count   |
| <b>statistics.routeRefreshMessageStats.receivedCount</b> | Read-Only  | Received count   |
| <b>statistics.updateMessageStats</b>                     | Read-Only  |  |
| <b>statistics.updateMessageStats.lastReceived</b>        | Read-Only  | Last received timestamp  |
| <b>statistics.updateMessageStats.sentCount</b>           | Read-Only  | Sent count   |
| <b>statistics.updateMessageStats.receivedCount</b>       | Read-Only  | Received count   |
| <b>statistics.ipv4Route</b>                              | Read-Only  | Stats for IPv4 routes  |
| <b>statistics.ipv4Route.updateSentCount</b>              | Read-Only  | Route update sent count  |
| <b>statistics.ipv4Route.updateReceivedCount</b>          | Read-Only  | Route update received count  |
| <b>statistics.ipv4Route.withdrawlSentCount</b>           | Read-Only  | Route withdrawal sent count  |
| <b>statistics.ipv4Route.withdrawlReceivedCount</b>       | Read-Only  | Route withdrawal received count  |
| <b>statistics.ipv6Route</b>                              | Read-Only  | Stats for IPv6 routes  |
| <b>statistics.ipv6Route.updateSentCount</b>              | Read-Only  | Route update sent count  |
| <b>statistics.ipv6Route.updateReceivedCount</b>          | Read-Only  | Route update received count  |
| <b>statistics.ipv6Route.withdrawlSentCount</b>           | Read-Only  | Route withdrawal sent count  |
| <b>statistics.ipv6Route.withdrawlReceivedCount</b>       | Read-Only  | Route withdrawal received count  |
| <b>Statistics.lastUpdated</b>                            | Read-Only  | Time stamp when the stats were last updated  |
| <b>policyMapOut</b>                                      | Read/Write | Reference to the policy map object that is used to filter the routing updates sent to the peer.  |
| <b>policyMapIn</b>                                       | Read/Write | Reference to the policy map object that is used to filter routing updates received from the peer |
| <b>isGenerated</b>                                       | Read-only  | This flag is set to "True" for iBGP peers.   |

| Element name                                   | Type      | Description   |
|--|-----------|---|
| <b>configurationState</b>                      | Read-only | Indicates the last known running state of this peer.  |
| <b>configurationState.status</b>               | Read-only | Indicates the last known running state of this peer. Possible values are – Uninitialized, InProgress, Success, Warning, Failure |
| <b>configurationState.DetailedInfo</b>         | Read-only | Detail information about the status. It is NULL if status is success.   |
| <b>configurationState.DetailedInfo.Code</b>    | Read-only | Indicates failure code. Can take values – PolicyConfigurationFailure, HostUnreachable   |
| <b>configurationState.DetailedInfo.Message</b> | Read-only | Contains an error string based on the error   |
| <b>configurationState.lastUpdatedTime</b>      | Read-only | Indicates the time stamp when the configuration state last changed.   |

### 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.17.2.2.1.2.1 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, Common URI 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)    |

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-4771-98f9-6c1d4ffbbaala",
    "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,
        "withdrawalSentCount": 0,
        "withdrawalReceivedCount": 0
      },
      "ipv6Route": {
        "updateSentCount": 0,
        "updateReceivedCount": 0,
        "withdrawalSentCount": 0,
        "withdrawalReceivedCount": 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, Common URI 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)                  |
| 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 in order 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, **parentResourceId**.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.17.3.1.1 | Create or update a <b>policyMaps</b> .                         |
| GET         | section 3.1.5.17.3.1.2 | Get a <b>policyMaps</b> resource.                              |
| GET (All)   | section 3.1.5.17.3.1.3 | List all <b>policyMaps</b> resources in the Network Controller |
| DELETE      | section 3.1.5.17.3.1.4 | Delete a <b>policyMaps</b> resource.                           |

The following property elements are valid:

| Element name                                 | Type       | Description  |
|--|------------|--|
| <b>etag</b>                                  | Read-Only  | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>                     | Read-Only  | See the description in section 2.2.2, Common JSON Elements.  |
| <b>policyMapEntryList[]</b>                  |            | Indicates list of policies (objects of type <b>policyMapEntry</b> )  |
| <b>policyMapEntry.policyName</b>             | Read/Write | Indicates the name of the policy.  |
| <b>policyMapEntry.action</b>                 | Read/Write | Indicates type of policy (Deny   Allow   ModifyAttribute)  |
| <b>policyMapEntry.matchCriteria[]</b>        | Read/Write | Indicates criteria to be matched (objects of type <b>policyMapEntryMatchCriteria</b> )   |
| <b>policyMapEntry.matchCriteria.property</b> | Read/Write | Indicates clause to be matched (MatchPrefix   NextHop   IgnorePrefix   AsnRange   Community )  |
| <b>policyMapEntry.matchCriteria.values</b>   | Read/Write | Indicates values for the property to be matched with the ingress / egress packet   |
| <b>policyMapEntry.setActions[]</b>           | Read/Write | Indicates action to be taken once there is match in criteria (objects of type <b>policyMapEntrySetAction</b> )   |
| <b>policyMapEntry.setActions.property</b>    | 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) |
| <b>policyMapEntry.setActions.value</b>       | Read/Write | New value of the property specified in <b>policyMapEntry.setActions.property</b> to updated in the ingress/egress data packet.   |
| <b>bgpPeersWithPolicyMapIn</b>               | 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  |
| <b>bgpPeersWithPolicyMapOut</b>              | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.17.3.1.2.1 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-91b3-0383ae1ea607",
  "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": []
}
]
}
}
}

```

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, Common URI 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)    |

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, Common URI 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)                  |
| 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, parentResourceId.

**resourceId**: the identifier for the specific descendant 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         | section 3.1.5.17.4.1.1 | Create or update a <b>networkConnections</b> resource                   |
| GET         | section 3.1.5.17.4.1.2 | Get a <b>networkConnections</b> resource.                               |
| GET (All)   | section 3.1.5.17.4.1.3 | List all <b>networkConnections</b> resources in the Network Controller. |
| DELETE      | section 3.1.5.17.4.1.4 | Delete a <b>networkConnections</b> resource.                            |

The following property elements are valid:

| Element name                     | Type       | Description   |
|----------------------------------|------------|---|
| <b>etag</b>                      | Read-Only  | See the description in section 2.2.2, Common JSON Elements.     |
| <b>provisioningState</b>         | Read-Only  | See the description in section 2.2.2, Common JSON Elements.     |
| <b>resourceId</b>                | Required   | Friendly name of the connection                                 |
| <b>connectionType</b>            | Read-Write | Indicates type of connection. Valid values are IPsec   GRE   L3 |
| <b>outboundKiloBitsPerSecond</b> | Read-Write | Indicates maximum allowed outbound bandwidth in Kbps            |

| Element name   | Type       | Description  |
|--|------------|--|
| <b>inboundKiloBitsPerSecond</b>  | Read-Write | Indicates maximum allowed outbound bandwidth in Kbps   |
| <b>ipsecConfiguration</b>  | Read-Write | Details of IPsec configuration.  |
| <b>ipsecConfiguration.authenticationMethod</b>                           | Read-Write | Indicates authentication method. PSK is the only valid value   |
| <b>ipsecConfiguration.sharedsecret</b>                                   | 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   |
| <b>ipsecConfiguration.mainMode</b>                                       | Read-Write | Main mode IPsec configuration details  |
| <b>ipsecConfiguration.mainMode.diffieHellmanGroup</b>                    | Read-Write | Indicates Diffie Hellman group used during main mode IKE negotiation. Values:<br>Group1   Group2   Group14   ECP256   ECP384   Group24   |
| <b>ipsecConfiguration.mainMode.integrityAlgorithm</b>                    | Read-Write | Indicates Integrity algorithm used during main mode IKE negotiation. Values:<br>MD5   SHA196   SHA256   SHA384   |
| <b>ipsecConfiguration.mainMode.encryptionAlgorithm</b>                   | Read-Write | Indicates cipher algorithm used during main mode IKE negotiation.<br>Values: DES   DES3   AES128   AES192   AES256   |
| <b>ipsecConfiguration.mainMode.saLifeTimeSeconds</b>                     | Read-Write | Indicates life time of SA in seconds   |
| <b>ipsecConfiguration.mainMode.saLifeTimeKilobytes</b>                   | Read-Write | Indicates life time of SA in Kilobytes. Ignored by IPsec   |
| <b>ipsecConfiguration.quickMode</b>                                      | Read-Write | Quick mode IPsec configuration   |
| <b>ipsecConfiguration.quickMode.perfectForwardSecrecy</b>                | Read-Write | Indicates whether Perfect Forward Secrecy is enabled or not. If enabled specifies the algorithm.<br>Values: None   PFS1   PFS2   PFS2048   PFS14   ECP256   ECP384   PFSMM   PFS24                     |
| <b>ipsecConfiguration.quickMode.cipherTransformationConstant</b>         | 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 |
| <b>ipsecConfiguration.quickMode.authenticationTransformationConstant</b> | Read-Write | Indicates the authentication transform used for data traffic. Values: None   MD596   SHA196   SHA256   GCMAES128   GCMAES192   GCMAES256   |
| <b>ipsecConfiguration.quickMode.saLifeTimeSeconds</b>                    | Read-Write | Indicates life time of SA in seconds   |
| <b>ipsecConfiguration.quickMode.saLifeTimeKilobytes</b>                  | Read-Write | Indicates life time of SA in Kilobytes   |
| <b>ipsecConfiguration.quickMode.idleDisconnectSeconds</b>                | Read-Write | Indicates idle time after which SA is disconnected   |

| Element name  | Type       | Description   |
|---|------------|---|
| <b>ipsecConfiguration.localVpnTrafficSelector</b>                 | Read-Write | Indicates collection of IPsec TrafficSelectors on the hoster side.  |
| <b>ipsecConfiguration.localVpnTrafficSelector.Type</b>            | Read-Write | Indicates whether traffic is IPv4 or IPv6   |
| <b>ipsecConfiguration.localVpnTrafficSelector.ProtocolId</b>      | Read-Write | Indicates IP protocol ID (such as UDP, TCP, and ICMP).  |
| <b>ipsecConfiguration.localVpnTrafficSelector.PortStart</b>       | Read-Write | Indicates start of port range   |
| <b>ipsecConfiguration.localVpnTrafficSelector.PortEnd</b>         | Read-Write | Indicates end of port range   |
| <b>ipsecConfiguration.localVpnTrafficSelectorIpAddressStart</b>   | Read-Write | Indicates start of IP addresses   |
| <b>ipsecConfiguration.localVpnTrafficSelector.IpAddressEnd</b>    | Read-Write | Indicates end of IP addresses   |
| <b>ipsecConfiguration.localVpnTrafficSelector.tsPayloadId</b>     | Read-Write | ??  |
| <b>ipsecConfiguration.remoteVpnTrafficSelector</b>                | Read-Write | Indicates collection of IPsec TrafficSelectors on the tenant side.  |
| <b>ipsecConfiguration.remoteVpnTrafficSelector.Type</b>           | Read-Write | Indicates whether traffic is IPv4 or IPv6   |
| <b>ipsecConfiguration.remoteVpnTrafficSelector.ProtocolId</b>     | Read-Write | Indicates IP protocol ID (such as UDP, TCP, and ICMP).  |
| <b>ipsecConfiguration.remoteVpnTrafficSelector.PortStart</b>      | Read-Write | Indicates start of port range   |
| <b>ipsecConfiguration.remoteVpnTrafficSelector.PortEnd</b>        | Read-Write | Indicates end of port range   |
| <b>ipsecConfiguration.remoteVpnTrafficSelector.IpAddressStart</b> | Read-Write | Indicates start of IP addresses   |
| <b>ipsecConfiguration.remoteVpnTrafficSelector.IpAddressEnd</b>   | Read-Write | Indicates end of IP addresses   |
| <b>IpAddress</b>  | 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 |
| <b>ipAddresses</b>  | Read-Write | IP assigned in the tenant compartment for L3 interface.   |
| <b>ipAddresses.ipAddress</b>                                      | Read-Write | IP address for L3 interface in tenant compartment   |
| <b>ipAddress.prefixLength</b>                                     | Read-write | Prefix length of the IP address   |
| <b>PeerIpAddress</b>  | Read-Write | Indicates peer IP address to which connection is made.Used by L3 interface  |

| Element name                                  | Type       | Description   |
|---|------------|---|
| <b>SourceIPAddress</b>                        | Read-Write | Indicates sourceIPAddress used by the tunnel. Applicable to IKEv2 and GRE.  |
| <b>destinationIpAddress</b>                   | Read-Write | Indicates destination ip address of the tunnel. Applicable to IKEv2 and GRE.  |
| <b>routes[]</b>                               | 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 |
| <b>routes.destinationPrefix</b>               | Required   | Prefix with subnet of the routes  |
| <b>routes.nextHop</b>                         | Optional   | Next Hop of the routes. Is significant only for L3 connections. Has no significance for point to point connections such as IPsec & GRE                  |
| <b>routes.metric</b>                          | Optional   | Indicates Metric of the route   |
| <b>routes.protocol</b>                        | Read-Only  | Indicates how the route is learnt/added (static   BGP)  |
| <b>ConnectionStatus</b>                       | Read-Write | Indicates administrative status of connection. Values: enabled   disabled   |
| <b>ConnectionState</b>                        | Read-Write | Indicates operational status of connection. Values: Connected   Disconnected  |
| <b>statistics</b>                             | Read-Only  | Statistics of the connection  |
| <b>statistics.outboundBytes</b>               | Read-Only  | Indicates number of bytes transmitted.  |
| <b>statistics.inboundBytes</b>                | Read-Only  | Indicates number of bytes received.   |
| <b>statistics.rxTotalPacketsDropped</b>       | Read-Only  | Indicates number of packets dropped in ingress direction  |
| <b>statistics.txTotalPacketsDropped</b>       | Read-Only  | Indicates number of packets dropped in egress direction   |
| <b>statistics.txRateKbps</b>                  | Read-Only  | Indicates rate at which traffic is going out in Kbps  |
| <b>statistics.rxRateKbps</b>                  | Read-Only  | Indicates rate at which traffic is coming in in Kbps  |
| <b>statistics.txRateLimitedPacketsDropped</b> | Read-Only  | Indicates number of packets dropped in egress direction due to rate limiting.   |
| <b>statistics.rxRateLimitedPacketsDropped</b> | Read-Only  | Indicates number of packets dropped in ingress direction due to rate limiting.  |
| <b>statistics.lastUpdated</b>                 | Read-Only  | Indicates the time the statistics were last updated   |
| <b>ConnectionUpTime</b>                       | Read-Only  | Indicates operations up time of the connection in seconds   |
| <b>ConnectionErrorReason</b>                  | Read-Only  | Indicates the reason for not being able to connect after dialling in the previous attempt   |
| <b>unreachabilityReason</b>                   | Read-Only  | Indicates the reason for not being able to connect/dial in the previous attempt   |
| <b>greConfiguration</b>                       | Read-Write | Indicates details of GRE configuration  |

| Element name                                   | Type              | Description   |
|--|-------------------|---|
| <b>greConfiguration.greKey</b>                 | Read-Write        | Indicates GRE key   |
| <b>I3Configuration</b>                         | Read-Write        | Indicates details of L3 configuration   |
| <b>I3Configuration.vlanSubnet</b>              | Read-Write        | Reference to a logical subnet of L3 connection  |
| <b>gateway</b>                                 | ResourceReference | Reference of the gateway on which the connection exists.  |
| <b>configurationState</b>                      | Read-only         | Indicates the last known running state of this connection.  |
| <b>configurationState.status</b>               | Read-only         | Indicates the last known running state of this connection. Possible values are – Uninitialized, InProgress, Success, Warning, Failure |
| <b>configurationState.DetailedInfo</b>         | Read-only         | Detail information about the status. It is NULL if status is success.   |
| <b>configurationState.DetailedInfo.Code</b>    | Read-only         | Indicates failure code. Can take values – PolicyConfigurationFailure, HostUnreachable   |
| <b>configurationState.DetailedInfo.Message</b> | Read-only         | Contains an error string based on the error   |
| <b>configurationState.lastUpdatedTime</b>      | Read-only         | Indicates the time stamp when the configuration state last changed.   |

### 3.1.5.17.4.1 HTTP Methods

#### 3.1.5.17.4.1.1 PUT

This method creates a new networkConnection resource or updates an existing networkConnection 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, Common URI 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)                  |
| 201 (Created)             |
| 412 (Precondition Failed) |

| Status code                 |
|-----------------------------|
| 500 (Internal Server Error) |

### 3.1.5.17.4.1.1.1 Request Body

The format for the request body for the **networkConnection 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 networkConnection 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, Common URI 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) |

### 3.1.5.17.4.1.2.1 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\"",
ae62a1d6-a1ea-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",
    "lastUpdateTime": "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.

### 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, Common URI 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)    |

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\"",
  "ae62a1d6-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,
    "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 networkConnection resources.

### 3.1.5.17.4.1.4 DELETE

This method deletes a networkConnection 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, Common URI 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)                  |
| 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 networkConnection resource.

### 3.1.5.18 virtualNetworks

This 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.18.1.1 | Create a new <b>virtualNetworks</b> resource or update an existing <b>virtualNetworks</b> resource. |
| GET         | section 3.1.5.18.1.2 | Get one <b>virtualNetworks</b> resource   |
| GET (All)   | section 3.1.5.18.1.3 | List all <b>virtualNetworks</b> resources in the Network Controller                                 |
| DELETE      | section 3.1.5.18.1.4 | Deletes a <b>virtualNetworks</b> resource   |

The following property elements are valid:

| Element name                          | Type      | Description  |
|---------------------------------------|-----------|--|
| <b>etag</b>                           | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>logicalNetwork</b>                 | Required  | Indicates a reference to the <b>networks</b> resource that is the underlay network which the virtual network runs on.  |
| <b>subnets[]</b>                      | Optional  | Indicates the subnets that are on the virtual network. For more details see the <b>subnets</b> resource, section 3.1.5.18.2.   |
| <b>addressSpace</b>                   | Required  | Indicates the address space of the virtual network.  |
| <b>addressSpace.addressPrefixes[]</b> | 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. |
| <b>dhcpOptions</b>                    | Optional  | Indicates the DHCP options used by servers in the virtual network.   |

| Element name                  | Type     | Description  |
|-------------------------------|----------|--|
| <b>dhcpOptions.dnsServers</b> | Optional | Indicates an array of DNS servers that are being used by the virtual network |

### 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.18.1.2.1 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/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"
  }
}
}
}

```

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, Common URI 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)    |

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-b3b816a4blea",
  "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"
        }
      ]
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ]
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ]
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ]
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ]
    },
    {
      "status": "Failure",
      "detailedInfo": [
        {
          "source": "VirtualNetwork",
          "message": "Failed to configure the policies on the host device.",
          "code": "PolicyConfigurationFailure"
        }
      ]
    }
  ]
},
"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-
fcdel574dba3/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-aled-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, Common URI 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)                  |
| 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, parentResourceId.

**resourceId:** the identifier for the specific descendant 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         | section 3.1.5.18.1.1 | Create a new <b>subnets</b> resource or update an existing <b>subnets</b> resource. |
| GET         | section 3.1.5.18.1.2 | Get one <b>subnets</b> resource   |
| GET (All)   | section 3.1.5.18.1.3 | List all <b>subnets</b> resources in the Network Controller                         |
| DELETE      | section 3.1.5.18.1.4 | Delete a subnets resource.  |

The following property elements are valid:

| Element name             | Type      | Description   |
|--------------------------|-----------|---|
| <b>etag</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b> | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>addressPrefix</b>     | 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. |
| <b>accessControlList</b> | Optional  | Indicates a reference to an <b>accessControlLists</b> resource that defines the ACLs in and out of the subnet.  |
| <b>serviceInsertion</b>  | Optional  | Indicates a reference to a <b>serviceInsertions</b> resource that defines the service insertion to be applied to the subnet.  |

| Element name            | Type      | Description   |
|-------------------------|-----------|---|
| <b>routeTable</b>       | Optional  | Indicates a reference to a <b>routeTable</b> resource that defines the tenant routes to be applied to the subnet. |
| <b>ipConfigurations</b> | Read-Only | Indicates an array of references of <b>networkInterfaces</b> 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.18.2.1.2.1 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, Common URI 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)    |

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, Common URI 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)                  |
| 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         | section 3.1.5.19.1.1 | Create a new <b>virtualNetworkManager</b> resource or update an existing <b>virtualNetworkManager</b> resource. |
| GET         | section 3.1.5.19.1.2 | Get the <b>virtualNetworkManager</b> resource   |

The following property elements are valid:

| Element name                         | Type      | Description  |
|--------------------------------------|-----------|--|
| <b>etag</b>                          | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>provisioningState</b>             | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>distributedRouterState</b>        | 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". |
| <b>networkVirtualizationProtocol</b> | 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, Common URI 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)                    |
| 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, Common URI 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) |

### 3.1.5.19.1.2.1 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

This 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, resourceId.

The following HTTP methods can be performed on this resource.

| HTTP method | Section              | Description   |
|-------------|----------------------|---|
| PUT         | section 3.1.5.20.1.1 | Create a new <b>virtualServers</b> resource or update an existing <b>virtualServers</b> resource. |
| GET         | section 3.1.5.20.1.2 | Get one <b>virtualServers</b> resource  |
| GET (All)   | section 3.1.5.20.1.3 | List all <b>virtualServers</b> resources in the Network Controller                                |
| DELETE      | section 3.1.5.20.1.4 | Deletes a <b>virtualServers</b> resource  |

The following property elements are valid:

| Element name                           | Type      | Description   |
|--|-----------|---|
| <b>etag</b>                            | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>provisioningState</b>               | Read-Only | See the description in section 2.2.2, Common JSON Elements.   |
| <b>connections[]</b>                   | 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.  |
| <b>connections.credential</b>          |           | Indicates a reference to a credential resource that can be used to connect to the device for management purposes.   |
| <b>connections.credentialType</b>      |           | Indicates a reference to a credential resource that specifies the type of credential.   |
| <b>connections.managementAddresses</b> |           | 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.   |
| <b>gateway</b>                         | 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.                                  |
| <b>loadbalancerMux</b>                 | Read-Only | Indicates a reference to the <b>loadbalancerMux</b> 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. |
| <b>server</b>                          | Read-Only | Indicates a reference to the <b>servers</b> resource this virtualServer is located on. The server reference is automatically created when a corresponding NIC arrival notification from the south bound is handled.               |
| <b>vmGuid</b>                          | Required  | Indicates the GUID of the VM object as found in the Hyper-V <b>WMI</b> .  |



### 3.1.5.20.1 HTTP Methods

#### 3.1.5.20.1.1 PUT

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

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

The query parameters are specified in section 2.2.3, Common URI 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)                    |
| 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 virtualServer resource.

It is invoked through the following URI.

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

The query parameters are specified in section 2.2.3, Common URI 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) |

### 3.1.5.20.1.2.1 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
    Fw0xMjA1MTAwNzAwMDBaFw0yMDEyMjIwMDAwMDUyMDEyMjIwMDAwMDUyMDEyMjIwMDAwMDUyMDEyMjIwMDAwMDUyMDEyMjIw
    QEFFAAObjQAwgYkCgYEAAq1XZZ2AakK1/qpxnh6mZjGrza5KpoilcIkdJNHfD6lbs7t0DrfZa3PPuWkMAaP9bMMBuN9QFeV
    e3jh0mLnpeAAAX49sNyY1cxtVKtBYaDd2fG1vJQMMce0WQvEDj+yCN/ND0HXtJ8IcrlthqmxlHerMHOrP/PcA2SjZhWh7
    tzC0CAwEAAANrMGkwHQYDVR0lBBYwFAYIKwYBBQUHAwEGCCsGAQUFBwMCMCEgAlUdaQRBMD+AEMprq6gkkm6zsBHNK13n
  }
```

```

JK+hGTAXMRUwEwYDVQQDEwwxOTAuMjE4LjAuNDaCEDR3nN93hSofQaX0IUTOROYwCQYFKw4DAh0FAAOBgQBW6Nj/tzmBW
+KzmI2+YWiFex1PEVrM7ue7yVwLne1c+uH+5Eu9y1gg4DcgeIxmMYRk4AMXBqG6BBtTE9sID7seG2c01yHyn5ZH0SPkPi
I6cnMuDLC9YuUFEh7HN+9Vo1BjQJ7cHMrqke0nlpSuPLYSYQYSyPNE+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 virtualServer resource.

#### 3.1.5.20.1.3 GET (All)

This method retrieves all virtualServer 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":
"MIICFjCCAYOgAwIBAgIQQkEUCk8XN7tDJNjWqcDYQjAJBgUrDgMCHQUAMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NzAe
Fw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBCxFTATBgNVBAMTDDE5MC4yMTguMC40NzCBnzANBghkiG9w0BA
QEFAAOBjQAwGykCgYEAwSbVTki5HaelHMDef9ugNfqSGr5ZKcUA3nwh6SQV/pJBe41jfWcVUyNhh7SVYv8TPQlB4tNmx
nYbKkWH1SRdkOXJ+8DFJDODF9aFfuPuebi8U9gZhbxtfurWkflhNukAx7vpmi9+mta+POB0F27wsmuFNXwlv/JjIz6SKt
uv2cCAwEAAANrMGkwhQYDVR0lBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMEMeGALUdaAQRBMD+AELm0o2+hOxw9qevual9O
muehGTAXMRUwEwYDVQQDEwxxOTAuMjE4LjAuNDcEEJBFAPFze7QyTScKnA2EiwCQYFKw4DAh0FAAOBgQBQDD/zN+T4u
7UqkuOK9Ocl17q99kgolonOv96pUBctKMaNaTPVKNXERii7cedvihGMwSWQCBJlJorpFZrfZ09D+tDok50EYSugx/O6ni
VcXah4qN+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
Fw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBCxFTATBgNVBAMTDDE5MC4yMTguMC40NTCBnzANBghkiG9w0BA
QEFAAOBjQAwGykCgYEArSgIbPMq9dWg2hUYBDQfKMuv3MBOCfvmm2WH0e2c0WRexdLR0Q0etIJrv9Gxbo5RW/U53y10ZA
bgFB58NstEHflo+8UAJUVU+tH/g2/L5K0ucYa4YzG0gftJKxkPJ85U1rtDXfd+MU9K91oQWgHYElmftdq2LdQ33tFI1YFu
T40MCAwEAAANrMGkwhQYDVR0lBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMEMeGALUdaAQRBMD+AENepWjRjtRvYGX30TZ8
/lShGTAXMRUwEwYDVQQDEwxxOTAuMjE4LjAuNDcEEJBFAPFze7QyTScKnA2EiwCQYFKw4DAh0FAAOBgQCFR7J+lxZkf
pLEh6lmWXTquiZJiI2av9zR6M31EKdHYM20gialUsMEFnxbuFamJ4TTXSM4juHfE9kxJ+K5JahQl3eRA+z6VQwrWAUKU
tJmg+PVuIAaatIGe+tpvRpxAEUMIxyGIC/fTwmqUPDWIB0c0eYKnYDnQ0DvGGBdHCYwA==",
    "vmGuid": "4d258e6b-d058-4b51-ab94-d38af22f9592"
  },
  "markServerReadOnly": true
},
{
  "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"
        ],
        "credential": {
          "resourceRef": "/credentials/5eda8dd3-9fad-4f73-bb46-fa696b2ca894"
        },
        "credentialType": "X509Certificate"
      }
    ]
  }
}

```

```

    ],
    "certificate":
    "MIICFjCCAYOgAwIBAgIQNHec33eFI59BpfQhRM5E5jAJBgUrDgMCHQUAMBCxFTATBgNVBAMTDDE5MC4yMTguMC40NjAe
    Fw0xMjAlMTAwNzAwMDBaFw0yMDEyMjIwNzAwMDBaMBcxFTATBgNVBAMTDDE5MC4yMTguMC40NjAeCBnzANBGlG9w0BA
    QEFAAOBjQAwgYkCgYEAq1XZZ2AakK1/qpxnh6mZjGrza5KpoilcIkDJNHfD6lbs7t0DrfZa3PPuWkMAaP9bMMBuN9QFeV
    e3jh0mLnpeAAAX49sNyY1cxtVKtBYaDd2fg1vJQMMce0WQvEDj+yCN/NDoHXtJ8Icr1thqmx1HerMHorP/PcA2SJZhWh7
    tzC0CAwEAAANrMGkwHQYDVR0lBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMEMEGALUdaQRBMD+AEMprq6gkkM6zsBHNK13n
    JK+hGTAXMRUwEwYDVQQDEwwxOTAuMjE4LjAuNDACEDR3N93hSOfoQaX0IUTOROYwCQYFKw4DAh0FAAOBggQBW6Nj/tzmBW
    +KzmI2+YWiFex1PEVrM7ue7yVwLne1c+uH+5Eu9y1qg4DcgeIxmMYRk4AMXBqG6BBtTE9sID7seG2c0lyHyn5ZH0SPkPi
    I6cnMuDLCC9YuUFEh7HN+9Vo1BjQJ7cHMrqke0nlpSuPLYSYQYSyPNE+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 virtualServer 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, Common URI 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)                  |
| 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 virtualServer resource.

### 3.1.5.21 Diagnostics

#### 3.1.5.21.1 Diagnostics ConnectivityCheck

This 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         | section 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   |
|--|-----------|---|
| <b>etag</b>                              | Read-Only | See the description in the Common JSON Elements page.   |
| <b>SenderIdAddress</b>                   | Required  | IP Address of the Sender endpoint from which the diagnostics needs to be initiated                |
| <b>ReceiverIpAddress</b>                 | Required  | IP Address of the Receiver endpoint to which the diagnostics needs to be initiated                |
| <b>SenderVirtualNetwork</b>              | Optional  | Virtual Network reference of the Sender endpoint from which the diagnostics needs to be initiated |
| <b>ReceiverVirtualNetwork</b>            | Optional  | Virtual Network reference of the Receiver endpoint to which the diagnostics needs to be initiated |
| <b>SenderLogicalNetwork</b>              | Optional  | Logical Network reference of the Sender endpoint from which the diagnostics needs to be initiated |
| <b>ReceiverLogicalNetwork</b>            | Optional  | Logical Network reference of the Receiver endpoint to which the diagnostics needs to be initiated |
| <b>Protocol</b>                          | Required  | Protocol to be used for diagnostics   |
| <b>IcmpProtocolConfig</b>                | Optional  | ICMP Protocol specific configuration  |
| <b>IcmpProtocolConfig.Length</b>         | Optional  | Length of the ICMP packet   |
| <b>IcmpProtocolConfig.SequenceNumber</b> | Optional  | Sequence Number of the ICMP packet  |
| <b>OperationId</b>                       | Read-Only | Operation ID for this diagnostics operation   |
| <b>ConnectivityCheckResult</b>           | Read-Only | Resource Reference of the result resource   |
| <b>SubmitTime</b>                        | 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, Common URI 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)                    |
| 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

### 3.1.5.21.1.1.3 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

This 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         | section 3.1.5.21.2.1.1 | Retrieves the result of the previously initiated diagnostics operation |
| GET (All)   | section 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   |
|------------------------|-----------|---|
| <b>etag</b>            | Read-Only | See the description in the Common JSON Elements page. |
| <b>SenderIdAddress</b> | Read-     | IP Address of the Sender endpoint from which          |



| Element name                                | Type      | Description   |
|---|-----------|---|
|   | Only      | the diagnostics needs to be initiated   |
| <b>ReceiverIpAddress</b>                    | Read-Only | IP Address of the Receiver endpoint to which the diagnostics needs to be initiated                |
| <b>SenderVirtualNetwork</b>                 | Read-Only | Virtual Network reference of the Sender endpoint from which the diagnostics needs to be initiated |
| <b>ReceiverVirtualNetwork</b>               | Read-Only | Virtual Network reference of the Receiver endpoint to which the diagnostics needs to be initiated |
| <b>SenderLogicalNetwork</b>                 | Read-Only | Logical Network reference of the Sender endpoint from which the diagnostics needs to be initiated |
| <b>ReceiverLogicalNetwork</b>               | Read-Only | Logical Network reference of the Receiver endpoint to which the diagnostics needs to be initiated |
| <b>Protocol</b>                             | Read-Only | Protocol to be used for diagnostics   |
| <b>IcmpProtocolConfig</b>                   | Read-Only | ICMP Protocol specific configuration  |
| <b>IcmpProtocolConfig.Length</b>            | Read-Only | Length of the ICMP packet   |
| <b>IcmpProtocolConfig.SequenceNumber</b>    | Read-Only | Sequence Number of the ICMP packet  |
| <b>OperationId</b>                          | Read-Only | Operation ID for this diagnostics operation   |
| <b>SubmitTime</b>                           | Read-Only | Submit Time of this diagnostics operation   |
| <b>Result</b>                               | Read-Only | Result output of this diagnostics operation   |
| <b>Result.Status</b>                        | Read-Only | Status of the diagnostics operation   |
| <b>Result.RoundTripTimeMSec</b>             | Read-Only | Round trip time in msec   |
| <b>Result.ErrorMessage</b>                  | Read-Only | Error occurred while executing the operation, if any  |
| <b>Result.NodeOutput</b>                    | Read-Only | Diagnostics Trace Output  |
| <b>Result.NodeOutput.NodeType</b>           | Read-Only | Type of the node (sender, receiver, transit)  |
| <b>Result.NodeOutput.NodeSequenceNumber</b> | Read-Only | Sequence number of the node in the data path  |
| <b>Result.NodeOutput.TraceOutput</b>        | 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

This 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         | section 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   |
|--------------------------------|-----------|---|
| <b>etag</b>                    | Read-Only | See the description in the Common JSON Elements page. |
| <b>OperationId</b>             | Read-Only | Operation ID for this diagnostics operation           |
| <b>ConnectivityCheckResult</b> | Read-Only | Resource Reference of the result resource             |
| <b>SubmitTime</b>              | 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, Common URI 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)                    |
| 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

This 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         | section 3.1.5.21.4.1.1.1 | Retrieves the result of the previously initiated diagnostics operation |
| GET (All)   | section 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                       |
|--------------|-------|-----------------------------------|
| <b>etag</b>  | Read- | See the description in the Common |

| Element name  | Type      | Description  |
|---|-----------|--|
|   | Only      | JSON Elements page.  |
| <b>OperationId</b>  | Read-Only | Operation ID for this diagnostics operation  |
| <b>SubmitTime</b>   | Read-Only | Submit Time of this diagnostics operation  |
| <b>Status</b>   | Read-Only | Status of the diagnostics operation  |
| <b>Output</b>   | 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 |
| <b>Output.DataGroups</b>                                  | Read-Only | Result output group  |
| <b>Output.DataGroups.Name</b>                             | Read-Only | Result output group name   |
| <b>Output.DataGroups.Description</b>                      | Read-Only | Result output group description  |
| <b>Output.DataGroups.DataSections</b>                     | Read-Only | Result output section (level 2)  |
| <b>Output.DataGroups.DataSections.Name</b>                | Read-Only | Result output section name   |
| <b>Output.DataGroups.DataSections.Description</b>         | Read-Only | Result output section description  |
| <b>Output.DataGroups.DataSections.DataRetrievalFailed</b> | Read-Only | Flag to indicate if the data section retrieval failed  |
| <b>Output.DataGroups.DataSections.DataUnits</b>           | Read-Only | Result output data unit (level 3)  |
| <b>Output.DataGroups.DataSections.DataUnits.Value</b>     | 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
\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\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\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\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\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

This 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         | section 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  |
|---------------------------------------|-----------|--|
| <b>etag</b>                           | Read-Only | See the description in the Common JSON Elements page, section 2.2.2. |
| <b>resourceRef</b>                    | Read-Only | Must be "/networkControllerState/NetworkControllerState"             |
| <b>resourceId</b>                     | Read-Only | Must be "NetworkControllerState"                                     |
| <b>instanceId</b>                     | Read-Only | See Common JSON Elements section 2.2.2.                              |
| <b>Properties. provisioningState</b>  | Read-Only | See Common JSON Elements section 2.2.2.                              |
| <b>properties. lastQueryTimeStamp</b> | Read-Only | Timestamp of the last query operation in format MMdyyyyHHmssfff      |

### 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

This 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         | section 3.1.5.23.1.1 | Map one instance ID to resource ID |

The following property elements are valid:

| Element name                         | Type      | Description  |
|--------------------------------------|-----------|--|
| <b>resourceRef</b>                   | Read-Only | See the description in section 2.2.2, Common JSON Elements.<br>Must be "/monitoring/NetworkControllerStatistics" |
| <b>instanceId</b>                    | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>Properties. provisioningState</b> | Read-Only |  |
| <b>Properties. healthStatistics</b>  | Read-Only | Array of <b>healthStatisticsItem</b>   |
| <b>Properties. usageStatistics</b>   | Read-Only | Array of <b>usageStatisticsItem</b>  |

### healthStatisticsItem

| Element name                | Type      | Description   |
|-----------------------------|-----------|---|
| <b>resourceType</b>         | Read-Only | Can be "VirtualNetwork", "Gateway" or "LoadBalancerMux"<br>These correspond to the top level resources virtualNetworks, Gateways, LoadBalancerMux |
| <b>totalResourceCount</b>   | Read-Only | Total count of REST resources of the type of resource specified by resourceType   |
| <b>healthyResourceCount</b> | Read-Only | Count of such resources in healthy state  |
| <b>errorResourceCount</b>   | Read-Only | Count of such resources in an error state   |
| <b>warningResourceCount</b> | Read-Only | Count of such resources in an warning state   |
| <b>healthUnknownCount</b>   | Read-Only | Count of such resources for which the health cannot be assessed   |

### usageStatisticsItem

| Element name              | Type      | Description   |
|---------------------------|-----------|---|
| <b>resourceType</b>       | Read-Only | Can be "PublicIPUtilization", "BackendIPUtilization" or "MacPoolUtilization" corresponding to <b>publicIpAddresses</b> resource, IPs in <b>backendAddressPools</b> , <b>macPools</b> resource |
| <b>totalResourceCount</b> | Read-Only | Total count of REST resources of the type of resource specified by <i>resourceType</i>  |
| <b>inUseResourceCount</b> | 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, Common URI 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) |

#### 3.1.5.22.1.1.1 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

This 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         | section 3.1.5.23.1.1 | Map one instance ID to resource ID |
| GET (All)   | section 3.1.5.23.1.2 | List all the mappings              |

The following property elements are valid:

| Element name                        | Type      | Description  |
|-------------------------------------|-----------|--|
| <b>resourceRef</b>                  | Read-Only | See the description in section 2.2.2, Common JSON Elements.<br>Reference relative to internalResourceInstances |
| <b>resourceId</b>                   | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>instanceId</b>                   | Read-Only | See the description in section 2.2.2, Common JSON Elements.  |
| <b>Properties.provisioningState</b> | Read-Only |  |
| <b>Properties.resourceReference</b> | 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, Common URI 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 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, Common URI 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) |

### 3.1.5.23.1.2.1 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": "866a1b81-e241-41bc-a424-aab75fff9ffb",
    "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 <b>iDnsServer</b> resource or update the existing <b>iDnsServer</b> resource. |
| GET         | section 3.1.5.24.1.2 | Get the <b>iDnsServer</b> resource.  |

The following property elements are valid.

| Element name             | Type      | Description  |
|--------------------------|-----------|--|
| <b>Etag</b>              | Read-Only | See the description in section 2.2.2, Common JSON Elements.                                      |
| <b>provisioningState</b> | Read-Only | See the description in section 2.2.2, Common JSON Elements.                                      |
| <b>Connections</b>       | Required  | Indicates a reference to collection of all the connections on the iDNS Server of the deployment. |
| <b>Zone</b>              | Required  | Indicates the DNS zone under which the tenant  |

| Element name | Type | Description   |
|--------------|------|---|
|              |      | 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, Common URI 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) |

### 3.1.5.24.1.2.1 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   |
|--------------------------|-----------|---|
| <b>etag</b>              | Read-Only | See the description in the Common JSON Elements page. |
| <b>provisioningState</b> | Read-Only | See the description in the Common JSON Elements page. |
| <b>QosSettings</b>       | Optional  | See table below                                       |

#### QosSettings

| Element name                     | Type | Description  |
|----------------------------------|------|--|
| <b>reservationMode</b>           |      | Specifies whether outboundReservedValue is applied as the absolute bandwidth (Mbps) or as a weighted value. Allowed values are "absolute" or "weight". |
| <b>enableSoftwareRevervation</b> |      | True to enable software qos reservation  |
| <b>enableHardwareLimits</b>      |      | Offloads Tx and Rx cap to hardware   |
| <b>enableHardwareREservation</b> |      | Offloads bandwidth reservation to hardware   |
| <b>linkSpeedPercentage</b>       |      | The percentage of the link speed to be used for calculating reservable bandwidth   |
| <b>defaultReservation</b>        |      | 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.

### 3.1.6 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.

```
{
  "resourceId": "f54fe160-9c16-49a6-b002-1e92396aaa54",
  "properties": {
    "aclRules": [
      {
        "resourceId": "e4dc9ca4-d5b0-459c-a3e2-9212ba1db7ac",
        "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-8c8e281d3037",
        "properties": {
          "protocol": "All",
          "sourcePortRange": "0-65535",
          "destinationPortRange": "0-65535",
          "action": "Allow",
          "sourceAddressPrefix": "13.168.101.0/24",
          "destinationAddressPrefix": "*",
          "priority": "200",
          "type": "Inbound",
          "logging": "Enabled"
        }
      }
    ],
    "ipConfigurations": [],
    "subnets": [],
  }
}
```

### 4.2 macPools usage

The admin creates a **macPools** resource on the Network Controller.

```
PUT ~/networking/v1/macPools/macPool1
{
  "resourceId": "macPool1",
  "instanceId": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "tags": { "key": "value" },
  "resourceMetadata": {
    {
      ...
    },
  },
  "properties": {
    "startMacAddress": "AA-BB-CC-DD-EE-FF",
  }
}
```

```
"endMacAddress": "UU-VV-WW-XX-YY-ZZ"  
}
```

## **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": {

```

```

        "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"
]
},
"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"
        },
        "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"
]
}
}

```

#### 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"
]
}
```

## 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: In Windows implementations, the server does not paginate, and "nextLink" is always set to "".

## 8 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

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 or functionality.
- The removal of a document from the documentation set.

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 **Editorial** means that the formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the technical content of the document is identical to the last released version.

Major and minor changes can be described further using the following change types:

- New content added.
- Content updated.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.
- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated**.

Some important terms used in the change type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

The changes made to this document are listed in the following table. For more information, please contact dochelp@microsoft.com.

| Section   | Tracking number (if applicable) and description   | Major change (Y or N) | Change type   |
|---|---|-----------------------|---|
| <a href="#">1.3.3.1 Concurrent operations on the same resource</a> <a href="#">3.1.5.11 networkInterfaces</a> | <del>72982 : Defined SDNAPI service.</del> Added 2 new rows to the property elements table. | <del>N</del> Y        | <del>Content update.</del> New protocol syntax added. |
| <a href="#">6.11.1 PUT schema</a>   | <a href="#">Added 2 new property elements.</a>  | Y                     | <a href="#">New protocol syntax added.</a>            |
| <a href="#">6.11.2 GET schema</a>   | <a href="#">Added 2 new property elements.</a>  | Y                     | <a href="#">New protocol syntax added.</a>            |
| <a href="#">6.11.3 GET ALL schema</a>   | <a href="#">Added 2 new property elements.</a>  | Y                     | <a href="#">New protocol syntax added.</a>            |

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