[MS-DOCO-Diff]:

Windows Protocols Documentation Roadmap

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Revision Summary

Date	Revision History	Revision Class	Comments
12/16/2011	1.0	New	Released new document.
3/30/2012	2.0	Major	Updated and revised the technical content.
7/12/2012	3.0	Major	Updated and revised the technical content.
10/25/2012	4.0	Major	Updated and revised the technical content.
1/31/2013	4.1	Minor	Clarified the meaning of the technical content.
8/8/2013	5.0	Major	Updated and revised the technical content.
11/14/2013	6.0	Major	Updated and revised the technical content.
2/13/2014	7.0	Major	Updated and revised the technical content.
5/15/2014	8.0	Major	Updated and revised the technical content.
6/30/2015	9.0	Major	Significantly changed the technical content.
10/16/2015	9.1	Minor	Clarified the meaning of the technical content.
7/14/2016	10.0	Major	Significantly changed the technical content.
9/26/2016	11.0	Major	Significantly changed the technical content.
3/16/2017	12.0	Major	Significantly changed the technical content.
6/1/2017	13.0	Major	Significantly changed the technical content.
12/15/2017	14.0	Major	Significantly changed the technical content.
11/5/2018	15.0	Major	Significantly changed the technical content.
11/10/2020	16.0	Major	Significantly changed the technical content.

Table of Contents

1 Introduction

This document describes the Windows protocols documentation set and provides a roadmap for navigating it. This document set includes detailed technical specifications for Windows protocols and extensions to industry-standard or other published protocols. These protocols and extensions provide a wide variety of services to Windows Workgroup networks.

The Windows protocols documentation set also includes companion overview and reference documents that supplement the technical specifications with conceptual background, descriptions of inter-protocol relationships, and technical reference information, such as common data types and error codes.

A cross-reference of the entire Windows protocols documentation set is provided in section 4.

1.1 (Updated Section) Glossary

This document uses the following terms:

Active Directory: The Windows implementation of a general-purpose directory service, which uses LDAP as its primary access protocol. Active Directory stores information about a variety of objects in the network such as user accounts, computer accounts, groups, and all related credential information used by Kerberos [MS-KILE]. Active Directory is either deployed as Active Directory Domain Services (AD DS) or Active Directory Lightweight Directory Services (AD LDS), which are both described in [MS-ADOD]: Active Directory Protocols Overview.

Active Directory Federation Services (AD FS): A Microsoft implementation of a federation services provider, which provides a security token service (STS) that can issue security tokens to a caller using various protocols such as WS-Trust, WS-Federation, and Security Assertion Markup Language (SAML) version 2.0.

Active Directory Lightweight Directory Services (AD LDS): A directory service (DS) implemented by a domain controller (DC). AD LDS is a deployment of Active Directory [MS-ADTS]. The most significant difference between AD LDS and Active Directory Domain Services (AD DS) is that AD LDS does not host domain naming contexts (domain NCs). A server can host multiple AD LDS DCs. Each DC is an independent AD LDS instance, with its own independent state. AD LDS can be run as an operating system DS or as a directory service provided by a standalone application (Active Directory Application Mode (ADAM)).

American National Standards Institute (ANSI) character set: A character set defined by a code page approved by the American National Standards Institute (ANSI). The term "ANSI" as used to signify Windows code pages is a historical reference and a misnomer that persists in the Windows community. The source of this misnomer stems from the fact that the Windows code page 1252 was originally based on an ANSI draft, which became International Organization for Standardization (ISO) Standard 8859-1 [ISO/IEC-8859-1]. In Windows, the ANSI character set can be any of the following code pages: 1252, 1250, 1251, 1253, 1254, 1255, 1256, 1257, 1258, 874, 932, 936, 949, or 950. For example, "ANSI application" is usually a reference to a non-Unicode or code-page-based application. Therefore, "ANSI character set" is often misused to refer to one of the character sets defined by a Windows code page that can be used as an active system code page; for example, character sets defined by code page 1252 or character sets defined by code page 950. Windows is now based on Unicode, so the use of ANSI character sets is strongly discouraged unless they are used to interoperate with legacy applications or legacy data.

Augmented Backus-Naur Form (ABNF): A modified version of Backus-Naur Form (BNF), commonly used by Internet specifications. ABNF notation balances compactness and simplicity with reasonable representational power. ABNF differs from standard BNF in its definitions and uses of naming rules, repetition, alternatives, order-independence, and value ranges. For more information, see [RFC5234].

authentication: The ability of one entity to determine the identity of another entity.

authorization: The secure computation of roles and accesses granted to an identity.

certificate: A certificate is a collection of attributes and extensions that can be stored persistently. The set of attributes in a certificate can vary depending on the intended usage of the certificate. A certificate securely binds a public key to the entity that holds the corresponding private key. A certificate is commonly used for authentication and secure exchange of information on open networks, such as the Internet, extranets, and intranets. Certificates are digitally signed by the issuing certification authority (CA) and can be issued for a user, a computer, or a service. The most widely accepted format for certificates is defined by the ITU-T X.509 version 3 international standards. For more information about attributes and extensions, see [RFC3280] and [X509] sections 7 and 8.

certificate services: The Microsoft implementation of a certification authority (CA) that is part of the server operating system. Certificate services include tools to manage issued certificates, publish CA certificates and CRLs, configure CAs, import and export certificates and keys, and recover archived private keys.

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

code page: An ordered set of characters of a specific script in which a numerical index (code-point value) is associated with each character. Code pages are a means of providing support for character sets and keyboard layouts used in different countries. Devices such as the display and keyboard can be configured to use a specific code page and to switch from one code page (such as the United States) to another (such as Portugal) at the user's request.

Common Information Model (CIM): The Distributed Management Task Force (DMTF) model that describes how to represent real-world computer and network objects. CIM uses an object-oriented paradigm, where managed objects are modeled using the concepts of classes and instances. See [DMTF-DSP0004].

conceptual schema definition language (CSDL): A language that is based on XML and that can be used to define conceptual models that are based on the Entity Data Model (EDM).

directory service (DS): A service that stores and organizes information about a computer network's users and network shares, and that allows network administrators to manage users' access to the shares. See also Active Directory.

Distributed Component Object Model (DCOM): The Microsoft Component Object Model (COM) specification that defines how components communicate over networks, as specified in [MS-DCOM].

domain: A set of users and computers sharing a common namespace and management infrastructure. At least one computer member of the set must act as a domain controller (DC) and host a member list that identifies all members of the domain, as well as optionally hosting the Active Directory service. The domain controller provides authentication of members, creating a unit of trust for its members. Each domain has an identifier that is shared among its members. For more information, see [MS-AUTHSOD] section 1.1.1.5 and [MS-ADTS].

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

~~**File Replication Service (FRS)**: One of the services offered by a domain controller (DC), which is advertised through the Domain Controller Location protocol. The service being offered to clients is a replicated data storage volume that is associated with the default naming context (NC). The~~

running or paused state of the FRS on a DC is available through protocols documented in [MS-ADTS] section 6.3.

global catalog (GC): A unified partial view of multiple naming contexts (NCs) in a distributed partitioned directory. The Active Directory directory service GC is implemented by GC servers. The definition of global catalog is specified in [MS-ADTS] section 3.1.1.1.8.

Group Policy: A mechanism that allows the implementer to specify managed configurations for users and computers in an Active Directory service environment.

Group Policy server: A server holding a database of Group Policy Objects (GPOs) that can be retrieved by other machines. The Group Policy server must be a domain controller (DC).

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.

interface: A specification in a Component Object Model (COM) server that describes how to access the methods of a class. For more information, see [MS-DCOM].

Interface Definition Language (IDL): The International Standards Organization (ISO) standard language for specifying the interface for remote procedure calls. For more information, see [C706] section 4.

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 [RFC7159]. The JSON format is based on the structure of ECMAScript (Jscript, JavaScript) objects.

Kerberos: An authentication system that enables two parties to exchange private information across an otherwise open network by assigning a unique key (called a ticket) to each user that logs on to the network and then embedding these tickets into messages sent by the users. For more information, see [MS-KILE].

Lightweight Directory Access Protocol (LDAP): The primary access protocol for Active Directory. Lightweight Directory Access Protocol (LDAP) is an industry-standard protocol, established by the Internet Engineering Task Force (IETF), which allows users to query and update information in a directory service (DS), as described in [MS-ADTS]. The Lightweight Directory Access Protocol can be either version 2 [RFC1777] or version 3 [RFC3377].

Microsoft Interface Definition Language (MIDL): The Microsoft implementation and extension of the OSF-DCE Interface Definition Language (IDL). MIDL can also mean the Interface Definition Language (IDL) compiler provided by Microsoft. For more information, see [MS-RPCE].

namespace: An abstract container that provides context for the items (names, technical terms, or words) that it holds and allows disambiguation of items that have the same name (residing in different namespaces).

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. A protocol family including name resolution, datagram, and connection services. For more information, see [RFC1001] and [RFC1002].

Network Access Protection (NAP): A feature of an operating system that provides a platform for system health-validated access to private networks. NAP provides a way of detecting the health state of a network client that is attempting to connect to or communicate on a network, and limiting the access of the network client until the health policy requirements have been met. NAP is implemented through quarantines and health checks, as specified in [TNC-IF-TNCCSPBSoH].

Office Open XML (OOXML): A family of XML schemas, specified in [ECMA-376], that is used for office productivity applications.

~~**Plugfest**: A recurring event for ISVs to help developers create interoperability solutions by using Windows protocols and protocol extensions.~~

~~**registry**: A local system-defined database in which applications and system components store and retrieve configuration data. It is a hierarchical data store with lightly typed elements that are logically stored in tree format. Applications use the registry API to retrieve, modify, or delete registry data. The data stored in the registry varies according to the version of the operating system.~~

remote procedure call (RPC): A communication protocol used primarily between client and server. The term has three definitions that are often used interchangeably: a runtime environment providing for communication facilities between computers (the RPC runtime); a set of request-and-response message exchanges between computers (the RPC exchange); and the single message from an RPC exchange (the RPC message). For more information, see [C706].

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.

schema: The set of attributes and object classes that govern the creation and update of objects.

security identifier (SID): An identifier for security principals that is used to identify an account or a group. Conceptually, the SID is composed of an account authority portion (typically a domain) and a smaller integer representing an identity relative to the account authority, termed the relative identifier (RID). The SID format is specified in [MS-DTYP] section 2.4.2; a string representation of SIDs is specified in [MS-DTYP] section 2.4.2 and [MS-AZOD] section 1.1.1.2.

SOAP: A lightweight protocol for exchanging structured information in a decentralized, distributed environment. SOAP uses XML technologies to define an extensible messaging framework, which provides a message construct that can be exchanged over a variety of underlying protocols. The framework has been designed to be independent of any particular programming model and other implementation-specific semantics. SOAP 1.2 supersedes SOAP 1.1. See [SOAP1.2-1/2003].

~~**Stock Keeping Unit (SKU)**: A unique code that refers to a particular manufactured object or source of revenue. A SKU can refer to a retail product (software in a box that is sold through a channel), a subscription program (such as MSDN), or an online service (such as MSN).~~

Technical Account Manager (TAM): Technical Account Managers help Microsoft customers create and maintain efficient and stable business systems. TAMs partner with customers to help design customized services for hosted Microsoft environments, facilitate support services and resources, and provide technical information to IT staff.

technical area: A broad categorization of the interoperability technologies that are addressed by the documents of the Windows protocols documentation set (see section 2.0).

technology collection: A technology overview and the technical specifications it references (see section 1.3.2).

terminal server: A computer on which terminal services is running.

terminal services (TS): A service on a server computer that allows delivery of applications, or the desktop itself, to various computing devices. When a user runs an application on a terminal server, the application execution takes place on the server computer and only keyboard, mouse, and display information is transmitted over the network. Each user sees only his or her individual session, which is managed transparently by the server operating system and is independent of any other client session.

transaction: In OleTx, an atomic transaction.

Unicode: A character encoding standard developed by the Unicode Consortium that represents almost all of the written languages of the world. The Unicode standard [UNICODE5.0.0/2007] provides three forms (UTF-8, UTF-16, and UTF-32) and seven schemes (UTF-8, UTF-16, UTF-16 BE, UTF-16 LE, UTF-32, UTF-32 LE, and UTF-32 BE).

Unicode string: A Unicode 8-bit string is an ordered sequence of 8-bit units, a Unicode 16-bit string is an ordered sequence of 16-bit code units, and a Unicode 32-bit string is an ordered sequence of 32-bit code units. In some cases, it could be acceptable not to terminate with a terminating null character. Unless otherwise specified, all Unicode strings follow the UTF-16LE encoding scheme with no Byte Order Mark (BOM).

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].

UTF-16: A standard for encoding Unicode characters, defined in the Unicode standard, in which the most commonly used characters are defined as double-byte characters. Unless specified otherwise, this term refers to the UTF-16 encoding form specified in [UNICODE5.0.0/2007] section 3.9.

Web Services Description Language (WSDL): An XML format for describing network services as a set of endpoints that operate on messages that contain either document-oriented or procedure-oriented information. The operations and messages are described abstractly and are bound to a concrete network protocol and message format in order to define an endpoint. Related concrete endpoints are combined into abstract endpoints, which describe a network service. WSDL is extensible, which allows the description of endpoints and their messages regardless of the message formats or network protocols that are used.

~~**Windows Event**: A technology and associated API that is typically used for troubleshooting application and driver software on a computer. An event contains an identifier and associated data. Events are published by an event provider to an event channel for consumption, and the identifiers are unique to the event provider. For more information, see [MSDN-WINEV].~~

Windows registry: The Windows implementation of the registry.

WSDL message: An abstract, typed definition of the data that is communicated during a WSDL operation [WSDL]. Also, an element that describes the data being exchanged between web service providers and clients.

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

XML schema definition (XSD): The World Wide Web Consortium (W3C) standard language that is used in defining XML schemas. Schemas are useful for enforcing structure and constraining the types of data that can be used validly within other XML documents. XML schema definition refers to the fully specified and currently recommended standard for use in authoring XML schemas.

XSL Transformation (XSLT): A declarative, XML-based language that is used to present or transform XML data. It is designed for use as part of the Extensible Stylesheet Language (XSL).

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 (Updated Section) 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.

[C706] The Open Group, "DCE 1.1: Remote Procedure Call", C706, August 1997, https://~~www2~~publications.opengroup.org~~/ogsys/catalog~~/c706

Note Registration is required to download the document.

[ECMA-404] Ecma International, "The JSON Data Interchange Format", Standard ECMA-404 1st Edition / October 2013, http://www.ecma-international.org/publications/files/ECMA-ST-ARCH/ECMA-404%201st%20edition%20October%202013.pdf

[JSON-Schema] Internet Engineering Task Force (IETF), "JSON Schema and Hyper-Schema", ~~January 2013,~~ http://json-schema.org/

[MC-CSDL] Microsoft Corporation, "Conceptual Schema Definition File Format".

[MIDLINF] Microsoft Corporation, "MIDL Language Reference", ~~http://msdn~~https://docs.microsoft.com/en-us/~~library/aa367088.aspx~~windows/desktop/Midl/midl-language-reference

[MS-ADA1] Microsoft Corporation, "Active Directory Schema Attributes A-L".

[MS-ADA2] Microsoft Corporation, "Active Directory Schema Attributes M".

[MS-ADA3] Microsoft Corporation, "Active Directory Schema Attributes N-Z".

[MS-ADLS] Microsoft Corporation, "Active Directory Lightweight Directory Services Schema".

[MS-ADSC] Microsoft Corporation, "Active Directory Schema Classes".

~~[MSFT-InteroperLabs] Microsoft Corporation, "Interoperability Test Labs", https://msdn.microsoft.com/en-us/openspecifications/dn750986~~

~~[MSFT-Plugfest] Microsoft Corporation, "Plugfests and Events", https://msdn.microsoft.com/en-us/openspecifications/dn750988~~

[RFC3986] Berners-Lee, T., Fielding, R., and Masinter, L., "Uniform Resource Identifier (URI): Generic Syntax", STD 66, RFC 3986, January 2005, http://www.rfc-editor.org/rfc/rfc3986.txt

[RFC5234] Crocker, D., Ed., and Overell, P., "Augmented BNF for Syntax Specifications: ABNF", STD 68, RFC 5234, January 2008, http://www.rfc-editor.org/rfc/rfc5234.txt

[RFC7230] Fielding, R., and Reschke, J., Eds., "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", RFC 7230, June 2014, http://www.rfc-editor.org/rfc/rfc7230.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

[RFC7232] Fielding, R., and Reschke, J., Eds., "Hypertext Transfer Protocol -- HTTP/1.1: Conditional Requests", RFC7232, June 2014, http://www.rfc-editor.org/rfc/rfc7232.txt

[RFC7233] Fielding, R., Lafon, Y., Reschke, J., Eds., "Hypertext Transfer Protocol -- HTTP/1.1: Range Requests", RFC7233, June 2014, http://www.rfc-editor.org/rfc/rfc7233.txt

[RFC7234] Fielding, R., Nottingham, M., Reschke, J., Eds., "Hypertext Transfer Protocol -- HTTP/1.1: Caching", RFC7234, June 2014, http://www.rfc-editor.org/rfc/rfc7234.txt

[RFC7235] Fielding, R., and Reschke, J., Eds., "Hypertext Transfer Protocol -- HTTP/1.1: Authentication", RFC 7235, June 2014, http://www.rfc-editor.org/rfc/rfc7235.txt

[RFC7236] J. Reschke, "Initial Hypertext Transfer Protocol (HTTP) Authentication Scheme Registrations", RFC7236, June 2014, http://www.rfc-editor.org/rfc/rfc7236.txt

[SOAP1.1] Box, D., Ehnebuske, D., Kakivaya, G., et al., "Simple Object Access Protocol (SOAP) 1.1", W3C Note, May 2000, http://www.w3.org/TR/2000/NOTE-SOAP-20000508/

[SOAP1.2/1] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 1: Messaging Framework", W3C Recommendation, June 2003, http://www.w3.org/TR/2003/REC-soap12-part1-20030624

[SOAP1.2/2] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 2: Adjuncts", W3C Recommendation, June 2003, http://www.w3.org/TR/2003/REC-soap12-part2-20030624

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[XML10] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Third Edition)", February 2004, http://www.w3.org/TR/2004/REC-xml-20040204/

[XMLINFOSET] Cowan, J., and Tobin, R., Eds., "XML Information Set (Second Edition)", W3C Recommendation, February 2004, http://www.w3.org/TR/2004/REC-xml-infoset-20040204/

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, http://www.w3.org/TR/2009/REC-xml-names-20091208/

[XMLSCHEMA1/2] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/2004/REC-xmlschema-1-20041028/

[XMLSCHEMA2/2] Biron, P., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/

1.3 (Updated Section) Overview

The purpose of the Windows Protocols Documentation Roadmap is to provide a useful starting point for obtaining the information needed to create interoperable protocol software. By traversing the links in this document, the reader can navigate the entire Windows protocols documentation set and discover additional helpful technical information that complements the documentation set.

The information in the Windows Protocols Documentation Roadmap is grouped into the following sections.

- Introduction (section 1): General information about using the documentation set, including licensing and support.
- Documentation Contents (section 2): A description of the different types of documents, including technical areas.
- Navigating the Documentation Set (section 3): Where to find the various components of documentation set ~~in the MSDN Library~~.
- Appendix A: Cross-Reference Matrices (section 4): Links to all documents in the documentation set, cross-referenced by technical area and technology collection.
- Appendix B: Open Specification Site Map (section 5): A diagram showing the entire node structure of the documentation set ~~in the MSDN Library~~.

It is suggested that the reader become familiar with the classification of the documents and their contents before proceeding to the navigation section, because that knowledge will help clarify the document relationships.

This section provides the following information:

- Windows product versions that apply to the documentation set.
- The relationship of documents to each other in the documentation set.
- Naming conventions used for the documents.
- The system for identifying versions of the documents.

1.3.1 Product Applicability

The Windows protocols documentation set supports interoperability with technologies used by various versions of Windows Client operating system and applicable Windows Server releases.

The versions of Windows Client covered in the documentation set include:

- Windows NT 3.1 operating system
- Windows NT 3.5 operating system
- Windows NT 3.51 operating system
- Windows 95 operating system
- Windows NT Workstation 4.0 operating system
- Windows 98 operating system
- Windows 2000 Professional operating system
- Windows Millennium Edition operating system
- Windows XP operating system
- Windows Vista operating system
- Windows 7 operating system
- Windows 8 operating system
- Windows 8.1 operating system
- Windows 10 operating system

The versions of applicable Windows Server releases covered in the documentation set include:

- Windows NT Server 3.1 operating system
- Windows NT Server 3.5 operating system
- Windows NT Server 3.51 operating system
- Windows NT Server 4.0 operating system
- Windows 2000 Server operating system
- Windows Server 2003 operating system

- Windows Server 2003 R2 operating system
- Windows Server 2008 operating system
- Windows Server 2008 R2 operating system
- Windows Server 2012 operating system
- Windows Server 2012 R2 operating system
- Windows Server 2016 operating system
- Windows Server operating system
- Windows Server 2019 operating system

1.3.2 Relationships Among Documents

The Windows protocols documentation set consists of the following types of documents:

- High-level overviews that contain information about the organization and content of the entire documentation set.
- Technology overviews that provide information about groups of related technical specifications.
- Technical specifications that specify the details of specific protocols, structures, algorithms, and so on.

The relationships among these types of documents are shown in the following diagram.

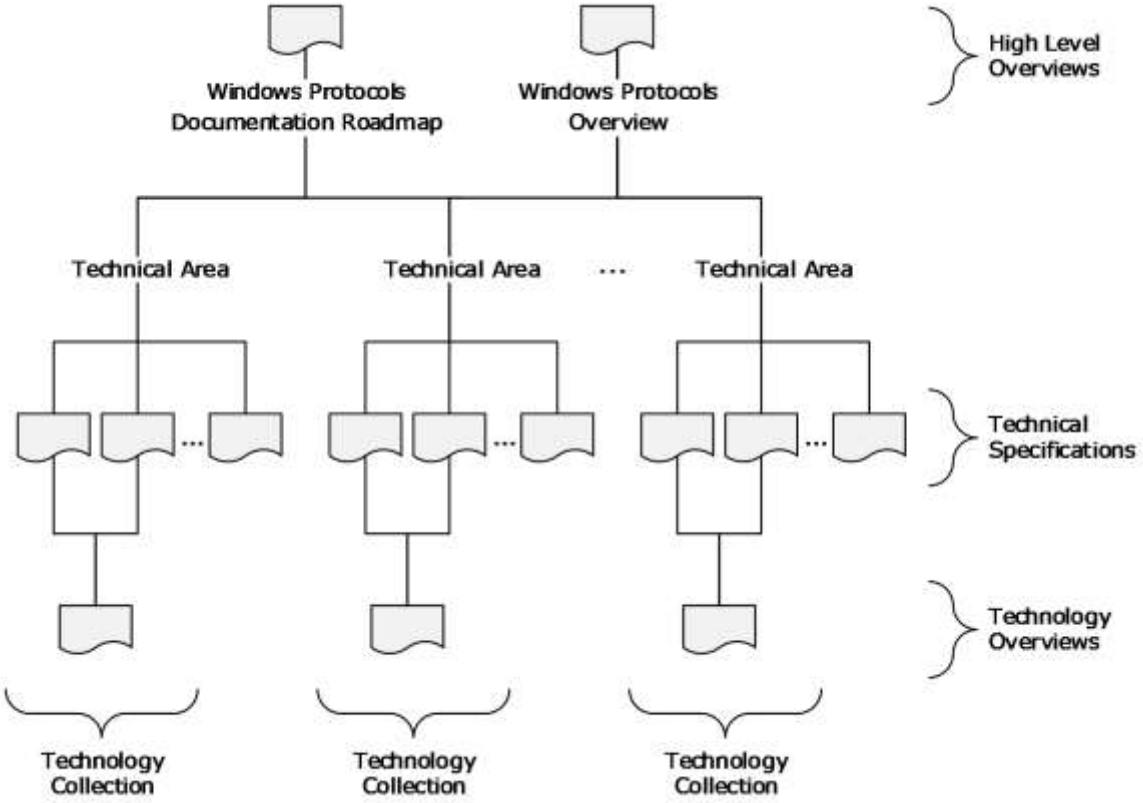


Figure 1: Relationships among documents

As shown in the diagram, the technical specifications of the Windows protocols documentation set are categorized according to technical area. Within a technical area, a technology overview and related technical specifications make up a technology collection. More than one technology collection can be defined in a technical area. The technical areas and different document types are described in Documentation Contents (section 2). The technical specifications are listed in the Technical Specification Cross-Reference Matrix (section 4.1); the technical areas are listed in the Technical Area Cross-Reference Matrix (section 4.2); and the technology collections are listed in the Technology Collection Cross-Reference Matrix (section 4.3).

1.3.3 (Updated Section) Naming Conventions

The Windows protocols documentation set uses the following naming conventions for all overview documents, technical specifications, and reference documents.

- All documents are assigned a short name enclosed in square brackets. The short name is used when citing the document or reference. Examples of short names are "[MS-DOCO]", "[~~MSDN-WSPP~~MSFT-WSTS]", and "[RFC2119]".
- All short names for documents in the documentation set have one of the following forms:
  - [MC-XXX] was originally used for documents that specify technology that has never shipped with Windows. However, that restriction has been removed, and there is now no

distinction between documents with short names prefaced with "MC" and those with short names prefaced with "MS". An example of this type of short name is "[MC-BUP]", where the suffix "BUP" is an abbreviation for "Background Intelligent Transfer Service (BITS) Upload Protocol".

- [MS-XXXOD] is used for technology overviews (section 2.1.3). An example of this type of short name is "[MS-AUTHSOD]", where the suffix "AUTHS" is an abbreviation for "Authentication Services Protocols".
- [MS-XXX] is used for all other overview, technical, and reference documents with short names that do not follow one of the preceding conventions. The suffix "XXX" is an abbreviation that refers to the subject covered by the document. An example of this type of short name is "[MS-WPO]", where "WPO" is an abbreviation for "Windows Protocols Overview". The short name of the current document, "[MS-DOCO]", also falls into this category.

- Short names for reference documents that describe Microsoft technology conform to the following naming conventions:
  - ~~[MSDN-XXX] is used for information on the Microsoft Developer Network (MSDN).~~
  - [MSFT-XXX] is used for information in Microsoft TechNet articles.
  - [KBNNNNN] and [~~MSKB-NNNNN~~MSFT-KBNNNNN] are used for ~~MSDN~~ Knowledge Base articles, where NNNNN is the article number.
  - [PRA-XXX] is used for downloadable ~~MSDN~~ informative technical documents in PDF format.
- Short names for RFC documents are in the form [~~RFCNNNNN~~RFCNNNN], where ~~NNNNN~~NNNN is the RFC number.
- Each document has a title that conforms to the following conventions:
  - The titles of technology overviews end with the word "Overview".
  - The titles of technical specifications that specify Microsoft extensions to non-Microsoft protocols and structures end with either the word "Extension" or "Extensions".
  - The titles of technical specifications that specify algorithms, protocols, and structures end with the word "Specification".

  Note The titles of [MS-DOCO] and [MS-WPO] are exceptions to these document title conventions.
- Each document has a long name, which is composed of its short name, a colon, and its title. Examples of long names are "[MS-DOCO]: Windows Protocols Documentation Roadmap" and "[MS-RPRN]: Print System Remote Protocol Specification".

1.3.4 Document Versions

Documents in the Windows protocols documentation set are assigned a version number that changes each time the document is updated. The title page of each document contains a revision summary table that shows the top-level history of changes to the document. This revision summary table contains the date of each release and the corresponding version number, revision class, and comment that describes the change.

The version number and revision class are correlated as shown in the following table:

Version number	Revision class	Version number change	Description
1.0	New	Not applicable	First release of the document.
2.0	Major	Number to the left of the first decimal point	Significantly changed the technical content.
2.1	Minor	Number to the right of the first decimal point	Clarified the meaning of the technical content.
2.1.1	Editorial	Number to the right of the second decimal point	Changed language and/or formatting of the technical content.
2.1.1	None	No change	No change to the meaning, language or formatting of the technical content.

Note Starting with Windows 8, the initial release version number was standardized at 1.0. Documents created prior to Windows 8 can have a different initial release version number, such as 0.1 or 0.01.

Each overview document and technical specification also contains its own more detailed Change Tracking Appendix, which lists the changes made to each section in the latest release.

1.4 Audience

The Windows documentation set is intended for use in conjunction with publicly available and standards-based specifications, network programming background material, and Windows distributed systems concepts. It assumes that the reader either is familiar with this material or has immediate access to it.

The documentation set provides the following levels of audience support:

- For implementers: Conceptual and reference information for an implementation of one or more protocol specifications for a given task or scenario.
- For architects: Structural and interoperability information for an implementation of a technology consisting of a group of related protocols.

1.5 Localization

The Windows documentation set is not localized, but individual documents can contain locale-specific information.

1.6 (Updated Section) Licensing

The Windows protocols documentation set is available to view and download from the ~~MSDN Library~~Microsoft Developer web site at no charge. Some specifications include patented inventions, and others do not. Implementers can benefit from a patent license if using any of the technical specifications covered by Microsoft patents. In addition, patent licensees can receive additional benefits such as:

- Optional Technical Account Manager (TAM) to help resolve documentation questions
- Optional viewing rights to Windows source code to assist with implementing the protocols
- ~~Access to Plugfests [MSFT-Plugfest] and Interoperability Labs [MSFT-InteroperLabs]~~

~~The following Document Programs are available. They vary principally with respect to the scope of the protocols and technical specifications that are covered:~~

Microsoft makes technical documents available through the following two document programs.

- Microsoft Interoperability Program (MIP): This program ~~includes~~ facilitates the use and implementation of technical specifications for ~~communications protocols in specific versions of Windows Client, applicable Windows Server releases, Microsoft PC productivity applications, Microsoft Exchange Server, and Windows SharePoint Services and technologies that are used by~~ certain ~~Microsoft client and server products, as well as certain standards, languages, and~~protocols, file formats ~~supported by such~~, standards support, and languages that are used or implemented in certain Microsoft products.
- Workgroup Server Protocol Program (WSPP): This program includes technical specifications for communications protocols between Windows Client and applicable Windows Server releases, as well as between applicable Windows Server releases systems, to provide file, print and user and group administration services in a Windows Client network.

Note Microsoft is no longer updating this content regularly. Check the Microsoft Lifecycle Policy for information about how these document programs are supported.

For more information about patent license and patent covenant agreements available for Windows, visit Patent Promises and Patents.

1.7 (Updated Section) Support

Many types of support are available for the protocol implementer. Information on the following resources can be found on the Open Specifications Developer Center:

- ~~Plugfests and~~Interop Dev Events, providing software developers with an in-person opportunity to learn more about Windows protocols and to test their implementations.
- Interoperability Test Tools, including a tool to view and monitor, in real time, specific protocol communications between two products.
- Development Support, including forums, blogs, and Microsoft Knowledge Base.

Additional information concerning support is available on the following websites:

- Microsoft ~~Developers Network (MSDN),~~Developer, providing informative content and resources for Microsoft products and technologies.
- ~~MSDN~~Open Specification Developer ~~Community~~Forums, providing a selection of forums across various product protocols.
- TechNet Wiki, providing community-generated content about Microsoft technologies.

2 Documentation Contents

This section describes the documents that are part of the Windows protocols documentation set and the information they contain. The following types of documents are defined:

- Overview documents
- Technical specifications
- Reference documents

The sections that follow contain details of each document type.

As described in Relationships Among Documents (section 1.3.2), the overview documents and technical specifications are associated with various technical areas according to technology. Those relationships are listed in the following sections:

- Technical Specification Cross-Reference Matrix (section 4.1)
- Technical Area Cross-Reference Matrix (section 4.2)
- Technology Collection Cross-Reference Matrix (section 4.3)

The following technical areas are covered by the documentation set:

Application services: Application services enable the components of an application to interoperate with components of other applications. These components can involve processes that are running on one or more computers or different operating systems.

Collaboration and communications: Collaboration and communications refers to services that facilitate interaction among people and enables client applications to locate each other on a network. The software used for collaboration includes application sharing, email, whiteboarding, sharing a calendar, instant messaging, and text chat. This technical area also includes protocols that enable content to be streamed over the Internet or an intranet and the creation, distribution, and playback of audio and video content.

Directory services: Directory services provide functionality for the centralized storage of identity and account information, as well as other forms of data such as group policies and printer location information. The protocols in this technical area make up the client and server behavior of Active Directory, which provides a foundation for authentication services in a domain environment, domain services, and directory replication services in Windows.

File, fax, and printing services: File, fax, and printing services refer to services for applications to access, share, manage and replicate files, and for managing and accessing fax and print systems in a distributed environment. This technical area also includes Windows SharePoint Services (WSS), which provide features and technologies that allow users to create, manage, and build their own collaborative websites.

Home server: Home server refers to services that enable two or more computers to connect directly to each other in order to communicate and to organize, share, and back up documents over a Home Server network. Home Server is a platform for private residences and small businesses that supports the management of devices within the household or on the Internet.

Multiplayer games: Multiplayer games refers to services that provide DirectPlay functionality for playing games over the Internet, including game configuration and connection, game state and event handling, communication between players, and remote configuration.

Networking: Networking refers to services that enable the communication of computers with each other over networks including wireless devices and links, IP transports, and client/server transports such as remote procedure call (RPC) and DCOM. This technical area includes protocols

that support dynamic configuration of IP addresses, the enforcement of computer health policies, the management of Web services, and wireless service discovery.

Remote connectivity: Remote connectivity refers to services that allow users to access applications and data on a remote computer over a network. Remote connectivity includes remote desktop services protocols, which provide secure connections and communication between remote clients and servers and allow clients to use server applications and resources.

Security and identity management: Security and identity management refers to services for authentication and authorization, certificate management, rights management, and interoperability over the web. This technical area includes protocols that support identity verification, credential validation, and the process of granting a person, computer process, or device access to certain information, services or functionality, the protection and security of digital information, and Web services based on XML, SOAP and WSDL.

Systems management: Systems management refers to services that support clustering, configuration and administration of client and server computers, content indexing queries, remote device management, Group Policy enforcement, remote management of computer and network resources, performance monitoring and event logging, deployment and management of storage technologies, system infrastructure functionality, management of Common Information Model (CIM) objects, deployment of Microsoft product updates, and Windows name resolution for network basic input/output system (NetBIOS) names.

Terminal services: Terminal services provide functionality for communicating remote graphical desktop interaction and display data packets, and sound, file redirection, and print redirection data packets from client applications to a Windows server configured as a terminal server.

2.1 Overview Documents

This section describes the overview documents in the Windows protocols documentation set. In general, overview documents provide information that pertains to groups of documents in the documentation set and about how protocols for specific technologies are related and used together. The following types of overview documents are defined:

- Windows Protocols Documentation Roadmap (section 2.1.1)
- Windows Protocols Overview (section 2.1.2)
- Technology Overviews (section 2.1.3)

2.1.1 Windows Protocols Documentation Roadmap

[MS-DOCO]: Windows Protocols Documentation Roadmap is the starting point for navigating within and understanding all the other documents in the Windows protocols documentation set.

2.1.2 Windows Protocols Overview

[MS-WPO]: Windows Protocols Overview provides a conceptual overview of Windows protocols, including their functionality, how they interact, and their relationships to Windows technologies. Each technology is further broken down into subsystems with information about the technology overviews (section 2.1.3) and technical specifications (section 2.2) that pertain to each subsystem. The Windows technologies are grouped into the technical areas described in Documentation Contents (section 2).

2.1.3 Technology Overviews

Technology overviews provide informative content that describes protocols in a technical area that are functionally related or are commonly used together to accomplish specific goals. Each technology

overview and the technical specifications it describes comprise a technology collection. The technology collections in the Windows protocols documentation set are listed in the Technology Collection Cross-Reference Matrix (section 4.3).

Each technology overview provides the following types of information:

- A conceptual description of the architecture, communication, and relationships among the protocols and with other technology collections.
- The intended users and uses of the technology collection, its environment, and its role within the architecture of Windows.
- Scenarios that illustrate use cases for the technology collection, including common errors, which describe the actors; the actors' intentions and goals; any necessary preconditions; an overall flow of data and events with common alternatives; and typical results.
- The Microsoft products that implement the technology collection, and its versions and capabilities in each Microsoft product.

The technology overviews are listed, grouped according to technical area, in the remainder of this section.

Application services:

- [MS-MQOD]: Message Queuing Protocols Overview: This document describes the functionality of Microsoft Message Queuing (MSMQ), a communications service that enables reliable and secure asynchronous messaging between applications over a variety of deployment topologies. MSMQ temporarily decouples the sending of a message from the receipt of that message, allowing applications to communicate even if their execution lifetimes do not overlap.
- [MS-NETOD]: Microsoft .NET Framework Protocols Overview: This document describes the functionality, interrelationships, and protocol layering of the communication protocols implemented in the .NET Remoting and Windows Communication Foundation (WCF) components of the .NET Framework.
- [MS-TPSOD]: Transaction Processing Services Protocols Overview: This document provides an overview of the functionality and relationships of transaction processing protocols. Transaction processing is designed to maintain a computation system in a known, consistent state by allowing multiple individual operations to be linked together as a single, indivisible operation, so that either all of the changes are processed or none of the changes are processed.

Collaboration and communications:

- [MS-MSSOD]: Media Streaming Server Protocols Overview: This document describes the functionality of the media streaming server protocols, which are used to convert both live and prerecorded audio format and to distribute the content over a network or the Internet. Media streaming server technologies support publishing secure content to a media server, streaming content from a media server, and requesting a license from a license server.

Directory services:

- [MS-ADFSOD]: Active Directory Federation Services (AD FS) Protocols Overview: This document describes the functionality and relationship of the Active Directory Federation Services (AD FS) protocols, which offer a means for distributed identification, authentication, and authorization across organizational and platform boundaries.
- [MS-ADOD]: Active Directory Protocols Overview: This document describes the functionality and relationships of the Active Directory protocols, which provide directory services for the centralized storage of identity, account information, group policies, and printer location

information, a foundation for authentication services in a domain environment, domain services, and directory replication services in Windows.

File, fax, and printing services:

- [MS-CCROD]: Content Caching and Retrieval Protocols Overview: This document describes the protocols, data structures, and security mechanisms that are required to enable a system of content caching and retrieval to interoperate with Windows systems, and content retrieval scenarios such as accessing content from a file or web server.
- [MS-FASOD]: File Access Services Protocols Overview: This document describes the use of the protocols for network file access services interoperation with Windows, which allows applications to access and share files located on a file server on a network in a secure and managed environment.
- [MS-FSMOD]: File Services Management Protocols Overview: This document describes the use of the protocols for remote administration and management of file servers that share data within an organization.
- [MS-PRSOD]: Print Services Protocols Overview: This document describes the distributed system of print servers that manage printers and make them available to print clients.
- [MS-STOROD]: Storage Services Protocols Overview: This document describes the interaction of protocols that provide disk and volume management services, data backup and restore, removable media management, file access control, and file encryption in Windows.
- [MS-VSOD]: Virtual Storage Protocols Overview: This document Provides an overview of the functionality of and relationship among the virtual storage protocols, which provide a means for a client to access, read, and write to virtual storage on a remote server.

Networking:

- [MS-NAPOD]: Network Access Protection Protocols Overview: This document describes the functionality to allow client computers to gain access to network resources based on the client's identity and compliance with a corporate governance policy, and how various components work together to promote the health and protection of networked systems.

Remote connectivity:

- [MS-RDSOD]: Remote Desktop Services Protocols Overview: This document describes the Terminal Services system, which enables a remote client to display and interact with a desktop or application running on a distant server. Using this technology, a remote client connected to the server can use software and resources available to the server.

Security and identity management:

- [MS-AUTHSOD]: Authentication Services Protocols Overview: This document describes the functionality and relationships of protocols in the identity verification of users, computers, and services through interactive logon and network logon authentication processes.
- [MS-AZOD]: Authorization Protocols Overview: This document describes the functionality and relationships of the protocols that control the granting of access to resources, once authentication has been accomplished, by using one of several Windows authorization models.
- [MS-CERSOD]: Certificate Services Protocols Overview: This document provides an overview of how the certificate enrollment, certificate policy and certificate remote administration protocols are implemented in the certificate services system, the standalone and enterprise models of the certificate authority (CA), the protocols involved, and how they communicate with each other.

- [MS-RMSOD]: Rights Management Services Protocols Overview: This document describes the protocols of the Rights Management Services (RMS) system, which allows individuals and administrators to encrypt and specify access and usage restrictions on various types of data, including documents and email messages.

Systems management:

- [MS-GPOD]: Group Policy Protocols Overview: This document describes the protocols used for Group Policy, which enables administrators to define and manage required computer configurations or policy settings for a large number of users and computers within an Active Directory environment.
- [MS-WMOD]: Windows Management Protocols Overview: Provides an overview of the functionality and relationships of the Windows Management protocols, which provide the ability to control settings and collect data for a set of client and server computers, to query another system or computer, and to perform administrative operations to monitor, troubleshoot, and conduct hardware and software inventories in remote computers.
- [MS-WSUSOD]: Windows Server Update Services Protocols Overview: This document describes the Windows Server Update Services system, which enables IT administrators to distribute and manage software updates from a central location to a large number of computers.

2.2 (Updated Section) Technical Specifications

~~Technical specifications specify~~This section describes the details of ~~specific~~ protocols, structures and standards that are specified in technical specifications. The goal of the technical specifications is to support interoperability, not to describe the Windows implementations of the technology. For example, many protocols specify client and server roles; for such protocols, the information contained in technical specifications fulfills the three general interoperability cases:

- Implement a client that interoperates with a server implemented in Windows.
- Implement a server that interoperates with a client implemented in Windows.
- Implement a client and a server that interoperate with each other on a non-Windows operating system.

Other types of protocols, as well as structures, algorithms, and so on, are also documented to support interoperability in both Windows and non-Windows operating environments.

Technical specifications consist of both normative and informative content.

2.2.1 (Updated Section) Normative Content

Normative content refers to technical details that are essential for implementing software that interoperates with Windows. This content is written using the prescriptive language of RFCs as defined in [RFC2119], including the verb forms MAY, MUST, MUST NOT, SHOULD, and SHOULD NOT.

- **MUST and MUST NOT** emphasize behavior that is required or prohibited, respectively, by the technology for interoperability, such as setting a field to zero, using a reply packet, or performing a action when a certain type of packet is received.

  In a normative section of a specification, any statement that does not use a prescriptive verb means that the behavior is required, as if a MUST were used explicitly.
- **MAY** means that the behavior is optional. A product behavior note (PBN) is required if the behavior is implemented in at least one applicable Windows version; the absence of a PBN

means that no Windows version implements the behavior. PBNs are informative content (section 2.2.2).

- **SHOULD** means that the behavior is optional but recommended by the designers of the technology. A PBN is required if the behavior is absent from at least one applicable Windows version; the absence of a PBN means that all product versions implement the behavior.
- **SHOULD NOT** means that the behavior is optional and not recommended by the designers of the technology. An implementer should understand and carefully consider the implications of the behavior before it is implemented. A PBN is required if the behavior is implemented in at least one applicable Windows version; the absence of a PBN means that no Windows version implements the behavior.

For all optional behavior, an implementation that does not do the behavior must be interoperable with one that does, and vice versa.

Normative content includes the following categories of information:

- Classes of functionality (roles)
- Data definitions (constants, enumerations, structures, and so on)
- Encryption
- Message formats and processing
- Method signatures and return values
- Schemas and namespaces
- State transitions
- Timers, events, and event processing
- Transport
- Vendor-extensible fields

Technical specifications that ~~use common data types (section 2.2.3.3.2) specify the following normative~~ reference~~:~~

~~- [MS-DTYP]: Windows Data Types~~

~~Technical specifications that reference HRESULT, NTStatus, or Win32 error codes (section 2.2.3.3.3) cite the following normative reference:~~

~~- [MS-ERREF]: Windows Error Codes~~

~~If a protocol references~~ directory service schema element class/attribute pairs~~,~~ (section 2.2.3.3.1), cite one or more of the following normative references ~~might be appropriate~~:

- [MS-ADA1]: Active Directory Schema Attributes A-L
- [MS-ADA2]: Active Directory Schema Attributes M
- [MS-ADA3]: Active Directory Schema Attributes N-Z
- [MS-ADSC]: Active Directory Schema Classes
- [MS-ADLS]: Active Directory Lightweight Directory Services Schema

Technical specifications that use common data types (section 2.2.3.3.2) cite the following normative reference:

- [MS-DTYP]: Windows Data Types

Technical specifications that reference HRESULT, NTStatus, or Win32 error codes (section 2.2.3.3.3) cite the following normative reference:

- [MS-ERREF]: Windows Error Codes

Technical specifications that reference landing code identifiers (LCIDs) (section 2.2.3.3.4) cite the following normative reference:

- [MS-LCID]: Windows Language Code Identifier (LCID) Reference

2.2.2 (Updated Section) Informative Content

Content that is not normative in technical specifications is informative, and it is provided only as a helpful guide to the implementer. Informative content is not essential for implementation and includes the following categories of information:

- Abstract data models
- Capability negotiations
- Examples
- Implementation-specific parameters
- Relationships to other protocols
- Security parameters
- Versioning
- Windows-version-specific behaviors

Windows-version-specific behavior is described in footnotes to the main body of a specification. That information is not normative and is provided to support interoperability across multiple versions of Windows Client operating system and applicable Windows Server releases. The following criteria are used to determine whether information is not appropriate in the body of a technical specification and gets placed in a product behavior footnote:

- The information varies by Windows ~~Stock Keeping Unit (SKU).~~product.
- The information concerns an implementation limit for a data structure; for example, maximum entries or queue size.
- The information concerns a retry interval.
- The information concerns a retry count prior to returning a specified error code.
- The information concerns a specific buffer size choice, when other buffer sizes will work.
- The information concerns loading implementation-specific configuration information from the Windows registry.

2.2.3 Template Types

In general, each technical specification conforms to one of a set of document templates, based on the type of information that is conveyed by the associated protocol or structure:

- Algorithm: Algorithms used in network communication.
- Block: Generic message-based protocols.
- Data Structure: Structures used by one or more algorithms or protocols.
- File Structure: The formats of files used to convey information between systems.
- HTTP: Protocols based on HTTP APIs, including RESTful and REST-like protocols.
- RPC: Remote procedure call (RPC) method-based client/server protocols.
- SOAP: Request/response protocols that are defined by using Web Services Description Language (WSDL).
- Standards Support: Microsoft implementation conformance with an external standard.

The following sections provide general descriptions of these document templates. The template used for each technical specification in the Windows protocols documentation set is listed in Technical Specification Cross-Reference Matrix (section 4.1).

2.2.3.1 Algorithm

An Algorithm technical specification defines an algorithm or extension to an algorithm that is used in network communication. An Algorithm document defines no data structure or data sent over the wire. If the algorithm is associated with a data structure, they are either documented separately in Algorithm and Structure technical specifications or together in a Block technical specification.

A technical specification that specifies a protocol can refer to an Algorithm document, but if the algorithm is specific to the protocol, it can be documented within the protocol document.

If the algorithm inherently has different classes of functionality, or "roles", normative information is provided for each. If enough logic is common between roles that it makes sense to not duplicate it, a section titled "Common Algorithm Details" can be specified. For example, for compression and decompression algorithms, a section for common details might be included with the role-specific sections "Compression Algorithm Details" and "Decompression Algorithm Details".

Algorithm technical specifications can contain the following types of normative information, where applicable:

- Classes of functionality (roles)
- Processing rules
- State transitions

2.2.3.2 (Updated Section) Block

A Block technical specification defines a packet-based protocol. The name "Block" is a reference to the block diagrams that are frequently used to express interaction patterns. The Block type of technical specification is also used if no other type of document is appropriate for the protocol or format being specified.

Block technical specifications specify exactly how data is marshaled that is sent or received over a network, which requires a definition of the byte order of packet data. Message syntax is specified by using packet diagrams that are 32-bits wide, with bit 0 on the far left, as shown in the following example.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Field Name 1																Field Name 2															
Field Name 3 (optional)																															

The bit numbering convention that is followed is big-endian; namely, the most significant bit of the first byte to traverse the network is bit 0, and the least significant bit of the last byte to traverse the network is in bit 31. The byte order format can be different in the operating environment, so it is specified in the document for multibyte data fields.

Block technical specifications can contain the following types of normative information, where applicable:

- Augmented Backus-Naur Form (ABNF) syntax [RFC5234]
- Binary packets
- Directory service schema classes and attributes [MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC]
- Data and type definitions (constants, enumerations, structures, and so on)
- Encryption algorithms
- Namespaces [XMLNS]
- Shared state variables
- XML schema definitions (XSDs) [XML10] [XMLINFOSET] [XMLSCHEMA1/2] [XMLSCHEMA2/2]

2.2.3.3 Data Structure

A Data Structure technical specification specifies a common structure or an extension to a common data structure that is used by multiple protocols. The description does not include related behavior. Behavior is defined in the specifications for protocols that use the data structure.

Data Structure technical specifications specify how data is decoded and encoded as it is processed in the specific operating environment. If the data is in XML, the schemas and namespaces are specified.

Data Structure technical specifications can contain the following types of normative information, where applicable:

- Augmented Backus-Naur Form (ABNF) syntax [RFC5234]
- Binary packet structure
- Data and type definitions (constants, enumerations, structures, and so on)
- XML schema definitions (XSDs) [XML10] [XMLINFOSET] [XMLSCHEMA1/2] [XMLSCHEMA2/2]

Specific data structure technical specifications that are cited normatively by other technical specifications are described in the following subsections.

2.2.3.3.1 Active Directory Objects

Active Directory objects are normative definitions of the objects that exist in the Microsoft Active Directory. The objects of type "attribute" that exist in the Active Directory schema are presented in the following technical specifications:

- [MS-ADA1]: Active Directory Schema Attributes A-L
- [MS-ADA2]: Active Directory Schema Attributes M
- [MS-ADA3]: Active Directory Schema Attributes N-Z

The objects of type "class" that exist in the Active Directory schema are presented in the following technical specification:

- [MS-ADSC]: Active Directory Schema Classes

The objects of types "attribute" and "class" that exist in the Active Directory Lightweight Directory Services (AD LDS) schema are presented in the following technical specification:

- [MS-ADLS]: Active Directory Lightweight Directory Services Schema

These specifications are not intended to stand on their own; they are intended to serve as appendixes to the Active Directory Technical Specification. For details about the Active Directory schema, see [MS-ADTS]: Active Directory Technical Specification.

2.2.3.3.2 Windows Data Types

Windows data types are common data types that are used in the Windows protocols documentation set. They are presented in the following document:

- [MS-DTYP]: Windows Data Types

The Windows data types are categorized as follows:

- Common base types: Primitive data types, including IDL base types, which are natively supported by Microsoft compilers; for example, byte, handle_t, and wchar_t.
- Common data types: Simple data types, including aliases for C/C++ primitive data types, which are frequently used by many protocols; for example, BYTE, DWORD, and WCHAR.
- Common data structures: User-defined data types, including those supporting RPC protocols, which are defined in C/C++ or ABNF; for example, FILETIME, GUID, and RPC_UNICODE_STRING.
- Constructed security types: Types used to define structures that are specific to the Windows security model; for example, security identifier (SID), and SECURITY_DESCRIPTOR.
- Impersonation abstract interface: Methods for managing the underlying security infrastructure for server roles in Windows.

2.2.3.3.3 Windows Error Codes

Windows error codes are method return values and status codes that are used in the Windows protocols documentation set. They are presented in the following document:

- [MS-ERREF]: Windows Error Codes

The following information is provided in the Windows error codes specification:

- HRESULT: The HRESULT data type is commonly used as a return value from RPC methods. The most significant bit is used to indicate success or failure. The following details about HRESULT are provided:

- The structure of the HRESULT data type.
- Requirements for vendor-specific values.
- Values in a 32-bit numbering space.
- Descriptions of the error conditions returned.
- Parameter substitution in value descriptions.
- The HRESULT from WIN32 error code macro, which converts a Win32 error code to an HRESULT value.

- Win32 error codes: Win32 error codes are 16-bit values extended to 32-bits with zero fill, and they can be returned by methods or in structures. In general, they are not vendor-extendable. The following details about Win32 error codes are provided:
  - Success and error values.
  - Descriptions of the error conditions returned
  - Parameter substitution in value descriptions.
- NTSTATUS: The NTSTATUS data type is a standard, 32-bit structure that is used to communicate system information. The following details about Win32 error codes are provided:
  - Identification of levels of severity: Success, Informational, Warning and Error.
  - The structure of the NTSTATUS data type.
  - Requirements for vendor-specific values.
  - Values in a 32-bit numbering space.
  - Descriptions of the error conditions returned.
  - Parameter substitution in value descriptions.
- LDAP result codes: Windows contains an implementation of the LDAP resultCode [RFC2251], which is used by higher-layer protocols to interpret the results of an LDAP operation. Each LDAP error value is mapped to the closest Win32 error value; this mapping is provided.

2.2.3.3.4 Windows Language Code Identifier (LCID) Reference

Windows language code identifiers (LCID) are presented in the following document:

- [MS-LCID]: Windows Language Code Identifier (LCID) Reference

Also known as culture identifiers, LCID values are used to identify specific languages for the purpose of customizing software for locales and cultures. For example, an LCID value can specify the way dates, times, and numbers are formatted as strings, as well as paper sizes and preferred sort order based on language elements.

The following information is provided in the Windows language code identifier reference:

- The structure of the LCID data type.
- All LCID values that are available in all versions of Windows.
- Locale-specific sort order values.

2.2.3.4 File Structure

A File Structure technical specification specifies the structure and contents of a file that can be sent over the network. Rules for accessing and processing the contents of the file can be specified in this type of technical specification.

File Structure technical specifications specify how data is encoded by the creator and decoded by the consumer as it is passed within the operating environment. If the data is in XML, the schemas and namespaces are specified.

File Structure technical specifications can contain the following types of normative information, where applicable:

- Augmented Backus-Naur Form (ABNF) syntax [RFC5234]
- Binary record structure
- Data and type definitions (constants, enumerations, structures, and so on)
- XML schema definitions (XSDs) [XML10] [XMLINFOSET] [XMLSCHEMA1/2] [XMLSCHEMA2/2]

2.2.3.5 HTTP

An HTTP technical specification defines a protocol that uses an HTTP-based API with a simplified set of HTTP functions, such as GET and POST, to make API calls. It can also use a Representational State Transfer (REST) client/server architecture in which requests and responses are built around the transfers of resource representations, which are documents that capture the current or intended states of resources. HTTP technical specifications specify the web resources that are accessed and manipulated by the protocol, HTTP operations that can be applied to the resources, and the syntax of request/response payloads.

An HTTP specification can specify either a REST-like or RESTful protocol. In general, "REST-like" refers to a protocol that uses simple URI-based requests to a specific domain over HTTP. "RESTful" refers to a protocol that conforms to certain constraints including a client/server architecture, statelessness, and a uniform interface.

HTTP specifications can contain the following types of normative information, where applicable:

- Augmented Backus-Naur Form (ABNF) syntax [RFC5234]
- Conceptual Schema Definition Language (CSDL) [MC-CSDL]
- Data definitions (complex types, simple types, attributes, and so on)
- Directory service schema classes and attributes [MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC]
- HTTP methods and structures [RFC7230] [RFC7231] [RFC7232] [RFC7233] [RFC7234] [RFC7235] [RFC7236]
- JavaScript Object Notation (JSON) definitions [ECMA-404] [JSON-Schema]
- Namespaces [XMLNS]
- URI syntax [RFC3986]
- XML schema definitions (XSDs) [XML10] [XMLINFOSET] [XMLSCHEMA1/2] [XMLSCHEMA2/2]

2.2.3.6 RPC

An RPC technical specification defines a method-based protocol, which uses a formal syntax with calls and return codes, and in which a protocol client initiates all communication and a protocol server responds to the protocol client. RPC specifies request/response protocols, in which all arguments come directly from the higher layer, and all return codes, output parameters, and exceptions are passed unmodified.

Some RPC specifications specify protocols that use the Distributed Component Object Model (DCOM) as their transport, which uses the TCP/IP RPC protocol sequence. Such protocols can use the DCOM security and authentication framework and interface activation.

RPC specifications use Interface Definition Language (IDL) to specify the syntax of protocol methods and marshaling of protocol data. Such interface definitions can be compiled by using the Microsoft Interface Definition Language (MIDL) compiler with command-line parameters, as follows: "midl /target NT60 /nologo". To avoid duplicating the definitions of common data types, RPC protocol IDL sections can contain one or more import directives for IDL data from other technical specifications, including the following:

- [MS-DCOM]: Distributed Component Object Model (DCOM) Remote Protocol Appendix A: Full IDL (section 6)
- [MS-DTYP]: Windows Data Types Appendix A: Full MS-DTYP IDL (section 5)
- [MS-OAUT]: OLE Automation Protocol Specification Appendix A: Full IDL (section 6)

RPC specifications can contain the following types of normative information, where applicable.

- Augmented Backus-Naur Form (ABNF) syntax [RFC5234]
- IDL definitions [MIDLINF]
- Directory service schema classes and attributes [MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC]
- RPC Interfaces and methods [C706]
- Namespaces [XMLNS]
- XML schema definitions (XSDs) [XML10] [XMLINFOSET] [XMLSCHEMA1/2] [XMLSCHEMA2/2]

RPC specifications include the following normative reference:

- [MS-RPCE]: Remote Procedure Call Protocol Extensions

For DCOM-based RPC protocols, the following normative reference is included:

- [MS-DCOM]: Distributed Component Object Model (DCOM) Remote Protocol Specification

2.2.3.7 SOAP

A Simple Object Access Protocol (SOAP) [SOAP1.1] [SOAP1.2/1] [SOAP1.2/2] technical specification defines a packet-based protocols. Unlike Block technical specifications, SOAP specifies request/response, SOAP-based protocols that use Web Services Description Language (WSDL). SOAP technical specifications typically apply to Web services.

A SOAP technical specification uses the features and mechanisms defined in XML and WSDL to define the protocol as closely as those mechanisms allow. SOAP services support the feature of returning XSD and WSDL documents that describe the protocol that the service implements. If the XSD includes character data that follows a grammar that cannot be described in the XSD, the grammar can be

defined in the technical specification, or a normative reference to the grammar definition is provided. If the character data has some internal syntax that is not defined in a normative reference, the syntax is specified in the technical specification by using "augmented" BNF (ABNF).

If the XSD includes binary data that follows a grammar that cannot be described in the XSD, the grammar is defined in the technical specification, or a normative reference to the grammar definition is provided. If the grammar is defined in the technical specification, the packet definition format used in Block technical specifications (section 2.2.3.2) is used.

SOAP technical specifications can contain the following types of normative information, where applicable:

- Augmented Backus-Naur Form (ABNF) syntax [RFC5234]
- Directory service schema classes and attributes [MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC]
- Namespaces [XMLNS]
- WSDL messages [WSDL]
- XML schema definitions (XSDs) [XML10] [XMLINFOSET] [XMLSCHEMA1/2] [XMLSCHEMA2/2]

2.2.3.8 Standards Support

A Standards Support technical specification describes how a Microsoft implementation or set of implementations conform to or vary from an existing specification such as a standard, a third-party specification, or any published specification.

A Standards Support document is essentially an appendix of implementation choices made and information about those choices. For example, a standard might specify that an implementation provides any of seven date/time values. A Standards Support document would indicate which date/time values are supported in the Microsoft implementation. If the implementation provides an eighth value—that is, one not from the standard, that variance from the standard would be defined in a normative section of the Standards Support document.

Standards Support documents can contain the following types of normative information, where applicable:

- Error handling variations from the standard
- Extensions to the standard
- Normative variations from the standard

2.3 (Updated Section) Reference Documents

~~Reference documents specify informative~~This section describes the non-normative information that is found in reference documents in the Windows documentation set. It is supplementary to the overview and technical documents ~~in the Windows documentation set~~ and are generally not specific to a single protocol or technical area. They consolidate related information and are intended to be helpful for understanding and using the documentation set.

Reference documents contain the following categories of information:

- Windows protocols Unicode reference

2.3.1 Windows Protocols Unicode Reference

This reference provides related Unicode processing algorithms on the Windows platform, including Unicode string comparison and conversion of Unicode to legacy code pages. They are presented in the following document:

- [MS-UCODEREF]: Windows Protocols Unicode Reference

The following information is provided in the Windows protocols Unicode reference:

- UTF-16 string comparison: Provides linguistic-specific comparisons between two Unicode strings and provides the comparison result based on the language and region for a specific user.
- Mapping of UTF-16 strings to earlier ANSI code pages: Converts Unicode strings to strings in the earlier code pages that are used in older versions of Windows and the applications that are written for these earlier code pages.
- The mechanism for the transport of Windows protocols Unicode reference messages.
- Windows protocols Unicode reference message syntax.

2.4 (Updated Section) External References

This section describes ~~general categories of~~the external references used by the Windows protocols documentation set, including the following:

- Information made available by the Microsoft Corporation
- Documents published by standards bodies.
- RFCs

2.4.1 (Updated Section) Microsoft Corporation

Microsoft makes available supplementary documentation that can be cited by Windows technical documents to provide helpful information to the implementer, including the following:

- Interoperability documents from other divisions of Microsoft, including Microsoft Office Protocols, Exchange Server Protocols, SharePoint Products and Technologies Protocols, and Microsoft SQL Server Protocols.
- Microsoft ~~Developers Network (MSDN),~~Developer, providing informative content and resources for Microsoft products and technologies.
- TechNet Wiki, providing community-generated content about Microsoft technologies.

2.4.2 (Updated Section) Standards Bodies

~~This section describes the information~~Documents from the following non-Microsoft standards bodies ~~that is~~are cited normatively and informatively in the Windows protocols documentation set.

American National Standards Institute (ANSI)**:** Represents the U.S. standards and conformity assessment system and oversees the creation and use of norms and guidelines in nearly all business sectors. ANSI also accredits programs that assess conformance to standards and operates the National Standards System Network (NSSN).

International Committee on Information Technology Standards (INCITS)**:** INCITS is part of ANSI. It is the primary U.S. standards group in the field of Information and Communications Technologies

(ICT), encompassing storage, processing, transfer, display, management, organization, and retrieval of information. INCITS also serves as ANSI's Technical Advisory Group for ISO/IEC Joint Technical Committee 1. JTC 1 is responsible for international standardization in the field of Information Technology.

Distributed Management Task Force (DMTF)**:** An IT industry organization that facilitates the development, validation, and promotion of systems management standards.

ECMA International**:** Standards organization for communications technology and consumer electronics.

Federal Information Processing Standards (FIPS)**:** Standards and guidelines issued by the National Institute of Standards and Technology (NIST). NIST develops FIPS when there are compelling Federal government requirements such as for security and interoperability and there are no acceptable industry standards or solutions.

Institute of Electrical and Electronics Engineers (IEEE) Standards Association**:** The IEEE-SA helps develop and advance global technologies by creating standards that drive the functionality, capabilities. and interoperability of a wide range of products and services.

International Organization for Standardization (ISO)**:** ISO is a network of the national standards institutes of 161 countries. Member institutions come from both government and the private sector. ISO enables a consensus to be reached on solutions that meet both the requirements of business and the broader needs of society.

International Telecommunications Union (ITU)**:** The United Nations agency for information and communication technology issues, and the global focal point for governments and the private sector in developing networks and services.

Internet Assigned Numbers Authority (IANA)**:** The organization responsible for coordinating some of the key elements that keep the Internet running smoothly. IANA provides technical coordination of key parts of the Internet.

Internet Engineering Task Force (IETF)**:** The IETF helps to make the Internet work better by producing high quality, relevant technical documents that influence the way people design, use, and manage the Internet.

Internet Society (ISOC)**:** The Internet Society (ISOC) is a nonprofit organization that provides leadership in Internet -related standards, education, and policy.

National Institute of Standards and Technology (NIST)**:** An agency of the U.S. Department of Commerce, the mission of NIST is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

Organization for the Advancement of Structured Information Standards (OASIS)**:** OASIS is a nonprofit consortium that drives the development, convergence and adoption of open standards. OASIS promotes industry consensus and produces worldwide standards for security, cloud computing, SOAP, web services, the Smart Grid, electronic publishing, emergency management, and other areas.

The Open Group**:** The Open Group is a vendor- and technology-neutral consortium that works towards enabling access to integrated information within and between enterprises based on open standards and global interoperability.

The Unicode Consortium**:** The Unicode Consortium is a nonprofit organization that develops standards in the area of internationalization including defining the behavior and relationships between Unicode characters.

Trusted Computing Group, Trusted Network Connect**:** The Trusted Computing Group (TCG) is a nonprofit organization that is focused on developing, defining, and promoting open standards for

trusted computing. TCG's Trusted Network Connect (TNC) network security offers interoperable standards for secure guest access, user authentication, endpoint integrity, clientless endpoint management, and coordinated security.

World Wide Web Consortium (W3C)**:** The W3C is an international community that develops standards to ensure the long-term growth of the web. The W3C mission is to develop protocols and guidelines that ensure the long-term growth of the web.

2.4.3 RFCs

RFCs constitute a large body of standards and proposed standards describing methods, behaviors, research, and innovations applicable to the working of network-connected systems. Technical specifications in the Windows documentation set make numerous references to RFCs via the RFC Editor website.

3 (Updated Section) Navigating the Documentation Set

This section describes howways to navigate within the online MSDN LibraryMicrosoft Docs library to find information incomponents of the Windows protocols documentation set. Navigating to the Windows protocols documentation set starts at the Open Specifications node of the MSDN Library as shown in the following diagram. All documents can be reached from this node.

Figure : Open Specifications

The subsections that follow describe the following paths to find documents in the MSDN Library:

- MSDNDocument nodes (section 3.1): The structure of the Open Specifications node and the documents within it.
- Document types (section 3.2): Where specific types of documents are located in the Open Specifications nodes.
- Tasks and scenarios (section 3.3): Technical specifications that support the implementation of common tasks and scenarios.
- Document citations (section 3.3): How documents are linked to each other.

A complete site map of the Open Specifications node tree for the Windows protocols documentation set is presented in Appendix B: Open Specification Site Map (section 5).

3.1 (Updated Section) MSDNDocument Nodes

This section describes the documents how to navigate to document nodes in the Windows protocols documentation set that are found in each node of the MSDN Library, starting from the Open Specifications node. That node, which contains the nodes shown in the following diagram.

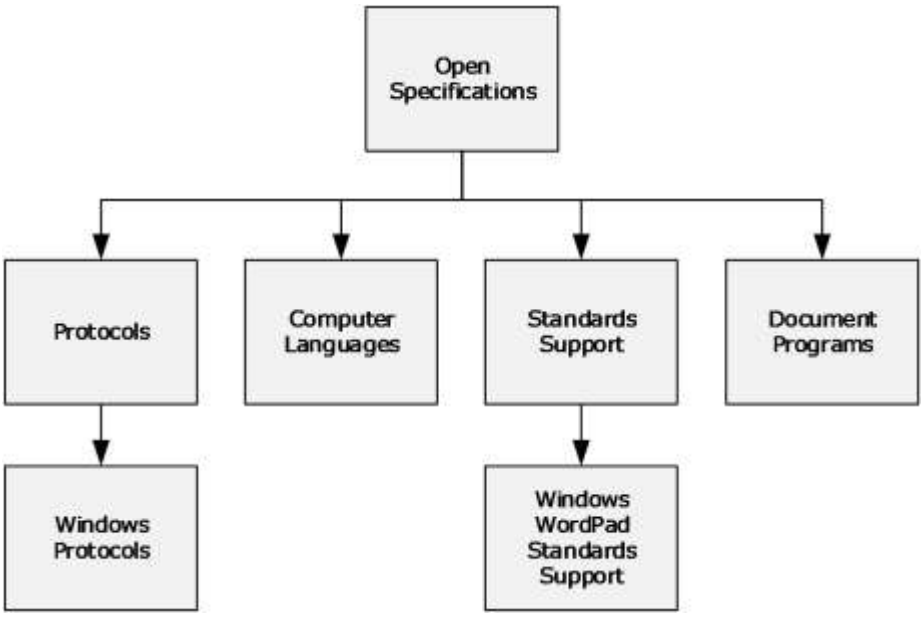


Figure 2: Open Specifications with additional nodes

The nodes shown in the diagram ~~can be traversed to reach overview and reference documents and technical specifications. They reflect the different ways in which access to the~~illustrate how the Windows protocols documentation set is organized~~, as follows~~. Specifically:

~~Document Programs: This node is described in section 3.1.1.~~

~~Preview Specifications: This node provides access to prerelease versions of documents for community review and feedback. The preview periods for each specification presented in this way are determined by the individual teams responsible for the documentation. Not every specification is published for preview. After the preview period, the specification is published in the appropriate location in the Open Specifications library for further reference.~~

Windows Protocols: This node ~~is organized according to the following document types:~~provides access to overview documents, Windows protocols, and reference documents, as described in section 3.1.1.

- ~~Overview documents~~
- ~~Technical documents~~
- ~~References~~

~~This node is described in section 3.1.2.~~

Computer Languages: This node provides access to technical documents for Microsoft general purpose languages and domain-specific languages that are used by Microsoft products.

Windows WordPad Standards Support: This node provides access to documents describing support ~~information~~ for the ~~following~~ standards that are implemented in Windows WordPad, as described in section 3.1.2.

Document Programs: This node describes the technical documents made available in the following document programs; however, Microsoft is no longer updating this content regularly. See section 1.6 for more information.

- Microsoft Interoperability Program (MIP)
- Workgroup Server Protocol Program (WSPP)

3.1.1 (Updated Section) Windows Protocols

The Windows Protocols node is reached from the Open Specifications node as shown in section 3.1. It is possible to navigate from this node to the nodes shown in the following diagram.

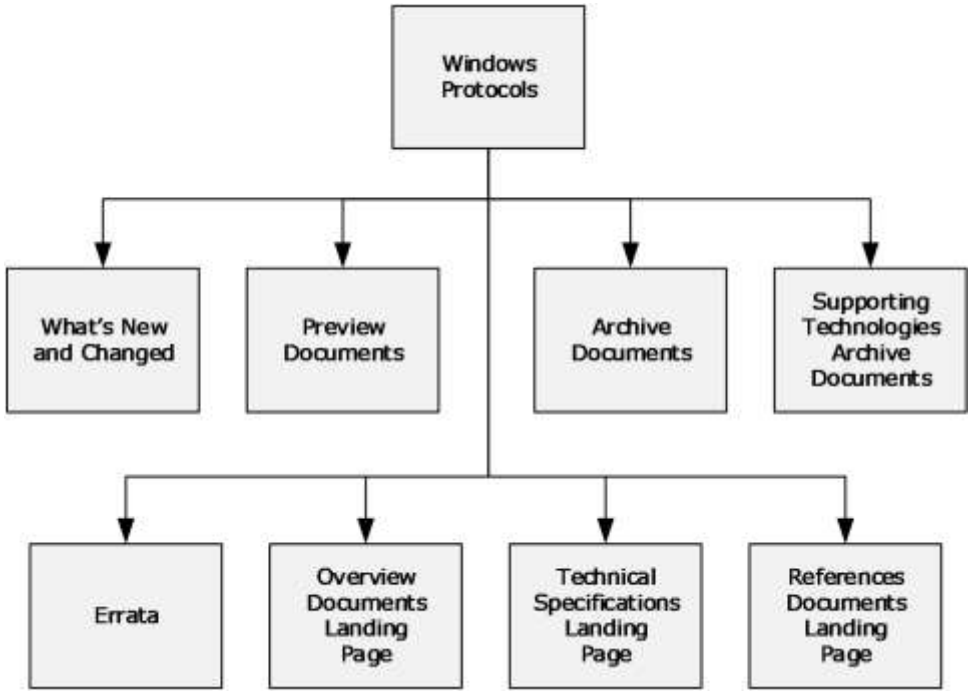


Figure 3: Windows protocols node

These nodes contain links to nodes in the Windows protocols documentation set, as follows:

What's New and Changed: Technical specifications that are new or updated for the last release. It also gives a description of what technical content has been changed in the technical specification.

Preview Documents: Prerelease versions of documents for community review and feedback. The differences in the preview document since the last release are identified.

Archive Documents: Archived copies of documents that were previously published. They are provided for convenience only and may not be normative.

Supporting Technologies Archive Documents: Archived copies of documents that were previously published in the Open Specifications library. They are provided for convenience only and may not be normative.

Errata: Content changes in technical specifications, overviews, and reference documents, which could impact an implementation in published versions of documents prior to their next release.

Overview Documents Landing Page: The overview documents landing page is described in section 3.1.1.1.

Technical Specifications Landing Page: The technical specifications landing page is described in section 3.1.1.2.

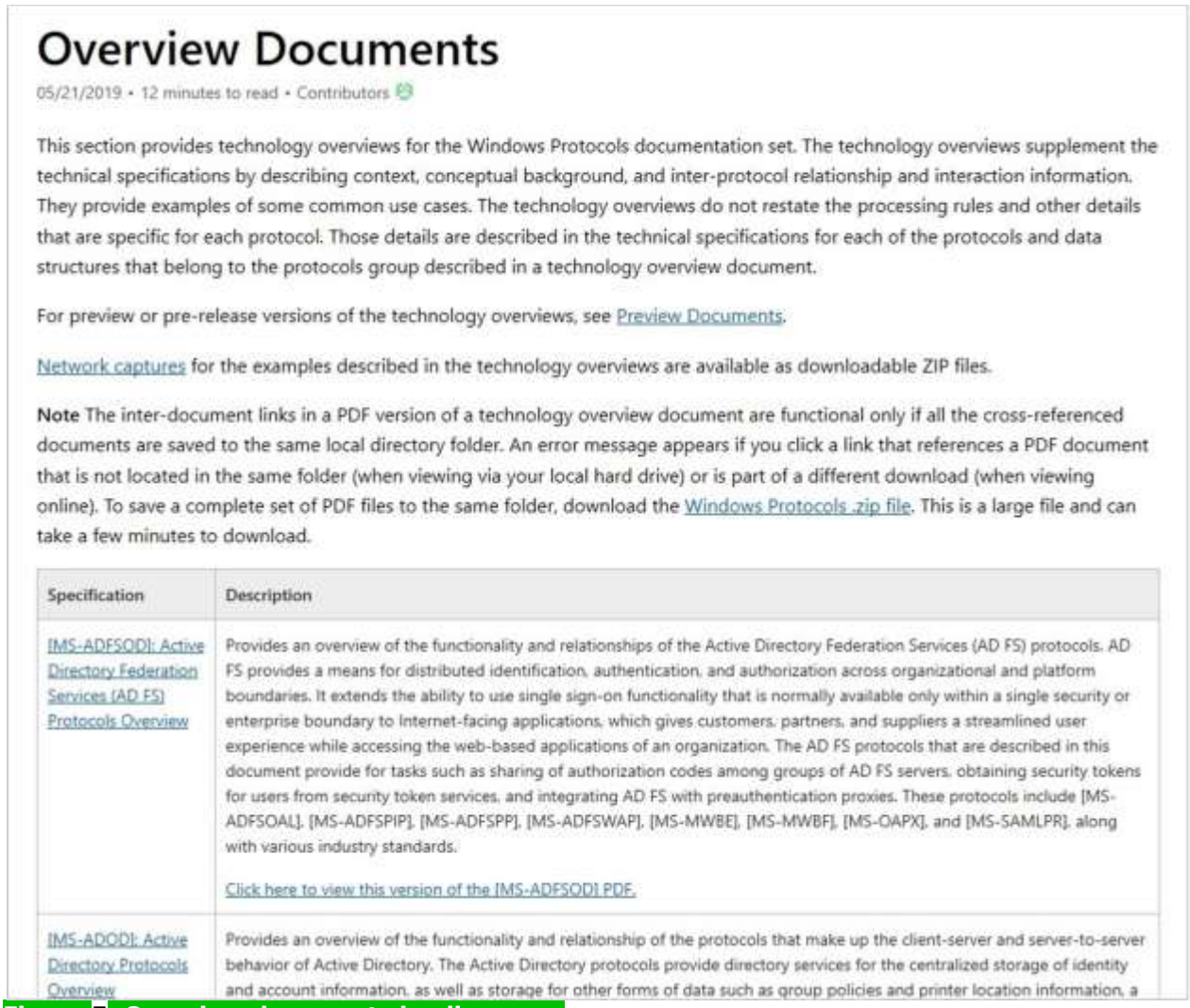
Reference Documents Landing Page: The reference documents landing page is described in section 3.1.1.3.

3.1.1.1 (Updated Section) Overview Documents Landing Page

The Overview Documents Landing Page node can be reached from the Windows Protocols node as shown in section 3.1.1. From this node it is possible to navigate to the nodes shown in the following diagram.

Figure 4: Overview document landing page nodes

The overview documents landing page node links to the landing pages for all overview documents in the Windows protocols documentation set. It is shown below.



Overview Documents

05/21/2019 • 12 minutes to read • Contributors

This section provides technology overviews for the Windows Protocols documentation set. The technology overviews supplement the technical specifications by describing context, conceptual background, and inter-protocol relationship and interaction information. They provide examples of some common use cases. The technology overviews do not restate the processing rules and other details that are specific for each protocol. Those details are described in the technical specifications for each of the protocols and data structures that belong to the protocols group described in a technology overview document.

For preview or pre-release versions of the technology overviews, see Preview Documents.

Network captures for the examples described in the technology overviews are available as downloadable ZIP files.

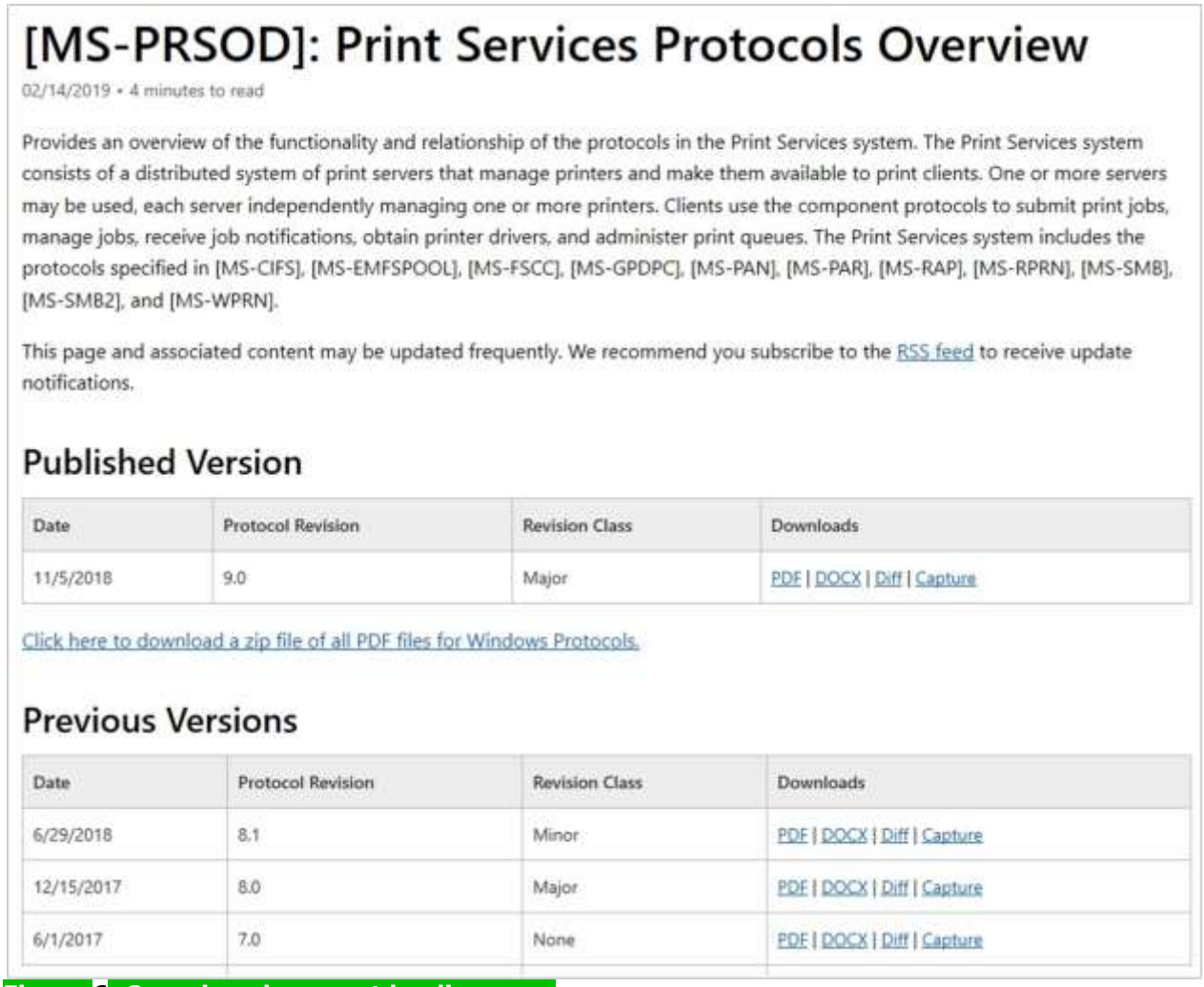
Note The inter-document links in a PDF version of a technology overview document are functional only if all the cross-referenced documents are saved to the same local directory folder. An error message appears if you click a link that references a PDF document that is not located in the same folder (when viewing via your local hard drive) or is part of a different download (when viewing online). To save a complete set of PDF files to the same folder, download the Windows Protocols .zip file. This is a large file and can take a few minutes to download.

Specification	Description
[MS-ADFSOD]: Active Directory Federation Services (AD FS) Protocols Overview	Provides an overview of the functionality and relationships of the Active Directory Federation Services (AD FS) protocols. AD FS provides a means for distributed identification, authentication, and authorization across organizational and platform boundaries. It extends the ability to use single sign-on functionality that is normally available only within a single security or enterprise boundary to Internet-facing applications, which gives customers, partners, and suppliers a streamlined user experience while accessing the web-based applications of an organization. The AD FS protocols that are described in this document provide for tasks such as sharing of authorization codes among groups of AD FS servers, obtaining security tokens for users from security token services, and integrating AD FS with preauthentication proxies. These protocols include [MS-ADFSOAL], [MS-ADFSPIP], [MS-ADFSPP], [MS-ADFSWAP], [MS-MWBE], [MS-MWBF], [MS-OAPX], and [MS-SAMLPR], along with various industry standards. Click here to view this version of the [MS-ADFSOD] PDF.
[MS-ADOD]: Active Directory Protocols Overview	Provides an overview of the functionality and relationship of the protocols that make up the client-server and server-to-server behavior of Active Directory. The Active Directory protocols provide directory services for the centralized storage of identity and account information, as well as storage for other forms of data such as group policies and printer location information, a

Figure 5: Overview documents landing page

3.1.1.1.1 (Updated Section) Overview Documents

Overview Document Landing Page nodes can be reached from the Overview Documents Landing Page node as shown in section 3.1.1.1. A landing page is defined for every overview document in the Windows protocols documentation set. An example is shown below.



[MS-PRSOD]: Print Services Protocols Overview

02/14/2019 • 4 minutes to read

Provides an overview of the functionality and relationship of the protocols in the Print Services system. The Print Services system consists of a distributed system of print servers that manage printers and make them available to print clients. One or more servers may be used, each server independently managing one or more printers. Clients use the component protocols to submit print jobs, manage jobs, receive job notifications, obtain printer drivers, and administer print queues. The Print Services system includes the protocols specified in [MS-CIFS], [MS-EMFSPOOL], [MS-FSCC], [MS-GPDPC], [MS-PAN], [MS-PAR], [MS-RAP], [MS-RPRN], [MS-SMB], [MS-SMB2], and [MS-WPRN].

This page and associated content may be updated frequently. We recommend you subscribe to the RSS feed to receive update notifications.

Published Version

Date	Protocol Revision	Revision Class	Downloads
11/5/2018	9.0	Major	PDF | DOCX | Diff | Capture

Click here to download a zip file of all PDF files for Windows Protocols.

Previous Versions

Date	Protocol Revision	Revision Class	Downloads
6/29/2018	8.1	Minor	PDF | DOCX | Diff | Capture
12/15/2017	8.0	Major	PDF | DOCX | Diff | Capture
6/1/2017	7.0	None	PDF | DOCX | Diff | Capture

Figure 6: Overview document landing page

The following types of files are available for download from this page:

- PDF: A .pdf file of the overview document.
- DOCX: A .docx file of the overview document.
- Errata: A .pdf file that shows exactly what has changed from the last to the current release for the overview document.
- Diff: A .pdf file of the overview document that uses revision marks to show what has changed from the last to the current release for the overview document.
- Capture: A .zip file of the network captures for the examples described in the overview document.

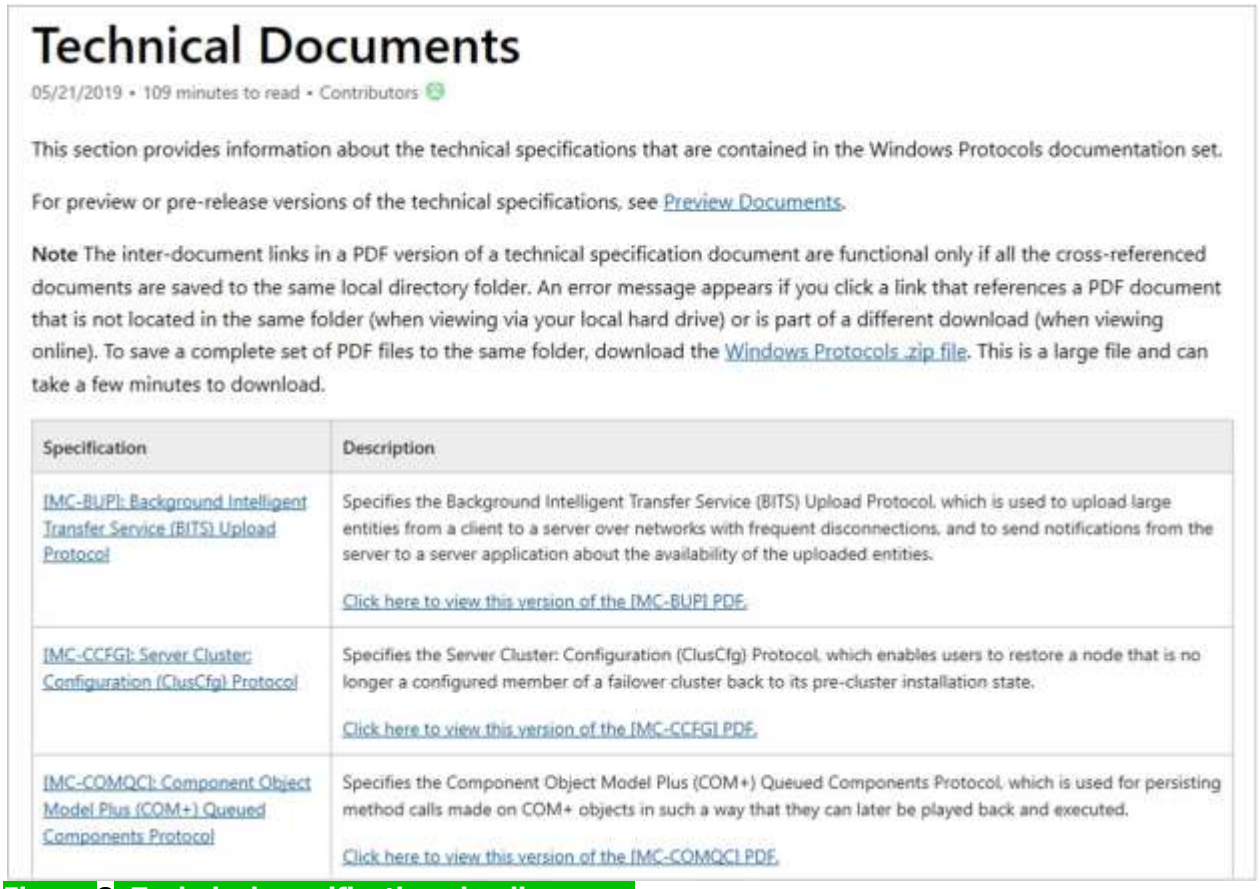
The structures of overview documents are described in section 2.1

3.1.1.2 (Updated Section) Technical Specifications Landing Page

The Technical Specifications Landing Page node can be reached from the Windows Protocols node as shown in section 3.1.1. From this node it is possible to navigate to the nodes shown in the following diagram.

Figure 7: Technical specifications landing page nodes

The technical specifications landing page node links to the landing page nodes for all technical specifications in the Windows protocols documentation set. It is shown below.



Technical Documents

05/21/2019 • 109 minutes to read • Contributors

This section provides information about the technical specifications that are contained in the Windows Protocols documentation set.

For preview or pre-release versions of the technical specifications, see Preview Documents.

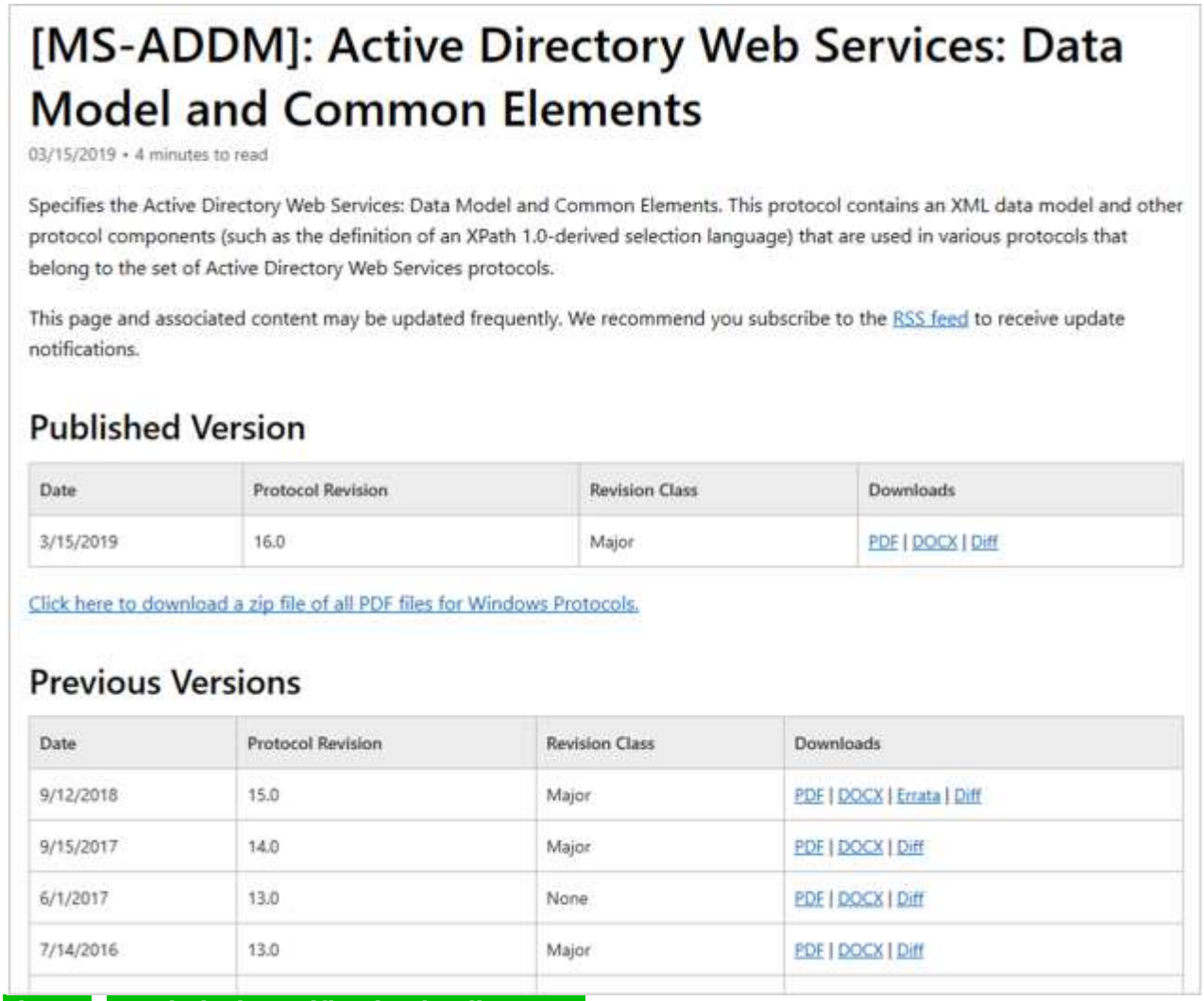
Note The inter-document links in a PDF version of a technical specification document are functional only if all the cross-referenced documents are saved to the same local directory folder. An error message appears if you click a link that references a PDF document that is not located in the same folder (when viewing via your local hard drive) or is part of a different download (when viewing online). To save a complete set of PDF files to the same folder, download the Windows Protocols .zip file. This is a large file and can take a few minutes to download.

Specification	Description
[MC-BUP]: Background Intelligent Transfer Service (BITS) Upload Protocol	Specifies the Background Intelligent Transfer Service (BITS) Upload Protocol, which is used to upload large entities from a client to a server over networks with frequent disconnections, and to send notifications from the server to a server application about the availability of the uploaded entities. Click here to view this version of the [MC-BUP] PDF.
[MC-CCFG]: Server Cluster: Configuration (ClusCfg) Protocol	Specifies the Server Cluster: Configuration (ClusCfg) Protocol, which enables users to restore a node that is no longer a configured member of a failover cluster back to its pre-cluster installation state. Click here to view this version of the [MC-CCFG] PDF.
[MC-COMQC]: Component Object Model Plus (COM+) Queued Components Protocol	Specifies the Component Object Model Plus (COM+) Queued Components Protocol, which is used for persisting method calls made on COM+ objects in such a way that they can later be played back and executed. Click here to view this version of the [MC-COMQC] PDF.

Figure 8: Technical specifications landing page

3.1.1.2.1 (Updated Section) Technical Specifications

Technical Specification Landing Page nodes can be reached from the Technical Specifications Landing Page node as shown in section 3.1.1.2. A landing page is defined for every technical specification in the Windows protocols documentation set. An example is shown below.



[MS-ADDM]: Active Directory Web Services: Data Model and Common Elements

03/15/2019 • 4 minutes to read

Specifies the Active Directory Web Services: Data Model and Common Elements. This protocol contains an XML data model and other protocol components (such as the definition of an XPath 1.0-derived selection language) that are used in various protocols that belong to the set of Active Directory Web Services protocols.

This page and associated content may be updated frequently. We recommend you subscribe to the RSS feed to receive update notifications.

Published Version

Date	Protocol Revision	Revision Class	Downloads
3/15/2019	16.0	Major	PDF | DOCX | Diff

Click here to download a zip file of all PDF files for Windows Protocols.

Previous Versions

Date	Protocol Revision	Revision Class	Downloads
9/12/2018	15.0	Major	PDF | DOCX | Errata | Diff
9/15/2017	14.0	Major	PDF | DOCX | Diff
6/1/2017	13.0	None	PDF | DOCX | Diff
7/14/2016	13.0	Major	PDF | DOCX | Diff

Figure 9: Technical specification landing page

The following types of files are available for download from this page:

- PDF: A .pdf file of the technical specification.
- DOCX: A .docx file of the technical specification.
- Errata: A .pdf file that shows exactly what has changed from the last to the current release for the technical specification.
- Diff: A .pdf file of the technical specification that uses revision marks to show what has changed from the last to the current release for the technical specification.

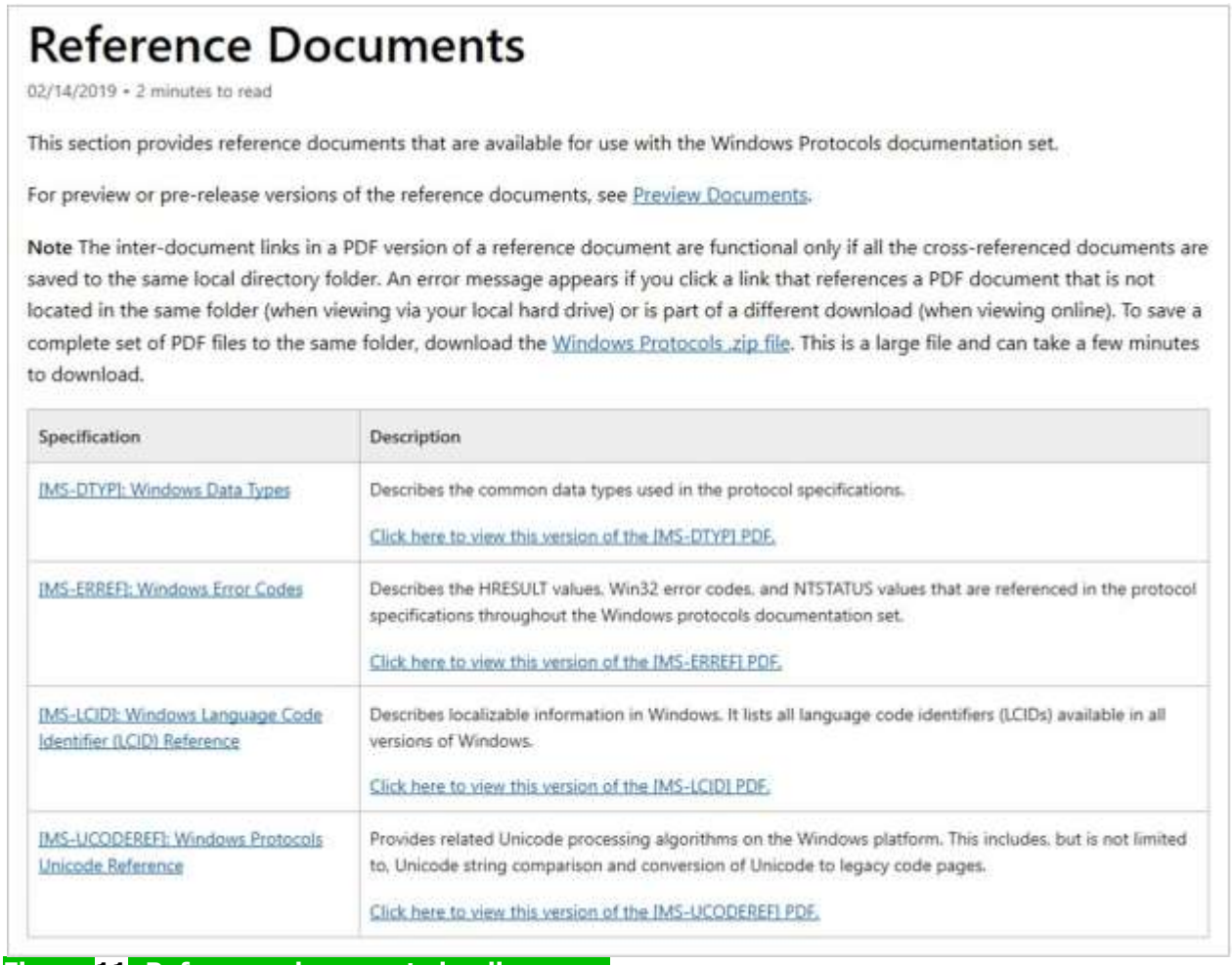
The structures of technical specifications are described in section 2.2.

3.1.1.3 (Updated Section) Reference Documents Landing Page

The Reference Documents Landing Page node can be reached from the Windows Protocols node as shown in section 3.1.1. From this node it is possible to navigate to the nodes shown in the following diagram.

Figure 10: Reference documents landing page nodes

The reference documents landing page node links to the landing pages for all reference documents in the Windows protocols documentation set. It is shown below.



Reference Documents

02/14/2019 • 2 minutes to read

This section provides reference documents that are available for use with the Windows Protocols documentation set.

For preview or pre-release versions of the reference documents, see Preview Documents.

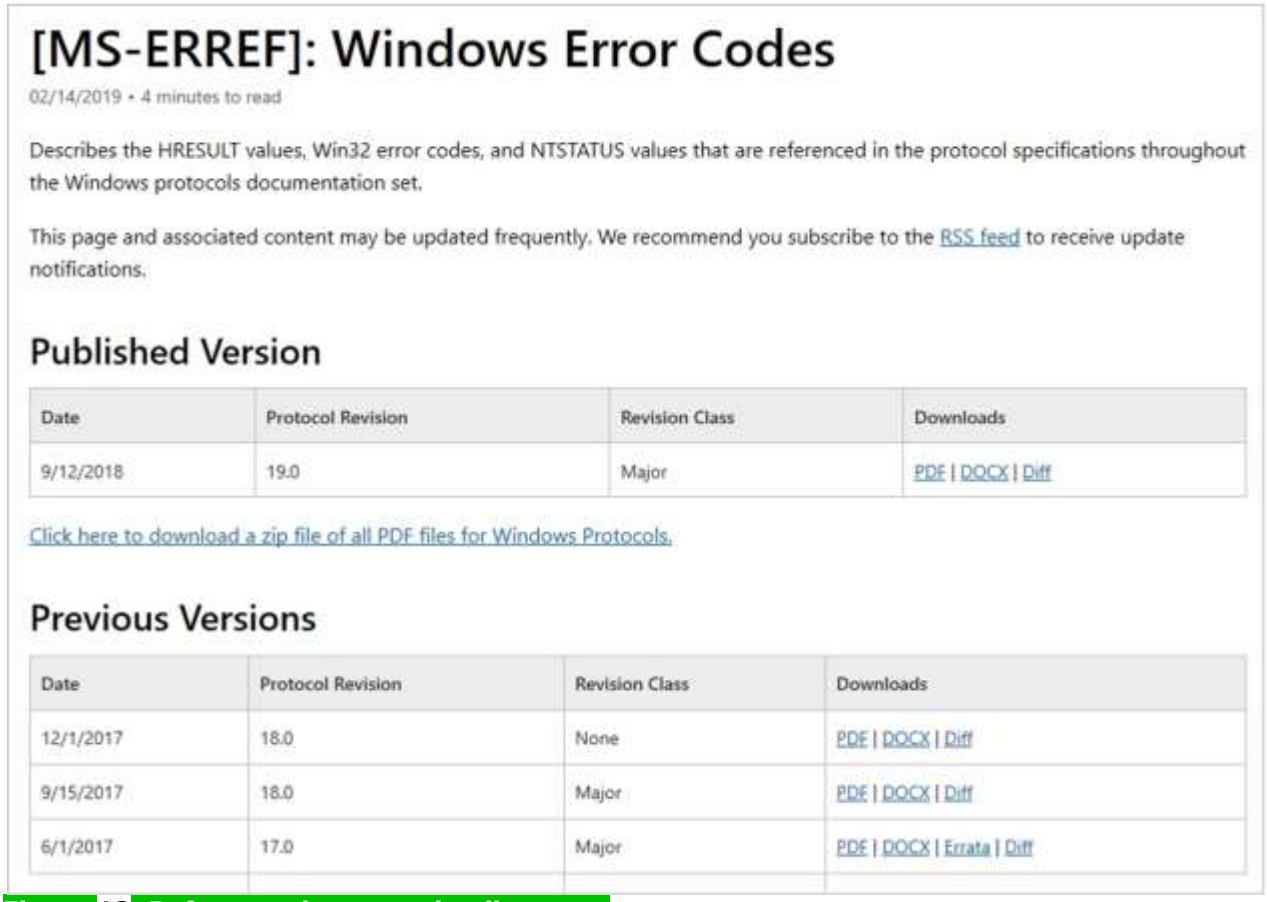
Note The inter-document links in a PDF version of a reference document are functional only if all the cross-referenced documents are saved to the same local directory folder. An error message appears if you click a link that references a PDF document that is not located in the same folder (when viewing via your local hard drive) or is part of a different download (when viewing online). To save a complete set of PDF files to the same folder, download the Windows Protocols .zip file. This is a large file and can take a few minutes to download.

Specification	Description
[MS-DTYP]: Windows Data Types	Describes the common data types used in the protocol specifications. Click here to view this version of the [MS-DTYP] PDF.
[MS-ERREF]: Windows Error Codes	Describes the HRESULT values, Win32 error codes, and NTSTATUS values that are referenced in the protocol specifications throughout the Windows protocols documentation set. Click here to view this version of the [MS-ERREF] PDF.
[MS-LCID]: Windows Language Code Identifier (LCID) Reference	Describes localizable information in Windows. It lists all language code identifiers (LCIDs) available in all versions of Windows. Click here to view this version of the [MS-LCID] PDF.
[MS-UCODEREF]: Windows Protocols Unicode Reference	Provides related Unicode processing algorithms on the Windows platform. This includes, but is not limited to, Unicode string comparison and conversion of Unicode to legacy code pages. Click here to view this version of the [MS-UCODEREF] PDF.

Figure 11: Reference documents landing page

3.1.1.3.1 (Updated Section) Reference Documents

Reference Document Landing Page nodes can be reached from the Reference Documents Landing Page node as shown in section 3.1.1.3. A landing page is defined for every reference document in the Windows protocols documentation set. An example is shown below.



[MS-ERREF]: Windows Error Codes

02/14/2019 • 4 minutes to read

Describes the HRESULT values, Win32 error codes, and NTSTATUS values that are referenced in the protocol specifications throughout the Windows protocols documentation set.

This page and associated content may be updated frequently. We recommend you subscribe to the RSS feed to receive update notifications.

Published Version

Date	Protocol Revision	Revision Class	Downloads
9/12/2018	19.0	Major	PDF | DOCX | Diff

Click here to download a zip file of all PDF files for Windows Protocols.

Previous Versions

Date	Protocol Revision	Revision Class	Downloads
12/1/2017	18.0	None	PDF | DOCX | Diff
9/15/2017	18.0	Major	PDF | DOCX | Diff
6/1/2017	17.0	Major	PDF | DOCX | Errata | Diff

Figure 12: Reference document landing page

The following types of files are available for download from this page:

- PDF: A .pdf file of the reference document.
- DOCX: A .docx file of the reference document.
- Errata: A .pdf file that shows exactly what has changed from the last to the current release for the reference document.
- Diff: A .pdf file of the reference document that uses revision marks to show what has changed from the last to the current release for the reference document.

The structures of reference documents are described in sections 2.2 and 2.3.

3.1.2 (Updated Section) Windows WordPad Standards Support

The Windows WordPad Standards Support node is reached from the Open Specifications node as shown in section 3.1. It is possible to navigate from this node to the nodes shown in the following diagram.

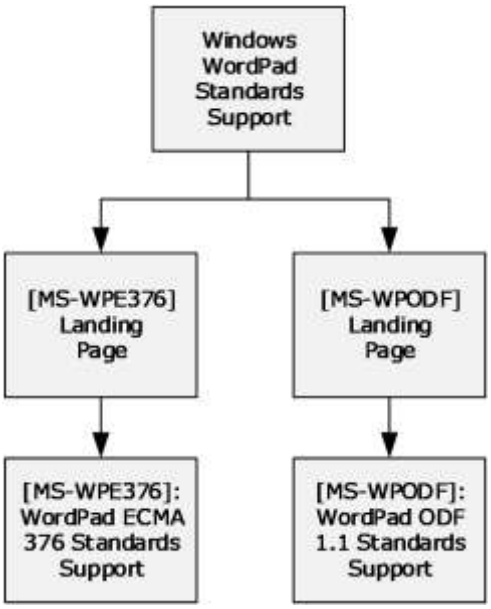


Figure 13: Windows WordPad standards support node

These documents describe support for the following standards, which are implemented in the Windows WordPad application:.

- [ECMA-376] ECMA International, "Office Open XML File Formats": A family of XML schema definitions (XSDs) for Office Open XML (OOXML), which are used for office productivity applications.
- [ODF1.1] OASIS Standard, "Open Document Format for Office Applications (OpenDocument) v1.1": An XSD with semantics and structures for office documents, which supports transformations using an XSL Transformation (XSLT) or similar XML-based tools.

The documents on this node are based on the Standards Support template (section 2.2.3.8).

~~3.1.1 (Removed Section) Document Programs~~

~~The Document Programs node is reached from the Open Specifications node as shown in MSDN Nodes (section 3.1). From this node it is possible to navigate to the node shown in the following diagram.~~

~~**Figure : Document programs**~~

~~WSPP Technical Specifications Task and Scenario: This node contains links to technical specifications, which are organized according to tasks and scenarios. For more information on this node, see Tasks and Scenarios (section 3.3).~~

~~3.1.2 (Removed Section) Windows Protocols~~

~~The Windows Protocols node is reached from the Open Specifications node as shown in MSDN Nodes (section 3.1). From this node it is possible to navigate to the nodes shown in the following diagram.~~

Figure : Windows Protocols

The nodes shown in the diagram contain links to documents in the Windows protocols documentation set, as follows:

What's New and Changed: This node contains links to the technical specifications that are new or updated for the last release. It also gives a description of what technical content has been changed in the technical specification.

Preview Documents: This node contains links to the preview technical specifications.

Overview Documents: This node contains links to the overview documents described in section 2.1.

Technical Documents: This node contains links to technical specifications for protocols, including extensions to industry-standard or other published protocols, which are used by applicable Windows Server releases to interoperate with Windows Client operating system.

References: This node contains links to the following reference document:

- [MS-UCODEREF]: Windows Protocols Unicode Reference

This node also contains links to the following technical specifications:

- [MS-DTYP]: Windows Data Types
- [MS-ERREF]: Windows Error Codes
- [MS-LCID]: Windows Language Code Identifier (LCID) Reference

3.1.2.1 (Removed Section) Landing Pages

This section describes the book level landing pages.

Figure : MSDN Landing Page

The following are available for download from this page:

PDF: A .pdf file of the technical specification.

DOCX: A .docx file of the technical specification.

Errata: A .pdf file that shows exactly what has changed from the last release to the current for the technical specification.

Diff: A .pdf file of the technical specification that uses revision marks to show what has changed from the last release to the current for the technical specification.

Capture: A .zip file of the network captures for the examples described in the overviews. (For Overview Documents only.)

3.2 (Updated Section) Document Types

This section describes how to find documents in the Windows protocols documentation set according to the following document types described in Documentation Contents (section 2):.

- Overview documents (section 2.1)

- Technical specifications (section 2.2)
- Reference documents (section 2.3)

~~This information is presented relative~~The navigation to ~~the following nodes:~~

~~- Document Programs~~
~~- Windows Protocols~~

~~The locations of~~ these ~~nodes~~document types relative to the Open Specifications node are shown in ~~MSDN~~Document Nodes (section 3.1).

~~3.2.1 (Removed Section) Document Programs~~

~~Technical specifications of the Windows protocols documentation set can be reached from the Document Programs node as shown in the following diagram.~~

~~**Figure : Document programs**~~

~~WSPP Technical Specifications Task and Scenario: This node contains links to technical specifications, which are organized according to tasks and scenarios. For more information on this node, see Tasks and Scenarios (section 3.3).~~

3.2.1 (Updated Section) Windows Protocols

This section ~~shows~~describes the ~~location of~~ documents by type relative to the Windows Protocols node.

3.2.1.1 (Updated Section) Overview Documents

Overview documents of the Windows protocols documentation set can be reached from the Windows Protocols node as shown in the following diagram.

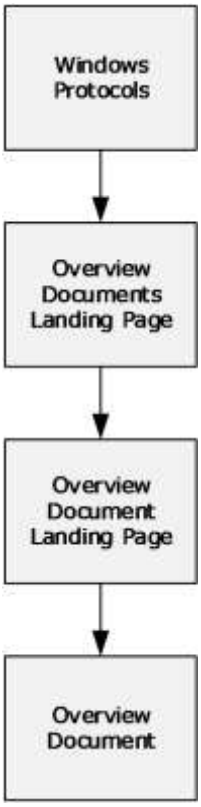


Figure 14: Overview documents

Overview Documents Landing Page: This node contains links to the landing pages of individual overview documents ~~listed~~, as described in ~~Windows Protocols (~~section 3.1.~~2).~~1.1.

3.2.1.2 (Updated Section) Technical Specifications

Technical specifications of the Windows protocols documentation set can be reached from the Windows Protocols node as shown in the following diagram.

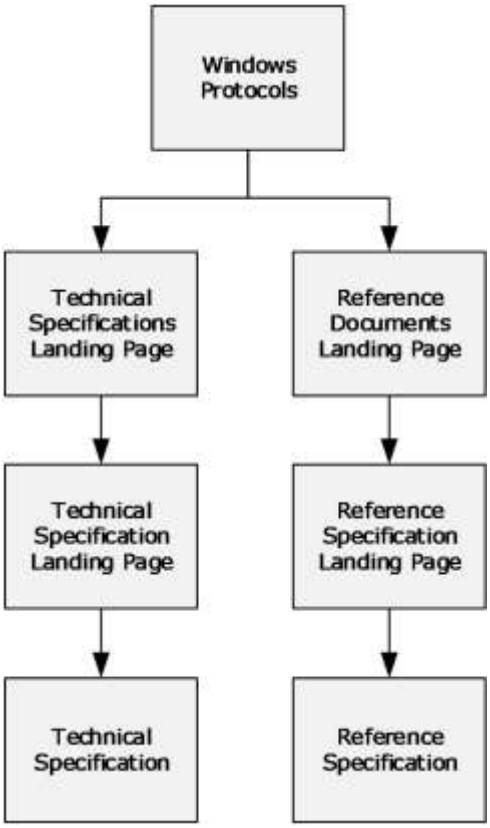


Figure 15: Technical specifications

The nodes shown in the diagram contain links to technical specifications, as follows:

Technical ~~Documents~~Specifications Landing Page: This node contains links to the landing pages of individual technical specifications ~~for protocols~~, as described in section 3.1.1.2, including extensions to industry-~~standard~~standards or other published protocols, which are used by applicable Windows Server releases to interoperate with Windows Client operating system.

~~References~~Reference Documents Landing Page: This node contains links to the landing pages of the following ~~technical~~normative reference specifications:

- [MS-DTYP]: Windows Data Types
- [MS-ERREF]: Windows Error Codes
- [MS-LCID]: Windows Language Code Identifier (LCID) Reference

3.2.1.3 (Updated Section) Reference Documents

Reference documents of the Windows protocols documentation set can be reached from the Windows Protocols node as shown in the following diagram.

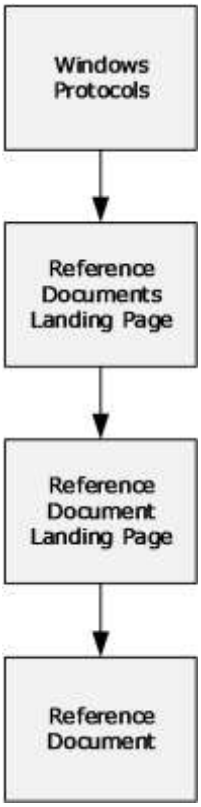


Figure 16: Reference documents

~~References~~Reference Documents Landing Page: This node contains links to the landing page of the following informative reference document:

- [MS-UCODEREF]: Windows Protocols Unicode Reference

~~3.3 (Removed Section) Tasks and Scenarios~~

~~Documents in the Windows protocols documentation set are categorized according to tasks, scenarios, and pricing models in the WSPP Technical Specifications Task and Scenario node, which is reached from the Open Specifications node as shown in the following diagram.~~

~~Figure : WSPP Technical Specifications Task and Scenario~~

~~A task is a collection of protocols used to implement a broad system function. Relevant tasks include:~~

- ~~File and print~~
- ~~User and group administration~~
- ~~Networking transport~~

~~A scenario is a more limited set of functions that is part of a specific task. Relevant file and print scenarios include:~~

- ~~Base file services~~

- Distributed File System (DFS) and File Replication Service (FRS) server
- Print RPC services
- Internet file print services
- Advanced file services

Relevant user and group administration scenarios include:

- Base authentication and authorization
- Domain services interaction server
- Multi-factor authentication & certificate server
- Group Policy server
- Systems health management server
- Directory and global catalog (GC) replication server
- Kerberos group membership
- Windows remote registry services
- Windows Event logging services
- Network time services
- Network connection management
- Remote procedure calls (RPCs)
- Network Access Protection (NAP)
- Rights management services

Technical specifications are also grouped by pricing model, as follows:

- Royalty free protocols
- One time flat fee (uniform pricing) protocols
- One time flat fee (variable pricing) protocols

3.3 (Updated Section) Document Citations

It is possibleThis section describes how to navigate from document to every other document in the Windows protocols documentation set from this roadmap document.by using links. The following figure shows the hierarchy of citations in the documentation set.

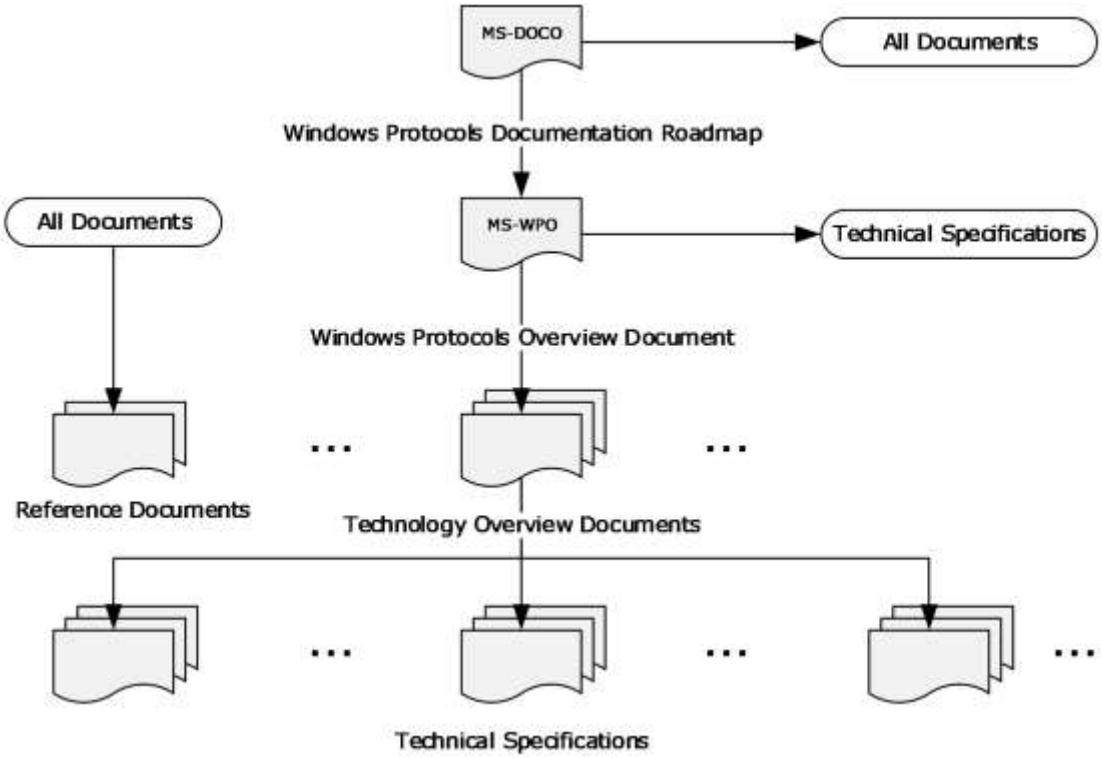


Figure 17: Citations in the Windows protocols documentation set

The connections represented in this figure can be summarized as follows:

- The Windows Protocols Documentation Roadmap contains links to all other types of documents.
- The Windows Protocols Overview contains links to technology overviews, technical specifications, and reference documents.
- Technology overview documents contain links to technical specifications and reference documents.
- Technical specifications contain links to technology overviews and reference documents.
- All documents can contain links to reference documents.

The contents of each type of document shown in the figure are described in Documentation Contents (section 2).

Each technical specification contains lists of the normative and informative references it cites, with links. References ~~that are part of the~~to other Windows ~~protocols documentation set~~documents do not include dates of publication, because the citations always link to the latest version. References to other documents include a publishing year when one is available.

The subsections in this section describe the types of links in the Windows protocols documentation set.

3.3.1 Normative Citations

Normative citations refer to information that is required in order to understand or implement the technology defined in a specification or for that technology to work.

Citations to normative content are distinguished by the use of the words "defined", "specified", and "details".

3.3.1.1 External Normative Citations

External citations to normative content include references to any of the following:

- Documents published by standards organizations (section 2.4.2).
- RFCs (section 2.4.3).
- Normative sections in other Windows technical specifications (section 3.3.1.2).

All external normative documents are listed in the normative references section of the referencing technical specification.

3.3.1.2 Internal Normative Citations

Internal citations to normative content are references to normative sections within a technical specification. The sections—including their subsections—that contain normative content in a technical specification vary according to the template type, as follows:

Algorithm template:

- 1.6 Standards Assignments
- 2.0 Algorithm Details

Block, HTTP, RPC, and SOAP protocol templates:

- 1.5 Prerequisites and Preconditions
- 1.8 Vendor Extensible Fields
- 1.9 Standards Assignments
- 2.0 Messages
- 3.0 Protocol Details

Data and File Structure templates:

- 1.7 Vendor -Extensible Fields
- 2.0 Structures

For more information about the document templates, see section 2.2.

3.3.2 Informative Citations

Informative citations refer to information that is not required in order to understand or implement the technology defined in a specification, such as background or implementation-specific information.

Citations to informative content are distinguished by the use of the words "described" and "information".

3.3.2.1 (Updated Section) External Informative Citations

~~External citations~~Citations to external informative content include references to any of the following:

- Any content that could qualify as an external normative reference (section 3.3.1.1).
- ~~MSDN~~Microsoft Developer articles.
- Windows overview documents (section 2.1).
- Informative sections in other Windows technical specifications (section 2.2).
- Windows reference documents (section 2.3).

All external informative documents are listed in the informative references section of the referencing technical specification.

3.3.2.2 Internal Informative Citations

Internal citations to informative content are references to informative sections within a technical specification. Any content that is not normative is by definition informative, including Windows product behavior. The sections—including their subsections—that contain informative content in a technical specification vary according to the template type.

For more information about the document templates, see section 2.2.

4 Appendix A: Cross-Reference Matrixes

4.1 (Updated Section) Technical Specification Cross-Reference Matrix

This section contains a table that provides, for each technical specification in the Windows protocols documentation set, the following information:

- Link to the document
- Document title
- Template type (section 2.2)
- Technical area (section 2)
- Protocols specified
- Other technical specifications normatively cited

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MC-BUP]	Background Intelligent Transfer Service (BITS) Upload Protocol Specification	Block	Systems Management	Background Intelligent Transfer Service (BITS) Upload Protocol	[MS-BPCR] [MS-ERREF] [MS-NTHT] [MS-SMB]
[MC-CCFG]	Server Cluster: Configuration (ClusCfg) Protocol Specification	RPC	Systems Management	Server Cluster: Configuration (ClusCfg) Protocol	[MS-CMRP] [MS-DCOM] [MS-ERREF] [MS-OAUT] [MS-RPCE] [MS-RRP] [MS-SCMR]
[MC-COMQC]	Component Object Model Plus (COM+) Queued Components Protocol Specification	Block	Application Services	Component Object Model Plus (COM+) Queued Components Protocol	[MS-COM] [MS-DCOM] [MS-MQDMPR] [MS-MQMP] [MS-MQMQ] [MS-OAUT]
[MC-CSDL]	Conceptual Schema Definition File Format	Structure	Application Services	Conceptual Schema Definition File Format	None
[MC-DPL4CS]	DirectPlay 4 Protocol: Core and Service Providers Specification	Block	Multiplayer Games	DirectPlay 4 Protocol: Core and Service Providers	[MC-DPL4R] [MC-DPLVP] [MS-DPDX] [MS-ERREF] [MS-NLMP]
[MC-DPL4R]	DirectPlay 4 Protocol: Reliable Specification	Block	Multiplayer Games	DirectPlay 4 Protocol	[MC-DPL4CS] [MS-DPDX]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MC-DPL8CS]	DirectPlay 8 Protocol: Core and Service Providers Specification	Block	Multiplayer Games	DirectPlay 8 Protocol: Core and Service Providers	[MC-DPL8R] [MS-DPDX] [MS-ERREF]
[MC-DPL8R]	DirectPlay 8 Protocol: Reliable Specification	Block	Multiplayer Games	DirectPlay 8 Protocol	[MS-DPDX] [MS-DTYP]
[MC-DPLHP]	DirectPlay 8 Protocol: Host and Port Enumeration Specification	Block	Multiplayer Games	DirectPlay 8 Protocol: Host and Port Enumeration	[MC-DPL8CS] [MC-DPL8R] [MS-DPDX] [MS-DTYP]
[MC-DPLNAT]	DirectPlay 8 Protocol: NAT Locator Specification	Block	Multiplayer Games	DirectPlay 8 Protocol: NAT Locator	[MC-DPL8CS] [MC-DPL8R] [MS-DPDX] [MS-DTYP]
[MC-DPLVP]	DirectPlay Voice Protocol Specification	Block	Multiplayer Games	DirectPlay Voice Protocol	[MC-DPL4CS] [MC-DPL8CS] [MC-DPL8R] [MS-DPDX] [MS-DTYP] [MS-ERREF]
[MC-DRT]	Distributed Routing Table (DRT) Version 1.0 Specification	Block	Home Server	Distributed Routing Table (DRT) Version 1.0	[MS-PNRP]
[MC-DTCXA]	MSDTC Connection Manager: OleTx XA Protocol Specification	Block	Application Services	MSDTC Connection Manager: OleTx XA Protocol	[MS-CMP] [MS-CMPO] [MS-DTCO] [MS-DTYP] [MS-ERREF]
[MC-EDMX]	Entity Data Model for Data Services Packaging Format	Structure	Application Services	Entity Data Model for Data Services Packaging Format	[MC-CSDL]
[MC-IISA]	Internet Information Services (IIS) Application Host COM Protocol Specification	RPC	Application Services	Internet Information Services (IIS) Application Host COM Protocol	[MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE]
[MC-MQAC]	Message Queuing (MSMQ): ActiveX Client Protocol Specification	RPC	Application Services	Message Queuing (MSMQ): ActiveX Client Protocol	[MS-ADTS] [MS-COM] [MS-DCOM] [MS-DTCO] [MS-DTYP] [MS-ERREF]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-MQDMPR] [MS-MQDSSM] [MS-MQMR] [MS-MQMQ] [MS-MQQB] [MS-OAUT] [MS-RPCE]
[MC-MQSRM]	Message Queuing (MSMQ): SOAP Reliable Messaging Protocol (SRMP) Specification	Block	Application Services	Message Queuing (MSMQ): SOAP Reliable Messaging Protocol (SRMP)	[MS-DTYP] [MS-MQDMPR] [MS-MQDSSM] [MS-MQMQ] [MS-MQQB]
[MC-NBFS]	.NET Binary Format: SOAP Data Structure	Structure	Application Services	.NET Binary Format: SOAP Data Structures .NET Binary Format: for XML	[MC-NBFSE] [MC-NBFX] [MC-NMF]
[MC-NBFSE]	.NET Binary Format: SOAP Extension	Structure	Application Services	.NET Binary Format: SOAP Extension .NET Binary Format for XML	[MC-NBFS] [MC-NBFX] [MC-NMF]
[MC-NBFX]	.NET Binary Format: XML Data Structure	Structure	Application Services	.NET Binary Format: XML Data Structure .NET Binary Format: for XML	[MS-OAUT]
[MC-NETCEX]	.NET Context Exchange Protocol Specification	Block	Application Services	.NET Context Exchange Protocol	None
[MC-NMF]	.NET Message Framing Protocol Specification	Block	Application Services	.NET Message Framing Protocol	[MC-NBFS] [MC-NBFSE] [MS-DTYP] [MS-MQMQ]
[MC-NPR]	.NET Packet Routing Protocol Specification	Block	Application Services	.NET Packet Routing Protocol	None
[MC-PRCH]	Peer Channel Protocol Specification	SOAP	Application Services	Peer Channel Protocol	[MC-NBFS] [MC-NBFSE] [MC-NMF] [MS-DTYP] [MS-ERREF] [MS-WSPOL]
[MC-PRCR]	Peer Channel Custom Resolver	SOAP	Application Services	Peer Channel Custom Resolver	[MC-NBFS] [MC-NBFSE]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Protocol Specification		Home Server	Protocol	[MC-NMF] [MS-DTYP] [MS-WSPOL]
[MC-SMP]	Session Multiplex Protocol Specification	Block	Application Services	Session Multiplex Protocol	[MS-DTYP]
[MC-SQLR]	SQL Server Resolution Protocol Specification	Block	Application Services	SQL Server Resolution Protocol	None
[MS-ABTP]	Automatic Bluetooth Pairing Protocol	Block	Device-Specific	Automatic Bluetooth Pairing Protocol	None
[MS-ADA1]	Active Directory Schema Attributes A-L	None	Directory Services	Active Directory Schema Attributes A-L	[MS-ADA3] [MS-ADTS] [MS-DTYP] [MS-LSAD] [MS-SAMR]
[MS-ADA2]	Active Directory Schema Attributes M	None	Directory Services	Active Directory Schema Attributes M	[MS-ADTS] [MS-DRSR] [MS-DTYP] [MS-LSAD] [MS-RCMP] [MS-SAMR]
[MS-ADA3]	Active Directory Schema Attributes N-Z	None	Directory Services	Active Directory Schema Attributes N-Z	[MS-ADSC] [MS-ADTS] [MS-DRSR] [MS-DTYP] [MS-LSAD] [MS-SAMR]
[MS-ADCAP]	Active Directory Web Services: Custom Action Protocol Specification	SOAP	Directory Services	Active Directory Web Services: Custom Action Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADDM] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-DRSR] [MS-DTYP] [MS-ERREF] [MS-NNS] [MS-SAMR] [MS-WSDS] [MS-WSPELD] [MS-WSTIM]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-ADDM]	Active Directory Web Services: Data Model and Common Elements	Structure	Directory Services	Active Directory Web Services: Custom Action Protocol WS-Transfer: Identity Management Operations for Directory Access Protocol Extensions WS-Transfer: Directory Services Protocol Extensions WS-Enumeration: Directory Services Protocol Extensions	[MS-ADCAP] [MS-ADTS] [MS-DTYP] [MS-ERREF] [MS-WSDS] [MS-WSPELD] [MS-WSTIM]
[MS-ADFSOAL]	Active Directory Federation Services OAuth Authorization Code Lookup Protocol	HTTP	Security and Identity Management	Active Directory Federation Services OAuth Authcode Lookup Protocol	None
[MS-ADFSPIP]	Active Directory Federation Services and Proxy Integration Protocol	HTTP	Security and Identity Management	Active Directory Federation Services Proxy and Web Application Proxy Integration Protocol Active Directory Federation Services and Proxy Configuration Protocol Active Directory Federation Services and Proxy Communication Protocol Federation Service Proxy Protocol	[MS-OAPX]
[MS-ADFSPP]	Active Directory Federation Service (AD FS) Proxy Protocol	Block	Security and Identity Management	Federation Service Web Agent Protocol	[MS-MWBF]
[MS-ADFSWAP]	Active Directory Federation Service (AD FS) Web Agent Protocol	SOAP	Security and Identity Management	Federation Service Web Agent and Proxy Protocol	[MS-ADTS] [MS-MWBF]
[MS-ADLS]	Active Directory Lightweight Directory Services Schema	None	Directory Services	Active Directory Lightweight Directory Services Schema	[MS-ADTS] [MS-DTYP]
[MS-ADSC]	Active Directory Schema Classes	None	Directory Services	Active Directory Schema Classes	[MS-ADTS]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-ADTG]	Remote Data Services (RDS) Transport Protocol Specification	Block	Networking	DCOM Interfaces for Remote Data Services Remote Data Services Transport Protocol (RDST) DCOM Interfaces for Remote Data Services Remote Data Services Transport Protocol (RDST)	[MS-DTYP] [MS-ERREF] [MS-LCID] [MS-OAUT]
[MS-ADTS]	Active Directory Technical Specification	Block	Directory Services	Lightweight Directory Access Protocol (LDAP) V3: Microsoft Profile Active Directory Lightweight Directory Access Protocol (LDAP) Extensions Active Directory Data Structures Active Directory Algorithms	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-APDS] [MS-DRSR] [MS-DTYP] [MS-ERREF] [MS-FRS1] [MS-KILE] [MS-LSAD] [MS-MAIL] [MS-NLMP] [MS-NRPC] [MS-PAC] [MS-SAMR] [MS-SFU] [MS-SPNG] [MS-SRPL] [MS-W32T]
[MS-AIPS]	Authenticated Internet Protocol Specification	Block	Security and Identity Management	Authenticated Internet Protocol	[MS-ERREF] [MS-IKEE] [MS-KILE] [MS-NLMP]
[MS-APDS]	Authentication Protocol Domain Support Specification	Block	Security and Identity Management	Authentication Protocol Domain Support (APDS) NetLogon Remote Protocol: Challenge Handshake Authentication Protocol (CHAP)/EAP-MD5 SubAuthentication Extension	[MS-ADA3] [MS-ADTS] [MS-DPSP] [MS-DTYP] [MS-ERREF] [MS-KILE] [MS-LSAD] [MS-NLMP] [MS-NRPC]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-PAC] [MS-RCMP] [MS-RPCE] [MS-SAMR]
[MS-ASP]	ASP.NET State Server Protocol Specification	Block	Application Services	ASP.NET State Server Protocol	None
[MS-AZMP]	Authorization Manager (AzMan) Policy File Format	Structure	Security and Identity Management Application Services	Authorization Manager (AzMan) Policy File Format	None
[MS-BDSRR]	Business Document Scanning: Scan Repository Capabilities and Status Retrieval Protocol Specification	SOAP	File, Fax, and Printing Services	Business Document Scanning: Scan Repository Capabilities and Status Retrieval Protocol	None
[MS-BGPP]	Border Gateway Protocol (BGP) Profile	Block	Systems Management	Border Gateway Protocol 4 (BGP-4)	None
[MS-BKRP]	BackupKey Remote Protocol Specification	RPC	Security and Identity Management	BackupKey Remote Protocol	[MS-DTYP] [MS-ERREF] [MS-KILE] [MS-LSAD] [MS-NLMP] [MS-RPCE] [MS-SMB] [MS-SMB2] [MS-SPNG]
[MS-BKUP]	Microsoft NT Backup File Structure	Structure	File, Fax, and Printing Services	File Replication Service (FRS) Protocol	[MS-FRS1] [MS-FRS2] [MS-FSCC]
[MS-BPAU]	Background Intelligent Transfer Service (BITS) Peer-Caching: Peer Authentication Protocol Specification	RPC	Systems Management	Background Intelligent Transfer Service (BITS) Peercaching: Peer Authentication Protocol	[MS-DTYP] [MS-ERREF] [MS-KILE] [MS-RPCE]
[MS-BPCR]	Background Intelligent Transfer Service (BITS) Peer-Caching: Content Retrieval Protocol	RPC	Systems Management	Background Intelligent Transfer Service (BITS) Peercaching: Content Retrieval Protocol	[MS-BPAU] [MS-BPDP] [MS-DTYP] [MS-ERREF]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Specification				
[MS-BPDP]	Background Intelligent Transfer Service (BITS) Peer-Caching: Peer Discovery Protocol Specification	RPC	Systems Management	Background Intelligent Transfer Service (BITS) Peercaching: Peer Discovery Protocol	[MS-DTYP]
[MS-BRWS]	Common Internet File System (CIFS) Browser Protocol Specification	RPC	File, Fax, and Printing Services	Common Internet File System (CIFS) Browser Protocol	[MS-BRWSA] [MS-ERREF] [MS-LSAD] [MS-MAIL] [MS-NBTE] [MS-RAP] [MS-SAMR] [MS-SMB] [MS-SRVS] [MS-WKST]
[MS-BRWSA]	Common Internet File System (CIFS) Browser Auxiliary Protocol Specification	RPC	File, Fax, and Printing Services	Common Internet File System (CIFS) Browser Auxiliary Protocol	[MS-DTYP] [MS-RPCE] [MS-SMB]
[MS-CAPR]	Central Access Policy Identifier (ID) Retrieval Protocol	RPC	File, Fax, and Printing Services	Central Access Policy ID Retrieval Protocol	[MS-DTYP] [MS-ERREF] [MS-LSAT] [MS-RPCE]
[MS-CBCP]	Callback Control Protocol Specification	Block	Networking	Callback Control Protocol	[MS-DTYP]
[MS-CDP]	Connected Devices Platform Protocol Version 3	Block	Networking	Connected Devices Platform Service Protocol	[MS-DTYP]
[MS-CER]	Corporate Error Reporting Version 1.0 Protocol Specification	Block	Systems Management	Corporate Error Reporting Version 1.0 Protocol	[MS-SMB]
[MS-CER2]	Corporate Error Reporting V.2 Protocol Specification	Block	Systems Management	Corporate Error Reporting V.2 Protocol Specification	[MS-LCID] [MS-NTHT]
[MS-CFB]	Compound File Binary File Format	Structure	Networking	Compound File Binary File Format	None
[MS-CHAP]	Extensible Authentication Protocol Method for Microsoft Challenge Handshake	RPC	Networking	Extensible Authentication Protocol Method for Microsoft Challenge Handshake	None

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Authentication Protocol (CHAP) Specification			Authentication Protocol (CHAP)	
[MS-CIFS]	Common Internet File System (CIFS) Protocol Specification	Block	File, Fax, and Printing Services	Common Internet File System (CIFS) Protocol	[MS-BRWS] [MS-DFSC] [MS-DFSNM] [MS-DTYP] [MS-ERREF] [MS-FSCC] [MS-LSAD] [MS-MSRP] [MS-NLMP] [MS-RAP] [MS-RPCE] [MS-SRVS]
[MS-CMOM]	MSDTC Connection Manager: OleTx Management Protocol Specification	Block	Application Services	MSDTC Connection Manager: OleTx Management Protocol	[MC-DTCXA] [MS-CMP] [MS-CMPO] [MS-CMRP] [MS-DTCLU] [MS-DTCM] [MS-DTCO] [MS-DTYP] [MS-RRP] [MS-SCMR]
[MS-CMP]	MSDTC Connection Manager: OleTx Multiplexing Protocol Specification	Block	Application Services	MSDTC Connection Manager: OleTx Multiplexing Protocol	[MS-CMPO] [MS-ERREF]
[MS-CMPO]	MSDTC Connection Manager: OleTx Transports Protocol Specification	RPC	Application Services	MSDTC Connection Manager: OleTx Transports Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE]
[MS-CMRP]	Failover Cluster: Management API (ClusAPI) Protocol Specification	RPC	Systems Management	Failover Cluster: Management API (ClusAPI) Protocol	[MS-DMRP] [MS-DTYP] [MS-ERREF] [MS-LSAD] [MS-NLMP] [MS-RPCE] [MS-RRP] [MS-SCMR] [MS-SPNG]
[MS-COM]	Component Object Model Plus (COM+) Protocol	RPC	Application Services	Component Object Model Plus (COM+) Protocol	[MS-DCOM] [MS-DTCO]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Specification				[MS-DTYP] [MS-ERREF]
[MS-COMA]	Component Object Model Plus (COM+) Remote Administration Protocol Specification	RPC	Application Services	Component Object Model Plus (COM+) Remote Administration Protocol	[MS-CIFS] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-LCID] [MS-OAUT] [MS-RPCE]
[MS-COMEV]	Component Object Model Plus (COM+) Event System Protocol Specification	RPC	Application Services	Object Model Plus (COM+) Event System Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT]
[MS-COMT]	Component Object Model Plus (COM+) Tracker Service Protocol Specification	RPC	Application Services	Component Object Model Plus (COM+) Tracker Service Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE]
[MS-CPSP]	Connection Point Services: Phonebook Data Structure	Structure	Networking	Connection Point Services: Phonebook Data Structure	None
[MS-CRTD]	Certificate Templates Structure	Structure	Security and Identity Management	Certificate Templates	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADTS] [MS-DTYP] [MS-WCCE]
[MS-CSRA]	Certificate Services Remote Administration Protocol Specification	RPC	Security and Identity Management	Certificate Services Remote Administration Protocol	[MS-ADA1] [MS-ADTS] [MS-CRTD] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-ICPR] [MS-KILE] [MS-LSAD] [MS-LSAT] [MS-NLMP] [MS-NRPC] [MS-OAUT] [MS-RPCE] [MS-RRP] [MS-WCCE]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-CSSP]	Credential Security Support Provider (CredSSP) Protocol Specification	Block	Security and Identity Management	Certificate Services Remote Administration Protocol	[MS-KILE] [MS-NLMP] [MS-SPNG]
[MS-CSVP]	Failover Cluster: Setup and Validation Protocol (ClusPrep) Specification	RPC	Systems Management	Failover Cluster: Setup and Validation Protocol (ClusPrep)	[MS-CMRP] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-FASP] [MS-OAUT] [MS-RPCE] [MS-SMB2]
[MS-CTA]	Claims Transformation Algorithm	Algorithm	Security and Identity Management	Claims Transformation Algorithm	None
[MS-DCHT]	Desktop Chat Protocol Specification	Block	Collaboration and Communications	Desktop Chat Protocol	[MS-DTYP]
[MS-DCLB]	Desktop Clipboard Protocol Specification	Block	Collaboration and Communications	Desktop Clipboard Protocol	[MS-DTYP] [MS-EMF] [MS-WMF]
[MS-DCOM]	Distributed Component Object Model (DCOM) Remote Protocol Specification	RPC	Networking	Distributed Component Object Model (DCOM) Remote Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE]
[MS-DFSC]	Distributed File System (DFS): Referral Protocol Specification	RPC	File, Fax, and Printing Services	Distributed File System (DFS): Namespace Referral Protocol	[MS-ADTS] [MS-CIFS] [MS-DFSNM] [MS-DRSR] [MS-ERREF] [MS-NRPC] [MS-SMB] [MS-SMB2]
[MS-DFSNM]	Distributed File System (DFS): Namespace Management Protocol Specification	RPC	File, Fax, and Printing Services	Distributed File System (DFS): Namespace Management Protocol	[MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DFSC] [MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SMB] [MS-SMB2] [MS-SRVS]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-DFSRH]	DFS Replication Helper Protocol Specification	RPC	File, Fax, and Printing Services	Distributed File System: Replication Helper Protocol (DFS-R Helper)	[MS-ADTS] [MS-DCOM] [MS-FRS2] [MS-OAUT] [MS-RPCE]
[MS-DHA]	Device Health Attestation Protocol	HTTP	Networking	Device Health Attestation (DHA) Protocol	None
[MS-DHCPE]	Dynamic Host Configuration Protocol (DHCP) Extensions	Block	Networking	Dynamic Host Configuration Protocol (DHCP) Extensions Dynamic Host Configuration Protocol (DHCP): User Class Option Extensions Dynamic Host Configuration Protocol (DHCP): Remote Access Server (RAS) Specific Client Identifier Extensions Dynamic Host Configuration Protocol (DHCP) Server Management: Secondary DHCP Server Delay Response Extensions	[MS-ADA1] [MS-ADSC] [MS-ADTS] [MS-DHCPM]
[MS-DHCPF]	DHCP Failover Protocol Extension	Block	Networking	DHCP Failover Protocol Extension	None
[MS-DHCPM]	Microsoft Dynamic Host Configuration Protocol (DHCP) Server Management Protocol Specification	Block	Networking	Microsoft Dynamic Host Configuration Protocol (DHCP) Server Management Protocol	[MS-DHCPE] [MS-DHCPN] [MS-DTYP] [MS-ERREF] [MS-LSAT] [MS-RPCE] [MS-SAMR]
[MS-DHCPN]	Dynamic Host Configuration Protocol (DHCP) Extensions for Network Access Protection (NAP)	Block	Networking	Dynamic Host Configuration Protocol (DHCP) Extensions for Network Access Protection (NAP)	[MS-DHCPE] [MS-RNAP]
[MS-	Digital Living Network Alliance	Block	Collaboration and	Digital Living Network Alliance	[MS-DTYP]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
DLNHND]	(DLNA) Networked Device Interoperability Guidelines: Microsoft Extensions		Communications	(DLNA) Networked Device Interoperability Guidelines: Microsoft Extensions	[MS-RTSP] [MS-UPMC]
[MS-DLTCS]	Distributed Link Tracking Central Store Protocol Specification	Block	File, Fax, and Printing Services	Distributed Link Tracking: Central Store Protocol	[MS-ADTS] [MS-DLTM] [MS-SMB]
[MS-DLTM]	Distributed Link Tracking: Central Manager Protocol Specification	Block	File, Fax, and Printing Services	Distributed Link Tracking: Central Manager Protocol	[MS-ADTS] [MS-DLTW] [MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SAMR] [MS-SMB] [MS-SPNG]
[MS-DLTW]	Distributed Link Tracking: Workstation Protocol Specification	RPC	File, Fax, and Printing Services	Distributed Link Tracking: Workstation Protocol	[MS-DTYP] [MS-ERREF] [MS-FSCC] [MS-RPCE] [MS-SMB] [MS-SMB2]
[MS-DMCT]	Device Media Control Protocol Specification	Block	Systems Management	Device Media Control Protocol	[MS-DSLR] [MS-DTYP] [MS-RTSP]
[MS-DMRP]	Disk Management Remote Protocol Specification	RPC	Systems Management	Disk Management Remote Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-RPCE]
[MS-DNSP]	Domain Name Service (DNS) Server Management Protocol Specification	RPC	Systems Management	Domain Name Service (DNS) Server Management Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DTYP] [MS-ERREF] [MS-NRPC] [MS-RPCE]
[MS-DPDX]	DirectPlay DXDiag Usage Protocol Specification	Block	Multiplayer Games	DirectPlay DXDiag Usage Protocol	[MS-DTYP]
[MS-DPSP]	Digest Protocol Extensions	Block	Security and Identity	Digest Access Authentication:	None

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
			Management	Microsoft Extensions	
[MS-DPWSRP]	Devices Profile for Web Services (DPWS): Shared Resource Publishing Data Structure	Structure	File, Fax, and Printing Services	DPWS: Shared Resource Publishing	[MS-DTYP] [MS-HGRP] [MS-SHLLINK]
[MS-DPWSSN]	Devices Profile for Web Services (DPWS): Size Negotiation Extension	SOAP	Systems Management	Devices Profile for Web Services (DPWS): Size Negotiation Extension	None
[MS-DRM]	Digital Rights Management License Protocol Specification	Block	Collaboration and Communications	Management License Protocol	[MS-DTYP] [MS-ERREF]
[MS-DRMCD]	Windows Media Digital Rights Management (WMDRM): MTP Command Extension	Block	Collaboration and Communications	WMDRM MTP Command Extension	[MS-DRM]
[MS-DRMND]	Windows Media Digital Rights Management (WMDRM): Network Devices Protocol Specification	Block	Collaboration and Communications	WMDRM Network Devices Protocol	[MS-DTYP]
[MS-DRMRI]	Windows Media Digital Rights Management for Network Devices (WMDRM-ND): Registrar Initiation Protocol Specification	Block	Collaboration and Communications	WMDRM-ND: Registrar Initiation Protocol	[MS-DSLR] [MS-DRMND]
[MS-DRSR]	Directory Replication Service (DRS) Remote Protocol Specification	RPC	Directory Services	Directory Replication Service Remote Protocol (drsuapi) - Replication Directory Replication Service Remote Protocol (drsuapi) - Management	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-DTYP] [MS-ERREF] [MS-KILE] [MS-LSAD] [MS-NRPC] [MS-RPCE]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-SRPL]
[MS-DSCPM]	Desired State Configuration Pull Model Protocol	~~Rest~~HTTP	Systems Management	Desired State Configuration Pull Model Protocol	None
[MS-DSLR]	Device Services Lightweight Remoting Protocol Specification	Block	Systems Management	Device Services Lightweight Remoting Protocol	[MS-DTYP] [MS-ERREF]
[MS-DSML]	Directory Services Markup Language (DSML) 2.0 Protocol Extensions	SOAP	Application Services	Directory Services Markup Language (DSML) 2.0 Protocol Extensions Directory Services Markup Language (DSML) 2.0 Protocol Extensions	[MS-ADDM]
[MS-DSMN]	Device Session Monitoring Protocol Specification	Block	Systems Management	Device Session Monitoring Protocol	[MS-DSLR] [MS-DTYP]
[MS-DSPA]	Device Session Property Access Protocol Specification	Block	Systems Management	Device Session Property Access Protocol	[MS-DSLR] [MS-DTYP]
[MS-DSSP]	Directory Services Setup Remote Protocol Specification	RPC	Systems Management	Directory Services Setup Remote Protocol	[MS-ADTS] [MS-DSLR] [MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SAMR] [MS-SMB]
[MS-DTAG]	Device Trust Agreement Protocol Specification	SOAP	Security and Identity Management	Device Trust Agreement Protocol	None
[MS-DTCLU]	MSDTC Connection Manager: OleTx Transaction Protocol Logical Unit Mainframe Extension	Block	Application Services	MSDTC Connection Manager: OleTx Transaction Protocol Logical Unit Mainframe Extension	[MS-CMP] [MS-CMPO] [MS-DTCO]
[MS-DTCM]	MSDTC Connection Manager: OleTx Transaction Internet Protocol Specification	Block	Application Services	Connection Manager: OleTx Transaction Internet Protocol	[MS-CMP] [MS-CMPO] [MS-DTCO] [MS-DTYP] [MS-RPCE]
[MS-DTCO]	MSDTC Connection Manager: OleTx Transaction	Block	Application Services	MSDTC Connection Manager: OleTx Transaction	[MS-CMOM] [MS-CMP]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Protocol Specification			Protocol	[MS-CMPO] [MS-CMRP] [MS-DTYP] [MS-RRP] [MS-TIPP] [MS-WSRVCAT]
[MS-DTYP]	Windows Data Types	Structure	Reference	Windows Data Types	[MS-ADTS] [MS-APDS] [MS-ERREF] [MS-KILE] [MS-LSAD] [MS-NBTE] [MS-NLMP] [MS-RPCE] [MS-SFU] [MS-TLSP]
[MS-DVRD]	Device Registration Discovery Protocol	HTTP	Device-Specific	Device Registration Discovery Protocol	[MS-DVRE]
[MS-DVRE]	Device Registration Enrollment Protocol	SOAP	Device-Specific	Device Registration Enrollment Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-DVRD] [MS-WSTEP]
[MS-DVRJ]	Device Registration Join Protocol	HTTP	Directory Services	Device Registration Join Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DRSR]
[MS-ECS]	Enterprise Client Synchronization Protocol	HTTP	Device-Specific	Enterprise Client Synchronization Protocol	[MS-DTYP]
[MS-EERR]	Extended Error Remote Data Structure	Structure	Networking	Extended Error Remote Data Structure	[MS-DTYP] [MS-RPCE]
[MS-EFSR]	Encrypting File System Remote (EFSRPC) Protocol Specification	RPC	File, Fax, and Printing Services	Encrypting File System Remote Protocol	[MS-ADTS] [MS-CRTD] [MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SMB] [MS-SMB2]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-WCCE]
[MS-EMF]	Enhanced Metafile Format	Structure	File, Fax, and Printing Services	Enhanced Metafile (EMF) Format	[MS-WMF]
[MS-EMFPLUS]	Enhanced Metafile Format Plus Extensions	Structure	File, Fax, and Printing Services	Enhanced Metafile (EMF) Format: Plus Extensions (EMF+)	[MS-EMF] [MS-WMF]
[MS-EMFSPOOL]	Enhanced Metafile Spool Format	Structure	File, Fax, and Printing Services	Enhanced Metafile (EMF) Spool Format	[MS-DTYP] [MS-EMF] [MS-RPRN] [MS-WMF]
[MS-ERREF]	Windows Error Codes	Structure	Reference	Windows Error Codes	None
[MS-EVEN]	EventLog Remoting Protocol Specification	RPC	Systems Management	EventLog Remoting Protocol Version 1.0	[MS-ADTS] [MS-DTYP] [MS-EERR] [MS-ERREF] [MS-LCID] [MS-LSAD] [MS-LSAT] [MS-RPCE] [MS-RRP] [MS-SMB]
[MS-EVEN6]	EventLog Remoting Protocol Version 6.0 Specification	RPC	Systems Management	EventLog Remoting Protocol Version 6.0	[MS-DTYP] [MS-ERREF] [MS-EVEN] [MS-GPSI] [MS-KILE] [MS-LSAD] [MS-NLMP] [MS-RPCE]
[MS-FASP]	Firewall and Advanced Security Protocol Specification	RPC	Networking	Firewall and Advanced Security Protocol	[MS-AIPS] [MS-DTYP] [MS-ERREF] [MS-GPFAS] [MS-IKEE] [MS-IPHTTPS] [MS-KILE] [MS-NLMP] [MS-RPCE]
[MS-FAX]	Fax Server and Client Remote Protocol Specification	RPC	File, Fax, and Printing Services	Fax Server and Client Remote Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SMB]

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[MS-FCIADS]	File Classification Infrastructure Alternate Data Stream (ADS) File Format	Structure	File, Fax, and Printing Services	File Classification Infrastructure ADS File Format	[MS-DTYP] [MS-FSRM]
[MS-FRS1]	File Replication Service Protocol Specification	RPC	File, Fax, and Printing Services	File Replication Service (FRS) Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-BKUP] [MS-DFSC] [MS-DFSNM] [MS-DFSRH] [MS-DRSR] [MS-DTYP] [MS-ERREF] [MS-FRS2] [MS-FSCC] [MS-RPCE] [MS-RRP]
[MS-FRS2]	Distributed File System Replication Protocol Specification	RPC	File, Fax, and Printing Services	Distributed File System: Replication (DFS-R) Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-BKUP] [MS-DTYP] [MS-FSCC] [MS-KILE] [MS-LSAD] [MS-NLMP] [MS-RDC] [MS-RPCE]
[MS-FSA]	File System Algorithms	Algorithm	File, Fax, and Printing Services	File System Algorithms	[MS-DTYP] [MS-ERREF] [MS-FSCC] [MS-LSAD]
[MS-FSCC]	File System Control Codes	Structure	File, Fax, and Printing Services	Server Message Block (SMB) Version 1.0 Protocol Server Message Block (SMB)	[MS-DTYP] [MS-ERREF] [MS-LSAD] [MS-SMB] [MS-SMB2]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
				Version 2 Protocol Common Internet File System (CIFS) Protocol File System Control Codes File Level Trim Data Structure	
[MS-FSRM]	File Server Resource Manager Protocol Specification	Block	File, Fax, and Printing Services	File Server Resource Manager Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE]
[MS-FSRVP]	File Server Remote VSS Protocol Specification	RPC	File, Fax, and Printing Services	File Server Remote VSS Protocol	[MS-CIFS] [MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SMB2] [MS-SRVS]
[MS-FSVCA]	File Set Version Comparison Algorithms	Algorithm	File, Fax, and Printing Services	File Set Version Comparison Algorithms	[MS-DTYP]
[MS-FTPS]	File Transfer Protocol over Secure Sockets Layer (FTPS) Specification	Block	File, Fax, and Printing Services	File Transfer Protocol over Secure Sockets Layer (FTPS)	None
[MS-GKDI]	Group Key Distribution Protocol Specification	RPC	Systems Management Security and Identity Management	Group Key Distribution Protocol	[MS-ADA2] [MS-ADSC] [MS-ADTS] [MS-DTYP] [MS-ERREF] [MS-NRPC] [MS-RPCE] [MS-SPNG]
[MS-GPAC]	Group Policy: Audit Configuration Extension	Block	Systems Management	Group Policy: Audit Configuration Extension	[MS-DTYP] [MS-GPOL]
[MS-GPCAP]	Group Policy: Central Access	Block	Systems Management	Group Policy: Central Access	[MS-ADA2] [MS-ADSC]

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	Policies Protocol Extension			Policies Protocol Extension	[MS-ADTS] [MS-DTYP] [MS-GPOL] [MS-SMB] [MS-SMB2]
[MS-GPDPC]	Group Policy: Deployed Printer Connections Extension	Block	Systems Management	Group Policy: Deployed Printer Connections Protocol Extension	[MS-ADA3] [MS-ADSC] [MS-DTYP] [MS-GPOL] [MS-RPRN] [MS-SPNG]
[MS-GPEF]	Group Policy: Encrypting File System Extension	Block	Systems Management	Group Policy: Encrypting File System Extension	[MS-DTYP] [MS-EFSR] [MS-GPOL] [MS-GPREG]
[MS-GPFAS]	Group Policy: Firewall and Advanced Security Data Structure	Block	Systems Management	Group Policy: Firewall and Advanced Security Data Structure	[MS-FASP] [MS-GPOL] [MS-GPREG]
[MS-GPFR]	Group Policy: Folder Redirection Protocol Extension	Block	Systems Management	Group Policy: Folder Redirection Protocol Extension	[MS-DTYP] [MS-GPOL] [MS-SMB]
[MS-GPIE]	Group Policy: Internet Explorer Maintenance Extension	Block	Systems Management	Group Policy: Internet Explorer Maintenance Extension	[MS-GPOL] [MS-GPREG]
[MS-GPIPSEC]	Group Policy: IP Security (IPsec) Protocol Extension	Block	Networking Systems Management	Group Policy: IP Security (IPsec) Protocol Extension	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-DTYP] [MS-GPOL] [MS-NRPC]
[MS-GPNAP]	Group Policy: Network Access Protection (NAP) Extension	Structure	Systems Management	Group Policy: Network Access Protection (NAP) Extension	[MS-DHCPN] [MS-DTYP] [MS-GPOL] [MS-GPREG] [MS-HCEP] [MS-LCID] [MS-PEAP] [MS-TSGU] [MS-WSH]
[MS-GPNRPT]	Group Policy: Name Resolution	Block	Systems Management	Group Policy: NRPT Data Extension	[MS-GPOL] [MS-GPREG]

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	Policy Table (NRPT) Data Extension				
[MS-GPOL]	Group Policy: Core Protocol Specification	Block	Systems Management	Group Policy: Core Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-DFSC] [MS-DRSR] [MS-DTYP] [MS-GPFR] [MS-GPSI] [MS-GPIPSEC] [MS-GPREG] [MS-GPSCR] [MS-KILE] [MS-NLMP] [MS-NRPC] [MS-SPNG] [MS-WMI]
[MS-GPPREF]	Group Policy: Preferences Extension Data Structure	Block	Systems Management	Group Policy: Preferences Extension	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-GPOL] [MS-SMB] [MS-SMB2]
[MS-GPREG]	Group Policy: Registry Extension Encoding	Block	Systems Management	Group Policy: Registry Extension Encoding	[MS-GPOL]
[MS-GPSB]	Group Policy: Security Protocol Extension	Block	Systems Management	Group Policy: Host Security Configuration	[MS-DTYP] [MS-GPOL] [MS-KILE] [MS-LSAD] [MS-SAMR] [MS-SCMR] [MS-SMB] [MS-SMB2] [MS-RRP]
[MS-GPSCR]	Group Policy: Scripts Extension	Block	Systems Management	Group Policy: Scripts Protocol	[MS-GPOL]

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	Encoding			Extension	
[MS-GPSI]	Group Policy: Software Installation Protocol Extension	Block	Systems Management	Group Policy: Software Installation Protocol Extension	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-DTYP] [MS-KILE] [MS-LCID] [MS-SPNG]
[MS-GPWL]	Group Policy: Wireless/Wired Protocol Extension	Block	Systems Management	Group Policy: Wireless/Wired Protocol Extension	[MS-ADA2] [MS-ADSC] [MS-ADTS] [MS-CHAP] [MS-GPOL] [MS-PEAP]
[MS-GSSA]	Generic Security Service Algorithm for Secret Key Transaction Authentication for DNS (GSS-TSIG) Protocol Extension	Block	Networking Security and Identity Management	Generic Security Service Algorithm for Secret Key Transaction Authentication for DNS (GSS-TSIG) Protocol Extension	None
[MS-H245]	H.245 Protocol: Microsoft Extensions	Block	Collaboration and Communications	Microsoft Extensions to H.245 protocol	None
[MS-H26XPF]	Real-Time Transport Protocol (RTP/RTCP): H.261 and H.263 Video Streams Extensions	Block	Collaboration and Communications	RTP/RTCP: H.261 and H.263 Video Streams Extensions	[MS-RTPME]
[MS-HCEP]	Health Certificate Enrollment Protocol Specification	Block	Networking	Health Certificate Enrollment Protocol	[MS-WCCE]
[MS-HGRP]	HomeGroup Protocol Specification	Block	File, Fax, and Printing Services Home Server Networking Systems Management	DPWS: Printer Sharing Protocol HomeGroup Credential Distribution Protocol	[MS-DTYP] [MS-FSCC] [MS-PPGRH] [MS-PPSEC] [MS-RPRN] [MS-WMF]
[MS-HGSA]	Host Guardian Service: Attestation Protocol	HTTP	Security and Identity Management	Host Guardian Service: Attestation Protocol	[MS-DTYP] [MS-KPS]
[MS-HNDS]	Host Name Data Structure	Structure	Networking	Host Name Data Structure Extension	None

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Extension				
[MS-HRL]	Hyper-V Replica Log (HRL) File Format	Structure	File, Fax, and Printing Services	Hyper-V Replica Log (HRL) File Format	None
[MS-HTTP2E]	Hypertext Transfer Protocol Version 2 (HTTP/2) Extension	Block	Networking	Hypertext Transfer Protocol Version 2 (HTTP/2) Extension	None
[MS-HTTPE]	Hypertext Transfer Protocol (HTTP) Extensions	Block	Networking	Hypertext Transfer Protocol (HTTP) Extensions	[MS-UCODEREF]
[MS-HVRS]	Hyper-V Remote Storage Profile	~~Block~~Standards Support	File, Fax, and Printing Services	Hyper-V Storage over SMB Protocol	[MS-FSA] [MS-FSCC] [MS-FSRVP] [MS-RSVD] [MS-SMB2] [MS-SQOS]
[MS-ICPR]	ICertPassage Remote Protocol Specification	RPC	Security and Identity Management	ICertPassage Remote Protocol	[MS-CRTD] [MS-DCOM] [MS-DTYP] [MS-RPCE] [MS-WCCE]
[MS-IISS]	Internet Information Services (IIS) ServiceControl Protocol Specification	RPC	Application Services	IIS ServiceControl Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE] [MS-SCMR]
[MS-IKEE]	Internet Key Exchange Protocol Extensions	Block	Security and Identity Management	Internet Key Exchange Protocol Extensions IKE: Fragmentation Extension IKEv2: Negotiation Correlation Extension	[MS-AIPS] [MS-ERREF]
[MS-IMSA]	Internet Information Services (IIS) IMSAdminBaseW Remote Protocol Specification	RPC	Application Services	IIS IMSAdminBaseW Remote Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE]
[MS-IOI]	IManagedObject Interface Protocol Specification	RPC	Application Services	IManagedObject Interface Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-NRBF]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-NRTP]
[MS-IPAMM]	IP Address Management (IPAM) Management Protocol	SOAP	Systems Management	IPAM Management Protocol	[MS-DTYP] [MS-EVEN6] [MS-NMFTB] [MS-NRTP] [MS-WSPOL]
[MS-IPAMM2]	IP Address Management (IPAM) Management ProtocolVersion 2	SOAP	Networking	IP Address Management (IPAM) Protocol	[MS-DTYP] [MS-EVEN6] [MS-NMFTB] [MS-IPAMM] [MS-NRTP] [MS-TDS] [MS-WSPOL]
[MS-IPHTTPS]	IP over HTTPS (IP-HTTPS) Tunneling Protocol Specification	Block	Networking	IP over HTTPS (IP-HTTPS) Protocol	None
[MS-IRDA]	IrDA Object Exchange (OBEX) Protocol Profile	Block	Networking	IrDA Object Exchange (OBEX) Protocol	None
[MS-IRP]	Internet Information Services (IIS) Inetinfo Remote Protocol Specification	RPC	Application Services	IIS Inetinfo Remote Protocol	[MS-DTYP] [MS-ERREF] [MS-LCID] [MS-RPCE]
[MS-KILE]	Kerberos Protocol Extensions	Block	Security and Identity Management	Kerberos Network Authentication Service (V5) Extensions	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DRSR] [MS-DTYP] [MS-GPSB] [MS-LSAD] [MS-PAC] [MS-RPCE] [MS-SAMR] [MS-SNTP] [MS-SPNG]
[MS-KKDCP]	Kerberos Key Distribution Center (KDC) Proxy Protocol Specification	Block	Security and Identity Management	Kerberos Key Distribution Center (KDC) Proxy Protocol	[MS-NRPC]
[MS-KPP]	Key Provisioning	HTTP	Directory	Key Provisioning	[MS-ADA2]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Protocol		Services	Protocol	[MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DRSR]
[MS-KPS]	Key Protection Service Protocol	HTTP	Security and Identity Management	Key Protection Service Protocol	[MS-HGSA]
[MS-L2TPIE]	Layer 2 Tunneling Protocol (L2TP) IPsec Extensions	Block	Networking	L2TP IPsec Extensions	[MS-DTYP]
[MS-LCID]	Windows Language Code Identifier (LCID) Reference	Structure	Reference	Windows Language Code Identifier (LCID) Reference	[MS-DTYP]
[MS-LLMNRP]	Link Local Multicast Name Resolution (LLMNR) Profile	Block	Networking	Link Local Multicast Name Resolution (LLMNR) Profile	None
[MS-LLTD]	Link Layer Topology Discovery (LLTD) Protocol Specification	Block	Networking	LLTD Protocol	None
[MS-LREC]	Live Remote Event Capture (LREC) Protocol	Block	Networking	Live Remote Event Capture Control Protocol	[MS-DTYP] [MS-ERREF] [MS-EVEN] [MS-EVEN6] [MS-RPCE]
[MS-LSAD]	Local Security Authority (Domain Policy) Remote Protocol Specification	RPC	Directory Services Security and Identity Management	Local Security Authority (Domain Policy) Remote Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DTYP] [MS-ERREF] [MS-GPEF] [MS-KILE] [MS-LSAT] [MS-RPCE] [MS-SAMR] [MS-SMB] [MS-SMB2] [MS-WKST]
[MS-LSAT]	Local Security Authority (Translation Methods) Remote Protocol Specification	RPC	Security and Identity Management	Local Security Authority (Translation Methods) Remote Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS]

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					[MS-DRSR] [MS-DTYP] [MS-ERREF] [MS-LSAD] [MS-NRPC] [MS-RPCE] [MS-SAMR] [MS-SCMR]
[MS-LWSSP]	Lightweight Web Services Security Profile	Block	Networking Security and Identity Management	Lightweight Web Services Profile	None
[MS-MAIL]	Remote Mailslot Protocol Specification	Block	Networking	Remote Mailslot Protocol	[MS-DTYP] [MS-SMB]
[MS-MCIS]	Content Indexing Services Protocol Specification	Block	Systems Management	Content Indexing Services Protocol	[MS-DTYP] [MS-ERREF] [MS-LCID] [MS-SMB]
[MS-MDE]	Mobile Device Enrollment Protocol	SOAP	Networking	Mobile Device Management Enrollment Protocol	[MS-MDM] [MS-WSTEP] [MS-XCEP]
[MS-MDE2]	Mobile Device Enrollment Protocol Version 2	SOAP	Networking	Mobile Device Enrollment Protocol Version 2	[MS-MDE] [MS-MDM] [MS-WSTEP] [MS-XCEP]
[MS-MDM]	Mobile Device Management Protocol	HTTP	Networking	Mobile Device Management Protocol	[MS-MDE]
[MS-MICE]	Miracast over Infrastructure Connection Establishment Protocol	Block	Networking	Miracast over Infrastructure Connection Establishment Protocol	None
[MS-MMSP]	Microsoft Media Server (MMS) Protocol Specification	Block	Collaboration and Communications	MMS Protocol	[MS-DTYP] [MS-ERREF] [MS-NLMP]
[MS-MNPR]	Microsoft NetMeeting Protocol Specification	Block	Collaboration and Communications	Microsoft NetMeeting Protocol	[MS-DTYP] [MS-EMF] [MS-H245] [MS-RDPBCGR] [MS-WMF]
[MS-MQBR]	Message Queuing (MSMQ): Binary	Block	Application Services	MSMQ: Binary Reliable Message	[MS-DTYP]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Reliable Message Routing Algorithm			Routing Algorithm	[MS-MQDMPR] [MS-MQDSSM] [MS-MQMQ] [MS-MQQB]
[MS-MQCN]	Message Queuing (MSMQ): Directory Service Change Notification Protocol Specification	Block	Application Services	MSMQ: Directory Service Change Notification Protocol	[MS-ADTS] [MS-DTYP] [MS-MQBR] [MS-MQDMPR] [MS-MQDS] [MS-MQDSSM] [MS-MQMQ] [MS-MQQB]
[MS-MQDMPR]	Message Queuing (MSMQ): Common Data Model and Processing Rules	Block	Application Services	MSMQ: Common Data Model and Processing Rules	[MS-ADTS] [MS-DTCO] [MS-DTYP] [MS-ERREF] [MS-LSAD] [MS-MQDSSM] [MS-MQMQ] [MS-MQRR]
[MS-MQDS]	Message Queuing (MSMQ): Directory Service Protocol Specification	RPC	Application Services	MSMQ: Directory Service Protocol	[MS-ADTS] [MS-DTYP] [MS-MQCN] [MS-MQDMPR] [MS-MQDSSM] [MS-MQMQ] [MS-RPCE] [MS-RDPBCGR]
[MS-MQDSSM]	Message Queuing (MSMQ): Directory Service Schema Mapping	RPC	Application Services	MSMQ: Directory Service Schema Mapping	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DTYP] [MS-MQDMPR] [MS-MQMQ]
[MS-MQMP]	Message Queuing (MSMQ): Queue Manager Client Protocol Specification	RPC	Application Services	MSMQ: Queue Manager Client Protocol	[MS-DTCO] [MS-DTYP] [MS-ERREF] [MS-MQDMPR] [MS-MQMQ] [MS-MQQB] [MS-MQQP] [MS-MQRR]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-RPCE]
[MS-MQMQ]	Message Queuing (MSMQ): Data Structures	Structure	Application Services	MSMQ: Data Structures	[MS-ADTS] [MS-DTYP] [MS-ERREF] [MS-MQMR] [MS-MQRR] [MS-RDPBCGR] [MS-SAMR]
[MS-MQMR]	Message Queuing (MSMQ): Queue Manager Management Protocol Specification	RPC	Application Services	MSMQ: Queue Manager Management Protocol	[MS-DTYP] [MS-ERREF] [MS-MQDMPR] [MS-MQMQ] [MS-MQQB] [MS-RPCE]
[MS-MQQB]	Message Queuing (MSMQ): Message Queuing Binary Protocol Specification	Block	Application Services	MSMQ: Message Queuing Binary Protocol	[MS-ADTS] [MS-DTYP] [MS-LCID] [MS-MQBR] [MS-MQDMPR] [MS-MQDSSM] [MS-MQMQ] [MS-PAC] [MS-SFU]
[MS-MQQP]	Message Queuing (MSMQ): Queue Manager to Queue Manager Protocol Specification	RPC	Application Services	MSMQ: Queue Manager to Queue Manager Protocol	[MS-DTYP] [MS-ERREF] [MS-MQDMPR] [MS-MQDSSM] [MS-MQMQ] [MS-MQMP] [MS-MQRR] [MS-RPCE]
[MS-MQRR]	Message Queuing (MSMQ): Queue Manager Remote Read Protocol Specification	RPC	Application Services	MSMQ: Queue Manager Remote Read Protocol	[MC-MQSRM] [MS-DTCO] [MS-DTYP] [MS-ERREF] [MS-MQBR] [MS-MQDMPR] [MS-MQMQ] [MS-MQQB] [MS-MQQP] [MS-RPCE]
[MS-MQSD]	Message Queuing (MSMQ): Directory Service Discovery	Block	Application Services	Message Queuing (MSMQ): Directory Service Discovery	[MS-DTYP] [MS-MQDMPR]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Protocol Specification			Protocol	[MS-MQMP]
[MS-MSB]	Media Stream Broadcast (MSB) Protocol Specification	Block	Collaboration and Communications	Media Stream Broadcast (MSB) Protocol	[MS-DTYP] [MS-WMLOG]
[MS-MSBD]	Media Stream Broadcast Distribution (MSBD) Protocol Specification	Block	Collaboration and Communications	Media Stream Broadcast Distribution (MSBD) Protocol	[MS-DTYP] [MS-ERREF] [MS-MSB]
[MS-MSRP]	Messenger Service Remote Protocol Specification	Block	Collaboration and Communications File, Fax, and Printing Services Networking	Messenger Service Name Management Protocol Messenger Service Messaging Protocol	[MS-DTYP] [MS-ERREF] [MS-MAIL] [MS-NBTE] [MS-RPCE] [MS-SMB]
[MS-MWBE]	Microsoft Web Browser Federated Sign-On Protocol Extensions	Block	Security and Identity Management	WS-Federation: Marshaling and SAML Advice Extensions	[MS-ADA1] [MS-ADA2] [MS-DTYP] [MS-MWBF]
[MS-MWBF]	Microsoft Web Browser Federated Sign-On Protocol Specification	Block	Security and Identity Management	WS-Federation: Browser Extensions Version 2 WS-Federation: Browser Extensions	[MS-ADA1] [MS-ADA3] [MS-ADTS] [MS-DTYP] [MS-MWBE]
[MS-N2HT]	Negotiate and Nego2 HTTP Authentication Protocol Specification	Block	Security and Identity Management	Negotiate and Nego2 HTTP Authentication Protocol	[MS-SPNG]
[MS-NBTE]	NetBIOS over TCP (NetBT) Extensions	Block	Networking	NetBIOS over TCP (NetBT) Extensions NetBT Name Data Structure Extension	None
[MS-NCNBI]	Network Controller Northbound Interface	HTTP	Networking	Network Controller Northbound Interface	None
[MS-NCT]	Network Cost Transfer Protocol	Block	Networking	Network Cost Transfer Protocol	None
[MS-NEGOEX]	SPEGNO Extended Negotiation (NEGOEX) Security Mechanism	Block	Security and Identity Management	Simple and Protected GSS-API Negotiation Mechanism (SPNEGO) Extension	[MS-DTYP] [MS-ERREF] [MS-SPNG]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-NETTR]	.NET Tracing Protocol Specification	Block	Application Services	.NET Tracing Protocol	[MS-DTYP]
[MS-NFPB]	Near Field Proximity: Bidirectional Services Protocol	Block	Networking	Near Field Proximity: Bidirectional Services Protocol	None
[MS-NFPS]	Near Field Proximity: Sharing Protocol	Block	Networking	Near Field Proximity: Sharing Protocol	[MS-NFPB]
[MS-NKPU]	Network Key Protector Unlock Protocol Specification	Block	Networking	Network Key Protector Unlock (NKPU) Protocol	None
[MS-NLMP]	NT LAN Manager (NTLM) Authentication Protocol Specification	Block	Security and Identity Management	NT LAN Manager (NTLM) Authentication Protocol	[MS-APDS] [MS-DTYP] [MS-RPCE] [MS-SMB] [MS-SPNG]
[MS-NMFMB]	.NET Message Framing MSMQ Binding Protocol Specification	SOAP	Application Services	.NET Message Framing MSMQ Binding Protocol	[MC-NBFS] [MC-NBFSE] [MC-NMF] [MS-MQDMPR] [MS-MQMQ] [MS-MQQB]
[MS-NMFTB]	.NET Message Framing TCP Binding Protocol Specification	SOAP	Application Services	.NET Message Framing TCP Binding Protocol	[MC-NBFS] [MC-NBFSE] [MC-NMF]
[MS-NNS]	.NET NegotiateStream Protocol Specification	Block	Application Services	.NET NegotiateStream Protocol	[MS-ERREF] [MS-NLMP] [MS-SPNG]
[MS-NNTP]	NT LAN Manager (NTLM) Authentication: Network News Transfer Protocol (NNTP) Extension	Block	Collaboration and Communications	NTLM Authentication: Network News Transfer Protocol	[MS-NLMP]
[MS-NRBF]	.NET Remoting: Binary Format Data Structure	Structure	Application Services	.NET Remoting: Binary Format Data Structure	[MS-DTYP] [MS-NRTP]
[MS-NRLS]	.NET Remoting: Lifetime Services Extension	RPC	Application Services	.NET Remoting: Lifetime Services Extension	[MS-NRTP]
[MS-NRPC]	Netlogon Remote Protocol	RPC	Security and Identity	Netlogon Remote Protocol	[MS-ADA1]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Specification		Management		[MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-APDS] [MS-CIFS] [MS-DTYP] [MS-ERREF] [MS-GPSB] [MS-LSAD] [MS-LSAT] [MS-MAIL] [MS-NLMP] [MS-PAC] [MS-RCMP] [MS-RPCE] [MS-RPRN] [MS-RRP] [MS-SAMR] [MS-SAMS] [MS-SMB] [MS-SNTP]
[MS-NRTP]	.NET Remoting: Core Protocol Specification	Block	Application Services	.NET Remoting: Core Protocol	[MS-DTYP] [MS-NLMP] [MS-NNS] [MS-NRBF] [MS-NRLS] [MS-OAUT]
[MS-NSPI]	Name Service Provider Interface (NSPI) Protocol Specification	Block	Directory Services	Name Service Provider Interface (NSPI) Protocol	[MS-KILE]
[MS-NTHT]	NTLM Over HTTP Protocol Specification	Block	Application Services Security and Identity Management	HTTP Authentication: NTLM over HTTP	[MS-NLMP] [MS-RPCE]
[MS-OAPX]	OAuth 2.0 Protocol Extensions	HTTP	Security and Identity Management	OAuth 2.0 Protocol Extensions	[MS-WCCE]
[MS-OAPXBC]	OAuth 2.0 Protocol Extensions for Broker Clients	HTTP	Security and Identity Management	OAuth 2.0 Protocol Extensions for Broker Clients	[MS-OAPX] [MS-ADA1] [MS-ADA2] [MS-ADSC]
[MS-OAUT]	OLE Automation Protocol Specification	RPC	Networking	OLE Automation Protocol	[MS-DCOM] [MS-DTYP]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-ERREF] [MS-RPCE]
[MS-OCSP]	Online Certificate Status Protocol (OCSP) Extensions	Block	Security and Identity Management	Online Certificate Status Protocol (OCSP) Extensions	[MS-CSRA] [MS-OCSPA]
[MS-OCSPA]	Microsoft OCSP Administration Protocol Specification	RPC	Security and Identity Management	Microsoft OCSP Administration Protocol	[MS-CRTD] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-KILE] [MS-NLMP] [MS-OAUT] [MS-OCSP] [MS-RPCE] [MS-WCCE]
[MS-ODATA]	Open Data Protocol (OData) Specification	Block	Application Services	Open Data Protocol (OData)	[MC-CSDL] [MC-EDMX]
[MS-OIDCE]	OpenID Connect 1.0 Protocol Extensions	HTTP	Security and Identity Management	OpenID Connect 1.0 Protocol Extensions	[MS-OAPX]
[MS-OLEDS]	Object Linking and Embedding (OLE) Data Structures	Structure	Networking	OLE Data Structures	[MS-CFB] [MS-DTYP] [MS-EMF] [MS-ERREF] [MS-RPRN] [MS-WMF]
[MS-OLEPS]	Object Linking and Embedding (OLE) Property Set Data Structures	Structure	Networking	Object Linking and Embedding (OLE): Property Set Data Structures	[MS-CFB] [MS-OAUT]
[MS-OTPCE]	One-Time Password Certificate Enrollment Protocol Specification	Block	Other	One-Time Password Certificate Enrollment Protocol	[MS-ADTS]
[MS-PAC]	Privilege Attribute Certificate Data Structure	Structure	Security and Identity Management	Privilege Attribute Certificate (PAC) Data Structure	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADTS] [MS-APDS] [MS-DTYP] [MS-KILE] [MS-NLMP] [MS-NRPC]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-PKCA] [MS-RCMP] [MS-RPCE] [MS-SAMR] [MS-SFU]
[MS-PAN]	Print System Asynchronous Notification Protocol Specification	RPC	File, Fax, and Printing Services	Print System Asynchronous Notification Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SPNG]
[MS-PAR]	Print System Asynchronous Remote Protocol Specification	RPC	File, Fax, and Printing Services	Print System Asynchronous Remote Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-RPRN] [MS-SMB2] [MS-SPNG]
[MS-PASS]	Passport Server Side Include (SSI) Version 1.4 Protocol Specification	Block	Security and Identity Management	Server Side Include (SSI) 1.4 Protocol	None
[MS-PBSD]	Publication Services Data Structure	Structure	Home Server	Publication Services Data Structure	[MS-DPWSSN] [MS-DTYP]
[MS-PCCRC]	Peer Content Caching and Retrieval: Content Identification	Structure	Networking	Peer Content Caching & Retrieval: Discovery Protocol Peer Content Caching and Retrieval: Hosted Cache Protocol Peer Content Caching & Retrieval: Content Identification Peer Content Caching & Retrieval: Retrieval Protocol	[MS-DTYP] [MS-PCCRD] [MS-PCCRR]
[MS-PCCRD]	Peer Content Caching and Retrieval Discovery Protocol Specification	SOAP	Networking	Peer Content Caching and Retrieval: Discovery Protocol	[MS-PCCRC] [MS-PCCRR]
[MS-PCCRR]	Peer Content Caching and Retrieval: Retrieval Protocol Specification	Block	Networking	Peer Content Caching and Retrieval: Retrieval Protocol	[MS-DTYP] [MS-PCCRC] [MS-PCCRD]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-PCCRTP]	Peer Content Caching and Retrieval: HTTP Extensions	Block	Networking	Peer Content Caching and Retrieval: Hypertext Transfer Protocol	[MS-PCCRC]
[MS-PCHC]	Peer Content Caching and Retrieval: Hosted Cache Protocol Specification	Block	Networking	Peer Content Caching and Retrieval: Hosted Cache Protocol	[MS-DTYP] [MS-PCCRC] [MS-PCCRR] [MS-SPNG]
[MS-PCQ]	Performance Counter Query Protocol Specification	RPC	Systems Management	Performance Counter Query Protocol	[MS-DTYP] [MS-ERREF] [MS-LCID] [MS-RPCE]
[MS-PEAP]	Protected Extensible Authentication Protocol (PEAP) Specification	Block	Networking	Protected Extensible Authentication Protocol (PEAP)	[MS-DTYP]
[MS-PKAP]	Public Key Authentication Protocol	HTTP	Directory Services	Public Key Authentication Protocol	None
[MS-PKCA]	Public Key Cryptography for Initial Authentication (PKINIT) in Kerberos Protocol Specification	Block	Security and Identity Management	Public Key Cryptography for Initial Authentication in Kerberos (PKINIT): Microsoft Extensions	[MS-KILE] [MS-NLMP] [MS-PAC]
[MS-PLA]	Performance Logs and Alerts Protocol Specification	RPC	Systems Management	Performance Logs and Alerts Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-PCQ] [MS-RPCE] [MS-RRP] [MS-TSCH] [MS-WMI]
[MS-PNRP]	Peer Name Resolution Protocol (PNRP) Version 4.0 Specification	Block	Application Services Home Server	Peer Name Resolution Protocol (PNRP) Version 4.0	None
[MS-POP3]	NT LAN Manager (NTLM) Authentication: Post Office Protocol - Version 3 (POP3) Extension	Block	Networking Security and Identity Management	POP3 Authentication Command Protocol Extension Post Office Protocol - Version 3	[MS-NLMP]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
				Extension	
[MS-PPGRH]	Peer-to-Peer Graphing Protocol Specification	Block	Home Server	Peer-to-Peer Graphing Protocol	None
[MS-PPPI]	PPP Over IrDA Dialup Protocol Specification	Block	Networking	PPP Over IrDA Dialup Protocol	None
[MS-PPSEC]	Peer-to-Peer Grouping Security Protocol Specification	Block	Home Server	Peer-to-Peer Grouping Security Protocol	[MS-PNRP] [MS-PPGRH]
[MS-PROPSTORE]	Property Store Binary File Format	Structure	Other	Property Store Binary File Format	[MS-SHLLINK] [MS-OLEPS]
[MS-PSDP]	Proximity Service Discovery Protocol Specification	Block	Networking	Proximity Service Discovery Protocol Specification	None
[MS-PSRDP]	PowerShell Remote Debugging Protocol	Block	Systems Management	PowerShell Remote Debugging Protocol	[MS-PSRP]
[MS-PSRP]	PowerShell Remoting Protocol Specification	Block	Systems Management	PowerShell Remoting Protocol	[MS-NRBF] [MS-NRTP] [MS-WSMV]
[MS-PTPT]	Point-to-Point Tunneling Protocol (PPTP) Profile	Block	Networking	Point-to-Point Tunneling Protocol	None
[MS-QDP]	Quality Windows Audio/Video Experience (qWave): Wireless Diagnostics Protocol Specification	Block	Networking	Quality Windows Audio/Video Experience (qWave): Wireless Diagnostics Protocol	None
[MS-QLPB]	Quality Windows Audio/Video Experience (qWave): Layer 3 Probing Protocol Specification	Block	Networking	Quality Windows Audio/Video Experience (qWave): Layer 3 Probing Protocol	None
[MS-RA]	Remote Assistance Protocol Specification	Block	Systems Management	Remote Assistance Protocol	[MS-DTYP] [MS-PNRP] [MS-RAI] [MS-RAIOP] [MS-RDPBCGR] [MS-RDPEGDI] [MS-RDPEMC]
[MS-RAA]	Remote Authorization API	RPC	File, Fax, and Printing Services	Remote Authorization API	[MS-DTYP] [MS-ERREF]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Protocol Specification			Protocol	[MS-KILE] [MS-LSAT] [MS-RPCE] [MS-SFU]
[MS-RAI]	Remote Assistance Initiation Protocol Specification	RPC	Systems Management	Remote Assistance Initiation Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RA] [MS-RDPBCGR] [MS-RPCE]
[MS-RAIOP]	Remote Assistance Initiation over PNRP Protocol Specification	Block	Systems Management	Remote Assistance Initiation over PNRP Protocol	[MS-PNRP] [MS-RA] [MS-RAI]
[MS-RAIW]	Remote Administrative Interface: WINS Specification	RPC	Systems Management	Remote Administrative Interface: WINS	[MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-WINSRA]
[MS-RAP]	Remote Administration Protocol Specification	Block	File, Fax, and Printing Services	Remote Administration Protocol (RAP)	[MS-BRWS] [MS-CIFS] [MS-ERREF] [MS-RPRN] [MS-SAMR] [MS-SMB] [MS-SRVS]
[MS-RASA]	Remote Access Server Advertisement (RASADV) Protocol Specification	Block	Networking	Remote Access Server Advertisement (RASADV) Protocol	None
[MS-RCMP]	Remote Certificate Mapping Protocol Specification	Block	Security and Identity Management	Remote Certificate Mapping Protocol	[MS-ADA1] [MS-ADA3] [MS-ADTS] [MS-ERREF] [MS-KILE] [MS-NRPC] [MS-PAC]
[MS-RDC]	Remote Differential Compression Algorithm Specification	Block	File, Fax, and Printing Services	Remote Differential Compression (RDC) Algorithm	None
[MS-RDPADRV]	Remote Desktop Protocol: Audio Level and Drive Letter Persistence	Block	Remote Connectivity	Remote Desktop Protocol: Audio Level and Drive Letter Persistence	[MS-RDPEDYC]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Virtual Channel Extension			Virtual Channel Extension	
[MS-RDPBCGR]	Remote Desktop Protocol: Basic Connectivity and Graphics Remoting Specification	Block	Remote Connectivity	Remote Desktop Protocol: Basic Connectivity and Graphics Remoting	[MS-CSSP] [MS-DTYP] [MS-ERREF] [MS-RDPEA] [MS-RDPEGDI] [MS-RDPELE] [MS-RDPERP] [MS-RDPNSC] [MS-RDPRFX]
[MS-RDPCR2]	Remote Desktop Protocol: Composited Remoting V2 Specification	Block	Remote Connectivity	Remote Desktop Protocol: Composited Remoting V2	[MS-ERREF] [MS-RDPBCGR] [MS-RDPEDC] [MS-RDPEDYC] [MS-RDPEGDI]
[MS-RDPEA]	Remote Desktop Protocol: Audio Output Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Audio Output Virtual Channel Extension	[MS-RDPBCGR] [MS-RDPEDYC]
[MS-RDPEAI]	Remote Desktop Protocol: Audio Input Redirection Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Audio Input Redirection Virtual Channel Extension	[MS-ERREF] [MS-RDPBCGR] [MS-RDPEA] [MS-RDPEDYC]
[MS-RDPEAR]	Remote Desktop Protocol: Authentication Redirection Virtual Channel Protocol	Block	Remote Connectivity	Remote Desktop Protocol: Authentication Redirection Virtual Channel Protocol	[MS-CSSP] [MS-KILE] [MS-NLMP] [MS-PAC] [MS-RDPEDYC] [MS-RPCE]
[MS-RDPECAM]	Remote Desktop Protocol: Video Capture Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Video Capture Virtual Channel Extension	[MS-RDPBCGR] [MS-RDPEDYC]
[MS-RDPECLIP]	Remote Desktop Protocol: Clipboard Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Clipboard Virtual Channel Extension	[MS-RDPBCGR] [MS-WMF]
[MS-RDPEDC]	Remote Desktop Protocol: Desktop Composition Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Desktop Composition Virtual Channel Extension	[MS-RDPBCGR] [MS-RDPEGDI]
[MS-RDPEDISP]	Remote Desktop Protocol: Display Update Virtual	Block	Remote Connectivity	Remote Desktop Protocol: Display Control Virtual	[MS-DTYP] [MS-RDPBCGR]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Channel Extension			Channel Extension	[MS-RDPEDYC] [MS-RDPEGFX]
[MS-RDPEDYC]	Remote Desktop Protocol: Dynamic Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Dynamic Virtual Channel Extension	[MS-DTYP] [MS-ERREF] [MS-RDPBCGR]
[MS-RDPEECO]	Remote Desktop Protocol: Virtual Channel Echo Extension	Block	Remote Connectivity	Remote Desktop Protocol: Virtual Channel Echo Extension	[MS-DTYP] [MS-RDPEDYC]
[MS-RDPEFS]	Remote Desktop Protocol: File System Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: File System Virtual Channel Extension	[MS-ERREF] [MS-FSCC] [MS-RDPBCGR] [MS-RDPEDC] [MS-RDPESC] [MS-RDPESP] [MS-SMB2]
[MS-RDPEGDI]	Remote Desktop Protocol: Graphics Devices Interfaces (GDI) Acceleration Extension	Block	Remote Connectivity	Remote Desktop Protocol: GDI Acceleration Extensions	[MS-EMFPLUS] [MS-RDPBCGR] [MS-RDPEDC] [MS-RDPEPC] [MS-RDPERP]
[MS-RDPEGFX]	Remote Desktop Protocol: Graphics Pipeline Extension	Block	Remote Connectivity	Remote Desktop Protocol: Graphics Pipeline Extension	[MS-RDPBCGR] [MS-RDPEDYC] [MS-RDPEGDI] [MS-RDPNSC] [MS-RDPRFX]
[MS-RDPEGT]	Remote Desktop Protocol: Geometry Tracking Virtual Channel Protocol Extension	Block	Remote Connectivity	Remote Desktop Protocol: Geometry Tracking Virtual Channel Extension	[MS-ERREF] [MS-RDPBCGR] [MS-RDPEDYC]
[MS-RDPEI]	Remote Desktop Protocol: Input Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Input Virtual Channel Extension	[MS-RDPBCGR] [MS-RDPEDYC]
[MS-RDPELE]	Remote Desktop Protocol: Licensing Extension	Block	Remote Connectivity	Remote Desktop Protocol: Licensing Extension	[MS-RDPBCGR]
[MS-RDPEMC]	Remote Desktop Protocol: Multiparty Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Multiparty Virtual Channel Extension	[MS-ERREF] [MS-RDPBCGR] [MS-RDPEPS]
[MS-RDPEMT]	Remote Desktop Protocol: Multitransport	Block	Remote Connectivity	Remote Desktop Protocol: Multitransport	[MS-ERREF] [MS-RDPBCGR]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Extension			Extension	[MS-RDPEUDP]
[MS-RDPEPC]	Remote Desktop Protocol: Print Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Print Virtual Channel Extension	[MS-ERREF] [MS-RDPEFS] [MS-RDPESP]
[MS-RDPEPNP]	Remote Desktop Protocol: Plug and Play Devices Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Plug and Play Devices Virtual Channel Extension	[MS-DTYP] [MS-ERREF] [MS-RDPBCGR] [MS-RDPEDYC]
[MS-RDPEPS]	Remote Desktop Protocol: Session Selection Extension	Block	Remote Connectivity	Remote Desktop Protocol: Session Selection Extension	[MS-RDPBCGR] [MS-RAI]
[MS-RDPERP]	Remote Desktop Protocol: Remote Programs Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Remote Programs Virtual Channel Extension	[MS-DTYP] [MS-ERREF] [MS-RDPBCGR] [MS-RDPEGDI]
[MS-RDPESC]	Remote Desktop Protocol: Smart Card Virtual Channel Extension	RPC	Remote Connectivity	Remote Desktop Protocol: Smart Card Virtual Channel Extension	[MS-DCOM] [MS-RPCE] [MS-RDPEFS]
[MS-RDPESP]	Remote Desktop Protocol: Serial and Parallel Port Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Serial and Parallel Port Virtual Channel Extension	[MS-ERREF] [MS-RDPBCGR] [MS-RDPEFS] [MS-SMB2]
[MS-RDPET]	Remote Desktop Protocol: Telemetry Virtual Channel Extension	Block		Remote Desktop Protocol: Telemetry Virtual Channel Extension	[MS-RDPBCGR] [MS-RDPEDYC]
[MS-RDPEUDP]	Remote Desktop Protocol: UDP Transport Extension	Block	Remote Connectivity	Remote Desktop Protocol: UDP Transport Extension	[MS-DTYP]
[MS-RDPEUDP2]	Remote Desktop Protocol: UDP Transport Extension Version 2	Block	Remote Connectivity	Remote Desktop Protocol: UDP Transport Extension Version 2	[MS-RDPEUDP]
[MS-RDPEUSB]	Remote Desktop Protocol: USB Devices Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: USB Devices Virtual Channel Extension	[MS-DTYP] [MS-ERREF] [MS-DPEDYC] [MS-RDPEXPS]
[MS-RDPEV]	Remote Desktop Protocol: Video Redirection Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Video Redirection Virtual Channel Extension	[MS-DTYP] [MS-ERREF] [MS-RDPBCGR] [MS-RDPEDYC]

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					[MS-RDPEXPS]
[MS-RDPEVOR]	Remote Desktop Protocol: Video Optimized Remoting Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: Video Optimized Remoting Virtual Channel Extension	[MS-ERREF] [MS-RDPBCGR] [MS-RDPEDYC] [MS-RDPEGT]
[MS-RDPEXPS]	Remote Desktop Protocol: XML Paper Specification (XPS) Print Virtual Channel Extension	Block	Remote Connectivity	Remote Desktop Protocol: XML Paper Specification (XPS) Print Virtual Channel Extension	[MS-DTYP] [MS-ERREF] [MS-RDPBCGR] [MS-RDPEDYC] [MS-RDPEFS] [MS-RDPEPC] [MS-RDPERP]
[MS-RDPNSC]	Remote Desktop Protocol: NSCodec Extension	Block	Remote Connectivity	Remote Desktop Protocol: NSCodec Extension	[MS-RDPBCGR] [MS-RDPEGDI]
[MS-RDPRFX]	Remote Desktop Protocol: RemoteFX Codec Extension	Block	Remote Connectivity	Remote Desktop Protocol: RemoteFX Codec Extension	[MS-RDPBCGR]
[MS-RDWR]	Remote Desktop Workspace Runtime Protocol Specification	SOAP	Remote Connectivity	Remote Desktop Workspace Runtime Protocol	None
[MS-RMPR]	Rights Management Services (RMS): Client-to-Server Protocol Specification	SOAP	Security and Identity Management	Rights Management Services (RMS): Client-Server Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-DTYP] [MS-KILE] [MS-MWBE] [MS-MWBF] [MS-NLMP] [MS-NTHT] [MS-PAC]
[MS-RMPRS]	Rights Management Services (RMS): Server-to-Server Protocol Specification	SOAP	Security and Identity Management	Rights Management Services (RMS): Server-Server Protocol	[MS-NLMP] [MS-RMPR]
[MS-RMSI]	Rights Management Services (RMS): ISV Extension Protocol Specification	SOAP	Security and Identity Management	Rights Management Services (RMS): ISV Extension Protocol	[MS-DTYP] [MS-MWBF] [MS-RMPR]

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[MS-RNAP]	Vendor-Specific RADIUS Attributes for Network Access Protection (NAP) Data Structure	Block	Networking	Remote Access Dial In User Service (RADIUS): Network Access Protection (NAP) Attributes Protocol Extensions	[MS-DTYP] [MS-HCEP] [MS-MSRP]
[MS-RNAS]	Vendor-Specific RADIUS Attributes for Network Policy and Access Server Data Structure	Block	Remote Connectivity	Remote Access Dial In User Service (RADIUS): Network Access Protection (NAP) Attributes Protocol Extensions	[MS-ADA2] [MS-DTYP] [MS-SSTP]
[MS-RPCE]	Remote Procedure Call Protocol Extensions	Block	Networking	Remote Procedure Call Protocol Extensions	[MS-APDS] [MS-CIFS] [MS-DTYP] [MS-EERR] [MS-ERREF] [MS-KILE] [MS-NLMP] [MS-NRPC] [MS-RPCH] [MS-RPCL] [MS-SPNG] [MS-TLSP]
[MS-RPCH]	Remote Procedure Call over HTTP Protocol Specification	Block	Networking	Remote Procedure Call (RPC) over HTTP Protocol	[MS-DTYP] [MS-EERR] [MS-ERREF] [MS-NTHT] [MS-RPCE]
[MS-RPCL]	Remote Procedure Call Location Services Extension	RPC	Networking	Remote Procedure Call Location Services Protocol Extensions	[MS-ADA1] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DTYP] [MS-MAIL] [MS-NRPC] [MS-RPCE] [MS-SPNG]
[MS-RPRN]	Print System Remote Protocol Specification	RPC	File, Fax, and Printing Services	Print System Remote Protocol Print System Asynchronous Remote Protocol	[MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-DRSR] [MS-DTYP] [MS-ERREF] [MS-LCID] [MS-PAR]

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					[MS-RPCE] [MS-RRP] [MS-SMB] [MS-SMB2]
[MS-RRASM]	Routing and Remote Access Server (RRAS) Management Protocol Specification	RPC	Systems Management	Routing and Remote Access Server (RRAS) Management Protocol	[MS-DTYP] [MS-ERREF] [MS-L2TPIE] [MS-RNAP] [MS-RPCE] [MS-RRP] [MS-SSTP] [MS-TRP]
[MS-RRP]	Windows Remote Registry Protocol Specification	RPC	Systems Management	Windows Remote Registry Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SMB] [MS-SMB2]
[MS-RRSP2]	Remote Rendering Server Protocol Version 2.0 Specification	Block	Collaboration and Communications	Remote Rendering Server Protocol Version 2.0	[MS-DSPA] [MS-DTAG] [MS-RXAD]
[MS-RSMC]	Remote Session Monitoring and Control Protocol	SOAP	Remote Connectivity	Remote Session Monitoring and Control Protocol	None
[MS-RSMP]	Removable Storage Manager (RSM) Remote Protocol Specification	Block	Systems Management	Removable Storage Manager (RSM) Remote Protocol	[MS-DCOM] [MS-DTYP] [MS-RPCE]
[MS-RSP]	Remote Shutdown Protocol Specification	RPC	Remote Connectivity	Remote Shutdown Protocol InitShutdown Protocol	[MS-ERREF] [MS-RPCE] [MS-RRP] [MS-SMB]
[MS-RSVD]	Remote Shared Virtual Disk Protocol	Block	Networking	Remote Shared Virtual Disk Protocol	[MS-SMB2]
[MS-RTPDT]	Real-Time Transport Protocol (RTP/RTCP): DTMF Digits, Telephony Tones and Telephony Signals Data Extensions	Block	Collaboration and Communications	RTP/RTCP: DTMF Digits, Telephony Tones and Telephony Signals Data Extensions	[MS-RTPME] [MS-RTPRAD] [MS-SDP]
[MS-RTPME]	Real-Time Transport Protocol (RTP/RTCP): Microsoft	Block	Collaboration and Communications	Real-Time Transport Protocol (RTP/RTCP): Microsoft	None

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	Extensions			Extensions	
[MS-RTPRAD]	Real-Time Transport Protocol (RTP/RTCP): Redundant Audio Data Extensions	Block	Collaboration and Communications	RTP/RTCP: Redundant Audio Data Extensions	[MS-RTPME] [MS-SDP]
[MS-RTSP]	Real-Time Streaming Protocol (RTSP) Windows Media Extensions	Block	Collaboration and Communications	Real-Time Streaming Protocol (RTSP) Windows Media Extensions	[MS-WMLOG] [MS-WMSP]
[MS-RXAD]	Remote Experience Advertisement Protocol Specification	SOAP	Systems Management	Remote Experience Advertisement Protocol	None
[MS-SAMLPR]	Security Assertion Markup Language (SAML) Proxy Request Signing Protocol Specification	SOAP	Security and Identity Management	Security Assertion Markup Language (SAML) Proxy Request Signing Protocol	None
[MS-SAMR]	Security Account Manager (SAM) Remote Protocol Specification (Client-to-Server)	RPC	Security and Identity Management	Security Account Manager (SAM) Remote Protocol (Client-to-Server)	[MS-ADTS] [MS-DRSR] [MS-KILE] [MS-LSAD] [MS-LSAT] [MS-NLMP] [MS-NRPC] [MS-PAC] [MS-RPCE] [MS-SMB]
[MS-SAMS]	Security Account Manager (SAM) Remote Protocol Specification (Server-to-Server)	Block	Security and Identity Management	Security Account Manager Remote Protocol (Server-to-Server)	[MS-ADTS] [MS-DRSR] [MS-KILE] [MS-NRPC] [MS-RPCE] [MS-SAMR]
[MS-SCMP]	Shadow Copy Management Protocol Specification	RPC	File, Fax, and Printing Services	Shadow Copy Management Protocol	[MS-DCOM] [MS-OAUT] [MS-RPCE]
[MS-SCMR]	Service Control Manager Remote Protocol Specification	RPC	Systems Management	Service Control Manager Remote Protocol	[MS-CIFS] [MS-DTYP] [MS-LSAD] [MS-RPCE]
[MS-SDP]	Session Description Protocol (SDP)	Block	Collaboration and	Session Description Protocol (SDP)	[MS-SIP]

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	Extensions		Communications	Extensions	
[MS-SFMWA]	Server and File Management Web APIs Protocol	HTTP	Systems Management	Server and File Management Web APIs Protocol	None
[MS-SFU]	Kerberos Protocol Extensions: Service for User and Constrained Delegation Protocol Specification	Block	Security and Identity Management	Kerberos Network Authentication Service (V5) Service for User (S4U) Extension	[MS-ADA2] [MS-KILE] [MS-PAC]
[MS-SHLLINK]	Shell Link (.LNK) Binary File Format	Structure	File, Fax, and Printing Services	Shell Link Binary File Format	[MS-DFSNM] [MS-DTYP] [MS-LCID] [MS-PROPSTORE]
[MS-SIP]	Session Initiation Protocol Extensions	Block	Collaboration and Communications	Session Initiation Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-KILE] [MS-NLMP]
[MS-SMB]	Server Message Block (SMB) Protocol Specification	Block	File, Fax, and Printing Services	Server Message Block (SMB) Version 1.0 Protocol	[MS-CIFS] [MS-DFSC] [MS-DTYP] [MS-EFSR] [MS-FSA] [MS-FSCC] [MS-KILE] [MS-NLMP] [MS-RAP] [MS-SPNG]
[MS-SMB2]	Server Message Block (SMB) Version 2 Protocol Specification	Block	File, Fax, and Printing Services	Server Message Block (SMB) Version 2 Protocol	[MS-CIFS] [MS-DFSC] [MS-DTYP] [MS-ERREF] [MS-FSCC] [MS-KILE] [MS-NLMP] [MS-PCCRC] [MS-RPCE] [MS-SMB] [MS-SPNG] [MS-SRVS]
[MS-SMBD]	SMB2 Remote Direct Memory	Block	File, Fax, and Printing Services	SMB2 RDMA Transport Protocol	None

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	Access (RDMA) Transport Protocol Specification				
[MS-SMTPNTLM]	NT LAN Manager (NTLM) Authentication: Simple Mail Transfer Protocol (SMTP) Extension	Block	Collaboration and Communications Security and Identity Management	NTLM Authentication: Simple Mail Transfer Protocol	[MS-NLMP]
[MS-SNID]	Server Network Information Discovery Protocol	Block	Networking	Server Network Information Discovery Protocol	None
[MS-SNTP]	Network Time Protocol (NTP) Authentication Extensions	Block	Systems Management	Simple Network Time Protocol (SNTP) Network Time Protocol (NTP) Authentication Extensions	[MS-ADTS] [MS-NRPC] [MS-RRP] [MS-SCMR] [MS-W32T]
[MS-SPNG]	Simple and Protected GSS-API Negotiation Mechanism (SPNEGO) Extension	Block	Security and Identity Management	Simple and Protected Generic Security Service Application Program Interface Negotiation Mechanism (SPNEGO): Microsoft Extension	None
[MS-SQMCS]	Software Quality Metrics (SQM) Client-to-Service Version 1 Protocol Specification	Block	Systems Management	SQM Client-to-Service Protocol Version 1	[MS-DTYP]
[MS-SQMCS2]	Software Quality Metrics (SQM) Client-to-Service Version 2 Protocol Specification	Block	Other	SQM Client-to-Service Protocol Version 2	[MS-SQMCS] [MS-TPXS]
[MS-SQOS]	Storage Quality of Service Protocol	Block	File, Fax, and Printing Services	Storage Quality of Service Protocol	[MS-SMB2]
[MS-SRPL]	Directory Replication Service (DRS) Protocol Extensions for SMTP	Block	Directory Services	SMTP Replication Protocol Extensions	[MS-ADTS] [MS-DRSR] [MS-RPCE] [MS-WCCE]
[MS-SRVS]	Server Service Remote Protocol Specification	RPC	File, Fax, and Printing Services Systems Management	Server Service Remote Protocol (SRVSVC)	[MS-CIFS] [MS-DFSC] [MS-DFSNM] [MS-DTYP] [MS-EERR]

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					[MS-ERREF] [MS-NRPC] [MS-RPCE] [MS-SMB] [MS-SMB2]
[MS-SSDP]	SSDP: Networked Home Entertainment Devices (NHED) Extensions	Block	Systems Management	SSDP: NHED Extensions	None
[MS-SSEAN]	Simple Mail Transfer Protocol (SMTP) AUTH Extension for SPNEGO	Block	Collaboration and Communications	Simple Mail Transfer Protocol (SMTP) AUTH Extension for SPNEGO	[MS-SPNG]
[MS-SSTP]	Secure Socket Tunneling Protocol (SSTP) Specification	Block	Networking	Secure Socket Tunneling Protocol (SSTP)	[MS-DTYP] [MS-PEAP]
[MS-SSTR]	Smooth Streaming Protocol Specification	Block	Collaboration and Communications	Smooth Streaming Protocol	None
[MS-SWN]	Server Message Block Version 2 (SMB2) Witness Protocol Specification	RPC	File, Fax, and Printing Services	SMB2 Witness Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE]
[MS-SWSB]	SOAP Over WebSocket Protocol Binding Specification	SOAP	Application Services	SOAP Over WebSocket Protocol Binding	None
[MS-TAIL]	Telephony API Internet Locator Service Protocol Specification	Block	Collaboration and Communications	Telephony API Internet Locator Service Protocol	[MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-NLMP]
[MS-TCC]	Tethering Control Channel Protocol	Block	Device-Specific	Tethering Control Channel Protocol	None
[MS-TDS]	Tabular Data Stream Protocol Specification	Block	File, Fax, and Printing Services	Tabular Data Stream (TDS) Protocol	None
[MS-THCH]	Tracing HTTP Correlation Header Protocol Specification	Block	Application Services	Tracing HTTP Correlation Header	None
[MS-TIPP]	Transaction Internet Protocol (TIP) Extensions	Block	Application Services	TIP Profile Extensions	[MS-DTCO]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-TLSP]	Transport Layer Security (TLS) Profile	Block	Security and Identity Management	Transport Layer Security (TLS) Profile	None
[MS-TNAP]	Telnet: NT LAN Manager (NTLM) Authentication Protocol Specification	Block	Networking	Telnet: NT LAN Manager (NTLM) Authentication Protocol	[MS-DTYP] [MS-NLMP]
[MS-TPMVSC]	Trusted Platform Module (TPM) Virtual Smart Card Management Protocol Specification	RPC	Systems Management	TPM Virtual Smart Card Device Management Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-RPCE] [MS-SPNG]
[MS-TPXS]	Telemetry Protocol XML Schema	Structure	Other	Telemetry Protocol XML Schema	None
[MS-TRP]	Telephony Remote Protocol Specification	RPC	Collaboration and Communications	Telephony Remote Protocol	[MS-ADA3] [MS-DTYP] [MS-ERREF] [MS-RPCE]
[MS-TSCH]	Task Scheduler Service Remoting Protocol Specification	RPC	Systems Management	Task Scheduler Service Remoting Protocol	[MS-CIFS] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-EVEN] [MS-EVEN6] [MS-RPCE] [MS-RRP] [MS-SFU] [MS-SMB]
[MS-TSGU]	Terminal Services Gateway Server Protocol Specification	RPC	Remote Connectivity	Terminal Services Gateway Server Protocol	[MS-DTYP] [MS-ERREF] [MS-RDPBCGR] [MS-RNAP] [MS-RPCE] [MS-RPCH]
[MS-TSRAP]	Telnet Server Remote Administration Protocol Specification	RPC	Networking	Telnet Server Remote Administration Protocol	[MS-DCOM] [MS-DTYP] [MS-OAUT] [MS-RPCE]
[MS-TSTS]	Terminal Services Terminal Server Runtime Interface Protocol Specification	RPC	Remote Connectivity	Terminal Services Terminal Server Runtime Interface Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-DTYP]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
					[MS-ERREF] [MS-RDPBCGR] [MS-RDPERP] [MS-RPCE] [MS-RPCH]
[MS-TSWP]	Terminal Services Workspace Provisioning Protocol Specification	RPC	Remote Connectivity	Terminal Services Workspace Provisioning Protocol	None
[MS-TVTT]	Telnet: VTNT Terminal Type Format Data Structure	Structure	Remote Connectivity	Telnet: VTNT Terminal Type Format Data Structure	None
[MS-UAMG]	Update Agent Management Protocol Specification	RPC	Systems Management	Update Agent Management Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE]
[MS-UCODEREF]	Windows Protocols Unicode Reference	Block	Reference	Windows Protocols Unicode Reference	None
[MS-UNMP]	User Name Mapping Protocol Specification	Block	File, Fax, and Printing Services	User Name Mapping (UNM) Protocol	[MS-DTYP]
[MS-UPIGD]	UPnP Device and Service Templates: Internet Gateway Device (IGD) Extensions	Structure	Systems Management	UPnP: Device & Service Templates: Internet Gateway Device (IGD) Extensions	None
[MS-UPMC]	UPnP Device and Service Templates: Media Property and Compatibility Extensions	Structure	Collaboration and Communications	UPnP Device and Service Templates: Media Property and Compatibility Extensions	[MS-DTYP]
[MS-V4OF]	IPv4 Over IEEE 1394 Protocol Extensions	Block	Networking	IPv4 over IEEE 1394 Protocol Extensions	None
[MS-VAPR]	Virtual Application Publishing and Reporting (App-V) Protocol	HTTP	Application Services	Virtual Application Publishing and Reporting Protocol	[MS-DTYP]
[MS-VDS]	Virtual Disk Service (VDS) Protocol Specification	Block	Systems Management	Virtual Disk Service (VDS) Remote Protocol	[MS-CHAP] [MS-DCOM] [MS-DMRP] [MS-DTYP] [MS-ERREF] [MS-RPCE]

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[MS-VHDX]	Virtual Hard Disk v2 (VHDX) File Format	Structure	File, Fax, and Printing Services	Virtual Hard Disk v2 (VHDX) File Format	None
[MS-VUVP]	VT-UTF8 and VT100+ Protocols Specification	Block	Networking	VT-UTF8 and VT100+ Protocols	None
[MS-W32T]	W32Time Remote Protocol Specification	RPC	Systems Management	W32Time Remote Protocol	[MS-ERREF] [MS-RPCE] [MS-SMB] [MS-SPNG]
[MS-WCCE]	Windows Client Certificate Enrollment Protocol Specification	RPC	Security and Identity Management	Windows Client Certificate Enrollment Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-CRTD] [MS-CSRA] [MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-ICPR] [MS-LSAT] [MS-NRPC] [MS-RPCE]
[MS-WCFESAN]	WCF-Based Encrypted Server Administration and Notification Protocol	SOAP	Windows - General	WCF-Based Encrypted Server Administration and Notification Protocol	[MS-ADA1] [MS-KILE] [MS-NMFTB] [MS-WSPOL]
[MS-WDHCE]	Wi-Fi Display Protocol: Hardware Cursor Extension	Block	Networking	Wi-Fi Display Protocol: Hardware Cursor Extension	[MS-ERREF]
[MS-WDSC]	Windows Deployment Services Control Protocol Specification	RPC	Networking	Windows Deployment Services Control Protocol	[MS-DTYP] [MS-ERREF] [MS-RPCE]
[MS-WDSMA]	Windows Deployment Services Multicast Application Protocol Specification	Block	Networking	Windows Deployment Services Multicast Application Protocol	None
[MS-WDSMSI]	Windows Deployment Services Multicast Session Initiation Protocol	Block	Networking	Windows Deployment Services Multicast Session Initiation	[MS-ERREF] [MS-WDSC] [MS-WDSMT]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
	Specification			Protocol	
[MS-WDSMT]	Windows Deployment Services Multicast Transport Protocol Specification	Block	Networking	Windows Deployment Services Multicast Transport Protocol	[MS-WDSMSI] [MS-WDSMA]
[MS-WDSOSD]	Windows Deployment Services Operation System Deployment Protocol Specification	Block	Networking	Windows Deployment Services Operation System Deployment Protocol	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADLS] [MS-ADSC] [MS-ERREF] [MS-WDSC]
[MS-WDV]	Web Distributed Authoring and Versioning (WebDAV) Protocol: Client Extensions	Block	File, Fax, and Printing Services	Web Distributed Authoring and Versioning (WebDAV) Protocol: Client Extensions	None
[MS-WDVSE]	Web Distributed Authoring and Versioning (WebDAV) Protocol: Server Extensions	Block	File, Fax, and Printing Services	Web Distributed Authoring and Versioning (WebDAV) Protocol: Server Extensions	None
[MS-WFDAA]	Wi-Fi Direct (WFD) Application to Application Protocol	Block	Device-Specific	Wi-Fi Direct (WFD) Protocol: Proximity Extensions	
[MS-WFDPE]	Wi-Fi Display Protocol Extension	Structure	Collaboration and Communications	Wi-Fi Display Protocol Extension	[MS-ERREF]
[MS-WFIM]	Workflow Instance Management Protocol Specification	SOAP	Application Services	Workflow Instance Management Protocol	[MS-DTCO] [MS-DTYP] [MS-WSPOL]
[MS-WINSRA]	Windows Internet Naming Service (WINS) Replication and Autodiscovery Protocol Specification	Block	Networking	Windows Internet Naming Service (WINS) Replication Protocol	[MS-DTYP]
[MS-WKST]	Workstation Service Remote Protocol Specification	RPC	File, Fax, and Printing Services	Workstation Service Remote Protocol (WKSSVC)	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-BRWS]

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					[MS-BRWSA] [MS-CIFS] [MS-DTYP] [MS-ERREF] [MS-LSAT] [MS-NLMP] [MS-NRPC] [MS-RPCE] [MS-SMB] [MS-SMB2] [MS-SPNG]
[MS-WMF]	Windows Metafile Format	Structure	File, Fax, and Printing Services	Windows Metafile (WMF) Format	[MS-DTYP]
[MS-WMHTTP]	Windows Media HTTP Push Distribution Protocol Specification	Block	Collaboration and Communications	Windows Media HTTP Push Distribution Protocol	[MS-DTYP] [MS-ERREF] [MS-NLMP] [MS-NTHT] [MS-WMSP]
[MS-WMI]	Windows Management Instrumentation Remote Protocol Specification	RPC	Systems Management	Windows Management Instrumentation Remote Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-LCID] [MS-OAUT] [MS-RPCE] [MS-WMIO]
[MS-WMIO]	Windows Management Instrumentation Encoding Version 1.0 Protocol Specification	Structure	Systems Management	Windows Management Instrumentation Remote Protocol Windows Management Instrumentation Encoding Version 1.0	[MS-DCOM] [MS-WMI]
[MS-WMLOG]	Windows Media Log Data Structure	Structure	Collaboration and Communications	Windows Media Log Data Structure	None
[MS-WMSP]	Windows Media HTTP Streaming Protocol Specification	Block	Collaboration and Communications	Windows Media HTTP Streaming Protocol	[MS-DTYP] [MS-ERREF] [MS-NLMP] [MS-NTHT] [MS-OAUT] [MS-RTSP] [MS-WMLOG]
[MS-	WordPad ECMA	Standards	Other	WordPad ECMA 376	None

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WPE376]	376 Standards Support	Support		Standards Support	
[MS-WPODF]	WordPad ODF 1.1 Standards Support	Standards Support	Other	WordPad ODF 1.1 Standards Support	None
[MS-WPRN]	Web Point-and-Print Protocol Specification	Block	File, Fax, and Printing Services	Web Point-and-Print Protocol	[MS-DTYP] [MS-RPRN] [MS-RRP]
[MS-WSDS]	WS-Enumeration: Directory Services Protocol Extensions	SOAP	Directory Services	WS-Enumeration: Directory Services Protocol Extensions	[MS-ADDM] [MS-ADTS]
[MS-WSH]	Windows Security Health Agent (WSHA) and Windows Security Health Validator (WSHV) Protocol Specification	Block	Networking	Windows Security Health Agent (WSHA) and Windows Security Health Validator (WSHV) Protocol	[MS-DTYP]
[MS-WSMAN]	Web Services Management Protocol Extensions for Windows Server 2003	SOAP	Systems Management	WS-Management Protocol Extensions	[MS-DTYP] [MS-WSMV]
[MS-WSMV]	Web Services Management Protocol Extensions for Windows Vista	SOAP	Systems Management	WS-Management Protocol: Extensions Version 2.0	[MS-CSSP] [MS-DTYP] [MS-WMI]
[MS-WSP]	Windows Search Protocol Specification	Block	File, Fax, and Printing Services	Windows Search Protocol	[MS-DTYP] [MS-ERREF] [MS-LCID] [MS-SMB] [MS-SMB2]
[MS-WSPE]	WebSocket Protocol Extensions	Block	Networking	WebSocket Protocol	None
[MS-WSPELD]	WS-Transfer and WS-Enumeration Protocol Extension for Lightweight Directory Access Protocol v3 Controls Specification	SOAP	Directory Services	WS-Transfer: Lightweight Directory Access Protocol (LDAP) v3 Control Extension	[MS-ADDM] [MS-ADTS] [MS-WSDS] [MS-WSTIM]
[MS-WSPOL]	Web Services: Policy Assertions and WSDL Extensions	SOAP	Application Services	Web Services: Policy Assertions and WSDL Extensions	[MC-NBFS] [MC-NBFSE] [MC-NMF] [MC-NPR] [MS-NNS] [MS-NTHT]

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-WSRM]	Windows System Resource Manager (WSRM) Protocol Specification	RPC	Systems Management	Windows System Resource Manager (WSRM) Protocol	[MS-DCOM] [MS-DTYP] [MS-ERREF] [MS-OAUT] [MS-RPCE]
[MS-WSRVCAT]	WS-AtomicTransaction (WS-AT) Version 1.0 Protocol Extensions	Block	Application Services	WS-AtomicTransaction (WS-AT) Version 1.0 Protocol	[MS-CMP] [MS-CMPO] [MS-DTCO] [MS-DTYP]
[MS-WSRVCRM]	WS-ReliableMessaging Protocol: Advanced Flow Control Extension	Block	Application Services	WS-ReliableMessaging Protocol: Advanced Flow Control Extension	None
[MS-WSRVCRR]	WS-ReliableMessaging Protocol: Reliable Request-Reply Extension	Block	Application Services	WS-ReliableMessaging Protocol: Reliable Request-Reply Extension	None
[MS-WSTC]	WS-Discovery: Termination Criteria Protocol Extensions	SOAP	Application Services	WS-Discovery: Termination Criteria Protocol	None
[MS-WSTEP]	WS-Trust X.509v3 Token Enrollment Extensions	SOAP	Security and Identity Management	WS-Trust X.509v3 Token Enrollment Protocol Extensions	[MS-ADA1] [MS-ADSC] [MS-WCCE]
[MS-WSTIM]	WS-Transfer: Identity Management Operations for Directory Access Extensions	SOAP	Security and Identity Management	WS-Transfer: Identity Management Operations for Directory AccessExtensions	[MS-ADA1] [MS-ADDM] [MS-ADTS]
[MS-WSUSAR]	Windows Server Update Services: Administrative API Remoting Protocol (WSUSAR)	SOAP	Systems Management	Windows Server Update Services: Administrative API Remoting Protocol	[MS-DTYP] [MS-TDS] [MS-WSUSSS] [MS-WUSP]
[MS-WSUSSS]	Windows Update Services: Server-Server Protocol Specification	SOAP	Systems Management	Windows Server Update Services: Server-Server Protocol	[MS-DRSR] [MS-LCID] [MS-WUSP]
[MS-WUSP]	Windows Update Services: Client-Server Protocol Specification	SOAP	Systems Management	Windows Server Update Services: Client-Server Protocol	[MS-ERREF] [MS-GPOL] [MS-LCID]
[MS-XCA]	Xpress Compression Algorithm	Algorithm	Application Services	Xpress Compression Algorithm	None

Document short name	Document title	Template type	Technical area	Protocols specified	Technical specifications cited
[MS-XCEP]	X.509 Certificate Enrollment Policy Protocol Specification	SOAP	Security and Identity Management	X.509 Certificate Enrollment Policy Protocol	[MS-ADLS] [MS-CRTD] [MS-WCCE] [MS-WSTEP]
[MS-XOPP]	XML-binary Optimized Packaging (XOP) Profile	SOAP	Networking Security and Identity Management	Lightweight Web Services Profile	None

4.2 (Updated Section) Technical Area Cross-Reference Matrix

This section contains a table that shows, for each technical area, the following information:

- Technology overviews (section 2.1.3) in the technical area
- Technical specifications in the technical area

Note The categorization of a technical specification in a technical area does not guarantee that the specification is cited by one of the technology overviews in that technical area. See the Technology Collection Cross-Reference Matrix (section 4.3) for listings of such citations.

Technical area	Technology overviews	Technical specifications
Application Services	[MS-MQOD] [MS-NETOD] [MS-TPSOD]	[MC-COMQC] [MC-CSDL] [MC-DTCXA] [MC-EDMX] [MC-IISA] [MC-MQAC] [MC-MQSRM] [MC-NBFS] [MC-NBFSE] [MC-NBFX] [MC-NETCEX] [MC-NMF] [MC-NPR] [MC-PRCH] [MC-PRCR] [MS-ASP] [MS-CMOM] [MS-CMP] [MS-CMPO] [MS-COM] [MS-COMA] [MS-COMEV] [MS-COMT]

Technical area	Technology overviews	Technical specifications
		[MS-DSML] [MS-DTCLU] [MS-DTCM] [MS-DTCO] [MS-IISS] [MS-IOI] [MS-IMSA] [MS-IRP] [MS-MQBR] [MS-MQCN] [MS-MQDMPR] [MS-MQDS] [MS-MQDSSM] [MS-MQMP] [MS-MQMQ] [MS-MQMR] [MS-MQQB] [MS-MQQP] [MS-MQRR] [MS-MQSD] [MS-NETTR] [MS-NMFMB] [MS-NMFTB] [MS-NNS] [MS-NRBF] [MS-NRLS] [MS-NRTP] [MS-NTHT] [MS-ODATA] [MS-PNRP] [MS-SWSB] [MS-THCH] [MS-TIPP] [MS-VAPR] [MS-WFIM] [MS-WSPOL] [MS-WSRVCAT] [MS-WSRVCRM] [MS-WSRVCRR] [MS-WSTC] [MS-XCA]
Collaboration and Communication	[MS-MSSOD]	[MS-DCHT] [MS-DCLB] [MS-DLNHND] [MS-DRM] [MS-DRMCD] [MS-DRMND]

Technical area	Technology overviews	Technical specifications
		[MS-DRMRI] [MS-H245] [MS-H26XPF] [MS-MMSP] [MS-MNPR] [MS-MSB] [MS-MSBD] [MS-NNTP] [MS-RRSP2] [MS-RTPDT] [MS-RTPME] [MS-RTPRAD] [MS-RTSP] [MS-SDP] [MS-SIP] [MS-SMTPNTLM] [MS-SSEAN] [MS-SSTR] [MS-TAIL] [MS-TRP] [MS-UPMC] [MS-WFDPE]
Directory Services	[MS-ADFSOD] [MS-ADOD]	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADCAP] [MS-ADDM] [MS-ADFSOAL] [MS-ADFSPIP] [MS-ADFSPP] [MS-ADFSWAP] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-DRSR] [MS-DSSP] [MS-DVRD] [MS-DVRE] [MS-DVRJ] [MS-KPP] [MS-LSAD] [MS-LSAT] [MS-MAIL] [MS-MWBE] [MS-MWBF] [MS-NSPI] [MS-OAPX]

Technical area	Technology overviews	Technical specifications
		[MS-OAPXBC] [MS-PKAP] [MS-SAMLPR] [MS-SAMR] [MS-SAMS] [MS-SRPL] [MS-WSDS] [MS-WSPELD] [MS-WSTIM]
File, Fax, and Printing Services	[MS-CCROD] [MS-FASOD] [MS-FSMOD] [MS-PRSOD] [MS-STOROD] [MS-VSOD]	[MC-BUP] [MS-BDSRR] [MS-BKUP] [MS-BPCR] [MS-BPDP] [MS-BRWS] [MS-BRWSA] [MS-CAPR] [MS-CIFS] [MS-DFSC] [MS-DFSNM] [MS-DFSRH] [MS-DLTCS] [MS-DLTM] [MS-DLTW] [MS-DMRP] [MS-DPWSRP] [MS-EFSR] [MS-EMF] [MS-EMFPLUS] [MS-EMFSPOOL] [MS-FAX] [MS-FCIADS] [MS-FRS1] [MS-FRS2] [MS-FSA] [MS-FSCC] [MS-FSRM] ~~[MS-FSRVP]~~[MS-FSRVP] [MS-FSVCA] [MS-FTPS] [MS-HGRP] [MS-HRL] [MS-HVRS] [MS-PAN] [MS-PAR] [MS-PCCRC] [MS-PCHC]

Technical area	Technology overviews	Technical specifications
		[MS-RAA] [MS-RAP] [MS-RDC] [MS-RPRN] [MS-RSMP] [MS-SCMP] [MS-SHLLINK] [MS-SMB] [MS-SMB2] [MS-SMBD] [MS-SQOS] [MS-SRVS] [MS-SWN] [MS-TDS] [MS-UNMP] [MS-VDS] [MS-VHDX] [MS-WDV] [MS-WDVSE] [MS-WKST] [MS-WMF] [MS-WPE376] [MS-WPODF] [MS-WPRN] [MS-WSP]
Home Server		[MC-DRT] [MC-PRCR] [MS-HGRP] [MS-PBSD] [MS-PNRP] [MS-PPGRH] [MS-PPSEC]
Multiplayer Games		[MC-DPL4CS] [MC-DPL4R] [MC-DPL8CS] [MC-DPL8R] [MC-DPLHP] [MC-DPLNAT] [MC-DPLVP] [MS-DPDX]
Networking	[MS-NAPOD]	[MS-ADTG] [MS-CBCP] [MS-CDP] [MS-CFB] [MS-CHAP] [MS-CPSP]

Technical area	Technology overviews	Technical specifications
		[MS-DHA] [MS-DHCPE] [MS-DHCPF] [MS-DHCPM] [MS-DHCPN] [MS-EERR] [MS-FASP] [MS-HCEP] [MS-HNDS] [MS-HTTP2E] [MS-IPAMM2] [MS-IPHTTPS] [MS-IRDA] [MS-L2TPIE] [MS-LLMNRP] [MS-LLTD] [MS-LWSSP] [MS-MDE2] [MS-MICE] [MS-MSRP] [MS-NBTE] [MS-NCNBI] [MS-NCT] [MS-NFPB] [MS-NFPS] [MS-NKPU] [MS-OAUT] [MS-OLEDS] [MS-OLEPS] [MS-PEAP] [MS-PPPI] [MS-PSDP] [MS-PTPT] [MS-QDP] [MS-QLPB] [MS-RASA] [MS-RNAP] [MS-RPCE] [MS-RPCH] [MS-RPCL] [MS-SNID] [MS-SSTP] [MS-TNAP] [MS-TSRAP] [MS-V4OF] [MS-VUVP] [MS-WDHCE] [MS-WDSC]

Technical area	Technology overviews	Technical specifications
		[MS-WDSMA] [MS-WDSMSI] [MS-WDSMT] [MS-WDSOSD] [MS-WINSRA] [MS-WSH] [MS-WSPE] [MS-XOPP]
Remote Connectivity	[MS-RDSOD]	[MS-RDPADRV] [MS-RDPBCGR] [MS-RDPCR2] [MS-RDPEA] [MS-RDPEAI] [MS-RDPEAR] [MS-RDPECAM] [MS-RDPECLIP] [MS-RDPEDC] [MS-RDPEDISP] [MS-RDPEDYC] [MS-RDPEECO] [MS-RDPEFS] [MS-RDPEGDI] [MS-RDPEGFX] [MS-RDPEGT] [MS-RDPEI] [MS-RDPELE] [MS-RDPEMC] [MS-RDPEMT] [MS-RDPEPC] [MS-RDPEPNP] [MS-RDPEPS] [MS-RDPERP] [MS-RDPESC] [MS-RDPESP] [MS-RDPEUDP] [MS-RDPEUDP2] [MS-RDPEUSB] [MS-RDPEV] [MS-RDPEVOR] [MS-RDPEXPS] [MS-RDPNSC] [MS-RDPRFX] [MS-RDWR] [MS-RNAS] [MS-RSMC] [MS-RSP] [MS-TSGU]

Technical area	Technology overviews	Technical specifications
		[MS-TSTS] [MS-TSWP] [MS-TVTT]
Security and Identity Management	[MS-AUTHSOD] [MS-AZOD] [MS-CERSOD] [MS-RMSOD]	[MS-ADA3] [MS-ADFSOAL] [MS-ADFSPIP] [MS-ADFSPP] [MS-ADFSWAP] [MS-ADSC] [MS-ADTS] [MS-AIPS] [MS-APDS] [MS-AZMP] [MS-BKRP] [MS-CAPR] [MS-CIFS] [MS-COMA] [MS-CRTD] [MS-CSRA] [MS-CSSP] [MS-CTA] [MS-DPSP] [MS-DTAG] [MS-DTYP] [MS-FCIADS] [MS-FSA] [MS-FSRM] [MS-GKDI] [MS-GPCAP] [MS-GPREG] [MS-GSSA] [MS-HGSA] [MS-ICPR] [MS-IKEE] [MS-KILE] [MS-KKDCP] [MS-KPS] [MS-LSAD] [MS-LWSSP] [MS-MWBE] [MS-MWBF] [MS-N2HT] [MS-NEGOEX] [MS-NLMP] [MS-NRPC] [MS-NTHT] [MS-OAPX]

Technical area	Technology overviews	Technical specifications
		[MS-OAPXBC] [MS-OCSP] [MS-OCSPA] [MS-OIDCE] [MS-PAC] [MS-PAN] [MS-PASS] [MS-PKCA] [MS-POP3] [MS-RAA] [MS-RCMP] [MS-RMPR] [MS-RMPRS] [MS-RMSI] [MS-RPRN] [MS-RRP] [MS-SAMLPR] [MS-SFU] [MS-SMB2] [MS-SMB] [MS-SMTPNTLM] [MS-SPNG] [MS-TDS] [MS-TLSP] [MS-WCCE] [MS-WSTEP] [MS-XCEP]
Systems Management	[MS-GPOD] [MS-WMOD] [MS-WSUSOD]	[MC-CCFG] [MS-BGPP] [MS-BPAU] [MS-CER] [MS-CER2] [MS-CMRP] [MS-CSVP] [MS-DCOM] [MS-DMCT] [MS-DNSP] [MS-DPWSSN] [MS-DSCPM] [MS-DSLR] [MS-DSMN] [MS-DSPA] [MS-EVEN] [MS-EVEN6] [MS-GPAC] [MS-GPCAP] [MS-GPDPC]

Technical area	Technology overviews	Technical specifications
		[MS-GPEF] [MS-GPFAS] [MS-GPFR] [MS-GPIE] [MS-GPIPSEC] [MS-GPNAP] [MS-GPNRPT] [MS-GPOL] [MS-GPPREF] [MS-GPSB] [MS-GPSCR] [MS-GPSI] [MS-GPWL] [MS-HGRP] [MS-IPAMM] [MS-LREC] [MS-MCIS] [MS-PCQ] [MS-PLA] [MS-PSRDP] [MS-PSRP] [MS-RA] [MS-RAI] [MS-RAIOP] [MS-RAIW] [MS-RRASM] [MS-RRP] [MS-RXAD] [MS-SCMR] [MS-SFMWA] [MS-SNTP] [MS-SQMCS] [MS-SQMCS2] [MS-SSDP] [MS-TPMVSC] [MS-TSCH] [MS-UAMG] [MS-UPIGD] [MS-W32T] [MS-WMI] [MS-WMIO] [MS-WSMAN] [MS-WSMV] [MS-WSRM] [MS-WSUSAR] [MS-WSUSSS] [MS-WUSP]

4.3 Technology Collection Cross-Reference Matrix

This section contains a table that shows the technology collections in the Windows protocols documentation set. Each technology collection consists of a technology overview (section 2.1.3) in a technical area (section 2) and the technical specifications it references.

Technology overview	Technical area	Technical specifications
[MS-ADFSOD]: Active Directory Federation Services (AD FS) Protocols Overview	Directory Services	[MS-ADFSOAL] [MS-ADFSPIP] [MS-ADFSPP] [MS-ADFSWAP] [MS-DVRJ] [MS-KPP] [MS-MWBE] [MS-MWBF] [MS-OAPX] [MS-OAPXBC] [MS-SAMLPR]
[MS-ADOD]: Active Directory Protocols Overview	Directory Services	[MS-ADA1] [MS-ADA2] [MS-ADA3] [MS-ADCAP] [MS-ADDM] [MS-ADLS] [MS-ADSC] [MS-ADTS] [MS-CIFS] [MS-DRSR] [MS-DSSP] [MS-LSAD] [MS-LSAT] [MS-MAIL] [MS-NRPC] [MS-RPCE] [MS-SAMR] [MS-SAMS] [MS-SMB] [MS-SMB2] [MS-SNTP] [MS-SRPL] [MS-WSDS] [MS-WSPELD] [MS-WSTIM]
[MS-AUTHSOD]: Authentication Services Protocols Overview	Security and Identity Management	[MS-ADTS] [MS-APDS] [MS-CIFS]

Technology overview	Technical area	Technical specifications
		[MS-CSSP] [MS-DPSP] [MS-DRSR] [MS-KILE] [MS-KKDCP] [MS-NLMP] [MS-NNTP] [MS-NRPC] [MS-PAC] [MS-PKCA] [MS-POP3] [MS-RCMP] [MS-RDPBCGR] [MS-RPCE] [MS-SAMR] [MS-SFU] [MS-SMB] [MS-SMB2] [MS-SNTP] [MS-SPNG] [MS-TLSP] [MS-WSMV]
[MS-AZOD]: Authorization Protocols Overview	Security and Identity Management	[MS-ADA3] [MS-ADSC] [MS-ADTS] [MS-APDS] [MS-AZMP] [MS-CAPR] [MS-CIFS] [MS-COMA] [MS-CTA] [MS-DPSP] [MS-FCIADS] [MS-FSA] [MS-FSRM] [MS-GPCAP] [MS-KILE] [MS-LSAD] [MS-NLMP] [MS-NRPC] [MS-PAC] [MS-PAN] [MS-PKCA] [MS-RAA] [MS-RCMP] [MS-RPRN] [MS-RRP]

Technology overview	Technical area	Technical specifications
		[MS-SFU] [MS-SMB] [MS-SMB2] [MS-SPNG] [MS-TDS] [MS-TLSP]
[MS-CCROD]: Content Caching and Retrieval Protocols Overview	File, Fax, and Printing Services	[MC-BUP] [MS-BPCR] [MS-BPDP] [MS-FSA] [MS-FSCC] [MS-KILE] [MS-PCCRC] [MS-PCCRD] [MS-PCCRR] [MS-PCCRTP] [MS-PCHC] [MS-SMB2] [MS-TLSP]
[MS-CERSOD]: Certificate Services Protocols Overview	Security and Identity Management	[MS-ADTS] [MS-CRTD] [MS-CSRA] [MS-DRSR] [MS-GPREG] [MS-ICPR] [MS-WCCE] [MS-WSTEP] [MS-XCEP]
[MS-FASOD]: File Access Services Protocols Overview	File, Fax, and Printing Services	[MS-BRWS] [MS-BRWSA] [MS-CIFS] [MS-DFSC] [MS-DFSNM] [MS-FSA] [MS-FSCC] [MS-RAP] [MS-RPCE] [MS-SMB] [MS-SMB2] [MS-SMBD] [MS-SRVS] [MS-UNMP] [MS-WDV] [MS-WDVSE] [MS-WKST]

Technology overview	Technical area	Technical specifications
[MS-FSMOD]: File Services Management Protocols Overview	File, Fax, and Printing Services	[MS-BRWS] [MS-DFSC] [MS-DFSNM] [MS-DFSRH] [MS-FRS1] [MS-FRS2] [MS-FSRM] [MS-RAP] [MS-RDC] [MS-RPCE] [MS-SMB] [MS-SRVS] [MS-WKST]
[MS-GPOD]: Group Policy Protocols Overview	Systems Management	[MS-ADTS] [MS-GPAC] [MS-GPCAP] [MS-GPDPC] [MS-GPEF] [MS-GPFAS] [MS-GPFR] [MS-GPIE] [MS-GPIPSEC] [MS-GPNAP] [MS-GPNRPT] [MS-GPOL] [MS-GPPREF] [MS-GPREG] [MS-GPSB] [MS-GPSCR] [MS-GPSI] [MS-GPWL] [MS-KILE] [MS-NLMP] [MS-NRPC] [MS-SMB] [MS-SPNG] [MS-WMI] [MS-WUSP]
[MS-MQOD]: Message Queuing Protocols Overview	Application Services	[MC-COMQC] [MC-MQAC] [MC-MQSRM] [MS-ADA2] [MS-ADTS] [MS-DTCO] [MS-MQBR] [MS-MQCN]

Technology overview	Technical area	Technical specifications
		[MS-MQDMPR] [MS-MQDS] [MS-MQDSSM] [MS-MQMP] [MS-MQMQ] [MS-MQMR] [MS-MQQB] [MS-MQQP] [MS-MQRR] [MS-MQSD] [MS-RDPBCGR]
[MS-MSSOD]: Media Streaming Server Protocols Overview	Collaboration and Communications	[MS-DRM] [MS-MMSP] [MS-MSB] [MS-MSBD] [MS-NLMP] [MS-RTSP] [MS-WMHTTP] [MS-WMLOG] [MS-WMSP]
[MS-NAPOD]: Network Access Protection Protocols Overview	Networking	[MS-APDS] [MS-DHCPM] [MS-DHCPN] [MS-GPNAP] [MS-HCEP] [MS-IKEE] [MS-PEAP] [MS-PTPT] [MS-RNAP] [MS-SNTP] [MS-TLSP] [MS-TSGU] [MS-WCCE] [MS-WSH]
[MS-NETOD]: Microsoft .NET Framework Protocols Overview	Application Services	[MC-CSDL] [MC-EDMX] [MC-NBFS] [MC-NBFSE] [MC-NBFX] [MC-NETCEX] [MC-NMF] [MC-NPR] [MC-PRCH] [MC-PRCR] [MS-ASP] [MS-CIFS]

Technology overview	Technical area	Technical specifications
		[MS-CMP] [MS-CMPO] [MS-DSML] [MS-DTCO] [MS-IOI] [MS-NETTR] [MS-NLMP] [MS-NMFMB] [MS-NMFTB] [MS-NNS] [MS-NRBF] [MS-NRLS] [MS-NRTP] [MS-NTHT] [MS-PNRP] [MS-RPCE] [MS-SMB2] [MS-WFIM] [MS-WSPOL] [MS-WSRVCAT] [MS-WSRVCRM] [MS-WSRVCRR] [MS-WSTC]
[MS-PRSOD]: Print Services Protocols Overview	File, Fax, and Printing Services	[MS-ADLS] [MS-ADSC] [MS-BRWS] [MS-CIFS] [MS-DRSR] [MS-EMFSPOOL] [MS-FSCC] [MS-GPDPC] [MS-GPOL] [MS-NRPC] [MS-PAN] [MS-PAR] [MS-RAP] [MS-RPCE] [MS-RPRN] [MS-SMB] [MS-SMB2] [MS-SPNG] [MS-WPRN] [MS-WUSP]
[MS-RDSOD]: Remote Desktop Services Protocols Overview	Remote Connectivity	[MS-RDPBCGR] [MS-RDPCR2] [MS-RDPEA]

Technology overview	Technical area	Technical specifications
		[MS-RDPEAI] [MS-RDPEAR] [MS-RDPECLIP] [MS-RDPEDC] [MS-RDPEDISP] [MS-RDPEDYC] [MS-RDPEECO] [MS-RDPEFS] [MS-RDPEGDI] [MS-RDPEGFX] [MS-RDPEI] [MS-RDPELE] [MS-RDPEMC] [MS-RDPEMT] [MS-RDPEPC] [MS-RDPEPNP] [MS-RDPEPS] [MS-RDPERP] [MS-RDPESC] [MS-RDPESP] [MS-RDPEUDP] [MS-RDPEUSB] [MS-RDPEV] [MS-RDPEVOR] [MS-RDPEXPS] [MS-RDPNSC] [MS-RDPRFX] [MS-TSGU] [MS-TSTS] [MS-TSWP]
[MS-RMSOD]: Rights Management Services Protocols Overview	Security and Identity Management	[MS-MWBE] [MS-MWBF] [MS-NTHT] [MS-RMPR] [MS-RMPRS] [MS-RMSI]
[MS-STOROD]: Storage Services Protocols Overview	File, Fax, and Printing Services	[MS-ADTS] [MS-DCOM] [MS-DMRP] [MS-EFSR] [MS-FSRVP] [MS-OAUT] [MS-RPCE] [MS-RSMP] [MS-SCMP] [MS-VDS]

Technology overview	Technical area	Technical specifications
		[MS-WCCE]
[MS-TPSOD]: Transaction Processing Services Protocols Overview	Application Services	[MC-DTCXA] [MS-CMOM] [MS-CMP] [MS-CMPO] [MS-COM] [MS-DTCLU] [MS-DTCM] [MS-DTCO] [MS-RPCE] [MS-TIPP] [MS-WSRVCAT]
[MS-VSOD]: Virtual Storage Protocols Overview	File, Fax, and Printing Services	[MS-RSVD] [MS-SMB2]
[MS-WMOD]: Windows Management Protocols Overview	Systems Management	[MS-DCOM] [MS-KILE] [MS-NLMP] [MS-PSRDP] [MS-PSRP] [MS-WMI] [MS-WMIO] [MS-WSMAN] [MS-WSMV]
[MS-WSUSOD]: Windows Server Update Services Protocols Overview	Systems Management	[MS-GPOL] [MS-WSUSSS] [MS-WUSP]

5 Appendix B: Open Specifications Site Map

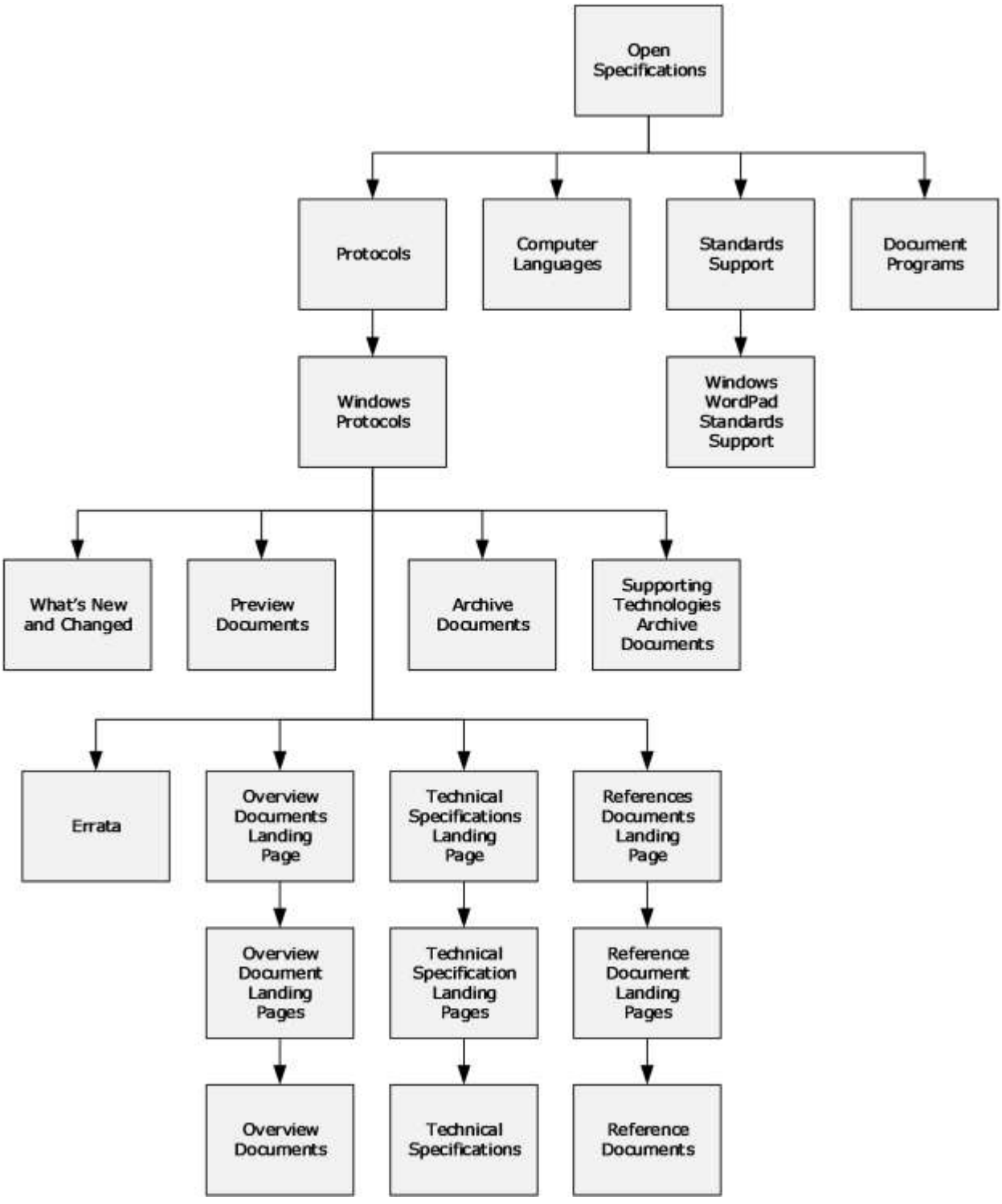

Figure 18: Open Specifications site map

6 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements.
- A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

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

Section	Description	Revision class
4.1 Technical Specification Cross-Reference Matrix	Added MS-BGPP and MS-NEGOEX.	Major
4.2 Technical Area Cross-Reference Matrix	Added MS-BGPP and MS-NEGOEX.	Major

7 Index

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