



Remote Desktop Protocol IO Lab
March 20-22, 2023

RDP IO Lab



Windows Content Q&A

Celia Parker & Jason Fisher

Finding New and Changed Content





Introductions

Celia Parker
&
Jason Fisher

Celia Parker

Content Developer II PM

In Windows Content 7 years

Jason Fisher

Senior Content PM Lead

In Windows Content 8 years

Team

Windows Content Publishing

in the Antitrust Compliance (ATC) team

in Governance Risk & Compliance (GRC)

in Windows + Devices (W+D) on the IMPACT team.

Agenda

- Windows Content Q&A
 - Your questions?
 - Answered!
- Locations of new and changed content
- Windows Protocols site navigation

Windows Content Q&A

- Your questions?
- Answered!



Locations of new and changed content

- [What's New and Changed](#)
- [Preview Documents](#)
- [Errata](#)
- Protocol document landing pages
- [Windows Interoperability Developer Blog](#)

Windows Protocols

Microsoft | Learn | Documentation | Training | Certifications | Q&A | Code Samples | Assessments | Shows | Events

Open Specifications | Specifications ▾ | Dev Center | Events ⓘ | Test | Support | Programs | Patents | Blog ▾



- Documentation

- [What's New and Changed](#)
- [Preview Documents](#)
- [Errata](#)

- Forums and Blogs

- [Windows Open Specifications Forum](#) – ask questions ...
- [Windows Interoperability Developer Blog](#) – announcements

- Downloads

- Windows Protocols PDF.zip – all Windows docs

- Sites

- [FAQ: Network Captures for Technology Overview Documents](#)

[MS-WINPROTLP]: Windows Protocols | Microsoft Learn

Filter by title

Open Specifications

- Protocols
- Windows Protocols
 - Windows Protocols
 - What's New and Changed
 - Preview Documents
 - Errata
 - Overview Documents
 - Technical Documents
 - Reference Documents
 - Archive Documents
 - Supporting Technologies Archive Documents

Explore Windows Protocols Documentation

- [What's New and Changed in Windows Documents](#)
Provides information about and links to new and updated protocol documents that contain details about the most recently released versions of Windows Client and Windows Server operating systems.
- [Windows Protocols Preview Documents](#)
Provides preliminary versions of new or updated Open Specifications technical documents for community review and feedback.
- [Windows Protocols Errata](#)
Provides clarifications and adjustments of content issues in published versions of protocol documents that could impact an implementation.
- [Windows Protocols Overview Documents](#)
Provides information about the protocols and other technologies that are included in the Windows Protocols documentation set and the relationships among those technologies.
- [Windows Protocols Technical Documents](#)
Provides detailed technical specifications for Microsoft proprietary protocols (including extensions to industry-standard or other published protocols) and other technologies that are used by Windows to communicate with other Microsoft products.
- [Windows Protocols Reference Documents](#)
Provides reference documents that are available for use with the Windows Protocols documentation set.

Forums and Blogs

- [Open Specifications Forums](#) ⓘ
These user forums are available to answer technical questions about the Open Specifications documents.
- [Open Specifications Blogs](#) ⓘ
These blogs, authored by the engineers who support the Open Specifications documents, provide a different venue for further discussion of those documents.
- [Windows Interoperability Developer Blog](#)
This blog is updated with the latest information on releases of the Open Specifications documents.

| Downloads | Sites |
|---|---|
| Windows Protocols PDF .zip file ⓘ (600+ MB) | Open Specifications Developer Center ⓘ |
| Standards Support Downloads | FAQ: Network Captures for Technology Overview Documents ⓘ |
| | Windows Protocols Archived Forums ⓘ |

Download PDF

What's New and Changed

The screenshot shows the Microsoft Learn website for the topic [MS-WINPROTLP]. The page is titled 'What's New and Changed' and includes a sidebar with navigation links. The main content area features two tables: 'New Documentation' and 'Updated Documentation'.

New Documentation

| Specification | Description | Release date |
|---|--|-------------------|
| [MS-RDPEWA]: Remote Desktop Protocol: WebAuthn Virtual Channel Protocol | Specifies the Remote Desktop Protocol (RDP): WebAuthn Virtual Channel Protocol which provides a way for a user to do WebAuthn operations over the RDP protocol. It enables a server to send webauthn request to a client, the client can then use this request to talk to authenticators (platform as well as cross-platform) and reply with the response. | September 3, 2022 |

Updated Documentation

Service Releases

The following documents were updated for service releases after the April 2022 release for Windows 11, version 22H2 operating system.

| Specifications with service release updates | Description | Release date |
|---|--|------------------|
| [MS-NCNBI]: Network Controller Northbound Interface | Specifies the Network Controller Protocol, which is used by tenants and network administrators to control data center networking. Common tasks that would use these APIs include designing and monitoring a virtual network in a data center. This document has been updated as follows: In section 3.2.5.1, updated product note that in February 2023 support for user sessions multi-session edition only in Windows Virtual Desktop (WVD) was backported to Windows 10 v2004 (21H1) and later. | January 30, 2023 |

WNC is the page to look for **new** & changed documents

- New Documents
- Service Releases
- Technical Documents Release
 - Content Updates – Change Tracking
- Overview Documents Release

Preview Documents

Technical documents with significant updates

- Links to the diff doc
- Listed for comments
- Comment in the

[Windows Open Specification](#) forum

[\[MS-WINPROTLP\]: Preview Documents | Microsoft Learn](#)

The screenshot shows the Microsoft Learn website's 'Preview Documents' page. The browser address bar shows the URL <https://learn.microsoft.com...>. The page has a blue header with the Microsoft logo and navigation links. The main content area is titled 'Preview Documents' and includes a description of the section, a table of preview documents, and a 'Download PDF' button.

Preview Documents

Article • 02/17/2023 • 2 minutes to read

This topic lists the available preview documents. Since this topic is updated frequently, we recommend that you subscribe to these RSS or Atom feeds to receive update notifications.

This section provides descriptions for and links to the technical documents in the Windows Protocols documentation set that are currently released as preview PDF versions. These documents are in the process of being created or updated for either new product versions or significant product updates.

Microsoft may publish technical documents as preview (also called pre-release or preliminary) versions for community review and feedback. Not every technical document is published for preview, and each document's preview period may vary. After the preview period is completed, each document is published to its appropriate released-version location at [Windows Protocols Technical Documents](#).

To provide feedback or ask questions about a preview version of a technical document, you can use the [Open Specifications forums](#).

Updated Documentation in Preview

These documents contain revision marks that show updates due to revisions made since these documents were last released. Preview documents, provided in PDF format, show content additions in green-highlighted underlined text and deletions in red-highlighted strikethrough text.

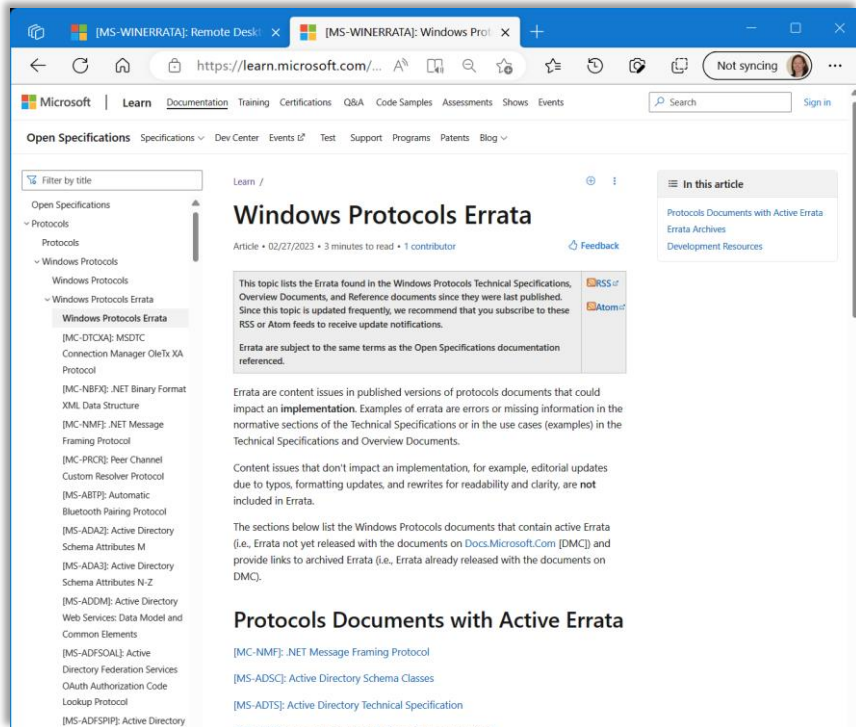
| Specification | Description | Latest preview release |
|---|--|------------------------|
| [MS-CDP]: Connected Devices Platform Protocol Version 3 | Specifies the Connected Devices Platform Protocol Version 3. This protocol provides a discovery system to authenticate and verify users and devices, as well as providing a message exchange between devices. It provides a transport-agnostic means of building connections among all of a user's devices, whether available through the cloud or through direct physical presence. | September 12, 2022 |

[Download PDF](#)

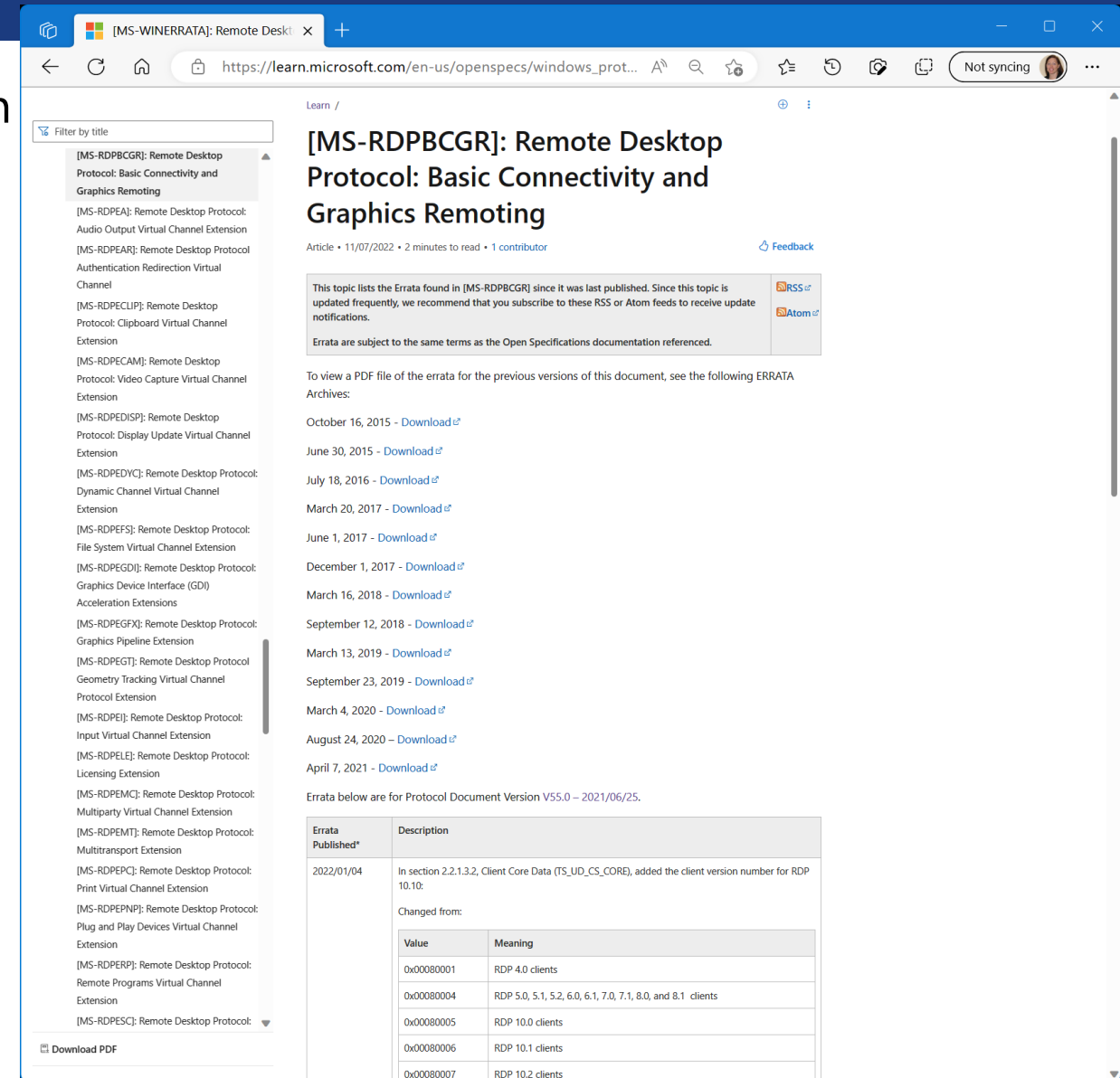
Windows Protocols Errata

Links to each doc's changes since the last publication

- Left menu links to all Windows doc errata pages
- Documents with active errata listed
- Errata Archives 2015 to 2023 listed



Each doc page
lists archives and
active errata
If there are any



Document Landing Pages

The screenshot shows a web browser displaying the Microsoft Learn page for the document [MS-RDPBCGR]: Remote Desktop Protocol: Basic Connectivity and Graphics Remoting. The page layout includes a top navigation bar with the Microsoft logo and various links (Learn, Documentation, Training, etc.), a left sidebar with a filterable table of contents, a main content area with the article title and body text, and a right sidebar with 'In this article' links.

Left Menu - links to doc sections

- Open Specifications
- Protocols
 - Windows Protocols
 - Windows Protocols
- Technical Documents
 - [MS-RDPBCGR]: Remote Desktop Protocol: Basic Connectivity and Graphics Remoting
 - [MS-RDPBCGR]: Remote Desktop Protocol: Basic Connectivity and Graphics Remoting
- 1 Introduction
- 2 Messages
- 3 Protocol Details
- 4 Protocol Examples
- 5 Security
- 6 Appendix A: Product Behavior
- 7 Change Tracking
- 8 Index

Published Version

| Date | Protocol Revision | Revision Class | Downloads |
|----------|-------------------|----------------|---|
| 9/3/2022 | 57.0 | 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 |
|-----------|-------------------|----------------|--|
| 4/29/2022 | 56.0 | Major | PDF DOCX Diff |
| 6/25/2021 | 55.0 | Major | PDF DOCX Errata Diff |
| 4/7/2021 | 54.0 | Major | PDF DOCX Diff |
| 8/26/2020 | 53.0 | Major | PDF DOCX Errata Diff |
| 3/4/2020 | 52.0 | Major | PDF DOCX Errata Diff |
| 9/23/2019 | 51.0 | Major | PDF DOCX Errata Diff |

In this article

- [Published Version](#)
- [Previous Versions](#)
- [Preview Versions](#)
- [Development Resources](#)

[Show more](#)

Version links for each release

- Left menu - links to doc sections
- Abstract
- Version tables
 - Doc version links by date
PDF, Docx, Errata, & Diff docs
- In this article - in-page section links

Windows Interoperability Developer Blog

Announcements of Interop events and doc publications

The screenshot shows the Microsoft Learn website. The top navigation bar includes links for Microsoft, Learn, Documentation, Training, Certifications, Q&A, Code Samples, Assessments, Shows, and Events. Below this, a secondary navigation bar lists various resources, with 'Blog' expanded to show 'Office Interoperability Developer Blog', 'SQL Interoperability Developer Blog', and 'Windows Interoperability Developer Blog'. An orange arrow points to the 'Windows Interoperability Developer Blog' link. The main content area displays the 'Windows Interoperability Developer Blog' page, which includes a filter by title search bar, a list of blog posts, and a detailed article titled 'Windows Interoperability Developer Blog' dated 12/16/2019. An orange arrow points to the 'Windows Interop Developer Blog - 2023' link in the left sidebar. The bottom section shows the 'Windows Interop Developer Blog - 2023' page, dated 01/23/2023, with a welcome message and a link to the 'Windows Protocols Errata'.

[MS-WININTBLOGLP]: Windows Interop Developer Blog - 2023 | Microsoft Learn

Windows Protocols

Forums and Blogs

| | |
|--|---|
| | Open Specifications Forums |
| These user forums are available to answer technical questions about the Open Specifications documents. | |
| | Open Specifications Blogs |
| These blogs, authored by the engineers who support the Open Specifications documents, provide a different venue for further discussion of those documents. | |
| | Windows Interoperability Developer Blog |
| This blog is updated with the latest information on releases of the Open Specifications documents. | |

January 2023

Article • 02/15/2023 • 2 minutes to read

[Feedback](#)

Attention RDP implementors!

Microsoft is excited to welcome you back to campus March 20–22, 2023, for the RDP IO Lab!

If you are a vendor with an implementation of the Remote Desktop Protocols (RDP) or are thinking of building one, this free, once-a-year event is for you!

You will have an opportunity at this event to test your implementations of RDP to identify and fix bugs in a collaborative setting, learn about RDP updates, attend RDP product team sessions, and more!

Registration is free and now open! Learn more at <https://interopevents.com/en-us/rdp2022>

2023/01/30 service release

- [MS-NCNB]: [Network Controller Northbound Interface Specification](#): This document has been updated as follows:
 - Added version v4.2 with `enableTcpReset` and `idleTimeoutInMinutes` properties in multiple sections. Updated product notes with V4.2, `idleTimeoutInMinutes`, and updated support for the `enableTcpReset` property backport to Windows Server 2019 with applicability to HCI.

2023/01/30 errata release

- [MS-CDP]: [Connected Devices Platform Protocol Version 3](#)
- [MS-DTYP]: [Windows Data Types](#)
- [MS-FSCC]: [File System Control Codes](#)
- [MS-SMB2]: [Server Message Block \(SMB\) Protocol Versions 2 and 3](#)
- [MS-XCA]: [Xpress Compression Algorithm](#)

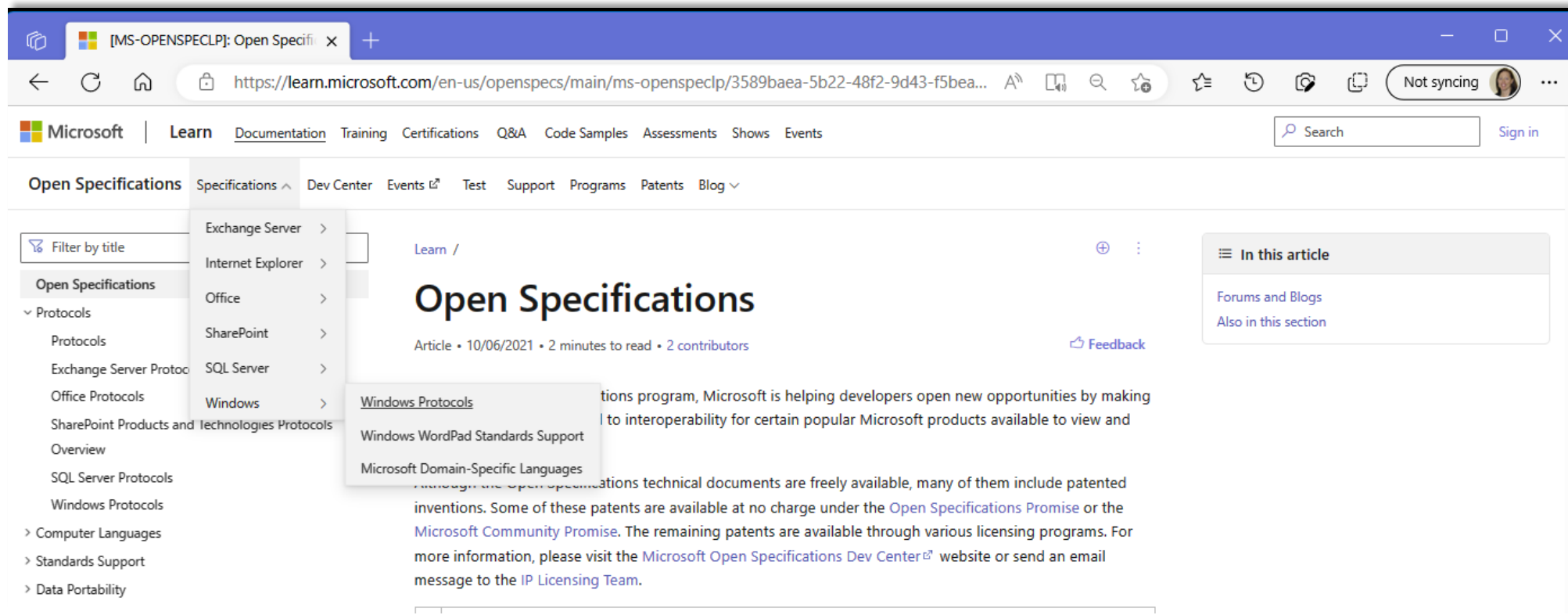
Windows Protocols

Site Navigation



Open Specifications

- Site URL change **docs.microsoft.com** to **learn.microsoft.com**
- [Learn Documentation](#) > [Open Specifications](#) > [Protocols](#) > [Windows Protocols](#)



[MS-WINPROTLP]: Windows Protocols | Microsoft Learn

Windows Protocols

Left menu links to all documentation

- [What's New and Changed](#)
- [Preview Documents](#)
- [Errata](#)
- Etc. . .

The screenshot shows the Microsoft Learn website for 'Windows Protocols'. A left-hand navigation menu is overlaid on the page, listing the following links: 'Open Specifications', 'Protocols', 'Windows Protocols' (highlighted), 'What's New and Changed', 'Preview Documents', 'Errata', 'Overview Documents', 'Technical Documents', 'Reference Documents', 'Archive Documents', 'Supporting Technologies Archive', and 'Documents'. The main content area on the right displays the 'Windows Protocols' article, dated 09/12/2022, with a 2-minute read time. It includes a 'Feedback' link, a section 'In this article' with links to 'Explore Windows Protocols Documentation' and 'Forums and Blogs', and a subscription prompt for the RSS feed. Below this is a 'Windows' logo and a paragraph explaining the documentation's purpose. Further down is a section titled 'Explore Windows Protocols Documentation' containing a list of links: 'What's New and Changed in Windows Documents', 'Windows Protocols Preview Documents', 'Windows Protocols Errata', 'Windows Protocols Overview Documents', 'Windows Protocols Technical Documents', and 'Windows Protocols Reference Documents'. Each link has a brief description of its content. At the bottom left of the page, there is a 'Download PDF' button.

Windows Protocols

- Documentation
- Forums and Blogs
 - [Windows Open Specifications Forums](#) – ask questions
 - Open Specification Blogs - archives
 - [Windows Interoperability Developer Blog](#) – announcements
- Downloads
 - Windows Protocols PDF.zip – all Windows docs
- Sites
 - [FAQ: Network Captures for Technology Overviews](#)

[MS-WINPROTLP]: Windows Protocols | Microsoft Learn

The screenshot shows the Microsoft Learn page for Windows Protocols. The page has a blue header with the title 'Windows Protocols'. Below the header is a navigation pane on the left with a search bar and a list of links: 'Open Specifications', 'Protocols', 'Windows Protocols', 'What's New and Changed', 'Preview Documents', 'Errata', 'Overview Documents', 'Technical Documents', 'Reference Documents', 'Archive Documents', and 'Supporting Technologies Archive Documents'. The 'Windows Protocols' link is highlighted. The main content area is titled 'Explore Windows Protocols Documentation' and contains a list of links: 'What's New and Changed in Windows Documents', 'Windows Protocols Preview Documents', 'Windows Protocols Errata', 'Windows Protocols Overview Documents', 'Windows Protocols Technical Documents', and 'Windows Protocols Reference Documents'. Below this list is a section titled 'Forums and Blogs' with links to 'Open Specifications Forums', 'Open Specifications Blogs', and 'Windows Interoperability Developer Blog'. At the bottom of the page is a table with two columns: 'Downloads' and 'Sites'. The 'Downloads' column contains links to 'Windows Protocols PDF .zip file' and 'Standards Support Downloads'. The 'Sites' column contains links to 'Open Specifications Developer Center', 'FAQ: Network Captures for Technology Overview Documents', and 'Windows Protocols Archived Forums'.

| Downloads | Sites |
|---|---|
| Windows Protocols PDF .zip file (600+ MB) | Open Specifications Developer Center |
| Standards Support Downloads | FAQ: Network Captures for Technology Overview Documents |
| | Windows Protocols Archived Forums |

Overview Documents

Links to every Overview Document's landing page (LP)

- Left menu
 - Overview doc LP links
- Center table
 - Overview doc LP links
 - Abstracts
 - PDF – instant downloads

[\[MS-WINPROTLP\]: Overview Documents | Microsoft Learn](#)

The screenshot shows the Microsoft Learn website for the '[MS-WINPROTLP]: Overview Documents' page. The browser address bar shows the URL: <https://learn.microsoft.com/en-us/openspec...>. The page has a blue header with the Microsoft logo and navigation links: Learn, Documentation, Training, Certifications, Q&A, Code Samples, Assessments, Shows, and Events. Below the header, there's a sub-header with 'Open Specifications' and a search bar. The main content area is titled 'Overview Documents' and includes a 'Filter by title' search box. A left-hand navigation menu lists various overview documents, including '[MS-ADFSOD]: Active Directory Federation Services (AD FS) Protocols Overview', '[MS-ADOD]: Active Directory Protocols Overview', '[MS-AUTHSOD]: Authentication Services Protocols Overview', '[MS-AZOD]: Authorization Protocols Overview', '[MS-CCROD]: Content Caching and Retrieval Protocols Overview', '[MS-CERSOD]: Certificate Services Protocols Overview', '[MS-DOCO]: Windows Protocols Documentation Roadmap', '[MS-FASOD]: File Access Services Protocols Overview', '[MS-FSMOD]: File Services Management Protocols Overview', '[MS-GPOD]: Group Policy Protocols Overview', '[MS-MQOD]: Message Queuing Protocols Overview', '[MS-MSSOD]: Media Streaming Server Protocols Overview', '[MS-NAPOD]: Network Access Protection Protocols Overview', '[MS-NETOD]: Microsoft .NET Framework Protocols Overview', '[MS-PRSOD]: Print Services Protocols Overview', and '[MS-RDSOD]: Remote Desktop Services Protocols Overview'. The main content area contains an introduction to the technology overviews, a 'Network captures' link, a 'Note' about inter-document links, and a table with two columns: 'Specification' and 'Description'. The table lists two specifications: '[MS-ADFSOD]: Active Directory Federation Services (AD FS) Protocols Overview' and '[MS-ADOD]: Active Directory Protocols Overview'. The first specification's description provides an overview of the functionality and relationships of the Active Directory Federation Services (AD FS) protocols. The second specification's description 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. At the bottom of the page, there is a 'Download PDF' button.

Overview Documents

Article • 02/17/2023 • 12 minutes to read [Feedback](#)

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.

[Network captures](#) for the examples described in these technology overviews are downloadable as .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 foundation for authentication services in a domain |

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MS-RDSOD Overview

Links for each release

- Left menu - links to doc sections
- Abstract
- Version tables link to
 - PDF, Docx, Diff docs & Captures
- In this article
 - page section links

Captures are network captures, see

[FAQ: Network Captures for Technology Overview Documents](#)

The screenshot shows the Microsoft Learn page for the document '[MS-RDSOD]: Remote Desktop Services Protocols Overview'. The page is viewed in a browser with the URL <https://learn.microsoft.com/en-us/openspe...>. The left navigation pane includes a search bar and a tree view with categories like 'Open Specifications', 'Protocols', 'Windows Protocols', 'Overview Documents', and '[MS-RDSOD]: Remote Desktop Services Protocols Overview'. The main content area features the document title, a 'Learn /' breadcrumb, a 'Feedback' link, and a summary paragraph. Below the summary is an 'Abstract' section. The 'Published Version' section contains a table with columns for Date, Protocol Revision, Revision Class, and Downloads. A link to download a zip file of all PDF files for Windows Protocols is provided. The 'Previous Versions' section contains another table with the same columns, showing historical releases.

[MS-RDSOD]: Remote Desktop Services Protocols Overview

Article • 10/26/2021 • 4 minutes to read

Provides an overview of the functionality and relationship of the protocols implemented in the Remote Desktop services in Windows, which includes the protocols specified in [MS-RDPBCGR], [MS-TSGU], [MS-TSTS], [MS-TSWP], [MS-RDPEDC], [MS-RDPEGDI], [MS-RDPCR2], [MS-RDPNSC], [MS-RDPRFX], [MS-RDPEPS], [MS-RDPELE], [MS-RDPECLIP], [MS-RDPEDYC], [MS-RDPEFS], [MS-RDPESP], [MS-RDPEPC], [MS-RDPESC], [MS-RDPEA], [MS-RDPEAI], [MS-RDPEMC], [MS-RDPEPNP], [MS-RDPEUSB], [MS-RDPERP], [MS-RDPEV], [MS-RDPEXS], [MS-RDPERP], [MS-RDPEUDP], [MS-RDPEGFX], [MS-RDPEMT], [MS-RDPEECO], [MS-RDPEVOR], [MS-RDPEI], and [MS-RDPEAR]. Using the Remote Desktop protocols, a user of a remote client can initiate a user session on a server and then run programs, save files, and use network resources. This supports the hosting of multiple simultaneous user sessions on servers. Remote Desktop protocols support scenarios such as redirecting keyboard, mouse, clipboard, media player content, print jobs, smart card data, and file system data between the RDP client and the server.

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

Abstract

Published Version

| Date | Protocol Revision | Revision Class | Downloads |
|------------|-------------------|----------------|---|
| 10/26/2021 | 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 |
|------------|-------------------|----------------|---|
| 6/3/2021 | 8.0 | Major | PDF DOCX Diff Capture |
| 11/5/2018 | 7.0 | Major | PDF DOCX Diff Capture |
| 12/15/2017 | 6.0 | Major | PDF DOCX Diff Capture |
| 6/4/2017 | 5.2 | Major | PDF DOCX Diff Capture |

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Technical Documents

Links to every Technical Document's landing page (LP)

- Left menu
 - Tech doc LP links
- Center table
 - Tech doc LP links
 - Abstracts
 - PDF – instant downloads

[MS-WINPROTLP]: Technical Documents | Microsoft Learn

Microsoft | Learn | Documentation | Training | Certifications | Q&A | Code Samples | Assessments | More

Open Specifications | Specifications | Dev Center | Events | Test | Support | Programs | Patents | Blog

Filter by title

Open Specifications

Protocols

Windows Protocols

What's New and Changed

Preview Documents

Errata

Overview Documents

Technical Documents

Technical Documents

[MC-BUP]: Background Intelligent Transfer Service (BITS) Upload Protocol

[MC-CCFG]: Server Cluster: Configuration (ClusCfg) Protocol

[MC-COMQC]: Component Object Model Plus (COM+) Queued Components Protocol

[MC-CSDL]: Conceptual Schema Definition File Format

[MC-DPL4CS]: DirectPlay 4 Protocol: Core and Service Providers

[MC-DPL4R]: DirectPlay 4 Protocol: Reliable

[MC-DPL8CS]: DirectPlay 8 Protocol: Core and Service Providers

[MC-DPL8R]: DirectPlay 8 Protocol: Reliable

[MC-DPLHP]: DirectPlay 8 Protocol: ...

Download PDF

Technical Documents

Article • 12/16/2022 • 111 minutes to read

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. |
| [MC-CSDL]: Conceptual | Specifies the Conceptual Schema Definition File Format, which defines |

MS-RDPBCGR Landing Page

The screenshot shows the Microsoft Learn page for the MS-RDPBCGR protocol. The page title is "[MS-RDPBCGR]: Remote Desktop Protocol: Basic Connectivity and Graphics Remoting". The article is dated 09/03/2022 and is 5 minutes to read. The left sidebar contains a navigation menu with sections like "Open Specifications", "Protocols", "Windows Protocols", "Technical Documents", and "In this article". The main content area includes a description of the protocol, a "Published Version" table, and a "Previous Versions" table. The "Published Version" table shows the latest revision (57.0) with links to PDF, DOCX, and Diff files. The "Previous Versions" table lists revisions from 51.0 to 56.0, each with links to PDF, DOCX, Errata, and Diff files. A "Download PDF" button is located at the bottom left of the page.

Microsoft | Learn | Documentation | Training | Certifications | Q&A | Code Samples | Assessments | Shows | Events

Open Specifications | Specifications | Dev Center | Events | Test | Support | Programs | Patents | Blog

Filter by title

Learn /

[MS-RDPBCGR]: Remote Desktop Protocol: Basic Connectivity and Graphics Remoting

Article • 09/03/2022 • 5 minutes to read

Specifies the Remote Desktop Protocol: Basic Connectivity and Graphics Remoting, designed to facilitate user interaction with a remote computer system by transferring graphics display information from the remote computer to the user and transporting input from the user to the remote computer, where it may be injected locally.

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 |
|----------|-------------------|----------------|---|
| 9/3/2022 | 57.0 | 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 |
|-----------|-------------------|----------------|--|
| 4/29/2022 | 56.0 | Major | PDF DOCX Diff |
| 6/25/2021 | 55.0 | Major | PDF DOCX Errata Diff |
| 4/7/2021 | 54.0 | Major | PDF DOCX Diff |
| 8/26/2020 | 53.0 | Major | PDF DOCX Errata Diff |
| 3/4/2020 | 52.0 | Major | PDF DOCX Errata Diff |
| 9/23/2019 | 51.0 | Major | PDF DOCX Errata Diff |

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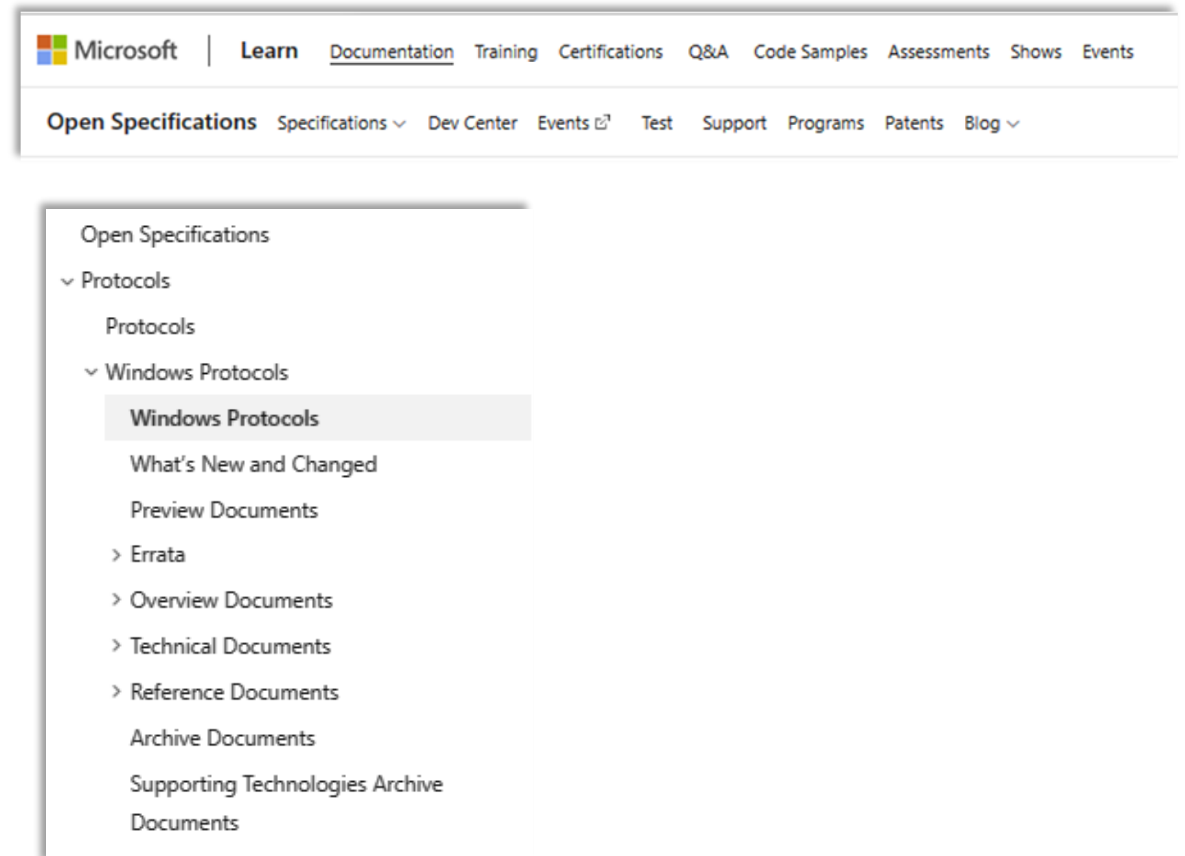
Version links for each release

- Left menu - links to doc sections
- Abstract
- Version tables
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- In this article - in-page section links

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- [Windows Protocols](#)
 - [What's New and Changed](#)
 - [Windows Protocols Errata](#)
 - [Overview Documents](#)
 - [FAQs Overview Network Captures](#)
 - [Technical Documents](#)
 - [Reference Documents](#)
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