Microsoft

April 17-18, 2024
sambaXP Conference

Microsoft Interoperability Track

Microsoft

Introduction to Microsoft's Commitment to Interoperability

sambaXP 2024, April 17-18

Hagit Galatzer

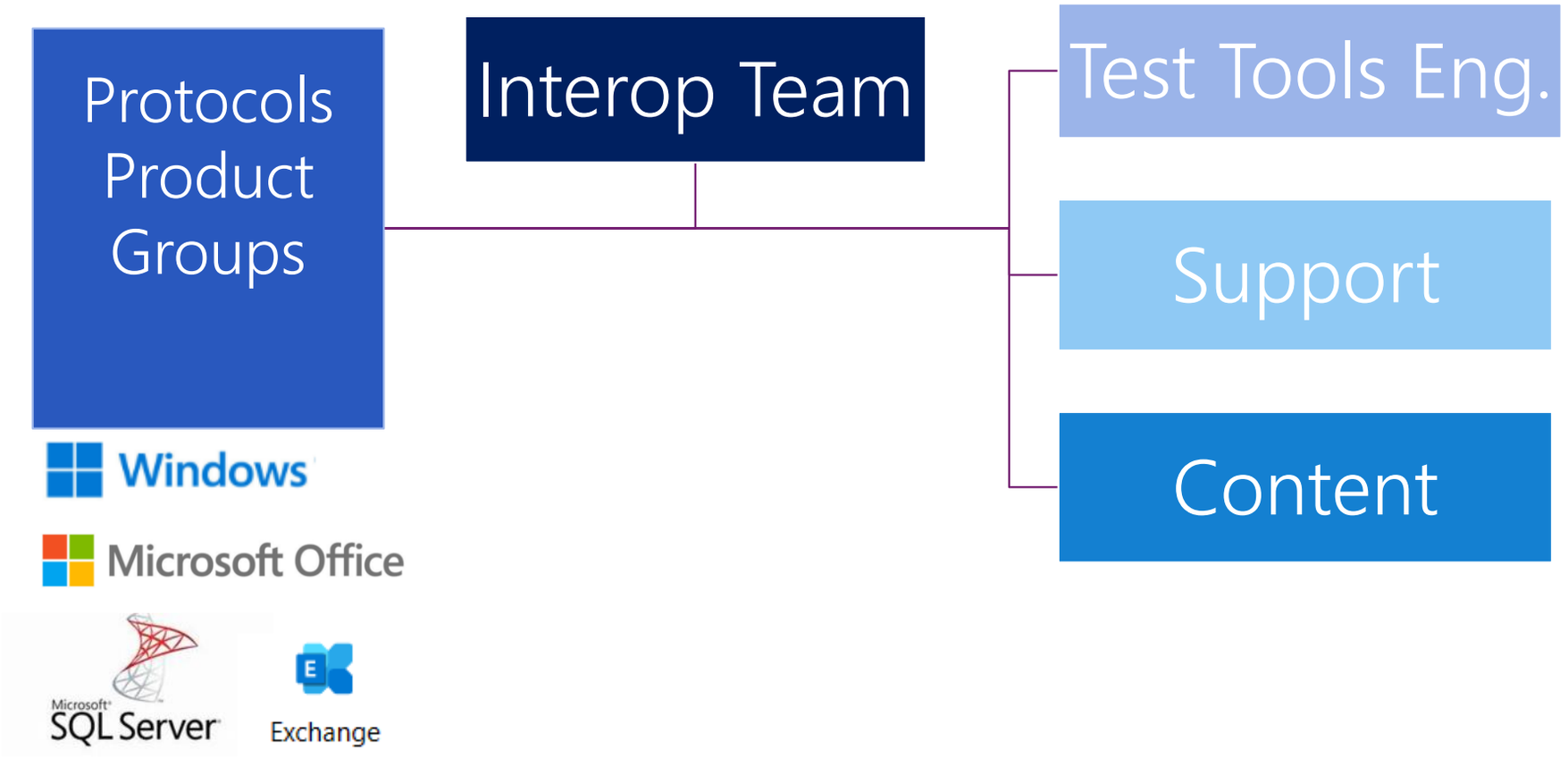
Senior Program Management, Microsoft

Microsoft

Agenda

- Who are we?
- Interop program guidelines
- The Open Specification documents
- Developers test tools
- Support channels and resources
- What’s next today?

The Interoperability Team - Who are we?



Guiding Principles – Interop Program

Ensure developers have access to the interoperability information, tools and resources to successfully develop for Microsoft's products and platforms.

We love our developers!

Docs

Support

Tools

Events

Interoperability Initiatives

Open engagement on a global basis

Up to date and published regularly

Experienced support team

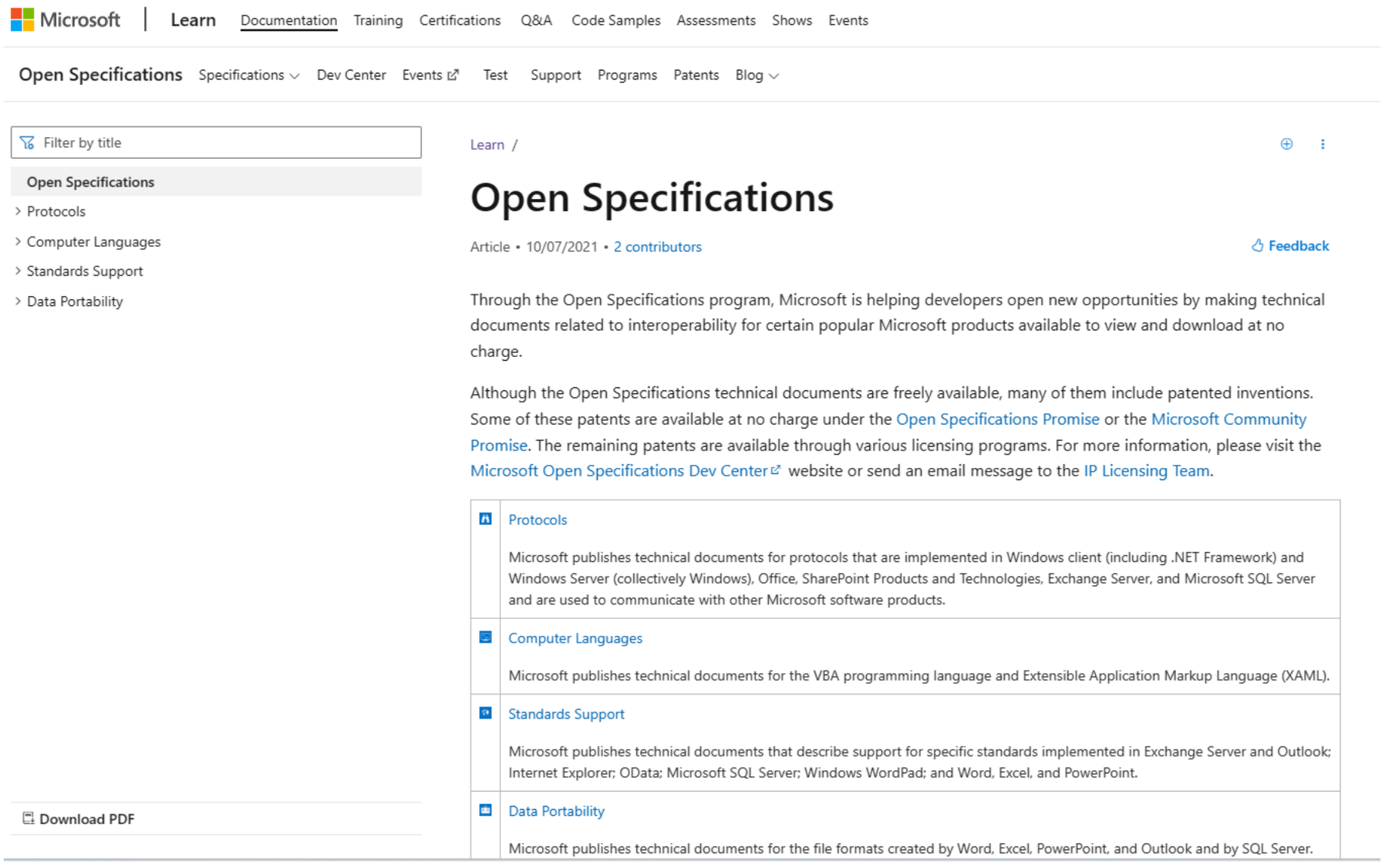
Building Microsoft interoperability ecosystem

Program Scope

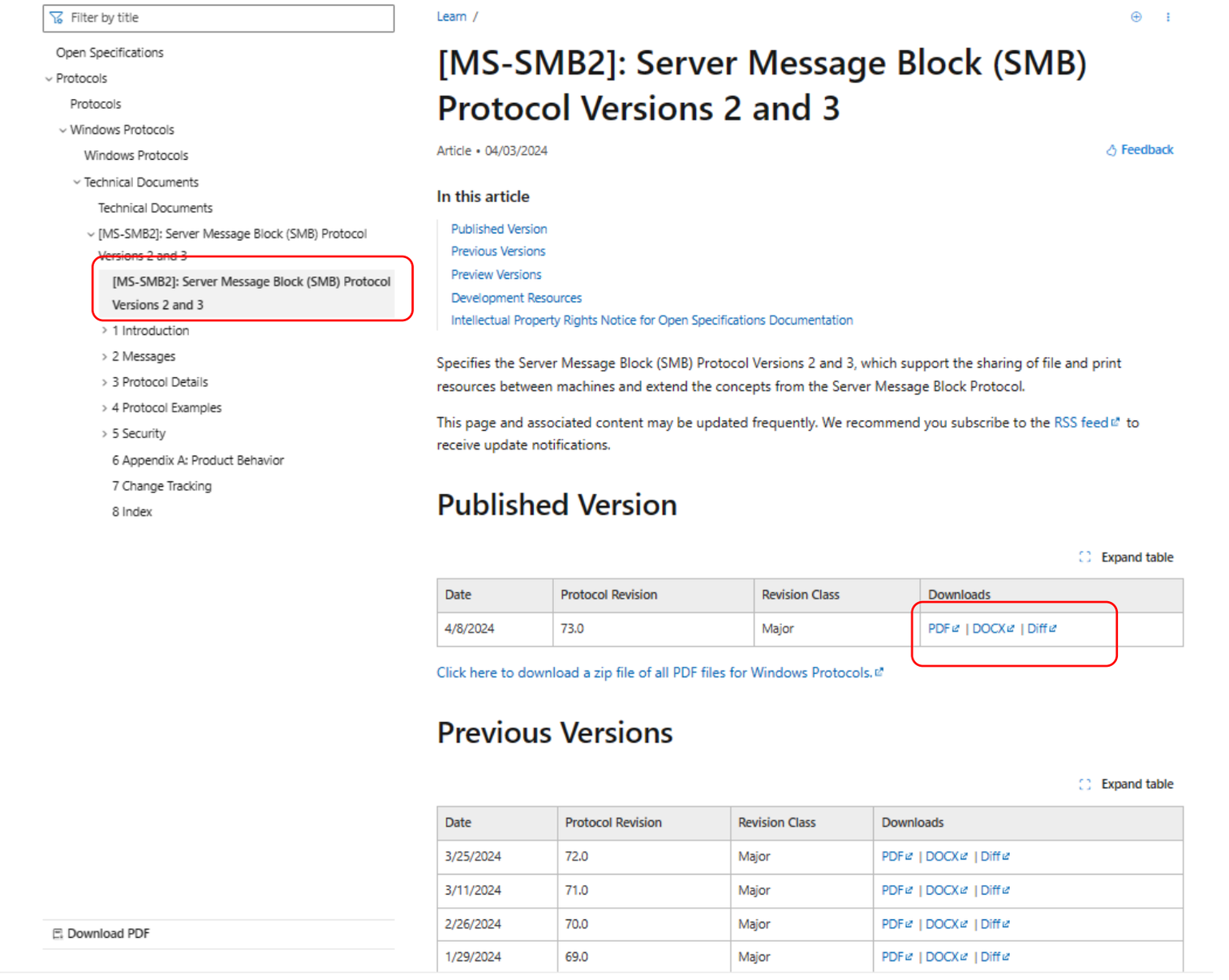
- **Windows Protocols** related to file sharing, remote desktop, Active Directory, and more…
- **Office Protocols** covering Exchange Server, SharePoint Server, and Office Clients
- **SQL Protocols** used by SQL server to interop or communicate with other Microsoft products
- **Office File Formats -** Binary file formats, OOXML, and Office Standards

Open Specifications

https://learn.microsoft.com/en-us/openspecs



The Doc page


Filter by title
Open Specifications
Protocols
Protocols
Windows Protocols
Windows Protocols
Technical Documents
Technical Documents
[MS-SMB2]: Server Message Block (SMB) Protocol Versions 2 and 3
[MS-SMB2]: Server Message Block (SMB) Protocol Versions 2 and 3
1 Introduction
2 Messages
3 Protocol Details
4 Protocol Examples
5 Security
6 Appendix A: Product Behavior
7 Change Tracking
8 Index
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[MS-SMB2]: Server Message Block (SMB) Protocol Versions 2 and 3
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In this article
Published Version
Previous Versions
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Development Resources
Intellectual Property Rights Notice for Open Specifications Documentation
Specifies the Server Message Block (SMB) Protocol Versions 2 and 3, which support the sharing of file and print resources between machines and extend the concepts from the Server Message Block Protocol.
This page and associated content may be updated frequently. We recommend you subscribe to the RSS feed to receive update notifications.
Published Version
Expand table
Date | Protocol Revision | Revision Class | Downloads
4/8/2024 | 73.0 | Major | PDF | DOCX | Diff
Click here to download a zip file of all PDF files for Windows Protocols.
Previous Versions
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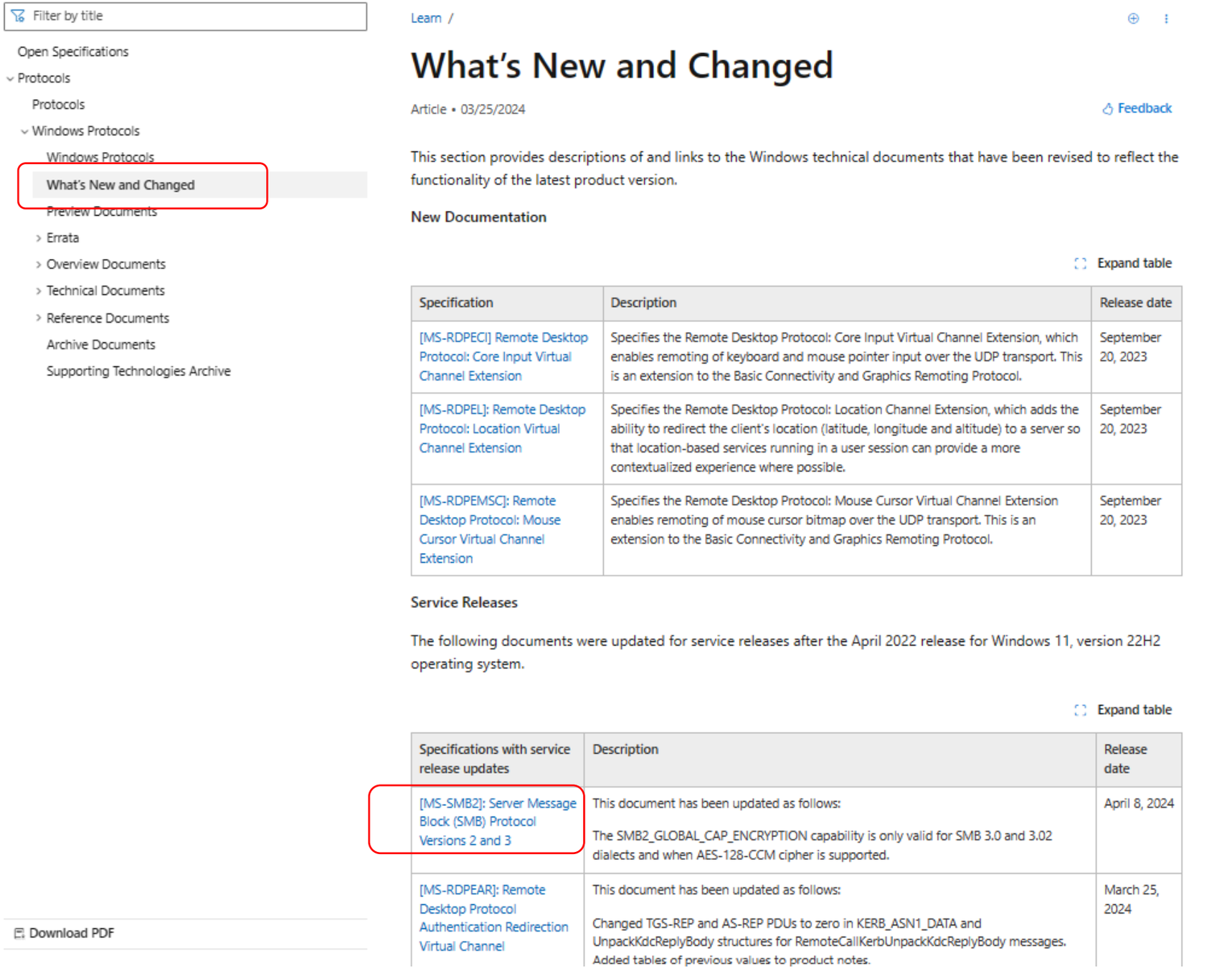
3/11/2024 | 71.0 | Major | PDF | DOCX | Diff
2/26/2024 | 70.0 | Major | PDF | DOCX | Diff
1/29/2024 | 69.0 | Major | PDF | DOCX | Diff

What's New?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Article • 03/25/2024
Feedback
This section provides descriptions of and links to the Windows technical documents that have been revised to reflect the functionality of the latest product version.
New Documentation
Expand table
Specification
Description
Release date
[MS-RDPECI] Remote Desktop Protocol: Core Input Virtual Channel Extension
Specifies the Remote Desktop Protocol: Core Input Virtual Channel Extension, which enables remoting of keyboard and mouse pointer input over the UDP transport. This is an extension to the Basic Connectivity and Graphics Remoting Protocol.
September 20, 2023
[MS-RDPEL]: Remote Desktop Protocol: Location Virtual Channel Extension
Specifies the Remote Desktop Protocol: Location Channel Extension, which adds the ability to redirect the client's location (latitude, longitude and altitude) to a server so that location-based services running in a user session can provide a more contextualized experience where possible.
September 20, 2023
[MS-RDPEMSC]: Remote Desktop Protocol: Mouse Cursor Virtual Channel Extension
Specifies the Remote Desktop Protocol: Mouse Cursor Virtual Channel Extension enables remoting of mouse cursor bitmap over the UDP transport. This is an extension to the Basic Connectivity and Graphics Remoting Protocol.
September 20, 2023
Service Releases
The following documents were updated for service releases after the April 2022 release for Windows 11, version 22H2 operating system.
Expand table
Specifications with service release updates
Description
Release date
[MS-SMB2]: Server Message Block (SMB) Protocol Versions 2 and 3
This document has been updated as follows:
The SMB2_GLOBAL_CAP_ENCRYPTION capability is only valid for SMB 3.0 and 3.02 dialects and when AES-128-CCM cipher is supported.
April 8, 2024
[MS-RDPEAR]: Remote Desktop Protocol Authentication Redirection Virtual Channel
This document has been updated as follows:
Changed TGS-REP and AS-REP PDUs to zero in KERB_ASN1_DATA and UnpackKdcReplyBody structures for RemoteCallKerbUnpackKdcReplyBody messages. Added tables of previous values to product notes.
March 25, 2024

The Diff

- Download the diff file
- Search for “Updated Section”
- See the changes in green

1.2.2 (Updated Section) Informative References

[FSBO] Microsoft Corporation, "File System Behavior in the Microsoft Windows Environment", June 2008, http://download.microsoft.com/download/4/3/8/43889780-8d45-4b2e-9d3a-c696a890309f/File%20System%20Behavior%20Overview.pdf

[KB2770917] Microsoft Corporation, "Windows 8 and Windows Server 2012 update rollup: November 2012", Version 6.0, http://support.microsoft.com/kb/2770917/en-us

[MS-AUTHSOD] Microsoft Corporation, "Authentication Services Protocols Overview".

[MS-PCCRR] Microsoft Corporation, "Peer Content Caching and Retrieval: Retrieval Protocol".

[MS-SQOS] Microsoft Corporation, "Storage Quality of Service Protocol".

[MSKB-5036909] Microsoft Corporation, "March 2024 - 5036909", March 2024, https://www.catalog.update.microsoft.com/Search.aspx?q=5036909

[MSKB-5036910] Microsoft Corporation, "March 2024 - 5036910", March 2024, https://www.catalog.update.microsoft.com/Search.aspx?q=5036910

[MSKB-5036980] Microsoft Corporation, "March 2024 - 5036980", March 2024, https://www.catalog.update.microsoft.com/Search.aspx?q=5036980

[OFFLINE] Microsoft Corporation, "Offline Files", January 2005, https://learn.microsoft.com/en-us/windows-server/storage/folder-redirection/folder-redirection-rup-overview

3.3.5.9 (Updated Section) Receiving an SMB2 CREATE Request

When the server receives a request with an SMB2 header with a **Command** value equal to SMB2 CREATE, message handling proceeds as described in the following sections.

If **Connection.Dialect** belongs to the SMB 3.x dialect family and the request does not contain SMB2_CREATE_DURABLE_HANDLE_RECONNECT Create Context or SMB2_CREATE_DURABLE_HANDLE_RECONNECT_V2 Create Context, the server MUST look up an existing open in the **GlobalOpenTable** where **Open.FileName** matches the file name in the **Buffer** field of the request. If an **Open** entry is found, and if all the following conditions are satisfied, the server SHOULD<291> fail the request with STATUS_FILE_NOT_AVAILABLE.

If **DesiredAccess** is not equal to **TreeConnect.MaximalAccess** and **TreeConnect.Share.ConnectSecurity** is not empty, the server MUST perform as below:

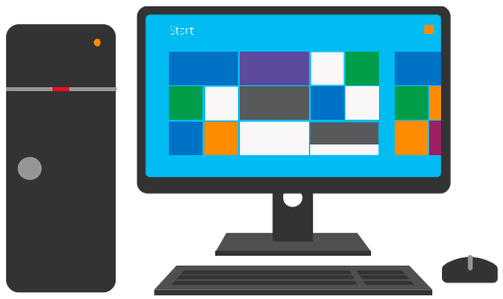
- Clear ACCESS_SYSTEM_SECURITY in **DesiredAccess**. If **DesiredAccess** is zero, the server MUST fail the request with STATUS_ACCESS_DENIED.
- If **Session.SecurityContext** is empty, the server MUST fail the request with STATUS_ACCESS_DENIED.
- The server MUST perform access check for the share in the underlying object store using the parameters **Session.SecurityContext**, **TreeConnect.Share.ConnectSecurity** and **DesiredAccess**.<301> If the underlying object store returns a failure and **TreeConnect.Share.DoAccessBasedDirectoryEnumeration** is TRUE and **CreateDisposition** is FILE_OPEN, the server MUST fail the request with STATUS_OBJECT_NAME_NOT_FOUND. Otherwise, if the underlying object store returns a failure, the server MUST fail the request with STATUS_ACCESS_DENIED.

Developer Tools & Resources

Comprehensive portfolio of developer tools available to you!

Scenarios

Client Implementation
Application connecting to a Microsoft Server



Man-in-the-Middle
Application manipulating traffic over the wire

Server Implementation
Client connecting to a Microsoft Server

Tools & Resources

Office Protocol Test Suites

Network Parsers

Sample code

Windows Protocol Test Suites

Solution Accelerators

Informative Content

Test Driven Quality Assurance

1 Open Specification Review

- Ambiguity Review
- Simulation of the implementation Process

2 Requirement Analysis

- Normative language
- Requirement Extraction

3 Test Suite Development

- Requirements become Test Cases
- Groups of Test Cases become Scenarios

3.1.4.9 CreateWeb

This operation is used to create a new subsite of the current site (2).<14>

```
<wsdl:operation name="CreateWeb">
  <wsdl:input message="tns:CreateWebSoapIn" />
  <wsdl:output message="tns:CreateWebSoapOut" />
</wsdl:operation>
```

The client sends a **CreateWebSoapIn** request message and the server responds with a **CreateWebSoapOut** response message upon successful completion of creating the subsite. In the case that any of the error conditions specified by the following table occur, this method MUST return a SOAP fault with the specified error code.

Error Code	Specification
0x800700b7	The location specified by **CreateWeb/url** is already in use.
	teName does not exist.

…, this method MUST return a SOAP fault with the specified error code.

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

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

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https://github.com/OfficeDev/Interop-TestSuites

SharePoint

- MS-LISTSWS
- MS-VERSS
- MS-SITESS
- MS-DWSS
- MS-ADMINS
- MS-MEETS
- MS-OUTSPS
- MS-WDVMODUU
- MS-WEBSS
- MS-WWSP
- MS-AUTHWS
- MS-SHDACCWS
- MS-CPSWS
- MS-WSSREST
- MS-OFFICIALFILE
- MS-COPYS
- MS-VIEWSS

File Sync & WOPI

- MS-FSSHTTP
- MS-FSSHTTPB
- MS-FSSHTTPD
- MS-WOPI
- MS-ONESTORE

EWS

- MS-OXWSATT
- MS-OXWSBTRF
- MS-OXWSCONT
- MS-OXWSCORE
- MS-OXWSFOLD
- MS-OXWSMSG
- MS-OXWSMTGS
- MS-OXWSSYNC
- MS-OXWSTASK
- MS-OXWSITEMID

EAS

- MS-ASAIRS
- MS-ASCAL
- MS-ASWBXML
- MS-ASCNTC
- MS-ASCON
- MS-ASDOC
- MS-ASEMAIL
- MS-ASHTTP
- MS-ASNOTE
- MS-ASPROV
- MS-ASRM
- MS-ASTASK
- MS-ASCMD
- MS-ASDTYPE

MAPIHTTP

- MS-OXCFOLD
- MS-OXCFXICS
- MS-OXCMAPIHTTP
- MS-OXCMSG
- MS-OXCNOTIF
- MS-OXCPERM
- MS-OXCPRPT
- MS-OXCROPS
- MS-OXCRPC
- MS-OXCSTOR
- MS-OXCTABL
- MS-OXNSPI
- MS-OXORULE

https://github.com/microsoft/WindowsProtocolTestSuites

File Server

- MS-SMB2
- MS-DFSC
- MS-SWN
- MS-FSRVP
- MS-FSA
- MS-FSCC
- MS-RSVD
- MS-SQOS

RDP

- MS-RDPBCGR
- MS-RDPEDISP
- MS-RDPEDYC
- MS-RDPEGFX
- MS-RDPEGT
- MS-RDPEI
- MS-RDPEMT
- MS-RDPEUDP
- MS-RDPEUSB
- MS-RDPEVOR
- MS-RDPRFX
- [MS-RDPBCGR
- MS-RDPEDYC
- MS-RDPEMT
- MS-RDPELE

Kerberos

- MS-KILE
- MS-KKDCP
- MS-PAC

SMB Direct

- MS-SMBD
- MS-SMB2

ADOD

- MS-ADOD

Active Directory

- MS-ADA1
- MS-ADA2
- MS-ADA3
- MS-ADLS
- MS-ADSC
- MS-ADTS
- MS-APDS
- MS-DRSR
- MS-FRS2
- MS-LSAD
- MS-LSAT
- MS-SAMR
- MS-NRPC

ADFS Proxy & Web Application Proxy

- MS-ADFSPIP

Brand Cache

- MS-PCCRTP
- MS-PCCRR
- MS-PCHC
- MS-PCCRC

Open Specifications Support

Dedicated Support Team based in the USA, multiple Escalation Engineers offering complimentary interop support for Windows and Office protocol and file format.

Email: **DocHelp@Microsoft.com** for direct, fast and private communication to the support team

Forums: **aka.ms/dochelp -** anonymous posting and community driven involvement. Constantly monitored by the support team.

GitHub: Issues are publicly tracked and contributed to by support team on open-source projects

Online Resources

Support: dochelp@microsoft.com

Forums: aka.ms/dochelp

Documents: https://learn.microsoft.com/en-us/openspecs

Events: https://interopevents.com

GitHub Repos

Protocol Test Suites

https://github.com/OfficeDev/Interop-TestSuites

https://github.com/microsoft/WindowsProtocolTestSuites

Fiddler Inspectors

https://github.com/OfficeDev/Office-Inspectors-for-Fiddler

WIRESHARK

Next on the Microsoft Interoperability Track

Obaro Ogbo
SENIOR SOFTWARE ENGINEER

Adedeji Adeloye
SOFTWARE ENGINEER II

File Sharing Test Suites Updates and Overview of SMB2 Dissectors on Wireshark

Ned Pyle
PRINCIPAL PROGRAM MANAGER

SMB Updates and Product Group Q&A

Vladimir Petter
PRINCIPAL SOFTWARE ENG LEAD

Teams Interoperability

Tarun Chopra
SENIOR SOFTWARE ENGINEER

Andrew Davidoff
SENIOR SOFTWARE ENGINEER

Exchange Server Protocols Overview

We want to hear from you!
interopdevevents@microsoft.com

And hope to see you in our future events:
SNIA SDC SMB3 IO Lab, Sept 16-18

Thank you!

Questions?

Microsoft

Presentation title

Speaker Name
Title

Photo layout 1

Demo

Speaker name

Section title

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