

Microsoft Interoperability Track

sambaXP Conference

April 7th - 8th, 2025



File Server Test Suites Overview and Demo 2025

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Agenda

- File Server Test Suite Overview
- What's New
- Demo

File Server Protocol Test Suites Overview

What is a Windows Protocol Test Suite?

Collection of Test Suites

Each Test Suite evaluates the implementation of a family of protocols

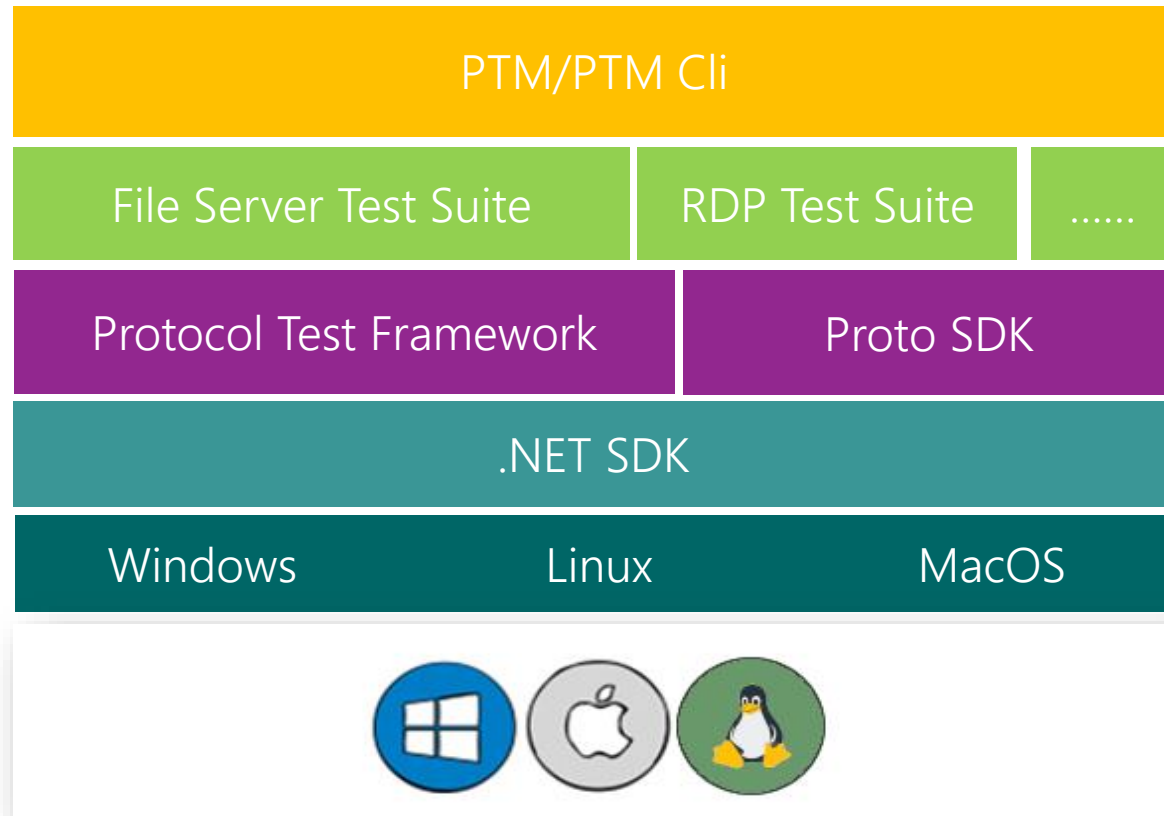
- File Server, RDP Server, RDP Client, Active Directory, etc

Evaluates whether a protocol implementation meets certain interoperability requirements.

- Originally developed for in-house testing of Microsoft Open Specifications.
- Used to test/verify Windows behavior.
- Also used to test 3rd-party implementations.

Do not cover every protocol requirement, and do not certify an implementation, but can be a useful indication of interoperability.

Windows Protocol Test Suites Cross Platform



Windows Protocol Test Suites Open Source

Open sourced on GitHub since 2016

<https://github.com/Microsoft/WindowsProtocolTestSuites>



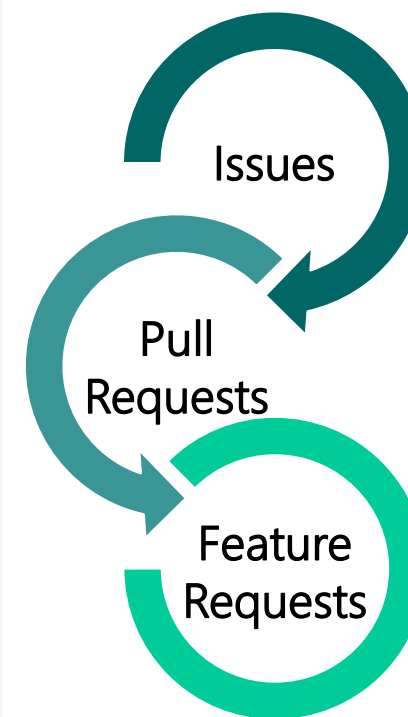
<https://github.com/Microsoft/ProtocolTestFramework>



Windows Protocol Test Suites Open Source

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Category	Test Suite Name	Protocols
File Sharing	FileServer	MS-SMB2, MS-FSRVP, MS-SWN, MS-DFSC, MS-RSVD, MS-SQOS, MS-FSA, MS-HVRS
	MS-SMB	MS-SMB
	MS-SMBD	MS-SMBD
	BranchCache	MS-PCCRC, MS-PCCRR, MS-PCCRTP, MS-PCHC, MS-CCROD
Security	Kerberos	MS-KILE, MS-KKDCP, MS-PAC
	MS-AZOD	MS-AZOD
Active Directory	ADFamily	MS-ADTS-LDAP, MS-ADTS-PublishDC, MS-ADTS-Schema, MS-ADTS-Security, MS-APDS, MS-DRSR, MS-FRS2, MS-LSAD, MS-LSAT, MS-NRPC, MS-SAMR
	MS-ADOD	MS-ADOD
Remote Desktop	RDP Client/RDP Server	MS-RDPBCGR, MS-RDPEDISP, MS-RDPEDYC, MS-RDPEGFX, MS-RDPEGT, MS-RDPEI, MS-RDPEMT, MS-RDPEUDP, MS-RDPEUSB, MS-RDPEVOR, MS-RDPRFX, MS-RDPELE
BYOD	MS-ADFSPiP	MS-ADFSPiP



File Server Test Suite Scope

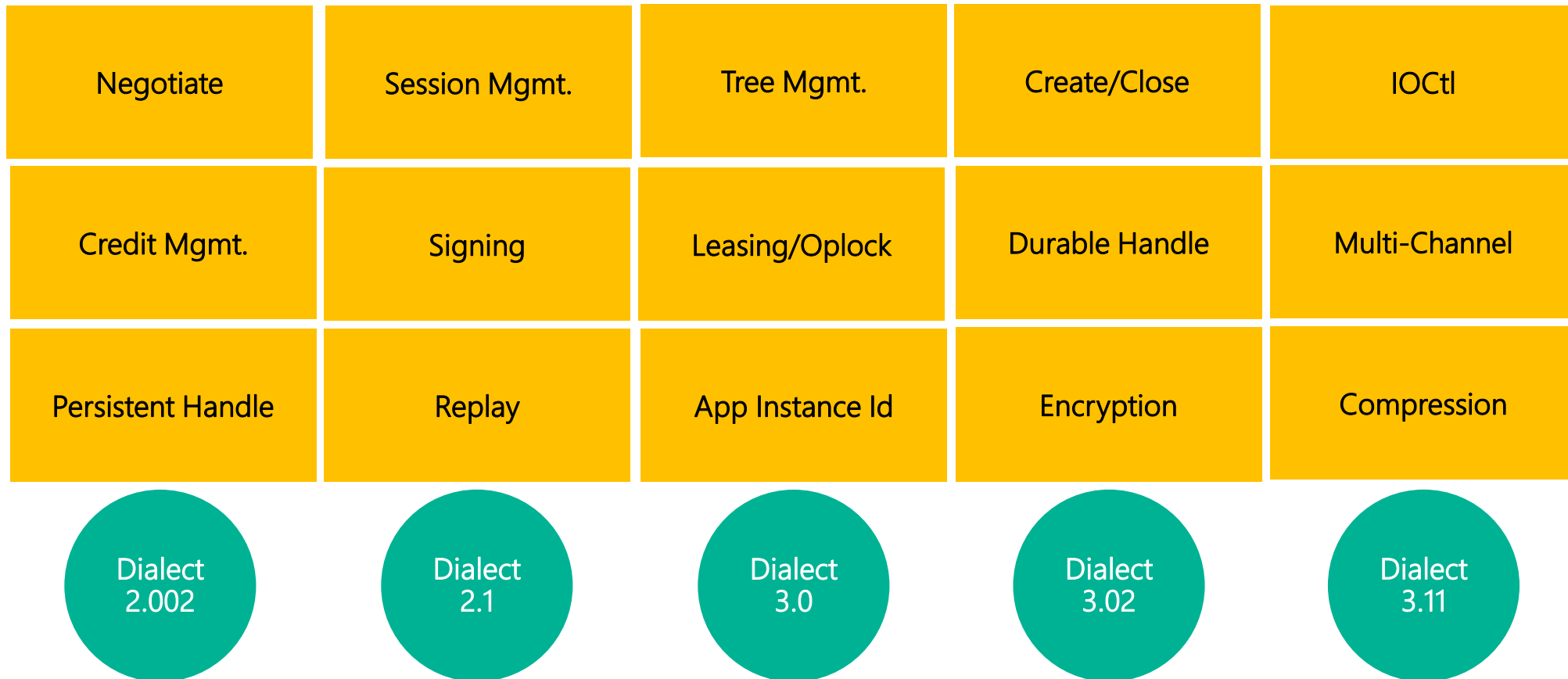
Protocols

[MS-SMB2]: Server Message Block (SMB) Protocol Versions 2 and 3	[MS-FSA]: File System Algorithms
[MS-SWN]: Service Witness Protocol	[MS-RSVD]: Remote Shared Virtual Disk Protocol
[MS-FSRVP]: File Server Remote VSS Protocol	[MS-SQOS]: Storage Quality of Service Protocol
[MS-DFSC]: Distributed File System (DFS): Referral Protocol	[MS-HVRS]: Hyper-V Remote Storage Profile

Messages

Negotiate (Negotiate Contexts)	Session Setup
Tree Connect/Disconnect	Create/Close (Create Contexts)
IOCTL	Query Directory
Query Info/Set Info	...

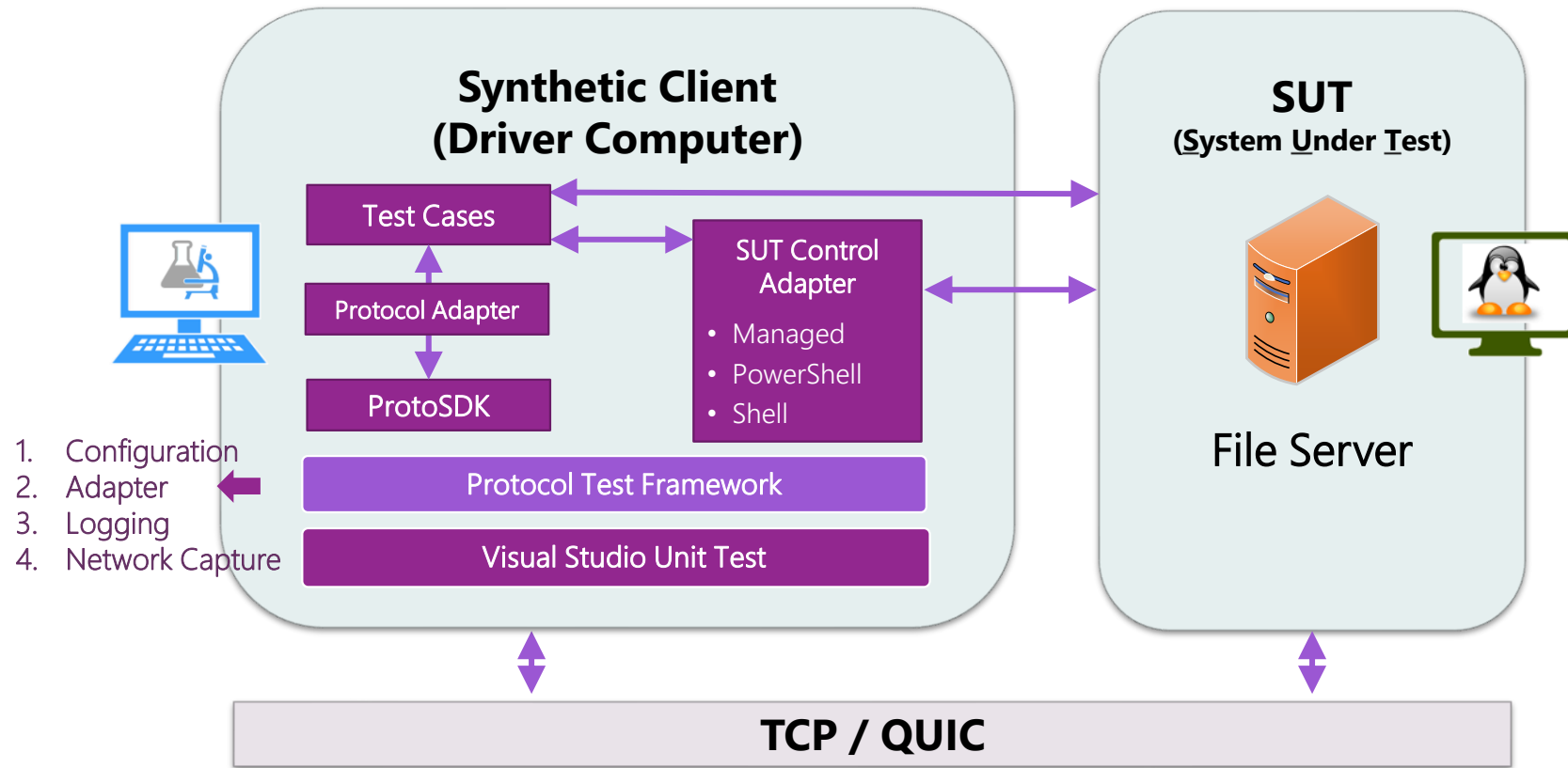
File Server Test Suite Features



File Server Test Suite Approach

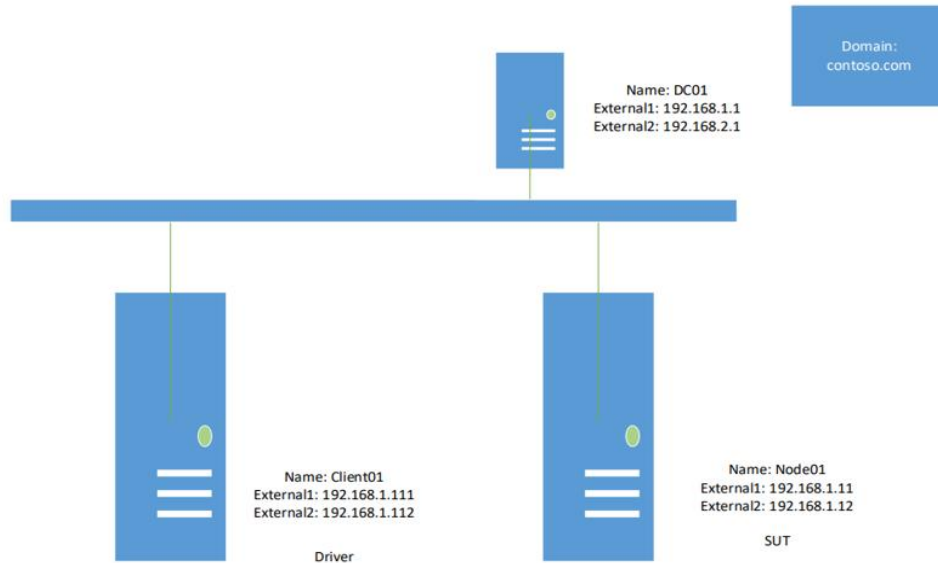
- **Traditional Test**
Covers basic functionalities and scenarios
- **Model-Based Test**
 - 2K+ test cases generated by 13 models
 - Better coverage on
 - Parameter combination
 - Message sequence
 - Negative tests

File Server Test Suite Infrastructure

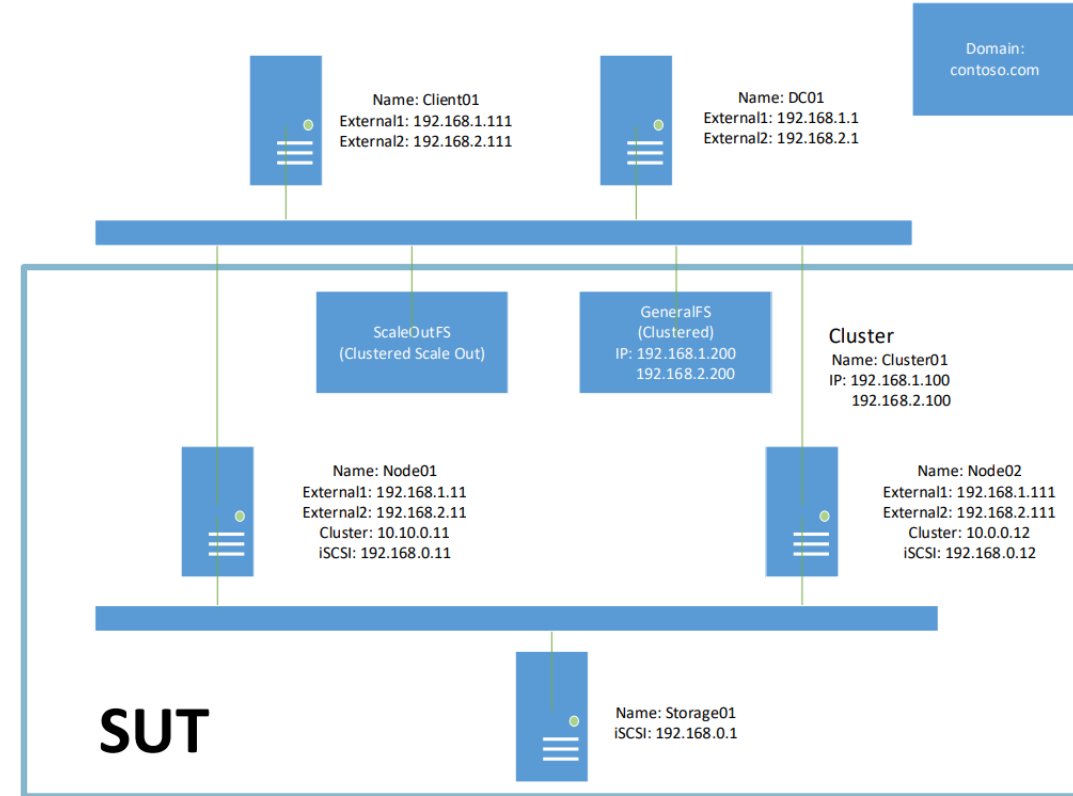


File Server Test Suite Environment

File Server Standard



File Server Cluster



What's New !

GitHub Release 4.25.4.0

Windows Protocol Test Suites Updates

Windows Protocol Test Suites Release v4.25.4.0

<https://github.com/Microsoft/WindowsProtocolTestSuites/releases/tag/4.22.9.0>

File Server Test Suites

- New Tests
- Support QUIC tests on a Linux driver
- Bug fixes

Protocol Test Manager Service

- Fix auto-detect bug on Linux driver
- Other bug fixes

New Tests for Algorithm noting File Accessed

- Tests algorithm for IsTransportCapabilitiesSupported and during SMB Negotiate
 - Detailed description available in [MS-SMB2]
https://docs.microsoft.com/en-us/openspecs/windows_protocols/ms-smb2
- Verify that Server responds with the capability support for both Transport and Notification Capabilities



Demo