



Cloud Storage
Technologies



Community Driven S3 Compatibility Testing

Live Webinar

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10:00 am PT / 1:00 pm ET

Today's Presenters



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SNIA Cloud Object Storage Plugfests sponsored by CST

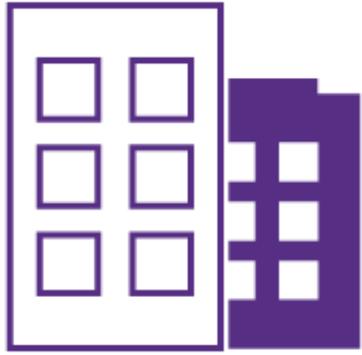


<https://snia.org/groups/cst>

Committed to the adoption, growth and standardization of **intelligent data storage usage** in cloud infrastructures

- New simplified SNIA Membership Model for FY'25
- Pay one fee for SNIA Membership – Participate in ANY group!
- Join SNIA groups at https://www.snia.org/member_com

The SNIA Community



200
industry leading
organizations



2,000
active contributing
members



50,000
IT end users & storage
pros worldwide

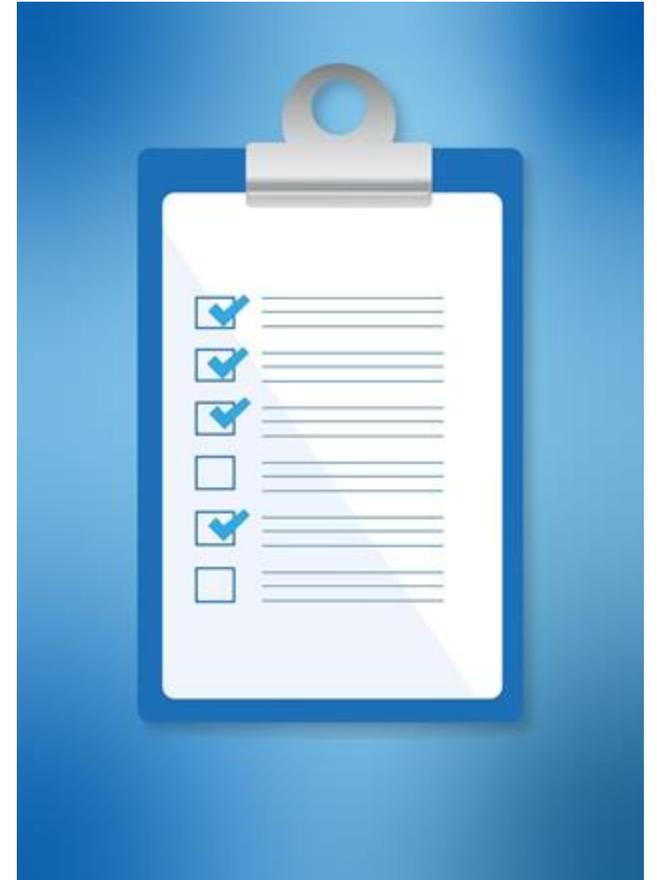
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Agenda

- Cross Vendor Compatibility and S3 Ecosystem
- Problem Statement
- Multi-Vendor Community
- SNIA Cloud Object Storage (COS) Plugfest Community
- Panel insights on COS Plugfest
- COS Test Tools effort
- Q&A
- Call to action



Cross-Vendor Compatibility – Why?

- Prevents vendor lock-in
 - Avoids single point of failure
 - Freedom to react to compliance changes
 - Cost reduction
 - Parallel capacity
 - Innovation
- SNIA Resources
 - [Webinar: Building Community to Tackle Cloud Object Storage Incompatibilities](#)
 - [Webinar: Navigating the Complexities of Object Storage Compatibility](#)
 - [Multi-cloud White Paper](#)

S3 Ecosystem

- *De facto* standard REST XML API
- Robust AWS Service Deployment
- High Quality Documentation
- AWS wrapper APIs (SDKs)
- AWS client applications/tools
- Other S3-compatible object storage systems
- Applications - wide variety of use cases
- Large community
- Custom extensions and SDK/tool forks

What's the Problem?

- User-facing compatibility issues around S3 ecosystem
 - Reliability suffers
 - Detection of problems is hard
 - Root causing problems is hard
 - Workarounds often hard or not possible
 - Costly to users and providers

How Do Problems Happen?

- AWS S3 service deployment is continuously changing reference implementation
- Documentation not always accurate or complete
- Detailed testing is required to determine expectations
- Server side changes continually deployed
- SDKs/Clients continually updated assuming S3 deployment dependencies

How Do Problems Happen?

- Versioning Strategies / backwards compatibility criteria
- Core I/O APIs continuously evolving
- Third party implementations typically support a subset
 - with new functionality iteratively added
- Applications often depend on subset based what's current at dev time
- Following best practices
 - e.g. ignoring unrecognized HTTP headers
 - e.g. rapid SDK updates

Multi-Vendor Community – What Can We Do?

- [SNIA Cloud Object Storage Plugfests](#)
 - Compatibility Testing – ensure interoperability
 - SNIA provides vendor neutral space
 - [SNIA Membership not required](#)
 - Planning - define test matrix with clients and servers
 - Find, fix, and discuss issues before customers do
 - Protected by NDA to facilitate open communication
 - Don't need to bring a finished product
 - Testing of off-the-shelf open-source applications encouraged
 - Learn about the ecosystem together
 - Brainstorming
 - [SNIA SDC](#) conference included

Cloud Object Storage (COS) Compatibility Test Progress

Completed two SNIA COS Plugfests and planning third...

- First SNIA Cloud Object Storage Plugfest
Santa Clara, CA - Sept 2024
 - [Summary webinar](#)
 - [Summary slides](#)
- Second SNIA Cloud Object Storage Plugfest
Denver, CO - April 2025
- Third SNIA Cloud Object Storage Plugfest
Santa Clara, CA - Sept 2025
 - [Pre-register here](#)

SNIA Cloud Object Storage
Plugfest



SNIA Cloud Object Storage Plugfest – Denver, CO April 2025

- Reiterate from last
 - More productive, more issues found
 - More ISVs
- Missing functionality hinders x-vendor compat
- Defining "S3 compatibility" is challenging



Will You Join Sept 2025 SNIA COS Plugfest, Santa Clara, CA?



past participants



Join us: [Pre-Register for September SNIA COS Plugfest @ SDC'25](#)

Google Perspective

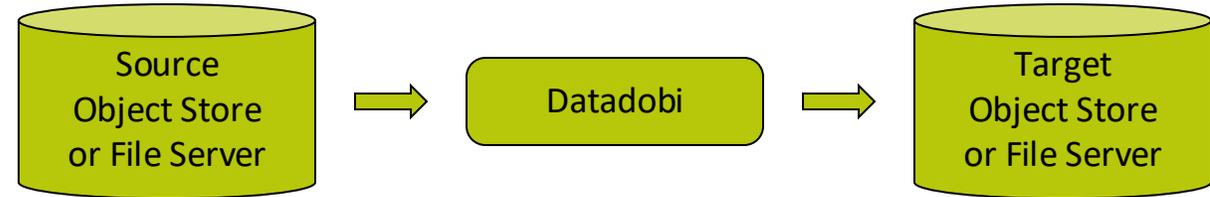


- Products
 - Google Cloud Storage (GCS)
 - Storage Transfer Service (STS)
- SNIA Cloud Object Storage Plugfest
 - Valuable opportunity to collaborate with industry experts
 - Test results from a wide range of clients and servers
- Future:
 - Integrate with testing tools
 - Extended protocol features

Datadobi Perspective



- Datadobi's Expertise & Software:
 - File & Object Data Analytics
 - Cross-Vendor Data Mobility
 - Migration, Replication, Copy, Delete



- SNIA Cloud Object Storage Plugfest
 - Amazing opportunity for Datadobi
 - Deep technical conversations with leading Object Storage vendors
 - Compatibility & Bug Hunt (under NDA)
- Future: *“S3 cutover or failover should be nothing more than a DNS change...”*
 - Standardize S3 compatibility testing – client & server
 - Both documented and undocumented behavior
 - Standardize cross-vendor S3 interoperability and portability
 - System metadata (e.g. timestamps and version-ids), access keys, access & lifecycle policies
 - Tracking Data & Metadata changes

IBM Perspective



IBM
Storage Ceph

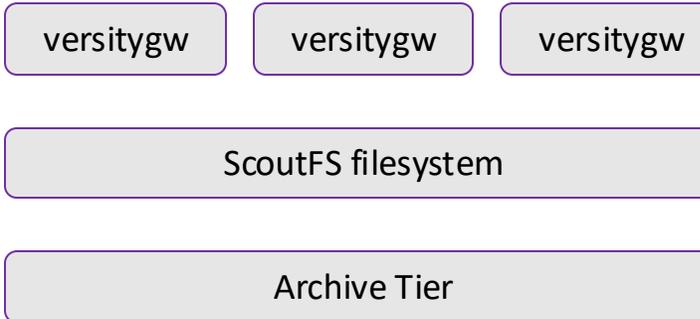


- Products
 - IBM COS
 - Ceph (IBM Ceph, Ceph S3-Tests)
- SNIA Cloud Object Storage Plugfest
 - Unique opportunity to collaborate
 - Productive Testing
 - Group Discussions
 - More Participants
 - Colocated w/SDC
- Future:
 - Build Community
 - Enhance interoperability

Versity Perspective



- Products
 - VersityGW - opensource S3 gateway service
 - ScoutFS - scale out file system
 - ScoutAM - archive manager
- SNIA Cloud Object Storage Plugfest
 - Validate our test suite
 - Collaboration on important features
 - Remote conference access
- Future
 - Collaboration on open test suite



SNIA COS Community - What else are we doing?

SNIA COS Test Tools Provisional Technical Work Group (TWG)

- Develop open source automated COS test suites
 - Drive collaboration to reduce duplicate effort and improve end-user experience regardless of provider
 - Document industry behavioral and interoperability consensus on widely popular industry COS APIs
 - Watch Test Tool webinar: [SNIA Cloud Object Storage Test Tools \(Open-Source Software Project\)](#)
- COS Test Tool Survey: "paint a picture" of COS ecosystem
 - Establish and publish 'minimum viable API' baseline set of operations and responses (common command set)
 - Survey - Call to help formulate industry direction
<https://snia.org/test-tool-survey>

SNIA Cloud Object Storage
Test Tools

**SNIA COS Test
Tools Survey**



Q&A



For More Information

- Join us: [Pre-Register for September SNIA COS Plugfest @ SDC'25](#)
- Learn More about the [SNIA Cloud Storage Technologies \(CST\) Community](#)
- Join SNIA groups at https://www.snia.org/member_com

SNIA COS Plugfest Pre-Registration



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• Thank You