

SNIA DEVELOPER CONFERENCE



By Developers FOR Developers

Hyatt Regency Santa Clara, CA
September 15-17, 2025

A decorative graphic consisting of a series of dots forming a wave that flows from left to right across the middle of the slide. The dots transition in color from purple on the left to yellow in the middle, and then to light blue on the right.

SNIA Community Driven S3 Compatibility Testing

Frank Borich & Jeff Terrace

www.sniadeveloper.org

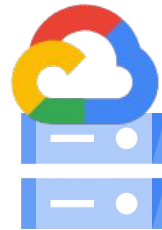
About Us



Frank Borich
Principal Engineer
Cloud Object Storage - IBM



Jeff Terrace
Senior Staff Software Engineer
Google Cloud Storage - Google



Google Cloud



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: Community Driven S3 Compatibility Testing](#)
 - [SNIA SDC 2025 Denver: Community Driven S3 Compatibility - SNIA Cloud Object Storage Plugfest Update](#)
 - [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

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 Cloud Object Storage
Plugfest

Previous SNIA Cloud Object Storage Plugfests

- Productive testing
- Conclusion: collaboration around test tools will help
 - Incomplete tools
 - Difficult to discover
 - Difficult to share (proprietary)
 - Biased toward specific implementation
 - Cross vendor differences
- [Summary 2024 webinar](#)
- [Summary 2024 slides](#)



SNIA Cloud Object Storage Interoperability Projects

SNIA COS Plugfests

- Expert face-to-face interoperability events, builds developer network and expedites resolution of COS API compatibility issues
- *Open to all*

BIOMEMORY

 Datadobi

 DELL
Technologies

 Google

 HAMMERSPACE

 Hewlett Packard
Enterprise

 HUAWEI

 IBM

 Impossible
Cloud

 leito
STORAGE

 Microsoft

 ORACLE

 PURE STORAGE®

 SEAGATE

 VAST

 Versity

SNIA COS Test Tools TWG

- Expands multi-vendor interoperability tooling available to everyone in the COS ecosystem
- Expedites collaboration among cloud storage developers, architects and test support engineers
- Enhances customer experience of popular COS APIs: AWS S3, Google Cloud Storage, and Azure Blob
- *Open to SNIA members only*

SNIA Cloud Object Storage Plugfest - September, 2025

- Moving Target: SDK Behavior vs Rest API
- Silent changes / “corrections” to Rest API
- Inconsistent SDK behavior between languages
- No roadmap - emerging technologies
 - Vector db, RDMA, Structured data, S3 tables, KV cache, Connectors, Spark, S3fs, S3a apache
- Performance test suite



Up Next

- Continue remote COS interoperability testing Sept '25 to July '25
- Join us back at SDC'26 - SNIA face-to-face COS Plugfest in Sept '26
 - Co-located with SDC'26 at the Hyatt Regency Santa Clara, CA
<https://www.sniadeveloper.org/>
- Email us michael.hoard@sniacstchair.org and we'll add you to COS Plugfest interest list (we will provide welcome package to get on board)
 - Team activities: work on test tools/strategy, best practice documents, reference implementation, define a standard, SDK/tool forks, engage w/AWS community, contribute to AWS open-source projects
- Email membeship@snia.org to join the SNIA and the Cloud Object Storage Test Tools technical working group (TWG)
- We're always learning...

snia.org/groups/cst

Educational Cloud Storage Webinars



SNIA  Cloud Storage Technologies 

Agentic AI
Use Cases, Benefits, Risks

Live Webinar
June 26, 2025
10:00 am PT / 1:00 pm ET

 Erin Farr
IBM

 Michael Hoard
SNIA CST

SNIA Cloud Object Storage Community

Cloud Object Storage
Plugfest

[SNIA COS Plugfests](#)

SNIA Cloud Object Storage
Test Tools

[SNIA COS Test Tools TWG](#)

CST committed to the adoption, growth and standardization of intelligent data storage usage in cloud infrastructures

- [Join SNIA](#) - Simplified Membership Model for FY'25
 - Pay one fee for SNIA Membership – Participate in ANY group!
- Join SNIA Cloud Object Storage Community - email us at askcloudplugfest@snia.org



Thank you for attending!

Please remember to rate this session. You get access the presentations at
<http://sniadeveloper.org/conference>