

SNIA / DMTF / NVM Express Consortium Alliance Agreement

Version 1.3

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Current State: Approved

This document is SNIA, DMTF, and NVMe Consortium Confidential until released here: <https://www.snia.org/about/alliances/dmtf-nvm-express-alliance>, here: <https://www.dmtf.org/about/registers>, and here <https://nvmexpress.org/ecosystem/>

Alliance Agreement

Introduction

This Alliance Agreement is created between SNIA, DMTF and the NVM Express Consortium organizations to formally define the objectives, benefits, and deliverables of the Alliance. The agreement structure helps the organizations coordinate efforts to achieve the stated goals and objectives. Additional Collaboration and Work Register items are created and added to this agreement by means of mutually approved Agreement Addendums.

Alliance Objectives, Benefits and Scope

Defines objectives, benefits to each organization, and states whether the alliance includes marketing and/or technical content.

This alliance provides the following benefits:

- Enables a holistic management experience.
- Enables scale out management for NVMe devices, including SSDs.
- Ensures that SNIA, NVM Express, and DMTF standards are coordinated and address all storage management requirements, including schema definition and JSON/OData interoperability.
- Promotes SNIA, NVM Express, and DMTF standards to member companies.
- Fosters SNIA and NVM Express participation at the DMTF Alliance Partner Technical Summit and in various working groups.

Alliance Goals

The goal of this agreement is to coordinate standards for managing aspects of SSD storage devices.

SNIA has the following applicable standards:

- **Swordfish** - The Swordfish specification produced by the Scalable Storage Management (SSM) Technical Work Group extends the Redfish Scalable Platforms Management API Specification to cover storage management.
- **Native NVMe-oF Drive specification** - This specification describes the features and functions of a storage device class known as Native NVMe-oF Drives. It includes a taxonomy covering the scope of involved device capabilities.

DMTF has the following applicable standards:

- **Redfish** - Designed to meet the expectations of end users for simple and secure management of modern scalable platform hardware, DMTF's Redfish is an open industry standard specification and schema that specifies a RESTful interface and utilizes JSON and OData to help customers integrate solutions within their existing tool chains.

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- **MCTP/PLDM** - The Management Component Transport Protocol (MCTP) is a protocol and Platform Level Data Model (PLDM) is a low-level data model defined by the DMTF Platform Management Communications Infrastructure (PMCI) working group. MCTP is designed to support communications between different intelligent hardware components that make up a platform management subsystem that provides monitoring and control functions inside a managed system.
- **SPDM** - The Security Protocol and Data Model is a specification that defines messages, data objects, and sequences for performing secured message exchanges between devices over a variety of transport and physical media.
- **RDE** - The PLDM for Redfish Device Enablement (RDE) defines messages and data structures used for enabling PLDM devices to participate in Redfish-based management without needing to support either JavaScript Object Notation (JSON), used for operation data payloads, or the [Secure] Hypertext Transfer Protocol (HTTP/HTTPS), used to transport and configure operations.

NVM Express has the following applicable standards:

- **NVM Express Base specification** – The NVMe Express Base specification defines how host software communicates with a non-volatile memory subsystem. This interface is optimized for all storage solutions attached using a variety of transports.
- **NVM Express Management Interface specification** - The NVM Express Management Interface specification defines a command set and architecture for out-of-band and in-band management of NVMe storage, making it possible to discover, monitor, configure, and update NVMe devices and NVMe enclosures. The NVM Express Management Interface specification includes features to meet the growing management needs of the NVMe ecosystem.
- **The NVM Express Boot specification** – The NVM Express Boot specification defines constructs and guidelines for booting from NVM Express interfaces.
- **The NVM Express I/O Command Set specifications** - The individual NVM Express I/O Command Set Specifications define data structures, features, log pages, commands, and status values that extend the NVM Express Base Specification.
- **The NVM Express Transport specifications** – The individual NVM Express Transport specifications define the binding of the NVMe protocol including controller properties to a specific transport.

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Alliance Organizations

[SNIA](#), [DMTF](#), and [NVM Express \(NVMe\)](#).

SNIA

SNIA is an industry organization that develops global standards and delivers education on all technologies related to data. We are the experts on data.

The following SNIA Groups are the primary participants in this alliance: (Note these are any groups participating, technical, F&I, etc)

- **Scalable Storage Management (SSM) Technical Working Group**: defines the Swordfish specification that extends the Distributed Management Task Force (DMTF)'s Redfish specification (API) to handle the management of storage equipment and storage services found in modern data centers
- **Object Drive Technical Working Group**: produces a comprehensive set of vendor-agnostic specifications related to data and control path interfaces and protocols which support future functionality in drive form factors to enable scale out storage systems to add and remove storage nodes incrementally and seamlessly. This group also provides educational materials that will identify ways Native NVMe-oF Drives can reduce complexity, conserve resources, and simplify the storage stack.

DMTF

DMTF creates open manageability standards spanning diverse emerging and traditional IT infrastructures including cloud, virtualization, network, servers, and storage. Member companies and alliance partners worldwide collaborate on standards to improve the interoperable management of information technologies.

The following DMTF Groups are the primary participants in this alliance: (Note these are any groups participating, technical, F&I, etc)

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- [Redfish Forum](#): The Redfish Forum, formerly known as the Scalable Platforms Management Forum (SPMF), is responsible for the DMTF Redfish Standard
- [Security Protocols and Data Models \(SPDM\) Working Group](#): creates platform security standards and technologies, which complement DMTF's standards such as the Redfish® Standard from the Redfish Forum, PMCI, SMBIOS, as well as remote access protocols that are defined in the other DMTF groups.
- [Platform Management Communications Infrastructure \(PMCI\)](#): defines standards to address “inside the box” communication interfaces between components of the platform management subsystem. Develops the Network Controller Sideband Interface (NC-SI), Management Component Transport Protocol (MCTP), and Platform Level Data Model (PLDM) that provide a comprehensive, common architecture for improved communication between management subsystem components.

NVM Express

The NVM Express Consortium community of members actively works to develop the specifications and standards needed to advance the capabilities and usability of NVM and to provide technologies, products, and solutions for the marketplace. NVM Express is an open collection of standards and information to fully expose the benefits of non-volatile memory in all types of computing environments from mobile to data center. NVMe is designed from the ground up to deliver high bandwidth and low latency storage access for current and future NVMe technologies.

The following NVM Express Groups are the primary participants in this alliance: (Note these are any groups participating, technical, F&I, etc)

- [NVMe Technical Working Group](#): coordinates NVMe technical activities and develops key NVMe technologies
- [NVMe Boot Task Group](#): develops features associated with booting NVMe devices through development of an NVMe Boot Specification with transport-specific content and the ACPI and UEFI semantics needed to adopt NVMe boot over supported transports.
- [NVMe Fabric and Multi-Domain Subsystem Task Group](#): develops features for fabrics connectivity and NVM subsystems that support multiple domains.
- [NVMe Management Interface Task Group](#): develops NVMe management technologies by defining the NVMe Management Interface Specification and systems management-related content in the NVM Express Base Specification.

Primary Alliance Agreement Contacts:

SNIA:

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- SNIA Technical Liaison to the DMTF (dmtfliaison@snia.org)
- SNIA Board Liaison to the DMTF (dmtfboardliaison@snia.org)
- SNIA Cross-Marketing Team Chair (cross_marketingteam-chair@snia.org)

DMTF:

- DMTF VP of Alliances (vp-alliances@dmtof.org)
- DMTF Contacts for NVMe-SNIA Alliance (nvme-snia-alliance@dmtof.org)

NVM Express:

- NVMe Technical Working Group Chair (peter.onufryk@intel.com)

Other Alliance Agreements and Related Documents

- SNIA and DMTF Alliance Agreement ([here](#)).
- SNIA and NVMe Alliance Agreement ([here](#)).

Corresponding SNIA Document

This document is the official SNIA record.

The document was reviewed and approved by the SNIA Alliances Committee: March 07, 2024.

The document was reviewed and approved by the SNIA Strategy Committee: March 08, 2024.

The document was reviewed and approved by the SNIA Technical Council: March 08, 2024.

The document was reviewed and approved by the SNIA Board of Directors: March 28, 2024.

Corresponding DMTF Document

This document is the official DMTF record.

The document was reviewed and approved by the DMTF Board of Directors as Board Resolution **2024-03-18** on March 11, 2024.

Corresponding NVM Express Consortium Document

This document is the official NVM Express Consortium record.

The document was reviewed and approved by the NVM Express Consortium Board of Directors: August 19, 2024.

Alliance Agreement Review Date

The next review date is expected to be April 2025.

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Appendix A – Technical Alliance Work Register

Technical Alliance Goals

Describe the goals of the technical portion of the alliance.

Activities

The following activities may occur during the duration of this work register:

- SNIA will publish whitepapers, specifications, and other supporting educational materials including updates to the Swordfish NVMe Model Overview and Mapping Guide, Swordfish specification and schema enhancements, profiles, and mockups to reflect detailed requirements for NVMe and NVMe-oF in Redfish / Swordfish. In addition, SNIA will publish updates for the Native NVMe-oF Drive Specification to reflect requirements from NVMe.
- DMTF will publish whitepapers, specifications, and other supporting educational materials including updates to the MCTP suite of specifications, Redfish - DSP0218 (covering both the specification and supporting open-source tools), SPDM suite of specifications, PLDM specification, and Redfish Schemas. DMTF will make available work in progress releases for use by other organizations. DMTF may extend the Redfish schema for more complete coverage of NVMe Management functionality.
- NVM Express will publish lettered and numbered updates to specifications that are members of the NVM Express family of specifications; current and past versions of the NVMe specifications are available at <https://nvmexpress.org/specifications/>. In addition, NVMe may publish educational materials regarding specifications and features covered by NVMe specifications.

Limitations

NVM Express will not produce delegated standards that conflict or diverge from existing or proposed SNIA or DMTF standards where possible.

DMTF will not produce delegated standards that conflict or diverge from existing or proposed SNIA or NVM Express standards where possible.

SNIA will not produce delegated standards that conflict or diverge from existing or proposed NVM Express or DMTF standards, where possible.

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Milestones / Dates

This section lists current and future specific milestones to be accomplished by the alliance partnership.

| Milestone/Deliverables | Timeframe |
|--|------------------|
| SNIA, NVM Express, and DMTF approve the expanded Work Register v1.3 | Q2-2024 |
| SNIA, NVM Express, and DMTF to update logo and logo usage guidelines as applicable (e.g., new Swordfish registered trademark) | Q2-2024 |
| SNIA, NVM Express, and DMTF announce the updated alliance agreement at discretion of individual organizations, and publish the updated agreement | Q2-2024 |
| NVM Express publishes ‘lettered’ updates to the NVMe family of specifications | Q1-2024 |
| NVM Express publishes ‘numbered’ updates to the NVMe family of specifications | 2H-2024 |
| NVM Express requests functionality requirement(s) of Redfish | 2H-2024 |
| DMTF releases Redfish update(s) which incorporate accepted feedback | 2H-2024 |
| NVM Express requests functionality requirement(s) of Swordfish | 2H-2024 |
| SNIA releases Swordfish update(s) which address NVMe requested functionality | 2H-2024 |
| NVM Express requests functionality requirement(s) of Redfish | 1H-2025 |
| DMTF releases Redfish update(s) which incorporate accepted feedback | 1H-2025 |
| NVM Express requests functionality requirement(s) of Swordfish | 1H-2025 |
| SNIA releases Swordfish update(s) which address NVMe requested functionality | 1H-2025 |
| Updates to Swordfish NVMe Model Overview and Mapping Guide | Ongoing |

Completed Milestones

This section contains the historical view of completed milestones for this alliance.

| Milestone/Deliverables | Timeframe |
|--|------------------|
| SNIA, NVM Express, and DMTF approves of the Work Register v1.1 | Q1-2022 |
| SNIA, NVM Express, and DMTF to mutually supply logo and logo usage guidelines | Q1-2022 |
| SNIA, NVM Express, and DMTF announces new alliance partner(s) (if necessary) and publish the work register | Q1-2022 |
| Collaboration begins | Q1-2022 |
| Publish ‘lettered’ updates to the NVMe family of specifications | Q4-2022 |
| NVMe MCTP Binding Work in Progress release | 1H-2018 |
| DSP0235 1.0.1 DMTF Standard | 2H-2018 |
| Platform Level Data Model for Redfish Device Enablement Work in Progress release | Feb-2018 |

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| DSP0218 1.0 DMTF Standard | 1H-2018 |
| Security Protocol and Data Model Enablement (SPDM 1.2) | Q4-2021 |
| Security Protocol and Data Model Enablement (SPDM Work in Progress) release | Q3-2022 |
| Security Protocol and Data Model Enablement (SPDM 1.3) | Q4-2022 |
| NVMe Redfish support – Introduce Technical Proposal Authorization Request | Q2-2021 |
| NVMe Redfish support – Technical Proposal Ratified | Q3-2021 |
| Swordfish NVMe Model Overview and Mapping Guide | Aug-2020 |
| NVMe Drives profiles | Q3-2021 |
| JBOF/EBOF and array profiles | 1H-2022 |
| NVMe-oF Model | 1H-2022 |
| NVMe-oF profiles | 1H-2022 |

Access

SNIA, DMTF, and NVM Express may want to provide documentation and collateral to each other. This information can be exchanged publicly, or not.

For information which can be accessed publicly:

- SNIA will provide access to information and specifications available by releasing and posting documents on the public SNIA website. The documents will be released as either “SNIA Standard”, “SNIA Specification”, or “Working Draft”.
- DMTF will provide access to information and specifications available by releasing and posting documents on the public DMTF website. The documents will be released as either “Work-in-Progress”, “Informational”, or “Standard”
- NVM Express will provide access to information and specifications available by releasing and posting documents on the public NVM Express website.

For any information that involves intellectual property (i.e., information contributed to each other’s projects:

- NVM Express should submit feedback, contributions, and requests to SNIA specifications via the SNIA Technology Submission Portal (<https://www.snia.org/feedback>), subject to the terms of the SNIA Feedback Contribution Agreement set forth on such portal.
- NVM Express should submit feedback, contributions, and requests to DMTF specifications via the DMTF Technology Submission Portal (dmtof.org/standards/feedback), subject to the terms of the DMTF Intellectual Property Rights Agreement set forth on such portal.

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- DMTF and SNIA should submit feedback, contributions, and requests to NVM Express specifications and proof-of-concepts through the appropriate NVM Express member company representatives and NVM Express Group members.
- SNIA and DMTF can host meetings to exchange and discuss public information.

Except as described above regarding feedback and contributions to each other's specifications, unless otherwise agreed to in writing, no sharing of information, documentation, or materials shall result in the assignment, transfer, or license of intellectual property from one party to the other.

Documents

SNIA makes their specifications, white papers, and presentations available to DMTF and NVM Express. These will generally be available on the public SNIA sites.

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