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2023 Year-in-Review

From the desk of DMTF President Jeff Hilland

As we begin to close out 2023, we want to pause and reflect on the last twelve months and celebrate the many accomplishments of the organization and our valued volunteers have achieved. Together, we have much to be proud of. I'm pleased to highlight the significant milestones of 2023.

Technical Milestones
Redfish

Technical work on the Redfish® standard takes place in the Redfish Forum. The Forum made significant progress this year, including:

- Kicking off 2023 with the Redfish Release 2022.3 in January. This release of the Redfish standard included **40 schema updates** and **3 new schemas including CXLLogicalDevice, Heater, and HeaterMetrics**. A key highlight in this release was the addition of support for **CXL** devices and fabrics, defined by DMTF alliance partner Compute Express Link (CXL) Consortium. The Fabric and Device data models have been extended to incorporate CXL Device Types 1,2, and 3. Other additions included support for multi-factor authentication, and support for heaters inside a chassis with new **Heater** and **HeaterMetrics** resources.
- Redfish version 2023.1 was released in May. Highlights of the release were support for **Cooling Distribution Units** and **CoolingLoops**, including critical subsystems such as **LeakDetectors**, **Pumps**, **Reservoirs**, and **Filters**. Also included were enhancements to the **Drive** and **Storage** models with new **DriveMetrics** and **StorageControllerMetrics** resources and **StorageController** actions. Other additions included new standard message registries to define messages for common events or errors related to **Platform**, **Power**, and **Environmental** conditions. It also included 28 schema updates and 11 new schemas. Want to learn more? Check out the 2023.1 webinar here!
- Continuing its aggressive development of the standard, Redfish version 2023.2 was released in October. The release included 31 schema updates and a **new OutboundConnection** schema providing a standardized means to configure and establish a Redfish Session using a WebSocket to address Internet and other "cloud-based" usage models. Key highlights of the release were the addition of **MemoryRegion,** which supports CXL dynamic capacity devices (DCD) and enhancements to the Drive and Storage models with new **DriveMetrics** and S**torageControllerMetrics** resources and **StorageController** action. To learn more watch the latest 2023.2 webinar.
- The Redfish Forum has been hard at work on 2023.3, which is expected to be released in early 2024. Stay tuned for details!

PMCI Efforts

The Platform Management Communications Infrastructure (PMCI) Working Group defines standards to address "inside the platform" communication interfaces between the components of the management subsystem. Following are some of the notable technical PMCI milestones in 2023:

- In March, the public release of the MCTP over USB Binding Specification (DSP0283) Work in Progress became available for download. This WIP defines a transport binding for facilitating MCTP communication between platform management system components (i.e. management controllers, management devices) over USB 2.0.
- In August, the Working Group published a new informational document, *Platform Level Data Model (PLDM) Accelerator Modeling*. This white paper defines an example data model for implementing the systems management of accelerators using PLDM for Platform Monitoring and Control (DSP0248) schematics.
- Also in August, PMCI released MMBI specifications. MMBI provides a modern interface to host operating systems and hypervisors to communicate with management controllers (BMC). This standard replaces such antiquated interfaces as IPMI's KCS with a modern queuing mechanism thus allowing larger and faster transfers between the host and the management plane. This work can be found in the MMBI Specification version 1.0.0 (DSP0282) and MCTP MMBI Transport Binding Specification version 1.0.0 (DSP0284)
- In November, the MCTP over USB Binding Specification (DSP0283) became a standard. It is available for download. The standard codifies the use of MCTP and the suite of standards that rely on it, allowing them to be transferred over USB 2.0. As USB begins to replace I2C, especially for PCIe devices, this should help MCTP and PLDM protocols gain bandwidth.
- The Working Group is also submitting several PMCI standards to the International Organization for Standardization (ISO) for certification. Click here for DMTF submissions, status, and the ANSI/ISO identifier.
- Additionally, PMCI continued their work on MCTP 2.0. This will greatly expand the features, endpoints, and security posture of MCTP, allowing it to be applicable to the evolving control plane in systems of the future.

SPDM

The Security Protocols and Data Models (SPDM) Working Group is responsible for the SPDM standard. This standard enables authentication, attestation and key exchange to assist in providing infrastructure security enablement.

- In March, SPDM released their Technical Note providing an overview of the standard and highlighting how it is helping solve platform security concerns in a common way and enabling platform integrity.
- In May, the public release of its SPDM Specification 1.3.0 was announced. This specification provides message exchange, sequence diagrams, message formats, and other relevant semantics for authentication, firmware measurement, certificate retrieval, and session key exchange protocols to enable confidentiality and integrity protected data communication thus enabling encrypted and authenticated communication of data in flight. Building on prior versions of SPDM, this version added support for multi-key, event support, a structured manifest format, measurement extension logs and endpoint information.
- In August, the SPDM Code Task Force released its latest open source release of libspdm version 2.3 and 3.0, which is conformant with DSP0274 1.0.1, 1.1.2 and 1.2.1 and DSP0277 1.1.0, and is now available for download.
- In November, the working group released errata updates for all the SPDM specifications. While the specifics of the changes are contained within the documents themselves, this included updates to DSPS0274 (SPDM Specification), DSP0275 (SPDM over MCTP Binding), DSP0276 (Secured Messages using SPDM over MCTP Binding) and DSP0277 (Secured Messages using SPDM).

SRTF

- The Security Response Task Force (SRTF) is hard at work within the organization's Technical Committee (TC). The Task Force, under the direction of the TC, is responsible for the coordination and management of reported security issues or vulnerabilities related to DMTF standards or DMTF open-source sample implementations.

SMBIOS

System Management BIOS (SMBIOS) is one of the most widely used IT standards in the world, simplifying the management of more than two billion client and server systems since its release in 1995.

- In July, the SMBIOS Working Group released Version 3.7 of the SMBIOS Reference Specification. Version 3.7 of SMBIOS adds support or updates for current technologies including the addition of CXL 3.0 support and Power Management Integrate Circuits (PMIC)/Residual Current Device (RCD) manufacturer ID and revision information.

CIM and DASH

- DMTF's foundation in CIM remains under the CIM Forum where extensions are added on an as needed basis as it moves toward maturity.
- The DASH conformance efforts remain strong within the industry and platforms passing conformance continue to be added to the Certification Registry.
- Stay tuned for additional DASH news. We're currently working on DASH 1.4, which will include security enhancements.

Alliances

Our Alliance Partner program continues to benefit the industry overall.

- In July, the organization held its annual summer event, the 2023 Alliance Partner Technical Symposium (APTS). Co-hosted with our alliance partner, SNIA, the fifteenth annual APTS was held on Monday, July 24 through Friday, July 28, 2023. It was a hybrid event, with the option to attend in person in Hillsboro, Oregon or to attend virtually. Led by DMTF's VP of Alliances John Leung, the event featured collaborative working group meetings -- focused on technical topics of interest to DMTF's Alliance Partners as well as symposium keynote addresses from the SNIA and UCIe. In addition, the Open Compute Project co-located an all day workshop on Sustainability with APTS this year.
- Also in July, DMTF and the UCIe™ Consortium agreed to a Work Register outlining areas of technical collaboration between the two organizations. As part of its agreement with DMTF, the UCIe Consortium will assist in defining the MCTP 2.0 over UCIe binding specification thus ensuring alignment between the two organizations. The collaboration also allows for UCIe expertise and industry feedback on the MCTP 2.0 specification and to the PMCI working group.

Education and Events

We continued our dedication to industry outreach and education with updated educational materials, YouTube videos, and attendance at several industry events.

- In January, PMCI Work Group Co-Chair Patrick Caporale presented an overview of PMCI's suite of standards on our YouTube channel. Click here to view the presentation.
- The organization's "Redfish School" YouTube series continues to be popular with viewers. In November, we published four new tutorial videos focused on the Redfish Fabrics Model in three parts as well as a video on support for CXL. Stay tuned for more videos in 2024!
- Have you attended a Redfish release webinar? Ongoing support for implementors of the Redfish standard, the Redfish Forum webinar series is timed with each release of the standard. Attendees are invited to join a live webinar, hosted via Zoom, where the Forum chairs present the contents of the latest release followed by a Q&A session. Each webinar is then added to our YouTube channel for those that can't attend or would like to revisit the information.
- DMTF specifications can be found in millions of products, but most people have no idea which products support our standards. DMTF has created a webpage where companies can showcase which standards they have adopted or implemented.
- Several of our executives, technology representatives, and standards were highlighted at industry events throughout the year.
  - OCP Tech Talks
  - OpenInfra Summit
  - OCP Global Summit
  - SC23
- Did you know our Education area offer visitors direct navigation and access to new materials? Did you know it also highlights the latest educational information and featured resources and provides visitors with a broad collection of information and most recent materials? The Education landing page showcases key resources, which changes on a regular basis, and visitors will also find pages for Presentations, White Papers and Webinars – all of which update automatically when we share new content. In addition, there are pages for Open Source information and Newsletter sign-up.

Final Thoughts

Reflecting on the sheer volume of work, I am extremely proud of the volunteers that contributed their efforts to carry the state-of-the-art industry standards forward this year. The DMTF Board not only granted DMTF Star Awards to a record number of people, but we also awarded three Super Star Awards (also a record number), which is DMTF's equivalent to a lifetime achievement award. However, it takes more than just these people to carry on this work - it takes a dedicated board, officers, and a broad and diverse membership to achieve these milestones. All of which I can proudly say, we have. Thank you to everyone who contributed to the success of DMTF this year, we couldn't do it without you.

The cooperation and collaboration with several of our alliance partners is another cornerstone of our success. DMTF continues to stay connected to the needs of customers and solutions required by the industry because of our alliances with organizations such as SNIA, OFA, OCP, TCG, and CXL Consortium. Additionally, DMTF continues to create standards both within the platform (PMCI, SMBIOS, SPDM) as well as communication between the platform and management clients (Redfish, CIM) that are valued by the industry. We value all our industry and organizational relationships and together we are helping solve real world challenges for business and end users alike.

We are looking forward to 2024 but want to thank our member companies, volunteers, as well as our alliance and industry partners for their ongoing commitment. You are the reasons for our progress and our success is your success.

SPDM Releases Updates to its Specifications

DMTF announces errata updates to its specifications. These specifications – developed by DMTF's Security Protocols and Data Models Working Group – continue to incorporate the input of the organization's Alliance Partners to help align component authentication, confidentiality, and integrity objects across the industry.

While the specifics of the changes are contained within the documents themselves, these updates include DSPS0274 (SPDM Specification), DSP0275 (SPDM over MCTP Binding), DSP0276 (Secured Messages using SPDM over MCTP Binding) and DSP0277 (Secured Messages using SPDM).

SPDM 1.3 specification was also recently updated and republished. The updated version is dated as of June 2023.

- SPDM Specification (DSP0274)
  - 1.0.2
  - 1.1.3
  - 1.2.2
  - 1.3.0
- SPDM over MCTP Binding Specification (DSP0275)
  - 1.0.2
- Secured Messages using SPDM over MCTP Binding Specification (DSP0276)
  - 1.1.1
- Secured Messages using SPDM Specification (DSP0277)
  - 1.0.1
  - 1.1.1

For more information about the SPDM Working Group please visit https://www.dmtf.org/standards/spdm.

It's Not Too Early to Think About DMTF Membership!

As DMTF's new fiscal year approaches, our membership renewal period is right around the corner - please take steps today to ensure your organization is prepared to renew! Your company's billing contact will receive the invoice in early January so be sure to give them the heads up! The upcoming membership year runs April 1 to March 31.

DMTF membership offers front-line access to our standards along with the opportunity to participate in the process of defining standards and programs. This important work is funded through membership dues that are among the most cost-effective in the industry. DMTF remains the ideal forum for industry-leading companies to come together in a neutral, non-competitive environment to collaborate on interoperable management standards.

To learn more about the benefits of membership, or to join or renew, please visit the DMTF website at www.dmtf.org/join. Have questions? Get answers from the DMTF membership team at admin@dmtf.org.

Thank you for your ongoing contributions and support of DMTF - our success depends on you! Renew your membership today!

In Case You Missed It

New Redfish Tutorials Highlighting the Fabrics Model and Support for CXL

DMTF's popular "Redfish® School" YouTube series recently added four new installments. In these latest mini-tutorial videos, viewers are introduced to the Redfish Fabrics Model in three parts as well as a video on support for CXL.

The three sessions on the Fabrics Model includes: Fabrics Introduction, Configuration and Routing, and Example implementations. Part one reviews Fabric Representation, Connectivity, Endpoints/switches/ports, and Adapters and Metrics. The second video discusses the Fabric Model Hierarchy, Zones, Address Pools and Connections along with showing some examples. The final video on the Fabrics Model highlights the different implementations, including Ethernet, SAS, NVMe-oF and PCI Express.

The fourth tutorial discusses the Support for Compute Express Link (CXL) devices in Redfish. This video focuses on the Chassis and System Model, Modeling local CXL Devices and modeling Remote CXL Devices.

All "Redfish School" mini-tutorials and videos can be viewed on the Redfish webinars page on the Redfish Developer Hub. In addition, the full library of DMTF videos is available on the Webinars page in the DMTF website's Education section.

These videos are also available directly on DMTF's YouTube channel, so don't miss out when we post something new – click here to subscribe to our YouTube channel today!

Need a DMTF Logo for your Marketing Materials?

We've got you covered!
Email press@dmtf.org for the DMTF and/or Redfish logo files as well as the most current Logo Usage Guidelines and Graphic Standards. We've recently updated the usage guidelines to include the use of the Redfish logo on a dark background.

DMTF on YouTube

Check out our latest videos and be sure to subscribe to the DMTF YouTube Channel to stay up-to-date with our current and upcoming webinars.

Information about DMTF's leadership, technologies, and how to participate can be found at www.dmtf.org. Contact us online or reach us at http://www.dmtf.org/contact.

Newsletter Feedback

We welcome your input on what you'd like to see included here – just Contact Us online and share your suggestions!

DMTF Attends Fall Events

DMTF participated in two events over the past few months – the Open Compute Project (OCP) Global Summit and SC23.

DMTF attended the OCP Global Summit October 17-19, 2023, at the San Jose Convention Center as an exhibitor. Executives and representatives of the organization and the Redfish Forum were on hand to answer questions from attendees. In addition, DMTF standards were highlighted and represented in several sessions. Click here to view all of the presentations from the Summit.

Continuing its commitment to industry outreach and education, DMTF's Redfish Forum also participated in SC23, November 12-17, 2023, at the Colorado Convention Center in Denver Colorado. SC23 is an international conference for high performance computing, networking, storage, and analysis. The Redfish Forum was part of the Open Standards Pavilion with SNIA®, OpenFabrics Alliance, UCIe™ (Universal Chiplet Express™), and Ultra Ethernet Consortium (UEC).

Representatives of the Forum were available to speak with attendees about the standard and how Redfish delivers simple and secure management for converged, hybrid IT and the Software Defined Data Center (SDDC). In addition, the Forum showed sample implementations of the Redfish management protocol, as well as interoperability among multiple device and system vendors.

Upcoming DMTF Meetings

12/14 Board Meeting
1/18 Board Meeting
2/15 Board Meeting

New Members

DMTF Participation
Rambus - Redfish Supporter
ASPEED Technology

Recent DMTF Specifications

DSP0274_1.2.2 (SPDM Specification)

DSP0274_1.1.3 (SPDM Specification)

DSP0274_1.0.2 (SPDM Specification)

DSP0275_1.0.2 (SPDM over MCTP Binding Specification)

DSP0276_1.1.1 (Secured Messages using SPDM over MCTP Binding Specification)

DSP0277_1.0.1 (Secured Messages using SPDM Specification)

DSP0277_1.1.1 (Secured Messages using SPDM Specification)

DSP0288_1.0.0 (CXL to Redfish Mapping Specification)

DSP2050_1.3.0 (Redfish Composability White Paper)

DSP0283_1.0.0 (MCTP over USB Binding Specification)

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About 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 organization is led by a diverse board of directors from Broadcom Inc.; Cisco; Dell Technologies; Hewlett Packard Enterprise; Intel Corporation; Lenovo; NetApp; Positivo Tecnologia S.A; and Verizon.