Submission Details: bof115s1

Form first submitted: 2021-07-19 15:05 CDT
Form last updated: 2021-08-04 11:41 CDT

Title

Title: Solving the Fabric Management Gordian Knot

Session Leader Information

Session Leader 1:

Name: Mr. Michael J. Aguilar
Email: mjaguil@sandia.gov
Company/Institution: Sandia National Laboratories
2nd Company/Institution:
Country: United States of America
Biography:

Michael Aguilar is a Senior Computer Scientist for HPC Research and Development at Sandia National Laboratories, working with both Capacity Computing and Advanced Architecture Testbeds. Michael is responsible for management of Sandia's ARM64 HPC systems, including Astra, and is active with the OpenFabrics Alliance, as the Board Secretary. He is currently serving as Chair of the OpenFabrics Management Framework (OFMF) Working Group. In addition, Michael is involved in Sandia Labs BeeGFS research and development. Michael has a Masters of Science degree in Computer Science and a Bachelor of Science in Computer Engineering.

Photograph

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Size: 12KB
Uploaded: Jul 19
MD5: 5bc7ef7cf292c2648018fd078d003392
Original Name: Michael_Aguilar_head_s...

Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes
Are you willing to present remotely if necessary? Yes

Additional Session Leader Information

Additional Session Leader 1:

Name: Mr. Russell W. Herrell
Email: russ.herrell@hpe.com
Company/Institution: Hewlett Packard Enterprise
2nd Company/Institution:
Country: United States of America
Biography:

Russ Herrell is a Distinguished Technologist and has been with HPE for 38 years. Russ has a Master's in Electrical Engineering from Montana State University and has worked at HPE ever since leaving campus. Russ has designed ECC memory boards, 3D graphics accelerators, virtual DMA interfaces, interrupt driven

flow controlled, load/store graphics library interfaces, and 16-64 socket SMP big iron. Most recently Russ has been working to enable the Gen-Z and memory centric computing ecosystem.

Photograph

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Size: 278KB
Uploaded: Jul 19
MD5: fef88194dce9fd15c804323b92ef899d
Original Name: russ_photo_2014.jpg

Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes
Are you willing to present remotely if necessary? Yes

Additional Session Leader 2:

Name: Miss Richelle L. Ahlvers
Email: richelle.ahlvers@intel.com
Company/Institution: Intel Corporation
2nd Company/Institution:
Country: United States of America
Biography:

Richelle Ahlvers is a Storage Technology Enablement Architect at Intel. She has spent over 25 years in Enterprise Storage R&D teams in a variety of technical roles, leading the architecture, design and development of storage array software, storage management software user experience projects including mobility, developing new storage industry categories including SAN management, storage grid and cloud, and storage technology portfolio solutions. Richelle has also been engaged with industry standards initiatives with SNIA and DMTF for many years. She served as the SNIA Technical Council Chair and has been engaged across a breadth of SNIA technologies ranging from storage management, to solid state storage, cloud, and green storage. She is Chair of the SNIA Storage Management Initiative and leads the SSM Technical Work Group developing the Swordfish Scalable Storage Management API. She also serves as the alliance liaison for SNIA to DMTF as well as SNIA to OFA.

Photograph

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Size: 79KB
Uploaded: Jul 19
MD5: f655b0e12c620a8bd23dcf856333ac09
Original Name: richelle.jpg

Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes
Are you willing to present remotely if necessary? Yes

Additional Session Leader 3:

Name: Mr. Jim Hull
Email: jmhull@intelliprop.com
Company/Institution: Intelliprop Inc
2nd Company/Institution:
Country: United States of America
Biography:
Photograph
Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes

Additional Session Leader 4:

Name: Mr. Phil C. Cayton
Email: phil.cayton@intel.cm
Company/Institution: Intel Corporation
2nd Company/Institution:
Country: United States of America
Biography:

Phil Cayton is a Senior Staff Engineer for Intel with 25 years of industry experience researching and developing networking, storage, and datacenter infrastructure technologies. In addition to his current role with Open Fabrics Alliance, he is actively involved with the Storage Networking Industry Association and the NVM ExpressTM Consortium. He has been involved with InfiniBand since the beginning and has written many RDMA-based drivers including the initial prototype NVMe-over-Fabrics driver stack. Additionally, he has led remote peer-to-peer memory projects, Open Fabrics testing and patching, dynamic data center energy efficiency R&D, server autonomics R&D, mobile-device multi-radio interference mitigation, mobile augmented reality, sensor enhanced personal medical monitoring, and network driver development projects. He has several published whitepapers and 20 granted patents. In his spare time he is an avid sailor.

Photograph

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Size: 27KB
Uploaded: Jul 19
MD5: be4ef05955dd2dab3db2683cfa7ea483
Original Name: phil-cayton-pic-v3.jpg

Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes
Are you willing to present remotely if necessary? Yes

Additional Session Leader 5:

Name: Mr. Erich Hanke
Email: ehanke@intelliprop.com
Company/Institution: Intelliprop Inc
2nd Company/Institution:
Country: United States of America
Biography:

Erich Hanke is a Principal Engineer of Storage and Memory Products at IntelliProp. He has spent 14 years in Storage and Memory Silicon IP architecture and development as well as SoC and ASSP product design. Recently Erich has been focused on memory semantic fabric solutions for fabric attached memory, low latency switches, and host bridging. Erich has been a member of and technical contributor to Gen-Z Consortium Core, Phy, Proof-of-Concept and Mechanical working groups as well as CXL Consortium Protocol, Memory Subsystems, and Bridging working groups. Erich also hosts the Gen-Z Linux Subsystem meetings which are focused on FPGA based Proof of Concept Hosts, Switches, and Media Controllers along with Linux support for Gen-Z Fabric Management software, subsystem and bridge driver definition and development.

Photograph

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Uploaded: Jul 19
MD5: e66aa619ae018d2dcebd4246ec1ca631
Original Name: erich_hanke.jpg

Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes
Are you willing to present remotely if necessary? Yes

Additional Session Leader 6:
Name: Mr. Jeff Hilland
Email: jeff.hilland@hpe.com
Company/Institution: Hewlett Packard Enterprise
2nd Company/Institution:
Country: United States of America
Biography:

Jeff Hilland is a Distinguished Technologist at Hewlett Packard Enterprise (HPE) in the CTO organization working on infrastructure management architecture with a focus on servers. Jeff served as VP of Technology for DMTF for 6 years before being appointed President of DMTF. Jeff has served in various leadership roles in DMTF since 2003, including chair of the Executive Committee, Technical Committee, Platform Subcommittee and co-chair of both the Server Management Work Group and the Desktop & Mobile Work Group. Jeff is one of the chief architects behind Redfish and contributed significantly to SMASH & DASH. Jeff also co-chairs the Security Task Force in PMCI. Jeff has spent the last 23 years driving industry standards and has also served in chairing roles in the Gen-Z Consortium, RDMA Consortium and the InfiniBand Trade Association.

Photograph

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Size: 136KB
Uploaded: Jul 19
MD5: 1d1c09658aae10edf0271ea933a0af36
Original Name: Jeff_Hilland_Headshot_...

Is this person on the Birds of a Feather reviewing committee? No
Are you willing to present in-person if possible? Yes
Are you willing to present remotely if necessary? Yes

BOF Topic Area

BOF Topic Area: Architectures and Networks

Abstract

Abstract (Maximum 100 words):

The OpenFabrics Alliance (OFA) together with its partners the DMTF, SNIA, and the Gen-Z Consortium, are developing a new open source fabric management 'framework' to accelerate the development and

deployment of network fabric management applications and tools. In a world of increasingly diverse fabrics and complex computational tasks posed by e.g. modern HPC problems, machine learning applications, cloud-based deployments, enterprise challenges, and more. A common fabric management framework provides advancement in control simplicity.

This BoF seeks inputs on requirements for managing fabrics from network, storage, and security communities, as well as, open development participation in the OFA OFMF Working Group.

Long Description

Long Description (Maximum 500 words):

Increasingly complex computing problems being tackled today are creating diverse requirements for an array of fabric management tools and applications needed to operate more architecturally complex computing systems. Developers of such tools and management applications, in turn, are faced with a complex permutation of fabrics (InfiniBand, Gen-Z, Slingshot, others).

Disaggregated resources, such as memory, storage, compute, and accelerators, are interconnected by high speed fabrics. With no common way of querying or manipulating such fabrics and resources a Gordian Knot of fabrics and resource allocation is being created. The victims of this Gordian Knot conundrum are System Administrators, Application Designers, and System Architects who design, deploy, maintain, and use any sort of fabric-based computing system and whom must supply their users with reliable, high performance systems. This includes systems for High-Performance Computing, Machine Learning, Cloud-based systems, and Enterprise environments.

The OpenFabrics Alliance (OFA), together with its partners, the DMTF, SNIA, and the Gen-Z Consortium is launching an effort to design and develop an open fabric management framework designed to help slice through this Gordian Knot. This so-called fabric management framework consists of a set of common tools designed for managing and manipulating underlying fabrics in an abstract way. Through the use of the open management framework tools, client APIs and methods can create resource/client associations, sub-fabrics and aggregate super-fabrics, get performance information, and manipulate underlying fabrics.

The resulting framework is intended to be used by clients to deliver security services, switch and end point inventories, route management, telemetry, performance and diagnostics, and more. Currently, targeted clients include Workload Managers, MPI and SHMEM, distributed deployment services, and others.

This collaboration is intending to create an open fabric management framework that will utilize Redfish as a management tool standard for modeling these complex fabrics. Currently, there is no high-level standardized Redfish schema for a management API and there is no fabric-level representation in Redfish.

This BoF is targeting communities of: Developers of fabrics, compute, accelerators, storage, and memory Developers of fabric management solutions and tools such as automation, composition, and orchestration, Those developing solutions that rely on accurate, easy access to fabric information such as workload managers, task brokers, telemetry services, operations management, AI, Big Data analytics, and performance tuning applications

This BoF is a Call to Action for those communities to discuss fabric management Use Cases, provide feedback on the most urgent set of problems facing them and to collect initial requirements. We are wanting to raise awareness of the OpenFabrics OpenFabrics Management Framework and solicit members for participation in development.

Session format

How much of the session will be used for interaction between audience and session leaders/presenters? 75%
What is the primary format for content that does not directly involve audience discussion? Sequence of presentations

Does the BOF topic deal with commercial technology? Not commercial

Description of the session format

Description of the session format (Maximum 150 words):

The session format will be modeled similar BoFs hosted by the OpenFabrics Alliance at its 2020 and 2021 Virtual Workshops.

The format consists of: Presentations (10-15 minutes) illustrating both the problem and the proposed solution. A guided discussion (45-50 minutes) led by members of the OFMF Working Group consisting of a series of questions put to the audience and facilitation designed to stimulate discussion in specific areas.

BOFs at recent SCs

Has your BOF been held at recent SC conferences?
If so, approximately how many attendees did your BOF attract the most recent year it was held?

Scheduling Information

Preferred date and time: Tuesday: 12:15pm - 1:15pm
Amount of time requested: 1 hr
Expected Attendance: 50
Keyword/Phrase 1: High Speed Network Fabrics
Keyword/Phrase 2: Open Management Tools
Keyword/Phrase 3: Redfish

Website

Website: https://www.openfabrics.org/working-groups-overview/#ofmfwg

Acknowledgement

Acknowledgement: yes

SC Communication

I agree to be contacted by future chairs for announcements for future SC conferences. Yes