HPC and Cloud computing designs are becoming more heterogeneous to be able to handle more and different types of computing tasks

- More available types of HPC applications and tools
- Machine Learning
- Deep Learning

New alternative network fabrics, new ways to deploy memory, and custom accelerators are being dreamed up to maximize performance for specialized tasks.

Use of different fabric technologies is proliferating

- Base interconnects are adding fabric capabilities
- Emergence of different fabrics applied throughout the system: for network, storage, and now accelerators, memory
Administrative Management Challenges

- No common fabric manager interface or fabric model available to link applications with remote resources
- Workload management and optimization is different for each type of fabric
- Administrators are being asked to manage an increasing heterogeneous fabrics infrastructure, each with its own management standard and model
THE FABRIC ADMIN SERVICES OFFERED BY THE OFMF

The Open Fabric Management Framework
- Control Services
  - Discovery
  - Inventory
- Communication Services
  - Connection management
  - App to app, manager to manager
  - Address Vectors
  - Managing fabric addresses
- Partitioning Services
  - Zones (subnets, vLans)
  - Connections (permitted paths)
  - Permissions
- Messaging Services
  - Queues and contexts
  - Events and errors
  - Atomics and other synchronizations
- Security

User APPs & Libraries
- Slurm
- PBS
- Kubernetes
- Orchestration Managers

Open Fabric Management Framework Interface

Fabric Services
- Proprietary Fabric Manager
- Gen-Z Fabric Manager
- IB Fabric Manager
- ... Ethernet Fabric Managers

AWS
- HW
- Gen-Z
- IB
- ... Ethernet

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LEVERAGE EXPERTISE AND EXISTING STANDARDS

Bringing Existing Standards-based Technologies together

- DMTF: Server / fabric management
- SNIA: Storage / storage fabric management
- GenZ: Fabric Manager
- CXL: Fabric Manager
- OFA: cross-fabric management, additional fabric technology expertise

OpenFabrics Management Framework Focus
USING THE OFMF (POC)

**Getting started?**
- Download the framework, and agent, and configure them to work together.
- POC code is on Github: [https://github.com/OFMFWG](https://github.com/OFMFWG)
- Site contains:
  - Mockups
  - Framework Proof-of-Concept (currently talks to GenZ Agent)
  - Proof-of-Concept Gen-Z Agent (can run either fully emulated, or integrated with GenZ equipment)
  - Proof-of-Concept GUI

**Work in containers?  OFMF and Agent POC Containers available for easy download:**
- Current location:
  - [https://hub.docker.com/repository/docker/richelleahlvers/ofmf-genz-poc](https://hub.docker.com/repository/docker/richelleahlvers/ofmf-genz-poc)
  - [https://hub.docker.com/repository/docker/richelleahlvers/ofmf-agent-poc](https://hub.docker.com/repository/docker/richelleahlvers/ofmf-agent-poc)
- Permanent home (OFMF containers will be relocated here soon):
  - [https://hub.docker.com/u/openfabric](https://hub.docker.com/u/openfabric)
GET INVOLVED WITH THE OFMF

1. Project info:
   • [https://www.openfabrics.org/openfabrics-management-framework/](https://www.openfabrics.org/openfabrics-management-framework/)

2. Join mailing list:
   • [https://lists.openfabrics.org/mailman/listinfo/ofmfwg](https://lists.openfabrics.org/mailman/listinfo/ofmfwg)

3. Engage in OFMF Meetings:
   • 3:00 pm PT: OpenFabrics Manager WG Wednesday Meeting
THANK YOU

Richelle Ahlvers, Storage Technology Enablement Architect, Intel