Advances in Storage Fabric Management:

Manage Across Multiple Fabrics using Standards-based Interfaces

Presented by Michael Aguilar, Chair, OFA OFMF-WG
Agenda

- Current Network Fabric Challenges
- OpenFabrics Management Framework Working Group
  - Objective
  - Participants
  - Current Work
- Proof-of-Concept Demonstration
Current Network Fabric Challenges

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 heterogenous fabrics infrastructure, each with its own management standard and model
OpenFabrics Management Framework Working Group---Objective

Clients

Management Layer

Hardware Layer

Application Domain

- App driven system reconfig

Fabric
- Resources Monitoring
- Composition Policies
- Resource Control (e.g., Compute, FAM, Storage, Fabric)
- Events & Logs

Composability Layer

RESTful API (RF/SF)

OFM Services
- Resource Inventory
- RF tree management
- Resource Configuration
- Fabric Configuration
- Authentication
- Access Control
- Events & Logs

Data Store

Hardware Manager(s)

- CXL Agent
- Gen-Z Agent
- Slingshot Agent
- IB Agent

RedFish
- Vendor Native API

Redfish/Native Translation

Administration Domain

- Systems composition
- Systems update

Infra management
OpenFabrics Management Framework Working Group---Objective

- **Application Domain**
  - OpenFam
  - LibFabric
  - Interactive Job
  - Batch Job

- **Administration Domain**
  - Kubernetes
  - Monitoring
  - Storage Manager (OpenFam using libFabric)
  - FAM Manager (OpenFam using libFabric)
  - Accelerator Manager (OpenFam using libFabric)

- **OFM Services**
  - Resource Inventory
  - RF tree management
  - Resource Configuration
  - Fabric Configuration
  - Authentication
  - Access Control
  - Events & Logs

- **RESTful API (RF/SF)**
  - Fabric Storages
OpenFabrics Management Framework Working Group---Participants
OpenFabrics Management Framework Working Group---Participants
OpenFabrics Management Framework Working Group---Current Work

- Gen-Z: SC21 and SC22 Proof-of-Concept Demonstrations
- CXL Consortium: SC22 Proof-of-Concept Demonstrations

- Code is checked into:
  [Open Fabrics Alliance: Open Fabrics Management Framework · GitHub](https://github.com/OpenFabricsManagementFramework)
Proof-of-Concept Demonstration
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