Example Fabric Implementations
Agenda

- Representing different types of fabrics
  - Ethernet
  - SAS
  - NVMe-oF
  - PCI Express
Representing Different Types of Fabrics

- We show examples of some different fabric models
  - Ethernet
  - SAS
  - NVMe-oF
  - PCI Express

- Showing the predominant use cases for each of these fabrics
  - Some model capabilities, like connections, can be used but may not be required
Ethernet Fabric Example

- Consists of switches, Ethernet interfaces, zones, and address pools
- Connectivity is defined with endpoints and switches
- No distinction between initiators and targets
Ethernet Fabric Diagram

- Service Root
- Chassis
- Fabrics
  - Ethernet
    - AddressPools
- NetworkAdapters
  - NDFs
  - Ports
- Switches
  - Ports
- Zones
- Endpoints
  - EP2
  - EP1

Collection resource
Singleton resource
Subordinate resource
Related resource
SAS Fabric Example

• Consists of drives, volumes, and controllers
• Connectivity defined with endpoints and switches
• Hosts are initiators and drives are target
SAS Fabric attached JBOD
NVMe Over Fabrics Example

- Consists of NVMe drives, volumes, and NVMe controllers
- Connectivity defined in with connections and endpoints
- Hosts connect to an interface provided by a network device function to access volumes on the NVMe subsystem
- For additional information on NVMe over Fabrics, SNIA has educational material that can be accessed here <URL>. 
NVMe-oF Attached JBOF

Service Root

Chassis 1

NetworkAdapters 1

Drives 1

NDFs 1

Ports 1

Endpoints

Connections

Host

Conn1

Target

NS1

Connections

Storage

NVMe-oF

Connections

Endpoints

Volumes

Collection resource
Singleton resource
Subordinate resource
Related resource

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PCI Express Fabric Example

• Consists of switches, endpoints, zones, and devices
  • Some example devices: Ethernet interfaces, storage controllers, and processors

• Connectivity defined with endpoints and switches

• The host root port is represented as a computer system
PCIe Fabric Diagram

- Service Root
- Systems
- Storage
- Storage Controllers
- Ethernet Interfaces
- Fabrics
- PCIe
- Switches
- Endpoints
  - Root
  - NIC1
  - SAS-HBA
- Zones
- Ports
  - Up
  - Down1
  - Down2

Legend:
- Collection resource
- Singleton resource
- Subordinate resource
- Related resource
Thank you!

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