



2022 OFA Virtual Workshop

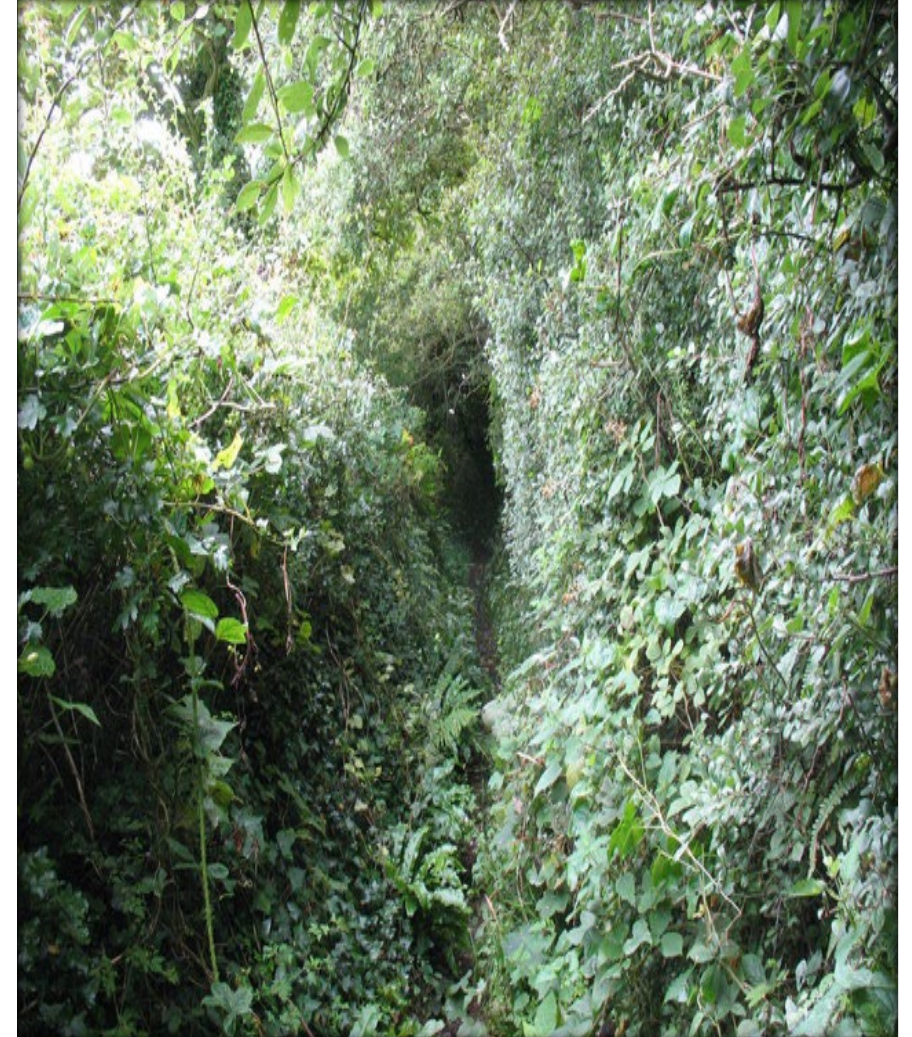
# TOWARDS UNIVERSAL MANAGEMENT OF FABRIC INTERFACES

**Richelle Ahlvers, Storage Technology Enablement Architect, Intel**

OFA OpenFabrics Management Framework Project

# INDUSTRY TRENDS

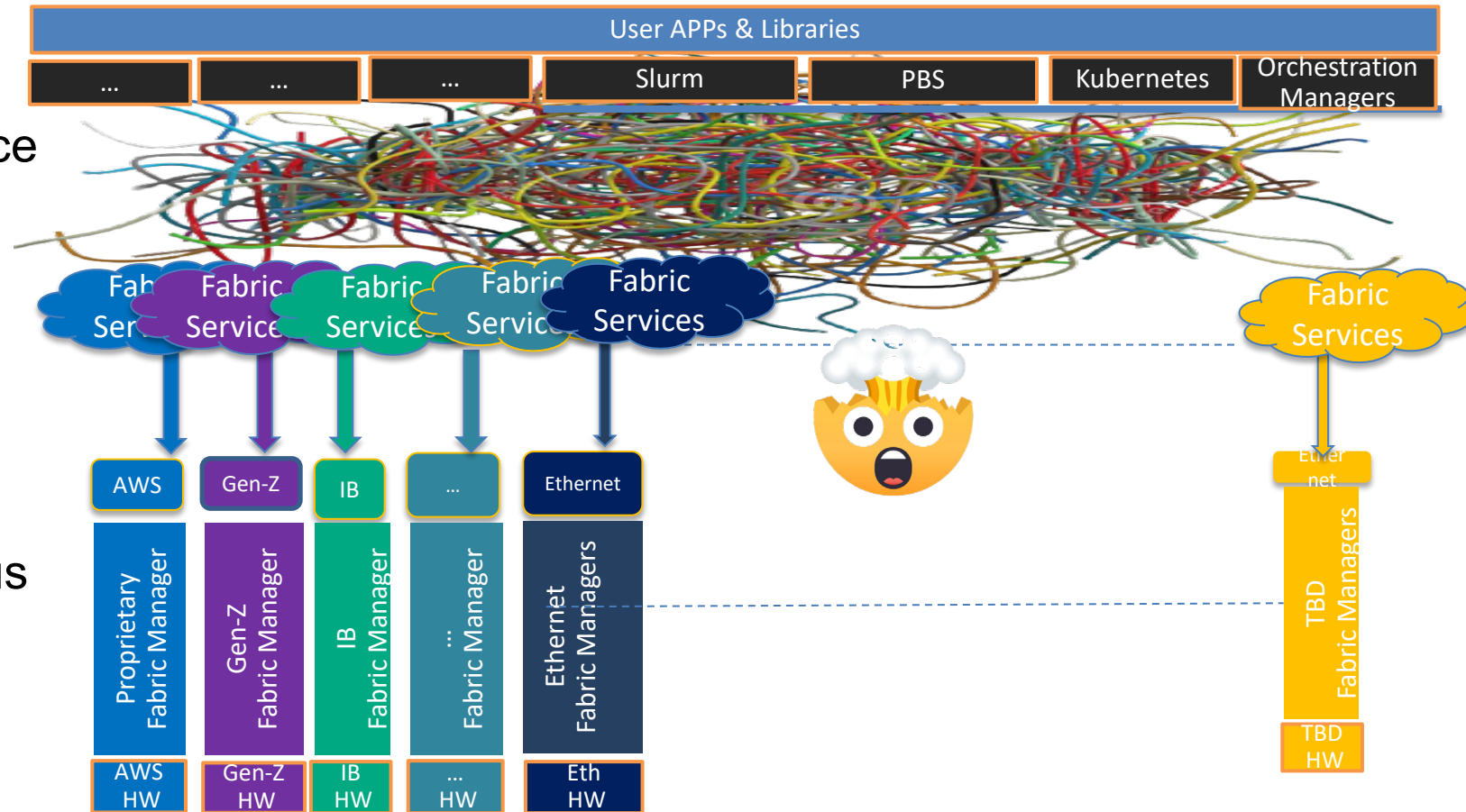
- **HPC and Cloud computing designs are becoming more heterogeneous to be able to handle more and different types of computing tasks**
  - More available types of HPC applications and tools
  - Machine Learning
  - Deep Learning
- **New alternative network fabrics, new ways to deploy memory, and custom 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



# A MANAGEABILITY HEADACHE

## 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



# 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

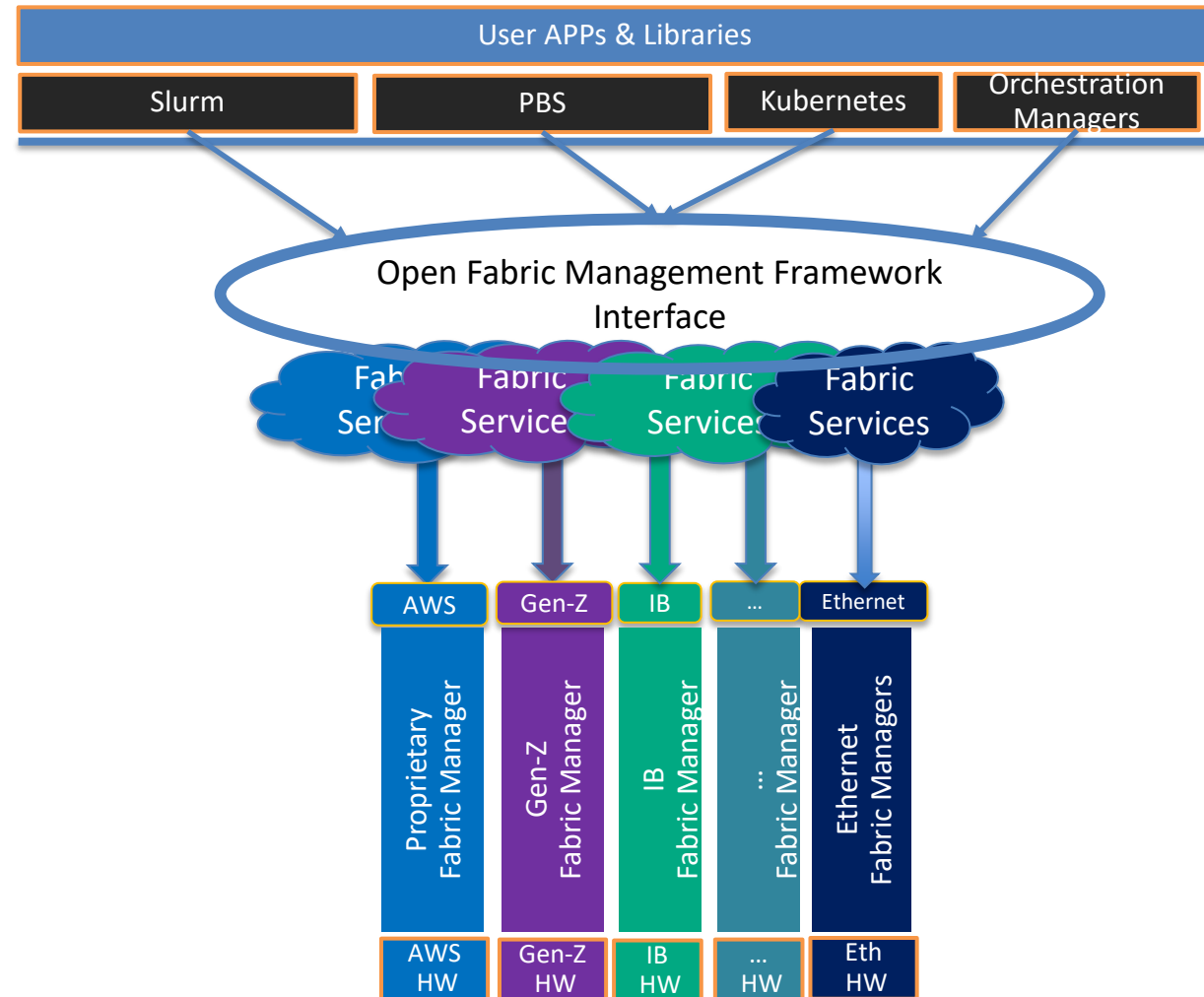
### Messaging Services

Queues and contexts

Events and errors

Atomics and other synchronizations

### Security

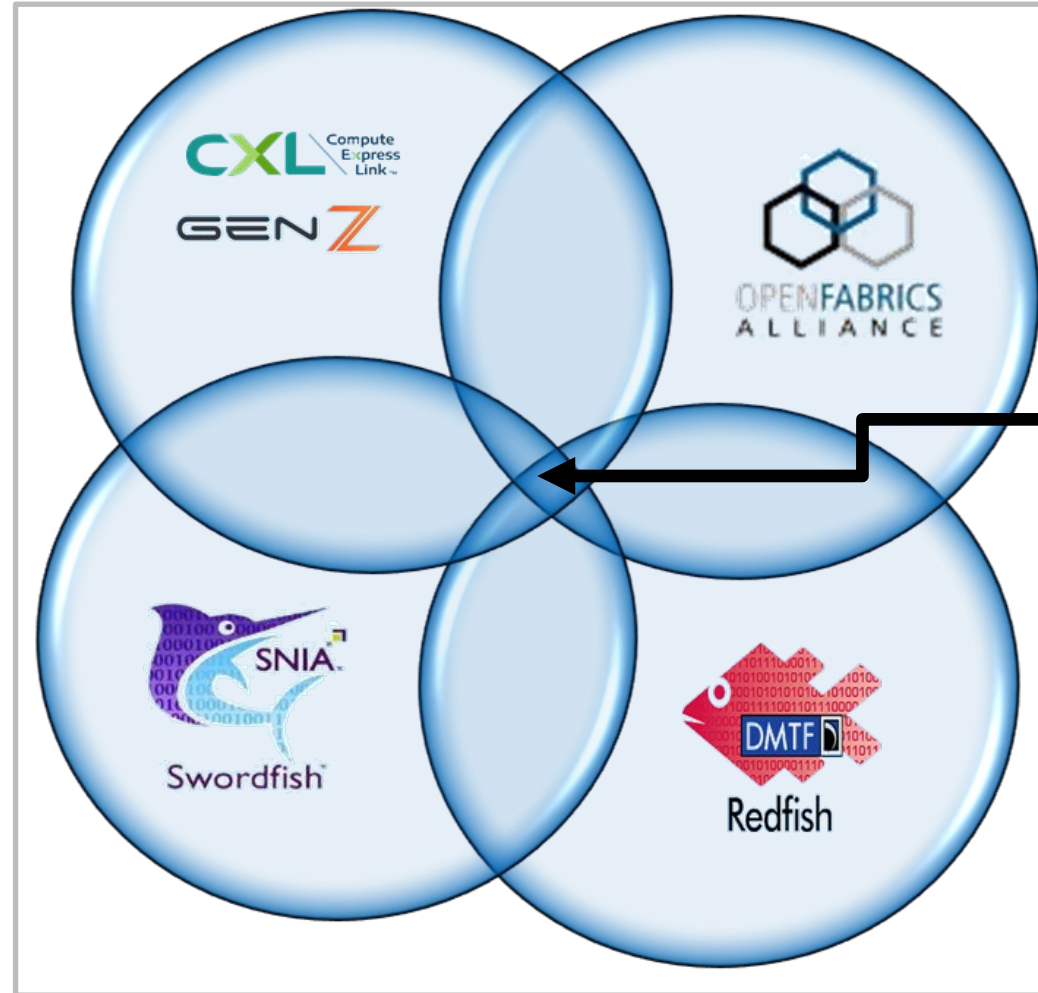




# LEVERAGE EXPERTISE AND EXISTING STANDARDS

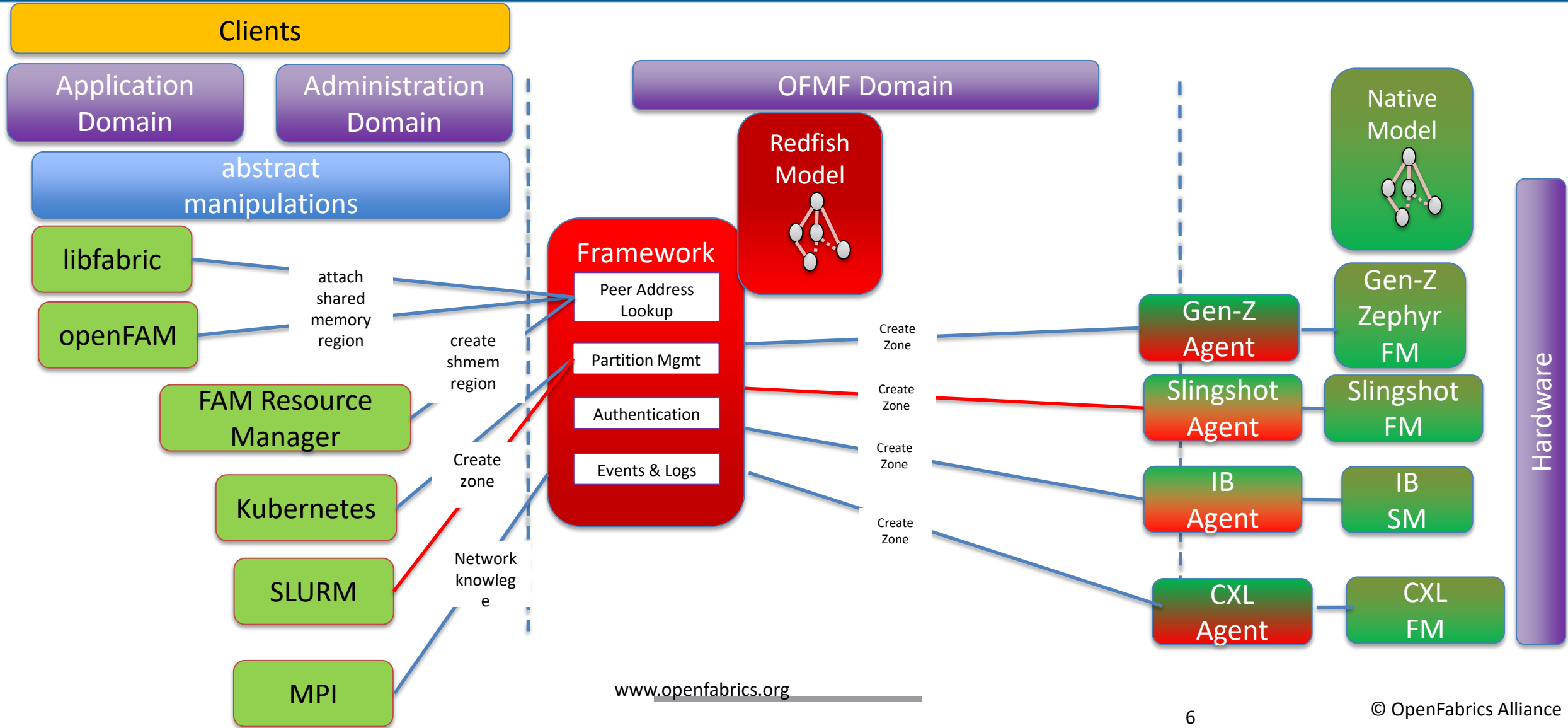
## Bringing Existing Standards-based Technologies together

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

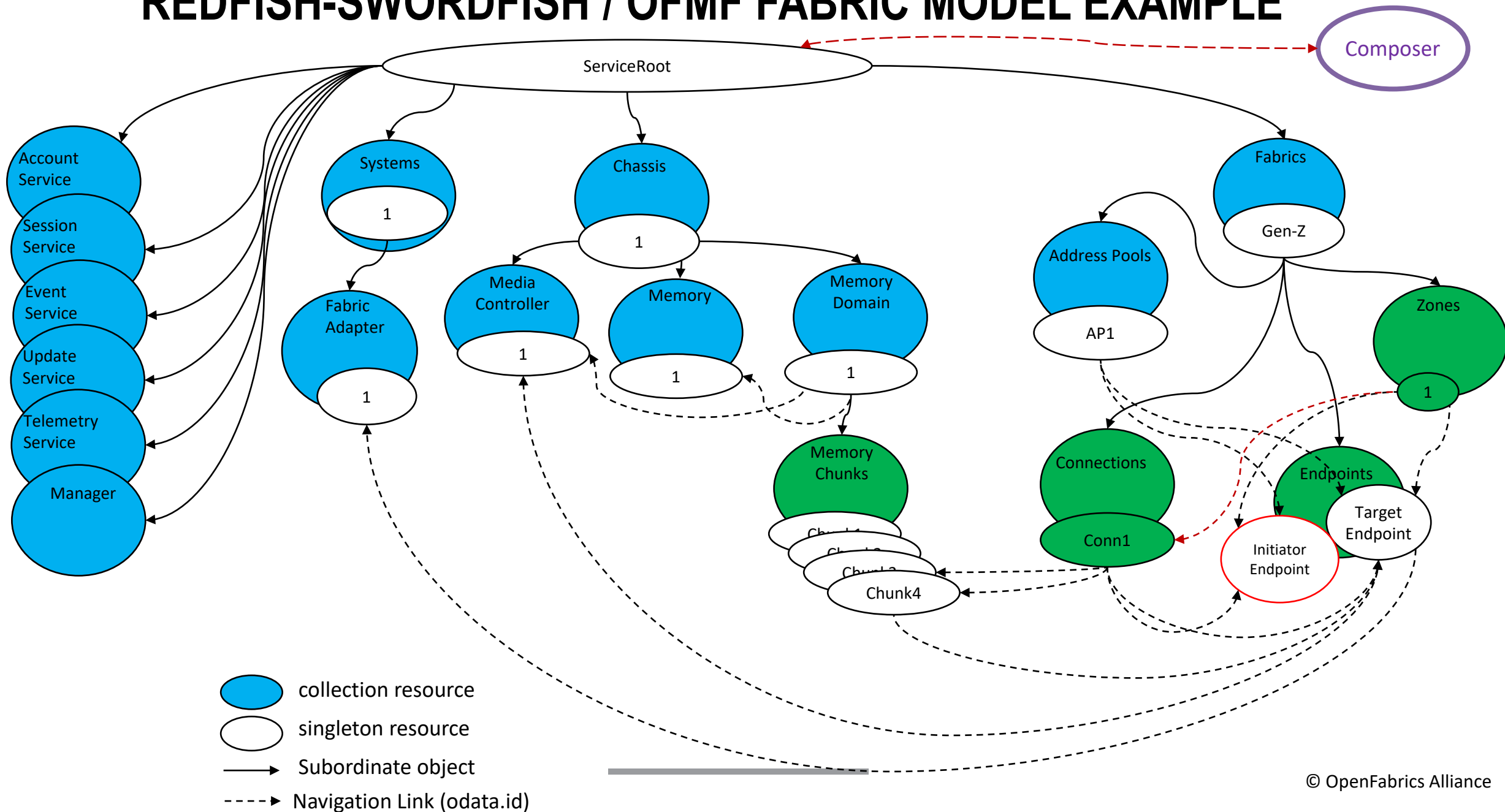


**OpenFabrics  
Management  
Framework  
Focus**

# THE OPENFABRICS MANAGEMENT FRAMEWORK ARCHITECTURE



# REDFISH-SWORDFISH / OFMF FABRIC MODEL EXAMPLE



# 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>
- 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-agent-poc>
- Permanent home (OFMF containers will be relocated here soon):
  - <https://hub.docker.com/u/openfabric>



# COMPANIES & ENTITIES INVOLVED IN THE OFMF PROJECT



# GET INVOLVED WITH THE OFMF

1

Project info:

- <https://www.openfabrics.org/openfabrics-management-framework/>

2

Join mailing list:

- <https://lists.openfabrics.org/mailman/listinfo/ofmfwg>

3

Engage in OFMF Meetings:

- 3:00 pm PT:  
OpenFabrics  
Manager WG  
Wednesday Meeting



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**THANK YOU**

Richelle Ahlvers, Storage Technology Enablement Architect, Intel

- OFA OpenFabrics Management Framework Project