PMEM-201-1
Persistent Memory: Remote Persistent Memory

Chairs:

Rob Peglar, Advanced Computing and Storage

Paul Grun, Cray and OpenFabrics Alliance

Sponsored by:

Agenda

- First Half - Speakers
  - Paul Grun, Cray
    - *Remote Persistent Memory – The Case for Use Cases*
  - Kurtis Bowman, Gen-Z Consortium
    - *The Impact of Persistent Memory on Interconnects and Fabrics*
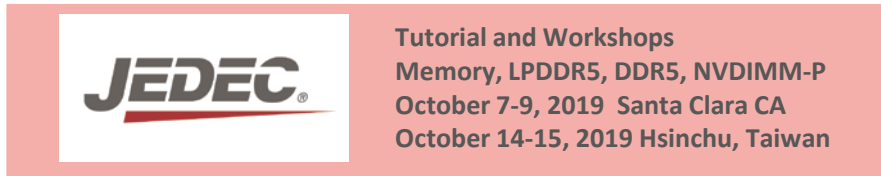- Second Half- Panel

Upcoming PM Events

SDC 19
Storage Developer Conference
September 23-26, 2019
Santa Clara, CA

Pick up your conference
registration discount card
at **SNIA booth 820**

JEDEC®

**Tutorial and Workshops
Memory, LPDDR5, DDR5, NVDIMM-P
October 7-9, 2019 Santa Clara CA
October 14-15, 2019 Hsinchu, Taiwan**

**Register at
www.jedec.org**

**SNIA PERSISTENT MEMORY
PM SUMMIT**
JANUARY 23, 2020 | SANTA CLARA, CA

Complimentary registration
now open at
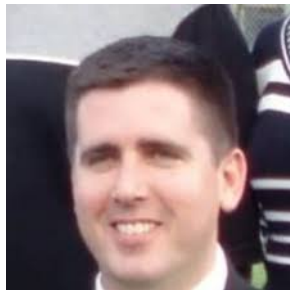**snia.org/pm-summit**

Meet Our Panel
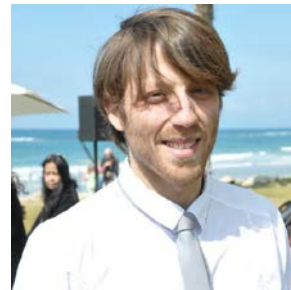
Paul Grun

OpenFabrics Alliance

Cray

Kurtis Bowman

Gen-Z Consortium

Alan Bumgarner

SNIA NVM Programming Technical Work Group

Idan Burstein

Mellanox

Wayne Rickard

Radian Memory

- SNIA and the OpenFabrics Alliance (OFA) are working to enable and accelerate the adoption of Remote Persistent Memory…
  - By providing standards and enabling software
  - By providing open source APIs
- … which depends on a clear elaboration of 'use cases' for RPM
  - Some of which have been explored at past Flash Memory Summits
- It also depends on understanding the relevant characteristics of the underlying technology
  - Which we will be exploring today

SNIA & OFA Collaboration Objectives

1. **OFA + SNIA**
   - Develop a set of example use cases for RPM
   - Generate a Whitepaper outlining those use cases
2. **SNIA NVMP TWG**
   - Generate Whitepapers describing each use case
3. **OFA OFIWG**
   - Generate open source network APIs to support those use cases

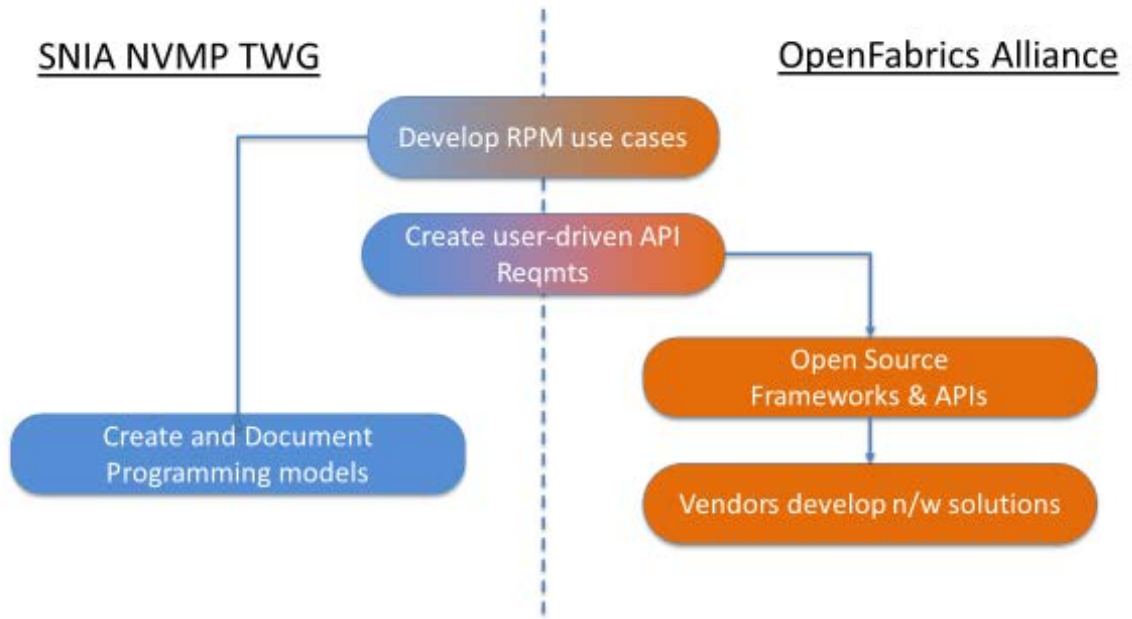# The Resulting Network APIs Must

- Be open source and freely available
- "Transport neutral"
  - i.e. not specific to any particular network architecture
- Application-centric
  - i.e. responsive to the needs of applications that consume them

Started in 2017, this is a long-running Work in Progress.

The goal is to accelerate adoption of Remote Persistent Memory.

ANNOUNCING - SNIA & OPENFABRICS ALLIANCE

SNIA NVMP TWG

OpenFabrics Alliance

Develop RPM use cases

Create user-driven API Reqmts

Open Source Frameworks & APIs

Create and Document Programming models

Vendors develop n/w solutions

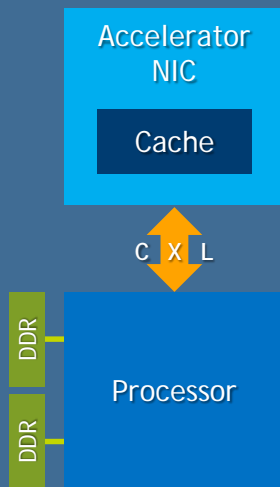27

OpenFabrics Alliance Workshop 2018

CXL & Gen-Z

Kurtis Bowman – Dell Server Office of the CTO

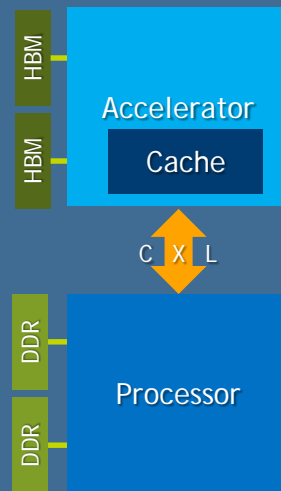# CXL – The New Kid On The Block

Caching Devices / Accelerators
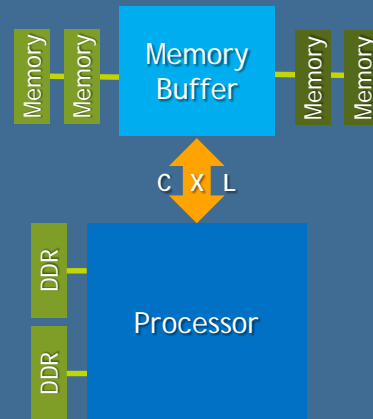
Protocols:
- CXL.io
- CXL.cache

Accelerator NIC

Cache

C X L

DDR

DDR

Processor

Type 1 Device

Accelerators with Memory

Protocols:
- CXL.io
- CXL.cache
- CXL.memory

HBM

HBM

Accelerator

Cache

C X L

DDR

DDR

Processor

Type 2 Device

Memory Buffers

Protocols:
- CXL.io
- CXL.mem

Memory

Memory

Memory Buffer

Memory

Memory

C X L

DDR

DDR

Processor

Type 3 Device

Gen-Z & CXL: In The Data Center & At The Edge

Thank You