

Introducing CXL™ 2.0 Specification

Industry Landscape



Proliferation of
Cloud Computing



Growth of
AI & Analytics



Cloudification of
the Network & Edge



CXL Board of Directors

CXL Compute Express Link™

Industry Open Standard for High Speed Communications

150+ Member Companies

CXL Delivers the Right Features & Architecture

Challenges

Industry trends driving demand for faster data processing and next-gen data center performance

Increasing demand for heterogeneous computing and server disaggregation

Need for increased memory capacity and bandwidth

Lack of open industry standard to address next-gen interconnect challenges

CXL

An open industry-supported cache-coherent interconnect for processors, memory expansion and accelerators

Coherent Interface

Leverages PCIe with 3 mix-and-match protocols

Low Latency

.Cache and .Memory targeted at near CPU cache coherent latency

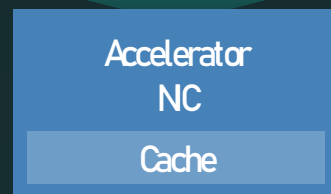
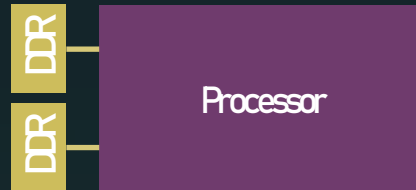
Asymmetric Complexity

Eases burdens of cache coherent interface designs

Representative CXL Usages

Caching Devices / Accelerators

TYPE 1

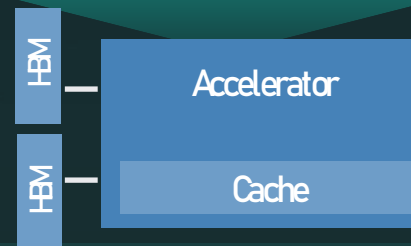
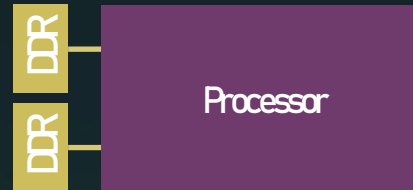


USAGES

- PGAS NIC
- NIC atomics

Accelerators with Memory

TYPE 2

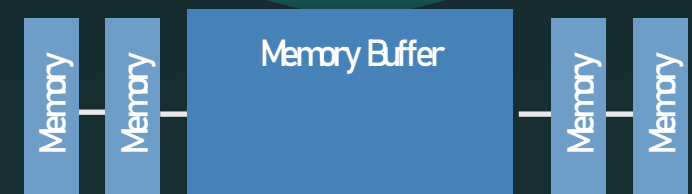
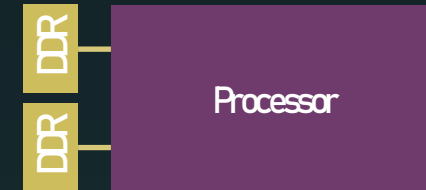


USAGES

- GP GPU
- Dense computation

Memory

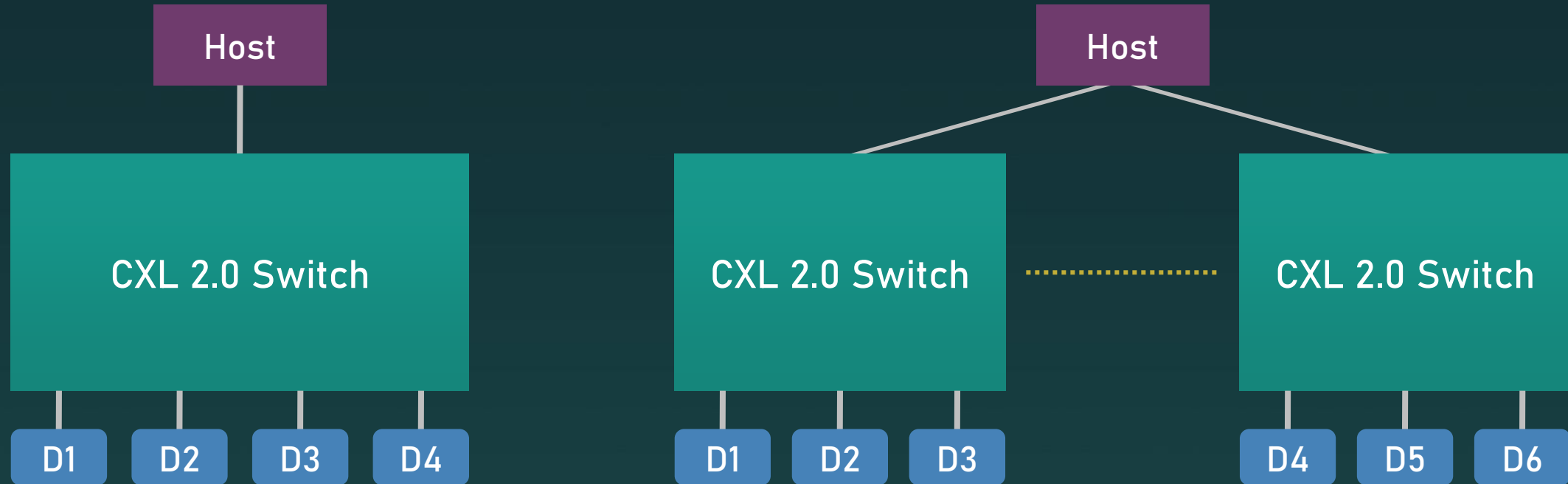
TYPE 3



USAGES

- Memory BW expansion
- Memory capacity expansion
- Storage class memory

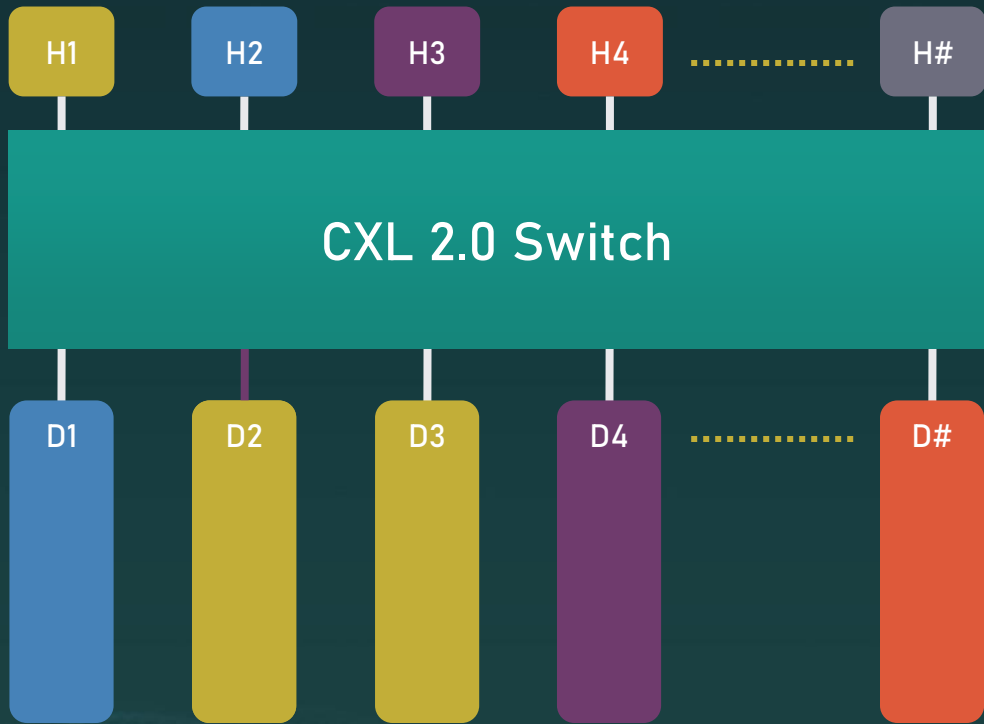
Benefit of CXL 2.0 Switching Expansion



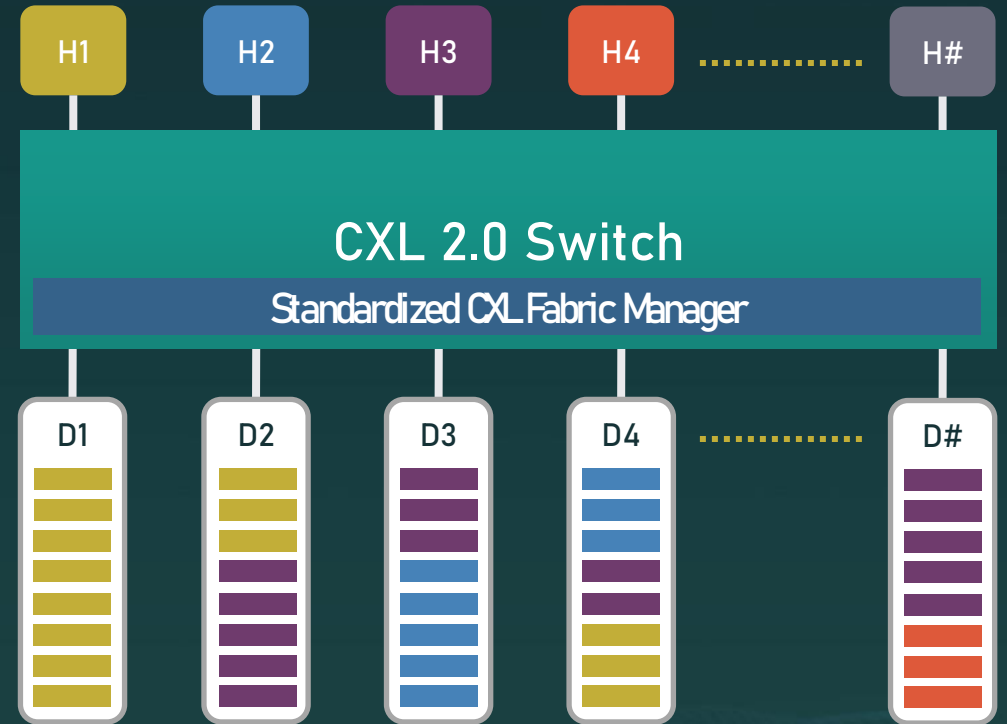
Benefit of CXL 2.0 Switching

Pooling

Memory/Accelerator Pooling with Single Logical Devices



Memory Pooling with Multiple Logical Devices

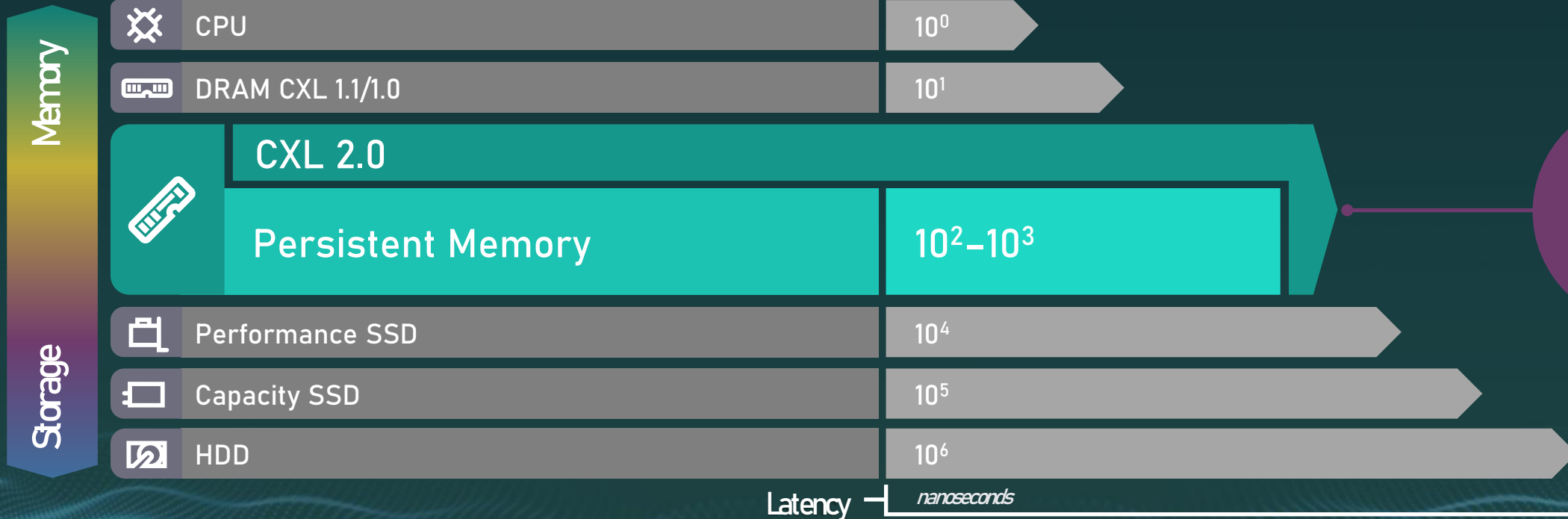


Benefits of CXL 2.0 and Persistent Memory

Moves Persistent Memory
from Controller to CXL

Enables Standardized Management
of the Memory and Interface

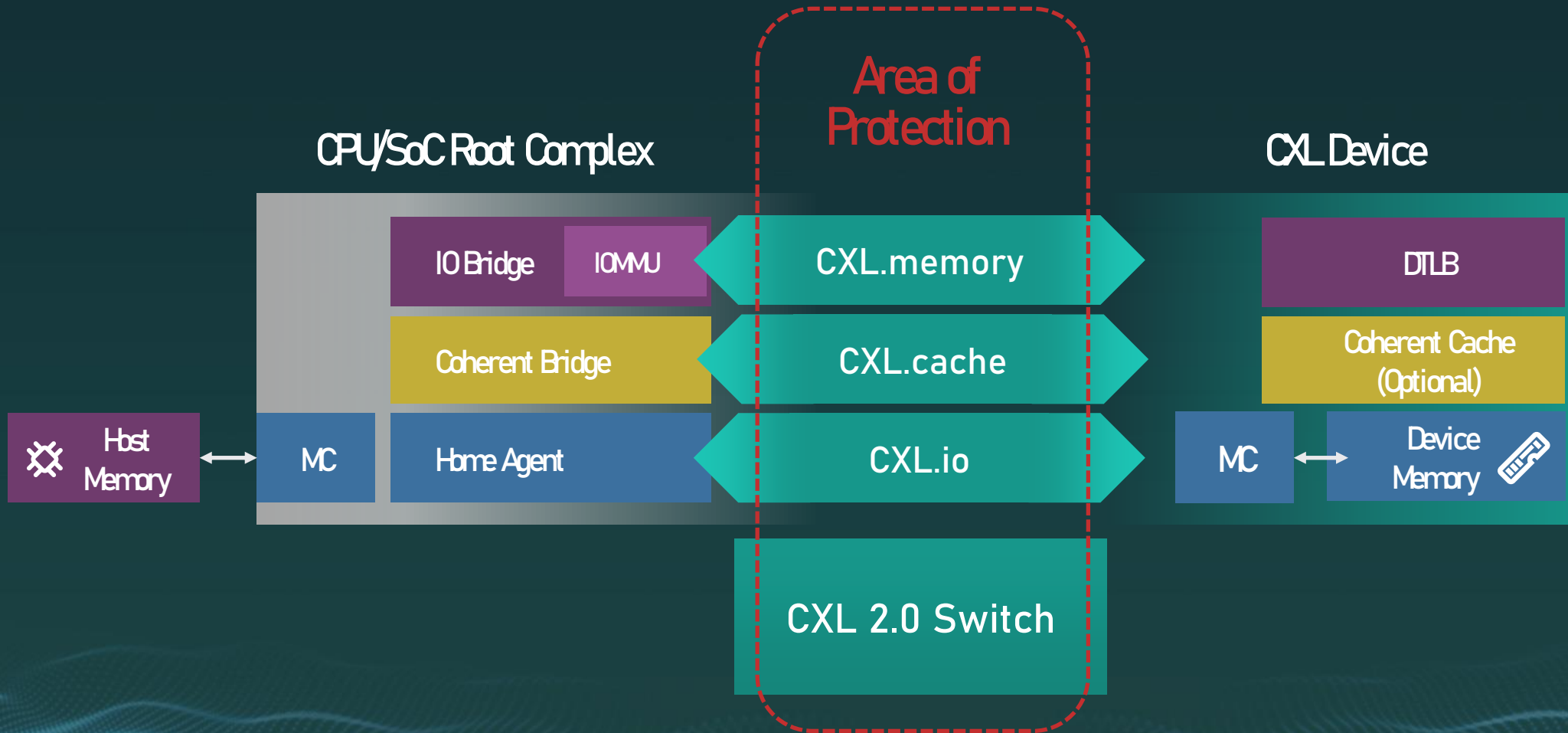
Supports a Wide Variety
of Industry Form Factors



CXL+PM
Fills
the Gap!

CXL 2.0 Security Benefits

CXL 2.0 provides Integrity and Data Encryption of traffic across all entities (Root Complex, Switch, Device)



In Summary

CXL Consortium momentum continues to grow

- 150+ members and growing
- Celebrating first anniversary of incorporation – second generation specification
- Responding to industry needs and challenges

CXL 2.0 introduces new features & usage models

- Switching, pooling, persistent memory support, security
- Fully backward compatible with CXL 1.1 and 1.0
- Built in Compliance & Interop program

Call to action

- Join CXL Consortium
- Follow us on [Twitter](#) and [LinkedIn](#) for more updates!





Thank You