

# OIF

CMIS – The Interface that ties everything together for AI

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# Abstract

The continued growth of AI has created a demand for faster interconnect solutions within the data center and between data centers. The complexity of these solutions is ever increasing and requires a management solution that is constantly evolving with the latest technology.

CMIS is the management interface of choice because it is ubiquitous and already widely deployed in the industry, allowing hosts and modules to leverage the existing industry investment.

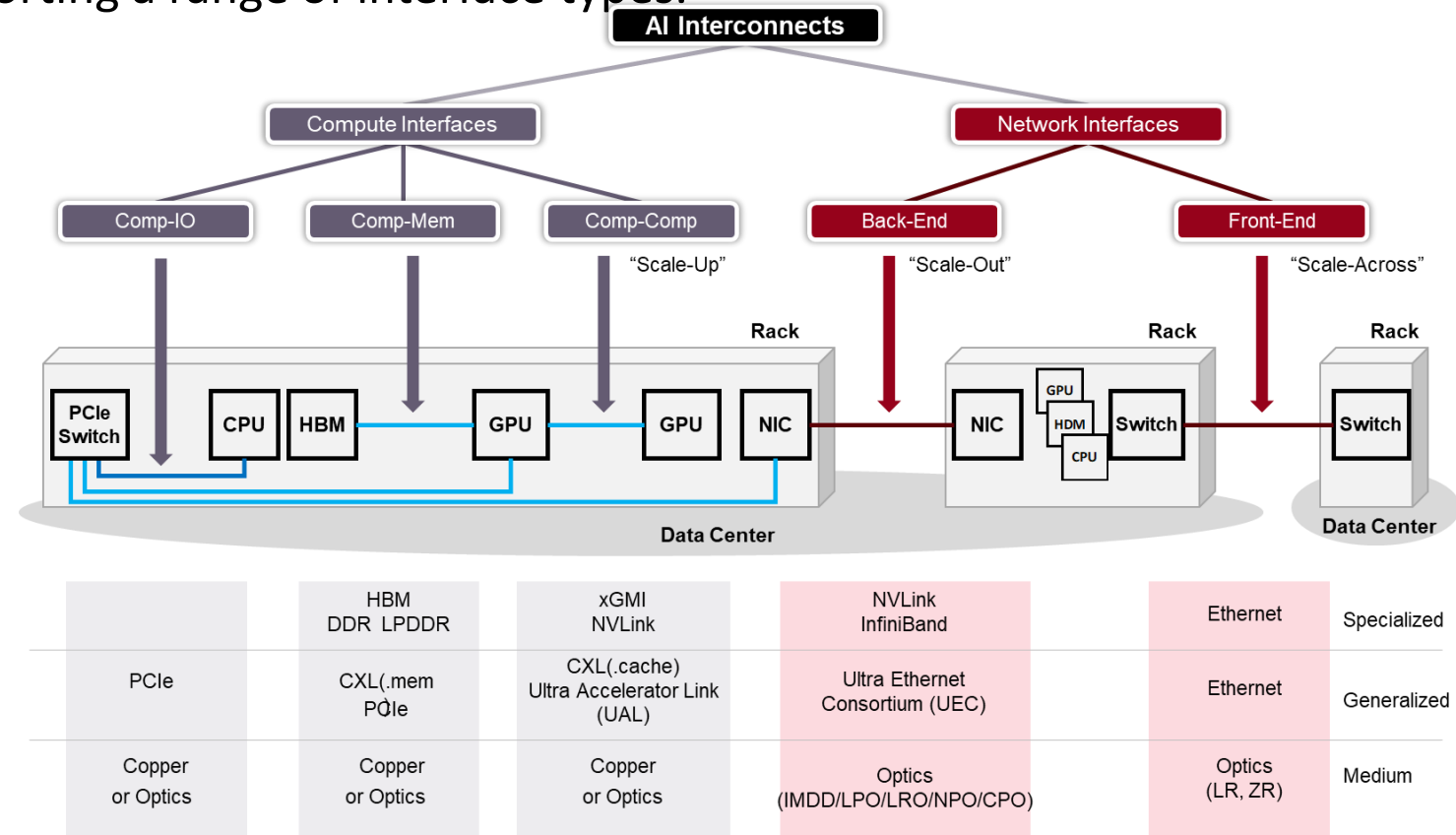
This talk will provide an overview of some of the ways CMIS addresses the unique challenges of AI including building out at scale, lower power, lower latency and extensive monitoring to ensure highly reliable optical links.

# Data center connections

Building out AI at scale is driving the need for higher capacity interconnects in and around the data center.

As the speeds increase, the types of interconnects are also evolving. Pluggable modules are being deployed in all parts of an AI network supporting a range of interface types.

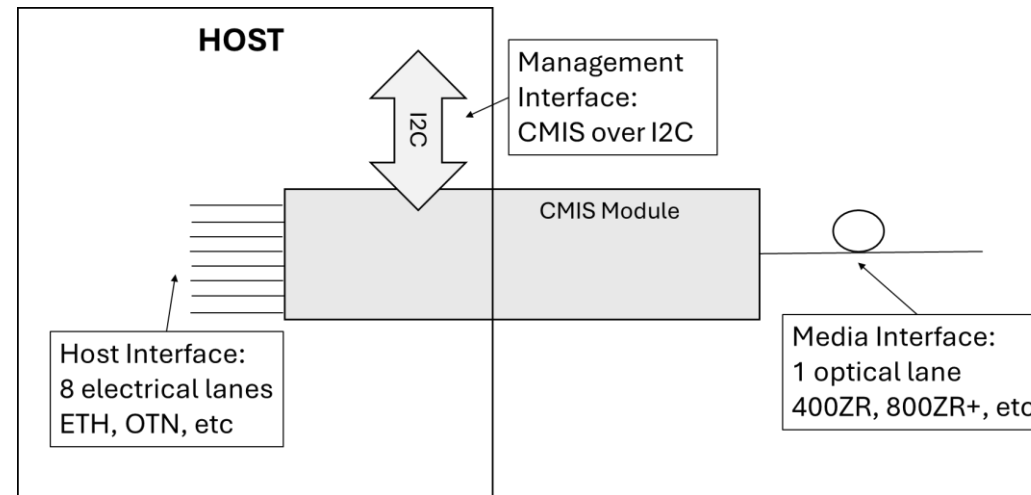
- Within a rack scaled GPU cluster – scale up
  - Then - PCIe bus
  - Now – pluggable copper cables
- Between racks/within a data center – scale out
  - Then – IMDD/ client optical modules
  - Now – Mix of IMDD/ client optical modules and coherent-lite modules
- Between data centers – scale across
  - Then – Mix of IMDD and Coherent modules
  - Now – Coherent modules



# What is CMIS?

## Common Management Interface Specification

- CMIS is a management interface for pluggable modules, defined in a family of documents.
- CMIS is implemented (through SW code) on the host and on the module.
- CMIS defines host to module interactions for management of the module
  - ie provisioning, monitoring, upgrades, inventory, etc
- CMIS provides register definitions, state machines, advertising and messages that are used to manage the module.
- CMIS is used by many pluggable module types including copper cables, client modules and coherent modules.



# Why CMIS is important for AI build outs

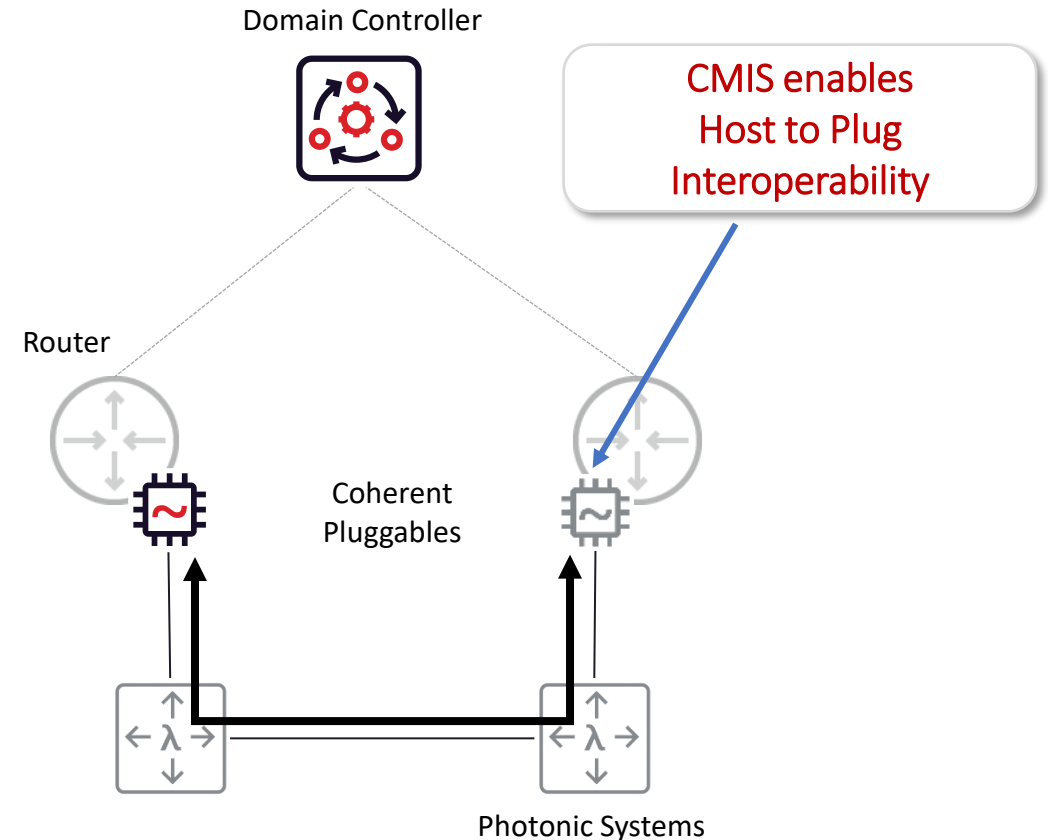
AI is driving increased bandwidth and reach requirements increase for interconnects.

When a pluggable module is required for an Interconnect, CMIS is the management interface.

The building blocks of CMIS are the same for all technologies of pluggable modules.

CMIS allows hosts and module to re-use software as technology evolves.

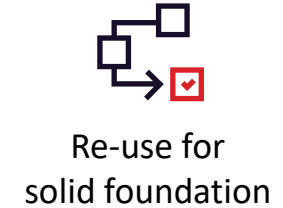
Multi vendor environment requires common management to reduce development and integration time.





## How does CMIS address the needs of AI?

- Predictive monitoring of high-speed links
- Common provisioning model
- Management features that enable new low power/low latency technologies
- In service firmware upgrades
- Allows host and module vendors to reuse software and add features faster.
  - Re-use provides a solid foundation to build on for new technologies
  - Reduced integration time from common features
- The OIF Management team is responsive to new features and technologies, updating CMIS regularly to meet industry needs.



# Summary

- 1 AI is driving the need for increased speed, lower power and lower latency in interconnects.
- 2 CMIS is enabling new interconnect solutions by providing a ubiquitous management interface that is evolving to support the latest technologies.
- 3 OIF is uniquely positioned to drive CMIS enhancements through its diverse membership and strong technical leadership in the interconnect space.