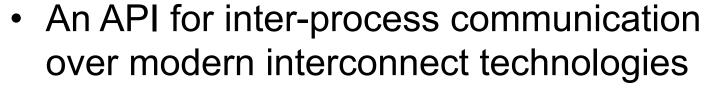
CCI – A Data Center Perspective



What is CCI?





- Designed to provide a common API for application and system software developers for data movement
- A balance between simplicity of semantic and support for modern interconnect capabilities
- Designed from the ground-up for scalability, robustness, and performance
- Community developed and vendor neutral

Current State of the Art

North/South traffic

- Remote side is Internet: IP on the wire
- Applications use Sockets
 - Little incentive to transition from this API

East/West traffic

- Application controls both sides of the network
- Performance and scalability are critical
- Applications can choose between:
 - Sockets API (for portability)
 - Custom vendor/interconnect APIs (for improved performance)

The Sockets API was not designed for modern networks

- Design limitations: assumes buffering, no zero-copy, per-peer resources/completion
- Cannot properly leverage high-speed interconnects



Rationale for a New Approach

- Network-specific communication APIs
 - Design driven by hardware capabilities
 - Benefits: high performance, native hardware capabilities
 - Drawbacks: vendor lock-in, single-source risk, and limited portability
- Unattractive alternatives
 - RDMA over Converged Ethernet is driven by the InfiniBand community
 - Semantics suited for InfiniBand hardware, not Ethernet
 - Highly complex API
 - Sockets is ubiquitous, but provides low performance
- Need a common, high performance communication API
 - Targeted to provide portability, scalability, and performance
 - Design driven by the needs of the data center while exposing common capabilities of modern interconnects

The CCI Approach

- Common Communication Interface
 - Best practices from 15 years of R&D
 - Community-driven, vendor-neutral ecosystem



- Designed for performance, scalability, resilience, and portability
- Leverage the capabilities of modern Ethernet (and "Ethernot") networks
- A network neutral API: performance without vendor lock-in

Benefits for vendors

- Leverage technological innovations
- Increases total addressable market
- Levels the playing field



Partners













http://www.cci-forum.com