

Editorial

March 11, 2019

[Contact Intel PR](#)



By Navin Shenoy

As part of my job leading the data-centric groups at Intel, I regularly meet with customers from across many different industries. They all face unique business challenges, but they have one thing in common: the need to get more value out of enormous amounts of data.

To address this, Intel together with Alibaba*, Cisco*, Dell EMC*, Facebook*, Google*, Hewlett Packard Enterprise*, Huawei* and Microsoft* today announced the founding of a consortium to develop [Compute Express Link \(CXL\)](#), an open interconnect technology that improves performance and removes the bottlenecks in computation-intensive workloads for CPUs and purpose-built accelerators.

Intel developed the technology behind CXL and donated it to the consortium to become the initial release of the new specification. I am proud of the work Intel has done in developing this interconnect technology and the milestone it represents to the technology industry – much like our roles with Universal Serial Bus (USB) and PCI Express – and we look forward to working with the CXL consortium on future versions of the specification.

Why CXL is Important

The explosion of data and rapid innovation in specialized workloads – like compression, encryption and artificial intelligence (AI) – have given rise to heterogeneous computing, where purpose-built accelerators work side-by-side with general-purpose CPUs. These accelerators need a high-performance connection to the processor, and, ideally, they share a common memory space to reduce overhead and latency. CXL is a key technology that enables memory coherence between the accelerator and CPU, with very high bandwidth, and does so using well-understood infrastructure based on PCI Express Gen 5.

More specifically, CXL creates a high-speed, low latency interconnect between the CPU and workload accelerators, such as GPUs, FPGAs and networking. CXL maintains memory coherency between the devices, allowing resource sharing for higher performance, reduced software stack complexity and lower overall system cost.

While there exist other interconnect protocols, CXL is unique in delivering CPU/device memory coherence, reduced complexity on the device, and an industry-standard physical and electrical interface together in a single technology for the best plug-and-play experience.

How Interconnect Fits with Our Technology Strategy

At Intel's Architecture Day in December, we [articulated our approach](#) to drive an accelerated pace of innovation and technology leadership that is anchored across six strategic pillars: process, architecture, memory, software, security and interconnect.



Our approach is increasingly important as processing data in emerging

applications requires a diverse mix of scalar, vector, matrix and spatial architectures deployed in CPU, GPU, FPGA, networking and other accelerators. CXL is a great example of an interconnect technology designed to address growing high-performance computational workloads for CPUs and purpose-built accelerators.

Emerging data-processing applications in AI, media, image and language processing, encryption and others will benefit significantly from CXL.

Developing Standards to Advance the Ecosystem

We're no strangers to working with standards that trigger massive innovation. We believe this will be one of those moments. In fact, Intel has helped pioneer other successful standards, such as USB and PCI Express, both interconnect technologies that are critical to moving and storing data. This month, we [contributed the Thunderbolt protocol to the USB Promoter Group](#), enabling and encouraging other chipmakers to build Thunderbolt-compatible silicon under the new USB4 specification.

As pioneers to some of the most successful protocols in computing, Intel constantly evaluates how new advancements such as CXL can benefit the entire tech ecosystem. Our experience in driving robust open ecosystems has proved to create unprecedented industry-wide innovation, resulting in broad commercial success and end-customer benefits.

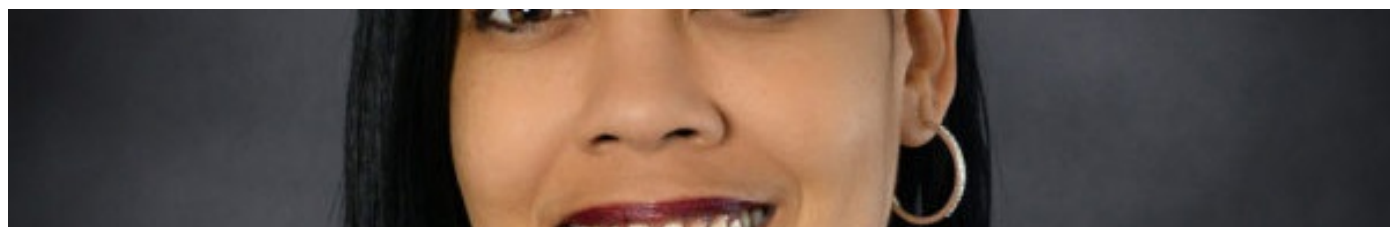
It's incredible to see the caliber of companies that came together to form the consortium for CXL. They represent the leaders in data center, communications infrastructure, and cloud computing and services – and we expect more companies to join in the coming future to contribute to the next iteration of this spec.

The first-generation specification will be available to consortium members in the first half of this year. Expect to see products that incorporate CXL technology starting in Intel's 2021 data center platforms, including Intel® Xeon® processors, FPGAs, GPUs and SmartNICs.

Navin Shenoy is executive vice president and general manager of the Data Center Group at Intel Corporation.

Tags: [Navin Shenoy](#)

Other News



April 14, 2021

[Intel Names Dawn Jones CDIO and VP of Social Impact](#)

April 7, 2021

[Media Alert: April Intel Partner Connect 2021 \(Virtual\)](#)

March 30, 2021

[Intel 2020 Supplier Continuous Quality Improvement Awards](#)

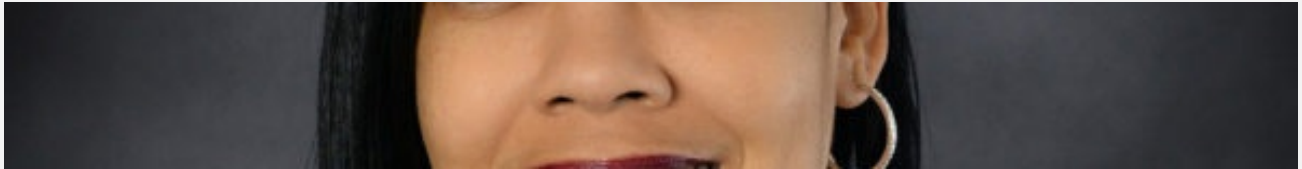
About Intel

Intel (Nasdaq: INTC) is an industry leader, creating world-changing technology that enables global progress and enriches lives. Inspired by Moore's Law, we continuously work to advance the design and manufacturing of semiconductors to help address our customers' greatest

challenges. By embedding intelligence in the cloud, network, edge and every kind of computing device, we unleash the potential of data to transform business and society for the better. To learn more about Intel's innovations, go to newsroom.intel.com and intel.com.

© Intel Corporation. Intel, the Intel logo and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

Latest News: Corporate



April 14, 2021

[Intel Names Dawn Jones CDIO and VP of Social Impact](#)



April 7, 2021

[Media Alert: April Intel Partner Connect 2021 \(Virtual\)](#)



April 7, 2021

[Leveraging Technology to Provide Global Pandemic Relief](#)

[Read More](#)