

## Vendor Spotlight

# Cisco Explains Why Infrastructure Matters in the Cloud

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Two experts from Cisco explain why infrastructure matters in today's dynamic, complex IT environments and describe the company's platform for cloud and server products powered by the Intel® Xeon® processor E5 family.

When it comes to cloud computing, most IT organizations find that their legacy data center environments are ill suited to managing dynamic, agile, and on-demand infrastructure services. The infrastructure is complex, it's messy, and it has trouble keeping up with the demands and pace of today's business. To get the full benefit of cloud computing and other innovative IT services, we recommend that you think differently about how you manage your infrastructure and take a new approach to how your data centers are designed and operated.

We've designed the Cisco\* Unified Data Center platform from the ground up to support a cost-effective, evolutionary transition of your data center from legacy systems and enable you to deliver your IT services faster and in a more agile way to your business users.

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*Infrastructure really does matter when it comes to solutions like cloud, where the complexity is very high, and gets higher with the scale.*

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## Cisco's Platform for Cloud

With the Cisco Unified Data Center, we've created an ideal platform for virtualized and cloud environments. Our platform provides agile, elastic infrastructure to scale with business demand and lowers costs through on-demand provisioning.

The platform is based on unified infrastructure with highly scalable and secure networking fabric, modular and stateless computing elements, and self-service automation for both physical and virtual resources. In other words, our Unified Data Center approach delivers unified fabric, unified computing, and unified management.

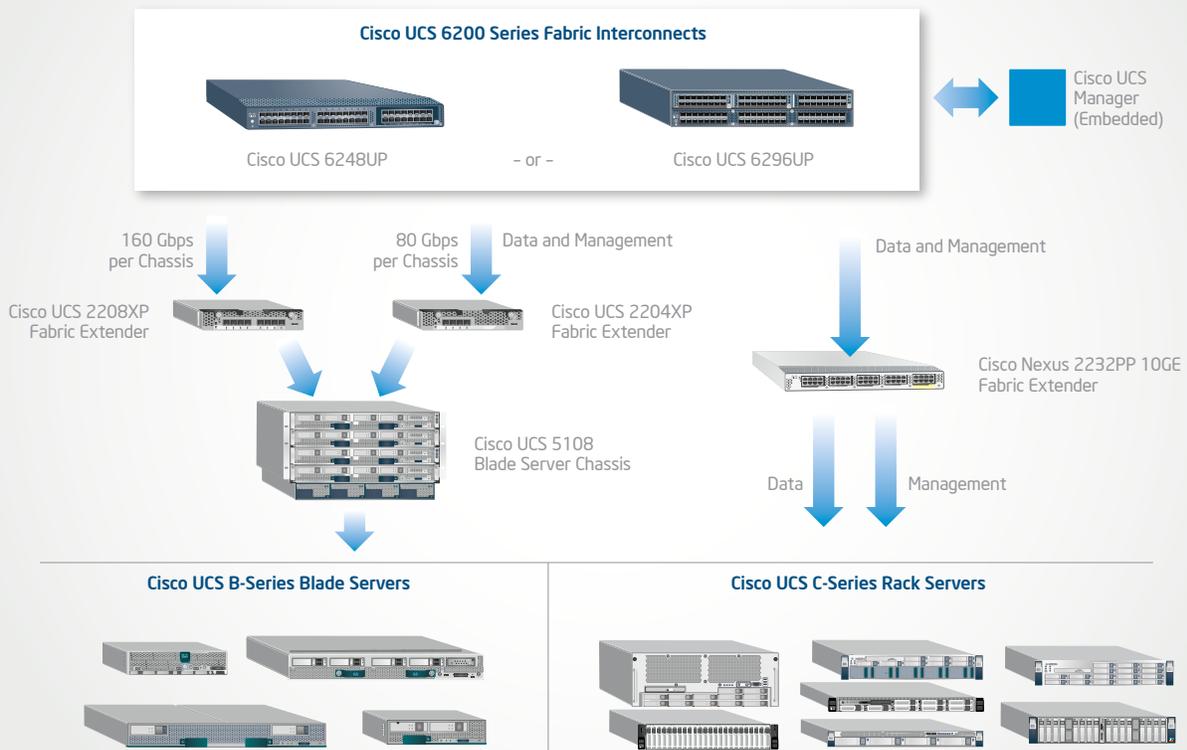
The core of the Unified Data Center is Cisco Unified Computing System (UCS). UCS goes beyond convergence to a truly unified solution. It is a holistic approach to managing, to deploying, and to utilizing infrastructure systems as a single system rather than a conglomeration of many capabilities. As such, UCS provides a very scalable and flexible infrastructure that makes it possible to more easily provision services on demand from a shared pool of resources in a multitenant environment—one of the cornerstones of cloud computing.

## Flexible Solution Components

UCS is designed to be flexible, with basic components that serve as the building blocks for the architecture. At the base level is the compute platform—a highly differentiated server platform built on industry-standard x86 architecture. Other pieces that make up the unique UCS architecture include:

- *Cisco Virtual Interface Card*, a high-performance, flexible adapter card that allows us to virtualize all of our connections to the network. We can provide any type of connectivity from this virtual interface card, including storage connectivity, network data traffic, or a combination of the two.
- *FEX-link architecture* that allows us to aggregate our connectivity at the chassis level without having to encumber the entire solution with extra switches and managed devices.
- *Fabric interconnects*, at the next level up, which house both main connectivity to data and storage networks as well as our management controller.
- *Cisco UCS Manager*, an embedded controller that provides a single management touch point for the entire system to enable scaling.

## Cisco Unified Computing System



*The Cisco UCS infrastructure works together as a single, flexible solution.*

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## The Intel Xeon Processor E5 Family—Powering Cisco Next-Generation Products

We worked closely with Intel throughout the entire development process for the Intel® Xeon® processor E5 family, so that we could architect our solution to take full advantage of the capabilities. For example, we've leveraged increased capabilities around the additional memory channels and increased speed on those channels.

The Intel Xeon processor E5 family enables us to create a truly balanced infrastructure that offers scalability and flexibility without compromise. UCS brings to bear a lot of advantages around fabric, stateless computing and management and takes advantage of the power and scalability in the Intel Xeon processor E5 family for all these areas.

Because of our close working relationship, we were able to launch our third generation of fabric computing innovations, including our M3 server products at the same time as the Intel Xeon processor E5 family. Our M3 server product line delivers a very large increase in performance and scalability. On the CPU side, customers see

tremendous increases in performance, and core count has gone up significantly.

Plus, with the Intel Xeon processor E5 family, we now can deliver increased performance that corresponds to the I/O and the storage capabilities of the server, as well as some of our internal features, such as Cisco Flexible Flash and storage options that we provide on rack and blade products. The M3 servers also offer enhanced security with optional trusted platform module (TPM) support, enabling us to fully support Intel Trusted Execution Technology (Intel TXT) capabilities.

Cisco has a long and successful relationship with Intel, and we're really excited about the release of the Intel Xeon processor E5 family. Intel is our only CPU vendor, and we also use Intel products in other parts of the platform, such as network cards and storage solutions around solid state disk.

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## Flexible, Cost-Effective Cloud

With Cisco Unified Computing and our Unified Data Center approach, we're enabling faster, simpler, more flexible, and more cost-effective IT. What we've found is that IT organizations can deploy our solutions in their private cloud, and ultimately, pave the way for a hybrid cloud where they're using external cloud services. But it requires a new approach to management, a new approach

to infrastructure, and that's what we're delivering with our Unified Data Center platform.

To learn more about the Cisco Unified Data Center and Unified Computing System, visit our web site at [www.cisco.com/go/UCS](http://www.cisco.com/go/UCS).

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## Share with Colleagues



No computer system can provide absolute security under all conditions. Intel TXT requires a computer system with Intel Virtualization Technology, an Intel TXT-enabled processor, a chipset, a BIOS, Authenticated Code Modules, and an Intel TXT-compatible measured launched environment (MLE). Intel TXT also requires the system to contain a TPM v1.s. For more information, visit [intel.com/technology/security](http://intel.com/technology/security).

The original equipment manufacturer must provide TPM functionality, which requires a TPM-supported BIOS. TPM functionality must be initialized and may not be available in all countries.

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