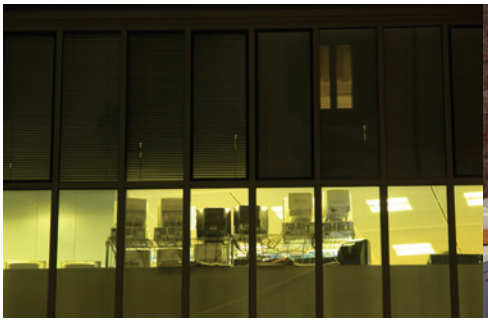
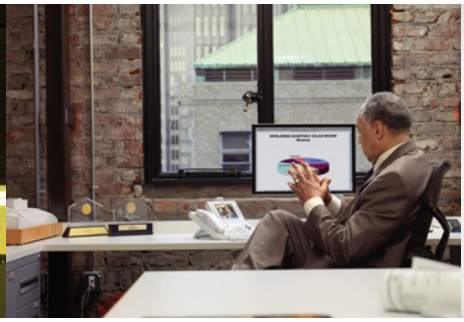
Cisco: Your Trusted Partner for Migrating Intel Itanium Workloads

Solution Brief
September 2011


Highlights

Intel Itanium Data Centers Facing Change

- With Oracle, Red Hat, and Microsoft ending development for Intel® Itanium® platforms, IT departments must consider their options.

Migration Is the Answer for Intel Itanium Data Centers

- Migration is an important decision. Which platforms provide the best option for the future support of mission-critical applications?

Move to Intel Xeon Processor-Powered Systems

- The Intel® Xeon® processor family is the market leader, with performance and availability characteristics to power business- and mission-critical applications.

Greater Value with Cisco Services

- Cisco RISC/UNIX Migration Services work with enterprises using best-in-class migration methodologies to deliver a comprehensive and cost-effective approach to migration initiatives.

The Ideal Destination Platform: Cisco Unified Computing System

- Cisco UCS delivers a world-class, mission-critical computing platform with greater flexibility and security at lower capital and operating costs than proprietary Intel Itanium or RISC and UNIX solutions.

Faced with the termination of platform support from Microsoft, Red Hat, and Oracle for the Intel Itanium processor technology, enterprises are looking for ways to move forward.

IT managers know that losing a valued platform complicates data center optimization and places strain on efforts to introduce new services. The choice of IT infrastructure is crucial, and choosing a new one for mission-critical applications is of paramount importance. Fortunately options exist—but choosing the right one is crucial to business success.

Migration Is the Answer—But to Which Platform?

Today, the future of Intel® Itanium® as an enterprise platform is clear. Without support from operating system and enterprise application vendors, migration from Intel Itanium is unavoidable. One option is for organizations to migrate business- and mission-critical applications and services from Intel Itanium to alternative RISC-based servers. With high acquisition, software licensing, and maintenance costs, moving to another proprietary RISC or UNIX infrastructure can put pressure on already strained IT budgets. The problems with RISC and UNIX platforms are reflected in its declining market share, which is being replaced by growth in the x86 architecture market. The x86 architecture delivers performance leadership and mission-critical reliability, availability, and serviceability (RAS), creating widespread adoption. The long-term viability of proprietary RISC and UNIX architectures is in question, with industry-wide missed deadlines, changes in planned roadmaps, and termination of hardware and software support by multiple vendors. Migration to industry-standard Intel® Xeon® processor-based systems is the clear alternative to help ensure business agility for the future.

Move to Intel Xeon Processor-Powered Systems

The strongest option available to enterprises is migration to industry-standard x86 technologies. The x86 architecture has become the platform of choice, with

> "Since we moved the Quote to Cash environment to the Cisco Unified Computing System, performance for all types of transactions improved by an average of 40 percent. Tax calculations that used to take around 7 hours now complete in 1 to 2 hours."
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> **Seshagirirao Surapaneni**
> IT service manager, Cisco

processor and memory technologies now delivering mission-critical RAS and consistently high performance. According to IDC's World Wide Server Tracker 2Q2011, over the past four quarters, x86-architecture server platforms made up 97 percent of all server sales, with RISC sales falling to just 2 percent. The overwhelming market share claimed by x86 systems is causing developers and technology innovators to focus on this technology. Many commercial applications have been restructured to take advantage of the improved economics of industry-standard hardware that delivers the reliability and availability characteristics of Intel Itanium and RISC implementations.

Although RISC and UNIX are still responsible for many mission-critical customer environments, rising costs and lack of choice are forcing IT departments around the world to look closely at migration to x86-based architectures. When organizations choose an x86 system, 89 percent of the time they select one based on Intel Xeon processors—and for good reason.

The Intel Ecosystem

The ubiquity of the x86 architecture, combined with the processing power and reliability advancements in Intel Xeon processors, continues to foster a rich ecosystem of innovation. Today, IT departments can select from a wide range of servers, operating systems, and applications to support business priorities for private and public cloud initiatives. Leading business applications, such as enterprise resource planning (ERP), customer relationship management (CRM), business intelligence, and online-transaction processing (OLTP) databases such as Oracle and SAP, are optimized for Intel Xeon processor-based servers. With so much choice and flexibility, global enterprises in nearly every industry turn to Intel Xeon processor-powered servers for their most critical business productivity applications and database deployments.

Migration Is an Important Decision

Migration is a decision that most organizations consider carefully. Although transitioning to servers with Intel Xeon processors is a straightforward choice, not all systems are equal. There is a significant difference between off-the-shelf x86-architecture servers and complete systems that give organizations a competitive edge. The Cisco Unified Computing System™ (Cisco UCS™) is designed to meet the challenges of mission-critical business computing now and into the future. Delivering the first converged system available anywhere, Cisco UCS supports rapid and accurate deployment of bare-metal, virtualized, and cloud-computing services and applications, giving organizations greater flexibility and performance at less cost than traditional systems.

Greater Value with Cisco Services

Understanding the process and its affect on day-to-day operations is critical to successful migration. Cisco® RISC/UNIX Migration Services provides a proven migration process to help IT departments move from Intel Itanium processor-based environments to Cisco UCS. Using best-in-class migration methodologies, in-depth analysis tools, a robust planning process, and design and implementation services, Cisco delivers a comprehensive, cost-effective approach to migration initiatives.

A Flexible Approach to Migration

Not all application migrations take the same path. Proper planning and a sound migration methodology are needed to help ensure a successful

> "We moved our Oracle environment to the Cisco UCS with no interruption to the business and no critical issues. That's a testament to the platform as well as the Cisco Services team's expertise and meticulous cutover plans."
>
> **Shrevas Shah**
> Senior director of global IT,
> Avago Technologies

migration. Cisco Migration Services provides a flexible, collaborative approach that adapts to the complexity and importance of the applications to be migrated. Extensive experience migrating commercial off-the-shelf and custom applications together with strong relationships with software vendors, including Oracle and SAP, enables Cisco Migration Services to deliver mission-critical migration without application downtime.

An Extensive Services Portfolio

The Cisco Services portfolio offers end-to-end migration services, from initial assessment to application migration and training. During the introductory Workshop and Proof of Concept Service, Cisco works with critical stakeholders to explore off-the-shelf and custom applications and identify migration candidates, resulting in a site-specific migration strategy blueprint and high-level migration roadmap. Additional tasks include migration planning and application service-level requirement evaluation. A map of the transfer of workloads from Intel Itanium to Cisco UCS is prepared along with a risk analysis of the effort.

After a detailed migration plan is created, including low-level design and functional and nonfunctional test plans, migration takes place. The process of migrating applications to Cisco UCS includes creation of a golden image, migration of the physical system, and integration into the company's system management framework. After the migration is complete, Cisco provides operational support, including mentoring and knowledge transfer.

The Ideal Destination Platform: Cisco Unified Computing System

Cisco UCS is an ideal destination for Intel Itanium migrations. Cisco UCS delivers a world-class, mission-critical computing platform with greater flexibility and security at lower capital and operating costs than proprietary Intel Itanium or RISC and UNIX solutions. These benefits are achieved through the architectural advantages of a simplified, programmable infrastructure, unified model-based management, unified fabric, and the Cisco Fabric Extender Architecture (FEX Architecture). The result is a high-performance, innovative architecture that simplifies the migration of enterprise-class applications running in bare-metal, virtualized, and cloud-computing environments. With Cisco UCS, IT departments can deliver performance, reliability, and security to demanding enterprise application workloads.

Single Converged System

Cisco UCS is the first converged system that integrates computing, networking, and storage access resources (Figure 1). Transcending the boundaries of traditional blade chassis and racks, Cisco UCS creates a physically distributed yet centrally managed system. Each system supports up to 320 blade servers and allows customers to choose from a broad portfolio of Intel Xeon processor-powered servers to deliver massive scalability. Because the system is self-aware, self-integrating, and self-documenting, it provides complete visibility into the results of a migration. System configuration can be programmed through software, helping make migration and future server deployment fast and accurate.

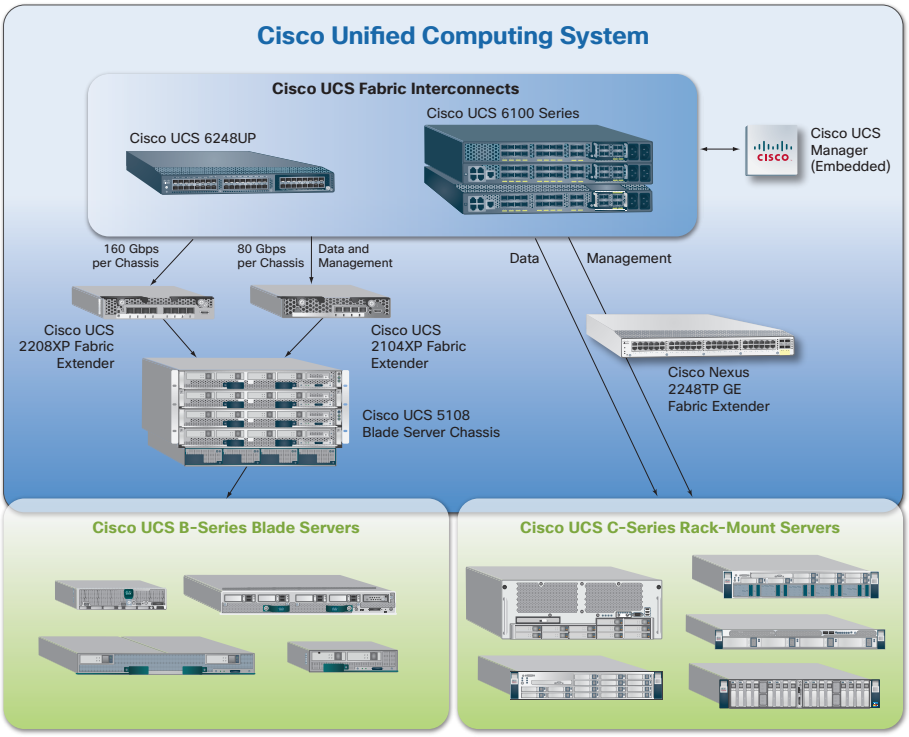

Figure 1. Cisco UCS Is the First Converged System That Integrates Computing, Networking, and Storage Access Resources

Smart Infrastructure

Cisco UCS is smart infrastructure. Every aspect of server personality is abstracted. Just as hypervisors abstract resources for virtual machines, Cisco UCS provides a pool of resources that can be quickly and easily configured to provide whatever identity, personality, and I/O settings the application requires. Servers and their I/O connectivity can be deployed on demand rather than through a time-consuming, error-prone manual process using individual element managers. This self-aware, self-integrating system automatically discovers and maintains an inventory of its components, without human intervention, for easy access. Reproducible and easy server deployment makes the migration process efficient, smooth, and error-free. Applications gain flexibility and scalability, improving business agility while reducing the likelihood of configuration errors that can cause downtime.

Unified Model-Based Management

Unified model-based management was designed into the Cisco UCS platform. Embedded management allows administrators to create a model of the desired server configuration that is instantiated on a Cisco UCS server and its associated I/O connectivity with point-and-click ease. After it is configured, the system is monitored efficiently through a single interface. In addition, the model is accessible and programmable through an intuitive GUI or open standards-based XML API, enabling the system to be integrated easily into ITIL® processes and higher-level management tools. Today, many higher-level management tools integrate with Cisco UCS, facilitating compliance with existing data center best practices.

Unified Fabric

A unified fabric integrates Cisco UCS servers with a single high-bandwidth, low-latency network that supports all system I/O. The fabric carries IP, storage, and interprocess communication on two 10 Gigabit

> "Since moving the SAS Profitability Management to the Cisco Unified Computing System, not only can we meet our SLA to publish allocated data to the reporting system by 9:00 a.m., we're actually beating the SLA time by up to two hours."
>
> **Deepak Maganti,**
> IT project manager, Cisco

Ethernet and Fibre Channel over Ethernet (FCoE) networks. Simplifying the architecture and eliminating up to two-thirds of the rack-level network infrastructure that is required for traditional platforms, the system's wire-once network infrastructure increases agility and accelerates deployment with zero-touch network configuration.

Cisco Fabric Extender Architecture
The Cisco FEX Architecture integrates the blade and rack-mount servers into a single, distributed virtual system, providing scalability without complexity. All I/O traffic meets at a single point, where it is efficiently and consistently managed, increasing network security, simplifying management, and reducing errors. This approach eliminates blade-server and hypervisor-resident switching and condenses three network layers into one to reduce capital expenditures and operating costs. With the capability to interconnect physical servers and virtual machines equivalently, the architecture delivers outstanding visibility and control that enables virtual networks to be managed in the same way as physical networks.

Architectural Advantages Enable Efficient Migration
The architectural advantages of Cisco UCS enable efficient delivery of migration services and offer greater scalability than traditional RISC and UNIX or x86 blade servers. With vast resource flexibility managed through a single interface, Cisco UCS can help enterprises improve business agility at significantly lower total cost of ownership (TCO).

Let Cisco Help You Migrate with Confidence

Cisco takes the worry out of planning for an environment without Intel Itanium-based solutions. With Cisco UCS and Cisco Migration Services, you can transform your IT infrastructure into a flexible, agile, cost-effective data center that is a strategic asset to the business. Imagine the possibilities: an environment in which computing, networking, and storage access resources are part of an elastic, scalable, flexible infrastructure that can be put into action at any moment. The process does not have to be daunting. Using a proven, phased approach that builds on system and service innovation, Cisco can help you accelerate the move to a data center of the future at less cost and with less risk.

For More Information

For more information about Intel Itanium migration, go to http://www.cisco.com/go/migratetoucs, or contact your local account representative.

For more information about the the Cisco Unified Computing System, go to http://www.cisco.com/go/ucs.

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