

# Power All Oracle Environments with the Cisco Unified Computing System

Brochure  
March 2011



## Highlights

### Cisco: Accelerating Oracle Performance at Lower Cost

Cisco Unified Computing System is an innovative new architecture with record-breaking performance

### Ideal Platform for All Oracle Environments

Support for leading operating systems and virtualization platforms provides exceptional freedom for Oracle environments

### Information Is Money

Timely information leads to timely decisions.

### Scale to Meet Business Needs

Quickly, easily, and accurately scale to handle workload fluctuations using Cisco service profiles.

### Unified Fabric Reduces Cost

Use a single network, rather than two or more, to reduce the number of components and cabling, reducing both capital and operational costs.

### Business Continuance Is Simplified

Enable remote systems to be provisioned in minutes to mitigate risk in the event of a failure over a wide geographic area.

### Better Together

Cisco and Oracle enjoy a long relationship and continue to work together to co-develop solutions

Business leaders understand that today's problems cannot be solved with yesterday's solutions. Outdated infrastructure generates new challenges in the face of changing circumstances. Inflexible server technology limits the pace of business as it reduces options and increases costs. Overprovisioning for peak workloads is common with traditional infrastructure, resulting in low system utilization, high capital expenditures, and an exponential increase in management costs.

**ORACLE PARTNER** Cisco and Oracle have joined forces to dramatically increase IT infrastructure reliability and agility while drastically reducing complexity. The results of this unique approach are innovative, cost-effective, and flexible infrastructure solutions that meet dynamic and evolving challenges.

“The Cisco Unified Computing System distinguishes itself for hosting virtualized Oracle applications because of its high RAM capacity. Our experience is that performance issues in multicustomer environments result from memory constraints, not processor constraints... The cost of hosting an Oracle application instance on the Cisco UCS will decrease by 10 percent when we add a third server blade, by another 10 percent when we add a fourth blade, and by 30 percent when we add a fifth.”

**Brady Reiter**  
General Manager of Enterprise  
Architecture Application Strategy  
NaviSite, Inc.

### Cisco: Accelerating Oracle Performance at Lower Cost

You already know Cisco and Oracle. For decades, Cisco® networking technology has accelerated Oracle performance while securing its data. Today, the Cisco Unified Computing System™ extends this legacy with a single cohesive system that includes Cisco servers, increasing efficiency and business agility.

The Cisco Unified Computing System is an innovative new architecture that combines high-performance servers, high-speed networking, storage access, and virtualization into an integrated infrastructure. Automatically configured through unified, model-based management, the Cisco Unified Computing System simplifies deployment of Oracle applications and

databases, whether they are running in bare-metal or virtualized environments. This new Cisco data center architecture improves Oracle Application and Oracle Database performance, speeds up new implementations and upgrades, and greatly enhances operational flexibility.

The Cisco Unified Computing System is setting new world-record benchmarks running Oracle Database and Oracle Applications and is doing so with a lower total cost than traditional data center and server architectures. The Cisco Unified Computing System is based on Intel® Xeon® processors with Intel Turbo Boost technology, facilitating Oracle configurations that are sized correctly from the start. These powerful blade servers integrate into the Cisco Unified Computing System using a virtualization-optimized, low-latency, high-bandwidth unified network

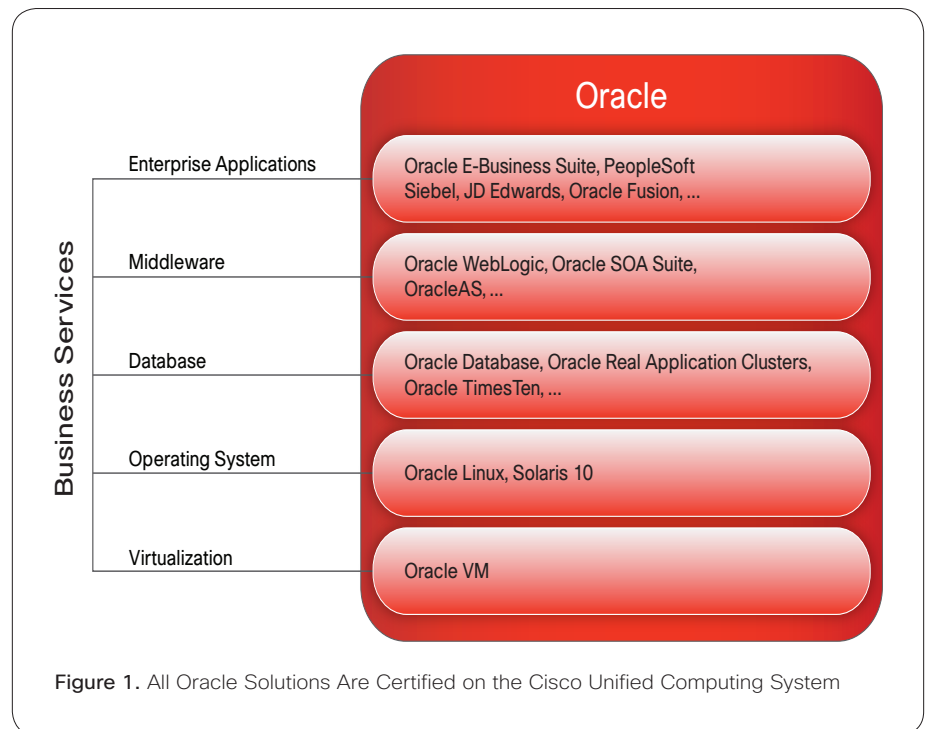


Figure 1. All Oracle Solutions Are Certified on the Cisco Unified Computing System



fabric for exceptional performance and scalability. This approach uses a single network technology to support both IP and storage networks, dramatically reducing cabling and management requirements while resulting in significantly lower costs. By connecting the unified fabric directly to blade servers and individual virtual machines without using blade-server or hypervisor-based switching, Cisco Fabric Extender technology reduces the number of components and their associated costs. The Cisco Unified Computing System uses software-based service profiles to specify an entire server's personality, configuration, and connectivity. Compared to traditional data center architectures, this approach dramatically accelerates deployment, eases management, and facilitates rapid scaling of Oracle environments.

## Ideal Platform for All Oracle Environments

The Cisco Unified Computing System supports all leading operating systems and virtualization platforms, giving organizations exceptional freedom in hosting their Oracle environments (Figure 1). The system helps increase efficiency and reduce costs when moving from a one-module-per-server model to a consolidated and virtualized deployment. The system's virtualization-optimized unified fabric securely separates data traffic and has been certified by Oracle. Oracle Real Application Clusters (RAC) gains near-linear scalability as a result of the high bandwidth and low latency of the unified fabric. Indeed, a single Cisco Unified Computing System is designed

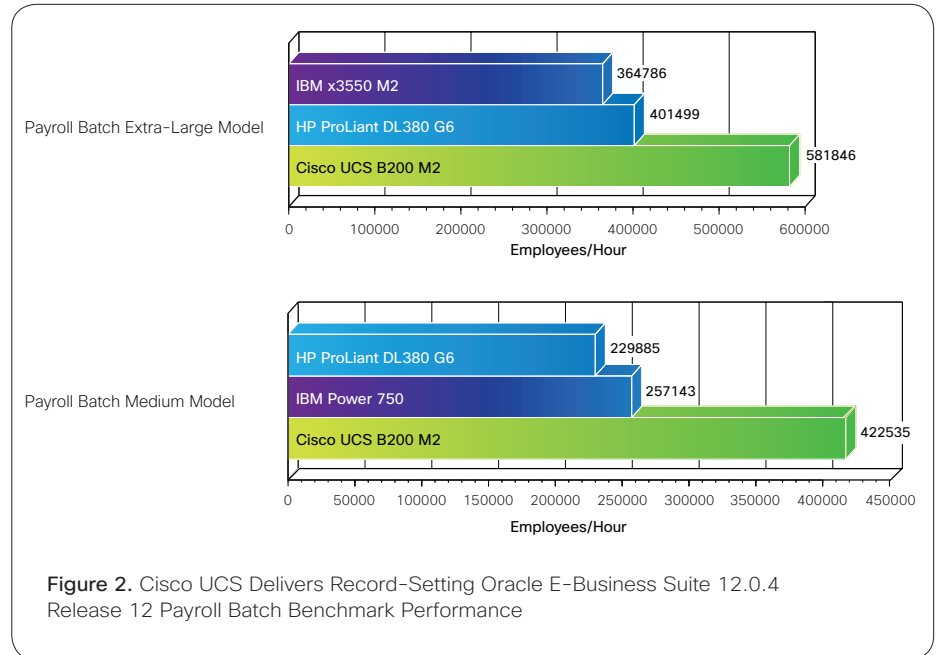


Figure 2. Cisco UCS Delivers Record-Setting Oracle E-Business Suite 12.0.4 Release 12 Payroll Batch Benchmark Performance

to support up to 320 servers with a single point of management—with a much greater administrator-to-server ratio than the vast majority of Oracle deployments require.

## Information Is Money

Timely information leads to timely decisions. Oracle software running on Cisco Unified Computing System servers delivers the performance needed to keep business information up to date and available to support a broad range of strategic, financial, and operational decisions. Cisco has demonstrated world-record-setting performance on both Oracle-specific and industry-standard benchmarks.

### Oracle E-Business Suite R12 Benchmark

Cisco servers have outperformed the competition by setting two performance

records for the Oracle E-Business Suite R12 benchmark:

- Record-setting result for Oracle E-Business Suite 12.0.4 Release 12 Payroll Batch Benchmark: Large and Extra-Large Models (Figure 2)
- Record-setting result for Oracle E-Business Suite 12.0.4 Release 12 Payroll Batch Benchmark: Medium Model (Figure 2)

These results surpass the IBM Power 750 RISC-based top result by up to 64 percent and HP's best eight-core Intel Xeon processor-based score by 84 percent. Cisco's industry-leading innovation gives customers the performance they need to support the most mission-critical applications in a standardized, simplified infrastructure.

The Oracle E-Business Suite R12 benchmark simulates several typical



workload scenarios used by global businesses, including order-to-cash batch runs, and company payroll batch runs. The benchmark uses small, medium, large, and extra-large data sets to yield a sense of both performance and scalability.

#### **SPECjEnterprise2010 Benchmark**

The Cisco Unified Computing System delivers record-setting performance with Oracle Fusion Middleware 11g running the SPEC® Java application server (SPECjEnterprise2010™) benchmark. Running Oracle WebLogic Server 11g, Oracle Database 11g Release 2, and Oracle Linux, the Cisco Unified Computing System set a world record, exceeding the top RISC processor-based result from IBM as of March 9, 2011.

#### **Balanced Architecture**

Cisco's balanced architecture delivers increased performance across all Oracle applications. The Cisco Unified Computing System, with its unified fabric, Intel Xeon processors, and large memory capacity help enable record-

setting performance. Using this high-performance platform as the foundation of your information systems helps ensure fast access to valuable business data to increase revenue to surpass the competition.

#### **Scale to Meet Business Needs**

IT departments manage workload highs and lows that result from quarterly and annual business cycles, seasonal demands, news events, or advertising initiatives. The Cisco and Oracle solution quickly, easily, and accurately scales up and out to handle workload fluctuations. When one high-activity period subsides and another one begins, Cisco service profiles enable resources to be reallocated to meet demands within minutes, not hours or days as is typical with traditional architectures. The Cisco Unified Computing System is designed to scale to up to 40 blade server chassis and up to 320 individual blade servers, with a full complement of rack-optimized servers also available.

This simplified provisioning, reassignment, and scaling of the Cisco Unified Computing System is enabled through Cisco service profiles. Each Cisco Unified Computing System server is a stateless resource until Cisco UCS Manager establishes its characteristics through service profiles. The service profiles specify how the entire hardware stack is provisioned, ranging from network profiles to server firmware. To move a workload to a new system resource, an administrator simply reprovisions a server by applying a service profile, reboots the system, and accesses the application. With Cisco, there is no hard-wired configuration that ties an application to a specific server. By creating a pool of computing resources, Cisco simplifies the movement of applications to quickly meet business needs.

Adding to the unique flexibility of the Cisco Unified Computing System, Intel Turbo Boost Technology intelligently adjusts server performance to meet workload demands. At the same time, Intel Intelligent Power Technology

“The Cisco Unified Computing System platform has greatly improved application performance, which translates to higher productivity for our users. Our field teams are able to respond immediately to customer questions and requests for quotes, without having to go back to the office and spending hours putting together data. My IT organization has received unsolicited emails from users in the field expressing their pleasure and the difference it is making in their productivity.”

**Ramesh Razdan**  
Senior Director, Enterprise Technology  
Services, EMC

automatically regulates power consumption to conserve energy when workload demands are light. These capabilities automatically right-size the infrastructure while reducing energy costs.

For virtual environments, the combination of Intel Xeon processors, Cisco Extended Memory Technology, and the unified fabric provides the scalability required to support high virtual machine densities. Intel Virtualization Technology FlexMigration enhances virtualization scalability and compatibility across different generations of Intel Xeon processors, making investments last well into the future.

Cisco Extended Memory Technology supports the largest memory capacity of any two-socket Intel Xeon processor-based server available today. Large memory capacity supports higher virtual machine densities and larger virtual machine memory sizes. For Oracle solutions, extended memory provides the flexibility to support more data in memory, helping optimize performance of large databases.

Cisco UCS Manager performs complete lifecycle management of every component in the server and network stack so that the system self-integrates and scales rapidly without complexity. Cisco UCS Manager uses role- and policy-based management and service profiles to increase IT staff productivity, improve compliance, and reduce opportunities for human errors that can cause downtime.

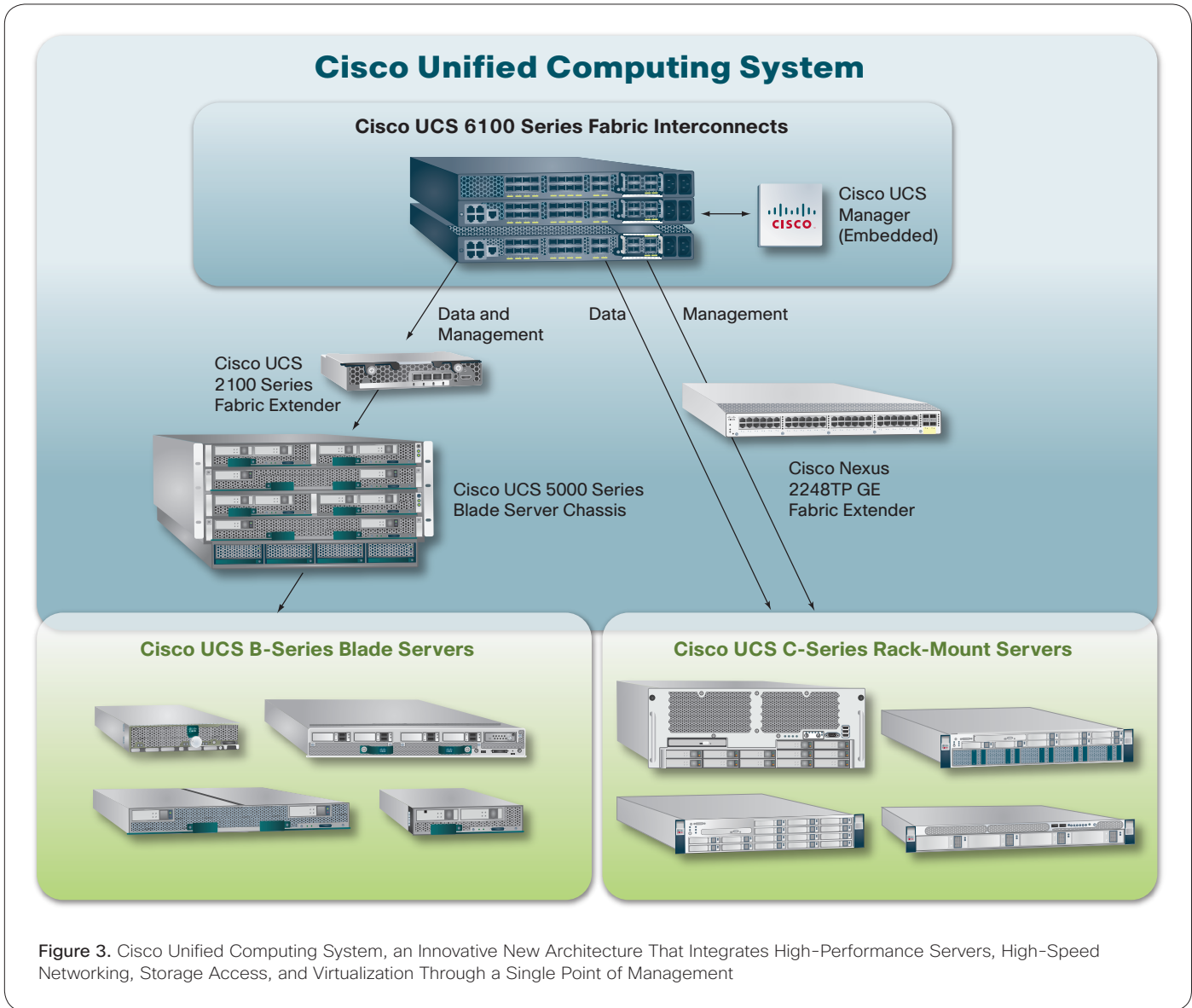
With the Cisco Unified Computing System, you can smoothly scale your Oracle environment to meet business

needs. When those needs change, the system provides greater agility to transition with the business.

## Unified Fabric Reduces Cost

Tying this flexible, scalable environment together is a low-latency, high-bandwidth virtualization-aware unified fabric. The unified fabric uses Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) to speed up all I/O traffic. Traditional server architectures require separate I/O adapters for LAN, SAN, and management networks. Cisco has led the industry in implementing FCoE, which allows both IP and storage I/O to be carried over a single physical network. Using a single network, rather than two or more networks, reduces the number of components and cabling, reducing both capital and operational costs.





**Figure 3.** Cisco Unified Computing System, an Innovative New Architecture That Integrates High-Performance Servers, High-Speed Networking, Storage Access, and Virtualization Through a Single Point of Management

Oracle RAC requires a separate, private, high-bandwidth, low-latency network to synchronize state between servers. In traditional architectures, this requirement adds the cost of yet another dedicated network. In the Cisco Unified Computing System, the unified fabric supports the private

network along with other network traffic. The result is fewer I/O adapters to purchase, simplified network infrastructure, and increased Oracle RAC performance. Oracle joined Cisco in defining the certification process for this new technology and for the Oracle ecosystem as a whole.

### Business Continuity Is Simplified

Any organization that values its data enough to store it in Oracle databases knows the importance of business continuity planning. Because the Cisco Unified Computing System is



configured through software, all the configuration information needed to run an Oracle environment can be exported from a running system and applied to a remote one. This capability enables a remote system to be provisioned in minutes in the event of a failure.

Reducing the opportunities for failure, the highly efficient Cisco Unified Computing System requires fewer servers, switches, adapters, and cables; consumes less power; and generates less heat than traditional, manually assembled systems. Beyond reliability, the system's simplicity reduces total cost of ownership (TCO) while increasing performance and availability.

## Better Together

Cisco and Oracle have a long relationship that has spanned nearly 20 years. The companies continue to work together to co-develop solutions that deliver better value to customers. Early on, Oracle standardized on Cisco networking solutions, and

Cisco's IT department hosts one of the largest Oracle E-Business Suite, Oracle Database, and Oracle RAC deployments in the world. Together, Oracle and Cisco have validated the capabilities and configurations of Oracle applications and databases running on the Cisco Unified Computing System. Cisco Validated Designs make getting an Oracle environment up and running easy and nearly risk free.

Acknowledging the value that the Cisco Unified Computing System brings to Oracle environments, Cisco received the Oracle 2010 Enable the Eco-Enterprise Award at Oracle OpenWorld 2010. The Eco-Enterprise Award honors Oracle customers and partners for their environmental

leadership. Winners come from a wide range of industries that are using Oracle products to support their green business practices and sustainability initiatives to reduce their environmental impact, cut costs, and improve business efficiency.

## Cisco Services

Cisco Services are ready to provide unique expertise to assist you with:

- Sizing the Cisco Unified Computing System specifically for your Oracle environment
- Oracle migration planning and deployment
- Oracle performance tuning
- Optimizing the value of the Cisco Unified Computing System



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## For More Information

Learn why thousands of customers around the world have chosen the Cisco Unified Computing System to run their mission-critical workloads.

For information about Oracle environments running on Cisco:

- Visit <http://www.cisco.com/go/oracle>
- Email [ciscowithoracle.com](mailto:ciscowithoracle.com)

## Benchmark Disclosures

SPEC and the benchmark name SPECjEnterprise2010 are trademarks of the Standard Performance Evaluation Corporation. Competitive benchmark results described in this document are derived from detailed benchmark reports from <http://www.spec.org> as of March 9, 2011. For the latest SPECjEnterprise2010 benchmark results, visit <http://www.spec.org/jEnterprise2010/results>. The systems cited in this document were configured as follows:

- Cisco UCS B440 M1: Oracle WebLogic Server Standard Edition 10.3.4 running on two Cisco UCS B440 M1 blade servers, each with four eight-core Intel Xeon X7560 processors running at 2.26GHz, with 17,301.86 SPECjEnterprise2010 EjOPS.
- IBM Power 780: WebSphere Application Server V7 with Feature Pack for OSGi Applications and Java Persistence API 2.0 running on an IBM Power 780 server, with eight POWER7 processors each with eight cores per chip (32 hardware threads per chip) running at 3.94GHz, with 16,646.34 SPECjEnterprise2010 EjOPS.



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**Americas Headquarters**  
Cisco Systems, Inc.  
San Jose, CA

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
Singapore

**Europe Headquarters**  
Cisco Systems International BV Amsterdam,  
The Netherlands

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LE-737004-00 03/11