Cisco UCS C260 M2 Rack-Mount Server

Product Overview

Cisco® UCS C-Series Rack-Mount Servers extend unified computing and standalone innovations to an industry-standard form factor to help reduce total cost of ownership (TCO) and increase business agility. Designed to operate both in standalone environments and as part of the Cisco Unified Computing System™, the Cisco UCS C-Series employs Cisco technology to help customers handle the most challenging workloads. The Cisco UCS C-Series incorporates many Cisco innovations such as standards-based unified network fabric; Cisco VN-Link virtualization support; Cisco Extended Memory Technology; and the capability to scale computing, I/O, disk, and memory resources independently. In addition, the Cisco UCS C-Series servers support an incremental deployment model and protect customer investments with a future migration path to unified computing.

The Cisco UCS C260 M2 Rack-Mount Server is one of the industry's highest-density two-socket rack-server platforms and is a critical new building block in the Cisco Unified Computing System portfolio, offering compact performance for enterprise-critical applications within the Cisco UCS architecture and patented Cisco Extended Memory Technology (Figure 1). It is well suited for IT departments that are looking for ways to increase computing performance, memory capacity, and disk drive I/O operations per second (IOPS) while deriving optimal value from the available space in their data centers, and it allows customers to avoid or reduce the need for costly per-socket or per-core licensing fees. With the Cisco UCS C260 M2 rack-mount server, Cisco continues to extend data center technology in every dimension, including CPU enhancements for better performance; expandability; security; and reliability, availability, and serviceability (RAS) features. The server also offers increased I/O performance, on-board storage capacity, and an exceptional memory footprint of up to 64 dual inline memory module (DIMM) slots in a two-rack-unit (2RU) form factor. In addition, the Cisco UCS C260 M2 is designed to increase performance and capacity for demanding virtualization and large-data-set workloads, service provider environments, enterprise data centers, and virtual desktop hosting. The system also helps improve throughput for large-data-set workloads, including database management systems and modeling and simulation applications.

Building on the success of the Cisco UCS C250 M2 Extended-Memory Rack-Mount Server, the Cisco UCS C260 M2 server extends the capabilities of the Cisco Unified Computing System with the next generation of Intel processor technology: the Intel® Xeon® processor E7-2800 product family. These powerful processors deliver more cores, threads, and cache, all within a similar power envelope, with even faster payback, greater productivity, and better energy efficiency than preceding models. When put into production, the Cisco Unified Computing System and Intel® Xeon® processor E7-2800 product family together offer further reductions in TCO, increased business agility, and another big leap forward in data center virtualization.

Figure 1. Cisco UCS C260 M2 Server

Applications

The Cisco UCS C260 M2 server is ideal for IT departments that are looking for ways to increase compute performance, memory capacity, internal storage or I/O capacity, while deriving maximum value from the available space in their data centers. This expandability allows customers to decrease costly licensing fees by increasing performance, without adding new cpu sockets. Applications that are memory-bound today will benefit from more than 1 terabyte (TB) of addressable memory that the Cisco UCS C260 M2 server offers.

With 64 DIMM slots available, the Cisco UCS C260 M2 server design is unique among two-socket servers based on Intel® Xeon® processor E7-2800 product family. From a memory-capacity perspective, it can alleviate memory bottlenecks in situations in which costly four-socket servers might otherwise be necessary, helping improve the price-to-performance ratio for running large-memory-footprint applications. From a memory-cost viewpoint, the server can be populated with low-cost 4- or 8-GB DIMMs for a total of up to 256 or 512 GB of main memory; this memory configuration delivers a memory footprint that other two-socket Intel® Xeon® processor E7-2800-based systems may require costly 32-GB DIMMS to achieve.

These benefits of Cisco Extended Memory Technology can be harnessed by customers when very large memory footprints are required or when large, low-cost memory footprints are desirable, as in the following examples:

- Large virtualized environments can host more or larger virtual machines with the server's larger memory capacity, resulting in higher performance.
- Database applications can thrive in virtualized and non-virtualized environments, because the server uses a combination of a large memory footprint, 16 hard-disk drives (HDDs) or solid-state drives (SSDs), and the fastest Intel processors.
- Traditional high-performance-computing (HPC) applications can benefit from the server's performance and 64 DIMM slots, including memory-intensive engineering design automation (EDA) and geophysical modeling applications. EDA applications and oil and seismic applications can now expand beyond the 256 GB memory capacity of other two-socket servers.
- Enterprise resource planning (ERP) applications hosted on the Cisco UCS C260 M2 server can run with improved performance with large data sets in main memory.

Features and Benefits

The Cisco UCS C260 M2 server extends Cisco unified computing innovations - including Cisco Extended Memory Technology - to an industry-standard, rack-mount form factor. It is the first rack-mount server available anywhere with a built-in future migration path to unified computing. It increases customer choice by providing unique benefits in a rack-mount server, bringing differentiation and value to what has traditionally been a market with products not optimized to meet the needs of virtualized data centers. Table 1 summarizes the features and benefits of the Cisco UCS C260 M2 server.

Table 1. Features and Benefits

Feature	Benefit
Cisco Extended Memory Technology	• Up to 1 TB of main memory using 16-GB DIMMs or 256 GB of main memory with 4-GB DIMMs • Substantially increased memory footprint, increasing performance and capacity for memory-intensive applications and large-data-set workloads • Reduced number of servers and decreased licensing costs with higher virtual-to-physical consolidation ratios • 64 DIMM slots, offering a more cost-effective memory footprint because smaller-density DIMMs can be substituted for more expensive, higher-density DIMMs • Capability to scale to higher levels of memory and performance without increasing socket count using Cisco Extended Memory Technology
10-Gbps unified network fabric	• Low-latency, lossless, 10-Gbps Ethernet and industry-standard Fibre Channel over Ethernet (FCoE) fabric • Wire-once deployment model in which changing I/O configurations no longer means installing adapters and recabling both racks and switches • Fewer interface cards, cables, and upstream network ports to purchase, power, configure, and maintain
Virtualization optimization	• Cisco VN-Link technology, I/O virtualization, and Intel® Xeon® processor E7-2800 product family features, extending the network directly to virtual machines • Consistent and scalable operational model • Increased security and efficiency with reduced complexity
Unified management* (when integrated into the Cisco Unified Computing System)	• Entire solution managed as a single entity with Cisco UCS Manager, improving operational efficiency and flexibility • Service profiles and templates that implement role- and policy-based management, enabling more effective use of skilled server, network, and storage administrators • Automated provisioning and increased business agility, allowing data center managers to provision applications in minutes rather than days • Integration with third-party management tools
Redundant, hot-swappable power supplies	Increased availability
Redundant, hot-swappable fans	Increased availability and serviceability, leading to less down time
Support for up to 7 PCI Express (PCIe) 2.0 slots	• Flexibility, increased performance, and compatibility with industry standards • I/O performance and flexibility with 2 full-height, half-length x16 slots; 4 low-profile, half-length x8 slots; and 1 low-profile, half-length x4 slot • Availability of 2 of the 6 slots to configure RAID support through optional LSI MegaRAID controller card • PCIe 2.0 slots, which double bandwidth over the previous generation and offer more flexibility while maintaining compatibility with PCIe 1.1
10-core Intel® Xeon® processor E7-2800 product family	• New levels of processor scalability, memory, and I/O capacity to address IT's greatest and most critical ERP, customer relationship management (CRM), database, analytics, and virtualization challenges with exceptional hardware and software support • Top-of-the-line processors, which deliver leading performance for mission- critical business solutions with outstanding economics that create new possibilities • Advanced reliability features and new security features, including Intel Machine Check Architecture Recovery to automatically manage hardware errors and protect against malicious software attacks, maintaining data integrity and increasing the availability of mission-critical services • Intelligent performance that automatically adjusts processor performance to meet application demands, increasing performance when needed and achieving substantial energy savings when not needed through Intel Intelligent Power Technology (IPT) • Enhanced virtualization technology that optimizes performance for virtualized environments, providing processor support for virtual machine migration and direct I/O • With more cores, threads, and cache and higher memory bandwidth in a similar power envelope, the Cisco Unified Computing System and Intel® Xeon® processor E7-2800 product family together offer further reductions in TCO, increased business agility, and another big leap forward in data center virtualization
Hot-swappable SAS, SATA and SSD drives	• Up to 16 front-accessible, hot-swappable, small form-factor (SFF) SAS or SATA-II drives or SSDs • Hot pluggable and easy front accessibility • Support for 10,000-RPM drives that deliver both value and capacity • Support for 15,000-RPM drives for high performance • Capability to tailor storage characteristics to application requirements through the choice of high-capacity (600 GB) and economical SATA-II drives or high-performance, enterprise-class SAS drives (146, 300, and 600 GB)

Feature	Benefit
RAID 0, 1, 5, 6, 10, 50, and 60 support	Choice of up to 2 optional RAID controllers to provide data performance and protection for up to 16 SAS or SATA-II drives or SSDs
Cisco UCS Integrated Management Controller (IMC)	• Web user interface for server management, administration, and virtual media • Virtual media support for remote keyboard, video, and mouse (KVM) and CD/DVD drives as if local • Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management through third-party enterprise management systems • Command-line interface (CLI) for server management
Integrated dual Gigabit Ethernet and dual 10 -Gigabit Ethernet SFP+	• Outstanding network I/O performance and increased network efficiency and flexibility • Increased network availability when configured in failover configurations

Product Specifications

Table 2 lists the specifications for the Cisco UCS C260 M2 server.

Table 2. Product Specifications

Item	Specification
Processors	• 2 x Intel® Xeon® processor E7-2800 product family • Choice of processors: Intel® Xeon® processor E7-2800s
Memory	• Up to 64 DIMM slots • DDR3 1066-MHz Memory Bus Interface Speed • Utilizes DDR3 1333-MHz registered low-voltage DIMMs • Advanced error correcting code (ECC) • Mirroring option • Double device data correction (DDDC)
PCIe slots	• 7 PCIe 2.0 slots available ◦ 4 low-profile, half-length x8 slots ◦ 2 full-height, half-length x16 slots ◦ 1 low-profile, half-length x4 slots (x8 connector)
Hard drives	Up to 16 front-accessible, hot-swappable, 2.5-inch SAS or SATA-II drives or SSDs
Hard disk options	• 146-GB SFF SAS; 15,000 RPM • 300-GB SFF SAS;10,000 RPM • 600-GB SFF SAS;10,000 RPM • 500-GB SFF SATA; 7200 RPM • 1-TB SATA; 7, 200 RPM • 100-GB SSD
Cisco UCS IMC	• Integrated ServerEngines Pilot-2 BMC • IPMI 2.0 compliance for management and control • Two 10/100BASE-T out-of-band management interfaces • CLI and WebGUI management tool for automated, lights-out management • KVM
Baseboard management controller (BMC)	Integrated ServerEngines Pilot-2 BMC
Physical dimensions (H x W x D) 2RU	3.5 x 17.6 x 31.5 in. (Chassis 30” + Bezel + Rear PSU Handle = 31.5”)
Temperature	• Operating 41 to 95℉ (5 to 35℃) • Nonoperating -40 to 149℉ (-40 to 65℃)
Humidity	• Operating 10 to 90% noncondensing • Nonoperating 5 to 93% noncondensing
Altitude	• Operating 0 to 10,000 ft (0 to 3000m) • Nonoperating 40,000 ft (12,000m)

Regulatory Standards

Table 3 lists regulatory standards compliance information.

Table 3. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Safety	• UL 60950-1 • CAN/CSA-C22.2 No. 60950-1 • CB IEC60950-1 • EN 60950-1 • IEC 60950-1 • GOST IEC60950-1 • SASO • SABS/CB IEC6095-1 • CCC*/CB GB4943-1995 • CNS14336 • AS/NZS 60950-1 • GB4943
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	• EN61000-6-1 • EN55024 • CISPR24 • EN300386 • KN 61000-4 Series

Cisco Unified Computing Services: Cisco UCS C-Series Rack-Mount Servers

Using a unified view of data center resources, Cisco and our industry-leading partners deliver services that accelerate your transition to a Cisco UCS C-Series Rack-Mount Server solution. Cisco Unified Computing Services helps you quickly deploy the servers, optimize ongoing operations to better meet your business needs, and migrate to Cisco's unified computing architecture. For more information, visit http://www.cisco.com/go/unifiedcomputingservices.

For More Information

Please visit http://www.cisco.com/go/unifiedcomputing.

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Printed in USA C78-648148-02 09/12