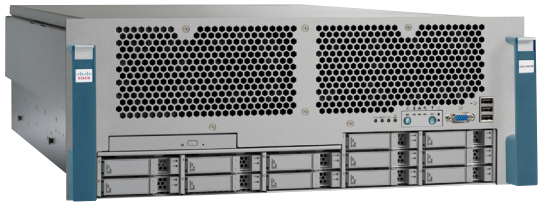
Cisco UCS C460 M2 High-Performance Rack Server

Overview

The Cisco® UCS C460 M2 Rack Server (Figure 1) is a high-performance, high-memory-capacity server designed with the performance and reliability to power computation-intensive, enterprise-critical standalone applications and virtualized workloads. The system is a four-rack-unit (4RU) rack-mount server supporting the Intel® Xeon® processor E7-4800 product family, up to 2 TB of Samsung 40-nm 1.35V double-data-rate (DDR3) memory in 64 slots, and 12 Small Form Factor (SFF) hot-pluggable SAS, SATA disk drives or SSDs. Abundant I/O capability is provided by 10 PCI Express (PCIe) slots supporting the Cisco UCS C-Series network adapters, with an eleventh PCIe slot reserved for SAS drive controller cards. Additional I/O is provided by four Ethernet LAN-on-motherboard (LOM) ports: two 10 Gigabit Ethernet and two Gigabit Ethernet.

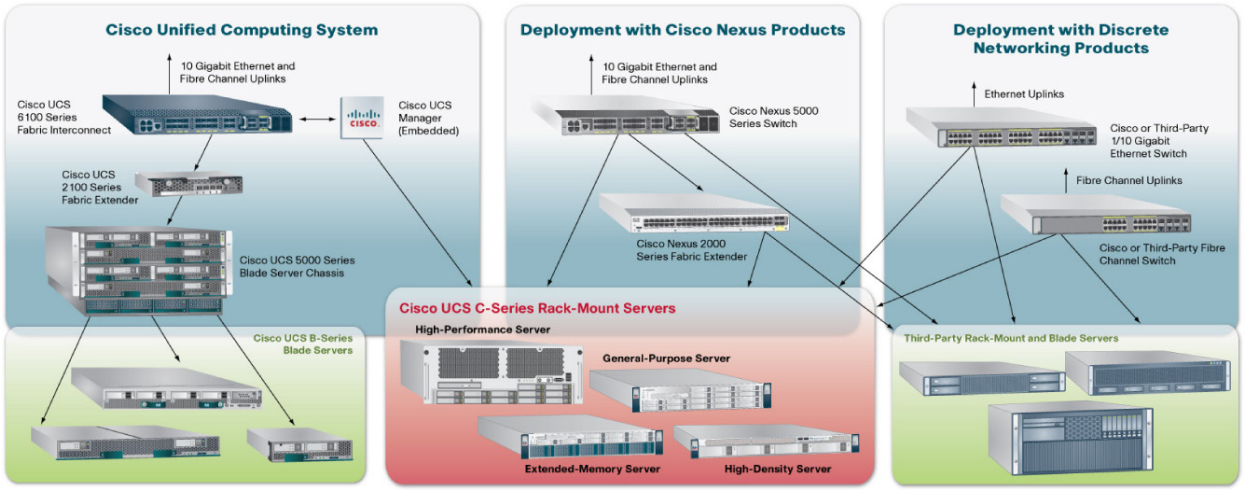
Figure 1. Cisco UCS C460 M2 Server



Extending Cisco Unified Computing Solution Agility and Efficiency

The Cisco UCS C460 M2 server extends Cisco's product portfolio to meet the needs of customers who choose to deploy rack-mount servers. The server enables organizations to deploy systems incrementally—using as many or as few servers as needed—on a schedule that best meets the organization's timing and budget. Extending the agility and total-cost-of-ownership (TCO) benefits of the Cisco Unified Computing System™ to a wider range of applications positions IT departments to respond more quickly to business demands and free precious resources.

Figure 2. Cisco UCS C-Series Rack-Mount Servers Are Designed to Operate in a Wide Range of Data Center Environments, Including Those Using the Cisco Unified Computing System, Cisco Nexus® Family Products, and Discrete Ethernet and Fibre Channel Switches from Cisco and Third Parties



Designed to operate both in standalone environments and as an entry point to the Cisco Unified Computing System (Figure 2), the server combines flexible disk storage and I/O configurations with Cisco innovations including patented Cisco Extended Memory Technology, a unified network fabric, and network-aware Cisco VN-Link technology.

The server brings differentiation and value to what has been a commodity market with products not optimized to meet the needs of virtualized data centers. Available from Cisco and its data center network infrastructure (DCNI) partners, the server advances the rack-mount server market with the following features:

- **High performance:** The Intel® Xeon® processor E7-4800 product family with intelligent performance that automatically adapts to the diverse needs of a virtualized environment, and advanced reliability and exceptional scalability for the most demanding applications, the Cisco UCS C460 M2 server is a critical new building block that unifies the most performance-intensive and enterprise-critical applications in the Cisco Unified Computing System architecture.
- **Exceptional memory capacity:** With up to 2 TB of Samsung high-efficiency memory, the Cisco UCS C460 M2 is designed to balance processing power and memory capacity for large-data-set, transaction-intensive, mission-critical workloads and provide headroom for jumbo virtual machines and greater levels of server consolidation.
- **Flexible I/O and storage options:** With 10 PCIe expansion slots, the server offers I/O flexibility and bandwidth, including the capability to integrate with both traditional Gigabit and 10 Gigabit Ethernet LANs and Fibre Channel SANs. The server hosts up to 12 internal SFF SAS or SATA or SSD drives, providing internal storage capacity exceeding what is available in a corresponding blade form-factor server.

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At-A-Glance

- **10 Gigabit unified network fabric:** When equipped with converged network adapters (CNAs), the server integrates with a low-latency, lossless 10-Gbps Ethernet and industry-standard Fibre Channel over Ethernet (FCoE) fabric. This technology enables a "wire-once" deployment model in which changing I/O configurations no longer means installing adapters and recabling racks and switches.
- **Virtualization optimization:** Cisco VN-Link technology, P81E Virtual Interface Card, I/O virtualization, and Intel® Xeon® processor E7-4800 product family extend the network directly to virtual machines. This optimization enables a consistent and scalable operating model, helping increase security and efficiency while reducing complexity.
- **Unified management:** When the server is integrated into the Cisco Unified Computing System, Cisco UCS Manager provides management. Management is uniquely integrated into all components of the system, enabling the entire solution to be managed as a single entity through Cisco UCS Manager, improving operation efficiency and flexibility.
- **Service profiles:** When the server is integrated into the Cisco Unified Computing System, the Cisco UCS Manager implements role- and policy-based management using service profiles and templates. Service profiles help automate provisioning and increase business agility, allowing data center managers to provision applications in minutes instead of days..

Cisco UCS C460 M2 Server Features

- Up to four multicore Intel® Xeon® processor E7-4800s ; these multicore processors with intelligent performance automatically adapt to the diverse needs of a virtualized environment and provide advanced reliability and exceptional scalability for the most demanding applications· Up to 2 TB in 64 dual in-line memory (DIMM) slots, based on Samsung 40-nm DDR3 memory technology
- Up to 12 internal SFF, SSD, SAS or SATA drives for a total of up to 12 terabytes (TB)
- RAID 0, 1, and 10 support for up to 12 SAS or SATA drives with the optional LSI SAS9240-8i PCIe RAID controller; and RAID 0, 1, 5, 6, 10, 50, and 60 support for up to 12 SAS or SATA or SSD drives with the optional LSI MegaRAID controller

Flexible I/O Options

A benefit of rack-mount servers is the capability to configure a range of I/O options to meet specific workload requirements. The Cisco UCS C460 M2 server offers a range of flexible I/O options through its 10 PCIe expansion slots. Cisco supports adapters through arrangements with original equipment manufacturers (OEMs).

- Cisco UCS P81E Virtual Interface Card: a virtualization-optimized Fibre Channel over Ethernet (FCoE) PCI Express (PCIe) 2.0 x8 10-Gbps adapter designed for use with Cisco UCS C-Series Rack- Mount Servers. The virtual interface card is a dual-port 10 Gigabit Ethernet PCIe adapter that can eventually support up to 128 PCIe standards-compliant virtual interfaces, which can be dynamically configured so that both their interface type (network interface card [NIC] or host bus adapter [HBA]) and identity (MAC address and worldwide name [WWN]) are established using just-in-time provisioning.
- CNAs form Emulex and QLogic present both Ethernet network interface cards (NICs) and Fibre Channel host bus adapters (HBAs) to the host operating system, consolidating traffic over a 10 Gbps unified fabric.
- Discrete I/O adapters further enhance customer flexibility and choice with Gigabit Ethernet, 10 Gigabit Ethernet, and 4-Gbps Fibre Channel interfaces from industry-leading vendors including Broadcom, Emulex, and QLogic.

Cisco Unified Computing Services

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

Why Cisco?

The Cisco Unified Computing System continues Cisco's long history of innovation in delivering integrated systems for improved business results based on industry standards and using the network as the platform. Recent examples include IP telephony, LAN switching, unified communications, and unified I/O. Cisco began the unified computing phase of our Data Center 3.0 strategy several years ago by assembling an experienced team from the computing and virtualization industries to augment our own networking and storage-access expertise. As a result, Cisco delivered foundational technologies, including the Cisco Nexus® Family, supporting unified fabric and server virtualization. The Cisco Unified Computing System completes this phase, delivering innovation in architecture, technology, partnerships, and services. Cisco is well positioned to deliver this innovation by taking a systems approach to computing that unifies network intelligence and scalability with innovative application-specific integrated circuits (ASICs), integrated management, and standard computing components.

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