

# Cisco UCS B22 M3 Blade Server

## Product Overview

The Cisco Unified Computing System™ (Cisco UCS™) combines Cisco UCS B-Series Blade Servers and C-Series Rack Servers with networking and storage access in a single converged system that simplifies management and delivers greater cost efficiency and agility with increased visibility and control. The latest server expansion of the Cisco UCS portfolio includes the new Cisco UCS B22 M3 Server. This new server increases compute density through more cores and cache balanced with more memory capacity and drives and faster I/O. Together these server improvements and complementary Cisco UCS system advancements deliver the best combination of features and cost efficiency to support IT's diverse needs.

The Cisco UCS B22 M3 Blade Server delivers a feature set with a balanced price-to-performance ratio to help enable quick deployment of scalable IT infrastructure and Web 2.0 applications. The Cisco UCS B22 M3 harnesses the power of the latest Intel® Xeon® processor E5-2400 and E5-2400 v2 product family with expandability to 384 GB of RAM (using 32-GB DIMMs), two hot-pluggable drives, two PCI Express (PCIe) mezzanine slots, and up to eight 10 Gigabit throughput connections. In addition, Cisco delivers the architectural advantage of not having to power and cool excess switches in each Cisco UCS blade chassis. Having a larger power budget per blade server enables Cisco to design uncompromised expandability and versatility in its blade servers, as evidenced by the dense and price-to-performance-optimized Cisco UCS blade servers, with their leading memory slot and drive capacities.

The Cisco UCS B22 M3 provides:

- Two, multi-core, Intel® Xeon® processor E5-2400 and E5-2400 v2 product family CPU sockets, for up to 20 processing cores
- 12 DIMM slots for industry-standard double-data-rate 3 (DDR3) memory running up to 1600 MHz and up to 384 GB of total memory
- Two optional, hot-pluggable SAS or SATA hard disk drives (HDDs) or solid-state drives (SSDs)
- Built-in Cisco Integrated Management Controller (CIMC) GUI or CLI interfaces enables one to monitor the server inventory, health, and system event logs

The Cisco UCS B22 M3 is a half-width blade (Figure 1). Up to eight of these high-density, two-socket blade servers can reside in the 6RU Cisco UCS 5108 Blade Server Chassis, offering one of the highest densities of servers per rack unit in the industry.

Another Cisco innovation, the Cisco UCS Virtual Interface Card (VIC) 1240, is a 4-port 10 Gigabit Ethernet, Fibre Channel over Ethernet (FCoE)-capable modular LAN on motherboard (LOM) designed exclusively for the M3 generation of Cisco UCS B-Series Blade Servers.

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The Cisco UCS VIC 1240 enables a policy-based, stateless, agile server infrastructure that can present up to 256 PCIe standards-compliant interfaces to the host that can be dynamically configured as either network interface cards (NICs) or host bus adapters (HBAs). In addition, the Cisco UCS VIC 1240 supports Cisco® Data Center Virtual Machine Fabric Extender (VM-FEX) technology, which extends the Cisco UCS fabric interconnect ports to virtual machines, simplifying server virtualization deployment.

**Figure 1.** Cisco UCS B22 M3 Blade Server



The Cisco UCS B22 M3 further extends the capabilities of Cisco UCS by delivering new levels of manageability, price-to-performance metrics, energy efficiency, reliability, security, and I/O bandwidth for enterprise-class applications.

## Applications

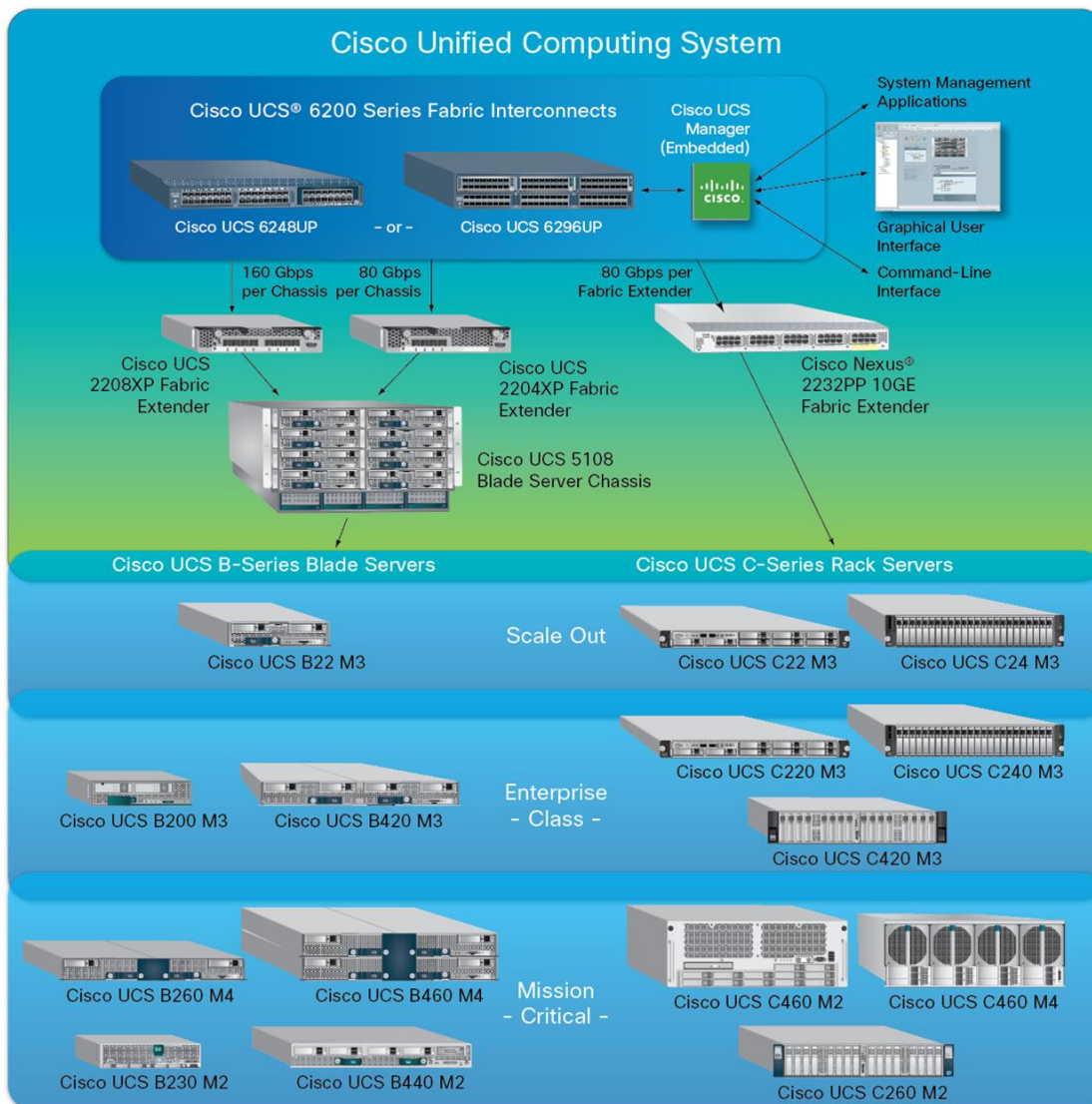
The Cisco UCS B22 M3 is suited for a broad range of IT workloads:

- Web infrastructure
- IT infrastructure
- Scale-out
- Distributed applications
- Workloads that require balanced price-to-performance metrics

## Cisco UCS Servers Change the Economics of the Data Center

IT infrastructure matters now more than ever, as organizations seek to achieve the full potential of infrastructure as a service (IaaS), bare metal, virtualized servers, and cloud computing. Cisco continues to lead in data center innovation with the introduction of new building blocks like the Cisco UCS B22 M3 Blade Server, which extends the exceptional simplicity, agility, and efficiency of Cisco UCS (Figure 2). The Cisco UCS B22 M3 server continues Cisco's commitment to delivery of uniquely differentiated value, fabric integration, and ease of management that is exceptional in the marketplace.

**Figure 2.** Cisco UCS Components



For example, Cisco innovations, such as the form-factor-agnostic Cisco UCS Manager software, allow administrators to create a software model of a desired server (using Cisco service profiles and templates) and then instantiate that server and its I/O connectivity by associating a model with physical resources. This stateless approach contrasts with the traditional method of configuring each system resource manually, one at a time, through individual element managers. Unlike vendors of traditional systems, Cisco uses a unified management model with service profiles that can be moved easily between any Cisco UCS servers - whether blade server or rack server - in a Cisco UCS Manager domain.

Other Cisco UCS building blocks include new Cisco UCS VIC options, expanded Cisco UCS fabric interconnects, and additional fabric extender options that increase throughput, investment protection, and management simplicity for both blade and rack servers. Here are a few examples of investment protection:

- Fabric extenders can be upgraded in the same Cisco UCS 5108 Server Chassis using the same fabric interconnects.
- Fabric interconnects can be upgraded independently of fabric extenders and blade servers within the chassis.
- The Cisco UCS 5108 Chassis high-performance midplane provides eight blades with 1.2 terabits per second (Tbs) of available Ethernet throughput for future blade and I/O requirements.

In addition, Cisco continues to innovate in all these areas, helping ensure that newer, more powerful blade servers have matching I/O bandwidth and computing power through continuous innovation across the Cisco UCS environment.

The Cisco UCS B22 M3 is also part of a large family of blade servers: the Cisco UCS B-Series Blade Servers. The Cisco UCS B-Series servers employ many innovative Cisco technologies to help customers handle the most challenging workloads. Cisco UCS B-Series servers operating in a Cisco UCS management framework incorporate:

- A standards-based unified network fabric
- Cisco Data Center VM-FEX virtualization support
- Cisco UCS Manager software
- Cisco Fabric Extender architecture
- Cisco Extended Memory Technology

Again, Cisco is innovating across all these technologies. Together, these Cisco UCS architectural advantages and Cisco's software advances, continuous innovation, and unique blade server and chassis designs combine to make Cisco UCS the first truly unified data center platform. In addition, Cisco UCS can transform IT departments through policy-based automation and deep integration with familiar systems management and orchestration tools.

## Features and Benefits

Table 1 summarizes the features and benefits of the Cisco UCS B22 M3 server.

**Table 1.** Features and Benefits

Feature	Benefit
<b>Unified fabric</b>	<ul style="list-style-type: none"> <li>• Decreases total cost of ownership (TCO) by reducing the number of NICs, HBAs, switches, and cables needed</li> <li>• Enables the Cisco UCS 5108 chassis to eliminate in-chassis HBAs, NICs, and switches and reallocates the saved power to denser, more powerful blade servers with more DIMM slots and better per-blade performance compared to alternative offerings</li> </ul>
<b>Cisco UCS Manager service profiles</b>	<ul style="list-style-type: none"> <li>• Helps reduce the number of manual steps required to deploy servers in the data center, improving server policy consistency and coherency</li> <li>• Allows servers and support infrastructure to be provisioned in minutes instead of days, shifting IT's focus from maintenance to strategic initiatives</li> <li>• Reduces configuration errors significantly as blades are added or repurposed</li> <li>• Enables service profile movement from blade server to blade server, rack server to blade server, blade server to rack server, or blade server to blade server in another chassis</li> </ul>
<b>Autodiscovery</b>	<ul style="list-style-type: none"> <li>• Requires no configuration; as with all Cisco UCS components, blades are automatically recognized and configured by Cisco UCS Manager</li> </ul>

Feature	Benefit
<b>Extensive monitoring</b>	<ul style="list-style-type: none"> <li>Through Cisco UCS Manager, provides extensive environmental monitoring for each blade</li> <li>Allows use of user thresholds to optimize environmental management of the blade</li> </ul>
<b>Cisco VIC adapter</b>	<ul style="list-style-type: none"> <li>Offers the Cisco UCS VIC 1240, a 4-port 10 Gigabit Ethernet, FCoE-capable adapter</li> <li>When used in combination with the VIC 1280, the two VICs can deliver a total of 8x10GbE throughput as well as hardware redundancy</li> </ul>
<b>Mezzanine adapters</b>	<ul style="list-style-type: none"> <li>Provides a choice of converged network adapters (CNAs), VIC adapters, or third-party PCIe cards, providing flexibility, increased performance, compatibility with industry standards, and network policy coherence for virtualized environments</li> </ul>
<b>Cisco Flexible Flash Secure Digital Cards</b>	<ul style="list-style-type: none"> <li>Two optional Cisco FlexFlash drives (SD Cards)</li> <li>Provides dual secure digital high-capacity (SDHC) flash card sockets on the front left side of the server</li> </ul> <p><b>Note:</b> Cisco FlexFlash SD cards are currently orderable; however, they will be enabled only with future firmware and software updates.</p>
<b>Optional local storage</b>	<ul style="list-style-type: none"> <li>Provides support on each blade for up to 2 optional, hot-pluggable, front-access SAS or SATA HDDs or SSDs</li> </ul>
<b>Intel Xeon processor E5-2400 and E5-2400 v2 product family</b>	<ul style="list-style-type: none"> <li>Provides automated energy efficiency, reducing energy costs by automatically putting the processor and memory in the lowest available power state, while still delivering the performance required and flexible virtualization technology that optimizes performance for virtualized environments, including processor support for migration and direct I/O</li> <li>Delivers up to twice the performance for floating-point operations; Intel Advanced Vector Extensions (AVX) provides new instructions that can significantly improve performance for applications that rely on floating-point or vector computations</li> <li>Keeps pace with Intel Xeon processor innovation by offering the latest processors with an increase in processor frequency and improved security features; with the increased performance provided by the Intel Xeon processor E5-2400 and E5-2400 v2 product family, the Cisco UCS B-Series offers an improved price-to-performance ratio, making Cisco UCS servers among the best values in the industry</li> <li>Adds advanced reliability features, including Machine Check Architecture Recovery, to automatically monitor, report, and recover from hardware errors to maintain data integrity and keep mission-critical services online</li> <li>Provides hardened protection for virtual and cloud environments using trusted pools of virtual resources established with Intel® Trusted Execution Technology (Intel® TXT); Intel TXT helps ensure that physical servers and hypervisors boot only into cryptographically verified "known good states," safeguarding your business more effectively by protecting your platform from the insertion of malware during or prior to launch</li> </ul>

## Specifications

Cisco UCS B-Series Blade Servers are critical key components of the Cisco UCS environment and are enabled by Cisco UCS Manager and Cisco UCS 6200 and 6100 Series Fabric Interconnects, 5100 Series Blade Server Chassis, 2200 and 2100 Series Fabric Extenders.

Table 2 summarizes the specifications for the Cisco UCS B22 M3.

**Table 2.** Product Specifications

Item	Specification
<b>Processors</b>	2 Intel Xeon processor E5-2400 and E5-2400 v2 product family CPUs
<b>Processor cores</b>	For a complete list of Processors, please refer to the corresponding <a href="#">SpecSheet</a>
<b>Memory</b>	<ul style="list-style-type: none"> <li>12 DIMM slots</li> <li>Maximum of 384 GB</li> </ul>
<b>Mezzanine adapter slots</b>	2
<b>Disk drives</b>	Up to 2 optional front-access SAS or SATA HDDs or SSDs
<b>Disk drive options</b>	For a complete list of drives, please refer to the corresponding <a href="#">SpecSheet</a>
<b>Maximum internal storage</b>	Up to 2TB
<b>Drive controller</b>	<ul style="list-style-type: none"> <li>LSI SAS 2002 Integrated RAID controller</li> <li>RAID 0 and 1 support</li> </ul>
<b>Flash memory</b>	2 slots for 16-GB SD flash memory cards (future enablement through software update)
<b>Management</b>	Management from the Cisco UCS 6100 or 6200 Series Fabric Interconnects by Cisco UCS Manager
<b>Temperature: Operating</b>	50 to 95°F (10 to 35°C)

Item	Specification
Temperature: Nonoperating	-40 to 149°F (-40 to 65°C)
Humidity: Operating	5 to 93% noncondensing
Humidity: Nonoperating	5 to 93% noncondensing
Altitude: Operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: Nonoperating	40,000 ft (12,000m)

Table 3 summarizes regulatory standards compliance.

**Table 3.** Regulatory Standards Compliance: Safety and EMC

Specification	Description
<b>Regulatory compliance</b>	Compliance with CE Markings according to directives 2004/108/EC and 2006/108/EC
<b>Safety</b>	<ul style="list-style-type: none"> <li>• UL 60950-1 No. 21CFR1040 Second Edition</li> <li>• CAN/CSA-C22.2 No. 60950-1 Second Edition</li> <li>• IEC 60950-1 Second Edition</li> <li>• EN 60950-1 Second Edition</li> <li>• IEC 60950-1 Second Edition</li> <li>• AS/NZS 60950-1</li> <li>• GB4943 2001</li> </ul>
<b>EMC: Emissions</b>	<ul style="list-style-type: none"> <li>• 47CFR Part 15 (CFR 47) Class A</li> <li>• AS/NZS CISPR22 Class A</li> <li>• CISPR2 2 Class A</li> <li>• EN55022 Class A</li> <li>• ICES003 Class A</li> <li>• VCCI Class A</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3</li> <li>• KN22 Class A</li> <li>• CNS13438 Class A</li> </ul>
<b>EMC: Immunity</b>	<ul style="list-style-type: none"> <li>• EN55024</li> <li>• CISPR24</li> <li>• EN300386</li> <li>• KN24</li> </ul>

## Warranty Information

Find warranty information at Cisco.com on the [Product Warranties](#) page.

## Ordering Information

For a complete list of part numbers, please refer to the corresponding [SpecSheet](#).

## 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 unified computing environment. Cisco Unified Computing Services helps you quickly deploy your data center resources and optimize ongoing operations to better meet your business needs. For more information about these and other Cisco Data Center Services offerings, visit <http://www.cisco.com/go/dcservices>.

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## Why Cisco?

Cisco has significant experience in listening to customer requirements and providing solid technology innovation for the enterprise data center. Cisco delivers standards-based solutions backed by a broad partner ecosystem of industry leaders to provide end-to-end customer solutions. Unified computing elevates the traditional product classification of network, server, storage, operating systems, and applications to a data center-wide vision. Cisco, as one of the largest technology providers in the world, has the resources, expertise, and customer focus to deliver on the unified computing vision.

## For More Information

For more information about Cisco UCS B-Series Blade Servers, visit <http://www.cisco.com/en/US/products/ps10280/index.html> or contact your local Cisco representative.

For complete technical information about Cisco UCS B22 M3 Blade Servers, visit [http://www.cisco.com/en/US/prod/collateral/ps10265/ps10280/B22M3\\_SpecSheet.pdf](http://www.cisco.com/en/US/prod/collateral/ps10265/ps10280/B22M3_SpecSheet.pdf).



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