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Cisco UCS 5100 Series Blade Server Chassis

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Cisco unified computing system overview

The Cisco Unified Computing System™ (Cisco UCS®) is a next-generation data center platform that unites computing, networking, storage access, and virtualization resources into a cohesive system designed to reduce Total Cost of Ownership (TCO) and increase business agility. The system integrates a low-latency, lossless 10/40 Gigabit Ethernet unified network fabric with enterprise-class, x86-architecture servers. The system is an integrated, scalable, multichassis platform in which all resources participate in a unified management domain (Figure 1).

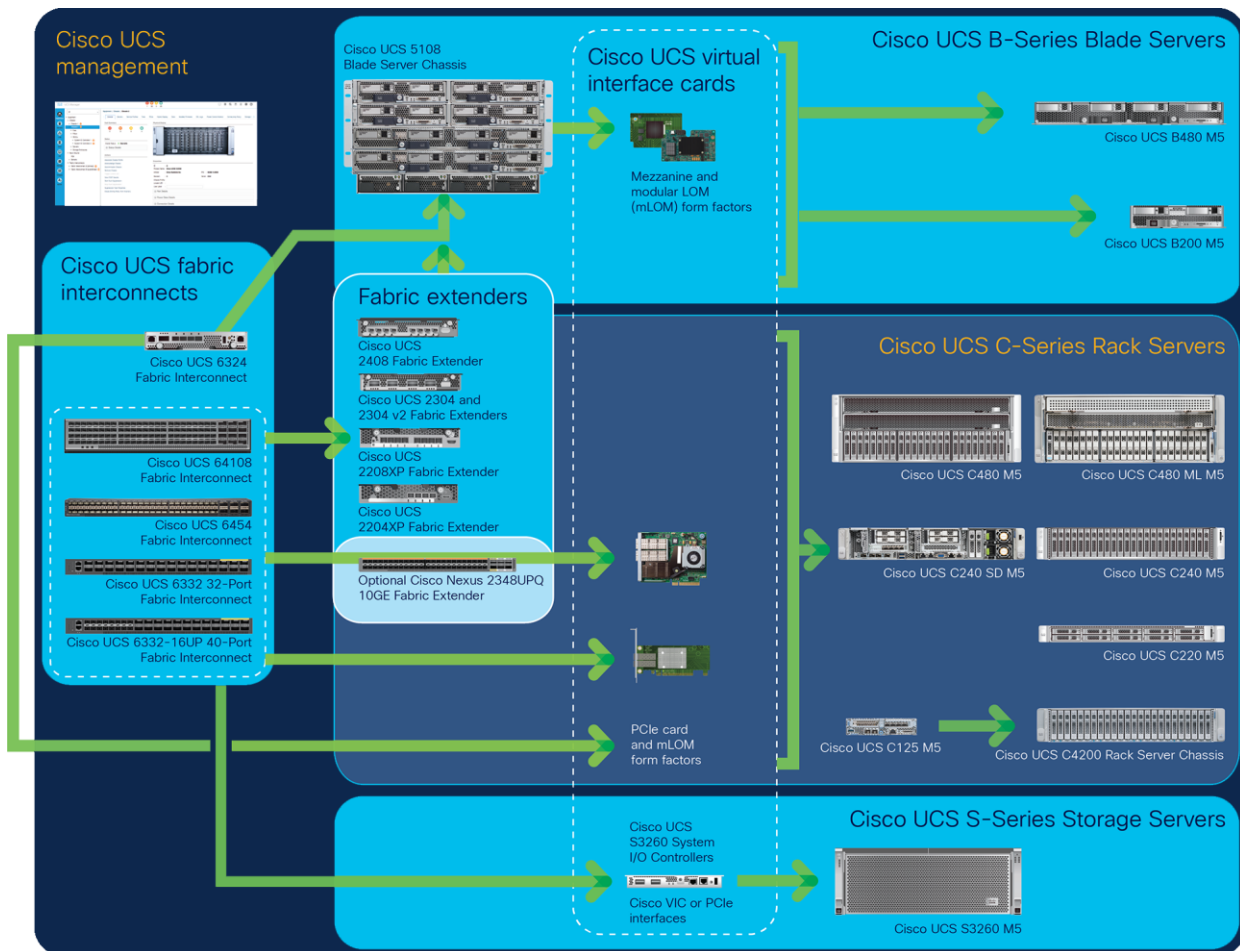


Figure 1.
The Cisco Unified Computing System Is a Highly Available Cohesive Architecture

With the [Cisco UCS 6324 Fabric Interconnect](#), the management flexibility and cable reduction of the full-scale Cisco UCS solution is now available in a single-chassis implementation. The Cisco UCS 6324 Fabric Interconnect allows a single Cisco UCS chassis to be managed and configured in the same way as a full-scale Cisco UCS solution, providing the advantages of Cisco UCS to smaller businesses and remote sites.

Product overview

The Cisco UCS 5100 Series Blade Server Chassis is a crucial building block of the Cisco Unified Computing System, delivering a scalable and flexible blade server chassis for today's and tomorrow's data center while helping reduce TCO.

The Cisco UCS 5108 Blade Server Chassis (Figure 2) is six Rack Units (6RU) high and can mount in an industry-standard 19-inch rack. A chassis can house up to eight half-width Cisco UCS B-Series Blade Servers and can accommodate both half-width and full-width blade form factors.

Four hot-swappable power supplies are accessible from the front of the chassis, and single-phase 2500 W AC, 2500 W -48 VDC, and 2500 W 200 - 380 VDC power supplies and chassis are available. These power supplies are up to 94 percent efficient and meet the requirements for the 80 Plus Platinum rating. The power subsystem can be configured to support nonredundant, N+1 redundant, and grid-redundant configurations. The rear of the chassis contains eight hot-swappable fans, four power connectors (one per power supply), and two I/O bays that can support either Cisco UCS 2000 Series Fabric Extenders or the Cisco UCS 6324 Fabric Interconnect. A passive midplane provides up to 80 Gbps of I/O bandwidth per server slot and up to 160 Gbps of I/O bandwidth for two slots. The chassis support 40 Gigabit Ethernet standards with the 2304 Fabric Extender and 25 Gigabit Ethernet standards with the Cisco UCS 2408 Fabric Extender.



Figure 2.
Cisco UCS 5108 Blade Server Chassis with Blade Servers Front and Back

Features and benefits

The Cisco UCS 5108 Blade Server Chassis revolutionizes the use and deployment of blade-based systems. By incorporating unified fabric, integrated, embedded management, and fabric extender technology, the chassis uses fewer physical components, has no need for independent management, and enables greater energy efficiency than traditional blade server chassis. This simplicity eliminates the need for dedicated chassis management and blade switches, reduces cabling, and enables Cisco UCS to scale to 20 chassis without adding complexity. The Cisco UCS 5108 chassis is a critical component in delivering the Cisco UCS benefits of data center simplicity and IT responsiveness.

In addition, the Cisco UCS 5108 chassis has the architectural advantage of not having to power and cool excess switches in each chassis. With a larger power budget per blade server, Cisco can design uncompromised expandability and capabilities in its blade servers, as evidenced by the new Cisco UCS B200 M5 and B480 M5 Blade Servers.

Table 1 summarizes the features and benefits of the Cisco UCS 5108.

Table 1. Features and Benefits

Feature	Benefit
Management by Cisco UCS Manager	<ul style="list-style-type: none"> Reduces TCO by managing servers, networking, and storage from a single interface
Unified fabric	<ul style="list-style-type: none"> Reduces TCO by reducing the number of Network Interface Cards (NICs), Host Bus Adapters (HBAs), switches, and cables that need to be managed, cooled, and powered
Support for one or two Cisco UCS 2100, 2200, 2300 or 2400 Series Fabric Extenders	<ul style="list-style-type: none"> Eliminates switches from the chassis along with complex configuration and management of those switches, allowing a system to scale without adding complexity and cost Allows use of two fabric extenders for both redundancy and aggregation of bandwidth Enables bandwidth scaling based on application needs; blades can be configured from 1.25 Gbps to 40 Gbps or more
Support for Cisco UCS 6324 Fabric Interconnect	<ul style="list-style-type: none"> Allows the simplicity and consistency of a Cisco UCS managed solution to be economically achieved for single-chassis implementations
Autodiscovery	<ul style="list-style-type: none"> Requires no configuration; like all Cisco UCS components, chassis are automatically recognized and configured by Cisco UCS Manager
High-performance midplane	<ul style="list-style-type: none"> Provides investment protection for new fabric extenders, fabric interconnects, and future blade servers Supports up to 2 x 40 Gigabit Ethernet for every half-width blade server slot when used in high-availability mode Provides 8 blades with 1.2 terabits (Tb) of available Ethernet throughput to meet future I/O requirements Provides reconfigurable chassis to accommodate a variety of current and future blade server form factors and functions
Redundant hot-swappable power supplies and fans	<ul style="list-style-type: none"> Provides high availability in multiple configurations Increases serviceability Provides uninterrupted service during maintenance
Hot-pluggable blade servers and fabric extenders	<ul style="list-style-type: none"> Provides uninterrupted service during maintenance and server deployment
Comprehensive monitoring	<ul style="list-style-type: none"> Provides extensive environmental monitoring on each chassis Allows use of user thresholds to optimize environmental management of the chassis

Feature	Benefit
Efficient front-to-back airflow	<ul style="list-style-type: none"> Helps reduce power consumption and increase component reliability
Tool-free installation	<ul style="list-style-type: none"> Requires no specialized tools for chassis installation Provides mounting rails for easy installation and servicing
Mixed blade configurations	<ul style="list-style-type: none"> Allows up to 8 half-width or 4 full-width blade servers, or any combination thereof, for outstanding flexibility

Specifications

The Cisco UCS 5100 Series is designed for use in the Cisco UCS environment and requires Cisco UCS Manager, UCS 6200 Series, 6300 or 6400 Series Fabric Interconnects, and UCS 2200, 2300 or 2400 Series Fabric Extenders and blade servers, or the UCS 6324 Fabric Interconnect and blade servers to function in this integrated environment.

Table 2 summarizes the specifications for the Cisco UCS 5100 Series. Table 3 summarizes regulatory standards compliance.

Table 2. Product Specifications

Item	Specification
Height	10.5 in. (26.7 cm); 6RU
Width	17.5 in. (44.5 cm); fits standard 19-inch square-hole rack
Depth	32 in. (81.2 cm)
Blade server half-width slots	8
I/O slots	2
Fabric extenders	<ul style="list-style-type: none"> Cisco UCS 2204XP with 4 x 10 Gigabit Ethernet external ports and 16 x 10 Gigabit Ethernet internal ports Cisco UCS 2208XP with 8 x 10 Gigabit Ethernet external ports and 32 x 10 Gigabit Ethernet internal ports Cisco UCS 2304 with 4 x 40 Gigabit Ethernet external ports and 8 x 40 Gigabit Ethernet internal ports Cisco UCS 2408 with 8 x 25 Gigabit Ethernet external ports and 32 x 10 Gigabit Ethernet internal ports All ports Fibre Channel over Ethernet (FCoE) capable
Fabric interconnect	<p>Cisco UCS 6324 with 4 x 10-Gbps uplinks, 1 x 40-Gbps Enhanced Quad Small Form-Factor Pluggable (QSFP+) expansion port, and 16 x 10-Gbps internal ports</p> <ul style="list-style-type: none"> All ports Fibre Channel over Ethernet (FCoE) capable

Item	Specification			
Power supplies		AC power supply	-48V DC power supply	200 to 380V DC power supply
	Input voltage	100 to 120V AC 200 to 240V AC	-40 to -62V DC	200 to 380V DC
	Maximum output power	1300 watts (W) at 100 to 120V input 2500W at 200 to 240V input	2500W	2500W
	Frequency	50 to 60 Hz	-	-
	Efficiency	94%	92%	94%
	Redundancy	Nonredundant, N+1 redundant, and N+N grid redundant		
Fans	8 hot-swappable fans			
Management	<ul style="list-style-type: none"> • Cisco UCS 6200 Series Fabric Interconnects provide management for mutichassis configurations • Cisco UCS 6300 Series Fabric Interconnects provide management for mutichassis configurations • Cisco UCS 6324 Fabric Interconnect provides management for single/dual-chassis implementations • Cisco UCS 6400 Series Fabric Interconnects provide management for mutichassis configurations 			
Backplane	1.2 Tbps of aggregate throughput; supports 10BASE-KR connections for 8 blades			
Temperature: Operating	50 to 95° F (10 to 35° C) (as altitude increases, maximum temperature decreases by 1° C per 300m)			
Temperature: Nonoperating	-40 to 149° F (-40 to 65° C); maximum altitude is 40,000 ft			
Humidity: Operating	5 to 93% noncondensing			
Humidity: Nonoperating	5 to 93% noncondensing			
Altitude: Operating	0 to 10,000 ft (3000m); maximum ambient temperature decreases by 1° C per 300m			
Altitude: Nonoperating	40,000 ft (12,000m)			

Table 3. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Regulatory compliance	Products comply with CE Markings per directives 2004/108/EC and 2006/108/EC
Safety	<ul style="list-style-type: none">• UL 60950-1• CAN/CSA-C22.2 No. 60950-1• EN 60950-1• IEC 60950-1• AS/NZS 60950-1• GB4943
EMC: Emissions	<ul style="list-style-type: none">• 47CFR Part 15 (CFR 47) Class A (FCC Class A)• AS/NZS CISPR22 Class A• CISPR2 2 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	<ul style="list-style-type: none">• EN50082-1• EN61000-6-1• EN55024• CISPR24• EN300386• KN 61000-4 Series

Warranty information

Find warranty information at [Cisco.com](https://www.cisco.com) on the Product Warranties page.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's [Corporate Social Responsibility](#) (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

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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 help 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, visit <https://www.cisco.com/go/dcservices>.

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.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. [Learn more](#).

For more information

For more information about the Cisco UCS 5100 Series Blade Server Chassis, visit <https://www.cisco.com/en/US/products/ps10279/index.html> or contact your local Cisco representative.

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