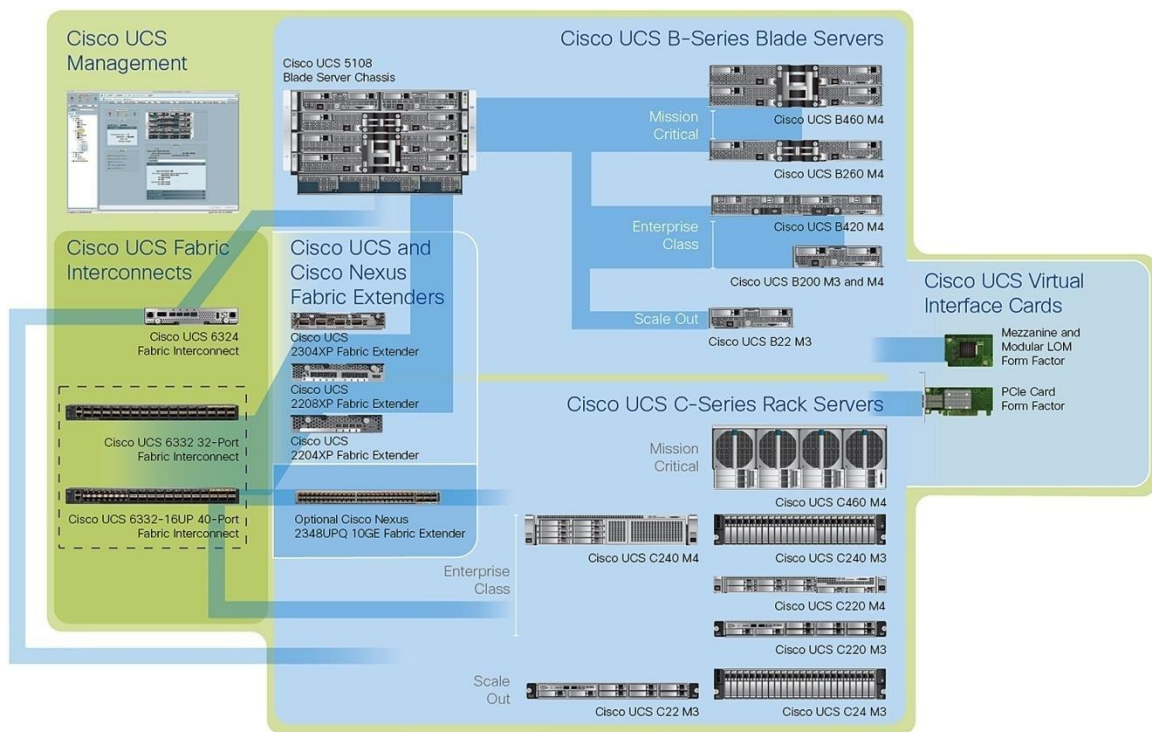


# Cisco UCS 6300 Series Fabric Interconnects

## 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 and 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



## Product Overview

The Cisco UCS 6300 Series Fabric Interconnects are a core part of Cisco UCS, providing both network connectivity and management capabilities for the system (Figure 2). The Cisco UCS 6300 Series offers line-rate, low-latency, lossless 10 and 40 Gigabit Ethernet, Fibre Channel over Ethernet (FCoE), and Fibre Channel functions.

The Cisco UCS 6300 Series provides the management and communication backbone for the Cisco UCS B-Series Blade Servers, 5100 Series Blade Server Chassis, and C-Series Rack Servers managed by Cisco UCS. All servers attached to the fabric interconnects become part of a single, highly available management domain. In addition, by supporting unified fabric, the Cisco UCS 6300 Series provides both LAN and SAN connectivity for all servers within its domain.

From a networking perspective, the Cisco UCS 6300 Series uses a cut-through architecture, supporting deterministic, low-latency, line-rate 10 and 40 Gigabit Ethernet ports, switching capacity of 2.56 terabits per second (Tbps), and 320 Gbps of bandwidth per chassis, independent of packet size and enabled services. The product family supports Cisco® low-latency, lossless 10 and 40 Gigabit Ethernet<sup>1</sup> unified network fabric capabilities, which increase the reliability, efficiency, and scalability of Ethernet networks. The fabric interconnect supports multiple traffic classes over a lossless Ethernet fabric from the server through the fabric interconnect. Significant TCO savings can be achieved with an FCoE optimized server design in which network interface cards (NICs), host bus adapters (HBAs), cables, and switches can be consolidated.

**Figure 2.** Cisco UCS 6300 Series Fabric Interconnects and 2304 Fabric Extender



### **Unified Fabric with FCoE: I/O Consolidation**

The Cisco UCS 6300 Series is built to consolidate LAN and SAN traffic onto a single unified fabric, saving the capital expenditures (CapEx) and operating expenses (OpEx) associated with multiple parallel networks, different types of adapter cards, switching infrastructure, and cabling within racks. The capability to connect FCoE to native Fibre Channel protects existing storage system investments while dramatically simplifying in-rack cabling.

### **Cisco UCS Manager**

The Cisco UCS 6300 Series hosts and runs Cisco UCS Manager in a highly available configuration, enabling the fabric interconnects to fully manage all Cisco UCS elements. Connectivity to the Cisco UCS 5100 Series blade chassis is maintained through the Cisco UCS 2200 Series or 2304 Fabric Extenders in each blade chassis. The Cisco UCS 6300 Series interconnects support out-of-band management through a dedicated 10/100/1000-Mbps Ethernet management port as well as in-band management. Cisco UCS Manager typically is deployed in a clustered active-passive configuration on redundant fabric interconnects connected through dual 10/100/1000 Ethernet clustering ports.

### **Optimization for Virtualization**

For virtualized environments, the Cisco UCS 6300 Series supports Cisco virtualization-aware networking and Cisco Data Center Virtual Machine Fabric Extender (VM-FEX) architecture. Data Center VM-FEX allows the interconnects to provide policy-based virtual machine connectivity, with network properties moving with the virtual machine, and a consistent operational model for both physical and virtual environments.

<sup>1</sup> All Cisco UCS 6300 Series ports can alternatively be configured for 1 Gigabit Ethernet (see Table 2).

### Cisco UCS 6332 32-Port Fabric Interconnect

The Cisco UCS 6332 32-Port Fabric Interconnect (Figure 3) is a 1-rack-unit (1RU) Gigabit Ethernet, and FCoE switch offering up to 2.56 Tbps throughput and up to 32 ports. The switch has 32 fixed 40-Gbps Ethernet and FCoE ports.

Both the Cisco UCS 6332UP 32-Port Fabric Interconnect and the Cisco UCS 6332 16-UP 40-Port Fabric Interconnect have ports that can be configured for the breakout feature that supports connectivity between 40 Gigabit Ethernet ports and 10 Gigabit Ethernet ports. This feature provides backward compatibility to existing hardware that supports 10 Gigabit Ethernet. A 40 Gigabit Ethernet port can be used as four 10 Gigabit Ethernet ports. Using a 40 Gigabit Ethernet SFP, these ports on a Cisco UCS 6300 Series Fabric Interconnect can connect to another fabric interconnect that has four 10 Gigabit Ethernet SFPs. The breakout feature can be configured on ports 1 to 12 and ports 15 to 26 on the Cisco UCS 6332UP fabric interconnect. Ports 17 to 34 on the Cisco UCS 6332 16-UP fabric interconnect support the breakout feature.

**Figure 3.** Cisco UCS 6332UP 32-Port Fabric Interconnect



### Cisco UCS 6332-16UP 40-Port Fabric Interconnect

The Cisco UCS 6332-16UP 40-Port Fabric Interconnect (Figure 4) is a 1RU 10 and 40 Gigabit Ethernet, FCoE, and native 4-, 8, and 16-Gbps Fibre Channel switch offering up to 2.43 Tbps throughput and up to 40 ports. The switch has 24 fixed 40-Gbps Ethernet and FCoE ports and sixteen 1 and 10 Gigabit Ethernet or 4-, 8-, and 16-Gbps Fibre Channel ports.

The unified ports in the Cisco UCS 6332-16UP support direct connections from Cisco UCS to existing native Fibre Channel SANs.

**Figure 4.** Cisco UCS 6332-16UP 40-Port Fabric Interconnect



Table 1 summarizes the characteristics of the Cisco UCS 6300 Series Fabric interconnects.

**Table 1.** Characteristics of Cisco UCS 6300 Series Fabric Interconnects<sup>2</sup>

Item	Cisco UCS 6332	Cisco UCS 6332-16UP
Description	32-port fabric interconnect	40-port fabric interconnect
Form factor	1RU	1RU
Number of fixed 10 and 40 Gigabit Ethernet and FCoE Enhanced Small Form-Factor Pluggable (SFP+) ports	32 fixed ports	40 fixed ports
Throughput	2.56 Tbps	2.43 Tbps
Fan modules	2+2	2+2

<sup>2</sup> The Cisco UCS 6300 Series requires Cisco UCS Manager operating software Release 3.1 or later.

## Features and Benefits

Table 2 summarizes the features and benefits of the Cisco UCS 6300 Series.

**Table 2.** Features and Benefits

Feature	Benefit
<b>Management by Cisco UCS Manager</b>	<ul style="list-style-type: none"> <li>Allows all elements connected to the interconnects to participate in a single, highly available management domain</li> </ul>
<b>Unified fabric</b>	<ul style="list-style-type: none"> <li>Decreases TCO by reducing the number of NICs, HBAs, switches, and cables required</li> <li>Transparently encapsulates Fibre Channel packets into Ethernet</li> </ul>
<b>Fabric extender architecture</b>	<ul style="list-style-type: none"> <li>Scales to 20 blade chassis without adding complexity by eliminating the need for dedicated chassis management and blade switches and by reducing the number of cables needed</li> <li>Provides deterministic latency for optimized application performance</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>Provides high-speed, low-latency connectivity to the chassis</li> </ul>
<b>Lossless fabric</b>	<ul style="list-style-type: none"> <li>Provides a reliable, robust foundation for unifying LAN and SAN traffic on a single transport</li> </ul>
<b>Priority flow control (PFC)</b>	<ul style="list-style-type: none"> <li>Simplifies management of multiple traffic flows over a single network link.</li> <li>Supports different classes of service, helping enable both lossless and classic Ethernet on the same fabric</li> </ul>
<b>Systemwide bandwidth management</b>	<ul style="list-style-type: none"> <li>Helps enable consistent and coherent quality of service (QoS) throughout the system</li> </ul>
<b>Cisco Data Center VM-FEX technology</b>	<ul style="list-style-type: none"> <li>Helps enable a consistent operational model between virtual and physical environments</li> <li>Provides the same level of network visibility for virtualized and nonvirtualized environments</li> <li>Improves diagnostic and troubleshooting capabilities in a virtual environment</li> <li>Simplifies network and security policy enforcement when migrating virtual machines from one host to another</li> </ul>
<b>Redundant hot-swappable fans and power supplies</b>	<ul style="list-style-type: none"> <li>Helps enable high availability in multiple configurations</li> <li>Increases serviceability</li> <li>Provides uninterrupted service during maintenance</li> </ul>
<b>Front-to-back cooling</b>	<ul style="list-style-type: none"> <li>Supports efficient data center hot- and cold-aisle designs</li> </ul>
<b>SFP+ ports</b>	<ul style="list-style-type: none"> <li>Increases flexibility with a range of interconnect solutions, including copper Twinax cable for short runs and fiber for long runs</li> <li>Consumes less power per port than traditional solutions.</li> <li>Helps enable cost-effective connections on fabric extenders with Cisco Fabric Extender Transceiver (FET) optics</li> </ul>
<b>SFP-compatible ports</b>	<ul style="list-style-type: none"> <li>Allows fixed ports to be configured to operate in 40/10 Gigabit Ethernet mode with the transceiver options specified for use with SFP-compatible ports in Table 3</li> </ul>
<b>Port-based licensing options</b>	<ul style="list-style-type: none"> <li>Helps enable a pay-as-you-go model, allowing customers to add capacity as the networking needs of an individual system increase</li> </ul>

## Product Specifications

### Transceivers

The Cisco UCS 6300 Series supports a wide variety of a10 and 40 Gigabit Ethernet connectivity options using Cisco 40GBASE and 10GBASE SFP+ modules. Unified ports on the Cisco UCS 6332-16UP support 1 and 10 Gigabit Ethernet connectivity options, and QSFP+ ports support 40 Gigabit Ethernet. Alternatively, 4-, 8-, and 16-Gbps Fibre Channel SFP+ are supported on the Cisco UCS 6332-16UP on 16 ports. Cisco UCS 6332 supports only 40-Gbps QSFP+ connectivity options.

Table 3 lists the supported transceiver options.

**Table 3.** Cisco UCS 6300 Series Transceiver Support Matrix

Product Number	Description
<b>SFP 1-Gbps Transceivers</b>	
<b>GLC-T</b>	1000BASE-T standard
<b>GLC-SX-MMD</b>	1000BASE-SX short wavelength; with DOM
<b>SFP+ 10-Gbps Transceivers</b>	
<b>SFP-10G-SR</b>	Cisco 10GBASE-SR SFP+ module for multimode fiber (MMF)
<b>SFP-10G-SR-S</b>	Cisco 10GBASE-SR SFP+ module for MMF (S-Class)
<b>SFP-10G-LR</b>	Cisco 10GBASE-LR SFP+ module for single-mode fiber (SMF)
<b>SFP-10G-LR-S (S-Class)</b>	Cisco 10GBASE-LR SFP+ module for SMF
<b>FET-10G</b>	10-Gbps line extender for fabric extender
<b>QSFP+ 40-Gbps Transceivers</b>	
<b>QSFP-40G-SR4</b>	40zGBASE-SR4 QSFP module (MMF at 100m)
<b>QSFP-40G-SR4-S</b>	40zGBASE-SR4 QSFP module (MMF at 100m)
<b>QSFP-40G-CSR4</b>	40GBASE Extended CSR4 QSFP module (MMF at 300m)
<b>QSFP-40G-LR4</b>	Cisco 40GBASE-LR4 QSFP+ transceiver module for SMF, duplex LC connector
<b>QSFP-40G-LR4-S</b>	Cisco 40GBASE-LR4 QSFP+ transceiver module for SMF, duplex LC connector
<b>QSFP-40G-SR-BD</b>	Cisco QSFP40G BiDi short-reach transceiver
<b>Fibre Channel Transceivers</b>	
<b>DS-SFP-FC4G-SW(=)</b>	4-Gbps Fibre Channel shortwave, SFP, LC
<b>DS-SFP-FC4G-LW(=)</b>	4-Gbps Fibre Channel, longwave, SFP, LC
<b>DS-SFP-FC8G-SW(=)</b>	8-Gbps Fibre Channel, shortwave, SFP+, LC
<b>DS-SFP-FC8G-LW(=)</b>	8-Gbps Fibre Channel, longwave, SFP+, LC
<b>DS-SFP-FC16G-SW(=)</b>	16-Gbps Fibre Channel, shortwave, SFP+, LC
<b>SFP+ and QSFP+ Copper Cables with Integrated Transceivers</b>	
<b>SFP-H10GB-CU1M</b>	10GBASE-CU SFP+ cable, 1m, passive
<b>SFP-H10GB-CU2M</b>	10GBASE-CU SFP+ cable, 2m, passive
<b>SFP-H10GB-CU3M</b>	10GBASE-CU SFP+ cable, 3m, passive
<b>SFP-H10GB-CU5M</b>	10GBASE-CU SFP+ cable, 5m, passive
<b>SFP-H10GB-ACU7M</b>	10GBASE-CU SFP+ cable, 7m, active
<b>SFP-H10GB-ACU10M</b>	10GBASE-CU SFP+ cable, 10m, active
<b>SFP-10G-AOC1M</b>	10GBASE-AOC SFP+ cable, 1m
<b>SFP-10G-AOC2M</b>	10GBASE-AOC SFP+ cable, 2m
<b>SFP-10G-AOC3M</b>	10GBASE-AOC SFP+ cable, 3m
<b>SFP-10G-AOC5M</b>	10GBASE-AOC SFP+ cable, 5m
<b>SFP-10G-AOC7M</b>	10GBASE-AOC SFP+ cable, 7m
<b>SFP-10G-AOC10M</b>	10GBASE-AOC SFP+ cable, 10m
<b>FET-10G</b>	10-Gbps line extender for fabric extender
<b>QSFP-4x10G-AC7M</b>	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ direct-attach breakout cable, 7m, active
<b>QSFP-4x10G-AC10M</b>	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ direct-attach breakout cable, 10m, active
<b>QSFP-H40G-CU1M</b>	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 1m, passive
<b>QSFP-H40G-CU3M</b>	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 3m, passive
<b>QSFP-H40G-CU5M</b>	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 5m, passive

Product Number	Description
QSFP-H40G-ACU7M	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 7m, active
QSFP-H40G-ACU10M	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 10m, active
QSFP-4SFP10G-CU1M	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ passive direct-attach copper transceiver assembly, 1m
QSFP-4SFP10G-CU3M	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ passive direct-attach copper transceiver assembly, 3m
QSFP-4SFP10G-CU5M	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ passive direct-attach copper transceiver assembly, 5m
QSFP-4X10G-AOC1M	Cisco 40GBASE-AOC QSFP to 4 SFP+ active optical breakout cable, 1m
QSFP-4X10G-AOC2M	Cisco 40GBASE-AOC QSFP to 4 SFP+ active optical breakout cable, 2m
QSFP-4X10G-AOC3M	Cisco 40GBASE-AOC QSFP to 4 SFP+ active optical breakout cable, 3m
QSFP-4X10G-AOC5M	Cisco 40GBASE-AOC QSFP to 4 SFP+ active optical breakout cable, 5m
QSFP-4X10G-AOC7M	Cisco 40GBASE-AOC QSFP to 4 SFP+ active optical breakout cable, 7m
QSFP-4X10G-AOC10M	Cisco 40GBASE-AOC QSFP to 4 SFP+ active optical breakout cable, 10m
QSFP-H40G-AOC1M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 1m
QSFP-H40G-AOC2M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 2m
QSFP-H40G-AOC3M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 3m
QSFP-H40G-AOC5M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 5m
QSFP-H40G-AOC7M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 7m
QSFP-H40G-AOC10M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 10m
QSFP-H40G-AOC15M	Cisco 40GBASE-AOC QSFP direct-attach active optical cable, 10m
CVR-QSFP-SFP10G	Cisco 40GBASE QSFP to SFP+ and SFP adapter (QSA)
FET-40G	40-Gbps line extender for fabric extender

The Cisco UCS 6332 requires a QSA module to support 1- and 10-Gbps optics and cables.

## Cabling

Table 4 provides 10 and 40 Gigabit Ethernet cabling specifications for the Cisco UCS 6300 Series.

**Table 4.** 10 and 40 Gigabit Ethernet Cabling Specifications

Connector (Media)	Cable	Distance	Power (Each Side)	Transceiver Latency (Link)	Standard
SFP+ copper (CU)	Twinax	1, 3, and 5m	Approximately 0.1 watt (W)	Approximately 0.1 microsecond	SFF 8431
SFP+ ACU copper	Active Twinax	7m 10m	Approximately 0.5W	Approximately 0.1 microsecond	SFF 8461
SFP+ FET	MM OM2 MM OM3 MM OM4	25 and 100m	1W	Approximately 0 microseconds	IEEE 802.3ae
SFP+ short reach (SR) and MMF	MM OM2 MM OM3 MM OM4	82 and 300m	1W	Approximately 0 microseconds	IEEE 802.3ae
SFP+ long reach (LR)	SMF	10 km	1W	Approximately 0 microseconds	IEEE 802.3ae
SFP+ long reach (ER)	SMF	40 km	1.5W	Approximately 0 microseconds	IEEE 802.3ae
SFP+ long reach (ZR)	SMF	80 km	1.5W	Approximately 0 microseconds	IEEE 802.3ae

## Performance

- Cisco UCS 6332: Layer 2 hardware forwarding at 2.56 Tbps or 720 million packets per second (mpps)
- Cisco UCS 6332-16UP: Layer 2 hardware forwarding at 2.43 Tbps or 683 million packets per second (mpps)

- MAC address table entries: 32,000
- Low-latency cut-through design: Provides predictable, consistent traffic latency regardless of packet size, traffic pattern, or enabled features

## **Layer 2**

- Layer 2 interconnect ports and 2000 VLAN
- IEEE 802.1Q VLAN encapsulation
- Support for up to 1024 VLANs and virtual SANs (VSANs) per interconnect
- Rapid Per-VLAN Spanning Tree Plus (PVRST+)
- Internet Group Management Protocol (IGMP) Versions 1, 2, and 3 snooping
- Cisco EtherChannel technology
- Link Aggregation Control Protocol (LACP): IEEE 802.3ad
- Advanced EtherChannel hashing based on Layer 2, 3, and 4 information
- Jumbo frames on all ports (up to 9216 bytes)
- Pause frames (IEEE 802.3x)

## **QoS**

- Layer 2 IEEE 802.1p (class of service [CoS])
- Eight hardware queues per port
- Per-port QoS configuration
- CoS trust
- Per-port virtual output queuing
- CoS-based egress queuing
- Egress strict-priority queuing
- Egress port-based scheduling: Weighted Round-Robin (WRR)

## **High Availability**

- Hot-swappable field-replaceable power supplies, fan modules, and expansion modules
- 1+1 power redundancy
- N+1 fan module redundancy

## **Management**

- Interconnect management using redundant 10/100/1000-Mbps management or console ports
- All management provided through Cisco UCS Manager; please refer to the Cisco UCS Manager data sheet for more information about management interfaces

## **Low-Latency, Lossless 10 and 40 Gigabit Ethernet Unified Network Fabric**

- PFC (per-priority pause frame support)
- Data Center Bridging Exchange (DCBX) Protocol
- IEEE 802.1Qaz: Bandwidth management

## Unified Ports

- UCS 6332-16UP can be configurable as 10 and 40 Gigabit Ethernet or 4/8/16-Gbps Fibre Channel

## Industry Standards

- IEEE 802.1p: CoS prioritization
- IEEE 802.1Q: VLAN tagging
- IEEE 802.1s: Multiple VLAN instances of Spanning Tree Protocol
- IEEE 802.1w: Rapid reconfiguration of Spanning Tree Protocol
- IEEE 802.3: Ethernet
- IEEE 802.3ad: LACP
- IEEE 802.3ae: 10 Gigabit Ethernet
- IEEE 802.3bg: 40 Gigabit Ethernet
- SFP+ support
- Remote Monitor (RMON)

## Physical Specifications

### QSFP+ Optics

Cisco UCS products support 10 and 40 Gigabit Ethernet SFP+ and QSFP+ copper Twinax cables for short distances, and SFP+ and QSFP+ optics for longer distances. SFP+ and QSFP+ have several advantages compared to other 10 and 40 Gigabit Ethernet connectivity options:

- 10 and 40 Gigabit Ethernet form factor
- Optical interoperability with XENPAK, X2, and 10 Gigabit Small Form-Factor Pluggable (XFP) interface types
- Low power consumption
- Hot-swappable device

## Power Supply

Tables 5 and 6 summarize the power supply properties for the Cisco UCS 6300 Series.

**Table 5.** AC Power Supply

Property	Cisco UCS 6332
Typical operating power	212W
Maximum power	650W
Input voltage	100 to 240VAC Input current: 7.6A at 100VAC; 3.65A at 208VAC; maximum input power: 760VAC
Frequency	50 to 60 Hz
Efficiency	95 to 98% (50 to 100% load)
RoHS compliance	Yes
Hot swappable	Yes
Heat dissipation	Typical 723 BTU/hr Maximum 2217 BTU/hr



**Table 6.** DC Power Supply

Property	Cisco UCS 6332/6332-16UP
Typical operating power	400W with 48-ports running 100%
Maximum output power	930W
Input voltage	-40 to -72VDC
Input current	23A maximum
Maximum input power	1104VA
Efficiency	88 to 92% (50 to 100% load)
RoHS compliance	Yes
Hot swappable	Yes
Maximum heat dissipation	3171.3 BTU

## Cisco UCS 6300 Series Physical and Environmental Specifications

Table 7 summarizes the physical and environmental specifications for the Cisco UCS 6300 Series.

**Table 7.** Physical and Environmental Specifications

Property	Cisco UCS 6332	Cisco UCS 6332-16UP
Physical (height x width x depth)	1.72 in. x 17.3 in. x 22.5 in. (4.4 cm x 43.9 cm x 57.1 cm)	1.72 in. x 17.3 in. x 22.5 in. (4.4 cm x 43.9 cm x 57.1 cm)
Operating temperature	32 to 104°F (0 to 40°C)	
Nonoperating temperature	-40 to 158°F (-40 to 70°C)	
Humidity	5 to 95% (noncondensing)	
Altitude	0 to 10,000 ft (0 to 300m)	

## Weight

Table 8 summarizes the weights for the Cisco UCS 6300 Series.

**Table 8.** Weight

Component	Weight
Cisco UCS 6332 with two power supplies, and four fan modules	22 lb (9.97 kg)
Cisco UCS 6332-16UP with two power supplies, and four fan modules	22.6 lb (10.25 kg)

## Regulatory Standards Compliance: Safety and EMC

Table 9 summarizes Cisco UCS 6300 Series regulatory compliance.

**Table 9.** Regulatory Standards Compliance

Specification	Description
Regulatory compliance	Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC
Safety	<ul style="list-style-type: none"><li>• UL 60950-1</li><li>• CAN/CSA-C22.2 No. 60950-1</li><li>• EN 60950-1</li><li>• IEC 60950-1</li><li>• AS/NZS 60950-1</li><li>• GB4943</li></ul>

Specification	Description
<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>• CISPR22 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>• EN50082-1</li> <li>• EN61000-6-1</li> <li>• EN55024</li> <li>• CISPR24</li> <li>• EN300386</li> <li>• KN 61000-4 series</li> </ul>
<b>RoHS</b>	The product is RoHS 5-compliant with exceptions for leaded ball grid array (BGA) balls and lead press-fit connectors

## Ordering Information

Table 10 presents ordering information for the Cisco UCS 6300 Series Fabric Interconnects.

**Table 10.** Ordering Information

Part Number	Description
<b>Fabric Interconnect</b>	
<b>UCS-FI-6332-U</b>	UCS 6332 1RU Fabric Interconnect/No PSU/32 QSFP+/8p LIC
<b>UCS-FI-6332-16UP-U</b>	UCS 6332-16UP 1RU Fabric Interconnect/No PSU/24 QSFP+ & 16 UP/12p LIC
<b>Power Supply and Fan</b>	
<b>UCS-PSU-6332-AC</b>	UCS 6332 Power Supply/100-240VAC
<b>UCS-PSU-6332-DC</b>	UCS 6332 Power Supply/-48VDC
<b>UCS-FAN-6332</b>	UCS 6332 Series Fan Module
<b>Accessory and Blanks</b>	
<b>UCS-ACC-6332</b>	UCS 6332 Chassis Accessory Kit

## Warranty Information

Warranty information is provided at Cisco.com on the [Product Warranties](#) page.

## 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, 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 vision that encompasses the whole data center. Cisco, as one of the largest technology providers in the world, has the resources, expertise, and customer focus to deliver on this vision.

## Cisco Capital

### Financing to Help You Achieve Your Objectives

Cisco Capital can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. [Learn more.](#)

## For More Information

For more information about the Cisco UCS 6300 Series Fabric Interconnects, visit <http://www.cisco.com/en/US/products/> or contact your local account representative.



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