Cisco UCS Mini
Blade Server Chassis

CONTENTS

OVERVIEW

The UCS Mini chassis is a 6RU chassis that can accommodate up to 8 half-width blades, 4 full-width blades, or combinations of half and full-width blades. The chassis is a Cisco UCS 5108 Blade Server Chassis that allows the two I/O bays at the rear of the chassis to accommodate the UCS 6324 Fabric Interconnect modules.

Figure 1 shows the front and rear views of a UCS Mini chassis filled with various blade servers:

Figure 1   Cisco UCS Mini Blade Server Chassis (front view)

Figure 2   Cisco UCS Mini Server Chassis (rear view showing two UCS 6324 FIs installed)

DETAILED VIEWS

Chassis Front Views

Figure 3 is a detailed front view of the Cisco UCS Mini Blade Server Chassis with eight half-width blade servers installed.

Figure 3   UCS Mini Chassis Front View With Eight Half-Width Blade Servers Installed
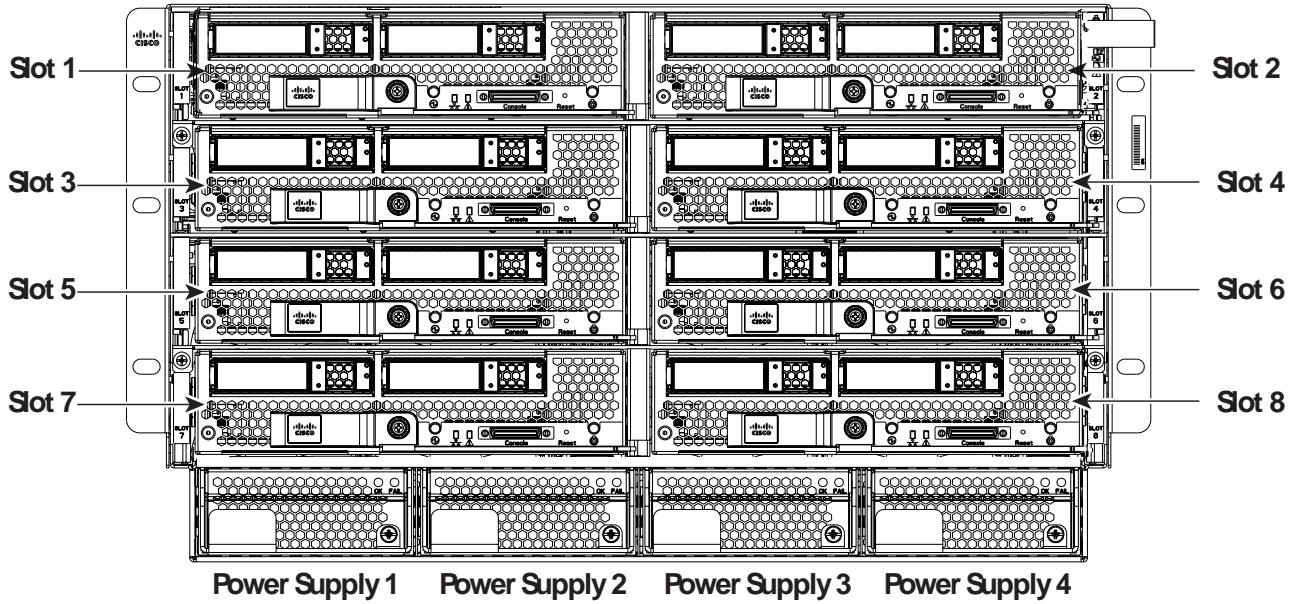
Table 1   Front View Callouts

Callout	Description
Slot 1 - 8	Slot numbering for half-width blade servers
Power Supply 1 - 4	4x Power Supplies: 2500W output at 200 - 240V and 1300W output at 100 - 120V

Figure 4 is a detailed front view of the Cisco UCS Mini Blade Server Chassis with four full-width blade servers installed.

Figure 4   **UCS Mini Chassis Front View With Four Full-Width Blade Servers Installed**
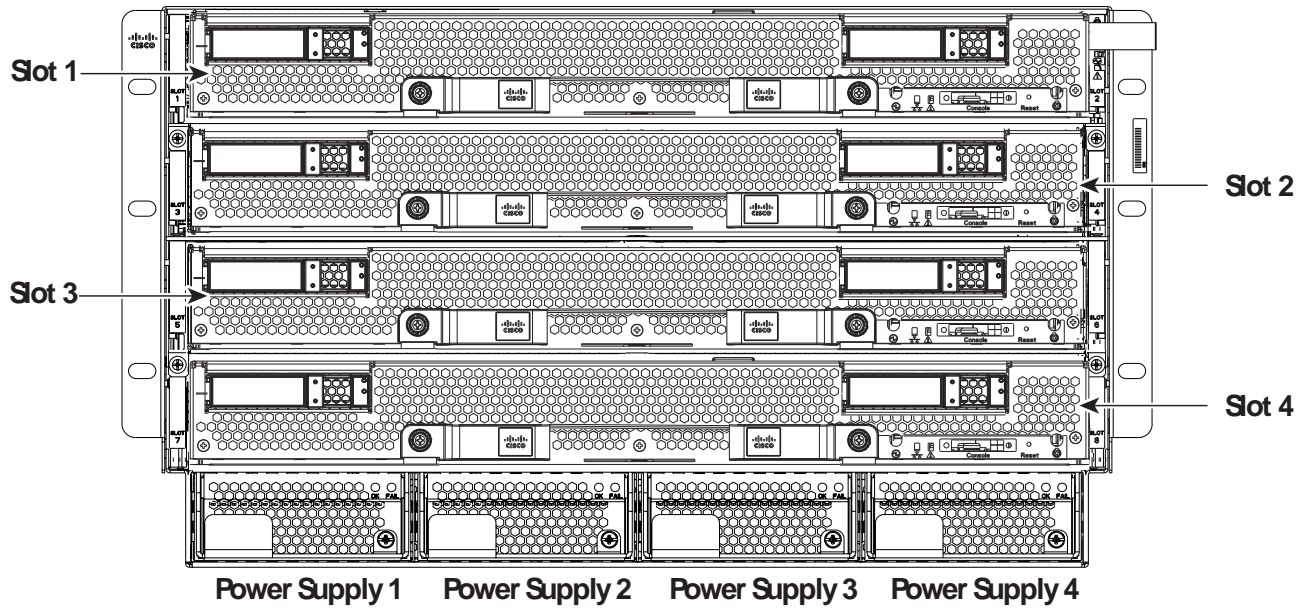
Table 2   Front View Callouts

Callout	Description
Slot 1 - 4	Slot numbering for full-width blade servers
Power Supply 1 - 4	4x Power Supplies: 2500W output at 200 - 240V and 1300W output at 100 - 120V

Chassis Rear View

Figure 5 shows the rear view of the UCS Mini chassis (AC power version).

Figure 5   Chassis Rear View (AC power supplies)
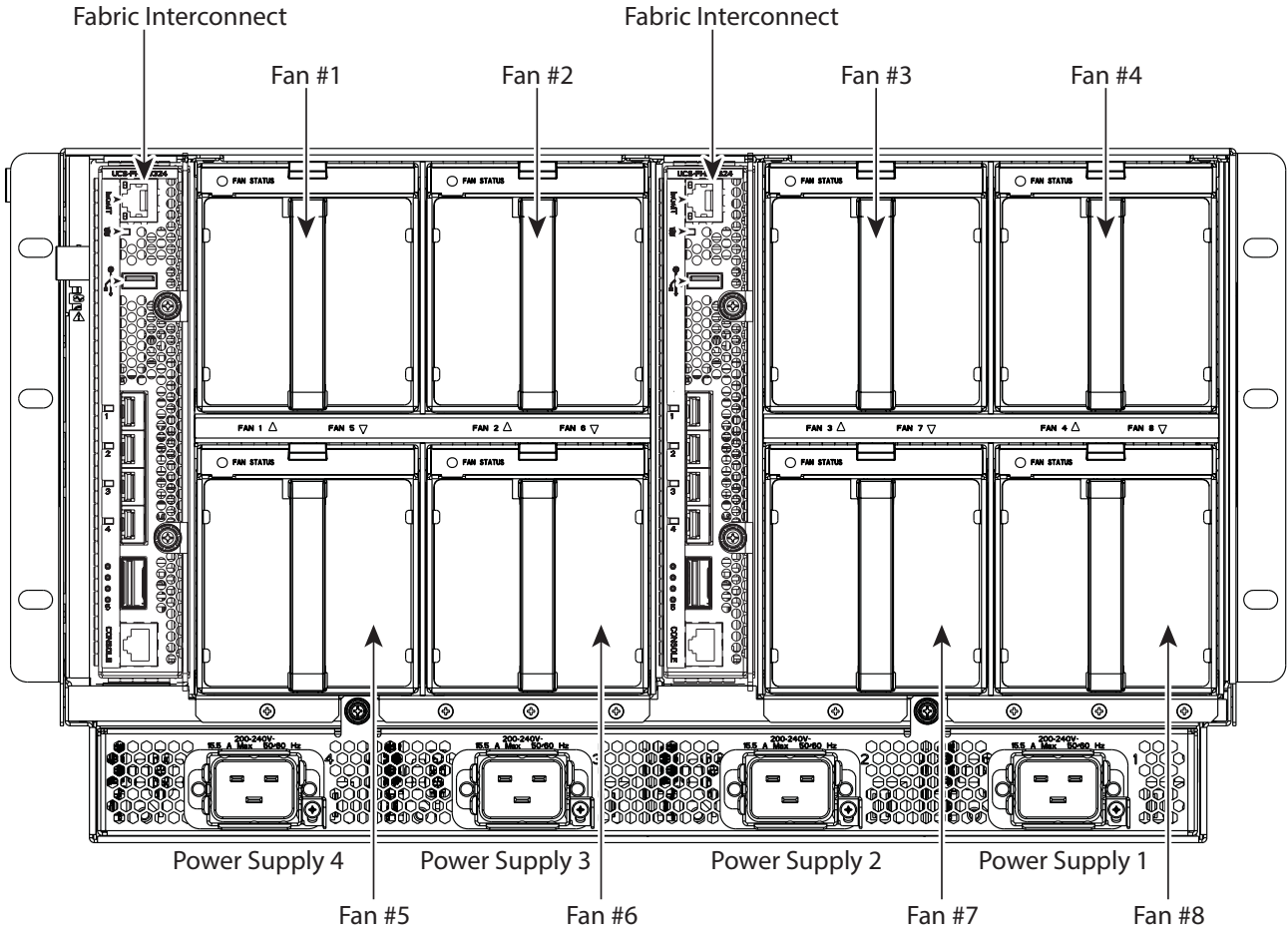
Fabric Interconnect Module

The Fabric Interconnect modules (up to two) plug into the back of the UCS Mini series blade server chassis. A midplane connects the blade servers to the Fabric Interconnects. The UCS Mini chassis accommodates the following Fabric Interconnect module:

- ◻ Cisco UCS 6324 Fabric Interconnect

Figure 6 shows the Fabric Interconnect.

Figure 6   Cisco UCS 6324 Fabric Interconnect

BASE CHASSIS STANDARD CAPABILITIES and FEATURES

Table 3 lists the capabilities and features of the base UCS Mini chassis. Details about how to configure the chassis for a particular feature or capability are provided in **CONFIGURING the CHASSIS on page 11**.

Table 3   Capabilities and Features

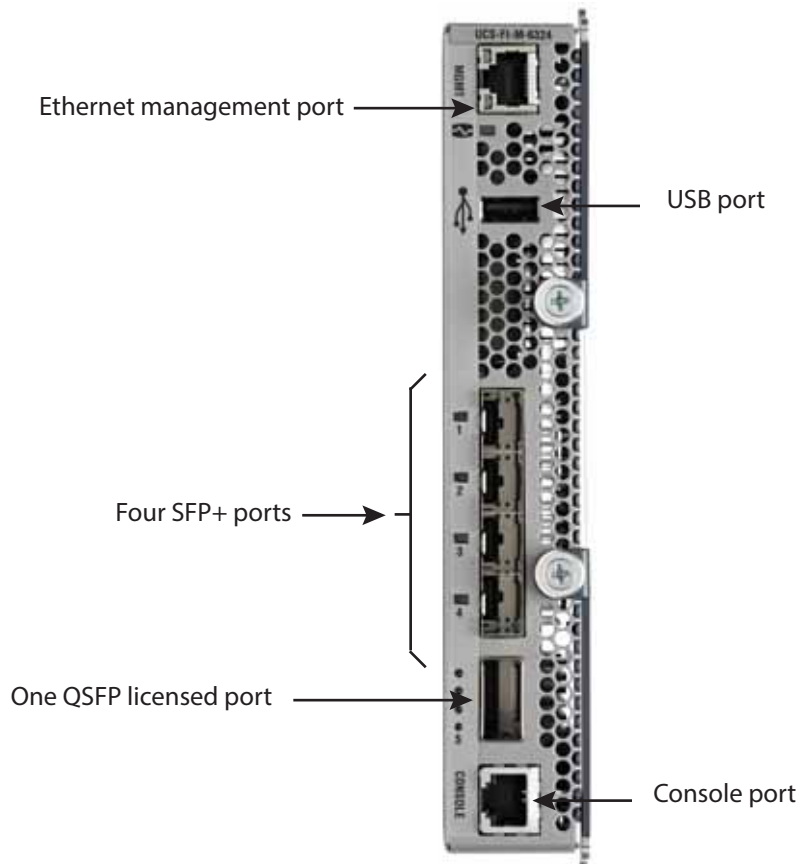| Capability/Feature	Description
Management by Cisco UCS Manager	☑ Reduces TCO by consolidating management modules into the chassis, making the chassis stateless ☑ Provides a single, highly available management domain for all system chassis, reducing administrative tasks through automated service profile configuration
Unified fabric	Decreases TCO by reducing the number of network interface cards (NICs), host bus adapters (HBAs), switches, and cables needed
Support for up to two Cisco UCS 6324 Fabric Interconnects that connect directly to external Nexus switch	☑ Allows use of up to two 6324 fabric interconnects for redundancy or aggregation of bandwidth ☑ The 6324 Fabric Interconnect combines the Fabric Extender and Fabric Interconnect functions into one plug-in module, and allows direct connection to an external switch.
Auto-discovery	Requires no configuration; like all components in the Cisco Unified Computing System, chassis are automatically recognized and configured by Cisco UCS Manager and its service profiles and service profile groups
High-performance mid-plane	☑ Provides investment protection ☑ Supports up to 80 Gbit Ethernet links to each half-width blade slot ☑ Provides 8 blades with 1.2 Tbps of available Ethernet throughput for future I/O requirements. Note the maximum I/O per 6324 is 500 Gbps.
Redundant hot-swappable power supplies and fans	☑ Provides high availability in multiple configurations ☑ Provides uninterrupted service during maintenance
Hot-swappable blade servers and fabric interconnects	Provides uninterrupted service during maintenance and server deployment
Comprehensive monitoring	☑ Provides extensive environmental monitoring on each chassis ☑ Allows use of user thresholds to optimize environmental management of the chassis
Thermal efficiencies	The Chassis Management Controller (CMC) monitors all the temperature sensors and regulates fan speeds to maintain the airflow at the minimum needed to cool the system. The open backplane and deep plenum allow air to be directed across the blades to ensure cooling is directed where it is needed most.
Tool-free installation	☑ Requires no specialized tools for chassis installation ☑ Provides mounting rails for easy installation and servicing

Table 3 Capabilities and Features *(continued)*

Capability/Feature	Description
Mixed blade configurations	The UCS Mini Server Chassis can accommodate a maximum of 8 half-width sever blades or 4 full-width server blades or any combinations of the two sizes that will fit in the chassis.
UCS Manager	The UCS Mini requires UCS Manager (UCSM) version 3.0 or higher. To support the B420 M4, UCSM 3.1 or higher is required.

SUPPORTED FEATURES AND CONFIGURATIONS

Table 4 lists the supported features and configurations of the UCS Mini.

Table 4   Supported Features and Configurations

Capability/Feature	Description
Blade Servers	The UCS Mini supports the B200 M4, B200 M3, B420 M3, and B420 M4 servers. It also supports the B260 M4 and B460 M4 servers (v3 and v4 CPU versions only).
Port Usage	The UCS Mini has four SFP+ ports and one QSFP port. The four SFP+ ports can be configured as: - Uplink ports 1 Gbit ports 10 Gbit ports - FCoE ports 2/4/8 Gbit Fibre Channel ports The QSFP port can only be used to connect to a secondary chassis, rack servers, or storage. **NOTE:** one SFP+ port must be used as a uplink
Rack Servers	In a single-chassis configuration, up to seven C220 M3, C240 M3, C220 M4,and C240 M4 rack servers are supported. To connect the maximum of seven rack mount servers: - Four servers can connect to the 6324 FI QSFP port (primary chassis) - Three servers can connect to the 6324 FI SFP+ ports (primary chassis) - The remaining 6324 FI SFP+ port is reserved for use as an uplink In a dual chassis configuration, a maximum of four C220 M3, C240 M3, C220 M4,and C240 M4 rack servers can be connected using the 6324 FI QSFP and SFP ports in the primary chassis.
Number of UCS Mini Chassis	Two UCS mini chassis can be connected together. The primary chassis utilizes two 6324 Fabric Interconnects and the secondary chassis utilizes two 2208XP or 2204XP Fabric Extenders (the 2204XP is recommended).
Licensing	The QSFP port must have a scalability license in order to be put into service.
Cisco UCS 6324 Fabric Interconnect	One or two Cisco UCS 6324 FIs can be installed in the UCS Mini
Fabric Extenders	Fabric Extenders (such as the 2204XP or 2208XP) are only supported in the secondary chassis and cannot be installed in the primary chassis.

CONFIGURING the CHASSIS

Follow these steps to configure the Cisco UCS Mini chassis:

STEP 1 VERIFY BASE CHASSIS SKU

Verify the product ID (PID) of the base UCS Mini chassis as shown in *Table 5*.

Table 5 PID of the Base UCS Mini Chassis

Product ID (PID)	Description	Usage
UCSB-5108-AC2	UCS 5108 Blade Server AC2 Chassis, 0 PSU/8 fans/0 FEX	Used as part of the N20-Z0001 and UCS-MINI-Z0001 bundle to include Fabric Interconnects, blades, power supplies (PSUs) and fabric extender (FEX) modules as a configured system.
UCSB-5108-AC2-UPG	UCS 5108 Blade Server AC2 Chassis, 0 PSU/8 fans/0 FEX	Can only be used to order a chassis configured with blades, power supplies, and FEX modules. May not be used to order an empty chassis.
UCSB-5108-AC2=	UCS 5108 Blade Server AC2 Chassis, 0 PSU/8 fans/0 FEX	Used to order an empty chassis, cannot be configured with blades. Power supplies and FEX modules may be installed.
UCSB-5108-DC2	UCS 5108 Blade Server DC2 Chassis/0 PSU/8 fans/0 FEX	Used as part of the N20-Z0001 and UCS-MINI-Z0001 bundle to include Fabric Interconnects, blades, power supplies (PSUs) and fabric extender (FEX) modules as a configured system.
UCSB-5108-DC2-UPG	UCS 5108 Blade Server DC2 Chassis/0 PSU/8 fans/0 FEX	Can only be used to order a chassis configured with blades, power supplies, and FEX modules. May not be used to order an empty chassis.
UCSB-5108-DC2=	UCS 5108 Blade Server DC2 Chassis/0 PSU/8 fans/0 FEX	Used to order an empty chassis, cannot be configured with blades. Power supplies and FEX modules may be installed.

Included with the chassis:

☒ N20-CAK: Chassis Accessory Kit, consisting of:

— N20-CRMK2: One Rail kit that supports square-holed racks (or round hole racks with an optional adapter - see below)

— N20-BKVM=: KVM local console connector dongle cable that connects to the front of any UCS blade server, and documentation

— N20-FAN5: Eight redundant and hot-swappable fan modules

Not included with the chassis (but may be ordered separately):

☒ N20-CRMK2=: Additional or spare rail kit for the Cisco UCS Mini chassis

☒   N20-CRMK2-RHA=: Round hole adapter kit (for threaded and non-threaded holes) for the rail kit (N20-CRMK2) included with the chassis.

> **NOTE:** The adapter kit only works with the N20-CRMK2 rail kit

☒   N20-CBLKB1=: Blade slot blanking panel for UCS 5108/single slot

☒   N20-CDIVH=: Horizontal divider for UCS 5108

Caveats

☒   You must select either an AC or -48 VDC version of the chassis.

☒   There is no mixing allowed of AC and -48 VDC power supplies within the same 5108 chassis.

STEP 2   SELECT FABRIC INTERCONNECTS

The Fabric Interconnect options are:

- ☒ Cisco UCS 6324 Fabric Interconnect

Choose Fabric Interconnects

The available Fabric Interconnects are listed in *Table 6*. Each Fabric Interconnect integrates the functions of a Fabric I/O Extender and Fabric Interconnect and connects directly to external Nexus switches by means of several ports of 10GbE and Fibre Channel over Ethernet (FCoE).

Table 6   Available Fabric Interconnects

Product ID (PID)	Fabric Interconnect	Number of Internal 10GbE/FCoE Ports	Number of 1Gb/10Gb FCoE Uplink Ports	Number of 40GbE/FCoE Scalability Ports[1]	Number of FC Ports (8 Gbps/ 4 Gbps)	Total Chassis I/O per Fabric Interconnect
UCS-FI-M-6324	UCS 6324 in-chassis FI with 4 x SFP+ ports, 1 x 40G QSFP expansion port, and 16 10G-KR links to servers	16	4	1	up to 4	500 Gbs[2]

Notes . . .

1. The scalability port supports a QSFP breakout cable. A QSFP license (PID UCS-6324-40G) is required for each 6324 Fabric Interconnect scalability port that is to be put into service (see *Table 11 on page 17*).
2. 40 Gbps QSFP port + 4 uplink SFP+ ports * 10Gbps + 16 server internal ports * 10 Gbps + 1 crosslink port * 10Gbps = 250 Gbps. Full duplex = 500 Gbps.

Approved Configurations

(1) Choose one or two identical Fabric Interconnects

Caveats

- ☒ You must select either one or two identical Fabric Interconnects. A QSFP license must be purchased for each scalability port that is to be placed into service.

STEP 3   CHOOSE ADDITIONAL COMPONENTS (OPTIONAL)

A variety of optical and copper Small Form-Factor Pluggable (SFP) transceivers and copper twinax cables are available for use with the Fabric Interconnects.

Choose 10 GbE SFP+ Optical Transceivers

You can choose up to four SFP+ optical transceivers for each 6324, as shown in *Table 7*.

Table 7   10GbE Transceivers

Product ID (PID)	PID Description
SFP-10G-LR	10GBASE-LR SFP Module
SFP-10G-LR-X	10GBASE-LR SFP Module for extended temp range
SFP-10G-SR	10GBASE-SR SFP Module
SFP-10G-SR-X	10GBASE-SR SFP Module for extended temp range

Choose 1 GbE and 8 GbE Transceivers

You may choose up to four transceivers for each 6324, as shown in *Table 8*.

Table 8   SFP Optical Transceivers

Product ID (PID)	PID Description
1GbE Transceivers	
GLC-SX-MM	GE SFP, LC connector SX transceiver
GLC-LH-SM	GE SFP, LC connector LX/LH transceiver
GLC-T (V03 or higher)	1000BASE-T SFP

Choose Twinax Copper Cables

You can choose twinax copper cables of various lengths (from 1 to 10 meters) as shown in *Table 9*. The two longer cables (7 and 10 meters) are active, which means that they contain active components within the SFP+ connector housing to improve signal quality. The ends of these cables are connectorized to plug directly into SFP receptacles.

Table 9   Twinax Copper Cables

Product ID (PID)	PID Description
SFP-H10GB-CU1M	10 G Base-CU SFP+, 1 meter (twinax cable)
SFP-H10GB-CU3M	10 G Base-CU SFP+, 3 meter (twinax cable)
SFP-H10GB-CU5M	10 G Base-CU SFP+, 5 meter (twinax cable)
SFP-H10GB-ACU7M	10 G Base-CU SFP+, 7 meter (twinax cable)
SFP-H10GB-ACU10M	10 G Base-CU SFP+, 10 meter (twinax cable)
SFP-10G-AOC1M	10GBASE Active Optical SFP+ Cable, 1M
SFP-10G-AOC3M	10GBASE Active Optical SFP+ Cable, 3M
SFP-10G-AOC5M	10GBASE Active Optical SFP+ Cable, 5M
SFP-10G-AOC7M	10GBASE Active Optical SFP+ Cable, 7M
SFP-10G-AOC10M	10GBASE Active Optical SFP+ Cable, 10M

Choose QSFP Copper/Optical Transceivers

The 40-Gigabit QSFP transceiver module is a hot-swappable, parallel fiber-optical module with four independent optical transmit and receive channels. These channels can terminate in another 40-Gigabit QSFP transceiver, or the channels can be broken out to four separate 10-Gigabit SFP+ transceivers. The QSFP transceiver module connects the electrical circuitry of the system with either a copper or an optical external network. The transceiver is used primarily in short reach applications in switches, routers, and data center equipment where it provides higher density than SFP+ modules. See the following link for more details:

http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/installation/note/OL_24862.html#wp44860

You may choose one QSFP copper/optical transceiver for each 6324, as shown in *Table 10*.

NOTE: The QSFP port on the 6324 FI can only be used in 4 x 10 Gbit mode.

Table 10 QSFP Copper/Optical Transceivers

Product ID (PID)	PID Description
QSFP-4SFP10G-CU1M	40GBASE-CR4 QSFP to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 1 meter passive
QSFP-4SFP10G-CU3M	40GBASE-CR4 QSFP to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 3 meter passive
QSFP-4SFP10G-CU5M	40GBASE-CR4 QSFP to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 5 meter passive
QSFP-4x10G-AC7M	40GBASE-CR4 QSFP to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 7 meter active
QSFP-4x10G-AC10M	40GBASE-CR4 QSFP to four 10GBASE-CU SFP+ direct attach breakout cable assembly, 10 meter active
QSFP-4X10G-AOC1M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 1m
QSFP-4X10G-AOC2M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 2m
QSFP-4X10G-AOC3M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 3m
QSFP-4X10G-AOC5M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 5m
QSFP-4X10G-AOC7M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 7m
QSFP-4X10G-AOC10M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 10m

Choose QSFP Port License

In order to use the QSFP port on a UCS 6324 Fabric Interconnect, a license must be added. Separate licenses must be purchased for each UCS 6324. See *Table 11*.

Table 11 QSFP Scalability Port License

Product ID (PID)	PID Description
UCS-6324-40G	License for 4 x 10 Gbps Scalability Port

Choose Fibre channel SFPs as needed for the 6324 from *Table 12*.

Table 12 Fibre Channel SFP Transceivers

Product ID (PID)	PID Description
4 Gb Transceivers	
DS-SFP-FC4G-SW	4 Gbps Fibre Channel-SW SFP, LC connector
DS-SFP-FC4G-LW	4 Gbps Fibre Channel-LW SFP, LC, (10km Reach)
8Gb Transceivers	
DS-SFP-FC8G-SW	8 Gbps Fibre Channel SW SFP+, LC connector
DS-SFP-FC8G-LW	8 Gbps Fibre Channel LW SFP+, LC connector

Approved Configurations

(1) Choose the number of transceivers or copper twinax cables according to the number of Fabric Interconnect ports that are active that or will be become active in the future.

Caveats

- ☒ You should order enough SFPs, QSFPs, and cables to accommodate your maximum forseeable needs.
- ☒ If you selected a QSFP transceiver, make sure you choose a QSFP port license.
- ☒ For the 6324, observe the following:
  - — The maximum number of SFP+ transceivers, SFP optical transceivers, copper transceivers, or twinax cables must be less than or equal to four. A minimum of one of these must be installed for the 6324 to have network connectivity.
  - — The maximum number of Fibre Channel SFPs must be less than or equal to three. The reason for this is that at least one SFP+ port on the 6324 must be free so the 6324 can connect to a network.
- ☒ The QSFP port can only be used for connection to a secondary chassis, C-series servers, and storage devices. It cannot be used as an uplink.

STEP 4   CHOOSE POWER SUPPLIES

The UCS Mini chassis accommodates up to four power supplies.

Choose Power Supplies

The available power supplies are listed in *Table 13*.

Table 13 Available Power Supplies

Product ID (PID)	PID Description
UCSB-PSU-2500ACDV	2500 W Platinum AC Hot Plug Power Supply - DV
UCSB-PSU-2500DC48	2500 W DC -48 V power supply

Approved Configurations

(1) Choose from 2 to 4 power supplies

Caveats

☒   Be aware of the blade power up limitations when using 110 V power supplies. See *Table 14*.

Table 14 Blade Power Up Limitations when Using 110 V Power Supplies[1] [2]

Power Configuration	Number of Power Supplies	Power Available	Number of Powered Up Blades		
			High Power Blades	Medium Power Blades	Low Power Blades
Non-redundant (2+0)	2	2600 W	4	5	6
Non-redundant (3+0)	3	3900 W	6	7	8
Non-redundant (4+0)	4	5200 W	8	8	8
N+1 (2+1)	3	2600 W	4	5	7
N+1 (3+1)	4	3900 W	6	7	8
Grid (2+2)	4	2600 W	4	5	6

Notes . . .

1. The actual number of blades that will power up depends on the exact configuration and blade mix.
2. There are no restrictions on blades powering up when the 5108 chassis runs on 200-240 VAC or -48 V DC power supplies.

Example configurations for B200 M3 and B200 M4 blades (low, medium, and high powered) are listed here:

- ☒ Low Power Server = 2X 80 W E5-2600 CPUs, 4x 8 GB DIMMs, 1X HDD, and 1X VIC1240
- ☒ Medium Power Server = 2X 105 W E5-2600 CPUs, 12x 8 GB DIMMs, 2X HDDs, and 1X VIC1240
- ☒ High Power Server = 2X 130 W E5-2600 CPUs, 24x 8 GB DIMMs, 2X HDDs, 1X VIC1240, and 1x VIC1280

Caveats

- ☒ Do not mix AC and DC power supplies
- ☒ Use only a -48 VDC power supply in a -48 VDC chassis
- ☒ Use only an AC power supply in an AC chassis

STEP 5 SELECT AC POWER CORD(s)

Select the appropriate AC power cords listed in *Table 15*. You may select up to 4 power cords.

Table 15 Available Power Cords

Product ID (PID)	PID Description	Comment
CAB-C19-C20-3M-JP	Power Cord C19-C20, 3M/10ft Japan PSE mark	Japan
CAB-ACS-16	AC Power Cord (Swiss) 16A	Switzerland
CAB-IR2073-C19-AR	IRSM 2073 to IEC-C19 14ft Argen	Argentina
CAB-C2316-C19-IT	CEI 23-16 to IEC-C19 14ft Italy	Italy
CAB-AC16A-CH	16A AC Power Cord For China	China
CAB-AC-2500W-INT	Power Cord, 250 VAC 16A, INTL	International
UCSB-CABL-C19-BRZ	NBR 14136 to C19 AC 14FT POWER CORD, BRAZIL	Brazil
CAB-S132-C19-ISRL	S132 to IEC-C19 14ft Israel	Israel
CAB-AC-2500W-ISRL	Power Cord,250 VAC,16A,Israel	Israel
CAB-BS1363-C19-UK	BS-1363 to IEC-C19 14ft UK	UK
CAB-SABS-C19-IND	SABS 164-1 to IEC-C19 India	India
CAB-AC-16A-AUS	Power Cord, 250 VAC, 16A, Australia C19	Australia
CAB-AC-2500W-EU	Power Cord, 250 VAC 16A, Europe	Europe
CAB-US620P-C19-US	NEMA 6-20 to IEC-C19 13ft US	USA
CAB-US520-C19-US	NEMA 5-20 to IEC-C19 14ft US	USA
CAB-US515P-C19-US	NEMA 5-15 to IEC-C19 13ft US	USA
CAB-AC-C6K-TWLK	Power Cord, 250 VAC 16A, twist lock NEMA L6-20 plug, US	USA
CAB-C19-CBN	Cabinet Jumper Power Cord, 250 VAC 16A, C20-C19 Connectors	Jumper cord C19/C20
R2XX-DMYMPWRCORD	No power cord option	

STEP 6   CHOOSE SERVICE and SUPPORT LEVEL

A variety of service options are available for the UCS Mini chassis and the UCS 6324 Fabric Interconnect module, as described in this section.

UCS Mini Chassis

Unified Computing Warranty, No Contract

If you have noncritical implementations and choose to have no service contract, the following coverage is supplied:

- ☒ Three-year parts coverage.
- ☒ Next business day (NBD) onsite parts replacement eight hours a day, five days a week.
- ☒ 90-day software warranty on media.
- ☒ Ongoing downloads of BIOS, drivers, and firmware updates.
- ☒ UCSM updates for systems with Unified Computing System Manager. These updates include minor enhancements and bug fixes that are designed to maintain the compliance of UCSM with published specifications, release notes, and industry standards.

SMARTnet for UCS

For support of the entire Unified Computing System, Cisco offers the Cisco SMARTnet for UCS Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Access to Cisco Technical Assistance Center (TAC) is provided around the clock, from anywhere in the world.

For the UCS Mini chassis, there is Smart Call Home, which provides proactive, embedded diagnostics and real-time alerts. For systems that include Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Cisco SMARTnet for UCS Service includes flexible hardware replacement options, including replacement in as little as two hours. There is also access to Cisco's extensive online technical resources to help maintain optimal efficiency and uptime of the unified computing environment. You can choose a desired service listed in *Table 16*.

Table 16   Cisco SMARTnet for UCS Service

Service SKU	On Site?	Description
AC Chassis		
CON-PREM-C6508AC2	Yes	ONSITE 24X7X2 UCS Mini AC Chassis
CON-OSP-C6508AC2	Yes	ONSITE 24X7X4 UCS Mini AC Chassis
CON-OSE-C6508AC2	Yes	ONSITE 8X5X4 UCS Mini AC Chassis
CON-OS-C6508AC2	Yes	ONSITE 8X5XNBD UCS Mini AC Chassis
CON-S2P-C6508AC2	No	SMARTNET 24X7X2 UCS Mini AC Chassis
CON-SNTP-C6508AC2	No	SMARTNET 24X7X4 UCS Mini AC Chassis
CON-SNTE-C6508AC2	No	SMARTNET 8X5X4 UCS Mini AC Chassis
CON-SNT-C6508AC2	No	SMARTNET 8X5XNBD UCS Mini AC Chassis
DC Chassis		
CON-PREM-6508DC2	Yes	ONSITE 24X7X2 UCS Mini DC Chassis
CON-OSP-6508DC2	Yes	ONSITE 24X7X4 UCS Mini DC Chassis
CON-OSE-6508DC2	Yes	ONSITE 8X5X4 UCS Mini DC Chassis
CON-OS-6508DC2	Yes	ONSITE 8X5XNBD UCS Mini DC Chassis
CON-S2P-6508DC2	No	SMARTNET 24X7X2 UCS Mini DC Chassis
CON-SNTP-6508DC2	No	SMARTNET 24X7X4 UCS Mini DC Chassis
CON-SNTE-6508DC2	No	SMARTNET 8X5X4 UCS Mini DC Chassis
CON-SNT-6508DC2	No	SMARTNET 8X5XNBD UCS Mini DC Chassis

SMARTnet for UCS Hardware Only Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco SMARTnet for UCS Hardware Only Service. You can choose from two levels of advanced onsite parts replacement coverage in as little as four hours. SMARTnet for UCS Hardware Only Service provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required. You can choose a service listed in *Table 17*.

Table 17   SMARTnet for UCS Hardware Only Service

Service SKU	Service Level GSP	On Site?	Description
AC Chassis			
CON-UCW7-C6508AC2	UCW7	Yes	UC PLUS 24X7X4OS UCS Mini AC Chassis
CON-UCW5-C6508AC2	UCW5	Yes	UC PLUS 8X5XNBDOS UCS Mini AC Chassis
DC Chassis			
CON-UCW7-C6508DC2	UCW7	Yes	UC PLUS 24X7X4OS UCS Mini DC Chassis
CON-UCW5-C6508DC2	UCW5	Yes	UC PLUS 8X5XNBDOS UCS Mini DC Chassis

Unified Computing Partner Support Service

Cisco Partner Support Service (PSS) is a Cisco Collaborative Services service offering that is designed for partners to deliver their own branded support and managed services to enterprise customers. Cisco PSS provides partners with access to Cisco's support infrastructure and assets to help them:

☒ Expand their service portfolios to support the most complex network environments

☒ Lower delivery costs

☒ Deliver services that increase customer loyalty

Partner Unified Computing Support Options enable eligible Cisco partners to develop and consistently deliver high-value technical support that capitalizes on Cisco intellectual assets. This helps partners to realize higher margins and expand their practice.

Partner Unified Computing Support Options are available to Cisco PSS partners. For additional information, see the following URL:

www.cisco.com/go/partnerucssupport

The two Partner Unified Computing Support Options include:

☒ Partner Support Service for UCS

☒ Partner Support Service for UCS Hardware Only

Partner Support Service for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. See *Table 18*.

Table 18   Partner Support Service for UCS

Service SKU	Service Level GSP	On Site?	Description
AC Chassis			
CON-PSJ1-C6508AC2	PSJ1	No	UCS SUPP PSS 8X5XNBD UCS Mini AC Chassis
CON-PSJ2-C6508AC2	PSJ2	No	UCS SUPP PSS 8X5X4 UCS Mini AC Chassis
CON-PSJ3-C6508AC2	PSJ3	No	UCS SUPP PSS 24X7X4 UCS Mini AC Chassis
CON-PSJ4-C6508AC2	PSJ4	No	UCS SUPP PSS 24X7X2 UCS Mini AC Chassis
CON-PSJ6-C6508AC2	PSJ6	Yes	UCS SUPP PSS 8x5x4 Onsite UCS Mini AC Chassis
CON-PSJ7-C6508AC2	PSJ7	Yes	UCS SUPP PSS 24X7X4 Onsite UCS Mini AC Chassis

Table 18   Partner Support Service for UCS *(continued)*

Service SKU	Service Level GSP	On Site?	Description
DC Chassis			
CON-PSJ1-C6508DC2	PSJ1	No	UCS SUPP PSS 8X5XNBD UCS Mini DC Chassis
CON-PSJ2-C6508DC2	PSJ2	No	UCS SUPP PSS 8X5X4 UCS Mini DC Chassis
CON-PSJ3-C6508DC2	PSJ3	No	UCS SUPP PSS 24X7X4 UCS Mini DC Chassis
CON-PSJ4-C6508DC2	PSJ4	No	UCS SUPP PSS 24X7X2 UCS Mini DC Chassis
CON-PSJ6-C6508DC2	PSJ6	Yes	UCS SUPP PSS 8x5x4 Onsite UCS Mini DC Chassis
CON-PSJ7-C6508DC2	PSJ7	Yes	UCS SUPP PSS 24X7X4 Onsite UCS Mini DC Chassis

Partner Support Service for UCS Hardware Only provides customers with replacement parts in as little as two hours. See .

Table 19   Partner Support Service for UCS (Hardware Only)

Service SKU	Service Level GSP	On Site?	Description
AC Chassis			
CON-PSW2-C6508AC2	PSW2	No	UCS W PL PSS 8X5X4 UCS Mini AC Chassis
CON-PSW3-C6508AC2	PSW3	No	UCS W PL PSS 24X7X4 UCS Mini AC Chassis
CON-PSW4-C6508AC2	PSW4	No	UCS W PL PSS 24X7X2 UCS Mini AC Chassis
CON-PSW6-C6508AC2	PSW6	Yes	UCS HW ONLY PSS 8x5x4 Onsite UCS Mini AC Chassis
CON-PSW7-C6508AC2	PSW7	Yes	UCS HW ONLY PSS 24x7x4 Onsite UCS Mini AC Chassis
DC Chassis			
CON-PSW2-C6508DC2	PSW2	No	UCS W PL PSS 8X5X4 UCS Mini DC Chassis

Table 19   Partner Support Service for UCS (Hardware Only) *(continued)*

Service SKU	Service Level GSP	On Site?	Description
CON-PSW3-C6508DC2	PSW3	No	UCS W PL PSS 24X7X4 UCS Mini DC Chassis
CON-PSW4-C6508DC2	PSW4	No	UCS W PL PSS 24X7X2 UCS Mini DC Chassis
CON-PSW6-C6508DC2	PSW6	Yes	UCS HW ONLY PSS 8x5x4 Onsite UCS Mini DC Chassis
CON-PSW7-C6508DC2	PSW7	Yes	UCS HW ONLY PSS 24x7x4 Onsite UCS Mini DC Chassis

For more service and support information, see the following URL:

http://www.cisco.com/en/US/services/ps2961/ps10312/Unified_Computing_Services_Overview.pdf

For a complete listing of available services for Cisco Unified Computing System, see this URL:

 http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

UCS 6324 Fabric Interconnect

Unified Computing Warranty, No Contract

If you have noncritical implementations and choose to have no service contract, the following coverage is supplied:

☒   Three-year parts coverage.

☒   Next business day (NBD) onsite parts replacement eight hours a day, five days a week.

☒   90-day software warranty on media.

☒   Ongoing downloads of BIOS, drivers, and firmware updates.

☒   UCSM updates for systems with Unified Computing System Manager. These updates include minor enhancements and bug fixes that are designed to maintain the compliance of UCSM with published specifications, release notes, and industry standards.

SMARTnet for UCS

For support of the entire Unified Computing System, Cisco offers the Cisco SMARTnet for UCS Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Access to Cisco Technical Assistance Center (TAC) is provided around the clock, from anywhere in the world.

For the UCS 6324, there is Smart Call Home, which provides proactive, embedded diagnostics and real-time alerts. For systems that include Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Cisco SMARTnet for UCS Service includes flexible hardware replacement options, including replacement in as little as two hours. There is also access to Cisco's extensive online technical resources to help maintain optimal efficiency and uptime of the unified computing environment. You can choose a desired service listed in *Table 16*.

Table 20   Cisco SMARTnet for UCS Service

Service SKU	On Site?	Description
CON-PREM-FIM6324U	Yes	ONSITE 24X7X2 UCS 6324 FI
CON-OSP-FIM6324U	Yes	ONSITE 24X7X4 UCS 6324 FI
CON-OSE-FIM6324U	Yes	ONSITE 8X5X4 UCS UCS 6324 FI
CON-OS-FIM6324U	Yes	ONSITE 8X5XNBD UCS 6324 FI
CON-S2P-FIM6324U	No	SMARTNET 24X7X2 UCS 6324 FI
CON-SNTP-FIM6324U	No	SMARTNET 24X7X4 UCS 6324 FI
CON-SNTE-FIM6324U	No	SMARTNET 8X5X4 UCS 6324 FI
CON-SNT-FIM6324U	No	SMARTNET 8X5XNBD UCS 6324 FI

SMARTnet for UCS Hardware Only Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco SMARTnet for UCS Hardware Only Service. You can choose from two levels of advanced onsite parts replacement coverage in as little as four hours. SMARTnet for UCS Hardware Only Service provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required. You can choose a service listed in *Table 17*.

Table 21   SMARTnet for UCS Hardware Only Service

Service SKU	Service Level GSP	On Site?	Description
CON-UCW7-FIM6324U	UCW7	Yes	UC PLUS 24X7X4OS UCS 6324 FI
CON-UCW5-FIM6324U	UCW5	Yes	UC PLUS 8X5XNBDOS UCS 6324 FI

Unified Computing Partner Support Service

Cisco Partner Support Service (PSS) is a Cisco Collaborative Services service offering that is designed for partners to deliver their own branded support and managed services to enterprise customers. Cisco PSS provides partners with access to Cisco's support infrastructure and assets to help them:

☒ Expand their service portfolios to support the most complex network environments

☒ Lower delivery costs

☒ Deliver services that increase customer loyalty

Partner Unified Computing Support Options enable eligible Cisco partners to develop and consistently deliver high-value technical support that capitalizes on Cisco intellectual assets. This helps partners to realize higher margins and expand their practice.

Partner Unified Computing Support Options are available to Cisco PSS partners. For additional information, see the following URL:

www.cisco.com/go/partnerucssupport

The two Partner Unified Computing Support Options include:

☒ Partner Support Service for UCS

☒ Partner Support Service for UCS Hardware Only

Partner Support Service for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. See *Table 18*.

Table 22   Partner Support Service for UCS

Service SKU	Service Level GSP	On Site?	Description
CON-PSJ1-FIM6324U	PSJ1	No	UCS SUPP PSS 8X5XNBD UCS 6324 FI
CON-PSJ2-FIM6324U	PSJ2	No	UCS SUPP PSS 8X5X4 UCS 6324 FI
CON-PSJ3-FIM6324U	PSJ3	No	UCS SUPP PSS 24X7X4 UCS 6324 FI
CON-PSJ4-FIM6324U	PSJ4	No	UCS SUPP PSS 24X7X2 UCS 6324 FI
CON-PSJ6-FIM6324U	PSJ6	Yes	UCS SUPP PSS 8x5x4 Onsite UCS 6324 FI
CON-PSJ7-FIM6324U	PSJ7	Yes	UCS SUPP PSS 24X7X4 Onsite UCS 6324 FI

Partner Support Service for UCS Hardware Only provides customers with replacement parts in as little as two hours. See *Table 19*.

Table 23   Partner Support Service for UCS (Hardware Only)

Service SKU	Service Level GSP	On Site?	Description
CON-PSW2-FIM6324U	PSW2	No	UCS W PL PSS 8X5X4 UCS 6324 FI
CON-PSW3-FIM6324U	PSW3	No	UCS W PL PSS 24X7X4 UCS 6324 FI
CON-PSW4-FIM6324U	PSW4	No	UCS W PL PSS 24X7X2 UCS 6324 FI
CON-PSW6-FIM6324U	PSW6	Yes	UCS HW ONLY PSS 8x5x4 Onsite UCS 6324 FI
CON-PSW7-FIM6324U	PSW7	Yes	UCS HW ONLY PSS 24x7x4 Onsite UCS 6324 FI

For more service and support information, see the following URL:

http://www.cisco.com/en/US/services/ps2961/ps10312/Unified_Computing_Services_Overview.pdf

For a complete listing of available services for Cisco Unified Computing System, see this URL:

http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

SUPPLEMENTAL MATERIAL

System Overview

The Cisco Unified Computing System™ (Cisco UCS™) is a next-generation data center platform that unites compute, network, 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 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 7* is a system diagram showing connectivity when the UCS Mini chassis uses in-chassis 6324 Fabric Interconnect modules.

Note that the two C240 M4 chassis at the bottom of the diagram show how the cables from the 6324 Fabric Interconnect modules connect to the VIC 1227 mLOM and the VIC 1225 PCIe card. For additional details on the VICs see the following links:

VIC 1227

VIC 1225

Figure 7   System Diagram (UCS Mini with in-chassis Fabric Interconnects)

Ethernet Switches

1 or 10 Gigabit Ethernet Uplinks →

10 Gigabit Ethernet Connections to QSFP or SFP Ports on Cisco UCS 6324

10 Gigabit Ethernet Connections to QSFP or SFP Ports on Cisco UCS 6324

Cisco UCS 6324 Fabric Interconnects (Plug into back of Cisco UCS Mini chassis)

Compatible Blade Servers (2 x Cisco UCS B200 M3, 2 x Cisco UCS B200 M4, 2 X Cisco UCS B420 M3, 2 x Cisco UCS B420 M4, 1 X Cisco UCS B260 M4, 1 X Cisco UCS B460 M4) in UCS Mini Chassis

Back of Cisco UCS C240 M4 Rack Server (with VIC 1227 mLOM)

Back of Cisco UCS C240 M4 Rack Server (with VIC 1225 PCIe card)
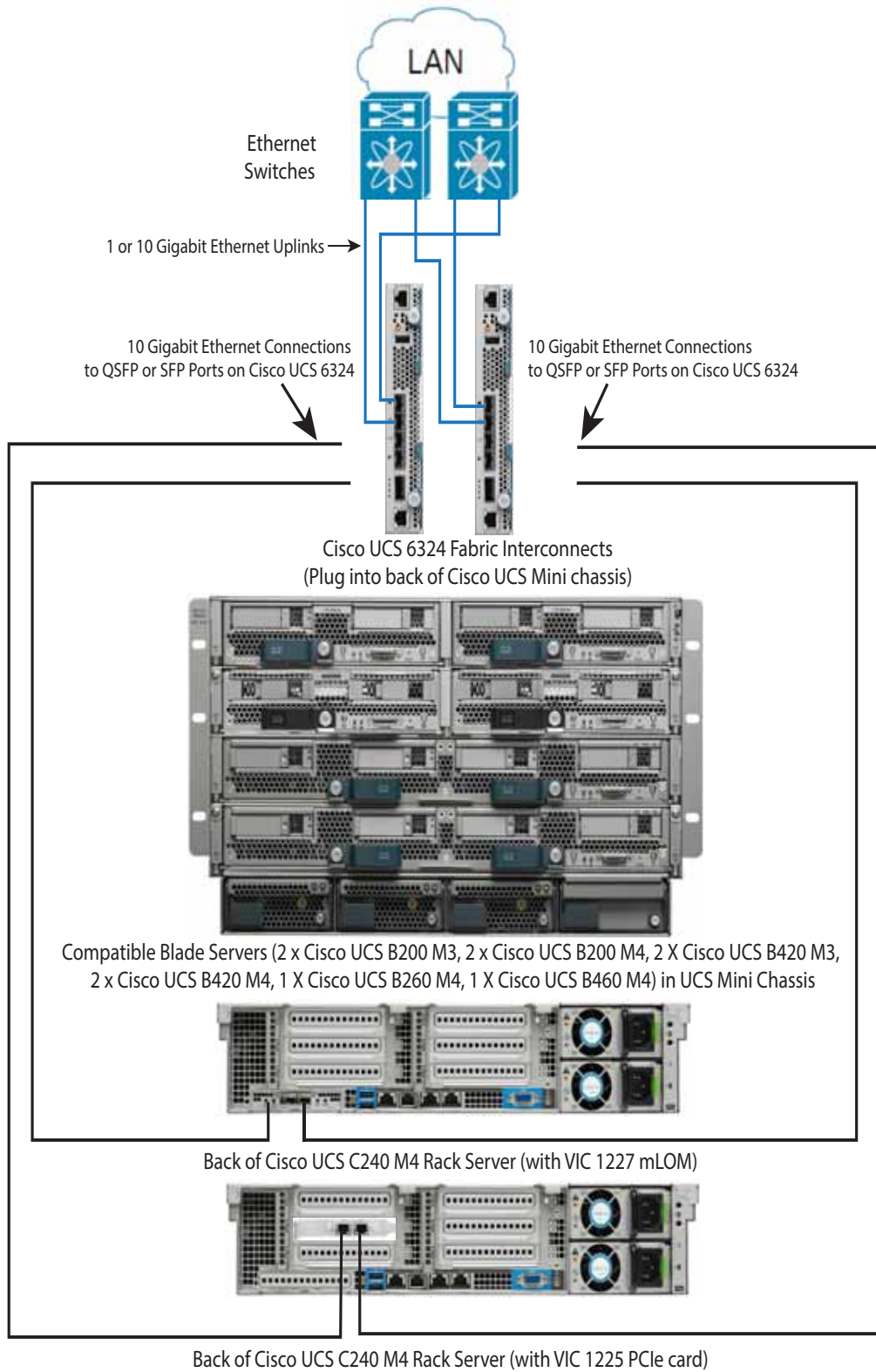
Cisco UCS Mini Blade Server Chassis

Figure 8 on page 35 shows two UCS Mini chassis connected together in a maximum configuration, which is 20 servers total:

- ☒ The upper (primary) chassis contains eight half-width blade servers and two 6324 FIs

- ☒ The lower (secondary) chassis contains eight half-width blade servers and two 2204XP FEXs

- ☒ Two of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connect to two of the 2204XP ports in the lower chassis

- ☒ Two rack servers are connected to the QSFP ports of the 6324 FIs in the upper UCS Mini chassis

- ☒ Two rack servers are connected to the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis

- ☒ One of the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis is the uplink port to the external network.

There are many possible configurations, some of which are listed here. All these configurations assume that there are eight blade servers in each of the UCS Mini chassis and one of the SFP+ ports in each of the 6324 FIs on the upper chassis is reserved for the uplink connection.
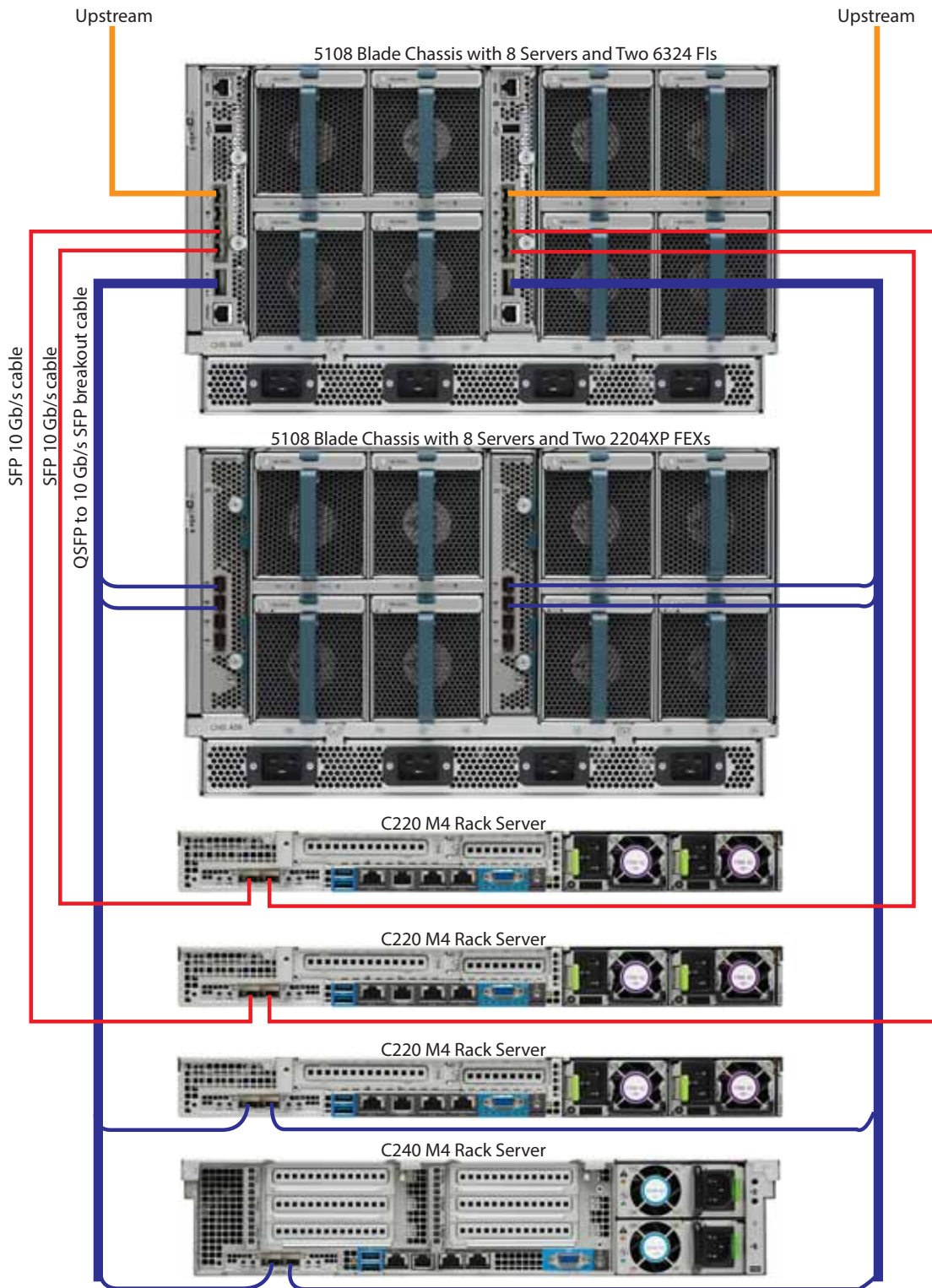
- ☒ 19-Server Configuration 1

    - ☒ From one to four of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connect to the 2204XP ports in the lower chassis

    - ☒ Three rack servers are connected to the three of the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis.

- ☒ 19-Server Configuration 2

    - ☒ One of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connects to a 2204XP port in the lower chassis

    - ☒ Two rack servers are connected to two of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis.

    - ☒ One rack server is connected to the one of the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis.

- ☒ 18-Server Configuration 1

    - ☒ From one to four of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connect to the 2204XP ports in the lower chassis.

    - ☒ Two rack servers are connected to two of the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis.

- ☒ 18-Server Configuration 2

    - ☒ Two of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connect to two of the 2204XP ports in the lower chassis.

    - ☒ One rack servers is connected to one of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis.

    - ☒ One rack server is connected to one of the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis.

- ☒ 17-Server Configuration

    - ☒ From one to four of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connect to the 2204XP ports in the lower chassis.

⌧ One rack server is connected to one of the SFP+ ports of the 6324 FIs in the upper UCS Mini chassis.

⌧ 16-Server Configuration

⌧ From one to four of the QSFP ports of the 6324 FIs in the upper UCS Mini chassis connect to the 2204XP ports in the lower chassis.

⌧ No rack servers are connected.

The main guidelines are as follows:

⌧ Only the QSFP port on the 6324 FI can connect to the lower UCS Mini chassis.

⌧ The QSFP ports on the 6324 FI can connect to external rack servers.

⌧ A maximum of three of the SFP+ ports on the upper UCS Mini can connect to external rack servers (at least one of these ports must be reserved for an uplink to the external network).

⌧ Only the 10-Gbps ports on the 6324 FI can be used as uplinks to the external network.

⌧ The 6324 FI QSFP and SFP+ ports can be used to connect iSCSI, NAS, and FCoE storage.

⌧ The maximum number of servers (blade and rack) connections is 20.

Figure 8   System Diagram (Two UCS Minis in Maximum 20-Server Configuration)

Upstream   Upstream

5108 Blade Chassis with 8 Servers and Two 6324 FIs

5108 Blade Chassis with 8 Servers and Two 2204XP FEXs

C220 M4 Rack Server

C220 M4 Rack Server

C220 M4 Rack Server

C240 M4 Rack Server

SFP 10 Gb/s cable

SFP 10 Gb/s cable

QSFP to 10 Gb/s SFP breakout cable

Connectivity Between Blades and UCS 6324 FI

B200 M3 Example

Figure 9 is an example of how the B200 M3 blade chassis implements a VIC 1340/1240 adapter and VIC 1380/1280 adapter to connect to the 6324 fabric interconnects in the UCS Mini chassis.

Figure 9   B200 M3 (with VIC 1340/1240 and VIC 1380/1280) to UCS 6324 Fabric Interconnect and LAN
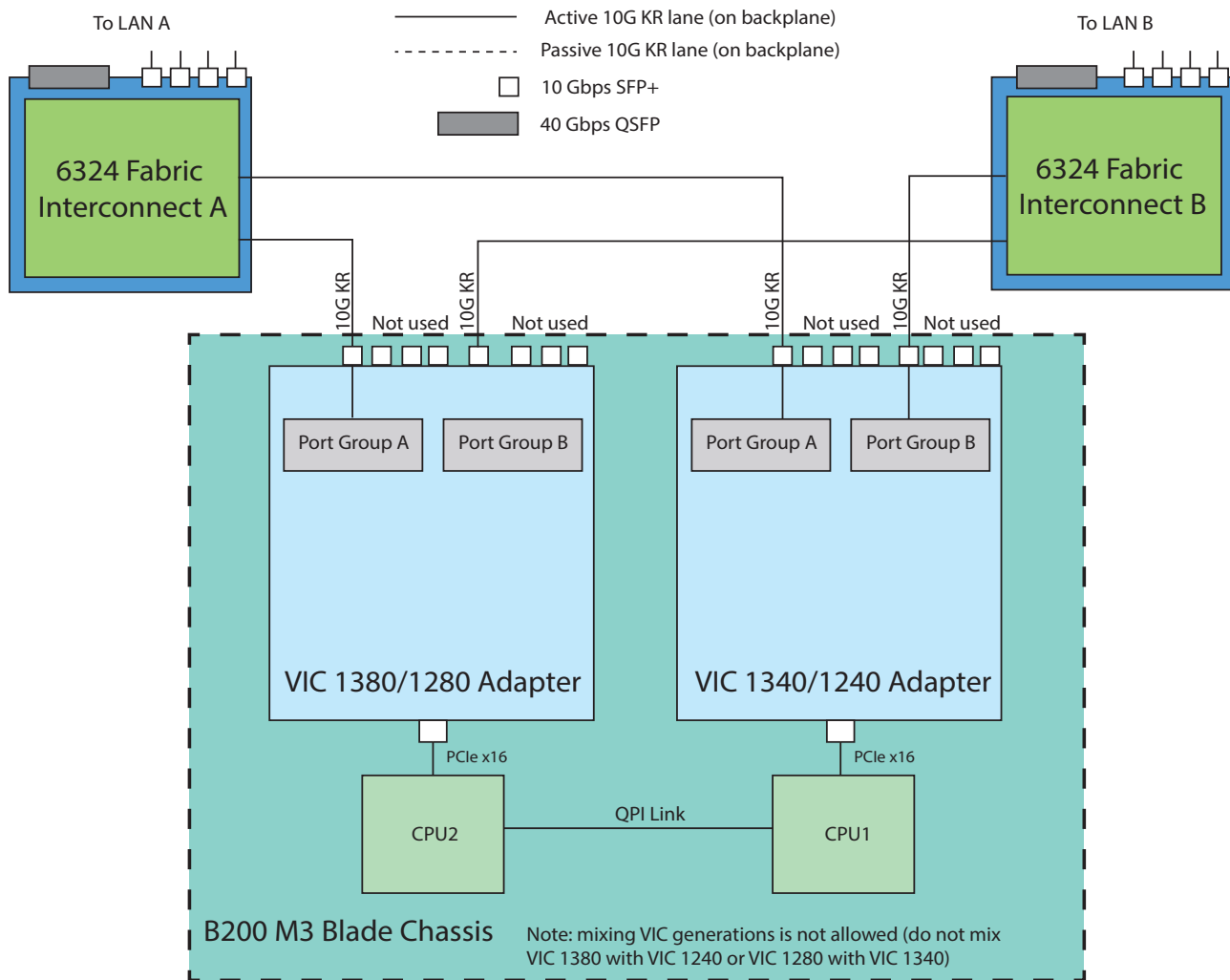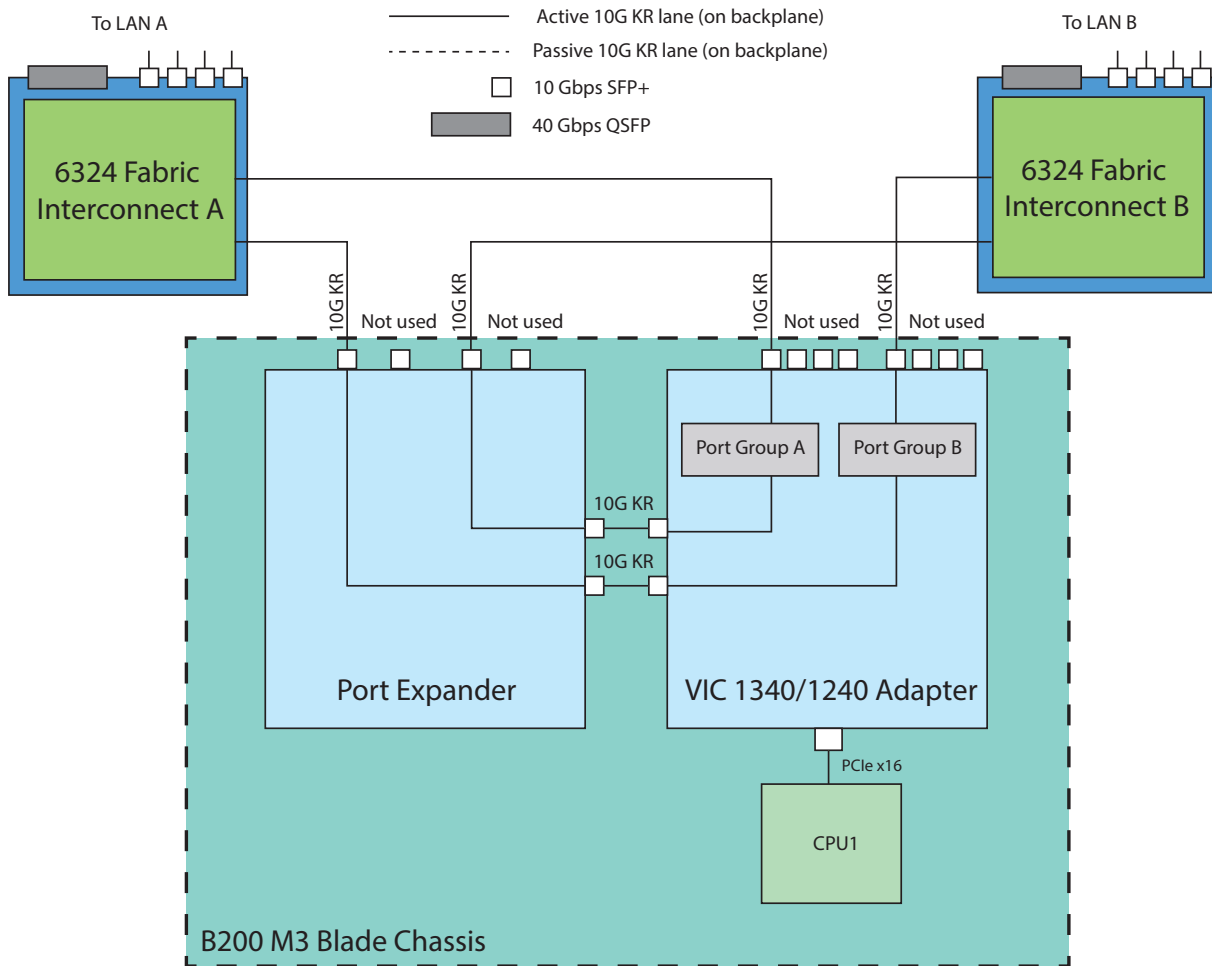

Figure 10 on page 37 is an example of how the B200 M3 blade chassis implements a VIC 1340/1240 adapter and a Port Expander to connect to the 6324 fabric interconnects in the UCS Mini chassis.
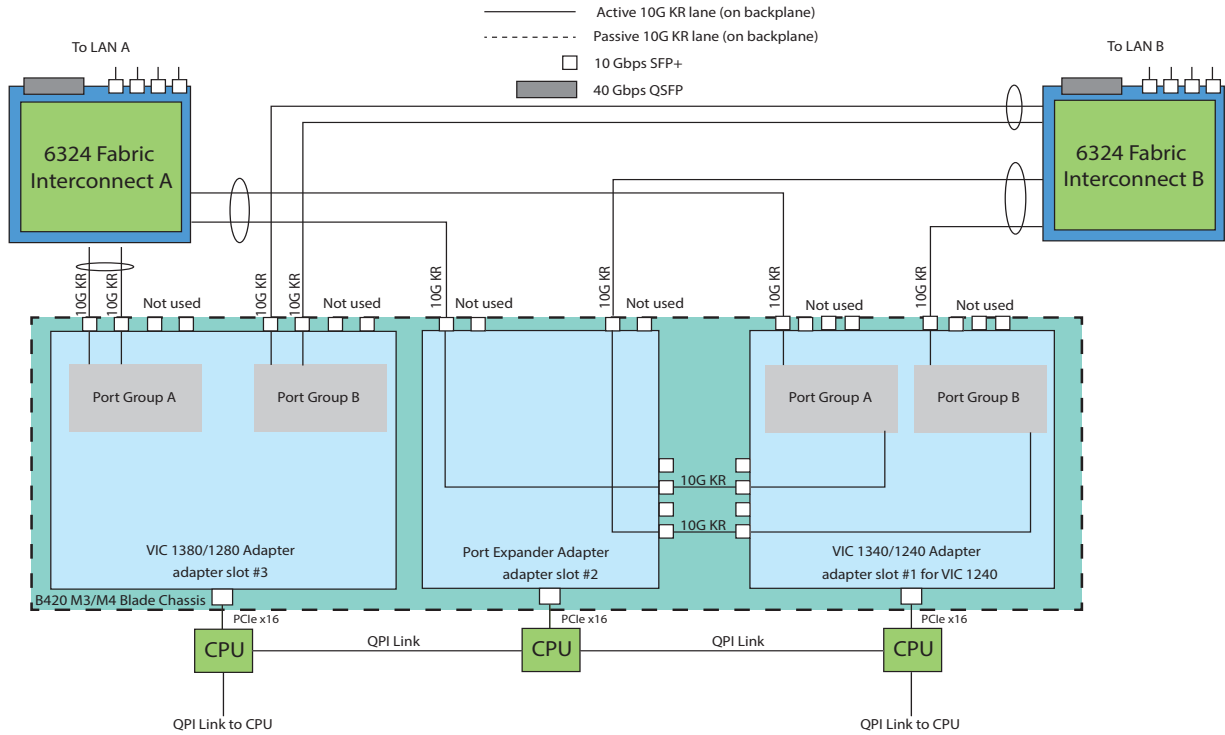
Figure 10   B200 M3 (with VIC 1340/1240 and Port Expander) to UCS 6324 Fabric Interconnect and LAN

B420 M3/M4 Example

Figure 11 is an example of how the B420 M3 and B420 M4 blade chassis implements a VIC 1240 adapter with a Port Expander and VIC 1280 adapter to connect to the 6324 fabric interconnects in the UCS Mini chassis.

Figure 11   B420 M3 (with VIC 1240, Port Expander, and VIC 1280) to UCS 6324 Fabric Interconnect and LAN

B200 M4 Example

Figure 12 is an example of how the B200 M4 blade chassis implements a VIC 1340/1240 adapter and VIC 1380/1280 adapter to connect to the 6324 fabric interconnects in the UCS Mini chassis.

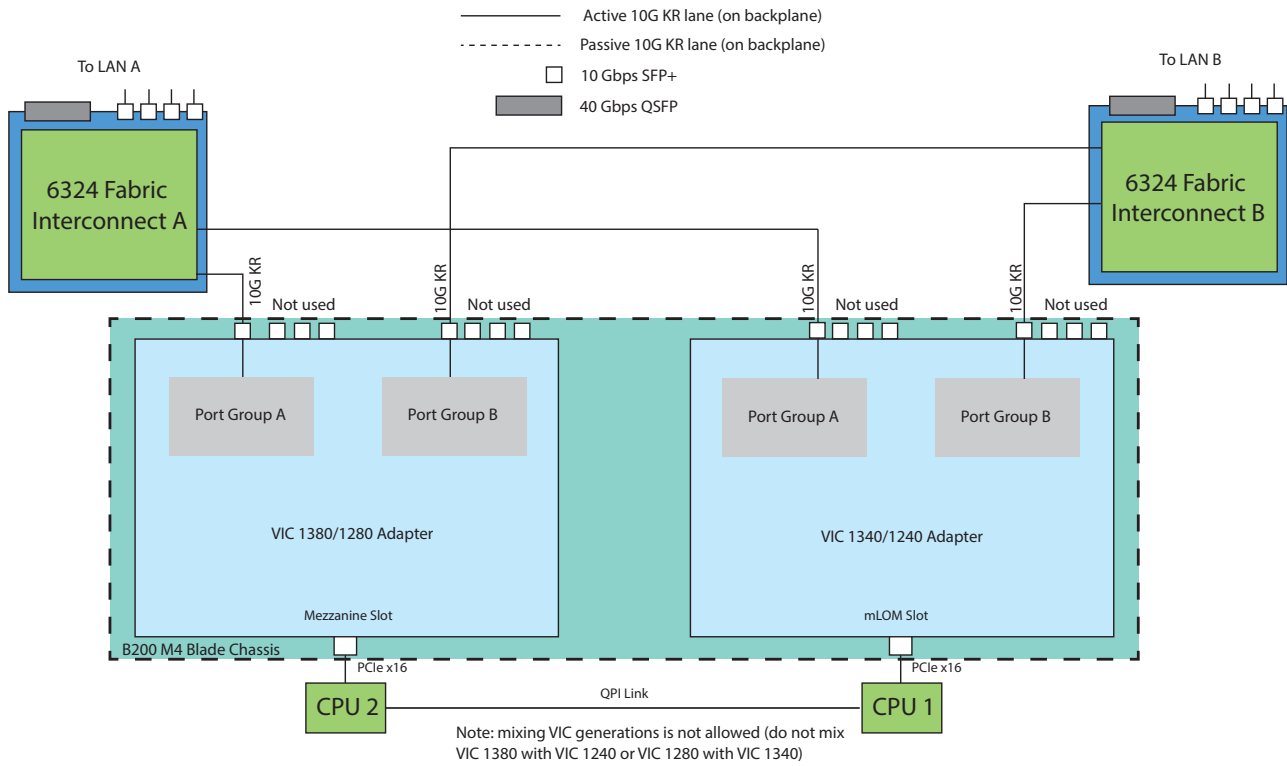**Figure 12   B200 M4 (with VIC 1340/1240 and VIC 1380/1280) to UCS 6324 Fabric Interconnect and LAN**

Figure 13 on page 40 is an example of how the B200 M4 blade chassis implements a VIC 1340/1240 adapter and a Port Expander to connect to the 6324 fabric interconnects in the UCS Mini chassis.

Figure 13   B200 M4 (with VIC 1340/1240 and Port Expander) to UCS 6324 Fabric Interconnect and LAN
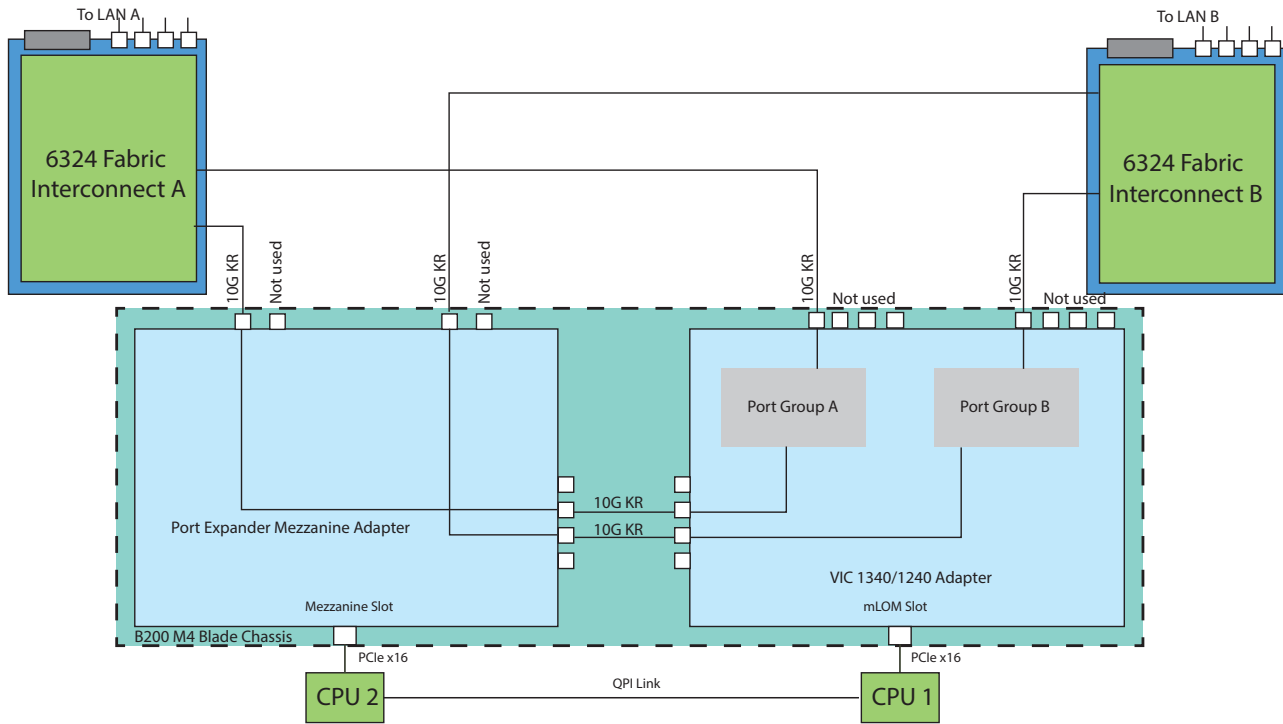
TECHNICAL SPECIFICATIONS

UCS Mini Specifications

Table 24 Cisco UCS Mini Chassis Specifications

Parameter	Value
Height	10.5 in. (26.7 cm); 6 rack unit (6RU)
Width	17.5 in. (44.5 cm); fits standard 19-inch square-hole rack (or round hole threaded or non-threaded, with optional adapter kit)
Depth	32 in. (81.2 cm)
Weight	90 lbs (40.83 kg) empty, 255 lbs (115.66 kg) fully configured
Blade server slots	8 half-width slots
Fabric Interconnect slots	2
In-Chassis Fabric Interconnect slots	Compatible with the Cisco UCS 6324 in-chassis Fabric Interconnect
Power	Four Power Supplies supporting N, N+1 and N+N Grid redundancy.
Fans	8 hot-swappable fans
	Each fan module contains 2 redundant fans; up to two fans can fail in the system.
Management	Managed by Cisco UCS Manager
Chassis Midplane	1.2 TB of aggregate throughput; supports 10BASE-KR connections for 8 blades
Regulatory compliance	Products comply with CE Markings per directives 2004/108/EC and 2006/108/EC
Safety	☒ UL 60950-1
	☒ CAN/CSA-C22.2 No. 60950-1
	☒ EN 60950-1
	☒ IEC 60950-1
	☒ AS/NZS 60950-1
	☒ GB4943
EMC: Emissions	☒ 47CFR Part 15 (CFR 47) FCC Class A
	☒ AS/NZS CISPR22
	☒ CISPR2 2 Class A
	☒ EN55022 Class A
	☒ ICES003 Class A
	☒ VCCI Class A
	☒ EN61000-3-2
	☒ EN61000-3-3
	☒ KN22 Class A

Table 24 Cisco UCS Mini Chassis Specifications *(continued)*

Parameter	Value
EMC: Immunity	☒ EN50082-1
	☒ EN61000-6-1
	☒ EN55024
	☒ CISPR24
	☒ EN300386
	☒ KN 61000-4 Series

UCS 6324 Specifications

Table 25 UCS 6324

Parameter	Value
Height	7.64 in (19.41 cm)
Width	1.36 in (3.45 cm)
Depth	7.2 in (18.29)
Weight	2.5 lb (1.13 kg)
Ambient operating temperature	32 to 95˚F (0 to 35˚C)
Non-operating temperature	-40 to 158˚F (-40 to 70˚C)
Humidity	5 to 95% (noncondensing)
Altitude	0 to 10,000 ft (0 to 300m)

Power Specifications

The specifications for the various UCS Mini power supplies are listed in this section.

Table 26 AC Input Dual Voltage Platinum Power Supply (UCSB-PSU-2500ACDV) Specifications

Description	Specification			
AC input voltage	Voltage Range 100-120 VAC, 200-240 VAC nominal (range: 90-132 VAC, 180-264 VAC)			
AC input frequency	50 to 60 Hz nominal (range: 47 to 63 Hz)			
AC Input current	< 15 Amps @ 100 VAC			
Maximum Input VA	2790 VA @ 200 VAC			
Maximum output power per power supply	2500 W at 200 to 240 VAC (up to four power supplies) 1300 W at 100 - 120 VAC (up to 4 Power supplies)[1]			
Maximum inrush current	35 A (sub cycle duration)			
Maximum hold up time	12 ms @ 2500 W			
Power supply output voltage	12 VDC			
Power supply standby voltage	3.3 VDC			
Efficiency rating	Climate Savers Platinum			
Efficiency (80Plus Platinum Certified)	10% load	20% load	50% load	100% load
	93.5%	94.9%	95%	93%
Input connector	IEC320 C20			

Notes . . .

1. Only supported with Cisco UCS 6324 Fabric Interconnect

Table 27 DC Input Power Supply (UCSB-PSU-2500DC48) Specifications

Description	Specification			
Minimum software requirement	Cisco UCS Manager Release 3.0(2c)			
DC input voltage	-48 VDC to -60 VDC nominal (range: -40 to -72 VDC)			
Maximum output power per power supply	2500 W			
Maximum inrush current	90A (cold turn-on)			
Current draw at min voltage	71A			
Current draw at max voltage	40A			
Maximum input VA	2840W			
Efficiency	10% load	20% load	50% load	100% load
	88%	88%	92%	88%
DC input terminal block	Accepts Panduit LCD4-14AF-L or equivalent barrel-type lug terminals with 90-degree angle, two- hole tongue, which accommodates 1/0 AWG size copper wire. The connector tongue width is 0.82 in, the stud hole spacing is 5/8 in, and the hole size is 1/4 in.			
Maximum hold up time	8 ms (50% Load) and 4ms (100% Load)			

For configuration-specific power specifications, use the Cisco UCS Power Calculator at:

https://mainstayadvisor.com/Go/Cisco/Cisco-UCS-Power-Calculator.aspx

Environmental Specifications

The environmental specifications for the UCS Mini chassis are listed in *Table 28*.

Table 28 UCS Mini Blade Server Environmental Specifications

Parameter	Minimum
Temperature operating	10˚C to 35˚C (50˚F to 95˚F)
Temperature nonoperating	-40˚C to 65˚C (-40˚F to 149˚F)
Altitude operating	0 to 3, 000 m (0 to 10,000 ft.); maximum ambient temperature decreases by 1˚ per 300 m
Humidity operating	10 to 90%, non-condensing
Humidity nonoperating	5 to 93%, non-condensing
Vibration nonoperating	2.2 Grms, 10 minutes per axis on each of the three axes
Shock operating	Half-sine 2 G, 11 ms pulse, 100 pulses in each direction, on each of the three axes
Shock nonoperating	Trapezoidal, 25 G, two drops on each of six faces ΔV: 175 inches per second each corner on bottom face drop, 90 inches per second each corner on other five faces
Safety	UL60 950-1 No. 21CFR1040, CAN/CSA-C22.2 No. 60950-1, IRAM IEC60950-1, CB IEC60950-1, EN
	60950-1, IEC 60950-1, GOST IEC60950-1, SABS/CB IEC6095-1, CCC*/CB GB4943-1995, CNS14336, CB IEC60950-1, AS/NZS 60950-1, GB4943
Emissions	47CFR Part 15 (CFR 47) 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
Immunity	Verified to comply with EN55024, CISPR 24, KN 61000-4 Series, KN 24
Electrostatic discharge	Tested to ESD levels up to 15 kilovolts (kV) air discharge and up to 8 kV contact discharge without physical damage
Acoustic	☒ Sound power: 68.8 dBA at ambient temperature 23˚ C measured using the Dome Method ☒ GOST MsanPiN 001-96

How to buy

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