

Cisco UCS 6536 Fabric Interconnect (FI)



CISCO UCS 6536 FABRIC INTERCONNECT

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Overview

The Cisco 6536 Fabric Interconnects are a core part of the Cisco Unified Computing System, providing both network connectivity and management capabilities for the system. The Cisco 6536 offer line-rate, low-latency, lossless 10/25/40/100 Gigabit Ethernet, Fibre Channel over Ethernet (FCoE), and Fibre Channel functions.

The Cisco UCS 6536 Fabric Interconnect provide the management and communication backbone for the Cisco UCS X-Series compute nodes, UCS X9508 X-series chassis, UCS B-Series Blade Servers, UCS 5108 B-Series Server Chassis and UCS C-Series Rack Servers. All servers attached to a Cisco UCS 6536 Fabric Interconnect become part of a single, highly available management domain. In addition, by supporting a unified fabric, Cisco UCS 6536 Fabric Interconnect provides both the LAN and SAN connectivity for all servers within its domain.

From a networking perspective, the Cisco UCS 6536 uses a cut-through architecture, supporting deterministic, low-latency, line-rate 10/25/40/100 Gigabit Ethernet ports, a switching capacity of 7.42 Tbps per FI and 14.84 Tbps per unified fabric domain, independent of packet size and enabled services. It enables 1600Gbps bandwidth per X9508 chassis per domain with a X9108-IFM-100G in addition to enabling end-to-end 100G ethernet and 200G aggregate bandwidth per X210c compute node. With X9108-IFM-25G and IOM 2408, it enables 400Gbps bandwidth per chassis per FI domain. The product family supports Cisco low-latency, lossless 10/25/40/100 Gigabit Ethernet 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 come from Cisco's unified fabric design in which Network Interface Cards (NICs), Host Bus Adapters (HBAs), cables, and switches can be consolidated.

Cisco UCS 6536 Fabric Interconnect

The Cisco UCS 6536 36-Port Fabric Interconnect (*Figure 1*) is a One-Rack-Unit (1RU) 10/25/40/100 Gigabit Ethernet, FCoE, and Fibre Channel switch offering up to 7.42 Tbps throughput and up to 36 ports. The switch has 32 40/100-Gbps Ethernet ports and 4 unified ports that can support 40/100-Gbps Ethernet ports or 16 Fiber Channel ports after break-out at 8/16/32-Gbps FC speeds. The 16 FC ports after breakout can either operate as an FC uplink port or as an FC storage port. The switch supports 2 1-Gbps speed after breakout and all 36 ports can breakout for 10/25-Gbps Ethernet connectivity. All Ethernet ports are capable of supporting FCoE.

The Cisco UCS 6536 Fabric Interconnect also has one network management port, one console port for setting the initial configuration, and one USB port for saving or loading configurations. The FI also includes L1/L2 ports for connecting two fabric interconnects for high availability.

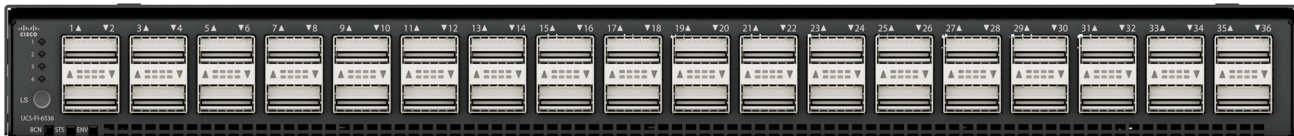
The 36-port chassis is shown in *Figure 1*.

Figure 1 Cisco UCS Fabric Interconnect 6536 (1RU)

Front View



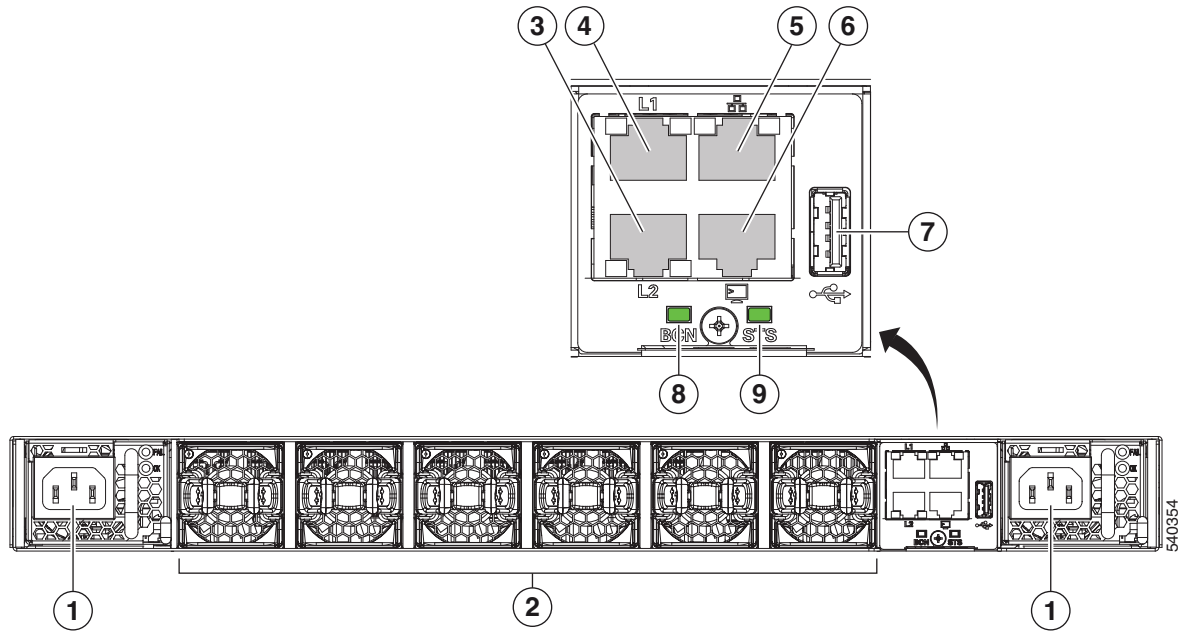
Rear View



Detailed Front View

The Cisco UCS 6536 front view shown in [Figure 2](#).

Figure 2 Front View of 6536



1	AC/DC power supplies power supply modules (1 or 2)	2	Six fan modules (hot swappable)
3	Layer 2 (L2) Ethernet port, 10/100/1000 Mb autonegotiating. Supports high availability (HA) or clustering	4	Layer 1 (L1) Ethernet port, 10/100/1000Mb autonegotiating. Supports high availability (HA) or clustering.
5	Ethernet network management port (RJ45), 10/100/1000Mb autonegotiating	6	RS-232 Serial Console port (RJ45 connector), 9600 baud.
7	USB 3.0/2.0 port Supports booting the system and downloading scripts.	8	Beacon (BCN) LED
9	Status (STS) LED	-	-

The front LED indicators are described in the following sections

Power Supply LEDs



The power supply LEDs are located on the left front portion of the power supply. Combinations of states indicated by the Power On () and Error () LEDs indicate the status for the module as shown in [Table 1](#)

Table 1 Power Supply LED States

Power on LED	Error LED	Status
Green	Off	Power supply is on and outputting power to the switch.
Flashing green	Off	Power supply is connected to a power source but not outputting power to the switch—power supply might not be installed in the chassis.
Off	Off	Power supply is not receiving power.
Green	Flashing amber	Power supply warning—possibly one of the following conditions: <ul style="list-style-type: none"> ■ High voltage ■ High power ■ Low voltage ■ Power supply installed in chassis but not connected to a power source ■ Slow power supply fan
Flashing green	Amber	Power supply failure—possibly one of the following conditions: <ul style="list-style-type: none"> ■ Over voltage ■ Over current ■ Over temperature ■ Power supply fan failure

Management Port LEDs

The management port LED states (see [Figure 2 on page 3](#)) are shown in [Table 2](#).

Table 2 Management Port LED States

LED Position	LED State	Description
Left	Off	No link
	Solid green	Physical link
Right	Off	No activity
	Blinking green	Activity

Beacon and System Status LEDs

The beacon and system status LED states (see [Figure 2 on page 3](#)) are shown in [Table 3](#).

Table 3 Beacon and System Status LED States

LED	Location	Function	Color	State	Description
Beacon LED	Front and rear	Identify selected chassis	Blue	Solid on	Chassis is selected
				Off	Chassis is not selected
System status LED	Front and rear	System power/health during boot up and run time	Green	Solid on	Normal operation
				Off	System is powered off
			Amber	On	System fault
			Red	Solid on	Power shut down by software
Blinking	Secure boot validation has failed				

L1/L2 Port LEDs

The L1/L2 port LED states (see [Figure 4 on page 7](#)) are shown in [Table 4](#).

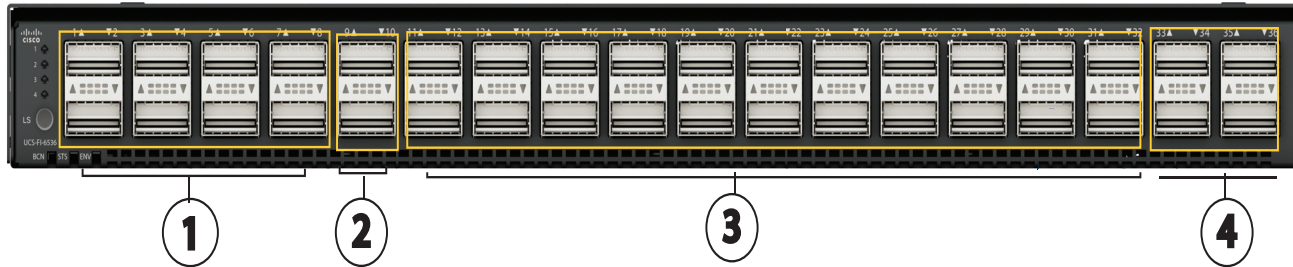
Table 4 L1/L2 Port LED States

LED Position	LED State	Description
Left	Off	No link
	Solid green	Physical link
Right	Off	No activity
	Blinking green	Activity

Detailed Rear View

Figure 3 is an overall rear view of the Cisco UCS 6536 Fabric Interconnect.

Figure 3 6536 36-port Fabric Interconnect Chassis Overall Rear View



1	<p>Ports 1-8</p> <ul style="list-style-type: none"> ■ 40/100 Gbps Ethernet or FCoE ports only ■ 10/25 Gbps Ethernet via breakout, QSA or QSA28 	2	<p>Ports 9-10</p> <ul style="list-style-type: none"> ■ 1 Gbps Ethernet via QSA ■ 40/100 Gbps Ethernet or FCoE ports only ■ 10/25 Gbps Ethernet via breakout, QSA or QSA28
3	<p>Ports 11-32</p> <ul style="list-style-type: none"> ■ 40/100 Gbps Ethernet or FCoE ports only ■ 10/25 Gbps Ethernet via breakout or QSA28 	4	<p>Unified 33-36</p> <ul style="list-style-type: none"> ■ 16 x 8/16/32G FC port via breakout ■ 10/25/40/100 Gbps Ethernet or FCoE ■ 10/25 Gbps Ethernet via breakout, QSA or QSA28



NOTE: Breakout is supported on all 36 ports and after breakout the UCS 6536 Fabric Interconnect can support a maximum of 128 server ports. There is also support for QSA and QSA-28 to support 1G/10G/25G speeds without using a breakout cable. In terms of rack-server connectivity with FI 6536, 25G/40G/100G ethernet for direct-connect rack-servers, 25G ethernet for rack-server with 93180YC-FX3 FEX, and 10G ethernet for rack-server with FEX 2348 UPQ are supported. Note that the 1G/10G ethernet are primarily for FI uplink connectivity

Rear LED Indicators

The rear LED indicators are described in the following sections

System Environment LED

The system environment LED is located on the left rear of the chassis (see [Figure 3 on page 6](#)). The LED states are shown in [Table 5](#).

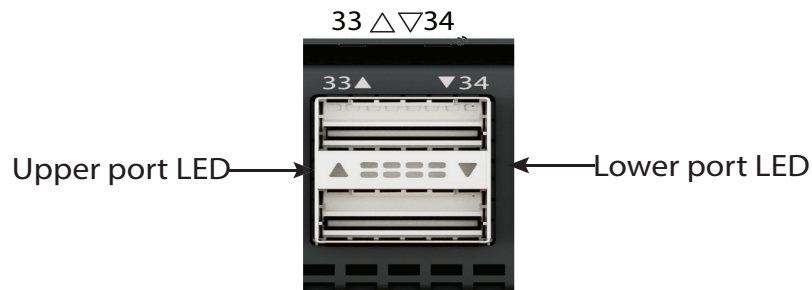
Table 5 System Environment LED States

LED State	Description
Solid Amber	Minor fan alarm (one fan missing or failure)
Solid red	Major fan alarm (two more fans missing or failed, or fan direction mismatch)

Ethernet Port (ports 1–36) LEDs

[Figure 4](#) is a detailed view of one of the 40/100 Gbps Ethernet or FCoE ports and its LEDs.

Figure 4 Ethernet Port LEDs (ports 1-36)



The port 1–36 LED states are shown in [Table 6](#).

Table 6 Port 1 to 36 LED States

LED Position	LED State	Description
Left	Off	No link
	Solid green	Physical link
Right	Off	No activity
	Blinking green	Activity

Cisco UCS 6536 Fabric Interconnect Capabilities And Features

Table 7 lists the capabilities and features of the Cisco UCS 6536 Fabric Interconnect. Details about how to configure this Fabric Interconnect series for a particular feature or capability are provided in *CONFIGURING the FABRIC INTERCONNECT on page 10*.

Table 7 Capabilities and Features

Capability/Feature	Cisco UCS 6536 (36 Ports)
Chassis	1RU 36-port Fabric Interconnect
Throughput	7.42 Tbps switching performance
Fan Modules	Six variable speed fans
Unified Ports	4 (33-36)
Power Supply	Two Power Supplies (AC or DC)
Management by Cisco Intersight	Allows all elements connected to the interconnects to participate in a single, highly available management domain
Unified Fabric	<ul style="list-style-type: none"> ■ Decreases total cost of ownership (TCO) by reducing the number of NICs, HBAs, switches, and cables needed ■ Support Fibre Channel and Ethernet traffic concurrently in a Unified Fabric ■ Increases flexibility with a range of interconnect solutions, including copper Twinax cable for short runs and fiber for long runs ■ Consumes less power per port than traditional solution
Fabric Extender Architecture	<ul style="list-style-type: none"> ■ Scales to 20 chassis without adding complexity by eliminating the need for dedicated chassis management and blade switches and by reducing the number of cables needed ■ Provides deterministic latency for optimized application performance
QSFP28-compatible Ports	Allows all ports to be configured to operate in 40/100 Gigabit Ethernet mode with the transceiver options specified for use with QSFP28-compatible ports (see <i>Table 13 on page 18</i>).
Transceivers	The Cisco UCS 6536 series FIs support a wide variety of 10/25/40/100 Gigabit Ethernet connectivity options using Cisco 10/25/40/100 Gbps modules. Unified Ports (UP) on the Cisco UCS 6536 support 10/25/40G/100G Gigabit Ethernet connectivity or a 128G FC-QSFP28 which can breakout into four 8/16/32 Gigabit Fibre Channel connection. Cisco UCS 6536 provides flexible uplink port connectivity at 1G/10G/25G/40G/100G via Gigabit Ethernet transceivers and cables. Table 3 lists the supported transceiver options.
Front-to-Back Cooling	Fan side intake, port side exhaust

Table 7 Capabilities and Features (*continued*)

Capability/Feature	Cisco UCS 6536 (36 Ports)
Redundant hot-swappable fans and power supplies	<ul style="list-style-type: none"> ■ Helps enable high availability in multiple configurations ■ Increases serviceability ■ Provides uninterrupted service during maintenance
Rear Ports	Helps keep cable lengths short and efficient
Performance	<ul style="list-style-type: none"> ■ Provides high-speed, low-latency connectivity to the chassis ■ Provides approximately 50% reduction in end-to-end system latency (latency is less than 1 microseconds)
Lossless Fabric	Provides a reliable, robust foundation for unifying LAN and SAN traffic on a single transport
Priority Flow Control (PFC)	<ul style="list-style-type: none"> ■ Simplifies management of multiple traffic flows over a single network link ■ Supports different classes of service, helping enable both lossless and classic Ethernet on the same fabric
Systemwide Bandwidth Management	Helps enable consistent and coherent quality of service (QoS) throughout the system

CONFIGURING the FABRIC INTERCONNECT

Follow these steps to configure the Cisco UCS 6536 Fabric Interconnect:

- *STEP 1 CHOOSE FABRIC INTERCONNECT SKU, page 11*
- *STEP 2 SOFTWARE IMAGE OPTIONS (INCLUDED), page 12*
- *STEP 3 SOFTWARE LICENSE (INCLUDED), page 13*
- *STEP 4 POWER SUPPLIES (INCLUDED), page 14*
- *STEP 5 SELECT AC POWER CORDS, page 15*
- *STEP 6 CHOOSE TRANSCEIVERS AND CABLE OPTIONS (OPTIONAL), page 18*
- *STEP 7 CHOOSE QSFP CABLE OPTIONS, page 20*
- *STEP 8 ACCESSORY KIT (INCLUDED), page 23*
- *STEP 9 FAN MODULE (INCLUDED), page 24*
- *STEP 10 CHOOSE SERVICE AND SUPPORT LEVEL, page 25*

STEP 1 CHOOSE FABRIC INTERCONNECT SKU

Select the product ID (PID) of the 6536 Fabric Interconnects as shown in [Table 8](#).



NOTE: When ordering Cisco UCS Fabric Interconnect 6536, the PIDs with “-D” suffix are ordering PIDs to be used with UCS M7 series of servers and the PIDs without “-D” are for the previous UCS M5/M6 generation of servers. There is no difference in functionality and operation of FI with and without “-D”.

Table 8 PID of the Base 6536 Fabric Interconnects

Product ID (PID)	Description
UCSX-FI-6536-U	Standalone FI ordering PID, Fabric Interconnect 6536 for IMM (Can also configure under X-series UCSX-M6-MLB)
UCSX-FI-6536-D-U	Standalone FI ordering PID, Fabric Interconnect 6536 for IMM (Can also configure under X-series UCSX-M7-MLB)
UCS-FI-6536-U	Standalone FI ordering PID, Fabric Interconnect 6536 for UCSM
UCS-FI-6536-D-U	Standalone FI ordering PID, Fabric Interconnect 6536 for UCSM

The base Cisco UCS 6536 Fabric Interconnect do not include the following components. They must be selected during product ordering:

- Transceivers
- Cables
- Power cords
- Warranty Service



NOTE: Use the steps on the following pages to configure the FI with the components that you want to include.

STEP 2 SOFTWARE IMAGE OPTIONS (INCLUDED)

Table 9 shows the Software Image Options. this included as a default line item under standalone FI ordering PID

Table 9 Software Image Options

Product ID (PID)	Description
N10-MGT018	UCS Manager v4.2 and Intersight Managed Mode v4.2

STEP 3 SOFTWARE LICENSE (INCLUDED)

Table 10 shows the Software License Options. This included as a default line item under standalone FI ordering PID.

Table 10 Software License

Product ID (PID)	Description
Software License	
UCS-FI-6500-SW	Perpetual software license for the 6500 series Fabric Interconnect. This license activates all the ports and software features of 6500 series Fabric Interconnect

STEP 4 POWER SUPPLIES (INCLUDED)

Table 11 shows the Supported 6536 FI Power Supplies. This included as a default line item under standalone FI ordering PID

Table 11 Power Supplies

Product ID (PID)	Description
UCS-PSU-6536-AC	UCS 6536 Power Supply/100-240VAC (1100 W)
UCS-PSU-6536-AC=	Spare, UCS 6536 Power Supply/100-240VAC (1100 W)
UCS-PSU-6536-AC-D	UCS 6536 Power Supply/100-240VAC (1100 W)
UCS-PSU-6536-AC-D=	Spare, UCS 6536 Power Supply/100-240VAC (1100 W)

STEP 5 SELECT AC POWER CORDS

Select the appropriate AC power cords listed in [Table 12](#). You must select two identical power cords. If you select the option R2XX-DMYMPWRCORD, no power cord is shipped with the server.

Table 12 Available Power Cords

Product ID (PID)	PID Description	Images
NO-POWER-CORD	ECO friendly green option, no power cable will be shipped	Not applicable
CAB-AC-L620-C13	AC Power Cord, NEMA L6-20 - C13, 2M/6.5ft	
CAB-250V-10A-AR	Power Cord, 250V, 10A, Argentina	
CAB-250V-10A-BR	Power Cord - 250V, 10A - Brazil	
CAB-9K10A-AU	Power Cord, 250VAC 10A 3112 Plug, Australia	
CAB-250V-10A-CN	AC Power Cord - 250V, 10A - PRC	
CAB-9K10A-EU	Power Cord, 250VAC 10A CEE 7/7 Plug, EU	

Table 12 Available Power Cords (continued)

Product ID (PID)	PID Description	Images
CAB-250V-10A-ID	Power Cord, 250V, 10A, India	<p>Plug: EL 208 Cordset rating 16A, 250V (2500mm) Connector: EL 701</p>
CAB-IND-10A	10A Power cable for India	
CAB-250V-10A-IS	Power Cord, 250V, 10A, Israel	<p>Plug: EL 212 (SI-32) Cordset rating 10A, 250V/500V MAX (2500 mm) Connector: EL 701B (IEC60320/C13)</p>
CAB-9K10A-IT	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy	<p>Plug: IEC (CEI 23-16) Cordset rating: 10 A, 250 V Length: 8 ft. 2 in. (2.5 m) Connector: C15M (EN60320/C15)</p>
CAB-9K10A-SW	Power Cord, 250VAC 10A MP232 Plug, Switzerland	<p>Plug: MP232-R Cordset rating: 10 A, 250 V Length: 8 ft. 2 in (2.5 m) Connector: IEC 60320 C15</p>
CAB-9K10A-UK	Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK	<p>Plug: EL 210 (BS 1363A) 13 AMP fuse Cordset rating: 10 A, 250 V/500 V MAX Length: 2500mm Connector: EL 701C (EN 60320/C15)</p>
CAB-C13-C14-2M	CABASY,WIRE,JUMPER CORD, PWR, 2 Meter, C13/C14,10A/250V	

Table 12 Available Power Cords (continued)

Product ID (PID)	PID Description	Images
CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	<p>Cordset rating 13A, 125V (8.2 feet) (2.5m)</p> <p>Plug: NEMA 5-15P</p> <p>Connector: IEC60320/C15</p>
CAB-N5K6A-NA	Power Cord, 200/240V 6A North America	
CAB-C13-C14-AC	Power cord, C13 to C14 (recessed receptacle), 10A	
CAB-C13-CBN	CABASY,WIRE,JUMPER CORD, 27" L, C13/C14, 10A/250V	
CAB-JPN-3PIN	Power Cord 3PIN, Japan	Image not available
CAB-C13-C14-2M	Power Cord C13-C14, 2M/6.5ft Japan PSE mark	Image not available
CAB-C13-C14-2M-JP	Power Cord C13-C14, 2M/6.5ft Japan PSE mark	Image not available
CAB-C13-C14-IN	Power Cord Jumper,C13-C14 Connectors,1.4 Meter Length, India	Image not available
CAB-C13-C14-3M-IN	Power Cord Jumper, C13-C14 Connectors, 3 Meter Length, India	Image not available

STEP 6 CHOOSE TRANSCEIVERS AND CABLE OPTIONS (OPTIONAL)

The Cisco UCS 6536 supports a wide variety of 10/25/40/100 Gigabit Ethernet connectivity options using Cisco 10/25/40/100 Gbps modules. Unified ports (UP) on the Cisco UCS 6536 support 10/25 Gigabit Ethernet connectivity or 8/16/32 Gigabit Fibre Channel modules.

Choose Transceivers

The supported transceivers for the UCS 6536 are listed in [Table 13](#).

Table 13 UCS 6536 FI Supported Transceivers

Product ID (PID)	Description
SFP 1-Gigabit Transceivers	
GLC-TE	1000 BASE-T SFP transceiver module for Category 5 copper wire
GLC-SX-MMD	1000BASE-SX short wavelength; with DOM
SFP+ 10-Gbps Transceivers	
SFP-10G-SR	10GBASE-SR SFP Module
SFP-10G-SR-S	10GBASE-SR SFP Module, Enterprise-Class
SFP-10G-LR	10GBASE-LR SFP Module
SFP-10G-LR-S	10GBASE-LR SFP Module, Enterprise-Class
CVR-QSFP-SFP10G	QSFP 40G to SFP+ 10G adapter
SFP28 25-Gbps Transceivers	
SFP-25G-SR-S	25GBASE-SR SFP Module
SFP-10/25G-LR-S	10/25GBASE-LR SFP28 Module
SFP-10/25G-CSR-S	Dual Rate 10/25GBASE-CSR SFP Module
SFP-25G-SL	25GBASE-SR SFP SL Module
CVR-QSFP28-SFP25G	100G to SFP25G adapter

Notes:

- The 6536 FI supports 1G optics on ports 9 and 10.
- Transceiver modules and cables that are supported on a specific fabric interconnect are not always supported on all VIC adapters, I/O modules, or fabric extenders that are compatible with that fabric interconnect. Detailed compatibility matrices for the transceiver modules are available here: <https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html>
- SFP-10/25G-LR-S and SFP-10/25G-CSR-S are supported only at 25G speed.
- S-class transceivers do not support FCoE at 10G and 40G speeds.

Caveats

- The maximum length of fiber optic runs is limited to 300 meters. This is imposed by our use of 802.3X/802.1Qbb Priority Pauses.



NOTE:

- Transceiver modules and cables that are supported on a specific Fabric Interconnect are not always supported on all VIC adapters, IOMs, or FEXs that are compatible with that Fabric Interconnect. Detailed compatibility matrices for the transceiver modules are available here:
<https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/product-s-device-support-tables-list.html>
 - S-Class transceivers, (for example QSFP-40G-SR4-S), do not support FCoE.
 - Also For transceiver specifications, see the following link:
http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/GE_Tx_Matrix.html
 - Refer to below data sheet for the complete details.
<https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs6536-fabric-interconnect-ds.html>
-

STEP 7 CHOOSE QSFP CABLE OPTIONS

The Cisco UCS 6536 supports a wide variety of 10/25/40/100 Gigabit Ethernet connectivity options using Cisco 10/25/40/100 Gbps modules. Unified ports (UP) on the Cisco UCS 6536 support 10/25 Gigabit Ethernet connectivity or 8/16/32 Gigabit Fibre Channel modules.

Choose Transceivers

The supported transceivers for the UCS 6536 are listed in [Table 14](#).

Table 14 UCS 6536 FI Supported Transceivers

Product ID (PID)	Description
QSFP+ 40Gbps Transceivers	
QSFP-40G-SR4	40GBASE-SR4 QSFP Transceiver Module with MPO Connector
QSFP-40G-SR4-S	40GBASE-SR4 QSFP Transceiver Module, MPO Conn, Enterprise-Class
QSFP-40G-CSR4	QSFP 4x10GBASE-SR Transceiver Module, MPO, 300M
QSFP-40G-CSR-S	40GBASE-CSR QSFP Transceiver Module with LC Connector
QSFP-40G-SR-BD	40GBASE-SR-BiDi, duplex MMF (LC)
QSFP-40G-LR4	QSFP 40GBASE-LR4 OTN Transceiver, LC, 10KM
QSFP-40G-LR4-S	QSFP 40GBASE-LR4 Transceiver Module, LC, 10km, Enterprise-Class
FET-40G	40G Line Extender for FEX
QSFP 40G cables with integrated transceivers	
QSFP-H40G-AOC1M	40GBASE active optical cable, 1M
QSFP-H40G-AOC2M	40GBASE Active Optical Cable, 2m
QSFP-H40G-AOC3M	40GBASE active optical cable, 3M
QSFP-H40G-AOC5M	40GBASE Active Optical Cable, 5m
QSFP-H40G-AOC7M	40GBASE Active Optical Cable, 7m
QSFP-H40G-AOC10M	40GBASE Active Optical Cable, 10m
QSFP-H40G-AOC15M	40GBASE Active Optical Cable, 15m
QSFP-H40G-AOC25M	40GBASE Active Optical Cable, 25m
QSFP-H40G-CU1M	40GBASE-CR4 Passive Copper Cable, 1m
QSFP-H40G-CU2M	40GBASE-CR4 Passive Copper Cable, 2m
QSFP-H40G-CU3M	40GBASE-CR4 Passive Copper Cable, 3m
QSFP-H40G-CU5M	40GBASE-CR4 Passive Copper Cable, 5m
QSFP-H40G-ACU10M	40GBASE-CR4 Active Copper Cable, 10m

Table 14 UCS 6536 FI Supported Transceivers (*continued*)

Product ID (PID)	Description
QSFP-4X10G-AOC1M	40GBASE Active Optical QSFP to 4SFP breakout Cable, 1m
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
QSFP-4SFP10G-CU1M	QSFP to 4xSFP10G Passive Copper Splitter Cable, 1m
QSFP-4SFP10G-CU3M	QSFP to 4xSFP10G Passive Copper Splitter Cable, 3m
QSFP-4SFP10G-CU5M	QSFP to 4xSFP10G Passive Copper Splitter Cable, 5m
QSFP28 100G Transceivers	
QSFP-100G-SR4-S	100GBASE SR4 QSFP Transceiver, MPO, 100m over OM4 MMF
QSFP-100G-LR4-S	100GBASE LR4 QSFP Transceiver, LC, 10km over SMF
QSFP-40/100-SRBD ¹	100GBASE/40GBASE SR-BiDi QSFP Transceiver, LC, 100m over OM4 MMF
QSFP-100G-SM-SR	100GBASE CWDM4 lite QSFP transceiver, 2KM over SMF, 10-60C
QSFP-100G-SL4	100GBASE SL4 for up to 30M over OM4 MMF
QSFP-100G-DR-S	100G QSFP28 Transceiver 100GBASE-DR, 500m SMF, duplex, LC
QSFP-100G-FR-S	100G QSFP28 Transceiver 100G-FR, 2km SMF, duplex, LC
QSFP28 100G cables with integrated transceivers	
QSFP-100G-SR1.2	100G SR1.2 BiDi QSFP Transceiver, LC, 100m OM4 MMF
QSFP-100G-CU1M	100GBASE-CR4 passive copper cable, 1M
QSFP-100G-CU2M	100GBASE-CR4 passive copper cable, 2M
QSFP-100G-CU3M	100GBASE-CR4 passive copper cable, 3M
QSFP-100G-CU5M	100GBASE-CR4 passive copper cable, 5M
QSFP-100G-AOC1M	100GBASE QSFP active optical cable, 1M
QSFP-100G-AOC2M	100GBASE QSFP active optical cable, 2M
QSFP-100G-AOC3M	100GBASE QSFP active optical cable, 3M
QSFP-100G-AOC5M	100GBASE QSFP active optical cable, 5M
QSFP-100G-AOC7M	100GBASE QSFP active optical cable, 7M
QSFP-100G-AOC10M	100GBASE QSFP active optical cable, 10M

Table 14 UCS 6536 FI Supported Transceivers (*continued*)

Product ID (PID)	Description
QSFP-100G-AOC15M	100GBASE QSFP active optical cable, 15M
QSFP-100G-AOC20M	100GBASE QSFP active optical cable, 20M
QSFP-100G-AOC25M	100GBASE QSFP active optical cable, 25M
QSFP-100G-AOC30M	100GBASE QSFP active optical cable, 30M
QSFP-4SFP25G-CU1M	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 1M
QSFP-4SFP25G-CU2M	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 2M
QSFP-4SFP25G-CU3M	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 3M
QSFP-4SFP25G-CU5M	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 5M
Fibre Channel transceivers	
DS-SFP-4X32G-SW ²	128 Gbps FC-SW QSFP, MPO for 4 x 8/16/32G fibre channel breakout, 100M

Notes

1. QSFP-40/100-SRBD is supported at 40 or 100G speed on uplink and for all other connectivity like server-port for IFM, FEX or VIC it supports only 100G speed.
2. The Cisco 128G FC QSPF (PID: DS-SFP-4x32G-SW) on the UCS 6536 Fabric Interconnect unified ports (33-36) will be used to connect to a SAN switch or storage array at 8/16/32G speeds using a multi-mode OM4 MPO female to 4x LC 8-fiber type-B breakout cable. The breakout cable for DS-SFP-4x32G-SW QSFP transceiver can use one of the Cisco breakout & patch-panel solution referenced in [Table 26](#) & [Table 27](#).

STEP 8 ACCESSORY KIT (INCLUDED)

An accessory kit is included for the Cisco 6536 Fabric Interconnects.

Choose Accessory Kit

The supported accessory kits for the Cisco UCS 6536 Fabric Interconnects are listed in [Table 15](#).

Table 15 6536 FI Accessory Kit

Product ID (PID)	Description
UCS-ACC-6536	UCS 6536 Chassis Accessory Kit
UCS-ACC-6536=	Spare, UCS 6536 Chassis Accessory Kit
UCS-ACC-6536-D	UCS 6536 Chassis Accessory Kit
UCS-ACC-6536-D=	Spare, UCS 6536 Chassis Accessory Kit

The Cisco UCS 6536 Fabric Interconnect accessory kit includes the following items:

- 2 slider rails
- 2 rack-mount guides
- 2 rack-mount brackets
- 12 M4 x 0.7 x 8-mm Phillips countersunk screws
- 10 10-32 rack nuts
- 10 10-32 x 3/4-inch Phillips pan-head screws
- 1 console cable with an RJ-45-RS-232 adapter and a DB9 adapter
- 1 ground lug kit
- 1 ESD wrist strap
- 1 power cord clip (a wire clip that is used to retain the power cord)
- 1 pointer document (specifies where to find the online product documentation)

STEP 9 FAN MODULE (INCLUDED)

6536 FI Fan Module

These are hot-swappable 6 x fan modules. And each fan module consists of two fan rotors. Redundancy of the fan is implanted in rotor level, and when the rotor fails, the system continues to operate with 9 fan rotors.

Table 16 6536 FI Fan Module

Product ID (PID)	Description
UCS-FAN-6536	UCS 6536 Fan Module
UCS-FAN-6536-D	UCS 6536 Fan Module

STEP 10 CHOOSE SERVICE AND SUPPORT LEVEL

A variety of service options are available, as described in this section.

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.

Smart Net Total Care (SNTC) for UCS

For support of the entire Unified Computing System, Cisco offers the Cisco Smart Net Total Care 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 systems that include Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Cisco Smart Net Total Care 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. For more information please refer to the following url: <http://www.cisco.com/c/en/us/services/technical/smart-net-total-care.html?stickynav=1>

You can choose a desired service listed in [Table 17](#).

Table 17 Cisco SNTC for UCS Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-PREM-UCSXUUF1	C2P	Yes	SNTC 24X7X2OS
CON-UCSD8-UCSXUUF1	UCSD8	Yes	UC SUPP DR 24X7X2OS*
CON-OSP-UCSXUUF1	C4P	Yes	SNTC 24X7X4OS
CON-UCSD7-UCSXUUF1	UCSD7	Yes	UCS DR 24X7X4OS*
CON-C4PL-UCSXUUF1	C4PL	Yes	LL 24X7X4OS**
CON-USD7L-UCSXUUF1	USD7L	Yes	LLUCS HW DR 24X7X4OS***
CON-OSE-UCSXUUF1	C4S	Yes	SNTC 8X5X4OS
CON-UCSD6-UCSXUUF1	UCSD6	Yes	UC SUPP DR 8X5X4OS*
CON-SNCO-UCSXUUF1	SNCO	Yes	SNTC 8x7xNCDOS****
CON-OS-UCSXUUF1	CS	Yes	SNTC 8X5XNBDOS
CON-UCSD5-UCSXUUF1	UCSD5	Yes	UCS DR 8X5XNBDOS*

Table 17 Cisco SNTC for UCS Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-S2P-UCSXUUF1	S2P	No	SNTC 24X7X2
CON-SNTP-UCSXUUF1	SNTP	No	SNTC 24X7X4
CON-SNTPL-UCSXUUF1	SNTPL	No	LL 24X7X4**
CON-SNTE-UCSXUUF1	SNTE	No	SNTC 8X5X4
CON-SNC-UCSXUUF1	SNC	No	SNTC 8x7xNCD****
CON-SNT-UCSXUUF1	SNT	No	SNTC 8X5XNBD
CON-SW-UCSXUUF1	SW	No	SNTC NO RMA
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-OSP-UCSIXFI6)			
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) - Only available in China and Japan			
***Includes Local Language Support and Drive Retention - Only available in China and Japan			

Smart Net Total Care (SNTC) for Cisco UCS Onsite Troubleshooting Service

An enhanced offer over traditional Smart Net Total Care which provides onsite-troubleshooting expertise to aid in the diagnostics and isolation of hardware issue within our customers’ Cisco Unified Computing System (UCS) environment. It is delivered by a Cisco Certified field engineer (FE) in collaboration with remote TAC engineer and Virtual Internet working Support Engineer (VISE). You can choose a desired service listed in [Table 18](#)

Table 18 SNTC for Cisco UCS Onsite Troubleshooting Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-OSPT-UCSXUUF1	OSPT	Yes	24X7X4OS Trblshtg
CON-OSPTD-UCSXUUF1	OSPTD	Yes	24X7X4OS TrblshtgDR*
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-OSPT-UCSIXFI6)			
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) - Only available in China and Japan			
***Includes Local Language Support and Drive Retention - Only available in China and Japan			

Solution Support for UCS

Solution Support (SSPT) for UCS

Solution Support includes both Cisco product support and solution-level support, resolving complex issues in multivendor environments, on average, 43% more quickly than product support alone. Solution Support is a critical element in data center administration, to help rapidly resolve any issue encountered, while maintaining performance, reliability, and return on investment.

This service centralizes support across your multivendor Cisco environment for both our products and solution partner products you've deployed in your ecosystem. Whether there is an issue with a Cisco or solution partner product, just call us. Our experts are the primary point of contact and own the case from first call to resolution. For more information please refer to the following url:

<http://www.cisco.com/c/en/us/services/technical/solution-support.html?stickynav=1>

You can choose a desired service listed in [Table 19](#)

Table 19 Solution Support for UCS Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-SSC2P-UCSXUUF1	SSC2P	Yes	SOLN SUPP 24X7X2OS
CON-SSC4P-UCSXUUF1	SSC4P	Yes	SOLN SUPP 24X7X4OS
CON-SSC4S-UCSXUUF1	SSC4S	Yes	SOLN SUPP 8X5X4OS
CON-SSCS-UCSXUUF1	SSCS	Yes	SOLN SUPP 8X5XNBDOS
CON-SSDR7-UCSXUUF1	SSDR7	Yes	SSPT DR 24X7X4OS*
CON-SSDR5-UCSXUUF1	SSDR5	Yes	SSPT DR 8X5XNBDOS*
CON-SSS2P-UCSXUUF1	SSS2P	No	SOLN SUPP 24X7X2
CON-SSSNP-UCSXUUF1	SSSNP	No	SOLN SUPP 24X7X4
CON-SSSNE-UCSXUUF1	SSSNE	No	SOLN SUPP 8X5X4
CON-SSSNC-UCSXUUF1	SSSNC	No	SOLN SUPP NCD**
CON-SSSNT-UCSXUUF1	SSSNT	No	SOLN SUPP 8X5XNBD
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-SSC4P-UCSIXFI6)			
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) - Only available in China and Japan			
***Includes Local Language Support and Drive Retention - Only available in China and Japan			

Solution Support for Service Providers

You can choose a desired service listed in [Table 19](#)

Table 20 Solution Support for Service Providers UCS Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
SP-SSC2P-UCSXUUF1	SPSSC2P	Yes	SP SOLN SUPP 24X7X2OS
SP-SSC4P-UCSXUUF1	SPSSC4P	Yes	SP SOLN SUPP 24X7X4OS
SP-SSC4S-UCSXUUF1	SPSSC4S	Yes	SP SOLN SUPP 8X5X4OS
SP-SSCS-UCSXUUF1	SPSSCS	Yes	SP SOLN SUPP 8X5XNBDOS
SP-SSS2P-UCSXUUF1	SPSSS2P	Yes	SP SOLN SUPP 24X7X2
SP-SSS4P-UCSXUUF1	SPSSS4P	Yes	SP SOLN SUPP 24X7X4
SP-SSSNE-UCSXUUF1	SPSSSNE	No	SP SOLN SUPP 8X5X4
SP-SSSNT-UCSXUUF1	SPSSSNT	No	SP SOLN SUPP 8X5XNBD
SP-SSSPB-UCSXUUF1	SPSSSPB	No	SP SOLN SUPP NO HW RPL
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-SPSSC4P-UCSIXFI6)			

Smart Net Total Care for UCS Hardware Only Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco Smart Net Total Care for UCS Hardware Only Service. You can choose from two levels of advanced onsite parts replacement coverage in as little as four hours. Smart Net Total Care 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 desired service listed in [Table 21](#)

Table 21 SNTC for UCS Hardware Only Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-UCW7-UCSXUUF1	UCW7	Yes	UCS HW 24X7X4OS
CON-UCWD7-UCSXUUF1	UCWD7	Yes	UCS HW+DR 24X7X4OS*
CON-UCW5-UCSXUUF1	UCW5	Yes	UCS HW 8X5XNBDOS
CON-UCWD5-UCSXUUF1	UCWD5	Yes	UCS HW+DR 8X5XNBDOS*
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-UCW7-UCSIXFI6)			
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) - Only available in China and Japan			

Table 21 SNTC for UCS Hardware Only Service (PID UCSX-FI-6536-U)

***Includes Local Language Support and Drive Retention - Only available in China and Japan

Partner Support Service for UCS

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

PSS 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.

PSS is available to all Cisco PSS partners.

The two Partner Unified Computing Support Options include:

- Partner Support Service for UCS
- Partner Support Service for UCS Hardware Only

PSS for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. You can choose a desired service listed in [Table 22](#).

Table 22 PSS for UCS (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-PSJ8-UCSXUUF1	PSJ8	Yes	UCS PSS 24X7X2 OS
CON-PSJ7-UCSXUUF1	PSJ7	Yes	UCS PSS 24X7X4 OS
CON-PSJD7-UCSXUUF1	PSJD7	Yes	UCS PSS 24X7X4 DR*
CON-PSJ6-UCSXUUF1	PSJ6	Yes	UCS PSS 8X5X4 OS
CON-PSJD6-UCSXUUF1	PSJD6	Yes	UCS PSS 8X5X4 DR*
CON-PSJ4-UCSXUUF1	PSJ4	No	UCS SUPP PSS 24X7X2
CON-PSJ3-UCSXUUF1	PSJ3	No	UCS SUPP PSS 24X7X4
CON-PSJ2-UCSXUUF1	PSJ2	No	UCS SUPP PSS 8X5X4
CON-PSJ1-UCSXUUF1	PSJ1	No	UCS SUPP PSS 8X5XNBD
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-PSJ7-UCSIXFI6)			
*Includes Drive Retention (see below for description)			

PSS for UCS Hardware Only

PSS for UCS Hardware Only provides customers with replacement parts in as little as two hours and provides remote access any time to Partner Support professionals who can determine if a return materials authorization (RMA) is required. You can choose a desired service listed in [Table 23](#)

Table 23 PSS for UCS Hardware Only (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-PSW7-UCSXUUF1	PSW7	Yes	UCS W PSS 24X7X4 OS
CON-PSWD7-UCSXUUF1	PSWD7	Yes	UCS W PSS 24X7X4 DR*
CON-PSW6-UCSXUUF1	PSW6	Yes	UCS W PSS 8X5X4 OS
CON-PSWD6-UCSXUUF1	PSWD6	Yes	UCS W PSS 8X5X4 DR*
CON-PSW4-UCSXUUF1	PSW4	No	UCS W PL PSS 24X7X2
CON-PSW3-UCSXUUF1	PSW3	No	UCS W PL PSS 24X7X4
CON-PSW2-UCSXUUF1	PSW2	No	UCS W PL PSS 8X5X4
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-PSW7-UCSIXFI6)			
*Includes Drive Retention (see below for description)			

Distributor Support Service (DSS)

You can choose a desired service listed in [Table 24](#)

Table 24 DSS for UCS Service (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-DSCO-UCSXUUF1	DSCO	Yes	DSS CORE 24X7X2OS
CON-DSO-UCSXUUF1	DSO	Yes	DSS CORE 24X7X4
CON-DSNO-UCSXUUF1	DSNO	Yes	DSS CORE 8X5XNBDOS
CON-DSCC-UCSXUUF1	DSCC	No	DSS CORE 24X7X2
CON-DCP-UCSXUUF1	DCP	No	DSS CORE 24X7X4
CON-DSE-UCSXUUF1	DSE	No	DSS CORE 8X5X4
CON-DSN-UCSXUUF1	DSN	No	DSS CORE 8X5XNBD
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-DSO-UCSIXFI6)			

Unified Computing Combined Support Service

Combined Services makes it easier to purchase and manage required services under one contract. SNTC services for UCS help increase the availability of your vital data center infrastructure and realize the most value from your unified computing investment. The more benefits you realize from the Cisco Unified Computing System (Cisco UCS), the more important the technology becomes to your business. These services allow you to:

- Optimize the uptime, performance, and efficiency of your UCS
- Protect your vital business applications by rapidly identifying and addressing issues
- Strengthen in-house expertise through knowledge transfer and mentoring
- Improve operational efficiency by allowing UCS experts to augment your internal staff resources
- Enhance business agility by diagnosing potential issues before they affect your operations,

You can choose a desired service listed in [Table 25](#).

Table 25 Combined Support Service for UCS (PID UCSX-FI-6536-U)

Service SKU	Service Level GSP	On Site?	Description
CON-NCF2P-UCSXUUF1	NCF2P	Yes	CMB SVC 24X7X2OS
CON-NCF4P-UCSXUUF1	NCF4P	Yes	CMB SVC 24X7X4OS
CON-NCF4S-UCSXUUF1	NCF4S	Yes	CMB SVC 8X5X4OS
CON-NCFCS-UCSXUUF1	NCFCS	Yes	CMB SVC 8X5XNBDOS
CON-NCF2-UCSXUUF1	NCF2	No	CMB SVC 24X7X2
CON-NCFP-UCSXUUF1	NCFP	No	CMB SVC 24X7X4
CON-NCFE-UCSXUUF1	NCFE	No	CMB SVC 8X5X4
CON-NCFT-UCSXUUF1	NCFT	No	CMB SVC 8X5XNBD
CON-NCFW-UCSXUUF1	NCFW	No	CMB SVC SW
Note: For PID UCSX-6536-CH, select Service SKU with UCSIXFI6 suffix (Example: CON-NCF4P-UCSIXFI6)			

UCS Drive Retention Service

With the Cisco Unified Computing Drive Retention Service, you can obtain a new disk drive in exchange for a faulty drive without returning the faulty drive.

Sophisticated data recovery techniques have made classified, proprietary, and confidential information vulnerable, even on malfunctioning disk drives. The Drive Retention service enables you to retain your drives and ensures that the sensitive data on those drives is not compromised,

which reduces the risk of any potential liabilities. This service also enables you to comply with regulatory, local, and federal requirements.

If your company has a need to control confidential, classified, sensitive, or proprietary data, you might want to consider one of the Drive Retention Services listed in the above tables (where available)



NOTE: Cisco does not offer a certified drive destruction service as part of this service.

Local Language Technical Support for UCS

Where available, and subject to an additional fee, local language support for calls on all assigned severity levels may be available for specific product(s) - see tables above.

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

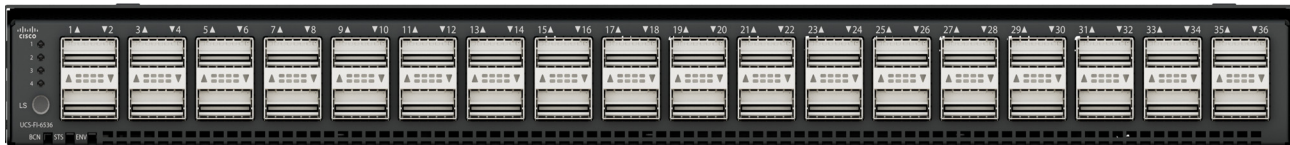
SUPPLEMENTAL MATERIAL

Cisco UCS 6536 FI Port Numbering

Each port on the Cisco UCS 6536 Fabric Interconnect is numbered, and groups of ports are numbered based on their function. The ports are numbered top to bottom and left to right.

Figure 5 shows how ports are numbered and the table below explains how each port group functions.

Figure 5 Port Numbering of the Cisco UCS 6536 FI



1	Ports 1–32: Ethernet uplink port at 1/10/25/40/100G, Server port will operate only at 25/40/100G speeds, FCoE uplink port, Appliance port (EHM only), Monitor Port operate either as 100G/40G/25G/10G QSFP28 Ethernet	2	Ports 33-36: <ul style="list-style-type: none"> ■ FC uplink port operate either as 8G/16G/32G Gbps Fibre channel ■ Ethernet uplink port, Server port, FCoE uplink port, Appliance port (EHM only), Monitor Port operate either as 100G/40G/25G/10G QSFP28 Ethernet
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Cisco UCS 6536 FI Supported Speeds

Speed	Port Range			
	1-8	9-10	11-32	33-36
1 Gbps	No	Yes	No	No
10/25 Gbps	Yes	Yes	Yes	Yes
40/100 Gbps	Yes	Yes	Yes	Yes
8/16/32 Gbps FC	No	No	No	Yes

Connectivity

This section explains the connectivity between the Fabric Interconnects (FIs) and Fabric Extenders (FEX). The Fabric Extenders are extensions of the Fabric Interconnects and act as remote line cards to form a distributed modular fabric system. The fabric extension is accomplished through the FEX fabric link, which is the connection between the Fabric Interconnect and the FEX.

A minimum of one connection between the FI and FEX is required to provide server connectivity. Depending on the FEX model, subsequent connections can be up to eight links, which provides added bandwidth to the servers.

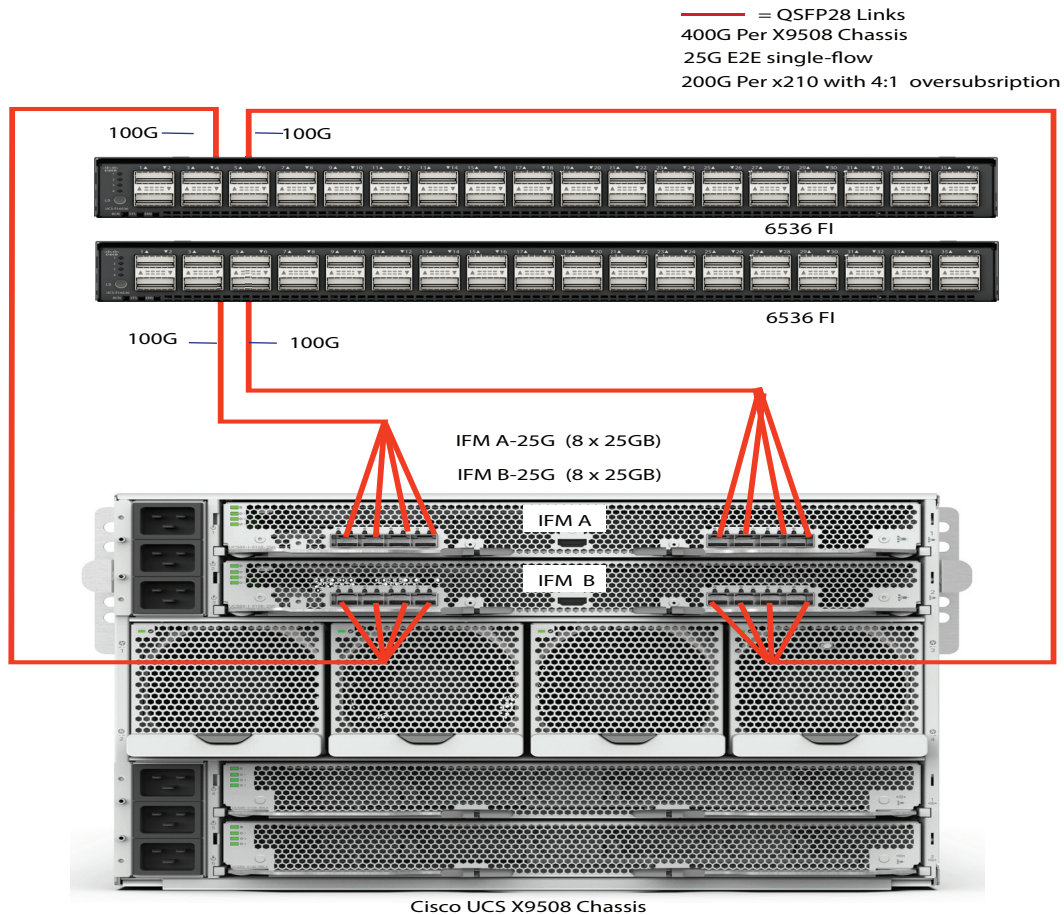
9508 Chassis Server Connectivity

For the X9508 chassis, the Fabric Extender modules (up to two) plug into the back of the UCS X9508 chassis. There is no backplane in the Cisco UCS X9508 chassis; the compute nodes directly connect to the IFMs using Orthogonal Direct connectors. The X9508 chassis accommodates the following IFMs:

- Cisco IFM 9108-25G (Figure 6)
- Cisco IFM 9108-100G (Figure 7)

The connectivity from the X9108-IFM-25G to 6536 Fabric Interconnects is shown in Figure 6.

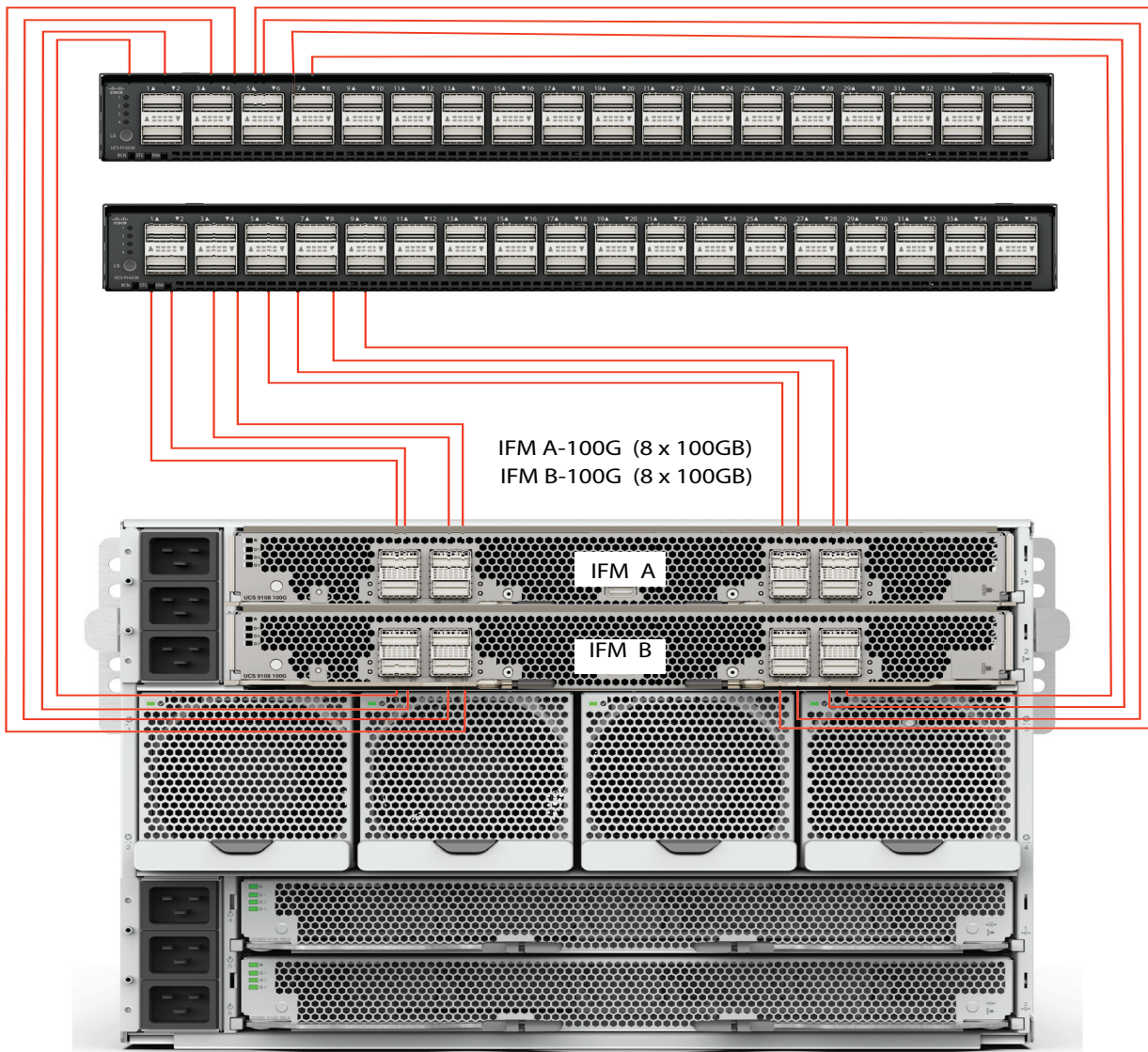
Figure 6 X9108-IFM-25G to 6536 Fabric Interconnect Connectivity



The connectivity from the X9108-IFM-100G to 6536 Fabric Interconnects is shown in [Figure 7](#).

Figure 7 X9108-IFM-100G to 6536 Fabric Interconnect Connectivity

- = QSFP28 Links
- 1600G Per X9508 Chassis
- 100G E2E single-flow
- 200G Per x210 with 1:1 oversubscription



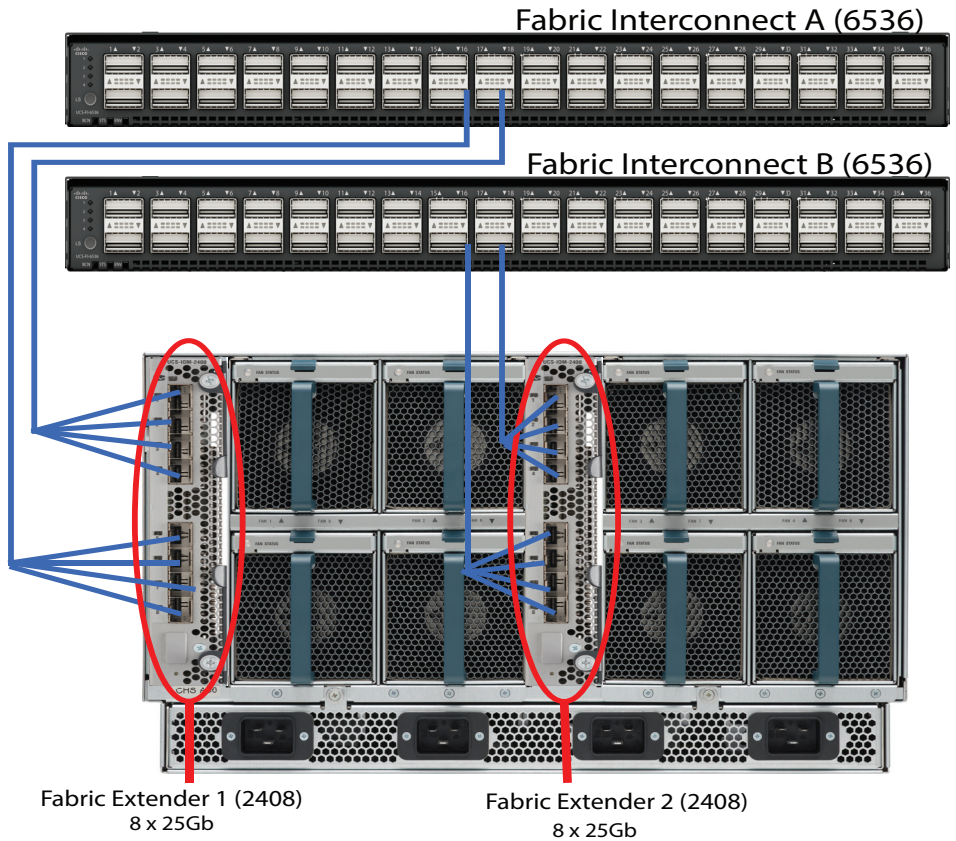
5108 Blade Chassis Server Connectivity

For the 5108 blade chassis, the Fabric Extender modules (up to two) plug into the back of the UCS 5108 series blade server chassis. A midplane connects the blade servers to the Fabric Extenders. The 5108 chassis accommodates the following FEX:

- Cisco UCS 2304
- Cisco UCS 2408 (*Figure 8*)

Figure 8 shows how the FEX modules in the blade chassis connect to the FIs.

Figure 8 Connecting Blade Chassis Fabric Extenders to Fabric Interconnect Chassis



NOTE: Cisco UCS 5108 rev 1 and rev 2 chassis are both supported with FI 6536

C-Series Rack-Mounted Server Connectivity

C-Series servers connect to external FEXs and FIs as summarized in this section. Single-Wire Management interconnection methods are possible:

Single-Wire Management

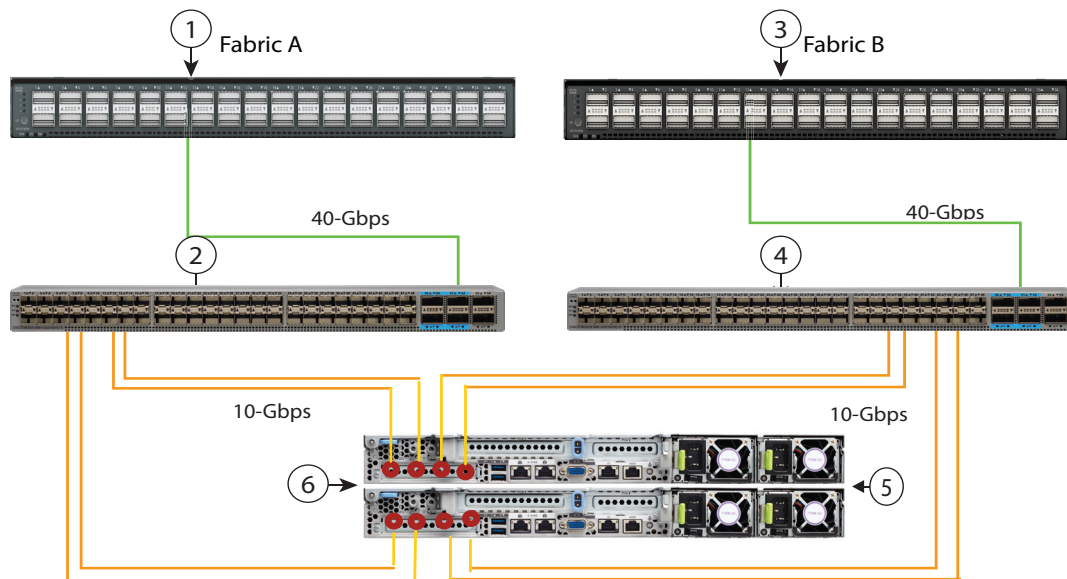
Cisco UCS Intersight supports an additional option to integrate the C-Series Rack-Mount Server with Cisco UCS Manager using the NCSI. This option enables Cisco Intersight to manage the C-Series Rack-Mount Servers using a single-wire for both management traffic and data traffic. When you use the single-wire management mode, one host facing port on the FEX is sufficient to manage one rack-mount server, instead of the two ports you would use in the Shared-LOM mode. This connection method allows you to connect more rack-mount servers for integrated server management.

C-Series Rack-Mounted Server Connectivity has two options:

- Single-wire Management With 93180YC-FX3 in FEX mode and FEX 2348 UPQ (*Figure 10*)
- Single-wire Management Without FEX (*Figure 11* & *Figure 12*)

Figure 10 shows how the C-Series rack mount chassis connect to the FEXs and FIs for single-wire management.

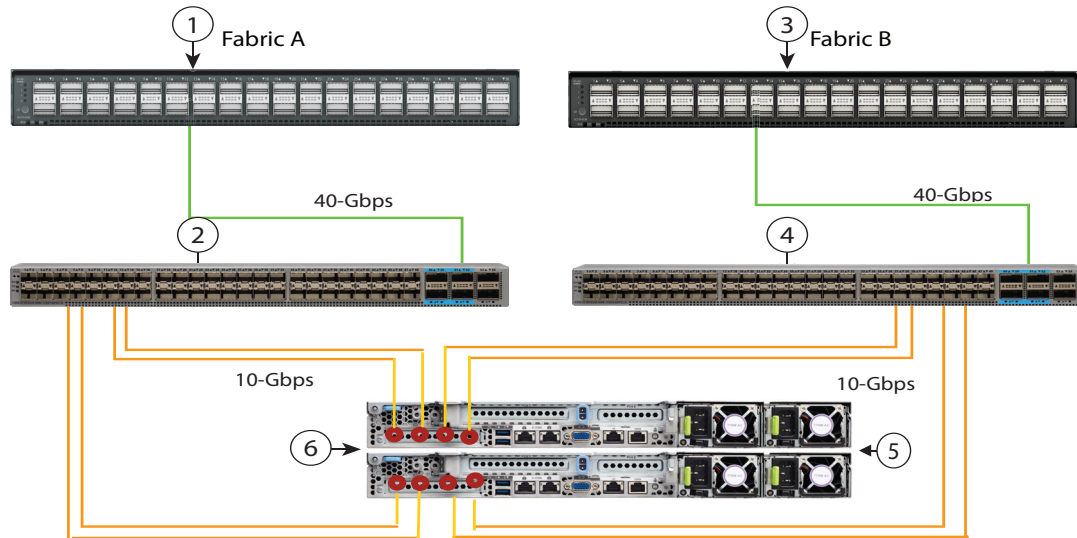
Figure 9 Connecting C-Series Rack Chassis (single-wire management with Nexus Switches)



1	Cisco UCS 6536 FI (Fabric A)	4	Cisco Nexus 93180YC-FX3 (Fabric B)
2	Cisco Nexus 93180YC-FX3 (Fabric A)	5	Cisco UCS C-series M5/M6/M7 server
3	Cisco UCS 6536 FI (Fabric B)	6	Cisco UCS VIC 1455/1457/1467/15428

Figure 10 shows how the C-Series rack mount chassis connect to the FEXs and FIs for single-wire management.

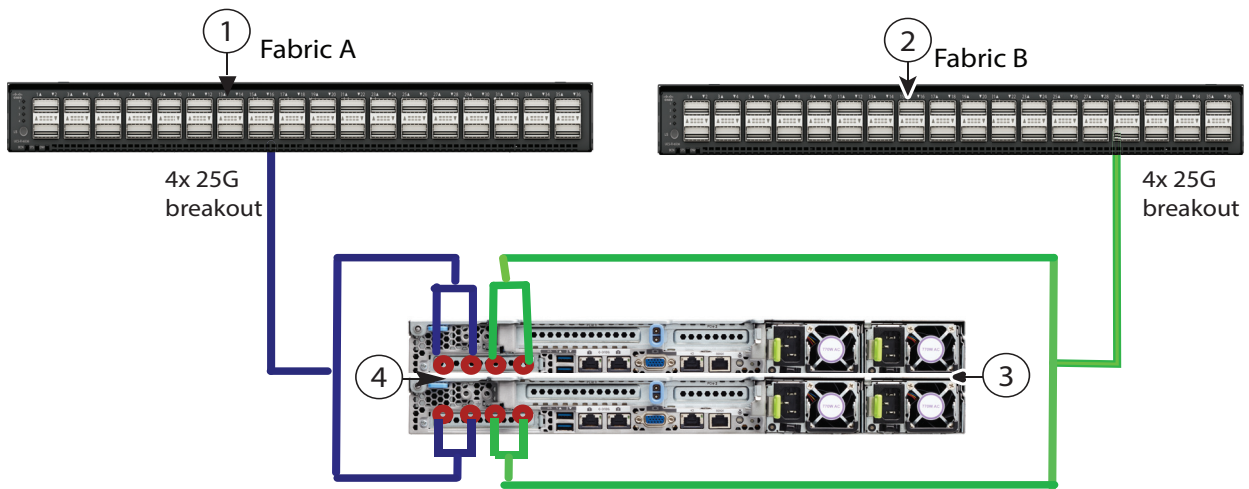
Figure 10 Connecting C-Series Rack Chassis (single-wire management with Nexus Switches)



1	Cisco UCS 6536 FI (Fabric A)	4	Cisco Nexus 2348 UPQ (Fabric B)
2	Cisco Nexus 2348 UPQ (Fabric A)	5	Cisco UCS C-series M4/M5/M6/M7 server
3	Cisco UCS 6536 FI (Fabric B)	6	Cisco UCS VIC 1385/1387/1455/1457/1467/15428

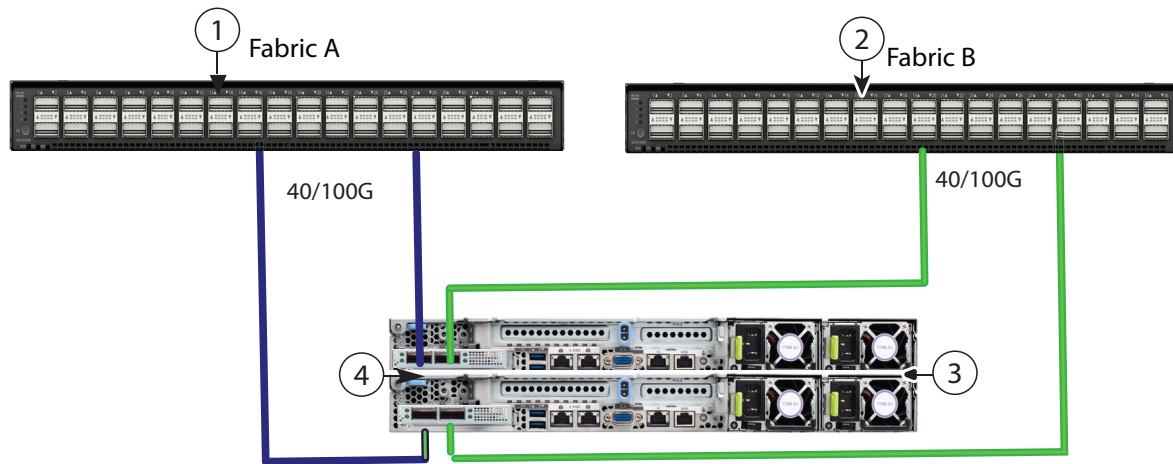
Figure 11 shows how the C-Series rack mount chassis connect to FIs for single-wire management.

Figure 11 Connecting C-Series Rack Chassis (single-wire management without FEX)



1	Cisco UCS 6536 FI (Fabric A)	3	Cisco UCS C-series M5/M6/M7 server
2	Cisco UCS 6536 FI (Fabric B)	4	Cisco UCS VIC 1455/1457/1467/15428

Figure 12 Connecting C-Series Rack Chassis (single-wire management without FEX)

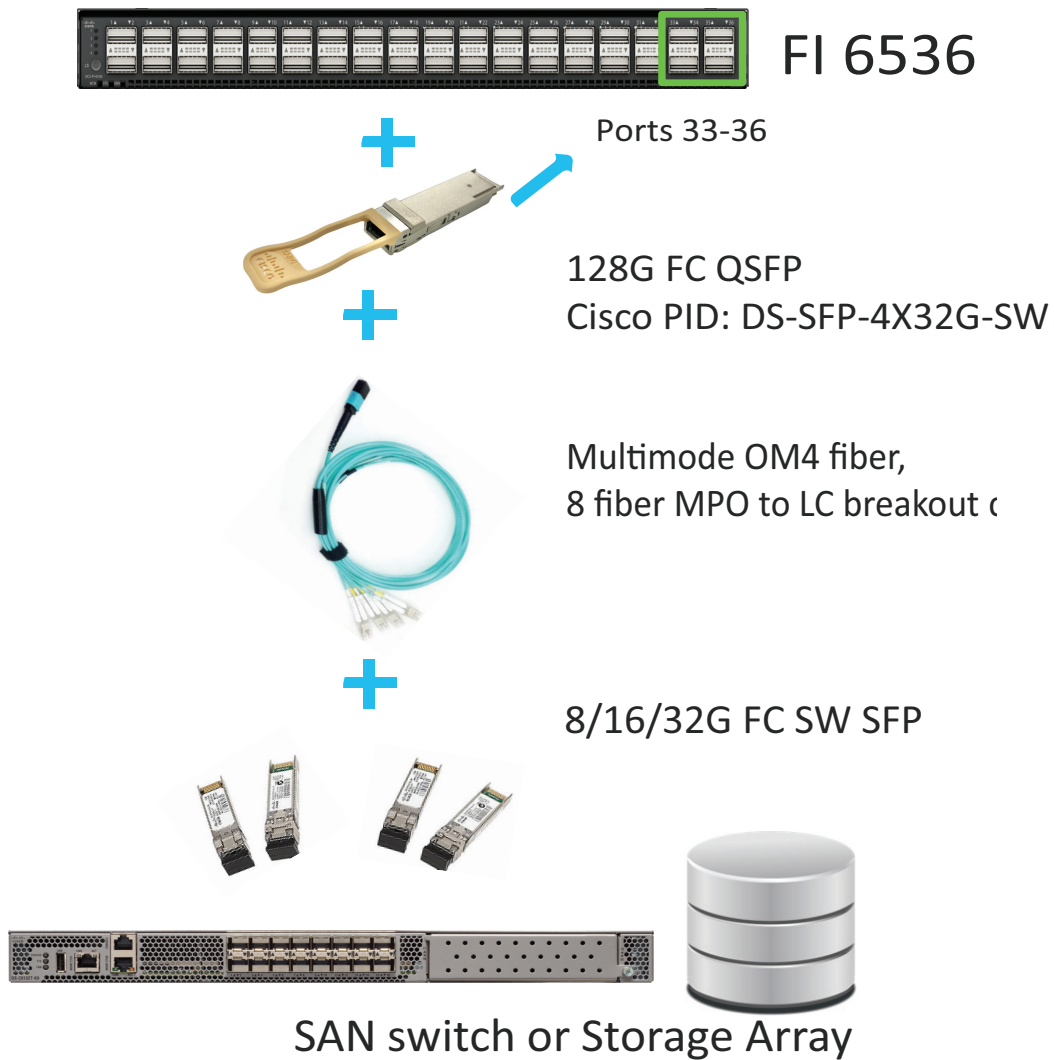


1	Cisco UCS 6536 FI (Fabric A)	3	Cisco UCS C-series M4/M5/M6/M7 server
2	Cisco UCS 6536 FI (Fabric B)	4	Cisco UCS VIC 1385/1387/1477/1497/1495/15238

FI 6536 Fibre channel connectivity

The Cisco 128G FC QSFP (PID: DS-SFP-4x32G-SW) is required to connect to a SAN switch or storage array at 8/16/32G speeds using a multi-mode OM4, 8 fiber MPO to LC breakout cable.

Figure 13 FC Connectivity



UCS 6536 FI Break Out Connectivity

The UCS 6536 Fabric Interconnect has been qualified with the new TMG offerings of MPO-LC breakout cable and the patch panel solution.

The breakout cable or the patch panel solution can be used for the following connectivity:

- 100G to 4x25G breakout for FI 6536 server ports with IFM-25G, IOM-2408 and VIC-15428/1455/1457/1467.
- 100G to 4x25G or 40G to 4x10G Ethernet breakout for FI 6536 uplink port.
- 4x32G or 4x 16G or 4x 8G FC breakout using “DS-SFP-4X32G-SW” QSFP transceivers on the FI 6536 unified ports.

The following are the supported cable and patch panels PIDs that are qualified with UCS 6536 Fabric Interconnect:

Table 26 MPO to LC breakout cables

Cisco PID	Cisco Description
MPO to LC Breakout cable only, No patch panel	
CB-M12-4LC-MMF1.5=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 1.5M
CB-M12-4LC-MMF2M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 2M
CB-M12-4LC-MMF3M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 3M
CB-M12-4LC-MMF4M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 4M
CB-M12-4LC-MMF5M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 5M
CB-M12-4LC-MMF7M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 7M
CB-M12-4LC-MMF10M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 10M
CB-M12-4LC-MMF15M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 15M
CB-M12-4LC-MMF20M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 20M
CB-M12-4LC-MMF25M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 25M
CB-M12-4LC-MMF30M=	CABLE, MPO12-4X DUPLEX LC, BREAKOUT CABLE, MMF, 30M



NOTE: In addition to the above cables, customers could also use a breakout-solution from any good cable vendor or use the qualified breakout cables from the vendor Panduit (Part Num#: FZ8RP5NLSQNM003, M005)

Table 27 Cisco patch panel solution

Cisco PID	Cisco Description
Patch Panel + Cassette + patch cord	
PP-72X100G-MMF=	PATCH PANEL, 1RU, 18 MPO12 - 72 DUPLEX LC, MMF
PP-144X100G-MMF=	PATCH PANEL, 2RU, MPO12 - 144 DUPLEX LC, MMF
PP-216X100G-MMF=	PATCH PANEL, 3RU, 54 MPO12 - 216 DUPLEX LC, MMF
PP-1RU-CHAS	PATCH PANEL, 1RU, EMPTY CHASSIS
PP-2RU-CHAS	PATCH PANEL, 2RU, EMPTY CHASSIS
PP-3RU-CHAS	PATCH PANEL, 3RU, EMPTY CHASSIS
PP-CAS-L-12LC-MMF=	PATCH PANEL, LEFT CASSETTE, 3 MPO12 - 12 DUPLEX LC, MMF
PP-CAS-R-12LC-MMF=	PATCH PANEL, RIGHT CASSETTE, 3 MPO12 - 12 DUPLEX LC, MMF
MPO to MPO	
CB-M12-M12-MMF1M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 1M
CB-M12-M12-MMF1.5=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 1.5M
CB-M12-M12-MMF2M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 2M
CB-M12-M12-MMF3M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 3M
CB-M12-M12-MMF4M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 4M
CB-M12-M12-MMF5M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 5M
CB-M12-M12-MMF7M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 7M
CB-M12-M12-MMF10M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 10M
CB-M12-M12-MMF15M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 15M
CB-M12-M12-MMF20M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 20M
CB-M12-M12-MMF25M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 25M
CB-M12-M12-MMF30M=	CABLE, MPO12-MPO12, TRUNK CABLE, TYPE B, MMF, 30M
LC to LC	
CB-LC-LC-MMF1M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 1M
CB-LC-LC-MMF2M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 2M
CB-LC-LC-MMF3M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 3M
CB-LC-LC-MMF4M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 4M
CB-LC-LC-MMF5M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 5M
CB-LC-LC-MMF7M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 7M

Table 27 Cisco patch panel solution

CB-LC-LC-MMF10M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 10M
CB-LC-LC-MMF15M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 15M
CB-LC-LC-MMF20M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 20M
CB-LC-LC-MMF25M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 25M
CB-LC-LC-MMF30M=	CABLE, DUPLEX LC-LC PATCH CORD, MMF, 30M

Refer to [Cisco High-Density Fiber Patch Panel, Simplex, MPO and Breakout Cables Portfolio Data Sheet](#) for more information.

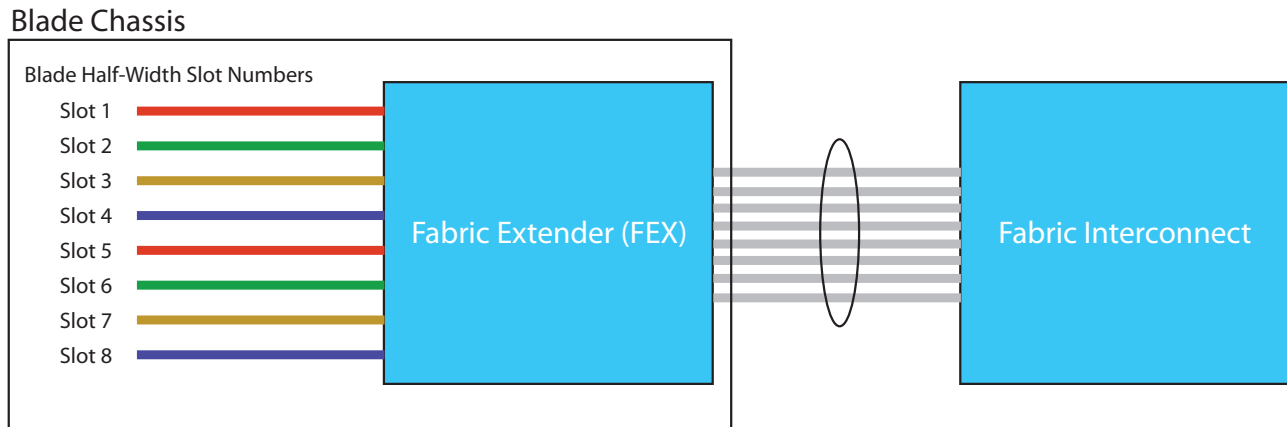
UCS 5108 and X9508 Chassis Connection Types

In a **5108 and X9508 Chassis**, Only port-channel mode is supported for connectivity from IOM-2408/2304 to FI or IFM-25G to FI or IFM-100G to FIs:

- Port Channel Mode

In port channel mode, the FEX fabric links are bundled into a single logical link (see [Figure 14](#)) to provide higher bandwidth to the servers. Up to 8 links can be port-channeled.

Figure 14 FEX Fabric Links in Port Channel Mode



TECHNICAL SPECIFICATIONS (s)

Physical and Environmental Specifications

Table 28 Physical and Environmental Specifications

Description	Specification
Cisco UCS 6536 FI	
Dimensions (H x W x D)	1.72 in. x 17.3 in x 24.7 in (4.4 cm x 43.9 cm x 62.7 cm)
Weight (with two power supplies and fans installed)	25.5 lb (11.6 kg)
Temperature, operating	32 to 104° F (0 to 40° C)
Temperature, non-operating	-40 to 158° F (-40 to 70° C)
Humidity (RH), non-condensing	5 to 95%
Altitude	0 to 13,123 ft (0 to 4000 m)

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

<https://ucspowercalc.cloudapps.cisco.com/public/index.jsp#eula>



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