Spec Sheet

Cisco UCS X9508 Chassis

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https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-x-series-modular-system/datasheet-listing.html



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PUBLICATION HISTORY

REV A.17 APRIL 04, 2026

OVERVIEW 3
Intelligent Fabric Modules 7
Fabric Interconnect Module 11
X-Fabric Modules 14
BASE CHASSIS STANDARD CAPABILITIES and FEATURES 15
CONFIGURING the CHASSIS 17
STEP 1 VERIFY BASE CHASSIS SKU 18
STEP 2 SELECT COMPUTE NODES 19
STEP 3 SELECT INTELLIGENT FABRIC MODULES 20
STEP 4 SELECT FABRIC INTERCONNECTS MODULES 21
STEP 5 SELECT X-FABRIC (Optional) 22
STEP 6 SELECT CISCO PCIE NODE (Optional) 23
STEP 7 CHOOSE POWER SUPPLIES 24
STEP 8 SELECT INPUT POWER CORD(s) 25
SUPPLEMENTAL MATERIAL 27
9508 Chassis Server Connectivity 27
9508 Chassis Direct Server Connectivity 30
ACCESSORIES/SPARE PARTS 34
TECHNICAL SPECIFICATIONS 35
Physical Dimensions and Specifications 35
Power Supply Specifications 37
Compliance Specifications 38
System Requirements 39

CONTENTS

OVERVIEW

The Cisco UCS® X-Series Modular System begins with the Cisco UCS X9508 chassis, engineered to be adaptable and future ready. It is a standard, open system designed to deploy and automate faster in concert with your hybrid cloud environment.

With a midplane-free design, I/O connectivity for the X9508 chassis is accomplished with front-loading, vertically oriented compute nodes intersecting with horizontally oriented I/O connectivity modules in the rear of the chassis. A Unified Ethernet fabric is supplied with the Cisco UCS 9108 Intelligent Fabric Modules. Cisco UCS X-Fabric Technology interconnects enable connectivity between the compute and resource nodes using PCIe Gen4 and will supply other industry-standard protocols as standards emerge. Interconnections can be easily updated with new modules.

The 7 rack-unit (7RU) Cisco UCS X9508 chassis has 8 flexible slots that can house a combination of compute nodes and a pool of current and future I/O resources that may include GPU accelerators, disk storage, and nonvolatile memory.

At the top rear of the chassis are two intelligent fabric modules that connect the chassis to upstream Cisco 6400/6500/6600 series Fabric Interconnects. At the bottom are slots housing XFM modules that can flexibly connect the compute modules with I/O devices and ready for future modules. This Cisco UCS X-Fabric technology uses 'X' to denote a variable that can evolve with new technology developments.

Six 2800 W power supply units (PSUs) provide 54 VDC power to the chassis with N, N+1, N+2, and N+N redundancy. The higher voltage allows efficient power delivery with less copper and reduced power loss. Efficient, 100 mm, dual counter-rotating fans deliver industry-leading airflow and power efficiency. Optimized thermal algorithms enable different cooling modes to best support your environment. Cooling is modular so that future enhancements can potentially handle open- or closed-loop liquid cooling to support even higher-power processors.

In addition to the Cisco UCS® X-Series Modular System there is the Cisco UCS® X-Series Direct. Cisco UCS X-Series Direct transforms the Cisco UCS X-Series Modular System into a self-contained system with pair of internal Cisco UCS Fabric Interconnects 9108 100G that integrate each of up to eight server nodes with Cisco unified fabric connectivity, upstream IP and Fibre Channel connectivity, all managed through Cisco Intersight or the time-proven Cisco UCS Manager.

The main benefits of the Cisco UCS X-Series Modular System and the Cisco UCS X-Series Direct are as follows:

- Cloud-operated infrastructure

  Management is moved from the on-premise network to the cloud so that you can respond at the speed and scale of your business and manage all of your infrastructure. You can shape Cisco UCS X Series Modular System resources to workload requirements with the Cisco Intersight cloud-operations platform.

- An adaptable system designed for modern applications

  Because requirements change often, you need a system that does not lock you into one set of resources when you find that you need another. For hybrid applications, and a range of traditional data center applications, with the Cisco UCS X Series Modular System, you can consolidate onto a single platform that combines the density and efficiency of blade servers with the expandability of rack servers. The result is better performance, automation, and efficiency.

- A system engineered for the future

The Cisco UCS X Series Modular System is emerging technology that reduces risk with a modular system designed to support future generations of processors, storage, nonvolatile memory, accelerators, and interconnects.

- Support a broader range of workloads

  A single server type supporting a broader range of workloads means fewer different products to support, reduced training costs, and increased flexibility.

Figure 1 and ***Figure 2*** show the front view and ***Figure 3*** & ***Figure 4*** & ***Figure 5*** shows the rear views of a populated X9508 chassis.
Note: ***Figure 1*** shows eight slots populated with compute nodes and ***Figure 2*** shows four slots populated with PCIe nodes. ***Figure 3*** & ***Figure 4*** shows X-Fabric Modules populated horizontally behind the chassis with Different IFMs. ***Figure 5*** shows the rear view of a populated X9508 X-Series Direct chassis.

Figure 1 Cisco UCS X9508 Chassis Front View (populated)

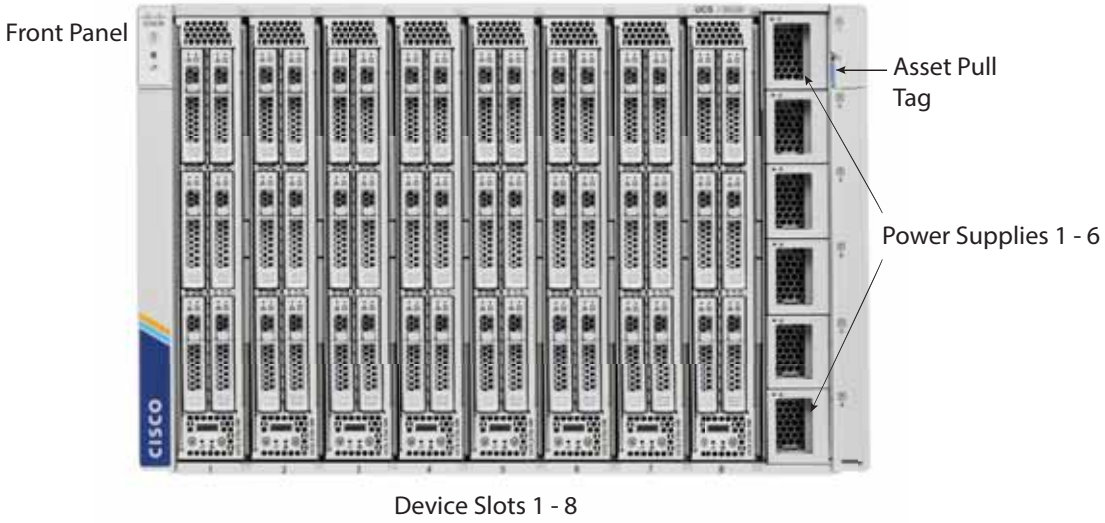


Figure 2 Cisco UCS X9508 Chassis Front View with PCIe Nodes (populated)

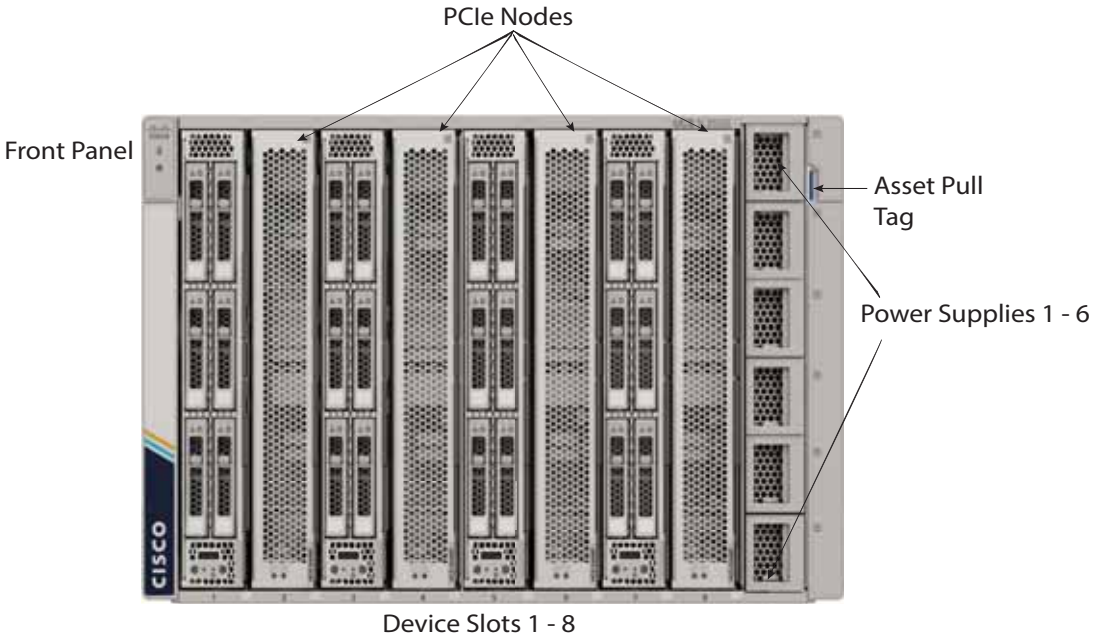


Figure 3 Cisco UCS X9508 Chassis Rear View with X9108-IFM-100G (top) and 2 Fabric Module Slots (bottom)

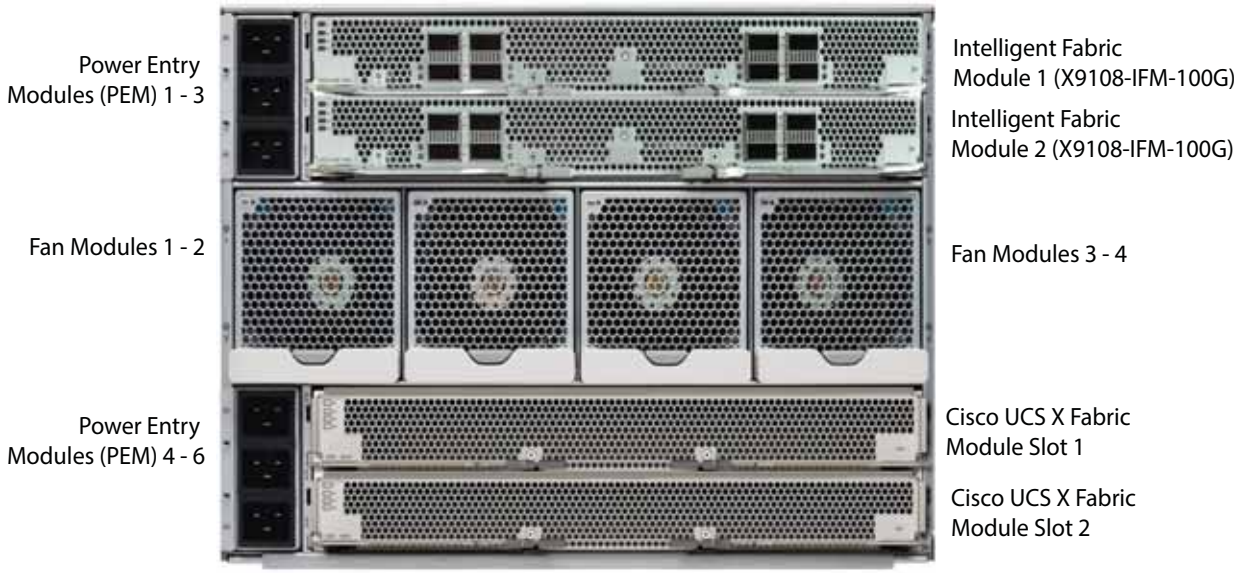


Figure 4 Cisco UCS X9508 Chassis Rear View with X9108-IFM-25G (top) and 2 Fabric Module Slots (bottom)



Figure 5 Cisco UCS X9508 X-Series Direct Rear View with UCSX-S9108-100G (top) and 2 Fabric Module Slots (bottom)



Intelligent Fabric Modules

Network connectivity is provided by a pair of Cisco UCS 9108 Intelligent Fabric Modules (IFMs). Similar to the fabric extenders used in the Cisco UCS 5108 Blade Server Chassis, these modules carry all network traffic to a pair of Cisco UCS 6400/6500/6600 series Fabric Interconnects (FIs). Having a single point of network connectivity and control in a system provides deterministic latency. This, in turn, frees you to place workloads without regard to whether the compute nodes are in the same chassis. Each IFM features the following:

Cisco UCS 9108-25G IFM:

- Server ports: Up to 50 Gbps of unified fabric connectivity per compute node with two IFMs.
- Uplink ports: 8x 25-Gbps SFP28 ports.

Cisco UCS 9108-100G IFM:

- Server ports: Up to 200 Gbps of unified fabric connectivity per compute node with two IFMs.
- Uplink ports: 8x 100-Gbps QSFP8 ports.

The unified fabric carries management, application data traffic using Ethernet and/or Fibre Channel over FCoE protocols to the fabric interconnects. There, management traffic connects to the Cisco Intersight cloud operations platform; FCoE traffic is passed to native Fibre Channel interfaces through universal ports on the fabric interconnects, and production Ethernet traffic is passed upstream to the data center network.

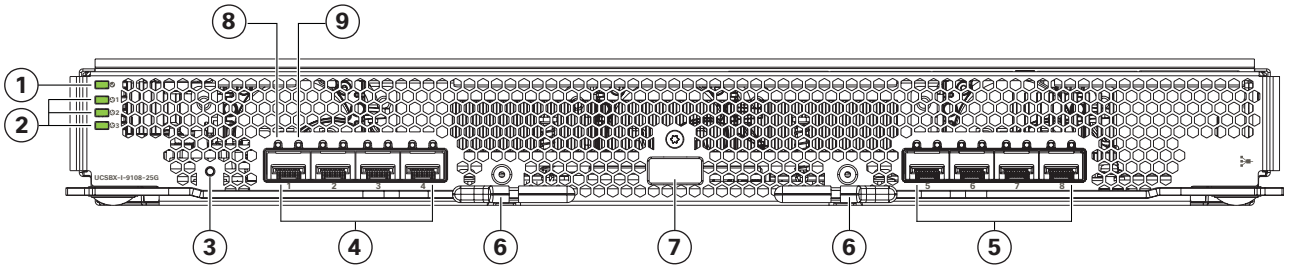
Up to two Intelligent Fabric Modules (IFMs) plug into the back of the UCS X9508 chassis.

The IFMs serve as line cards in the chassis and multiplex data from the Cisco UCS X210c, X215c or X410c compute nodes to the Fabric Interconnect (FI). They also monitor and manage chassis components such as fan units, power supplies, environmental data, LED status panel, and other chassis resources. The compute node's Keyboard-Video-Mouse (KVM) data, Serial over LAN (SoL) data, and Intelligent Platform Management Interface (IPMI) data also travel to the IFMs for monitoring and management purposes. In order to provide redundancy and failover, the IFMs are always used in pairs.

There are 8 x SFP28 or 8 X QSFP28 connectors on an IFM to interface with a Fabric Interconnect (FI). The IFM provides up to 8x 25 Gbit/s links for the UCS 9108-25G IFM and 8X 100 Gbit/s links for the UCS 9108-100G IFM. The links provide the end-to-end interface from a compute node in the X9508 chassis to the connections on a Fabric Interconnect (FI). When a compute node is inserted into the chassis, the compute node's upper mezzanine card (mLOM) plugs directly into the two IFMs using two orthogonal connectors (ODs). The X9508 chassis accommodates either two Cisco UCS 9108-25G IFMs, two Cisco UCS 9108-100G IFM, or Cisco UCS Fabric Interconnect 9108 100G.

Figure 6 shows the IFM front view characteristics.

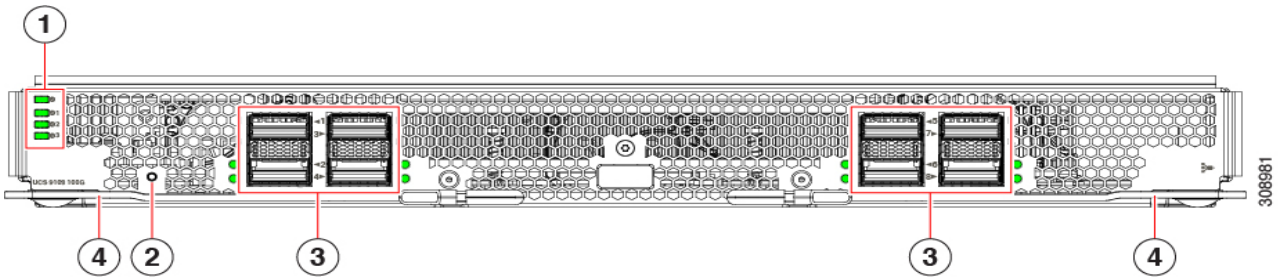
Figure 6 Cisco UCS 9108-25G IFM (front view)



1	IFM status LED	**6**	Ejector handle
2	Fan #1 - #3 status LEDs	**7**	HDMI port (for factory use only)
3	Reset button	**8**	Link/port status LED (one per port)
4	SFP28 ports 1 - 4	**9**	Port activity LED (one per port)
5	SFP28 ports 5 - 8	**-**	-

Figure 7 shows the IFM front view characteristics.

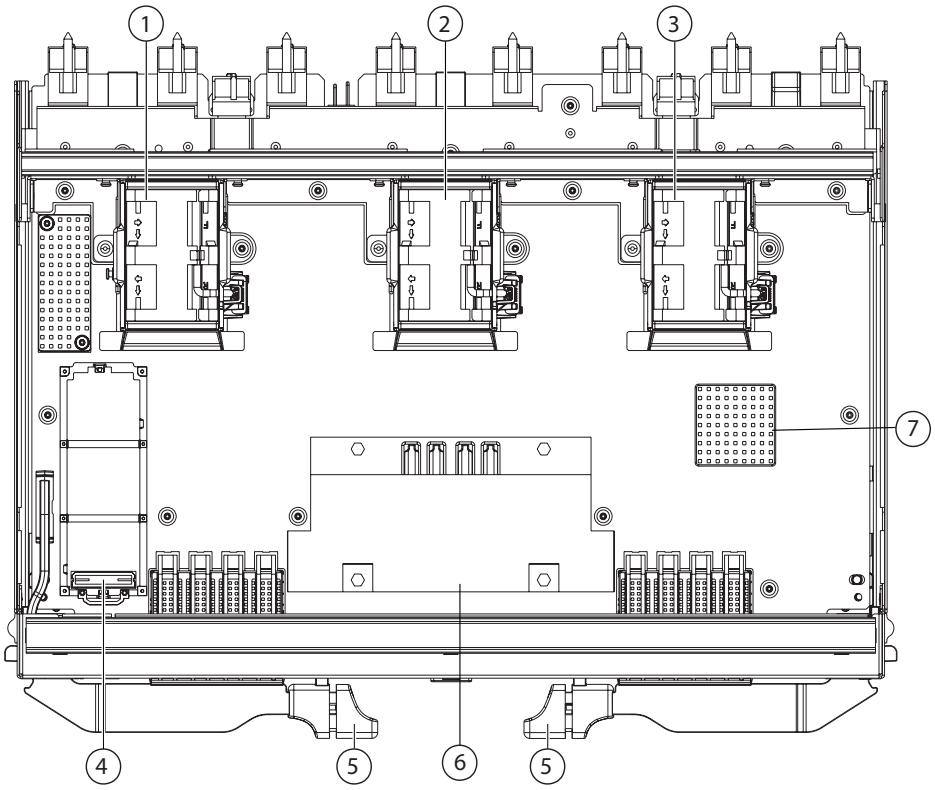
Figure 7 Cisco UCS 9108-100G IFM (front view)



1	Status LEDs: ■ IFM Status (top LED) ■ Fan Status LEDs 1 through 3, with Fan 1 as LED 2, Fan 2 as LED 3, and Fan 3 as LED 4.	**3**	QSFP28 Optical Ports. Ports are arranged in two groups of four physical ports. Ports are stacked in vertical pairs, with two ports in each vertical port stack.
2	IFM Reset Button	**4**	IFM Ejector Handles, left and right

Figure 8 shows the IFM top view characteristics.

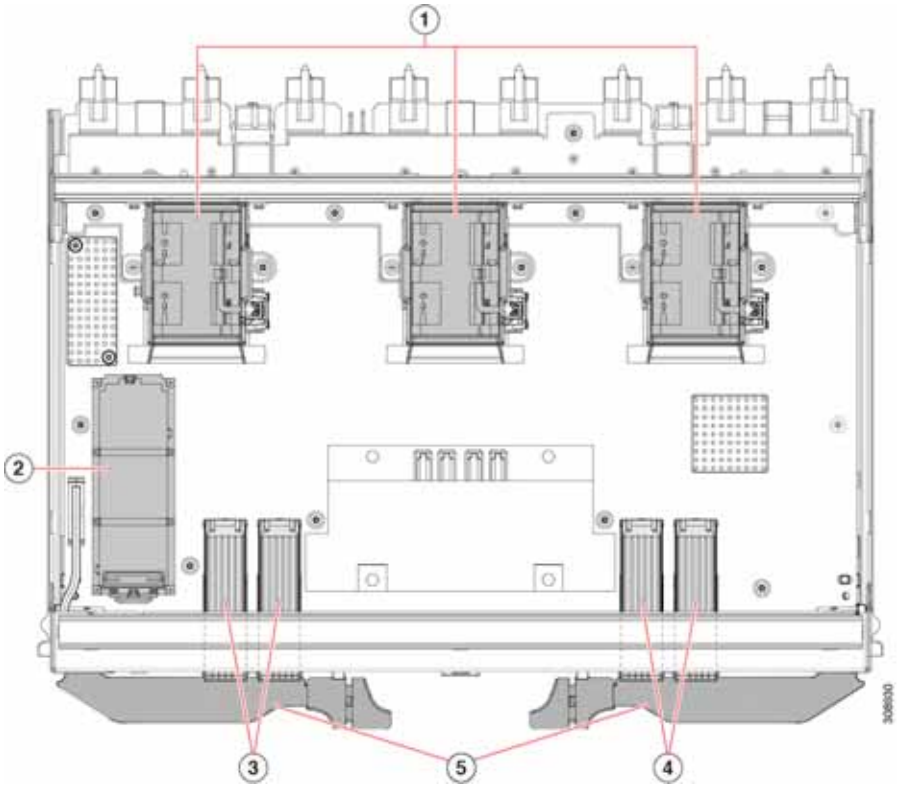
Figure 8 Cisco UCS 9108-25G IFM (top view)



1	Fan #1	**4**	Mini storage connector (future)
2	Fan #2	**5**	Ejector Handles
3	Fan #3	**6**	Cisco switch ASIC
7	CPU (Intel Denverton, 4-core, 2.1 GHz, 15W)	**-**	

Figure 9 shows the IFM top view characteristics.

Figure 9 Cisco UCS 9108-100G IFM (top view)



1	Fans (3) which are numbered 1 through 3 starting with the left fan	**4**	QSFP28 Optical Ports 5-8 Ports are arranged in two groups of four physical ports. Ports are stacked in vertical pairs, with two ports in each vertical port stack.
2	One M.2 mini storage module slot	**5**	IFM ejector handles, left and right
3	QSFP28 Optical Ports 1-4 Ports are arranged in two groups of four physical ports. Ports are stacked in vertical pairs, with two ports in each vertical port stack.	**-**	-

Fabric Interconnect Module

The Cisco UCS Fabric Interconnect 9108 100G (***Figure 10***) is an integrated 1/10/25/40/100 Gigabit Ethernet, FCoE, and Fibre Channel switch offering up to 1.6 Tbps throughput and up to 8 ports. The switch has 6 40/100-Gbps Ethernet ports and 2 unified ports that can support 40/100-Gbps Ethernet ports or 8 Fiber Channel ports after break-out at 8/16/32-Gbps FC speeds. The 8 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 8 ports can breakout for 10/25-Gbps Ethernet connectivity. All Ethernet ports are capable of supporting FCoE. Beyond the 8 external facing 100G ports, the Fabric Interconnect 9108 100G also provides eight 100G or thirty-two 25G backplane ethernet ports connectivity towards the X-series compute nodes depending on 100G or 25G VIC. The rear-view image shows the ortho-direct connectors that will connect to the VIC on the X-series compute node.

The Cisco UCS Fabric Interconnect 9108 100G also has one network management port, one console port for setting the initial configuration, and one USB port for saving or loading configuration.

Figure 10 shows the 8-port FI.

Figure 10 Cisco UCS Fabric Interconnect 9108 100G.

Front View

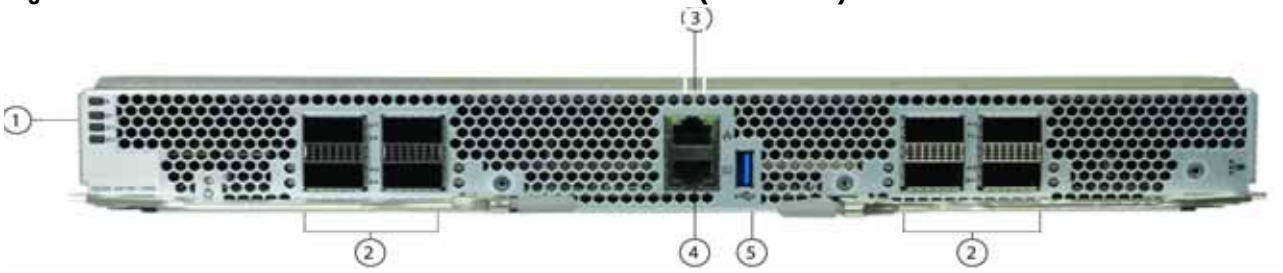


Rear View



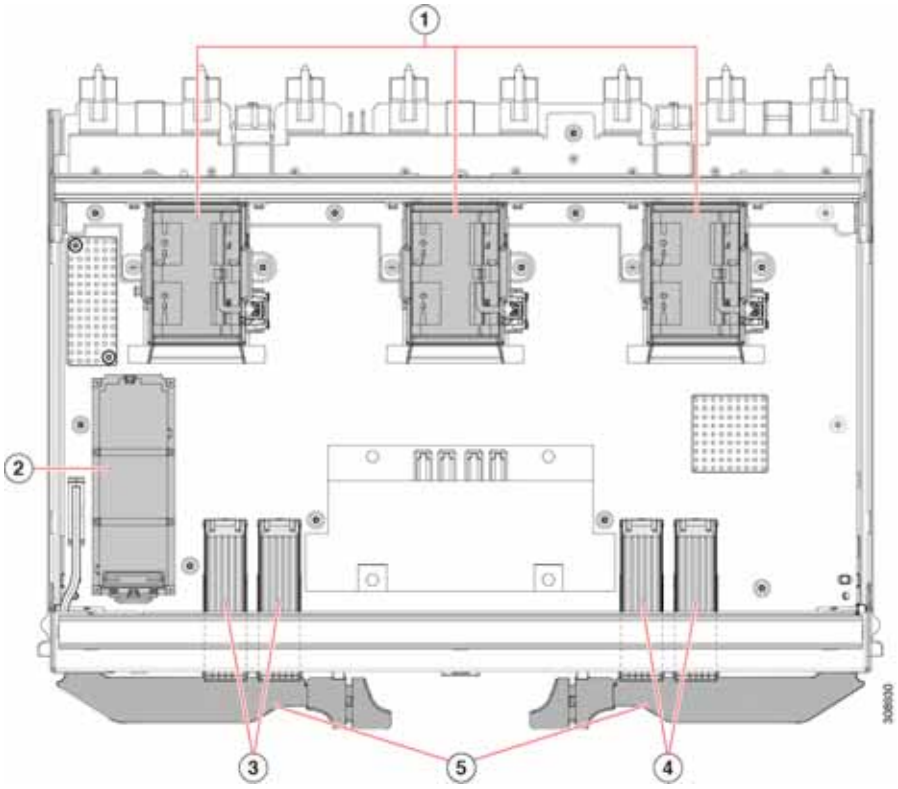
The Cisco UCS Fabric Interconnect 9108 100G front detailed view shown in ***Figure 11***.

Figure 11 Cisco UCS Fabric Interconnect 9108 100G (front view)



1	Status LEDs: ■ FI Status (top LED) ■ Fan Status LEDs 1 through 3, with Fan 1 as LED 2, Fan 2 as LED 3, and Fan 3 as LED 4.	**2**	QSFP28 Optical Ports. Ports are arranged in two groups of four physical ports. Ports are stacked in vertical pairs, with two ports in each vertical port stack.
3	Management Port	**4**	Console Port
5	USB Port	**-**	

Figure 12 Cisco UCS Fabric Interconnect 9108 100G (top view)



1	Fans (3) which are numbered 1 through 3 starting with the left fan	**4**	QSFP28 Optical Ports 5-8 Ports are arranged in two groups of four physical ports. Ports are stacked in vertical pairs, with two ports in each vertical port stack.
2	One M.2 mini storage module slot	**5**	FI ejector handles, left and right
3	QSFP28 Optical Ports 1-4 Ports are arranged in two groups of four physical ports. Ports are stacked in vertical pairs, with two ports in each vertical port stack.	**-**	-

X-Fabric Modules

Configuring your Cisco UCS X210c, X215c or X410c Compute Nodes in the X9508 chassis with both mLOM and mezzanine-form-factor virtual interface cards delivers up to 200 Gbps of network bandwidth to the node and prepares it for connectivity to Cisco UCS PCIe node and future devices with Cisco UCS X-Fabric technology. The PCIe I/O devices are configured on demand and connects to the Cisco UCS X210c, X215c or X410c Compute Nodes through Cisco UCS X-Fabric modules in the Cisco UCS X9508 Chassis.

Following combinations can be used to connect the Cisco UCS X210c, X215c or X410c node to the Cisco UCS PCIe node via Cisco UCS X9416 X-Fabric.

- UCS VIC 14425 mLOM card and mezzanine-form-factor virtual interface card or the Cisco UCS PCIe Mezz card for X-Fabric.
- UCS VIC 15230 mLOM card and mezzanine-form-factor virtual interface card or the Cisco UCS PCIe Mezz card for X-Fabric.

Fabric Modules slots provide an alternative path to bridging/switching within the chassis and interconnect compute node CPUs, storage devices, and communication devices so that all these components interoperate directly without any need to translate PCIe to Ethernet. The result is a significant reduction in cost, power, and latency.

With the Cisco UCS X9416 X-Fabric there are x16 high speed links (PCIe Gen 4 is supported) connected from each X-Fabric Module slot to each compute node.

The X-Fabric Module slots are located at the rear of the UCS X9508 chassis. When a compute node is inserted into the chassis, the compute node's mezzanine card plugs directly into the two Fabric Module slots (with no midplane).

Figure 13 Front view of Cisco UCS X9416 X-Fabric.



BASE CHASSIS STANDARD CAPABILITIES and FEATURES

Table 1 lists the capabilities and features of the base X9508 chassis. Details about how to configure the chassis for a particular feature or capability are provided in ***CONFIGURING the CHASSIS, page 17***.

Table 1 Capabilities and Features

Capability/Feature	Description
7 RU Chassis	The X9508 chassis has 8x front-facing flexible slots. These can house a combination of compute nodes and a pool of future I/O resources that may include GPU accelerators, disk storage, and nonvolatile memory.
Compute Node Support	■ General • Support for 2-CPU single slot and 4-CPU dual slot compute nodes ■ Compute Nodes • Supports CPUs and future GPUs with 300W+ TDP, and 900W+ per compute node TDP • Support for highest end DDR/persistent memory configurations • Support for a minimum of 2 Mezzanine slots for premium VIC, GPU, and FPGA expansion
Intelligent Fabric Module	2x Cisco UCS 9108 Intelligent Fabric Modules (IFMs) at the top of the chassis that connect the chassis to upstream Cisco UCS 6400/6500/6600 series Fabric Interconnects. Each IFM features the following: ■ Up to 100 Gbps of unified fabric connectivity per compute node. ■ 8x 25-Gbps SFP28 or 8X 100-Gbps QSFP28 uplink ports. The unified fabric carries management traffic to the Cisco Intersight cloud-operations platform, Fibre Channel over Ethernet (FCoE) traffic, and production Ethernet traffic to the fabric interconnects.
Fabric Interconnect Module	2x Cisco UCS Fabric Interconnect 9108 100G Modules (FIs) at the top of the chassis that connect the chassis to upstream Top-of-Rack (ToR) switches. Each FI features the following: ■ Up to 100 Gbps of unified fabric connectivity per compute node. ■ Integrated 1/10/25/40/100 Gigabit Ethernet, FCoE, and Fibre Channel switch offering up to 1.6 Tbps throughput and up to 8 ports. The switch has 6 40/100-Gbps Ethernet ports and 2 unified ports that can support 40/100-Gbps Ethernet ports or 8 Fiber Channel ports after break-out at 8/16/32-Gbps FC speeds.
Cisco UCS X-Fabric technology	At the bottom rear of the X9508 chassis are slots ready to house X-Fabric modules that can flexibly connect the compute modules with I/O devices. The “X” in Cisco UCS X-Fabric technology denotes a variable that can evolve with new technology developments.
Next Generation Power and Thermal Capability	■ Power supplies • Six 2800-Watt power supplies providing 54 V power • 4x 100 mm dual counter-rotating fans • N, N+1, N+2, and N+N redundancy • 300 Watt+ total power dissipation for compute nodes

Table 1 Capabilities and Features *(continued)*

Capability/Feature	Description
Density and Form Factor	■ Industry-leading socket density per RU ■ Minimum of 8 compute slots ■ 32 DIMM socket support on a 2-socket compute node (beginning with the Ice Lake CPU family) and 64 DIMM socket support on a 4-socket compute node (beginning with the Sapphire Rapids CPU family) ■ Power, thermal, and form factor support for smart NICs, FPGA accelerators, and GPU cards
Fabric Bandwidth	■ Data fabric connectivity to compute nodes of 200 Gbps Ethernet speeds per compute node ■ Provision for future fabric expansion
Chassis Storage Support	■ Local storage
Virtual Card Interface (VIC) Support	■ Cisco VIC ASIC ■ 25G throughput ■ 100G throughput

CONFIGURING the CHASSIS

Follow these steps to configure the Cisco UCS X9508 chassis:

- *STEP 1 VERIFY BASE CHASSIS SKU, page 18*
- *STEP 2 SELECT COMPUTE NODES, page 19*
- *STEP 3 SELECT INTELLIGENT FABRIC MODULES, page 20*
- *STEP 4 SELECT FABRIC INTERCONNECTS MODULES, page 21*
- *STEP 6 SELECT CISCO PCIE NODE (Optional), page 23*
- *STEP 7 CHOOSE POWER SUPPLIES, page 24*
- *STEP 8 SELECT INPUT POWER CORD(s), page 25*
- *SUPPLEMENTAL MATERIAL, page 27*

STEP 1 VERIFY BASE CHASSIS SKU

Top level ordering product ID (PID) is shown in ***Table 2***.

Table 2 Top Level Major Line Bundle ordering PIDs (MLB)

Product ID (PID)	Description
UCSX-M6-MLB	UCS M6 Rack, Blade, Chassis MLB
UCSX-M7-MLB	UCS M7 Rack, Blade, Chassis MLB
UCSX-M8-MLB	UCS M8 Rack, Blade, Chassis MLB

Verify the product ID (PID) of the base X9508 chassis as shown in ***Table 3***.

Table 3 PID of the Base Cisco UCS X9508 Chassis

Product ID (PID)	Description	Usage
M6		
UCSX-9508=	UCS X9508 Chassis	Chassis with or without IFM, PSU - Nodes are not offered/configurable in this SKU
UCSX-9508-U	UCS X9508 Chassis Configured	Chassis configured with Node, IFM, PSU etc
UCSX-9508-CH	DISTI: UCS X9508 Chassis	Chassis SKU used for Cisco approved Distributor's: this SKU is not configurable -Bare Chassis with Blanks, Brackets and Accessory Kit
M7/M8		
UCSX-9508-D=	UCS X9508 Chassis	Chassis with or without IFM, PSU - Nodes are not offered/configurable in this SKU
UCSX-9508-D-U	UCS X9508 Chassis Configured	Chassis configured with Node, IFM, PSU etc
UCSX-9508-D-CH	DISTI: UCS X9508 Chassis	Chassis SKU used for Cisco approved Distributor's: this SKU is not configurable -Bare Chassis with Blanks, Brackets and Accessory Kit

Items included with the chassis:	Items not included with the chassis (but may be ordered separately):
■ Fans	■ Compute nodes
■ Chassis accessory kit	■ IFMs
■ Compute node blank panels (where needed)	■ FIs
■ X-Fabric module blank panels (two)	■ X-Fabric modules
■ Power supply blanks (where needed)	■ PCI Nodes, Risers and GPU
■ Chassis Rear AC Power Expansion Module (two)	■ Transceivers and cables
■ AC power supply keying bracket	■ Power supplies

STEP 2 SELECT COMPUTE NODES

Choose Compute Nodes

The available single-slot compute nodes for the chassis is shown in ***Table 4***.

Table 4 Available Compute Nodes

Product ID (PID)	Description
UCSX-210C-M6	UCS 210c M6 Compute Node without CPU, Memory, Storage, Mezz
UCSX-210C-M7	UCS 210c M7 Compute Node without CPU, Memory, Storage, Mezz
UCSX-410C-M7	UCS 410c M7 Compute Node without CPU, Memory, Storage, Mezz
UCSX-210C-M8	UCS 210c M8 Compute Node without CPU, Memory, Storage, Mezz
UCSX-215C-M8	UCS 215c M8 Compute Node without CPU, Memory, Storage, Mezz
UCSX-410C-M8	UCSX 410c M8 Compute Node w/o CPU, Memory, Storage, Mezz

Approved Configurations

(1) Choose from one to eight compute nodes

Caveats

The chassis can accommodate up to eight single-slot or four dual-slot compute nodes or a mix of single- and dual-slot compute nodes. If any PCIe nodes are used in the chassis, then fewer compute nodes can be installed in the chassis.



NOTE: Refer to the compute node specification sheets below for more details on the components and PIDs:

- Cisco UCS X210c M8 Compute Node Spec Sheet
- Cisco UCS X215c M8 Compute Node Spec Sheet
- Cisco UCS X410c M7 Compute Node Spec Sheet
- Cisco UCS X210c M6 Compute Node Spec Sheet
- Cisco UCS X210c M7 Compute Node Spec Sheet

STEP 3 SELECT INTELLIGENT FABRIC MODULES

Choose Intelligent Fabric Modules

The available Intelligent Fabric Modules are listed in ***Table 5***. Each IFM connects to external Fabric Interconnects using 8x 25G ports or 8x 100G ports

Table 5 Available Intelligent Fabric Modules (IFMs)

Product ID (PID)	Description
M6	
UCSX-I-9108-25G	UCS 9108-25G IFM for X9508 chassis
UCSX-I-9108-100G	UCS 9108-100G IFM for X9508 chassis
M7/M8	
UCSX-I-9108-25G-D	UCS 9108-25G IFM for 9508 Chassis
UCSX-I9108-100G-D	UCS 9108-100G IFM for X9508 chassis

Approved Configurations

(1) Choose two IFMs of same type

(2) You can not mix IFM and integrated FI in the same chassis

NOTE: Refer to the IFM specification sheets below for more details on the components and PIDs:

- Cisco UCS 9108 25G Intelligent Fabric Module Spec Sheet
- Cisco UCS 9108 100G Intelligent Fabric Module Spec Sheet

STEP 4 SELECT FABRIC INTERCONNECTS MODULES

Choose Fabric Interconnect Modules

The available Fabric Interconnect Modules are listed in ***Table 6***. Each FI connects to external Top-of-Rack switch using 8x 100G ports.

Table 6 Available Fabric Interconnect

Product ID (PID)	Description
M6	
UCSX-S9108-100GM6	UCS X-Series Direct Fabric Interconnect 9108 100G
UCSX-S9108-SW	Perpetual SW License for UCS X-Series Direct FI 9108-100G
M7/M8	
UCSX-S9108-100G	UCS X-Series Direct Fabric Interconnect 9108 100G
UCSX-S9108-SW	Perpetual SW License for UCS X-Series Direct FI 9108-100G

Approved Configurations

(1) Choose two FI

(2) You can not mix IFM and integrated FI in the same chassis

NOTE: Refer to the Fabric Interconnect specification sheets below for more details on the components and PIDs:

- Cisco UCS Fabric Interconnect 9108 100G Spec Sheet

STEP 5 SELECT X-FABRIC (Optional)

Choose X-Fabric Modules

The available X- Fabric Modules are listed in ***Table 7***. Each X-Fabric module provides native PCIe Gen4 x16 connectivity to the X210c, X215c or X410c Compute node and the Cisco UCS X440p and X580p PCIe Node.

Table 7 Available X- Fabric Modules (XFMs)

Product ID (PID)	Description
UCSX-F-9416-D	UCS 9416 X-Fabric module for 9508 chassis

Choose X-Fabric PCIE ETX

Table 8 Available X- Fabric PCIe ETX

Product ID (PID)	Description
UCSX-FS-9516	UCS 9516 X-Fabric PCIe Gen5 switch module for 9508 chassis

Approved Configurations

(1) Choose two XFMs or PCIE ETX

STEP 6 SELECT CISCO PCIE NODE (Optional)

The available PCIe Nodes

Table 9 Available PCIe Node Option

Product ID (PID)	Description
M6	
UCSX-440P	UCS X-Series Gen4 PCIe node
M7/M8	
UCSX-440P-D	UCS X-Series Gen4 PCIe node
UCSX-580P	UCS X-series PCIe Gen5 node

Approved Configuration

The PCIe node requires both the risers to be configured and doesn't support orderability without both risers included.

NOTE: Refer to the below spec sheet for the list of components such as riser cards and available GPUs under the PCIe Nodes:

- Cisco UCS X440p PCIe Node Spec Sheet

STEP 7 CHOOSE POWER SUPPLIES

The X9508 chassis accommodates up to six power supplies. The six dual feed power supplies provide an overall chassis power capability of greater than 9000 W, and can be configured as N, N+1, N+2, or N+N redundant.

Choose Power Supplies

The available power supplies are listed in ***Table 10***.

Table 10 Available Power Supplies

Product ID (PID)	PID Description
UCSX-PSU-2800AC	UCS 9508 Chassis 2800 VAC Dual Voltage PSU
UCSX-PSU-2800AC-D	UCS 9508 Chassis 2800 VAC Dual Voltage PSU

Approved Configurations

Choose from 2 to 6 power supplies

- If node quantity 1 is selected, then minimum 2 quantity of PSU is required
- If node quantity 2 to 6 is selected, then minimum 4 quantity of PSU is required
- If node quantity 7 or 8 is selected, then minimum 6 quantity of PSU is required



NOTE:

- Two PSUs minimum are required for chassis operation. Four PSUs are recommended and the maximum number of PSUs is six.
- Use the Power Calculator to determine the correct number of power supplies. The Power Calculator can be found at this link:

  http://ucspowercalc.cisco.com\

STEP 8 SELECT INPUT POWER CORD(s)

Select the appropriate AC power cords listed in ***Table 11***. You may select up to 6 power cords.

Table 11 Available Power Cords

Product ID (PID)	PID Description	Comment
CAB-AC-16A-AUS	16A, 250 VAC	Australia
CAB-9K16A-BRZ	16A, 250 VAC	Brazil
UCSB-CABL-C19-BRZ	C19, 14', 16A, 250V	Brazil
CAB-AC16A-CH	16A, 250 VAC	China
CAB-AC-2500W-EU	16A, 250 VAC	Europe
CAB-AC-2500W-INT	16A, 250 VAC	International
CAB-AC-2500W-ISRL	16A, 250 VAC	Israel
CAB-US620P-C19-US	16A, 250VAC NEMA L6-20P to IEC C19	USA
CAB-AC-C6K-TWLK	20A, 250VAC NEMA L6-20 (Twist Lock) to IEC C19	USA
CAB-ACS-16	16A, 250 VAC	Switzerland
CAB-C19-CBN	16A, 250 VAC	Jumper cord C19/C20
CAB-US515P-C19-US	15A, 125 VAC NEMA 5-15 to IEC-C19	USA
CAB-US520-C19-US	20A, 125 VAC NEMA 5-20 to IEC-C19	USA
CAB-BS1363-C19-UK	13A, 250 VAC BS1363 to IEC C19	UK
CAB-9K16A-KOR	16A, 250 VAC CEE 7/7 to IEC C19	South Korea
CAB-C19-C20-3M-JP	16A, 250 VAC	Japan
CAB-AC-C19-TW	250.0 V, 16.0 A	Taiwan
CAB-IR2073-C19-AR	20A, 250 VAC IRSM 2073 to IEC C19	Argentina
CAB-SABS-C19-IND	16A, 250 VAC SABS 164-1 to IEC C19	India
CAB-C19-C20-IND	14 AWG, 250.0 V, 16.0 A, 9' L	India

Table 11 Available Power Cords

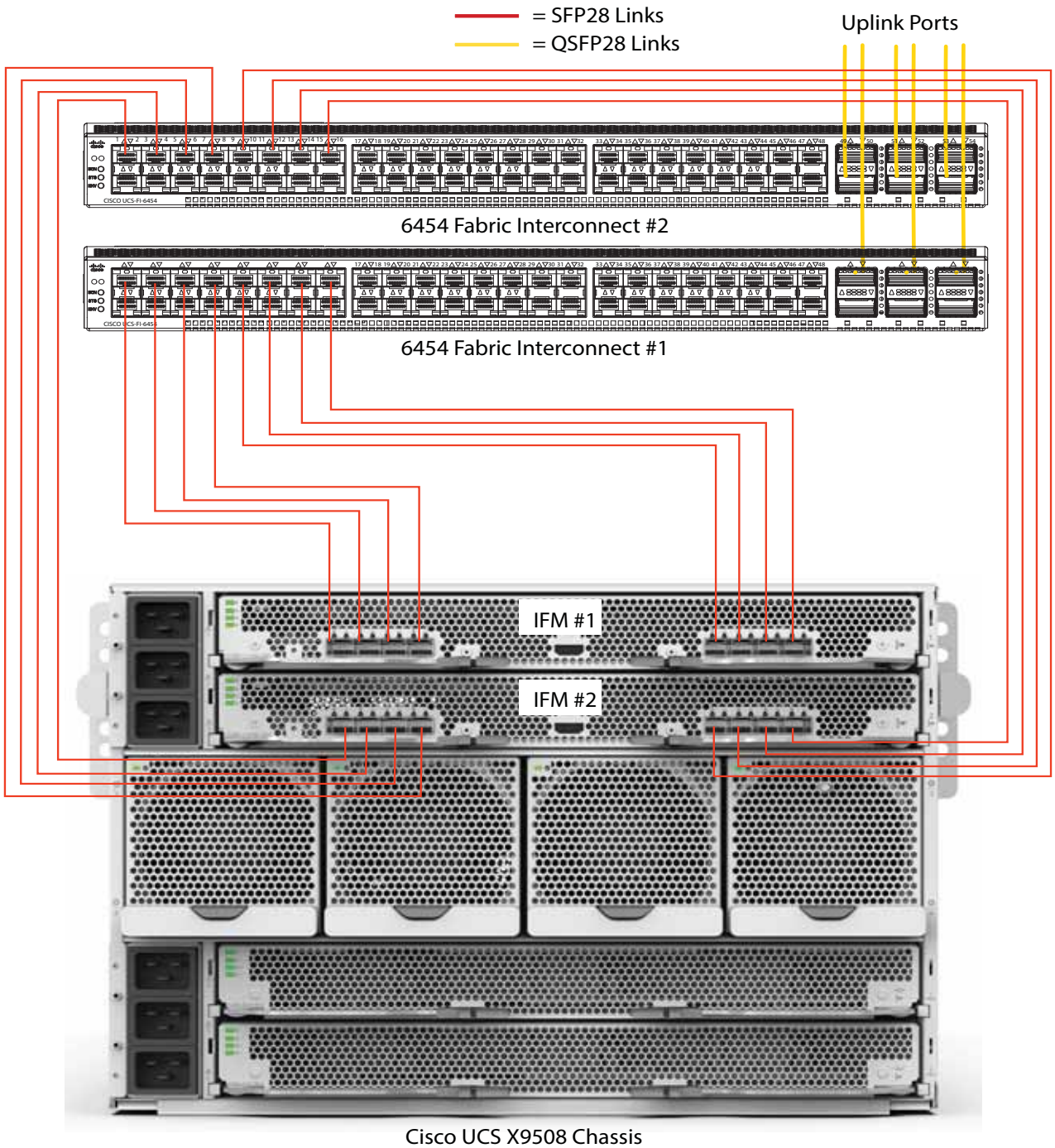
Product ID (PID)	PID Description	Comment
CAB-S132-C19-ISRL	16A, 250 VAC S132 to IEC C19	Israel
CAB-C2316-C19-IT	16A, 250 VAC CEI 23-16 to IEC C19	Italy
R2XX-DMYMPWRCORD	No power cord	

SUPPLEMENTAL MATERIAL

9508 Chassis Server Connectivity

The connectivity from the IFMs to 6400 series Fabric Interconnects is shown in ***Figure 14***.

Figure 14 IFM to 6400 Series Fabric Interconnect Connectivity

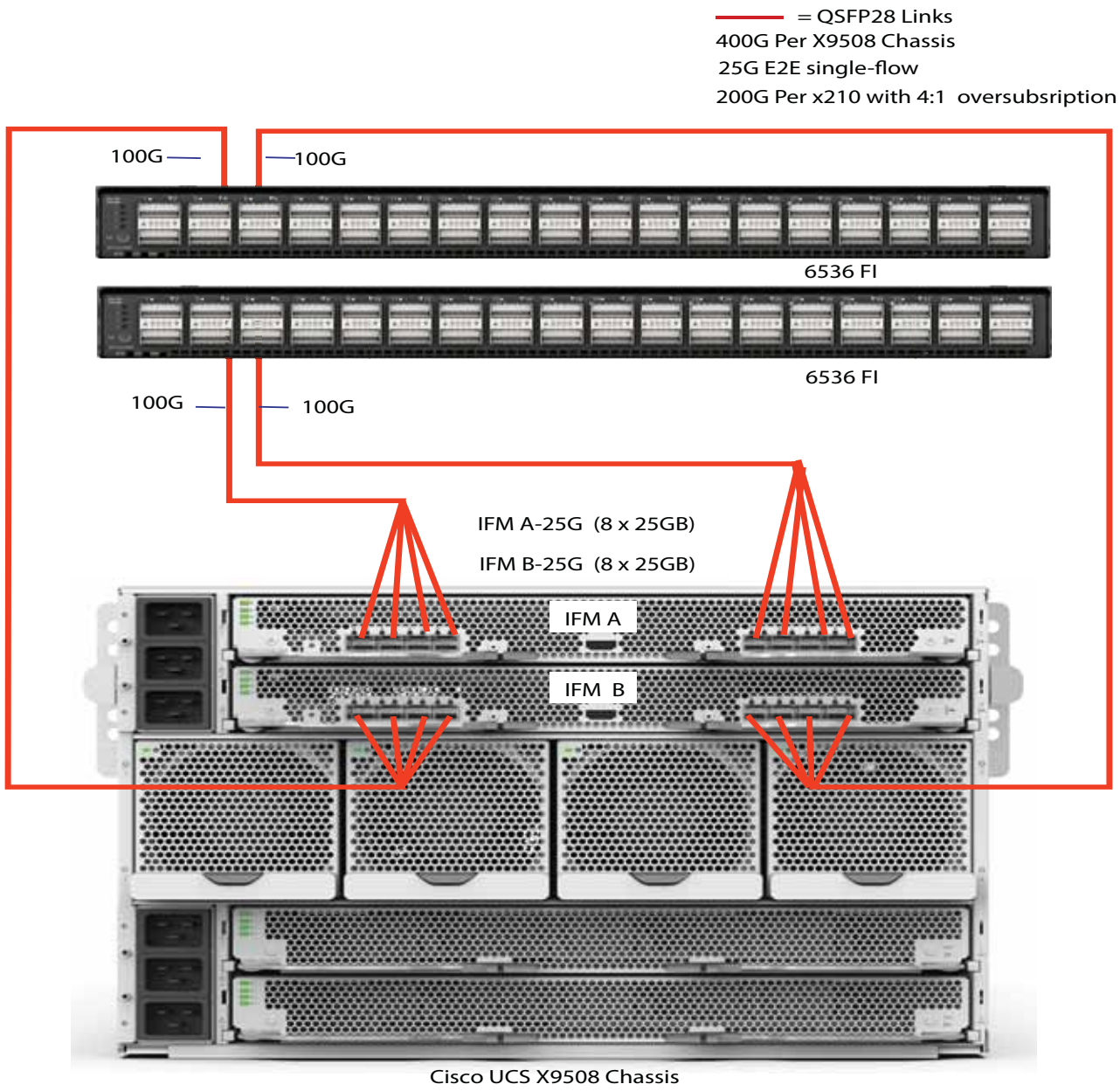


For the X9508 chassis, the Fabric Extender modules (up to two) plug into the back of the UCS X9508 chassis. The X9508 chassis accommodates the following IFMs:

- Cisco IFM 9108-25G (***Figure 15***)
- Cisco IFM 9108-100G (***Figure 16***)

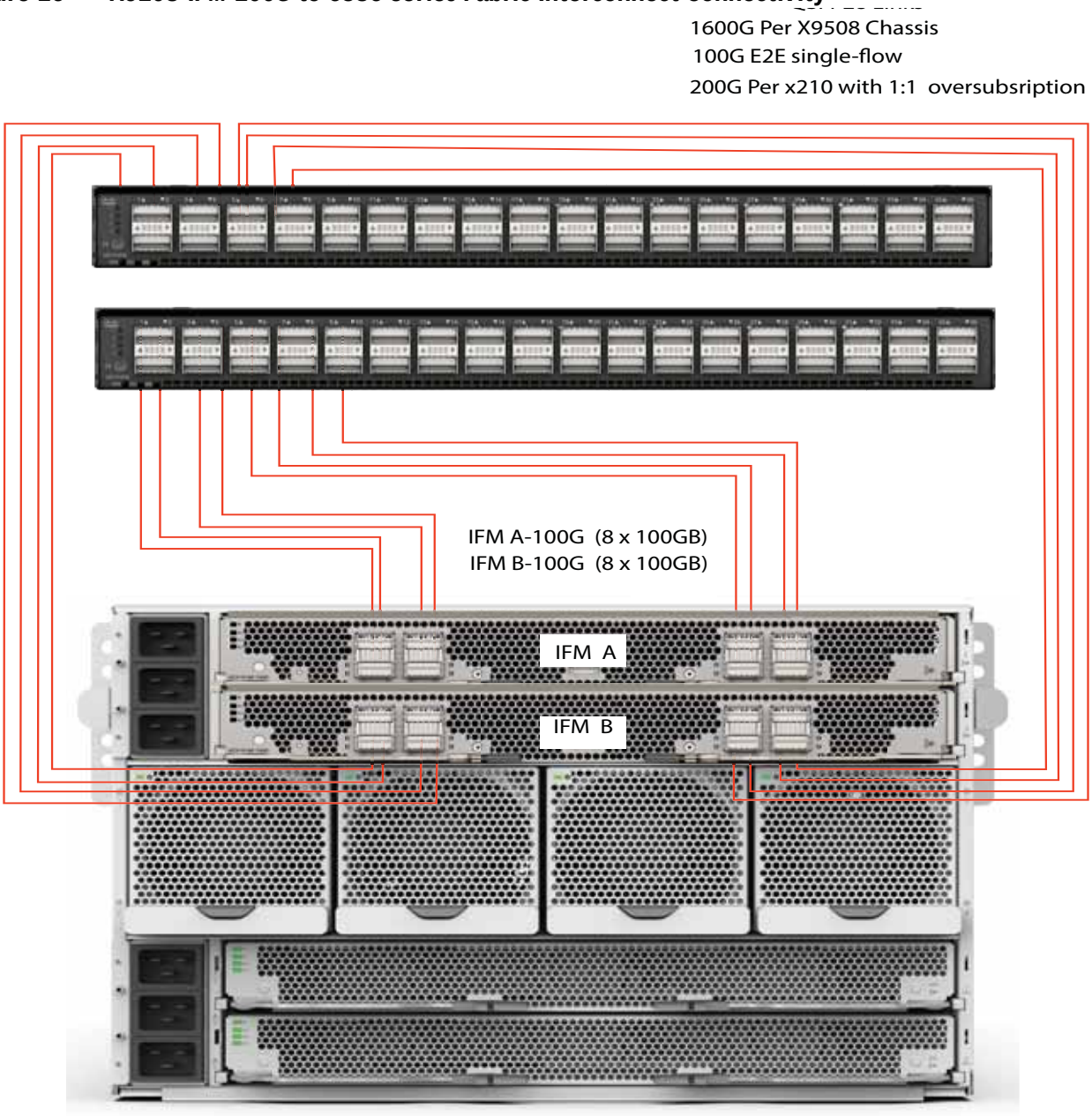
The connectivity from the X9108-IFM-25G to 6536 series Fabric Interconnects is shown in ***Figure 15***.

Figure 15 X9108-IFM-25G to 6536 Series Fabric Interconnects Connectivity



The connectivity from the X9108-IFM-100G to 6536 series Fabric Interconnects is shown in ***Figure 16***.

Figure 16 X9108-IFM-100G to 6536 Series Fabric Interconnect Connectivity



9508 Chassis Direct Server Connectivity

The LAN connectivity from the Cisco UCS Fabric Interconnect 9108 100G to the ToR switch is shown in ***Figure 17*** and ***Figure 18***

Figure 17 LAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G and vPC in End-Host mode

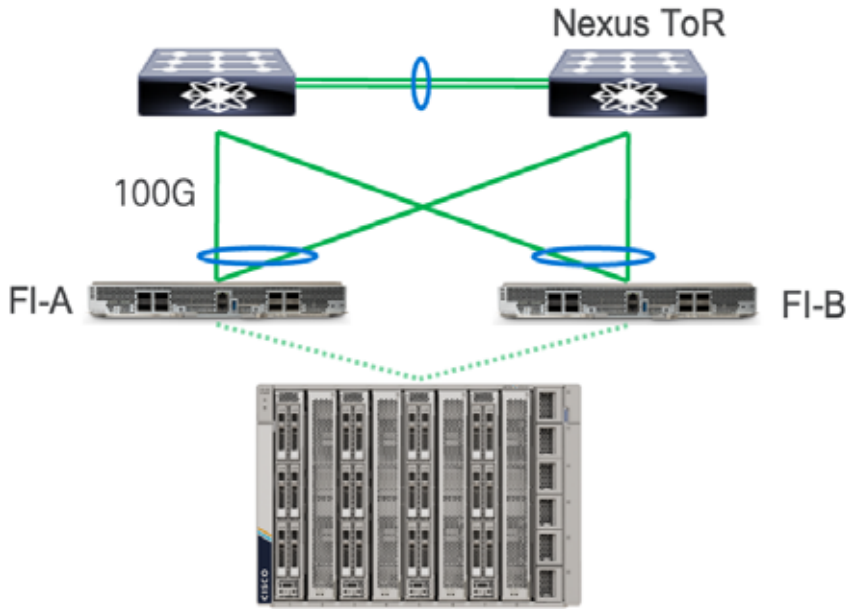
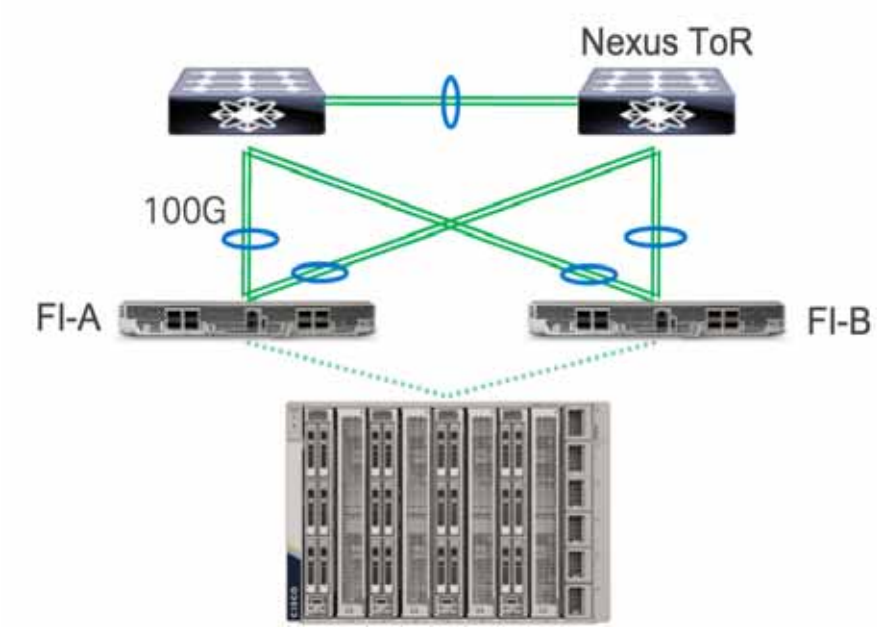


Figure 18 LAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G but without vPC in end-host mode



The SAN connectivity from the Cisco UCS Fabric Interconnect 9108 100G to a Cisco MDS or non-MDS switch is shown in ***Figure 19***, ***Figure 20*** and ***Figure 21***

Figure 19 SAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G and FC end-host or switch mode (Cisco MDS)

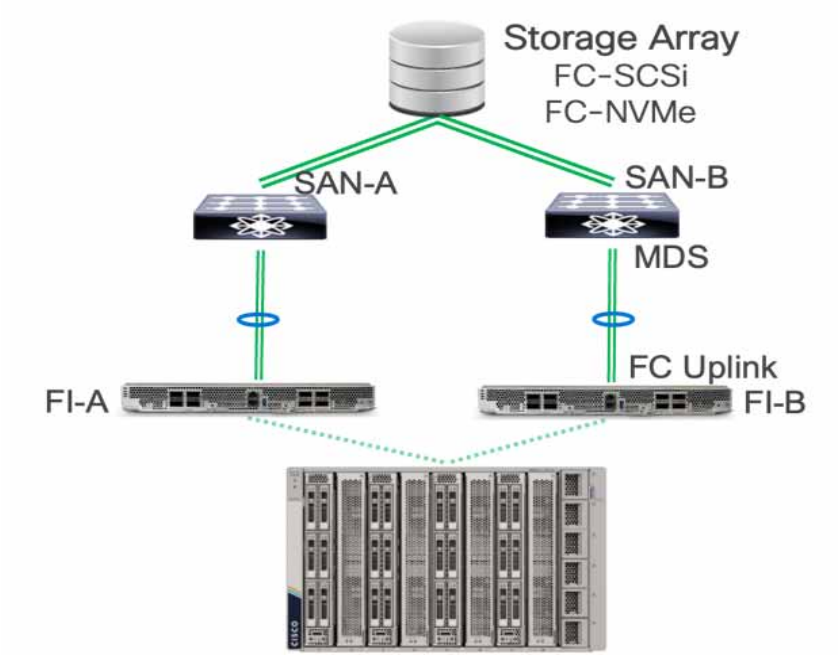


Figure 20 SAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G and FC end-host mode (non-Cisco MDS)

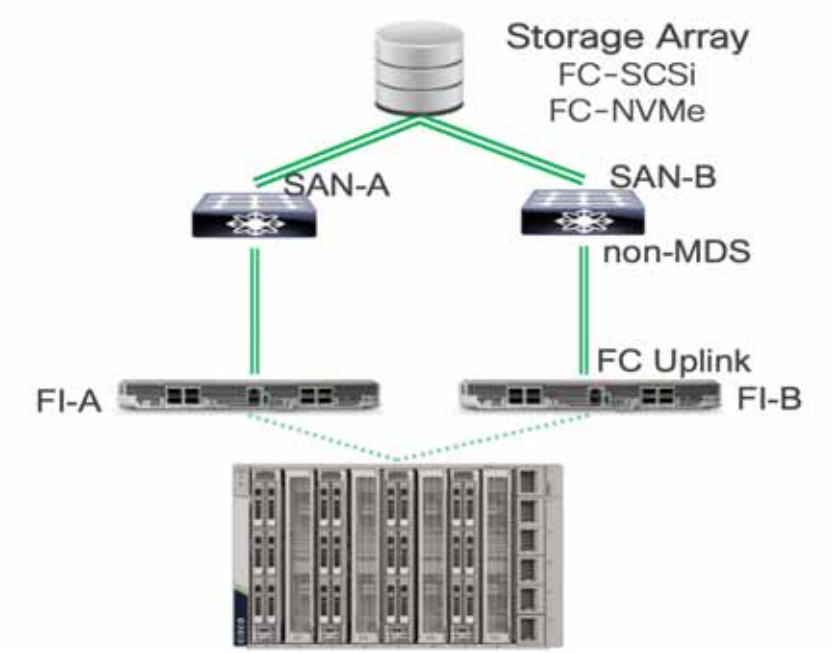
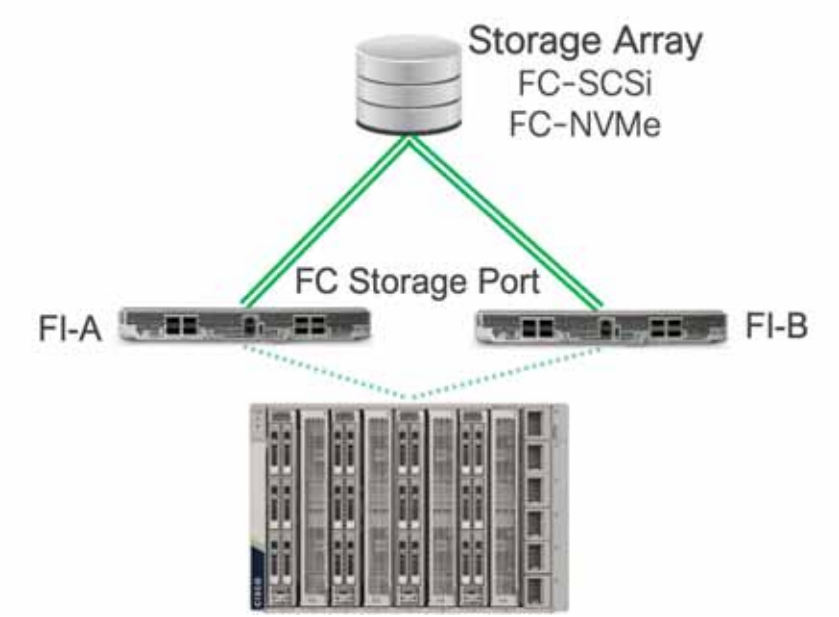


Figure 21 SAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G and FC switch mode (direct attached)



The IP-SAN connectivity from the Cisco UCS Fabric Interconnect 9108 100G is shown in, ***Figure 22*** and ***Figure 23***

Figure 22 IP-SAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G

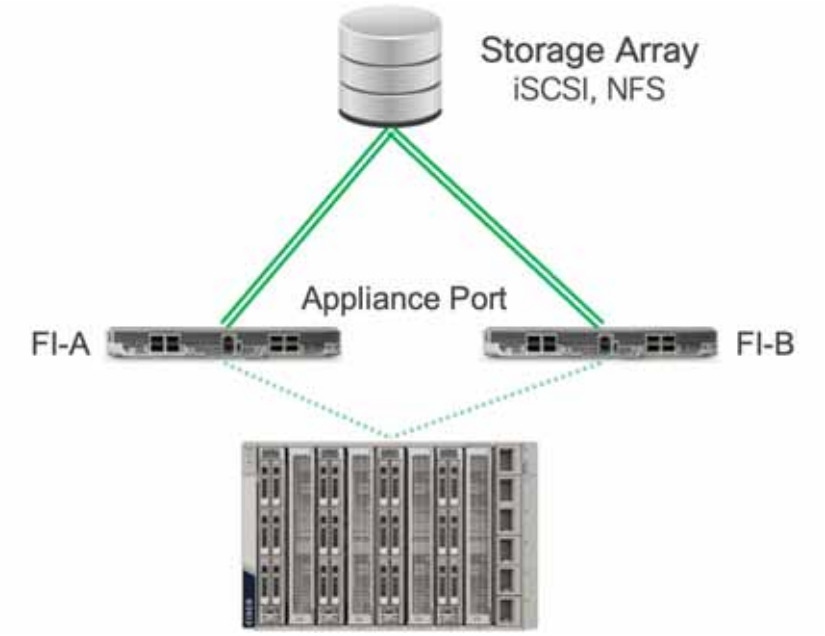
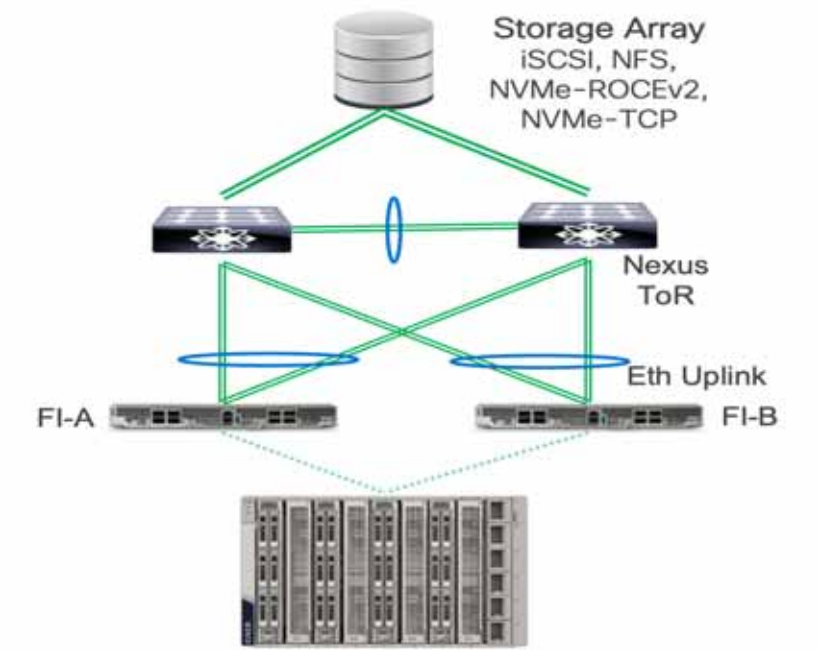


Figure 23 IP-SAN Connectivity with Cisco UCS Fabric Interconnect 9108 100G and Appliance Port through ToRs in vPC Port Channel configuration



ACCESSORIES/SPARE PARTS

This section lists the upgrade and service-related parts for the Cisco UCS X9508 chassis. Some of these parts are configured with every compute node or with every Cisco UCS X9508 chassis.

Table 12 Spare Parts for Cisco UCS X9508 chassis

Spare Product ID (PID)	Description
UCSX-C-DEBUGCBL=	UCSX Compute Node KVM dongle cable
UCSX-9508-FSBK=	UCS 9508 Chassis Front Node Slot Blank
UCSX-9508-PSUBK=	UCS 9508 Chasiss PSU Blank
UCSX-9508-CAK=	UCS 9508 Chassis Accessory Kit
UCSX-9508-RBLK=	UCS 9508 Chassis Active Cooling Module (XFM slot)
UCSX-9508-ACPEM=	UCS 9508 Chassis Rear AC Power Expansion Module
UCSX-9508-KEY-AC=	UCS 9508 AC PSY Keying Bracket
UCSX-9508-FAN=	UCS 9508 Fan Module

TECHNICAL SPECIFICATIONS

Physical Dimensions and Specifications

The physical specifications for the Cisco UCS X9508 chassis are listed in ***Table 13***

Table 13 Cisco UCS X9508 Chassis Specifications

Parameter	Value
Height	12.05 in (30.6 cm); 7 RU
Width	17.55 (44.6 cm); fits standard 19-inch square-hole rack
Depth	35.8 in (90.932 cm)
Weight	Empty chassis: 95 lb (43.09 kg) Fully populated chassis: Approximately 400 lb (163.29 kg) depending on models and options selected
Compute node slots	8 full-width slots.
Intelligent Fabric Modules (IFMs)	2 x Cisco UCS 9108 Intelligent Fabric Module with 8x 25G SFP28 ports or or 8x 100G QSFP28 ports.
Fabric Interconnect Modules (FI)	2 x Cisco UCS 9108 100G Fabric Interconnect Module with 8x 100G QSFP28 ports
X-Fabric Module slots	2x Cisco UCS X-Fabric module rear blank slots (for future expansion)
Fan modules	4 x 100mm hot-swappable dual rotor fans
Power supply bays	6
Power supplies	2800 W Titanium certified
Power redundancy	Nonredundant, N+1, N+2 and Grid (N+N)
Power entry module (PEM)	2x PEM for AC inputs, PEM1 (PSU1,2,3), PEM2 (PSU4,5,6)

Input voltage	100 to 127 V AC 200 to 240V AC Each power supply can be connected to a different phase
Maximum input VA	3200 VA at 230 VAC
Maximum output power per power supply	2800 W @200-240 VAC Nominal 1400 W @100-127 VAC Nominal
Frequency	50 to 60 Hz
Output voltage	54 VDC

Table 13 Cisco UCS X9508 Chassis Specifications *(continued)*

Parameter	Value
Management	■ Cisco Intersight Software (SaaS, Virtual Appliance and Private Virtual Appliance) ■ Cisco UCS Manager
Temperature: operating	50 to 95°F (10 to 35°C) (as altitude increases, maximum temperature decreases by 1°C per 300m)
Temperature: non-operating	-40 to 149°F (-40 to 65°C); maximum altitude is 40,000 ft
Humidity: operating	10% to 90% noncondensing, 28°C max
Humidity: non-operating	5% to 93% noncondensing, 38°C max
Altitude: operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: non-operating	40,000 ft (12,000m)
Sound pressure level	83 dBA (at normal operating temperature)

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

https://ucspowercalc.cisco.com

Power Supply Specifications

Detailed specifications for the Cisco UCS X9508 power supplies are listed in ***Table 14***

Table 14 Cisco UCS X9508 Power Supply Specifications

Parameter	Value
AC input voltage	Voltage Range 100-127 VAC, 200-240 VAC nominal (range: 90-140 VAC, 180-264 VAC) Each power supply can be connected to a different phase
AC input frequency	50 to 60 Hz nominal (range: 47 to 63 Hz
Maximum AC input current	18 A @ 90 VAC 18 A @ 180 VAC
Maximum input VA	3200 VA at 230 VAC
Maximum output power per power supply	2800 W @ 200-240 VAC nominal 1400 W @ 100-127 VAC nominal
Maximum inrush current	35 A (sub cycle duration)
Minimum holdup time	10 ms @ 1400 W 10 ms @ 2800 W
Power supply main output voltage	54 VDC
Efficiency rating	80+ Titanium Certified
Input connector	IEC320 C20 System input power connectors are located in the chassis PEMs, not on the power supply

Compliance Specifications

The regulatory standards compliance (safety and EMC) specifications for the Cisco UCS X9508 chassis are listed in ***Table 15***.

Table 15 Cisco UCS X9508 Chassis Compliance Specifications

Parameter	Description
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) Class A (FCC Class A) ■ AS/NZS CISPR22 Class A ■ CISPR2 2 Class A ■ EN55022 Class A ■ ICES003 Class A ■ VCCI Class A ■ EN61000-3-2 ■ EN61000-3-3 ■ KN22 Class A ■ CNS13438 Class A
EMC: Immunity	■ EN50082-1 ■ EN61000-6-1 ■ EN55024 ■ CISPR24 ■ EN300386 ■ KN 61000-4 Series

System Requirements

The system requirements for the Cisco UCS X9508 chassis are listed in ***Table 16***.

Table 16 Cisco UCS X9508 Chassis Compliance Specifications

Item	Requirement
X-Series chassis	Cisco UCS X9508 Chassis
Fabric interconnect	Cisco UCS 6400/6500/6600 series Fabric Interconnects[1]
Cisco Intersight or Cisco UCS Manager	Cisco Intersight Managed Mode or Cisco UCS Manager for management

Notes:

1. Only when configured with IFMs



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