

# Cisco UCS Virtual Interface Card 15000 Series

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## Cisco Unified Computing System overview

The Cisco Unified Computing System™ (Cisco UCS®) is a next-generation data center platform that unites computing, networking, storage access, and virtualization resources into a cohesive system designed to reduce Total Cost of Ownership (TCO) and increase business agility. The system integrates a low-latency, lossless 10/25/50/100/200 Gigabit Ethernet network fabric with enterprise-class blade and rack x86-architecture servers. The system is an integrated, scalable, multichassis platform in which all resources participate in a unified management domain.

### Portfolio overview

The Cisco UCS Virtual Interface Card (VIC) 15000 Series extends the network fabric directly to both servers and virtual machines so that a single connectivity mechanism can be used to connect both physical and virtual servers with the same level of visibility and control. Cisco® VICs provide complete programmability of the Cisco UCS I/O infrastructure, with the number and type of I/O interfaces configurable on demand with a zero-touch model.

Cisco VICs support Cisco SingleConnect technology, which provides an easy, intelligent, and efficient way to connect and manage computing in your data center. Cisco SingleConnect unifies LAN, SAN, and systems management into one simplified link for rack servers, blade servers, and virtual machines. This technology reduces the number of network adapters, cables, and switches needed and radically simplifies the network, reducing complexity. Cisco VICs can support 512 PCI Express (PCIe) virtual devices, either virtual network interface cards (vNICs) or virtual Host Bus Adapters (vHBAs), with a high rate of I/O operations per second (IOPS), support for lossless Ethernet, and 10/25/50/100/200-Gbps connection to servers. The PCIe Generation 4 x16 interface helps ensure optimal bandwidth to the host for network-intensive applications, with a redundant path to the fabric interconnect. Cisco VICs support NIC teaming with fabric failover for increased reliability and availability. In addition, it provides a policy-based, stateless, agile server infrastructure for your data center.

The VIC 15000 series is designed for Cisco UCS X-Series M6 Blade Servers, Cisco UCS B-Series M6 Blade Servers, and Cisco UCS C-Series M6 Rack Servers. The adapters are capable of supporting 10/25/40/50/100/200-Gigabit Ethernet and Fibre Channel over Ethernet (FCoE). They incorporate Cisco's next-generation Converged Network Adapter (CNA) technology and offer a comprehensive feature set, providing investment protection for future feature software releases.

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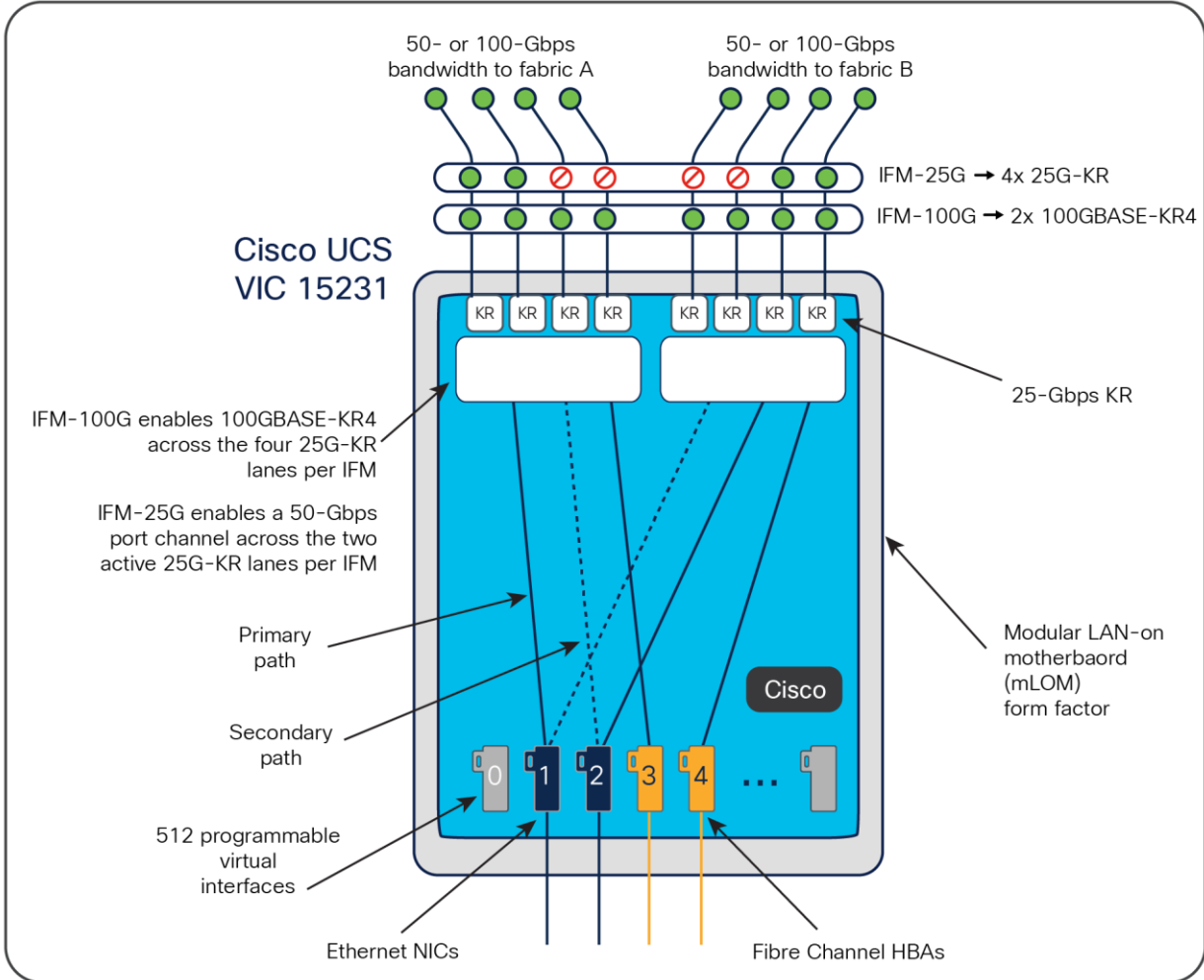
## Product overview

### Cisco VIC 15231

The Cisco UCS VIC 15231 (Figure 1) is a 2x100-Gbps Ethernet/FCoE-capable modular LAN on motherboard (mLOM) designed exclusively for the Cisco UCS X210 Compute Node. The Cisco UCS VIC 15231 enables a policy-based, stateless, agile server infrastructure that can present to the host PCIe standards-compliant interfaces that can be dynamically configured as either NICs or HBAs.



**Figure 1.**  
Cisco UCS VIC 15231



**Figure 2.**  
Cisco UCS VIC 15231 Infrastructure

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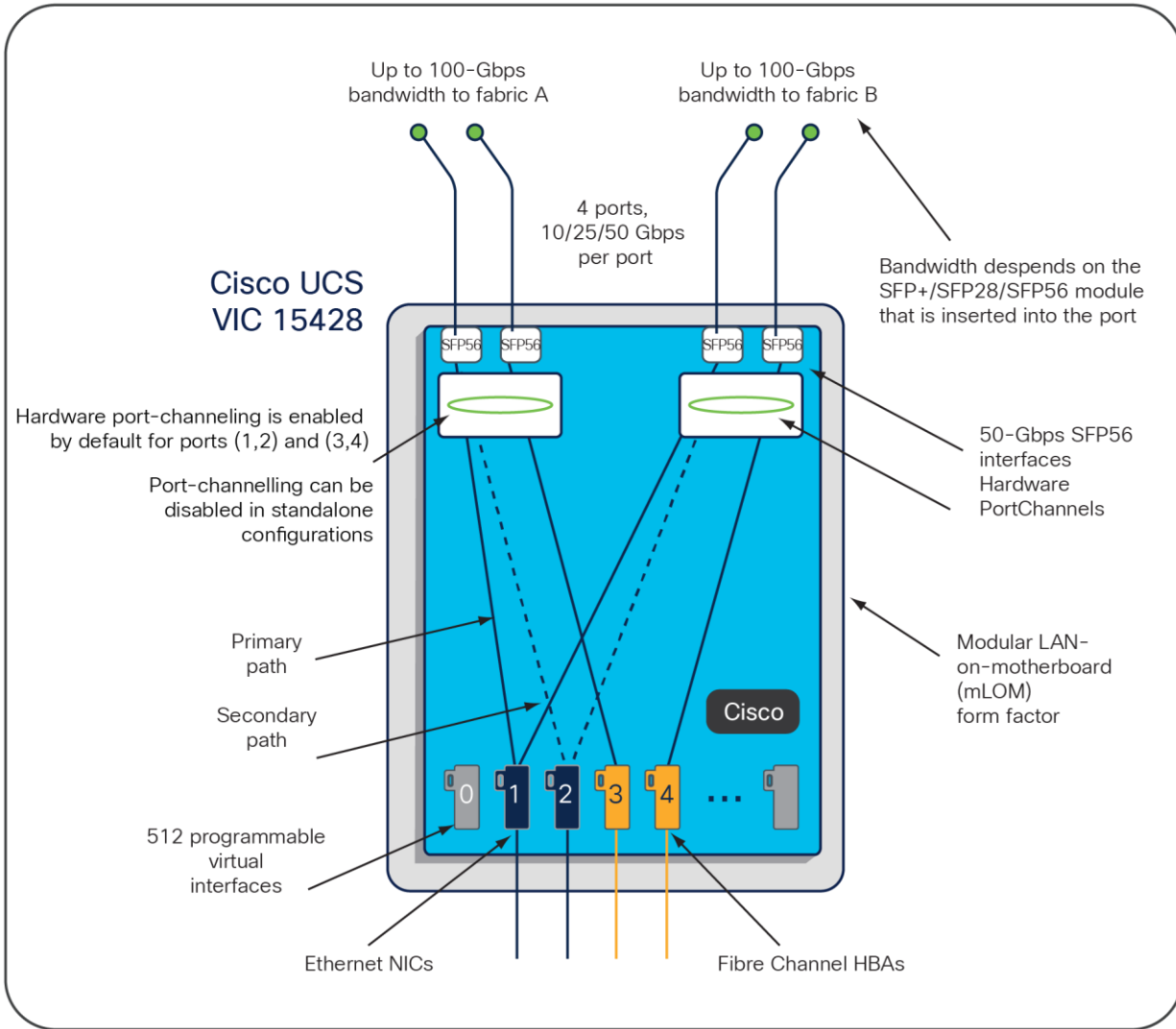
### Cisco VIC 15428

The Cisco UCS VIC 15428 (Figure 3) is a quad-port small-form-factor pluggable (SFP+/SFP28/SFP56) mLOM card designed for Cisco UCS C-series M6 rack servers. The card supports 10/25/50-Gbps Ethernet or FCoE. The card can present PCIe standards-compliant interfaces to the host, and these can be dynamically configured as either NICs or HBAs.

When a UCS rack server with VIC 15428 is connected to a fabric interconnect (FI-6536/6400/6300), the VIC 15428 is provisioned through Cisco Intersight™ or Cisco UCS Manager (UCSM) policies and is provisioned like an X-series or B-series server. When the UCS rack server with VIC 15428 is connected to a ToR switch such as Cisco Nexus® 9000 Series, the VIC 15428 is provisioned through the Cisco IMC or Intersight policies for a standalone server.



**Figure 3.**  
Cisco UCS VIC 15428

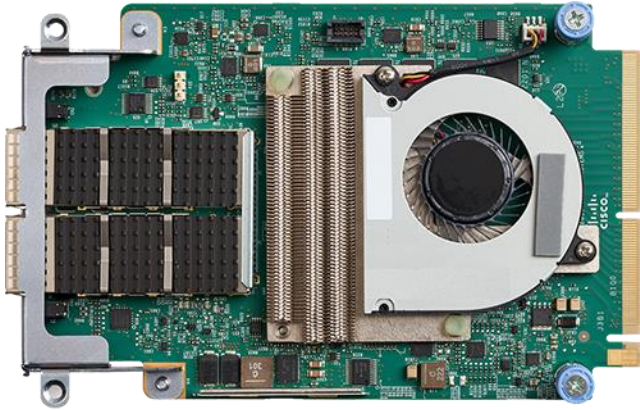


**Figure 4.**  
Cisco UCS VIC 15428 Infrastructure

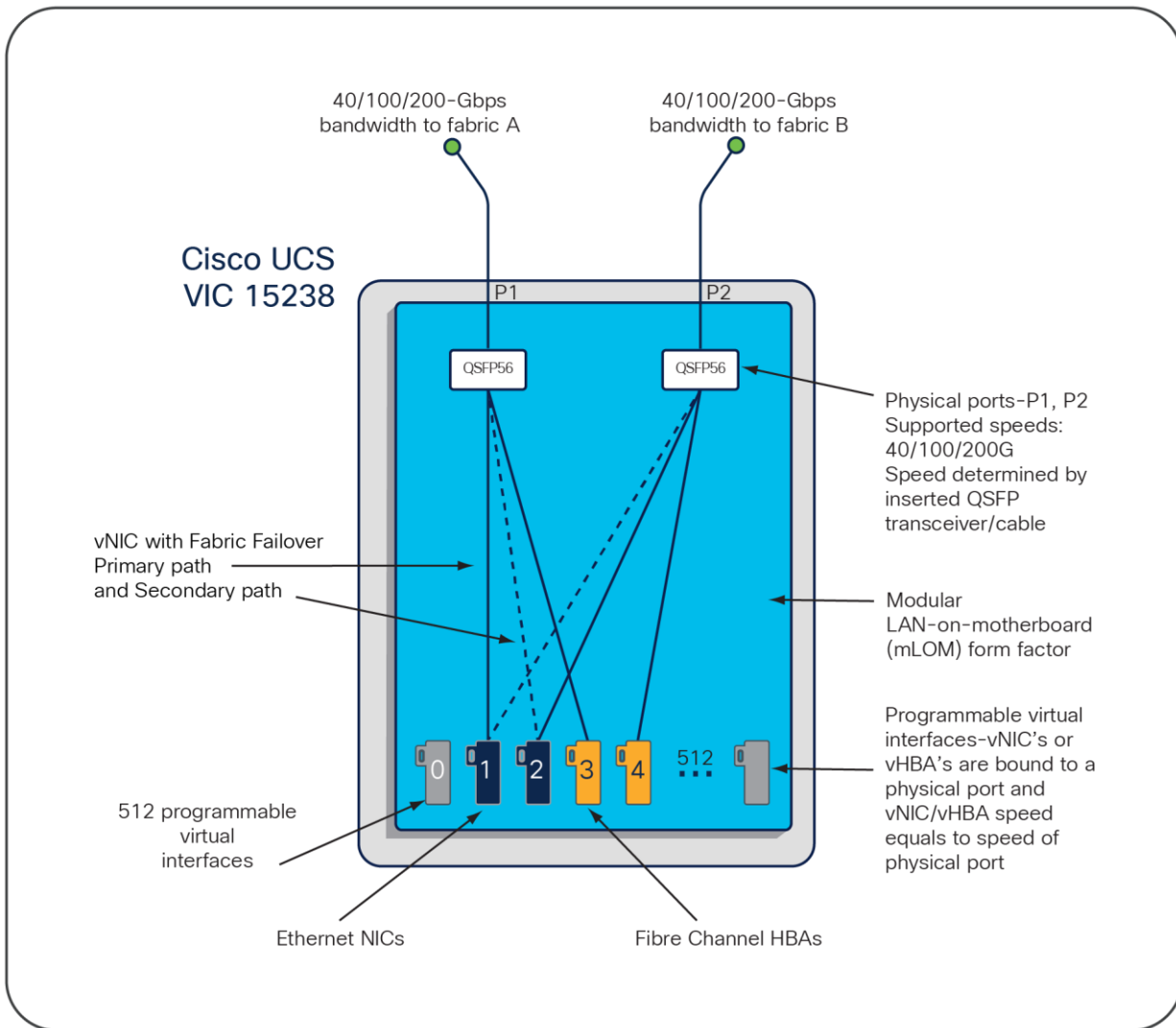
### Cisco VIC 15238

The Cisco UCS VIC 15238 (Figure 5) is a dual-port quad small-form-factor pluggable (QSFP/QSFP28/QSFP56) mLOM card designed for Cisco UCS C-series M6 rack servers. The card supports 40/100/200-Gbps Ethernet or FCoE. The card can present PCIe standards-compliant interfaces to the host, and these can be dynamically configured as either NICs or HBAs.

When a UCS rack server with VIC 15238 is connected to a fabric interconnect (FI-6536/6300), the VIC 15238 is provisioned through Cisco Intersight (IMM) or Cisco UCS Manager (UCSM) policies and is provisioned like an X-series or B-series server. Additionally, when the UCS rack server with VIC 15238 is connected to a ToR switch such as Cisco Nexus 9000 Series, the VIC 15238 is provisioned through the Cisco IMC or Intersight policies for a UCS standalone server.



**Figure 5.**  
Cisco UCS VIC 15238

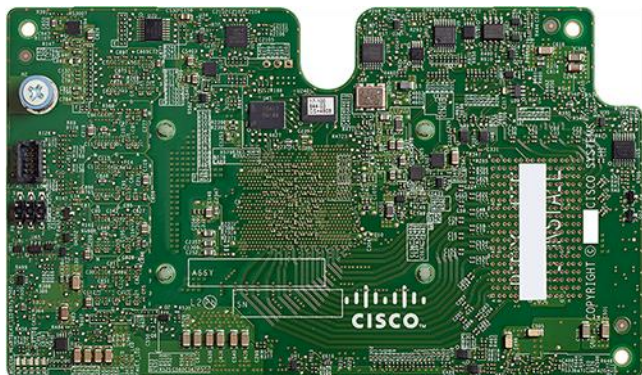


**Figure 6.**  
Cisco UCS VIC 15238 infrastructure

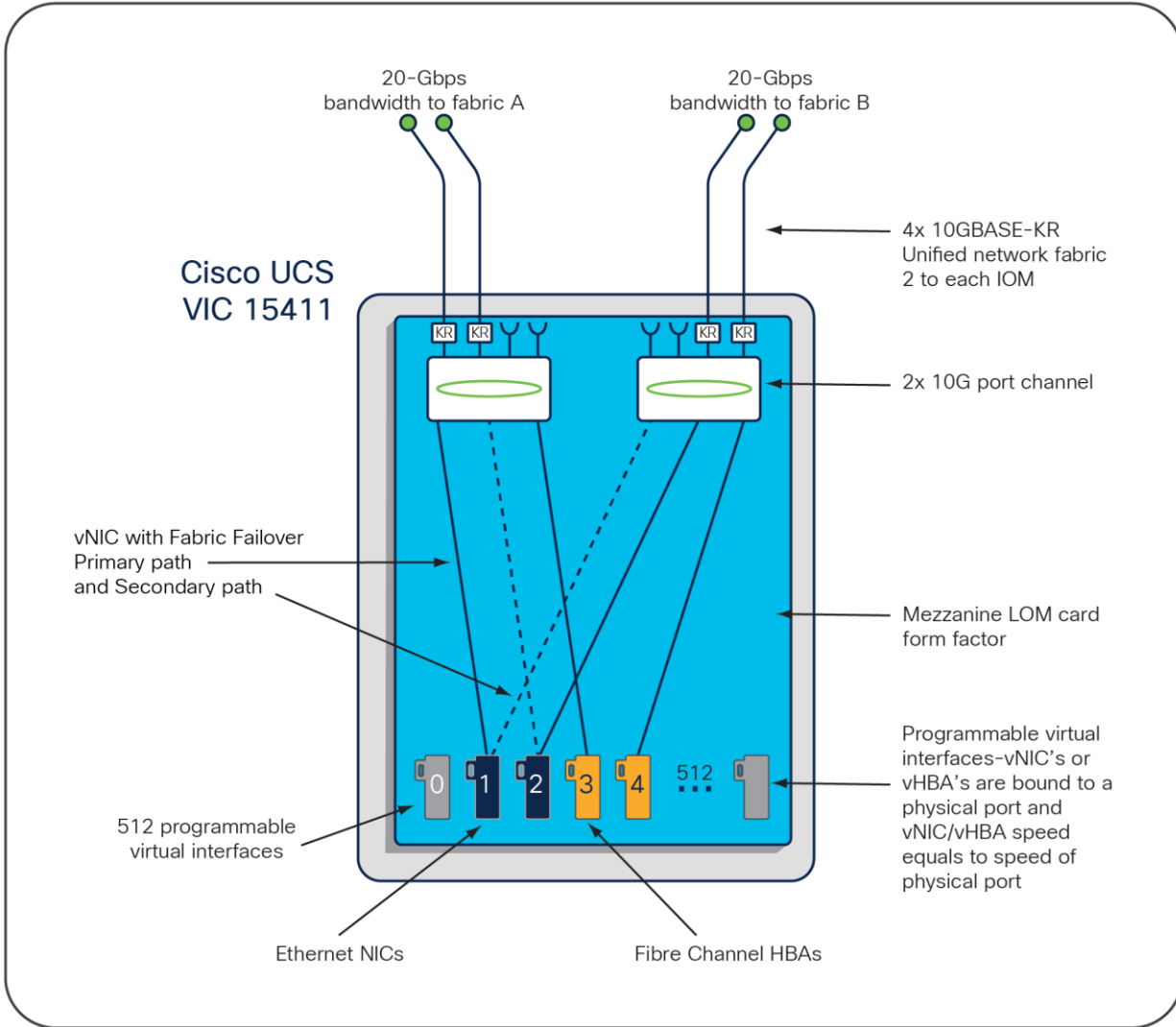


## Cisco VIC 15411

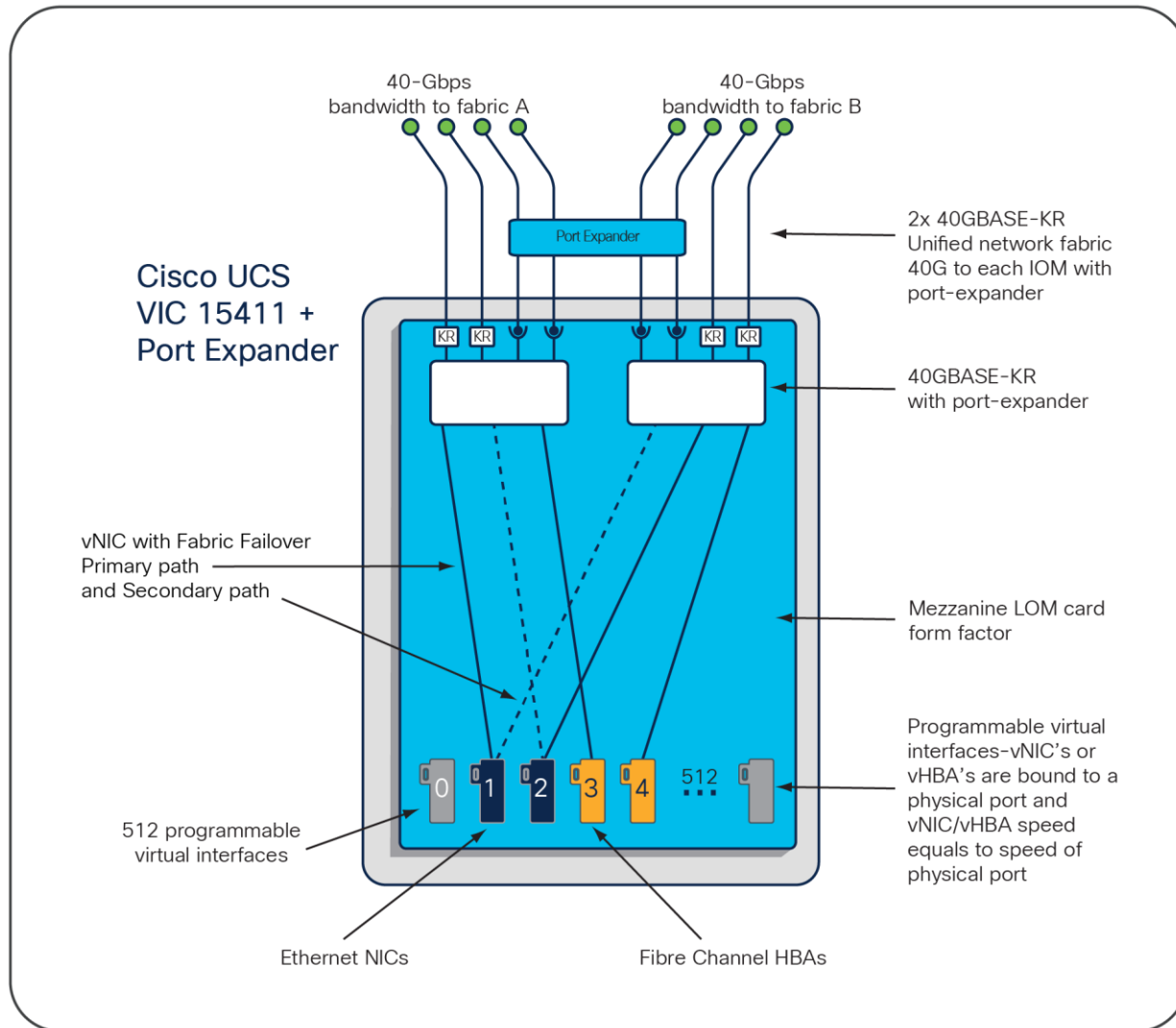
The Cisco UCS VIC 15411 (Figure 7) is a dual-port 40-Gbps or 4x10-Gbps Ethernet/FCoE-capable modular LAN on motherboard (mLOM) designed for Cisco UCS B-Series M6 Blade Servers. When used in combination with an optional port expander, the Cisco UCS VIC 15411 capabilities are enabled for two ports of 40-Gbps Ethernet. The Cisco UCS VIC 15411 enables a policy-based, stateless, agile server infrastructure that can present to the host PCIe standards-compliant interfaces that can be dynamically configured as either NICs or HBAs.



**Figure 7.**  
Cisco UCS VIC 15411



**Figure 8.**  
Cisco UCS VIC 15411 infrastructure



**Figure 9.**  
Cisco UCS VIC 15411 with port expander

## Features and benefits

The Cisco UCS VIC 15000 Series provide the following features and benefits:

- **Stateless and agile platform:** The personality of the card is determined dynamically at boot time using the service profile associated with the server. The number, type (NIC or HBA), identity (MAC address and World Wide Name [WWN]), failover policy, bandwidth, and Quality-of-Service (QoS) policies of the PCIe interfaces are all determined using the service profile. The capability to define, create, and use interfaces on demand provides a stateless and agile server infrastructure.
- **Network interface virtualization:** Each PCIe interface created on the VIC is associated with an interface on the Cisco UCS fabric interconnect, providing complete network separation for each virtual cable between a PCIe device on the VIC and the interface on the fabric interconnect.

## Next-generation data center features

A hardware classification engine provides support for advanced data center requirements, including stateless network offloads for VXLAN, NVGRE, and GENEVE. Additional features support low-latency kernel bypass for performance optimization through usNIC, DPDK, and server virtualization support using NetQueue and VMQ/VMMQ. The Cisco UCS VIC 15000 Series provide high network performance and low latency for the most demanding applications:

- Big data, High-Performance Computing (HPC)
- Large-scale virtual machine deployments
- High-bandwidth storage targets and archives
- NVMe over Fabrics support for NVMe over RoCEv2, NVMe/FC, NVMe/TCP

When the Cisco UCS VIC 15000 Series is connected to Cisco Nexus 9000 Series Switches, pools of virtual hosts scale with greater speed and agility. Cisco Nexus 9000 Series Switches provide native FCoE connectivity from the VIC to both Ethernet and Fibre Channel targets.

The Cisco VIC provides industry-leading performance and features.

Table 1 summarizes the main features and benefits of the Cisco UCS VIC 15000 Series.

**Table 1.** Features and benefits

Features	Benefits
<b>PCIe x16 Gen4 interfaces</b>	Delivers high performance (200 Gb/s) throughput
<b>10/25/50/100/200-Gbps unified I/O</b>	<ul style="list-style-type: none"> <li>• Delivers 4x 10/25/50-Gbps or 2x 40/100/200-Gbps in a single VIC configuration with a Cisco UCS C-Series M6 Rack Server</li> <li>• Delivers 2x 100-Gbps or 4x 25-Gbps in a single VIC configuration with the Cisco UCS X210c M6 Compute Node with Cisco UCS FI-6536/6400</li> <li>• Delivers 2x 40-Gbps or 4x 10-Gbps in a single VIC configuration with the Cisco UCS B-Series M6 Blade Server with Cisco UCS FI-6536/6400/6300</li> <li>• Helps reduce TCO by consolidating the overall number of NICs, HBAs, cables, and switches because LAN and SAN traffic run over the same adapter card and fabric</li> </ul>
<b>512 virtual adapters and interfaces</b>	<ul style="list-style-type: none"> <li>• Creates fully functional unique and independent PCIe adapters and interfaces (NICs and HBAs) without requiring single-root I/O virtualization (SR-IOV) support from OSES or hypervisors</li> <li>• Allows these virtual interfaces and adapters to be configured and operated independently, just like physical interfaces and adapters</li> <li>• Creates a highly flexible I/O environment needing only one card for all I/O configurations</li> </ul> <p><b>Note:</b> Cisco UCS VIC 15000 Series hardware is SR-IOV capable. Please refer to Cisco UCS Manager configuration limits for your specific OS and environment in the configuration guide.</p>
<b>Low-latency connectivity</b>	Supports usNIC technology, delivering latency as low as 1 microsecond in back-to-back VIC connections; standard latency using the Cisco Nexus series switches in approximately 1-2 microseconds
<b>Cisco SingleConnect technology</b>	A single unified network: the same network brings LAN, SAN, and management connectivity to each server.

Features	Benefits
<b>Centralized management</b>	Enables the mezzanine in X-Series and mLOM for M6 rack servers to be centrally managed and configured by Cisco Intersight
<b>Support for advanced features</b>	<ul style="list-style-type: none"> <li>• usNIC</li> <li>• 802.1Q-in-Q (QinQ)</li> <li>• Small Computer System Interface over IP (iSCSI) and iSCSI boot</li> <li>• Ethernet NIC (eNIC) and Fibre Channel NIC (fNIC)</li> <li>• DPDK</li> <li>• NetFlow</li> <li>• N-Port ID Virtualization (NPIV)</li> <li>• Receive flow steering</li> <li>• Multi-RQ</li> <li>• 16K extended (TX/RX) ring</li> <li>• PTPv2 (Linux only)</li> <li>• VMware NetQueue</li> <li>• Windows VMQ/VMMQ</li> <li>• Receive side scaling (IPv4/IPv6/UDP/TCP)</li> <li>• GENEVE offload support with VMware NSX-T</li> <li>• VXLAN offload support for VMware NSX-V, Linux(RHEL, SLES)</li> <li>• ENS support for VMware NSX-T</li> <li>• VXLAN and NVGRE support on Windows</li> <li>• NVMe over RoCEv2 support with RHEL</li> <li>• NVMe over RoCEv2 support with ESXi</li> <li>• NVMe-TCP qualified with ESXi</li> <li>• NVMe-TCP qualified with RHEL</li> <li>• SMB Direct support on Windows 2019 and windows 2022 using RDMA over converged Ethernet RoCEv2</li> </ul>
<b>Fibre Channel</b>	<ul style="list-style-type: none"> <li>• Supports Fibre Channel over the UCS unified fabric with Cisco UCS Fabric Interconnect 6300 Series, 6400 Series and 6536</li> <li>• Supports NVMe over Fabrics (NVMeoF) for Fibre Channel (FC-NVMe) with RHEL, SLES, and ESXi</li> <li>• Supports FC multiqueue (FC MQ) on RHEL and SLES</li> <li>• FDMI on Linux and ESX</li> <li>• Supports FCoE Fibre Channel when connected to Cisco Nexus 9000 Series Switches</li> </ul>
<b>Network architecture</b>	Provides a redundant path to the fabric interconnect using hardware-based fabric failover
<b>High performance I/O</b>	Supports 900,000+ I/O operations per second (IOPS)
<b>Lossless Ethernet</b>	Uses priority flow control (PFC) to enable as part of the Cisco UCS Unified Fabric
<b>Broad OS and hypervisor support</b>	Supports customer requirements for VMware vSphere, Microsoft Windows, Red Hat Enterprise Linux, Citrix XenServer, SUSE Linux Enterprise Server, and Ubuntu. Refer to the Hardware Compatibility List (HCL) for detail list of supported operating systems

## Product specifications

Table 2 lists the specifications for the Cisco UCS VIC 15000 Series.

**Table 2.** Cisco UCS VIC 15000 Series specifications

Items	Specifications
<b>Standards</b>	<ul style="list-style-type: none"> <li>• 10-Gigabit Ethernet</li> <li>• 25-Gigabit Ethernet</li> <li>• 40-Gigabit Ethernet</li> <li>• 50-Gigabit Ethernet</li> <li>• 100-Gigabit Ethernet</li> <li>• 200-Gigabit Ethernet</li> <li>• IEEE 802.3x</li> <li>• IEEE 802.1q VLAN</li> <li>• IEEE 802.1p</li> <li>• IEEE 802.1Qaz</li> <li>• IEEE 802.1Qbb</li> <li>• IEEE 802.3cd</li> <li>• IEEE 802.3ba, 802.3bj, 802.3bm</li> <li>• IEEE 802.3by</li> <li>• IEEE 802.3ae, 802.3ap</li> <li>• Prestandard IEEE 802.1BR</li> <li>• Jumbo frames up to 9KB</li> <li>• SCSI-FCP</li> <li>• T11 FCoE</li> <li>• PCI Express Gen 3 and Gen 4</li> </ul>
<b>Components</b>	Cisco UCS custom Application-Specific Integrated Circuit (ASIC)
<b>Connectivity</b>	PCIe 4.0x16 form factor (PCIe, mLOM and mezz)
<b>Performance</b>	10/25/40/50/100/200-Gbps per port
<b>Management</b>	<p>Software release:</p> <p>Cisco VIC 15231: Recommended IMM release is 4.2(2) or later that contains VIC firmware 5.2(2)</p> <p>Cisco VIC 15428: Recommended UCSM release and IMM release is 4.2(2) or later that contains VIC firmware 5.2(2) or later, and recommended standalone CIMC release is 4.2(2). Review note under Table 2 for minimum version required.</p> <p>Cisco VIC 15411: Recommended IMM release is 4.2(3) or later that contains VIC firmware 5.2(3)</p> <p>Cisco VIC 15238: Recommended UCSM release and IMM release is 4.2(3) or later that contains VIC firmware 5.2(3) or later, and recommended standalone CIMC release is 4.2(3). Review note under Table 2 for minimum version required.</p>
<b>Number of interfaces</b>	512 virtual interfaces (Factors such as the OS, hypervisor, and validations would limit this number.)

Items	Specifications
<b>VIC 15428 physical ports</b>	4x10/25/50-Gbps Ethernet and FCoE SFP+/SFP28/SFP56
<b>Supported switches with VIC 15428</b>	<p>Cisco fabric interconnects and Cisco Nexus switches:</p> <ul style="list-style-type: none"> <li>• Cisco UCS FI-6536</li> <li>• Cisco UCS-FI-64108</li> <li>• Cisco UCS-FI-6454</li> <li>• Cisco UCS-FI-6332-16UP</li> <li>• Cisco UCS-FI-6332</li> <li>• Cisco Nexus 93180YC-FX3 in FEX mode</li> <li>• Cisco Nexus 2348UPQ</li> <li>• Cisco Nexus 36180YC-R</li> <li>• Cisco Nexus 9336C-FX2</li> <li>• Cisco Nexus 93360YC-FX2</li> <li>• Cisco Nexus 9316D-GX</li> <li>• Cisco Nexus 93180YC-EX</li> <li>• Cisco Nexus 93180YC-FX</li> <li>• Cisco Nexus 93240YC-FX2</li> <li>• Cisco Nexus 93108TC-FX (qualified with SFP-10G-T-X)</li> <li>• Cisco Nexus 93108TC-EX (qualified with SFP-10G-T-X)</li> </ul>
<b>Supported switches with VIC 15238</b>	<p>Cisco fabric interconnects and Cisco Nexus switches (from 4.2.3)</p> <ul style="list-style-type: none"> <li>• Cisco UCS-FI-6536</li> <li>• Cisco UCS-FI-6332-16UP</li> <li>• Cisco UCS-FI-6332</li> <li>• Cisco Nexus 3232C</li> <li>• Cisco Nexus 9236C</li> <li>• Cisco Nexus 9336C-FX2</li> <li>• Cisco Nexus 9336C-FX2-E</li> <li>• Cisco Nexus 93360YC-FX2</li> <li>• Cisco Nexus 9316D-GX</li> </ul>
<b>Supported fabric interconnect and IFM with VIC 15231</b>	<p>Cisco fabric interconnect switches and IOMs:</p> <ul style="list-style-type: none"> <li>• Cisco UCS FI-6536</li> <li>• Cisco UCS-FI-64108</li> <li>• Cisco UCS FI-6454</li> <li>• Cisco UCSX-I-9108-25G</li> <li>• Cisco UCSX-I-9108-100G</li> </ul>
<b>Supported fabric interconnect and IOM with VIC 15411</b>	<p>Cisco fabric interconnect switches and IOMs (from 4.2.3)</p> <ul style="list-style-type: none"> <li>• Cisco UCS FI-6536</li> <li>• Cisco UCS-FI-64108</li> <li>• Cisco UCS FI-6454</li> <li>• Cisco UCS-FI-6332-16UP</li> <li>• Cisco UCS-FI-6332</li> <li>• Cisco UCS-IOM-2408</li> <li>• Cisco UCS-IOM-2304v1/v2</li> <li>• Cisco UCS-IOM-2208</li> <li>• Cisco UCS-IOM-2204</li> </ul>

**Note:** All the listed switches are validated against our transceivers/cables. Any switch that is not listed is expected to work but is not validated.

**Table 3.** Cisco UCS VIC 15000 power and physical specification

Items	Specifications			
Power consumption	Cisco UCS VIC		Power consumption (max)	
	15428		27.4W	
	15231		24.8W	
	15238		34.4W	
	15411		26.9W	
Physical dimensions	Cisco UCS VIC	Length	Width	Height
	15428	6.60 in	2.5 in	0.53 in
	15231	4.29 in	5.03 in	1.47 in
	15238	6.28 in	3.94 in	0.74 in
	15411	5.85 in	3.4 in	0.94 in

**Table 4.** Cisco UCS VICs, fabric interconnect, IFM, FEX, and server support

Cisco UCS VIC	Cisco UCS Servers, Fabric Interconnect, FEX
15231 dual-port 100G mLOM	X210C, FI 6536, FI 6454/64108, X9108-IFM-25G, X9108-IFM-100G
15428 quad-port 10/25/50-Gbps mLOM	C220 M6, C240 M6, C225 M6, C245 M6, FI 6536, FI 6454/64108, FI 6332/6332-16UP, 93180YC-FX3 in FEX-mode, 2348UPQ FEX
15411 dual-port 40G mLOM	B200-M6, FI 6536, FI 6454/64108, FI 6332/6332-16UP, IOM 2204/2208, IOM 2304, IOM 2408
15238 dual-port 40/100/200-Gbps mLOM	C220 M6, C240 M6, C225 M6, C245 M6, FI 6536, FI 6332/6332-16UP

### Transceiver and cable support

The Cisco UCS VIC supports a wide variety of Ethernet connectivity options using Cisco 10/25/50-Gbps transceivers and 10/25/50-Gbps passive cables and active optical cables.

Table 5 lists the supported transceiver options.

**Table 5.** Cisco UCS VIC transceiver matrix

Product number	Description
<b>SFP+ 10-Gbps transceivers<sup>(4)</sup></b>	
<b>SFP-10G-T-X<sup>(3)</sup></b>	10GBASE-T, copper, 30m



Product number	Description
<b>SFP-10G-SR</b>	10GBASE-SR, 850 nm, MMF, 300m
<b>SFP-10G-SR-S</b>	10GBASE-SR, 850 nm, MMF, 300m, S-Class
<b>SFP-10G-LR</b>	10GBASE-LR, 1310 nm, SMF, 10 km
<b>SFP-10G-LR-S</b>	10GBASE-LR, 1310 nm, SMF, 10 km, S-Class
<b>SFP28 25-Gbps transceivers<sup>(7)</sup></b>	
<b>SFP-25G-SR-S<sup>(1,6)</sup></b>	25GBASE-SR SFP28 module for MMF
<b>SFP-10/25G-CSR-S<sup>(1,6)</sup></b>	10/25GBASE-CSR SFP28 module for MMF
<b>SFP-10/25G-LR-S<sup>(2,6)</sup></b>	10/25GBASE-LR SFP28 module of SMF
<b>SFP-25G-SL<sup>(5,6)</sup></b>	25GBASE-SL SFP28 module for MMF
<b>QSFP 40-Gbps transceivers</b>	
<b>QSFP-40G-SR4</b>	40GBASE-SR4 QSFP transceiver module with MPO connector
<b>QSFP-40G-SR4-S</b>	40GBASE-SR4 QSFP transceiver module, MPO connector, enterprise class
<b>QSFP-40G-CSR4</b>	40GBASE-CSR4, 4 lanes, 850 nm MMF, MPO
<b>QSFP-40G-CSR-S</b>	40GBASE-SR-, duplex MMF, LC
<b>QSFP-40G-SR-BD</b>	40GBASE-SR-BiDi, duplex MMF (LC)
<b>QSFP-40G-LR4</b>	QSFP 40GBASE-LR4 OTN transceiver, LC, 10KM
<b>QSFP-40G-LR4-S</b>	40GBASE-LR, 1310 nm, SMF, 10 km, S-Class
<b>QSFP 100-Gbps transceivers</b>	
<b>QSFP-100G-SR4-S</b>	100GBASE SR4 QSFP transceiver, MPO, 100m over OM4 MMF
<b>QSFP-40/100-SRBD</b>	100GBASE/40GBASE SR-BiDi QSFP transceiver, LC, 100m over OM4 MMF
<b>QSFP-100G-LR4-S</b>	100GBASE LR4 QSFP transceiver, LC, 10KM over SMF
<b>QSFP-100G-DR-S</b>	100GBASE DR QSFP Transceiver, 500m over SMF, LC
<b>QSFP-100G-FR-S</b>	100GBASE FR QSFP Transceiver, 2km over SMF, LC
<b>QSFP-100G-SL4</b>	100GBASE QSFP Short Link Transceivers, 30M reach over OM4 MMF, MPO

**Note:**

- <sup>(1)</sup> SFP-10/25G-CSR-S is supported only at 25G. Interoperability between SFP-25G-SR-S and SFP-10/25G-CSR-S (at 25G) is supported on VIC15428
- <sup>(2)</sup> SFP-10/25G-LR-S is supported at 25G only.
- <sup>(3)</sup> SFP-10G-T-X transceiver is supported with VIC 15428 on ports 2 and 4 when in standby-power. When the server is fully powered-on, SFP-10G-T-X transceiver is enabled for all 4 ports. If user intends to mix cable types on a 15428 VIC card along with SFP-10G-T-X, ports 1 and 3 can support only passive copper cables (10/25G-CUx).
- <sup>(4)</sup> 10G connectivity from VIC 15428 is supported with UCS fabric interconnect 6300/6400 series and standalone switches. UCS-FI-6536 does not currently support 10-Gbps connectivity to UCS VIC 15428.
- <sup>(5)</sup> SFP-25G-SL is supported with UCS-FI-6536
- <sup>(6)</sup> FI 6536 with QSA28 (CVR-QSFP28-SFP28) on server-port supports connectivity with VIC14528 using the following SFP28 transceiver. This connectivity is supported with UCS-FI-6536 from IMM Release 4.2(2).
- <sup>(7)</sup> 25G connectivity from VIC 15428 is supported with UCS fabric interconnect 6400/6500 series, 93180YC-FX3 in Fex mode and 93180YC-FX/93360YC-FX2 standalone switches

**Qualified transceiver optical breakout using 3rd party MPO-4xLC fiber breakout cable**

- SFP-10G-SR to QSFP-40G-SR4 in 4x10G breakout mode with fabric-interconnect and standalone switches
- SFP-10G-SR to QSFP-40G-CSR4 in 4x10G breakout mode with fabric-interconnect and standalone switches
- SFP-10G-LR-S to QSFP-4x10G-LR-S in 4x10G breakout mode with standalone switches
- SFP-25G-SR-S to QSFP-100G-SR4-S in 4x25G mode breakout mode fabric-interconnect and standalone switches
- SFP-10/25G-CSR-S to QSFP-100G-SR4-S in 4x25G mode breakout mode fabric-interconnect and standalone switches
- SFP-10/25G-LR-S to QSFP-100G-PSM4-S in 4x25G mode breakout mode with standalone switches
- SFP-25G-SL to QSFP-100G-SL4 in 4x25G mode breakout mode with 6536 fabric-interconnect

**Table 6.** Cisco UCS VIC cable support matrix

Product number	Description
<b>SFP+ 10-Gbps cables with integrated transceivers<sup>(4)</sup></b>	
<b>SFP-H10GB-CU1M</b>	10GBASE-CU SFP+ direct-attached copper cable, 1M
<b>SFP-H10GB-CU1-5M</b>	10GBASE-CU SFP+ direct-attached copper cable, 1.5M
<b>SFP-H10GB-CU2M</b>	10GBASE-CU SFP+ direct-attached copper cable, 2M
<b>SFP-H10GB-CU2-5M</b>	10GBASE-CU SFP+ direct-attached copper cable, 2.5M
<b>SFP-H10GB-CU3M<sup>(8)</sup></b>	10GBASE-CU SFP+ direct-attached copper cable, 3M
<b>SFP-H10GB-CU5M<sup>(8)</sup></b>	10GBASE-CU SFP+ direct-attached copper cable, 5M

Product number	Description
SFP-H10GB-ACU7M <sup>(8)</sup>	10GBASE-CU SFP+ direct-attached active copper cable, 7M
SFP-H10GB-ACU10M	10GBASE-CU SFP+ direct-attached active copper cable, 10M
SFP-10G-AOC1M	10GBASE active optical SFP+ cable, 1M
SFP-10G-AOC2M	10GBASE active optical SFP+ cable, 2M
SFP-10G-AOC3M <sup>(8)</sup>	10GBASE active optical SFP+ cable, 3M
SFP-10G-AOC5M <sup>(8)</sup>	10GBASE active optical SFP+ cable, 5M
SFP-10G-AOC7M	10GBASE active optical SFP+ cable, 7M
SFP-10G-AOC10M	10GBASE active optical SFP+ cable, 10M
<b>SFP28 25-Gbps cables with integrated transceivers<sup>(7)</sup></b>	
SFP-H25G-CU1M	25GBASE-CU SFP28 direct-attached copper cable, 1M
SFP-H25G-CU2M	25GBASE-CU SFP28 direct-attached copper cable, 2M
SFP-H25G-CU3M <sup>(9)</sup>	25GBASE-CU SFP28 direct-attached copper cable, 3M
SFP-H25G-CU4M	25GBASE-CU SFP28 direct-attached copper cable, 4M
SFP-H25G-CU5M <sup>(9)</sup>	25GBASE-CU SFP28 direct-attached copper cable, 5M
SFP-25G-AOC1M	25GBASE-AOC SFP28 active optical cable, 1M
SFP-25G-AOC2M	25GBASE-AOC SFP28 active optical cable, 2M
SFP-25G-AOC3M <sup>(9)</sup>	25GBASE-AOC SFP28 active optical cable, 3M
SFP-25G-AOC4M	25GBASE-AOC SFP28 active optical cable, 4M
SFP-25G-AOC5M <sup>(9)</sup>	25GBASE-AOC SFP28 active optical cable, 5M
SFP-25G-AOC7M	25GBASE-AOC SFP28 active optical cable, 7M
SFP-25G-AOC10M	25GBASE-AOC SFP28 active optical cable, 10M
<b>QSFP 40-Gbps cables with integrated transceivers<sup>(10)</sup></b>	
QSFP-4x10G-AC7M	40GBASE-CR4 QSFP+ to 4x10GBASE-CU SFP+ active direct-attach breakout cable, 7M
QSFP-4x10G-AC10M	40GBASE-CR4 QSFP+ to 4x10GBASE-CU SFP+ active direct-attach breakout cable, 10M
QSFP-4SFP10G-CU1M	40GBASE-CR4 QSFP+ to 4x10GBASE-CU SFP+ passive direct-attach cable, 1M

Product number	Description
QSFP-4SFP10G-CU3M	40GBASE-CR4 QSFP+ to 4x10GBASE-CU SFP+ passive direct-attach cable, 3M
QSFP-4SFP10G-CU5M	40GBASE-CR4 QSFP+ to 4x10GBASE-CU SFP+ passive direct-attach cable, 5M
QSFP-4X10G-AOC1M	40GBASE-active optical QSFP to 4xSFP+ active optical breakout cable, 1M
QSFP-4X10G-AOC2M	40GBASE-active optical QSFP to 4xSFP+ active optical breakout cable, 2M
QSFP-4X10G-AOC3M	40GBASE-active optical QSFP to 4xSFP+ active optical breakout cable, 3M
QSFP-4X10G-AOC5M	40GBASE-active optical QSFP to 4xSFP+ active optical breakout cable, 5M
QSFP-4X10G-AOC7M	40GBASE-active optical QSFP to 4xSFP+ active optical breakout cable, 7M
QSFP-4X10G-AOC10M	40GBASE-active optical QSFP to 4xSFP+ active optical breakout cable, 10M
QSFP-H40G-CU1M	40GBASE-CR4 passive copper cable, 1M
QSFP-H40G-CU3M	40GBASE-CR4 passive copper cable, 3M
QSFP-H40G-CU5M	40GBASE-CR4 passive copper cable, 5M
QSFP-H40G-ACU7M	40GBASE-CR4 active copper cable, 7M
QSFP-H40G-ACU10M	40GBASE-CR4 active copper cable, 10M
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

Product number	Description
<b>QSFP 100-Gbps cables with integrated transceivers<sup>(11)</sup></b>	
<b>QSFP-4SFP25G-CU1M</b>	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 1M
<b>QSFP-4SFP25G-CU2M</b>	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 2M
<b>QSFP-4SFP25G-CU3M</b>	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 3M
<b>QSFP-4SFP25G-CU5M</b>	100GBASE QSFP to 4xSFP25G passive copper splitter cable, 5M
<b>QSFP-100G-CU1M</b>	100GBASE-CR4 passive copper cable, 1M
<b>QSFP-100G-CU2M</b>	100GBASE-CR4 passive copper cable, 2M
<b>QSFP-100G-CU3M</b>	100GBASE-CR4 passive copper cable, 3M
<b>QSFP-100G-CU5M</b>	100GBASE-CR4 passive copper cable, 5M
<b>QSFP-100G-AOC1M</b>	100GBASE QSFP active optical cable, 1M
<b>QSFP-100G-AOC2M</b>	100GBASE QSFP active optical cable, 2M
<b>QSFP-100G-AOC3M</b>	100GBASE QSFP active optical cable, 3M
<b>QSFP-100G-AOC5M</b>	100GBASE QSFP active optical cable, 5M
<b>QSFP-100G-AOC7M</b>	100GBASE QSFP active optical cable, 7M
<b>QSFP-100G-AOC10M</b>	100GBASE QSFP active optical cable, 10M
<b>QSFP-100G-AOC15M</b>	100GBASE QSFP active optical cable, 15M
<b>QSFP-100G-AOC20M</b>	100GBASE QSFP active optical cable, 20M
<b>QSFP-100G-AOC25M</b>	100GBASE QSFP active optical cable, 25M
<b>QSFP-100G-AOC30M</b>	100GBASE QSFP active optical cable, 30M

**Note:**

<sup>(8)</sup> Support also includes Nexus 93180YC-EX and 93240YC-FX2 with Cisco IMC Release 4.2(2)

<sup>(9)</sup> Support also included Nexus 36180YC-R, 93180YC-EX, and 93240YC-FX2 with Cisco IMC Release 4.2(2)

<sup>(10)</sup> 10G connectivity from VIC 15428 with 4x10G/4SFP10G cables is supported with UCS fabric interconnect 6300/6400 series. UCS-FI-6536 does not currently support 10-Gbps connectivity to UCS VIC 15428

<sup>(11)</sup> 25G connectivity from VIC 15428 with 4SFP25G cables is supported with UCS fabric interconnect 6400/6500 series along with 93180YC-FX, 93360YC-FX2, 9336C-FX2, and 9316D-GX standalone switches

## Ordering information

Table 7 presents ordering information for the Cisco UCS VIC 15000 Series.

**Table 7.** Ordering information

Part number	Description
<b>UCSX-ML-V5D200G</b>	Cisco UCS VIC 15231 2x100G mLOM for Cisco UCS X210c Compute Node
<b>UCSC-M-V5Q50G</b>	Cisco UCS VIC 15428 Quad port 10/25/50G mLOM for C220-M6, C240-M6, C225-M6, C245-M6
<b>UCSC-M-V5D200G</b>	Cisco UCS VIC 15238 dual port 40/100/200G mLOM for C220-M6, C240-M6, C225-M6, C245-M6
<b>UCSB-ML-V5Q10G</b>	Cisco UCS VIC 15411 mLOM for Cisco UCS B-Series M6 Blade Server

## System requirements

The Cisco UCS VIC 15000 Series is designed for use on Cisco UCS X-series M6 servers, B-series M6 blade servers and C-series M6 rack servers.

## Warranty information

Find warranty information at Cisco.com on the Product Warranties page.

## Product sustainability

Information about Cisco's Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

**Table 8.** Cisco environmental sustainability information

Sustainability topic	Reference	
<b>General</b>	Information on product-material-content laws and regulations	<a href="#">Materials</a>
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	<a href="#">WEEE Compliance</a>
	Information on product takeback and reuse program	<a href="#">Cisco Takeback and Reuse Program</a>
	Sustainability inquiries	Contact: <a href="mailto:csr_inquiries@cisco.com">csr_inquiries@cisco.com</a>
	Standards	<a href="#">Table 2. Product specifications</a>
<b>Power</b>	Power consumption	<a href="#">Table 2. Product specifications</a>
<b>Material</b>	Product packaging weight and materials	Contact: <a href="mailto:environment@cisco.com">environment@cisco.com</a>
	Physical dimensions	<a href="#">Table 2. Product specifications</a>

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## Cisco Unified Computing Services

Using a unified view of data center resources, Cisco and our industry-leading partners deliver services that accelerate your transition to a unified computing architecture. Cisco Unified Computing Services help you quickly deploy your data center resources, simplify ongoing operations, and optimize your infrastructure to better meet your business needs. For more information about these and other Cisco Data Center Services, visit <https://www.cisco.com/go/unifiedcomputingservices>

### Why Cisco?

The Cisco Unified Computing System continues Cisco's long history of innovation in delivering integrated systems for improved business results based on industry standards and using the network as the platform. Recent examples include IP telephony, LAN switching, unified communications, and unified I/O. Cisco began the unified computing phase of our unified data center strategy several years ago by assembling an experienced team from the computing and virtualization industries to augment our own networking and storage access expertise. As a result, Cisco delivered foundational technologies, including the Cisco Nexus Family, supporting unified fabric and server virtualization. Cisco UCS completes this phase, delivering innovation in architecture, technology, partnerships, and services. Cisco is well positioned to deliver this innovation by taking a systems approach to computing that unifies network intelligence and scalability with innovative ASICs, integrated management, and standard computing components.

### Cisco Capital

#### **Flexible payment solutions to help you achieve your objectives**

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

### For more information

For more information about Cisco UCS, visit <https://www.cisco.com/en/US/products/ps10265/index.html>.

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## Document history

New or revised topic	Described in	Date
Added new transceiver matrix	Where applicable	10/20/2022

**Americas Headquarters**  
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