

Huawei CloudEngine 6885 Data Center Switch Datasheet

Huawei CloudEngine 6885 series switches are next-generation high-performance and high-density 10GE/25GE/50GE access switches designed for data centers (DCs), and provide 40GE/100GE/200GE uplink ports.




Overview

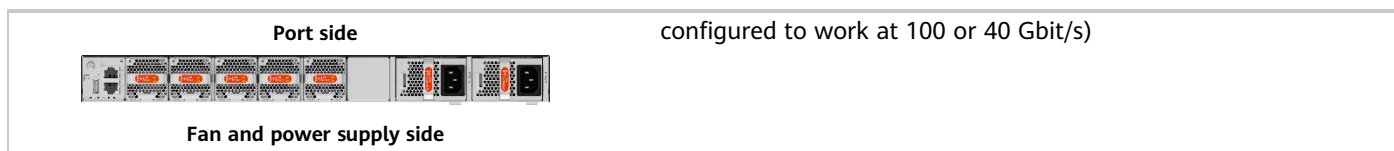
- Huawei CloudEngine 6885 series switches are next-generation high-performance and high-density 10GE/25GE/50GE access switches designed for DCs.
- CloudEngine 6885 series switches have an advanced hardware structure design, and provide high-density 10GE/25GE/50GE port access and 40GE/100GE/200GE uplink ports. The switches support extensive DC features and flexible selection of the airflow direction.
- CloudEngine 6885 series switches can work with CloudEngine 16800, 16800-X, or 8800 DC core switches to build an elastic, virtualized, high-quality, and fully-connected 40GE/100GE/200GE data center network (DCN), meeting network requirements of DCs in the cloud era.
- CloudEngine 6885 series switches provide high-density 10GE/25GE/50GE access in DCs to build DCN platforms for enterprises and carriers in the cloud era. The switches can also work as core or aggregation switches on campus networks.
- CloudEngine 6885-48YS8CQ-T supports trusted boot based on trusted platform module (TPM).

Product Model and Appearance

CloudEngine 6885 series switches consist of the following model:

CloudEngine 6885-48YS8CQ, CloudEngine 6885-48YS8CQ-T(TPM)

Appearance	Description
<p>CloudEngine 6885-48YS8CQ</p>  <p>Port side</p>  <p>Fan and power supply side</p>	<ul style="list-style-type: none"> • Downlink: 48 x 25GE SFP28/48 x 50GE SFP56 (25GE and 50GE ports can be configured to work at 10 Gbit/s and can be used as GE ports) • Uplink: 8 x 100GE QSFP28/8 x 200GE QSFP56 (each 100GE port can be configured to work at 40 Gbit/s, and each 200GE port can be configured to work at 100 or 40 Gbit/s)
<p>CloudEngine 6885-48YS8CQ-T</p> 	<ul style="list-style-type: none"> • Downlink: 48 x 25GE SFP28/48 x 50GE SFP56 (25GE and 50GE ports can be configured to work at 10 Gbit/s and can be used as GE ports) • Uplink: 8 x 100GE QSFP28/8 x 200GE QSFP56 (each 100GE port can be configured to work at 40 Gbit/s, and each 200GE port can be configured to work at 100 or 40 Gbit/s)



Features

High-Density Access, Providing Superior Capacity

- A CloudEngine 6885 series switch supports up to 48 x 10GE/25GE/50GE ports, ensuring high-density 10GE/25GE/50GE server access and smooth evolution.
- A CloudEngine 6885 series switch supports up to 8 x 100GE high-performance QSFP28 ports or 8 x 200GE high-performance QSFP56 ports. Each 200GE QSFP56 port can automatically adjust its rate to 40 or 100 Gbit/s. Each 100GE QSFP28 port can be used as one 40GE QSFP+ port or split into four 25GE SFP28 ports or four 10GE SFP+ ports, providing flexibility in networking. The CloudEngine 6885 switch can connect to the CloudEngine 16800-X, 16800, 9800 or 8800 series switches through 40GE/100GE/200GE uplinks to build a non-blocking network platform.

Inter-Device Link Aggregation, Ensuring High Efficiency and Reliability

- CloudEngine 6885 series switches support Multichassis Link Aggregation Group (M-LAG) to implement link aggregation among multiple devices, improving link reliability from the card level to the device level.
- Switches in an M-LAG all work in active state to share traffic and back up each other, enhancing system reliability.
- Switches in an M-LAG system can be upgraded independently. During the upgrade, other switches in the system take over traffic forwarding to ensure uninterrupted services.
- M-LAG supports dual-homing to Ethernet, VXLAN, and IP networks, allowing for flexible networking.

Virtualized Hardware Gateway, Achieving Rapid Deployment

- CloudEngine 6885 series switches can work with the industry's mainstream virtualization platforms. When functioning as high-performance hardware gateways on an overlay network (VXLAN), CloudEngine 6885 series switches can support the operations of a DC with up to 16 million tenants.
- When functioning as hardware gateways on an overlay network, CloudEngine 6885 series switches can connect to cloud platforms through open APIs, facilitating unified management of virtual and physical networks.
- The hardware virtualized gateway solution achieves rapid service deployment without having to change the customer network, protecting customer investments.
- CloudEngine 6885 series switches support Border Gateway Protocol - Ethernet VPN (BGP-EVPN), which can run as the VXLAN control plane to simplify VXLAN configuration within and between DCs.

Standard Interfaces, Enabling Open Interconnection

- CloudEngine 6885 series switches support NETCONF and can interconnect with iMaster NCE-Fabric.
- CloudEngine 6885 series switches support Ansible — an automatic management and O&M tool — to implement unified provisioning of physical and virtual networks.
- CloudEngine 6885 series switches are integrated with mainstream cloud platforms (including commercial and open-source cloud platforms) and third-party controllers, enabling flexible service customization and automatic management.

Zero Touch Provisioning, Enabling Automatic O&M

- CloudEngine 6885 series switches support Zero Touch Provisioning (ZTP). ZTP enables the switches to automatically obtain and load version files from a file server, freeing network engineers from onsite configuration and deployment. ZTP reduces labor costs and improves device deployment efficiency.

- ZTP supports embedded script languages and provides them for users through open APIs. DC users can use a familiar programming language (such as Python) to centrally configure network devices.
- ZTP decouples the configuration time of new devices from device quantity and geographical distribution, shortening the service provisioning time and improving the service provisioning efficiency.

Intelligent O&M Through Collaboration with iMaster NCE-FabricInsight

- CloudEngine 6885 series switches support telemetry technology to collect device data in real time and send the collected data to iMaster NCE-FabricInsight — the DCN analysis component of Huawei iMaster NCE. Leveraging the intelligent fault identification algorithm, iMaster NCE-FabricInsight can analyze network data, accurately display the real-time network status, locate faults and identify their root causes in a timely and effective manner, and detect network problems that can affect user experience, precisely guaranteeing user experience.
- CloudEngine 6885 series switches support insertion of IFIT extension headers into packets, path visualization, and interface-level analysis of packet loss, traffic, and latency. This helps to achieve high-precision service-level packet loss detection and facilitate fault demarcation.
- CloudEngine 6885 series switches support Packet Event. When a device discards packets due to reasons such as abnormal forwarding, specified packet discarding rules, a full buffer, or ACL rule deny actions, or when the latency of packets exceeds a specified threshold, the device reports related flow entries to the iMaster NCE-FabricInsight collector.

Simplified DCN Deployment via Collaboration with iMaster NCE-Fabric

- CloudEngine 6885 series switches can interconnect with iMaster NCE-Fabric through standard protocols such as NETCONF and SNMP to adapt to networks and implement automatic network management. This helps to provide more efficient and intelligent operation methods, simplifying network management, and reducing the OPEX.

Intelligent Lossless Network, Meeting High Performance Requirements of RoCEv2 Applications

- CloudEngine 6885 series switches support the iLossless algorithm to eliminate packet loss on the conventional Ethernet. This helps to build a lossless, low-latency, and high-throughput network environment for RoCEv2 traffic, meeting high performance requirements of RoCEv2 applications.
- CloudEngine 6885 series switches support PFC deadlock prevention. The switches can identify service flows that may cause PFC deadlocks and change queue priorities of these flows to prevent PFC deadlocks.
- CloudEngine 6885 series switches support Artificial Intelligence Explicit Congestion Notification (AI ECN). This future-oriented function can intelligently adjust the ECN thresholds of lossless queues based on the live-network traffic model to ensure low latency and high throughput with zero packet loss, maximizing the performance of lossless services.
- CloudEngine 6885 series switches support ECN Overlay. ECN Overlay applies ECN to a VXLAN network, enabling the traffic receiver to detect congestion on the overlay network in a timely manner and instruct the traffic sender to reduce its packet sending rate to relieve network congestion.

Flexible Airflow Design, Improving Energy Efficiency

Flexible front to back/back to front airflow design:

- CloudEngine 6885 series switches use a strict front-to-rear airflow design that isolates cold air channels from hot air channels, meet heat dissipation requirements in DC equipment rooms.
- Air can flow from front to rear or from rear to front depending on the fan modules and power modules in use.
- Redundant power modules and fan modules can be configured to ensure service continuity.

Innovative energy-saving technologies:

- CloudEngine 6885 series switches use energy-saving chips and an intelligent fan speed control scheme to measure system power consumption in real time. This can reduce O&M costs and help to build a green DC.

Clear Indicators, Simplifying O&M

Clear indicators:

- The innovative port indicators can clearly show the port status, port speed, and status of all sub-interfaces.
- State and stack indicators on both the front and rear panels enable users to maintain the switch from either side.
- CloudEngine 6885 series switches support remote positioning. Users can turn on the remote positioning indicator through the network management system (NMS) or console to easily identify the switches they want to maintain in an equipment room full of devices.

Simple maintenance:

- The management port, fan modules, and power modules are on the front panel, which facilitates device maintenance.
- Data ports are located at the rear, facing servers. This facilitates cabling.

License Authorization

CloudEngine 6885 series switches support the CloudFabric IDN One Software (N1) business model, which bundles iMaster NCE-Fabric, iMaster NCE-FabricInsight, and CloudEngine switches in a range of typical scenarios. This approach simplifies transactions, provides customers with more functions and value, and protects customers' software investment through Software License Portability.

Feature	N1 Software Package (Mandatory)			N1 Add-On Package (Optional)							
	Foundation	Advanced	Premium	TCP Acceleration	distributed storage	Security	Multi-Cloud and Multi-DC	Specified Flow Analysis	xFlow Intelligent Full-flow Analysis	Financial-grade High Availability	Digital Map
Basic functions (including IPv6 and VXLAN)	•	•	•								
Telemetry	•	•	•								
PTP	•	•	•								
Multicast NAT		•	•								
M-LAG virtual peer-link	•	•	•								
MACsec						•					
AI ECN 2.0					•						
TCP optimization				•	•						
NSLB											
MoFRR										•	
Adaptive routing											
Automation	•	•	•								
Basic intent functions			•								
Runbook		•	•								
Multi-cloud and multi-DC automation scenario package							•				
Basic digital map functions											•
Basic network analysis functions	•	•	•								
Network health evaluation		•	•								
Value-added functions of network traffic analysis (100 VMs)			•					•			
IFIT service assurance		•	•								
Value-added functions of network traffic analysis (1000 VMs)									•		
Value-added package of multi-cloud and multi-DC analysis scenarios							•				
Version mapping	Select one from the three packages. The Advanced package contains features of the Foundation package, and the Premium package contains the features of the Advanced package.			Used together with the Foundation, Advanced, or Premium package.							

Product Specifications

Item	CloudEngine 6885-48YS8CQ	CloudEngine 6885-48YS8CQ-T
10/25GE SFP28 port	48	
50GE SFP56 port1	48	
40/100GE QSFP28 port	8	
200GE QSFP56 port1	8	
Switching capacity	8Tbps	
Packet forwarding rate	1200 Mpps	
Air duct type	Standard front-to-back or back-to-front airflow	
Device virtualization	M-LAG	
Interface	Jumbo frames	
Network virtualization	VXLAN routing and VXLAN bridging	
	BGP-EVPN	
SDN	iMaster NCE-Fabric	
Network convergence	PFC and AI ECN	
	RDMA and RoCE (RoCE v1 and RoCE v2)	
Programmability	OpenFlow	
	OPS programming	
Traffic analysis	NetStream	
VLAN	Access, trunk, and hybrid ports	
	Default VLAN	
MAC address table	Automatic MAC address learning and aging	
	Static, dynamic, and blackhole MAC address entries	
	Source MAC address filtering	
	MAC address learning limiting based on ports and VLANs	
Policy Routing	Policy-based Routing (PBR)	
IP routing	IPv4 dynamic routing protocols such as RIP, OSPF, IS-IS, and BGP	
	IPv6 dynamic routing protocols such as RIPng, OSPFv3, IS-ISv6, and BGP4+	
IPv6	VXLAN over IPv6	
	IPv6 VXLAN over IPv4	

	IPv6 neighbor discovery (ND)
	Path MTU discovery (PMTU)
	TCP6, IPv6 ping, IPv6 tracer, IPv6 socket, UDP6, and raw IPv6
Multicast	Multicast routing protocols such as IGMP, PIM-SM, and MSDP
	IGMP snooping and IGMP proxy
	IPv6 Layer 3 multicast and configuration of both Layer 2 and Layer 3 multicast services
	Fast leave of multicast member interfaces
	Multicast traffic suppression
Reliability	LACP
	STP, RSTP, VBST, and MSTP
	BPDU protection
	Smart link and multi-instance
	Hardware-based Bidirectional Forwarding Detection (BFD), with a minimum packet sending interval of 3.3 ms
	VRRP, VRRP load balancing, and BFD for VRRP
	BFD for BGP, IS-IS, OSPF, and static routing
	BFD for VXLAN
	Traffic classification based on Layer 2 headers, Layer 3 protocols, and Layer 4 protocol priorities
QoS	ACL, CAR, re-marking, and scheduling
	Queue scheduling modes such as PQ, DRR, and PQ+DRR
	Congestion avoidance mechanisms such as WRED and tail drop
	Traffic shaping
	IEEE 1588v2
Intelligent O&M	Network-wide path detection
	Telemetry
	Enhanced ERSPAN
	IFIT
	Packet Event: packet loss visualization and ultra-long latency visualization
	Statistics collection on the buffer microburst status
	VXLAN OAM: VXLAN ping and VXLAN tracer

Intelligent lossless network	PFC deadlock prevention	
	AI ECN	
	ECN Overlay	
	Enhanced NSLB	
Configuration and maintenance	Terminal login through the console port, Telnet, and SSH	
	Network management protocols, such as SNMPv1/v2/v3	
	File upload and download through FTP and TFTP	
	Boot Read-Only Memory (BootROM) upgrade and remote online upgrade	
	Hot patches	
	User operation logs	
	Configuration rollback	
	ZTP	
Security and management	MACsec	
	Command line authority control based on user levels, preventing unauthorized users from using commands	
	Defense against DoS, ARP, and ICMP attacks	
	Port isolation, port security, and sticky MAC	
	Binding of the IP address, MAC address, port ID, and VLAN ID	
	Authentication methods, including AAA, LDAP, RADIUS, and HWTACACS	
	/	TPM
	RMON	
Dimensions (H x W x D)	43.6 mm × 442 mm × 420 mm	
Weight in full configuration	9.2 kg	
Environment requirements	Operating temperature: 0°C to 40°C (0 m to 1800 m) Storage temperature: -40°C to +70°C Relative humidity: 5% RH to 95% RH (noncondensing)	
Operating voltage	600 W AC&240 V DC power module: AC: 90 V AC to 290 V AC, 45 Hz to 65 Hz; DC: 190 V DC to 290 V DC 1200 W DC power module: -38.4 V DC to -72 V DC; 40 V DC to 57 V DC	
Typical power consumption	48 x 25GE + 8 x 100GE: 147 W 48 x 50GE + 8 x 200GE: 177 W	

By default, a CE6885-48YS8CQ switch supports forty-eight 25GE ports and eight 100GE ports. To use them as forty-eight 50GE ports and eight 200GE ports, the CE68-RTU-U48S8CQ needs to be purchased.

Performance and Scalability

Item	Value
Maximum number of MAC address entries	640K
Maximum number of routes (FIB IPv4/IPv6)	1.5M/750K
ARP size	128K
Maximum number of VRFs	4096
IPv6 ND table size	128K
Maximum number of VRRP groups	1024
Support ECMP	Yes, 128 member paths in each ECMP group for load balancing
Maximum number of VXLAN bridge domains	16K
Maximum number of BDIF interfaces	16K
Maximum number of virtual tunnel endpoints (VTEPs)	16K
Maximum number of LAGs	1024
Maximum number of links in a LAG	256
Maximum number of VLANs where VBST can be configured	1000
Maximum number of supported VLANs	4063

Note: This specification may vary between different scenarios. Please contact Huawei for details.

Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of CloudEngine 6800 series switches.

Certification Category	Description
Safety	EN 62368-1 IEC 62368-1 UL 62368-1 CSA-C22.2 No.62368-1 AS/NZS 62368-1 GB4943
Electromagnetic Compatibility (EMC)	EN 300386 EN 55032 EN 55035 IEC/EN 61000-3-2 IEC/EN 61000-3-3 AS/NZS CISPR32 FCC 47CFR Part15 ICES-003 CISPR 32 CISPR 24 VCCI- CISPR32 CISPR35 GB9254
Environment	EN 50581 EN 50419 (EC) No.1907/2006 GB/T 26572 ETSI EN 300 019-1-1 ETSI EN 300 019-1-2 ETSI EN 300 019-1-3 ETSI EN 300 753
EMC: electromagnetic compatibility; CISPR: International Special Committee on Radio Interference EN: European Standard; ETSI: European Telecommunications Standards Institute CFR: Code of Federal Regulations; FCC: Federal Communication Commission IEC: International Electrotechnical Commission AS/NZS: Australian/New Zealand Standard; VCCI: Voluntary Control Council for Interference UL: Underwriters Laboratories; CSA: Canadian Standards Association	

Ordering Information

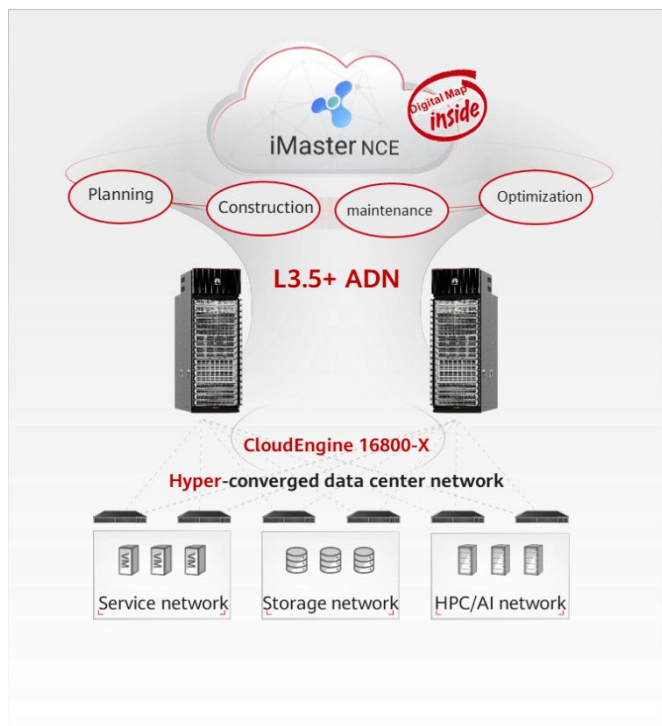
Device Description	
CE6885-48YS8CQ	CE6885-48YS8CQ switch (48 x 25GE SFP28, 8 x 100GE QSFP28, without fan and power module)
CE6885-48YS8CQ-B	CE6885-48YS8CQ switch (48 x 25GE SFP28, 8 x 100GE QSFP28, 2 x AC power modules, 5 x fan modules, port-side air intake)
CE6885-48YS8CQ-F	CE6885-48YS8CQ switch (48 x 25GE SFP28, 8 x 100GE QSFP28, 2 x AC power modules, 5 x fan modules, port-side air exhaust)
CE6885-48YS8CQ-T	CE6885-48YS8CQ-T switch (48 x 25GE SFP28, 8 x 100GE QSFP28, without fan and power module)
CE6885-48YS8CQ-T-B	CE6885-48YS8CQ-T switch (48 x 25GE SFP28, 8 x 100GE QSFP28, 2 x AC power modules, 5 x fan modules, port-side air intake)
CE6885-48YS8CQ-T-F	CE6885-48YS8CQ-T switch (48 x 25GE SFP28, 8 x 100GE QSFP28, 2 x AC power modules, 5 x fan modules, port-side air exhaust)
Fan module	
Model	Description
FAN-031A-F	Fan box (F,FAN panel side intake)
FAN-031A-B	Fan box (B,FAN panel side exhaust)
FAN-031B-F	Fan box (F,FAN panel side intake), supporting the electronic label function
FAN-031B-B	Fan box (B,FAN panel side exhaust), supporting the electronic label function
Power module	
Model	Description
PAC600S12-PF	600W AC Power Module (Front to Back, Power panel side intake)
PAC600S12-PB	600W AC Power Module (Back to Front, Power panel side exhaust)
PDC1K2S12-PB	1200W DC Power Module (Front to Back, Power panel side intake)
PDC1K2S12-CE	1200W DC Power Module (Back to Front, Power panel side exhaust)

Software	
Hardware RTU	
CE68-RTU-U48S8CQ	Downlink ports: 48 x 25GE upgraded to 48 x 50GE; Uplink ports: 8 x 100GE upgraded to 8 x 200GE
Software	
N1-CE68LIC-CFFD	N1-CloudFabric Foundation SW License for CloudEngine 6800
N1-CE68CFFD- SnS1Y	N1-CloudFabric Foundation SW License for CloudEngine 6800-SnS-Year
N1-CE68LIC-CFAD	N1-CloudFabric Advanced SW License for CloudEngine 6800
N1-CE68CFAD- SnS1Y	N1-CloudFabric Advanced SW License for CloudEngine 6800-SnS-Year
N1-CE68LIC-CFPM	N1-CloudFabric Premium SW License for CloudEngine 6800
N1-CE68CFPM- SnS1Y	N1-CloudFabric Premium SW License for CloudEngine 6800-SnS-Year
N1-CE68UPG-F-A	N1-CloudEngine 6800 Upgrade SW License:Foundation to Advanced
N1-CE68UGFA- SnS1Y	N1-CloudEngine 6800 Upgrade SW License:Foundation to Advanced-SnS-Year
N1-CE68UPG-A-P	N1-CloudEngine 6800 Upgrade SW License:Advanced to Premium
N1-CE68UGAP- SnS1Y	N1-CloudEngine 6800 Upgrade SW License:Advanced to Premium-SnS-Year
N1-CE68LIC-AFRD-2	N1-CloudEngine 6800 AI Fabric RDMA Application Acceleration Function 2
N1-CE68AFRD2- SnS1Y	N1-CloudEngine 6800 AI Fabric RDMA Application Acceleration Function 2-SnS-Year
N1-CE68LIC-SEC	N1-CloudEngine 6800 Security Function
N1-CE68SEC-SnS1Y	N1-CloudEngine 6800 Security Function-SnS-Year
N1-CE-F-LIC-MDCA	N1-CloudEngine Data Center Switch Multi-cloud Multi-DC Value-added Package - Fixed
N1-CEFMDCA - SnS1Y	N1-CloudEngine Data Center Switch Multi-cloud Multi-DC Value-added Package, Per Fixed device-SnS-Year
N1-CE-LIC-AFP100VM	N1-CloudEngine Specified Flow Analysis Value-added Package Per 100 VM
N1-CEAFP100VM-SnS1Y	N1-CloudEngine Specified Flow Analysis Value-added Package Per 100 VM-SnS-Year

Networking Application

Application in a DC

On a typical DCN, CloudEngine 16800-X, 16800 or 8800 switches work as core switches, whereas CloudEngine 6885 series switches work as TOR switches and connect to the core switches through 40GE, 100GE, or 200GE ports to build an end-to-end and fully-connected 100GE/200GE/400GE network. The switches use VXLAN and other fabric technologies to establish a non-blocking large Layer 2 network, which allows large-scale VM migrations and flexible service deployments.



Note: VXLAN can also be used on campus networks to support flexible service deployment in different service areas.

More Information

For more information about Huawei products, visit <https://e.huawei.com/en/> or contact Huawei's local sales office.


Alternatively, you can contact us through one of the following methods:

- Global service hotline: <https://e.huawei.com/en/about/service-hotline>
- Enterprise technical support website: <https://support.huawei.com/enterprise/en/index.html>
- Service email address for enterprise users: support_e@huawei.com

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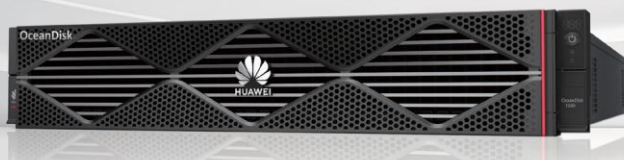
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Leading-Performance Storage for HPC and AI



Huawei OceanDisk 1600 series smart disk enclosures are an intelligent upgrade from traditional solutions. The OceanDisk 1600 series offers professional-grade storage features like RAID and erasure coding (EC), while eliminating the needs for redundant features like replication. It shortens I/O processing paths and provides ultimate performance experiences.

In addition, the OceanDisk 1600 series is seamlessly compatible with open-source or customer-developed storage software such as Lustre, GPFS, and BeeGFS, serving as a standard component to provide an ultra-fast, ultra-reliable, and ultra-cost-effective SAN storage foundation for HPC, AI, and other scenarios.

A single 2 U enclosure delivers up to 3.5 million IOPS and 70 GB/s bandwidth. It also offers ultra-high capacity density, featuring an all-flash controller enclosure with up to 4 PB of available capacity, and can be expanded with HDD enclosures to provide up to 20 PB of total capacity in a hybrid flash configuration.

OceanDisk 1600 Series

Leading-performance storage for HPC and AI

Ultra-fast

70 GB/s
bandwidth

3.5 million
IOPS

Ultra-reliable

99.999%
reliability

15 mins/TB
data reconstruction

Ultra-cost-effective

2 PB/2 U
capacity density

Switchless networks
for small-/mid-scale deployment



Product Features

◀ Ultra-Fast

A single 2 U enclosure delivers 70 GB/s bandwidth and 3.5 million IOPS and enables minute-level read/write of TB-scale checkpoints, improving utilization of AI cluster computing.

- **Innovative hardware:** Huawei-developed DPU supports NVMe-over-Fabric target offload acceleration and provides a more direct data path, boosting read bandwidth by 30%.
- **FlashLink®** : The disk-controller collaboration algorithm supercharges data processing efficiency, reduces I/O latency, and improves IOPS performance by 30%.
- **Data-control plane separation architecture:** The architecture enables writes of large I/O metadata to the cache and data directly to disks, increasing the write bandwidth by 30%.

◀ Ultra-Reliable

Professional-grade 99.999% reliability with multi-level protection.

- **Disk-level reliability:** Global SSD wear-leveling and Huawei-patented anti-wear-leveling technology extend SSD lifespan, with integrity ensured by LDPC+FSP algorithms and intra-disk DIF.
- **Architecture reliability:** E2E active-active architecture enables switchover in seconds upon hardware failure.
- **System-level reliability:** Huawei RAID-TP tolerates simultaneous three-disk failures. Huawei's RAID 2.0+ algorithm slashes the data reconstruction time from 5 hours/TB to 15 minutes/TB. HyperZoom dynamic reconstruction ensures data redundancy.
- **System-level reliability:** Proactive disk health monitoring and preprocessing minimize potential failure risks.

◀ Ultra-Cost-Effective

Industry-leading capacity density maximizes space and energy savings.

- **High-density hardware:** 2 U enclosure with 36 disk slots (up to 61.44 TB per disk), supporting up to 2 PB total capacity.
- **Intra-enclosure high-ratio EC:** The maximum EC ratio can be 23+2, with a space utilization of up to 92%.
- **Storage and compute separation architecture:** On-demand storage and compute expansion.

Technical Specifications

◀ All-flash series

Model	OceanDisk 1500	OceanDisk 1600
Hardware Specifications		
Hardware Architecture	2 U, 36 disks	2 U, 36 disks
Channel Port Types	25/100 Gbit/s NVMe over RoCE, 16/32/64 Gbit/s FC, 10/25/40/100 Gbit/s Ethernet	
CPU	128-core (64-core x 2)	192-core (48-core x 4)
Cache	256 GB	512 GB
Disk Types	NVMe SSD (3.84/7.68/15.36/30.72/61.44 TB)	
Max. Bandwidth	42 GB/s read and 18 GB/s write	70 GB/s read and 35 GB/s write
Max. IOPS	2,500,000	3,500,000
Max. Available Capacity	4 PB	4 PB
Max. Number of Hot Swappable I/O Modules	12	12
Redundancy of Main Components	Controllers (1+1), fans (5+1) per controller, and power modules (1+1)	
Software Specifications		
Max. Number of Namespaces per Storage Pool	16,384	32,768
EC Support	Intra-enclosure high-ratio EC including 22+3, 23+2, etc.	
Storage Management Software	Device O&M (DeviceManager), remote O&M (DME)	
Physical Specifications		
Power Supply	2000 W AC power with 200 V to 240 V AC±10%, 10A 3000 W AC power with 100 V to 240 V AC±10%, 16A	
Typical Power Consumption (W)	Controller enclosure: 1,394	Controller enclosure: 1,458
Dimensions (W x D x H)	Controller enclosure: 447 mm x 920 mm x 86.1 mm	
Weight (Excluding Disks)	Controller enclosure: 40.65 kg	
Operating Temperature	–60 m to +1800 m altitude: 5°C to 35°C (cabinet) or 40°C (enclosure) 1800 m to 3000 m altitude: The max. temperature threshold decreases by 1°C for every altitude increase of 220 m.	
Operating Humidity	10% RH–90% RH	

Technical Specifications

◀ Hybrid flash series

Model	OceanDisk 1500	OceanDisk 1600
Hardware Specifications		
Controller Enclosure	2 U 36 NVMe SSDs 2 U 25 SAS SSDs	2 U 36 NVMe SSDs
Disk Enclosure	NVMe SSD controller enclosure expansion options: NVMe SSD enclosure, SAS HDD enclosure SAS SSD controller enclosure expansion option (only for OceanDisk 1500): SAS HDD enclosure	
Channel Port Types	25/100 Gbit/s NVMe over RoCE, 16/32/64 Gbit/s FC, 10/25/40/100 Gbit/s Ethernet	
CPU	128-core (64-core x 2)	192-core (48-core x 4)
Cache	512 GB	512 GB, 1 TB
Disk Types	NVMe SSD, SAS SSD, and NL-SAS HDD	NVMe SSD and NL-SAS HDD
Max. Bandwidth	25 GB/s read and 12GB/s write	30 GB/s read and 20GB/s write
Max. IOPS	800,000	1,200,000
Max. Available Capacity	10 PB	10 PB (512 GB cache), 20 PB (1 TB cache)
Max. Number of Hot Swappable I/O Modules	12	12
Max. Number of Disks	800	1,200
Redundancy of Main Components	Controllers (1+1), fans (5+1) per controller, and power modules (1+1)	
Software Specifications		
Max. Number of Namespaces per Storage Pool	1,024	
EC Support	Intra-enclosure high-ratio EC including 22+3, 23+2, etc.	
Storage Management Software	Device O&M (DeviceManager), remote O&M (DME)	
Physical Specifications		
Power Supply	2000 W AC power with 200 V to 240 V AC±10%, 10A 3000 W AC power with 100 V to 240 V AC±10%, 16A	
Typical Power Consumption (W)	NVMe controller enclosure: 1,394 SAS controller enclosure: 1,151	NVMe controller enclosure: 1,463
Dimensions (W x D x H)	NVMe controller enclosure: 447 mm x 920 mm x 86.1 mm SAS controller enclosure: 447 mm x 820 mm x 86.1 mm	NVMe controller enclosure: 447 mm x 920 mm x 86.1 mm
Weight (Excluding Disks)	NVMe controller enclosure: 40.65 kg SAS controller enclosure: 38.05 kg	NVMe controller enclosure: 40.65 kg
Operating Temperature	-60 m to +1800 m altitude: 5°C to 35°C (cabinet) or 40°C (enclosure) 1800 m to 3000 m altitude: The max. temperature threshold decreases by 1°C for every altitude increase of 220 m.	
Operating Humidity	10% RH-90% RH	

For More Information

To learn more about Huawei storage, please contact your local Huawei office or visit the Huawei Enterprise website: <http://e.huawei.com/en>.



OceanDisk Website

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Cisco UCS X9508 Chassis

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Figure 1.
UCS X9508 Chassis

Product overview

The Cisco UCS® X-Series Modular System simplifies your data center, adapting to the unpredictable needs of modern applications while also providing for traditional scale-out and enterprise workloads. It reduces the number of server types to maintain, helping to improve operational efficiency and agility as it helps reduce complexity. Powered by the Cisco Intersight™ cloud-operations platform, it shifts users' IT focus from administrative details to business outcomes—with a hybrid-cloud infrastructure that is assembled from the cloud, shaped to their workloads, and continuously optimized.

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 a hybrid cloud environment.

With a midplane-free design, I/O connectivity for the X9508 chassis is accomplished with frontloading, 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. In the future, Cisco UCS X-Fabric Technology interconnects will supply other industry-standard protocols as standards emerge. Interconnections can be easily updated with new modules.

Features and benefits

Main features

- 7-Rack-Unit (7RU) 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.
- 2x Cisco UCS 9108 Intelligent Fabric Modules (IFMs) at the top of the chassis that connect the chassis to upstream Cisco UCS 6400 Series Fabric Interconnects. Each IFM features
 - Up to 100 Gbps of unified fabric connectivity per compute node
 - 8x 25-Gbps SFP28 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.
- At the bottom are slots ready to house future I/O modules that can flexibly connect the compute modules with I/O devices. We call this connectivity Cisco UCS X-Fabric technology because “X” is a variable that can evolve with new technology developments.
- Six 2800W Power Supply Units (PSUs) provide 54V power to the chassis with N, N+1, and N+N redundancy. A higher voltage allows efficient power delivery with less copper and reduced power loss.
- Efficient, 4x100mm, dual counter-rotating fans deliver industry-leading airflow and power efficiency. Optimized thermal algorithms enable different cooling modes to best support the network environment. Cooling is modular so that future enhancements can potentially handle open- or closed-loop liquid cooling to support even higher-power processors.



Figure 2.
Cisco UCS 9508 X-Series Chassis, front (top) and back (bottom)

Benefits

Since we first delivered the Cisco Unified Computing System™ (Cisco UCS) in 2009, our goal has been to simplify the data center. We pulled management out of servers and into the network. We simplified multiple networks into a single unified fabric. And we eliminated network layers in favor of a flat topology wrapped up into a single unified system. With the Cisco UCS X-Series Modular System, we take that simplicity to the next level:

- **Simplify with cloud-operated infrastructure:** We move management from the network into 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. You can integrate third-party devices including storage from NetApp, Pure Storage, and Hitachi. And you gain intelligent visualization, optimization, and orchestration for all of your applications and infrastructure.
- **Simplify with an adaptable system designed for modern applications:** Today's cloud-native, hybrid applications are inherently unpredictable. They get deployed and redeployed as part of an iterative DevOps practice. Requirements change often, and you need a system that doesn't 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, you can consolidate onto a single platform that combines the density and efficiency of blade servers with the expandability of rack servers. The result: better performance, automation, and efficiency.
- **Simplify with a system engineered for the future:** Embrace emerging technology and reduce risk with a modular system designed to support future generations of processors, storage, nonvolatile memory, accelerators, and interconnects. Gone is the need to purchase, configure, maintain, power, and cool discrete management modules and servers. Cloud-based management is kept up to date automatically with a constant stream of new capabilities delivered by the Intersight software-as-a-service model.
- **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.

Product specifications

Table 1. Product specifications

Item	Specifications	
Height	12.05 in (30.6 cm); 7 RU	
Width	17.55 (44.6 cm); fits standard 19-inch square-hole rack	
Depth	34.81 in (88.4 cm)	
Node slots	8	
Intelligent Fabric Module (IFM)	Intelligent Fabric Module options: <ul style="list-style-type: none"> • 2 x Cisco UCS 9108 25G Intelligent Fabric Module with 8x 25G SFP28 ports • 2 x Cisco UCS 9108 100G Intelligent Fabric Module with 8x 100G QSFP28 ports 	
X-Fabric module (XFM)	X-Fabric Module options: <ul style="list-style-type: none"> • 2 x Cisco UCS X9416 X-Fabric modules for X9508 chassis • 2x Cisco UCS X-Fabric module rear blank slots 	
Fan module	4 x 100mm hot-swappable dual rotor fans	
Power supply bays	6	
Power supplies	2800W Titanium certified	
	Input voltage	100 to 127 V AC 200 to 240V AC
	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
	Power connector	IEC320 C20
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)	
Management	Cisco Intersight software (SaaS, Virtual Appliance and Private Virtual Appliance)	
Temperature: operating	50 to 95°F (10 to 35°C) (as altitude increases, maximum temperature decreases by 1°C per 300m)	
Temperature: nonoperating	-40 to 149°F (-40 to 65°C); maximum altitude is 40,000 ft	

Item	Specifications
Humidity: operating	10% to 90% noncondensing, 28°C max
Humidity: nonoperating	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: nonoperating	40,000 ft (12,000m)
Sound pressure level	83 dBA – at normal operating temperature

Table 2. Regulatory Standards Compliance: safety and EMC

Specification	Description
Regulatory compliance	Products comply with CE Markings per directives 2004/108/EC and 2006/108/EC
Safety	<ul style="list-style-type: none"> • UL 60950-1 • CAN/CSA-C22.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950-1 • GB4943
EMC: Emissions	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • EN50082-1 • EN61000-6-1 • EN55024 • CISPR24 • EN300386 • KN 61000-4 Series

System requirements

Table 3. System requirements

Item	Requirements
X-Series chassis	Cisco UCS X9508 Chassis
Fabric interconnect	Cisco UCS 6454, 64108 and 6536 fabric interconnects
Cisco Intersight	Intersight Managed Mode

Ordering information

Table 4 provides ordering information for the Cisco UCS X9508 Chassis.

Table 4. Ordering information

Part number	Description
UCSX-M6-MLB	UCSX M6 Modular Server and CHASSIS MLB
UCSX-9508-U	UCS X9508 Chassis Configured
UCSX-9508-CH	DIST1: UCS X9508 Chassis

For information about installing or upgrading Cisco UCS X9508 Chassis, see the [Hardware Installation](#) guide. For ordering information, see the Cisco UCS X9508 Chassis spec sheet.

Warranty information

The Cisco UCS X9508 Chassis has a three-year Next-Business-Day (NBD) hardware warranty and a 90-day software warranty.

Augmenting the Cisco Unified Computing System™ (Cisco UCS) warranty, Cisco Smart Net Total Care® and Cisco Solution Support services are part of Cisco's technical services portfolio. Cisco Smart Net Total Care combines Cisco's industry-leading and award-winning foundational technical services with an extra level of actionable business intelligence that is delivered to you through the smart capabilities in the Cisco Smart Net Total Care portal. For more information, please refer to <https://www.cisco.com/c/en/us/support/services/smart-net-total-care/index.html>.

Cisco Solution Support includes both Cisco® product support and solution-level support, resolving complex issues in multivendor environments on average 43 percent more quickly than with product support alone. Cisco Solution Support is a critical element in data center administration, helping 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 that you have deployed in your ecosystem. Whether there is an issue with a Cisco product or with a 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 <https://www.cisco.com/c/en/us/services/technical/solution-support.html>.

Product sustainability

Information about Cisco's environmental, social, and governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

Table 5. Cisco environmental sustainability information

Sustainability topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability inquiries	Contact: csr_inquiries@cisco.com
	Operating and nonoperating conditions	Table 1. Product specifications
	Regulatory compliance	Table 2. Product specifications
Power	Power supply	Main features Table 1. Product specifications
	Thermal overview	Main features Table 1. Product specifications
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Modular design	Benefits

Cisco and partner services

Cisco and our industry-leading partners deliver services that accelerate your transition to a Cisco UCS X-Series Modular System solution. Cisco Unified Computing Services (UCS) can help you create an agile infrastructure, accelerate time to value, reduce costs and risks, and maintain availability during deployment and migration. After deployment, our services can help you improve performance, availability, and resiliency as your business needs evolve, and help you further mitigate risk. For more information, visit <https://www.cisco.com/go/unifiedcomputingservices>.

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 the Cisco UCS X9508 Chassis, refer to the [Cisco UCS X-Series Solution Overview](#).

For more information about Cisco UCS X-Series, go to <https://cisco.com/go/ucsx>.

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Cisco UCS C220 M7 Rack Server



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The Cisco UCS® C220 M7 Rack Server delivers record-breaking performance for space-constrained environments.

Product overview



The Cisco UCS C220 M7 Rack Server is a versatile general-purpose infrastructure and application server. This high-density, 1RU, 2-socket rack server delivers industry-leading performance and efficiency for a wide range of workloads, including virtualization, collaboration, and bare-metal applications.

The Cisco UCS C220 M7 Rack Server extends the capabilities of the Cisco UCS rack server portfolio. It incorporates the 4th and 5th Gen Intel® Xeon® Scalable Processors with 50 percent more cores per socket, advanced features such as Intel Advanced Matrix Extensions (AMX), Data Streaming Accelerator (DSA), In-Memory Analytics Accelerator (IAA), and QuickAssist Technology (QAT). Many applications will see significant performance improvements.

You can deploy the Cisco UCS C-Series rack servers as standalone servers or as part of the Cisco Unified Computing System™ managed by Cisco Intersight™ or Cisco UCS Manager to take advantage of Cisco® standards-based unified computing innovations that can help reduce your Total Cost of Ownership (TCO) and increase your business agility.

The C220 M7 rack server brings many new innovations to the UCS rack server portfolio. With the introduction of PCIe Gen 5.0 for high-speed I/O, a DDR5 memory bus, and expanded storage capabilities, the server delivers significant performance and efficiency gains that will improve your application performance.

- Supports up to two 4th or 5th Gen Intel Xeon Scalable CPUs, with up to 60 cores per socket.
- Up to 32 DDR5 DIMMs for up to 4 TB of capacity using 128 GB DIMMs (16 DIMMs per socket).
- Up to 5600 MT/s DDR5 memory plus other speeds depending on the CPU installed.
- Up to 3 PCIe 4.0 slots or up to 2 PCIe 5.0 slots, plus a modular LAN on motherboard (mLOM) slot.
- Support for Cisco UCS VIC 15000 Series adapters as well as third-party options.
- Up to 10 SAS/SATA or NVMe disk drives.
 - New tri-mode RAID controller supports SAS4 RAID or NVMe hardware RAID with optional up to four direct-attach NVMe drives.
 - Option for 10 direct-attach NVMe drives at PCIe Gen4x4 each.
- M.2 boot options.
 - Up to two 960GB SATA M.2 drives with hardware RAID, or
 - Up to two 960GB NVMe M.2 drives with NVMe hardware RAID

- Up to three GPUs supported
- Hybrid modular LOM/OCP 3.0
 - One dedicated Gen 4.0 x16 slot that can be used to add an mLOM or OCP 3.0 card for additional rear-panel connectivity.
 - mLOM allows for Cisco UCS Virtual Interface Cards (VICs) without consuming a PCIe slot, supporting quad port 10/25/50 Gbps or dual port 40/100/200 Gbps network connectivity.
 - OCP 3.0 slot features full out-of-band management for select adapters.

Powering next-generation applications

The Cisco UCS C220 M7 Rack Server is well suited for a wide range of workloads, including:

- IT and web infrastructure
- High-performance virtual desktops
- Medium-sized and distributed databases
- Middleware
- Collaboration
- Public cloud

Cisco UCS C220 M7 Rack Servers can be deployed as standalone servers, part of a Cisco UCS-managed environment or through Cisco Intersight. When used in combination with Cisco Intersight, the C220 M7 brings the power and automation of unified computing to enterprise applications, including Cisco SingleConnect technology, drastically reducing switching and cabling requirements.

Cisco Intersight leverages the familiar capabilities of UCS Manager with service profiles, templates, and policy-based management to enable rapid deployment and help ensure deployment consistency. It also enables end-to-end server visibility, management, and control in both virtualized and bare-metal environments.

The Cisco Integrated Management Controller (IMC) delivers comprehensive out-of-band server management with support for many industry standards, including:

- Redfish Version 1.13.0 (2021.1 schema0)
- Intelligent Platform Management Interface (IPMI) v2.0
- Simple Network Management Protocol (SNMP) v2 and v3
- Syslog
- Simple Mail Transfer Protocol (SMTP)
- Key Management Interoperability Protocol (KMIP)
- cKVM (all-new Cisco KVM)
- Command-Line Interface (CLI)
- XML API

Management Software Development Kits (SDKs) and DevOps integrations exist for Python, Microsoft PowerShell, Ansible, Puppet, Chef, and more. For more information about integrations, see Cisco DevNet (<https://developer.cisco.com/site/ucs-dev-center/>).

Product specifications

Table 1 lists the specifications for the Cisco UCS C220 M7 Rack Server.

Table 1. Specifications

Item	Specifications
Form factor	1RU rack server
Processors	Up to 2x 5 th Gen Intel Xeon Scalable processors (1 or 2) or Up to 2x 4 th Gen Intel Xeon Scalable processors (1 or 2)
Memory	32 DDR5-5600 DIMM slots (16 DIMMS per CPU): 16, 32, 48, 64, 96, 128GB at up to 5600 MT/s for up to 4TB of memory with 5 th Gen Intel Xeon Scalable processors or 32 DDR5-4800 DIMM slots (16 DIMMS per CPU): 16, 32, 64, 128GB at up to 4800 MT/s for up to 4TB of memory with 4 th Gen Intel Xeon Scalable processors
PCIe expansion	Up to 3 PCIe 4.0 slots or up to 2 PCIe 5.0 slots plus 1 dedicated 24-Gbps RAID controller slot and 1 dedicated mLOM/OCP 3.0 slot
RAID controllers	<ul style="list-style-type: none"> Internal controllers: <ul style="list-style-type: none"> Cisco 24-Gbps modular tri-mode controller supports SAS 4 or NVMe hardware RAID Cisco 12-Gbps modular RAID controller (PCIe 4.0) with 4-GB Flash-Backed Write Cache (FBWC), or Cisco 12-Gbps modular SAS Host Bus Adapter (HBA) External controller: Cisco 12-Gbps 9500-8e SAS HBA
Internal storage	<ul style="list-style-type: none"> Backplane options: <ul style="list-style-type: none"> Up to 10 x 2.5-inch SAS and SATA HDDs, SSD, NVMe drives, with the option of up to 4 direct-attach NVMe drives Up to 10 x 2.5-inch NVMe PCIe SSDs (all direct-attach PCIe Gen4x4)
mLOM/OCP 3.0	<ul style="list-style-type: none"> One dedicated PCIe Gen4x16 slot that can be used to add an mLOM or OCP 3.0 card for additional rear-panel connectivity mLOM slot can flexibly accommodate 10/25/50/100/25/40, and 40/100/200 100-Gbps Cisco VIC adapters. OCP 3.0 slot features full out-of-band manageability that supports Intel X710 OCP Dual 10GBase-T via mLOM interposer.
Power supplies	Hot-pluggable, redundant platinum and titanium options: <ul style="list-style-type: none"> Platinum: 770W AC, 1050W DC, and 1600W AC Titanium: 1200W AC, and 2300W AC
Other storage	<ul style="list-style-type: none"> Dedicated Baseboard Management Controller (BMC) FlexMMC for utilities (on board) Dual M.2 SATA/NVMe SSDs with HW RAID support

Item	Specifications
Management	<ul style="list-style-type: none"> • Cisco Intersight • Cisco Integrated Management Controller (IMC) • Cisco UCS Manager
Rack options	<ul style="list-style-type: none"> • Cisco ball-bearing rail kit with optional reversible cable management arm
Hardware and software interoperability	See the Cisco Hardware and Software Interoperability List for a complete listing of supported operating systems and peripheral options.

System requirements

Table 2 lists system requirements for the server.

Table 2. System requirements

Item	Requirements
Cisco IMC	Release 4.3(1) or later

Ordering information

Table 3. Ordering information

Part #	Product description
UCSC-C220-M7S	C220 M7 1RU standard server with up to 10x SFF drive bays
UCSC-C220-M7N	C220 M7 1RU NVMe optimized server with up to 10x NVMe drive capability

For information about installing or upgrading your server, see the [Cisco UCS C220 M7 Server Installation and Service Guide](#).

For ordering information, see [Cisco UCS C220 M7 SFF rack server specifications sheet](#).

Warranty information

The Cisco UCS C220 M7 Rack Server has a three-year, Next-Business-Day (NBD) hardware warranty and a 90-day software warranty.

Cisco support

Augmenting the Cisco Unified Computing System (Cisco UCS) warranty, Cisco Smart Net Total Care® and Cisco Solution Support services are part of Cisco's technical services portfolio. Smart Net Total Care combines Cisco's industry-leading and award-winning foundational technical services with an extra level of actionable business intelligence that is delivered to you through the smart capabilities in the Smart Net Total Care portal. Learn more about [Smart Net Total Care](#).

Cisco Solution Support includes both Cisco product support and solution-level support, resolving complex issues in multivendor environments on average 43 percent more quickly than with product support alone. Cisco Solution Support is a critical element in data center administration, helping to 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 that you have deployed in your ecosystem. Whether there is an issue with a Cisco product or with a solution partner product, just call us. Our experts are the primary point of contact and own the case from first call to resolution. Learn more about [Cisco Solution Support](#).

Product sustainability

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

Table 4. Cisco environmental sustainability information

Sustainability topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	WEEE compliance
	Information on our product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability inquiries	Contact: csr_inquiries@cisco.com
	Operating and nonoperating conditions	Product specifications
Material	Product packaging weight and materials	Contact: environment@cisco.com

Product environmental information

Product environmental information for users per Commission Regulation (EU) 2019/424
<https://www.cisco.com/web/dofc/23906225.pdf>.

Cisco and partner services

Cisco and our industry-leading partners deliver services that can accelerate your transition to a Cisco UCS X-Series Modular System solution. Cisco Unified Computing Systems Services can help you create an agile infrastructure, accelerate time to value, reduce costs and risks, and maintain availability during deployment and migration. After deployment, our services can help you improve performance, availability, and resiliency as your business needs evolve and help you further mitigate risk. For more information, visit <https://www.cisco.com/go/unifiedcomputingservices>.

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](#).

Document history

New or revised topic	Described in	Date
Support for 5 th Gen Intel® Xeon® Scalable Processors with 5600MT/s DDR5	Product Specifications	December 14, 2023