

Refurbished CISCO DS-C9148T-24EK9 Datasheet

CISCO > STORAGE-NETWORKING

Cisco MDS 9100 Series Multilayer Fabric Switches

Product specifications

Protocols

Fibre Channel standards

FC-PH, Revision 4.3 (ANSI INCITS 230-1994)
FC-PH, Amendment 1 (ANSI INCITS 230-1994/AM1-1996)
FC-PH, Amendment 2 (ANSI INCITS 230-1994/AM2-1999)
FC-PH-2, Revision 7.4 (ANSI INCITS 297-1997)
FC-PH-3, Revision 9.4 (ANSI INCITS 303-1998)
FC-PI, Revision 13 (ANSI INCITS 352-2002)
FC-PI-2, Revision 10 (ANSI INCITS 404-2006)
FC-PI-3, Revision 4 (ANSI INCITS 460-2011)
FC-PI-4, Revision 8 (ANSI INCITS 450-2008)
FC-PI-5, Revision 6 (ANSI INCITS 479-2011)
FC-PI-6 (ANSI INCITS 512-2015)
FC-FS, Revision 1.9 (ANSI INCITS 373-2003)
FC-FS-2, Revision 1.01 (ANSI INCITS 424-2007)
FC-FS-2, Amendment 1 (ANSI INCITS 424-2007/AM1-2007)
FC-FS-3, Revision 1.11 (ANSI INCITS 470-2011)
FC-FS-4
FC-LS, Revision 1.62 (ANSI INCITS 433-2007)
FC-LS-2, Revision 2.21 (ANSI INCITS 477-2011)
FC-LS-3, Includes revision 3.53
FC-SW-2, Revision 5.3 (ANSI INCITS 355-2001)
FC-SW-3, Revision 6.6 (ANSI INCITS 384-2004)
FC-SW-4, Revision 7.5 (ANSI INCITS 418-2006)
FC-SW-5, Revision 8.5 (ANSI INCITS 461-2010)
FC-SW-6
FC-GS-3, Revision 7.01 (ANSI INCITS 348-2001)
FC-GS-4, Revision 7.91 (ANSI INCITS 387-2004)
FC-GS-5, Revision 8.51 (ANSI INCITS 427-2007)
FC-GS-6, Revision 9.4 (ANSI INCITS 463-2010)
FC-GS-7, Includes revision 10.8
FCP, Revision 12 (ANSI INCITS 269-1996)
FCP-2, Revision 8 (ANSI INCITS 350-2003)
FCP-3, Revision 4 (ANSI INCITS 416-2006)
FCP-4, Revision 2b (ANSI INCITS 481-2011)
FC-SB-2, Revision 2.1 (ANSI INCITS 349-2001)
FC-SB-3, Revision 1.6 (ANSI INCITS 374-2003)
FC-SB-3, Amendment 1 (ANSI INCITS 374-2003/AM1-2007)
FC-SB-4, Revision 3.0 (ANSI INCITS 466-2011)
FC-SB-5, Revision 2.00 (ANSI INCITS 485-2014)
FC-BB-6, Revision 2.00 (ANSI INCITS 509-2014)
FC-BB-2, Revision 6.0 (ANSI INCITS 372-2003)
FC-BB-3, Revision 6.8 (ANSI INCITS 414-2006)
FC-BB-4, Revision 2.7 (ANSI INCITS 419-2008)
FC-BB-5, Revision 2.0 (ANSI INCITS 462-2010)
FC-VI, Revision 1.84 (ANSI INCITS 357-2002)
FC-SP, Revision 1.8 (ANSI INCITS 426-2007)
FC-SP-2, Revision 2.71 (ANSI INCITS 496-2012)
FAIS, Revision 1.03 (ANSI INCITS 432-2007)
FAIS-2, Revision 2.23 (ANSI INCITS 449-2008)
FC-IFR, Revision 1.06 (ANSI INCITS 475-2011)
FC-FLA, Revision 2.7 (INCITS TR-20-1998)
FC-PLDA, Revision 2.1 (INCITS TR-19-1998)
FC-Tape, Revision 1.17 (INCITS TR-24-1999)
FC-MI, Revision 1.92 (INCITS TR-30-2002)
FC-MI-2, Revision 2.6 (INCITS TR-39-2005)
FC-MI-3, Revision 1.03 (INCITS TR-48-2012)
FC-DA, Revision 3.1 (INCITS TR-36-2004)
FC-DA-2, Revision 1.06 (INCITS TR-49-2012)
FC-MSQS, Revision 3.2 (INCITS TR-46-2011)
Fibre Channel classes of service: Class 2, Class 3, and Class F
Fibre Channel standard port types: E, F, and B
Fibre Channel enhanced port types: SD, ST, and TE
FC-NVMe
In-band management using IP over Fibre Channel (RFC 2625)

	IPv6, IPv4, and Address Resolution Protocol (ARP) over Fibre Channel (RFC 4338) Extensive IETF-standards-based TCP/IP, Simple Network Management Protocol Version 3 (SNMPv3), and Remote Monitoring (RMON) MIBs
Fibre Channel ports	Fixed-switch form factor with 48 SFP+ ports base Entry-level 24-port preactivated base model with flexibility to turn on any 24 ports Incremental ports 8-ports upgrade license offers the option of upgrading to 32, 40, and 48 ports
Security	VSAN fabric isolation Intelligent packet inspection at port level Hardware zoning by Access Control Lists (ACLs) Fibre Channel Security Protocol (FC-SP) switch-to-switch authentication FC-SP host-to-switch authentication Role-based access control (RBAC) using RADIUS, TACACS+, or Lightweight Directory Access Protocol (LDAP) authentication, authorization, and accounting (AAA) functions Secure FTP (SFTP) Secure Shell Protocol Version 2 (SSHv2) Simple Network Management Protocol Version 3 (SNMPv3) implementing Advanced Encryption Standard (AES) Control-plane security Cisco TrustSec payload encryption Secure Boot and Anti-counterfeit technology
Performance	Port speed: 4-, 8-, 16-, and 32-Gbps autosensing with 32 Gbps of dedicated bandwidth per port Aggregate bandwidth of 1.5-Tbps end-to-end full duplex Buffer credits: Up to 8300 for a group of 16 ports, with a default of 500 buffer credits per port and a maximum of 8270 buffer credits for a single port in the group Port groups: 3 port groups of 16 ports each Port channel: Up to 16 load-balanced physical links grouped in one port channel
Diagnostics	Power-On-Self-Test (POST) diagnostics Online Health Management System (OHMS) diagnostics Internal loopbacks SPAN Fibre Channel traceroute Fibre Channel ping Fibre Channel debug Cisco Fabric Analyzer Syslog Port-level statistics Link diagnostics (E-port and F-port links) Read Diagnostic Parameter
Serviceability	Configuration file management Call Home Port beaconing Link cable beacon System LEDs SNMP traps for alerts
Reliability and availability	Cisco In-Service Software Upgrade (ISSU) Hot-swappable, dual redundant power supplies Hot-swappable fan tray with switch integrated temperature and power management Hot-swappable SFP+ optics Stateful process restart Any port configuration for port channels Fabric-based multipathing Per-VSAN fabric services Port tracking Virtual Router Redundancy Protocol (VRRP) for management IP interface FEC with HBA ports Buffer-to-buffer state change notification with HBA ports
Network management	Management access through 2 out-of-band Ethernet ports mgmt0: 10/100/1000BASE-T port mgmt1: 1/10G SFP+ port RS-232 serial console port USB power-on auto-provision port Access protocols Command-Line Interface (CLI) using the console and Ethernet port SNMPv3 using the Ethernet port and in-band IP over Fibre Channel access Storage Networking Industry Association (SNIA) Storage Management Initiative Specification (SMI-S) NX-API for REST full access through HTTPS REST Distributed device alias service Network security Per-VSAN RBAC using LDAP, RADIUS, and TACACS+-based AAA functions Simple File Transfer Protocol (SFTP) SSHv2 implementing AES SNMPv3 implementing AES Cisco Data Center Network Manager (DCNM)

Programming interfaces	Scriptable CLI Cisco DCNM web services API NX-API RESTful interfaces Onboard Python interpreter Cisco Embedded Event Manager (EEM) Cisco NX-OS Software scheduler
Physical dimensions (H x W x D) and weight	1 Rack Unit (1RU) (1.72 x 17.3 x 22.3 in. [4.37 x 43/9 x 56.6 cm]) excluding Power Supply Unit (PSU) and fan-tray handles 16.7 lb. (8.5 kg)
Power	80 Plus Platinum certified power supplies Power supply options 650W AC in base model, port-side exhaust variant (2 per switch) 650W AC in base model, port-side intake variant (2 per switch) Power cord IEC60320 C14 plug on 650W power supply connecting to a notched C15 socket connector (check Table 6 later in this document for power cords specific to regions) AC input: 100 to 240 VAC (10% range) Frequency: 50 to 60 Hz (nominal) Typical power consumption 217W for Idle 48-Port switch without optics modules 251W for 48-Port switch with 24 32G SW optics modules under typical conditions 297W for 48-Port switch with 48 32G SW optics modules under typical conditions Airflow Back to front (toward ports) using port-side exhaust fans Front to back (inward from ports) using port-side intake fans 50 Cubic Feet per Minute (CFM) through system fan assembly at 77°F (25°C) 100 CFM maximum
Temperature range	Temperature, ambient operating: 32 to 104°F (0 to 40°C) with port-side exhaust and intake airflow variants Temperature, ambient nonoperating and storage: -40 to 158°F (-40 to 70°C) Relative humidity, ambient (noncondensing) operating: 10 to 90% Relative humidity, ambient (noncondensing) nonoperating and storage: 10 to 95% Altitude, operating: -197 to 6500 ft (-60 to 2000m)
Approvals and compliance	Safety compliance CE Marking UL 60950 CAN/CSA-C22.2 No. 60950 EN 60950 IEC 60950 TS 001 AS/NZS 3260 IEC60825 EN60825 21 CFR 1040 EMC compliance FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55022 Class A CISPR 22 Class A AS/NZS 3548 Class A VCCI Class A EN 55024 EN 50082-1 EN 61000-6-1 EN 61000-3-2 EN 61000-3-3
Fabric services	Name server Registered State Change Notification (RSCN) Login services Fabric Configuration Server (FCS) Broadcast In-order delivery
Advanced functions	VSAN IVR Port Channel with multipath load balancing Flow- and zone-based QoS
Supported Cisco optics, media, and transmission distances	For detailed information about all supported transceivers, refer to Cisco MDS 9000 Family pluggable transceivers documentation

Base modules

Description	Part number
MDS 9148T 32G 1 RU FC switch, w/ 24	DS-C9148T-24IK9

active FC ports, 4 Fans, 2 PSU, Port Side Intake

MDS 9148T 32G FC switch 8 Port
Activation License for Base M9148T-PL8,
M9148T-PL8=

Spare modules

Description	Part number
MDS 9148T 32G 1 RU FC switch, w/ 24 active FC ports, 4 Fans, 2 PSU, Port Side Exhaust, spare	DS-C9148T-24EK9=
MDS 9148T 32G 1 RU FC switch, w/ 24 active FC ports, 4 Fans, 2 PSU, Port Side Intake, spare	DS-C9148T-24IK9=
AC PSU Port side Exhaust, spare	DS-CAC-650W-E=
AC PSU Port side Intake, spare	DS-CAC-650W-I=
MDS 9148T FAN tray, port side Exhaust, spare	DS-C32S-FAN-E=
MDS 9148T FAN tray, port side Intake, spare	DS-C32S-FAN-I=

Bundled configurations

Description	Part number
MDS 9148T 32G FC switch, w/ 24 active ports + 24x32G SW Optics, 4 Fans, 2 PSUs, Port Side Exhaust	DS-C9148T-24PETK9
MDS 9148T 32G FC switch, w/ 24 active ports + 24x32G SW Optics, 4 Fans, 2 PSUs, Port Side Intake	DS-C9148T-24PITK9
MDS 9148T 32G FC switch, w/ 48 active ports + 48x32G SW Optics, 4 Fans, 2 PSUs, Port Side Exhaust	DS-C9148T-48PETK9
MDS 9148T 32G FC switch, w/ 48 active ports + 48x32G SW Optics, 4 Fans, 2 PSUs, Port Side Intake	DS-C9148T-48PITK9
MDS 9148T 32G FC switch 8 Port Activation license + 8 X 32G SW optics, spare	M9148T-PL8TE
MDS 9148T 32G FC switch 8 Port Activation license + 8 X 32G SW optics	M9148T-PL8T

Power cords

Description	Part number
Power Cord, 250VAC 10A IRAM 2073 Plug, Argentina	CAB-9K10A-AR
Power Cord, 250VAC 10A 3112 Plug, Australia	CAB-9K10A-AU
Power Cord, 250VAC 10A GB1002 Plug, China	CAB-9K10A-CH
Power Cord, 250VAC 10A CEE 7/7 Plug, EU	CAB-9K10A-EU
Power Cord, 250VAC 10A SI16S3 Plug, Israel	CAB-9K10A-ISR
Power Cord, 250VAC 10A CEI 23-16/VII	CAB-9K10A-IT

Plug, Italy	
Power Cord, 125VAC 13A KSC8305 Plug, Korea	CAB-9K10A-KOR
Power Cord, 250VAC 10A SABS 164/1 Plug, South Africa	CAB-9K10A-SA
Power Cord, 250VAC 10A, Straight C15, MP232 Plug, SWITZ	CAB-9K10A-SW
Power Cord, 125VAC 15A CNS10917-2, Taiwan	CAB-9K10A-TWN
Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK	CAB-9K10A-UK
Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	CAB-9K12A-NA
Power Cord, 250VAC 10A, Brazil	CAB-250V-10A-BR
Cabinet Jumper Power Cord, 250 VAC 13A, C14-C15 Connectors	CAB-C15-CBN
Cabinet Jumper Power Cord, 250 VAC 13A, C14-C15 Connectors, China, Republic of Korea	CAB-C15-CBN-CK
Cabinet Jumper Power Cord, 250 VAC 13A, C14-C15 Connectors, EU, Russian Federation, Belarus, Kazakhstan and Australia	CAB-C15-CBN-EURA

Transceivers

Description	Part number
32G FC Shortwave Optics	DS-SFP-FC32G-SW
32G FC Longwave Optics	DS-SFP-FC32G-LW=
16G FC Shortwave Optics	DS-SFP-FC16G-SW
16G FC Longwave Optics	DS-SFP-FC16G-LW=
8G FC Shortwave Optics	DS-SFP-FC8G-SW=
8G FC Longwave Optics	DS-SFP-FC8G-LW=

System requirements

Item	Requirement
Cisco NX-OS Software for switch	Cisco MDS NX-OS 8.3(1) or later
Cisco Data Center Network Manager	Cisco DCNM 11(0) or later

Accessories

Description	Part number
MDS 9148T Accessory Kit for Cisco	DS-9148T-KIT-CSCO
MDS 9148T Accessory Kit for Cisco, spare	DS-9148T-KIT-CSCO=
MDS 9148T Accessory Kit for Dell/EMC	DS-9148T-KIT-EM
MDS 9148T Accessory Kit for HDS	DS-9148T-KIT-HDS

The next steps...

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