Dell Networking C-Series

C150 and C300 Aggregation / Core Chassis Switches

High-density line-rate, non-blocking GbE and 10 GbE switches; affordable PoE enabled GbE ports; modular Dell Force10 Operating System (FTOS) software delivers inherent stability; in-service diagnostics and traffic visibility tools increase control of network.

C-Series Resilient Switches

The Dell C-Series are resilient chassis-based switches that deliver reliability, network control and scalability. The C-series is designed to support GbE and 10GbE switch aggregation for enterprise campus and business wiring closets, while also supporting GbE server aggregation for data centers. Comprehensive management capabilities make the C-Series a cost-effective and flexible deployment option.

Key applications

- Low cost 100/1000 Mbps server aggregation for small-to medium-sized data centers (100s to 1,000s of servers)
- Scalable GbE aggregation and 10 Gigabit Ethernet transport in a carrier's Middle Mile network to enable the deployment of triple play services
- High density GbE aggregation into a multiple Gbps or 10 GbE backbone
- Cost-effective, scalable PoE-enabled wiring closet aggregation of VoIP phones, wireless access points, or other IEEE 802.3af-compliant devices

Key features

The Dell C-Series is designed to provide inherent reliability, network control, and scalability for high performance Ethernet environments.

- Up to 384 line-rate 10/100/1000Base-T ports with full 15.4 W Class 3 PoE support in a 13-RU chassis
- Up to 64 line-rate, non-blocking 10 GbE ports with plug-gable XFP modules
- Suite of security, access control and wiring closet edge features for enterprise networks

- PowerSmart™ intelligent power management features provide automatic sensing, provisioning and management of PoE power
- Full complement of standards-based Layer 2, IPv4 and IPv6 features for unicast and multicast applications
- 5 microsecond switching latency under full load for 64 byte frames
- Switch fabric capacity of up to 1.536 Tbps and up to 952 Mpps L2/L3 packet forwarding capacity
- High availability architecture
  - 1+1 Route Processor Module (RPM) design
  - Continuous runtime data plane monitoring and advanced in-service CLI diagnostic functions
  - Power supply redundancy with load sharing power bus enabling uninterrupted VoIP calls during a power supply failure

Scalable, cost-effective aggregation chassis for data center networks and enterprise campus.

Specifications: C-Series Resilient Enterprise Switches

Dell SKU Description

C-Series chassis
C150 4-slot chassis* with 3 AC power supplies
C150 4-slot chassis* with 1 AC power supply
C150 4-slot chassis* with 3 AC power supplies, & variable speed fan
C150 4-slot chassis* with 1 AC power supply, & variable speed fan
C300 8-slot chassis* with 4 AC power supplies
C300 8-slot chassis* with 2 AC power supplies
C300 8-slot chassis* with 4 AC power supplies, & variable speed fan
C300 8-slot chassis* with 2 AC power supply, & variable speed fan
*Chassis includes backplane, switch and route processor module and fan subsystem.

Fans
C150 enhanced fan subsystem
C300 enhanced fan subsystem

Line cards
Switch Fabric and Route Processor Module
8-port 10 Gigabit Ethernet Line card SFP+ modules required
4-port 10 Gigabit Ethernet line card, XFP modules required
8-port 10 Gigabit Ethernet line card, XFP modules required
48-port Gigabit Ethernet line card, SFP modules required
48-port 10/100/1000Base-T line card with RJ45 interfaces
48-port 10/100/1000Base-T line card with RJ45 interfaces & PoE
FlexMedia line card - 36 10/100/1000Base-T RJ45 interfaces, and eight GbE interfaces
 – SFP modules required, and two 10 GbE interfaces
 – SFP+ modules required
FlexMedia line card with PoE - 36 10/100/1000Base-T RJ45 interfaces, and eight GbE interfaces
 – SFP modules required, and two 10 GbE interfaces
 – SFP+ modules required

Redundant power supply
1200 W AC Power Supply Module

Optics/Transceivers
XFP, 10GbE, CX4, 15m Reach
XFP, 10GbE, SR/SW, 850nm Wavelength, 300M Reach
XFP, 10GbE, LR/LW, 1310nm Wavelength, 10km Reach
XFP, 10GbE, ER/EW, 1550nm Wavelength, 40km Reach
SFP, 100BASE-FX, 1310nm Wavelength, 2km Reach
SFP, 1000BASE-T
SFP, 1000BASE-SX, 850nm Wavelength, 550m Reach
SFP, 1000BASE-LX, 1310nm Wavelength, 10km Reach
SFP, 1GbE, ZX, 1550nm Wavelength, 80km Reach typical on 9/125um SMF
SFP+, 10GbE, SR, 850nm Wavelength, 300m Reach
SFP+, 10GbE, LR, 1310nm Wavelength, 10km Reach
SFP+, 10GbE, ER, 1310nm Wavelength, 40km Reach

Cables
10GBASE-CX4, 1 Meter
10GBASE-CX4, 3 Meters
10GBASE-CX4, 5 Meters
10GBASE-CX4, 10 Meters

Chassis models

C300 – 8 line card slots
2 Route processor module with integrated switch fabric slots
8 Power supply module slots and 1 fan tray slot
Size: 13 RU, 22.7 h x 17.4 w x 14.4" d (57.66 h x 44.2 w x 37.58 cm d)
Weight with factory-installed components: 55 lbs (24.95 kg)
Weight fully loaded: 152.27 lbs (69.07 kg)
ISO 7779 A-weighted sound pressure level: 73.8 dBA at 73.4°F (23°C)
AC power
Nominal input voltage: 100–240 VAC 50/60 Hz
 Maximum thermal output: 4,978 BTU/h (1,498 W) at 100/120 VAC
                          4,864 BTU/h (1,459 W) at 200/220 VAC
 Maximum input current per module:
   14 A at 100 VAC, 12 A at 120 VAC, 7 A at 200 VAC, 6 A at 240 VAC
 Maximum system power input:
   8.7 KVA at 100/120 VAC, 8.5 KVA at 200/240 VAC
 Maximum power consumption:
   8,675 W at 100/120 VAC, 8,476 W at 200/240 VAC

C150 – 4 line card slots
2 Route processor module with integrated switch fabric slots
6 Power supply module slots and 1 fan tray slot
Size: 9 RU, 15.7 h x 17.5 w x 15.3" d (39.88 h x 44.45 w x 38.86 cm d)
Weight with factory-installed components: 38 lbs (17.24 kg)
Weight fully loaded: 86.63 lbs (39.29 kg)
ISO 7779 A-weighted sound pressure level: 69.3 dBA at 73.4°F (23°C)
AC power
Nominal input voltage: 100–240 VAC 50/60 Hz
 Maximum thermal output: 2,891 BTU/h (862 W) at 100/120 VAC
                         2,824 BTU/h (840 W) at 200/220 VAC
 Maximum input current per module:
   14 A at 100 VAC, 12 A at 120 VAC, 7 A at 200 VAC, 6 A at 240 VAC
 Maximum system power input:
   4.5 KVA at 100/120 VAC, 4.4 KVA at 200/240 VAC
 Maximum power consumption:
   4,420 W at 100/120 VAC, 4,319 W at 200/240 VAC

Common attributes to both chassis
19" front rack mountable
Maximum operating specifications:
 Temperature: 32° to 104°F (0° to 40°C)
 Altitude: no performance degradation to 10,000 feet (3,048 meters)
 Relative humidity: 5 to 85% (RH), non-condensing
Maximum non-operating specifications:
 Temperature: -40° to 158°F (-40° to 70°C)
 Maximum altitude: 15,000 feet (4,572 meters)
 Relative humidity: 5 to 95% (RH), non-condensing

Redundancy/Availability
1+1 redundant Switch Fabric & Route Processor Modules (RPM)
C300: 2+1 redundant system AC Power Supply Modules
  4+1 redundant PoE Power Supply Modules supporting up to 384 PoE ports at 15.4 W with deterministic failure mode
C150: 1+1 redundant system AC Power Supply Modules
  2+2 redundant PoE Power Supply Modules supporting up to 192 PoE ports at 15.4 W with deterministic failure mode
Online insertion and removal of all components
Environmental self-monitoring

Performance
MAC addresses: C150: 256K, C300: 512K
IPv4 routes: 12K
IPv6 routes: 6K
Switching fabric capacity: C150: 768 Gbps (476 Mpps)
                              C300: 1,536 Tbps (952 Mpps)
Link aggregation: 8 links per group, 128 groups per chassis
Queues per port: 4 queues
VLANs: 1024 VLANs with 4096 tag value support
Line-rate Layer 2 switching: all protocols, including IPv4 and IPv6
Line-rate Layer 3 routing: IPv4 and IPv6
LAG load balancing: based on Layer 2, IPv4 or IPv6 headers
Switching latency: <5 μs for 64 byte frames

IEEE Compliance

802.1AB	LLDP
802.1D	Bridging, STP
802.1p	L2 Prioritization
802.1Q	VLAN Tagging, Double VLAN Tagging, GVRP
802.1s	MSTP
802.1w	RSTP
802.1X	Network Access Control
802.3ab	Gigabit Ethernet (1000BASE-T)
802.3ac	Frame Extensions for VLAN Tagging
802.3ad	Link Aggregation with LACP
802.3ae	10 Gigabit Ethernet (10GBASE-X)
802.3af	Power over Ethernet
802.3ak	10 Gigabit Ethernet (10GBASE-CX4)
802.3i	Ethernet (10BASE-T)
802.3u	Fast Ethernet (100BASE-FX, 100BASE-TX)
802.3x	Flow Control
802.3z	Gigabit Ethernet (1000BASE-X)
ANSI/TIA-1057	LLDP-MED
Force10	FRRP (Force10 Redundant Ring Protocol)
Force10	PVST+
MTU	9,252 bytes

RFC and I-D Compliance

General Internet Protocols

768	UDP	1350	TFTP
793	TCP	2474	Differentiated Services
854	Telnet	3164	Syslog
959	FTP	draft-ietf-bfd-base-03	BFD
1321	MD5		

General IPv4 Protocols

791	IPv4	1812	Routers
792	ICMP	1858	IP Fragment Filtering
826	ARP	2131	DHCP (server and relay)
1027	Proxy ARP	2338	VRRP
1035	DNS (client)	3021	31-bit Prefixes
1042	Ethernet Transmission	3046	DHCP Option 82
1191	Path MTU Discovery	3069	Private VLAN
1519	NTPv3	3128	Tiny Fragment Attack Protection
1542	CIDR		
1542	BOOTP (relay)		

General IPv6 Protocols

1981	Path MTU Discovery (partial)	2464	Ethernet Transmission
2460	IPv6	2675	Jumbograms
2461	Neighbor Discovery (partial)	3587	Global Unicast Address Format
2462	Stateless Address Autoconfiguration	4291	Addressing
2463	ICMPv6		

RIP

1058	RIPv1	2453	RIPv2

OSPF

1587	NSSA	2740	OSPFv3
2154	MD5	3623	Graceful Restart
2328	OSPFv2	4222	Prioritization and Congestion Avoidance
2370	Opaque LSA		

BGP

1997	Communities	2842	Capabilities
2385	MD5	2858	Multiprotocol Extensions
2439	Route Flap Damping	2918	Route Refresh
2545	Multiprotocol Extensions for IPv6	3065	Confederations
		4360	Extended Communities
2796	Route Reflection	4893	4-byte ASN
draft-ietf-idr-bgp4-20	BGPv4	5396	4-byte ASN Representation
draft-ietf-idr-bgp4-20	Graceful Restart		

Multicast

1112	IGMPv1	4541	IGMPv1/v2 Snooping
2236	IGMPv2		draft-ietf-pim-sm-v2-new-05
3376	IGMPv3		PIM-SM for IPv4
3569	SSM for IPv4		

Network Management

1155	SMIv1	2865	RADIUS
2385	MD5	3273	RMON High Capacity MIB
1156	Internet MIB	3376	IGMPv3
1157	SNMPv1	3416	SNMPv2
1212	Concise MIB Definitions	3418	SNMP MIB
1215	SNMP Traps	3434	RMON High Capacity Alarm MIB
1493	Bridges MIB		
1850	OSPFv2 MIB	3580	802.1X with RADIUS
1901	Community-based SNMPv2	5060	PIM MIB
			ANSI/TIA-1057
2011	IP MIB		LLDP-MED MIB
2012	TCP MIB		draft-grant-tacacs-02
2013	UDP MIB		TACACS+
2024	DLSw MIB		draft-ietf-tacacs-mib-06
2096	IP Forwarding Table MIB		BGP MIBv1
2570	SNMPv3		IEEE 802.1AB
2571	Management Frameworks		LLDP MIB, LLDP DOT1 MIB, LLDP DOT3 MIB
2572	Message Processing and Dispatching		ruzin-mstp-mib-02
2574	SNMPv3 USM		MSTP MIB (traps)
2575	SNMPv3 VACM	sFlow.org	sFlowv5
2576	Coexistence Between SNMPv1/v2/v3	sFlow.org	sFlowv5 MIB (version 1.3)
2578	SMIv2		FORCE10-BGP4-V2-MIB
2579	Textual Conventions for SMIv2		FORCE10-CS-CHASSIS-MIB FORCE10-IF-EXTENSION-MIB
2580	Conformance Statements for SMIv2		FORCE10-LINKAGG-MIB FORCE10-COPY-CONFIG-MIB
2618	RADIUS Authentication MIB		FORCE10-MON-MIB
2665	Ethernet-like Interfaces MIB		FORCE10-PRODUCTS-MIB
2674	Extended Bridge MIB		FORCE10-SMI
2787	VRRP MIB		FORCE10-SYSTEM-COMPONENT-MIB
2819	RMON MIB (groups 1, 2, 3, 9)		FORCE10-TC-MIB FORCE10-TRAP-ALARM-MIB
2863	Interfaces MIB		

Regulatory Compliance

Safety
UL/CSA 60950-1, 1st Edition
EN 60950-1, 1st Edition
IEC 60950-1, 1st Edition Including all National Deviations and Group Differences
EN 60825-1 Safety of Laser Products Part 1: Equipment Classification Requirements and User's Guide
EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems
FDA Regulation 21 CFR 1040.10 and 1040.11

Emissions
Australia/New Zealand: AS/NZS CISPR 22: 2006, Class A
Canada: ICES-003, Issue-4, Class A
Europe: EN 55022: 2006 (CISPR 22: 2006), Class A
Japan: VCCI V3/2007.04 Class A
USA: FCC CFR 47 Part 15, Subpart B, Class A

Immunity
EN 300 386 V1.3.3: 2005 EMC for Network Equipment
EN 55024: 1998 + A1: 2001 + A2: 2003
EN 61000-3-2: Harmonic Current Emissions
EN 61000-3-3:Voltage Fluctuations and Flicker
EN 61000-4-2: ESD
EN 61000-4-3: Radiated Immunity
EN 61000-4-4: EFT
EN 61000-4-5: Surge
EN 61000-4-6: Low Frequency Conducted Immunity

RoHS
All C-Series components are EU RoHS compliant.

Certifications
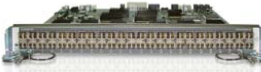TAA (Trade Agreement Act) compliant models also available

Learn more at Dell.com/Networking

	Dell Networking C-Series FlexMedia Gigabit Ethernet and 10 Gigabit Ethernet Line Card	Dell Networking C-Series Gigabit Ethernet 48-port SFP Line Card	Dell Networking C-Series 48-port 10/100/1000Base-T Line Card	Dell Networking C-Series 48-port 10/100/1000Base-T with PoE Line Card
Description	The multi-port FlexMedia line card features 36 10/100/1000Base-T ports, eight Gigabit Ethernet SFP ports, and two 10 Gigabit Ethernet SFP+ ports. This line card provides flexibility for supporting applications that require a diverse set of Gigabit Ethernet and 10 Gigabit Ethernet interfaces in the same chassis. PoE capable line card also available.	The 48-port Gigabit Ethernet line card with pluggable SFP modules support distances up to 80 km over fiber, and pluggable 1000Base-T modules support distances up to 100 m over Cat5/6 UTP. 100Base-FX SFP modules support distances up to 2 km, providing a flexible solution for applications spanning the LAN, MAN, and WAN in mixed fiber/copper and mixed speed installations.	The 48-port 10/100/1000Base-T line card provides high density networks with up to 384 line-rate, non-blocking 10/100/1000Base-T Ethernet ports in a single chassis.	The 48-port 10/100/1000Base-T line card provides IEEE 802.3af PoE support. Using intelligent power management, each chassis can provide up to 15.4 W of power per port, while maintaining full system and PoE power supply redundancy.
Key features	Standard and PoE versions of the line card support wiring closet and data center applications 36 10/100/1000Base-T interfaces with autonegotiation and auto-MDI/MDIX Eight Gigabit Ethernet interfaces with pluggable SFP modules providing support for 100Base-FX, 1000Base-SX, 1000Base-LX, 1000Base-ZX and 1000Base-T Two 10 Gigabit Ethernet interfaces with pluggable SFP+ modules providing support for 10GBase-SR and 10GBase-LR Per-port status and activity LEDs	Up to 384 line-rate, nonblocking Gigabit Ethernet ports in a single chassis Flexible solution for 100Base-FX, 1000Base-SX, 1000Base-LX, 1000Base-ZX and 1000Base-T applications 5 microsecond switching latency under full load for 64 byte frames Per-port status and activity LEDs	Up to 384 10/100/1000Base-T ports in a single chassis with Line-rate, non-blocking performance Integrated Time Domain Reflectometer (TDR) to easily monitor and isolate faults on copper wiring infrastructure 5 microsecond switching latency under full load for 64 byte frames Per-port status and activity LEDs	Up to 384 10/100/1000Base-T PoE ports in a single chassis with Line-rate, non-blocking performance Intelligent power management with PoE (IEEE 802.3af) support, provides Class 3 inline power of 15.4 watts per port Integrated Time Domain Reflectometer (TDR) to easily monitor and isolate faults on copper wiring infrastructure 5 microsecond switching latency under full load for 64 byte frames Per-port status and activity LEDs
Ports				
10/100/1000Base-T	36	none	48	48
1 GbE (Fiber)	8 SFP	48 SFP	none	none
10 GbE	2 SFP+	none	none	none
Power-over-Ethernet (PoE) ports	36 (PoE model)	none	none	48
Optics & Cables (sold separately)	Transceiver, Qualified 100Base-FX Ethernet SFP optics module, LC connector Transceiver, Qualified SX GbE SFP optics module, LC connector Transceiver, Qualified LX GbE SFP optics module, LC connector Transceiver, Qualified ZX GbE SFP optics module, LC connector Transceiver, Qualified 1000Base-T GbE SFP module, RJ45 connector) Transceiver, SFP+, 10GbE, SR, 850nm Wavelength, 300m Reach Transceiver, SFP+, 10GbE, ER, 1310nm Wavelength, 40km Reach Transceiver, SFP, 1000BASE-T	Transceiver, Qualified 100Base-FX Ethernet SFP optics module, LC connector Transceiver, Qualified SX GbE SFP optics module, LC connector Transceiver, Qualified LX GbE SFP optics module, LC connector Transceiver, Qualified ZX GbE SFP optics module, LC connector Transceiver, Qualified 1000Base-T GbE SFP module, RJ45 connector) Transceiver, SFP, 1000BASE-T		
IEEE Compliance	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ab Gigabit Ethernet (1000BASE-T) 802.3ac Frame Extensions for VLAN Tagging 802.3ae 10 Gigabit Ethernet) 802.3af Power over Ethernet 802.3i Ethernet (10BASE-T) 802.3u Fast Ethernet (100BASE-TX, 100BASE-FX) 802.3x Flow Control 802.3z Gigabit Ethernet (1000BASE-X) MTU 9,252 bytes	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ab Gigabit Ethernet (1000BASE-T) 802.3ac Frame Extensions for VLAN Tagging 802.3u Fast Ethernet (100BASE-FX) 802.3x Flow Control 802.3z Gigabit Ethernet (1000BASE-X) MTU 9,252 bytes	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ab Gigabit Ethernet (1000BASE-T) 802.3ac Frame Extensions for VLAN Tagging 802.3i Ethernet (10BASE-T) 802.3u Fast Ethernet (100BASE-TX) 802.3x Flow Control MTU 9,252 bytes	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ab Gigabit Ethernet (1000BASE-T) 802.3ac Frame Extensions for VLAN Tagging 802.3af Power over Ethernet 802.3i Ethernet (10BASE-T) 802.3u Fast Ethernet (100BASE-TX) 802.3x Flow Control MTU 9,252 bytes
Maximum Power consumption and thermal	120 W (409 BTU/h)	130 W (444 BTU/h)	100 W (341 BTU/h)	100 W (341 BTU/h)
Physical	Occupies a single slot in the Dell C150/C300 chassis Dimensions 1.75 h x 15.25 w x 13.75" d (4.45 h x 38.74 w x 34.93 cm d)			
	Weight 5.31 lbs (2.41 kg)	Weight 5.31 lbs (2.41 kg)	Weight 5.31 lbs (2.41 kg)	Weight 5.56 lbs (2.53 kg)
Max Operating Specifications	Operating Temperature: 32° to 104°F (0° to 40°C) Operating Altitude: No performance degradation to 10,000 ft (3,048 m) Operating Humidity: 5 to 85%, non-condensing			
Max Non-Operating Specifications	Operating Temperature: -40° to 158°F (-40° to 70°C) Operating Altitude: 15,000 ft (4,572 m) Operating Humidity: 5 to 95%, non-condensing			

	Dell Networking C-Series 10 Gigabit Ethernet 4-port XFP Line Card	Dell Networking C-Series 10 Gigabit Ethernet 8-port XFP Line Card	Dell Networking C-Series 10 Gigabit Ethernet 8-port SFP+ Line Card
Description	The 4-port 10 GbE line card with pluggable XFP modules, supports distances of up to 80 km. This line card provides density of up to 32 line-rate, non-blocking 10 Gigabit Ethernet ports in a single chassis.	The 8-port 10 GbE line card with pluggable XFP modules, supports distances of up to 80 km. This line card provides density of up to 64 line-rate, non-blocking 10 Gigabit Ethernet ports in a single chassis.	The 8-port SFP+ 10 Gigabit Ethernet line card delivers purpose-built performance to enhance existing infrastructure with high-density fiber communications. This line card provides cost-effective uplink capability with open-standards SFP+ operation coupled with lower TCO than XFP options. It also drives up to 64 line-rate, non-blocking 10 Gigabit Ethernet ports for high performance, non-stop networking.
Key features	Up to 32 10 GbE ports in a single chassis with Line-rate, non-blocking performance Pluggable XFP modules providing support for SR, LR, ER, ZR, DWDM and CX4 interfaces 5 microsecond switching latency under full load for 64 byte frames Per-port status and activity LEDs	Up to 64 10 GbE ports in a single chassis with Line-rate, non-blocking performance Pluggable XFP modules providing support for SR, LR, ER, ZR, DWDM and CX4 interfaces 5 microsecond switching latency under full load for 64 byte frames Per-port status and activity LEDs	Up to 64 10 GbE SFP+ ports in a single chassis with Line-rate, non-blocking performance Pluggable SFP+ modules providing support for SR, LR, ER, DWDM and CX4 interfaces 5 microsecond switching latency under full load for 64 byte frames Per-port status and activity LEDs
Ports			
10/100/1000Base-T	none	none	none
1 GbE (Fiber)	none	none	8 SFP
10 GbE	4 XFP	8 XFP	8 SFP+
Power-over-Ethernet (PoE) ports	none	none	none
Optics & Cables (sold separately)	Transceiver, Qualified SR/SW 10 GbE XFP optics module, LC connector Transceiver, Qualified LR/LW 10 GbE XFP optics module, LC connector Transceiver, Qualified ER/EW 10 GbE XFP optics module, LC connector Transceiver, Qualified ZR/ZW 10 GbE XFP optics module, LC connector Transceiver, Qualified DWDM 10 GbE XFP optics module, LC connector (100 GHz ITU grid, C-Band) Transceiver, Qualified CX4 10 GbE XFP module, CX4 connector	Transceiver, Qualified SR/SW 10 GbE XFP optics module, LC connector Transceiver, Qualified LR/LW 10 GbE XFP optics module, LC connector Transceiver, Qualified ER/EW 10 GbE XFP optics module, LC connector Transceiver, Qualified ZR/ZW 10 GbE XFP optics module, LC connector Transceiver, Qualified DWDM 10 GbE XFP optics module, LC connector (100 GHz ITU grid, C-Band) Transceiver, Qualified CX4 10 GbE	Transceiver, SFP+, 10GbE, SR, 850nm Wavelength, 300m Reach Transceiver, SFP+, 10GbE, LR, 1310nm Wavelength, 10km Reach Tranceiver, 10GbE SFP+ LRM Optic, 1310nm Wavelength, 220m reach on MMF Transceiver, SFP+, 10GbE, ER, 1310nm Wavelength, 40km Reach Transceiver, Qualified DWDM 10 GbE SFP+ optics module, LC connector (100 GHz ITU grid, C-Band) Cable, SFP+ to SFP+, 10GbE, Copper Twinax Direct Attach Cable, 0.5 Meter Cable, SFP+ to SFP+, 10GbE, Copper Twinax Direct Attach Cable,1 Meter Cable, SFP+ to SFP+, 10GbE, Copper Twinax Direct Attach Cable, 3 Meter Cable, SFP+ to SFP+, 10GbE, Copper Twinax Direct Attach Cable, 5 Meter Cable, SFP+ to SFP+, 10GbE, Copper Twinax Direct Attach Cable, 7 Meter
IEEE Compliance	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ac Frame Extensions for VLAN Tagging 802.3ae 10 Gigabit Ethernet 802.3ak 10 Gigabit Ethernet (10GBASE-CX4) 802.3x Flow Control MTU 9,252 bytes	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ac Frame Extensions for VLAN Tagging 802.3ae 10 Gigabit Ethernet 802.3ak 10 Gigabit Ethernet (10GBASE-CX4) 802.3x Flow Control MTU 9,252 bytes	802.1p L2 Prioritization 802.1Q VLAN Tagging, Double VLAN Tagging 802.3ac Frame Extensions for VLAN Tagging 802.3ae 10 Gigabit Ethernet 802.3x Flow Control MTU 9,252 bytes
Maximum Power consumption and thermal	100 W (341 BTU/h)	120 W (409 BTU/h)	120 W (409 BTU/h)
Physical	Occupies a single slot in the Dell C150/C300 chassis Dimensions 1.75 h x 15.25 w x 13.75" d (4.45 h x 38.74 w x 34.93 cm d)		
	Weight 5.31 lbs (2.41 kg)	Weight 5.31 lbs (2.41 kg)	Weight 5.31 lbs (2.41 kg)
Max Operating Specifications	Operating Temperature: 32° to 104°F (0° to 40°C) Operating Altitude: No performance degradation to 10,000 ft (3,048 m) Operating Humidity: 5 to 85%, non-condensing		
Max Non-Operating Specifications	Operating Temperature: –40° to 158°F (-40° to 70°C) Operating Altitude: 15,000 ft (4,572 m) Operating Humidity: 5 to 95%, non-condensing		