Dell PowerConnect 8100 Series

The Dell™ PowerConnect™ 8100 10-Gigabit Ethernet switches are high-density Layer 3 core and aggregation switches engineered to deliver unprecedented performance, and accelerate workloads in demanding campus and business environments. Purpose-built to deliver advanced functionality and energy-efficient operation for small and large enterprises, these switches feature high density up to 384 10-Gigabit ports, 40GbE uplinks, High Availability (HA) stacking and simplified manageability.

Purpose-built for next generation campus environments

The PowerConnect 8100 Series are line-rate, high density 10/40Gb Ethernet switches designed for Enterprise campus and mid-market core and aggregation deployments requiring high throughput and availability. These high density 24-port and 48-port 10Gb switches are ready for converged Ethernet environments supporting virtualization, iSCSI storage, and 10Gb traffic aggregation. Together with the PowerConnect 1 GbE switch portfolio, the 8100 switches enable a campus fabric composed of 1 and 10GbE ports offering full routing functionality. Up to six switches can be stacked and managed with a single IP address to deliver network performance and resiliency for enterprise networks.

Enabling network convergence

The PowerConnect 8100 Series support converged fabric requirements for SAN and LAN networks with loss-less operation for iSCSI environments with DCB (Data Center Bridging). iSCSI traffic can also be monitored at the fabric level, allowing the administrator to track active iSCSI sessions. In addition, these switches deliver simplified connectivity with Dell EqualLogic™ arrays. The iSCSI Auto-Configuration feature automatically detects the arrays and configures the switch for optimal throughput. This feature is enabled by default, streamlining the process to just connecting a cable.

10 Gb performance and high availability

The PowerConnect 8100 Series brings the benefits of 10 and 40Gb Ethernet to a compact and reliable switching platform, with the quality and great service of Dell. Operating at wire speed, the 8100 switches can deliver up to 960 Mpps throughput and a data rate of up to 1.2Tbps (full duplex) for both Layer 2 and Layer 3 environments for wire-speed 10Gb and 40Gb Switching.

The PowerConnect 8100 Series is designed for non-stop networking with high availability stacking, 10- and 40GbE capabilities, dual hot-swap, redundant power supplies, and removable fan modules. Up to 384 10GbE ports can be managed from a single screen using the highly-available stacking architecture, and the entire stack can be redundantly linked back to the rest of the network at 40Gb via the QSFP+ stacking ports.

Fast stack failover enables sub-50ms failover scenarios within the same stack. These switches also incorporate dual firmware images to allow for image promotions or image redundancy in a network.

Other key features

- Up to 64 10GbE ports of copper or fiber with module options in a 1RU form factor
- Non-stop forwarding and fast failover in stack configurations
- Converged network support for DCB, with Priority Flow Control (802.1Qbb), ETS (802.1Qaz), DCBx, iSCSI TLV Support
- IPv4 and IPv6 routing, including OSPFv1/2/3 and routing enhancements
- Private VLAN extensions and Private VLAN Edge support
- Unidirectional Link Detection (UDLD) support
- AAA Authorization, TACACS+ Accounting, and RADIUS Support for comprehensive secure access support
- Pre-defined Administrative profiles/roles for switch access to management functions
- USB auto-configuration rapidly deploys the switches in minutes without setting up complex TFTP configurations or sending technical staff to remote offices.
- Manage via a standard command line interface (CLI), embedded Web server, third party SNMP-based management console applications (including Dell OpenManage Network Manager), Telnet, or serial connections.
- Designed to be easy on campus budgets with energy savings from the power cord to the ports
- Energy Efficient Ethernet (IEEE 802.3az) ports reduce per port power consumption when link is idle or if ports are inactive
- Efficient power supplies and multi-speed fan operation help decrease cooling and power costs
- Tool-less Enterprise ReadyRails™ mounting kits reduces time and resources for switch rack installation
- Operation in environments up to 50°C, helps reduce cooling costs in temperature constrained deployments

Lifetime Warranty*

Select PowerConnect switches are backed a Lifetime Limited Warranty with Basic Hardware (repair or replacement) for life. Details at Dell.com/LifetimeWarranty

Scalable high density, Layer 3 10/40Gb Ethernet switches for aggregation and core switching in a compact 1U form factor.

*Select PowerConnect products carry a Lifetime Limited Warranty with Basic Hardware Service (repair or replacement) for life. Repair or replacement does not include troubleshooting, configuration, or other advanced service provided by Dell ProSupport™ Services. The warranty does not apply to products purchased before first announcement in Spring 2011. Dates vary by region. Contact customer service to verify if your product qualifies. For more details see www.Dell.com/Warranty.
<table>
<thead>
<tr>
<th>Technical specification</th>
<th>Dell™ PowerConnect™ 8132</th>
<th>Dell™ PowerConnect™ 8132F</th>
<th>Dell™ PowerConnect™ 8164</th>
<th>Dell™ PowerConnect™ 8164F</th>
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<tbody>
<tr>
<td><strong>Port types</strong></td>
<td>24x 10GBASE-T auto-sensing GbE switching ports; upgradable QSFP+/4x10GbE/stacking ports</td>
<td>24x SFP+ 10Gb/1Gb ports; upgradable QSFP+/4x10GbE/stacking ports</td>
<td>48x 10GBASE-T auto-sensing GbE switching ports; 2 fixed QSFP+ ports; upgradable QSFP+/4x10GbE/stacking ports</td>
<td>48x SFP+ 10Gb/1Gb ports; 2 fixed QSFP+/4x10GbE/stacking ports</td>
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<td><strong>Port configuration</strong></td>
<td>Resilient HA stacking with up to 6 switches Auto-negotiation for speed, duplex mode and flow control Auto MDI/MDIX Port mirroring Flow-based port mirroring Broadcast storm control Supports DCB requirements including PFC (802.1Qbb), ETS (802.1Qaz), DCBx, iSCSI TLV 2.2, iSCSI Optimization Up to 8,160 Routes Supported Ease-of-Use Compliant Macro for setting up storage connections Ports support 1Gb and 10Gb transceivers for SFP/SFP+ and 100Mb, 1Gb and 10GBASE-T for RJ-45 environments and 40Gb transceivers for QSFP environments</td>
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<td><strong>Management</strong></td>
<td>Web-based management interface; Industry-standard CLI accessible via Telnet, Out-of-Band Ethernet or Local Serial Port SNMPv1, SNMPv2c and SNMPv3 supported; LLDP-MED; NT; iSCSI Auto Configuration; Multiple configuration file upload/download supported; TFTPP transfers of firmware and configuration files; Dual firmware images on-board; Four RMON groups supported (history, statistics, alarms and events); Statistics for error monitoring and performance optimization including port summary tables, BootIP/DHCP IP address management supported; Syslog remote logging capabilities; Pre-defined roles for simplified administration of the switch</td>
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<td><strong>Quality of service</strong></td>
<td>Layer 2 Trusted Mode (IEEE 802.1p tagging); Layer 3 Trusted Mode (DSCP); Layer 4 Trusted Mode (TCP/UDP); Advanced Mode using Layer 2/3/4 flow-based Policies, including metering/rate limiting, marking and bandwidth guarantees; 8 Priority Queues per Port; Adjustable Weighted-Round-Robin (WRR) and Strict Queue Scheduling; Port-based QoS Services Mode; Flow-based QoS Services Mode;IPv4 and IPv6 support</td>
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<td><strong>Security</strong></td>
<td>Switch access password protection and strong password support; User-definable settings for enabling or disabling Web, SSH, Telnet, SSL management access; IP Address filtering for management access via Telnet, HTTP, HTTPS/SSL, SSH and SNMP; RADIUS and TACACS+ remote authentication for switch management access; SSLv3 and SSHv2 encryption for switch management traffic; Management access filtering via Management Access Profiles; IEEE 802.1x-based edge authentication; 802.1x monitor mode to aid in 1x troubleshooting; Up to 100 Access Control Lists (ACLs) supported with up to 1k rules per ACL, TACACS+ per-command authorization, TACACS+ accounting</td>
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<td><strong>VLAN</strong></td>
<td>IEEE 802.1Q tagging and port-based, up to 4,000 user-configurable VLANs (up to 1000 simultaneous); Private VLAN and edge extensions</td>
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<td><strong>Layer 2 multicast</strong></td>
<td>IGMP v1/v2/v3 snooping; IGMP snooping for IP multicast support; IGMP Querier PIM-SM, PIM-DM</td>
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<td><strong>Other switching features</strong></td>
<td>Link Aggregation with support for up to 72 link aggregation groups (LAGs) per switch and up to 8 member ports per LAG (IEEE 802.3ad); LACP support (IEEE 802.3ad); Support for unicast NLB (multicast NLB not supported); Jumbo frame support up to 9K</td>
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<td><strong>Availability</strong></td>
<td>Spanning Tree (IEEE 802.1D) and Rapid Spanning Tree (IEEE 802.1w) with Fast Link Support; Multiple spanning trees (IEEE 802.1s); Spanning Tree optional features – STP root guard, BPDU guard, BPDU filtering; Dual firmware images; Supports Virtual Redundant Routing Protocol (VRRP); Cable diagnostics; SFP/SFP+ transceiver diagnostics</td>
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<td><strong>Layer 3 routing protocols</strong></td>
<td>Static routes; Routing Information Protocol (RIP) v1/v2; Open Shortest Path First (OSPF) v1/v2/v3; Virtual Redundant Routing Protocol (VRRP); Classless Inter-Domain Routing (CIDR); Internet Control Message Protocol (ICMP); ICMP Router Discovery Protocol (IRDP); Address Resolution Protocol (ARP); Internet Group Management Protocol (IGMP) v1/v2/v3, Distance-Vector Multicast Routing Protocol (DVMRP); DHCP – Helper/Relay</td>
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<td><strong>Layer 3 routing performance</strong></td>
<td>Up to 512 RIP Routes Up to 8K IPv4/4K IPv6 OSPF Routes Up to 2,000 Multicast Forwarding Entries</td>
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<td><strong>Layer 3 routing performance</strong></td>
<td>Up to 4,000 ARP entries</td>
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Specifications: PowerConnect 8100 high-performance 10/40 GbE Enterprise Switches

**Dell SKU description**

**PowerConnect 8100 Series**
- PowerConnect 8132, 24x 10GbE-T ports, up to 32 ports max via optional 40GbE Module
- PowerConnect 8164, 48x 10GbE-T + 2x 40GbE base ports, up to 64 ports max via optional 40GbE Module
- PowerConnect 8164F, 48x 10GbE SFP+ ports + 2x 40GbE base ports, 64 ports max via optional 40GbE Module

**Modules**
- 10GbE-T Module - 4-port, Hot Swappable, 4x 10GbE-T ports (RS485 for Cat6 cables)
- QSFP+ 40GbE Module - 2-Port, Hot Swap, Max 8x 40GbE ports w/ breakout cables (cables not included)
- SFP+ 10GbE Module, 4-port, Hot Swappable, 4x SFP+ ports (optics or direct attach cables required)

**Redundant power supplies**
- AC Power Supply, Hot swappable

**Fans**
- Fan kit per module, I/O Panel to PSU Airflow (ports to back)

**Optics**
- Transceiver, 40G QSFP+ Short Reach Optic, 850nm Wave-length, 100-150m Reach
- Transceiver, 10G SFP, LR, Multi-mode, 30m Reach
- Transceiver, SFP+, 10GbE, LR, Single-mode, 10km Reach
- Transceiver, SFP+, 10GbE, LR-M, Multi-Mode LC-CLC, 220m Reach
- Transceiver, SFP, 1000BASE-SX, 850nm Wavelength, 550m Reach
- Transceiver, SPF, 1000BASE-LX, 1310nm Wavelength, 10km Reach

**Cables**
- 40GbE QSFP+ to 4x 10GbE SFP+ TwinAx Breakout Cable, 0.5m
- 40GbE QSFP+ to 4x 10GbE SFP+ TwinAx Breakout Cable, 1m
- 40GbE MTP (QSFP) to 4x SFP (SFP) 1m Optical Cable (optics not included)
- 40GbE QSFP+ to 4x 10GbE SFP+ TwinAx Breakout Cable, 3m
- 40GbE MTP (QSFP) to 4c SFP (SFP) 3m Optical Cable (optics not included)
- 40GbE QSFP+ to 4x 10GbE SFP+ TwinAx Breakout Cable, 5m
- 40GbE MTP (QSFP) to 4x SFP (SFP) 5m Optical Cable (optics not included)
- 40GbE QSFP+ to 4x 10GbE SFP+ TwinAx Cable, 5meters
- 40GbE MTP (QSFP) to 4x SFP (SFP) 5m Optical Cable (optics not included)
- 40GbE QSFP+ to 4x 10GbE SFP+ TwinAx Cable, 7meters
- 40GbE MTP (QSFP) to 4x SFP (SFP) 7m Optical Cable (optics not included)
- QSFP+ to QSFP+ 40GbE TwinAx Cable, 0.5 Meters
- QSFP+ to QSFP+ 40GbE TwinAx Cable, 1 Meters
- QSFP+ to QSFP+ 40GbE TwinAx Cable, 3 Meters
- QSFP+ to QSFP+ 40GbE TwinAx Cable, 5 Meters
- QSFP+ to QSFP+ 40GbE TwinAx Cable, 7 Meters
- QSFP+ to QSFP+ 40GbE TwinAx Cable, 10 Meters

**General IPv4 Protocols**
- IPv4 1981
- IPv6 626
- ARP 894
- ICMP 127
- ICMPv6 4166
- IGMP 1058
- MLD 5187

**Network Management**
- TFTP 201
- SSH 1991
- Telnet 693

**IEEE Compliance**
- 802.1D 2081
- 802.1w 2740
- 802.1Q 1383
- 802.1Qaz 3556
- 802.1q 1058
- 802.11 1213
- 802.11a 1212
- 802.11b 1157
- 802.11g 1112
- 802.11n 2740
- 802.11ac 1112

**MTU and I Pv4**
- IPv4 Multicast table size: 512
- IPv4 packet buffer memory: 9Mb
- CPU memory: 2GB

**Environmental**
- Power Consumption Max (Watts): 240W (8132); 176W (8164); 128W (8164F)
- Power Consumption Max (Watts): 395W (8164); 220W (8164F)
- Max. current draw per system: 8164F: 754.82 BTU/hr
- Max. thermal output: 8164F: 1051.62 BTU/hr
- Approximate weight: 9.03 kg (20 lb) (8132); 9.60 kg (21 lb) (8132); 9.31 kg (20 lb) (8164); 32.56 lbs (8164F)
- Approximate weight: 9.83 kg/21.67 lb (8132); 9.59 kg/21.14 lb (8132); 10.92 kg/24.07 lb (8164); 10.56 kg/23.28 lb (8164F)
- Approximate weight: 9.41 kg/20.71 lb (8164F); 9.10 kg/19.96 lb (8164)

**Regulatory and environment Compliance**
- Product meets RoHS compliance standards in many countries inclusive of USA, Canada, EU, Japan, China.
- For more country-specific regulatory information, and approvals, please see your Dell representative.

**Learn more at Dell.com/Networking**