Dell PowerConnect M8024-k 10Gb Ethernet Switch

For Dell M1000e Blade Enclosures

Expand the value of your blade investment with Dell™ PowerConnect™ M8024-k, delivering performance and scalability in a flexible package that are designed to meet the shifting demands of your business and data center as you transition to 10Gb Ethernet. Providing 10Gb Ethernet connectivity for up to sixteen M-Series blade servers equipped with the latest KR-based 10Gb network daughter cards (NDCs) or mezzanine cards, M8024-k simplifies deployment and management of M-Series blades within 10Gb Ethernet infrastructures. Not ready for 10Gb? No worries, as M8024-k supports 1Gb connections both to the server and to LAN, ensuring you'll be ready for 10Gb when the time comes. M8024-k's enhanced bandwidth, performance, and flexibility satisfy the changing demands of data centers embracing virtualization and other I/O-intensive technologies.

Connect with the benefits of virtualization

With up to twenty-four total 10GbE ports, PowerConnect M8024-k meets the high bandwidth demands placed by multi-core CPUs and server virtualization. When combined with PowerEdge M710HD blade servers featuring 10Gb Network Daughter Cards, M8024-k provides end-to-end 10Gb Fabric A connectivity and leaves room for growth or other technologies in Fabrics B and C. Supporting connectivity to M-Series' KR-based 10Gb NICs and CNAs, M8024-k opens the door to cutting edge networking features such as NIC Partitioning (NPAR), SR-IOV, and iSCSI Offload.

Simply deploy and manage

Deploy and manage 10Gb-based blade configurations simply and with minimal network admin involvement using M8024-k's default Simple Switch mode of operation, featuring port aggregation and auto-configuration when connecting to any external LAN. Alternatively, when operating in full switch mode, enjoy a shortened learning curve and seamless integration of M8024-k into existing Cisco® or other LANs using industry standard CLI (IS-CLI). These capabilities combined with enterprise-class QoS, Security, and management features, help ensure that M8024-k meets your in-chassis Ethernet switching needs both today and in the future.

Flex and grow with FlexIO

Every PowerConnect M8024-k includes sixteen internal 1/10GbE ports, as well as four integrated external 1/10GbE SFP+ ports. To ensure room to grow and change with your business, each M8024-k also includes one FlexIO bay for modular uplinks that can be added or swapped as needed down the road. Choose from 4-port SFP+, 2-port 10GBASE-T, and 3-port CX-4 FlexIO Modules to expand aggregate (bi-directional) bandwidth by up to 80 Gigabit per second.

> M8024-k provides end-to-end 10Gb Fabric A connectivity and leaves room for growth or other technologies in Fabrics B and C.

Port attributes

- Up to 24 auto-sensing 1/10Gb Ethernet switching ports available
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- 16 internal server 10Gb (KR) Ethernet ports with auto-negotiation capability to 1Gb Ethernet
- 4 external integrated 1/10Gb SFP+ Ethernet ports
- Flexible media choices for up to 4 additional 1/10Gb uplink ports with one optional FlexIO Module:
  - 4-port SFP+ 10GbE module (1/10Gb)
  - 3-port CX-4 10GbE copper module (10Gb only)
  - 2-port 10GBASE-T 10GbE copper module (1/10Gb)
- Auto-negotiation for speed, duplex mode and flow control
- Auto MDI/MDIX
- Port mirroring
- Flow-based port mirroring
- Broadcast storm control
- 10Gb (10GBASE-KR) adapters supported with M8024-k:
  - Brocade BR1741M-k mezzanine card
  - Broadcom 57712-k NDC
  - Intel X520-x/k mezzanine card
  - Future 10Gb adapters for M-Series blades
- 1Gb NICs (mezz card and LOM) are also supported

Performance

- Switch Fabric Capacity 480 Gbps aggregate bandwidth
- Forwarding Rate 357 Mpps
- Up to 16K MAC Addresses
- 512MB of CPU SDRAM
- 32MB of Flash Memory

Availability

- Spanning Tree (IEEE 802.1D) and Rapid Spanning Tree (IEEE 802.1w) with Fast Link Support
- Multiple spanning trees (IEEE 802.1s)
- Supports Virtual Redundant Routing Protocol (VRRP)

Layer 3 routing performance

- Up to 128 RIP Routing Interfaces
- Up to 128 OSPF Routing Interfaces; up to 128 OSPF Areas; up to 128 Routing Interfaces per OSPF
- Area; up to 32 routes for ECMP Routing; up to 4 next hops per ECMP
- Up to 128 VLAN Routing Interfaces
- Up to 256 Multicast Forwarding Entries
- Up to 8K ARP entries; Up to 4K NDP entries

VLAN

- VLAN support for tagging and port-based as per IEEE 802.1Q
- Double VLAN tagging (QinQ)
- Up to 1024 VLANs supported
- Dynamic VLAN with GVRP support

Quality of Service

- 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; up to 100 ACLs can be used for QoS flow identification via Class-maps
- 8 Priority Queues per Port
- Adjustable Weighted-Round-Robin (WRR) and Strict Queue Scheduling
- Port-based QoS Services Mode
- Flow-based QoS Services Mode
- Priority Flow Control (PFC)
- iSCSI Optimization based on Link Layer Discovery Protocol (LLDP)

Security options

- IEEE 802.1x based edge authentication -- supports single and multiple host access, guest access, voice authorization, and Microsoft Active Directory
- Switch access password protection
- User-definable settings for enabling or disabling Web, SSH, Telnet, SSL management access
- Port-based MAC Address alert and lock-down
- Address filtering for management access via Telnet, HTTP, HTTPS/SSL, SSH and SNMP
- RADIUS and TACACS+ remote authentication for switch management access
- Up to 100 Access Control Lists (ACLs) supported; up to 127 rules per ACL; up to 28 Access Control Entries (ACEs) per ACL
- SSLv3 and SSHv2 encryption for switch management traffic
- Management access filtering via Management Access Profiles

Other switching features

- Link Aggregation with support for up to 8 static aggregated links, 8 dynamic aggregated links per switch and up to 8 member ports per aggregated link; LACP support (IEEE 802.3ad)

Management

- Default mode of operation is Simple Switch (port aggregator) mode to allow auto configuration of complex network settings
- User configurable to fully managed switch mode
- Web-based management interface
- Industry-standard CLI accessible via Telnet or Local Serial Port
- SNMPv1, SNMP v2c and SNMPv3 supported
- 4 RMON groups supported (history, statistics, alarms and events)
- TFTP transfers of firmware and configuration files
- Dual Firmware images
- Multiple Configuration file upload/download supported
- Statistics for error monitoring and performance optimization including port summary tables
- BootP/DHCP IP address management supported
- Syslog remote logging capabilities

Chassis

- Single-wide I/O Module for M1000e blade enclosure
- 267 x 258 x 31mm (W x D x H)
- 10.5" x 10.2" x 1.2"
- Approximate weight: 2.7kg, 5.8 lbs

Standards supported

- RFC 1213, 1215, 1286, 1442, 1451, 1492, 1493, 1573, 1643, 1757, 1907, 2011, 2012, 2013, 2233, 2618, 2665, 2666, 2674, 2737, 2819, 2863
- IEEE 802.1AB, 802.1D, 802.1Q, 802.1p, 802.1w, 802.1x, 802.2, 802.3, 802.3l, 802.3u, 802.3x, 802.3z, 802.ab, 802.3ac, 802.3ad, 802.3ae, 802.3ak

Environmental

- Operating Temperature: 0° C to 45° C, Storage Temperature: -20° C to 70° C, Operating Relative Humidity: 10% to 90% non-condensing, Storage Relative Humidity: 10% to 95% non-condensing

Regulatory and environmental compliance

- Regulatory Model: PCM8024-k, Product Safety, EMC and Environmental, Datasheets, Dell Regulatory Compliance Home Page, Dell and the Environment

Learn more at www.Dell.com/powerconnect