

Nortel Layer 2/3 10Gb Uplink Ethernet Switch Module for IBM BladeCenter



This switch module delivers multiple 10Gb Ethernet connections to the BladeCenter chassis.

Highlights

- *Unleash high-bandwidth and time-sensitive applications such as VOIP and IPTV with 10 Gbps uplinks*
- *Maintain system uptime with high availability and proven resilience*
- *Simplify deployment and help reduce costs by integrating Layer 2-3 LAN switching and routing into the IBM BladeCenter® chassis*
- *Help meet stringent requirements of both enterprise and telecom-communications environments*

The answer for bandwidth-hungry applications

Networks are changing. Voice, video, storage and data are fast converging to form a single backbone, and the need for more bandwidth is growing by the day. As the demands of mission-critical and real-time applications continue to expand, IT infrastructures must offer higher processing capabilities in order to keep up. Because existing switch architectures can't handle the data throughput required for these applications, they are fast becoming bottlenecks.

IBM delivers the answer for bandwidth-hungry applications—the Nortel Layer 2/3 10Gb Uplink Ethernet Switch Module (10Gb ESM). This switch provides up to 45 Gbps non-blocking, line-speed bandwidth to meet your application requirements. With three 10Gb uplink ports that can be trunked together—and 15 non-blocking Gigabit Ethernet ports—the 10Gb ESM offers performance with room to spare for growing application needs.

Visit

ibm.com to locate an IBM reseller or for more information.

Nortel Layer 2/3 10Gb Uplink Ethernet Switch Module at a glance features

Interface options

Uplinks:	4 Ports: 3 10G (2 CX4, 1 XFP) and 1 1G RJ-45 SFP) used for management or data
Internal ports:	2 Ports: 100Base-T management ports
	14 Ports: 1000Base-CX to servers

Performance

Full Line rate performance:	45 Gbps
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Availability/Resiliency

- Ready for mission-critical applications
- Link Trunk Failover, NIC teaming
 - IEEE 802.1 (s, d, w, q and ad)
 - UplinkFast and Cisco Port Fast compatibility
 - VRRP (RFC2338 + Nortel active-active extension)
 - Cisco EtherChannel compatibility
 - Broadcast storm control
 - User configurable hashing options for LACP
 - SMAC
 - DMAP
 - SIP
 - DIP

MAC Addresses

Up to 16K MAC addresses provide flexibility and scalability as the number of discrete devices increase in network.

VLANs

- Customizable Virtual LAN support
- 1024 configurable VLANs (802.1Q)
 - Protocol-based VLANs
 - GVRP-Dynamic VLAN creation on 802.1Q trunks

Traffic Management and Routing

- Optimized for best performance
- OSPF v2 (RFC 2328) with ECMP, OSPF (RFC 3101)
 - BGP 4, RIPv1, RIPv2
 - DHCP/BootP Relay (RFC 3046)
 - QoS (metering, remarking, DSCP/CoS)
 - IEEE 802.1p (Priority Queues), IEEE 802.3x Flow Control
 - IGMPv1 (RFC 1112) Multicast Snooping, IGMPv2 (RFC 2236) Multicast Snooping
 - IGMP Filtering, IP Forwarding
 - Jumbo Frame (9K), Static Routing
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Nortel Layer 2/3 10Gb Uplink Ethernet Switch Module at a glance features

Security

- Filtering based on:
 - 802.1x port authentication
 - MAC and IP address (source, destination)
 - Application type (Telnet, FTP, SMTP, etc.)
 - IP address range or TCP port range
- HTTPS
- SSH v1/v2 and SNMP v1-3
- RADIUS (authentication and accounting) and TACACS+

Command Line Interface

- Dual CLI:
- Industry-based CLI (compatible with Cisco)
 - Nortel Alteon AOS CLI

Cluster Management

- Cluster of switches can be managed from one central location
- Group configuration downloads
 - Group image downloads
 - Scheduled downloads

Highly Secure Management

- Flexible and highly secure
- Automatic chassis detection
 - Management via CLI, telnet, Web, SNMP v1
 - Highly secure management via HTTPS, SSH v1/v2, SNMP v1-3
 - Dual software images
 - Element Management System (EMS) for cluster management
 - Upgrade via TFTP, FTP and serial download
 - Network Time Protocol (Multiple servers)
 - Port Mirroring
 - Detailed statistics and switch diagnostics

Configuration Tracking

- Complete logging of all changes
- Identification of the user, time and date stamp, parameters changed (both old and new settings)
 - Changes attempted and denied
 - Local log with option to export data to a remote server, system log or other utility in real time
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For more information

U.S.	ibm.com/systems/bladecenter
Canada	ibm.com/systems/can/en/bladecenter



Simplified deployment, management and security

By collapsing the networking access layer and aggregation layers into one, this switch module can help businesses lower their total cost of ownership. How? Traditional blade Ethernet switches are only used to provide access to the “aggregation/edge switches” from the chassis. These aggregation switches perform all the advanced features, including routing and filtering. But the 10Gb ESM next-generation blade switch provides full L2 and L3 capabilities, including OSPF and VRRP dynamic routing, alleviating the need for aggregation layer switches. And of course, fewer discrete devices in a network means fewer potential points of failure, less time spent on management and potentially lower procurement costs.

Integration

Seamless, standards-based integration into existing Cisco and other networks helps reduce downtime and learning curve.

Compatibility/scalability: Designed to work in current BladeCenter chassis along with existing Ethernet switches or in the next-generation BladeCenter H and BladeCenter T chassis—helping protect your investment.

Portfolio expansion: Common look and feel among Nortel switches (L2/3, L4-7), as well as an industry-based Command Line Interface (CLI, Cisco-compatible) helps administrators minimize the learning curve for new platforms.

Easy upgrades: Software can be upgraded easily through Web User Interface, TFTP, telnet or serially.

Enhanced security and traffic management: Easy to configure filters help secure traffic in L2 and L3 passing through the 10Gb ESM by allowing or denying traffic based on MAC addresses, IP addresses and TCP/UDP ports. Dedicated VLAN for management traffic between the management module and the switch improves the overall performance, keeping the management traffic separate.

Maintain high availability

Because these 10Gb ESMs offer integrated, high-availability support in both Layer 2 and 3, they help minimize single points of failure, enabling network reliability and performance.

- *Layer 2 high availability is supported with Link Aggregation Control, Rapid Spanning Tree, Cisco UplinkFast compatibility, PortFast compatibility, 802.1Q VLANs, broadcast storm control and controlled link failover with NIC. VRRP Hot-Standby further enables the effective use of Layer 2 NIC teaming.*
- *Layer 3 high availability is supported in a special extended version of VRRP that allows multiple 10Gb ESMs to process traffic in an active-active configuration. The result? All switches in the VRRP group can concurrently process traffic, enabling maximum switch performance while allowing easy failover in the unlikely event of a system problem.*

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