

BlackDiamond 20800 Series



The BlackDiamond® 20800 series Ethernet Transport switches are purpose-built for carriers deploying next-generation networks for residential triple play, business Ethernet and mobile backhaul services.

Benefits

- Graceful service expansion and increased network longevity
- Proactive service management to delight the subscriber
- Easy-to-operate, next-generation Ethernet Transport networks

Target Applications

- **Residential Triple-Play:** Aggregating Ethernet traffic from DSLAMs, PON OLTs, and active Ethernet subscribers for video, voice over IP, and high-speed Internet services over a 10 Gigabit Ethernet Transport network
- **Business Ethernet:** Metro Ethernet Forum-certified E-Line and E-LAN services with user network interfaces up to 10 GbE and Ethernet network to network interface (E-NNI) for global interconnect
- **Ethernet Mobile Backhaul:** High-performance Ethernet mobile backhaul services for synchronized communications from tower to the base station
- **Ethernet Transport:** Aggregating residential triple-play, business Ethernet and Ethernet mobile backhaul services on a common transport network that supports high-density 10 GbE today and is ready for 100 GbE in the future

Rural, regional and global carriers around the world are facing increased competition for both residential and business subscribers. To differentiate themselves, many are deploying next-generation networks to enable an array of services that fulfill subscribers' increasing expectations for an outstanding service experience.

New residential video services including HD IPTV and Video-on-Demand, business E-Line and E-LAN Ethernet services, and new Ethernet mobile backhaul services increase the urgency for deploying high-capacity, next-generation networks. As carriers offer a growing number of services on a converged transport network, optimizing the network for operational simplicity is vital.

Extreme Networks® BlackDiamond 20800 series Ethernet Transport switches are our fifth generation of Ethernet switching systems, and are purpose-built for carriers converging several high-bandwidth services onto a single scalable transport network. The BlackDiamond 20800 series Ethernet Transport switches provide advanced resilient Ethernet ring and OAM&P protocols that enable the carrier to enhance their subscribers' experience with their services. With its superior bandwidth capacity, line-rate 10 GbE port density, and 100 GbE-ready slots, the BlackDiamond 20800 series Ethernet Transport switches address the demanding challenges faced by rural, regional and global carriers worldwide.

Graceful Service Expansion and Increased Network Longevity

Extreme Networks BlackDiamond 20800 series Ethernet Transport switches are fifth-generation Ethernet systems incorporating over ten years of engineering experience. Together, the four-slot BlackDiamond 20804 and eight-slot BlackDiamond 20808 Ethernet Transport switches are a powerful combination, with software and hardware commonalities that simplify operations and lower the total cost of ownership.

Outstanding multicast performance is ensured with hardware support for multicast QoS. ExtremeXOS® provides fast channel change times, protocol-independent multicast (PIM), Provider Bridges (PB), Virtual Private LAN Services (VPLS) with the flexibility to add more high-performance protocols as standards continue to evolve. The H-QoS engine allows bandwidth control on a per-service, per-subscriber, and per-port basis.

The BlackDiamond 20800 switches share common hardware elements, including AC and DC power supplies, line-rate 8x10 GbE I/O modules, line-rate 40x1 GbE I/O modules, and management modules. This commonality lowers the total cost of ownership as the number of unique spares required to support a network is reduced. Investments in staff training are also reduced. The switches share the highest per-slot bandwidth capacity in the industry, with 120 Gbps per slot today, supporting future line-rate 100 GbE I/O modules and future switch fabric upgrades to 480 Gbps per slot. (See Table 1.)

The BlackDiamond 20808 Ethernet Transport switch packs up to 64 line-rate 10 GbE ports in a single chassis, making it ideal for high-density metro core central offices. The switching fabric supports up to 2 Tbps and has been designed for a straightforward upgrade path to support up to 5 Tbps in the future.

The BlackDiamond 20804 switch, supporting up to 32 line-rate 10 GbE ports in a single chassis, is ideal for Ethernet aggregation central offices. The switch lowers the cost of entry for next-generation network deployments, allowing small carriers a way to grow large, and larger carriers a means to move quickly into new markets.

Delight Subscribers with Proactive Service Management

Delighting subscribers requires anticipating failures and designing the network to work around faults without impacting services, and software tools for rapid service provisioning and service assurance. All Extreme Networks switches support resilient Ethernet rings using the Ethernet Automatic Protection Switching protocol (EAPS, RFC 3619), with industry-leading support for sub-tended rings, dual-node interconnect, spatial reuse and fast failover. Easy-to-use service management software provisions and maintains BlackDiamond 20800 series switches with instrumentation enabled by advanced Ethernet OAM&P including hardware support for IEEE 802.1AG continuity fault management (CFM), and ITU Y.1731 for jitter and latency measurement.

Extreme Networks provides global carrier technical assistance 24x7x365 with RMA depots around the globe. Our Global Carrier TAC and Professional Services Teams provide expertise and customized support in every phase of the network lifecycle including assistance in the assessment, design, implementation, operation, and optimization of the network as well as training.

Operational Simplicity Lowers Operational Costs

The BlackDiamond 20800 series Ethernet Transport switches are optimized for operational simplicity. Common software and hardware modules reduce the complexity of network operations, as well as training and sparring costs.

The industry-leading system capacity of the switches supports more subscribers and more high-bandwidth services with fewer network elements, simplifying network operations.

A common operating system, ExtremeXOS, simplifies operations by reducing the number of unique commands required to provision a service across multiple network elements, and by simplifying software release management in the field. A common management platform further reduces costs.

The reuse of SONET/SDH fiber topologies and related operations processes also provide operational familiarity.

Table 1 - BlackDiamond 20800 Series Ethernet Transport Switch Feature Comparison

BlackDiamond 20800 Series Differences	20804	20808
I/O Slots per Switch	4	8
Max Line Rate 10 GbE Ports per Switch	32	64
Max Line Rate 1 GbE Ports per Switch	160	320
Switches per 7' Rack	4	3
Depth	22.5 inches	27 inches

BlackDiamond 20800 Series Commonalities	20804	20808
10 GbE Ports per I/O Module	8	8
1 GbE Ports per I/O Module	40	40
Module Compatibility	40 x GbE; 8 x 10 GbE Management Module AC & DC Power Supplies	40x GbE; 8 x 10 GbE Management Module AC & DC Power Supplies
PSU Type Supported	AC or DC	AC or DC
Bandwidth per Slot	120G	120G
Future Bandwidth per Slot	480G	480G
Operating System	ExtremeXOS	ExtremeXOS
CPU Redundancy	1:1	1:1
Fabric Redundancy	N + 1	N + 1
PSU Redundancy	N + 1	N + 1
Fan Tray Redundancy	1:1	1:1
Switch Fabric Slots	5	5



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