

The background of the slide features two server racks filled with network switches. The rack on the left is a BlackDiamond 6808 chassis, and the rack on the right is a BlackDiamond 6816 chassis. The switches are densely packed with ports and cables. The overall aesthetic is professional and technical, with a light blue and white color scheme.

BlackDiamond™ 6808 6816

BlackDiamond 6808 and 6816 Switches

The BlackDiamond 6808 and 6816 chassis are uniquely designed with carrier-class fault tolerance for IP data networks that require the highest level of availability as well as scalability from 10/100BASE-T to 1 Gigabit and Ten Gigabit Ethernet. Both switches provide wire-speed Layer 2 and Layer 3 switching for consistent performance regardless of traffic patterns or network load.

BlackDiamond 6808

- The BlackDiamond 6808 supports up to 64 Gigabit Ethernet ports when populated with the 8-port G8Xi or G8Ti modules, and 96 Gigabit Ethernet ports when populated with the G12SXi module.
- The BlackDiamond 6808 supports a maximum of 576 10/100 Mbps ports when fully populated with the F96Ti, or 224 100BASE-FX ports with fully populated with the F32F module.

BlackDiamond 6816

- The BlackDiamond 6816 leads the industry in density with up to 192 Gigabit Ethernet ports in a single chassis.
- The BlackDiamond 6816 supports a maximum of 1,152 10/100BASE-TX ports when fully populated with the F96Ti. In addition, when fully populated with the F48Ti, the BlackDiamond chassis will accommodate a maximum of 768 10/100BASE-TX ports, or 448 100BASE-FX ports when fully populated with the F32F module.
- The BlackDiamond 6816 supports a maximum of 128 Gigabit Ethernet ports when fully populated with the G8Xi and G8Ti modules, or 192 Gigabit Ethernet ports when fully populated with the G12SXi modules.
- Passive backplane supports dual-redundant, load-sharing and hot-swappable switch fabric modules
- Quad-redundant management CPUs
- Most advanced resiliency and fault tolerance:
 - Redundant load-sharing Management Switch fabric Modules
 - Hot-swappable modules, power supplies and fan tray
 - Fully redundant, load-sharing power supplies
 - Dual switch configurations and ExtremeWare images
 - Extreme Standby Router Protocol (ESRP™)
 - OSPF Equal Cost Multipath Routing (ECMP)
- WDM optical broadband networking
- MPLS Edge routing (PoS) and BGP4
- Policy-Based QoS including prioritization, bandwidth management and congestion control
- Wire-Speed IP/IPX Routing and wire-speed switching
- Wire-Speed server load balancing, web cache redirection, VLAN switching and routing, DiffServ and IEEE 802.1p and IETF DiffServ
- 4,096 IEEE 802.1Q VLANs
- IEEE 802.3ad link aggregation, and redundant PHY
- Access control lists Access profiles, RADIUS, SSH2, and network login
- Extensive management via local and remote (telnet) CLI, SNMP, RMON and HTTP
- Switch and route jumbo frames
- Industry-leading Layer 3 switching performance, availability and port density
 - 6808 Non-blocking 128 Gbps backplane yields over 96 million packet per second throughput
 - 6816 Non-blocking 256 Gbps backplane yields over 192 million packet per second throughput
- Reduction in network complexity and cost of ownership, plus scaling performance and increased resiliency
 - 6808 96 100BASE-X, 576 10/100BASE-TX or 224 100BASE-FX ports in a single 6808 chassis
 - 6816 192 100BASE-T or 192 100BASE-X ports, 1,152 10/100BASE-TX ports, or 448 100BASE-FX ports in a single 6816 chassis

6808 BlackDiamond™ 6816 Product Specifications

Performance

BlackDiamond 6808

128 Gbps non-blocking bandwidth
Route/filter/forward 96 million pps

BlackDiamond 6816

256 Gbps non-blocking bandwidth

Protocols and Standards

RIP
RFC 1058 RIP v1
RFC 1058 RIP v2
OSPF
RFC 2328 OSPF v2
RFC 1587 OSPF NSSA
RFC 2154 OSPF w/ Digital Signatures (password, MD-5)
BGP4
RFC 1771 BGP4
RFC 1965 AS Confederations for BGP
RFC 1966 BGP Route Reflection
RFC 1997 BGP Communities Attribute
RFC 1745 BGP/OSPF Interaction
IP Multicast
RFC 2362 PIM-SM
PIM-DM Draft IETF PIM-DM v2-dm-03
RFC 1122 DVMRP Host Requirements
DVMRP v3 Draft IETF DVMRP v3-07
RFC 2236 IGMP v2
IGMP with Configurable Router Registration Forwarding
General Routing
RFC 1812 Router Requirements
RFC 1519 CIDR
RFC 1256 IRDP Router Discovery
RFC 783 TFTP
RFC 951 BootP
RFC 2131 BootP/DHCP Helper
RFC 1591 DNS (client operation)
RFC 1122 Host Requirements
RFC 768 UDP
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
Extreme Standby Router Protocol™ (ESRP™)

Policy-Based Quality of Service

IEEE802.1D-1998 (802.1p) Packet Priority
RFC 2474 DiffServ Precedence
RFC 2598 DiffServ Expedited Forwarding
RFC 2597 DiffServ Assured Forwarding
RFC 2475 DiffServ Core and Edge Router Functions
Bidirectional Rate Shaping
Layer 1-4, Layer 7 (user name) Policy-Based Mapping
Policy-Based Mapping/Overwriting of DiffServ code points and 802.1p priority
VLANs
IEEE802.1Q VLAN Tagging
IEEE802.3ad Draft - static configuration
GVRP (Generic VLAN Registration Protocol)
Port, MAC, and Protocol-sensitive

Management and Security

Management

RFC 1157 SNMP v1/v2c
RFC 1907 SNMP v2
RFC 1757 RMON 4 groups: Statistics, History, Alarms, and Events
RFC 2021 RMON2 (probe config)
RFC 2668 MAU
RFC 1493 Bridge MIB
RFC 1213 MIB-II
RFC 2037 Entity MIB
RFC 2233 Interface MIB
RFC 2096 IP Forwarding
RFC 1724 RIP v2 MIB
ExtremeWare Private MIB (include ACL, QoS and VLAN config)
RFC 1866 HTML
RFC 2068 HTTP
RFC 854 Telnet
HTML and Telnet Management
Configuration logging
Multiple ExtremeWare images and configurations
Multiple syslog servers
999 Local Messages (criticals stored across reboots)
RFC 1769 v3 Simple Network Time Protocol

Security

FIPS-186 (Federal Information Processing Standards Publication 186) SSH2
RFC 1851 3DES-CBC cipher
RFC 2792 DSA key exchange
TACACS+
RFC 2138 RADIUS
RFC 2139 RADIUS Accounting
Access Profiles on All Routing Protocols
Access Profiles on All Management Methods
Denial of Service Protection
RFC 267 Network Ingress Filtering
RPF (Unicast Reverse Path Forwarding) control
Wire-speed ACLs
Rate Limiting by ACLs
IP Broadcast Forwarding Control
ICMP and IP-Option Response Control
Server Load Balancing with Layer 3, 4 Protection of Servers
SYN attack protection
Unidirectional Session Control

Physical Dimensions

BlackDiamond 6808

(H) 26.25 in x (W) 17.32 in x (D) 18 in
(H) 66.68 cm x (W) 43.99 cm x (D) 45.72 cm
Weight – Empty: 60 lbs (27 kg)
Weight – Fully loaded: 170 lbs (76.5 kg)
Weight – One AC power supply: 30 lbs (13.5 kg)
Weight – One module: 5 lbs (2.25 kg)

BlackDiamond 6816

(H) 61.25 in x (W) 19 in x (D) 19 in
(H) 155.57 cm x (W) 48.26 cm x (D) 48.26 cm
Weight – Empty: 75.4 lbs
Weight – Loaded: 360 lbs (160 kg)
Weight – One AC power supply: 30 lbs (13.5 kg)
Weight – One MSM blade: 5.8 lbs (2.61 kg)
Weight – One F48Ti blade: 7.35 lbs (3.31 kg)
Weight – One fan tray: 7.2 lbs (3.24 kg)
Weight – One backplane: 70 lbs (31.5 kg)

Heat Dissipation

Power Supply 680 watt Maximum
(2325 BTU/hr)

Input Voltage Operations:

100 - 120 VAC
and 200 - 240 VAC, autoranging

AC Line Frequency 47 Hz to 63 Hz
DC Input: -48VDC, 30 Amp
Current Rating: 100 - 120 VAC: 13 A;
200 - 240 VAC: 6.5 A

Safety

UL 1950 3rd Edition, Listed (Safety of ITE)
EN60950:1992/A1-4:1997+ZB/ZC Deviations (Safety of ITE)
IEC 950CB (Safety of ITE)
Low Voltage Directive (LVD)
CSA 22.2#950-95 (Safety of ITE)
AS/NZS 3260 (product safety standard)
EN60825-1 (Safety of Lasers Products)
FCC CFR 21 (Laser Products)

EMI/EMC

FCC CFR 47 part 15 Class A (USA EMC standard)
ICES-003A/C108.8-M1983 Class A (Canada EMC standard)
VCCI Class A (Japan EMC standard)
AS/NZS 3548 (Australia EMC standard)
EN 55022 Class A (European EMC standard)
CISPR 22 Class A (European EMC standard)
EN 50082-1:1997 includes ENV 50204 (European EMC standards)
EN 55024:1998 includes IEC 61000-4-2, 3, 4, 5, 6, 8, 11 (European EMC standards)
EN 61000-3-2, 3 (European EMC standards)
CNS 13438 Class A (BSMI-Taiwan)
Low Voltage Directive (LVD)

Environmental Requirements

Operating Temperature: 0° to 40° C
Storage Temperature: -40° to 70° C
Operating Humidity: 10% to 95% relative humidity, non-condensing
EN60068 to Extreme IEC68 schedule

Reliability

Minimum 50000 hrs MTBF to Mil HDBK 217F Notice 1, Parts Stress Method

Ordering Information

| Part Number | Description |
|-------------|---|
| 50011 | BlackDiamond 6808 10-slot chassis |
| 50015 | Management Switch Fabric Module 64 (MSM64i). Minimum of one required; maximum of two. |
| 50020 | 110 VAC Power Supply Unit (PSU). Minimum of [one 6808 two 6816]; maximum of [two 6808 four 6816]. |
| 50021 | 220 VAC Power Supply Unit (PSU). Minimum of [one 6808 two 6816]; maximum of [two 6808 four 6816]. |
| 50022 | -48 VDC Power Supply Unit (PSU). Minimum of [one 6808 two 6816]; maximum of [two 6808 four 6816]. |
| 51032 | 8-port GBIC-based (G8Xi) switch module with 8 unpopulated 1000BASE-X GBIC ports |
| 51033 | 8-port GbE module (G8Ti) with 8 auto-negotiating 100/1000BASE-T ports (RJ-45) |
| 51034 | Wavelength Division Multiplexing Module (WDMi) |
| 51040 | 12-port MT-RJ-based (G12SXi) switch module with 12 1000BASE-SX ports |
| 52011 | 48-port auto-negotiating 10/100BASE-TX (F48Ti) switch module (RJ-45) |
| 52012 | 96-port auto-negotiating 10/100BASE-TX (F96Ti) switch module (Telco) |
| 52020 | 32-port 100BASE-FX (F32F) switch module (MT-RJ) |

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