



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-TX to 1 Gigabit and 10-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 672 10/100 Mbps ports when fully populated with the F96Ti, or 256 100BASE-FX ports with fully populated with the F32Fi 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 1440 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 512 100BASE-FX ports when fully populated with the F32Fi 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 1000BASE-X, 672 10/100BASE-TX or 256 100BASE-FX ports in a single 6808 chassis
 - 6816 128 1000BASE-T or 192 1000BASE-X ports, 1440 10/100BASE-TX ports, or 512 100BASE-FX ports in a single 6816 chassis

BlackDiamond™ 6808 Product Specifications 6816

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

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)

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)
52021	32-port 100BASE-FX (F32Fi) i series switch module (MT-RJ)

For more product information from Extreme Networks, please call 1.888.257.3000. 3585 Monroe Street, Santa Clara, CA 95051-1450 Phone 408.579.2800
Fax 408.579.3000 email info@extremenetworks.com Web www.extremenetworks.com



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