

# BlackDiamond® 12804C



*The BlackDiamond 12804C—taking application performance to the next level.*

## Features

- Designed to enforce application performance
- Voice-class availability
- Resiliency under attack
- Extensibility to integrate new applications

## Target Applications

- Core applications for small and medium enterprises
- Traditional gigabit or 10 Gigabit Ethernet aggregation switch for secure environments

Enterprise networks continue to converge. There is an increasing need for application-level awareness within the core and aggregation layers of the network. As the leader in open converged networks, Extreme Networks® provides a new level of intelligence for Ethernet networking with the BlackDiamond 12804C switch.

The BlackDiamond 12804C delivers deterministic performance independent of which features are enabled and is capable of maintaining this performance under various failure conditions and under network attacks.

The BlackDiamond 12804C is ideal for core deployments for mid-sized enterprises and aggregation switch for large-sized enterprises—where protecting the “soft interior” of the network is a key objective.

The BlackDiamond 12804C, like the BlackDiamond 10808, delivers security that scales to 10 gigabit rates, voice-class availability and deterministic performance, independent of application. Located in the core of some of the most demanding IPv4 and IPv6 networks, the CLEAR-Flow Security Rules Engine and Layer 3 Virtual Switching capability of the BlackDiamond 12804C has set the bar for core security. With its redundant hardware design, ExtremeXOS™ modular operating system and network resiliency protocol support, the BlackDiamond 12804C provides the network uptime users expect of traditional circuit-based voice networks.

The BlackDiamond 12804C switch supports IPv6 in hardware today—enabling enterprise support of IPv6 traffic without hardware upgrades.



## Designed to Enforce Application Performance

The BlackDiamond 12804C provides deterministic performance independent of which features are enabled. For example, Access Control Lists (ACLs) are one of the most powerful tools to control network resource utilization and to secure and protect the network. BlackDiamond 12804C supports thousands of ACLs based on Layer 2, 3 or 4-header information such as the MAC address or IP source/destination address all without impact to switch performance.

BlackDiamond 12804C uses deep packet buffers so that packets are not dropped during traffic bursts—less advanced switches discard the excess traffic under congestion.

BlackDiamond 12804C builds on Extreme Networks' leadership in IP multicast performance. The switch fabric architecture does not store and forward multiple copies of the same packet across the fabric. Efficient hardware identification and packet replication provides excellent multicast performance for thousands of multicast streams, without impacting other traffic running through the switch.

The BlackDiamond 12804C delivers consistent network performance regardless of frame size, which is important for supporting the varying traffic mix in converged networks.

## Voice-Class Availability

The BlackDiamond 12804C incorporates a redundant hardware design, the ExtremeXOS modular operating system, and networking protocols that provide network resiliency required for converged communications.

Unlike monolithic operating systems, ExtremeXOS continues operating even if individual processes fail. ExtremeXOS dramatically increases network availability by monitoring the independent operating

system processes in real time. If any process is unresponsive, it can be automatically restarted.

The advanced hardware design of the BlackDiamond 12804C helps ensure that there is no single point of failure. The design includes a passive backplane, fully redundant management (1:1) switch modules with hitless failover, isolated control and data planes, redundant control boards and redundant load-sharing power supplies.

In the case of link failure, the BlackDiamond 12804C supports Ethernet Automatic Protection Switching (EAPS), the network resiliency protocol from Extreme Networks. EAPS allows the IP network to provide the level of resiliency and uptime that users expect from their traditional voice networks. EAPS is superior to the Spanning Tree or Rapid Spanning Tree Protocols, offering sub-second (less than 50 milliseconds) recovery and delivers consistent failover regardless of number of VLANs, number of network nodes or network topology.

## Resilience Under Attack

The BlackDiamond 12804C delivers a new level of security to Ethernet core networking. The BlackDiamond 12804C complements perimeter firewalls by protecting the “soft interior” of the network that is currently unprotected. Utilizing the industry's most advanced CLEAR-Flow Security Rules Engine, the

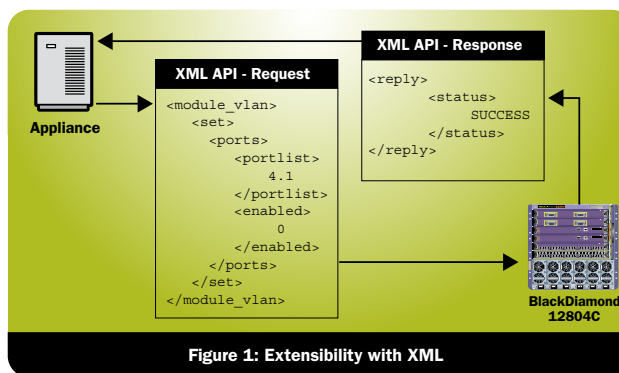
BlackDiamond 12804C can be programmed to automatically detect and mitigate security threats in seconds.

The BlackDiamond 12804C is equally effective against Denial of Service attacks directed at the switch itself. The switch detects this type of attack and discards all packets associated with the attack, while continuing to forward acceptable traffic at full wire-speed.

The BlackDiamond 12804C also supports Layer 3 Virtual Switching. Multiple virtual router instances provide a logical segregation of the network into multiple domains, such as the DMZ, Intranet, and extranet, each maintaining its own routing table and routing processes. Traffic between multiple domains can further be redirected through a third-party firewall or other security device, enabling secure and cost-effective network topologies.

## Extensibility to Integrate New Applications

ExtremeXOS allows for flexible expansion of network capabilities by providing a mechanism for third-party applications in the network to interact directly with the operating system. ExtremeXOS uses a secure XML-based API to integrate with best-of-breed monitoring and security devices. This extensibility allows integration with third-party applications to provide a closed loop for new monitoring and response capabilities (see Figure 1).



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