

The BLADE Network Technologies' RackSwitch™ G8124 is a 10GbE switch specifically designed for the data center, providing a Virtual, Cooler and Easier network solution.

The RackSwitch G8124 is "Virtual"- for the first time providing rack-level virtualization of networking interfaces for a rack full of server and storage systems. Patent-pending VMready™ software enables movement of virtual machines—providing matching movement of VLAN assignments, ACLs, and other networking and security settings. Using VMready, the trusted zone for the virtual machine is never compromised.

The RackSwitch G8124 is "Cooler"- implementing server-like directional cooling to maximize datacenter layout and provisioning. Its superior airflow design complements the hot-aisle and cold-aisle data center cooling model.

The RackSwitch G8124 is "Easier" with server-oriented provisioning via point-and-click management interfaces, along with BLADEHarmony™ Manager for updating large groups of switches.

The low latency offered by the RackSwitch G8124 makes it ideal for latency sensitive applications such as high performance computing clusters and financial applications. And the G8124 supports the newest protocols – including Converged Enhanced Ethernet (CEE) for support of Fibre Channel over Ethernet (FCoE).

The RackSwitch G8124 offers 24 10 Gigabit Ethernet ports in a 1 RU footprint. Designed with top performance in mind, the RackSwitch G8124 provides line-rate, high-bandwidth switching, filtering, and traffic queuing without delaying data, and large data-center grade buffers to keep traffic moving. Redundant power and fans along with numerous high availability features ensure that the RackSwitch G8124 is always available for business-sensitive traffic.



Figure 1 RackSwitch G8124

## Product Benefits

- 24x SFP+ ports that operate at 10GbE or Gigabit speeds
- Optimal for High-Performance Computing or other applications requiring the highest bandwidth and lowest latency
- All ports non-blocking 10GbE with deterministic latency under 700 nanoseconds.
- Unlike most rack equipment that cools from side to side, the RackSwitch G8124 has two airflow options (front-to-rear or rear-to-front) which allow for flexible mounting of the switch in a server rack or datacom rack.
- Variable speed fans automatically reduce power consumption
- The switch also has a special mounting kit, allowing it to be mounted vertically or horizontally in a rack.
- Seamless, standards-based integration into existing Cisco® and other networks helps reduce downtime and learning curve.
- Network Virtualization - **VMready™** software on the switch helps reduce configuration complexity while significantly improving security levels in virtualized environments.
  - Automatically detects VM movement from one physical server to another
  - Instantly reconfigures each VM's network policies across VLANs to keep the network up and running without

- interrupting traffic or impacting performance.
- Works with all leading VM providers such as VMware, Citrix, Xen and Microsoft Active MultiPath (AMP™) – effectively doubles bandwidth by allowing all uplink ports to be active/active, eliminating cross stack traffic and providing up to 900Gbps aggregate bandwidth between servers. Built-in fault tolerance constant health checking ensure maximum availability.

## Business Benefits

- High performance** - The 10G Low Latency Switch provides the best combination of extremely low latency, non-blocking line-rate switching and ease of management.
- Reduced TCO** - SFP+ ports and SFP+ Direct Attach (twinax) Cables provide the flexibility needed for 10GbE networking at a very affordable price.
- Deployment Flexibility** - Front-to-rear cooling for server racks and Rear-to-front cooling for rear-facing applications like storage enclosures.
- Lower Power and Better Cooling** – The RackSwitch G8124 uses a fraction of the power of competitive offerings. Unlike side-cooled switches which can cause heat recirculation and reliability concerns, the G8124's front-to-rear or rear-to-front cooling design reduces data center air conditioning costs.
- Interoperability** - Software is based on Internet standards for optimal interoperability with Cisco® or other vendors' networks.
- Easy Server Provisioning** - ServerMobility™ enables simple bare-metal provisioning of servers and repurposing of standby servers.

## RackSwitch G8124 at a Glance

### Performance

- 100% Line rate performance
- Latency under 700 nanoseconds
- 480 Gbps non-blocking switching throughput (full duplex)

### Hardware Features

#### Models

- RackSwitch G8124F (for front-to-rear cooling)
- RackSwitch G8124R (for rear-to-front cooling)

#### Interface Options

- 24 10G SFP+ fiber connectors
- 2x10/100/1000 Ethernet RJ45 ports for Management
- 1 mini-USB Console port for Management
- Server-like port orientations enables short and simple cabling

- Active DAC support for interoperability with Cisco Nexus 5k and Brocade

### Dimensions

- 17.3" wide, 15" deep, 1 RU high

### Weight:

- 6.40kg (14.08 lb)

### Rack Installation Kit

- Versatile 4-post mounting options for 19" server rack or datacom rack
- Can be mounted vertically or horizontally

### LEDs

- System LEDs to indicate status
- LEDs to indicate Master/Member

### Airflow

- Front-to-rear or rear-to-front cooling
- Redundant variable speed fans for reduced power draw

### Power

- The AC-Powered G8124 has dual load-sharing internal power modules, 50-60Hz, 100-240 VAC auto-switching per module.
- The DC Powered G8124 has dual load-sharing internal DC-DC power modules, input voltage ranging from 42VDC to 60VDC per module.
- The Nominal Power for AC or DC G8124 models ranges from 115W to 168W depending on the speed of the port (1G/10G), type of transceivers (SR or DAC) and number of active ports.

### Mean Time between Failure (MTBF)

- 189,060 hrs with ambient operating temperature of 40°C<sup>1</sup>

### Environmental Specifications

#### Temperature

- Ambient operating: 0°C to +40°C

#### Relative humidity

- Non-condensing, operating 10 to 90%

#### Altitude

- Operating 3,050 m (10,000 feet)

#### Acoustic noise

- Less than 65dB

#### Heat dissipation

- 1100 BTU/hour (maximum)

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<sup>1</sup> MTBF is calculated using the Telcordia Technologies Reliability Prediction Procedure for Electronic Equipment, (SR-332 issue 2) Parts Count (method 1 case 1) failure rate data.

## Software Features

### Security

- RADIUS
- TACACS+
- SCP
- Wire Speed Filtering: Allow and Deny
- SSH v1, v2
- HTTPS Secure BBI
- Secure Interface Login & Password
- MAC address move notification
- Shift B Boot menu (Password Recovery/ Factory Default)

### VLANs

- Port-based VLANs
- 4096 VLAN ids supported
- 1k VLANs (802.1Q)
- Private VLAN Edge

### FCoE/Lossless Ethernet

- 802.1 Data Center Bridging
- Priority Based Flow Control (PFC)
- Enhanced Transmission Selection (ETS)
- Data Center Bridge Exchange protocol (DCBX)
- FIP Snooping
- Fibre Channel over Ethernet
- Converged Enhanced Ethernet

### Trunking

- LACP
- Static Trunks (EtherChannel)
- Configurable Trunk Hash algorithm

### Spanning Tree

- Multiple Spanning Tree (802.1s)
- Rapid Spanning Tree (802.1w)
- PVRST+
- Fast Uplink Convergence
- BPDU guard

### Quality of Service

- QoS 802.1p (Priority Queues)
- DSCP Remarking
- Metering

### Routing Protocols

- RIP v1/v2
- OSPF
- BGP

### High Availability

- Uplink Failure Detection
- HotLinks™
- Virtual Router Redundancy support (VRRP)
- Active MultiPath (AMP)™

### Multicast

- IGMP Snooping v1, v2 and v3 with 2K IGMP groups
- Protocol Independent Multicast (PIM Sparse Mode/Dense Mode)

### Monitoring

- Port mirroring
- VLAN mirroring
- ACL-based mirroring
- sFlow® version 5

### Virtualization

- VMready with VI API support
- vNIC MIB support for SNMP

### Management Features

- Netboot

### Clients

- BLADEHarmony Manager
- isCLI (Cisco-like)
- Scriptable CLI
- Browser-based client or telnet

### Standard Protocols

- IPv6
- SNMP v1, v2c and v3
- RMON
- Secondary NTP Support
- Accept DHCP
- DHCP Relay
- LLDP
- 16K MAC Table
- 9K Jumbo Frames
- 802.3X Flow Control

### Upgrades

- Upgrade firmware via serial or TFTP
- Dual software images

### Ordering Information

Model Number	Description
<b>Switches</b> BN-8124F-BDL	G8124 24-port 10GbE Switch with Front-to-Rear airflow with Two power cords Rack mount ears Serial cable
BN-8124R-BDL	G8124 24-port 10GbE Switch with Rear-to-Front airflow Two power cords Rack mount ears Serial cable

BN-8124F-DC G8124 24-port 10GbE Switch with Front Front-to-Rear airflow with DC Power Supply Unit Rack mount ears Serial cable

**Pluggable Optics**

BN-CKM-SP-SR SFP+ 10GBase-SR Short Range Transceiver  
 BN-CKM-SP-LR SFP+ 10GBase-LR Long Range Transceiver  
 BN-CKM-S-T SFP 1000Base-T Copper Transceiver  
 BN-CKM-S-SX SFP 1000Base-SX Optical Transceiver  
 BN-CKM-S-LX 1000BASE-LX transceiver

**Direct Attach Cables (DAC)**

**BN-SP-CBL-1M** SFP+ Copper Direct Attach Cable (1 meter)  
**BN-SP-CBL-3M** SFP+ Copper Direct Attach Cable (3 meters)  
**BN-SP-CBL-5M** SFP+ Copper Direct Attach Cable (5 meters)  
**BN-SP-CBL-8M5** SFP+ Copper Direct Attach Cable (8.5 meters)

**Rail Kits**

**BN-4POST-RLS** 19" EIA 4-Post Rail Kit

**Regulatory Compliance**

Country	Agency
Austria	CE
Belgium	CE
Canada	CSA, ICES-003
China	CCC
Denmark	CE
Finland	CE
France	CE
Germany	TUV-GS, CE
Italy	CE
Japan	VCCI (A)
Korea	MIC (RRL)
Luxembourg	CE
Mexico	NOM-NYCE
Netherlands	CE
Poland	CE
Portugal	CE
Slovakia	CE
Slovenia	CE
Spain	CE
Sweden	CE
Switzerland	CE
U.K., Ireland	CE
United States	FCC (A), UL

**Services**

BLADE Network Technologies' suite of Premium services provides operational support and consulting for planning, deploying and managing your datacenter networking infrastructure. Service and support are available through certified partners. Contact [services@bladenetwork.net](mailto:services@bladenetwork.net) or visit [www.bladenetwork.net/services](http://www.bladenetwork.net/services).

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