DXS-5000-54S
54 Port 10GbE/40GbE Open Network Switch

Features

High Performance
• Open Network Switch for Data Center and Enterprise networks
• 48 x 10GbE SFP+ ports
• 6 x 40GbE QSFP+ ports
• 1440 Gbps switching capacity
• All data ports and management ports on front

Management Features
• RJ45 10/100/1000 Ethernet out of band management port
• Mini-USB Console port
• USB host port

High Availability and Flexibility
• Two hot-swappable power supply modules for 1+1 redundancy and load sharing
• Four hot-swappable fan modules provide 3+1 cooling redundancy
• Port grouping allows one 40GbE port to be split into four 10GbE connections

Software Compatibility
• Support for open-source Open Network Install Environment (ONIE) for zero-touch installation of network OS
• Certified compatible with the Pluribus Netvisor OS enterprise or fabric editions

Overview

D-Link’s DXS-5000-54S 10 GbE Open Network Switch is a compact, high-performance switch that features full line-rate 10-Gigabit Ethernet switching and low latency at Layer 2 or Layer 3. With its open architecture and high port density, this switch is ideal in a data center for Top-of-Rack (ToR) applications or as part of a 10GbE/40GbE leaf-spine architecture. In addition, the scalability, capacity and advanced capabilities of the DXS-5000-54S are equally compelling for deployment as a Campus or Enterprise core switch.

The DXS-5000-54S is 1U high and includes forty-eight (48) SFP+ ports supporting 10 Gigabit Ethernet (10GBASE-SR, 10GBASE-LR, or DAC/Direct Attach Copper) These ports are also backwards compatible with 1GbE SFPs. In addition, there are six (6) QSFP+ ports supporting 40 Gigabit Ethernet (40GBASE-SR, or 40GBASE-LR). Using optional DAC breakout cables, the switch supports up to 72 x 10GbE ports.

Open Networking

The DXS-5000-54S switch supports open networking, providing IT professionals with innovative third party operating systems and software options. This lowers costs by separating software from hardware and increases network agility and flexibility. With support for standards-based tools and standards-based applications, open networking simplifies scalability and future-proofs the network.

ONIE

As a bare metal switch, the DXS-5000-54S ships preloaded with Open Network Install Environment (ONIE). ONIE is an open source install environment that acts as an enhanced boot loader. This small Linux operating system allows IT Professionals to install the network operating system of choice as part of data center provisioning process, in the same manner that their servers are provisioned.
Netvisor Operating System

For simple plug-and-play deployments, the DXS-5000-54S is also available pre-configured with the Pluribus Netvisor OS, the industry’s most programmable, open source-based network operating system. The Pluribus Netvisor software is a virtualized network operating system that provides a best-in-class Layer 2 and Layer 3 networking foundation, advanced network services, VXLAN, distributed Adaptive Cloud Fabric™ intelligence and embedded network performance monitoring telemetry.

The Pluribus Netvisor software virtualizes the switch hardware, decoupling network resources from the underlying hardware to create multiple network containers on a single device. Each container can be dynamically allocated, and a single switch can instantiate multiple network containers. Each container has its own virtualized router and can support granular east/west and north/south network segmentation, strict multi-tenant services, security and policies, and the integration of virtualized network services and functions.

D-Link offers the DXS-5000-54S pre-configured with the Pluribus Netvisor OS licensed for either:

- Netvisor Enterprise — includes Layer 2 and Layer 3 switching and routing functionality with all standard networking protocols and high availability features.
- Netvisor Fabric — adds VXLAN, Telemetry, Adaptive Cloud Fabric, Data Center Interconnect and security and segmentation capabilities.

High Availability and Flexibility

The DXS-5000-54S switch features modular fans and power supplies for a high availability architecture. The hot-swappable design means that fans and power supplies can be replaced without affecting switch operation. Each switch ships with a full complement of two power supplies and four fan modules. Additional power supplies and fans may be purchased separately.

Energy Efficient

The DXS-5000-54S switch supports front-to-back airflow which optimizes air circulation inside the cabinet/rack, supports hot and cold aisles in data centers, and increases energy efficiency. Switches supporting back-to-front airflow are also available for applications where switches are mounted with data ports facing the rear of the cabinet/rack.

The switches feature smart fans, with internal heat sensors that monitor and detect temperature changes, and react accordingly by utilizing different fan speeds for different temperatures. At lower temperatures, the fans will run slower, reducing the switch’s power consumption and noise.

Limited Lifetime Warranty

D-Link offers an industry leading Limited Lifetime Warranty for the DXS-5000-54S 10GbE Open Network Switch, to further its commitment to product quality and long-term customer confidence.

Front View

1. Reset - Reset button
2. System LEDs - Displays PSU and fan status
3. 10 GbE Ports - 48 x 10GbE (SFP+) ports
4. 40 GbE Ports - 6 x 40GbE (QSFP+) ports
5. Console - Mini-USB console port. Used to connect to the switch CLI for configuration, management, and monitoring
6. MGMT - RJ45 Management port. IP-based, 10/100/1000 Out-of-Band port for Telnet, web, or SNMP management. Used to configure the switch without being connected to the network
7. USB - USB 2.0 Type-A port. Provides additional storage space for portable firmware images and configuration files
8. Fan modules - Four (4) hot-swappable fan modules. (Four included with each switch)
9. Power supplies - Two (2) hot-swappable power supplies. (Two included with each switch)
## Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th>DXS-5000-54S</th>
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### Interfaces

<table>
<thead>
<tr>
<th>Interface</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>10GbE Optical (SFP+) ports</td>
<td>48</td>
</tr>
<tr>
<td>40GbE Optical (QSFP+) ports</td>
<td>6</td>
</tr>
<tr>
<td>Console Port</td>
<td>Mini USB console port for out-of-band CLI management</td>
</tr>
<tr>
<td>Management Port</td>
<td>10/100/1000BASE-T RJ45 Ethernet for out-of-band IP management</td>
</tr>
<tr>
<td>USB Port</td>
<td>USB 2.0 Type A</td>
</tr>
</tbody>
</table>

### Performance

<table>
<thead>
<tr>
<th>Performance</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch Capacity</td>
<td>1440 Gbps</td>
</tr>
<tr>
<td>Max. Packet Forwarding Rate</td>
<td>1071 Mpps</td>
</tr>
<tr>
<td>Switching Engine</td>
<td>Broadcom Trident II ASIC</td>
</tr>
<tr>
<td>CPU</td>
<td>2.4GHz 4-core Intel Rangeley C2558</td>
</tr>
<tr>
<td>DRAM Size</td>
<td>8 GB DDR3 with ECC</td>
</tr>
<tr>
<td>Flash Memory Size</td>
<td>SSD: M.2 64GB</td>
</tr>
<tr>
<td>Packet Buffer Memory</td>
<td>12 MB</td>
</tr>
<tr>
<td>MAC Address Table</td>
<td>288K</td>
</tr>
</tbody>
</table>

### Physical and Environmental

<table>
<thead>
<tr>
<th>Physical and Environmental</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Input</td>
<td>100 to 240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Max Power Consumption</td>
<td>295 W</td>
</tr>
<tr>
<td>Standby Power Consumption</td>
<td>140 W</td>
</tr>
</tbody>
</table>
### DXS-5000-54S
54 Port 10GbE/40GbE Open Network Switch

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Heat Dissipation</td>
<td>1006.58 BTU/hr</td>
</tr>
<tr>
<td>Acoustics</td>
<td>62dB (fan low speed) 74dB (fan high speed)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>17.32 x 16.0 x 1.73 inches (440 x 406 x 44mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>19.8 lbs / 9 kg</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>23°F to 122°F (0°C to 45°C)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°F to 158°F (-40°C to 70°C)</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>5% to 95% RH</td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>5% to 95% RH</td>
</tr>
<tr>
<td>MTBF</td>
<td>205,000 hours</td>
</tr>
<tr>
<td>Certifications</td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>cULus, CB, CE, CCC, BSMI</td>
</tr>
<tr>
<td>EMI/EMC</td>
<td>CE, FCC, BSMI, CCC</td>
</tr>
</tbody>
</table>

### Supported Operating Systems
- Pluribus Netvisor OS (ONVL) – Enterprise Edition version 2.6 or later
- Pluribus Netvisor OS (ONVL) – Fabric Edition version 2.6 or later

### Ordering Information

<table>
<thead>
<tr>
<th>Bare Metal Switches</th>
<th>Description</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXS-5000-54S/AF</td>
<td>Open Network Switch preloaded with ONIE only (no operating system). 48 x 10 GbE SFP+ ports and 6 x 40 GbE QSFP+ ports. Includes two (2) 550W AC modular power supply, and four (4) fan modules with front-to-back airflow.</td>
<td>Limited Lifetime ¹</td>
</tr>
<tr>
<td>DXS-5000-54S/AB</td>
<td>Open Network Switch preloaded with ONIE only (no operating system). 48 x 10 GbE SFP+ ports and 6 x 40 GbE QSFP+ ports. Includes two (2) 550W AC modular power supply, and four (4) fan modules with back-to-front airflow.</td>
<td>Limited Lifetime ¹</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-configured Switches</th>
<th>Description</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXS-5000-54S/AF-PNE</td>
<td>Open Network Switch pre-configured with Pluribus Netvisor (ONVL) Enterprise (ONVL-10G-ENT-LIC) perpetual license. 48 x 10 GbE SFP+ ports and 6 x 40 GbE QSFP+ ports. Includes two (2) 550W AC modular power supply, and four (4) fan modules with front-to-back airflow. Includes 1-year support for ONVL-10G-ENT-LIC (SVC-ONVL-10G-ENT-1YR).</td>
<td>Limited Lifetime ¹</td>
</tr>
<tr>
<td>DXS-5000-54S/AB-PNE</td>
<td>Open Network Switch pre-configured with Pluribus Netvisor (ONVL) Enterprise (ONVL-10G-ENT-LIC) perpetual license. 48 x 10 GbE SFP+ ports and 6 x 40 GbE QSFP+ ports. Includes two (2) 550W AC modular power supply, and four (4) fan modules with back-to-front airflow. Includes 1-year support for ONVL-10G-ENT-LIC (SVC-ONVL-10G-ENT-1YR).</td>
<td>Limited Lifetime ¹</td>
</tr>
<tr>
<td>DXS-5000-54S/AF-PNF</td>
<td>Open Network Switch pre-configured with Pluribus Netvisor (ONVL) Fabric (ONVL-10G-PLEX-LIC) perpetual license. 48 x 10 GbE SFP+ ports and 6 x 40 GbE QSFP+ ports. Includes two (2) 550W AC modular power supply, and four (4) fan modules with front-to-back airflow. Includes 1-year support for ONVL-10G-PLEX-LIC (SVC-ONVL-10G-PLEX-1YR).</td>
<td>Limited Lifetime ¹</td>
</tr>
<tr>
<td>DXS-5000-54S/AB-PNF</td>
<td>Open Network Switch pre-configured with Pluribus Netvisor (ONVL) Fabric (ONVL-10G-PLEX-LIC) perpetual license. 48 x 10 GbE SFP+ ports and 6 x 40 GbE QSFP+ ports. Includes two (2) 550W AC modular power supply, and four (4) fan modules with back-to-front airflow. Includes 1-year support for ONVL-10G-PLEX-LIC (SVC-ONVL-10G-PLEX-1YR).</td>
<td>Limited Lifetime ¹</td>
</tr>
</tbody>
</table>
## Optional Switch Accessories

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXS-PWR550AC/F</td>
<td>550W AC modular power supply with front-to-back airflow</td>
<td>5 Year Limited</td>
</tr>
<tr>
<td>DXS-PWR550AC/B</td>
<td>550W AC modular power supply with back-to-front airflow</td>
<td>5 Year Limited</td>
</tr>
<tr>
<td>DXS-FAN5K/F</td>
<td>Spare fan module with front-to-back airflow</td>
<td>5 Year Limited</td>
</tr>
<tr>
<td>DXS-FAN5K/B</td>
<td>Spare fan module with back-to-front airflow</td>
<td>5 Year Limited</td>
</tr>
</tbody>
</table>

## Optional 40 Gbps (QSFP+) Optical Transceivers

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM-QX01Q-SR4</td>
<td>40GBASE-SR Multimode QSFP+ Optical Transceiver</td>
</tr>
<tr>
<td>DEM-QX10Q-LR4</td>
<td>40GBASE-LR Single-mode QSFP+ Optical Transceiver</td>
</tr>
</tbody>
</table>

## Optional 10 Gbps (SFP+) Optical Transceivers

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM-431XT-DD</td>
<td>10GBASE-SR Transceiver, Multimode, DDM, 80/300M</td>
</tr>
<tr>
<td>DEM-432XT-DD</td>
<td>10GBASE-LR Transceiver, Single-mode, DDM, 10KM</td>
</tr>
</tbody>
</table>

## Optional 1 Gbps (SFP) Optical Transceivers

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DGS-712</td>
<td>1000BASE-T SFP Transceiver</td>
</tr>
<tr>
<td>DEM-310GT</td>
<td>1000BASE-LX SFP Transceiver, Single-mode, 10KM</td>
</tr>
<tr>
<td>DEM-311GT</td>
<td>1000BASE-SX SFP Transceiver, Multimode, 550M</td>
</tr>
</tbody>
</table>

## Optional 10 Gbps / 40 Gbps Direct Attach Copper (DAC) Cables

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM-CB100S</td>
<td>1M (40&quot;) 10G SFP+ to SFP+ Direct Attach Copper Cable</td>
</tr>
<tr>
<td>DEM-CB300S</td>
<td>3M (118&quot;) 10G SFP+ to SFP+ Direct Attach Copper Cable</td>
</tr>
<tr>
<td>DEM-CB100QXS</td>
<td>1M (40&quot;) 40G QSFP+ to QSFP+ Direct Attach Copper Cable</td>
</tr>
<tr>
<td>DEM-CB300QXS</td>
<td>3M (118&quot;) 40G QSFP+ to QSFP+ Direct Attach Copper Cable</td>
</tr>
<tr>
<td>DEM-CB100QXS-4XS</td>
<td>1M (40&quot;) 40G QSFP+ to 4x10G SFP+ Direct Attach Copper Breakout Cable</td>
</tr>
</tbody>
</table>

## Optional Support Licenses

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC-ONVL-10G-ENT-1YR</td>
<td>Pluribus 24/7 1 Year support renewal for ONVL-10G-ENT-LIC</td>
</tr>
<tr>
<td>SVC-ONVL-10G-PLEX-1YR</td>
<td>Pluribus 24/7 1 Year support renewal for ONVL-10G-PLEX-LIC</td>
</tr>
</tbody>
</table>

This is a joint solution of D-Link and Pluribus Networks and requires multiple elements to enable the capabilities referenced. D-Link and Pluribus Networks reserve the right to make changes to its technical information and specifications at any time.

1 Limited Lifetime Warranty available in USA only. Warranty void when not purchased from Authorized US D-Link Reseller. Please visit us.dlink.com for list of Authorized US Resellers.

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DXS-5000-54S_REVA_DATASHEET_1.12_EN_US.PDF

For more information

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