# D-Link®

**Building Networks for People**

## Product Highlights

**High Performance**
Up to 960 Gbps switching capacity

**Flexible Deployments**
Suitable for both top-of-rack in data centres and enterprise network environments

**Easy Management**
Web-based graphical interface

**Power Saving Features**
Saves energy and increases the product's lifespan

## DXS-3600-32S

# DXS-3600 Top of Rack 10Gigabit Managed Switch

## Key Features

**High Performance and Flexibility**
• Fast performance with up to 960 Gbps switching capacity
• 24 fixed SFP+ 10G ports

**Security**
• Access Control List
• Port Security
• Traffic Segmentation
• Broadcast/Multicast/Unicast Storm Control
• DoS Attack Prevention

**Advanced Features**
• OSPF/BGP
• Three Colour Marker – Classifying network traffic for QoS

**Easy Management**
• Web-based GUI
• Telnet
• Command Line Interface (CLI)
• SSH
• SNMP & RMON
• RADIUS/TACACS+
• LLDP/LLDP-MED

The DXS-3600-32S is a 24-port SFP+ 10-Gigabit Ethernet (GbE) switch featuring wired-speed 10-Gigabit Ethernet switching, routing, and very low latency. This switch delivers high-performance 10-GbE capacity of up to 960 Gbps and forwarding rates of up to 595.2 Mbps. The switch features hot-swappable power supplies and fan trays to provide a redundant, high availability architecture. With 1U height and front-to-back air flow, the DXS-3600-32S is suitable for top-of-rack (ToR) deployment in data centers or enterprise and campus aggregation network environments.

## Security, Performance & Availability

The DXS-3600-32S switch provides a complete set of security features including L2/L3/L4 multi-layer Access Control Lists and 802.1x user authentication via TACACS+ and RADIUS servers. This ensures the network is protected from unauthorised access. It also offers extensive VLAN support including GVRP and 802.1Q VLAN to enhance security and performance. A robust set of L2/L3/L4 QoS/CoS solutions help ensure that critical network services such as VoIP and video conferencing are served with priority. Bandwidth Control can be flexibly set for each port using pre-defined thresholds to assure a committed level of service for end users. For advanced applications, flow-based bandwidth control allows easy fine-tuning of service types based on specific IP addresses or protocols.

## Energy Efficient

The DXS-3600-32S provides front-to-back airflow, a more effective cooling method throughout rack systems in data centers, compared to side-to-side airflow. The switch also features built-in smart fans; internal heat sensor monitor and detects temperature change, reacting accordingly by utilising different fan speeds for different temperatures. At lower temperatures, the fans will run slower and reduce the switch's power consumption and noise.

If the worst should happen to your network you need the very best support and fast. Downtime costs your business money. D-Link Assist maximises your uptime by solving technical problems quickly and effectively. Our highly trained technicians are on standby around the clock, ensuring that award-winning support is only a phone call away.

With a choice of three affordable service offerings covering all D-Link business products, you can select the package that suits you best:

### D-Link Assist Gold - for comprehensive 24-hour support

D-Link Assist Gold is perfect for mission-critical environments where maximum uptime is a high priority. It guarantees four hour around-the-clock response. Cover applies 24/7 for every day of the year including holidays.

### D-Link Assist Silver - for prompt same-day assistance

D-Link Assist Silver is designed for 'high availability' businesses that require rapid response within regular working hours. It provides a four hour response service Monday to Friday from 8am to 5pm, excluding holidays.

### D-Link Assist Bronze - for guaranteed response on the next business day

D-Link Assist Bronze is a highly cost-effective support solution for less critical environments. Response is guaranteed within eight business hours Monday to Friday from 8am to 5pm, excluding holidays.

D-Link Assist can be purchased together with any D-Link business product. So whether you're buying switching, wireless, storage, security or IP Surveillance equipment from D-Link, your peace of mind is guaranteed. D-Link Assist also offers installation and configuration services to get your new hardware working quickly and correctly.

| Technical Specifications | DXS-3600 |
|---|---|
| **General** | |
| Interfaces | • 24x fixed SFP+ ports<br>• 1x RJ-45 console port for out-of-band local management<br>• 1x 10/100/1000Base-T Ethernet port for out-of-band remote management<br>• 1x SD card slot |
| Performance | • Switching capacity: 960 Gbps<br>• Max. forwarding rate: 595.2 Mpps<br>• Packet buffer memory: 9 MB<br>• MAC Address Table: 128K |
| Physical | • Power input: 100 to 240 V AC, 50/60 Hz<br>• Power consumption: 115.3 W (max.), 85.9 W (standby)<br>• Heat dissipation: 393.4 BTU/hr (max.), 293.1 BTU/hr (standby)<br>• Dimensions: 440 x 506 x 44 mm<br>• Weight: 9.84 Kg. |
| Temperature | • Operating: 0 to 45 °C<br>• Storage: 40 to 70 °C |
| Humidity | • Operating: 0% to 95% RH<br>• Storage: 0% to 95% RH |
| Diagnostic LEDs: | • Per device: Power 1, Power 2, Fan 1, Fan 2, Fan 3, Console, MGMT, SD Card, Stacking ID<br>• Per port: Link/ACTIVITY/Speed |
| Certifications | • Safety: CB, cUL, LVD CE<br>• EMI/EMC: FCC, CE, C-Tick, IC, VCCI |

# Software Features

## L2 Features
MAC Address Table
- 128K entries

Flow Control
- 802.3x Flow Control when Full Duplex
- Back Pressure when Half Duplex
- HOL Blocking Prevention

Spanning Tree Protocol
- 802.1D STP
- 802.1w RSTP
- 802.1s MSTP
- Support Root Restriction

802.1AX Link Aggregation
- Max. 16 groups per device, 12 ports per group

Port Mirroring
- One-to-One, Many-to-One
- Mirroring for Tx/Rx/Both
- 4 mirroring groups

Flow Mirroring
- One-to-One, Many-to-One
- Mirroring for Rx
- 4 mirroring groups

Jumbo Frame
- Up to 12,000 bytes

## L2 Multicast Features
IGMP Snooping
- IGMP v1/v2/v3 Snooping
- Supports 4K IGMP groups
- Supports 1K static multicast addresses
- IGMP per VLAN

L2 Multicast Filtering
- Forwards all groups
- Forwards all unregistered groups
- Filters all unregistered groups

## VLAN
802.1Q
802.1v
Double VLAN (Q-in-Q)
- Port-based Q-in-Q
- Selective Q-in-Q

Port-based VLAN
MAC-based VLAN
Subnet-based VLAN
VLAN Group
- Max. 4K static VLAN groups
- Max. 4094 VIDs

GVRP
- Up to 4K dynamic VLANs

## QoS (Quality of Service)
802.1p Quality of Service
8 queues per port
Queue Handling
- Strict
- Weighted Round Robin (WRR)
- Strict + WRR
- Round Robin (RR)
- Weighted Elastic Round Robin (WERR)

CoS based on
- 802.1p Priority Queues
- DSCP
- IP address
- MAC address
- VLAN
- IPv6 Traffic Class
- IPv6 flow label
- TCP/UDP port

## Bandwidth Control
- Port-based (Ingress/Egress, min. granularity 8 Kb/s)
- Flow-based (Ingress/Egress, min. granularity 8 Kb/s)
- Per queue bandwidth control (min. granularity 8 Kb/s)

Three Color Marker
- trTCM
- srTCM

Congestion Control
- WRED

Support for following actions:
- Remark 802.1p priority tag
- Remark TOS/DSCP tag
- Bandwidth Control
- Committed Information Rate (CIR)

## L3 Features
ARP
- 512 Static ARP

IP Interface
- Supports 256 interfaces

## L3 Routing
Default Routing
Static Routing
- Max. 1K IPv4 entries
- Support route distribution
- Support secondary route
- Support Equal Cost/Weighted Cost multi-path route

## Access Control List (ACL)
Max. ACL entries:
- 1792 ingress ACL rule
- 1K egress ACL rules
- 1K VLAN ACL rules

Time-based ACL
ACL based on:
- 802.1p priority
- VLAN
- MAC address
- Ether type
- IP address
- DSCP
- Protocol type
- TCP/UDP port number
- IPv6 Traffic Class
- IPv6 flow label

## Security
Port Security (up to 12K MAC addresses per port/system)
Broadcast/Multicast/Unicast Storm Control
Traffic Segmentation
SSH
BPDU Attack Prevention
DOS Attack Prevention

## AAA
802.1X Authentication
- Supports Port-based access control
- Supports Host-based access control
- Dynamic VLAN Assignment
- Identity-driven Policy (VLAN/ACL/QoS) Assignment
  Guest VLAN

## MIB & RFC Standards
- RFC1213 MIB II
- RFC1907 SNMP v2 MIB
- RFC5519 IGMP v3 MIB
- RFC1724 RIP v2 MIB
- RFC2021 RMONv2 MIB
- RFC1643, RFC2358, RFC2665 Ether-like MIB
- RFC2668 802.3 MAU MIB
- RFC2674 802.1p MIB
- RFC2618 RADIUS Authentication Client MIB
- RFC2096 IP Forwarding Table MIB
- RFC2932 IPv4 Multicast Routing MIB
- RFC2934 PIM MIB for IPv4
- RFC2620 RADIUS Accounting Client MIB
- RFC2925 Trace Out MIB
- RFC2925 Ping MIB
- RFC1850 OSPF MIB
- Private MIB
- RFC1112, RFC2236, RFC3376, RFC4541 IGMP Snooping
- RFC4363 802.1v
- RFC2338 VRRP
- RFC1058, RFC1388, RFC1723, RFC2453, RFC2080 RIP

- RFC1370, RFC1765, RFC2328, RFC2740, RFC3101 makes RFC1587 obsolete, RFC2328 makes RFC1583, RFC2178 OSPF v2,v3
- RFC1771, RFC1997, RFC2439, RFC2796, RFC2842, RFC2918 BGP
- RFC3973 PIM-DM
- RFC5059 PIM-SM
- RFC3569, RFC4601, RFC4608, RFC4607, RFC4604 PIM SSM
- RFC3376 IGMP
- RFC2475 Priority Queue Mapping
- RFC2475, RFC2598 Class of Service (CoS)
- RFC2597, RFC2598 QoS Flow Actions
- RFC2697, RFC2698 Three Color Marker
- RFC2093, RFC2904, RFC2095, RFC2906 AAA
- RFC1321, RFC2144, RFC2313, RFC2420, RFC2841, RFC3394 Encryption
- RFC2289 One-Time
- RFC3580 802.1X
- RFC2866 RADIUS Accounting
- RFC2138, RFC2139, RFC2865, RFC2618 RADIUS Auth. for Management Access
- RFC1492 TACACS+ Auth. for Management Access
- FC2068, RFC2616 Web-based GUI
- RFC854 Telnet Server
- RFC783, RFC1350 TFTP Client
- RFC1157, RFC1901, RFC1908, RFC2570, RFC2574, RFC2575, RFC3411-17 SNMP
- RFC3164 System Log
- RFC2819 RMON v1
- RFC951, RFC1542, RFC2131, RFC3046 BootP/DHCP Client
- RFC1769 Time Setting
- RFC2131 DHCP Server
- RFC1191 MTU Setting
- RFC1065, RFC1066, RFC1155, RFC1156, RFC2578 MIB Structure
- RFC1215 MIB Traps Convention
- RFC4188 Bridge MIB
- RFC1157, RFC2571-2576, RFC3411-3415, RFC3418 SNMP MIB
- RFC1901-1908,RFC1442, RFC2578 SNMP v2 MIB
- RFC2737 Entity MIB
- RFC768 UDP
- RFC791 IP
- RFC792 ICMP
- RFC793 TCP
- RFC826 ARP
- RFC1338, RFC1519 CIDR
- RFC2716, RFC3748 EAP
- RFC2571, RFC2572, RFC2573, RFC2574 SNMP

## Management
Web-based GUI
CLI
Telnet
TFTP Client
FTP Client
Traffic Monitoring
SNMP v1/v2/v3
SNMP Trap
System Log
DHCP Client
DHCP Server
DHCP Relay
Multiple Image
Multiple Configuration
Flash File System
DNS Resolver
CPU Monitoring
MTU Setting
Traceroute
LLDP
DNS Relay
SNTP
RCP2
RMONv1
RMONv2
Password Encryption
Debug Command

## Optional Products:

### Optional Management Software

DV-600S D-View 6.0 Network Management Software Standard Edition
DV-600P D-View 6.0 Network Management Software Professional Edition

### Optional 10 Gbps SFP+ Transceivers

| | |
|---|---|
| DEM-431XT | • 10 GBASE-SR SFP+ Transceiver (w/o DDM), 80m: OM1 & OM2 MMF, 300m: OM3 MMF |
| DEM-431XT-DD | • 10GBASE-SR SFP+ Transceiver (with DDM), 80m: OM1 & OM2 MMF, 300m: OM3 MMF |
| DEM-432XT | • 10GBASE-LR SFP+ Transceiver (w/o DDM), 10km |
| DEM-432XT-DD | • 10GBASE-LR SFP+ Transceiver (w/o DDM), 10km |
| DEM-433XT | • 10GBASE-ER SFP+ Transceiver (w/o DDM), 40km |
| DEM-433XT-DD | • 10GBASE-ER SFP+ Transceiver (with DDM), 40km |
| DEM-435XT | • 10GBASE-LRM SFP+ Transceiver (w/o DDM), 220m: OM1 & OM2 MMF, 300m: OM3 MMF |
| DEM-435XT-DD | • 10GBASE-LRM SFP+ Transceiver (with DDM), 220m: OM1 & OM2 MMF, 300m: OM3 MMF |
| DEM-436XT-BXU | • 10GBASE-LR BiDi SFP+ Transceiver (w/o DDM) 20km, TX: 1270nm, RX: 1330nm |
| DEM-436XT-BXD | • 10GBASE-LR BiDi SFP+ Transceiver (w/o DDM) 20km, TX: 1330nm, RX: 1270nm |

### Optional 10 Gbps SFP+ Transceivers

| | |
|---|---|
| DEM-310GT | • SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage |
| DEM-311GT | • SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550 m, 3.3 V operating voltage |
| DEM-312GT2 | • SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2 km, 3.3 V operating voltage |
| DEM-314GT | • SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 50 km, 3.3 V operating voltage |
| DEM-315GT | • SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 80 km, 3.3 V operating voltage |
| DEM-330T | • WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating  voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm |
| DEM-330R | • WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm |
| DEM-331T | • WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm |
| DEM-331R | • WDM SFP transceiver 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3V operating voltage, Tx wavelength 1310 nm, Rx wavelength1550 nm |

### Optional 10 Gbps SFP+ Direct Attach Cables

DEM-CB100S 10-GbE SFP+ 1m Direct Attach Cable
DEM-CB300S 10-GbE SFP+ 3m Direct Attach Cable
DEM-CB700S 10-GbE SFP+ 7m Direct Attach Cable

### Ordering information

| | |
|---|---|
| DXS-3600-32S | • 24 fixed SFP+ ports, one AC power supply, and three fan trays (front-to-back airflow) included |

# D-Link Europe

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|---|---|---|
| **D-Link European HQ**<br>www.dlink.eu | **France**<br>www.dlink.fr | **Norway**<br>www.dlink.no |
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