

Highlights

High Performance

Remove bottlenecks and future-proof the network with up to 714.3 Mpps forwarding rate and 960 Gbps throughput

Reliability

The DXS-3600-32S supports dual power supplies and load sharing for AC/DC power, as well as Data Center Bridging features for lossless Ethernet

Energy Saving

Intelligent, removable smart fans and front-to-back airflow unifies airflow direction in the data center and minimizes power consumption of the switch



DXS-3600-32S

24-Port Top-of-Rack 10 Gigabit Managed Switch

Features

High Performance and Flexibility

- Two AC hot-swappable power modules for 1+1 power redundancy and load sharing
- Three hot-swappable fan trays with front-to-back airflow and N+1 cooling redundancy
- Up to 480G stacking bandwidth with four devices functioning together as a single unit

Data Center Features

- IEEE 802.1Qbb Priority-based Flow Control (PFC)
- IEEE 802.1Qaz Enhanced Transmission Selection (ETS)
- IEEE 802.1Qau Congestion Notification (QCN)

Advanced Features

- MPLS
- OSPF/BGP/IS-IS
- ERPS (G.8032 v1/v2)
- Three Color Marker

Easy Management

- Web-based GUI, Command Line Interface (CLI)
- RADIUS/TACAS+
- LLDP/LLDP-MED

OAM

- IEEE 802.3ah Ethernet link OAM
- IEEE 802.1ag
- ITU-T.Y.1731

The D-Link DXS-3600-32S 24-Port Top-of-Rack 10 Gigabit Managed Switch is a compact, high-performance switch that features very low latency wire speed 10G Ethernet switching and routing. The 1U height and front-to-back airflow make the DXS-3600-32S suitable for enterprise and campus aggregation network environments. It has 24 fixed 10G SFP+ ports and can accommodate more ports with the addition of an expansion module. The expansion modules not only provide extra 10G SFP+ ports, but also increase flexibility by allowing 120G stacking, 40G uplinks, or low-cost 10GBASE-T connections for different applications.

Convenient Deployment

The DXS-3600-32S provides your network with high-performance 10G Ethernet switching capacities of up to 960 Gbps and forwarding rates of up to 714 Mpps. These switches feature hot-swappable power supplies and fan trays, which enable the switches to have redundant, high-availability architecture. When inserting two power modules, both power modules share the load and help to extend the lifetime of the other. The DXS-3600-32S also features a modular fan design; three fans can back up each other, providing 2+1 redundancy for the system. If a fan fails or the temperature rises, the smart fans will adjust their speed automatically.

Flexible Software

The DXS-3600-32S can be deployed using one of two different software images. The Standard Image (SI) features a wide range of Layer 2, VLAN, multicasting, Quality of Service (QoS), security, data center, and static routing functions. The Enhanced Image (EI) features comprehensive IPv4/v6 routing including RIP, VRRP, OSPF, BGP, and L3 multicasting features such as IGMP, MLD, PIM-DM, SM, SDM, SSM, and DVMRP. The Enhanced Image (EI) also supports L2/L3 MPLS VPN, which enables the DXS-3600-32S to be deployed as the core router of an enterprise environment, or as an aggregation switch in an MPLS environment.

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Data Center Features

Data Center Bridging (DCB) is an essential set of enhancements to Ethernet for networking in data center environments. The DXS-3600-32S support several core components of Data Center Bridging (DCB) such as IEEE 802.1Qbb, IEEE 802.1Qaz, and IEEE 802.1Qau. IEEE 802.1Qbb (Priority-based Flow Control) provides flow control to ensure there is no data loss during network congestion. IEEE 802.1Qaz (Enhanced Transmission Selection) manages the allocation of bandwidth based on different traffic classes. IEEE 802.1Qau (Congestion Notification) provides congestion management for data flows within network domains to avoid congestion. The DXS-3600-32S switches also support cut-through switching, which reduces latency when transmitting data in a network.

Energy-Efficient

The DXS-3600-32S utilises front-to-back airflow for increased cooling efficiency, allowing hot and cold aisles to be built in the data center and unifying airflow direction when compared to a mix of back-to-front and side-to-side airflow. Modular power supplies provide the option to use AC or DC power inputs, allowing the most efficient choice for the environment to be chosen. The switches also feature built-in smart fans that monitor and detect temperature changes, adjusting the fan speed for maximum efficiency. At lower temperatures, the fans run at a lower speed, reducing both the power consumption and noise output of the switch.

Stacking with DXS-3600-EM-Stack and DXS-3600-EM-4QXS module

DXS-3600-32S with stacking module to build a physical stacking architecture that provides:

- Up to 96 10G SFP+ ports
- Up to 480G stacking bandwidth
- High redundancy and reliability

Stacking with DXS-3600-EM-Stack module



DEM-CB50CXP 120G CXP Stacking Cable

DXS-3600-32S with 40G QSFP+ expansion module to build a physical stacking architecture that provides:

- Longer distance stacking by connecting 40G transceivers and fiber cables
- Up to 160G stacking bandwidth
- High redundancy and reliability

DXS-3600-EM-4QXS, the 40G QSFP+ module



DEM-CB100QXS, the 40G QSFP+ to QSFP+ DAC

Technical Specifications

General

Interfaces	• 24 fixed SFP+ 10G ports with one expansion slot
Console Port	• RJ-45 console port for out-of-band management
Management Port	• 10/100/1000 BASE-T RJ-45 Ethernet for out-of-band remote management
SD Card Slot	• 1 slot

Performance

Switching Capacity	• 960 Gbps
Max. Forwarding Rate	• 714.28 Mpps
Packet Buffer Memory	• 9 MB
MAC Address Table	• 128K

24-Port Top-of-Rack 10 Gigabit Managed Switch

Physical	
Power Input	• 100 to 240 V AC, 50/60 Hz
Maximum Power Consumption	• 116.8 W (without expansion module) • 160.4 W (with DXS-3600-EM-4QXS)
Standby Power Consumption	• 88.2 W
Heat Dissipation (Max.)	• 398.29 BTU/hr (without expansion module) • 546.96 BTU/hr (with DXS-3600-EM-4QXS)
Heat Dissipation (Standby)	• 300.76 BTU/hr
Dimensions (W x L x H)	• 440 x 506 x 44 mm (17.32 x 19.92 x 1.73 in)
Weight	• 10.71 kg (23.6 lbs)
Operating Temperature	• 0 to 45 °C (32 to 113 °F)
Storage Temperature	• -40 to 70 °C (-40 to 158 °F)
Operating Humidity	• 0% to 95% RH
Storage Humidity	• 0% to 95% RH
Certifications	
Safety	• CB, cUL, LVD
EMI/EMC	• FCC, CE, C-Tick, IC, VCCI
Standard Image (SI) Features	
Stackability	<ul style="list-style-type: none"> DXS-3600-32S with: <ul style="list-style-type: none"> DXS-3600-EM-Stack expansion module: 480G stacking bandwidth DXS-3600-EM-4QXS expansion module: 160G stacking bandwidth DXS-3600-16S with: <ul style="list-style-type: none"> DXS-3600-EM-4QXS expansion module: 160G stacking bandwidth <ul style="list-style-type: none"> Virtual Stacking/Clustering of up to 32 units <ul style="list-style-type: none"> Supports D-Link Single IP Management Physical Stacking <ul style="list-style-type: none"> Up to 480G stacking bandwidth Up to 4 switches in a stack Ring/chain topology support
L2 Features	<ul style="list-style-type: none"> MAC Address Table <ul style="list-style-type: none"> 128K entries Flow Control <ul style="list-style-type: none"> 802.3x Flow Control when using full-duplex Back Pressure when using half-duplex HOL Blocking Prevention Spanning Tree Protocol <ul style="list-style-type: none"> 802.1D STP 802.1w RSTP 802.1s MSTP Supports Root Restriction Jumbo Frame <ul style="list-style-type: none"> Up to 12,000 bytes Multi-Chassis Link Aggregation Group (MLAG) 802.1AX Link Aggregation <ul style="list-style-type: none"> Max. 32 groups per device, 12 ports per group ERPS (Ethernet Ring Protection Switching) Port Mirroring <ul style="list-style-type: none"> Supports One-to-One, Many-to-One Supports Mirroring for Tx/Rx/Both Supports 4 mirroring groups Flow Mirroring <ul style="list-style-type: none"> Supports One-to-One, Many-to-One Supports Mirroring for Rx Supports 4 mirroring groups RSPAN mirroring Loopback Detection L2 Protocol Tunneling
L2 Multicast Features	<ul style="list-style-type: none"> L2 Multicast Filtering <ul style="list-style-type: none"> Forwards all groups Forwards all unregistered groups Filters all unregistered groups MLD Snooping <ul style="list-style-type: none"> MLD v1/v2 Snooping Supports 4K groups Host-based MLD Snooping Fast Leave IGMP Snooping <ul style="list-style-type: none"> IGMP v1/v2/v3 Snooping Supports 4K IGMP groups Supports 1K static multicast addresses IGMP per VLAN Host-based IGMP Snooping Fast Leave PIM Snooping
L3 Features	<ul style="list-style-type: none"> ARP <ul style="list-style-type: none"> 512 Static ARP Supports Gratuitous ARP IP Interface <ul style="list-style-type: none"> Supports 256 interfaces Loopback Interface IPv6 Neighbor Discovery (ND)

24-Port Top-of-Rack 10 Gigabit Managed Switch

L3 Routing	<ul style="list-style-type: none"> • Static Routing <ul style="list-style-type: none"> • Max. 1K IPv4 entries • Max. 512 IPv6 entries • Supports secondary route • Supports Equal Cost/Weighted Cost multi-path route 	<ul style="list-style-type: none"> • Default Routing
VLAN	<ul style="list-style-type: none"> • 802.1Q • 802.1v Protocol-based VLAN • Double VLAN (Q-in-Q) <ul style="list-style-type: none"> • Port-based Q-in-Q • Selective Q-in-Q • Port-based VLAN • MAC-based VLAN • Subnet-based VLAN • Private VLAN 	<ul style="list-style-type: none"> • VLAN Group <ul style="list-style-type: none"> • Max. 4K static VLAN groups • Max. 4094 VIDs • GVRP <ul style="list-style-type: none"> • Up to 4K dynamic VLANs • VLAN Translation • ISM VLAN (Multicast VLAN) • Private VLAN • Super VLAN • VLAN Trunking
AAA	<ul style="list-style-type: none"> • 802.1X Authentication <ul style="list-style-type: none"> • Supports port-based access control • Supports host-based access control • Dynamic VLAN assignment • Identity-driven policy (VLAN/ACL/QoS) assignment • Web-based Access Control (WAC) <ul style="list-style-type: none"> • Supports port-based access control • Supports host-based access control • Dynamic VLAN Assignment • Identity-driven Policy (VLAN/ACL/QoS) Assignment 	<ul style="list-style-type: none"> • MAC-based Access Control (MAC) <ul style="list-style-type: none"> • Supports port-based access control • Supports host-based access control • Dynamic VLAN Assignment • Identity-driven Policy (VLAN/ACL/QoS) Assignment • Guest VLAN • Compound Authentication • Microsoft NAP <ul style="list-style-type: none"> • Supports 802.1X NAP • Supports DHCP NAP • RADIUS and TACACS+ authentication • Authentication Database Failover • Trusted Host
QoS (Quality of Service)	<ul style="list-style-type: none"> • 802.1p Quality of Service (QoS) • 8 queues per port • Queue handling <ul style="list-style-type: none"> • Strict • Weighted Round Robin (WRR) • Strict + WRR • Round Robin (RR) • Weighted Deficit Round Robin (WDRR) • QoS based on: <ul style="list-style-type: none"> • 802.1p Priority Queues • DSCP • IP address • MAC address • VLAN • IPv6 Traffic Class • IPv6 Flow Label • TCP/UDP port 	<ul style="list-style-type: none"> • Bandwidth Control <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • trTCM • srTCM • Congestion Control <ul style="list-style-type: none"> • WRED • Support for following actions: <ul style="list-style-type: none"> • Remark 802.1p priority tag • Remark TOS/DSCP tag • Bandwidth Control • Committed Information Rate (CIR)
Access Control List (ACL)	<ul style="list-style-type: none"> • ACL based on: <ul style="list-style-type: none"> • 802.1p priority • VLAN • MAC address • EtherType • IP address • DSCP • Protocol type • TCP/UDP port number • IPv6 Traffic Class • IPv6 Flow Label 	<ul style="list-style-type: none"> • Max. ACL entries: <ul style="list-style-type: none"> • 1792 ingress ACL rules • 1K egress ACL rules • 3K VLAN Access Maps • Time-based ACL

24-Port Top-of-Rack 10 Gigabit Managed Switch

<p>Security</p>	<ul style="list-style-type: none"> • Port Security <ul style="list-style-type: none"> • Supports up to 12K MAC addresses per port/system • Broadcast/Multicast/Unicast Storm Control • D-Link Safeguard Engine • DHCP Server Screening • IP-MAC-Port Binding (IMPB) • Dynamic ARP Inspection • IP Source Guard • DHCP Snooping • IPv6 Snooping • DHCPv6 Guard • IPv6 Route Advertisement (RA) Guard 	<ul style="list-style-type: none"> • IPv6 ND Inspection • ARP Spoofing Prevention <ul style="list-style-type: none"> • Max. 64 entries • Traffic Segmentation • SSL <ul style="list-style-type: none"> • Supports v3 • Supports IPv4/v6 access • Supports TLS 1.2 • SSH <ul style="list-style-type: none"> • Supports v2 • Supports IPv4/v6 access • BPDU Attack Protection • DOS Attack Prevention
<p>Management</p>	<ul style="list-style-type: none"> • Web-based GUI • CLI • Telnet Server/Client • TFTP Client • FTP Client • Traffic Monitoring • SNMP (Supports v1/v2c/v3) • SNMP Trap • System Log • DHCP Client • DHCP Server • DHCP Relay options 12, 60, 61, 82 • Multiple Image • Multiple Configuration • Flash File System • DNS Resolver 	<ul style="list-style-type: none"> • CPU Monitoring • MTU Setting • Traceroute & Ping • LLDP/LLDP-MED • DNS Relay • SMTP • DHCP Auto Configuration • SNTP • RCP (Remote Copy Protocol) • RMONv1 • RMONv2 • Trusted Host • Password encryption • Debug command • IPv6 Stateless Address Auto-configuration (SLAAC) • D-Link Discover Protocol (DDP)
<p>Enhanced Image (EI) Additional Features</p>		
<p>L3 Multicasting</p>	<ul style="list-style-type: none"> • Multicast Table Size: 2K • IGMP v1, v2c, v3 • PIM-SM IPv4/IPv6 • PIM-DM • Multicast Source Discovery Protocol (MSDP) 	<ul style="list-style-type: none"> • PIM-Sparse-Dense Mode • PIM-SSM • DVMRP v3 • MLD v1/v2
<p>MPLS</p>	<ul style="list-style-type: none"> • Label Distribution Protocol (LDP) • PHP (Penultimate hop popping) • Virtual Private Wire Service (VPWS) • Virtual Private LAN Service (VPLS) 	<ul style="list-style-type: none"> • BGP/MPLS VPN <ul style="list-style-type: none"> • Multiprotocol extensions for BGP4 • Virtual Routing Forwarding (VRF) • LSP MPLS Ping/Traceroute • VCCV Ping/Traceroute
<p>L3 Features</p>	<ul style="list-style-type: none"> • IPv6 Tunneling <ul style="list-style-type: none"> • Static • ISATAP • GRE • 6to4 	<ul style="list-style-type: none"> • VRRP v2/v3
<p>L3 VPN</p>	<ul style="list-style-type: none"> • MPLS/BGP L3 VPN • MP-BGP 	<ul style="list-style-type: none"> • VRF aware application
<p>L3 Routing</p>	<ul style="list-style-type: none"> • Supports 16K hardware routing entries shared by IPv4/IPv6 <ul style="list-style-type: none"> • Max. 16K IPv4 entries • Max. 8K IPv6 entries • Supports 8K hardware L3 forwarding entries shared by IPv4/IPv6 <ul style="list-style-type: none"> • Max. 8K IPv4 entries • Max. 4K IPv6 entries • RIP <ul style="list-style-type: none"> • RIP v1/v2 • RIPng • OSPF <ul style="list-style-type: none"> • OSPF v2/v3 • OSPF Passive Interface • Stub/NSSA Area • OSPF Equal Cost Route • BGP v4/v4+ • IS-IS • IS-ISv6 	<ul style="list-style-type: none"> • Route Redistribution <ul style="list-style-type: none"> • Default Route • Static Route • RIP • OSPF v2/v3 • BGP • IP Directed Broadcast • Policy Based Route • Bidirectional Forwarding Detection (BFD) <ul style="list-style-type: none"> • Supports OSPF • Supports VRRP • VRF Lite <ul style="list-style-type: none"> • IPv4 Static Route • RIPv1/v2 • OSPFv2/v3 • BGPv4 • IPv4 PIM-DM/SM/SSM

Standards	
MIB & RFC Standards	<ul style="list-style-type: none"> • RFC1213 MIB II • RFC1907 SNMP v2 MIB • RFC5519 IGMP v3 MIB • RFC1724 RIP v2 MIB • RFC2021 RMONv2 MIB • RFC1643, RFC2358, RFC2665 Ether-like MIB • RFC4836 802.3 MAU MIB • RFC4363 802.1p MIB • RFC2618 RADIUS Authentication Client MIB • RFC4292 IP Forwarding Table MIB • RFC2932 IPv4 Multicast Routing MIB • RFC2934 PIM MIB for IPv4 • RFC2620 RADIUS Accounting Client MIB • RFC2925 Traceroute 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 Applicability Statement for OSPF • RFC1765 OSPF Database Overflow • RFC2328 OSPF v2 • RFC2740 OSPF for IPv6 • RFC3101 OSPF Not-So-Stubby Area (NSSA) option; makes RFC1587 obsolete • RFC2328 makes RFC2178 obsolete • RFC2178 makes RFC1583 obsolete • 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 Author. for Management Access • RFC1492 TACACS+ Auth. for Management Access • RFC2068, 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
Optional License Upgrade and Expansion Modules	
DXS-3600-32S-SE-LIC	• DXS-3600-32S Standard Image to Enhanced Image License
DXS-3600-EM-4XT	• 4 x 10GBASE-T expansion module
DXS-3600-EM-8T	• 8 x 10/100/1000BASE-T expansion module
DXS-3600-EM-4QXS	• 4 x 40G QSFP+ expansion module
DXS-3600-EM-Stack	• 2 x 120G CXP physical stacking module
DXS-PWR300AC	• 300 W AC modular power supply with front-to-back airflow
DXS-3600-FAN-FB	• Fan tray with front-to-back airflow
Optional Management Software	
DV-700	• D-View 7 Network Management Software (downloadable from http://dview.dlink.com)
DV-700-N25-LIC	• D-View 7 - 25 Node License
DV-700-N250-LIC	• D-View 7 - 250 Node License
DV-700-P10-LIC	• D-View 7 - 10 Probe License

24-Port Top-of-Rack 10 Gigabit Managed Switch

Optional 10G SFP+ Transceivers	
DEM-431XT	• 10GBASE-SR SFP+ transceiver (w/o DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-432XT	• 10GBASE-LR SFP+ transceiver (w/o DDM), 10 km
DEM-410T	• SFP+ 10GBASE-T Copper Transceiver
Optional 1G SFP Transceivers	
DEM-310GT	• 1000BASE-LX SFP transceiver, single-mode fiber, 10 km, 3.3 V operating voltage
DEM-311GT	• 1000BASE-SX SFP transceiver, multi-mode fiber, 550 m, 3.3 V operating voltage
DEM-312GT2	• 1000BASE-SX SFP transceiver multi-mode fiber, 2 km, 3.3 V operating voltage
DGS-712	• 1000BASE-TX SFP transceiver
Optional 40G QSFP+ Transceivers	
DEM-QX01Q-SR4	• 40GBASE-SR4 transceiver, multi-mode, OM3: 100 m/OM4: 150 m
DEM-QX10Q-LR4	• 40GBASE-SR4 transceiver, single-mode, 10 km
Optional 10G SFP+ Direct Attach Cables	
DEM-CB100S	• 10G SFP+ to SFP+ 1 m Direct Attach Cable
DEM-CB300S	• 10G SFP+ to SFP+ 3 m Direct Attach Cable
DEM-CB100QXS	• 40G QSFP+ to QSFP+ 1 m Direct Attach Cable
DEM-CB100QXS-4XS	• 40G QSFP+ to 4x10G SFP+ 1 m Direct Attached Cable
Optional 120G CXP Direct Attach Cables	
DEM-CB50CXP	• CXP to CXP 50 cm Stacking Cable
10G Ethernet Adapter	
DXE-820T	• Dual Port 10GBASE-T RJ-45 PCI Express Adapter



For more information: www.dlink.com

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