

Highlights

High Performance

Get the speeds your network needs with up to 960/480 Gbps switching capacity and 714.28/357.14 Mpps forwarding rate.

Reliability

The DXS-3600 Series supports dual load sharing for AC/DC power, as well as Data Center Bridging to provide "lossless Ethernet" transmission quality.

Energy Saving

A removable redundant smart fan speeds up as needed, and two airflow configurations keep the switch cool and power consumption low.



DXS-3600 Series

Layer 3 Stackable 10GbE Managed Switch

Features

High Performance and Flexibility

- Two AC/DC hot-swappable power modules for 1+1 power redundancy and load sharing
- Three hot-swappable fan trays with airflow control provide N+1 cooling redundancy
- Attain up to 480G stacking bandwidth with four devices functioning together as one

Data Center Features

- IEEE 802.1Qbb Priority-based Flow Control (PFC)
- IEEE 802.1 Qaz Enhanced Transmission Selection (ETS)
- IEEE 802.1Qau Congestion Notification (QCN)
- NLB¹

Advanced Features

- MPLS
- OSPF/BGP
- FRPS¹
- Three Color Marker
- · Congestion Control¹

Easy Management

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

D-Link's DXS-3600 Series Layer 3 Stackable 10GbE Managed Switch consists of new compact, high-peformance switches that feature wire speed 10-Gigabit Ethernet switching, routing, and very low latency. The 1U height and selectable front-to-back or back-to-front air flow make the DXS-3600 Series suitable for enterprise and campus aggregation network environments. The DXS-3600 Series switches have 24 or 8 fixed 10 GbE SFP+ ports and can accomodate more ports with the addition of an expansion module. The expansion modules not only provide extra 10G SFP+ ports, but also increase the flexibility of 120G stacking, 40G uplinks, or low-cost 10GBASE-T connections for different applications.

Convenient Deployment

The DXS-3600 Series switches provide your network with high-performance 10-Gigabit Ethernet switching capacities up to 960 Gbps and forwarding rates up to 714 Mpps. The switches feature hot-swappable power supplies and fan trays, which enable the switches to have redundant, high-availability architecture. The modular power design allows customers to use AC or DC power sources according to where the switch is deployed. When inserting two power modules, the two power modules share the load and help to extend the lifetime of the other. The DXS-3600 Series 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 increase their speed automatically.

Flexible Software

The DXS-3600 Series 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 IGMP, MLD, PIM-DM, SM, SDM, SSM, and DVMRP. The Enhanced Image (EI) also supports L2/L3 MPLS VPN that enables the DXS-3600 Series switches to also be deployed as the core router of an enterprise environment or as an aggregation switch in an MPLS environment.



Data Center Features

Data Center Bridging (DCB) is an essential set of enhancements to Ethernet for networking in data center environments. The DXS-3600 Series switches 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 amongst different traffic classes. IEEE 802.1Qau (Congestion Notification) provides congestion management for data flows within network domains to avoid congestion. The DXS-3600 Series switches also support cutthrough switching, which reduces latency when transmitting data in a network.

Energy Efficient

The DXS-3600 Series switches allow users to manage airflow by using different power and fan module sets. Selectable front-to-back or back-to-front airflow optimizes air circulation to provide more effective cooling throughout rack systems in data centers where the switches are used when compared to side-to-side airflow. The switches also feature built-in smart fans; internal heat sensors 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.

Stacked DXS-3600-32S

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

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



DEM-CB50CXP 120G CXP Stacking Cable

Technical Specifications		
General	DXS-3600-32S	DXS-3600-16S
Interfaces	24 fixed SFP+ 10G ports with one expansion module	8 fixed SFP+ 10G ports with one expansion module
Console Port	• RJ-45 console port for a	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	DXS-3600-32S	DXS-3600-16S
Switching Capacity	• 960 Gbps	• 480 Gbps
Max. Forwarding Rate	• 714.28 Mpps	• 357.14 Mpps
Packet Buffer Memory	• 9 MB	
MAC Address Table	• 128K	
Physical	DXS-3600-32S	DXS-3600-16S
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)	74.3 W (without expansion module) 105.3 W (with DXS-3600-EM-4QXS)
Standby Power Consumption	• 88.2 W	• 69.9 W
Heat Dissipation (Max.)	398.29 BTU/hr (without expansion module) 546.96 BTU/hr (with DXS-3600-EM-4QXS)	253.36 BTU/hr (without expansion module) 359.07 BTU/hr (with DXS-3600-EM-4QXS)
Heat Dissipation (Standby)	• 300.76 BTU/hr	• 238.36 BTU/hr
Dimensions (W x D x H)	• 440 x 506 x 44 mm (17.32 x 19.92 x 1.73 inches)	



Weight	• 10.71 kg (23.6 pounds)	• 9.89 kg (21.8 pounds)
Operating Temperature	• 0 to 45 °C (32 to 113 °F)	
Storage Temperature	• 40 to 70 °C (104 to 158 °F)	
Operating Humidity	• 0% to 95% RH	
Storage Humidity	• 0% to 95% RH	
Certifications		
Safety	• CB, cUL	
EMI/EMC	• FCC, CE, C-Tick, IC, VCCI, BSMI	

Standard Image (SI) Features		
Stackability	Physical Stacking 480G stacking bandwidth Up to 4 switches in a stack Ring/chain topology support	 Virtual Stacking/Clustering of up to 32 units¹ Supports D-Link Single IP Management
L2 Features	MAC Address Table 128K entries Flow Control 802.3x Flow Control when using Full Duplex Back Pressure when using Half Duplex HOL Blocking Prevention Spanning Tree Protocol 802.1D STP 802.1w RSTP 802.1s MSTP Supports Root Restriction Jumbo Frame Up to 12,000 bytes	 802.1AX Link Aggregation Max. 16 groups per device, 12 ports per group ERPS¹ (Ethernet Ring Protection Switching) Port Mirroring Supports One-to-One, Many-to-One Supports Mirroring for Tx/Rx/Both Supports 4 mirroring groups Flow Mirroring Supports One-to-One, Many-to-One Supports Mirroring for Rx Supports 4 mirroring groups Loopback Diagnostics¹
L2 Multicast Features	L2 Multicast Filtering Forwards all groups Forwards all unregistered groups Filters all unregistered groups MLD Snooping MLD V1/V2 Snooping Supports 4K groups Host-based MLD Snooping Fast Leave	 IGMP Snooping IGMP v1/v2/v3 Snooping Supports 4K IGMP groups Supports 1K static multicast addresses IGMP per VLAN
L3 Features	ARP 512 Static ARP Supports Gratuitous ARP	 IP Interface Supports 256 interfaces Loopback Interface¹
L3 Routing	Static Routing Max. 1K IPv4 entries Max. 512 IPv6 entries Supports route distribution Supports secondary route Supports Equal Cost/Weighted Cost multi-path route	Default Routing
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 Private VLAN¹ VLAN Group Max. 4K static VLAN groups Max. 4094 VIDs GVRP Up to 4K dynamic VLANs



AAA	802.1X Authentication 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)¹ MAC-based Access Control (MAC)¹ Guest VLAN
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 Deficit Round Robin (WDRR) QoS 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)
Access Control List (ACL)	ACL based on: 802.1 p priority VLAN MAC address EtherType IP address DSCP Protocol type TCP/UDP port number IPv6 Traffic Class IPv6 Flow Label	Max. ACL entries: 1792 ingress ACL rules 1K egress ACL rules 1K VLAN ACL rules Time-based ACL
Security	Port Security 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 ARP inspection IP inspection DHCP Snooping	 ARP Spoofing Prevention¹ Max. 64 entries Traffic Segmentation SSL¹ Supports v1/v2/v3 Supports IPv4/v6 access SSH BPDU Attack Prevention DOS Attack Prevention
Management	Web-based GUI CLI Telnet TFTP Client FTP Client Traffic Monitoring SNMP Supports 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 SMTP¹ DHCP Auto Configuration¹ SNTP RCP¹ RMONv1 RMONv2 Trusted Host¹ Password Encryption Debug Command
Enhanced Image (EI)	Additional Features	
L3 Multicasting	Multicast Table Size: 2KIGMP v1, v2, v3PIM-SMPIM-DM	 PIM-Sparse-Dense Mode PIM-SSM DVMRP v3 MLD v1/v2¹



MPLS	 LDP MPLS LSP trigger filtering MPLS label-forwarding MPLS QoS MPLS ping and traceroute 	L2 protocol tunneling through PWVPWSVPLSPW Redundancy
L3 Features	IPv6 Tunneling¹ Static ISATAP GRE 6to4	• VRRP
L3 VPN	MPLS/BGP L3 VPN VRF-Lite	MP-BGP VRF aware application
L3 Routing	Supports 16K hardware routing entries shared by IPv4/IPv6 Max. 16K IPv4 entries Max. 8K IPv6 entries¹ Supports 8K hardware L3 forwarding entries shared by IPv4/IPv6 Max. 8K IPv4 entries Max. 4K IPv6 entries¹ RIP RIP v1/v2 RIPng¹	 OSPF OSPF v2 OSPF v3¹ OSPF Passive Interface Stub/NSSA Area OSPF Equal Cost Route BGPv4 Route Redistribution IP Directed Broadcast Policy Based Route¹
Standards		
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 RFC4836 802.3 MAU MIB RFC4363 802.1 p MIB RFC4918 RADIUS Authentication Client MIB RFC4929 IP Forwarding Table MIB RFC2932 IPv4 Multicast Routing MIB RFC2934 PIM MIB for IPv4 RFC2934 PIM MIB for IPv4 RFC2925 Traceroute MIB RFC2925 Traceroute MIB RFC1112, RFC2236, RFC3376, RFC4541 IGMP Snooping RFC4363 802.1v RFC1112, RFC2236, RFC3376, RFC4541 IGMP Snooping 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 RFC376 IGMP RFC2475, RFC2598 Class of Service (CoS) RFC2597, RFC2698 Three Color MarkerRFC2093, RFC2904, RFC2095, RFC2697, RFC2698 Three Color MarkerRFC2093, RFC2904, RFC2095, RFC2906 AAA 	 RFC1321, RFC2144, RFC2313, RFC2420, RFC2841, RFC3394 Encryption RFC2289 One-Time RFC2389 802.1X RFC2866 RADIUS Accounting RFC2138, RFC2139, RFC2865, RFC2618 RADIUS Author. for Management Access RFC1492 TACACS+ Auth. for Management Access RFC1492 TACACS+ Auth. for Management Access RFC2068, RFC2616 Web-based GUI RFC854 Telnet Server RFC783, RFC1350 TFTP Client RFC783, 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 RFC1157 MIB Traps Convention RFC4188 Bridge MIB RFC1157, RFC2571-2576, RFC3411-3415, RFC3418 SNMP MIB RFC1901-1908,RFC1442, RFC2578 SNMP v2 MIB RFC737 Entity MIB RFC768 UDP RFC791 IP RFC793 TCP RFC826 ARP RFC1338, RFC1519 CIDR RFC2716, RFC3748 EAP RFC2571, RFC2572, RFC2573, RFC2574 SNMP

Ordering Information	
Model Name	Description
DXS-3600-32S/SI	• 24 fixed SFP+ ports with one expansion slot with Standard Image, one AC power supply, and three fan trays (front-to-back airflow) included



DXS-3600-16S/SI	• 8 fixed SFP+ ports with one expansion slot with Standard Image, one AC power supply, and three fan trays (front-to-back airflow)
	included
DXS-3600-32S/EI	• 24 fixed SFP+ ports with one expansion slot with Enhanced Image, one AC power supply, and three fan trays (front-to-back airflow) included
DXS-3600-16S/EI	8 fixed SFP+ ports with one expansion slot with Enhanced Image, one AC power supply, and three fan trays (front-to-back airflow) included
DXS-3600-32S-SE-LIC	DXS-3600-32S Standard Image to Enhanced Image License
DXS-3600-16S-SE-LIC	DXS-3600-16S Standard Image to Enhanced Image License
DXS-3600-EM-4XT ²	• 4 x 10GBASE-T expansion module
DXS-3600-EM-8T ²	8 x 1000BASE-T expansion module
DXS-3600-EM-4QXS ²	• 4 x 40G QSFP+ expansion module
DXS-3600-EM-8XS ²	• 8 x 10G SFP+ expansion module
DXS-3600-EM-Stack ³	• 2 x 120G CXP physical stacking module
DXS-3600-PWR-FB	300W AC power supply tray with front-to-back airflow
DXS-3600-PWR-BF	300W AC power supply tray with back-to-front airflow
DXS-3600-PWRDC-FB	300W DC power supply tray with front-to-back airflow
DXS-3600-FAN-FB	Fan tray with front-to-back airflow
DXS-3600-FAN-BF	Fan tray with back-to-front airflow
Optional Manageme	ent 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 SF	P+ Transceivers
DEM-431XT	10 GBASE-SR SFP+ Transceiver (w/o DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-431XT-DD	10GBASE-SR SFP+ Transceiver (with DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-432XT	10GBASE-LR SFP+ Transceiver (w/o DDM), 10 km
DEM-432XT-DD	10GBASE-LR SFP+ Transceiver (with DDM), 10 km
DEM-433XT	10GBASE-ER SFP+ Transceiver (w/o DDM), 40 km
DEM-433XT-DD	10GBASE-ER SFP+ Transceiver (with DDM), 40 km
DEM-434XT	10GBASE-ZR SFP+ Transceiver, (w/o DDM), 80 km
DEM-435XT	10GBASE-LRM SFP+ Transceiver (w/o DDM), 220 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-435XT-DD	10GBASE-LRM SFP+ Transceiver (with DDM), 220 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-436XT-BXU	10GBASE-LR BiDi SFP+ Transceiver (w/o DDM) 20 km, TX: 1270 nm, RX: 1330 nm
DEM-436XT-BXD	10GBASE-LR BiDi SFP+ Transceiver (w/o DDM) 20 km, TX: 1330 nm, RX: 1270 nm
DEM-X10CS-1271	10G Single-Mode 10KM CWDM SFP+Transceiver (1271nm)
DEM-X10CS-1291	10G Single-Mode 10KM CWDM SFP+Transceiver (1291nm)
DEM-X10CS-1311	10G Single-Mode 10KM CWDM SFP+ Transceiver (1311nm)
DEM-X10CS-1331	10G Single-Mode 10KM CWDM SFP+ Transceiver (1331nm)

• 10G Single-Mode 40KM CWDM SFP+ Transceiver (1471nm)
• 10G Single-Mode 40KM CWDM SFP+ Transceiver (1491nm)
• 10G Single-Mode 40KM CWDM SFP+ Transceiver (1511nm)
• 10G Single-Mode 40KM CWDM SFP+ Transceiver (1571nm)
ansceivers
SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage
SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550 m, 3.3 V operating voltage
SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2 km, 3.3 V operating voltage
SFP transceiver, 1000BASE-LHX standard, single-mode fiber, max. distance 50 km, 3.3 V operating voltage
SFP transceiver, 1000BASE-ZX standard, single-mode fiber, max. distance 80 km, 3.3 V operating voltage
WDM SFP transceiver, 1000BASE-BX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
WDM SFP transceiver, 1000BASE-BX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
 WDM SFP transceiver, 1000BASE-BX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
WDM SFP transceiver 1000BASE-BX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength1550 nm
SFP transceiver, 1000BASE-TX standard
- Direct Attach Cables
• 10-GbE SFP+ to SFP+ 1 m Direct Attach Cable
• 10-GbE SFP+ to SFP+ 3 m Direct Attach Cable
• 10-GbE SFP+ to SFP+ 7 m Direct Attach Cable
• 40-GbE QSFP+ to QSFP+ 1 m Direct Attach Cable
• 40-GbE QSFP+ to QSFP+ 3 m Direct Attach Cable
• 40G QSFP+ to 4*10G SFP+ 1 m Direct Attach Cable
P Direct Attach Cables
• CXP to CXP 50cm Stacking Cable

These features will be supported in a future version.
 Product available Q4 2012
 Product available Q1 2013 Updated 2012/11/05

