D-Link®
Building Networks for People

Product Highlights

- **High performance**
  Up to 960/480 Gbps switching capacity and 714/357 Mbps forwarding rate
- **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 Series

Top-of-Rack 10 Gigabit Managed Switch

Key Features

High performance

- 960/480 Gbps switching capacity
- 24/8 fixed 10 Gigabit SFP+ ports

High availability

- Hot-swappable power modules for power redundancy and load sharing
- Hot-swappable fan trays with airflow control provide cooling redundancy
- Up to 480G stacking[1] bandwidth with four devices functioning together as one

Security

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

Advanced Features

- MPLS/OSPF/BGP
- Three Colour Marker – Classifying network traffic for QoS

Management

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

D-Link's DXS-3600 Series Top-of-Rack 10 Gigabit Stackable[1] Managed Switch consists of compact, high-performance switches that feature 10 Gigabit Ethernet switching, routing, and very low latency. The 1U height and front-to-back air flow make the DXS-3600 Series suitable for Top-of-Rack data centre, enterprise and campus aggregation network environments. The DXS-3600 Series consists of 24-port and 8-port 10 Gigabit SFP+ switches with an expansion module slot. The optional expansion modules not only provide additional 10 Gigabit SFP+ ports but also 120G stacking[1], 10GBASE-T or 1000BASE-T connectivity for different applications.

Convenient deployment

The DXS-3600 Series switches provide your network with high-performance 10 Gigabit Ethernet switching capacities of up to 960/480 Gbps and forwarding rates of up to 714/357 Mbps. Hot-swappable power modules and fan trays provides the switches with redundancy and high availability. As well as redundancy, loading sharing between the power modules helps to further extend their lifetime. The modular fan design can provide 2+1 redundancy for the system. If a fan fails or the temperature rises, the smart fans will ncrease their speed accordingly to ensure the device continues to operate without downtime.

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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 centre, 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 DVMR. The Enhanced Image (EI) also supports L2/L3 MPLS VPN that enables the DXS-3600 Series switches to be deployed as the core router of an enterprise environment or as an aggregation switch in an MPLS environment.

Data centre features

Data Centre Bridging (DCB) is an essential set of enhancements to Ethernet for networking in data centre environments. The DXS-3600 Series switches support various core components of Data Centre Bridging (DCB) such as IEEE 802.1Qbb, IEEE 802.1Qaz, and IEEE 802.1Qau; preventing data loss during network congestion, managing the allocation of bandwidth and providing congestion management. The DXS-3600 Series switches also support cut-through switching, which reduces network latency.

Energy efficient

The DXS-3600 Series switches allow users to manage airflow by using different power and fan module sets. Front-to-back airflow optimizes air circulation to provide more effective cooling throughout rack systems in data centres. 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.

D-LinkAssist
Rapid Response Support

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.

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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 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)	• 74.3 W (without expansion module)
Standby Power Consumption	• 88.2 W	• 69.9 W
Heat Dissipation (Max.)	• 398.29 BTU/hr (without expansion module)	• 253.36 BTU/hr (without expansion module)
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 (-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	

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Standard Image (SI) Features		

Stackability	• Physical Stacking[1]
	  • 480G stacking bandwidth
	  • Up to 4 switches in a stack
	  • Ring/chain topology support
		• Virtual Stacking/Clustering of up to 32 units[2]
		  • 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
		• ERPS[1] (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 Diagnostics[2]

L2 Multicast Features	• L2 Multicast Filtering
	  • Forwards all groups
	  • Forwards all unregistered groups
	  • Filters all unregistered groups
	• MLD Snooping[2]
	  • 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[2]
		• IP Interface
		  • Supports 256 interfaces
		• Loopback Interface[2]

L3 Routing	• Static Routing
	  • Max. 1K IPv4 entries
	  • Max. 512 IPv6 entries[2]
	  • 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 VLAN[2]
		• 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)[2]
		• MAC-based Access Control (MAC)[2]
		• Guest VLAN

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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:
	  • 802.1p 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[2]
	• DHCP Server Screening[2]
	• IP-MAC-Port Binding[2]
	  • ARP inspection
	  • IP inspection
	  • DHCP Snooping
		• ARP Spoofing Prevention[2]
		  • Max. 64 entries
		• Traffic Segmentation
		• SSL[2]
		  • 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 • SMTP[2] • DHCP Auto Configuration[2] • SNTP • RCP[1] • RMONv1 • RMONv2 • Trusted Host[2] • Password Encryption • Debug Command

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Enhanced Image (EI) Additional Features		
L3 Multicasting	• Multicast Table Size: 2K • IGMP v1, v2, v3 • PIM-SM • PIM-DM	• PIM-Sparse-Dense Mode • PIM-SSM • DVMRP v3 • MLD v1/v2[2]
MPLS	• LDP • MPLS LSP trigger filtering • MPLS label-forwarding • MPLS QoS • MPLS ping and traceroute	• L2 protocol tunneling through PW • VPWS • VPLS • PW Redundancy

L3 Features	• IPv6 Tunneling[2]
	  • 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 entries[2]
	• Supports 8K hardware L3 forwarding entries shared by IPv4/IPv6
	  • Max. 8K IPv4 entries
	  • Max. 4K IPv6 entries[2]
	• RIP
	  • RIP v1/v2
	  • RIPng[2]
		• OSPF
		  • OSPF v2
		  • OSPF v3[2]
		  • OSPF Passive Interface
		  • Stub/NSSA Area
		  • OSPF Equal Cost Route
		• BGPv4
		• Route Redistribution
		• IP Directed Broadcast
		• Policy Based Route[2]

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 802.1p 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, 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 MarkerRFC2093, 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

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Optional License Upgrade and Expansion Modules	
DXS-3600-32S-SE-LIC	• DXS-3600-32S Standard Image to Enhanced Image License
DXS-3600-EM-4XT[3]	• 4 x 10GBASE-T expansion module
DXS-3600-EM-8T[3]	• 8 x 1000BASE-T expansion module
DXS-3600-EM-Stack[1,3]	• 2 x 120G CXP physical stacking module (requires DEM-CB50CXP stacking cable)
DXS-3600-PWR-FB	• 300W AC power supply tray with front-to-back airflow
DXS-3600-FAN-FB	• Fan tray with front-to-back airflow
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), 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
Optional 1 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-LHX standard, single-mode fiber, max. distance 50 km, 3.3 V operating voltage
DEM-315GT	• SFP transceiver, 1000BASE-ZX standard, single-mode fiber, max. distance 80 km, 3.3 V operating voltage
DEM-331T	• 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
DEM-331R	• 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
Optional 10 Gbps SFP+ Direct Attach Cables	
DEM-CB100S	• 10-GbE SFP+ to SFP+ 1 m Direct Attach Cable
DEM-CB300S	• 10-GbE SFP+ to SFP+ 3 m Direct Attach Cable
Optional 120 Gbps CXP Direct Attach Cables	
DEM-CB50CXP	• CXP to CXP 50cm Stacking Cable

[1] Only available on DXS-3600-32S
[2] Support in future firmware release
[3] Product available Q2 2013

For more information: www.dlink.com

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