D-Link®

Highlights

High Performance

Future-proof your network with 100G uplink port speeds, forwarding rates up to 1607 Mpps, 32 MB packet buffer and 2.16 Tbps switching bandwidth

Reliable Systems

Redundancy features including hot-swappable power supplies and fan trays. Stack up to 12 switches to operate as a single module, providing fault tolerance and increasing network reliability

Flexible and Open Architecture

Support for multiple software images to fit the need in a datacenter or Enterprise/ISP network. Supports SDN Openflow v1.3 for an open networking setup

DXS-3610 Series

Layer 3 Stackable 10G Managed Switches

Features

High Performance and Flexibility

- Two hot-swappable power modules for 1+1 power redundancy and load sharing
- Hot-swappable fan trays with front-to-back airflow and N+1 cooling redundancy
- Up to 1200G stacking bandwidth with twelve devices functioning together as a single unit[5]

Data Center Features

- IEEE 802.1Qbb Priority-based Flow Control (PFC)

Advanced Features

- MPLS
- ERPS (G.8032 v1/v2)
- MACSec[1] (DXS-3610-54T 10G BASE-T port only)
- OpenFlow v1.3

OAM

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

Accessible Management

- **D-View, D-Link Network Assistant (DNA) utility, web-based GUI, Command Line Interface (CLI) through Telnet, SSH or RJ-45 Console/ Management Port**

The D-Link DXS-3610 Series Layer 3 Stackable 10G Managed Switches are a set of new, compact, high-performance switches that feature ultra-low latency, suitable for enterprise and campus, as well as service provider's aggregation network environments. Available in two configurations, 48 x 10G Base-T or 10G SFP+ ports with 6 x 100G QSFP28 that can be used either uplink or stacking[5] configurations. The DXS-3610 Series is available with standard as well as enhanced software images. The Standard Image features a wide range of Layer 2, VLAN, multicasting, Quality of Service (QoS), security, data center, and static routing protocols including RIP, VRRP and OSPF. The Enhanced Image features comprehensive IPv4/v6 routing, including BGP and L3 multicasting features such as IGMP, MLD, PIM-DM, SM, SDM, SSM, and DVMRP. The Enhanced Image also supports L2/L3 MPLS VPN, which enables the DXS-3610 Series to be deployed as the core router of an enterprise environment, or as an aggregation switch in an MPLS environment. Furthermore, the Switch Resource Management feature allows the hardware table size to be dynamically adjusted. The DXS-3610 Series also supports essential OpenFlow 1.3 features, enabling the switch to be managed through an OpenFlow controller.

DXS-3610 Series Layer 3 Stackable 10G Managed Switches

Technical Specifications		
General	**DXS-3610-54S**	**DXS-3610-54T**
Size	• 19-inch, 1U rack-mount	
Interfaces	• 48 x 1/10GbE SFP/SFP+ ports • 6 x 40/100GbE QSFP+/QSFP28 ports	• 48 x 1/10GbE Base-T ports • 6 x 40/100 GbE QSFP+/QSFP28 ports
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	
USB Port	• 1 x USB 2.0 Type A port	
Performance		
Switching Capacity	• 2.16 Tbps	
Max. Forwarding Rate	• 1607.04 Mpps	
Packet Buffer Memory	• 32 MB	
MAC Address Table[2]	• Up to 288K	
IPv4 Routing Table[2]	• Up to 32K	
IPv6 Routing Table[2]	• Up to 16K	
IPv4 Forwarding Table[2]	• Up to 144K	
IPv6 Forwarding Table[2]	• Up to 144k	
Jumbo Frame Size	• 9436 bytes	
Physical		
Power Input	• 1 + 1 redundant power supply design • Input: 100 to 240 V AC, 50/60 Hz	
Maximum Power Consumption	• 320.8 W	• 330.2 W
Standby Power Consumption	• 120.6 W	• 108.2 W
Heat Dissipation (Max.)	• 1083 BTU/hr	• 1126 BTU/hr
Acoustics	• Max: 79.4 dB(A) • Min: 65.3 dB(A)	• Max: 76.6 dB(A) • Min: 69.7 dB(A)
Fans	• 5 x fans	
Dimensions (W x L x H)	• 441.0 x 487.44 x 43.5 mm	
Weight	• 9.80 kg	• 9.88 kg
Operating Temperature	• 0 to 45 °C	
Storage Temperature	• -40 to 70 °C	
Operating Humidity	• 0% to 95% RH	
Storage Humidity	• 0% to 95% RH	
MTBF	• 94,262 hours	• TBD
Certifications		
Safety	• CB, cUL, LVD	
EMI/EMC	• FCC, CE, C-Tick, IC, VCCI	

D-Link® DXS-3610 Series Layer 3 Stackable 10G Managed Switches

Standard Image (SI) Features		

Stackability	• Virtual Stacking/Clustering of up to 32 units
	  • Supports D-Link Single IP Management
		• Physical Stacking[5]
		  • Up to 1200G stacking bandwidth
		  • Up to 12 switches in a stack
		  • Ring/chain topology support

L2 Features	• MAC Address Table
	  • Max 288K entries[2]
	• 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 9416 bytes
	• Multi-Chassis Link Aggregation Group (MLAG)
		• 802.1AX Link Aggregation
		  • Max. 32 groups per device, 12 ports per group
		• ERPS (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
		• RSPAN mirroring
		• Loopback Detection
		• L2 Protocol Tunneling

L2 Multicast Features	• L2 Multicast Filtering
	  • Forwards all groups
	  • Forwards all unregistered groups
	  • Filters all unregistered groups
	• MLD Snooping
	  • MLD v1/v2 Snooping
	  • Supports a max of 8k MLD snooping groups
	  • Host-based MLD Snooping Fast Leave
		• IGMP Snooping
		  • IGMP v1/v2/v3 Snooping
		  • Supports a max of 16K IGMP snooping groups
		  • Supports 1K static multicast addresses
		  • IGMP per VLAN
		  • Host-based IGMP Snooping Fast Leave
		• PIM Snooping

L3 Features	• ARP
	  • 512 Static ARP
	  • Supports Gratuitous ARP
	• IPv6 Tunneling
	  • Static
	  • ISATAP
	  • GRE
	  • 6to4
		• IP Interface
		  • Supports 256 interfaces
		• Loopback Interface
		• IPv6 Neighbor Discovery (ND)
		• IP Helper

L3 Routing	• Static Routing
	  • Max. 1K IPv4 entries
	  • Max. 512 IPv6 entries
	  • Supports secondary route
	  • Supports Equal Cost/Weighted Cost multi-path route
	• Default Routing
	• Supports hardware routing entries shared by IPv4/IPv6
	  • Max. 32K IPv4 entries
	  • Max. 16K IPv6 entries
	• Supports hardware L3 forwarding entries shared by IPv4/IPv6
	  • Max. 144K IPv4 entries[2]
	  • Max. 144K IPv6 entries[2]
	• Route Redistribution
	  • Default Route
	  • Static Route
		• Graceful Restart (GR) Helper
		• Policy Based Route
		• Bidirectional Forwarding Detection (BFD)
		  • IPv4/v6 Static Route
		  • RIP/RIPng
		  • Supports OSPF
		  • Supports VRRP
		• OSPF
		  • OSPFv2/v3
		  • IPv4 Static Route
		  • OSPF Passive Interface
		  • OSPF Equal Cost Route
		• RIP
		  • RIPv1/v2
		  • RIPng
		• VRRPv2/v3

VLAN	• 802.1Q
	• 802.1v Protocol-based VLAN
	• 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
		• VLAN Group
		  • Max. 4K static VLAN groups
		  • Max. 4094 VIDs
		• GVRP
		  • Up to 4K dynamic VLANs
		• VLAN Translation
		• ISM VLAN (Multicast VLAN)
		• Private VLAN
		• Super VLAN
		• VLAN Trunking

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)
	  • Supports port-based access control
	  • Supports host-based access control
	  • Dynamic VLAN Assignment
	  • Identity-driven Policy (VLAN/ACL/QoS) Assignment
		• MAC-based Access Control (MAC)
		  • 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
		  • Supports 802.1X NAP
		  • Supports DHCP NAP
		• RADIUS and TACACS+ authentication
		• Authentication Database Failover
		• Trusted Host

QoS (Quality of Service)	• 802.1p Quality of Service (QoS)
	• 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:
		  • 2304 ingress ACL rules
		  • 2K egress ACL rules
		  • 3K VLAN Access Maps
		• 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 (IMPB)
	• Dynamic ARP Inspection
	• IP Source Guard
	• DHCP Snooping
	• IPv6 Snooping
	• DHCPv6 Guard
	• IPv6 Route Advertisement (RA) Guard
		• IPv6 ND Inspection
		• ARP Spoofing Prevention
		  • Max. 64 entries
		• Traffic Segmentation
		• SSL
		  • Supports IPv4/v6 access
		  • Supports TLS 1.2
		• SSH
		  • Supports v2
		  • Supports IPv4/v6 access
		• BPDU Attack Protection
		• DOS Attack Prevention

Management	• 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 • Microsoft® Network Load Balancing (NLB) • Switch Resource Management (SRM) • sFlow	• DNS Resolver • CPU Monitoring • MTU Setting • Traceroute and 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) • D-Link License Management System (DLMS) • OpenFlow v1.3
Enhanced Image (EI) Additional Features		
L3 Multicasting	• Multicast Table Size: Up to 16K[3] • IGMP v1, v2c, v3 • PIM-SM IPv4/IPv6 • PIM-DM • Multicast Source Discovery Protocol (MSDP)	• PIM-Sparse-Dense Mode • PIM-SSM • DVMRP v3 • MLD v1/v2

MPLS	• Label Distribution Protocol (LDP)
	• Penultimate Hop Popping (PHP)
	• Virtual Private Wire Service (VPWS)
	• Virtual Private LAN Service (VPLS)
		• BGP/MPLS VPN
		  • Multiprotocol extensions for BGP4
		  • Virtual Routing Forwarding (VRF)
		• LSP MPLS Ping/Traceroute
		• VCCV Ping/Traceroute

L3 VPN	• MPLS/BGP L3 VPN • MP-BGP	• VRF aware application

L3 Routing	• BGP v4/v4+
	• IS-IS
	• IS-ISv6
	• VRF Lite
	  • BGPv4
	  • OSPFv2
	  • IPV4 Static Route
	  • RIPv1/2
		• IP Directed Broadcast
		• Bidirectional Forwarding Detection (BFD)
		  • BGP

DXS-3610 Series Layer 3 Stackable 10G Managed Switches

Standards

MIB and 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 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 Licences and Accessories	
DXS-3610-54S-SE-LIC	• DXS-3610-54S Standard Image to Enhanced Image License
DXS-3610-54T-SE-LIC	• DXS-3610-54T Standard Image to Enhanced Image License
DXS-PWR700AC	• 770 W AC modular power supply with front-to-back airflow
DXS-FAN200	• Fan tray with front-to-back airflow
Optional Management Software	
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
Optional 100G QSFP28 Transceivers[4]	
DEM-Q2801Q-SR4	• 100GBASE-SR4 QSFP28, Multi-Mode 100 m SR4 transceiver
DEM-Q2810Q-LR4	• 100GBASE-LR4 QSFP28, Single-Mode 10 km LR4 transceiver
Optional 40G QSFP+ Transceivers[4]	
DEM-QX01Q-SR4	• 40GBASE-SR4 Multi-mode, OM3:100M/OM4:150 m
DEM-QX10Q-LR4	• 40GBASE-LR4 Single-mode, 10 km
Optional 10G SFP+ Transceivers[4]	
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
Optional 1G SFP Transceivers[4]	
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 100G QSFP28 Direct Attach Stacking Cable	
DEM-CB100Q28	• 100G QSFP28 to QSFP28 1 m Direct Attach Stacking Cable
Optional 40G QSFP+ Direct Attach Cable	
DEM-CB300QXS	• 40G QSFP+ to QSFP+ 3 m Direct Attach Cable
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

[1] Will be supported in future releases.
[2] Based on maximum value of Switch Resource Management (SRM)
[3] Table is shared between all multicast functions
[4] Only supports full duplex mode
[5] Physical stacking feature requires DEM-CB100Q28 100G QSFP28 to QSFP28 1 m Direct Attach Cable

For more information: www.dlink.com

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