D-Link
Building Networks for People

Product Highlights

10 Gigabit Connectivity
High bandwidth uplinks eliminate network bottlenecks and provide low-latency connections for network servers and storage

High Performance
Get the speeds your network needs with up to 1.28Tbps/640 Gbps switching capacity and 960/480 Mpps forwarding rate

Reliability
The DXS-F3500 Series supports dual load sharing for AC/DC power, as well as Data Center Bridging to provide “lossless Ethernet” transmission quality

DXS-F3500 Series

High Port Density Data Center TOR Switch

Features

High availability & Flexibility

- Two AC/DC hot-swappable power modules for 1+1 redundancy and load sharing.
- Five hot-swappable fan trays provide N+1 cooling redundancy.
- Supports Virtual Switching Unit (VSU) by leveraging Multi Chassis Trunking (MCT) to avoid single point of failure.
- Ethernet Ring Protection Switching (ERPS) / Ethernet Automatic Protection Switching (EAPS)

Lossless Ethernet via Data Center Bridging (DCB)

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

Traffic Monitoring & Bandwidth Control

- Port mirroring/Bandwidth Control
- Broadcast/Multicast/Unicast storm control
- Single Rate Three Color Marker (srTCM)
- Two Rate Three Color Marker (trTCM)

D-Link’s new generation DXS-F3500 switch delivers versatile feature set, High density port count in 1U rack mount size; suitable for Data Center TOR or Enterprise & campus environments CORE/Aggregation requirements. The DXS-F3500 high-performance switches feature wire-speed 10/40 Gigabit Ethernet switching, routing at ultra-low latency.

The DXS-F3500 Series switches can provide flexible interface options. You can avail 24 10-Gig & 2x40-Gig ports or 32x10-Gig ports in DXS-F3500-32S. Whereas DXS-F3500-64S provides 48x10-Gig & 4x40-Gig ports or 64x10-Gig ports in compact 1U size.

High Availability & Flexibility

The DXS-F3500 Series switches feature a modular fan and power supply design for a high availability architecture. The hot-swappable design means that fans and power supplies can be replaced without affecting switch operation. The Multi Chassis Trunking enables multiple DXS-F3500 switches to be configure in a Virtual chassis and can provide non-stop layer-3 routing forwarding even in case of failure of any switch in the virtual chassis.

Lossless Ethernet

Data Center Bridging (DCB) is an essential set of enhancements to Ethernet for networking in data center environments. The DXS-F3500 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 on specific priority 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.

Technical Specifications		
General	**DXS-F3500-32S**	**DXS-F3500-64S**
Interfaces	Up to 32 10-Gig SFP+ or 24 10-Gig SFP+ & 2 40-Gig QSFP Ports,	Up to 64 10-Gig SFP+ or 48 10-Gig SFP+ & 4 40-Gig QSFP Ports
Console Port	RJ-45 and Mini USB console ports for out-of-band CLI management	
Management Port	10/100/1000BASE-T RJ-45 Ethernet for out-of-band IP management	
USB Port	A-Type Port	
Performance		
Switching Capacity	640 Gbps	1.28 Tbps
Max. Forwarding Rate	480 Mpps	960 Mpps
Packet Buffer Memory	9 MB	
MAC Address Table	128K	
Physical		
Power input	Dual Redundant AC Power supplies (100 to 230 V AC) Dual Redundant DC Power supply 36V ~ 72V (Available on request)	
Dimensions	442.5×404×44 mm (W x D x H) 1U	
Operating Temperature	0° to 50° C	
Storage Temperature	-20° to 70° C	
Operating Humidity	10%-90% non-condensing	
Storage Humidity	5%-95% non-condensing	
Certifications		
Safety	RoHS	
Software Features		
Virtual Switching Unit (VSU)	Multi Chassis Trunking	

Layer 2 Features	• MAC Address Table
	  • Up to 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
	  • Root Guard
	  • Loop Guard
	• Jumbo Frame
	  • Up to 12 Kb
		• 802.1AX Link Aggregation
		  • Max. 32 groups per device, 32 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 mirroring for Rx
		• VLAN mirroring
		• L2 protocol tunnelling
		• Loopback Detection (LBD)
		• iSCSI awareness

L2 Multicast Features	• MLD Snooping
	  • MLD v1/v2 Snooping
	  • Supports 256 groups
	  • Host-based MLD Snooping Fast Leave
	  • Supports 64 static MLD groups
	  • MLD Snooping Querier
	  • Per-VLAN MLD Snooping
	  • MLD Proxy Reporting
		• IGMP Snooping
		  • IGMP v1/v2/v3 Snooping
		  • Supports 8K IGMP groups
		  • Supports 64 static IGMP groups
		  • Per VLAN IGMP Snooping
		  • IGMP Snooping Querier
		  • Host-based IGMP Snooping Fast Leave
		• PIM Snooping

Layer 3 Multicast	• IGMP v1/v2/v3 • MLD v1/v2 • IGMP/MLD Proxy • DVMRP v3 • PIM-DM/SM/SM v6/SSM/SDM • Multicast Source Discovery Protocol (MSDP)

L3 Features	• ARP
	  • 512 static ARP
	  • Supports Gratuitous ARP
	  • ARP Proxy
	• Loopback interface
	• UDP helper
	• IPv6 tunneling
	  • Static
	  • ISATAP
	  • GRE
	  • 6to4
	• IPv6 Neighbor Discovery (ND)
	• IGMP Proxy Reporting
	• VRRP v2/v3
	• IPv6 Tunneling
	  • Static
	  • ISATAP
	  • GRE
	  • 6to4
	• IP Interface
	  • Supports 256 interfaces

L3 Routing	• Static routing
	  • Max. 16K IPv4 entries
	  • Max. 8K IPv6 entries
	  • Supports Route Redistribution
	  • Supports secondary route
	• Supports hardware routing entries shared by IPv4/IPv6
	  • Max. 16K IPv4 entries
	  • Max. 8K IPv6 entries
	• Supports hardware L3 forwarding entries shared by IPv4/ IPv6
	  • Max. 32K IPv4 entries
	  • Max. 16K IPv6 entries
	• Default routing
	• Policy-based Route (PBR)
	• Null route
	• Bidirectional Forwarding Detection (BFD)
	  • IPv4/IPv6 static route
	  • RIP
	  • VRRP
	• RIP
	  • RIP v1/v2
	  • RIPng
	• Graceful Restart (GR) Helper for RIP
	• Route Redistribution
	  • Default route
	  • Static route
	  • RIP
	  • RIPng
	  • Null route
	OSPF
	  • OSPF v2/v3
	  • OSPF Passive Interface
	  • Stub/NSSA Area
	• Graceful Restart (GR) Helper for OSPF
	• Route Preference
	  • OSPF v2/v3
	• Route Redistribution
	  • OSPF v2/v3
	• Bidirectional Forwarding Detection (BFD)
	  • OSPF
	• BGP4+

MPLS VPN	• LDP protocol • MCE • P/PE of MPLS VPN • MPLS Traffic Engineering (TE) • MPLS Operations, Administration, and Maintenance (OAM)

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
	• VLAN group
	  • Max. 4K static VLAN groups
	  • Max. 4094 VIDs
	• ISM VLAN (multicast VLAN)
	• Voice VLAN
	• Auto Surveillance VLAN
	• VLAN trunking
	• GVRP
	  • Up to 4094 dynamic VLANs

AAA	• 802.1X authentication
	  • Supports port-based access control
	  • Supports host-based access control
	  • Identity-driven policy assignment
	  • Dynamic VLAN assignment
	  • QoS assignment
	  • ACL assignment
	• Web-based Access Control (WAC)
	  • Identity-driven policy assignment
	  • Dynamic VLAN assignment
	  • QoS assignment
	  • ACL assignment
	• Supports port-based access control
	• Supports host-based access control
	• MAC-based Access Control (MAC)
	  • Identity-driven policy assignment
	  • Dynamic VLAN assignment
	  • QoS assignment
	  • ACL assignment
	  • Supports port-based access control
	  • Supports host-based access control
	• Compound Authentication
	• Microsoft NAP
	  • Support 802.1X NAP
	  • Support DHCP NAP
	• RAIDUS and TACACS+ authentication
	• Authentication Database Failover
	• Guest VLAN

Quality of Service (QoS)	• 802.1p Quality of Service
	  • 8 queues per port
	• QoS based on
	  • 802.1p Priority Queues
	  • DSCP
	  • IP address
	  • MAC address
	  • VLAN
	  • IPv6 traffic class
	  • IPv6 Flow Label
	  • TCP/UDP port
	  • Switch port
	  • EtherType
	  • ToS/IP Preference
	  • Protocol type
	• Congestion Control
	  • WRED
	• Queue handling
	  • Strict
	  • Weighted Round Robin (WRR)
	  • Strict + WRR
	  • Deficit Round Robin (DRR)
	  • Weighted Deficit Round Robin (WDRR)
	• Bandwidth control
	  • Port-based (ingress/egress, min. granularity 64 Kb/s)
	  • Flow-based (ingress/egress, min. granularity 64 Kb/s)
	  • Per queue bandwidth control (min. granularity 64 Kb/s)
	• Support for following actions:
	  • Remark 802.1p priority tag
	  • Remark ToS/DSCP tag
	  • Committed Information Rate (CIR)
	• Three Color Marker
	  • trTCM
	  • srTCM

Data Center Bridging (DCB)	• 802.1Qbb Priority-based Flow Control (PFC) • 802.1Qaz Enhanced Transmission Selection (ETS) • 802.1Qau Congestion Notification (CN)

Access Control List (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
	• Max. ACL entries:
	  • Ingress
	  • IPv4: 2K
	  • IPv6: 2K
	  • Egress
	  • IPv4: 2K
	  • IPv6: 2K
	  • 3K VLAN access map
	• 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
	• 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
		• Duplicate Address Detection (DAD)
		• L3 Control Packet Filtering
		• Traffic Segmentation
		• SSL
		  • Supports v1/v2/v3
		  • Supports IPv4/IPv6 access
		• SSH
		  • Supports SSH v2
		  • Supports IPv4/IPv6 access
		• BPDU attack protection
		• DoS attack prevention

Operations, Administration, and Maintenance (OAM)	• Cable diagnostics • 802.3ah Ethernet link OAM • D-Link Unidirectional Link Detection (DULD) • Dying Gasp	• 802.1ag Connectivity Fault Management (CFM) • Y.1731 OAM • Optical Transceiver Digital Diagnostic Monitoring (DDM)

Management	• Web-based GUI
	• CLI
	• Telnet server
	• Telnet client
	• TFTP client
	• FTP client
	• Secure FTP (SFTP) server
	• Traffic monitoring
	• SNMP
	  • Supports v1/v2c/v3
	• SNMP Trap
	• System log
	• DHCP client
	• DHCP server
	• DHCP Relay options 60, 61, 82
	• Multiple images
	• Multiple configurations
	• Flash file system
	• DNS client
		• CPU monitoring
		• MTU setting
		• ICMP tools
		  • Ping
		  • Traceroute
		• LLDP & LLDP-MED
		• DNS Relay
		• SMTP
		• DHCP Auto Configuration
		• NTP
		• RCP (Remote Copy Protocol)
		• RMON v1/v2
		• Trusted host
		• Password encryption
		• Debug command
		• sFlow
		• Switch Resource Management (SRM)
		• Microsoft Network Load Balancing (NLB)

Ordering Information	
DXS-F3500-32S	24 10G SFP+ Ports & 2 40G QSFP Ports. Two AC modular power supplies and five fan modules with front-to-back airflow.
DXS-F3500-64S	48 10G SFP+ Ports & 4 40G QSFP Ports. Two AC modular power supplies and five fan modules with front-to-back airflow.
DEM-CB100QXS-4XS	40G QSFP+ to 4*10G SFP+ 1 m Direct Attached Cable
Optional SFP Transceivers	
DEM-310GT	1000BASE-LX, single-mode, 10 km
DEM-311GT	1000BASE-SX, multi-mode, 550 m
DEM-312GT2	1000BASE-SX, multi-mode, 2 km
DEM-314GT	1000BASE-LHX, single-mode, 50 km
DEM-315GT	1000BASE-ZX, single-mode, 80 km
Optional SFP+ Transceivers	
DEM-431XT	10GBASE-SR SFP+ Transceiver (without DDM), 33 m: OM1 MMF, 82 m: OM2 MMF, 300 m: OM3 MMF
DEM-431XT-DD	10GBASE-SR SFP+ Transceiver (with DDM), 33 m: OM1 MMF, 82 m: OM2 MMF, 300 m: OM3 MMF
DEM-432XT	10GBASE-LR SFP+ Transceiver (without DDM), 10 km
DEM-432XT-DD	10GBASE-LR SFP+ Transceiver (with DDM), 10 km
DEM-433XT	10GBASE-ER SFP+ Transceiver (without DDM), 40 km
DEM-433XT-DD	10GBASE-ER SFP+ Transceiver (with DDM), 40 km
DEM-434XT	10GBASE-ZR SFP+ Transceiver (without DDM), 80 km
DEM-436XT-BXD	10GBASE-LR BiDi SFP+ Transceiver (without DDM), Wavelength Tx 1330 nm, Rx: 1270 nm, 20 km
DEM-436XT-BXU	10GBASE-LR BiDi SFP+ Transceiver (without DDM), Wavelength Tx 1270 nm, Rx: 1330 nm, 20 km
Optional 40 Gbps SFP Transceivers	
DEM-QX10Q-LR4	40GBASE-LR4 transceiver, single-mode, 10 km
DEM-QX01Q-SR4	40GBASE-SR4 transceiver, multi-mode, OM3: 100 m/OM4: 150 m
Optional 40 Gbps SFP+ Direct attached cable	
DEM-CB100QXS	40-GbE QSFP+ to QSFP+ 1 m Direct attached cable
DEM-CB300QXS	40-GbE QSFP+ to QSFP+ 3 m Direct attached cable
DEM-CB100QXS-4XS	40-G QSFP+ to 4* 10G SFP+ 1 m Direct attached cable

D-Link®
Building Networks for People