XSTACK

Advanced Layer 2+ Gigabit Switches

Flexible Choices

- 24 or 48 10/100/1000BASE-T ports
- 4 combo SFP ports for Gigabit Fiber Connection
- 2 or 3 open slots for optional 10 Gigabit uplinks
- Stackable through optional 10 Gigabit coaxial ports
- Optional external redundant power supply
- Available with or without 802.3af Power Over Ethernet (PoE)

xStack Integration

- Virtual stack of up to 32 units
- Single IP Management for integration with L3 core switches
- Physical stack of up to 12 units, 576 Gigabit ports[1]

Enhanced L2+ Features

- IP v4/v6 Static Routing
- Routing Information Protocol (RIP)[1]

Security

- L2/L3/L4 Multi-Layer Access Control List
- D-Link Safeguard Engine
- IP-MAC-Port Binding
- ZoneDefense Technology
- Supports Microsoft® NAP
- DHCP Server Screening
- Web-based Access Control (WAC)
- Compound authentication

Quality of Service

- 802.1p Priority Queues/Multi-Layer CoS
- 8 Hardware Queues per port

Traffic Monitoring/Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control down to 64 kps per port
- Granular Bandwidth Storm Control down to 1 pps per port
- 802.3ad Link Aggregation (Port Trunks)

Configuration/Management

- Web-Based GUI
- Command Line Interface (CLI)
- SNMP v1/v2c/v3
- Multiple Images/Configuration
- DHCP Server
- sFlow

[1]Calculation based on 12 stacked DGS-3450 units

The xStack DGS-3400 series of next generation switches delivers performance, flexibility, security, multi-layer Quality of Service (QoS), and redundant power options for SMBs and enterprises. With high Gigabit port densities for desktop connections, SFP fiber connectivity, 10-Gigabit uplink options, and enhanced Layer 2+ functions, these switches comprise the workgroup access-layer stack for seamless integration with L3 core switches to form part of a multi-level network structured with a high-speed backbone and centralized servers.

Unparalleled Flexibility
Any switch in the DGS-3400 series can operate as a stand-alone device or as part of a scalable stack. Embedded with Single IP Management capability, a standalone switch can form part of a virtual stack, where intra-stack traffic flows through the usual network wires, doing away with costly stacking cables. Without stacking cables, cable distance barriers, and physical stacking limitations, a virtual stack can comprise units that are located anywhere on the network, minimizing the impact of any single point of failure.

Redundant Ring Stacking
Alternatively, optional 10-Gigabit modules can be installed in the open slots to create a physical stack. Up to 12 units or 576 Gigabit ports can be configured for a stack.[1] Users can install one or two single-port modules, depending on whether linear or fault-tolerant ring stacking is implemented. With each of these ports providing 20 Gbps full duplex transmission on cost-effective coaxial cable, the DGS-3400 series not only provides high-bandwidth stacking, but also cost control capabilities that allow users to add ports strictly on a per need basis. Modules with a single 10-Gigabit XFP can also be installed in any of the open slots for uplink to servers or a fiber backbone.

Intelligent Layer 2 Switches
The DGS-3400 Series provides a complete set of security features, which includes L2/L3/L4 multi-layer Access Control Lists and 802.1x user authentication via TACACS+ and RADIUS servers. In addition, it offers suppression capabilities and Layer 3 IPv4/v6 Static Routing to increase network performance and security. Built-in D-Link ZoneDefense technology allows businesses to integrate the switch stack with D-Link NetDefend firewalls to implement a full-coverage, proactive security architecture.

Security, Performance & Availability
The DGS-3400 Series provides extensive VLAN support, including GARP/GVRP and 802.1Q VLAN to enhance security and performance. To support converged applications including VoIP, ERP, Intranet and video conferencing, a robust set of L2/L3/L4 QoS/CoS features ensures that critical network services are served with proper priority. To prevent malicious traffic flooding caused by worms or virus infections, the DGS-3400 series utilizes the D-Link Safeguard Engine to increase the switch's reliability, serviceability, and availability. Bandwidth Control can be flexibly set for each port using pre-defined thresholds to ensure a committed level of service for end users. For advanced applications, per-flow bandwidth control allows for easy fine-tuning of service types based on specific IP addresses or protocols.

Technical Specifications		DGS-3426	DGS-3426P	DGS-3427	DGS-3450
					
Physical & Hardware	Size	19-inch Standard Rack-Mount Width, 1U Height	19-inch Standard Rack-Mount Width, 1U Height	19-inch Standard Rack-Mount Width, 1U Height	19-inch Standard Rack-Mount Width, 1U Height
	Interfaces	24 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	24 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	24 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP	48 10/100/1000BASE-T 4 Combo 10/100/1000BASE-T/SFP
	Console Port	RS-232 Console Port			
	Open Slots for 10-Gigabit Uplink Modules	2	2	3	2
Physical Stacking	Installable Modules for Stacking	Single-Port DEM-410CX Module or Single-Slot DEM-410X Module			
	Max. Number of Stacking Ports	2 CX4 Ports or 2 XFP Slots			
	Stacking Speed (per port)	20 Gbps (Full-Duplex)			
	No. of Units per Stack	12	12	12	12
Optional 10 Gigabit Uplinks	Single XFP Slot Module (DEM-410X)	✓	✓	✓	✓
	Single CX4 Port Module (DEM-410CX)	✓	✓	✓	✓
	Max. Number of 10-Gigabit Uplinks Installable	2	2	3	2
Performance	Switching Fabric	88 Gbps	88 Gbps	108 Gbps	136 Gbps
	Packet Forwarding Rate	65.47 Mpps	65.47 Mpps	80.36 Mpps	101.19 Mpps
	MAC Address Table Size	8K	8K	8K	8K
	Packet Buffer	750 KB	750 KB	750 KB	750 KB
	IP v.4/v.6 Static Routing Table Size	128	128	128	128
	IP v.4 Host Table Size	2K	2K	2K	2K
	IP v.6 Host Table Size	1K	1K	1K	1K
	Jumbo Frame Size	9.216 Bytes	9.216 Bytes	9.216 Bytes	9.216 Bytes
MTBF		477,404 hours	373,693 hours	474,795 hours	402,096 hours
Acoustic		< 52.4 dB	< 52.4 dB	< 52.3 dB	< 48.7 dB
Heat Dissipation		241.58 BTU/hr	1477.48 BTU/hr	244.65 BTU/hr	448.02 BTU/hr
Power Input		100 to 240VAC, 50 to 60Hz, Internal Universal Power Supply			
Power Consumption (Max)		85.8 watts	542.3 watts	95.4 watts	148.9 watts
Optional Redundant Power Supply		DPS-500	DPS-600	DPS-500	DPS-500
Dimensions		441 x 389 x 44 mm			

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Weight (without optional module)	5.42 kg	5.82 kg	5.51 kg	5.74 kg
Ventilation	2 DC Fans (40 x 40 mm)	2 DC Fans (40 x 40 mm)	2 DC Fans (40 x 40 mm)	2 DC Fans (40 x 40 mm)
Operating Temperature	0 to 40˚C (32 to 104˚ F)			
Storage Temperature	-40 to 70˚C (-40 to 158˚ F)			
Operating Humidity	10% to 90% RH			
Storage Humidity	5% to 90% RH			
EMI	FCC Class A, CE, C-Tick, VCCI Class A			
Safety	CSA International, CB			

Software Features

Stackability

- Physical Stacking
  - Up to 40G Stacking Bandwidth
  - Up to 12 units per Stack
  - Support Duplex Chain / Duplex Ring Topology
  - Support backup master
  - Allows trunking or mirroring to span multiple units of the stack
- Virtual Stacking
  - D-Link Single IP Management (SIM)
  - Up to 32 units per Virtual Stack

L2 Features

- MAC Address Table: 8K
- Flow Control
  - 802.3x Flow Control
  - HOL Blocking Prevention
- Jumbo Frame up to 9,216Bytes
- IGMP Snooping
  - IGMP v1/v2/v3 Snooping
  - Support 1K groups
  - IGMP Snooping Fast Leave
  - Host-based IGMP Snooping Fast Leave
- MLD Snooping
  - MLD v1/v2 Snooping
  - Supports 1K groups
  - Host-based MLD Snooping Fast Leave
- Multicast VLAN Replication
- Limited IP Multicast (IGMP Filtering)
- Spanning Tree Protocol
  - 802.1D- 2004 Edition STP
  - 802.1w RSTP
  - 802.1s MSTP
  - BPDU Filtering
  - STP Root Restriction
  - 802.1Q-2005
- Loopback Detection
- Link Aggregation
  - Compliant with 802.1AX and 802.3ad
  - Max. 32 groups per device/ 8 ports per group
  - Supports cross stack/module trunk
- Port Mirroring
  - One-to-One
  - Many-to-One
  - Flow-based Mirroring
  - RSPAN
- L2 Protocol Tunneling
- ERPS (Ethernet Ring Protection Switching)

VLAN

- 802.1Q Tagged VLAN
- Subnet-based VLAN
- Max. 4K Static VLAN Group
- GVRP
- 802.1v Protocol VLAN
- Double VLAN (Q-in-Q):
  - Port-based Q-in-Q
  - Selective Q-in-Q
- VLAN Translation
- ISM VLAN
- MAC-based VLAN
- Voice VLAN[2]
- Private VLAN[2]

L3 Features

- 64 IP Interfaces
- 2K hardware routing entries shared by IPv4/v6:
  - Max. 2K IPv4 routes
  - Max. 1K IPv6 routes
- 128 static routes shared by IPv4/v6
- RIP v1/v2
- RIPng
- IPv6 Tunneling
  - Static
  - ISATAP
  - 6 to 4
- Gratuitous ARP
- ARP Proxy

QoS (Quality of Service)

- 802.1p Quality of Service
- 8 queues per port
- Queue Handling
  - Strict
  - Weighted Round Robin (WRR)
  - Strict + WRR
- CoS based on
  - Switch Port
  - VLAN ID
  - 802.1p Priority Queues
  - MAC Address
  - IPv4/IPv6 Address
  - DSCP
  - TCP/UDP port number
  - Protocol Type
  - IPv6 Traffic Class
  - IPv6 Flow Label
  - User-defined Packet Content
- QoS Flow Actions
  - Remark 802.1p Priority Tag
  - Remark TOS/DSCP Tag
  - Bandwidth Control
  - Flow Statistics
  - Committed Information Rate (CIR)
- Three Color Marker
  - trTCM
  - srTCM
- Bandwidth Control
  - Port-based (Ingress/Egress, min. granularity 1Kb/s)
  - Flow-based (Ingress, min. granularity 64Kb/s)
- Time-based QoS

Access Control List (ACL)

- Up to 768 Access Rules
- ACL based on
  - 802.1p Priority
  - VLAN ID
  - MAC Address
  - Ether Type
  - IPv4/IPv6 Address
  - DSCP
  - Protocol Type
  - TCP/UDP Port Number
  - IPv6 Traffic Class
  - IPv6 Flow Label
  - User-defined Packet Content
  - Time-based ACL
- ACL Statistics

Security

- SSH v1/v2
- SSL v1/v2/v3
- Port Security up to 16 MAC address per port
- Broadcast/Multicast/Unicast Storm Control
- Traffic Segmentation
- IP-MAC-Port Binding
  - ARP Packet Inspection
  - IP Packet Inspection
  - DHCP Snooping
  - DHCPv6 and ND Snooping

- Supports up to 511 Address Binding Entries per Device
- IMPB 3.8
- D-Link Safeguard Engine
- DHCP Server Screening
- CPU Interface Filtering
- ARP Spoofing Prevention
- BPDU Attack Protection

AAA
- 802.1X
  - Port-based Access Control
  - Host-based Access Control
  - Dynamic VLAN Assignment
- Web-based Access Control (WAC)
  - Port-based Access Control
  - Host-based Access Control
  - Dynamic VLAN Assignment
- MAC-based Access Control (MAC)
  - Port-based Access Control
  - Host-based Access Control
  - Dynamic VLAN Assignment
- Compound Authentication
- Guest VLAN
- Supports Microsoft® NAP
  - 802.1X NAP
  - DHCP NAP
- RADIUS Accounting
- RADIUS and TACACS+ Authentication for Switch Access
- 3-Level User Account

[1] Functions will be added in a future firmware upgrade.

Management
- Web-based GUI (Supports IPv4/IPv6)
- Command Line Interface (CLI)
- Telnet (Supports IPv4/IPv6)
- TFTP Client (Supports IPv4/IPv6)
- SNMP v1/v2c/v3 (Supports IPv4 / IPv6)
- SNMP Trap
- System Log
- RMON v1
  - Supports 1,2,3,9 groups
- RMON v2
  - Supports ProbeConfig group
- sFlow (Support IPv4 / IPv6)
- LLDP
- Microsoft® NAP (Network Load Balancing) Support
- DNS Relay
- LLDP-MED[2]
- BOOTP/DHCP Client
- DHCP Auto-Configuration
- DHCP Relay
- DHCP Relay Option 60, 61, 82
- DHCP Server
- Flash File System
- Multiple Images/Configuration
- CPU Monitoring
- SNTP
- Password Encryption
- Password Recovery
- ICMPv6
- IPv6 Neighbor Discovery (ND)
- DHCPv6 Client
- DHCPv6 Relay
- DHCPv6 Server
- Trusted Host
- MTU Setting

OAM
- Cable Diagnostics
- 802.3ah Ethernet Link OAM
- Factory Reset

MIB
- RFC1212 Concise MIB
- RFC1213 MIB-II
- RFC1516 MIB Traps
- RFC1493, 4188 Bridge MIB
- RFC1907 SNMPv2 MIB
- RFC1757, 2819 RMON MIB
- RFC2021 RMONv2 MIB
- RFC2096 IP Forwarding Table MIB
- RFC1398, 1643,2358,2665 Ether-like MIB
- RFC2674, 4363 802.1p MIB
- RFC2233, 2863 Interfaces Group MIB
- RFC2618 RADIUS Authentication Client MIB
- RFC2620 RADIUS Accounting Client MIB
- RFC2737 Entity MIB
- RFC2925 Ping & Traceroute MIB
- D-Link Private MIB

Standard Compliance
- RFC768 UDP
- RFC791 IP
- RFC792 ICMPv4
- RFC793 TCP
- RFC826 ARP
- RFC854 Telnet
- RFC2463,4443 ICMPv6
- RFC1338, 1519 CIDR
- RFC2068, 2616 HTTP
- RFC2460 IPv6
- RFC1157,1901,1908, 2273, 2570~2575 SNMPv1/v2c/v3
- RFC2598 DiffServ Expedited Forwarding
- RFC4861 IPv6 Neighbor Discovery (ND)
- RFC4862 IPv6 Stateless Address Autoconfiguration
- RFC1981 IPv6 Path MTU Discovery[2]
- RFC3176 sFlow
- RFC951, 1542, 2131 BootP / DHCP Client
- ITU-T G. 8032 ERPS
- RFC3046 DHCP Relay
- RFC2131 DHCP Server
- RFC1072 DHCP ARP Proxy

Optional Products

Optional Management Software

DV-600S	D-View 6.0 Network Management System (Standard Edition)
DV-600P	D-View 6.0

Optional 10-Gigabit Uplink Modules

DEM-410X	1-slot 10-Gigabit XFP uplink module
DEM-410CX	1-port 10-Gigabit CX4 uplink module

Optional 10-Gigabit XFP Transceivers

DEM-421XT	XFP transceiver, 10GBASE-SR standard, multi-mode fiber, max. distance 300m, 3.3/5V
DEM-422XT	XFP transceiver, 10GBASE-LR standard, single-mode fiber, max. distance 10km, 3.3/5V
DEM-423XT	XFP transceiver, 10GBASE-ER standard, single-mode fiber, max. distance 40km, 3.3/5V

Optional 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-330T	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
DEM-330R	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
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 wavelength 1550 nm

Optional Redundant Power Supply

DPS-500	140-watt redundant power supply
DPS-500DC	140-watt DC redundant power supply
DPS-600	500-watt redundant power supply
DPS-800	2-slot redundant power supply chassis
DPS-900	8-slot redundant power supply chassis

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