

L3 Gigabit Stack

Multi-Layer Routing Switch

- Up to 48 Gigabit Connections Per Switch
- 4 Combo 1000BASE-T/ SFP Fiber
- 2 or 3 Open Slots for Optional 10-Gigabit Uplinks
- Virtual Stack or Physical High-Speed Stacking
- Robust Security With Enhanced Performance/Availability
- Malicious Traffic and Performance Degradation Prevention

FEATURES

Flexible Choices

- Up to 48 10/100/1000BASE-T Ports or 24 SFP Slots
- 4 Combo SFP or Combo 1000BASE-T
- 2 or 3 Open Slots for Optional Single-Port 10-Gigabit Uplinks
- Stackable Through Low-Cost 10-Gigabit Coaxial Ports
- Optional External Redundant Power Supply

xStack Integration

- Virtual Stack of Up to 32 Units Using Single IP Management
- Physical Stackable to 12 Units, 576 Gigabit Ports ²

Quality of Service

- 802.1p Priority Queues/Multi-Layer CoS
- IP Multicast Support for Bandwidth-Intensive Applications

Security

- L2/L3/L4 Multi-Layer Access Control
- External RADIUS/TACACS+ Authentication Support
- SSH/SSL Support
- 802.1X Guest VLAN
- Web-Based Access Control (WAC)
- MAC-Based Access Control (MAC)
- D-Link Safeguard Engine

Traffic Monitoring/Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control Down to 64Kbps Per Port
- Granular Broadcast Storm Control Down to 1pps Per Port
- 802.3ad Link Aggregation
- RMON Support
- Port Mirroring

Configuration/Management

- Web-Based
- Command Line Interface (CLI)
- SNMP v1, v2c, v3
- D-Link Single IP Management (SIM) v.1.6
- Telnet Server
- Dual Images/Configurations

¹ Redundant ring stacking available in future.

² Calculation based on a stack of 12 DGS-3650 switches. DGS-3612G switch does not support ring stacking.

The xStack DGS-3600 series of next generation Layer 3 Gigabit switches delivers performance, flexibility, security, multi-layer QoS and access, and redundant power option for SMB and enterprises. With high Gigabit port densities, SFP support, 10-Gigabit uplink options and advanced software functions, these switches can act as departmental access-layer devices or core switches to form a multi-level network structured with high-speed backbone and centralized servers. Telecom service providers can also take advantage of the high SFP density switches to form the core of their Fiber to the building (FTTB) network that extends to the subscribers' sites.

Unparalleled Flexibility. Easy to deploy and simple to managed, the DGS-3600 series can be stacked with any switches supporting D-Link's Single IP Management to form a multi-level network structured with backbone and centralized high-speed servers. This virtual stack can comprise units located anywhere on the same network domain, and uses the optional 10-Gigabit uplinks to move intra-stack traffic at 20Gbps full duplex. It can eliminate single points of failures, cable distance barriers, physical stacking method limitations and the need for stacking cabling.

Redundant Ring¹ Stacking. Alternatively, users can install one or two 10-Gigabit uplinks, depending on whether the linear or fault-tolerant ring stacking is implemented, to create a physical stack. Up to 12 units or 576 Gigabit ports can be configured for a stack.² Using the low-cost coaxial cable as the medium to stack switches together, the DGS-3600 series provides not only high-bandwidth stacking but also the cost control capability that allows users to add 10-Gigabit uplinks strictly as needed. Modules with single 10-Gigabit XFP can also be installed in any of the open slots for uplink to servers or a fiber backbone.

Security, Performance & Availability. The DGS-3600 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 IP v4/v6 Static Routing to increase network performance and security. Built-in D-Link ZoneDefense technology allows business to integrate the switch stack with D-Link NetDefend firewalls to implement a full coverage, proactive security architecture.

The DGS-3600 series offers 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 conference, a robust set of L2/L3/L4 QoS/CoS features ensures that critical network services are served with proper priority. To prevent malicious flooding traffic caused by worm/virus infections, the DGS-3600 series provides 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 assure a committed level of service for end users. For advanced applications, per-flow bandwidth control allows easy fine-tuning of service types based on specific IP addresses or protocols.



Technical Specifications

DGS-3612G

DGS-3627

DGS-3627G

DGS-3650



Interface	10/100/1000BASE-T Ports	-	24	-	48
	SFP Slots	12	-	24	-
	Combo SFP Slots	-	4	-	4
	Combo 10/100/1000BASE-T Ports	4	-	4	-
	Open Slot for 10-Gigabit Uplink Modules	-	3	3	2
	RS-232 Console Port	1	1	1	1
Physical Stacking	Installable Module for Stacking	-	Single-Port DEM-410CX		
	Max Number of Stacking Ports Installable	-	2 CX4 Ports		
	Stacking Speed (Per Port)	-	20Gbps (Full-Duplex)		
	No. of Units Per Stack	-	12 *	12 *	12 *
Optional 10-Gigabit Uplink	Single XFP Slot Module (DEM-410X)	-	✓	✓	✓
	Single CX4 Port Module (DEM-410CX)	-	✓	✓	✓
	10GBASE-SR (300 m Multi-Mode Fiber) Support	-	✓	✓	✓
	10GBASE-LR (10 km Single-Mode Fiber) Support	-	✓	✓	✓
	10GBASE-ER (40 km Single-Mode Fiber) Support	-	✓	✓	✓
	Max. Number of 10-Gigabit Uplinks Installable	-	3	3	2
Performance	Switch Fabric	24Gbps	108Gbps	108Gbps	136Gbps
	Packet Forwarding Rate	17.86Mpps	80.36Mpps	80.36Mpps	101.19Mpps
	Packet Buffer	2MB	2MB	2MB	2MB
	MAC Address Table	16K Entries	16K Entries	16K Entries	16K Entries
	IP v4/v6 Routing Table	12K Entries	12K Entries	12K Entries	12K Entries
	IP v6 Routing Table	6K Entries	6K Entries	6K Entries	6K Entries
	IP v4 Host Table	8K Entries	8K Entries	8K Entries	8K Entries
	IP v6 Host Table	4K Entries	4K Entries	4K Entries	4K Entries
	Jumbo Frame Size	9,216 Bytes	9,216 Bytes	9,216 Bytes	9,216 Bytes
Power	Power Supply	100 to 120VAC, 200 to 240VAC, 50/60Hz, Internal Power Supply			
	Power Consumption (Max.)	60.0 Watts	72.3 Watts	77.0 Watts	131.3 Watts
	Optional Redundant Power Supply	DPS-500	DPS-500	DPS-500	DPS-500
Physical/Environmental	Heat Dissipation	187.67 BTU/Hr	246.70 BTU/Hr	262.74 BTU/Hr	448.02 BTU/Hr
	Ventilation DC Fans	3 40 x 40 x 20 mm	4 40 x 40 x 20 mm	4 40 x 40 x 20 mm	3 40 x 40 x 20 mm
		1 50 x 50 x 10 mm	1 50 x 50 x 10 mm	1 50 x 50 x 10 mm	2 40 x 40 x 10 mm
					1 50 x 50 x 10 mm
	Dimensions	441 x 389 x 44 mm			
	Size	19-Inch Rack-Mount Width, 1U Height			
	Weight (Without Optional Module)	5.0 kg	5.51 kg	5.5 kg	5.74 kg
	Operating Temperature	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C
	Storage Temperature	-10° to 70°C	-10° to 70°C	-10° to 70°C	-10° to 70°C
	Operating Humidity	10% to 90% RH	10% to 90% RH	10% to 90% RH	10% to 90% RH
	Storage Humidity	5% to 90% RH	5% to 90% RH	5% to 90% RH	5% to 90% RH
	EMI	FCC Class A, CE, C-Tick, VCCI			
	Safety	cUL, CB	cUL, CB	cUL, CB	cUL, CB

* Functions available in future.

Technical Specifications

L2 Features

- IGMP snooping v1, v2, v3
 - 1K IGMP snooping groups
 - 64 static multicast address
- MLD snooping
 - 1K MLD snooping groups
 - 64 static multicast addresses
- Spanning Tree
 - 802.1D STP
 - 802.1w RSTP
 - 802.1s MSTP
 - STP Loopback detection
 - BPDU filtering per port and per device
- 802.3ad Link Aggregation
 - Up to 32 groups per device
 - Up to 8 Gigabit ports or 2 10-Gigabit ports per group
- Port mirroring
 - One-to-One mode
 - Many to One mode
 - ACL mode *
- Trunking across stack *

VLAN

- 802.1Q
- 802.1v
- Total 4K VLAN groups
- Max 4K static VLAN groups
- Max 255 dynamic VLAN groups
- Configurable VLAN ID from 1 to 4094
- GVRP
- Double VLAN *
- Guest VLAN

L3 Features

- L3 routing
 - Up to 12K entries (all route entries combined)
 - Up to 256 IPv4 static route entries
 - Up to 128 IPv6 static route entries
 - Up to 12K IPv4 dynamic route entries
 - Up to 6K IPv6 dynamic route entries
- L3 forwarding
 - Up to 8K entries (all L3 hardware forwarding entries combined)
 - Up to 8K Ipv4 forwarding entries
 - Up to 4K Ipv6 forwarding entries
- Floating Static Route
 - IPv4 Floating Static Route
 - IPv6 Floating Static Route
- Policy Based Route
- RIP v1, v2
- RIPvng (IPv6) *
- OSPF v2
 - OSPF Passive Interface
 - OSPF NSSA (Not So Stubby Area)
 - OSPF Equal Cost Route *
- Up to 64 IP Interfaces
- Multiple IP interfaces per VLAN (up to 5)
- Multi Path Routing supporting Equal Cost (EC) and Weighted Cost (WC) *
- VRRP
- IP v6 Ready Phase 1 *
- Multicast
 - Up to 1K multicast groups (static and dynamic multicast groups combined)
 - Up to 64 static multicast groups
 - Up to 1K dynamic multicast groups
- IGMP v1, v2, v3
- DVMRP v3
- PIM DM for IPv4

- PIM SM for IPv4 *
- Multicast duplication (up to 32 VLAN per port)
- Per port limit IP multicast address range for control packet

QoS (Quality of Service)

- Per port bandwidth control (granularity of 64Kbits per second)
- Per flow bandwidth control (granularity of 64Kbits per second)
- 802.1p Priority Queues (8 queues)
 - Queue handling mode support: WRR and Strict modes
- CoS based on:
 - Switch port
 - VLAN ID
 - 802.1p Priority Queues
 - MAC address
 - IPv4/v6 address
 - DSCP
 - Protocol type
 - IPv6 traffic class
 - IPv6 flow label
 - TCP/UDP port
 - User-defined packet content

ACL (Access Control List)

- Up to 8 profiles
- Up to 1792 global rules, each rule can set its own port range
- ACL based on:
 - Switch port
 - VLAN ID
 - 802.1p Priority Queues
 - MAC address
 - IPv4/v6 address
 - DSCP
 - Protocol type
 - IPv6 traffic class
 - IPv6 flow label
 - TCP/UDP port
 - User-defined packet content
 - Time (time-based ACL)
- CPU interface filtering

Security

- RADIUS authentication for management access (RFC 2138, 2139)
- TACACS+ authentication for management access (RFC 1492)
- SSH v2
- SSL v3
- Port security (up to 16 MAC addresses per port)
- 802.1x port-based/MAC-based access control
- Web-based Access Control *
- MAC-based Access Control *
- Broadcast/Multicast Storm Control (minimum granularity of 1 packet per second)
- Traffic segmentation
- IP-MAC binding (up to 500 entries per device)
- IP-MAC-Port binding (up to 500 entries per device) supporting ARP and ACL modes
- D-Link Safeguard Engine

Management

- Single IP Management v1.6
- Web-based GUI
- CLI
- Web GUI traffic monitoring
- Web MAC address browsing
- Telnet server
- Telnet client *
- TFTP client
- SNMP v1, v2c, v3
- SNMP trap on MAC notification
- RMON v1, v2
- sFlow*
- BootP/DHCP client
- DHCP auto-configuration
- DHCP relay option 82
- System log
- Trap/Alarm/Log Severity Control
- Dual Image
- Dual Configuration
- Flash file system
- Port description
- Editable login banner
- Editable system prompt
- CPU monitoring via web, CLI, SNMP
- Virtual Interface *

MIBs

- MIB-II (RFC 1213)
- Bridge MIB (RFC 1493)
- SNMP v2 MIB (RFC 1907)
- RMON MIB (RFC 1757, 2819)
- RMON v2 MIB (RFC 2021)
- Ether-like MIB (RFC 1643, 2358, 2665)
- 802.3 MAU MIB (RFC 2668)
- 802.1p MIB (RFC 2674)
- IF MIB (RFC 2233, 2863) *
- RADIUS Authentication Client MIB (RFC 2618)
- IGMP v3 MIB
- RIP v2 MIB (RFC 1724)
- OSPF v2 MIB (RFC 1850)
- IP Forwarding Table MIB (CIDR) (RFC 2096)
- VRRP MIB (RFC 2787)
- IPv4 Multicast Routing MIB (RFC 2932)
- PIM MIB for IPv4 (RFC 2934)
- RADIUS Accounting Client MIB (RFC 2620)
- Ping MIB *
- Trace out MIB *
- L2 Specific MIB
- L3 Specific MIB
- Private MIB

* Function available in future firmware upgrade

WAN

Network Security Firewall DFL-2500

Server Farm / Data Center

L3 Gigabit switch with 10G uplinks DGS-3627

L2 Gigabit Switch DGS-3024

L2 Gigabit Switch DGS-3048

1G Copper

10G Stacking

10G CX4

1G Copper

Legend:

- 1G Copper
- 10G CX4

The diagram illustrates a multi-branch SD-WAN architecture using Double VLAN technology. It shows two branches, Branch A and Branch B, connected to a central Service Provider network.

Branch A: An Enterprise User (represented by a building) connects to a DES-3526 switch via FTTB. This switch is connected to a DGS-3627G switch in the Service Provider VLAN via 1G Fiber. The Service Provider VLAN is a yellow-shaded area containing two DGS-3627G switches connected by 10G Fiber. A Chassis Switch is also part of the Service Provider Ring, connected to the DGS-3627G switches via 10G Fiber. The Service Provider Ring is connected to an Access Ring (orange-shaded area) via 10G Fiber. The Access Ring is connected to Branch B via 10G Fiber.

Branch B: An Enterprise User (represented by a building) connects to a DES-3526 switch via FTTB. This switch is connected to a DGS-3612G switch in the Service Provider VLAN via 1G Fiber. The Service Provider VLAN is a yellow-shaded area containing two DGS-3627G switches connected by 10G Fiber. A Chassis Switch is also part of the Service Provider Ring, connected to the DGS-3627G switches via 10G Fiber. The Service Provider Ring is connected to an Access Ring (orange-shaded area) via 10G Fiber. The Access Ring is connected to Branch B via 10G Fiber.

Sub Access Ring: A Sub Access Ring (blue-shaded area) is connected to the DGS-3612G switch in the Service Provider VLAN via 1G Fiber. The Sub Access Ring contains several DES-3526 switches connected by 10/100M Copper. The Sub Access Ring is connected to Branch B via 10/100M Copper.

Legend:

- 10G Fiber (Orange line)
- 1G Fiber (Grey line)
- 10/100M Copper (Brown line)
- Service Provider VLAN (Yellow shaded area)
- Customer VLAN (Blue shaded area)

Optional Products

Optional Management Software

DS-510S D-View 5.1 SNMP Network Management Program (standard version)

DS-510P D-View 5.1 SNMP Network Management Program (professional version)

Optional 10Gbps Uplink Modules

DEM-410X 1-slot 10-Gigabit XFP uplink module

DEM-410CX 1-port 10-Gigabit CX4 uplink module

Optional 10Gbps XFP Transceivers

DEM-421XT XFP transceiver, 10GBASE-SR standard, multi-mode fiber, max. distance 300 m, 3.3/5V

DEM-422XT XFP transceiver, 10GBASE-LR standard, single-mode fiber, max. distance 10 km, 3.3/5V

DEM-423XT XFP transceiver, 10GBASE-ER standard, single-mode fiber, max. distance 40 km, 3.3/5V

Optional 1Gbps SFP Transceivers

DEM-310GT SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10km, 3.3V operating voltage

DEM-311GT SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550m, 3.3V operating voltage

DEM-312GT2 SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2km, 3.3V operating voltage

DEM-314GT SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 50km, 3.3V operating voltage

DEM-315GT SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 80km, 3.3V operating voltage

DEM-330T WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm

DEM-330R WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm

DEM-331T WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm

DEM-331R WDM SFP transceiver 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm

DEM-211 SFP transceiver, 100BASE-FX standard, up to 2 km multi-mode fiber cable distance, 3.3V operating voltage (for DGS-3612G switch only)

DEM-210 SFP transceiver, 100BASE-FX standard, up to 15 km single-mode fiber cable distance, 3.3V operating voltage (for DGS-3612G switch only)

Optional Redundant Power Supply

DPS-500 140-watt redundant power supply

DPS-800 2-slot redundant power supply chassis

DPS-900 8-slot redundant power supply chassis

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