

### Flexible Choices

- 12 10/100/1000BASE-T and 12 Combo 10/100/1000BASE-T/SFP ports, or 12 SFP plus 12 Combo 10/100/1000BASE-T/SFP ports per Switch
- 2 Open Slots for Optional Single-Port 10 Gigabit Ethernet Modules
- Stackable through 10-Gigabit Extension Modules

### High Resiliency

- 802.1D/w/s Spanning Tree, 802.3ad -Link Aggregation
- Rapid Ether Ring Protection (RERP)
- Virtual Router Redundancy Protocol (VRRP)

### Quality of Service

- 8 Hardware Queues
- 802.1p Priority Queues/Multi-Layer CoS
- IP Multicast support for Bandwidth-Intensive Applications
- Flow-Based Bandwidth Control

### Robust Security

- Advanced L2/L3/L4 ACL
- IP-MAC-Port Binding
- Virus/Malicious Traffic Flooding Prevention
- CPU Protection Policy (CPP)

### L3 Routing

- RIP/OSPF/BGP
- Policy Based Routing (PBR)
- ECMP/WCMP
- PIM-DM/SM/SSM

### IPv6 Ready

- ICMPv6
- IPv6 Neighbor Discovery
- IPv6/v4 Tunneling
- RIP/OSPFv3
- PIM v6\*



\*Available in future release

## xStack L3 Managed Stackable Gigabit Switches

The DGS-3610 Series 26 and 26G are part of the D-link xStack family of next generation high-end, multi-service Layer 3 Gigabit switches. These switches offer advanced L3 features including IPv4/v6 routing, BGP, QoS and ACL filtering. Packet Routing and Protocol Filtering/Inspection enable the switch to act as a Layer 4 switch. The DGS-3610-26 and DGS-3610-26G provide 24 Gigabit ports and two optional 10-Gigabit ports in a low-profile rack-mount case. The DGS-3610-26 is equipped with 12 10/100/1000BASE-T and 12 combo 10/100/1000BASE-T/SFP ports, and the DGS-3610-26G supports 12 SFP and 12 combo 10/100/1000BASE-T/SFP ports. The 10/100/1000BASE-T ports provide inexpensive copper Gigabit connection to the local nodes, while the SFP slots and the wide-range of SFP transceivers offer flexible long/medium/short fiber connections suitable for FTTX and MAN applications. Two open slots on the back of each switch allow users to install two optional single-port 10-Gigabit XFP modules for copper or fiber connections. These 10-Gigabit connections can be used for switch unit stacking, or attachment to a 10-Gigabit backbone or servers.

### High Reliability

The DGS-3610 switches support a number of link reliability technologies including Rapid Ether Ring Protocol (RERP). RERP is a network protection mechanism which ensures normal operations without impacting network convergence time. It can rapidly start up the backup link when a node or link on the Ethernet ring is disconnected. Other network resiliency features include Spanning Tree, Rapid Spanning Tree and Multiple Spanning Tree protocol.

### Comprehensive IPv6 Support

To ensure compatibility and interoperability with the latest Internet standards, the switch supports emerging applications such as Internet-enabled wireless devices, home and industrial appliances, Internet-connected transportations, integrated telephony services, sensors networks, and distributed computing or gaming requirements. The use of globally unique IPv6 addresses simplifies the mechanisms used for reachability and end-to-end security for network devices. This functionality is crucial for applications and services that drive the demand for IP addresses.

### Enterprise Wide Security

Access security is provided through comprehensive Policy-Based ACL, Port Security, IP-MAC-Port Binding features, and Defeat IP Scan. Meanwhile malicious attacks hidden behind control protocols can be thwarted to prevent the switch's CPU from being overwhelmed with redundant tasks which would cause performance degradation. The DGS-3610 also supports SSH v2 and SNMP v3 functions to ensure secure management access to switches with authentication and encryption in network management traffic.

### QoS & Bandwidth Management

The DGS-3610 supports numerous advanced traffic management options including Flow-Based Bandwidth Control and Broadcast/Multicast Storm Control. It also supports Egress Traffic Bandwidth Control with minimum granularity of 64 Kbits. With a combination of Rate Limiting function (applicable to CPE subscribers) and Access Control-Based Accounting, the DGS-3610 provides useful functions for carriers that offer services to home users in a Metropolitan Ethernet Network.

### Comprehensive Management

A comprehensive set of management features is provided to ensure enterprise wide visibility and control for configuration, access/traffic monitoring and troubleshooting to network administrators. These features are accessible through CLI, Telnet or the SNMP console. RMON monitoring, complete system debug data, alert information, and interface management are also supported.



Technical Specifications		DGS-3610-26	DGS-3610-26G
General	Interface	12 10/100/1000BASE-T 12 Combo 10/100/1000BASE-T/SFP	12 SFP 12 Combo 10/100/1000BASE-T/SFP
	Open Slots for 10-Gigabit Uplink Modules	2	
	Console Port	RJ-45	
Physical Stacking	Installable Module for Stacking	DEM-412CX or DEM-412X	
	Max number of Stacking Ports Installable	2 CX4 or XFP Ports	
	Stacking Speed (Per Port)	40G (Full-Duplex)	
	No. of units per Stack	8	
Performance	Switching Capacity	88 Gbps	
	Max. Forwarding Rate	65.48 Mpps	
	Packet Buffer Memory	2 MB	
	IP v4/v6 Routing Table	12K Entries	
	IP v6 Routing Table	6K Entries	
	IP v4 Host Table	H/W A1: 8K Entries; H/W A2: 16K Entries	
	IP v6 Host Table	H/W A1: 4K Entries; H/W A2: 8K Entries	
	Jumbo Frame Size	9.216 Bytes	
MTBF (Hours)	188,129 Hours	210,864 Hours	
Acoustics	< 52.1 dB	< 51.1 dB	
Heat Dissipation	238.85 BTU/Hr	238.85 BTU/Hr	
Power Input	100 to 240 V AC, 50 to 60 Hz Internal Universal Power Supply		
Max Power Consumption	70 Watts		
Dimensions (W x D x H)	440 mm x 435 mm x 44 mm		
Weight	8.5 kg		
Size	19-Inch Rack-Mount Width, 1U Height		
Operating Temperature	0 to 40°C		
Storage Temperature	-40 to 70°C		
Operating Humidity	10% to 90% non-condensing		
Storage Humidity	5% to 90% non-condensing		
Emission (EMI)	FCC Class A, CE, VCCI		
Safety	cUL, CB		

## Software Features

### Stackability

- Up to 8 units per stack
- Support Linear/Ring topology
- Up to 40G stacking bandwidth
- Allows trunking or mirroring to span multiple units of the stack

### L2 Features

- 16K MAC Address Table
  - H/W A1: 16K
  - H/W A2: 32K
- Jumbo Frames up to 9,216 bytes
- IGMP Snooping
  - IGMP Snooping Fast Leave
  - Report Suppression
- Spanning Tree
  - 802.1D STP
  - 802.1w RSTP
  - 802.1s MSTP
- Rapid Ether Ring Protection (RERP)
  - Supports up to 16 domains
  - Recovering L2 traffic in 500 ms
- Rapid Link Detection Protocol (RLDP)
- Rapid Ethernet Uplink Protection (REUP)
- 802.3ad Link Aggregation
  - 12 Trunk Groups, 8 Ports per Group
- Port Mirroring
  - One-to-One
  - Many-to-One
  - RSPAN
- Head of Line Blocking Prevention

### VLAN

- 802.1Q Tagged VLAN
- 802.1v Protocol VLAN
- VLAN Group: 4K
- Port-Based VLAN
- Super VLAN
- Private VLAN
- Double VLAN (Q-in-Q)
  - Port-Based Q-in-Q
  - Selective Q-in-Q\*

### L3 Features

- IP Interface
  - Supports 1024 IP interfaces
  - Supports max 256 IP interfaces per VLAN
- Secondary IP
- VRRP
- IPv6 Tunneling
  - Manual Tunnel
  - ISATAP
  - 6to4
- IPv6 Ready Phase 2
- Proxy ARP

### L3 Routing

- 12K hardware routing entries shared by IPv4/v6
  - Max. 8K IPv4 routes
  - Max. 4K IPv6 routes
- 8K hardware L3 forwarding entries shared by IPv4/v6 (H/W A1)
  - Max. 8K IPv4 routes
  - Max. 4K IPv6 routes
- 16K hardware L3 forwarding entries shared by IPv4/v6 (H/W A2)
  - Max. 16K IPv4 routes
  - Max. 8K IPv6 routes
- Static Routes: Max. 1K
  - Supports ECMP/WCMP
- Policy Based Route
- Multi Path Route:
  - ECMP /WCMP
- RIP
  - RIP v1/v2
  - RIPng (IPv6)
- OSPF
  - OSPF v2
  - OSPF v3 (IPv6)
    - Stub/NSSA Area
    - OSPF Equal Cost Route
- BGP
  - BGP v4
  - BGP+ v4 (IPv6)\*
- VRF-Lite (H/W A2)

### L3 Multicasting

- PIM-DM
- PIM-DM v6\*
- PIM-SM
- PIM-SM v6\*
- PIM-SSM
- PIM-SSM v6\*
- IGMP v1/v2/v3
- PIM Snooping

### QoS (Quality of Service)

- 802.1p Class of Service (CoS)
- 8 queues
- Queue Handling
  - Strict
  - Weighted Round Robin (WRR)
  - ST+WRR
- CoS Based on
  - MAC Address
  - VLAN ID
  - 802.1p
  - IP Address or IP Prefix
  - DSCP/IP Precedence
  - IP Protocol Type
  - TCP/UDP Port Number
- Time Based QoS

### ACL (Access Control List)

- Up to 1790 ingress access rules (H/W A1)
- Up to 3580 ingress access rules, 512 egress access rules, (H/W A2)
- ACL Based on
  - MAC Address
  - VLAN ID
  - 802.1p Priority
  - IP v4/v6 Address or IP Prefix
  - DSCP/IP Precedence
  - IP Protocol Type
  - TCP/UDP Port Number
  - IPv6 Flow Label
  - User-Defined Packet Content (ACL80)
- Time-Based ACL

### Security

- CPU Protection Policy (CPP)
- SSH v1.5/v2
- Port Security up to 16 MAC addresses per port
- Broadcast/Multicast/Unicast Storm Control
- Global MAC-IP Binding
- Defeat IP Scan
- IP-MAC-Port Binding
  - DHCP Snooping
  - ARP Check
  - IP Source Guard

### AAA

- 802.1X
  - Port-Based Access Control
  - MAC-Based Access Control
  - Dynamic VLAN Assignment
- Accounting
  - Period Accounting
  - Multiple Accounting
- RADIUS and TACACS+ Authentication for Switch Access

### Management

- Command Line Interface (CLI)
- Web-Based GUI\*
- Telnet Server
- TFTP
- DHCP Server
- DHCP Relay
- XModem
- SNMP v1/v2c/v3
- SNMP Trap
- System Log
- RMON v1
  - Supports 1,2,3,9 Groups
- DNS Client
- Debug
- NTP/SNTP
- File System
  - Flash storage media

- Multiple Firmware
- Multiple Configuration
- System Status LED

### MIB/IETF Standard

- RFC1213 MIB-II
- RFC1493 Bridge MIB
- RFC1901, 1907 SNMPv2 MIB
- RFC1157, 2571~2576 SNMP MIB
- RFC1271, 2819 RMON MIB
- RFC3569 PIM-SSM MIB
- D-Link Private MIB
- RFC2362 PIM-SM
- RFC2338, 2787 VRRP

- RFC1075 DVMRP
- RFC2474~2475 DiffServ
- RFC2674 802.1p
- RFC2138~2139, 2865~2866 RADIUS
- RFC1370, 1587, 1765, 1850,2328, 2370 OSPF
- RFC1771, 1997, 2439, 2796, 2842, 2918 BGP
- RFC1542, 2131, 3046 DHCP
- RFC3069 Super VLAN
- RFC3411~3417 SNMP
- RFC768 UDP
- RFC791 IP
- RFC793 TCP
- RFC854 Telnet

- RFC1305 NTP
- RFC1350 TFTP
- RFC1769 SNTP
- RFC2096 IP FDB MIB
- RFC1724 RIP v2 MIB
- RFC2933 IGMP v3 MIB

\* Available in future release

## Optional Products

### Optional 10-Gigabit 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 SFP Transceivers

- DEM-310GT SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3V
- DEM-311GT SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550m, 3.3V
- DEM-312GT2 SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2km, 3.3V
- DEM-314GT SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 50km, 3.3V
- DEM-315GT SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 80km, 3.3V
- DEM-330T WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3V, 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, 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, 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, Tx wavelength 1310 nm, Rx wavelength 1550 nm

### Extension Modules

- DEM-412CX 1 port 10GE CX4 module
- DEM-412X 1 port 10GE XFP module

### Accessories

- DEM-CB-100CX 1m CX4 cable
- DEM-CB-300CX 3m CX4 cable



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