

# Managed L2 Gigabit Stack

## Entry-Level SNMP Solution

- High Port Density Gigabit & PoE Stackable Switches
- Up to 4 Fiber Links Via Combo SFP
- 10-Gigabit Bi-Directional Stacking Bandwidth
- 802.1X User Authentication & ACL Access Security
- Network Protection With D-Link Safeguard Engine

### FEATURES

#### Flexible Choices of High Port Densities

- 24 or 48 10/100/1000BASE-T Ports
- 4 Combo SFP for Fiber Gigabit and 100BASE-FX Links
- 802.3af Power Over Ethernet Support <sup>1</sup>

#### High Bandwidth Physical Stacking

- 2 HDMI Ports Per Switch
- Up to 20Gbps Full-Duplex Stacking Bandwidth
- Up to 6 Units (288 Gigabit Ports) Per Stack
- Linear or Fault Tolerant Ring Stacking Topology

#### Security

- Port Security
- ACL
- 802.1X Port-Based/MAC-Based Access Control
- Guest VLAN
- Traffic Segmentation
- 256 VLAN Groups
- D-Link Safeguard Engine

#### Traffic Monitoring/Bandwidth Control

- Port Mirroring
- Granular Bandwidth Control (Down to 64Kbps Per Port/Flow)
- Broadcast Storm Control

#### Resiliency/Performance

- 802.1D, 802.1w and 802.1s Spanning Tree
- 802.3ad Link Aggregation (Port Trunks)
- Trunking/Mirroring Across Multiple Units Within a Stack
- Jumbo Frames Up to 10,240 Bytes

#### Configuration/Management

- Web-Based GUI
- Command Line Interface (CLI)
- Telnet Client/Server
- SNMP v1, v2c, v3 & RMON v1
- RADIUS/TACACS+ Authentication for Management Access
- SSH v1, v2, SSL v3

<sup>1</sup> Available on DGS-3100-24P and DGS-3100-48P only.

<sup>2</sup> MLD snooping available in future firmware upgrade.

The DGS-3100 series switches are managed Layer 2 Gigabit stackable switches designed as feature-rich, low-cost devices in the entry-level network management category. These series consists of 24 and 48 port 10/100/1000Mbps switches, with or without 802.3af Power over Ethernet (PoE) support - all with up to 20Gbps physical stacking ability. Outstanding features include scalable expansion, 4 combo SFP fiber links, comprehensive network security, granular bandwidth control and extensive network management. SMB looking for a flexible, advanced but affordable solution can deploy these switches to set up Gigabit connections to their desktops or build up a company-wide network backbone.

*Physical Stacking.* Each of the DGS-3100 series switches comes with 2 dedicated HDMI stacking ports, each providing 5Gbps stacking bandwidth (up to 20Gbps for overall system in full-duplex mode, bi-directional). Up to 6 units, 288 10/100/1000Mbps ports can be stacked up in a linear or fault-tolerant Ring topology. A stack can consist of 10/100/1000Mbps switches, 10/100/1000Mbps PoE switches, or a combination of both types, with up to 24 SFP fiber links. Units can be gradually added to the stack to accommodate growth, while expansion beyond a single stack is possible using Gigabit port trunks between stacks, or from stack to network backbone and server paths.

*Security & Availability.* The DGS-3100 stack includes many security features including Access Control List (ACL), 802.1X Port-Based/MAC-Based Access Control and 802.1X Guest VLAN to make network access available to authorized users. To prevent malicious attack and virus/worm affection from overwhelming the switch with unnecessary workload, the DGS-3100 stack provides the D-Link Safeguard Engine function to increase the switch's reliability and availability.

*Resilience/Performance Enhancement.* To enhance network resilience, the DGS-3100 stack provides Spanning Tree protocols, including 802.1D, 802.1w and 802.1s for redundant bridge paths. 802.3ad Link Aggregation provides the aggregated bandwidth between switches or server. For Quality of Service (QoS), it supports 802.1p Priority Queues and packet classification based on TOS, DSCP, MAC, IP, VLAN ID and L4 protocol types, enabling Internet voice, video and streaming media applications to run smoothly.

*Traffic Monitoring/Bandwidth Control.* Network administrators can define throughput levels for each port to manage bandwidth. The bandwidth limiting feature provides fine granularity with the ability to define limits down to 64Kbps segments. Broadcast storm control and flow-based bandwidth control can reduce the level of damage that a virus attack can do to the network. The switch provides IGMP snooping and MLD snooping <sup>2</sup> to control multicast transmission, and port mirroring to facilitate diagnostics.

*Management.* The DGS-3100 stack supports standard-based management protocols such as SNMP, RMON, Telnet, Web GUI and SSH/SSL security authentication. With DHCP auto-configuration, the administrator can pre-set configurations and save them in a TFTP server, and individual switches can boot their IP from the server and load in the pre-set configurations.



## Hardware Specifications

DCS-3100-24

DCS-3100-24P

DCS-3100-48

DCS-3100-48P



	DCS-3100-24	DCS-3100-24P	DCS-3100-48	DCS-3100-48P
<b>Interface</b>				
10/100/1000BASE-T Ports	24	24	48	48
Combo SFP	4	4	4	4
RS-232 Console Port	√	√	√	√
Optional Redundant Power Supply	DPS-200	DPS-600	DPS-500	DPS-600
<b>Stacking</b>				
HDMI Stacking Ports	2	2	2	2
Number of Unit Per Stack (Max)	6	6	6	6
Bandwidth/Topology	Up to 10Gbps (Linear Topology) Up to 20Gbps (Bi-Directional Redundant Ring Topology)			
<b>Power Over Ethernet</b>				
802.3af PoE Support	-	Per 10/100/1000BASE-T Port	-	Per 10/100/1000BASE-T Port
Power Provision Per Port (Max.)	-	15.4W	-	15.4W
System PoE Power Budget	-	370W	-	370W
Auto Power/Device Discovery	-	√	-	√
Over-Current Protection	-	√	-	√
<b>Performance</b>				
Switch Capacity	68Gbps	68Gbps	116Gbps	116Gbps
64-Byte Packet Forwarding Rate	50.60Mpps	50.60Mpps	86.31Mpps	86.31Mpps
MAC Address Table Size	8K	8K	8K	8K
Packet Buffer	768KB	768KB	1.5MB	1.5MB
Jumbo Frame (Max.)	10,240Bytes	10,240Bytes	10,240Bytes	10,240Bytes
<b>Physical &amp; Environmental</b>				
Power Input	100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply			
Power Consumption (Max)	49.39W	555.50W	102.63W	619.30W
Dimensions	440mm x 210mm x 44mm	440mm x 310mm x 44mm	440mm x 310mm x 44mm	440mm x 430mm x 44mm
Weight	3.04kg	5.58kg	5.50kg	7.43kg
Heat Dissipation	168.53 BTU/hr	1895.48 BTU/hr	350.19 BTU/hr	2113.18 BTU/hr
MTBF	212,377 hrs	117,136 hrs	103,924 hrs	96,648 hrs
Operating Temperature	0° to 40°C (32° to 104° F)			
Storage Temperature	-10° to 70°C (-14° to 158° F)			
Operating Humidity	10% to 90% non-condensing			
Storage Humidity	5% to 90% non-condensing			
EMI/EMC	FCC Class A, ICES-003 Class A, CE, C-Tick, VCCI Class A			
Safety	cUL, CB			

## Software Functions

### L2 Features

- IGMP snooping v1, v2
  - Up to 256 IGMP snooping groups
  - Up to 64 static multicast address
  - IGMP Per VLAN
  - IGMP snooping fast leave
- MLD snooping \*
- Spanning Tree
  - 802.1D STP
  - 802.1w RSTP
  - 802.1s MSTP
- STP Loopback Detection
- BPDU filtering
- 802.3ad Link Aggregation: max. 32 groups per device, 8 ports per group
- Mirroring
  - One-to-one mode
  - Many-to-one mode

### VLAN

- 802.1Q
- VLAN Groups: total 256 VLAN groups, max. 256 static VLAN groups, max. 256 dynamic VLAN groups
- GVRP
- Asymmetric VLAN \*

### ACL (Access Control List)

- Maximum Mask/Profiles: 15 profiles, 240 rules per profile
- Content-based ACL according to:
  - 802.1p priority
  - VID
  - MAC address
  - Ether type
  - IP address
  - DSCP

- L4 Protocol type
- TCP/UDP port number
- Time Based ACL \*

### QoS (Quality of Service)

- Priority queues number: 4 queues
- 802.1p standard
- Queue handling: WRR/Strict/ST+WRR modes
- Bandwidth Control:
  - Port and Flow based bandwidth control
  - Granularity: down to 64Kbps
- Class of Service based on:
  - 802.1p priority
  - VLAN
  - MAC address
  - Ether type
  - IP address
  - DSCP
  - Protocol type
  - TCP/UDP port number

### Security

- Traffic Segmentation
- SSH v2
- SSL v3
- Port Security: 16 MACs per port
- Broadcast storm control
- D-Link Safeguard Engine

### AAA

- Port/MAC-Based 802.1X Access Control
- Guest VLAN
- RADIUS Auth. for Mgmt Access
- TACACS+ Auth. for Mgmt Access
- MAC-based Access Control \*

### Management

- Web-based GUI
- CLI
- Device Locator
- 3 Level User Account
- Dual Image
- Telnet Server
- Telnet Client
- TFTP client
- SNMP v1, v2c, v3
- SNMP Traps
- System Log
- RMON v1
- BootP/DHCP client
- DHCP Auto-configuration
- SNTP
- Port Description
- CPU Monitoring
- Web GUI Traffic Monitoring

### MIB

- MIB II (RFC 1213)
- Bridge MIB (RFC 1493)
- SNMP v2 MIB (RFC 1907)
- RMON MIB (RFC 1757, 2819)
- Ether-like MIB (RFC 2021)
- 802.1p MIB (RFC 1643, 2358, 2665)
- IF MIB (RFC 2674)
- RADIUS Authentication Client MIB (RFC 2233, 2863)
- RADIUS Accounting Client MIB (RFC 2618)
- Private MIB

\* Features available in future firmware upgrade

## Optional Products

### Optional SFP Transceivers

- DEM-310GT** (1000BASE-LX, Single-mode, 10km)
- DEM-311GT** (1000BASE-SX, Multi-mode, 500m)
- DEM-312GT2** (1000BASE-SX, Multi-mode, 2km)
- DEM-314GT** (1000BASE-LX, Single-mode, 50km)
- DEM-315GT** (1000BASE-LX, Single-mode, 80km)
- DEM-210** (100BASE-FX, Single-mode, 15km)
- DEM-211** (100BASE-FX, Multi-mode, 2km)

### Optional WDM Transceivers

- DEM-330T** (1000BASE-LX, wavelength Tx: 1550nm, Rx: 1310nm, Single-mode, 10km)
- DEM-330R** (1000BASE-LX, wavelength Tx: 1310nm, Rx: 1550nm, Single-mode, 10km)
- DEM-331T** (1000BASE-LX, wavelength Tx: 1550nm, Rx: 1310nm, Single-mode, 40km)
- DEM-331R** (1000BASE-LX, wavelength Tx: 1310nm, Rx: 1550nm, Single-mode, 40km)



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