D-Link
Building Networks for People

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

- 8, 24 or 48 10/100/1000BASE-T Ports
- 4 Combo SFP or 16 Dedicated SFP for Fiber Gigabit and 100BASE-FX Links
- 802.3af Power Over Ethernet Support [1]

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

[1] Available on DGS-3100-24P and DGS-3100-48P only.
[2] 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 switches provide wide-ranging port densities and up to 20Gbps physical stacking. Outstanding features include scalable expansion, SFP fiber links, comprehensive network security, granular bandwidth control and extensive network management. Small to medium businesses (SMBs) looking for a flexible, advanced and 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 the 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 96 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 attacks 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 can reduce the level of damage that a virus attack can do to the network. The switch provides IGMP snooping and MLD snooping[2] 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	DGS-3100-24TG	DGS-3100-24	DGS-3100-24P	DGS-3100-48	DGS-3100-48P
					
Interface					
10/100/1000BASE-T Ports	8	24	24	48	48
Combo SFP	-	4	4	4	4
Dedicate SFP	16	-	-	-	-
RS-232 Console Port	√	√	√	√	√
Optional Redundant Power Supply	DPS-200	DPS-200	DPS-600	DPS-500	DPS-600
Stacking					
HDMI Stacking Ports	2	2	2	2	2
Number of Unit Per Stack (Max)	6	6	6	6	6
Bandwidth/Topology	Up to 10Gbps (Linear Topology) Up to 20Gbps (Bi-Directional Redundant Ring Topology)				
Power Over Ethernet					
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	-	-	√	-	√
Performance					
Switch Capacity	68Gbps	68Gbps	68Gbps	116Gbps	116Gbps
64-Byte Packet Forwarding Rate	50.60Mpps	50.60Mpps	50.60Mpps	86.31Mpps	86.31Mpps
MAC Address Table Size	8K	8K	8K	8K	8K
Packet Buffer	768KB	768KB	768KB	1.5MB	1.5MB
Jumbo Frame (Max.)	10,240Bytes	10,240Bytes	10,240Bytes	10,240Bytes	10,240Bytes
Physical & Environmental					
Power Input	100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply				
Power Consumption (Max)	38.30W	49.39W	555.50W	102.63W	619.30W
Dimensions	440mm x 210mm x 44mm	440mm x 210mm x 44mm	440mm x 310mm x 44mm 19-inch Rack Mount Width, 1U Height	440mm x 310mm x 44mm	440mm x 430mm x 44mm
Weight	2.95kg	3.04kg	5.58kg	5.50kg	7.43kg
Heat Dissipation	120.26 BTU/hr	168.53 BTU/hr	1895.48 BTU/hr	350.19 BTU/hr	2113.18 BTU/hr
MTBF	195,655 hrs	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
- MAC Address Table: 8K
- Flow Control
  802.3x Flow Control
  HOL Blocking Prevention
- Jumbo Frame up to 10,240 Bytes
- IGMP snooping
  IGMP v1/v2 Snooping
  Support 256 Groups
  IGMP Snooping Fast Leave
- MLD Snooping *
  MLD v1/v2 Snooping
  Support 128 Groups
- Spanning Tree
  802.1D STP
  802.1w RSTP
  802.1s MSTP
- Per port / per device BPDU filtering
- Loopback Detection
- 802.3ad Link Aggregation
  Max. 32 Groups per device/8 Ports per group
- Port Mirroring
  Support One-to-One
  Many-to-One

VLAN
- VLAN Group
  Max. 256 Static VLAN Groups
  Max. 256 Dynamic VLAN Groups
- 802.1Q Tagged VLAN
- GVRP

QoS (Quality of Service)
- 802.1p Class of Service
- 4 queues
- Queue Handling
  Strict
  Weighted Round Robin (WRR)
  Strict + WRR
- CoS Based on
  Switch Port
  VLAN ID
  802.1p Priority Queues
  MAC Address
  Ether Type
  IPv4 Address
  DSCP
  Protocol Type
  TCP/UDP Port
- Bandwidth Control
  Port-based (Ingress, min. granularity 3500Kbps; Egress, min. granularity 64Kbps)

ACL (Access Control List)
- Max. 15 profiles
- Max. 240 rules shared by all profiles
- ACL Based on
  802.1p Priority
  VLAN ID
  Ether Type
  MAC Address
  IPv4 Address
  DSCP
  Protocol Type
  TCP/UDP Port Number
- Time-based ACL

Security
- SSH v2
- SSL v3
- Port Security: up to 16 MAC address per port
- Broadcast/Multicast/Unicast Storm Control
- Private VLAN
- D-Link Safeguard Engine

AAA
- 802.1X
  Port-Based Access Control
  MAC-Based Access Control
- MAC-Based Access Control (MAC)
  Port-Based Access Control
- Guest VLAN
- Authentication for Management Access Support
  RADIUS/TACACS+

Management
- Web-based GUI
- Command Line Interface (CLI)
- Telnet Server/Client
- TFTP Client
- SNMP v1/v2c/v3
- SNMP Trap
- System Log
- RMON v1
  Support 1,2,3,9 Groups
- BootP/DHCP Client
- DHCP Auto-Configuration
- Dual Image
- Dual Configuration
- CPU Monitoring
- SNTP

MIB/IETF Standard
- RFC1213 MIB-II
- RFC1493 Bridge MIB
- RFC1907 SNMPv2 MIB
- RFC1757, 2819 RMON MIB
- RFC1643,2358,2665 Ether-like MIB
- RFC2674 802.1p MIB
- RFC2233, 2863 IF MIB
- RFC2618 RADIUS Authentication Client MIB
- RFC2925 Ping & Traceroute MIB
- D-Link Private MIB
- RFC768 UDP
- RFC783 TFTP
- RFC791 IP
- vRFC792 ICMP
- RFC793 TCP
- RFC826 ARP
- RFC854 Telnet
- RFC951, 1542 BootP
- RFC2068 HTTP
- RFC2138 RADIUS
- RFC2139,2866 RADIUS Accounting
- RFC1492 TACACS
- RFC1157 SNMPv1
- RFC1901, 1908 SNMPv2c
- RFC2570,2575 SNMPv3

* 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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