D-Link®

Product Highlights

Small Form Factor
- 8 10/100/1000BASE-T ports
- 2 Combo 10/100/1000BASE-T/SFP ports
- Desktop or rack mountable

Fully Managed
- Advanced L2 Features
- Solid Security with High Availability

Virtual Stacking
- Virtual Stacking up to 32 units using single IP Management

DGS-3000-10TC

Layer 2 Gigabit Managed Switch

Features

Reliability
- Redundant Power Supply (RPS) support
- Spanning Tree 802.1D (STP) / 802.1w (RSTP) / 802.1s (MSTP)
- 6 kV surge protection for Ethernet ports
- G.8032 Ethernet Ring Protection Switching
- Loop detection

Security
- 802.1X
- MAC-based Access Control (MAC)
- SSH/SSL support
- External RADIUS/TACACS+ Authentication
- D-Link Safeguard Engine

Quality of Service (QoS)
- 8 queues per port
- Three Color Marker (trTCM / srTCM)
- Granular Bandwidth Control Down to 64 Kbps per port

Metro Access
- Comprehensive service OAM for quick trouble shooting

Overview

The DGS-3000-10TC is a small and compact, yet fully managed, 10-port, Layer 2 Ethernet switch. It provides wired Gigabit speed access for campus and metro networks. The 1U high DGS-3000-10TC can be installed almost anywhere, including desktops, equipment racks, and telecom cabinets. The smaller dimensions provide better air flow in limited spaces and also make cable management easier.

Reliable Networking

All Ethernet ports of the DGS-3000-10TC support 6kV surge/lightning protection. This feature protects the switch from power surges due to lightning or improper electrical wiring when the Ethernet cables are exposed in open spaces, such as in older buildings. The switch also provides an additional power connector for connection to D-Link's DPS-200 Redundant Power Supply, or to a stable, protected 12VDC backup power source in case of a main power failure. For Ethernet link fail-over, the DGS-3000-10TC supports 802.1D Spanning Tree Protocol (STP), 802.1w Rapid Spanning Tree Protocol (RSTP), and 802.1s Multiple Spanning Tree Protocol (MSTP), to allow automatic backup of bridge paths. Using these features, the transmission and reception of frames can be guaranteed even during a network failure. For mission critical environments, the switch also supports ITU-T G.8032 Ethernet Ring Protection Switching (ERPS); traffic can be rerouted around the ring within 50 milliseconds, minimizing disruption to service. D-Link Loopback Detection (LBD) is a loop detection function that prevents loop events from causing congestion in uncontrolled network segments such as unmanaged switches or customer networks. The DGS-3000-10TC also supports 802.1AX and 802.3ad Link Aggregation, which allow grouping of multiple ports in parallel to increase bandwidth and redundancy for high availability and load sharing in a multi-client environment.

DGS-3000-10TC Layer 2 Gigabit Managed Switch

Solid Security with High Availability

The DGS-3000-10TC offers various user/device authentication features including 802.1X, Web-based Access Control (WAC)[1] and MAC-based Access Control (MAC). The clientless WAC[1] and MAC functions provide convenience for IT managers implementing user/device authentication into a network. They allow administrators to control security without installing client software on each network device, which is especially important for devices on which the software cannot be installed. For a greater security level, the DGS-3000-10TC also supports Compound Authentication[1], letting IT managers choose between multiple authentication methods for any single device. Selectable host-based authentication and authorization provide the option to finely control access by each device in the network. For advanced applications, the switches also provide RADIUS and TACACS accounting information for integration of backend services such as a billing system or advanced user/device control. In mission critical networks, the DGS-3000-10TC supports strict address and interface binding function via IP-MAC-Port Binding (IMPB) and ARP Spoofing Prevention to protect the networks from Man-in-the-Middle or ARP Spoofing attacks.

To maintain a high availability network, the DGS-3000-10TC uses D-Link Safeguard Engine to manage the CPU and ensure that the network stays up even if it is overloaded by malicious traffic caused by worms and viruses. The switch also supports DHCP Screening to filter out unauthorized DHCP offerings from rogue DHCP servers or routers. Other security features such as BPDU Attack Protection, DoS Attack Prevention, and L3 Control Packet Filtering help to block leaks caused by protocol or behavioral security intrusions.

IPv6 Ready

The DGS-3000-10TC is IPv6 ready and supports various IPv6 functions such as MLD Snooping, WAC[1], IPv6 ACL/QoS, and IMPBv6 to ensure seamless integration of next generation networks. The DGS-3000-10TC is certified IPv6 Ready Logo Phase 2, which guarantees interoperability for IPv6 environments.

Easy Maintenance and Troubleshooting

The DGS-3000-10TC features rich Operations, Administration, and Management (OAM) features to help network administrators reduce the burden of maintenance and troubleshooting. Cable diagnostics display the status of Ethernet cables and locate the position of cable errors remotely, helping cut onsite support costs. 802.1ag Connectivity Fault Management (CFM) provides administrators with convenient tools to monitor and troubleshoot end-to-end service networks. This allows service providers to check connectivity, isolate network issues, and identify the affected customers. D-Link Unidirectional Link Detection (DULD) helps detect a broken one-way fiber connection, improving the stability of the fiber infrastructure in a Metropolitan Area Network (MAN).

Deliver Triple Play Services

The DGS-3000-10TC features full L2 multicast functions, including IGMP/MLD snooping, fast leave, and filtering. With L2 multicast support, the switch is ideal for use with IPTV services. Host-based IGMP/MLD Snooping provides service to multiple IPTV subscribers per physical interface and ISM VLAN registers multicast streams in a multicast VLAN to save bandwidth on the network backbone. The ISM VLAN profiles allow users to bind or replace the channel profiles of subscription ports quickly and easily. The DGS-3000-10TC also supports IGMP authentication, which can prevent rogue IPTV subscriptions by authenticating Set Top Boxes as well as channel switching to secure Internet Service Provider (ISP) revenues.

The DGS-3000-10TC also supports advanced Quality of Service (QoS) functions to help ISPs reliably deliver high-quality triple play services. Flexible packet classification can be based on various header fields or user-defined packet content to help administrators prioritize network traffic. Two-rate and single-rate Three Color Marker (trTCM/srTCM) help classify traffic streams into conforming and nonconforming groups to guarantee the minimum bandwidth for prioritized packets. The Bandwidth Control feature allows network administrators to define the upstream/downstream throughput levels for each port with granularity down to 64 kbps.

Technical Specifications

Interfaces	
Ports	• 8 10/100/1000 Base-T • 2 Combo 10/100/1000 Base-T/SFP
Optional Redundant Power Supply	DPS-200[2]
Console Port	RJ-45
Performance	
Switching Capacity	20 Gbps
64 Byte Packet Forwarding Rate	14.88 Mpps
MAC Address Table	16K Entries

DRAM for CPU	128 MB
Packet Buffer Memory	1.5 MB
Flash Memory	32 MB
Jumbo Frame	12,288 Bytes
Physical	
MTBF(hours)	711,565.6 hours
Acoustic	33.8 dB
Heat Dissipation	56.26 Btu/h
Power Input	AC Input 100 to 240 V AC, 50 to 60 Hz Internal Universal Power Supply
Max Power Consumption	16.5 W
Dimensions (W x D x H)	9 x 7.68 x 1.73 in (228.5 x 195 x 44 mm)
Weight	2.42 lb (1.11 kg)
Ventilation	Smart Fan (Turns on at > 26 ˚C; Turns off at < 20 ˚C)
Power Surge Protection	All Ethernet ports support IEC61000-4-5 10/700us 6 kV surge protection
Operation Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	-40 to 158°F (-40 to 70°C)
Operation Humidity	10% to 90% RH
Storage Humidity	5% to 90% RH
Emission (EMI)	CE, FCC, IC, C-Tick, VCCI, BSMI
Safety	CB, UL/cUL, BSMI
Certifications	IPv6 Ready Logo Phase 2
Software Features	
Virtual Stacking	• D-Link Single IP Management • Up to 32 units per Virtual Stack

L2 Features	• 16K MAC Address Table
	• Flow Control:
	  • 802.3x Flow Control
	  • HOL Blocking Prevention
	• Jumbo Frames up to 12K bytes
	• Spanning Tree Protocols:
	  • 802.1D STP
	  • 802.1w RSTP
	  • 802.1s MSTP
	• BPDU Filtering
	• Root Restriction
	• Loopback Detection
	• Link Aggregation:
	  • Compliant with 802.1AX and 802.3ad
	  • Max. 5 groups, 8 ports per group
	• Port Mirroring:
	  • Supports 1 Mirroring group
	  • Supports One-to-One, Many-to-One, Flow-based (ACL) Mirroring
	• Ethernet Ring Protection Switching (ERPS)
	• L2 Protocol Tunneling (L2PT)

L2 Multicasting	• IGMP Snooping:
	  • IGMP v1/v2 Snooping, v3 partial support
	  • Supports 1024 groups
	  • Port/Host-based IGMP Snooping Fast Leave
	  • Report Suppression
	• IGMP Authentication
	• IGMP/MLD Proxy Reporting
	• Limited IP Multicast (IGMP Filtering)
	• MLD Snooping:
	  • MLD v1, MLD v2 partial support
	  • Supports 1024 groups
	  • Host-based MLD snooping Fast Leave

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VLAN	• VLAN Group:
	  • Max. 4094 VLAN
	  • Port-based VLAN
	  • MAC-based VLAN
	• GVRP:
	  • Max. 255 dynamic VLANs
	• 802.1v Protocol VLAN
	• 802.1Q Tagged VLAN
		• Double VLAN (Q-in-Q):
		  • Port-based Q-in-Q
		  • Selective Q-in-Q
		• ISM VLAN
		• VLAN Translation
		• Voice VLAN
		• VLAN Trunking
		• Asymmetric VLAN

L3 Features	• Support 1024 ARP Entries • Gratuitous ARP	• IPv6 Neighbor Discovery (ND) • Default Route

Quality of Service (QoS)	• 8 queues per port
	• DSCP
	• 802.1p
	• Bandwidth Control:
	  • Port-based (Ingress/Egress, min. granularity 64 kbps)
	  • Flow-based (Ingress/Egress, min. granularity 64 kbps)
	  • Per egress queue bandwidth control (min. granularity 64 kbps)
	• Queue Handling:
	  • Strict Priority Queue (SPQ)
	  • Weighted Round Robin (WRR)
	  • Deficit Round Robin (DRR)
	  • SPQ + WRR
	• Supports the following actions for flows:
	  • Remark 802.1p Priority Tag
	  • Remark TOS/DSCP Tag
		• Time-based QoS
		• Three Color Marker
		  • trTCM
		  • srTCM
		• CoS Based on:
		  • 802.1p Priority Queues
		  • VLAN ID
		  • MAC Address
		  • Ether Type
		  • IPv4/v6 Address
		  • IPv6 Traffic Class
		  • IPv6 Flow Label
		  • DSCP
		  • Protocol Type
		  • TCP/UDP Port
		  • User-Defined Packet Content

Access Control List(ACL)	• ACL based on:
	  • Switch Port
	  • 802.1p Priority
	  • VLAN ID
	  • MAC Address
	  • Ether Type
	  • IPv4/v6 Address
	  • IPv6 Traffic Class
	  • IPv6 Flow Label
		• DSCP
		  • Protocol Type
		  • TCP/UDP Port Number
		  • User Defined Packet Content
		• Up to 1024 ingress access rules
		• Time-based ACL
		• ACL Statistics
		• CPU Interface Filtering

Security	• SSH v1/v2
	• SSL v1/v2/v3
	• Port Security
	  • Up to 64 MAC addresses per port
	• Broadcast/Multicast/Unicast Storm Control
	• IP-MAC-Port Binding (IMPB):
	  • ARP Inspection
	  • IP Inspection
	  • DHCP Snooping
		• Traffic Segmentation
		• D-Link Safeguard Engine
		• L3 Control Packet Filtering
		• NetBIOS/NetBEUI Filtering
		• DHCP Server Screening
		• DHCP Client Filtering
		• ARP Spoofing Prevention
		• BPDU Attack Protection
		• DoS Attack Prevention

AAA	• 802.1X
	  • 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
	• Web-based Access Control (WAC)[1]
	  • Port-based Access Control
	  • Host-based Access Control
	  • Dynamic VLAN Assignment
	• Japan Web-based Access Control (JWAC)
	  • Host-based Access Control
	  • Dynamic VLAN Assignment
		• Compound Authentication[1]
		• Microsoft® NAP (IPv4/v6)
		  • Supports 802.1x NAP
		  • Supports DHCP NAP
		• Guest VLAN
		• RADIUS (IPv4/v6)
		• TACACS
		• TACACS+
		• XTACACS+
		• Trusted Host
		• RADIUS Accounting
		• TACACS+ Accounting
		• Four-level User Account

DGS-3000-10TC Layer 2 Gigabit Managed Switch

OAM	• Cable Diagnostics • 802.3ah Ethernet Link OAM • 802.1ag Connectivity Fault Management (CFM)	• 802.3ah D-link Unidirectional Link Detection (DULD) • Y.1731 OAM[1] • sFlow
Green Features	• IEEE 802.3az Energy Efficient Ethernet (EEE) • Power-saving function • Link Status • Cable Length	• LED Shut-Off • Port Shut-Off • Port Standby • System Hibernation

Management	• Web-based GUI (Supports IPv4/v6)
	• Command Line Interface (CLI)
	• Telnet Server/Client (Supports IPv4/v6)
	• TFTP Client (Supports IPv4/v62)
	• FTP Client (Supports IPv4/v6)
	• ZModem
	• Command Logging
	• SNMP v1/v2c/v3
	• SNMP Traps
	• System Log
	• SMTP
	• RMON v1:
	  • Supports 1,2,3,9 groups
	• RMON v2:
	  • Supports Probe Config group
	• 802.1AB LLDP
	• LLDP-MED
		• BootP/DHCP Client
		• DHCP Auto-Configuration
		• DHCP Relay (Support IPv4)
		• DHCP Relay Option 60, 61 and 82
		• DHCP Client Option 12
		• PPPoE Circuit-ID Tag Insertion
		• Multiple Image
		• Flash File System
		• CPU Monitoring
		• Memory Monitoring
		• NTP/SNTP
		• Debug Command
		• Password Recovery
		• Password Encryption
		• Ping (Supports IPv4/v6)
		• Traceroute
		• Microsoft® NLB (Network Load Balancing) Support

MIB	• RFC1065, 1066, 1155, 1156, 2578 MIB Structure • RFC1212 Concise MIB Definitions • RFC1213 MIB II • RFC1215 MIB Traps Convention • RFC1493, 4188 Bridge MIB • RFC1157, 2571-2576 SNMP MIB • RFC1901-1908, 3418, 3636, 1442, 2578 SNMPv2 MIB • RFC271,1757, 2819 RMON MIB • RFC2021 RMONv2 MIB • RFC1398, 1643, 1650, 2358, 2665, 3635 Ether-like MIB • RFC2668 802.3 MAU MIB • RFC2674, 4363 802.1p MIB • RFC2233, 2863 Interface Group MIB • RFC2618 RADIUS Authentication Client MIB	• RFC4022 MIB for TCP • RFC4113 MIB for UDP • RFC3298 MIB for Diffserv • RFC2620 RADIUS Accounting Client MIB • RFC 2925 Ping & Traceroute MIB • Running configuration write and backup • TFTP uploads and downloads • Trap MIB • RFC 2465 IPv6 MIB • RFC 2466 ICMPv6 MIB • RFC 2737 Entity MIB • RFC 4293 IPv6 SNMP Mgmt Interface MIB • Private MIB • RFC 3289 DIFFSERV MIB
IETF® Standards	• RFC768 UDP • RFC791 IP • RFC792 ICMPv4 • RFC2463, 4443 ICMPv6 • RFC4884 Extended ICMP to Support Multi-Part Messages • RFC793 TCP • RFC826 ARP • RFC1338, 1519 CIDR • RFC2474, 3168, 3260 Definition of the DS Field in the IPv4 and IPv6 Header • RFC1321, 2284, 2865, 2716, 1759, 3580, 3748 Extensible Authentication Protocol (EAP) • RFC2571, RFC2572, RFC2573, RFC2574 SNMP	
IPv6	• RFC2460 IPv6 • RFC2461, 4861 Neighbor Discovery • RFC2462, 4862 IPv6 Stateless Address Auto-configuration • RFC2464 IPv6 Neighbor over Ethernet and definition • RFC3513, 4291 IPv6 Addressing Architecture • RFC2893, 4213 IPv4/IPv6 dual stack function • IPv6 Ready Logo Phase 2	

DGS-3000-10TC Layer 2 Gigabit Managed Switch

Warranty	
Warranty	Lifetime[3]
Ordering Information	
DGS-3000-10TC	8-Port 10/100/1000 Base-T + 2-Port Combo 10/100/1000BASE-T/SFP, L2 Management Switch
Redundant Power Supply and Cable	
DPS-200	60-watt RPS with a 1-meter DC power cable
DPS-CB150-2PS	RPS Cable for DGS-3000-10TC. Connects up to 2 DGS-3000-TC to a DPS-200.
Optional Management Software	
DV-600S	D-View 6.0 Network Management System (Standard Edition)
DV-600P	D-View 6.0 Network Management System (Professional Edition)
Optional SFP Transceivers	
DEM-310GT	1000Base-LX, Single-mode, 10 km
DEM-311GT	1000ase-SX, Mutli-mode, 550 m
DGS-712	1000BASE-T Copper SFP Transceiver
DEM-211	100Mbps Multi-Mode SFP Transceiver, 2 km

[1]Available in the future.
[2]Use DPS-CB150-2PS for connecting DPS-200 to DGS-3000-10TC.
[3]Lifetime warranty available in the U.S.A. and Canada only. Visit www.dlink.com for warranty details.

For more information

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