D-Link®

Product Highlights

Flexible Ports Types

24 or 48 10/100 Ports + 2 combo 1000BASE-T/SFP Ports + 2 Gigabit SFP Uplinks, with available PoE give you plenty of options to connect to devices or other switches.

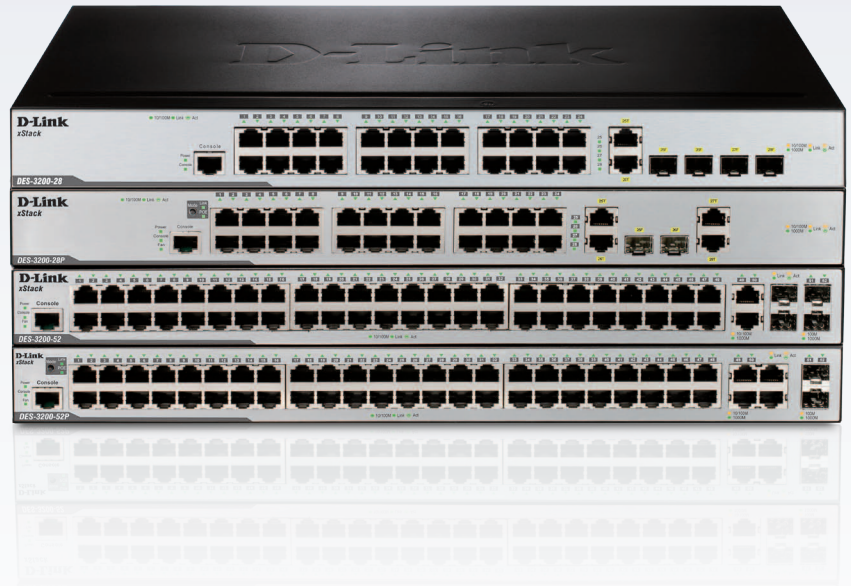**Quiet Fanless Design with Surge Protection**

Fanless and Smart Fan Models with and 6 KV surge protection on all Ethernet ports keeps switch operation quiet and increases reliability.

Comprehensive L2 Features

Advanced security and management features allow you to secure, control and monitor the traffic on your network.

DES-3200 Series

Layer 2 Managed Switch

Features

Flexible Port Density

- 24 or 48 10/100BASE-TX, with available PoE
- 2 Combo 1000BASE-T/SFP ports and 2 dedicated SFP ports
- 19" Rack-mount width

Surge Protection

- All Ethernet ports have 6 KV surge protection

L2 Features

- Asymmetric VLAN/ISM VLAN
- Double VLAN (Q-in-Q)
- Spanning Tree Protocols: 802.1D-2004 Edition, 802.1w and 802.1s
- 802.1AX and 802.3ad Link Aggregation

Security

- Port Security/SSH/SSL
- Access Control List (ACL)
- 802.1X Port-based/Host-based Access Control
- 802.1X Guest VLAN
- IP-MAC-Port Binding

The DES-3200 Series are members of D-Link®'s Layer 2 xStack Managed Switch family designed for the Metro ETTX, FTTX, and Enterprise market. The DES-3200 series offers 24 or 48 10/100Mbps Faster Ethernet Ports with available PoE, plus 2 combo Gigabit/SFP ports and 2 dedicated SFP ports. It also offers the beneficial design of 2 Gigabit/SFP Combo ports and 2 dedicated SFP ports which provide up to 4 Gbps uplink bandwidth or dual Ethernet ring topology support.

Security & Availability

The DES-3200 Series supports 802.1X Port-based/Host-based Access Control, Guest VLAN, and RADIUS and TACAS+ Authentication for strict access control over the network. The IP-MAC-Port Binding feature allows administrators to bind a source IP address with an associated MAC for a defined port number to enhance user access control. Furthermore with the DHCP Snooping feature, the switch automatically understands the IP/MAC pairs by snooping DHCP packets and saving them to the IMPB white list. These features play a significant role in keeping the network secure and auditable. The built-in D-Link Safeguard Engine identifies and prioritizes "CPU interested" packets to prevent malicious traffic from interrupting normal network flows and protects switch operation. In addition, the Access Control List (ACL) feature enhances the network security and switch performance.

Traffic Monitoring & Bandwidth Control

- Port Mirroring/Bandwidth Control
- Broadcast/Multicast/Unicast Storm Control

Management

- SNMP v1, v2c, v3 & RMON v1, v2
- D-Link Single IP Management (SIM)
- Network Load Balancing (NLB)
- RADIUS/TACACS+ Authentication for

Management Access

- Link Layer Discovery Protocol (LLDP)

Operations Administration Maintenance (OAM)

- 802.3ah Ethernet Link OAM
- 802.1ag Connectivity Fault Management (CFM)
- 802.3ah D-Link Extension: D-Link Unidirectional Link Detection (DULD)

Resilience & Quality of Service

For mission critical environments the DES-3200 Series supports 802.1D-2004 edition, 802.1w and 802.1s Spanning Tree Protocols (STP). STP allows you to configure the switch with a redundant backup bridge path, so transmission and reception of packets can be guaranteed in the event of any failed switch on the network. The switch also supports 802.1AX (formerly 802.3ad) Link Aggregation, enabling you to group multiple ports in parallel to form a single port, increasing bandwidth and redundancy for higher availability. For Quality of Service (QoS), the switches support 802.1p. This standard is a mechanism that allows real-time traffic classification into 8 priority levels mapped to 4 queues. Packet classification is based on TOS, DSCP, MAC Addresses, IP Addresses, VLAN ID, TCP/UDP port number, protocol type and user defined packet content, which enables flexible configuration especially for real-time streaming multimedia applications such as voice over IP.

Traffic & Bandwidth Control

The bandwidth control feature allows network administrators to define the throughput levels for each port in order to manage bandwidth. It also provides fine granularity to define the ingress/egress traffic limits down to 8kbps segments. The switches also support the Broadcast Storm Control feature which minimizes the chance of a virus attack within the network. Port Mirroring helps administrators facilitate traffic diagnostics or track switch performance and make changes if necessary. Q-in-Q, also known as VLAN stacking, is a powerful yet simple and cost-effective solution which can be used to provide multiple virtual connections and access to multiple services available over the Metro Ethernet.

Multicast Applications

The DES-3200 Series provides IGMP Snooping to prune multicast traffic and to optimize network performance. The MLD snooping feature minimizes multicast IPv6 packets at the port level to conserve network bandwidth.

Management Capabilities

The DES-3200 Series supports standard management protocols such as SNMP, RMON, Telnet, SSH/SSL security authentication and DHCP Relay Option 82. A web-based GUI is also supported for user-friendly interface and easy management. DHCP Auto- Configuration is an enhanced management feature that allows administrators to pre-set configuration and save them to a TFTP server. Individual switches can then get IP addresses from the server for booting up and loading the pre-set configuration. The Link Layer Discovery Protocol (LLDP) allows a network device to advertise its identity and capabilities on the local network, which helps businesses better manage their network topology. Each port on the switch supports the Cable Diagnostics feature that helps to detect cable-related information such as cable length status or cable functionality. D-Link Single IP Management (SIM) simplifies and speeds up management tasks, allowing multiple switches to be configured, monitored and maintained from any workstation running a web browser through one unique IP address. The DES-3200 Series also works with D-Link's D-View 6.0 software. D-View 6.0 is a Network Management System that allows for the central management of critical network characteristics such as availability, reliability, resilience, and security. D-View 6.0 provides a useful set of tools for network administrators who want to effectively manage device configurations, fault tolerance, performance, and security.

Technical Specifications

	DES-3200-28	DES-3200-28P	DES-3200-52	DES-3200-52P
Hardware Version		• C1		
InterfacE	• 24 10/100BASE-TX • 2 100/1000 SFP • 2 Combo 10/100/1000 BASE-T or 100/1000 SFP		• 48 10/100BASE-TX • 2 100/1000 SFP • 2 Combo 10/100/1000 BASE-T or 100/1000 SFP	
PoE Support	• No	• Yes	• No	• Yes
PoE Budget	• N/A	• 188W	• N/A	• 370W
PoE Ports	• N/A	• 1-24	• N/A	• 1-48
PoE+ Ports	• N/A	• 1-4	• N/A	• 1-8
Console Port	• RJ-45			

Performance

Switching Capacity	• 12.8Gbps		• 17.6Gbps	
64-Byte Packet Forwarding Rate	• 9.5Mpps		• 13.1MPPs	
MAC Address Table-Size	• 16K Entries			
SDRAM for CPU	• 128 MB			
Packet Buffer	• 1.5 MB			
Flash Memory	• 32 MB			
Jumbo Frame	• 12kb			

Physical & Environmental

LEDs	• Power (Per Device)	• Console (Per Device)	• Link/Activity/Speed (Per Port)	
Acoustic	• 0 dB	• 37 dB at low speed • 49.5 dB at high speed	• 0 dB at fan off • 32.8 dB at fan on	• 39.3 dB at low speed • 51.2 db at high speed
Heat Dissipation	• 48.4 BTU per hour	• 855.696 BTU per hour	• 113.9 BTU per hour	• 1608.196 BTU per hour
Power Input	• 100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply			
Max Power Consumption	• 14.2 watts	• 250.78 watts	• 33.38 watts	• 471.6 watts
Dimensions	• 17.36" x 12.13" x 1.732" (441 x 308 x 44 mm) • 19-inch Standard Rack-Mount Width, 1U Height			
Ventilation	• Fanless	• Smart Fans		
Power Surge Protection	• All Ethernet ports support IEC61000-4-5 10/700us 6 KV surge protection			

Operating Temperature	• 23°F to 112°F (-5° to 50°C)			
Storage Temperature	• -40°F to 158°F(-40° to 70°C)			
Operating Humidity	• 10% to 90% non-condensing			
EMI	• FCC Class A • CE Class A	• VCCI Class A	• IC	• C-Tick
Safety	• CE LVD	• UL/cUL	• CB	
3rd Party Certifications	• MEF 21, IPv6 Ready Logo			
MTBF	• 668,867 hours	• 216,780 hours	• 189,396 hours	• 189,396 hours

Software Features

Stackability	• Virtual Stacking: D-Link Single IP Management, Up to 32 units per Virtual Stack

L2 Features	• MAC Address Table: 16k
	• Flow Control:
	  - 802.3x Flow Control
	  - HoL Blocking Prevention
	• Loopback Detection
	
	• 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

Spanning Tree Protocols	• 802.1D STP • 802.1w RSTP • 802.1s MSTP • 802.1Q-2005 MSTP • BPDU Filtering • Root Restriction
Link Aggregation	• Max. 14 groups (8 ports per group) Compliant with 802.1AX (formerly 802.3ad)

L2 Multicasting	• IGMP Snooping:
	  - IGMP v1/v2 Snooping, IGMP v3 awareness
	  - Supports 1K groups
	  - Port/Host-based IGMP Snooping Fast Leave
	• Limited IP Multicasting:
	  - Up to 24 IGMP filtering profiles, 128 ranges per profile
	
	• MLD Snooping:
	  - MLD v1, MLD v2 awareness
	  - Supports 1K groups
	• IGMP Authentication

VLAN	• 802.1Q Tagged VLAN
	• VLAN Group: Max. 4K VLAN
	• Port-based VLAN
	• MAC-based VLAN
	• GVRP: Max. 255 dynamic VLANs
	• 802.1v Protocol VLAN
	• VLAN Trunking
	
	• Asymmetric VLAN
	• Double VLAN (Q-in-Q):
	  - Port-based Q-in-Q
	  - Selective Q-in-Q
	• ISM VLAN
	• VLAN Translation

L3 Features	• Gratuitous ARP

Quality of Service (QoS)	• Port-based Bandwidth Control:
	  Ingress/Egress, min. granularity 8kbps)
	• Flow-based Bandwidth Control:
	  (Ingress, min. granularity 8 kbps)
	• Per egress queue Bandwidth Control
	• 4 queues per port
	• DSCP
	• 802.1p
	• Queue Handling:
	  - Strict Priority
	  - Weighted Round Robin (WRR)
	  - Strict + WRR
	• Remark 802.1p Priority Tag
	• Remark ToS/DSCP Tag
	• Bandwidth Control
	• Flow Statistics
	
	• Time-based QoS
	• CoS Based on:
	  - Switch Port
	  - VLAN ID
	  - 802.1p Priority Queues
	  - MAC Address
	  - Ether Type
	  - IPv4/v6 Address
	  - IPv6 Traffic Class
	  - IPv6 Flow Label
	  - TOS
	  - DSCP
	  - Protocol Type
	  - TCP/UDP Port
	  - User-defined packet content

Access Control List (ACL)	• ACL based on:
	  - Switch Port
	  - VLAN ID
	  - 802.1p Priority Queues
	  - MAC Address
	  - Ether Type
	  - IPv4/v6 Address
	  - IPv6 Traffic Class
	  - IPv6 Flow Label
		- ToS
		  - DSCP
		  - Protocol Type
		  - TCP/UDP Port
		  - User Defined Packet Content
		• Up to 512 ingress access rules
		• Time-based ACL
		• ACL Statistics
		• CPU Interface Filtering

Security	• SSH 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
		• DHCP Server Screening
		• DHCP Client Filtering
		• DoS Attack Prevention
		• ARP Spoofing Prevention
		• BPDU Attack Protection

AAA	• Guest VLAN • RADIUS • TACACS+ • XTACACS+	• Trusted Host • RADIUS Accounting • Two-level User Account
802.1X	• Port-based Access Control • Host-based Access Control	• Dynamic VLAN Assignment • Identity-driven security policy assignment: QOS, VLAN
MAC-based Access Control (MAC)	• Port-based Access Control • Host-based Access Control • Dynamic VLAN Assignment	• Authentication Database Failover • Identity-driven security policy assignment: QoS, ACL, VLAN
Microsoft® NAP (IPv4/v6)	• Supports 802.1x NAP	• Supports DHCP NAP
Management	• Web-based GUI (Supports IPv4/v6) • Command Line Interface (CLI) • Telnet Server/Client (Supports IPv4/v6) • TFTP Client (Supports IPv4/v6) • ZModem • SNMP v1/v2c/v3 • SNMP Traps • System Log • RMON v1: Supports 1,2,3,9 groups • RMON v2: Supports ProbeConfig group • BootP/DHCP Client • DHCP Auto-Configuration • DHCP Relay • DHCP Relay Option 12	• DHCP Relay Option 82 • PPPoE Circuit-ID Tag Insertion • Dual Image • CPU Monitoring • SNTP • LLDP • Debug Command • Password Encryption • SMTP • Ping (Supports IPv4/v6) • Traceroute (Supports IPv4) • Command Logging • ICMPv6 • Microsoft® NLB (Network Load Balancing) Support
OAM	• Cable Diagnostics • 802.3ah Ethernet Link OAM • Dying Gasp	• 802.1ag Connectivity Fault Management (CFM) • 802.3ah D-Link Extension: D-Link Unidirectional Link Detection (DULD)
MIB	• RFC 1065, 1066, 1155, 1156, 2578 MIB Structure • RFC 1157, 2571-2576 SNMP MIB • RFC 1212 Concise MIB Definitions • RFC 1213 MIB II • RFC 1215 MIB Traps Convention • RFC 1398, 1643, 1650, 2358, 2665 Ether-like MIB • RFC 1493 Bridge MIB • RFC 1757, 2819 RMON MIB	• RFC 1907 SNMPv2 MIB • RFC 2021 RMONv2 MIB • RFC 2233, 2863 IF MIB • RFC 2618 RADIUS Authentication Client MIB • RFC 2620 RADIUS Accounting Client MIB • RFC 2674, 4363 802.1p MIB • RFC 2925 PING & TRACEROUTE MIB • RFC 4188 Bridge MIB

IETF® Standard	• RFC 768 UDP • RFC 783 TFTP • RFC 791 IP • RFC 792, 2463, 4443 ICMP • RFC 793 TCP • RFC 826 ARP • RFC 854 Telnet • RFC 951, 1542 BootP • RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP) • RFC 1492 TACACS • RFC 1981 Path MTU Discovery for IPv6 • RFC 2068 HTTP	• RFC 2460 IPv6 • RFC 2461, 4861 Neighbor Discovery for IPv6 • RFC 2462, 4862 IPv6 Stateless Address Auto Configuration • RFC 2463, 4443 ICMPv6 • RFC 2464 IPv6 Ethernet and definition • RFC 2474, 3260 Definition of the DS field in the IPv4 and IPv6 Headers • RFC 2544 Benchmarking Methodology for Network Interconnect Devices • RFC 2571, 2572, 2573, 2574 SNMP • RFC 2866 RADIUS Accounting • RFC 2893, 4213 IPv4/IPv6 dual stack function • RFC 3513, 4291, IPv6 Addressing Architecture

Warranty

Warranty	• Limited Lifetime

Ordering Information

Part Number	Description
DES-3200-28	Layer 2 managed switch, 24 10/100BaseT ports, 2 combo 1000BaseT ports, 2 Gigabit SFP ports
DES-3200-28P	Layer 2 managed switch, 24 PoE 10/100BaseT ports, 2 combo 1000BaseT ports, 2 Gigabit SFP ports
DES-3200-52	Layer 2 managed switch, 48 10/100BaseT ports, 2 combo 1000BaseT ports, 2 Gigabit SFP ports
DES-3200-52P	Layer 2 managed switch, 48 PoE 10/100BaseT ports, 2 combo 1000BaseT ports, 2 Gigabit SFP ports

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DES-3200-28   DES-3200-28P   DES-3200-52   DES-3200-52P

For more information

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D-Link®

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