

## L3 Ethernet Stack

### Multi-Layer Routing Switch

- 24 or 48 Ethernet Ports/4 Gigabit Uplinks Per Switch
- Scalable Stack With Single IP Management
- Robust Security With Enhanced Performance/Availability
- L2/L3/L4 Multi-Layer QoS
- Redundant Power Supply/802.3af Power Over Ethernet

#### FEATURES

##### L3 IP Routing for Workgroups/Departments

- Cost-Effective IP Packet Routing From Desktops
- Alleviates Traffic Burden on Backbone/Servers
- Complete L2/L3 Features
- 24 or 48 Ethernet Connections for Desktops
- Gigabit Uplinks for Server/Backbone Attachments

##### 3 Flexible Choices

- With Internal AC Power Supply for General Installation Sites
- With Internal DC Power Supply for Deployment in Central Computer Room
- With 802.3af Power Over Ethernet for Special Installation Sites

##### Security

- L2/L3/L4 Multi-Layer Access Control
- External RADIUS/TACACS+ Authentication Support
- SSH/SSL Support
- 802.1X Guest VLAN
- Web-Based Access Control (WAC)
- MAC-Based Access Control (MAC)
- IP-MAC-Port Binding
- D-Link Safeguard Engine
- Support Microsoft® NAP

##### Quality of Service

- 802.1p Priority Queues/Multi-Layer CoS
- IP Multicast Support for Bandwidth-Intensive Applications

##### Traffic Monitoring/Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control Down to 64Kbps Per Port
- Granular Broadcast Storm Control Down to 1pps Per Port
- 802.3ad Link Aggregation (Port Trunks)
- RMON Support
- Port Mirroring

##### Configuration/Management

- Web-Based GUI
- Command Line Interface (CLI)
- SNMP v1, v2c, v3 Standard
- D-Link Single IP Management (SIM) v1.6
- D-View SNMP Network Management Module Provided
- Telnet Server/Client

The DES-3800 series is a member of the D-Link xStack family of next generation switches that deliver performance, flexible expansion, robust security, multi-layer Quality of Service (QoS), Power Over Ethernet and redundant power option. The DES-3800 series forms a cost-effective Ethernet virtual stack for workgroup connection. It incorporates L3 packet routing and many functions typically found in a chassis-based solution. The DES-3800 series provides Single IP Management for seamless integration with a core Gigabit xStack attached to an optional high-speed 10Gigabit backbone.

*L3 Virtual Stack.* Simple to deploy and easy to manage, the DES-3800 series comprises the departmental access-level devices that can be easily stacked and configured with any switches supporting D-Link's Single IP Management, including the D-Link xStack core switches, to form part of a multi-level network structured with backbone and centralized high-speed servers. Without any stacking cable, cable distance barrier and physical stacking method limitations, a DES-3800 stack can comprise units that are located anywhere on the same network domain, eliminating the possibility of any single point of failure. Ideal for deployment at the network edge, the DES-3800 blends L2 packet switching with dynamic L3 IP routing to relieve the network backbone and servers of any unnecessary traffic.

*Comprehensive Security.* The DES-3800 series provides a complete set of security features for connectivity and access control, which includes L2/3/4 Access Control Lists (ACL), ARP storm control and MAC address control. Authentication mechanisms such as 802.1x Guest VLAN, Web-based Access Control (WAC) and MAC-based Access Control (MAC) provide extra flexibility for user identity control. The DES-3800 also provides central management for administration access via TACACS+ and RADIUS. Together with network application control, this security ensures that not only proper user access is served, but malicious traffic is also prevented from being spread across the network.

*Enhanced Network Performance & Availability.* The DES-3800 series provides extensive VLAN support including 4K VLAN entries, GARP/GVRP and 802.1Q to enhance network security and performance. Bandwidth control allows you to set traffic limit for each port to control the traffic volume from the edge of the network. The DES-3828, DES-3828P and DES-3852 support redundant power option to maximize network uptime. Other features include 802.3ad Link Aggregation, 802.1d Spanning Tree and 802.1w Rapid Spanning Tree to increase network reliability and availability of your Virtual Stack.

*Multi-layer Quality of Service (QoS).* The DES-3800 series implements a robust set of multi-layer (L2, L3, L4) QoS/CoS features to ensure that critical network services like VoIP, ERP, Intranet and video conference are served with proper priority. 8 priority queues for 802.1p/TOS/DiffServ are supported, with classification and marking based on MAC SA/DA, IP SA/DA, DSCP, and/or TCP/UDP port numbers. With IP Multicast support, the DES-3800 is also ideal for high-bandwidth applications, such as MPEG video, delivering traffic to multiple receivers without adding any additional burden on the source or the receivers while using the



**Technical Specifications**

**DES-3828**

**DES-3828DC**

**DES-3828P**

**DES-3852**



**Interface**

10/100BASE-TX Ports	24	24	24	48
10/100/1000BASE-T Ports	2	2	2	2
Combo 10/100/1000BASE-T Ports/SFP Slots	2	2	2	2
Auto-Negotiation of Network Speeds	√	√	√	√
RS-232 Console Port	√	√	√	√

**Power**

Internal Power Supply	AC to DC	DC to DC	AC to DC	AC to DC
Power Input	100 to 240VAC, 1A, 50 to 60Hz	DC 60W, 48VDC	100 to 240VAC, 10A, 50 to 60Hz	100 to 240VAC, 1A, 50 to 60Hz
Power Consumption	24 watts (max.)	24 watts (max.)	395.2 watts (max.)	47 watts (max.)
Optional Redundant Power Supply	√	-	√	√
802.3af Power Over Ethernet	-	-	√	-
Number of PoE Capable Ports	-	-	24	-
PoE Auto-Discovery	-	-	√	-
PoE Auto-Disable (Per Port)	-	-	√	-
PoE Active Circuit Protection	-	-	√	-

**Performance**

Switching Capacity	12.8Gbps	12.8Gbps	12.8Gbps	17.6Gbps
64-Byte System Packet Forwarding Rate	9.5mpps	9.5mpps	9.5mpps	11.7mpps
IP Routing Table	2K	2K	2K	2K
MAC Address Table	16K	16K	16K	16K
Packet Buffer Size	32MB	32MB	32MB	32MB
Max. Jumbo Frame Size	9KBytes	9KBytes	9KBytes	9KBytes

**Diagnostic LED**

10Mbps or 100Mbps Speed (Per Ethernet Port)	√	√	√	√
10/100Mbps or 1000Mbps Speed (Per Gigabit Port)	√	√	√	√
Link/Activity (Per Port)	√	√	√	√
Power, Console, RPS (Per Device)	√	√	√	√

**Physical/Environmental**

BTU/Hr.	81.72	81.72	1159.2	158.4
Dimensions	441 x 310 x 44 mm	441 x 310 x 44 mm	441 x 369 x 44 mm	441 x 310 x 44 mm
Size	19-Inch Standard Rack-Mount Width, 1U Height			
Weight	4.24 kg (9.35 lbs)	4.24 kg (9.35 lbs)	6.02 kg (13.27 lbs)	4.25 kg (9.44 lbs)
Operating Temperature	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C
Storage Temperature	-40° to 70°C	-40° to 70°C	-40° to 70°C	-40° to 70°C
Humidity	5% to 95% Non-Condensing	5% to 95% Non-Condensing	5% to 95% Non-Condensing	5% to 95% Non-Condensing
EMI	FCC Class A, CE, C-Tick	FCC Class A, CE, C-Tick	FCC Class A, CE, C-Tick	FCC Class A, CE, C-Tick
Safety	CSA International, CB	CSA International, CB	CSA International, CB	CSA International, CB
MTBF	123,027 Hours	133,105 Hours	168,110 Hours	102,737 Hours
Acoustic (Refer to ISO-7779)	<51dB	<52dB	<51dB	<53dB

## Software Features

### L2 Features

- IGMP Snooping: Supports 256 Multicast Groups
- 802.1D Spanning Tree
- 802.1w Rapid Spanning Tree
- 802.1s Multiple STP
- 802.3ad Link Aggregation: 32 Groups, 8 Ports Per Group
- One-to-One/Many-to-One/Per-Flow Port Mirroring

### VLAN

- 802.1Q
- Maximum VLAN Groups: VLAN 4K (4K Static VLANs, 255 Dynamic VLANs)
- Double VLAN

### L3 Features

- Static Routing: 128 Routes
- RIP v1, v2
- OSPF
- IPv4 Hardware Routing Table: 2K
- L3 Hardware Forwarding Table: 4K
- RRRP
- Number of IP Interfaces: 64
- Multiple IP Per VLAN: 10
- Per-port Limit IP Multicast Address Range
- Proxy ARP

### Multicast

- IGMP v1, v2, v3
- DVMRP v3
- PIM DM
- PIM SM

### QoS

- Bandwidth Control: 64Kbps Per Port Granularity
- Broadcast Storm Control: 1pps Per Port Granularity
- 802.1p Priority Queues
- Number of Queues Per Port: 8
- CoS Based on Port
- CoS Based on MAC Destination and Source Addresses
- CoS Based on TOS
- CoS DSCP
- CoS Based on IP Destination and Source Addresses
- CoS Based on TCP/UDP Port
- Weighted Random Early Detection (WRED) Congestion Control

### Access Control List (ACL)

- 800 Rules Per Device
- Based on Port
- Based on MAC Address
- Based on 802.1p Priority Queues
- Based on VLAN
- Based on DSCP
- Based on IP Address
- Based on Protocol Type
- Based on TCP/UDP Port
- Based on TCP/UDP Payload (Packet Content)

### Security

- Broadcast Storm Control
- RADIUS Authentication for Management Access
- TACACS+ Authentication for Management Access
- SSH v1.5, v2
- SSL v2
- Port Security: 16 MAC Addresses per port
- 802.1X Port-Based Access Control
- 802.1X MAC-Based Access Control
- 802.1X Guest VLAN
- Web-Based Access Control (WAC)
- MAC-Based Access Control (MAC)
- Traffic Segmentation
- IP-MAC-Port Binding: 500 entries per device
- 3-Level User Access Right
- RADIUS Accounting
- D-Link Safeguard Engine

### Management

- Single IP Management v1.6
- Web-Based GUI
- CLI
- Telnet Server/Client
- TFTP Client
- SNMP v1, v2c, v3
- SNMP Trap on MAC Notification
- RMON v1: 4 Groups (Statistics, History, Alarms, Events)
- RMON v2 (Probeconfig Group)
- Bootp/DHCP Client
- DHCP Relay Option 82
- SYSLLOG
- Dual Image
- Dual Configuration

### MIB

- RFC 1213 MIB-II
- RFC 1493 Bridge MIB
- RFC 1907 SNMP v2MIB
- RFC 2819 RMON MIB
- RFC 2665 Ether-likeMIB
- RFC 2674 802.1p MIB
- RFC 2863 IF MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 2620 RADIUS Accounting Client MIB
- RFC 1724 RIP v2MIB
- RFC 1850 OSPF v2MIB
- RFC 2096 IP Forwarding Table MIB (CIDR)
- RFC 2787 VRRP MIB
- RFC 2932 IPv4 Multicast Routing MIB
- RFC 2934 PIM MIB for IPv4
- Private MIB

### Optional SFP Transceivers

- DEM-310GT** SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 10km, 3.3V
- DEM-311GT** SFP transceiver for 1000BASE-SX, multi-mode fiber, max. distance 550m, 3.3V
- DEM-312GT2** SFP transceiver for 1000BASE-SX, multi-mode fiber, max. distance 2km, 3.3V
- DEM-314GT** SFP transceiver for 1000BASE-LHX, single-mode fiber, max. distance 50km, 3.3V
- DEM-315GT** SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 80km, 3.3V
- DEM-330T** SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 10 km, 3.3V, WDM (Tx: 1550 nm, Rx: 1310 nm)
- DEM-330R** SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 10 km, 3.3V, WDM (Tx: 1310 nm, Rx: 1550 nm)
- DEM-331T** SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 40 km, 3.3V, WDM (Tx: 1550 nm, Rx: 1310 nm)
- DEM-331R** SFP transceiver for 1000BASE-LX, single-mode fiber, max. distance 40 km, 3.3V, WDM (Tx: 1310 nm, Rx: 1550 nm)

### Optional Redundant Power Supply

- DPS-200** 60-watt redundant power supply
- DPS-600** 500-watt redundant power supply
- DPS-800** 2-slot redundant power supply chassis
- DPS-900** 8-slot redundant power supply chassis

### Management Software

- DS-510** D-View 5.1 SNMP Network Management Program



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