D-Link®

Product Highlights

Flexible Choices:

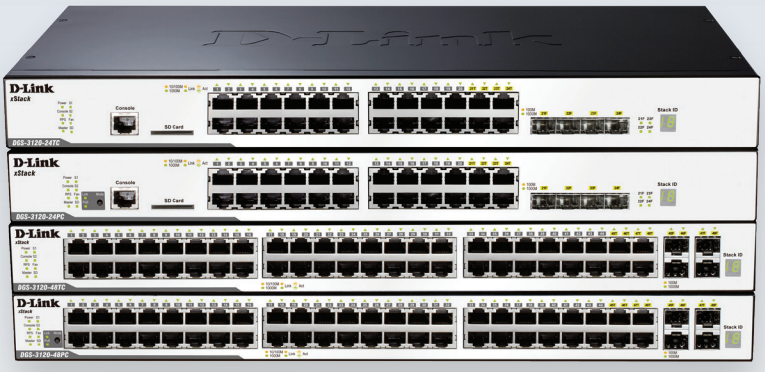
- 20/44 10/100/1000BASE-T ports
- 4 Combo 10/100/1000BASE-T/SFP ports
- 2 10-Gigabit CX4 Ports
- 802.3af and 802.3at PoE support[1]
- Optional External Redundant Power Supply

High Bandwidth Physical/Virtual Stacking:

- Physical stack up to 6 units
- Stackable through 2 10-Gigabit CX4 Ports
- Up to 40 Gbps Full-Duplex Stacking B/W
- Virtual Stack up to 32 units w/Single IP Mgt.

Enhanced Image (EI) L2+ Features:

- IPv4/v6 Static Routing
- RIP/RIPng



Lifetime Warranty

DGS-3120 Series

xStack L2 Managed Stackable Gigabit Switches

Features

Reliability

- Optional Redundant Power Supply (RPS) support
- 802.1D/802.1w/802.1s Spanning Tree

Security Features

- L2/L3/L4 Multi-Layer Access Control
- External RADIUS/TACACS+ Authentication
- SSH/SSL support
- 802.1X Guest VLAN
- Web-based Access Control (WAC)
- MAC-based Access Control (MAC)
- D-Link Safeguard Engine

Traffic Monitoring & Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control down to 64 Kbps/port
- 802.3ad Link Aggregation
- RMON support
- Port mirroring

OAM

- 802.3ah Ethernet Link OAM
- 802.1ag, ITU-T Y.1731 Service OAM

Configuration Management

- Web-based GUI
- Command Line Interface (CLI)
- SNMP v1, v2c, v3
- D-Link Single IP Management (SIM)
- Telnet
- sFlow
- LLDP, LLDP-MED

Overview

The DGS-3120 xStack Series are enhanced L2 stackable access switches designed to connect end-users in an SMB or enterprise network. These switches support physical stacking, multicast and enhanced security, making them an ideal Gigabit access layer solution. The DGS-3120-24TC and DGS-3120-48TC provide 20 or 44 10/100/1000 Mbps Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. The DGS-3120-24PC and DGS-3120-48PC provide 20 or 44 10/100/1000 Mbps PoE Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. Each 10/100/1000 Mbps port of DGS-3120-24PC/48PC supports IEEE 802.3af and IEEE 802.3at Power over Ethernet standard. The default power budget is 370 Watts and can be expanded to 740 Watts with the DPS-700 RPS. The switches are also equipped with an SD Card slot, allowing the user to boot images and upload configuration files directly from an SD Card. Furthermore, syslog files can also be conveniently saved to a card.

Standard and Enhanced Software Images

The DGS-3120 Series supports two different software images - Standard Image (SI) and Enhanced Image (EI). The Standard Image provides sophisticated features for campus, or enterprise. It includes advanced Quality of Service (QoS), traffic shaping, L2 multicasting, and advanced security features. The Enhanced Image supports ERPS, Double VLAN (Q-in-Q), Ethernet OAM, Static Route, IMPB, sFlow, IPv6 features which are suitable for the next generation IPv6 networks or triple play applications in Metro Ethernet.

All DGS-3120 models are shipped with the Standard Image. A separately orderable license key may also be ordered which activates the Enhanced Image.

DGS-3120 Series
xStack L2 Managed Stackable Gigabit Switches

Enhanced Network Reliability

The DGS-3120 Series targets enterprise/campus and customers who require advanced network security features and maximum uptime. All the models in DGS-3120 Series support an external redundant power supply to help ensure continued operation. They also include other features, such as 802.1D Spanning Tree (STP), 802.1w Rapid Spanning Tree (RSTP) and 802.1s Multiple Spanning Tree (MSTP), Loopback Detection (LBD), and Broadcast Storm Control, that help enhance network resilience. The G.8032 Ethernet Ring Protection Switching (ERPS) function minimizes the recovery time to 50 ms[2]. For load sharing and redundancy backup in switch cascading/server attachment configuration, the DGS-3120 Series supports dynamic 802.3ad Link Aggregation Port Trunking.

Network Security Features

The DGS-3120 Series provides users with security features such as Multi-layer and Packet Content Access Control Lists (ACL), Storm Control, and IP-MAC-Port Binding (IMPB) with DHCP Snooping. The IP-MAC-Port Binding feature allows administrators to bind a source IP address with an associated MAC and also define the port number to help enhance user access control. With the DHCP Snooping feature, the switch automatically learns IP/MAC pairs by snooping DHCP packets and saving them to the IMPB white list. In addition, the D-Link Safeguard Engine identifies and prioritizes "CPU interested" packets to help prevent malicious traffic from interrupting normal network flows, and to help protect switch operation.

Identity Driven Network Policies

The DGS-3120 Series supports authentication mechanisms such as 802.1X, Web-based Access Control (WAC), and MAC-based Access Control (MAC) for strict access control and easy deployment. After authentication, individual policies such as VLAN membership, QoS policies, and ACL rules can be assigned to each host. In addition, the switch also supports Microsoft® NAP (Network Access Protection). NAP is a policy enforcement technology that allows customers to help protect network assets from unhealthy computers by enforcing compliance with network health policies.

Traffic Management for Triple Play

The DGS-3120 Series implements a rich set of multilayer QoS/CoS features to help ensure that critical network services like VoIP, video conference, IPTV and IP surveillance are served with high priority. The Traffic Shaping features help ensure bandwidth of these services when the network is busy. With L2 Multicast support, the DGS-3120 supports growing IPTV applications. Host-based IGMP/MLD Snooping allows multiple multicast subscribers per physical interface, ISM VLAN sends multicast streams in a multicast VLAN to save bandwidth and to help provide better security to the backbone network. The ISM VLAN profiles allow users to bind/replace the pre-defined multicast registration information to subscriber ports quickly and easily.

Proactive, Effective Network Management

To help uphold enterprise customers' Service Level Agreements (SLA), service providers must reduce the Mean Time to Repair (MTTR) and increase service availability. Ethernet OAM features help address these challenges and help enable service providers to offer carrier-grade services. The DGS-3120 Series supports industry-standard OAM tools, including IEEE 802.3ah, IEEE 802.1ag, and ITU-T Y.1731. Connectivity Fault Management (CFM) provides tools to monitor and troubleshoot end-to-end Ethernet networks, allowing service providers to check connectivity, isolate network issues, and identify customers affected by network issues.

IPv6 Technology

The DGS-3120 Series is fully compliant with the future IPv6 networks. It supports remote IPv6 manageability from telnet, HTTP, or SNMP. To help create secure IPv6 networks, the DGS-3120 Series uses IPv6 ACL, DHCPv6 Snooping and Neighbor Discovery (ND) Snooping functions to help protect the network from illegal IPv6 clients. The DGS-3120 Series has been certified with IPv6 Ready Logo Phase 2 from the IPv6 forum, a worldwide IPv6 advocacy consortium. The IPv6 Ready Logo Program provides conformance and interoperability of IPv6 products.

D-Link Green Technology

D-Link is striving to take the lead in developing innovative and power-saving technology that does not sacrifice operational performance or functionality. The DGS-3120 Series implements the D-Link Green Technology, which includes a power saving mode, smart fan, reduced heat dissipation, and cable length detection. The power saving feature automatically powers down ports that have no link or link partner. The Smart Fan feature allows for the built-in fans to automatically adjust their speed at a certain temperature, helping to provide continuous, reliable and eco-friendly operation of the switch.

Manageability

D-Link's 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. This virtual stack is managed as a single object, having all units maintained by one IP address. The DGS-3120 Series also supports standard-based management protocols such as SNMP, RMON, Telnet, Console, Web-based GUI and SSH/SSL authentication.

Lifetime Warranty and NBD Replacement

D-Link offers a Lifetime Warranty and Next Business Day (NBD) hardware replacement on the DGS-3120 Series of xStack L2 Managed Stackable Gigabit Switches to further its commitment to product quality and long-term customer confidence.

D-Link®

DGS-3120 Series
xStack L2 Managed Stackable Gigabit Switches

Technical Specifications				
	DGS-3120-24TC	DGS-3120-48TC	DGS-3120-24PC	DGS-3120-48PC
				
General				
Interfaces:				
• 10/100/1000BASE-T ports (RJ45)	20	44	20	44
• Gigabit Combo ports (RJ45/SFP)	4	4	4	4
• 10GbE Stacking Ports (CX4)	2	2	2	2
Console Port	RJ45	RJ45	RJ45	RJ45
SD Card Slot	1	1	1	1
Optional Redundant Power Supply	DPS-200 / DPS-200A	DPS-500A	DPS-700	DPS-700
Performance				
Switch Capacity	88 Gbps	136 Gbps	88 Gbps	136 Gbps
64-Byte Packet Forwarding Rate	65.48 Mbps	101.19 Mbps	65.48 Mbps	101.19 Mbps
Packet Buffer Memory	2 MB	2 MB	2 MB	2 MB
Flash Memory	32 MB	32 MB	32 MB	32 MB
Power over Ethernet (DGS-3120-24PC / DGS-3120-48PC only)				
PoE Standards	N/A	N/A	802.3af / 802.3at	802.3af / 802.3at
PoE Power Budget	N/A	N/A	370W (740W with DPS-700)	370W (740W with DPS-700)
Physical and Environmental				
MTBF	344,512 hours	275,756 hours	272,292 hours	213,575 hours
Acoustics	Max: 44.2 dB Min: 28.1 dB	Max: 49.6 dB Min: 37.7 dB	Max: 52.5 dB Min: 38.1 dB	Max: 50.2 dB Min: 37.3 dB
Heat Dissipation	121.1 BTU/h	209.7 BTU/h	1665.10 BTU/h (w/370 W PoE load) 3227.9 BTU/h (w/740 W PoE load)	1838 BTU/h (w/370 W PoE load) 3283.83 BTU/h (w/740 W PoE load)
Power Input	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz
Max. Power Consumption	35.5 W	61.5 W	488.3 watts (w/370 W PoE load) 946.6 watts (w/740 W PoE load)	539 watts (w/370 W PoE load) 963 watts (w/740 W PoE load)
Dimensions (W x D x H)	17.3 x 8.3 x 1.73 inches (440 x 210 x 44 mm)	17.3 x 12.2 x 1.73 inches (440 x 310 x 44 mm)	17.3 x 12.2 x 1.73 inches (440 x 310 x 44 mm)	17.3 x 15.0 x 1.73 inches (440 x 380 x 44 mm)
Weight	5.66 lbs / 2.57 kg	10.0 lbs / 4.54 kg	11.71 lbs / 5.31 kg	14.15 lbs / 6.42 kg

Ventilation	Smart Fan[3] (High Speed at > 40 ˚C; Low Speed at < 35 ˚C)
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Operating Humidity	10% to 90% RH
Storage Humidity	5% to 90% RH
Certifications	
Safety	CB, cUL, LVD, BSMI
EMI/EMC	FCC Class A, CE Class A, VCCI Class A, IC, C-Tick, BSMI
Other	IPv6 Ready Logo Phase 2

Software Features - All Models

Standard Image (SI) Software

- Ships with product
- All models support the following features:

Stackability	Physical stacking • Up to 40G stacking bandwidth • Up to 6 units per stack	Virtual Stacking • Supports D-Link Single IP Management (SIM) • Up to 32 units per Virtual Stack
L2 Features	MAC Address Table : 16K entries Flow Control • 802.3x Flow Control • HOL Blocking Prevention Jumbo Frames up to 13 Kbytes 802.3ad Link Aggregation • Max. 32 groups per device, 8 • Gigabit ports per group	Spanning Tree Protocols • 802.1D STP • 802.1w RSTP • 802.1s MSTP • BPDU Filtering • Root Restriction Loopback Detection Port Mirroring • One-to-One • Many-to-One • Flow-based • RSPAN Mirroring
L2 Multicasting	IGMP Snooping • IGMP v1/v2/v3 Snooping • Supports 1024 IGMP groups • Port/Host-based IGMP Snooping Fast Leave Limited IP Multicast • Up to 24 IGMP filtering profiles, 32 ranges per profile	MLD Snooping • MLD v1/v2 Snooping • Support 1024 MLD Groups • Host-based MLD Snooping Fast Leave
VLAN	VLAN Group • Max. 4K VLAN Groups GVRP • Max. 4K Dynamic VLAN Groups 802.1Q Tagged VLAN Port-based VLAN 802.1v Protocol VLAN	Voice VLAN MAC-based VLAN ISM VLAN Asymmetric VLAN Private VLAN VLAN Trunking

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QoS (Quality of Service)	802.1p 8 queues per port Queue Handling • Strict Priority • Weighted Round Robin (WRR) • Strict + WRR Supports following actions for flows • Remark 802.1p Priority Tag • Remark TOS/DSCP Tag • Bandwidth Control CoS based on • Switch Port • VLAN ID • 802.1p Priority Queues • MAC Address • IPv4 Address • DSCP • Protocol Type • TCP/UDP Port • User-Defined Packet Content • IPv6 Address • IPv6 Traffic Class • IPv6 Flow Label	Bandwidth Control • Port-based (Ingress/Egress, Min. granularity 8 Kbps) • Flow-based (Ingress/Egress, Min. granularity 8 Kbps) Three Color Marker • CIR/PIR minimum granularity: 8 kbps • Two Rate Three Color Marker (trTCM), CBS/PBS • Single Rate Three Color Marker (srTCM), CBS/EBS
Access Control List (ACL)	ACL based on • 802.1p Priority • VLAN ID • MAC Address • Ether Type • IPv4 Address • DSCP • Protocol Type • TCP/UDP Port Number • User-Defined Packet Content • IPv6 Address • IPv6 Flow Label • IPv6 Traffic Class	Supports up to 1.5K Ingress access rules Time-based ACL CPU Interface Filtering
Security Features	SSH v2 SSL v1/v2/v3 Port Security • Up to 64 MAC addresses per port/VLAN Broadcast/Multicast/Unicast Storm Control Traffic Segmentation	D-Link Safeguard Engine NetBIOS/NetBEUI Filtering DHCP Server Screening ARP Spoofing Prevention DoS Attack Prevention BPDU Attack Protection
AAA	802.1X: • Port-based Access Control • Host-based Access Control • Identity-driven Policy (VLAN, ACL or QoS) Assignment • Authentication Database Failover Web-based Access Control (WAC): • Port-based Access Control • Host-based Access Control • Identity-driven Policy (VLAN, ACL or QoS) Assignment • Authentication Database Failover MAC-based Access Control (MAC): • Port-based Access Control • Host-based Access Control • Identity-driven Policy (VLAN, ACL or QoS) Assignment • Authentication Database Failover	Japan Web-based Access Control (Host-based JWAC) Guest VLAN Microsoft® NAP • Support 802.1X NAP • Support DHCP NAP RADIUS Accounting TACACS+ Accounting RADIUS and TACACS authentication for switch access Four levels of User Account control
Green Features	Compliant with RoHS Power Saving by Link Status Power Saving by Cable Length	Time-based PoE[1] IEEE 802.3az Energy Efficient Ethernet (EEE)
Operation, Administration & Management (OAM)	Cable Diagnostics	

Management	Web-based GUI Command Line Interface (CLI) Telnet Server Telnet Client TFTP Client DNS Client Secure FTP Server ZModem SNMP v1/v2c/v3 SNMP Traps System Log RMON v1: • Supports 1,2,3,9 groups RMON v2: • Supports ProbeConfig group LLDP	BootP/DHCP Client DHCP Auto-Configuration DHCP Relay DHCP Client Option 12 DHCP Relay Option 18, 37, 82 Flash File System Multiple Images Multiple Configurations CPU Monitoring Debug Command SNTP Password Recovery Password Encryption Trusted Host Microsoft® NLB (Network Load Balancing) Support ICMPv6
Enhanced Image (EI) Software • Requires additional license upgrade • Includes all SI features plus the following:		
L2 Features	Ethernet Ring Protection Switching (ERPS)	
VLAN	Double VLAN (Q-in-Q) • Port-based Q-in-Q	
L3 Features	Max. 16 IP Interfaces ARP Proxy	IPv6 Neighbor Discovery (ND)
L3 Routing	Static Route • 512 static routing entries for IPv4/IPv6	
Access Control List (ACL)	Supports up to 512 egress access rules	
Security	IP-MAC-Port Binding • ARP Packet Inspection • IP Packet Inspection • DHCP Snooping • IPv6 ND Snooping • Support up to 510 Address Binding Entries per Device	
AAA	Compound Authentication	
Operation, Administration & Management (OAM)	802.3ah Ethernet Link OAM 802.3ah D-Link Extension: D-link Unidirectional Link Detection (DULD)	802.1ag Connectivity Fault Management (CFM) ITU-T Y.1731
Management	sFlow	PPPoE Circuit-ID Tag Insertion
MIB and RFC		
MIB	RFC 1213 MIB II RFC 4188 Bridge MIB RFC 1157, 2571-2576 SNMP MIB RFC 1907 SNMPv2 MIB RFC 1757, 2819 RMON MIB RFC 2021 RMONv2 MIB RFC 1398, 1643, 1650, 2358, 2665 Ether-like MIB RFC 2674 802.1p MIB RFC 2233, 2863 IF MIB RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client MIB	RFC 2925 PING & TRACEROUTE MIB RFC 2674, 4363 802.1p MIB RFC 1065, 1066, 1155, 1156, 2578 MIB Structure RFC 1215 MIB Traps Convention RFC 1212 Concise MIB Definitions RFC 1215 MIB Traps Convention RFC 1157, 2571-2576 SNMP MIB RFC 4022 MIB for TCP RFC 4113 MIB for UDP RFC 4293 IPv6 SNMP Mgmt Interface MIB RFC 2737 Entity MIB (version 2)

RFC Standard Compliance	RFC 768 UDP RFC 791 IP RFC 792, 2463, 4443 ICMP RFC 793 TCP RFC 826 ARP RFC 3513, 4291, IPv6 Addressing Architecture RFC 2893, 4213 IPv4/IPv6 dual stack function RFC 2463, 4443 ICMPv6 RFC 2462, 4862 IPv6 Stateless Address Auto Configuration RFC 2464 IPv6 Ethernet and definition RFC 1981 Path MTU Discovery for IPv6 RFC 2460 IPv6	RFC 2461, 4861 Neighbor Discovery for IPv6 RFC 783 TFTP RFC 2068 HTTP RFC 1492 TACACS RFC 2866 RADIUS Accounting RFC 2474, 3260 DiffServ RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP) RFC 2571, 2572, 2573, 2574, SNMP IPv6 Ready Logo Phase 2 RFC 854 Telnet RFC 951, 1542 BootP

Ordering Information[4]		
Model Number	**Description**	**Warranty**
DGS-3120-24TC/SI	xStack Managed 20-Port Gigabit Stackable L2 Switch, with 4 Combo RJ45/SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, embedded Standard Image	Lifetime
DGS-3120-48TC/SI	xStack Managed 44-Port Gigabit Stackable L2 Switch, with 4 Combo RJ45/SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, embedded Standard Image	Lifetime
DGS-3120-24PC/SI	xStack Managed 20-Port Gigabit Stackable L2 PoE+ Switch, with 4 Combo RJ45/SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, embedded Standard Image	Lifetime
DGS-3120-48PC/SI	xStack Managed 44-Port Gigabit Stackable L2 PoE+ Switch, with 4 Combo RJ45/SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, embedded Standard Image	Lifetime
Optional License Upgrades		
DGS-3120-24TC-SE-LIC	DGS-3120-24TC DLMS License Upgrade from Standard Image (SI) to Enhanced Image (EI)	
DGS-3120-48TC-SE-LIC	DGS-3120-48TC DLMS License Upgrade from Standard Image (SI) to Enhanced Image (EI)	
DGS-3120-24PC-SE-LIC	DGS-3120-24PC DLMS License Upgrade from Standard Image (SI) to Enhanced Image (EI)	
DGS-3120-48PC-SE-LIC	DGS-3120-48PC DLMS License Upgrade from Standard Image (SI) to Enhanced Image (EI)	
Optional SFP Optical Transceivers		
DGS-712	1000BASE-T SFP Transceiver	
DEM-310GT	1000BASE-LX SFP Transceiver, 10KM	
DEM-311GT	1000BASE-SX SFP Transceiver, up to 550M	
DEM-211	100BASE-FX SFP Transceiver, 2KM	
Optional Stacking Cables		
DEM-CB50	50cm Stacking Cable with screw type connector	
DEM-CB100	1m Stacking Cable with screw type connector	
DEM-CB300	3m Stacking Cable with screw type connector	

Optional Redundant Power Supplies	
DPS-200 / DPS-200A	Redundant Power Supply Unit, 60 Watt RPSU
DPS-500A	Redundant Power Supply Unit, 140 Watt RPSU
DPS-700	Redundant Power Supply Unit, 589 Watt RPSU
DPS-800	2-Slot RPS Chassis (use for DPS-200 / DPS-200A / DPS-500A)
DPS-900	8-Slot RPS Chassis (use for DPS-200)
Optional Management Software	
DV-700	D-View 7 Network Management System
DV-700-N25-LIC	D-View 7 NMS - 25 Node License Upgrade
DV-700-N50-LIC	D-View 7 NMS - 50 Node License Upgrade
DV-700-N100-LIC	D-View 7 NMS - 100 Node License Upgrade
DV-700-N250-LIC	D-View 7 NMS - 250 Node License Upgrade
DV-700-N500-LIC	D-View 7 NMS - 500 Node License Upgrade
DV-700-N1000-LIC	D-View 7 NMS - 1000 Node License Upgrade
DV-700-P5-LIC	D-View 7 NMS - 5 Probe License Upgrade
DV-700-P25-LIC	D-View 7 NMS - 25 Probe License Upgrade

[1] This feature supported with PoE models only: DGS-3120-24PC and DGS-3120-48PC.
[2] 50ms response time based on an ITU-T G.8032 recommended environment.
[3] By default, the fan speed is low. When over 40˚C, the fan switches to high speed and remains high until the temperature drops below 35˚C.
[4] Stacking cable, SD card, RPS, and optical transceivers are not included and must be separately purchased.
[5] Lifetime Warranty available in USA only.

Updated 06-SEP-2018
DGS-3120_REVB_DATASHEET_2.02_EN_US.PDF

For more information

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