Product Highlights

Flexible Choices

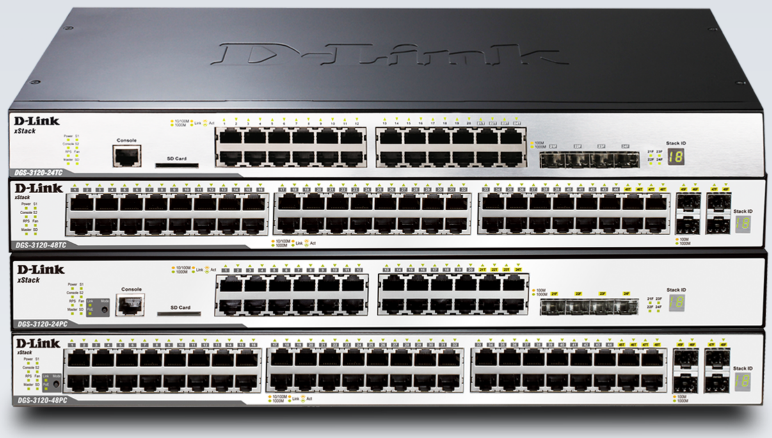
- 20/44 10/100/1000BASE-T ports
- 4 Combo 10/100/1000BASE-T/SFP ports
- 2 10-Gigabit CX4 Ports
- 802.3af and 802.3at Power Over Ethernet support[1]
- Optional External Redundant Power Supply

High Bandwidth Physical/Virtual Stacking

- Physical stack of up to 6 units, 288 Gigabit ports
- Stackable through 2 10-Gigabit CX4 Ports
- Up to 40 Gbps Full-Duplex Stacking Bandwidth
- Virtual Stack of up to 32 units using single IP Management

Enhanced Image (EI) L2+ Features

- IPv4/v6 Static Routing
- RIP/RIPng



DGS-3120 Series

xStack L2 Managed Stackable Gigabit Switches

Features

Reliability

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

Security

- 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
- Supports Microsoft® NAP

Traffic Monitoring/Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control Down to 64 Kbps per 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
- Multiple Images/Configurations
- DHCP Server
- sFlow
- LLDP, LLDP-MED

Overview

The DGS-3120 xStack Series are enhanced L2 access stackable switches designed to connect end-users in a secure 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/48TC provides 20 or 44 10/100/1000 Mbps Gigabit Ethernet ports and 4 combo 1000BASE-T/SFP Gigabit Ethernet ports. The DGS-3120-24PC/48PC provides 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 Images

The DGS-3120 Series is available with 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 robust 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.

Enhanced Network Reliability

The DGS-3120 Series targets enterprise/campus and customers who require a high level of network security and maximum uptime. All the models in DGS-3120 Series support an external redundant power supply so that continued operation can be assured. 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 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 provides dynamic 802.3ad Link Aggregation Port Trunking.

Comprehensive Security

The DGS-3120 Series provides users with the latest 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 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 prevent malicious traffic from interrupting normal network flows, and to 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 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 ensure that critical network services like VoIP, video conference, IPTV and IP surveillance are served with high priority. The Traffic Shaping features guarantee bandwidth of these services when the network is busy. With L2 Multicast support, the DGS-3120 shows its ability to handle 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 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 uphold enterprise customers' Service Level Agreements (SLA), service providers must reduce the Mean Time to Repair (MTTR) and increase service availability. Ethernet OAM features address these challenges and 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 create secure IPv6 networks, the DGS-3120 Series uses IPv6 ACL, DHCPv6 Snooping and Neighbor Discovery (ND) Snooping functions to 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, providing 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 security authentication.

Technical Specifications		DGS-3120-24TC	DGS-3120-48TC	DGS-3120-24PC	DGS-3120-48PC
General	Interfaces Console Port	• 20 10/100/1000BASE-T • 4 Combo • 10/100/1000BASE-T/SFP • 2 10-G CX4	• 44 10/100/1000BASE-T, • 4 Combo • 10/100/1000BASE-T/SFP • 2 10-G CX4	• 20 10/100/1000BASE-T, • 4 Combo • 10/100/1000BASE-T/SFP • 2 10-G CX4	• 44 10/100/1000BASE-T, • 4 Combo •10/100/1000BASE-T/SFP • 2 10-G CX4
	Optional Redundant Power Supply	• DPS-200	• DPS-500	• DPS-700	• DPS-700
	Console Port	RJ-45			
	Stacking Port	2			
	SD Card Slot	1			
Performance	Switching Capacity	• 88 Gbps	• 136 Gbps	• 88 Gbps	• 136 Gbps
	64-Byte Packet Forwarding Rate	• 65.48 Mpps	• 101.19 Mpps	• 65.48 Mpps	• 101.19 Mpps
	Packet Buffer Memory	2 MB			
	Flash Memory	32 MB			
PoE	Standards	-		• IEEE 802.3af and 802.3at	
	Power Budget	-		• 370 watts • 740 watts (with DPS-700 RPS)	
Physical & Environment	MTBF (Hours)	• 561,829 Hours	• 292,201 Hours	• 282,541 Hours	• 223,006 Hours
	Acoustics	• Max: 44.2 db; Min: 28.1 db	• Max: 45.2 db; Min: 35.7 db	• Max: 52.5 db; Min: 38.1 db	• Max: 52.3 db; Min: 38.4 db
	Heat Dissipation	• 138.11 BTU/h	• 228.8 BTU/h	• 1646.0 BTU/h (with 370W PoE load), 3188.7 BTU/h (with 740W PoE load)	• 1761.27 BTU/h (with 370 W PoE load), 3310.43 BTU/h (with 740W PoE load)
	Power Input	• 100 to 240 VAC, 50 to 60 Hz Internal Universal Power Suppy	• 100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply	• 100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply	• 100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply
	Max Power Consumption	• 40.5 Watts	• 67.1 Watts	• 482.7 Watts (with 370W PoE load): 935.1 Watts (with 740W PoE load)	• 516.5 Watts (with 370W PoE load), 970.8 Watts (with 740W PoE load)
	Dimensions (W x D x H)	• 17.3" x 8.27" x 1.73" (440 x 210 x 44 mm)	• 17.3" x 12.2" x 1.73" (440 x 310 x 44 mm)	• 17.3" x 12.2" x 1.73" (440 x 310 x 44 mm)	• 17.3" x 14.96" x 1.73" (440 x 380 x 44mm)
	Weight	• 5.64lbs (2559 g)	• 10.17lbs (4615g)	• 11.95lbs (5423g)	• 13.96lbs (6331g)
	Smart Fan	> 40˚ C: High Speed; < 35˚ C: Low Speed			
	Operating Temperature	32˚ to 122˚F (0 to 50 ˚C)			
	Storage Temperature	-40˚ to 158˚ F (-40 to 70 ˚C)			

Physical & Environment	Operating Humidity	10% to 90% RH
	Storage Humidity	5% to 90% RH
	Emission (EMI)	FCC Class A, CE Class A, VCCI Class A, IC C-Tick
	Safety	CB, cUL, LVD
	Certification	IPv6 Ready Logo Phase 2

Software Specifications

Standard Image (SI) Features

Stackability	• Physical Stacking - Up to 40G Stacking Bandwidth - Up to 6 units per Stack		• Virtual Stacking - D-Link Single IP Management (SIM) - Up to 32 units per Virtual Stack	
L2 Features	• MAC Address Table: 16K • Flow Control - 802.3x Flow Control - HOL Blocking Prevention • Jumbo Frame up to 13K Bytes	• Spanning Tree Protocols - 802.1D STP - 802.1w RSTP - 802.1s MSTP - BPDU Filtering - Root Restriction	• Loopback Detection • 802.3ad Link Aggregation - Max. 32 groups per device	• 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 - IGMP Snooping Querier • 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 - MLD Snooping Querier Snooping Fast Leave	
VLAN	• VLAN Group - Max. 4K VLAN Groups • GVRP - Max. 255 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
QoS (Quality of Service)	• 802.1p • 8 queues per port • Queue Handling - Strict Priority - Weighted Round Robin (WRR) - Strict + WRR	• 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 • Supports following actions for flows	- Remark 802.1p Priority Tag - Remark TOS/DSCP Tag - Bandwidth Control • Bandwidth Control - Port-based (Ingress/Egress, Min. Granularity 64 Kbps) - Flow-based (Ingress/Egress, Min. Granularity 64 Kbps)
Access Control List (ACL)	• Supports up to 1.5K Ingress access rules • 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 • Time-based ACL • CPU Interface Filtering
Security	• SSL v1/v2/v3 (for WebGUI)	• 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 • 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)4 • Guest VLAN • Microsoft® NAP - Support 802.1X NAP - Support DHCP NAP • RADIUS Accounting • RADIUS and TACACS authentication for switch access • 4 Level User Account
D-Link Green Features	• Compliant with RoHS	• Power Saving by Link Status	• Power Saving by Cable Length	• Time-based PoE
Operation, Administration & Management (OAM)	• Cable Diagnostics			
Management	• Web-based GUI (Supports IPv4) • Command Line Interface (CLI) • Telnet Server(Supports IPv4) • Telnet Server(Supports IPv4) • SSH Server (Support IPv4) • TFTP Client(Supports IPv4) • ZModem	• SNMP v1/v2c/v3 • SNMP v1/v2c/v3 • SNMP Traps • System Log (Supports IPv4 Log Server) • RMON v1 - Supports 1,2,3,9 groups • RMON v2 - Supports ProbeConfig group	• LLDP • BootP/DHCP Client • DHCP Auto-Configuration • DHCP Relay • DHCP Relay Option 12 • DHCP Relay Option 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
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 2618 RADIUS Authentication Client MIB	• RFC 2620 RADIUS Accounting Client MIB • CPU Monitoring • Debug Command • SNTP • Password Recovery	• Password Encryption • Trusted Host • Microsoft® NLB (Network Load Balancing) Support
RFC Standard Compliance	• Web-based GUI (Support IPv4) • Command Line Interface (CLI) • Telnet Server(Supports IPv4) • Telnet Client(Supports IPv4) • TFTP Client(Supports IPv4) • ZModem • SNMP v1/v2c/v3	• SNMP v1/v2c/v3 • SNMP Traps • System Log (Supports IPv4 Log Server) • RMON v1: - Supports 1,2,3,9 groups • RMON v2: - Supports ProbeConfig group	• LLDP • BootP/DHCP Client • DHCP Auto-Configuration • DHCP Relay • DHCP Relay Option 12 • DHCP Relay Option 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
Enhanced Image (EI) : Includes support for all Standard Image (SI) Features as well as the features below				
L2 Features	• Double VLAN (Q-in-Q) - Port-based Q-in-Q		- Ethernet Ring Protection Switching (ERPS)	
L3 Features	• Max. 16 IP Interfaces - ARP Proxy • IPv6 Neighbor Discovery (ND) -128 Static ND entries Static Route - 512 static routes			
Access Control List (ACL)	• Supports up to 512 Egress access rules -ACLS support IPv4 IPV6			

Security	• IP-MAC-Port Binding - ARP Packet Inspection - IP Packet Inspection • Power Saving by Link Status	DHCP Snooping - IPv6 ND Snooping - Support up to 510 Address Binding Entries per Device
AAA	• Compound Authentication • WAC IPv6	• JWAC IPv6
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.17316
Management	• SNMP IPv6e -Web-Based GUI IPv6 -SSH CLI IPV6 • Syslog IPv6	• Sflow v5 • PPPoE Circuit ID Tag Insertion • Telnet Server/Circuit IPv6 • TFTP IPv6

Ordering Information

Part Number	Description
DGS-3120-24TC/SI	xStack Managed 20-Port Gigabit Stackable L2 Switch, 4 Combo SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, Standard Image
DGS-3120-48TC/SI	xStack Managed 44-Port Gigabit Stackable L2 Switch, 4 Combo SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, Standard Image
DGS-3120-24PC/SI	xStack Managed 20-Port Gigabit Stackable L2 PoE+ Switch, 4 Combo SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, Standard Image
DGS-3120-48PC/SI	xStack Managed 44-Port Gigabit Stackable L2 PoE+ Switch, 4 Combo SFP, 40-Gigabit Stacking with 2 10G-CX4 ports, Standard Image
DGS-3120-24TC-SE-LIC	DGS-3120-24TC SI license upgrade to Enhanced Image [EI]
DGS-3120-48TC-SE-LIC	DGS-3120-48TC SI license upgrade to Enhanced Image [EI]
DGS-3120-24PC-SE-LIC	DGS-3120-24PC SI license upgrade to Enhanced Image [EI]
DGS-3120-48PC-SE-LIC	DGS-3120-48PC SI license upgrade to Enhanced Image [EI]

Optional Products

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 Accessories	
DEM-CB50	~20" (50cm) CX4 Stacking Cable with "Screw Type" connector
DEM-CB100	~39" (100cm) CX4 Stacking Cable with "Screw Type" connector
DEM-CB300	~118" (300cm) CX4 Stacking Cable with "Screw Type" connector

Optional Redundant Power Supply	
DPS-200	60 Watt Redundant Power Supply
DPS-500	140 Watt Redundant Power Supply
DPS-700	589 Watt Redundant Power Supply
DPS-800	2-slot redundant power supply chassis for DPS-200/300/500 Power Supplies
DPS-900	8-slot redundant power supply chassis for DPS-200/300/500 Power Supplies
Optional SFP Transceivers	
DEM-310GT	1000BASE-LX, Single-mode, 10 km
DEM-311GT	1000BASE-SX, Multi-mode, 500 m
DEM-211	100BASE-FX, Multi-mode, 2 km

[1] Supported in DGS-3120-24PC and DGS-3120-48PC only.
[2] 50ms response time based on an ITU-T G.8032 recommended environment
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