D-Link®

Gigabit L3 Stackable Switch

Business & Enterprise SOLUTIONS

DGS-3324SR

24-Port Layer 3 Gigabit Stackable Switch

With 24 Copper Gigabit Ports, 4 Combo SFP, Integrated 10Gbps Stacking & Redundant Power Support

The DGS-3324SR stackable Gigabit switch is a high-performance Layer 3 switch designed for business enterprise connection. It provides 24 1000BASE-T copper Gigabit ports, 4 combo SFP (Mini GBIC) ports for fiber attachment, redundant power support, and scalable expansion through switch stacking. This switch blends wire-speed packet routing with many features typically found in more expensive chassis-based solutions, including performance, high port density, unit hot swap and redundant power backup, with the price and flexibility of a stackable.

High Port Density, High Performance

In a low profile rack-mount box, the DGS-3324SR gives you 24 10/100/1000BASE-T Gigabit ports for 24 Gigabit connections on your existing Cat. 5 twisted-pair cable. In addition, it also gives you 4 SFP (Mini GBIC) ports for flexible fiber connection. You can select to install optional transceiver modules in these slots for short, medium or long-distance fiber backbone attachment. Use of the SFP GBIC will disable their corresponding built-in 10/100/1000BASE-T connections.

Scalable Expansion

Each DGS-3324SR comes with dual 10-Gigabit stacking ports, allowing up to 12 units of DGS-3324SR to be stacked together in a recoverable ring architecture. Alternately, 6 units of DGS-3324SR can be stacked with a DGS-3324SRi Stacking Master in a fail-safe star architecture. You can add units to reach maximum 288 Gigabit ports per ring stack, or 168 Gigabit ports in a star stack. The switches are stacked together through high-speed stack cables that provide multiple Gigabit connections, allowing the entire stack to perform as a single IP entity. Users can easily see the ID number of switches stacked together on the 7-segment display on the front panel of each switch.

Redundant Power Support

Each switch in the stack can be connected to an external power supply for redundant power backup purposes. In case the built-in internal power supply fails, the optional external redundant power supply unit will automatically provide all required power to ensure continuous operation.

Wire-speed IP Routing

The switch is designed for basic IP routing, with instant support for Windows, Unix and Internet environments. It provides wire-speed non-blocking switch fabrics with hardware-based packet filtering/forwarding. Packet routing is performed by on-board ASICs at speeds many times faster than CPU-based routers.

Port Trunks for Aggregated Bandwidths

Port trunks supporting 802.3ad Link Aggregation standard allow up to 8 Gigabit ports to be combined together to create a multi-link load-sharing aggregated bandwidth. Port trunks can span multiple units of the stack for fail-safe connectivity to mission-critical servers and the network center. Up to 8 multi-link trunks can be configured for a stack.

VLANs for Enhanced Security & Performance

VLANs improve security and bandwidth utilization by limiting the broadcast domains and confining intra-group traffic within their segments. To segment up the network, workstations supporting IEEE 802.1Q VLAN Tagging connected to the switch can be grouped into different Virtual LANs (VLANs). The switch also supports GVRP (GARP VLAN Registration Protocol) for automatic VLAN configuration distribution.

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Technical Specifications

Gigabit L3 Stackable Switch

Advanced Network Access Management

Port-based and MAC-based 802.1x features enable user authentication for each network access attempt. Port security features allow you to limit the number of MAC addresses per port in order to control the number of stations for each port. Static MAC addresses can be defined for each port to ensure only registered machines are allowed to access. By enabling both of these features, you can establish an access mechanism based on user and machine identities, as well as control the number of access stations.

Multi-layer Access Control List (ACL)

Access Control Lists (ACL) allow the network administrator to define policies on network traffic control. The switch supports comprehensive and multi-layer ACLs, providing a powerful tool for network management. For example, the switch can be set to block malicious bulk traffic from specific clients (based either on MAC or IP addresses). Or during a virus attack, the switch can be set to restrict its flooding based on a virus's unique pattern (TCP/UDP port number).

Advanced QoS Support

The switch supports not only Layer 2 802.1p Priority Queue control, but also a variety of ways to prioritize network packets. Multi-layer information from L2 to L4 can be used to classify packet priorities. This function support allows you to attach IP telephony devices or video servers to the switch to run delay-sensitive applications like video conference.

Flexible Transmission Scheduling

The switch supports 2 methods of packet transmission scheduling: Strict Priority Scheduling and Round-Robin. You can select to use Strict Priority Scheduling to strictly enforce your priority queues, or Round-Robin to address bandwidth limitations at peak time. Round-Robin allows each queue to be assigned a different percentage of the output port's bandwidth, so that lower-priority queues are not denied access to buffer space and port bandwidth.

IGMP Snooping for Broadcast Control

The switch listens to IGMP (Internet Group Management Protocol) messages to build mapping table and associate forwarding filters. It dynamically configures the switch ports to forward IP multicast traffic only to those ports associated with multicast hosts.

Broadcast Storm Control

To limit too many broadcast/multicast flooding in the network, broadcast/multicast storm control is configured to screen excessive traffic. Threshold values are available to control the rate limit for each port. Packets are discarded if the respective count exceeds the configured upper threshold in a given time interval. The possible range of upper threshold is from 0 to 255k packets per second.

Port Mirroring

This function allows you to mirror adjacent ports for the purpose of analyzing incoming and outgoing packets where packet patterns can be studied.

802.1D Compatible & 802.1w Rapid Spanning Tree

For mission critical environments with multiple switches supporting STP, you can configure the stack of switches with a redundant backup bridge path, so transmission and reception of packets can be guaranteed in event of any fail-over switch on the network.

Multiple Management Interfaces

SNMP v.1, v.2c, v.3 network management with single IP address per stack is supported. RMON monitoring and SYSLOG are provided for effective central management. The switch also provides a Command Line Interface (CLI) and a Web-based GUI. CLI enables quick system configuration for administrators familiar with command line operation. The embedded Web-based interface allows you to easily access the switch from anywhere on the network and troubleshoot it in real-time. You can, for example, browse the MAC address table via the Web browser and perform searching to identify the location of any workstation. Port utilization graphs provide real-time traffic monitoring and diagnostic information.

Features

- *24 10/100/1000BASE-T Gigabit ports*
- *4 combo SFP (Mini GBIC) ports*
- *Up to 12 units per stack (ring architecture) or 6 units + 1 Stacking Master per stack (star architecture)*
- *Recoverable ring stacking or fail-safe star stacking*
- *Redundant power supply support*
- *88Gbps switching fabric*
- *Auto MDI/MDIX uplink for all twisted-pair ports*
- *IP routing supporting RIP-1, RIP-2, OSPF routing protocols, DVMRP, PIM Dense mode*
- *4K 802.1Q VLANs, IGMP snooping, eight 802.1p Priority Queues, port mirroring*
- *Multi-layer ACL and DiffServ QoS*
- *Administrator-definable port security*
- *802.3ad Link Aggregation port trunks of up to 8 Gigabit ports*
- *Broadcast storm control*
- *802.3x Flow Control*
- *Jumbo frame support*
- *802.1D compatible and 802.1w Rapid Spanning Tree for redundant backup bridge paths*
- *Single IP address management per stack, SNMP v.1, v.2c, v.3 support, RMON monitoring, SYSlog, web-based management, Telnet, CLI through console port*
- *802.1x port-based/MAC-based access control*
- *Per-port bandwidth control*

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Technical Specifications

Gigabit L3 Stackable Switch

Hardware

Device Ports
- 24 auto-sensing 10/100/1000BASE-T ports (front panel)
- 4 combo SFP (Mini GBIC) ports (front panel)
- 2 10Gbps stacking ports (rear panel)
- 1 RS-232 console port (front panel)

Unit Stacking
- Ring architecture: 12 units per stack
- Star architecture: 6 units per stack + 1 DGS-3324SRi Stacking Master

Port Standard/Function Support
- IEEE 802.3 10BASE-T/802.3u 100BASE-TX/802.3ab 1000BASE-T
- ANSI/IEEE 802.3 NWay auto-negotiation
- IEEE 802.3x Flow Control
- Auto MDI/MDIX
- Port mirroring

SFP (Mini GBIC) Support
- IEEE 802.3z 1000BASE-LX (DEM-310GT transceiver)
- IEEE 802.3z 1000BASE-SX (DEM-311GT transceiver)
- IEEE 802.3z 1000BASE-LH (DEM-314GT transceiver)
- IEEE 802.3z 1000BASE-ZX (DEM-315GT transceiver)

Diagnostic LEDs
Per device:
- Power On/Off
- Master
- Console (login/POST status)
- RPS in use/not in use

Per 10/100/1000BASE-T port:
- 1000Mbps speed, 10/100Mbps speed
- Link/Activity

Per SFP port:
- Link/Activity

Per stacking port:
- Link/No Link

7-Segment Display
To display unit ID in the stack

Software

IP Routing
- IP v4 support
- IP Fragmentation support
- IP multi-netting
- Routing protocols supported:
  Static routing
  RIP-1, RIP-2
  OSPF v.2

VLAN
- IEEE 802.1Q Tagged VLAN
- GARP/GVRP
- Asymmetric VLAN *
- Number of VLANs: 4K static VLANs (max.)
- Supports multiple IPs per VLAN *

** Feature available in next firmware upgrade*

Priority Queues (CoS)
- Standard: IEEE 802.1p
- Number of queues: 8

Traffic Classification (CoS)
Can be based on user-definable application types:
- TOS
- Diffserv (DSCP)
- Port-based
- MAC address
- IP address
- TCP/UDP port number

Network Access Security
- Port security features
- 802.1x user authentication
  Port-based access control
  MAC-based access control *
- RADIUS client
- Multi-layer ACL based on:
  VLAN
  MAC address
  IP address Protocol type
  TCP/UDP port number
  802.1p
  Diffserv (DSCP)
- Other authentication protocols supported:
  SSH2 *
  TACACS *
  TACACS+ *
  SSL *

** Features available in future firmware release*

Spanning Tree Protocol
- 802.1D Spanning Tree compatible
- 802.1w Rapid Spanning Tree *

** 802.1w available in next firmware release*

IP Multicast
- IGMP Snooping
- IGMP v.2
- DVMRP
- PIM Dense mode
- PIM Sparse mode *

** Function supported in future firmware upgrade*

MultiLink Trunking (MLT)
Enables grouping of links between the switch and another switch or a server to provide higher bandwidth of up to 8 Gigabit ports with active redundant links. A multi-link is defined as trunked ports spanning multiple units of the stack for fail-safe connectivity to mission-critical servers and the network center.
- Supports up to 32 trunking groups; up to 8 ports per group
- Operation mode: load sharing
- 802.3ad compatible Link Aggregation static mode
- 802.3ad compatible Link Aggregation (LACP) *

** Available in future firmware upgrade*

Performance

Switch Fabric
88Gbps (32Mpps)

Transmission Method
Store-and-forward

MAC Address Table
16K entries per device

MAC Address Learning
- Dynamic entries: automatic update
- Static entries: user-defined

IP Address Learning
- Dynamic entries: automatic update
- Supports Delete of individual IP addresses by dynamic learning

Packet Filtering/Forwarding Rates (half duplex)
1,488,100 pps per port (max.)

RAM Buffer
2MB per device

Jumbo Frame
Up to 9,216 bytes

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Configuration & Management

Management Support
- SNMP v.1, v.2c, v.3 *
- Web-based management
- Web GUI traffic monitoring
- Web-based MAC address browsing
- CLI (command line interface)
- RMON monitoring
- Telnet server
- SYSLOG

** SNMP v.3 available in next firmware release*

MIBs
- MIB-II (RFC 1213)
- Bridge MIB (RFC 1493)
- RMON MIB (RFC 1757)
- 802.1p Priority Queues (RFC 2674)
- 802.1Q VLAN MIB (RFC 2674)
- IGMP MIB (RFC 2833)
- If MIB (RFC 2233)
- Ethernet-like MIB (RFC 1643)
- RIP MIB (RFC 1724)
- OSPF MIB (RFC 1850)
- CIDR MIB (RFC 2096)
- D-Link enterprise MIB

RMON Groups
1, 2, 3, 9 (Alarm, Statistics, History, Event)

IP Number Self-identification
Through DHCP client, Bootp client

Firmware Upgrade
TFTP

Console Port
DB-9 RS-232 DCE

Physical & Environmental

Power Input
100 to 240 VAC, 50~60 Hz
Internal power supply

Redundant Power Backup Support
Connector to connect to external redundant power supply

Power Consumption
90 watts (max.)

Ventilation
- 40 x 40 X10 mm DC fans x 2
- 60 x 60 X18 mm DC fans x 1

Dimensions
441 x 207 x 44 mm
19-inch rack-mount width, 1 U height

Weight
3.15kg

Operating Temperature
0° to 40 °C

Storage Temperature
-25° to 55 °C

Humidity
5% to 95% non-condensing

Emission (EMI)
- FCC Class A
- CE Class A

Safety
CSA International

Ordering Information

Gigabit Stackable Layer 3 Switch

DGS-3324SR	24 10/100/1000BASE-T ports, 4 combo SFP (Mini GBIC) slots, redundant power support

Optional Gigabit Stacking Master Layer 3 Switch

DGS-3324SRi	24 10/100/1000BASE-T ports, 8 combo SFP (Mini GBIC) slots, redundant power support

Optional SFP (Mini GBIC) Transceiver

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-314GT	SFP transceiver for 1000BASE-LHX, single-mode fiber, max. distance 35km, 3.3V
DEM-315GT	SFP transceiver for 1000BASE-ZX, single-mode fiber, max. distance 80km, 3.3V

Optional Redundant Power Supply

DPS-500	140-watt redundant power supply
DPS-800	2-slot redundant power supply chassis
DPS-900	8-slot redundant power supply chassis

U.S.A	TEL: 1-714-885-6000	FAX: 1-866-743-4905
Canada	TEL: 1-905-8295033	FAX: 1-905-8295095
Europe	TEL: 44-20-8731-5555	FAX: 44-20-8731-5511
Germany	TEL: 49-6196-77990	FAX: 49-6196-7799300
France	TEL: 33-1-30238688	FAX: 33-1-30238689
Benelux	TEL: 31-10-282-1445	FAX: 31-10-282-1331
Italy	TEL: 39-2-2900-0676	FAX: 39-2-2900-1723
Iberia	TEL: 34-93-4090770	FAX: 34-93-4910795
Sweden	TEL: 46-(0)8564-61900	FAX: 46-(0)8564-61901
Norway	TEL: 47-22-309075	FAX: 47-22-309085
Denmark	TEL: 45-43-969040	FAX: 45-43-424347
Finland	TEL: 358-9-2707-5080	FAX: 358-9-2707-5081
Singapore	TEL: 65-6774-6233	FAX: 65-6774-6322
Australia	TEL: 61-2-8899-1800	FAX: 61-2-8899-1868
Japan	TEL: 81-3-5434-9678	FAX: 81-3-5434-9868
China	TEL: 86-10-8518-2533	FAX: 86-10-8518-2250
India	TEL: 91-22-652-6696	FAX: 91-22-652-8914
Middle East (Dubai)	TEL: 9714-8834234	FAX: 9714-8834394
Turkey	TEL: 90-212-335-2553	FAX: 90-212-335-2500
Chile	TEL: 56-2-232-3185	FAX: 56-2-232-0923
Brasil	TEL: 55-11-55039320	FAX: 55-11-55039321
South Africa	TEL: 27(0)1266-52165	FAX: 27(0)1266-52186
Russia	TEL: 7-095-737-3389	FAX: 7-095-737-3390
Taiwan	TEL: 886-2-2910-2626	FAX: 886-2-2910-1515
D-Link Corp.	TEL: 886-2-2916-1600	FAX: 886-2-2914-6299

RECYCLABLE
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