

Product Highlights

DC Leaf-Spine, Top-of-Rack (ToR)

48 x 25G SFP28 Ports for high bandwidth requirements of Leaf-Spine or ToR architecture deployments or Campus Core deployments

Open Network Switching

ONIE support allows the use of multiple Network Operation Systems (NOS) for optimal flexibility and integration

High Availability

Redundancy features, including hot-swappable power supplies, and redundant fan trays maximize the availability of network



DQS-F5000-56ZS

25G Data Center Switch

Key Features

Ports and High Availability

- 48 x 25 Gbps (SFP28) Ports + 8x100G QSFP28
- 2 (4) Tbps switching capacity
- 2 PSUs (1+1) redundant & hot-swappable
- 5 fans (n+1) redundant and hot-swappable
- Front-to-back cooling
- Compact 1RU, 19-inch rack-mountable design
- Optimized design for Data Centers

Flexibility and Compatibility

- ONIE support allows the use of multiple Network Operation Systems (NOS) for flexibility and integration

Data Center

- Wire-speed, low-latency switching
- 802.1Qau, 802.1Qbb, 802.1Qaz Data Center Bridging (DCB)
- RoCE for AI Workloads
- VXLAN
- BGP-EVPN
- EVPN multi-homing
- MC-LAG
- VRF (virtual routing and forwarding)

Advanced L3 Features

- BGP v4/v6, OSPFv2/v3, IS-IS
- ECMP, BFD, VRRPv3
- Static / Default Routing, Inter-VLAN Routing
- Routed / Port based VLAN Interfaces
- NAT

The D-Link DQS-F5000-56ZS is a high-performance, 48*25G SFP28 switch purpose-built for modern data centers and enterprise core networks. With high port density, ultra-low latency, and robust routing capabilities, it's ideal for deployment as a Top-of-Rack (ToR) or Spine switch in scalable data center architectures, or as a core switch in enterprise campus networks. Its support for ONIE (Open Network Install Environment) and cost-efficient design makes it a powerful and versatile solution for network administrators looking to scale without overspending.

Blazing Performance

Packed with 48 x 25G SFP28 ports, the DQS-F5000-56ZS delivers up to 2 Tbps (or 4 Tbps full duplex) throughput. It comes equipped with a powerful processor, ample RAM, and higher packet buffer support, ensuring high-speed packet processing and minimal latency under demanding loads.

Built for High Availability

The DQS-F5000-56ZS switch features a modular fan and power supply design for a high availability architecture. The hot-swappable design means that fans and power supplies can be replaced without affecting switch operation. Load sharing enables both power supplies to evenly distribute load to increase reliability and lifetime. Meanwhile, 1+1 redundancy minimizes downtime in case of a single power supply failure.

Open Networking Ready

The DQS-F5000-56ZS embraces open networking, giving IT teams the freedom to run third-party NOS (Network Operating Systems) for customized control and better cost-efficiency. By decoupling software from hardware, it empowers agile network deployments and ensures compatibility with standards-based tools and applications, helping future-proof your infrastructure.

Technical Specifications

General	
Form Factor	19-inch, 1U rack-mount size
Interfaces / Ports	48 x 25G + 8 x 40/100G QSFP28 ports
Port Modes / Breakout	4 x 25G Breakout 4 x 10G Breakout
Console Port	1 x RJ-45 Serial Console Port for CLI management
Management Port	1 x 1000BASE-T RJ-45 and 2x10G Port for out-of-band IP management
USB Port	1 x USB Port Type A
Performance	
CPU	Intel Xeon D-1518 processor 4-core 2.2GHz
Switch Silicon	Broadcom Trident 3
Memory (RAM)	16 GB DDR4 (8 GB x 2)
Storage	64 GB m2 SSD
Packet Memory	32 MB
Switch Capacity	2 (4) Tbps
Forwarding Rate	2 Bpps
Bridge FDB Entries	32 K min / 288 K max
Router IPv4 Host Routes	168K
Router IPv6 Host Routes	100K
IPv4 Unicast Prefixes	IPv4:324K
IPv6 Unicast Prefixes	IPv4:168K
ARP Entries	168K
Egress Queues	Unicast (UC) – 10 and Multicast (MC) - 1
TCAM Rules	36K x 10B
Physical & Environmental	
Dimensions (W x D x H)	43.84 x 53.6 x 4.35 cm
Weight	10kg
Power Supply Units	1 + 1 redundant, load-sharing, hot-swappable AC
Power Input & Consumption	AC input range: 100-240 VAC at 50-60 Hz
Fans	6 (5 + 1 redundant), hot swappable
Operating Temperature	F2B Operating 0°C to 45°C (32°F to 113°F) / B2F Operating 0°C to 40°C (32°F to 104°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	5% to 95% (RH), non-condensing
MTBF	336,618 hours at 25°C (AC-Front Airflow model)

Software Features

Data Center Features	• Multi-chassis link aggregation (MC-LAG) / MLAG • Active-Active redundancy (SAG) • IEEE 802.1Qbb PFC, IEEE 802.1Qaz ETS, IEEE 802.1Qaz DCBX, IEEE 802.1Qau QCN • Virtual eXtensible Local Area Network (VXLAN) • EVPN • RoCEv2 (RDMA over Converged Ethernet)	• ECMP • DLB (Dynamic Load Balance) • Open API • Open network installation environment (ONIE) • Supports Ansible / Puppet / Chef
L2 Features	• 802.1Q • VLAN Groups and IDs – 4K • MAC Address Table: Up to 288K entries • 802.3ad link aggregation (LACP) • 802.1D Spanning Tree Protocol • 802.1s MSTP and PVST+ • Root guard • Loop guard	• BPDU filter / restriction • Loop Detection – Port and VLAN • MAC Aging • ITU-T G.8032v2 ERPS • MVRP • Port mirroring, One-to-one, many-to-one
L3 Features	• IP interfaces - Up to 1K (IPv4 / IPv6) • Port based VLAN Interfaces • Loopback interface • ARP	• VRRP v2/v3 • DHCP Relay • IPv6 Neighbor Discovery (ND)
L3 Routing	• Static Routing (IPv4 and IPv6) • Equal-cost multi-path route (ECMP) • IPv4 / IPv6 Default Route • Route preference • Route redistribution • RIP, RIPng • OSPF v2/v3 • BGP4 / BGP4+ • IS-IS, IS-ISv6	• Bidirectional forwarding detection (BFD) • BGP Unnumbered • Route Redistribution • NAT • VRF (BGP, OSPF, IP Interfaces, VRRP) • Route Leaking across VRF
Security	• Access Control Lists • Radius	• TACACS+ • AAA
Quality of Services (QoS)	• 802.1p • Differentiated services code point (DSCP) • Port Bandwidth control / Rate Limiting • Class of service (CoS) • WRED	• Ingress ACL-based Mirroring (ERSPAN) • Queue handling • Storm Control

Management & Monitoring	• Command Line Interface (CLI) • SNMP v1/v2c/v3 • CPU, Memory and Port Utilization • SSH • ZTP • Debug • Web UI • sFlow • Syslog • Audit Logs • Digital Diagnostics Monitoring • Editable Banner • Uplink fault detection • Temperature, Power Supply & Fan Monitoring • LLDP and LLDP-MED	• Interface Counter statistics • CoPP (Control Plane Policing) • Provisioning (gNMI, Rest API, Yang) • NETCONF • RESTCONF • Warm Reboot • Telemetry • Tech Support • Open Config • OpenStack / Neutron plugin compatibility • Network Orchestration • Network Automation • IP SLA • Management VRF • Port Breakout • Docker Support
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Ordering Information	
DQS-F5000-56ZS	48*25G + 8*40/100G QSFP28 ports Data Center Switch
Transceivers	
DEM-FS2801SR	25G, SFP28 850NM,300M.MMF,DDM
DEM-FS2801LR	25G SFP28 Single-Mode, 10KM Transceiver
DEM-Q2810Q-LR4	100G QSFP28 Transceiver, Single Mode, LC Duplex, 10Kms
DEM-Q2801Q-SR4	100GBase-SR4 Multi-Mode QSFP28 transceiver (up to 70 m (OM3) / 100 m (OM4)
DEM-QX10Q-LR4	40G QSFP+ Transceiver, Single Mode, LC Duplex, 10Kms
DEM-QX01Q-SR4	40G QSFP+ Transceiver, Multi-Mode
Direct Attach Cables	
DEM-CB100Q28	1 m 100G QSFP28 Direct Attach Cable (DAC)
DEM-CB100Q28-4S28	1 m 100G QSFP28 to 4 x 25G SFP28 Direct Attach Cable (DAC)
DEM-FCB100QXS	40G QSFP+ to QSFP+ 1 m Direct Attach Cable

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