

### Flexible Modular Architecture

Available in 10-Slots, 6-Slots and 3-Slots.  
The open slots can be fitted with user-selectable Line cards module

### Super Reliability

Fault-tolerant topologies ensure rock-solid connectivity, and D-Link Green technology provides eco-friendly power-saving

### Versatile Management

Telnet/CLI/SNMP v1, v2c, v3 Management, RMON Monitoring, System/Alert Information, Interface Management and Port Mirroring/Traffic Redirection, QinQ VLAN



## DES-8500E Series Carrier-Level Core Routing Switches

### Designed for Enterprise LAN and MAN

- Deployable as Enterprise Core Switch
- Enterprise-Class Software Functions
- Support IPv6, MPLS, 802.1X services
- Flexible Option for AC or DC Power Supply

### Superior Performance

- Data switching capacity up to 3840 Gbps
- Non-blocking wire speed Switching/Routing
- Intelligent Line Cards with On-Board L2/L3/L4 Switching Controllers

### Flexible Modular Design

- 10-Slot, 6 Slot and 3 Slot Chassis
- Up to two Control Modules and dual AC/DC Power supply.

### High Resiliency

- Reliability through Hitless Protection System(HPS)
- Dual Redundant Control Modules
- Two Redundant Power Supplies
- Hot-Swappable Control module and Line Cards

### Robust Security

- Advanced L2/L3/L4 ACL
- IP-MAC-Port Binding
- Virus/Malicious Traffic Flooding Prevention

D-Link's DES-8500E Series of chassis-based Switches are intelligent and high-performance multi-layer LAN devices designed for enterprise campus and metropolitan area networks (MAN). They are ideal for deployment in environments where minimal or zero downtime of network applications, superior performance, security and control are required.

The DES-8500E Series switches feature minimum or zero network downtime, robust security and real-time running of bandwidth-intensive applications. Equipped with high-speed switching fabrics, redundant backup/load sharing capability and advanced software functions including complete IPv6 support, these switches provide the performance, high availability and future-proof architecture suitable for applications of not just today but well into the future. The Green Technology in DES-8500E Series contributes to in-depth energy saving, environment protection and effective decrease in Operations Administration and Maintenance (OAM). The DES-8500E Series offers have three models: DES-8503E, DES-8506E and DES-8510E supports end-to-end connectivity and granular application control to meet different scales in a network.

### Enterprise Core or Distribution Switch

IT personnel can fit a DES-8500E switch with different port types and deploy it either as an Enterprise/ISP core switch or Telecom aggregation (i.e. distribution) switch. The DES-8500E deployed as enterprise core switch provides numerous high-speed fiber backbones for a campus and central office network, while the DES-8500E deployed as aggregation switch can provide high port density connections.

### Application Convergence

The DES-8500E combines high-speed hardware with software functions like prioritized traffic QoS and multicast routing to deliver the performance suitable for real-time applications such as VOIP, IPTV/multi-terminal HD video monitoring and HD video conferencing.

### High Performance

The DES-8510E 10-slot switch provides switching capacity up to 3840Gbps and a system performance of up to 1440Mpps. The DES-8506E 6-slot switch provides switching capacity up to 1920Gbps and system performance of up to 720Mpps. The DES-8503E 3-slot switch provides switching capacity up to 960Gbps and system performance of up to 360Mpps. To make use of this high-performance hardware, these switches utilize a distributed switching method which has each line card (the port module that directly connects to the network nodes) intelligently determine the switch path for each data packet.

### Enterprise -Wide Security

The DES-8500E Series provides not only network access security but also protection against virus and worm attacks. Access security is provided through comprehensive policy-based ACL, port security, and IP-MAC-Port binding features. Attacks hidden behind control protocols are thwarted to prevent the switch's CPU from being overwhelmed with unnecessary tasks which can cause degradation to a network's performance. The DES-8500E Series extends security to network management via such functions as SSH v2 and SNMP v3 with authentication and encryption of management traffic.

### MPLS Functions

DES-8500E supports many advanced Multi-Protocol Label Switching (MPLS) functions, including MPLS label management, LDP, MPLS L2/L3 VPN, enabling enterprises and service providers to build next-generation intelligent networks that deliver a wide variety of advanced, value-added services over a single infrastructure. This solution can be integrated seamlessly over any existing infrastructure, such as IP, Frame Relay, ATM, or Ethernet. Subscribers with differing access links can be aggregated on an MPLS edge without changing their current environments, as MPLS is independent of access technologies.

### Virtual Switch System (VSS)

DES-8500E switches support Virtual Switch System, a technology that can virtualize multiple physical devices into a logical device, to obtain much better performance, reliability, flexibility and management than independent physical devices. The virtualization can make full use of every link between physical devices, avoid STP from blocking links and protect the existing link investment to perfection. The advanced distributive processing technology and the efficient link aggregation beyond physical equipment realize the separation of logical control plane, service control plane and service data plane, provide continuous L3 routing forwarding to stop a single-point trouble from causing service interruption.

The 10G line cards of DES-8500E can extend the distance of VSS to 80KM, flexible and convenient which breaks distance limits of traditional cluster. The whole virtualization system realizes the uniform management of single IP, simplifies the management of network devices and network topology, improves the network operation efficiency and reduces the operation and maintenance cost.

### Complete IPv6 Support

The DES-8500E Series provides complete support for IPv6 to accommodate the potential huge increase in number of users and geographical needs of the expanding Internet. It addresses the requirements of emerging applications such as Internet-enabled wireless devices, home and industrial appliances, Internet-connected transportation, integrated telephony services, sensor networks, distributed computing, and gaming. The use of globally unique IPv6 addresses simplifies the mechanisms used for reachability and end-to-end security for network devices that are crucial to the applications and services that are driving the demand for IP addresses.

### Innovative Green Design

The adoption of Green Technology idea limits the maximum power consumption of whole machine to 1000W, which is energy-saving and environmental friendly. Smart power supply management has the unique power supply monitoring mechanism low startup, intelligent adjustment and in-depth energy-saving. The Intelligent fan management system supports automatic speed regulation, independent partition control, reducing the rotation speed, lowering noise and extending the fan life span effectively. The support of energy-efficient Ethernet and the compliance of IEEE802.3az cuts down energy consumption efficiently.

### Hitless Protection System HPS

The DES-8500E Series adopts the HPS (Hitless Protection System). The key components of the DES-8500E Series such as the power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without need of manual intervention.



## Technical Specification

Chassis	DES-8503E	DES-8506E	DES-8510E
Switching capacity	960Gbps	1920Gbps	3840Gbps
Packet forwarding rate	360Mpps	720Mpps	1440Mpps
Number of Slots	3	6	10
Service Slots	2	4	8
MSU Slots	1	2	2
MAC	Static Configuration and dynamic MAC learning MAC browsing and removal Configurable aging time of the MAC address Limited number of learnable MAC addresses MAC filtration Port/MAC Binding		
VLAN	4K VLAN List GVRP 1:1 VLAN mapping and N:1 VLAN mapping Basic QinQ, flexible QinQ PVLAN		
STP	802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP) BPDU protection, root protection, and loopback protection		
Multicast	IGMP v1/v2/v3 IGMP Snooping IGMP Fast Leave Multicast flow copying over VLANs PIM-SM, PIM-DM		
IPv4	Static route, RIPv1/v2, OSPF, and BGP Policy Based Routing (PBR) Load balance via equivalent route Graceful Restart for OSPF and BGP BFD for OSPF and BGP		
IPv6	ICMPv6, DHCPv6, ACLv6, and IPv6 Telnet IPv6 neighbor discovery Path MTU discovery MLD and MLD snooping IPv6 static route, RIPv6, OSPFv3 and BGP+4 Manual/ISATAP/6to4 tunnels		
MPLS VPN	Layer2 – MPLS VPN (VPWS) & VPLS Protocol Layer3 – MPLS VPN Adopts RFC 2547		

	<p>Flow classification based on each field in the header of L2/L3/L4 protocols</p> <p>CAR flow limit</p> <p>802.1P/DSCP priority re-labeling</p> <p>SP, WRR, and “SP+WRR”</p> <p>Congestion avoidance mechanisms like Tail-Drop and WRED</p> <p>Flow monitoring and flow shaping</p>		
Security features	<p>L2/L3/L4 ACL flow identification and filtering</p> <p>DDoS attack prevention, TCP’s SYN Flood attack prevention, UDP Flood attack prevention, etc.</p> <p>Broadcast/multicast/unknown unicast storm control</p> <p>Port Isolation</p> <p>Port security, and “IP+MAC+port” binding</p> <p>DHCP snooping and DHCP option 82</p> <p>IEEE 802.1x authentication</p> <p>Radius, Tacacs+ authentication</p> <p>uRPF</p> <p>Level-based command line protection</p>		
Reliability	<p>Two-MSU redundancy (excluding DES-8503E)</p> <p>“1+1” backup of power source</p> <p>Hot-swappable MSUs and service cards, and automatic service recovery</p> <p>Static/LACP link aggregation, and link aggregation across cards</p> <p>Ring network protection such as ERPS</p> <p>VRRP</p> <p>Ethernet OAM 802.3ah/802.1ag/ITU-Y.1731</p> <p>GR for OSPF and BGP</p> <p>BFD for OSPF and BGP</p> <p>ISSU uninterrupted system upgrade</p>		
Management and maintenance	<p>Console, Telnet, SSH</p> <p>SNMP v1/v2/v3</p> <p>TFTP</p> <p>RMON</p> <p>SFLOW/Netflow flow statistics and analysis</p>		
Value-added services	VSS		
Green and energy saving	IEEE 802.3az energy-efficient Ethernet		
Environment requirements	<p>Operating temperature and humidity: 0°C-40°C, 10%-90% non-condensing</p> <p>Storage temperature and humidity: -20°C-70°C, 5%-95% non-condensing</p>		
Power Supply	<p>AC : 100V-240V, 50Hz±10%</p> <p>DC : -48V</p>		
Dimension mm (W*H*D)	482×548×266 6U	482×548×399 9U	482×548×533 12U
Entire weight (null configuration)	21.5kg	26kg	30.5kg

## Ordering Information

<i>Part Number</i>	<i>Description</i>
<b>Chassis DES-8500E Series</b>	
DES-8503E	Chassis of DES-8503E (including 1 fan tray, 2 power supply slots, 1 control module slot and 2 service slots)
DES-8506E	Chassis of DES-8506E (including 1 fan tray, 2 power supply slots, 2 control module slots and 4 service slots)
DES-8510E	Chassis of DES-8510E (including 1 fan tray, 2 power supply slots, 2 control module slots and 8 service slots)
<b>Power Supplies</b>	
DES-8500-PWR-600A	600W AC power supply module of DES-8500E Series (for DES-8503E and DES-8506E)
DES-8500-PWR-1000A	1000W AC power supply module of DES-8500E Series
DES-8500-PWR-1000D	- 48V 1000W DC power supply module of DES-8500E Series
<b>CPU Engines</b>	
DES-8500-CM1	Control module for DES-8500E Series chassis with switching capacity: DES-8503E: 384Gbps, DES-8506E: 768Gbps, DES-8510E: 1536Gbps
DES-8500-CM2	Control module for DES-8500E Series chassis with switching capacity: DES-8503E: 960Gbps, DES-8506E: 1920Gbps, DES-8510E: 3840Gbps
<b>Line Card Modules</b>	
DES-8500-12TS	12 Ports Combo 10/100/1000Base-T/SFP enhanced line card module, 32K MAC Address
DES-8500-24TC	20 10/100/1000Base-T Ports and 4 combo ports (10/100/1000Base-T or SFP) enhanced line card module, 32K MAC Address
DES-8500-24SC	20 SFP Ports and 4 combo Ports (10/100/1000Base-T or SFP) enhanced line card module, 32K MAC Address
DES-8500-48T-MPLS	48 10/100/1000Base-T Ports line card module, 32K MAC Address
DES-8500-48T-MPLS-E	48 10/100/1000Base-T Ports enhanced line card module, 512K MAC Address
DES-8500-48S-MPLS	48 SFP Ports line card module, 32K MAC Address
DES-8500-48S-MPLS-E	48 SFP Ports enhanced line card module, 512K MAC Address
DES-8500-2XS	2 Ports 10G SFP+ enhanced line card module, 32K MAC Address
DES-8500-4XS-MPLS	4 Ports 10G SFP+ line card module, 32K MAC Address
DES-8500-4XS-MPLS-E	4 Ports 10G SFP+ enhanced line card module, 512K MAC Address
DES-8500-12XS-MPLS	12 Ports 10G SFP+ line card module, 32K MAC Address
DES-8500-12XS-MPLS-E	12 Ports 10G SFP+ enhanced line card module, 512K MAC Address

<b>Optical Transceivers</b>	
DGS-712	SFP transceiver, 1000BASE-T
DEM-311GT	SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550m, 3.3 V operating voltage
DEM-310GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage
DEM-314GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 50km, 3.3 V operating voltage
DEM-315GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 80km, 3.3 V operating voltage
DEM-330T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
DEM-330R	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-331T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
DEM-331R	WDM SFP transceiver 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-431XT	10Gbase-SR SFP+ Transceivers (without DDM), 33m: OM1 MMF, 82m: OM2 MMF, 300m: OM3 MMF
DEM-432XT	10Gbase-LR SFP+ Transceivers (without DDM), 10Km
DEM-433XT	10Gbase-ER SFP+ Transceivers (without DDM), 40Km
DEM-434XT	10Gbase-ZR SFP+ Transceivers (without DDM), 80Km