

Designed for Enterprise LAN and MAN

- Deployable as an enterprise Core or metro Edge Switch
- Support IPv6, MPLS, IPFIX services
- User-Selectable AC and DC Power Supplies

Superior Performance

- Dual Switch Fabrics up to 384 Gbps, 286 Mpps Packet Forwarding
- Bottleneck-Free Distributed Packet Switching/Routing
- Intelligent Line Cards with On-Board L2/L3/L4 Switching Controllers

Flexible Modular Design

- 6-Slot and 10-Slot Chassis
- Shared Line Card and Power Module for both chassis
- Scalable Expansion to 384 10/100/1000BASE-T, 384 PoE, 192 SFP, or 32 10-Gigabit Ports
- Single or Dual Control Modules/Power Supplies

High Resiliency

- Dual Redundant Backup/Load-Sharing Control Modules
- Dual Redundant Backup Power Supplies
- Hot-Swappable Control and Line Cards
- Replaceable Fan Modules
- 802.1D/w/s Spanning Tree, 802.3ad Link Aggregation/Backup Redundancy
- Rapid Ether Ring Protection (RERP)
- VRRP Support

Robust Security

- Advanced L2/L3/L4 ACL
- IP-MAC-Port Binding
- Virus/Malicious Traffic Flooding Prevention
- CPU Protection Policy (CPP)



Chassis-Based Switches

D-Link's DES-7200 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 uninterrupted running of network applications and a high level of performance, security, and control are required.

Featuring a flexible modular architecture and industry standard compliance, these switches provide scalable expansion and a high level of investment protection for businesses and telecom carriers deploying Gigabit and 10-Gigabit packet switching and routing for office networking and Ethernet-based Internet services to homes.

The DES-7200 series features minimum to zero network downtime, robust security, and real-time running of bandwidth-intensive applications. Equipped with high-speed switch 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 those of the future.

The DES-7200 series offers end-to-end connectivity and granular application control with two chassis supporting a wide range of port modules:

DES-7206

- 6-slot chassis
- 2 slots for dual control modules with dual load-sharing/redundant switch fabrics of up to 192 Gbps
- 4 slots for user-selectable port modules
- 2 slots for redundant backup power supplies
- 1 slot for a fan module
- Up to 192 Gbps switch fabric
- 142 Mpps packet forwarding rate
- Up to 192 Gigabit ports
- Up to 16 10-Gigabit ports

DES-7210

- 10-slot chassis
- 2 slots for dual control modules with dual load-sharing/redundant switch fabrics of up to 384 Gbps
- 8 slots for user-selectable port modules
- 2 slots for redundant backup power supplies
- 1 slot for a fan module
- Up to 384 Gbps switch fabric
- 286 Mpps packet forwarding rate
- Up to 384 Gigabit ports
- Up to 32 10-Gigabit ports



DES-7206
6-Slot Chassis



DES-7210
10-Slot Chassis

QoS & Bandwidth Management

- Rate Limiting for End-Users or for Subscribers' CPE
- Granular Bandwidth Control Down to 64 Kbits for Ingress and Egress traffic
- Traffic Classification

Versatile Management

- Telnet/CLI/SNMP v1, v2c, v3 Management
- RMON Monitoring
- System/Alert Information, Interface Management
- Optional Dual Management Modules
- 802.1v Protocol VLAN, Super VLAN, Private VLAN, Double VLAN
- Port Mirroring/Traffic Redirection

Flexible Modular Design

The DES-7200 series is available in two models: the DES-7206 6-slot chassis with 6 open slots, and the DES-7210 10-slot chassis with 10 open slots. Two open slots are reserved for redundant backup control modules and the other open slots can be fitted with user-selectable port modules. In addition to the open slots, there are 2 slots for redundant backup power supplies, and one slot for a replaceable fan module. This modular architecture allows modules to be gradually added to meet network growth, and modules to be easily swapped anytime to fit network requirement changes.

Deployable as Core or Distribution Switch

Using a common set of modules for 10/100/1000BASE-T ports, PoE support, SFP, and 10-Gigabit uplinks, IT personnel can fit a DES-7200 series switch with different port types and deploy it either as a core switch or an aggregation (i.e. distribution) switch. As a core switch, the DES-7200 series provides numerous high-speed fiber backbones for a campus and central office network, while as an aggregation switch can provide high port density connections to workstations in an office environment, or to a subscriber's CPE in a densely populated Ethernet metro area network.

High Availability

Both the DES-7206 and the DES-7210 provide 2 slots for control modules. Each control module is equipped with its own switch fabric and management agent, and can be used for redundant backup and sharing of network traffic load and management tasks. Additionally, 2 redundant backup power supplies and a hot swappable fan module help create highly available chassis-based devices suitable for mission-critical network applications.

High Performance

The DES-7206 6-slot switch provides a switching capacity of up to 192 Gbps and system performance of up to 142 Mpps. The DES-7210 10-slot switch provides a switching capacity of up to 384 Gbps and system performance of up to 286 Mpps. To make use of this high-performance hardware, these switches utilize a distribution 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. The switches synchronize the switching and routing information between the control cards and the line cards to map out the fastest data transfer path. With each line card capable of performing L2/3/4 on-board packet switching without reliance on the control cards, the DES-7200 series switches can deliver very fast packet forwarding at almost zero-wait speed.

High Port Densities

Port densities can reach 192 Gigabit or 16 10-Gigabit ports per 6-slot chassis, or 384 Gigabit or 32 10-Gigabit ports per 10-slot chassis. All port modules are hot-swappable, and can be used in either chassis type without the need to change hardware or software settings.

Application Convergence

The DES-7200 series combines high-speed hardware with software functions like prioritized traffic QoS and multicast routing to deliver performance suitable for real-time applications such as Internet telephony, streaming multimedia, and TV. In addition, these switches offer Power over Ethernet (PoE) solutions to provide both electrical power and network connectivity to PoE-capable devices, such as IP phones and wireless AP, and are ideal for large-scale enterprise edge deployment. An example of this application convergence would be VoIP for mobile users via wireless access points connected through DES-7200 series switches.

Complete IPv6 Support

The DES-7200 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.

Enterprise-Wide Security

The DES-7200 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, IP-MAC-Port binding features, and Defeat IP Scan, while 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-7200 series extends security to network management via such functions as SSH v2 and SNMP v3 with authentication and encryption of management traffic.



DES-7206
6-Slot Chassis



DES-7210
10-Slot Chassis

MPLS Functions

With the Advanced Service Engine (ASE), the DES-7200 series supports many advanced Multi-protocol Label Switching (MPLS) functions, including MPLS label management, LDP, and 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.

QoS & Bandwidth Management

The DES-7200 series supports numerous advanced traffic management options including flow-based bandwidth control and broadcast/multicast storm control. It provides egress traffic bandwidth control with minimum granularity of 64 Kbits. Combining Rate Limiting applicable to categories of subscriber CPE and access control-based accounting, the DES-7200 series provides functions that are useful for carriers offering services to home users in a metropolitan Ethernet network.

Comprehensive Management

To maximize management uptime, the DES-7200 series provides optional dual redundant backup management agents in the same chassis. It offers a comprehensive set of management features to provide enterprise-wide visibility and control to network administrators for configuration, access and traffic monitoring and troubleshooting. These features are accessible through a CLI, Telnet, or SNMP console. RMON monitoring is supported, and complete debug, system, and alert information is provided.

Technical Specifications	DES-7206	DES-7210
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Hardware (Chassis)	Chassis Slots	6	10
	Fixed Slots (for Control Modules)	2	2
	Open Slots (for Port Modules)	4	8 (vertical)
	Max. Switching Capacity¹	192 Gbps	384 Gbps
	Max. Packet Forwarding Rate¹	142 Mpps	286 Mpps
Maximum Port Density	10/100/1000Base-T Ports	192	384
	10/100/1000Base-T Ports with PoE	192	384
	SFP Slots	96	192
	10-Gigabit Ethernet XFP Slots	16	32
Fans	Fan Tray Module	7206-Fan	7210-Fan
	Number of DC Fans	6	

¹ Figures are based on the usage of 2 control modules.

Module Support Matrix						
Modules	Port Type				Module Support	
Modules	10/100/1000 Base-T	10/100/1000 Base-T/ SFP Combo	SFP	10G XFP	DES-7206	DES-7210
CPU Engines						
7200-CM1	-	-	-	-	✓	-
7200-CM2	-	-	-	-	-	✓
7200-CM3 ²	-	-	-	-	✓	-
7200-CM4 ²	-	-	-	-	-	✓
Advanced Service Engines						
7200-ASE2 ³ (IPFIX)	-	-	-	-	✓	✓
7200-ASE3 (MPLS)	-	-	-	-	✓	✓
LAN Interface Modules						
7200-24	12	12	-	-	✓	✓
7200-24G	-	12	12	-	✓	✓
7200-24P	12 (PoE)	12 (PoE)	-	-	✓	✓
7200-48	44	4	-	-	✓	✓
7200-48P	44(PoE)	4(PoE)	-	-	✓	✓
7200-2XG	-	-	-	2	✓	✓
7200-4XG	-	-	-	4	✓	✓
7200-24GE	-	-	24 ⁴	-	✓	✓
7200-24G2XG	-	-	24	2	✓	✓
Power Supplies						
7200-1200AC	-	-	-	-	✓	✓
7200-1200DC	-	-	-	-	✓	✓
7200-2000AC	-	-	-	-	✓	✓
Fan Tray Modules						
7206-Fan	-	-	-	-	✓	-
7210-Fan	-	-	-	-	-	✓

¹ Supports Advanced Service Engine(ASE)

² Available in future

⁴ Supports dual speed 100/1000M SFP

Chassis-Based Switches

Software Features

L2 Features

- MAC Address Table
 - 16K per I/O module (H/W Ver. A1/A2)
 - 32K per I/O module (H/W Ver. A3)
- ARP
 - Static ARP
 - Configurable ARP aging time
- Jumbo Frames up to 9,216 bytes
- IGMP v1/v2/v3 Snooping
 - Support 1K groups
- IGMP Proxy
- Spanning Tree
 - 802.1D STP
 - 802.1w RSTP
 - 802.1s MSTP
- Rapid Ether Ring Protection (RERP)
 - Support up to 16 domains
 - Recover L2 traffic in 500 ms
- Rapid Link Detection Protocol (RLDP)
- Rapid Ethernet Uplink Protection (REUP)
- 802.3ad Link Aggregation
 - Max. 128 trunk groups per device, 8 ports per group
 - Support cross-module trunk
- Port Mirroring:
 - One-to-One
 - Many-to-One
 - Port mirroring for Tx/Rx/Both
 - RSPAN
- Head of Line Blocking Prevention

VLAN

- VLAN Group
 - Max. 4K VLAN groups
- 802.1Q Tagged VLAN
- 802.1v Protocol VLAN
- Port-based VLAN
- Super VLAN
- Private VLAN
- Double VLAN (Q-in-Q)
 - Port-based Q-in-Q
 - Selective Q-in-Q

L3 Features

- Max 2K IP interface
- Secondary IP
- VRRP
- IPv6 Tunneling
 - Manual
 - ISATAP
 - 6to4
- IPv6 Ready Logo Phase 2

L3 Routing

- 12K hardware routing entries shared by IPv4/IPv6
 - Max. 12K IPv4 routes
 - Max. 6K IPv6 routes
- 192K hardware routing entries shared by IPv4/IPv6 (7200-ASE3 is required)
 - Max. 192K IPv4 routes
 - Max. 96K IPv6 routes
- 1K static routing entries
 - Supports ECMP/WCMP
- Policy-based Route
- RIP v1/v2
- RIPng (IPv6)⁵
- OSPF
 - OSPF v2
 - OSPF v3 (IPv6)
 - OSPF Passive Interface
 - Stub/NSSA Area
 - OSPF Equal Cost Route
- BGP v4
- BGP+ v4 (IPv6)

L3 Multicasting

- 1K hardware multicast groups
- PIM-DM
- PIM-DM v6⁵
- PIM-SM
- PIM-SM v6⁵
- PIM-SSM
- PIM-SSM v6⁵
- IGMP v1/v2/v3
- PIM Snooping

QoS (Quality of Service)

- 802.1p Class of Service (CoS)
 - 8 queues
- Queue Handling:
 - Strict
 - Weighted Round Robin (WRR)
 - Strict+WRR
- CoS Based on:
 - VLAN ID
 - 802.1p Priority
 - MAC Address

MPLS

- VRF (7200-ASE3 is required)
- MPLS Label Management (7200-ASE3 is required)
- LDP (7200-ASE3 is required)
- MPLS L3 VPN (7200-ASE3 is required)
- VPWS⁵ (7200-ASE3 is required)

- VRF-Lite (I/O module with H/W Ver. A3 is required)

IPFIX (7200-ASE2 is required)

- Supports 128K IPFIX entries

ACL (Access Control List)

- Ingress / Egress⁵ ACL
- ACL based on
 - 802.1p Priority
 - VLAN ID
 - MAC Address
 - IPv4/v6 Address or IP Prefix
 - DSCP/IP Precedence
 - IP Protocol Type
 - TCP/UDP Port Number
 - Combination of the above
- Time-based ACL

Security

- CPU Protection Policy (CPP)
- SSH v1.5/v2
- Port Security up to 16 MAC addresses per port
- Broadcast/Multicast/Unicast Storm Control
- Global MAC-IP Binding
- Defeat IP Scan
- IP-MAC-Port Binding
 - DHCP Snooping
 - ARP Check
 - IP Source Guard

AAA

- 802.1X
 - Port-based Access Control
 - MAC-based Access Control
 - Dynamic VLAN Assignment
- Accounting
 - Period Accounting
 - Multiple Accounting Servers
- RADIUS and TACACS+ Authentication for Switch Access

Management

- Command Line Interface (CLI)
- Telnet Server
- Telnet Client
- TFTP
- DHCP Server
- DHCP Relay
- DHCP Relay option 82
- XModem
- SNMP v1/v2c/v3

- SNMP Trap
- System Log
- RMON v1
 - Support 1,2,3,9 Groups
 - DNS Client
 - Debug
 - NTP/SNTP
 - File System

MIB/IETF Standard

- RFC1213 MIB-II
- RFC1493 Bridge MIB
- RFC1901, 1907 SNMPv2 MIB
- RFC1157, 2571~2576 SNMP MIB
- RFC1271, 2819 RMON MIB
- RFC3569 PIM-SSM MIB
- D-Link Private MIB
- RFC2362 PIM-SM
- RFC2338, 2787 VRRP
- RFC1075 DVMRP
- RFC2474~2475 DiffServ
- RFC2674 802.1p
- RFC2138~2139, 2865~2866 RADIUS
- RFC1370, 1587, 1765, 1850,2328, 2370 OSPF
- RFC1771, 1997, 2439, 2796, 2842, 2918 BGP
- RFC1542, 2131, 3046 DHCP
- RFC3069 Super VLAN
- RFC3411~3417 SNMP
- RFC768 UDP
- RFC791 IP
- RFC793 TCP
- RFC854 Telnet
- RFC1305 NTP
- RFC1350 TFTP
- RFC1769 SNTP
- RFC2096 IP FDB MIB
- RFC1724 RIP v2 MIB
- RFC2933 IGMP v3 MIB



⁵ Function available in future firmware upgrade
⁶ I/O Module with H/W Ver. A3 is required

Optional Products

Chassis Kits

DES-7206-Base	6-slot chassis base with fan module without power supply
DES-7210-Base	10-slot chassis base with fan module without power supply

LAN Interface Modules

7200-24	12-port 10/100/1000M and 12-port combo 10/100/1000M / SFP module
7200-24G	12-port SFP and 12-port combo 10/100/1000M / SFP module
7200-24P	12-port 10/100/1000M PoE and 12-port combo 10/100/1000M PoE / SFP module
7200-48	44-port 10/100/1000M and 4-port combo 10/100/1000M / SFP module
7200-2XG	2-port XFP module
7200-4XG	4-port XFP module
7200-48P	44-port 10/100/1000M PoE and 4-port combo 10/100/1000M PoE / SFP module
7200-24GE	24-port 100/1000M SFP module
7200-24G2XG	24-port SFP and 2-port XFP module

Power Supplies

7200-1200AC	1200W redundant AC power supply
7200-1200DC	1200W redundant DC power supply
7200-2000AC	2000W redundant AC power supply

CPU Engines

7200-CM1	CPU module for DES-7206 chassis, 96G switching capacity
7200-CM2	CPU module for DES-7210 chassis, 192G switching capacity
7200-CM3	CPU module for DES-7206 chassis, 96G switching capacity, supports Advanced Service Engine(ASE)
7200-CM4	CPU module for DES-7210 chassis, 192G switching capacity, supports Advanced Service Engine(ASE)

Advanced Service Engine

7200-ASE2 ⁷	Advanced Service Engine for IPFIX support
7200-ASE3	Advanced Service Engine for MPLS support, 192K H/W routing table and 24K L3 FDB

⁷ Available in future

Accessories

7200-512RAM	512MB additional RAM for CPU models CM3/CM4.
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Optional Management Software

DV-600S	D-View 6.0 Network Management Software Standard Edition
DV-600P	D-View 6.0 Network Management Software Professional Edition

Optional 10-Gigabit XFP Transceivers

DEM-421XT	XFP transceiver, 10GBASE-SR standard, multi-mode fiber, max. distance 300 m, 3.3/5 V
DEM-422XT	XFP transceiver, 10GBASE-LR standard, single-mode fiber, max. distance 10 km, 3.3/5 V
DEM-423XT	XFP transceiver, 10GBASE-ER standard, single-mode fiber, max. distance 40 km, 3.3/5 V

Optional SFP Transceivers

DEM-310GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V
DEM-311GT	SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550 m, 3.3 V
DEM-312GT2	SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2 km, 3.3 V
DEM-314GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 50 km, 3.3 V
DEM-315GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 80 km, 3.3 V
DEM-330T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V, 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, 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, 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, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-211	SFP transceiver, 100BASE-FX multi-mode fiber, max. distance 2 km, 3.3 V
DEM-210	SFP transceiver, 100BASE-FX single-mode fiber, max. distance 15 km, 3.3 V



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