

## DX-0630P



DX-0630P is a high performance 10 slot chassis-based Layer-3 switch. It is an ideal core switch for campus, enterprise network and aggregation layer of IP metropolitan network. DX-0630P has 10 slot configurations with 8 slots for Payload modules and 2 slots for Management Modules.

DX-0630P can support maximum 32# 10G ports or 416 Gigabit ports. The high capacity enables the switch to forward Layer 2 / Layer 3 traffic in line speed. DX-0630P supports various types of Network Interface modules, including Gigabit and 10G modules. It supports Policy-based routing and Ipv6.

### High Availability

DX-0630P supports high availability. In order to support zero point of failure, DX-0630P is equipped with redundancy options for Fan, AC Power, Switching Fabric (CPU Management Module) with redundancy for Fan, Power Supply, management module and Link Redundancy. Hot swap support is available on all the line cards, Fan tray, power supplies and management modules. The Fan tray is hot swappable and individual fans are field replaceable. With high redundancy and reliability, DX-0630P ensures continuous operation to offer 99.9% network uptime.

### High Scalability and Performance

DX-0630P supports up to 32# 10G ports or 416 Giga ports providing flexibility and high port density. With 4 port 10G modules, the DX-0630P core switch can be connected as 10G links to Gigabit L3 distribution switches or L2 Gigabit switches.

### Redundancy and Survivability

Designed for mission-critical network core operation, DX-0630P architecture incorporates multiple levels of redundancy. IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence



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convergence. IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links. IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balancing and fault tolerance for uplink connections. IGMP snooping prevents flooding of IP multicast traffic and limits bandwidth intensive video traffic to the subscribers. Multi-layer Ring Protection Protocol fast recovery for links in a Ring.

### **Advanced Enterprise Features**

DX-0630P delivers high-performance hardware based IP routing. RIP , OSPF and BGP4 for both IPv4 & IPv6 and provide dynamic routing by exchanging routing information with other Layer 3 switches or routers. DX-0630P supports DVMRP, PIM Multicast Routing Protocols which is used to send IP multicast traffic from one subnet to another and the support of VRRP prevents your system from failing by dynamically backing up multiple L3 switches for routing.

### **Comprehensive Traffic Control**

Network Managers can use DX-0630P to build high performance backbone that provides comprehensive support for traffic management. DX-0630P provides advanced traffic control by preventing broadcast storms and significantly reduces packet loss with a built in flow control mechanism. In addition 8 levels of egress queues per port enable differentiated management of up to 8 traffic types and the traffic is prioritized according to 802.1p, DSCP, IP precedence and TCP/UDP port number giving optimal performance to real time applications such as voice and video. Further DX-0630P offers Bidirectional rate-limiting, per port or traffic class preserves network bandwidth and allows full control of network resources.

### **Enhanced Network Security**

As networks grow and branch out to remote locations, network vulnerability increases in importance and administration complexity. Customers need to protect networks and network services from unauthorized access by remote users.



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DX-0630P provides multiple security algorithms such as IEEE 802.1X Port security, ACLs based on L2 / L3 / L4 headers, SSL, Web Management Encryption, RADIUS and TACACS+ to protect data communication to ensure data privacy. Also the switch supports security features for anti attack making the switch ideal for any enterprise application.

### **Flexible System Management**

The System can be managed and monitored via the SNMP protocol through any computer using Network management Software or via internet web browser. DX-0630P supports Industry standard Command Line Interface (CLI) configuration via console port or Telnet for switch management.

### **Features & Benefits**

- Supports 32#10G modules for linking to L3 Gigabit distribution layer switches or L2 Gigabit switches on 10G backbone
- Jumbo frames up to 9000 bytes
- Broadcast, Multicast and Unicast storm control on per port basis
- Supports IGMP snooping to prevent flooding of IP multicast traffic, and limits bandwidth intensive video traffic to only the subscribers.
- The Switch delivers high-performance hardware based IP routing
- Supports RIP, OSPF and BGP provide dynamic routing, DVMRP, PIM Multicast Routing Protocols send IP multicast traffic from one subnet to another.
- Supports 8 egress queues per port enable differentiated management of up to 8 traffic types.
- Traffic can be prioritized according to 802.1p, DSCP, IP precedence and TCP/UDP port number, giving optimal performance to real-time applications such as voice and video.
- Bidirectional rate limiting, per port or traffic class, preserves network bandwidth and allows full control of network resources.



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- Supports IEEE 802.1X port-based access control ensures all users are authorized before being granted access to the network.
- Supports Access Control Lists (ACL) to restrict access to sensitive network resources by denying packets based on L2/L3/L4 headers.
- Supports SSL, Web Management Encryption, RADIUS and TACACS+ authentication which protects data communication and ensure data privacy.
- Supports Embedded user friendly web interface for quick and simple configurations on switches.
- Backup and restore Firmware and configuration files via TFTP.

### Technical Specifications

Model	DX-0630P
<b>Physical Ports</b>	416 Giga ports 32 # 10G ports , 10 open slots( 2 dedicated for Management and 8 for Network module) 1 AC power supply provided, 2 open slots for Additional Power Supply
<b>Performance</b>	Backplane Capacity: 3.2Tbs Switching Capacity : 800Gbps Forwarding Rate: 720 Mpps Non-blocking wire speed performance
<b>Routing table</b>	128 K
<b>L2 &amp; L3 Features</b>	
<b>Architecture</b>	Store and Forwarding
<b>Standards</b>	IEEE802.3(10Base-T) IEEE802.3u(100Base-TX) IEEE802.3z(1000BASE-X) IEEE802.3ab(1000Base-T) IEEE802.3ae (10GBase) IEEE802.1d(STP) IEEE802.1w(RSTP) IEEE802.1s(MSTP) IEEE802.3ad(LACP) Loopback interface 9k Jumbo Frame Port loop detect Link Layer Discovery Protocol (LLDP) LLDP-MED Unidirectional Link Detection (UDLD)
<b>Flow control</b>	IEEE802.3X and Back-Pressure



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<b>Link Aggregation</b>	IEEE802.3ad (LACP) Static Trunk Load Balancing for both Unicast and Multicast Number of ports per trunk: 2~8 ports No of groups : 128 Groups
<b>Spanning Tree</b>	IEEE802.1d (Spanning Tree Protocol) IEEE802.1w (Rapid Spanning Tree Protocol) IEEE802.1s (Multiple Spanning Tree Protocol) Root Guard BPDU Guard BPDU Forwarding
<b>Port Mirroring</b>	One to one Port Mirroring Any to one Port Mirroring Port Mirroring based on Ingress & Egress flow Port Mirroring based on data stream
<b>VLAN</b>	Port-based 802.1Q 4096 VLAN IDs 4K VLANs Q-in-Q GVRP Broadcast / Multicast / Unicast Storm Control MAC based VLAN Protocol based VLAN (IEEE 802.1v) Voice VLAN Private VLAN Inter VLAN Routing Port Isolation
<b>MAC Operation</b>	MAC binding(Ipv4 /Ipv6) MAC filtering MAC limit Port binding(Ipv4 /Ipv6) IP source guard
<b>ARP</b>	ARP guard Local ARP proxy Proxy ARP ARP binding Gratuitous ARP ARP limit ARP Scan
<b>Multicasting</b>	IGMP v1/v2/v3 IGMP v1/v2/v3 Snooping IGMP proxy ICMPv6 ND, ND snooping MLDv1/v2 MLDv1/v2 snooping DVMRP PIM-DM/ PIM-SM/PIM-SSM Multicast VLAN Registration (MVR) for IPv4 and IPv6 Static Multicast route Multicast receive control Illegal multicast source detect



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<p><b>QoS</b></p>	<p>Priority Queues: 8 hardware queues per port  <b>Traffic classification based on :</b>          IEEE 802.1p CoS          IP Precedence          DSCP          TCP/UDP port number          Source/destination Address          Access Control List          Marking and Re-marking          Weighted Round Robin (WRR),          Scheduled Weighed Round Robin (SWRR)          Strict Priority          Hybrid Queuing          Bandwidth Control: Egress rate limiting, Ingress rate limiting</p>
<p><b>L3 Features(IPv4)</b></p>	<p>IP (IP support both of IPv4 and IPv6)</p> <hr/> <p>Default Routing          Static Routing          RIPv1/V2          MD5 authentication</p> <hr/> <p>OSPFv2/v3          BGP4          Graceful restart ( OSPF / BGP)          Longest Prefix Match Routing          URPF for IPv4 and IPv6          ECMP(Equal Cost Multi-Path)          Bidirectional Forwarding Detection</p> <hr/> <p>Policy based Routing(PBR) for IPv4 &amp; IPv6          VRRP/VRRP v3          Multi-netting          Super-netting (CIDR)          DNS proxy</p>
<p><b>IPv6</b></p>	<p>ICMPv6          ND,ND Snooping</p> <hr/> <p>RIPng          OSPFv3          BGP4+          PIM-SM/DM for IPv6          MLDv1/v2          MLD v1/v2 snooping</p>
<p><b>MPLS</b></p>	<p>255 VRF/VFI          LDP          L3 MPLS VPN          L2 VLL/VPLS          MPLS/VPLS proxy          MPLS-TE/FRR          Cross domain MPLS VPN          MPLS QOS</p>



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<b>ACL</b>	Standard and extended ACL Time Based ACL ACL based on physical port MAC ACL and IP ACL combination
	<b>IP ACL based on:</b> Source/destination IP IP protocol IP priority (DSCP, TOS, Precedence) TCP/UDP source/destination port
	<b>MAC ACL based on:</b> Source / destination MAC Address Class of Service
<b>ACL-X</b>	Time-based security auto-negotiation <b>ACL rules can be configured to :</b> Port VLAN VLAN routing interfaces QoS classification
<b>Anti-Attack and Security</b>	S-ARP: ARP inspection, defense ARP-DOS attack and address clone
	Anti-Sweep: prevent ping Sweep
	S-ICMP: resist PING-DOS attack, ICMP unreachable attack
	S-Buffer: prevent DDOS attack
	Switch engine CPU protection
	Key message priority: secure processing of key legal messages
	Port credit: inspect illegal DHCP Server, Radius Server. Connection via credit port only
	Advanced LPM: filter "Bluster", "zero day" and "SQL slammer warm"
Supports URPF, avoid IP address clone	
<b>IEEE 802.1X</b>	IEEE 802.1X port-based access control MAC-based access control User based access control Account based on time length and traffic Guest VLAN Auto VLAN
<b>AAA</b>	RADIUS for IPV4 and IPv6 (standard support client, MD5/PEAP/TLS) TACACS+
<b>Redundancy</b>	Virtual Routing Redundancy Protocol (VRRP) LACP load balance MRPP - Multi-layer Ring Protection Protocol VLAN based traffic balance Redundant power supply and Management module with power load balancing

**MIB / RFC's**

RFC 792 ICMP.  
RFC 1812 IPv4  
RFC 793 TCP  
RFC 768 UDP  
TCP / UDP MIB  
RFC 783 TFTP  
RFC 826 ARP  
RFC 903 RARP  
RFC 1027 Proxy ARP.  
RFC 894 IP over Ethernet.  
RFC 854 TELNET.  
RFC 1058 ( RIP v1)  
RFC 1723 ( RIP v2)  
RFC 2453 ( RIP v2)  
RFC 2082 ( MD5 authentication)  
RFC 2328 ( OSPF v2)  
RFC 1771 ( BGP 4)  
RFC 2030 (RIPng)  
RFC 2740 ( OSPF v3)  
RFC 2283 ( BGP4+)  
RFC 2338 VRRP  
RFC 3768 VRRP  
RFC 5798 VRRP v3  
RFC1213 MIB ( System , port information MIB)  
RFC1215 type definition  
RFC1271 RMON  
RFC1354 IP-Forwarding MIB  
RFC1493 Bridge MIB  
RFC1643 Ether-like MIB  
RFC1724 rip2 MIB  
RFC1850 OSPF MIB  
RFC 1907 SNMP v2  
RFC2011 IP/ICMP MIB  
RFC2012 TCP MIB  
RFC2013 UDP MIB  
RFC2096 ip forward mib  
RFC2233 if MIB  
RFC2452 TCP6 MIB  
RFC2454 UDP6 MIB  
RFC2465 IPv6 MIB  
RFC2466 ICMP6 MIB  
RFC2573 SnmpV3 notify  
RFC2674 Bridge MIB Extensions (IEEE802.1Q MIB)  
RFC2674 Bridge MIB Extensions (IEEE802.1P MIB)  
RFC 1757 RMON Groups 1,2,3,9  
RFC2934 PIM  
RFC 2362 PIM SM  
RFC 1112 IGMP  
RFC 2236 IGMP v2  
RFC 2138 RADIUS



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<b>DHCP</b>	DHCP Client DHCP Relay DHCP Snooping DHCP Option 82 DHCP Server for IPv4 and IPv6
<b>DNS</b>	DNS Client DNS Proxy
<b>Firmware &amp; Configuration</b>	Dual firmware images Firmware upgrade via TFTP server Multiple configuration files Configuration file upload/download via TFTP server
<b>Management Features</b>	CLI, console port(RS-232) Telnet (Ipv4/Ipv6) SSH (Ipv4/Ipv6) SSL WEB management SNMPv1/v2c/v3 MIBs (MIB-I & II) RMON (groups 1, 2, 3 and 9) Simple Network Time Protocol (SNTP) NTP Event/Error Log/Syslog sFlow
<b>NMS</b>	Strict access control by ACL Access Switch through AAA or Local Authentication SNTP for IPv4 and IPv6 NTP for IPv6
<b>Supervision and Trouble Shooting</b>	Supervise abnormality of task, memory, CPU, stack, switch chip and temperature Ping Trace route
<b>Physical Environment Requirements</b>	
<b>Power Supply</b>	AC: Input 90~260V, 50~60 Hz: DC: Input -36V~ -72V: Output 12V/25A, 5V/10A Built-in Universal Power Supplies
<b>Power Consumption</b>	700W (max)
<b>MTBF</b>	>250,000 hours
<b>Temperature</b>	IEC 68-2-14 0° to 40°(Standard Operating) -40° to 70°(Non-Operating)
<b>Humidity</b>	10% to 90% (Non-condensing)
<b>Vibration</b>	IEC 68-2-36, IEC 68-2-6
<b>Shock &amp; Drop</b>	IEC 68-2-29
<b>Drop</b>	IEC 68-2-32



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<b>EMC Certification</b>	CE Mark FCC Class A VCCI Class A
<b>Dimensions</b>	797 x 436 x 478 mm (19RU)
<b>Size</b>	Rack Mountable - 17U Size

### Ordering Information

<b>DX-0630P-AC</b>	DX - 0630P Chassis with 2 Management Module slots, 8 line card slots with Fan Module, one AC power supply included and 2 additional slots for redundant power supply modules. Management Module, Line Card Module and redundant Power Modules to be ordered separately.
<b>DX-0630P-DC</b>	DX - 0630P Chassis with 2 Management Module slots, 8 line card slots with Fan Module, one DC power supply included and 2 additional slots for redundant power supply modules. Management Module, Line Card Module and redundant Power Modules to be ordered separately.
<b>DX-0630P-XMGT</b>	Management Controller Module for DX-0630P Chassis
<b>DX-0630P-AC-PWR</b>	220V AC Power Supply Module for DX-0630P Chassis
<b>DX-0630P-DC-PWR</b>	(-48V) DC Power Supply Module for DX-0630P Chassis
<b>Line card Module for DX-0630P</b>	
<b>Dax DX-065-48GT</b>	48 # 10/100/1000 Base T Ports Module for DX-0630P
<b>DX-065-48SFP</b>	48 # Unpopulated miniGBIC SFP Slots Module for DX-0630P
<b>Dax DX-065-24GT/12SFP</b>	24 # 10/100/1000 Base T Ports and 12 # Unpopulated miniGBIC SFP Slots (Shared) Module for DX-0630P
<b>Dax DX-065-24SFP/12GT</b>	24 # Unpopulated miniGBIC SFP Slots and 12 # 10/100/1000 Base T Ports (Shared) Module for DX-0630P
<b>DX-065-2XFP-24SFP/8GT</b>	24 # Unpopulated miniGBIC SFP Slots and 8 # 10/100/1000 Base T Ports (Shared) with 2# Unpopulated 10G XFP ports Module for DX-0630P
<b>DX-065-2XFP-24GT/12SFP</b>	24 # 10/100/1000 Base T Ports and 12 # Unpopulated miniGBIC SFP Slots (Shared) with 2# Unpopulated 10G XFP ports Module for DX-0630P
<b>DX-065-2XFP-24SFP/12GT</b>	24 # Unpopulated miniGBIC SFP Slots and 12 # 10/100/1000 Base T Ports (Shared) with 2# Unpopulated 10G XFP ports Module for DX-0630P, supports MPLS



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<b>Dax DX-065-4-XFP</b>	4 # Unpopulated 10G XFP ports Module for DX-0630P
<b>Transceivers</b>	
<b>Dax DX-G-SFP-100FX-MM-1310-LC-2</b>	100FX SFP transceiver, Multi Mode, 850nm, LC connector, 2Km, Pluggable into the Gigabit SFP slots
<b>DX-G-SFP-100FX-SM-1310-LC-10</b>	100FX SFP transceiver, Single Mode, 1310nm, LC connector, 10Km, Pluggable into the Gigabit SFP slots
<b>Dax DX-MGBIC-SX-LC</b>	miniGBIC 1000SX Transceiver with LC Connector, Multimode (850nm) 550m
<b>Dax DX-MGBIC-LX-LC-10</b>	miniGBIC 1000LX Transceiver with LC Connector, Single mode (1310nm) 10Km
<b>Dax DX-MGBIC-LHX-LC-40</b>	miniGBIC 1000LH Transceiver with LC Connector, Single mode (1310nm) 40Km
<b>Dax DX-MGBIC-ZX-LC-80</b>	miniGBIC 1000ZX Transceiver with LC Connector, Single mode (1550nm) 80Km
<b>Dax DX-10G-SR-XFP-LC</b>	10G SR Transceiver with LC Connector, Multimode (850nm) 300m
<b>Dax DX-10G-LR-XFP-10-LC</b>	10G LR Transceiver with LC Connector, Single mode (1310nm),10km
<b>Dax DX-10G-ER-XFP-40-LC</b>	10G ER Transceiver with LC Connector, single mode (1550nm),40km
<b>Dax DX-10G-ER-XFP-70-LC</b>	10G ER Transceiver with LC Connector, single mode (1550nm),70km



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