

# D-Series

## Gigabit Ethernet Workgroup L2 Switch with Policy Support

### BENEFITS

#### BUSINESS ALIGNMENT

- Quiet design and flexible mounting options support evolving workgroup environments
- High-availability design with redundant power (including PoE) assures reliable network operations
- Aligns network resource utilization with business goals and priorities

#### OPERATIONAL EFFICIENCY

- Temperature-tolerant design enables quiet operation and flexible physical placement of equipment
- Role-based policies simplify addition of new users
- Centralized management reduces network operational expenses

#### SECURITY

- Integral security without performance degradation
- Network security maintained concurrently with user mobility
- Network resources securely allocated according to user operational roles

#### SUPPORT AND SERVICE

- Industry-leading customer satisfaction and first call resolution rates
- Personalized services, including site surveys, network design, installation, and training
- Lifetime warranty



- 12-port small form factor 10/100/1000 workgroup switch
- Quiet design and flexible mounting options for placement in a classroom or a conference room
- Temperature-tolerant design enables continuous operation in warm environments
- High-availability design with redundant power (including PoE) assures reliable network operations
- 24 Gbps capacity and 17.86 Mpps

### Product Overview

The Extreme Networks D2 is a high-performance Gigabit Ethernet workgroup switch with a high tolerance for environmental temperatures up to 140°F / 60°C. With fans that only operate at extreme temperatures, the D2's very quiet design makes it an ideal solution for classrooms and conference rooms, as well as warm locations with limited ventilation. By providing LEDs on the front, back, and top of the switch, the D2 offers very flexible mounting options (rack, wall, desktop, or under-tabletop), including an integral Kensington lock and an optional lock box for secure mounting.

Along with a switch capacity of 24 Gbps, the D2 provides 12 fixed 10/100/1000 Ethernet ports; two of these ports are combo ports and can be accessed via either 100Base-FX or 1 Gbps Small Form Factor Pluggable (SFP) connectors. In order to provide a reliable, high-availability network, both the standard and Power over Ethernet (PoE) D2 models support redundant, external power bricks as well as Link Aggregation Groups (LAGs) for scalable, redundant uplinks.

In conjunction with its non-blocking architecture, the D2's robust Quality of Service (QoS) features enable strong support for converged multimedia networks, including Voice over IP (VoIP), video, as well as all types of data-intensive applications. The D2's highly customizable Layer 2/3/4 packet classification capabilities together with its intelligent queuing mechanisms ensure that mission-critical applications receive prioritized access to network resources.

Making use of Extreme Networks' policy capabilities (included with every D2 after October 1st, 2011), a network administrator can define distinct roles or profiles that represent industry-specific operational groups such as a school or a business. Each defined role is granted individualized access to specific network services and applications (e.g., administrative staff, teacher, student, guest) and these access privileges remain associated with users as they move across both wired and wireless network access points. Users are authenticated via IEEE 802.1X, MAC address, or web authentication, and then assigned a pre-defined operational role ensuring that each user has access to appropriate information, thus aligning network resource utilization with business goals and priorities. In addition, administrators can easily transition from RFC 3580 and complex ACL deployments to the Extreme Networks role-based policy framework in a seamless fashion, without the need to make changes to their RADIUS infrastructure (e.g., adding filter-ID). In order to sustain a secure, feature-rich and cost-effective network well into the future, the D2 comes with a lifetime warranty.

## Features

### SECURITY

- Business-oriented, policy-based security\* by user, application, protocol, port, or VLAN
- Multiple user authentication methods via IEEE 802.1X, Web portal, and/or MAC address
- Full support, for port-based policies (PC+Phone)
- Acceptable use policy enforcement when deployed with Extreme Networks Network Management Suite (NMS)
- Rapid detection, isolation and remediation of threats when deployed with Extreme Networks NMS and Intrusion Prevention System (IPS)
  - Proactive protection services:
  - MAC address lockdown / lockout
  - Worm & virus quarantine
  - Source port pairing
  - ARP broadcast protection
  - BPDU port protection
  - DHCP service protection

### PERFORMANCE

- Aggregate capacity: D2 performs at wire speed per port and provides switching capacity up to 17.86 Mpps throughput and 24 Gbps bandwidth
- Address table size: up to 16,000 addresses are supported
- Hardware queues: 8 hardware queues per port are supported

### MANAGEMENT

- Secure management: authenticated and encrypted SNMPv3 support in addition to SSHv2, Secure Copy, Secure FTP and SSL
- Policy support: the D2 supports the creation of 100 unique policy rules and 10 unique masks per port
- Port mirroring: mirrors ingress/egress traffic from switch port(s) to a local or remote device for further traffic analysis or compliance purposes
- RMON: provides advanced monitoring and reporting capabilities for statistics, history, alarms, events, filter and packet capture. Note: packet capture is sampling only; packet capture/filter sampling is disabled by default and cannot be enabled on the same interface concurrently with port mirroring
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP): automated device discovery protocol for easy mapping by network management applications
- Alias/node table: dynamically updated local directory of attached users and devices used to locate and resolve IP addresses to MAC addresses throughout the network

### CONVERGENCE

- LLDP-MED (Media Endpoint Discovery): a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure and provision network devices such as IP phones
- IP multicast snooping (data-driven IGMP): automatically prevents flooding of IP multicast traffic

### CONNECTIVITY

- IEEE 802.3af Power over Ethernet: 100 watts of PoE power is available for distribution across all 12 10/100/1000 ports with the base PoE switch; a maximum of 15.4 W (Class 3) can be delivered to IEEE 802.3af compliant PoE powered devices such as IP phones, wireless access points, and security cameras
- PoE power management: prioritize which ports receive power and how much power each port may provide
- Jumbo frames: enables high-performance remote backup and disaster-recovery services

### HIGH AVAILABILITY

- IEEE 802.1s Multiple Spanning Tree Protocol: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1D Spanning Tree Protocol and IEEE 802.1w Rapid Spanning Tree Protocol

- IEEE 802.3ad Link Aggregation Control Protocol (LACP): support up to 6 trunks, each with up to 8 ports per trunk
- Optional external redundant power supply

## LAYER 2 SWITCHING

- IEEE 802.1q VLAN support and tagging: supports up to 1,024 VLANs simultaneously
- IEEE 802.1v protocol VLANs: isolate select non-IPv4 protocols automatically into their own VLANs
- GARP VLAN Registration Protocol: allows automatic learning and dynamic assignment of VLANs

## QUALITY OF SERVICE (QOS)

- Traffic classification at layer 2,3,4: enables packet classification and tagging at the network edge based on any of the following attributes: MAC address, physical port, IP address, IP protocol, IP ToS/DSCP, TCP/UDP port, and IP subnet
- Traffic prioritization: allows real-time traffic classification into 8 priority levels mapped to eight hardware queues. Weighted round robin (WRR) or strict priority (SP) queuing are supported which keeps low priority traffic from being completely starved of bandwidth. Support for IP Differentiated Services Code Point (DSCP) enables the D2 to enforce requested service levels

## Standards and Protocols

### SWITCHING SERVICES

IEEE 802.1AB - LLDP  
 ANSI/TIA-1057 - LLDP-MED  
 IEEE 802.1D - MAC Bridges  
 IEEE 802.1AB - LLDP  
 ANSI/TIA -1057 - LLDP-MED  
 IEEE 802.1s - Multiple Spanning Trees  
 IEEE 802.1t - 802.1D Maintenance  
 IEEE 802.1w - Rapid Spanning Tree Reconvergence  
 IEEE 802.3 - Ethernet  
 IEEE 802.3ab - GE over Twisted Pair  
 IEEE 802.3ad - Link Aggregation  
 IEEE 802.3af - PoE  
 IEEE 802.3i - 10Base-T  
 IEEE 802.3u - 100Base-T, 100Base-FX  
 IEEE 802.3z - GE over Fiber  
 Full/half duplex auto-sense support on all ports  
 IGMP Snooping v1/v2/v3  
 IP Helper Address  
 Jumbo Frame support (9,216 bytes)  
 Loop Protection  
 One-to-One and Many-to-One Port Mirroring

Port Description  
 Protected Ports  
 Per-port Broadcast/Multicast/Unknown Unicast Suppression  
 Spanning Tree Backup Root  
 STP Pass Thru

### VLAN SUPPORT

Generic Attribute Registration Protocol (GARP)  
 Generic VLAN Registration Protocol (GVRP)  
 IEEE 802.1p - Traffic classification  
 IEEE 802.1Q - VLAN Tagging  
 Protocol-based VLANs with Extreme Networks Policy  
 IEEE 802.3ac - VLAN Tagging Extensions  
 Port-based VLAN Port (private port/private VLAN)  
 Tagged-based VLAN  
 VLAN Marking of Mirror Traffic

### QUALITY OF SERVICE

8 Priority Queues per Port  
 802.3x Flow Control  
 IP DSCP - Differentiated Services Code Point  
 IP Precedence  
 IP Protocol  
 Queuing Control - Strict and Weighted Round Robin  
 Source/Destination IP Address  
 Source/Destination MAC Address

### SECURITY

ARP Spoof Protection  
 DHCP Spoof Protection  
 Dynamic and Static MAC Locking  
 EAP Pass Thru  
 IEEE 802.1X Port Authentication  
 MAC-based Port Authentication  
 RADIUS Accounting for MAC Authentication  
 RADIUS Client  
 RFC 3580 - IEEE 802.1X RADIUS Usage Guidelines  
 Multi-user Authentication per Gigabit port  
 Password Protection (encryption)  
 Secure Networks Policy License  
 Secured Shell (SSHv2)  
 Secured Socket Layer (SSL)  
 User and IP Phone Authentication  
 Web-based Port Authentication

### RFC AND MIB SUPPORT

Enterasys Networks Entity MIB  
 Enterasys Networks Policy MIB  
 Enterasys Networks VLAN Authorization MIB  
 ANSI/TIA-1057 - LLDP-MED MIB  
 IEEE 802.1AB - LLDP MIB

IEEE 802.1X MIB - Port Access  
IEEE 802.3ad MIB - LAG MIB  
RFC 826 - ARP and ARP Redirect  
RFC 951, RFC 1542 - DHCP/BOOTP Relay  
RFC 1213 - MIB/MIB II  
RFC 1493 - BRIDGE-MIB  
RFC 1643 - Ethernet-like MIB  
RFC 2131, RFC 3046 - DHCP Client/Relay  
RFC 2233 - IF-MIB  
RFC 2271 - SNMP Framework MIB  
RFC 2465 - IPv6 MIB  
RFC 2466 - ICMPv6 MIB  
RFC 2618 - RADIUS Authentication Client MIB  
RFC 2620 - RADIUS Accounting Client MIB  
RFC 2668 - Managed Object Definitions for 802.3 MAUs  
RFC 2674 - P-BRIDGE-MIB  
RFC 2674 - QBRIDGE-MIB VLAN Bridge MIB  
RFC 2737 - Entity MIB (physical branch only)  
RFC 2819 - RMON-MIB  
RFC 2933 - IGMP MIB  
RFC 3289 - DiffServ MIB  
RFC 3413 - SNMPv3 Applications MIB  
RFC 3414 - SNMPv3 User-based Security Module (USM) MIB  
RFC 3415 - View-based Access Control Model for SNMP  
RFC 3584 - SNMP Community MIB  
RFC 3621 - Power over Ethernet MIB

RFC 792 - ICMP  
RFC 793 - TCP  
RFC 826 - ARP  
RFC 854 - Telnet  
RFC 951 - BootP  
RFC 1157 - SNMP  
RFC 1901 - Community-based SNMPv2  
RFC 2271 - SNMP Framework MIB  
RFC 3164 - The BSD Syslog Protocol  
RFC 3413 - SNMPv3 Applications  
RFC 3414 - User-based Security Model for SNMPv3  
RFC 3415 - View-based Access Control Model for SNMP  
RFC 3826 - Advanced Encryption System (AES) for SNMP  
RMON (Stats, History, Alarms, Events, Filters, Packet Capture)  
Secure Copy  
Secure FTP  
Simple Network Management Protocol (SNMP) v1/v2c/v3  
Simple Network Time Protocol (SNTP)  
SSH v2  
Syslog  
TACACS+ for Management Authentication, Authorization and Auditing  
Text-based Configuration Upload/Download  
Web-based Management  
Webview via SSL Interface

## MANAGEMENT

Alias Port Naming  
Command Line Interface  
Configuration Upload/Download  
Editable Configuration File  
TFTP client  
Multi-configuration File Support  
NMS Automated Security Manager  
NMS Console  
NMS Inventory Manager  
NMS Policy Manager  
Node/Alias Table  
RFC 768 - UDP  
RFC 783 - TFTP  
RFC 791 - IP

# Specifications

	D2G124-12	D2G124-12P
Description	12-port 10/100/1000 switch with 2 SFP combo ports and power brick	12-port 10/100/1000 PoE switch with 2 SFP combo ports and 130 watt power brick
Port	12 fixed RJ-45 10/100/1000 ports (Type 10Base-T, Type 100Base-TX, Type 1000Base-T)	12 fixed PoE RJ-45 10/100/1000 ports (Type 10Base-T, Type 100Base-TX, Type 1000Base-T)
	2 combo SFP GBIC ports (a total of 12 of the 14 front panel ports can be active at one time)	2 combo SFP GBIC ports (a total of 12 of the 14 front panel ports can be active at one time)
Power Supplies	The switch supports redundant power feeds so 2 power "bricks" can be used in cases where redundancy is required. See Accessories for additional power bricks.	The switch supports redundant power feeds so 2 power "bricks" can be used in cases where redundancy is required. See Accessories for additional power bricks.
Form Factor	Fixed standalone. Two D2s side by side can be mounted in a 19 inch rack.	Fixed standalone. Two D2s side by side can be mounted in a 19 inch rack.
Memory and Processor	256 MB RAM 32 MB flash memory	256 MB RAM 32 MB flash memory
<b>PERFORMANCE</b>		
Throughput	17.86 Mpps	17.86 Mpps
Switching capacity	24.0 Gbps	24.0 Gbps
<b>ELECTRICAL</b>		
PoE power per port (watts)	NA	At 40° C or less, an average of 8.3 W per port. Up to 15.4 W for Class 3 support on any port up to a system maximum of 100 watts of PoE power. Total system PoE power decreases 2.16 W per ° C increase over 40° C.
IEEE 802.3af Compliant	NA	Yes
Management	NMS Policy Manager, Automated Security Manager (additional license), command line interface, web browser	NMS Policy Manager, Automated Security Manager (additional license), command line interface, web browser
<b>PHYSICAL SPECS</b>		
Dimensions (HxWxD)	1.60x8.25x8.50 in / 4.06x20.9x21.5 cm	1.60x8.25x8.50 in / 4.06x20.9x21.5 cm
Net Weight (g/lb)	3.65 lb / 1.66 kg	4.02 lb / 1.82 kg
MTBF (Hrs)	105,347	82,532
Thermal Output (BTUs/Hr)	86.35 (BTUs/Hr)	107.5 (BTUs/Hr)
<b>ENVIRONMENTAL SPECIFICATIONS</b>		
Power Requirements		
Input Voltage	100-240 VAC	100-240 VAC
Input Frequency	50-60 Hz	50-60 Hz
Input Current	2.0 A	3.2 A
Power Consumption (watts)	25 W	31.5 W
<b>TEMPERATURE</b>		
Operating Temperature (C/F)	0-60° C / 32-140° F	0-50° C / 32-122° F
Non-Operating/Storage Temperature (C/F)	-40-70° C / -40-158° F	-40-70° C / -40-158° F
<b>HUMIDITY</b>		
Operating Humidity	5%-95% non-condensing	5%-95% non-condensing
<b>AGENCY &amp; STANDARDS SPECIFICATIONS</b>		
Standard Safety (UL)	UL/CB/LVD	UL/CB/LVD
<b>ELECTROMAGNETIC COMPATIBILITY</b>		
Standard EMC	CE / FCC Class A / VCCI / C-Tick /BSMI	CE / FCC Class A / VCCI / C-Tick /BSMI
<b>VIBRATION</b>		
Non-Operational Shock and Drop	ISTA 2A	ISTA 2A

# Redundant Power Supply Equipment Specifications

## D2-PWR

### Dimensions (L x W x H)

16.9 cm (6.65") x 6.5 cm (2.56") x 3.75 cm (1.48")

### AC Input Frequency Range

50 - 60 Hz

### AC Input Voltage Range

100 - 240 VAC

### Output Voltage

19 V 6.32 A

### Net Weight (Unit Only)

0.84 kgs (1.85 lbs)

### MTBF

60,000 hours at 25° C (77° F)

### Operating Temperature

0° C to 40° C (32° F to 104° F)

### Storage Temperature

-40° C to 70° C (-40° F to 158° F)

### Operating Relative Humidity

20% to 80%

### AC Input Frequency Range

47 - 63 Hz

### AC Input Voltage Range

100 - 240 VAC

### Maximum Output Power

120 W continuous

### Power Consumption

7.3 W

### Thermal Output

24.88 BTUs/Hr

## D2-PWR-POE

### Dimensions (L x W x H)

19.6 cm (7.72") x 8.8 cm (3.46") x 5.1 cm (2.01")

### AC Input Frequency Range

50 - 60 Hz

### AC Input Voltage Range

100 - 240 VAC

### Output Voltage

50 V 2.6 A max

### Net Weight (Unit Only)

.75 - .916 kgs (1.65 - 2.02 lbs)

### MTBF

195,130 hours at 25° C (77° F)

### Operating Temperature

0° C to 70° C (32° F to 158° F)

### Storage Temperature

-45° C to 85° C (-49° F to 185° F)

### Operating Relative Humidity

5% to 95%

### Maximum Output Power

130 W continuous

### Power Consumption

14.5 W

### Thermal Output

49.48 BTUs/Hr

# Mounting Boxes Specifications

## D2-LOCKBOX

### Dimensions (L x W x H)

39.1 cm (15.375") x 37.7 cm (14.850") x 5.9 cm (2.313")

## D2-RMT

### Dimensions (L x W x H)

46.0 cm (18.110") x 44.1 cm (17.362") x 4.4 cm (1.732") (the width does not include the rack ears, +2.0 cm (+0.776") each side)

## D2-TBL-MNT

### Dimensions (L x W x H)

21.6 cm (8.504") x 37.0 cm (14.567") x 10.5 cm (4.130") (the width does not include the mounting tabs, +2.3 cm (+0.905") each side)

## D2-WALL-MNT

### Dimensions (L x W x H)

21.7 cm (8.560") x 21.0 cm (8.250") x 5.9 cm (2.310") (the width does not include the mounting tabs, +1.6 cm (+0.638") each side)

## Ordering Information

PART NUMBER	DESCRIPTION
<b>D2</b>	
D2G124-12	12-port 10/100/1000 policy-enabled switch with 2 SFP combo ports and power brick
D2G124-12P	12-port 10/100/1000 PoE policy-enabled switch with 2 SFP combo ports and PoE power brick
<b>SOFTWARE LICENSES</b>	
D2POL-LIC	Optional D2 Policy License for D2s purchased prior to October 1st, 2011
<b>CABLES</b>	
D2-PWR	External redundant Power Brick for non-PoE switch
D2-PWR-POE	External redundant Power Brick for PoE switch (130 Watt)
D2-COVER-W	White D2 switch enclosure
<b>CABLES</b>	
D2-LOCKBOX	Metal Lockbox for D2
D2-RMT	Rack Mount Kit for D2
D2-TBL-MNT	Under Table Mount Kit for D2
D2-WALL-MNT	Wall Mount Kit for D2
<b>POWER CORDS</b>	
In support of its expanding Green initiatives as of July 1st 2014, Extreme Networks will no longer ship power cords with products. Power cords can be ordered separately but need to be specified at the time order. Please refer to <a href="http://www.extremenetworks.com/product/powercords/">www.extremenetworks.com/product/powercords/</a> for details on power cord availability for this product.	

## Transceivers

Extreme Networks transceivers provide connectivity options for Ethernet over twisted pair copper and fiber optic cables with transmission speeds from 100 Megabits per second to 10 Gigabits per second. All Extreme Networks transceivers meet the highest quality for extended life cycle and the best possible return on investment.

For detailed specifications, compatibility and ordering information please go to:

<http://www.extremenetworks.com/products/transceivers-ds.pdf>

## Warranty

As a customer-centric company, Extreme Networks is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or media replaced as soon as possible. The Extreme Networks D2 comes with a lifetime warranty against manufacturing defects.

For full warranty terms and conditions please go to:

<http://www.extremenetworks.com/support/warranty.aspx>

## Service and Support

Extreme Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Extreme Networks account executive for more information about Extreme Networks Service and Support.



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