

## PRODUCT OVERVIEW



# LN-2316-SERIES

## Highlights

- ▶ Proactive Threat Defense with Real-Time DoS Mitigation and IP Integrity Protection
- ▶ Seamless Stack Management: Control Up to 8 Switches as One, with Zero Overhead
- ▶ Optimized Voice VLAN with Intelligent QoS for Lag-Free VoIP Performance
- ▶ Advanced QinQ Stacking for Multi-Tenant Networks and Seamless VLAN Isolation
- ▶ Hardened Secure Control Technology for Uninterrupted Administration Under Attack
- ▶ All Models Can Support Layer 3 if Necessary
- ▶ PoE Budget Can Be Adjusted According to Client Requirements
- ▶ Ability to Modify the Number and Types of Ports
- ▶ Supports PoE+ or PoE++ Ports
- ▶ Design can be Modified to Include a Removable Power Supply Unit
- ▶ Removable Fans can be Added (Where Applicable)



## HARDWARE SPECIFICATIONS

	1G RJ45 Downlinks	1G Combo Downlinks	10G SFP+ Uplinks	PoE	2 Hot swap PSU	Marvell Chipset
LN-2316G-4XGF	16	-	4	-	-	98DX223S
LN-2316GP-4XGF	16	-	4	400W	-	98DX223S
LN-2316GP-2XGF	16	-	2	400W	-	98DX223S
LN-2316XF8C-4XGF	16	8	4	-	-	98DX223S
LN-2416XF8C-4XGF-HSP	16	8	4	-	+	98DX336S

### Hardware

Marvell Chipset	98DX223S/ 98DX336S
MTBF	100,000h
Case	440x245x44mm (LxDxH)
Weight	2.8KG (16x1G + 4xSFP/SFP+), 3.5KG (16x1G + 4xSFP/SFP+ w/16xPOE+)

### Environment

Operating temperature	-5°C (23°F) to 65°C (149°F)
Humidity	5% ~ 95% non-condensing

### Capacity

Switching capacity	88 Gbps (for models LN-2316G-4XGF and LN-2316GP-4XGF); 72 Gbps (for model LN-2316GP-2XGF); 128 Gbps (for models LN-2316XF8C-4XGF and LN-2416XF8C-4XGF-HSP)
Forwarding rate	65.47 Mpps (for models LN-2316G-4XGF and LN-2316GP-4XGF); 53.57 Mpps (for model LN-2316GP-2XGF); 95.23 Mpps (for models LN-2316XF8C-4XGF and LN-2416XF8C-4XGF-HSP)
MAC address table	Max 16k
Packet buffer size	3 MB
Active VLANs support	4096
Maximum jumbo frame size	9,216 bytes

## SOFTWARE FEATURES

### Quality of Service

DiffServ (Differentiated services)	Strict priority support
Priority queue	Traffic shaping/policing
ACL mapping to priority queue	WRR support
Flow mirror, 802.1p Support	SP+WRR
Flow redirection	Rate limiting (Based on per port and per queue)
Single Rate Three Color Marker (srTCM)	Class map defines traffic flow with ACLs or support for network traffic management
Two Rate Three Color Marker (trTCM)	Policy map & route MAP to define the action for a set of classified inbound traffic
QoS based on classification (Based on IP, MAC and VLAN)	

### Security

RADIUS, TACACS+	Downloadable ACL
Port security	Dynamic ACL
DHCP Snooping	Role based access control
AAA (Authentication, Authorization, and Accounting)	802.1x authentication (Port Based, MAC Based, Web Based)
ACL (Based On IP, Port, Protocol, MAC, Time Based)	Management ACL
IP source guard	DoS prevention
Protected port	Secure copy (SCP)
ARP inspection (DAI & SAI)	Kerberos
SSL	

### Multicast

Internet Group Management Protocol -IGMP v1/v2/v3	Multicast Listener Discovery- MLD v1/V2
IGMP snooping	MLD snooping
PIM-SM/SSM	Multicast TV VLAN
PIM-SMv6	MVR (Multicast VLAN registration)



## SOFTWARE FEATURES

### Layer 2

Port Tagging/untagged	BPDU guard
MAC based VLANs	GVRP
Private VLAN	LLDP/LLDP MED
Subnet based VLAN	RADIUS assigned VLAN
Auto MDI/MDIX	Link aggregation (Ether Channel)
Loopback detection	Link Aggregation Control Protocol (LACP)
Port isolation	Port mirroring (Port, ACL, VLAN Based)
Root guard	Default VLAN
Guest VLAN	Auto voice VLAN
Energy Efficient Ethernet (EEE)	Green Ethernet
Link flapping detection	Flow control
STP/RSTP/MSTP	Native VLAN
QinQ (802.1Q)	Loop guard

### Layer 3

IPv4 and IPv6 dual stack	IPv6 prefix list
Intra-Site Automatic Tunnel Addressing Protocol (ISATAP)	IP source guard
Policy Based Routing (PBR)	DHCP server
ARP, Gratuitous ARP	DHCP relay
DHCP Client	IPv6 NDRA (Neighbor Discovery Router Advertisement)
ICMP redirect & ICMP unreachable	Duplicate Address Detection (DAD)
IPv6 SLAAC (Stateless Address Auto configuration)	IPv6 ND
ARP-Proxy	DHCP Option 82, 66, 67

### Layer 3 Routing

Static routing (IPv4, IPv6)	Inter-VLAN routing
Routing Information Protocol, version 2 (RIPv2)	OSPFv2/v3 (Open Shortest Path First)

### High Availability

Stacking (Up-to 8 members)	Ring Redundancy Protocol (RRP)
Equal-Cost Multi Path (ECMP)	Virtual Router Redundancy Protocol (VRRP)
Storm control (Broadcast, Multicast, Unicast)	

## SOFTWARE FEATURES

### Management

Local GUI	Management: RUDDER (Controller)/Standalone
Industrial standard CLI	SPAN/RSPAN
Telnet support	SSHv1/v2
Storage & File management with USB	Firmware auto install support
TFTP support	Syslog server
SNMP v1/v2c/v3	RMON (All 4 Groups 1,2,3,9)

### Standard Compliance

#### *IEEE Standards Compliance*

802.1AB LLDP/ LLDP-MED	802.3ae 10 gigabit Ethernet
802.1D MAC bridging	802.3at power over Ethernet Plus
802.1p Mapping to priority queue	802.3u 100Base-TX
802.1s Multiple Spanning Tree (MST)	802.3x flow control
802.1w Rapid Reconfiguration of Spanning Tree (RSTP)	802.3z 1000Base-SX/LX
802.1x Port-based Network Access Control (PNAC)	802.3 MAU MIB (RFC 2239)
802.3 Carrier Sense Multiple Access/Collision Detection(CSMA/CD)	802.1Q VLAN tagging
802.3ab 1000Base-T	802.3az Energy Efficient Ethernet
802.3 10Base-T	802.3af Power over Ethernet
802.3ad link aggregation (Dynamic and Static)	

### Monitoring and Troubleshooting

Errdisable detection and recovery	CPU Utilization
Device temp/PSU/FAN/status display & alarm	User operation logs
Virtual cable test	Management logs, alarms
ICMPv4/v6	DDM (Digital Diagnostic Monitoring)
Traceroute	UDLD (Unidirectional Link Detection)

### Packaging Content

Switch with type D power cord with rack mounting kit





**LN-2316-SERIES**

## CERTIFICATION & COMPLIANCES

### Regulatory

FCC

BIS

TEC

### Environmental

RoHS

CE





**LN-2316-SERIES**

## ORDERING INFORMATION

Models	Description
LN-2316G-4XGF	Campus Switch L2, 16×1G ETH+ 4×10G, no PoE
LN-2316GP-4XGF	Campus Switch L2, 16×1G ETH+ 4×10G, PoE+ 400W
LN-2316GP-2XGF	Campus Switch L2, 16×1G+2×10G, PoE+ 400w USB, OOB
LN-2316XF8C-4XGF	Campus Switch L2, 16×1G SFP + 8×1G SFP/RJ45 COMBO + 4×10G
LN-2416XF8C-4XGF-HSP	Campus Switch L3, 16×1G SFP + 8×1G SFP/RJ45 COMBO + 4×10G Hot-swappable 2PSU, AC+AC

*In all configurations: USB, OOB, and Console.*

All switches include a 1-year HW Warranty.

