Matrix™ N Standalone Switch

- High-performance premium, standalone edge switch
- Fully integrated advanced switching and routing
- Optimized for high-availability services and maximum uptime
- Enables premium Secure Networks features in smaller network environments
- Delivers advanced policy, QoS and flow-based switching

- **High-performance integrated switching and routing**
  - Switching/routing performance: 13.5 Mpps
  - Switching capacity: 18 Gbps
  - Supports more high-bandwidth and latency-sensitive applications
- **Advanced security features**
  - 802.1x, PWA, and MAC-based authentication
  - Dynamic and static policy
  - Multi-user per port policy
  - Multiple authentication types per port
- **Key enabler of Secure Networks solutions**
  - Acceptable Use Policy
  - Secure Application Provisioning
  - Dynamic Intrusion Response
  - Trusted End System
- **Flow-based switching and multilayer packet classification**
  - Enables business-critical application transport, security and user personalization
  - Tunes the network to business drivers; makes the network more efficient
- **Premium software features throughout the network infrastructure**
  - Supports the same functionality as Matrix N-Series chassis
  - Decreases costs by simplifying configuration, maintenance, and support

A Premium Standalone Enterprise Switch

Ideal for edge applications in smaller wiring closets, the Matrix N Standalone delivers the same premium switch and routing functionality found in the Matrix N3, N5, and N7 chassis in a smaller, integrated high-performance switch. Designed to complement an existing network of Matrix N-Series switches, the Matrix N Standalone provides unparalleled switching functionality and security capabilities.

The Matrix N Standalone leverages Enterasys' advanced nTERA™ ASICs and delivers high performance and flexibility to ensure comprehensive switching, routing, Quality of Service, security and traffic containment unmatched by competitive solutions.

Integrated Services Design with Flow Based Switching

The industry's first Integrated Services Design enables every Matrix N Standalone to deliver:

- Switching/VLAN Services
- IP Routing
- Advanced Multilayer Packet Classification (including Port-Based and User-Based)
- Security (User, Host, Network)
- Management, Control and Analysis

This integrated functionality is provided in a single system and is the same premium software feature set found on chassis-based Matrix N-Series systems.

Flow-based switching allows communication flows to be established between two end points in the switch, which provides a very granular level of control in the system while enabling the switch to handle a large volume of traffic. Benefits of a flow-based switching architecture are increased security protection in case of unwanted attacks on the network and increased Quality of Service for mission-critical traffic types.

Advanced Switching Services, VLANs and Quality of Service

All Matrix N-Series switches, including the Matrix N Standalone, support standards-based switching. IEEE standards such as 802.1D (Mac Bridges), 802.3x (Flow Control), 802.1p (Traffic Prioritization), 802.1s (Multiple Spanning Tree), 802.1w (Rapid Reconvergence), and 802.3ad (Link Aggregation) are all fully supported.

The Matrix N Standalone provides extensive VLAN support including a wide range of VLAN and classification capabilities. These include Layer 2, Layer 3, and Layer 4 classification and industry-standard 802.1q (Tagging VLAN) support. Up to 4,096 VLANS are supported on each Matrix N Standalone switch.

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Networks that Know

Broad support for Quality of Service allows granular control of a variety of traffic types including Voice over IP, real-time and non-real-time video, and data-intensive applications. Extensive classification capabilities combined with network-wide policies allow the Matrix N Standalone to rate limit traffic flows granularly. Both Weighted Round Robin, which keeps low priority traffic from being completely starved of bandwidth, and Strict Priority Queuing is supported. Support for the IP Differentiated Services Code Point (DSCP) enables the switches to enforce requested service levels.

Extensive Security Support

With the Matrix N Standalone switch, the network is protected at the first point of entry where users access the network. Authentication and security of end-user ports can be managed at the individual port or individual user granularity level. Matrix N Standalone switches support user authentication via IEEE 802.1x, access control lists, VLANs, RADIUS, MAC and Web-based (PWA) authentication. Multi-user authentication and multiple authentication types per port are both supported on the Matrix N Standalone switch.

A Key Enabler of Secure Networks

The Matrix N Standalone supports enhanced security that goes beyond traditional perimeter security and access control. Secure Networks integrates advanced security and management features to centralize and automate granular control of the entire network infrastructure. Working in conjunction with NetSight™ Policy Manager, NetSight Automated Security Manager, and Dragon™ Intrusion Defense Systems, the Matrix N Standalone switch is a key enabler of Secure Networks. Flexible, dynamic policy capability and Flow Setup Throttling in the Matrix N Standalone switch enable network managers to support Acceptable Use Policy, Secure Application Provisioning, Secure Guest Access, Dynamic Intrusion Response, Single Sign-On, and Trusted End System Secure Networks solutions.

Connectivity, Performance, and Availability

The Matrix N Standalone supports 48 10/100/1000Base-TX ports and four 1000Base-X ports via mini-GBICs. Mini-GBICs that support both multimode and single mode fiber over long- or short-haul fibers are available. The high-performance architecture of the Matrix N Standalone supports throughput of 13.5 Mpps, ensuring no degradation of performance as new users connect to the network.

Engineered for high availability, the Matrix N Standalone comes standard with two redundant power supplies, allowing the switch to failover seamlessly to the redundant power supply in case of a failure.

Embedded Services

Multilayer Packet Processing
Multi-stage Packet Classification
IP TOS Re-write
VLAN/Priority Tag Re-Write

Switching/VLAN Services
Generic VLAN Registration Protocol 802.1Q VLANs
802.1D MAC Bridges
802.1w Rapid-reconvergence of Spanning Tree
802.1s Multiple Spanning Tree
802.3ad Link Aggregation
Broadcast Suppression
802.3ae Gigabit Ethernet
802.3x Flow Control
SMON Port Redirect
SMON VLAN Redirect
IDS Redirect
IP Multicast (IGMP support v1, v2, querier)
Jumbo Packet with MTU Discovery Support for Gigabit
Ethernet ports
Flow Set-Up Throttling
VLAN-to-policy mapping
Automatic port disabling
Span Guard

IP Routing
Basic IP Routing Package: Part of Enterasys
Operating System (EOS) and included in all base DFEs.
Static Routes
RIPv1/v2
RIP Equal Cost Multipath (ECMP)
IGMPv1/IGMPv2
ICMP
Virtual Router Redundancy Protocol (VRRP)
ACL Basic
DHCP Server/Relay
Extended IP Routing Package:
A software upgrade (N-EOS-L3)
sold on a per-chassis basis.
OSPF with Multipath Support
DVMRP
Extended ACLs
PIM-SM
LS-NAT policy-based routing

Security (User, Network and Host)
Telnet (Inbound/Outbound)
Secured Shell (SSHv2) (switch interface only)
Syslog
802.1X Port-Based Network Access Control (Single User)
Web-based authentication
MAC-based authentication
Multiple authentication types (802.1X, MAC address,
web) per port

Management, Control and Analysis
SNMP v1/v2c/v3
Web Support
CLI Support
Single IP
Multi-image Support
Multiconfiguration File Support
Editable Configuration File
Configuration Upload/Download
DHCP Client
FTP Client
RADIUS Client Support with PAP and CHAP
Entity MIB
COM Port Boot Prom Download via ZMODEM
RMON (rfc2819) Stats, History, Alarms, Events
High-Capacity RMON (64-bit counters)
SMON (rfc2613) VLAN and Priority Stats
Simple Network Time Protocol (SNTP)
Trace Route
Dynamic Egress
Inbound Rate Policing
Inbound Rate Policing
Outbound Rate Shaping
Node and Alias Table
Cabletron Discovery Protocol (CDP)
Port-Based MAC Locking
Access Control Lists

Network Management
NetSight Console
NetSight Policy Manager
NetSight Inventory Manager
NetSight Automated Security Manager

Performance/Capacity

Address Table Size
64k MAC Addresses

Throughput Capacity
18 Gbps

Switching Performance
13.5 Mpps (measured in 64-byte packets)

VLANs Supported
4,094

10/100 Priority Queues
4

GbE Priority Queues
8

Classification Rules
64k

Specifications

Physical Specifications

Dimensions
8.51 cm (3.35") H x 44.45 cm (17.5") W x 47.90 cm (18.86") D

Weight
13.38 kg (29.5 lbs), gross shipping; 13.15 kg (29 lbs), net

Rack Mounting and Unit Height
19"
2RU

Environmental

Operating Temperature
5° C to 40° C (41° F to 104° F)

Storage Temperature
-30°C to 73°C (-22°F to 164°F)

Operating Relative Humidity
5% to 95% (non-condensing)

Processors/Memory
Processor: MPC750CX, 400 MHz processor
Dynamic Random Access Memory: 128 MB
FLASH Memory: 32 MB

Power
Power Supply Redundancy: 1+1 (Standard)
Power Supply Wattage: 250 Watts per supply
Input Frequency: 47 to 63 Hz
Input Voltage Range: 90 to 264VAC
Input Current: 1.8 Arms, 90 VAC at full load

Agency and Standards Specifications

Safety
UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, IEC 60950, EN 60825, 2 CFR 1040.10

Electromagnetic Compatibility
47 CFR Parts 2 & 15, CSA C108.8, 89/336/EEC, EN 55022, 61000-3-2, 61000-3-3 and 55024, AS/NZS CISPR 22, VCCI V-3

MTBF (Predicted)
Matrix N Standalone: > 200,000 hours

IEEE Standards
IEEE 802.3
IEEE 802.1D
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w
IEEE 802.1s
IEEE 802.1X
IEEE 802.3ad

Ordering Information

2G4072-52
Matrix N Standalone switch with 48-port 10/100/1000Base-TX ports via RJ45 and four 1000Base-X ports via mini-GBIC (includes two redundant internal power supplies)

N-EOS-L3
Enterasys Operating System (EOS) Layer 3 routing package for Matrix N-Series switches

DFE-256MB-UGK
256 MB Dimm memory module (required for LS-NAT and PIM-SM)

Mini-GBIC Modules

MGBIC-LC01
Mini-GBIC with 1000Base-SX port via LC connector

MGBIC-LC03
Mini-GBIC with 1000Base-LX/LH (long-haul 2 km) over multimode fiber via LC connector

MGBIC-LC09
Mini-GBIC with 1000Base-LX port via LC connector

MGBIC-MT01
Mini-GBIC with 1000Base-SX port via MTRJ connector

MGBIC-02
Mini-GBIC with 1000Base-TX port via RJ45 connector

MGBIC-08
Mini-GBIC with 1000Base-ELX (long-haul 70 km) port via MTRJ connector

Note: Matrix N Standalone switches ship with Enterasys' Operating System (EOS), which includes the features described in this data sheet. The only exception is the advanced routing features that are provided through a software license (Part No. N-EOS-L3).

Warranty

As a customer-centric company, Enterasys is committed to providing the best possible workmanship and design in our product set. In the event that one of our products fails due to a defect in one of these factors, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired as soon as possible.

Service and Support

Enterasys understands that superior service and support is a critical component of *Networks that Know.*™ The Enterasys **SupportNet Portfolio**—a suite of innovative and flexible service and support offerings—completes the Enterasys solution. SupportNet offers all the post-implementation support services you need—online, onsite or over the phone—to maintain your network availability and performance.

Additional Information

For additional information on the Matrix N Standalone and other Matrix switching products, please visit the web at **enterasys.com/products/switching/**

Contact Information

Contact Enterasys Sales at **877-801-7082** or **enterasys.com/corporate/contact/contact-sales.html**

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