

Enterasys Matrix® N-Series Gold DFE

Secure, Highly-Available Policy-based 10GbE Modular L2/L3/L4 Edge to Data Center Core Flow Switch



High-density, cost effective 10/100, 10/100/1000, 100FX and Power-over-Ethernet Modules

Optimized for enterprise edge network deployments

Multiple authentication techniques enable user/device-aware networking

Enables simplified network design to reduce maintenance & service costs

Backplane architecture provides a total of 1.68 Terabits per second of switching capacity

Product Overview

Optimized for the network edge, the Gold Distributed Forwarding Engine (DFE) modules for the Matrix® N-Series are designed specifically for high-density 10/100, 10/100/1000 and 100FX network edge applications. These DFEs provide a very cost-effective and flexible option for customers deploying switching at the edge of the network.

Gold DFEs deliver scalable performance and flexibility to ensure comprehensive switching, routing, Quality of Service, security, and traffic containment unmatched by competitive solutions.

Gold DFEs are supported in the Matrix N1, N3, N5 and N7 platforms for guaranteed investment protection across the entire series. Through a flexible, optional license upgrade, these modules support 1+1 redundancy and advanced routing for mission-critical network applications.

Module Configurations

The Gold DFEs provide flexibility with a variety of port-density and technology options for the edge:

- Up to 48 ports of 100Base-FX via MT-RJ
- Up to 72 ports of 10/100Base-TX via RJ45
- Up to 48 ports of PoE 10/100Base-TX via RJ45
- Up to 72 ports of 10/100Base-TX via RJ21
- Up to 72 ports of 10/100/1000Base-T via RJ45
- Up to 72 ports of PoE 10/100/1000Base-T via RJ45

All modules can be installed in any Matrix N-Series chassis-based solution.

Benefits

Business Alignment

- Open convergence support for voice, video and data networks enable automatic discovery, classification and prioritization
- Cost effective high density 10/100, 10/100/1000 and 100FX provide dedicated, scalable edge connectivity
- Choice of high availability implementations align with enterprise edge network configuration requirements

Operational Efficiency

- Integrated services design reduces the number and type of modules required to build typical wiring closet configurations and simplifies network design
- Common chassis, management and baseline features simplify network configuration and support
- Multiple chassis footprints enable “pay as you grow” connectivity, lowering entry and support costs

Security

- Static and dynamic policy rules intelligently sense and automatically respond to network security threats
- Multi-user, multi-method authentication on every port supports all device types connecting at the edge of the network
- Firewall-like control on every port in the infrastructure, enabling pervasive network wide perimeter security

Support and Services

- Industry leading customer satisfaction and first call resolution rates
- Personalized services

**There is nothing more important
than our customers.**

Features

Scalable Edge Connectivity

The Gold DFE dramatically increases the edge density for 10/100 and 10/100/1000 connectivity with the highest module density in the industry. This not only provides extensive scalability, but also optimizes the cost-effectiveness of the Matrix N-Series.

Density and Performance

The Matrix N-Series provides high performance and high density:

Gold DFE	Matrix N1	Matrix N3	Matrix N5	Matrix N7
Performance (Mpps)	6.5 Mpps	19.5 Mpps	32.5 Mpps	45.5 Mpps
Capacity	4.5 Gbps	13.5 Gbps	22.5 Gbps	31.5 Gbps
10/100 Base-TX Ports	72	216	360	504
100 Base-FX Ports	54	162	270	378
10/100/1000 Base-TX Ports	72	216	360	504
10/100/100 Base-TX Ports with PoE	72	216	360	504
1000 Base-X Ports	6	18	30	42

Common Enterasys Switching, Routing and Management

As part of the Matrix N-Series family, GOLD DFEs offer a consistent feature set and management functionality. This reduces implementation and management costs of an end-to-end Enterasys network.

Performance/Capacity

Switching Fabric Bandwidth Capacity

9.0 Gbps per DFE

Switching Throughput

6.5 Mpps (measured in 64-byte packets)

Routing Throughput

6.5 Mpps (measured in 64-byte packets)

Address Table Size

32k MAC Addresses

VLANs Supported

4,094

Transmit Queues

4

Classification Rules

6K/chassis

Memory

Main Memory: 128, Mb, expandable to 256 Mb

Flash Memory: 32 Mb, expandable to 64 Mb

Standards and Protocols

Switching/VLAN Services

Generic VLAN Registration Protocol (GVRP)
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
802.3x Flow Control
IDS Redirect
IGMP v1/v2
Jumbo Packet with MTU Discovery Support for Gigabit Ethernet ports
Flow Set-Up Throttling
SPAN Guard

IP Routing

Basic IP Routing Package: Part of Enterasys Operating System (EOS) and included in all Gold DFEs

Static Routes
RIPv1/v2
RIP Equal Cost Multipath (ECMP)
IGMPv1/IGMPv2
ICMP
Virtual Router Redundancy Protocol (VRRP)

ACL Basic

DHCP 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

Only one license is required per Matrix N3, Matrix N5, or Matrix N7 chassis.

Standards and Protocols (Cont.)

Security (User, Network, and Host)

Telnet (Inbound/Outbound)
Secured Shell (SSHv2) (switch host 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
Industry-Standard CLI Support
Single IP Address Management
Support for Multiple, Editable Configuration Files
DHCP Client
RADIUS Client Support with PAP and CHAP
Entity MIB
COM Port Boot Prom Download via ZMODEM
RMON (Nine Groups)

High-Capacity RMON (64-bit counters)
Simple Network Time Protocol (SNTP)
Trace Route
Dynamic Egress
Inbound Rate Policing
Node and Alias Table
Enterasys Discovery Protocol (EDP)
Port-Based MAC Locking
Access Control Lists

Network Management

NetSight Console
NetSight Policy Manager
NetSight Inventory Manager
NetSight Automated Security Manager

Specifications

Physical Specifications

Dimensions

46.43 cm (18.28") H x 6.05 cm (2.38") W x 29.51 cm (11.62") D

Weight

5.54 kg (12 lbs), gross shipping; 4.10 kg (9 lbs), net

Environmental Specifications

Operating Temperature

5° C to 40° C (41° F to 104° F)

Non-Operating Temperature

-30° C to 73° C (-22° F to 164° F)

Operating Humidity

5% to 90% RH, non-condensing

Power Consumption

100 to 125 VAC or 200 to 250 VAC; 50 to 60 Hz

Agency and Standards Specifications

Safety

UL160950, CSA 60950, EN 60825, EN 60950, IEC 60950

Electromagnetic Compatibility

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

IEEE Standards

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

Power over Ethernet

IEEE 802.3af
Total PoE Power: 4,800 watts per chassis
(7.5w) on all ports simultaneously
Support Class 1 (4w), Class 2 (7.5w) and Class 3 (15.4w) PoE devices
Fully loaded chassis will power Class 2 devices
Automated or manual PoE power distribution
Per-port enable/disable
Per-port power level
Per-port priority safety
Per-port overload and short-circuit protection
System power monitor

Ordering Information

Part Number	Description
Gold Distributed Forwarding Engines	
4H4282-49	GOLD DFE with 48 10/100Base-TX ports via RJ45 and 1 Network Expansion Module (NEM) slot
4H4283-49	GOLD DFE with 48 10/100Base-TX ports via RJ21 and 1 Network Expansion Module (NEM) slot
4H4285-49	GOLD DFE with 48 10/100Base-TX PoE ports via RJ45 and 1 Network Expansion Module (NEM) slot
4H4284-49	GOLD DFE with 48 100Base-FX ports via Multi mode Fiber MTRJ and 1 Network Expansion Module (NEM) slot
4H4202-72	GOLD DFE with 72 10/100Base-TX ports via RJ45
4H4203-72	GOLD DFE with 72 10/100Base-TX ports via RJ21
4G4282-49	GOLD DFE with 48 10/100/1000Base-T ports via RJ45 and 1 Network Expansion Module (NEM) slot
4G4285-49	GOLD DFE with 48 10/100/1000Base-T PoE ports via RJ45 and 1 Network Expansion Module (NEM) slot
4G4202-72	GOLD DFE with 72 10/100/1000Base-T ports via RJ45
4G4205-72	GOLD DFE with 72 10/100/1000Base-T PoE ports via RJ45
Network Expansion Modules	
7G-6MGBIC-B	Network Expansion Module with 6 1000Base-X ports via mini- MGBIC, includes 100FX SUPPORT
7K-2XFP-6MGBIC	Network Expansion Module with 6 1000Base-X ports via mini- MGBIC and 2 10GbE ports via XFP
7S-DSNSA7-01	Dragon Intrusion Detection/Prevention Network Security Module
7S-DSNSA7-01NPS	Dragon Security Processor Network Expansion Module No PS
Mini-GBIC Modules	
MGBIC-LC01	1000Base-SX Mini-GBIC via LC Connector
MGBIC-LC03	1000Base-LX/LH (2KM Mini-GBIC) MMF via LC Connector
MGBIC-08	1000Base-LX/LH (70KM Long Haul) Mini-GBIC SMF via LC Connector
MGBIC-LC09	1000Base-LX Mini-GBIC via LC Connector
MGBIC-02	1000Base-T Mini-GBIC via RJ45 Connector
MGBIC-MT01	1000Base-SX Mini-GBIC via MTRJ Connector
MGBIC-N-LC04	100Base-FX (2Km) port Mini-GBIC via LC connector
MGBIC-N-LC05	100Base-FX (10Km) port Mini-GBIC via LC connector
XFP Modules	
10GBASE-ER-XFP	10GBase-ER, IEEE 802.3 SM, 1550 nm Long Wave Length, 40 Km, LC XFP
10GBASE-LR-XFP	10GBase-LR, IEEE 802.3 SM, 1310 nm Long Wave Length, 10 Km, LC XFP
10GBASE-SR-XFP	10GBase-SR, IEEE 802.3 MM, 850 nm Short Wave Length, 33/82 M, LC XFP
10GBASE-CX4-XFP	10GBase-CX4, IEEE 802.3 TwinAxial, Copper SFF-8470, 15 M, LC XFP
10GBASE-ZR-XFP	10GBase-ZR, SM, 1550 nm Long Wave Length, 80 Km, LC XFP
Software	
N-EOS-L3	Enterasys Operating System Advanced Feature Package for Matrix N-Series Switches
N-EOS-RED	Enterasys Operating System (EOS) 1+1 High Availability upgrade for Matrix N-Series switches (with Gold DFE only)

Note:

1. Gold Distributed Forwarding Engines (DFEs) are designed to work seamlessly with other Gold DFEs in the same chassis; however, they cannot be mixed with Platinum or Diamond DFEs in the same chassis.
2. By default, the Gold DFE does not provide high availability (system redundancy). To get 1+1 redundancy, the N-EOS-RED software license must be purchased and installed.
3. Basic EOS routing is included with each Gold DFE. EOS supports static routes and RIP.
4. Only one Advanced Routing Module (N-EOS-L3) is required per chassis (N3, N5, or N7).
5. The Advanced Routing Package (N-EOS-L3) includes OSPF, DVMRP, and PIM-SM.

Warranty

The Matrix N-Series comes with a one year hardware warranty. There is also a 90-day software and firmware warranty to cover patches, bug fixes, and feature upgrades with 8 x 5 telephone support. For full warranty terms and conditions please go to <http://www.enterasys.com/support/warranty.aspx>.

Service and Support

Enterasys understands that superior service and support is a critical component of Secure Networks™. 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, visit <http://www.enterasys.com/products/switching/>

Contact Us

For more information, call Enterasys Networks toll free at 1-877-801-7082, or +1-978-684-1000 and visit us on the Web at enterasys.com



Thought Leadership

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Delivering on our promises. On-time. On-budget.