

Enterasys S-Series™

I/O Module

Hardware Installation Guide



Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

Risques d'électrocution: Seul un personnel qualifié doit effectuer les procédures d'installation.

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This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Clase A. Aviso de ITE

ADVERTENCIA: Este es un producto de Clase A. En un ambiente doméstico este producto puede causar interferencia de radio en cuyo caso puede ser requerido tomar medidas adecuadas.

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この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

AS/NZS CISPR 22



Hazardous Substances

This product complies with the requirements of Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

European Waste Electrical and Electronic Equipment (WEEE) Notice



In accordance with Directive 2012/19/EU of the European Parliament on waste electrical and electronic equipment (WEEE):

1. The symbol above indicates that separate collection of electrical and electronic equipment is required.
2. When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3. It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4. It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.

For information about the available collection system, please contact Enterasys Customer Support at +353 61 705500 (Ireland).

Battery Notice

This product contains a battery used to maintain product information. If the battery should need replacement it must be replaced by Service Personnel. Please contact Technical Support for assistance.



Caution: There is an explosion risk if you replace the battery with the incorrect type. Dispose of expended battery in accordance with local disposal regulations.

Precaución: Hay riesgo de explosión si la batería se reemplaza con el tipo incorrecto. Deshágase de las baterías gastadas de conformidad con las regulaciones de eliminación local.

产品说明书附件 Supplement to Product Instructions

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁶⁺)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	×	○	○	×	○	○
电路模块 (Circuit Modules)	×	○	○	×	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	×	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	×
电路开关 (Circuit Breakers)	○	○	×	×	○	○

○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T 11363-2006 standard.

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Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T 11363-2006 standard.

对销售之日的所售产品, 本表显示,
凯创供应链的电子产品信息产品可能包含这些物质。注意: 在所售产品中可能会也可能不会含有所有所列的部件。
This table shows where these substances may be found in the supply chain of Enterasys' electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.

除非另外特别的标注, 此标志为针对所涉及产品的环保使用期标志。某些零部件会有一个不同的环保使用期(例如, 电池单元模块)贴在其产品上。
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作。
The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.



Safety Information Class 1 Laser Transceivers

**The single mode interface modules use Class 1 laser transceivers.
Read the following safety information before installing or operating these modules.**

The Class 1 laser transceivers use an optical feedback loop to maintain Class 1 operation limits. This control loop eliminates the need for maintenance checks or adjustments. The output is factory set, and does not allow any user adjustment. Class 1 Laser transceivers comply with the following safety standards:

- 21 CFR 1040.10 and 1040.11 U.S. Department of Health and Human Services (FDA).
- IEC Publication 825 (International Electrotechnical Commission).
- CENELEC EN 60825 (European Committee for Electrotechnical Standardization).

When operating within their performance limitations, laser transceiver output meets the Class 1 accessible emission limit of all three standards. Class 1 levels of laser radiation are not considered hazardous.

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55×10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or $8 \times 10^3 \text{ W m}^{-2} \text{ sr}^{-1}$.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Safety Compliance

Warning: Fiber Optic Port Safety

**CLASS I
LASER DEVICE**

When using a fiber optic media expansion module, never look at the transmit laser while it is powered on. Also, never look directly at the fiber TX port and fiber cable ends when they are powered on.

Avertissement: Ports pour fibres optiques - sécurité sur le plan optique

**DISPOSITIF LASER
DE CLASSE I**

Ne regardez jamais le laser tant qu'il est sous tension. Ne regardez jamais directement le port TX (Transmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.

Warnhinweis: Faseroptikanschlüsse - Optische Sicherheit

**LASERGERÄT
DER KLASSE I**

Niemals ein Übertragungslaser betrachten, während dieses eingeschaltet ist. Niemals direkt auf den Faser-TX-Anschluß und auf die Faserkabelenden schauen, während diese eingeschaltet sind.

Declaration of Conformity

Application of Council Directive(s): **2004/108/EC**
2006/95/EC

Manufacturer's Name: **Enterasys Networks, Inc.**

Manufacturer's Address: **9 Northeastern Boulevard**
Salem, NH 03079
USA

European Representative Name: **Enterasys Networks Limited**

European Representative Address: **Nexus House, Newbury Business Park**
London Road, Newbury
Berkshire RG14 2PZ, England

Conformance to Directive(s)/Product Standards: **EC Directive 2004/108/EC**
EN55022:2006
A1:2007
EN 55024:1998
A1:2001
A2:2003
EN 61000-3-2:2006
A1:2009
A2:2009
EN 61000-3-3:2008
EC Directive 2006/95/EC
EN 60950-1:2006
A1:2009
EN 60825-1:2007
EN 60825-2:2004
A1:2007
EC Directive 2011/65/EU

Equipment Type/Environment: **Information Technology Equipment, for use in a Commercial or Light Industrial Environment.**

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14. **TERMINATION.** Enterasys may terminate this Agreement immediately upon Your breach of any of the terms and conditions of this Agreement. Upon any such termination, You shall immediately cease all use of the Program and shall return to Enterasys the Program and all copies of the Program.

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About This Guide

This guide provides an overview, installation and troubleshooting instructions, and specifications for the Enterasys S-Series™ I/O fabric modules and I/O modules:

Who Should Use This Guide



Electrical Hazard: Only qualified personnel should install or service this unit.

Riesgo Electrico: Nada mas personal capacitado debe de instalar o darle servicio a esta unida.

Elektrischer Gefahrenhinweis: Installationen oder Servicearbeiten sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

Risques d'électrocution: Seul un personnel qualifié doit installer ou effectuer les opérations de maintenance sur cet élément.

This guide is intended for a network administrator who is responsible for installing and setting up the modules in the S-Series chassis.

How to Use This Guide

Read through this guide completely to familiarize yourself with its contents and to gain an understanding of the features and capabilities of the S-Series I/O fabric modules and I/O modules. A general working knowledge of data communications networks is helpful when installing and cabling the S-Series I/O fabric modules and I/O modules.

This preface provides the following:

- An overview of this guide and the S-Series manual set
- A brief summary of each chapter
- Definitions of the conventions used in this document
- Instructions regarding how to obtain technical support from Enterasys Networks.

To locate information about various subjects in this guide, refer to the following table.

For...	Refer to...
An overview of the S-Series I/O fabric modules and I/O modules and their features.	Chapter 1, Introduction
Installation requirements and guidelines	Chapter 2, Installation Requirements and Guidelines
Instructions for installing the S-Series I/O fabric modules and I/O modules in an S-Series chassis.	Chapter 3, Module Installation
Information on port and module LEDs and how to restart or shut down the S-Series I/O fabric modules and I/O modules using the OFFLINE/RESET button.	Chapter 4, Troubleshooting

For...	Refer to...
Specifications, environmental requirements, and physical properties of the S-Series I/O fabric modules and I/O modules.	Appendix A, Specifications
Information on how to reset the S-Series I/O fabric module and I/O module mode switches.	Appendix B, Mode Switch Bank Setting
Instructions for removing an option module from S-Series I/O fabric modules and I/O modules.	Appendix C, Removing an Option Module from an I/O Module
PoE overview information.	Appendix D, About PoE (Power over Ethernet)
Instructions for downloading a firmware image via the serial port.	Appendix E, Downloading a Firmware Image via the Serial Port

Related Documents




The *Enterasys S-Series Configuration Guide* and *Enterasys S-Series CLI Reference* provide information on how to use the CLI to set up and manage the S-Series modules.

These manuals can be obtained from the World Wide Web in Adobe Acrobat Portable Document Format (PDF) at the following site:

<https://extranet.enterasys.com/downloads/>

Typographical Conventions

The following typographical conventions and icons are used in this document.

blue type	Indicates a hypertext link. When reading this document online, click the text in blue to go to the referenced figure, table, or section.
Lowercase x	Indicates the general use of an alphanumeric character.
	Note: Calls the reader's attention to any item of information that may be of special importance.
	Caution: Contains information essential to avoid damage to the equipment. Precaución: Contiene información esencial para prevenir dañar el equipo. Achtung: Verweist auf wichtige Informationen zum Schutz gegen Beschädigungen.
	Warning: Warns against an action that could result in personal injury or death. Advertencia: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte. Warnhinweis: Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können! Avertissements: Met en garde contre un geste qui pourrait entraîner des blessures ou la mort.



Electrical Hazard: Warns against an action that could result in personal injury or death due to an electrical hazard.

Riesgo Electrico: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico.

Elektrischer Gefahrenhinweis: Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!

Risques d'électrocution: Met en garde contre un geste qui pourrait entraîner des blessures ou la mort à la suite d'une électrocution.

Getting Help

For additional support related to the S-Series modules or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	www.enterasys.com/services/support/
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-603-952-5000 For the Enterasys Networks Support toll-free number in your country: www.enterasys.com/services/support/contact/
Email	support@enterasys.com To expedite your message, please type [S-Series] in the subject line.

Before contacting Enterasys Networks for technical support, have the following data ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (for example, changing mode switches or rebooting the unit)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any previous Return Material Authorization (RMA) numbers

Introduction

For information about...	Refer to page...
Module Types and Chassis Support	1-1
Port Options	1-2
Option Modules	1-2
VSB Expansion Module	1-2
Micro-USB Port	1-2
Power over Ethernet	1-3
Management	1-3

Module Types and Chassis Support

Table 1-1 lists which types of S-Series I/O modules and I/O fabric modules are supported by the S8, S6, S4, S3, and S1 chassis.

Table 1-1 S-Series Module Support

Module Type (Type Indicator in Model Number)	Module Supported by the Chassis?				
	S8	S6	S4	S3	S1
S130 Class I/O (SG4 or ST4)	Yes	Yes	Yes	Yes	No
S140 Class I/O (SG2, SK2, or ST2)	Yes	Yes	Yes	Yes	No
S150 Class I/O (SG1, SK1, or ST1)	Yes	Yes	Yes	No	No
S180 Class I/O (SK8 or SL8)	Yes	Yes	Yes	No	No
S130 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S150 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S155 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S180 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes

On the top cover of each S-Series I/O module and I/O fabric module is a label that indicates the S-Series chassis in which you can install the module. For example, the label on an S180 I/O fabric module indicates that the module can only be installed in an S8, S6, S4, or S1 chassis.

For a complete list of the S-Series I/O modules and I/O fabric modules that are currently available, refer to the S-Series datasheet at <http://www.enterasys.com/products>.

Port Options

S-Series modules support the following port options:

- 10/100/1000BASE-TX RJ45 ports
- 10GBASE-T RJ45 ports
- 1000BASE-X SFP ports
- 10GBASE-X SFP+ ports
- 40GBASE-X QSFP+ ports

IEEE 802.3af and 802.3at Power over Ethernet (PoE) are supported on the 10/100/1000BASE-TX RJ45 ports.

Option Modules

Many S-Series I/O fabric modules and I/O modules can be expanded with option modules, which have the following port options:

- 10/100/1000BASE-TX RJ45 ports
- 1000BASE-X SFP ports
- 10GBASE-X SFP+ ports

IEEE 802.3af and 802.3at Power over Ethernet (PoE) are supported on the 10/100/1000BASE-TX RJ45 ports.

If your S-Series I/O fabric module or I/O module has shipped with an option module and you need to remove the option module, see [Appendix C, Removing an Option Module from an I/O Module](#).

For a complete list of the S-Series option modules that are currently available, refer to the S-Series datasheet at <http://www.enterasys.com/products>.

VSB Expansion Module

Some S-Series S180 class I/O modules can be expanded with a VSB expansion module, which has four 10GBASE-X SFP+ ports, for virtual switch bonding of two co-located S-Series chassis.

For VSB configuration CLI commands, refer to the *Enterasys S-Series Configuration Guide* at <https://extranet.enterasys.com/downloads/>.

Micro-USB Port

The micro-USB port is intended for debug purposes only.

Power over Ethernet

S-Series modules with 10/100/1000BASE-TX RJ45 ports support both IEEE 802.3af and 802.3at Power over Ethernet (PoE) standards. To supply PoE power to the 10/100/1000BASE-TX RJ45 ports on the S-Series modules, you must have a PoE subsystem, with S-POE-PS power supplies, installed on your S-Series chassis. Depending on your PoE power supply configuration, the S-Series chassis can supply PoE power to powered devices on all 10/100/1000BASE-TX RJ45 ports simultaneously.

The red PoE button on the left of the S-Series modules switches the RJ45 port LEDs to report PoE information.

For an overview of PoE, see [Appendix D, About PoE \(Power over Ethernet\)](#).

Management

You can manage the S-Series modules either in-band or out-of-band. In-band remote management is possible using the Enterasys Networks NetSight[®] management application or the command line interface (CLI) via Telnet. Out-of-band management is provided through the RJ45 COM (Communication) port on the front panel of the S-Series chassis using a PC, a VT terminal, or a VT terminal emulator.

Installation Requirements and Guidelines

For information about...	Refer to page...
Installation Site Requirement	2-1
S-Series Module Placement and Installation Rules	2-2

Installation Site Requirement

If you are installing the S-Series modules in an S4, S6, or S8 chassis, the chassis must be located in a Restricted Access Location (RAL). This location should only be accessible by people that have been trained or are technically competent enough to be aware of potential risks of accessing the hazardous areas of the chassis. Locations such as a locked wiring closet or locked cabinet meet this requirement.



Warning: Install this module in an S-Series S4, S6, or S8 chassis that has been installed in a Restricted Access Location only. Access to the equipment by users must be restricted through the use of a tool or lock and key or other means of security and is controlled by the authority responsible for the location.

Advertencia: Instalar este modulo en un S-Series S4, S6, o S8 que ha sido localizado en un lugar de Acceso Restringido. Acceso al equipo debe ser restringido por el responsable del sitio.

Warnhinweis: Installieren Sie dieses Modul nur in einem S4, S6, oder S8 Chassis, wenn sich diese in einer zugangsgeschützten Umgebung befinden. Der Bereich zu den Komponenten sollte durch ein Schloß, einen Schlüssel oder sonstigen Sicherungen geschützt und durch einen Verantwortlichen kontrolliert werden.

Avertissements: Installez ce module dans une S-Series S4, S6, S8 châssis qui a été installé dans un lieu d'accès restreint seulement. L'accès à l'équipement par les utilisateurs doit être restreint par un outil, un cadenas à clé ou tout autre dispositif de sécurité et doit être contrôlé par une autorité compétente responsable du lieu.

If you are installing the S-Series modules in an S3 chassis, the chassis must be located in a Restricted Access Location (RAL) if it is equipped with a PoE subsystem.

S-Series Module Placement and Installation Rules

Table 2-1 lists which types of S-Series modules are supported by the S8, S6, S4, S3, and S1 chassis.

Table 2-1 S-Series Module Support

Module Type (Type Indicator in Model Number)	Module Supported by the Chassis?				
	S8	S6	S4	S3	S1
S130 Class I/O (SG4 or ST4)	Yes	Yes	Yes	Yes	No
S140 Class I/O (SG2, SK2, or ST2)	Yes	Yes	Yes	Yes	No
S150 Class I/O (SG1, SK1, or ST1)	Yes	Yes	Yes	No	No
S180 Class I/O (SK8 or SL8)	Yes	Yes	Yes	No	No
S130 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S150 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S155 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S180 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes

On the top cover of each S-Series I/O module and I/O fabric module is a label that indicates the S-Series chassis in which you can install the module. For example, the label on an S180 I/O fabric module indicates that the module can only be installed in an S8, S6, S4, or S1 chassis.

For a complete list of the S-Series I/O modules and I/O fabric modules that are currently available, refer to the S-Series datasheet at <http://www.enterasys.com/products>.

Module Installation



Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

Risques d'électrocution: Seul un personnel qualifié doit effectuer les procédures d'installation.

Important Notice

Read the Release Notes specific to the firmware image running in the chassis to check for any exceptions to the supported features and operation documented in this guide.

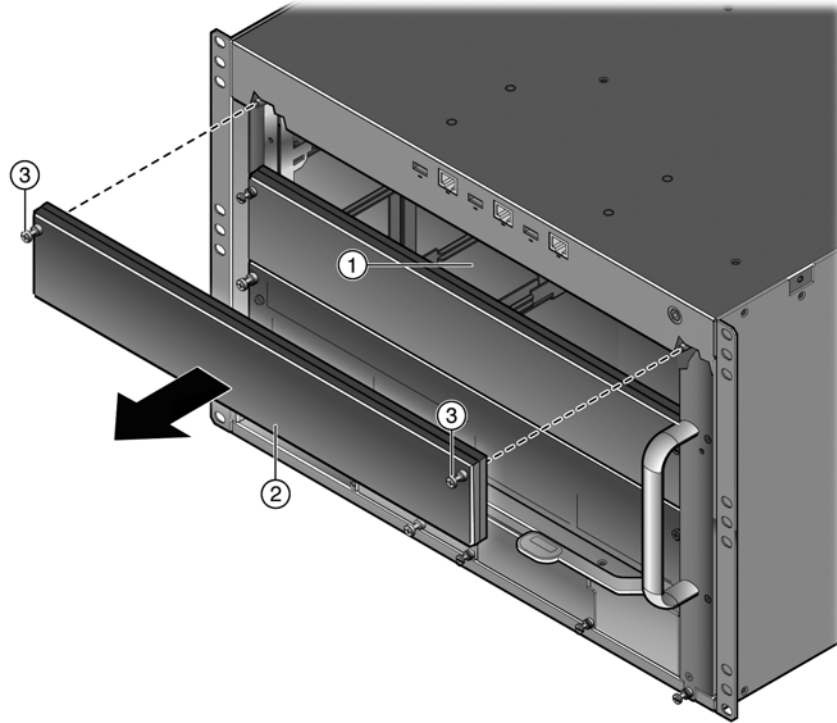
This chapter provides the instructions to install the S-Series I/O fabric modules and I/O modules. Follow the order of the sections listed below to correctly install the modules.

For information about...	Refer to page...
Preparation	3-2
Installing the Module	3-3
Connecting to the Network	3-4
Completing the Installation	3-7
LEDs	3-10

Preparation

1. Remove the blank panel covering the slot in which the module will be installed. See [Figure 3-1](#).

Figure 3-1 Removing a Coverplate from a Module Slot



- | | | | | | |
|---|-----------------|---|-----------------------|---|--------------------|
| 1 | I/O module slot | 2 | I/O module coverplate | 3 | Captive screws (2) |
|---|-----------------|---|-----------------------|---|--------------------|

All other slots must remain covered to ensure proper airflow for cooling. Save the blank plate in the event you need to remove the module.

2. Remove the module from the shipping box.
Save the box and packing materials in the event the module needs to be reshipped.
3. Locate the antistatic wrist strap shipped with the chassis. Attach the antistatic wrist strap to your wrist and plug the cable from the antistatic wrist strap into the ESD grounding receptacle at the upper right corner of the chassis.
4. Remove the module from the plastic bag.
Observe all precautions to prevent damage from Electrostatic Discharge (ESD). Save the bag in the event the module must be reshipped.
5. Examine the module for damage.
If any damage exists, DO NOT install the module. Immediately contact Enterasys Networks. Refer to [“Getting Help”](#) on page xv.

Installing the Module



Caution: Failure to observe static safety precautions could cause damage to the S-Series module. Follow static safety handling rules and wear the antistatic wrist strap.

Do not cut the non-conductive bag to remove the module. Sharp objects contacting the board or components can cause damage.

Precaución: Si no toma las medidas de seguridad necesarias para evitar descargas de electricidad estática, es posible que el módulo se dañe. Siga los consejos de seguridad para la manipulación del producto y no olvide utilizar la pulsera antiestática.

No corte la bolsa antiestática para sacar el módulo. Tenga en cuenta que si algún objeto cortante entra en contacto con la placa o con los componentes, éstos podrían dañarse.

To install an S-Series module:

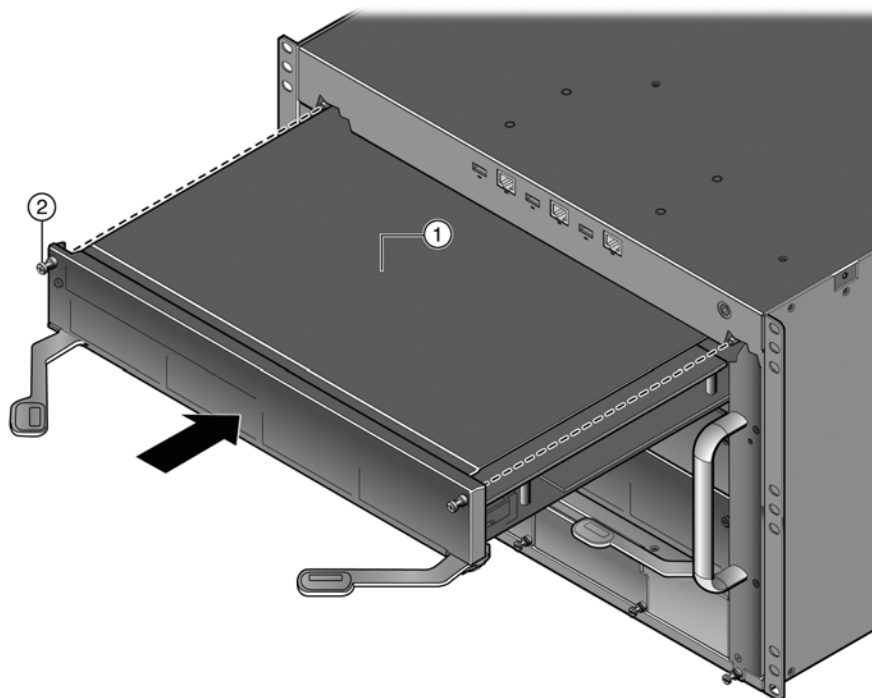
1. Open the ejector handles of the module.

The open position is approximately a 45° angle away from the module faceplate. The ejector handles must be open when inserting the module to allow the module to be installed properly.

2. Insert the module in the chassis. See [Figure 3-2](#).

Ensure that the module is in both the right and left guide rails.

Figure 3-2 Inserting a Module into the Chassis



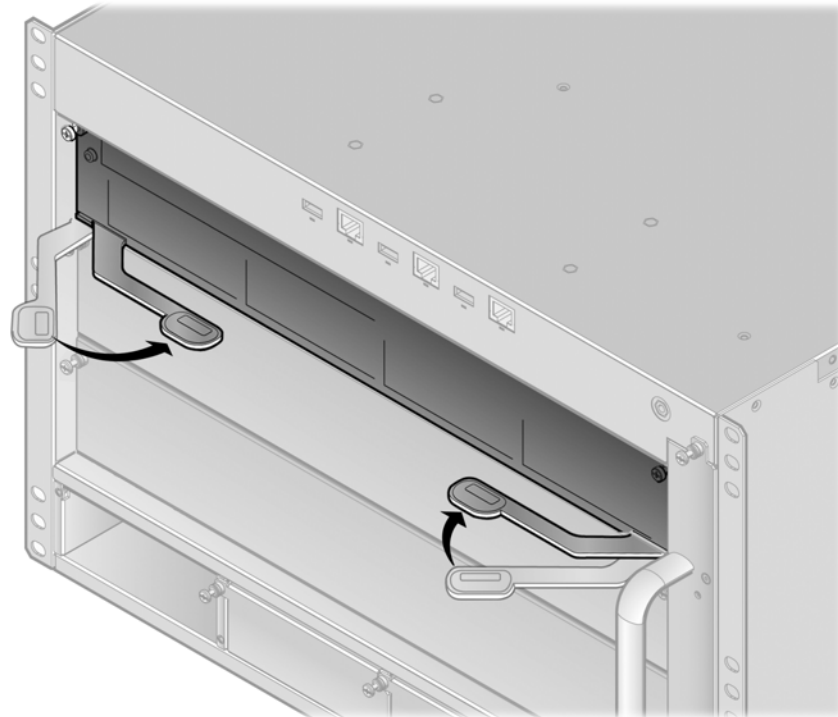
1 Module

2 Captive screws

3. Gently slide the module into the slot until the module engages the connector on the backplane.

4. Push the ejector handles toward the center of the module, as shown in [Figure 3-3](#), until the module locks into place and is flush with adjacent coverplates or module faceplates.

Figure 3-3 Engaging Ejector Handles



5. Tighten the module's captive screws.



Caution: When setting the locking levers to the closed position, do not try to force the locking levers to the point that they touch the face of the front panel. Forcing the locking levers to this point could damage the module and chassis.

Precaución: Al mover las palancas a la posición de cerrado, tenga cuidado de no llevarlas a un punto en donde estén en contacto con el panel frontal. Si lo hace, podría dañar el módulo o el chasis.

Connecting to the Network

This section provides the procedures for connecting Category 5 unshielded twisted pair (UTP) segments or SFP and SFP+ pluggable transceivers from the network or other devices to the S-Series module.



Note: If the S-Series module is being installed in a network using Link Aggregation, there are rules concerning the network cable and port configurations that must be followed for Link Aggregation to operate properly. Before connecting the cables, refer to the *Enterasys S-Series Configuration Guide* for the configuration information. For details on how to obtain manuals, refer to [“Related Documents”](#) on page xiv.

Connecting Category 6 UTP Ethernet Cables to the BASE-T Ports

The RJ45 connections of the S-Series modules are 10/100/1000 Mbps and 10Gb ports. They have internal crossovers and support automatic-polarity sensing which eliminates the need for a crossover cable, regardless of whether the connection is to another network device or a workstation.



Note: All RJ45 front panel ports on the S-Series modules support Category 6 Unshielded Twisted Pair (UTP) cabling with an impedance between 85 and 111 ohms.

1. Ensure that the far-end device connected to the other end of the segment is powered ON.
2. Connect the far-end device's twisted pair segment into the appropriate S-Series module RJ45 port connector.
3. Verify that a link exists by checking that the port RX (Receive) LED is ON (flashing amber, blinking green, or solid green).

If the RX LED is OFF and the TX (Transmit) LED is not blinking amber, perform the following steps until it is on:

- a. Verify that cabling is Category 6 UTP with an impedance between 85 and 111 ohms.
- b. Verify that the device at the other end of the twisted pair segment is on and properly connected to the segment.
- c. Verify that the RJ45 connectors on the twisted pair segment have the proper pinouts and check the cable for continuity.

If a link is not established, refer to [Chapter 4, Troubleshooting](#), for details.

4. Repeat steps 1–3, until all connections have been made.

Connecting Pluggable Transceivers to the SFP, SFP+, and QSFP+ Ports

This section describes how to install an SFP, SFP+, or QSFP+ pluggable transceiver in any of the S-Series module SFP, SFP+, or QSFP+ ports. For a list of supported SFP, SFP+, or QSFP+ pluggable transceivers and their specifications, refer to the S-Series firmware *Release Notes* for the latest compatibility matrix for SFP, SFP+, or QSFP+ pluggable transceivers. You can also refer to the datasheet located at the following URL:

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



Note: A 40Gb QSFP+ port can be configured as four 10Gb SFP+ ports. The 10Gb, QSFP+ to SFP+ adaptor cables (model numbers: 10GB-4-C03-QSFP, 10GB-4-F10-QSFP, or 10GB-4-F20-QSFP) provide for the single QSFP+ to four SFP+ cable conversion. See the **set port speed** command information *Enterasys S-Series CLI Reference* for port configuration details.



Note: Enterasys QSFP+ to SFP+ adapter (model number QSFP-SFPP-ADPT) to support 10 Gigabit Ethernet SFP+ transceivers in QSFP+ ports. The 10GB-LRM-SFPP SFP+ transceiver is only supported on the S-Series devices in native SFP+ ports.



Warning: Fiber-optic pluggable transceivers use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Advertencia: Los transmisores receptores de fibra óptica SFP, SFP+, y QSFP+ conectables utilizan sistemas de láser clase 1. No emplee instrumentos ópticos para ver la salida del láser. Hacerlo podría incrementar el riesgo de daño en los ojos. Cuando se revise el puerto óptico de salida, deberá cortarse la energía del adaptador de red.

Warnhinweis: Faseroptische, steckbare Transceiver der Typen SFP, SFP+, und QSFP+ verwenden Laser der Klasse 1. Zur Ansicht der Laserausgabe dürfen keine optischen Geräte verwendet werden, da hierdurch die Wahrscheinlichkeit einer Gefährdung der Augen erhöht wird. Vor der Inspektion des optischen Ausgangsanschlusses muss das Stromkabel des Netzwerkadapters herausgezogen werden.

Avertissements: Les émetteurs-récepteurs en fibre optique enfichables ne fonctionnent qu'avec des lasers de classe 1. N'utilisez aucun instrument d'optique pour observer la sortie du laser. L'utilisation d'instruments d'optique augmente les risques de blessure aux yeux. L'alimentation de l'adaptateur de réseau doit être coupée lorsque vous inspectez le port optique de sortie.



Caution: Carefully follow the instructions in this manual to avoid damaging the SFP, SFP+, QSFP+, and module.

The SFP, SFP+, QSFP+, and module are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to the SFP, SFP+, QSFP+, and module. Always leave the SFP, SFP+ or QSFP+ in the antistatic bag or an equivalent antistatic container when not installed.

Precaución: Siga las instrucciones del manual para no dañar el SFP, SFP+, QSFP+, ni el módulo, puesto que son muy sensible a las descargas de electricidad estática.

Utilice la pulsera antiestática y tome todas las precauciones necesarias durante este procedimiento. Si no lo hace, podría dañar el SFP, SFP+, QSFP+, o el módulo. Mientras no esté instalado, mantenga el SFP, SFP+, o QSFP+ en su bolsa antiestática o en cualquier otro recipiente antiestático.

Preparation

Before installing the pluggable transceiver, proceed as follows:

1. Put on the antistatic wrist strap and plug the cable from the antistatic wrist strap into the ESD grounding receptacle at the upper right corner of the chassis before removing the pluggable transceiver from the anti-static packaging. Refer to the instructions in the anti-static wrist strap package.
2. Remove the pluggable transceiver from the packaging.
3. If there is a protective dust cover on the pluggable transceiver, do not remove it at this time.

Installing the Pluggable Transceiver

To install a pluggable transceiver in the S-Series module:

1. Hold the pluggable transceiver so that the connector will seat properly.
2. Carefully align the pluggable transceiver with the port.
3. Push the pluggable transceiver into the port until the pluggable transceiver clicks and locks into place.

Removing the Pluggable Transceiver

To remove a pluggable transceiver from a port:



Caution: Do NOT remove an SFP, SFP+, or QSFP+ from a slot without releasing the locking tab located under the front bottom end of the SFP, SFP+, or QSFP+. This can damage the SFP, SFP+, or QSFP+.

The SFP, SFP+, QSFP+, and module are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to the SFP, SFP+, or QSFP+, and module. Always leave the SFP, SFP+, or QSFP+ in the antistatic bag or an equivalent antistatic container when not installed.

Precaución: NO quite el SFP, SFP+, o QSFP+ de la ranura sin antes abrir la traba ubicada en la parte frontal del el SFP, SFP+, o QSFP+.

Utilice la pulsera antiestática y tome todas las precauciones necesarias durante este procedimiento. Si no lo hace, podría dañar el SFP, SFP+, QSFP+, o el módulo. Mientras no esté instalado, mantenga el SFP, SFP+, o QSFP+ en su bolsa antiestática o en cualquier otro recipiente antiestático.

1. Put on the antistatic wrist strap and plug the cable from the antistatic wrist strap into the ESD grounding receptacle at the upper right corner of the chassis before removing the pluggable transceiver from the anti-static packaging. Refer to the instructions in the anti-static wrist strap package.
2. Remove the cables connected to the pluggable transceiver.
3. Release the pluggable transceiver from the port.
4. Grasp the sides of the pluggable transceiver and pull it straight out of the port.

If storing or shipping the pluggable transceiver, insert its dust protector to protect its fiber-optic ports.

Completing the Installation

Completing the S-Series module installation depends on if the module is being installed in:

- a new S-Series chassis (refer to [“Completing the Installation”](#) on page 3-7), or
- an established, operating S-Series chassis (refer to [“Completing the Installation of an S-Series Module in an Existing Chassis”](#) on page 3-9).

Completing the Installation of a New System

In a new S-Series chassis, one of the installed S-Series modules will become the management module on chassis power up, and all S-Series modules will automatically be set to the factory default values. A complete list of the factory default values are provided in Chapter 3 of the *Enterasys S-Series Configuration Guide*.

After installing all S-Series modules into the host chassis and making the connections to the network, proceed to [“First-Time Log-In Using a Console Port Connection”](#) on page 3-8 to access the module management startup screen from your PC, terminal, or modem connection.

First-Time Log-In Using a Console Port Connection



Note: This procedure applies only to initial log-in, and to logging in to a device not yet configured with administratively-supplied user and password settings.

By default, the S-Series module is configured with three user login accounts: **ro** for Read-Only access; **rw** for Read-Write access; and **admin** for super-user access to all modifiable parameters. The default password is set to blank (carriage return). For information on changing these default passwords, refer to the *Enterasys S-Series Configuration Guide*.

Start the Command Line Interface (CLI) from the module's local console port as follows:

1. Connect a terminal to the local console port as described in [“Completing the Installation”](#) on page 3-7. The startup screen, [Figure 3-4](#), displays.
2. At the login prompt, enter one of the following default user names:
 - **ro** for Read-Only access,
 - **rw** for Read-Write access, or
 - **admin** for Super User access. (This access level allows Read-Write access to all modifiable parameters, including user accounts.)
3. Press ENTER.
4. The Password prompt displays. Leave this string blank and press ENTER. The module information and S Chassis prompt displays as shown in [Figure 3-4](#).

The S-Series module is now ready to be configured. For information about setting the IP address and configuring Telnet settings for remote access to S-Series module management, refer to the *Enterasys S-Series Configuration Guide*. The CLI commands enable you to initially set up and perform more involved management configurations.

The *Enterasys S-Series Configuration Guide* is available online at:

<https://extranet.enterasys.com/downloads/>

If you require assistance, contact Enterasys Networks using one of the methods described in “Getting Help” on page xv.

Figure 3-4 S-Series Startup Screen Example

```
login: admin
Password:

S C H A S S I S
Command Line Interface

Enterasys Networks, Inc.
9 Northeastern Blvd.
Salem, NH 03079 USA

Phone: +1 603 952 5000
E-mail: support@enterasys.com
WWW: http://www.enterasys.com

(c) Copyright Enterasys Networks, Inc. 2012

Chassis Serial Number: xxxxxxxxxxxxxx
Chassis Firmware Revision: xx.xx.xx.xxxxT

User admin last logged in WED NOV 14 16:12:42 2012
There have been 0 failed login attempts since then

S Chassis(su)->
```

Completing the Installation of an S-Series Module in an Existing Chassis

When you install a new S-Series module into an S-Series chassis with an existing configured user account, the current system settings in that account are already recognized by the new S-Series module and it will operate accordingly.

If you need to change any settings, you can connect a terminal to the local console port as described in “Completing the Installation” on page 3-7 to access system management, or use a Telnet connection to access the S-Series module system management as described in the *Enterasys S-Series Configuration Guide*.

Logging in with an Administratively-Configured User Account

If the device’s default user account settings have been changed, proceed as follows:

1. At the login prompt, enter your administratively-assigned user name and press ENTER.
2. At the Password prompt, enter your password and press ENTER.

The notice of authorization and the S Chassis prompt displays as shown back in [Figure 3-4](#).



Note: Users with Read-Write (rw) and Read-Only access can use the **set password** command to change their own passwords. Administrators with Super User (su) access can use the **set system login** command to create and change user accounts, and the **set password** command to change any local account password. For information on the set password and set system login commands, refer to the *Enterasys S-Series Configuration Guide*.

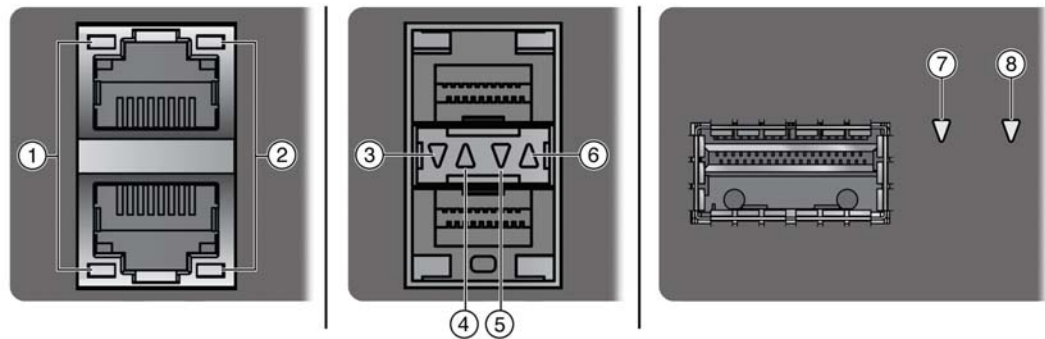
LEDs

The S-Series modules have port and module LEDs.

Port LEDs

On the S-Series modules, you can view the receive and transmit activity on the RX and TX LEDs for the 10/100/1000 RJ45, SFP, SFP+, and QSFP+ ports. See [Figure 3-5](#).

Figure 3-5 10/100/1000 RJ45, SFP, SFP+, and QSFP+ Port LEDs



- | | | | | | | | |
|---|-------------------|---|---------------------------------|---|---------------------------------|---|------------------------------|
| 1 | RJ45 port RX LEDs | 3 | SFP/SFP+ RX LED for bottom port | 5 | SFP/SFP+ TX LED for bottom port | 7 | QSFP+ TX LED for bottom port |
| 2 | RJ45 port TX LEDs | 4 | SFP/SFP+ RX LED for top port | 6 | SFP/SFP+ TX LED for top port | 8 | QSFP+ TX LED for top port |



Note: Though [Figure 3-5](#) shows SFP ports, the LEDs are the same for both SFP and SFP+ ports.

[Table 3-1](#) describes the LED indications for the RX and TX LEDs for the 10/100/1000 RJ45, SFP, SFP+, and QSFP+ ports and provides recommended actions.

Table 3-1 Port LEDs

LED	Color	State	Recommended Action
RX (Receive)	None	No link. No activity. Port enabled or disabled.	None.
	Green	Solid. Link present, port enabled, no traffic is being received by the interface.	None.
	Yellow	Blinking. Link present, port enabled, traffic is being received by the interface.	None.

Table 3-1 Port LEDs (continued)

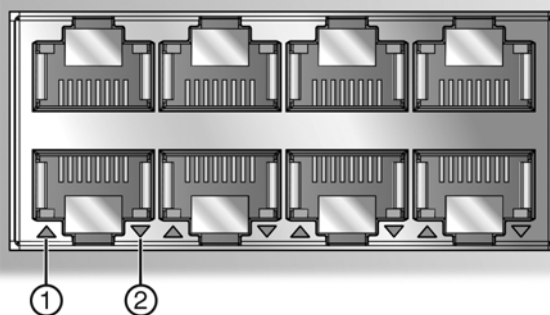
LED	Color	State	Recommended Action
TX (Transmit)	None	Port enabled, but no activity.	If you know the port should be active and is not, contact Enterasys Technical Support.
	Green	Blinking. Indicates data transmission activity. Flashing frequency indicates the data rate.	None.
	Yellow	Solid. Fault or error (collision).	None, unless activity is high; in which case, check for network configuration problems or a defective device.

Table 3-2 describes the LED indications for the RX and TX LEDs when the 10/100/1000 RJ45 ports are in PoE mode. You can switch the RJ45 ports to PoE mode or RX/TX mode by pressing the red POE button, which is next to the POE LED on the left side of the module. The POE LED, described in Table 3-4 on page 3-12, indicates whether the RJ45 port LEDs are in PoE or RX/TX mode.

Table 3-2 10/100/1000 RJ45 Port LEDs—PoE Mode

RX LED Color	TX LED Color	State
Green	None	There is a connection to the PD and there is 48VDC at the RJ45 connector.
None	Yellow	Port is off due to overload (attached PD exceeded maximum load).
Yellow	None	Port is off due to PoE power management.
None	None	Port is off due to another reason.

Figure 3-6 shows the port LEDs for 10Gb RJ45 ports.

Figure 3-6 10Gb RJ45 Port LEDs

1 Upper port status LED

2 Lower port status LED

[Table 3-3](#) describes the port LED indications for 10Gb RJ45 ports.

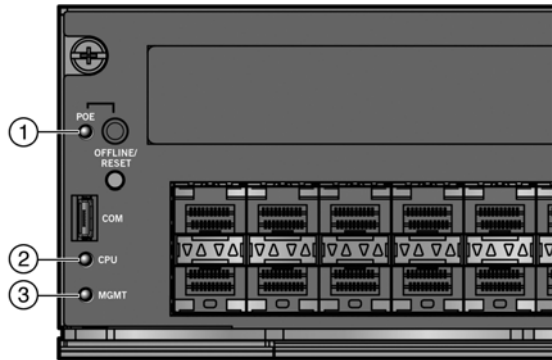
Table 3-3 10Gb RJ45 Port LED

Color	Status
None	No link. No activity. Port enabled or disabled.
Green	Solid. Link present. Blinking. The interface is transmitting traffic.
Green and Yellow	Alternating. The interface is both transmitting and receiving traffic.
Yellow	Blinking. The interface is receiving traffic. Solid. Fault or error.

Module LEDs

[Figure 3-7](#) shows the module LEDs.

Figure 3-7 I/O Fabric Module and I/O Module LEDs



1 POE LED

2 CPU LED

3 MGMT LED

[Table 3-4](#) describes the LED indications for the module LEDs and provides recommended actions.

Table 3-4 System LEDs

LED	Color	State	Recommended Action
POE	Green	The RJ45 port LEDs are in PoE mode. See Table 3-2 on page 3-11. You can switch to or from PoE mode by pressing the red POE button next to the POE LED.	None.
	None	The RJ45 port LEDs are in RX/TX mode. See Table 3-1 on page 3-10. You can switch to or from RX/TX mode by pressing the red POE button next to the POE LED.	None.

Table 3-4 System LEDs (continued)

LED	Color	State	Recommended Action
CPU	None	Power off.	Ensure chassis has adequate power.
	Amber	Blinking. Device in bootup process.	None.
		Solid. Testing.	If the LED remains amber for several minutes, contact Enterasys Networks for technical support.
	Green	Blinking. Image starts running.	None.
		Solid. Functional.	None.
	Red	Solid. Processor in reset.	None.
	Green and Amber	Blinking. Indicates that the module is in the process of shutting down.	None. This state is activated when the RESET button is pressed for less than 1 second to start an orderly shutdown.
Amber and off	Alternating (67% on, 33% off). Indicates a shutdown is complete. The indication will hold for 60 seconds then automatically restart.	While in this state, you have 60 seconds before the module will reboot.	
MGMT	None	This module is not the management module.	None.
	Green	Solid. This module is the designated management module.	None.
	Amber	Amber. This is a temporary indication that the module is saving data.	None.

Troubleshooting

This chapter provides information concerning the following:

For information about...	Refer to page...
Troubleshooting Checklist	4-1
Using the OFFLINE/RESET Button	4-3

Troubleshooting Checklist

If the module is not working properly, refer to [Table 4-1](#) for a checklist of problems, possible causes, and recommended actions to resolve the problem.

Table 4-1 Troubleshooting Checklist

Problem	Possible Cause	Recommended Action
All LEDs are OFF.	Loss of power.	Ensure that the module was installed properly according to the installation instructions in Chapter 3, Module Installation , and that the host chassis is providing power.
No Local Management Password screen.	Incorrect terminal setup.	Refer to the <i>Enterasys S-Series Configuration Guide</i> for proper setup procedures.
	Improper console cable pinouts.	Refer to Appendix A, Specifications for proper COM port pinouts.
	Corrupt firmware image, or hardware fault.	If possible, attempt to download the image to the module again. Refer to the section, " Setting the Mode Switches ," on page B-2 for instructions to clear NVRAM.
Cannot navigate beyond Password screen.	Improper username/password combination entered.	If the username/password combination has been forgotten, refer to the section, " Setting the Mode Switches ," on page B-2 for instructions on how to set the mode switch to reset the username/password combination to the default values.

Table 4-1 Troubleshooting Checklist (continued)

Problem	Possible Cause	Recommended Action
Cannot contact the module through in-band management.	IP address not assigned.	Refer to the <i>Enterasys S-Series Configuration Guide</i> for the IP address assignment procedure.
	Port is disabled.	Enable port. Refer to the <i>Enterasys S-Series Configuration Guide</i> for instructions to enable/disable ports.
	Host Port policy and/or management VLAN is incorrectly configured, or not configured.	Verify that a management VLAN exists and that it is associated with the Host Port. Refer to the <i>Enterasys S-Series Configuration Guide</i> for information about Host Port and management VLAN configuration.
	No link to device.	Verify that all network connections between the network management station and the module are valid and operating. If the problem continues, contact Enterasys Networks for technical support.
Port(s) goes into standby for no apparent reason.	Loop condition detected.	Verify that Spanning Tree is enabled. Refer to the <i>Enterasys S-Series Configuration Guide</i> for the instructions to set the type of STA. Review the network design and delete unnecessary loops. If the problem continues, contact Enterasys Networks for technical support.
User parameters (IP address, device and module name, etc.) were lost when the module power was cycled, the front panel OFFLINE/RESET switch was pressed.	Position of Mode switch (7), Persistent Data Reset, was changed sometime before either cycling power or pressing the OFFLINE/RESET switch, causing the user-entered parameters to reset to factory default settings. Clear Persistent Data was set through Local Management. The module was moved either from slot-to-slot or from chassis-to-chassis.	Reenter the lost parameters as necessary. Refer to the <i>Enterasys S-Series Configuration Guide</i> for the instructions to configure the device. If the problem continues, contact Enterasys Networks for technical support.

Using the OFFLINE/RESET Button



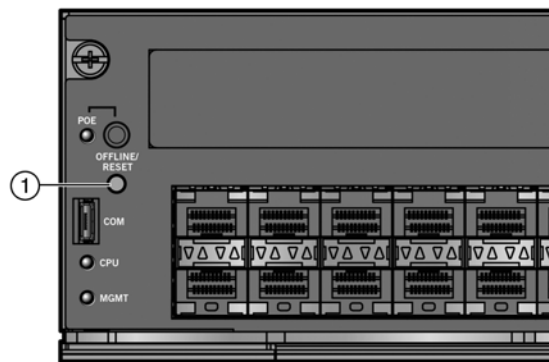
Caution: Do not remove a module from an operating chassis system before reading the following information and instructions.

Precaución: Antes de retirar los módulos del chasis en funcionamiento, lea las siguientes instrucciones y la información suministrada.

You must shut down an S-Series module in an orderly fashion to ensure that the other modules in the system and other devices on the network are notified of the impending change. The device(s) can then make intelligent decisions and stabilize the network before the change is made; thereby increasing network availability.

You can shut down an S-Series module in an operating system using the OFFLINE/RESET switch shown in [Figure 4-1](#).

Figure 4-1 OFFLINE/RESET Button



1 OFFLINE/RESET button

There are two procedures to shut down an S-Series module.

- [Recommended Shutdown Procedure Using OFFLINE/RESET Button](#)
- [Last Resort Shutdown Procedure Using OFFLINE/RESET Button](#) (This procedure is not recommended.)

Recommended Shutdown Procedure Using OFFLINE/RESET Button



Caution: Do not pull any module out of an operating chassis before it has completed its shutdown routine.

Precaución: No retire los módulos del chasis en funcionamiento hasta que no se haya terminado con la rutina de apagado.

Before shutting off power to an S-Series module, **press or tap** on its OFFLINE/RESET button for less than one second.

The S-Series module CPU LED changes from solid green to blinking between green and amber, indicating that the S-Series module is shutting down. At the end of the shutdown routine, the CPU LED changes to a 67%/33% sequence of amber/off, respectively, indicating the system is in a halt state. At this time it is safe to restart the S-Series module.

When you initiate a controlled shutdown with the OFFLINE/RESET button, you have 60 seconds from the time the CPU LED starts flashing amber/off until the device automatically restarts.

Last Resort Shutdown Procedure Using OFFLINE/RESET Button



Caution: This method of shutting down a module is not recommended except as a last resort, because all processes currently running on the module will be interrupted resulting in loss of frames.

Precaución: No se recomienda utilizar este método para apagar los módulos. Recorra a él sólo como último recurso, puesto que interrumpe todos los procesos del módulo en funcionamiento, lo que podría resultar pérdidas de frames.

To reset an S-Series module without it performing an orderly shutdown routine, **press and hold** the OFFLINE/RESET button for approximately 6 seconds.

Pulling any S-Series module out of the chassis before it has been shut down is not recommended. The only safe time to pull a module out of the chassis is after the completion of a shutdown and the management LED is alternately flashing amber/off.



Specifications

Module Specifications

For the S-Series I/O module and I/O fabric module specifications, refer to the S-Series datasheet at <http://www.enterasys.com/products>.

SFP, SFP+, and QSFP+ Fiber-Optic Specifications

For SFP, SFP+, and QSFP+ transceiver specifications, refer to the datasheet at <http://www.enterasys.com/products/transceivers-ds.pdf>

Regulatory Compliance

This product meets the safety, electromagnetic compatibility (EMC), and environmental requirements listed in [Table A-1](#).

Table A-1 Compliance Standards

Regulatory Compliance	Standard
Safety	UL 60950-1, FDA 21 CFR 1040.10 and 1040.11, CAN/CSA C22.2 No. 60950-1, EN 60950-1, EN 60825-1, EN 60825-2, IEC 60950-1, 2006/95/EC (Low Voltage Directive)
Electromagnetic Compatibility (EMC)	FCC 47 CFR Part 15 (Class A), ICES-003 (Class A), EN 55022 (Class A), EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR-22 (Class A). VCCI V-3. CNS 13438 (BSMI), 2004/108/EC (EMC Directive)
Environmental	2011/65/EU (RoHS Directive), 2012/19/EU (WEEE Directive), Ministry of Information Order #39 (China RoHS)

Mode Switch Bank Setting



Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Eléctrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

Risques d'électrocution: Seul un personnel qualifié doit effectuer les procédures d'installation.

This appendix covers the following items:

For information about...	Refer to page...
Required Tools	B-1
About the Mode Switches	B-1
Setting the Mode Switches	B-2

Required Tools

Use an ESD wrist strap to perform the procedure provided in this appendix.



Caution: An antistatic wrist strap is required to perform the procedures in this appendix. Use the antistatic wrist strap to minimize ESD damage to the devices involved.

Precaución: Para llevar a cabo los procedimientos especificados en el apéndice deberá utilizar una pulsera antiestática. Esta pulsera sirve para minimizar los efectos de las descargas de electricidad estática.

About the Mode Switches



Caution: Read the appropriate sections to be fully aware of the consequences when changing switch settings.

Only qualified personnel should change switch settings.

Precaución: Si desea modificar la configuración del interruptor, lea las secciones correspondientes para saber cuál será el resultado de hacerlo.

Estas modificaciones a la configuración sólo debe realizarlas personal calificado.

[Figure B-1](#) on page B-2 shows the locations of the mode switches and the switch settings for normal operation. These switches are set at the factory and rarely need to be changed.

Switch definitions and positions are as follows:

- Switches 1–6: For Enterasys Networks use only.
- Switch 7: Clear Persistent Data. Changing the position of this switch clears Persistent Data on the next power-up of the module. All user-entered parameters, such as the IP address, system

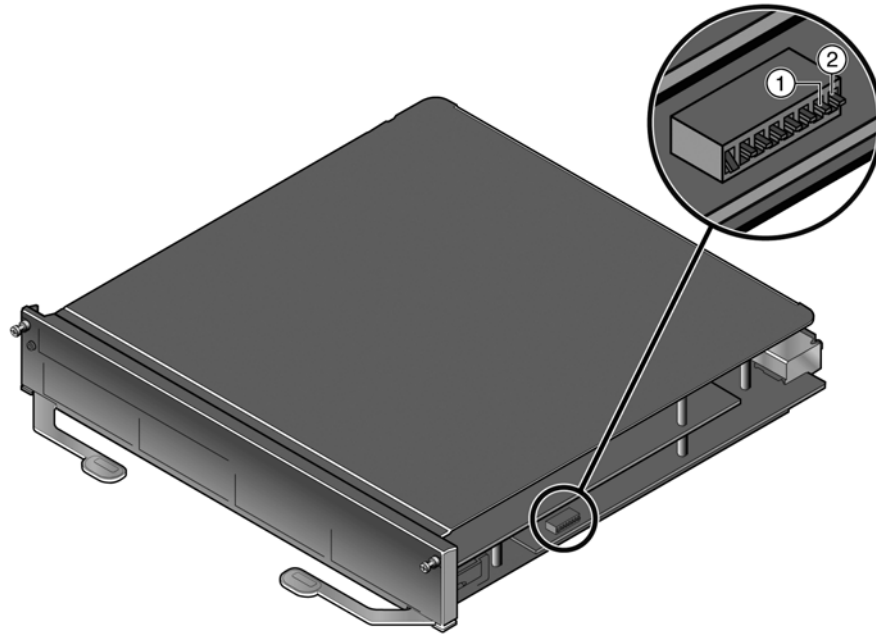
name, and so on, are reset to the factory default settings. Once the system resets, you can either use the factory default settings or reenter your own parameters.

- Switch 8: Clear Admin Password. Changing the position of this switch clears the admin password, and restores the factory default password on the next power-up of the system. Once the module resets, you can either use the factory default settings or reenter your own password.



Note: Do not change the position of Switch 8 unless it is necessary to reset the admin password to its factory default setting.

Figure B-1 Mode Switch Location



1 Switch 7

2 Switch 8

Setting the Mode Switches

Before setting the mode switches, you must power down the module and remove it from the S-Series chassis. You do not have to remove the module top cover to reset the mode switches.

To set the mode switches:

1. Put on the ESD wrist strap and attach it to ground.
2. Place the module on an anti-static pad on a sturdy, flat surface.
3. Reset the appropriate switch.
4. Reinstall the module.

Removing an Option Module from an I/O Module

If you must remove an installed S-Series option module from an S-Series I/O module, follow the procedure in this appendix to avoid damaging the option module or the I/O module.



Note: In this appendix, the term I/O module refers to both I/O fabric modules and I/O modules.

Required Tools

- Anti-static strap
- Anti-static bag (for storing the removed option module)
- Phillips screwdriver
- Narrow-nose pliers (for removing, if necessary, the PoE power header)

Removing an Option Module

To remove an option module from an I/O module:

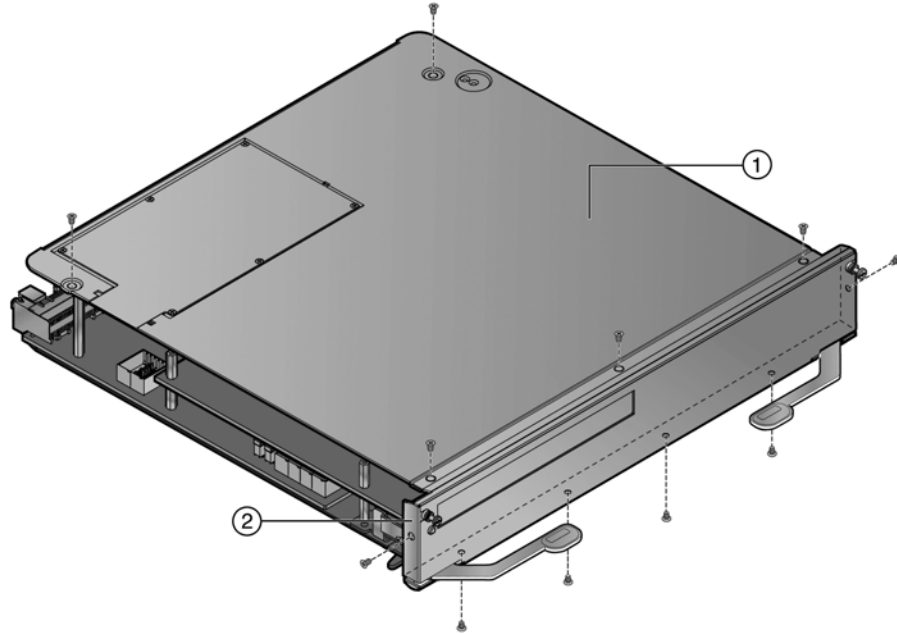


Note: Some S-Series I/O modules are equipped with ramp and rail option module ejector assemblies. This procedure is also applicable to those I/O modules.

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. Place the I/O module on an anti-static pad on a sturdy, flat surface.

3. Remove the eleven screws fastening the top cover and faceplate to the main board of the I/O module (five screws on top, two screws on the sides, four screws on the bottom). See [Figure C-1](#).
Set aside the top cover, faceplate, and screws for reinstallation at the end of this procedure.

Figure C-1 Removing the Top Cover and Faceplate of the I/O Module



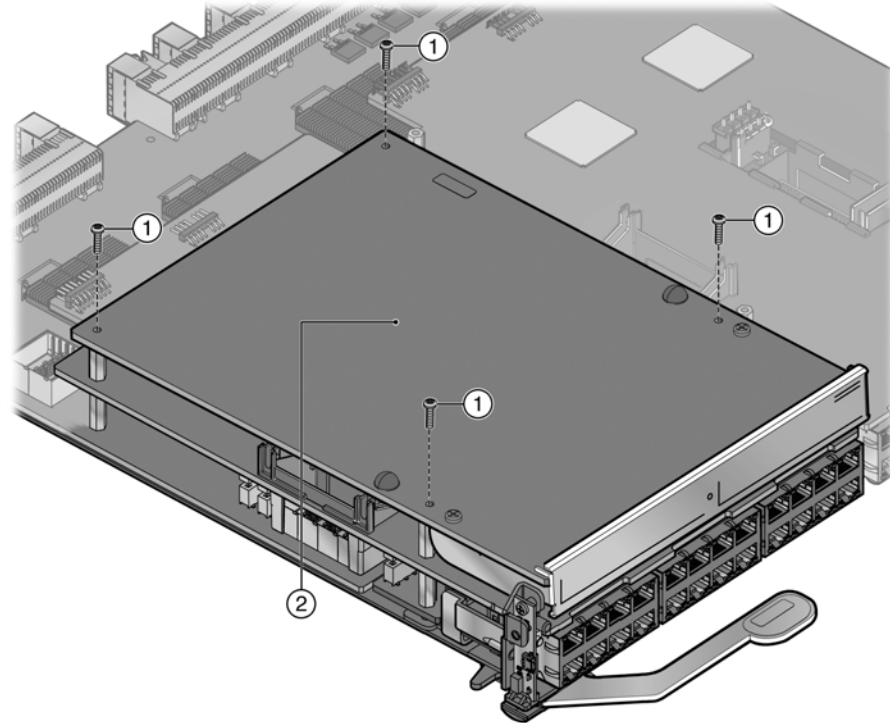
1 Top cover

2 Faceplate

4. Unscrew the four pan head screws that secure the option module to the standoffs on the I/O module. See [Figure C-2](#).

Keep the screws with the option module. If you install an option slot coverplate after you have removed the option module, you will need to use two of the pan head screws.

Figure C-2 Removing the Four Pan Head Screws



1 Pan head screws

2 Option module

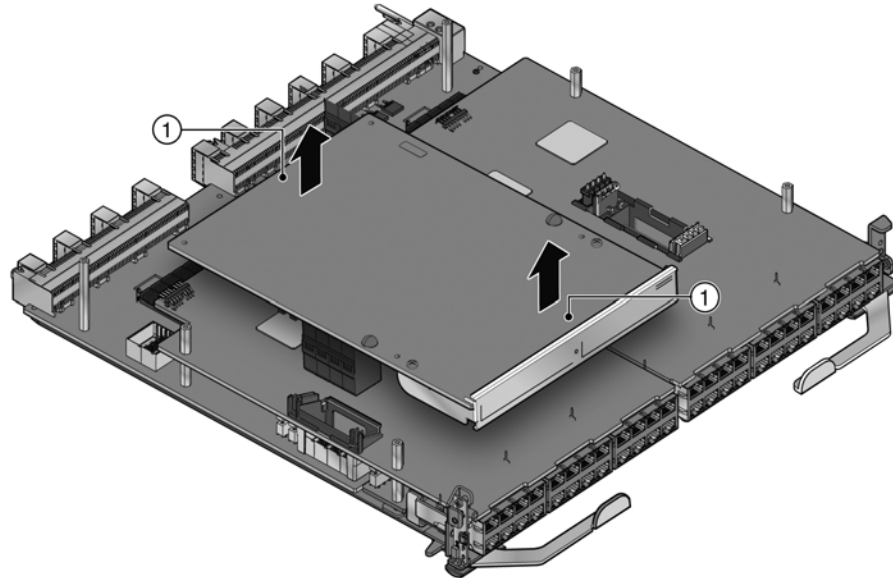
5. With your fingers under the faceplate and on the back edge of the option module, gently rock the option module back and forth 10 to 15 times while lifting the option module straight off the I/O module motherboard connectors. See [Figure C-3](#).



Note: The option module should never be more that five degrees from level.

Ensure that you do not touch any components on the option module as you remove it from the I/O module motherboard connectors.

Figure C-3 Removing the Option Module from the I/O Module



- 1 Place fingers at the front and back of the option module
-

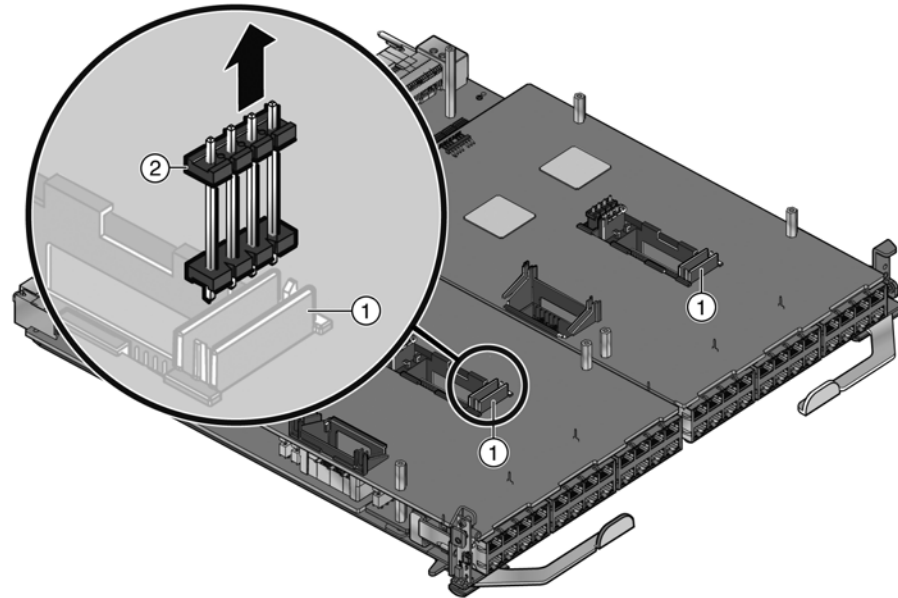
- If you are removing an option module with RJ45 ports from an S-Series module that supports PoE, use a pair of pliers to remove the PoE power header from the I/O module if the PoE power header does not come out with the option module. See [Figure C-4](#).

You will feel some resistance as you unseat the PoE power header from the connector on the I/O module. You may need to use a slight side-to-side motion to unseat the PoE power header.



Note: Remove the PoE power header only if you are replacing the removed option module with an option module that does not support PoE.

Figure C-4 Removing the PoE Power Header (If Necessary)



1 Slot for the PoE power header

2 PoE power header

- Place the option module in an anti-static bag. For additional protection, store the option module in its shipping container or similar cardboard box with foam.

You can now install a new option module. If you are not replacing the option module, you should reinstall the option slot coverplate before reinstalling the I/O module in the chassis.

- Reinstall the faceplate and top cover of the I/O module.

You can now install the I/O module in an S-Series chassis.



About PoE (Power over Ethernet)

This appendix provides an overview of Power over Ethernet technology and how it is implemented in relation to the S-Series devices.

Overview

Power over Ethernet (PoE) refers to the ability to provide operational power through the same Ethernet cabling to a PD (powered device) connected to a data network. Modern Ethernet implementations employ differential signals over twisted pair cables. This requires a minimum of two twisted pairs for a single physical link. Both ends of the cable are isolated with transformers blocking any DC or common mode voltage on the signal pair. PoE exploits this fact by using two twisted pairs as the two conductors to supply a direct current. One pair carries the power supply current and the other pair provides a path for the return current. While several proprietary legacy implementations of PoE have been deployed by LAN equipment vendors, in 2003 the IEEE published the IEEE 802.3af-2003 specification, which is part of the 802.3 suite of standards.

The S-Series devices that support PoE are fully compliant with the IEEE 802.3af standard and the high powered 802.3at draft. They support the standard resistor-based detection method, as well as AC disconnect capability.

Each PD has a PDC (Powered Device Classification) that is transmitted to the S-Series device for power management purposes. [Table D-1](#) lists the classifications and the associated power ranges.

Table D-1 Powered Device Classifications

Class	Usage	PD Maximum Power Range Usage
0	Default	0.44 to 12.95 Watts
1	Optional	0.44 to 3.84 Watts
2	Optional	3.84 to 6.49 Watts
3	Optional	6.49 to 12.95 Watts
4	Reserved	12.95 to 25.50 watts

Proprietary PD Detection

S-Series devices support a subset of the currently deployed proprietary PoE methods. This includes support for Cisco PDs, including a proprietary capacitor-based detection scheme.

PoE Port Status LEDs

The PoE port status of each 10/100/1000 Mbps RJ45 port on an S-Series I/O module is indicated by the two-color RX and TX LED display for each port. To observe the PoE port status indications, you must switch the S-Series I/O module from the default RX/ TX Status Mode to the PoE Port Status Mode using the red PoE button.

Allocation of PoE Power to Devices

When equipped with a PoE subsystem and S-POE-PS power supplies, the S-Series chassis provides dedicated PoE power for powered devices (PDs) attached to the 10/100/1000 Mbps RJ45 ports on the installed S-Series I/O modules.

The S-Series firmware determines the power available for PoE based on power supply status and power supply redundancy mode. When any change is made to the power supply status or redundancy mode, the firmware recalculates the power available for PoE.

The power available for PoE is distributed based on the configured allocation mode:

- **Automatic** mode (default), in which available power is distributed evenly. Any change in available power, due to a change in power supply status or redundancy mode, will trigger an automatic redistribution of power.
- **Manual** mode, in which the power budget is manually configured, using either CLI commands or the MIBs. The wattage configured cannot exceed the total power available on the switch for PoE.

The configured wattage assignment is used to calculate the total available PoE power. If the total available PoE power changes, a redistribution of available power will occur, applying the calculated percentage.

If the PoE power needed or requested exceeds the power available, the system will generate a trap to notify the system manager.

For more information on configuring allocation mode, see the *Enterasys S-Series CLI Reference*.

Management of PoE Power to PDs

You can configure how the S-Series chassis makes power available to attached PDs:

- **Real-time** mode (default), in which the PoE controller calculates the power needed by a PD based on the actual power consumption of the attached devices.
- **Class** mode, in which the PoE controller manages power based on the IEEE 802.3at definition of the class limits advertised by the attached devices. In this mode, the maximum amount of power required by a device in the advertised class is reserved for the port, regardless of the actual amount of power being used by the device.

For more information on configuring power management mode, see the *Enterasys S-Series CLI Reference*.



Downloading a Firmware Image via the Serial Port

This appendix describes how to download firmware via the serial (usbcom) port on an I/O fabric module or I/O module or via the S-Series chassis console port for an I/O fabric module. This procedure is an out-of-band operation that copies the firmware through the serial port to the device.

Serial port download has been successfully tested with the following applications:

- HyperTerminal
- TeraTerm

Other terminal applications may work, but are not explicitly supported.

To download device firmware via the serial (usbcom) port, proceed as follows:

1. With the serial port connected, power up the device. The following message displays:

```
Boot ROM Initialization, Version 01.00.02

Copyright (c) 2003 Enterasys Networks, Inc.
SDRAM size: 1024 MB
Testing SDRAM... PASSED.
Loading Boot Image: 01.00.19... DONE.
Uncompressing Boot Image... DONE.
```

2. Once the boot image is finished uncompressing, you receive a message indicating you have 3 seconds to access the bootloader menu by pressing any key. Press a key and the system image loader prompt displays:

```
###You have 3 seconds to access the bootloader menu###
Press any key to enter System Image Loader menu
```

Press any key within 3 seconds.

```
[System Image Loader]:
```

3. To display help for all the system image loader mode commands, enter a question mark (?):

```
[System Image Loader]:?
?, help          - print this list
boot            - boot (load and go)
delete         - delete an image file
download       - start ZMODEM download
list           - display available images
log            - message log
setbaud        - set baud rate, (9600,38400,57600,115200)
setboot        - change boot image file
showboot       - display boot image file
clearnvram     - clear persistent storage
[System Image Loader]:
```

4. Use the **list** command to display the images currently on this device.

-
- The baud rate can be set to 9600, 38400, 57600, or 115200. Using the **setbaud** command, set the baud rate to 115200:

```
[System Image Loader]: setbaud 1152000
###Change the baud of the terminal program to 1152000###
[System Image Loader]:
```

- Use the **download** command to start the ZMODEM receive process. Send the image file using the ZModem protocol from your terminal application. (This procedure will vary depending on your application.) When the ZModem download is finished, the following message displays:

```
[System Image Loader]: download
Preparing to receive file...
**xxxxxxxxxxxxxxxxxxxxx
###Start the ZMODEM transfer from the terminal software###
Writing file...
Download successful.
[System Image Loader]:
```

- Use the **list** command to confirm the:

- Images that are currently on the device
- Image currently listed as the boot image

Use the **setboot filename** command to set the correct boot image:

```
[System Image Loader]: list
Filename:      722010001 (Boot)
Version:      07.22.01.0001
Size:        4527490 (bytes)
Date:        MON AUG 1 15:32:24 2011
Checksum:    d89ace409317bc765789fcelc73b8745
Compatibility: listOfCompatibleDevices

Filename:      722010025
Version:      07.22.01.0025
Size:        4529790 (bytes)
Date:        TUE AUG 23 22:38:54 2011
Checksum:    6ccaaf8a5b77d7d34c6c3d972b381024
Compatibility: listOfCompatibleDevices
[System Image Loader]:setboot 722010025
[System Image Loader]:list
Filename:      722010001
Version:      07.22.01.0001
Size:        4527490 (bytes)
Date:        MON AUG 1 15:32:24 2011
Checksum:    d89ace409317bc765789fcelc73b8745
Compatibility: listOfCompatibleDevices

Filename:      722010025 (Boot)
Version:      07.22.01.0025
Size:        4529790 (bytes)
Date:        TUE AUG 23 22:38:54 2011
Checksum:    6ccaaf8a5b77d7d34c6c3d972b381024
Compatibility: listOfCompatibleDevices
[System Image Loader]:
```




Note: If you reboot without specifying the image to boot using the **setboot** command as described above, the device will attempt to load whatever image is currently stored in the bootstring via the **setboot** system command. If the device cannot find the image, or it is not set, it will search through available images and attempt to boot the newest one. If the device finds and successfully boots an image file, it will set the bootstring to the name of that image file.

8. Use the **boot** command to reboot using the new image:



Note: When a device is booted, the device baud rate is reset to 9600. After issuing the boot command, reset the terminal application baud rate to 9600 so that it will continue to display output from the device.

```
[System Image Loader]: boot
###The unit will boot normally###

/flash0/ - Volume is OK
Loading 61205...                DONE.
Uncompressing System Image...   DONE.
Loading System Image...         DONE.
Initializing Platform Hardware

.
.
.
```

If you require assistance, contact Enterasys Networks Technical Support. Refer to [“Getting Help”](#) on page xv.

