Hardware Installation and Configuration Guide for the Cisco Ethernet Subscriber Solution Engine 1105

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Cisco 90-Day Limited Hardware Warranty Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranty applicable to Cisco software, is included on the CD that accompanies your Cisco product. Follow these steps to access and download the *Cisco Information Packet* and your warranty document from the CD or from Cisco.com.

1. Launch your browser, and go to this URL:

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2. To read the *Cisco Information Packet*, follow these steps:

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   d. Review the document online, or click the **PDF** icon to download and print the document in PDF format (Adobe Portable Data File).

You can also contact the Cisco service and support website for assistance:

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Duration of Hardware Warranty

Ninety (90) days.

Replacement, Repair, or Refund Policy for Hardware

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Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	

Preface

This guide describes how to install, configure, and administer the Cisco Ethernet Subscriber Solution Engine (Cisco ESSE).

Audience

This guide is intended primarily for system administrators who install and configure internetworking equipment and who are familiar with Cisco IOS software.

Warning **This equipment is to be installed and maintained by service personnel only as defined by AS/NZS 3260 Clause 1.2.14.3 Service Personnel.**

Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	**boldface** font
Variables for which you supply values	*italic* font
Displayed session and system information	`screen` font

Item	Convention
Information you enter	**boldface screen** font
Variables you enter	*italic screen* font
Menu items and button names	**boldface** font
Selecting a menu item in paragraphs	**Option>Network Preferences**
Selecting a menu item in tables	Option>Network Preferences

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Warning **This warning symbol means *danger*. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.**

Waarschuwing **Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen. Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het document *Regulatory Compliance and Safety Information* (Informatie over naleving van veiligheids- en andere voorschriften) raadplegen dat bij dit toestel is ingesloten.**

Varoitus **Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä julkaisussa esiintyvien varoitusten käännökset löydät laitteen mukana olevasta *Regulatory Compliance and Safety Information* -kirjasesta (määräysten noudattaminen ja tietoa turvallisuudesta).**

Attention **Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez le document *Regulatory Compliance and Safety Information* (Conformité aux règlements et consignes de sécurité) qui accompagne cet appareil.**

Warnung **Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Dokument *Regulatory Compliance and Safety Information* (Informationen zu behördlichen Vorschriften und Sicherheit), das zusammen mit diesem Gerät geliefert wurde.**

Avvertenza **Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti. La traduzione delle avvertenze riportate in questa pubblicazione si trova nel documento *Regulatory Compliance and Safety Information* (Conformità alle norme e informazioni sulla sicurezza) che accompagna questo dispositivo.**

Advarsel **Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du vare oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. Hvis du vil se oversettelser av de advarslene som finnes i denne publikasjonen, kan du se i dokumentet *Regulatory Compliance and Safety Information* (Overholdelse av forskrifter og sikkerhetsinformasjon) som ble levert med denne enheten.**

Aviso **Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes. Para ver as traduções dos avisos que constam desta publicação, consulte o documento *Regulatory Compliance and Safety Information* (Informação de Segurança e Disposições Reguladoras) que acompanha este dispositivo.**

¡Advertencia! **Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes. Para ver una traducción de las advertencias que aparecen en esta publicación, consultar el documento titulado *Regulatory Compliance and Safety Information* (Información sobre seguridad y conformidad con las disposiciones reglamentarias) que se acompaña con este dispositivo.**

Varning! **Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador. Se förklaringar av de varningar som förkommer i denna publikation i dokumentet *Regulatory Compliance and Safety Information* (Efterrättelse av föreskrifter och säkerhetsinformation), vilket medföljer denna anordning.**

Product Documentation

Note Although every effort has been made to validate the accuracy of the information in the printed and electronic documentation, you should also review the product documentation on Cisco.com for any updates.

The following product documentation is available:

- Regulatory Compliance and Safety Information
- Documentation Roadmap
- Release Notes
- Quick Start Guide
- Installation and Configuration Guide
- User Guide
- Programmer's Guide
- Context-Sensitive Online Help

Note To view the PDFs, Adobe Acrobat Reader 4.0 or later is required.

Regulatory Compliance and Safety Information

This document provides regulatory compliance and safety information for the Cisco ESSE. This document is available in the following formats:

- PDF on the product CD-ROM
- On Cisco.com
- Printed document shipped with product

Documentation Roadmap

This document summarizes the Cisco ESSEdocumentation set and the locations. This document is available in the following formats:

- PDF on the product CD-ROM
- On Cisco.com

- Printed document shipped with product

Release Notes

This document provides new information on the Cisco ESSE. This document is available in the following formats:

- On Cisco.com

Quick Start Guide

This document describes installation getting started process for the Cisco ESSE. This document is available in the following formats:

- PDF on the product CD-ROM
- On Cisco.com
- Printed document shipped with product

Installation and Configuration Guide

This document describes the installation and configuration of the Cisco ESSE. This document is available in the following formats:

- PDF on the product CD-ROM
- On Cisco.com
- Printed document available by order

User Guide

This document describes the Cisco ESSE. This document is available in the following formats:

- PDF on the product CD-ROM and from the product online help
- On Cisco.com
- Printed document available by order

Programmer's Guide

This document describes the northbound APIs. This document is available in the following formats:

- On Cisco.com

Context-Sensitive Online Help

You can access the help in two ways:

- Select a window, then click the Help icon (?) in the upper right corner of the dialog box.
- To launch the main help page, click **Help** in the upper right corner of the desktop.

Related Documentation

Note Although every effort has been made to validate the accuracy of the information in printed and electronic documentation, you should also review Cisco product documentation on Cisco.com for any updates.

The following additional documentation is available:

Quick Start Guide for the Cisco ONT

This document describes the installation steps for the Cisco ONT. This document is available at:

- On Cisco.com at http://www.cisco.com/en/US/products/hw/optical/ps4026/products_quick_reference_guides_list.html

Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com

Translated documentation is available at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to this URL:

http://www.cisco.com

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquires are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://www.cisco.com/register/

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

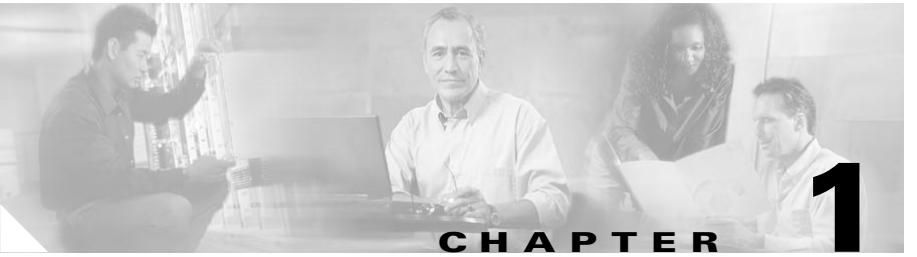
Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.



Product Overview

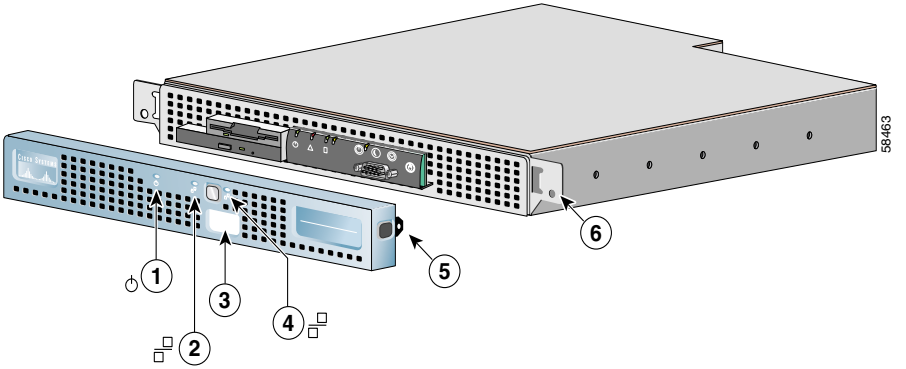
The Cisco Ethernet Subscriber Solution Engine 1105 (Cisco ESSE) is a rack-mountable appliance with a web browser graphical user interface (GUI). A network administrator can use the Cisco ESSE to configure and manage Cisco ONT 1031s that provide optical fiber-based Ethernet connectivity to homes and small offices.

This chapter contains the following major sections:

Bezel Features

The Cisco ESSE has a bezel that attaches to its front and covers the front panel. This bezel contains two Ethernet indicators, a power indicator, and a power button, and it provides access to the serial port. To remove the bezel, press the tab on each end of the bezel and lift it from the chassis. Figure 1-1 shows the bezel's features.

Figure 1-1 Bezel Features

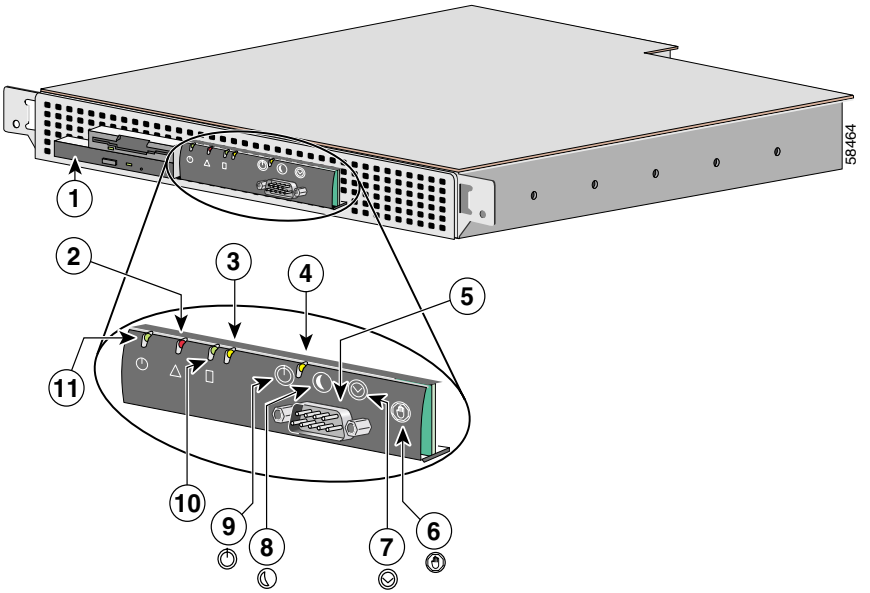


1	Power indicator	**4**	Ethernet 1 activity / link indicator
2	Ethernet 0 activity / link indicator	**5**	Bezel mounting tabs (2)
3	Console / serial port access		

Front Panel Features

The Cisco ESSE front panel contains switches (see the "System Switches" section on page 1-5), indicators (see the "System Indicators" section on page 1-4), a CD-ROM drive, and a serial port. To access the front panel, remove the bezel. Figure 1-2 shows the front panel's features.

Figure 1-2 Front Panel Features



1	CD-ROM drive	**7**	Reset switch
2	System fault indicator	**8**	Sleep switch (not supported)
3	Ethernet 0 activity / link indicator	**9**	Power switch
4	Ethernet 1 activity / link indicator	**10**	Hard drive indicator
5	Console / serial port	**11**	Power indicator
6	Nonmaskable interrupt switch		

System Indicators

When troubleshooting your system, you might need to check the status of the indicators on the system's front panel (see Figure 1-2). The appearance and function of these lights are described in Table 1-1.

Table 1-1 System Indicators

Indicator	Color	Function
Power	Green	This indicator lights up when the Cisco ESSE is connected to an AC power source. It blinks when the Cisco ESSE is in sleep mode. The bezel contains a duplicate of this indicator.
System fault	Amber	This indicator blinks during system startup and when a system fault is detected. This indicator is not visible with the bezel attached.
Hard drive activity	Green	This indicator blinks when hard drive activity occurs. This indicator is not visible with the bezel attached.
Ethernet 0 activity / link	Amber	This indicator lights up when the Ethernet 0 port is connected to a network. It blinks when activity occurs on this channel. The bezel contains a duplicate of this indicator.
Ethernet 1 activity / link	Amber	The Ethernet 1 activity / link indicator lights up when the Ethernet 1 port is connected to a network; blinks when activity occurs on this channel. The bezel contains a duplicate of this indicator.

System Switches

Refer back to Figure 1-2 to see the location of the switches on the Cisco ESSE front panel. To activate a switch, press the corresponding icon on the front panel. Table 1-2 describes the function of these switches.

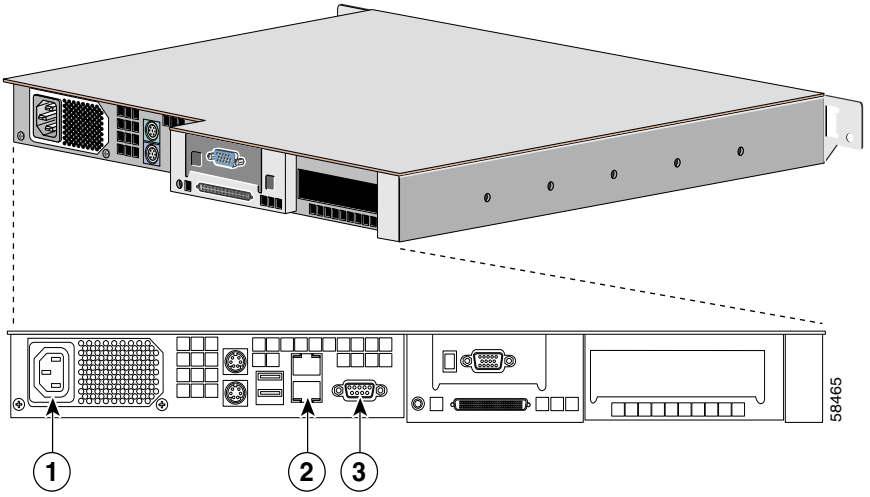
Table 1-2 Front Panel Switches

Switch	Function
Power switch	This switch turns the Cisco ESSE's power on or off. To turn system power off, press and hold this switch for at least 4 sec. There is a power switch on both the bezel and on the front panel.
Sleep switch	This switch places the system in sleep mode. This switch is accessible only when the bezel is removed.
Reset switch	This switch reboots the system. If you cannot shut down the Cisco ESSE using the operating system, press the Reset switch. This switch is accessible only when the bezel is removed.
Nonmaskable interrupt switch	Use this switch only when instructed to do so by Cisco's Technical Assistance Center. This switch is accessible only when the bezel is removed.

Back Panel Features

The back panel contains the Cisco ESSE AC power receptacle, Ethernet connectors, and a serial port. Figure 1-3 shows the back panel features. Do not attach peripheral devices, such as mice, monitors, and keyboards to the Cisco ESSE. It does not support their use.

Figure 1-3 Back Panel Connections



1	AC power receptacle
2	Ethernet connectors (Ethernet 0 is the lower port, and Ethernet 1 is the upper port)
3	Serial port

Serial Ports

The two integrated serial ports on the front and back panels of the system use 9-pin D-subminiature connectors.

Serial Port Connectors

If you reconfigure your hardware, you may need pin number and signal information for the serial port connectors. Figure 1-4 illustrates the pin numbers for the serial port connectors, and Table 1-3 defines the pin assignments and interface signals for the serial port connector.

Figure 1-4 Pin Numbers for the Serial Port Connectors

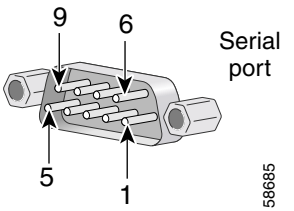


Table 1-3 Serial Port PIn Assignments

Pin	Signal	I/O	Definition
1	DCD	I	Data carrier detect
2	SIN	I	Serial input
3	SOUT	O	Serial output
4	DTR	O	Data terminal ready
5	GND	N/A	Signal ground
6	DSR	I	Data set ready
7	RTS	O	Request to send
8	CTS	I	Clear to send
9	RI	I	Ring indicator
Shell	N/A	N/A	Chassis ground

Ethernet Connectors

Your system has integrated 10/100 Mbps Ethernet connectors. Each Ethernet connector provides all the functions of a network expansion card and supports both the 10BASE-T and 100BASE-TX Ethernet standards.

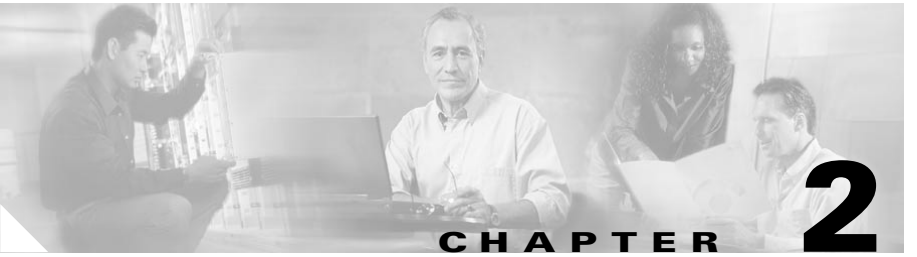
Warning **To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.**

Network Cable Requirements

The Cisco ESSE Ethernet connectors are designed for attaching an unshielded twisted pair (UTP) Ethernet cable equipped with standard RJ-45 compatible plugs. Press one end of the UTP cable into the Ethernet connector until the plug snaps securely into place. Connect the other end of the cable to an RJ-45 jack wall plate or to an RJ-45 port on a UTP concentrator or hub, depending on your network configuration. Observe the following cabling restrictions for 10BASE-T and 100BASE-TX networks:

- For 10BASE-T networks, use Category 3 or greater wiring and connectors.
- For 100BASE-TX networks, use Category 5 or greater wiring and connectors.
- The maximum cable run length (from a workstation to a concentrator) is 328 ft or 100 m.
- For 10BASE-T networks, the maximum number of daisy-chained concentrators on one network segment is four.

Note To avoid line interference, put voice and data lines in separate sheaths.



Preparing for Installation

This chapter describes the safety instructions and site requirements needed for installing the Cisco ESSE and helps you prepare for installation. It contains the following major sections:

Required Tools and Equipment

You need the following tools and equipment to install the Cisco ESSE:

- Console cable
- Power cord
- Number 2 Phillips screwdriver
- Tape measure and level
- Antistatic mat or antistatic foam
- Electro-static discharge grounding strap

- Two Ethernet cables
- Rack-mount kit:
  - Two chassis-support brackets
  - Two rack-mount brackets
  - Six screws threaded appropriately for your rack

Safety

This section provides safety information you will need when installing this product.

Warnings and Cautions

Read Chapter 3, "Installing and Configuring the Cisco ESSE," before you connect the system to its power source. Failure to read and follow these guidelines could lead to an unsuccessful installation and possible damage to the system and components.

You should observe the following safety warnings when working with any equipment that connects to electrical power or telephone wiring. They can help you avoid injuring yourself and damaging the Cisco ESSE.

The following warnings and cautions are provided to help you prevent damage to the devices or injury to yourself:

Warning **This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.**

Warning **The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.**

Warning **Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.**

Warning **Before working on a chassis or working near power supplies, unplug the power cord on AC units.**

Warning **Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages.**

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.**

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Make sure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. and 240 VAC, 10A international are used on the phase conductors (all current-carrying conductors).**

Warning **This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.**

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.**

Warning **Do not work on the system or connect or disconnect cables during periods of lightning activity.**

Warning **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.**

Warning **Ultimate disposal of this product should be handled according to all national laws and regulations.**

Warning **Before working on a system that has an On/Off switch, turn OFF the power and unplug the power cord.**

Warning **Read the installation instructions before you connect the system to its power source.**

Warning **The ports labeled "10BaseT," "100BaseTX," and "10/100" are safety extra-low voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits. Avoid connecting these circuits to telephone network voltage (TNV) circuits.**

Warning **There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.**

Warning **The device is designed to work with TN power systems.**

General Precautions

Observe the following general precautions when using and working with your system:

- Keep your system components away from radiators and heat sources, and do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the computer gets wet, see the appropriate chapter in your troubleshooting guide or contact the Cisco Technical Assistance Center. For instructions on contacting the Technical Assistance Center, see the "Obtaining Technical Assistance" section on page xxv.
- Do not push any objects into the openings of your system components. Doing so can cause fire or electric shock by short-circuiting interior components.
- Position system cables and power cables carefully; route system cables and the power cable and plug so that they cannot be stepped on or tripped over. Be sure that nothing rests on your system components' cables or power cable.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the system before removing a component from the system board or disconnecting a peripheral device from the computer.

Maintaining Safety with Electricity

Follow these guidelines when working on equipment powered by electricity:

- If any of the following conditions occurs contact the Cisco Technical Assistance Center:
  - The power cable, extension cable, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.

  - The product does not operate correctly when you follow the operating instructions.

- Use the correct external power source. Operate the product only from the type of power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult the Cisco Technical Assistance Center or a local power company.
- Use only approved power cable(s). If you have not been provided with a power cable for your computer or storage system or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the Cisco ESSE, components, and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a three-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the extension cable with properly grounded plugs.
- To help protect your system/components from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptable power supply (UPS).
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.

Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside your computer. To prevent static damage, discharge static electricity from your body before you touch any of your computer's electronic components, such as the microprocessor. You can do so by touching an unpainted metal surface on the computer chassis.

As you continue to work inside the computer, periodically touch an unpainted metal surface to remove any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component in your computer. Just before unwrapping the antistatic packaging, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads.

Preventing Electromagnetic Interference

When you run wires for any significant distance in an electromagnetic field, electromagnetic interference (EMI) can occur between the field and the signals on the wires.

Note the following:

- Bad plant wiring can result in radio frequency interference (RFI).
- Strong EMI, especially when it is caused by lightning or radio transmitters, can destroy the signal drivers and receivers in the system, and can even create an electrical hazard by conducting power surges through lines and into the system.

To predict and remedy strong EMI, consult RFI experts.

Preparing Your Site for Installation

This section describes the requirements your site must meet for safe installation and operation of your Cisco ESSE. Ensure that your site is properly prepared before beginning installation.

Environmental

When planning your site layout and equipment locations, keep in mind the information provided in this section to help avoid equipment failures and reduce the possibility of environmentally caused shutdowns. If you are currently experiencing shutdowns or unusually high errors with your existing equipment, the precautions listed below will help you isolate the cause of failures and prevent future problems:

- To avoid damage to equipment, always follow the ESD-prevention procedures described in the "Preventing Electromagnetic Interference" section on page 2-7. Damage from static discharge can cause immediate or intermittent equipment failure.
- Make sure that the chassis cover is secure. The chassis is designed to allow cooling air to flow effectively within it. An open chassis allows air leaks, which could interrupt and redirect the flow of cooling air from internal components.
- Make sure that the room in which you operate has adequate air circulation. Electrical equipment generates heat. Ambient air temperature might not be adequate to cool equipment to acceptable operating temperatures without adequate circulation.

Choosing a Site for Installation

Warning **This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.**

- Choose a site with a dry, clean, well-ventilated and air-conditioned area.
- Choose a site that maintains an ambient temperature of 10° to 35°C (50° to 95°F).

Grounding the System

Warning **Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.**

Creating a Safe Environment

Follow these guidelines to create a safe operating environment:

- Keep tools and chassis components off the floor and away from foot traffic.
- Clear the area of possible hazards, such as damp floors, ungrounded power extension cables, and missing safety grounds.
- Keep the area around the chassis free from dust and foreign conductive material (such as metal flakes from nearby construction activity).

AC Power

Warning **The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.**

For Cisco ESSE power requirements, see Appendix B, "Technical Specifications."

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Make sure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. and 240 VAC, 10A international are used on the phase conductors (all current-carrying conductors).**

Cabling

Use the cables in the accessory kit to connect the Cisco ESSE console port to a console or computer that is running a console program. In addition to the console cable, you must supply your own standard Ethernet cable to connect the Cisco ESSE to your network. For information detailing cable requirements, see the "Network Cable Requirements" section on page 1-8.

A structured wiring system provides a standardized way to wire a building for all types of networks for the Cisco ESSE to be installed. The main distribution frame links all of the building's interior wiring and provides an interface connection to circuits coming from outside sources such as the local telephone company. Wiring hubs (peripherals for cabling installations) provide the connection logic unique to Fast Ethernet cables that the Cisco ESSE uses. Unshielded twisted pair (UTP) copper wire is used to connect the Cisco ESSE and distributes the network connections to wall jacks near each piece of network equipment.

Precautions for Rack Mounting

Observe the following precautions for rack stability and safety. Also, refer to the rack installation documentation accompanying the rack for specific warning and/or caution statements and procedures.

Note Servers, storage systems, and appliances are considered components in a rack. Thus, *component* refers to any server, storage system, or appliance, as well as to various peripherals or supporting hardware.

- Do not move large racks by yourself. Due to the height and weight of the rack, at least two people are needed to accomplish this task.
- Ensure that the rack is level and stable before extending a component from the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to components in the rack.
- Do not step on or stand on any system/component when servicing other system/components in a rack.

- A component should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting components in a partially filled rack, load the rack from the bottom to the top, with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Precautions for Products with Modems, Telecommunications, or LAN Options

Observe the following guidelines when working with options:

- Do not connect or use a modem or telephone during a lighting storm. You will be at risk of electrical shock from lightning.
- Never connect or use a modem or telephone in a wet environment.
- Do not plug a modem or telephone cable into the Ethernet connector.
- Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.

- Do not use a telephone line to report a gas leak while you are in the vicinity of the leak.

Setting Up the Layer 2 Network

As part of the installation process, you must configure your Cisco ESSE. During this process, you are prompted to enter information for the two Ethernet interface ports. Ethernet 0 is used for IP communications, and Ethernet 1 is used for L2NMP management packet communications.

The IP interface is used for IP-based web-server-to-web-browser communications and can be physically isolated to a separate LAN, if you wish.

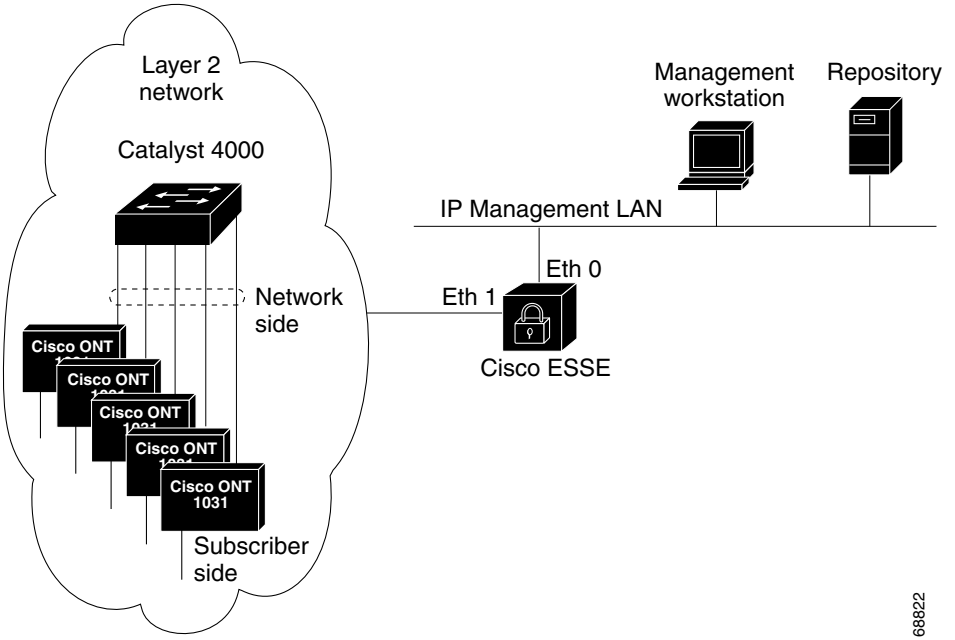
The L2NMP interface is used to exchange management packets with Cisco ONT 1031 devices located throughout the layer 2 network.

General notes on network configuration are provided in Table 2-1. An example of a Layer 2 network showing a Cisco ESSE is shown in Figure 2-1.

Table 2-1 Network Configuration Notes

Device Type	Tasks
All	• Upgrade your network device software to the supported versions. • Verify connectivity from the Cisco ESSE to the devices you want to manage.
Access switches	• Enable CDP. **Note** A switch port that connects to the Cisco ONT 1031 should not see a CDP neighbor. If a neighbor is seen, the Cisco ONT will not be grouped in the Cisco ESSE GUI. (For example, if the Cisco ONT 1031 subscriber port is connected to a switch that runs CDP, you must turn off CDP on the Access Switch port connecting to the Cisco ONT 1031). • Enable SNMP (read only). Specify the community string by using the Cisco ESSE GUI. • Specify the IP address by using the Cisco ESSE GUI. • Set up VLANs.

Figure 2-1 Sample Layer 2 Network



The Cisco ESSE to Cisco ONT 1031 network switching fabric for the L2NMP interface is based on communicating at the Layer 2 level. The network switching fabric may either be configured on a single VLAN or as IEEE 802.1q trunks with appropriate VLANs.

Configuring VLANs

If the network switching fabric is configured as a single VLAN, L2NMP management traffic and the Cisco ONT 1031 subscriber traffic will share this single VLAN. The Cisco ESSE L2NMP interface, for L2NMP management packet exchange, can potentially become overloaded due to excessive packet processing of the additional end user traffic or other high traffic source or surge (i.e., flooding or, potentially, the end user data) causing disruption of L2NMP management packet exchange. When the high traffic recedes, L2NMP packet communication resumes.

To avoid this potential issue, logically separate these two traffic streams by implementing the appropriate IEEE 802.1q trunk and VLAN configurations across your network.

L2NMP packets generated by Cisco ONT 1031 devices are without VLAN tags and will be placed onto the native VLAN (as required by IEEE 802.1q). Therefore, if you are distributing Cisco ONT 1031s across multiple VLANS in your network, each Cisco ONT 1031 network access port must be defined as a trunk and must contain the appropriate native VLAN and the second non-native VLAN for end user traffic. If you clear all other unnecessary VLANs from this trunk definition, traffic on this trunk will be kept to a minimum.

The network access port on the Cisco ESSE L2NMP interface therefore must also be defined as a trunk and contain all native VLANs from all Cisco ONT 1031 network access port trunk definitions. To prevent excess packet processing on the Cisco ESSE L2NMP interface, clear all extraneous VLANs from this trunk.

If all Cisco ONT 1031 access ports in the network are in the same native VLAN, the L2NMP interface's access port needs only to be in this same native VLAN and does not have to be defined as a trunk. To prevent excess packet processing on the Cisco ESSE L2NMP interface, ensure all the Cisco ONT 1031 network access ports and the Cisco ESSE L2NMP interface are the only devices on this native VLAN.

To separate these two traffic streams, verify that the customer premises equipment (CPE) subscriber side port is IEEE 802.1q compliant, defined as a trunk, and has the same native VLAN and end user VLANs defined.

For more information on configuring VLANs and VLAN trunks on access switches, refer to the software configuration guide for the switch.

CHAPTER 3

Installing and Configuring the Cisco ESSE

This chapter describes how to install and configure the Cisco ESSE. It contains the following major sections:

Quick Reference

Table 3-1 provides a high-level overview of the installation process.

Table 3-1 Quick Reference

Task	Steps	For more information, see . . .
Access Switches	Configure VLANs.	• Access switch product documentation • Supported device table on Cisco.com • Configuring VLANs, page 2-13
Install the Cisco ESSE	1. Attach the chassis support brackets to the chassis. 2. Attach the rack mount brackets to the rack. 3. Put the chassis into the rack. 4. Fasten the chassis in the rack.	Installing the Cisco ESSE, page 3-3
Connect to a power source	Connect to an AC power source.	Connecting to the Power Source, page 3-7
Connect cables	1. Plug the IP management network connection into the Ethernet 0 port. 2. Plug the layer 2 network connection into the Ethernet 1 port. 3. Connect a terminal to the console port.	Connecting the Cables, page 3-7
Power up the Cisco ESSE	Press the power switch. The Cisco ESSE will now boot.	Powering Up the Cisco ESSE, page 3-8

Table 3-1 Quick Reference (continued)

Task	Steps	For more information, see . . .
Configure the Cisco ESSE	1. Log in at the terminal. 2. Configure Cisco ESSE connectivity by responding to the prompts.	Configuring the Cisco ESSE, page 3-8
Configure the web browser	1. Verify that the client system is using a supported browser. 2. Enable JavaScript. 3. Configure the browser to accept all cookies.	Configuring the Web Browser, page 3-13
Verify HTTP and HTTPS connectivity	Verify that you can connect to the Cisco ESSE via HTTP and HTTPS.	Verifying HTTP and HTTPS Connectivity, page 3-15
Install Cisco ONT 1031 devices	1. Mount device to outside wall at subscriber premise. 2. Connect cables and verify connection. 3. Replace the top cover and seal the unit.	Refer to the documentation that accompanies the Cisco ONT 1031 devices.
Use the Cisco ESSE to manage your Cisco ONT 1031s.	Launch the Cisco ESSE GUI via a web browser.	Refer to the product online help or the Quick Start Guide for getting started details.

Installing the Cisco ESSE

This section provides instructions for installing the Cisco ESSE in a rack. The rack must be properly secured to the floor, to the ceiling or upper wall and, where applicable, to adjacent racks. The rack should be secured using floor and wall fasteners and bracing specified or approved by the rack manufacturer or by industry standards. Refer to the rack manufacturer's installation documentation for precautionary warnings and information before attempting this installation.

Before installing the Cisco ESSE in a rack, read the "Preparing Your Site for Installation" section on page 2-7 to familiarize yourself with the proper site and environmental conditions. Failure to read and follow these guidelines could lead to an unsuccessful installation and possible damage to the system and components. Perform the steps below when installing and servicing the Cisco ESSE:

- Disconnect all power and external cables before installing the system.
- Install the system in compliance with your local and national electrical codes:
  - United States: National Fire Protection Association (NFPA) 70; United States National Electrical Code
  - Canada: Canadian Electrical Code, Part, I, CSA C22.1
  - Other countries: If local and national electrical codes are not available, refer to IEC 364, Part 1 through Part 7
- Do not work alone under potentially hazardous conditions.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Do not attempt to install the Cisco ESSE into a rack that has not been securely anchored in place. Damage to the system and personal injury may result.
- Due to the size and weight of the computer system, never attempt to install the computer system by yourself.

Warning **Before working on a system that has an on/off switch, turn OFF the power and unplug the power cord.**

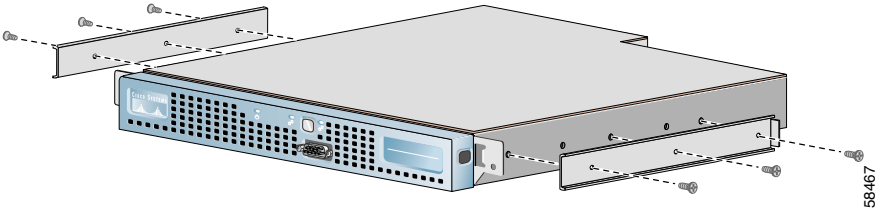
See Chapter 2, "Preparing for Installation," for additional safety information regarding rack installation.

Installing the Cisco ESSE in a Rack

To install the Cisco ESSE in a rack, perform the following steps:

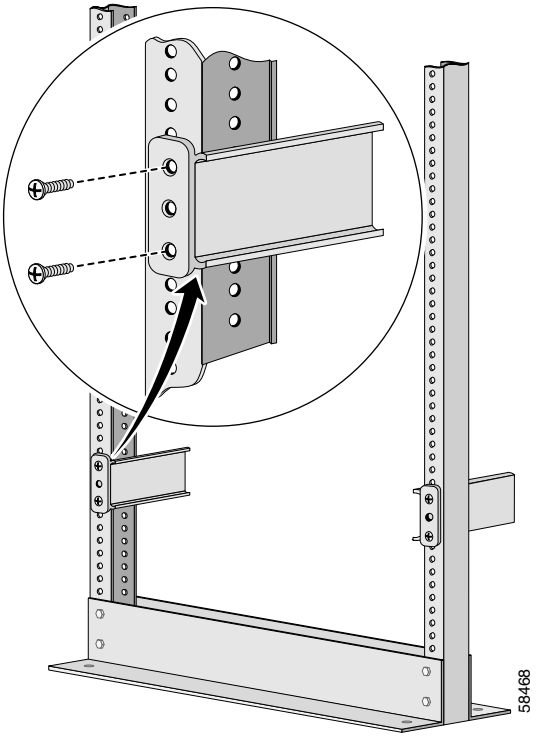
Step 1 Attach chassis-support brackets—Use the screws provided to attach one chassis-support bracket to each side of the chassis. Use the three front screw holes on the Cisco ESSE, and use three screws on each side. See Figure 3-1.

Figure 3-1 Chassis-Support Bracket Installation



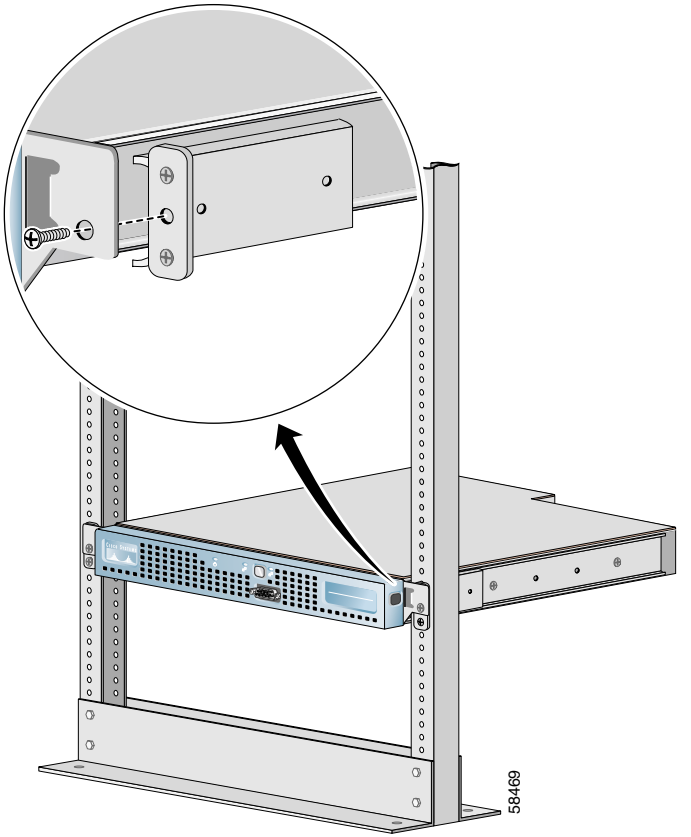
Step 2 Attach the rack-mount brackets to the rack—Because not all holes in a rack are equidistant, it is possible to misalign the brackets. To avoid this problem, make sure that the three holes of the brackets line up exactly with the holes in the rack. Screws are not provided. See Figure 3-2.

Figure 3-2 Rack-Mount Bracket Installation



Step 3 Put the chassis into the rack—Slide the chassis-support brackets (attached to the chassis in Step 1) into the rack-mount brackets (attached to the rack in Step 2). See Figure 3-3.

Figure 3-3 Chassis Installation



Caution The rack-mount kit is not intended for use as a slide rail system. You must complete installation of the front-mount bracket assembly by securely fastening the chassis into the rack.

Step 4 Fasten the chassis in the rack—Fasten the front flanges of the chassis to the rack. When you are done, the chassis should not slide on the channel bar.

Connecting to the Power Source

Warning **Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.**

Warning **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.**

Connect the AC power receptacle to the AC power source with the provided power cable.

Connecting the Cables

Warning **Do not work on the system or connect or disconnect cables during periods of lightning activity.**

Use unshielded twisted pair (UTP) copper wire Ethernet cable, with standard RJ-45 compatible plugs, to connect the Cisco ESSE to the IP management LAN and Layer 2 networks.

To connect the cables:

Step 1 Plug the IP management LAN connection into the Ethernet 0 port. For the location of the Ethernet 0 port, see Figure 1-3.

Step 2 Plug the Layer 2 network connection into the Ethernet 1 port. For the location of the Ethernet 1 port, see Figure 1-3.

Step 3 Connect a console to the rear serial port. To connect the console to the terminal port:

a. Attach a DB-9 to RJ-45 adapter (provided) to the serial port of the console.

b. Attach a DB-9 to RJ-45 adapter (provided) to the console port of the Cisco ESSE.

c. Connect the console to the Cisco ESSE using an RJ-45 cable (provided).

Powering Up the Cisco ESSE

To activate the Cisco ESSE power, press the power switch.There is a power switch both on the bezel and on the front panel. The system begins booting and sends messages to the console window. When the login prompt appears, you can configure the system.

To turn off power, press and hold the power switch for at least four seconds.

Configuring the Cisco ESSE

Configure the Cisco ESSE when you boot the system for the first time and whenever you manually erase the configuration using the **erase config** command (for more information, see the "erase config" section on page C-23).

To delete characters when inputting a response to a prompt, press the **Backspace** key or the **Delete** key. You cannot edit a response after you press the **Enter** key. To change an entered response, you must exit the setup program and enter your responses again.

You can exit the setup program in two ways:

- Press **Ctrl-C**.

  The login prompt appears. Log in using the username **setup** to run the setup program.

- Or enter **no** at the final prompt:

```
Would you like to save this configuration? [yes].
no
```

The setup program exits without saving the configuration, and then restarts.

To configure the Cisco ESSE, perform the following steps:

Step 1 Power up the Cisco ESSE.

When the system finishes booting, a login prompt appears on the console.

Step 2 At the login prompt, enter **setup**.

When you boot the system for the first time, it is not configured. Logging in as **setup** allows you to configure the system.

Step 3 Enter responses to the first set of prompts to configure Cisco ESSE connectivity. Table 3-2 describes how to respond to the prompts. After inputting the required information, press **Enter** to proceed to the next prompt.

Table 3-2 General Configuration

Prompt	Your Response	Sample Response
`host name:`	Set the system hostname.	**solutionengine**
`domain name:`	Set the system domain name.	**cisco.com**
`<username> password:`	Set the password for the default user **admin**. Characters you type do not appear on screen. **Note** Default user **admin** is reserved and cannot be deleted or changed.	**wq1Cvu2pl**
`confirm password:`	Reenter your password to verify that you typed it correctly. Characters you type do not appear on screen.	**wq1Cvu2pl**
`eth0 ip address:`	Set the IP address of the Ethernet 0 interface.	**209.165.200.224**
`eth0 network mask:`	Set the network mask of the Ethernet 0 interface.	**255.255.255.0**
`default gateway ip address:`	Set the IP address of the default router that connects the Cisco ESSE to network.	**209.165.200.222**

Table 3-2 General Configuration (continued)

Prompt	Your Response	Sample Response
`DNS server ip address:`	Set the IP address of the DNS server that the Cisco ESSE uses for name/address resolution. The Cisco ESSE must have a functional DNS server configured to function correctly. The setup program does not validate the IP address you enter. See the "ip name-server" section on page C-33 for information on adding up to two more name servers.	`209.165.201.1`
`Would you like to save this configuration? [yes]:`	Do one of the following: • Type **yes** and press **Enter** to save the configuration. • Type **no** and press **Enter** to exit without saving configuration and run the setup program again.	`Enter`

Step 4 Answer the next set of prompts to create a self-signed certificate. This certificate will allow you to access the Cisco ESSE securely, using HTTPS, until you are able to obtain a certificate from a certificate authority (CA). Table 3-3 describes how to respond to the prompts.

Table 3-3 Self-Signed Certificate Prompts

Prompt	Your Response	Sample Response
`Country Name`	Enter a 2-character code.	**US**
`State or Province Name`	Enter the full name of a state or province.	**snake desert**
`Locality Name`	Enter a city or locality name.	**snake town**
`Organization Name`	Enter a company name.	**snake oil, ltd.**
`Organizational Unit`	Enter the section of the company that is using the Cisco ESSE.	**webserver team**
`Common Name`	Enter a fully qualified domain name (FQDN).	**www.snakeoil.dom**
`Email Address`	Enter an e-mail address.	**www@snakeoil.dom**

After the setup script is complete, all changes are saved and the system reboots.

If you want to change the information in the setup configuration, use the following CLI commands:

- To change the hostname, use the **hostname** command (see hostname, page C-26).
- To change the domain name, use the **ip domain-name** command (see ip domain-name, page C-32).
- To change the DNS server, or to add up to two other DNS servers, use the **ip name-server** command (see ip name-server, page C-33).
- To configure or reconfigure an Ethernet port, use the **interface** command (see interface, page C-30).

If you want to change any other part of the Cisco ESSE setup configuration, use the **erase config** command to erase the previous configuration (see erase config, page C-23), and run the **setup** program again.

Verifying the Configuration

While you are at the console, verify that the Cisco ESSE is correctly configured by performing this procedure:

Step 1 At the system console, enter **admin** at the login prompt, and enter the password you created during setup at the password prompt.

If you cannot log in, see the "Cannot Log into the System" section on page A-1 for troubleshooting information.

Step 2 Enter the following command to verify that the Cisco ESSE can obtain DNS services from the network:

```
# nslookup dns-name
```

Where *dns-name* is the DNS name of a host that is registered in DNS.

If the browser cannot obtain the IP address of the host from DNS, make sure that the hostname has been configured in the DNS server. Then use the **ip name-server** command to specify that DNS server for address resolution. See the "ip name-server" section on page C-33 for instructions.

Step 3 Enter the following command to verify that the system can communicate with the network:

```
# ping ip-address
```

Where *ip-address* is the IP address of a host that is accessible on the network.

A DNS server is a useful host to ping because it should always be running and accessible.

For information about the **ping** command, see the "ping" section on page C-10.

If the system cannot communicate with the network, see the "Cisco ESSE Cannot Connect to the Network" section on page A-2 for troubleshooting information.

Step 4 Enter the command **show config** to verify that the configuration is as you expected. See the "show config" section on page C-55 for information about this command.

Step 5 Enter the **show clock** command to verify that the system time and date are correct in Coordinated Universal Time (UTC). If the time or date is incorrect, make the needed corrections. If your network uses network time protocol (NTP), configure the system to use NTP. The NTP server will set the date and time.

For more information about configuring time and date, see the "Setting System Date and Time" section on page 4-7.

Step 6 Enter the **exit** command to log out of the system.

If you cannot connect to the system using a web browser, see the "Cannot Connect to the Cisco ESSE Using a Web Browser" section on page A-4 for additional troubleshooting information.

Configuring the Web Browser

Before you connect to the Cisco ESSE via its web interface, make sure your browser is properly configured and is the correct version. The Cisco ESSE provides a web-based GUI supporting the following browsers:

- Netscape 6.2, Internet Explorer 5.5 with Service Pack 2, and Netscape 6.0 web browsers on Windows 2000 and Windows NT
- Netscape 6.2 only on Solaris 8, and Linux 6.2.

Configuring Netscape Navigator

To configure Netscape Navigator, perform the following steps:

Step 1 Verify that the client system is running Netscape Navigator 4.78 on Windows 2000, Solaris 8, or Linux 6.2.

Step 2 Enable JavaScript:

a. Select **Edit > Preferences > Advanced**.

b. Check the **Enable JavaScript** check box.

c. Click **OK**.

Step 3 Configure Netscape to Navigator accept all cookies:

a. Select **Edit > Preferences > Advanced**.

b. Select the **Accept all cookies** radio button.

c. Click **OK**.

Step 4 Change the default font to a sans serif font for improved readability:

a. Select **Edit > Preferences > Appearance > Fonts**.

b. Select a sans-serif font (for example, Arial), and a font size, in the **Variable Width Font** and **Fixed Width Font** selection areas.

c. Click **OK**.

The text in the browser window is redrawn with the new fonts. Netscape navigator is now configured.

Configuring Internet Explorer

To configure Internet Explorer with Windows 2000, perform the following steps:

Step 1 Verify that the client system is running Internet Explorer 5.5 with Service Pack 2.

Step 2 Enable JavaScript:

a. Select **Tools > Internet Options > Security**.

b. Make sure that the Internet icon is selected, and click **Custom Level**.

c. Select **Enable active scripting, Allow paste operations via script**, and **Scripting of Java applets**.

Step 3 Configure your browser to accept all cookies:

a. Select **Tools > Internet Options > Security**.

b. Make sure that the Internet icon is selected, and click **Custom Level**.

c. Scroll to Cookies. Select **Enable** for both "Allow cookies that are stored on your computer," and "Allow per-session cookies (not stored)."

d. Click **OK**.

Step 4 Change the default font to sans serif for improved readability:

a. Select **Tools>Internet Options.** A dialog box appears.

b. Click the **General** tab, and select **Fonts**. A second dialog box appears.

c. Select a sans-serif font (for example, Arial) from the **Web page font** and **Plain text font** lists.

d. Click **OK** in both dialog boxes to close them.

The text in the browser window is redrawn with the new fonts. Internet Explorer is now configured.

Verifying HTTP and HTTPS Connectivity

To verify HTTP and HTTPS connectivity, connect to the Cisco ESSE using a web browser and perform this procedure:

Step 1 To verify HTTP connectivity, enter the system IP address in a web browser, followed by **:1741** (the default port number).

For example, if the system IP address is 172.165.202.128, enter **http://172.165.202.128:1741** in a web browser.

If a login dialog box appears, you have connectivity. If you cannot connect to the Cisco ESSE, see the "Cannot Connect to the Cisco ESSE Using a Web Browser" section on page A-4.

Step 2 To verify HTTPS connectivity, enter the system IP address in a web browser, prefixed by **https://**. No port number is needed.

For example, if the system IP address is 209.165.202.128, enter **https://209.165.202.128** in a web browser.

If a login dialog box appears, you have connectivity. If you cannot connect to the Cisco ESSE, see the "Cannot Connect to the Cisco ESSE Using a Web Browser" section on page A-4.

Configuring DNS

Register the system in Domain Name System (DNS) on a DNS server, using the Cisco ESSE hostname as its DNS name. For proper resolution of hostname-to-IP address or IP-address-to-hostname, the system uses DNS servers. If your network does not have a DNS server, use the **import** CLI command to import host files. For more information, see the "import" section on page C-26.

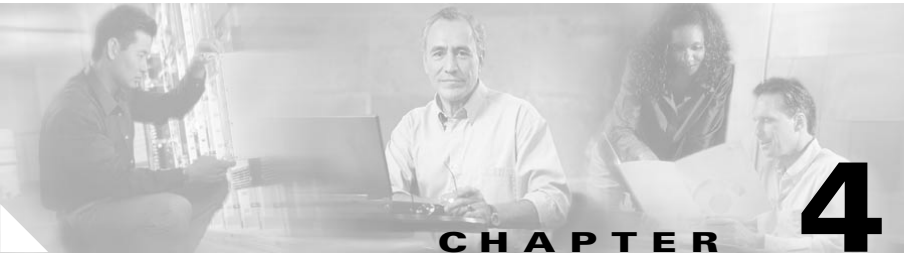
Caution If you do not register the system in DNS using the system hostname as its DNS name, or if you do not import the host files, network connectivity problems will occur.

Using the Cisco ESSE

You are now ready to start using your Cisco ESSE. You can connect to it via its web interface to start using it, or you can continue on to Chapter 4, "Administering the Cisco ESSE" for information on administering your Cisco ESSE.

Refer to the product online help or the Quick Start Guide for getting started information.

Note When the Cisco ESSE is first powered-on, the Cisco ONT 1031s will not appear for about 15 minutes.



Administering the Cisco ESSE

This chapter describes the major system administration tasks of the Cisco ESSE. It contains the following major sections:

Logging In and Out of the System

You can connect to the Cisco ESSE in the following ways:

- Point a web browser at the Cisco ESSE
- Telnet to the system
- Connect a console to the Cisco ESSE console port

If you are connected to the Cisco ESSE via the web, enter a valid username and password in the login screen to log in, and click the **Logout** button to log out.

If you are connected to the Cisco ESSE via the CLI, enter a valid username and password at the login prompt to log in, and enter the **exit** command to log out.

Administering User Accounts

The Cisco ESSE allows you to create users who have tiered access. For more information about creating and administering user accounts, see the Cisco ESSE's online help.

Backing Up and Restoring Your Cisco ESSE

You should back up the Cisco ESSE essential files at regular intervals to an FTP server. Before attempting to back up or restore your Cisco ESSE, make sure the username and password is valid on the target system, that the target directory exists and has the proper permissions for the username and password, and that the system allows FTP. Backing up the Cisco ESSE will preserve all configuration, user, device, and log information. Table 4-1 lists some of the more important file locations.

Table 4-1 Important File Locations

Description	location
l2nmpstack log location	/var/adm/CSCOets/l2nmp/log/l2nmpstack.log
Tomcat log location	/var/adm/CSCOets/logs/tomcat.log
Discovery log	/var/adm/CSCOets/log/jobvm.log

To back up your Cisco ESSE:

Step 1 Point a browser at the Cisco ESSE and log in.

Step 2 Select **Administration > Appliance > BackUp and Restore**.

Step 3 If you have not yet configured the backup location, do so by clicking the **Configure** button and entering the required information.

Step 4 Click the **Backup** button.

To restore your Cisco ESSE:

Step 1 Point a browser at the Cisco ESSE and log in.

Step 2 Select **Administration > Appliance > BackUp and Restore**.

Step 3 Click the **Restore** button.

Step 4 Select the image you want to restore from the drop-down list and click **Continue**.

Step 5 A window appears displaying the image you will be restoring. If the information is correct, click **OK**.

You can also back up and restore your Cisco ESSE by using the following CLI commands:

- To back up your Cisco ESSE, use the **backup** command. For more information, see the "backup" section on page C-18.
- To configure the location of your Cisco ESSE backup, use the **backupconfig** command. For more information, see the "backupconfig" section on page C-19.
- To restore your Cisco ESSE, use the **restore** command. For more information, see the "restore" section on page C-46.

Note The system will automatically reboot after a user runs the restore command from either the CLI or the GUI.

Updating Your Cisco Ethernet Subscriber Solution Engine

You can update the software on the Cisco ESSE, or install a new software image, by downloading and installing files from a repository. A repository is a remote or local server from which a system can download software. If you are using a Windows 2000 or Windows NT machine as a repository, see the Shutting Down and Reloading the System, page 4-6.

Configuring the Repository

In order to install software updates and images, you must configure a repository. You can configure the Cisco ESSE to be to be a repository for itself and for external systems. To configure the local repository for the Cisco ESSE, use the following CLI command:

repository source *URL*

where *URL* is the IP address of an external server containing software updates and images. You can download software updates from ftp.cisco.com. For more information on the **repository** command, see the *User Guide for the Cisco Ethernet Subscriber Solution Engine*. You can access a PDF version of the user guide by clicking **View PDF** in the Cisco ESSE's online help.

Adding Software Updates and Images to the Repository

To add software updates and images to the configured repository, use the following CLI command:

repository add *package*

where *package* is the name of the software update or image to be transferred. To find packages available for download, use the **repository list** command. For more information on these commands, see the *User Guide for the Cisco Ethernet Subscriber Solution Engine*. You can access a PDF version of the user guide by clicking **View PDF** in the Cisco ESSE's online help.

Defining the Repository

Before you can install software from a configured repository, you must define which repository the Cisco ESSE will use. To define the repository, perform the following steps:

Step 1 Point a browser at the Cisco ESSE, and log in.

Step 2 Select **Administration > Appliance > Software > Define Repository**. The Define Repository dialog box appears.

Step 3 To define or redefine the repository, fill in the Host Name, Port Number, and Description fields as described below:

Table 4-2 Repository Information

Text Box	Description
Host Name	The host name or IP address of the repository.
Port Number	The port number used by the software on the repository. The default port number is 9851.
Description	A description of the repository. This text box is optional.

Step 4 Click **Connect to Repository**. If the data is incorrect, and error message will occur.

Installing Software from the Repository

To install a software update or complete image, perform the following steps:

Step 1 Select **Administration > Appliance > Software > Install Software Updates**. The Install Software Updates window opens. The Install software Updates window displays information about the Cisco ESSE, the currently defined repository, and the compatible software available for updating.

Step 2 Select a software version from the Compatible Updates table, Compatible Reinstallations table, or Complete Images table.

These tables display the following information about the software you can install.

Field	Description
Name	The identifier for the software.
Version	The version number of the software.
Summary	A brief description of the software.
Release Date	The release date of the software.
Details	A readme file containing a detailed description of the software.

Step 3 To begin installation, make a selection from the Compatible Updates table, Compatible Reinstallations table, or Complete Images table.

Step 4 To install the selected software, click **Install**. The Confirm Installation window opens.

Step 5 Click **Confirm** to continue the installation. To cancel the update or reinstallation, click **Cancel**.

Shutting Down and Reloading the System

You can shut down the Cisco ESSE using either the web interface or the CLI. Rebooting the system starts the management services installed on the system, even if they were stopped prior to the reboot.

To restart the Cisco ESSE using the web interface, select **Administration > Restart**. Click **Yes** in the dialog box that appears. The Cisco ESSE will restart.

To shut down the Cisco ESSE using the CLI, enter the **shutdown** command before powering down the Cisco ESSE. If you power down the Cisco ESSE without entering this command, you might disable the system.

To reboot the system using the CLI, enter the **reload** command. The login prompt appears when the reboot is complete.

To erase the system configuration and reboot the system using the CLI, enter the **erase config** command. After the system reboots you must reconfigure the system using the **setup** program, as described in the "Configuring the Cisco ESSE" section on page 3-8.

For more information about these commands, see these sections:

- The "shutdown" section on page C-71
- The "reload" section on page C-40
- The "erase config" section on page C-23

Setting System Date and Time

The Cisco ESSE uses Universal Coordinated Time (UTC) for the time and date. The Cisco ESSE uses the client's local time to display the time and date when connected via the web interface. It uses UTC to display the time and date when connected via Telnet or a console, or when you are viewing log files.

You can set and maintain the system date and time using either of these two methods:

- Use the **ntp server** CLI command to assign one or more network time protocol (NTP) servers with which the system will synchronize its date and time. This method is recommended. For more information, see the "Setting Date and Time Using NTP" section on page 4-7.
- Use the **clock** CLI command to set the date and time manually, updating it as needed. For more information, see the "Setting Date and Time Manually" section on page 4-8.

To display the system time, enter the **show clock** command. For more information, see the "show clock" section on page C-12.

Setting Date and Time Using NTP

NTP is the recommended method for configuring time and date on the system. If your network uses NTP to set the date and time on devices, enter the following command in the CLI to designate an NTP server the system should use to set the system clock:

```
# ntp server ip-address
```

Where *ip-address* is the IP address of an NTP server.

For more information, see the "ntp server" section on page C-38.

If you disable NTP, set the system clock to UTC manually as described in the "Setting Date and Time Manually" section on page 4-8. If you do not set the system clock manually after disabling NTP, the system clock might become inaccurate when the system is rebooted.

Setting Date and Time Manually

If your network does not use NTP to set the system time on devices and the time is not set correctly, set the date and time to UTC manually by entering the following command at the CLI:

```
# clock set hh:mm:ss month day year
```

Where:

hh:*mm*:*ss* is the current time (for example, 13:32:00)

month is the current month (for example, January, February)

day is the day of the month (for example, 31)

year is the current year (for example, 2001)

For more information, see the "clock" section on page C-21.

Configuring the Ethernet Ports

The Cisco ESSE uses 10/100 Mbps Ethernet connectors. The Ethernet 0 interface is connected to the IP management network and is configured when the Cisco ESSE is configured. The Ethernet 1 interface is connected to the Layer 2 network. To enable or change an additional interface configuration, enter the **interface** command in the CLI. For instructions about using the interface command, see the "interface" section on page C-30.

Any Cisco ESSE Ethernet port can be individually configured to allow connections via the following protocols:

- Cisco Discovery Protocol (CDP)
- Hypertext Transfer Protocol (HTTP)
- Hypertext Transfer Protocol Secure (HTTPS)
- Internet Control Message Protocol (ICMP)
- Secure shell (SSH) 1 and 2
- Simple Network Management Protocol (SNMP)
- Telnet

To enable CDP on an individual Ethernet port, use the **cdp** command. For more information, see the "cdp" section on page C-20. To disable any of the other protocols listed above on an individual Ethernet port, use the **firewall** command. For more information about the **firewall** command, including a detailed example of its use, see the "firewall" section on page C-24.

Administering Management Services

The Cisco ESSE allows you to administer all management services at once. All commands that affect management services affect all of them at once; the logs that collect services information collect information about all of them. You will need to log in with the username *admin* to use these services.

You can stop and restart the management services if the system is not responding correctly to a management application. This should cause the services to reset and function properly again. Management services are restarted automatically when you reboot, but you will have to log in again after the system reboots.

To stop management services, enter the following command at the CLI:

```
# services stop
```

To start management services, enter the following command at the CLI:

```
# services start
```

To view management services status, enter the following command at the CLI:

```
# services status
```

For more information about the services command, see the "services" section on page C-47.

Viewing System Information

To view system information, use the **show** commands, such as **show clock** and **show process**. For more information on the **show** commands, see Appendix C, "Command Reference."

Using the Maintenance Image

The Cisco ESSE has an operating system image and a default system configuration (hereafter collectively called the maintenance image). You can use the maintenance image to boot the system to perform some system administration tasks and disaster recovery.

While the system is running from the maintenance image, you can run only the following commands: **reload**, **erase config**, and **fsck**.

For information about these commands, see the "Maintenance Image Commands" section on page C-76.

While the maintenance image is running, you can do the following tasks, which you cannot do when the system is booted from the disk:

- Recover from loss of all administrative user account passwords
- Perform disk filesystem integrity checks

Booting from the Maintenance Image

As a security measure, you can boot from the maintenance image only while connected to the system console. To boot from the maintenance image, follow these steps:

Step 1 Connect a console to the Cisco ESSE console port and log on as **admin**.

Step 2 Reboot the system by doing one of the following:

- If the system is running, reload it as described in the "reload" section on page C-40.
- If the system is off, power up the system.
- If you cannot log in because you have lost all user account passwords, power cycle the system.

Step 3 When the `LILO boot:` prompt appears, press the **Tab** key.

Step 4 When the `boot:` prompt appears, enter **CiscoBreR**.

Step 5 After you complete all necessary tasks, reboot the system by entering the **reload** command and allow the system to boot from the disk (the default boot order).

Recovering from Loss of All Administrator Passwords

If you cannot log in to the system because you cannot remember the administrator account names or passwords, you can recover by booting from the maintenance image, erasing the existing configuration from Flash memory, and reconfiguring the system using the **setup** program.

To recover from the loss of all administrator passwords, perform the following steps:

Step 1 Boot the system from the maintenance image as described in the "Booting from the Maintenance Image" section on page 4-10.

Step 2 Enter the **erase config** command to erase the system configuration. The system reboots.

Step 3 Allow the system to boot from disk (the default boot order).

Step 4 Configure the system from the **setup** program, as described in the "Configuring the Cisco ESSE" section on page 3-8.

Step 5 After the system reboots, reconfigure the Cisco ESSE by following the steps outlined in the "Installing the Cisco ESSE" section on page 3-3.

Installing a Replacement Cisco ESSE

This section describes tasks you should perform when installing a replacement Cisco ESSE (a new unit intended to replace an existing unit), to make the transition as easy as possible. These tasks are in addition to the installation and configuration processes described in Chapter 3, "Installing and Configuring the Cisco ESSE."

Removing the Old Cisco ESSE

Before removing the old Cisco ESSE, perform the following steps:

Step 1 Enter the command **show config** in the CLI to view the Cisco ESSE configuration.

Step 2 Record the configuration manually.

Step 3 Back up the old Cisco ESSE. See the "Backing Up and Restoring Your Cisco ESSE" section on page 4-2 for details.

Step 4 Enter the **shutdown** command.

The system shuts down.

Step 5 Power down and remove the old system.

Installing the Replacement Cisco ESSE

To install the replacement Cisco ESSE, perform the following steps:

Step 1 Install and power up the new Cisco ESSE.

For details, see the following sections:

- Installing the Cisco ESSE, page 3-3
- Connecting to the Power Source, page 3-7
- Connecting the Cables, page 3-7
- Powering Up the Cisco ESSE, page 3-8

Step 2 Run the **setup** program.

For details, see the "Configuring the Cisco ESSE" section on page 3-8.

Step 3 Using the configuration settings that you recorded from the old system, answer the setup program prompts.

Step 4 Restore the information saved when you backed up the old system. For more information, see the "Backing Up and Restoring Your Cisco ESSE" section on page 4-2.

Using the Recovery CD

A recovery CD is included with your Cisco ESSE. With this CD in the Cisco ESSE CD-ROM drive you can perform two functions: you can reimage the Cisco ESSE, or you can boot from the rescue image. When the recovery CD is inserted into the CD-ROM drive of a Windows NT 4.0 or Windows 2000 computer, it starts a web server application and also creates a repository of software images for use on the Cisco ESSE. Initially, the repository will only contain the image shipped with the Cisco ESSE, and future upgrades will be found on the Cisco.com web site.

Reimaging the Cisco ESSE

Use the Cisco ESSE recovery CD to reimage the Cisco ESSE if necessary. Reimaging will destroy all data and install a new image. You can reimage, using the recovery CD, in two ways: Using the Cisco ESSE CD-ROM or Using a Remote Machine.

Using the Cisco ESSE CD-ROM

Step 1 Connect a console to the Cisco ESSE console port. For the location of the console port, see the "Front Panel Features" section on page 1-3.

Step 2 Log in using the username **admin** and enter the password created when the Cisco ESSE was configured.

Step 3 Put the recovery CD in the Cisco ESSE CD-ROM drive. For the location of the CD-ROM, see the "Front Panel Features" section on page 1-3.

Step 4 Enter the **reload** command. The Cisco ESSE will reboot. For more information on the **reload** command, see the "reload" section on page C-40.

Step 5 At the `Do you wish to continue (yes/[no]/rescue):` prompt, enter **yes**. If you do not want to reimage your Cisco ESSE, enter **rescue**. For more information about the rescue image, see "Rescue Image" section on page 4-14.

Step 6 When the Cisco ESSE ejects the recovery CD, remove it.

The Cisco ESSE reboots and is reimaged.

Using a Remote Machine

Step 1 Insert the recovery CD into a WindowsNT or Window2000 machine.

Step 2 If Autoplay is enabled, the autorun.bat file will automatically run. If it does not, double-click it. A browser window opens, displaying the Cisco ESSE Update screen.

Step 3 Enter the hostname or IP address of the Cisco ESSE.

Step 4 Select the installation image, then click **OK**.

The Cisco ESSE reboots and is reimaged.

Rescue Image

The rescue image is equivalent to the maintenance image, but is accessible via the recovery CD. If the maintenance image is unavailable or is not working, you can use the rescue image to boot the system to perform some system administration tasks and disaster recovery. You can use the same maintenance image commands while the system is running the Rescue image: **reload**, **erase config**, and **fsck**. For more information about the uses of the Rescue image, see the "Using the Maintenance Image" section on page 4-10.

To boot from the Rescue image, perform the following steps:

Step 1 Connect a console to the Cisco ESSE console port. For the location of the console port, see the "Front Panel Features" section on page 1-3.

Step 2 Log in as the user **admin**. The password for the user **admin** was created when the Cisco ESSE was configured.

Step 3 Put the recovery CD in the Cisco ESSE CD-ROM drive. For the location of the CD-ROM, see the "Front Panel Features" section on page 1-3.

Step 4 Enter the **reload** command. The Cisco ESSE will reboot. For more information on the **reload** command, see the "reload" section on page C-40.

Step 5 At the `Do you wish to continue (yes/[no]/rescue):` prompt, enter **rescue**. The Cisco ESSE will boot from the Rescue image.

Troubleshooting

This appendix provides troubleshooting information. It consists of the following sections:

Cannot Log into the System

Problem: You cannot log into the system.

Possible causes:

- You did not run the setup program to create an initial system configuration.
- You lost all of the user account passwords.

Resolution:

Step 1 Did you run the setup program after booting the system for the first time?

If no, run the setup program as described in the "Configuring the Cisco ESSE" section on page 3-8.

If yes, continue.

Step 2 Do you know the password for any system user accounts?

If no, reconfigure the system to create a new user account. Refer to the "Recovering from Loss of All Administrator Passwords" section on page 4-11 for more information.

If yes, continue.

Step 3 If you are certain you entered a valid username and password, contact Cisco's Technical Assistance Center for assistance.

Cisco ESSE Cannot Connect to the Network

Problem: The system cannot connect to the network.

Possible causes:

- The network cable is not connected to the Ethernet 0 port.
- The Ethernet 0 interface is disabled or misconfigured.
- The Cisco ESSE system is configured correctly, but the network is down or misconfigured.

Resolution:

Step 1 Verify that the network cable is connected to the Ethernet 0 port and the Ethernet indicator is lit.

- If the network cable is not connected, connect it.
- If the network cable is connected but the Ethernet indicator is not lit, these are the probable causes:
  - The network cable is faulty.
  - The network cable is the wrong type (for example, a cross-over type, rather than the required straight-through type).
  - The port on the default gateway to which the system connects is down.

If the network cable is connected and the Ethernet indicator is on but the system cannot connect to the network, continue with Step 2.

Step 2 Use the **show interfaces** command to determine whether the Ethernet 0 interface is disabled or misconfigured. For more information, see the "show syslog" section on page C-68.

If the Ethernet 0 interface is disabled, enable it. If it is misconfigured, configure it correctly. For more information, see the "Configuring the Ethernet Ports" section on page 4-8.

If the interface is enabled and correctly configured, continue with step 3.

Step 3 Use the **ping** command to perform the following tests:

a. Try to ping a well known host on the network. A DNS server is a good target host.

If the **ping** command gets a response, the system is connected to the network. If it cannot connect to a particular host, the problem is either with the network configuration or that host. Contact your network administrator for assistance.

If the **ping** command does not get a response, continue with Step b.

b. Attempt to connect to another host on the same subnet as the system.

If the **ping** command can connect to a host on the same subnet, but cannot connect to a host on a different subnet, the default gateway is probably down.

If the ping command cannot connect to any hosts, continue with Step 4.

Step 4 Contact your network administrator to verify that there are no conditions on the network that prevent the system from connecting to the network.

If conditions prevent the system from connecting to the network, have your network administrator correct them.

Step 5 If no conditions are preventing the system from connecting to the network, contact Cisco's Technical Assistance Center.

Cannot Connect to the Cisco ESSE Using a Web Browser

Problem: You cannot connect to the system by entering its IP address in a web browser.

Possible causes:

- The system cannot connect to the network.
- HTTP or HTTPS is not enabled
- If you are connecting via HTTP, the IP address was not appended with **:1741**.
- The client system is not configured. See"Configuring the Web Browser" section on page 3-13.

Resolution:

Step 1 Make sure that the system can connect to the network by using the procedure in the "Cisco ESSE Cannot Connect to the Network" section on page A-2. Attempt to connect the system using a web browser.

If you cannot connect, continue with Step2.

Step 2 If you are attempting to connect via HTTP, verify that the IP address is appended with **:1741**.

Step 3 If you are attempting to connect via HTTP, verify that HTTP is enabled. If you are attempting to connect via HTTPS, verify that HTTPS is enabled. For more information, see the "Configuring the Ethernet Ports" section on page 4-8. You may need to run the **firewall** command documented in the "firewall" section on page C-24.

Step 4 Verify that the browser is configured correctly; attempt to connect to the Cisco ESSE. For more information, see the "Configuring the Web Browser" section on page 3-13. If you cannot connect, continue to Step 5.

Step 5 At the system console, or through Telnet, verify that the web server and tomcat are running, by entering the following:

```
# services status
```

If they are running, go to Step 7. If they are not running continue to step 5.

Step 6 Stop the system services by entering the following:

```
# services stop
```

Step 7 Restart the system services by entering the following:

```
# services start
```

Step 8 Try to connect the system using a web browser.

If you cannot connect, continue to Step 9.

Step 9 Reboot the system by entering the **reload** command.

For more information about the **reload** command, see the "reload" section on page C-40.

Step 10 If you still cannot connect to the system using a web browser, contact Cisco's Technical Assistance Center for assistance.

System Time or Date Is Incorrect

Problem: The system time or date is incorrect.

Possible causes:

- NTP is misconfigured.
- The system clock is set incorrectly.

Resolution:

See the "Setting System Date and Time" section on page 4-7 for information about maintaining the system time and date.

System Cannot Boot from the Hard Drive

Problem: The system cannot boot from the hard drive during a reboot.

Possible causes:

- The disk has a physical error.
- The disk image is corrupted.

Resolution:

If the Cisco ESSE cannot boot from the hard drive, reimage the hard drive. Use the Recovery CD to reimage your Cisco ESSE. For more information, see the "Using the Recovery CD" section on page 4-13.

Cannot Connect to System with Telnet, or Telnet Interaction Is Slow

Problem: You cannot connect to the system using Telnet, even though the system is connected to the network, or the Telnet connection seems unusually slow.

Possible causes:

- Telnet is disabled or configured incorrectly.
- The system cannot get DNS services from the network. The system will not function correctly without DNS.

Resolution:

If the problem is not the network, perform the following procedure. Connect to the console port if you cannot Telnet to the Cisco ESSE.

Step 1 Check the Telnet settings to be sure Telnet is enabled and configured correctly. For more information, see the following:

- To check the Telnet settings, or to enable or disable Telnet on specific domains or IP addresses, see the "telnetenable" section on page C-74.
- To enable or disable Telnet on individual ports, see the "firewall" section on page C-24.

Step 2 If you have specified hosts in **telnetenable**, make sure the host from which you are attempting to Telnet is on the list.

Step 3 Configure the system to use a functioning DNS server by entering the following:

```
# ip name-server ip-address
```

Where *ip-address* is the IP address of the DNS server.

Step 4 Verify that the system can get DNS services from the network by entering the following command:

```
# nslookup dns-name {hostname | ip-address}
```

Where *dns-name* is the DNS name of a host on the network that is registered in DNS and *hostname* and *ip-address* is the same IP address specified in Step 2.

The command returns the IP address of the host.

Step 5 If the system cannot resolve DNS names to IP addresses, the DNS server it is using is not working properly.

Resolve the network DNS problem, and then continue.

Step 6 If the system can resolve DNS names to IP addresses but you still cannot connect to the system using Telnet, or if Telnet interaction with the system is extremely slow, contact Cisco's Technical Assistance Center.

Cisco ONT Devices Not Discovered By Cisco ESSE

Problem: The Cisco ESSE does not discover certain Cisco ONT devices.

Possible causes:

- Layer 2 network cable is not connected to the Ethernet 1 port
- The Ethernet 1 interface is disabled or misconfigured
- The Cisco ESSE is configured correctly, but the network is down
- The Cisco ESSE Layer 2 network port may not be defined with appropriate native VLANs or as an IEEE 802.1q trunk port (See Setting Up the Layer 2 Network, page 2-12.)
- The Layer 2 network switches may not be uniformly configured for IEEE 802.1q trunking and VLANs throughout the network

Resolution:

Step 1 Verify proper connection of the Ethernet 1 port.

Step 2 Verify that the Ethernet ports are configured correctly.

Step 3 Verify that the Cisco ESSE Layer 2 switch port and the layer 2 network are configured consistently. See Setting Up the Layer 2 Network, page 2-12.

Step 4 Verify that the Cisco ONT switch port connection has port negotiation disabled.

Step 5 Toggle the power of the Cisco ONT and let it rediscover the Cisco ESSE using multicast notifications. If the network is properly configured, these notifications will arrive at the Cisco ESSE Ethernet 1 port.

Technical Specifications

Table B-1 provides the Cisco ESSE specifications.

Table B-1 Cisco ESSE Technical Specifications

Component	Specifications
Serial ports	Two 9-pin connectors
RJ-45 ports	RJ-45 connectors for connection to integrated 10/100 Ethernet controllers
AC power supply wattage	125W
AC power supply voltage	100 to 120 VAC / 200 to 240 VAC, 50 / 60 Hz
System battery	CR2032 3V lithium coin cell
Height	4.3 cm (1.7 inches)
Width	42.5 cm (16.7 inches)
Depth	55 cm (22 inches)
Weight	10 kg (23 lb) maximum
Operating temperature	10° to 35°C (50° to 95°F)
Storage temperature	–40° to 65°C (–40° to 149°F)
Operating relative humidity	8% to 80% (noncondensing) with a humidity gradation of 10% per hour

Table B-1 Cisco ESSE Technical Specifications (continued)

Component	Specifications
Storage relative humidity	5% to 95% (noncondensing)
Operating maximum vibration	0.25 G (half-sine wave) at a sweep of 3 to 200 Hz for 15 minutes
Storage maximum vibration	0.5 G at 3 to 200 Hz for 15 minutes
Operating maximum shock	Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 41 G for up to 2 ms
Storage (non-operational) maximum shock	Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for 2 ms
Operating altitude	–16 to 2000 m (–50 to 6500 ft)
Storage altitude	–16 to 10,600 m (–50 to 35,000 ft)

Command Reference

This appendix summarizes the Cisco Ethernet Subscriber Solution Engine's command line interface (CLI) commands. When you make a configuration change using these commands, the system configuration is updated immediately.

This appendix contains the following sections:

Using the CLI

You can use the CLI by:

- Attaching a console to the Cisco ESSE
- Accessing the Cisco ESSE using Telnet

CLI Conventions

The command-line interface (CLI) uses the following conventions:

- The key combination **^c** or **Ctrl-c** means hold down the **Ctrl** key while you press the **c** key.
- A string is defined as a non-quoted set of characters.
- Use single-quotes (‘) to surround a series of parameters; do not use double-quotes

Do not confuse the Cisco ESSE’s CLI with the IOS CLI. Though they are similar, they are not identical.

Command Privileges

Access to CLI commands is controlled by your user account privilege level. Users with privilege level 15 can use all commands. Users with privilege level 0 can use only a subset of the commands. The command descriptions in this appendix are organized by privilege level. Initially, only the system administrator has access to CLI commands. The administrator can grant access to other users by using the username command (see username, page C-75).

Note Users created by using the GUI are not automatically CLI users. To add CLI users, you must create new users using the CLI command **username.**

Checking Command Syntax

The user interface provides several types of responses to incorrect command entries:

- If you enter a command line that does not contain any valid commands, the system displays `Command not found.`
- If you enter a valid command but omit required options, the system displays `Incomplete command.`
- If you enter a valid command but provide invalid options or parameters, the system displays Invalid input.

In addition, some commands have command-specific error messages that notify you that a command is valid, but that it cannot run correctly.

Command History Feature

The CLI provides a command history feature.

Note Make sure your terminal type is set to VT100.

To display previously entered commands, press the up arrow key. After pressing the up arrow key, you can press the down arrow key to display the commands in reverse order. To run a command, press the Enter key while the command is displayed on the command line. You can also edit commands before pressing the Enter key.

Help for CLI Commands

You can obtain help using the following methods:

- For a list of all commands and their syntax, type **help** and press **Enter**.
- For help on a specific command, use either of the following methods:
  - Type the command name, a space, **help**; then press **Enter**. For example, **ntp help**.

– Type **help**, a space, and the command name; then press **Enter**. For example, **help ntp**.

The help contains command usage information and syntax.

Command Summary

Table C-1 summarizes all commands available on the Cisco ESSE. Refer to the full description of commands that you are not familiar with before using them.

Table C-1 Command Summary

Command	Privilege Level	Summary Description	Location of Full Description
auth	15	Enables secure remote authentication.	"auth" section on page C-17
backup	15	Backs up the Cisco ESSE.	"backup" section on page C-18
backupconfig	15	Sets the configuration for all backup and restore operations.	"backupconfig" section on page C-19
cdp	15	Configures the Cisco Discovery Protocol (CDP).	"cdp" section on page C-20
clock	15	Sets the Cisco ESSE's date and time.	"clock" section on page C-21
df	15	Display the current storage usage on the Cisco ESSE.	"df" section on page C-22
erase config	15[1]	Erases the configuration in Flash memory and reload the device.	"erase config" section on page C-23
exit	0	Logs user out of the Cisco ESSE.	"exit" section on page C-10
gethostbyname	15	Displays IP address of a known domain name.	"gethostbyname" section on page C-25
fsck	N/A[2]	Checks and repairs the filesystem.	"fsck" section on page C-76
firewall		Implements port filtering on the Cisco ESSE.	"firewall" section on page C-24

Table C-1 Command Summary (continued)

Command	Privilege Level	Summary Description	Location of Full Description
hostname	15	Changes the system hostname.	"hostname" section on page C-26
import	15	Imports host files, or to maps IP addresses to hostnames.	"import" section on page C-26
install configure	15	Configures the repository that the Cisco Ethernet Subscriber Solution Engine uses to install updates.	"install configure" section on page C-27
install list	15	Lists software updates and images currently available on a configured repository.	"install list" section on page C-28
install update	15	Installs software updates and images from a configured repository.	"install update" section on page C-30
interface	15	Configures an Ethernet interface.	"interface" section on page C-30
ip domain-name	15	Defines a default domain name.	"ip domain-name" section on page C-32
ip name-server	15	Specifies the address of up to three name servers for name and address resolution.	"ip name-server" section on page C-33
listbackup	15	Lists all current backups at the configured site.	"listbackup" section on page C-34
mail	15	Debugs and tests email settings.	"mail" section on page C-35
mailcntrl clear	15	Deletes the maillog, sendqueue, or userqueue.	"mailcntrl clear" section on page C-35
mailcntrl list	15	Lists the size of the userlog, userqueue, or the sendqueue.	"mailcntrl list" section on page C-36
mailroute	15	Forwards email to a specified server.	"mailroute" section on page C-37
nslookup	15	Translates a device name to its IP address or an IP address to its device name.	"nslookup" section on page C-37

Table C-1 Command Summary (continued)

Command	Privilege Level	Summary Description	Location of Full Description
ntp server	15	Configures the Network Time Protocol (NTP) and allow the system clock to be synchronized by a time server.	"ntp server" section on page C-38
ping	0	Sends ICMP echo_request packets for diagnosing basic network connectivity.	"ping" section on page C-10
reload	15[1]	Reboots the system.	"reload" section on page C-40
reinitdb	15	Reinitializes the database.	"reinitdb" section on page C-41
repository	15	Configures the Cisco Ethernet Subscriber Solution Engine to be a repository server.	"repository" section on page C-41
repository add	15	Transfers software updates and images from a remote server to the Cisco Ethernet Subscriber Solution Engine's local repository.	"repository add" section on page C-42
repository delete	15	Deletes software updates and images on the Cisco Ethernet Subscriber Solution Engine's local repository.	"repository delete" section on page C-43
repository list	15	Lists software updates and images on the configured local or remote repository.	"repository list" section on page C-44
repository server	15	Starts, stops, or displays the status of the Cisco Ethernet Subscriber Solution Engine's local repository.	"repository server" section on page C-45
restore	15	Restores a backed up configuration.	"restore" section on page C-46
route	15	Adds a route through a gateway device.	"route" section on page C-47
services	15	Lists, starts, or stops management services.	"services" section on page C-47
show anilog	15	Displays the Cisco Ethernet Subscriber Solution Engine's ANI log.	"show anilog" section on page C-49

Table C-1 Command Summary (continued)

Command	Privilege Level	Summary Description	Location of Full Description
show auth-cli	15	Displays the type of authentication used for secure CLI access.	"show auth-cli" section on page C-50
show auth-http	15	Displays the type of authentication used for secure HTTP access.	"show auth-http" section on page C-50
show backupconfig	15	Displays the current backup and restore configuration.	"show backupconfig" section on page C-51
show bootlog	0	Displays the messages logged during the last system boot.	"show bootlog" section on page C-52
show cdp neighbor	15	Displays the Cisco ESSE's nearest neighbor on the network.,	"show cdp neighbor" section on page C-53
show cdp run	15	Displays the Cisco Discovery Protocol (CDP) configuration.	"show cdp run" section on page C-53
show clock	0	Displays the system date and time in Coordinated Universal Time (UTC).	"show clock" section on page C-12
show collectorlog	15	Displays the Cisco Ethernet Subscriber Solution Engine's collector log.	"show collectorlog" section on page C-54
show config	15	Displays the system configuration.	"show config" section on page C-55
show daemonslog	15	Displays the Cisco Ethernet Subscriber Solution Engine's daemons log.	"show daemonslog" section on page C-56
show dmgtdlog	15	Displays the Cisco Ethernet Subscriber Solution Engine's daemon manager log.	"show dmgtdlog" section on page C-57
show domain-name	0	Displays the system domain name	"show domain-name" section on page C-12
show webaccesslog	15	Displays the Cisco Ethernet Subscriber Solution Engine's Web access log.	"show webaccesslog" section on page C-58
show weberrorlog	15	Displays the Cisco Ethernet Subscriber Solution Engine's Web error log.	"show weberrorlog" section on page C-59
show websslaccesslog	15	Displays the Cisco Ethernet Subscriber Solution Engine's Web SSL log.	"show websslaccesslog" section on page C-60

Table C-1 Command Summary (continued)

Command	Privilege Level	Summary Description	Location of Full Description
show import	15	Displays imported host files.	"show import" section on page C-60
show install logs	15	Displays the software updates and images available on the configured repository.	"show install logs" section on page C-61
show interfaces	0	Displays information about the system network interface.	"show interfaces" section on page C-13
show ipchains	15	Displays the IP chains for the selected interface.	"show ipchains" section on page C-61
show hosts	15	Displays the Cisco Ethernet Subscriber Solution Engine's host file.	"show hosts" section on page C-62
show maillog	15	Displays the Cisco Ethernet Subscriber Solution Engine's mail log.	"show maillog" section on page C-63
show process	0	Displays information about processes running on the system.	"show process" section on page C-14
show repository	15	Displays the status or the access log of a configured repository.	"show repository" section on page C-64
show route	15	Displays the routes currently configured.	"show route" section on page C-65
show securitylog	15	Displays the Cisco Ethernet Subscriber Solution Engine's secure log information.	"show securitylog" section on page C-66
show snmp-server	15	Displays the Cisco Ethernet Subscriber Solution Engine's SNMP configuration.	"show snmp-server" section on page C-67
show ssh-version	15	Displays the type of SSH enabled.	"show ssh-version" section on page C-67
show syslog	15	Displays syslog information.	"show syslog" section on page C-68
show tech	15	Displays information necessary for Cisco's Technical Assistance Center to assist you.	"show tech" section on page C-69

Table C-1 Command Summary (continued)

Command	Privilege Level	Summary Description	Location of Full Description
show telnetenable	15	Displays the Cisco Ethernet Subscriber Solution Engine's Telnet status.	"show telnetenable" section on page C-69
show tomcatlog	15	Displays the Cisco Ethernet Subscriber Solution Engine's Tomcat log.	"show tomcatlog" section on page C-70
show version	0	Displays information about the current software on the system.	"show version" section on page C-15
shutdown	15	Shuts down the system in preparation for powering it off.	"shutdown" section on page C-71
snmp-server	15	Configures an snmp agent.	"snmp-server" section on page C-72
ssh	15	Connects to an external host using SSH	"ssh" section on page C-72
ssh-version	15	Enables Secure Shell (SSH) 1, SSH 2, or both SSH 1 and SSH 2.	"ssh-version" section on page C-73
telnet	15	Telnets to an external host.	"telnet" section on page C-73
telnetenable	15	Configures Telnet access.	"telnetenable" section on page C-74
traceroute	0	Displays the network route to a specified host and identify faulty gateways.	"traceroute" section on page C-15
username	15	Creates a new user account or changes an account's properties.	"username" section on page C-75

1. This command is also available in the maintenance image.
2. This command is available only in the maintenance image.

Command Description Conventions

Command descriptions in this document and in the CLI help system use the following conventions:

- Vertical bars (|) separate alternative, mutually exclusive elements.

- Square brackets ([ ]) indicate optional elements.
- Braces ({ }) indicate a required choice. Braces within square brackets ([{ }]) indicate a required choice within an optional element.
- Boldface indicates commands and keywords that are entered literally as shown.
- Italics indicate arguments for which you supply values.

Privilege Level 0 Commands

This section describes the privilege level 0 commands.

exit

To log out of the system, use the exit command.

exit

Syntax Description

This command has no arguments or keywords.

Example

The following command logs you out of the system:

```
exit
```

ping

To send ICMP echo_request packets for diagnosing basic network connectivity, use the **ping** command.

ping [**-c** *count*] [**-i** *wait*] [**-s** *packetsize*] [-**n**] {*hostname* | *ip-address*}

Syntax Description

c	Sets the number of echo packets to send.
count	Number of echo packets to send.
i	Sets the amount of time to wait between sending each packet.
wait	Amount of time to wait between sending each packet, in seconds. The default is 1.
s	Sets the size of each echo packet.
packetsize	The size of each echo packet, in bytes. The default is 56.
hostname	Host name of system to ping.
ip-address	IP address of system to ping.
n	Disables reverse DNS lookup.

Usage Guidelines

To use this command with the *hostname* argument, DNS must be configured on the system. To force the time-out of a nonresponsive host or to eliminate a loop cycle, press **Ctrl-c**.

Example

This command sends 4 echo packets to the host otherhost with a wait time of 5 seconds between each packet:

```
ping -c 4 -i 5 209.165.200.224

PING 209.165.200.224 (209.165.200.224) from 209.165.201.0 : 56(84)
bytes of data.
64 bytes from dns-sj1.cisco.com (209.165.200.224): icmp_seq=0 ttl=246
time=16.3 ms
64 bytes from dns-sj1.cisco.com (209.165.200.224): icmp_seq=1 ttl=246
time=2.0 ms
64 bytes from dns-sj1.cisco.com (209.165.200.224): icmp_seq=2 ttl=246
time=2.1 ms
64 bytes from dns-sj1.cisco.com (209.165.200.224): icmp_seq=3 ttl=246
time=2.1 ms
```

show clock

To display the system date and time in Coordinated Universal Time (UTC), use the **show clock** command.

show clock

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Use the **show clock** command to display the system date and time. For more information about the system time, see the section "Setting System Date and Time" in the *Installation and Configuration Guide for the Cisco Ethernet Subscriber Solution Engine*.

Example

This command displays the system date and time:

```
show clock
12:43:47 Jun 20 2001
```

Related Commands

clock

ntp server

show domain-name

To display the system domain name, use the **show domain-name** command.

show domain-name

Syntax Description

This command has no arguments or keywords.

Example

This command displays the system domain name:

```
show domain-name
cisco.com
```

show interfaces

To display information about the system network interface, use the **show interfaces** command.

show interfaces

Syntax Description

This command has no arguments or keywords.

Example

This command displays information about system network interfaces:

```
show interfaces
eth0      Link encap:Ethernet  HWaddr 00:02:B3:35:FD:CC
          inet addr:209.165.200.224 Bcast:209.165.201.0
           Mask:255.255.255.224
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:80309 errors:0 dropped:0 overruns:0 frame:0
          TX packets:22451 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          Interrupt:5 Base address:0xef00 Memory:d0c7e000-d0c7ec40
```

Related Commands

interface

show process

To display information about processes running on the system (including the status of the database), use the **show process** command.

show process [**page**]

Note If the db2sync process is listed, the database is running.

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.

Example

This command displays information about processes running on the system:

```
show process page
PID  PPID     ELAPSED    SZ                  STARTED TTY  COMMAND
    1     0  4-20:04:35   277 Fri Jun 15 16:54:03 2001 ?    init
    2     1  4-20:04:35     0 Fri Jun 15 16:54:03 2001 ?    kflushd
    3     1  4-20:04:35     0 Fri Jun 15 16:54:03 2001 ?    kupdate
    4     1  4-20:04:35     0 Fri Jun 15 16:54:03 2001 ?    kpiod
    5     1  4-20:04:35     0 Fri Jun 15 16:54:03 2001 ?    kswapd
    6     1  4-20:04:28     0 Fri Jun 15 16:54:10 2001 ?    kreiserfsd
   81     1  4-20:04:25     0 Fri Jun 15 16:54:13 2001 ?    kreiserfsd
   82     1  4-20:04:25     0 Fri Jun 15 16:54:13 2001 ?    kreiserfsd
   83     1  4-20:04:25     0 Fri Jun 15 16:54:13 2001 ?    kreiserfsd
   84     1  4-20:04:25     0 Fri Jun 15 16:54:13 2001 ?    kreiserfsd
   85     1  4-20:04:24     0 Fri Jun 15 16:54:14 2001 ?    kreiserfsd
  199     1  4-20:04:23   290 Fri Jun 15 16:54:15 2001 ?    watchdog
  213     1  4-20:04:23   342 Fri Jun 15 16:54:15 2001 ?    idled
  402     1  4-20:04:17   290 Fri Jun 15 16:54:21 2001 ?    syslogd
  411     1  4-20:04:17   360 Fri Jun 15 16:54:21 2001 ?    klogd
  517     1  4-20:04:15   327 Fri Jun 15 16:54:23 2001 ?    crond
  531     1  4-20:04:15   286 Fri Jun 15 16:54:23 2001 ?    inetd
  540     1  4-20:04:14   585 Fri Jun 15 16:54:24 2001 ?    sshd
  585     1  4-20:04:09   842 Fri Jun 15 16:54:29 2001 ?    dmgtd.lnx
-----------more-----------
```

show version

To display information about the current software on the system, use the **show version** command.

show version

Syntax Description

This command has no arguments or keywords.

Example

This command displays the current software on the system:

```
show version
Copyright (c) 1999-2000 by Cisco Systems, Inc.
Build Version (166) Mon Jun 11 16:56:23 PDT 2001
Uptime: 4 days 20 hours 6 mins
Linux/UID32 version 2.2.16-13bipsec.uid32 (gcc version egcs1
```

traceroute

To display the network route to a specified host and identify faulty gateways, use the **traceroute** command.

traceroute [-f *first_ttl***] [-m** *max_ttl***] [-w** *waittime***]** *host* **[***packetlength***]**

Syntax Description

-f	(Optional) Sets the time-to-live used in the first outgoing probe packet.
first_ttl	Time-to-live value of the first outgoing probe packet. The default is 1 hop.
-m	(Optional) Sets the maximum time-to-live (maximum number of hops) used in outgoing probe packets.
max_ttl	Maximum time-to-live for outgoing probe packets. The default is 30 hops.

-w	(Optional) Sets the time to wait for a response to a probe, in seconds.
waittime	Time to wait for a response to a probe, in seconds. The default is 5.
host	Name or IP address of host to which to connect.
packetlength	(Optional) The length of the packet to send, in bytes. The default and minimum value is 40.

Usage Guidelines

Use the **traceroute** command to trace the network route to a specified host and identify faulty gateways. The command displays a list of the hosts that receive probe packets as they travel to the destination host, in the order that the receiving hosts receive the packets. Asterisks (*) appear as the list entry for hosts that do not respond to probing correctly.

Example

This command displays the network route to the host otherhost with a packet time-to-live value of 2, a wait time of 5 seconds, and 50-byte packets:

```
traceroute -m 20 -w 10 cisco.com 50
traceroute to example.com (209.165.200.224), 20 hops max, 50 byte
packets
 1  ex1.com (209.165.200.225)  0.981 ms  0.919 ms  0.926 ms
 2  ex2.com (209.165.200.254)  1.528 ms  0.747 ms 0.661 ms
 3  ex3.com (209.165.200.255)  0.887 ms  0.770 ms  0.744 ms
 4  ex4.com (209.165.201.0)  0.932 ms  0.789 ms  0.679 ms
 5  ex5.com (209.165.201.1)  1.066 ms  1.052 ms  0.983 ms
 6  ex6.com (209.165.201.30)  1.472 ms  1.247 ms  1.847 ms
 7  ex7.com(209.165.201.31)  1.738 ms  1.424 ms  1.658 ms
 8  ex8.com (209.165.202.128)  3.728 ms  2.429 ms  2.804 ms
 9  ex9.com (209.165.202.129)  6.283 ms  5.499 ms 3.285 ms
10  ex10.com (209.165.202.158)  9.926 ms  73.463 ms  3.895 ms
11  ex11.com (209.165.202.159)  70.967 ms *  47.106 ms
```

Related Commands

ping

Privilege Level 15 Commands

This section describes the privilege level 15 commands. Only users with privilege level 15 can run these commands.

auth

Use the **auth** command to enable secure remote authentication.

auth {cli | http} {local | tacacs *secret server1* **[***server2***] | radius** *secret server1* **[***server2***] | nt** *domain pdc* **[***bdc***]}**

Syntax Description

cli	Enables authentication using the Command Line Interface (CLI).
http	Enables authentication using Hypertext Transfer Protocol (HTTP).
local	Enables local authentication.
tacacs	Enables authentication using the Terminal Access Controller Access Control System (TACACS).
radius	Enables authentication using Remote Dial-In User Service (RADIUS).
nt	Enables authentication from an NT domain controller.
secret	Shared secret code of server.
server1	IP address or device name of server from which authentication will occur.
server2	IP address or device name of optional secondary server from which authentication could occur
domain	NT domain name.
pdc	Name of the Primary Domain Controller (PDC).
bdc	Name of the Backup Domain Controller (BDC).

Example

This command enables secure remote authentication from a remote server, using TACACS.

```
auth http tacacs tr5e43 209.165.200.224
```

backup

Use the **backup** command to back up the Cisco ESSE.

backup [test]

Syntax Description

test	Tests the configured backup hostname, username, password, and directory.

Usage Guidelines

To back up the Cisco ESSE, use the **backup** command. To configure the backup location, use the **backupconfig** command.

Example

The following command backs up the Cisco ESSE:

```
backup
```

Related Commands

backupconfig

listbackup

restore

show backupconfig

backupconfig

Use the **backupconfig** command to set the configuration for all backup and restore operations. To clear the backup and restore configuration information, use the **no backupconfig** command.

backupconfig {*hostname*} {*username*} {*password*} [*directory*]

no backupconfig

Syntax Description

hostname	Host name or IP address of the host system.
username	Username of host system.
password	Password of the host system.
directory	Path to specific backup directory, if different from user's default directory.

Usage guidelines

To set the configuration for all backup and restore operations, use the **backup** command.

Example

The following command will configure the backup and restore operations to backup to and restore from host 209.165.200.224, set the username to user1, and set the password to pass:

```
backupconfig 209.165.200.224 user1 pass
```

The following command clears all backup and restore configuration information:

```
no backupconfig
```

Related Commands

backup

listbackup

restore

show backupconfig

cdp

Use the **cdp** command to configure the Cisco Discovery Protocol

cdp {run [*port***] | timer** *seconds* **| holdtime** *seconds***}**

no cdp {run [*port***] | timer | holdtime}**

Syntax Description

run	start cdp
timer	set cdp packets retransmission time.
holdtime	set cdp packet info hold time.
port	Ethernet port on which CDP will be enabled. Acceptable values are eth0-15.
seconds	amount of time, in seconds, that the system takes to either transmit the cdp packet information or to hold another system's cdp packet information.

Usage Guidelines

Cisco Discovery Protocol (CDP) is a protocol by which one Cisco device can recognize, and be recognized by, another Cisco device. The run command starts the system sending out signals to the other systems. The timer command sets the amount of time, in seconds, that these signals are sent. The holdtime sets the amount of time a system will recognize another system without receiving a signal. For example, if your system's holdtime is set to 30 seconds, and another system that has already been recognized by yours does not send a signal within that 30 seconds, your system will cease to recognize it. If you are using the **no cdp** command, the timer and holdtime commands set their respective values to the default value.

Example

This command sets the cdp packet's retransmission time at 10 seconds.

```
cdp timer 10
```

This command sets the cdp packet's retransmission to its default time.

```
no cdp timer
```

clock

To set the system date and time, use the **clock** command. See the Usage Guidelines before using this command.

clock {set *hh***:***mm***:***ss month day year***}**

Syntax Description

set	Sets the system clock.
*hh***:***mm***:***ss*	Current time (for example, 13:32:00).
month	Current month. You can enter full month names or abbreviations that include at least the first 3 characters of the month name (for example, jan, feb, mar).
day	Day of the month (for example, 1 to 31).
year	Current year (for example, 2000).

Usage Guidelines

When resetting the time, you must stop and restart Cisco ESSE services. Otherwise, scheduled configuration and firmware jobs will not run properly. To reset the time:

Step 1 Stop services:

```
services stop
```

Step 2 Change the time.

Step 3 Start services:

```
services start
```

To set the date and time, use the **set** option.

If you configure the system to use Network Time Protocol (NTP), you do not need to set the system clock manually using the **clock** command.When setting the clock, enter the current time in Coordinated Universal Time (UTC).

For more information about the system time, refer to "Setting System Date and Time" in the *Installation and Configuration Guide for the Cisco Ethernet Subscriber Solution Engine*.

Example

This command sets the date and time:

```
clock set 16:00:00 dec 11 2001
```

```
Tue Dec 11 16:00:00 UTC 2001
```

Related Commands

ntp server

s**how clock**

df

To display the current storage usage on the Cisco ESSE, use the **df** command.

df

Usage Guidelines

This command in primarily intended as a debugging tool for problems with full partitions.

Example

The following command displays the current storage usage on the Cisco ESSE:

```
df
Filesystem            Size  Used Avail Use% Mounted on
/dev/sda12            151M   59M   92M  39% /
/dev/sda1              49M  2.8M   44M   6% /boot
/dev/sda7             985M   24M  911M   3% /extra
/dev/sda8             601M   32M  569M   5% /home
/dev/sda6            1001M  136M  865M  14% /opt
/dev/sda13            9.7G   32M  9.7G   0% /tftpboot
/dev/sda9             601M   32M  569M   5% /tmp
/dev/sda10            591M  212M  350M  38% /usr
/dev/sda5             2.9G  450M  2.5G  15% /var
```

erase config

To erase the configuration in flash memory and reload the device, use the **erase config** command.

erase config

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Use this command to erase the configuration in Flash memory and reload the device.

When you enter the command, you are prompted for confirmation. Enter **yes** to confirm, or press **Enter** to accept the default response **no**.

Caution When you confirm this command, the system configuration is erased and the system reboots automatically. The system will not operate until you reconfigure it.

When the system reboots, you must reconfigure it with the setup program. For information about using the setup program, refer to the *Installation and Configuration Guide for the Cisco Ethernet Subscriber Solution Engine*.

Example

This command erases the system configuration:

```
erase config
This will erase your configuration, return device t
o factory defaults, and reload the device
Do you want to continue?[no]:yes
```

firewall

To implement port filtering on the Cisco ESSE, use the **firewall** command.

firewall *eth <0-5>* **[public | private] | [icmp telnet ssh snmp https 1741]**

Syntax Description

eth <0-5>	Port to be configured. Acceptable values are eth0-5.
public	Denies access via ICMP, Telnet, SNMP, and the HTTP 1741 port.
private	Denies no access.
icmp	Denies Internet Control Message Protocol (ICMP) ping messages.
telnet	Denies incoming Telnet connections.
ssh	Denies incoming SSH connections.
snmp	Denies incoming SNMP requests.
https	Denies all connections to the SSL HTTP port.
1741	Denies all connections to the HTTP 1741 port.

Usage Guidelines

Use the firewall command to implement port filtering on the Cisco ESSE. To configure an Ethernet port for secured public access, use the **public** option. To configure an Ethernet port for local access, via a LAN or VLAN, use the **private** option. To *dissable* icmp, Telnet, ssh, snmp, https, or to deny connections to the SSL HTTP port or the HTTP 1741 port, use its corresponding option.

Example

The following is an example of a secure Ethernet port configuration:

- The Ethernet 0 port is connected to the Internet, and is configured to be accessible only via HTTPS by entering the following command:

  ```
  firewall eth0 public ssh 1741
  ```

- The Ethernet 1 port is connected to an internal LAN or VLAN, and is configured to be accessible via any of the supported protocols by entering the following command:

  ```
  firewall eth1 private
  ```

  An on-site user has full access to the Cisco ESSE, but an external user can only access it using a secure connection.

gethostbyname

Use the gethostbyname command to display the IP address of a known domain name.

gethostbyname *host*

Syntax Description

host	Domain name of host.

Example

This command displays the IP address of example.com

```
gethostbyname example.com
209.165.200.224
```

hostname

To change the system hostname, use the **hostname** command.

hostname *name*

Syntax Description

name	New hostname for the Cisco ESSE; the name is case sensitive and may be from 1 to 22 alphanumeric characters.

Example

The following example changes the hostname to sandbox:

```
hostname sandbox
```

import

To import host files, or to map IP addresses to hostnames, use the **import** command:

import {host *hostname ipaddress***} | {hosts** *ftp-host username password path***}**

no import {host *hostname ipaddress***} | {hosts}**

Syntax Description

host	Maps one IP address to a hostname.
hostname	Hostname to map IP address to.
hosts	Imports host files from ftp accessible host.
ipaddress	IP address to map Hostname to.
password	Password used to access ftp accessible host.
path	Path to ftp accessible host.

ftp-host	IP address of ftp accessible host.
username	username use to access ftp accessible host.

Usage Guidelines

To map a single hostname to an IP address, enter the import command as follows

import host *hostname ipaddress*

To import host files from an external, ftp accessible server, enter the import command as follows:

import hosts *ftp-host username password path*

To remove an individual IP address from a host file, use the **no** version of the **import** command as follows:

no import host *hostname ipaddress*

To remove an imported host file, use the **no** version of the **import** command as follows:

no import hosts

Example

This command imports host files from the ftp accessible server ftpserver_1. Ftpserver_1 has the username admin, the password pass, and the path /ftpserver_1/hosts.

```
import hosts ftpserver_1 admin pass /ftpserver_1/hosts
```

This command deletes the hosts imported in the example above:

```
no import hosts
```

install configure

To define the repository that the Cisco Ethernet Subscriber Solution Engine uses to install software updates and images, use the **install configur**e command.

install configure {URL *URL Value* **| default | save}**

Syntax Description

URL	Sets the URL of the repository.
URL Value	The URL of the repository. The URL should take the form of http://host:port/path (the path is not a requirement).
default	Configures the Cisco Ethernet Subscriber Solution Engine to be its own repository. The URL is http://localhost:9851.
save	Saves the current configuration in the install.ini file.

Usage Guidelines

The **install configure** command defines the repository that the Cisco Ethernet Subscriber Solution Engine uses. A repository is a remote or local server from where a system can download software updates and images. Only HTTP is supported.

Example

The following command configures the Cisco Ethernet Subscriber Solution Engine to use http://209.165.200.22, with port 9851, as a repository:

```
install configure URL http://209.165.200.224:9851
```

Related Commands

install update

install list

install list

To list software updates and images currently available on the configured repository, use the **install list** command.

install list [all | full | page | updates]

Syntax Description

all	Displays all software updates and images on a configured repository. This command displays the name, the version, the requirements, the type, and a summary of the software.
full	Displays only the complete images on a configured repository.This command displays the name, the version, the requirements, the type, and a summary of the image.
page	Displays only the names of all software updates and images on a configured repository. All other information is omitted.
updates	Displays only the updates on a configured repository. This command displays the name, the version, the requirements, the type, and a summary of the update.

Usage Guidelines

The **install list** command displays software updates and images currently available on a repository. A repository is a remote or local server from where a system can receive software.

Example

Enter the following command to display a list of all available software updates and images on a configured repository:

```
install list all
Name            Version Requires        Type       Summary
 EX-1.02        1.02    HSE-1.0         UPDATE     Hosting Solution...
 EX-1.1aR       1.1aR   HSE-1.1         UPDATE     Hosting Solution...
 EX-1.1a        1.1a    HSE-1.1         UPDATE     Hosting Solution...
 EX-1.0a        1.0a    HSE-1.0         UPDATE     Hosting Solution...
 EX-1.0aR       1.0aR   HSE-1.0         UPDATE     Hosting Solution...
 EX-1.0-ROB     1.0     HSE-1.0         COMPLETE   Hosting Solution...
 EX-1.0         1.0     HSE-1.0         COMPLETE   Hosting Solution...
```

Related Commands

install configure

install update

install update

To install a software update or image, use the **install update** command.

install update *package name*

Syntax Description

Package Name	Name of the software update or image to be installed. To see the names of software updates and images available for installation, use the **install list** command. For more information, see the "install list" section on page C-28.

Example

The following command installs the update EX-2.0:

```
install update EX-2.0
```

Related Commands

install configure

install list

interface

To configure an Ethernet interface, use the **interface** command.

interface *eth<0-5>* **{[up | down] |** *ipaddress netmask* **[default-gateway** *address***] [up | down]}**

Syntax Description

eth<0-5>	Name of the interface port to be configured. Acceptable values are eth0-5.
up	Enables the interface (the default).

	If you include the *ipaddress* parameter and want to enable the interface in the same command, either enter the **up** parameter after *ipaddress* and its required parameters, or do not specify the **up** or **down** parameters (**up** is the default).
down	Disables the interface. If you include the *ipaddress* parameter and want to disable the interface in the same command, enter the **down** parameter after *ipaddress* and its required parameters.
ipaddress	The IP address of the interface.
netmask	The netmask of the interface IP address.
default-gateway	Changes the IP address of the default gateway that connects the Cisco ESSE to the network.
address	The gateway IP address.

Default

When you enter the **interface** command, the interface that you specify is enabled by default. If you want to disable an enabled interface or leave a disabled interface disabled, you must specify the **down** option.

Usage Guidelines

Use the **interface** command to configure an Ethernet interface.

If you change the IP address or hostname, follow these steps to ensure that applications using the system can connect to it correctly:

Step 1 Stop and restart management services by entering:

```
# services stop

# services start
```

Step 2 Verify that management applications that use the system can still connect to it.

Step 3 Reconnect any applications that cannot connect to it using the system's new IP address or hostname.

Example

This command disables the Ethernet 1 interface:

```
interface eth1 down
```

This command sets the Ethernet 0 IP address, netmask, and gateway IP address:

```
interface eth0 209.165.200.224 255.255.255.224 default-gateway
209.165.201.31 up
```

ip domain-name

To define a default domain name, use the **ip domain-name** command. To remove the default domain name, use the **no** form of the command.

ip domain-name *name*

no ip domain-name *name*

Syntax Description

name	Domain name (e.g. cisco.com).

Usage Guidelines

Use this command to define a default domain name.

A default domain name allows the system to resolve any unqualified host names. Any IP hostname that does not contain a domain name will have the configured domain name appended to it. If you are using a DNS server, this appended name is resolved by the DNS server, and then added to the host table.

Example

This command defines the default domain name cisco.com:

```
ip domain-name cisco.com
```

This command removes the default domain name:

```
no ip domain-name
```

Related Commands

ip name-server

ip name-server

To specify the addresses of up to three name servers for name and address resolution, use the **ip name-server** command. To remove a name server, use the **no** form of the command.

ip name-server *ip-address*

no ip name-server *ip-address*

Syntax Description

ip-address	Name server IP address (maximum of 3).

Usage Guidelines

Use the **ip name-server** command to point the system to a specific DNS server. You may configure up to three servers.

If you attempt to configure a fourth name server, the following error message appears:

```
# Name-server table is full.
```

The system must have a functional DNS server configured to function correctly. If it does not, in most cases it will not correctly process requests from management applications that use it. If the system cannot obtain DNS services from the network, Telnet connections to the system will fail or Telnet interaction with the system will become extremely slow.

Example

This command assigns a name server for the system to use for DNS name to address resolution:

```
ip name-server 209.165.200.224
```

This command disables the name server; the system will not use it for name to address resolution:

```
no ip name-server 209.165.200.224
```

Related Commands

ip domain-name

listbackup

Use the **listbackup** command to list all current backups at the configured site.

listbackup

Syntax Description

This command has no arguments or keywords.

Example

The following command lists all current backups at the configured site:

```
listbackup
ex1_06042001_170640: Hostname: ex1 Date: 06042001  time: 1700
ex1_06052001_124543: Hostname: ex1 Date: 06052001  time: 1243
ex1_06052001_155148: Hostname: ex1 Date: 06052001  time: 1558
ex1_06202001_145704: Hostname: ex1 Date: 06202001  time: 1454
```

Related Commands

backup

backupconfig

restore

show backupconfig

mail

To debug and test email settings, use the **mail** command.

mail [to *user@host* **[debug]]**

Usage Guidelines

Entering the **mail** command with no arguments will allow you to read email. Entering the **mail** command with the arguments listed will allow you to send email.

Syntax Description

to	Sends email to the expressed recipient.
user@host	Recipient of the email.
debug	Debugs any email problems.

Example

The following command sends an email message:

```
mail to johndoe@example.com
```

mailcntrl clear

To delete the maillog, sendqueue, or userqueue, use the **mailcntrl clear** command.

mailcntrl clear {log | sendqueue | userqueue}

Syntax Description

log	Clears the Cisco ESSE's email log.
sendqueue	Clears the Cisco ESSE's sendqueue.
userqueue	Clears the Cisco ESSE's userqueue.

Example

The following command clears the Cisco ESSE's email log.

```
mailcntrl clear log
```

Related Commands

mailcntrl list

mailcntrl list

To list the size of the userlog, userqueue, or the sendqueue, use the **mailcntrl list** command.

mailcntrl list {logsize | sendqueuesize | userqueuesize}

Syntax Description

logsize	Size of the mail log.
sendqueuesize	Size of the sendqueue.
userqueuesize	Size of the userqueue.

Example

The following command displays the size of the Cisco ESSE's email log.

```
mailcntrl list logsize
Mail log files total size: 4.0k
```

Related Commands

mailcntrl clear

mailroute

To forward email to a specified SMTP server, use the **mailroute** command to specify the server. If no server is specified, the Cisco ESSE will use DNS to resolve the correct email server in your local domain. To stop forwarding mail to the SMTP server, use the **mailroute** command followed by a blank space.

mailroute {*hostname* | *ip-address*}

Syntax Description

hostname	Host name of an email server.
ip-address	IP address of an email server.

Example

The following command forwards email to a server with the hostname mailserver:

```
mailroute mailserver
```

nslookup

To translate a device name to its IP address or an IP address to its device name, use the **nslookup** command.

nslookup {*dns-name* | *ip-address*}

Syntax Description

dns-name	Device name of a host on the network.
ip-address	IP address of a host on the network.

Example

The following command translates the device name hostname to its IP address:

```
nslookup hostname
Server: dns.ex1.com
Address: 209.165.200.224
```

```
Name:    ex1.com
Address: 209.165.201.0
```

ntp server

To configure the Network Time Protocol (NTP) and allow the system clock to be synchronized by a time server, use the **ntp server** command. To disable this function, use the **no** form of this command.

ntp server *ip-address*

no ntp server *ip-address*

Syntax Description

ip-address	IP address of the NTP time server providing clock synchronization.

Usage Guidelines

Use the **ntp server** command to synchronize the system clock with the specified NTP server. If you configure multiple NTP servers, the system will synchronize with the first working NTP server it finds. There is no limit to the number of NTP servers that you can configure.

The **ntp server** command validates the NTP server that you specify. The possible results are:

- If the server is a valid NTP server, a message similar to the following appears:

  ```
  # 19 Jan 00:43:48 ntpdate[1437]: step time server 209.165.200.224
  offset 999.257304
  ```

- If no NTP server with the name or IP address you specified exists, a message similar to the following appears:

  ```
  # 19 Jan 00:43:40 ntpdate[1431]: no server suitable for
  synchronization found
  ```

  In this case, remove the NTP server by using the **no** form of the command, then configure a valid NTP server.

- If the system time is set to a time later than the time on the NTP server, a message similar to the following appears:

```
# 19 Jan 00:43:58 ntpdate[1265]: Can't adjust the time of day:
Invalid argument.
```

  In this case, the **ntp server** command is entered into the system configuration, but NTP will not function. Follow these steps to remove the command and configure NTP correctly:

Step 1 Remove the **ntp server** command from the configuration by entering the **no** form of the command. For example:

no ntp server *ip-address*

where *ip-address* is the IP address of the NTP server.

Step 2 Set the system clock to a time that is behind the time on the NTP server using the **clock set** command. For more information about the clock command, refer to the "clock" section on page C-21.

Step 3 Enter the **ntp server** command again to configure the NTP server on the system. For example:

ntp server *ip-address*

Example

This command configures the system to use an NTP server:

```
ntp server 209.165.201.0
```

This command configures the system to stop using the NTP server:

```
no ntp server 209.165.201.0
```

Related Commands

clock

reload

To reboot the system, use the **reload** command.

reload

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Use the **reload** command to reboot the system.

You are prompted to verify the reload. Enter **yes** to confirm or **no** to cancel the reload.

Caution All processes running on the system stop when you run the reload command. The Cisco ESSE will not respond while it is reloading.

Example

This command reboots the system:

```
reload
```

Related Commands

shutdown

reinitdb

To reinitialize the database, use the **reinitdb** command.

reinitdb

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

The **reinitdb** command reinitializes the database. This erases all information contained within the database.

Example

This command reinitializes the database:

```
reinitdb
```

repository

To configure the Cisco Ethernet Subscriber Solution Engine to be a repository server, use the **repository** command.

repository source *URL*

Syntax Description

source	Sets the location from where the local repository downloads software updates and images.
URL	The IP address of an external server containing software updates and images.

Usage Guidelines

The **repository** command allows the Cisco Ethernet Subscriber Solution Engine to be a repository both for itself and for external systems. A repository is a remote or local server from where a system can receive software updates and images.

The **repository** command only configures the Cisco Ethernet Subscriber Solution Engine to be a repository. To configure the Cisco Ethernet Subscriber Solution Engine to install software updates and images from this repository, see the "install configure" section on page C-27.

Example

To configure the Cisco Ethernet Subscriber Solution Engine to be a repository, and to download software updates and images from http:// 209.165.200.224, enter the following command:

```
repository source ftp://209.165.200.224
```

Related Commands

repository add

repository delete

repository list

repository server

repository add

To transfer software updates and images from a remote server to the Cisco Ethernet Subscriber Solution Engine's local repository, use the **repository add** command.

repository add *package*

Syntax Description

package	Name of the software update or image to be transferred.

Usage Guidelines

The **repository add** command transfers software updates and images from a remote server to the Cisco Ethernet Subscriber Solution Engine's local repository. You will be prompted to enter a username and password if they are needed to access the remote server.

Example

To transfer the update EX_2.0 from an update server to the local repository, enter the following command:

```
repository add ex_2.0
```

Related Commands

repository

repository delete

repository list

repository server

repository delete

To delete software updates and images on the Cisco Ethernet Subscriber Solution Engine's local repository, use the **repository delete** command.

repository delete [*package* **| all]**

Syntax Description

all	Deletes all software updates and images in the local repository.
package	Name of the software update or image to be deleted.

Usage Guidelines

The **repository delete** command deletes software updates and images on the Cisco Ethernet Subscriber Solution Engine's local repository. A repository is a remote or local server from where a system can receive software updates and images.

Example

The following command deletes the update EX_2.0 from the local repository:

```
repository delete EX_2.0
```

Related Commands

repository

repository add

repository list

repository server

repository list

To list software updates and images on the configured local or remote repository, use the **repository list** command.

repository list {local | remote} [detail] [page]

Syntax Description

local	Lists software updates and packages on the local repository.
remote	Lists software updates and packages on a remote repository.
detail	Includes details of the software updates and images displayed.
page	Displays the software updates and packages on page at a time.

Example

To list the software updates and images available on the configured local repository, with details and one page at a time, enter the following command:

```
repository list local detail page
```

Related Commands

repository

repository add

repository delete

repository server

repository server

To start, stop, or view the status of the Cisco Ethernet Subscriber Solution Engine's local repository, use the **repository server** command.

repository server [stop | start | status]

Syntax Description

stop	Stops the local repository.
start	Starts the local repository.
Status	Displays the status of the local repository.

Usage Guidelines

The **repository server** command starts, stops, or displays the status of the Cisco Ethernet Subscriber Solution Engine's local repository. A repository is a remote or local server from where a system can receive software updates and images.

Example

The following command stops the local repository:

```
repository server stop
```

Related Commands

repository

repository add

repository delete

repository list

restore

Use the **restore** command to restore a backed up configuration of the Cisco ESSE.

restore *restore name*

Syntax Description

restore name	Name of backup to be used to restore the Cisco ESSE.

Usage Guidelines

To restore a configuration, use the **restore** command. If you use the **restore** command all current domains, roles, users, and discovery configuration information will be erased.

Example

The following command will restore a backed up configuration:

```
restore backup1
```

Releated Commands

backup

backupconfig

listbackup

show backupconfig

route

To add a route through a gateway device, use the **route** command. To delete a route, use the no version of the command.

route {*network address*} **netmask** {*network netmask*} **gateway** {*gateway address*}

no route {*network address*} **netmask** {*network netmask*}

Syntax Description

netmask	Sets value of the network netmask.
gateway	Sets the IP address of the router or gateway.
network address	IP address of the network.
network netmask	Value of the network netmask.
gateway address	IP address of router or gateway.

Example

The following command adds a route:

```
route 209.165.201.0 netmask 255.255.255.224 gateway 209.165.200.224
```

The following command deletes the above route:

```
no route 209.165.201.0 netmask 255.255.255.224
```

services

To list, start, or stop the management services running on the system, use the **services** command.

services [status | start | stop]

Syntax Description

status	Displays the management services status.
start	Starts the management services.
stop	Stops the management services.

Usage Guidelines

Use this command to start, stop, or view status of the management services running on the system.

Management services are the software installed on the system by network management applications. Use this command to stop and restart the management services if the system is not responding correctly to a management application. This should cause the services to reset and function properly again.

Example

This command stops management services:

```
services stop
```

This command starts management services:

```
services start
```

This command shows services status:

```
# services status
Process= HSECollector
        State  = Running but busy flag set
        Pid    = 588
        RC     = 0
        Signo  = 0
        Start  = 06/15/01 16:54:32
        Stop   = Not applicable
        Core   = Not applicable
        Info   = HSECollector started.

        Process= HSEANIServer
        State  = Running but busy flag set
        Pid    = 589
        RC     = 0
        Signo  = 0
        Start  = 06/15/01 16:54:32
-----------more-----------
```

Related Commands

show process

show anilog

To display the Cisco Ethernet Subscriber Solution Engine's ANI log, use the **show anilog** command.

show anilog [page] | include *MatchString1* **[***MatchString2***]**

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's ANI log, one page at a time:

```
show anilog page
/var/adm/CSCOets/log/ani.log
SNMPThrPool: Instantiated ex.lib.snmp.lib.timer.DynamicThreadPool,  mi
n=15, max=48, maxIdleSecs=240
2001/12/20 13:43:12 main ani MESSAGE DBConnection: Created new
Database connecti
on [hashCode = 45981573]
2001/12/20 13:43:38 main ani MESSAGE ServletServiceModule: Moxie
Servlet Engine
is ready to receive requests
2001/12/20 15:43:39 HSEStatusPoll ani MESSAGE DBConnection: Created
new Database
 connection [hashCode = 85057415]
```

```
2001/12/20 17:43:39 HSEStatusPoll ani MESSAGE DBConnection: Created
new Database
 connection [hashCode = 396959623]
2001/12/20 19:43:39 HSEStatusPoll ani MESSAGE DBConnection: Created
new Database
--More--
```

show auth-cli

To display the type of authentication used for secure CLI access, use the **show auth-cli** command.

show auth-cli

Syntax Description

This command has no arguments or keywords.

Example

This command and response shows that the Cisco ESSE's local authentication is being used for the CLI:

```
show auth-cli
local
```

show auth-http

To display the type of authentication used for secure HTTP access, use the **show auth-http** command.

show auth-http

Syntax Description

This command has no arguments or keywords.

Example

This command and response shows that the Cisco ESSE's local authentication is being used for the CLI:

```
show auth-http
local
```

show backupconfig

The **show backupconfig** command displays the current backup and restore configuration.

```
show backupconfig
```

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

To display the current backup and restore configuration, use the **show backupconfig** command. If the backup configuration has not been set, the host and username fields display NONE.

Example

The following command displays the current backup and restore configuration:

```
show backupconfig
Hostname: 209.165.201.0
Username: user1
```

Related Commands

backup

backupconfig

listbackup

restore

show bootlog

To display the messages logged during the last system boot, use the **show bootlog** command.

show bootlog [page]

Syntax Description

page	Displays command output one screen at a time. Press the **return** key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.

Example

This command displays the messages logged during the last system boot:

```
show bootlog page
Linux/UID32 version 2.2.16-13bipsec.uid32 (gcc version egcs1
Console: colour VGA+ 80x25
Calibrating delay loop... 1133.77 BogoMIPS
start low memory: 0xc0001000 i386_endbase: 0xc009f000
addresses range:: 0xc0f00000  0xc1000000
start memory: c04f8000 end_memory: d0000000
Memory: 257688k/262144k available (988k kernel code, 416k reserved,
2992k data,)
Dentry hash table entries: 262144 (order 9, 2048k)
Buffer cache hash table entries: 262144 (order 8, 1024k)
Page cache hash table entries: 65536 (order 6, 256k)
vmdump: setting dump_execute() as dump_function_ptr ...
VFS: Diskquotas version dquot_6.4.0 initialized
CPU: Intel Pentium III (Coppermine) stepping 06
Checking 386/387 coupling... OK, FPU using exception 16 error
reporting.
Checking 'hlt' instruction... OK.
POSIX conformance testing by UNIFIX
mtrr: v1.35a (19990819) Richard Gooch (rgooch@atnf.csiro.au)
PCI: PCI BIOS revision 2.10 entry at 0xfda95
PCI: Using configuration type 1
-----------more-----------
```

Related Commands

reload

clock

show cdp neighbor

To display the Cisco ESSE's nearest neighbor on the network, use the **show cdp neighbor** command.

show cdp neighbor

Syntax Description

This command has no arguments or keywords.

Example

This command shows the nearest neighbor on the network.

```
show cdp neighbor
cdp neighbor device: Switch
        device type: cisco WS-C2924-XL
        port: FastEthernet0/12
        address: 209.165.201.0
```

show cdp run

To display the Cisco Discovery Protocol (CDP) configuration, use the **show cdp-run** command.

show cdp run

Syntax Description

This command has no arguments or keywords.

Example

This command displays the CDP configuration:

```
show cdp run
CDP protocol is enabled ...
        broadcasting interval is every 60 seconds.
        time-to-live of cdp packets is 180 seconds.

        CDP is enabled on port eth0.
```

show collectorlog

To display the Cisco Ethernet Subscriber Solution Engine's collector log, use the show collectorlog command.

show collectorlog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's collector log, one page at a time:

```
show collectorlog page
/var/adm/CSCOets/log/collector.log
2001/12/20 13:43:18 main HSECollector MESSAGE CollectorMain: Waiting
for databas
e to be ready
2001/12/20 13:43:21 main HSECollector MESSAGE CollectorMain: Database
is ready
SNMPThrPool: Instantiated ex.lib.snmp.lib.timer.DynamicThreadPool,  mi
```

```
n=15, max=48, maxIdleSecs=0
2001/12/20 13:43:29 main HSECollector MESSAGE ServletServiceModule:
Moxie Servle
t Engine is ready to receive requests
2001/12/20 13:43:30 PeriodicSchedulerRun:FaultCleanup HSECollector
MESSAGE Colle
ctorDBUtils: DB.TableCleanupCommand=[VACUUM ]
2001/12/20 13:43:30 PeriodicSchedulerRun:FaultCleanup HSECollector
MESSAGE Colle
ctorDBUtils: DB.TableUpdateStatsCommand=[VACUUM ANALYZE ]
2001/12/21 10:39:52 Moxie Servlet Engine:Pooled Thread:1 HSECollector
MESSAGE Se
rvletContextAdaptor: Collector: init
```

show config

To display the system configuration, use the **show config** command.

show config

Syntax Description

This command has no arguments or keywords.

Example

This command displays the system configuration:

```
show config
hostname ex1
interface ethernet0 209.165.201.0 255.255.255.224 default-gateway
209.165.202.128
interface ethernet1 down
interface ethernet2 down
interface ethernet3 down
interface ethernet4 down
interface ethernet5 down
ip domain-name embu-doc
ip name-server 209.165.202.158
username admin epassword ************* privilege 15
```

show daemonslog

To display the Cisco Ethernet Subscriber Solution Engine's daemons log, use the **show daemonslog** command.

show daemonslog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's daemons log, one page at a time:

```
show daemonslog page
/var/adm/CSCOets/log/daemons.log
[dmgrDbg] getenv(PX_DBG)=NULL
[dmgrDbg] getenv(PX_MY_DEBUG)=NULL
[dmgrDbg] getenv(PX_MY_TRACE)=NULL
[dmgrDbg] getenv(PX_DBG_LEVEL)=NULL
[dmgrDbg][Thu Dec 20 13:42:53 2001]##### INFO ##### re-evaluate
DbgLevel=0x0
        ++>>it(1) = 8077978 <HSECollector>
        ++>>it(1) = 8077898 <HSEANIServer>
        ++>>it(1) = 8077428 <PostgreSQL>
        ++>>it(1) = 8077228 <WebServer>
        ++>>it(1) = 8077328 <Tomcat>
        ++>>it(1) = 80770d8 <ExcepReporter>
        ++>>it(1) = 8076fc8 <CDPbrdcast>
        ++>>it(1) = 8076e58 <PerfMon>
#!/bin/sh -v
#!/bin/sh -v

if [ "$NMSROOT" = "" ]; then
```

```
        NMSROOT=/opt/CSCOets
        export NMSROOT
fi

cd $NMSROOT
--More--
```

show dmgtdlog

To display the Cisco Ethernet Subscriber Solution Engine's daemon manager log, use the **show dmgtdlog** command.

show dmgtdlog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's daemon manager log, one page at a time:

```
show dmgtdlog page
/var/adm/CSCOets/log/dmgtd.log
Dec 20 13:42:56 ex dmgt[712]: #3001:TYPE=INFO:Using port: tcp/42340.
Dec 20 13:42:56 ex dmgt[714]: #3007:TYPE=INFO:Started application(HSEC
ollector) "/bin/nice -n 19 /opt/CSCOets/bin/collector" pid=715.
Dec 20 13:42:56 ex dmgt[714]: #3007:TYPE=INFO:Started application(HSEA
--More--
```

show webaccesslog

To display the Cisco Ethernet Subscriber Solution Engine's Web access log, use the **show webaccesslog** command.

show webaccesslog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's Web access log, one page at a time:

```
show webaccesslog page
/var/adm/CSCOets/log/access_log
209.165.200.224 - - [21/Dec/2001:10:38:54 +0000] "GET / HTTP/1.0" 302
276 "-" "Moz
illa/4.76 [en]C-CCK-MCD   (Windows NT 5.0; U)"
209.165.200.224 - - [21/Dec/2001:10:38:54 +0000] "GET
/perl/login-form.cgi HTTP/1.
0" 200 2268 "-" "Mozilla/4.76 [en]C-CCK-MCD   (Windows NT 5.0; U)"
209.165.200.224 - - [21/Dec/2001:10:38:55 +0000] "GET /icons/hse.gif
HTTP/1.0" 200
 5554 "http://209.165.201.0:1741/perl/login-form.cgi" "Mozilla/4.76
[en]C-CCK-MC
D   (Windows NT 5.0; U)"
209.165.200.224 - - [21/Dec/2001:10:38:55 +0000] "GET
/icons/left_top.gif HTTP/1.0
" 200 324 "http://209.165.201.0:1741/perl/login-form.cgi"
"Mozilla/4.76 [en]C-CC
K-MCD   (Windows NT 5.0; U)"
--More--
```

show weberrorlog

To display the Cisco Ethernet Subscriber Solution Engine's Web error log, use the **show weberrorlog** command.

show weberrorlog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's Web error log, one page at a time:

```
show weberrorlog page
/var/adm/CSCOets/log/error_log
[Thu Dec 20 13:43:00 2001] [error] (22)Invalid argument: <Perl>:
Invalid command
 'secret', perhaps mis-spelled or defined by a module not included in
the server
 configuration
[Thu Dec 20 13:43:00 2001] [error] (22)Invalid argument: <Perl>:
Invalid command
 'line', perhaps mis-spelled or defined by a module not included in
the server c
onfiguration
[Thu Dec 20 13:43:00 2001] [error] (22)Invalid argument: <Perl>:
```

show websslaccesslog

To display the Cisco Ethernet Subscriber Solution Engine's Web SSL log, use the **show websslaccesslog** command.

show websslaccesslog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's Web SSL log, one page at a time:

```
show websslaccesslog page
```

show import

To display an imported host file, use the **show import** command.

show import *hosts*

Syntax Description

hosts	Name of server that host files were imported from.

Example

This command displays the imported host file.

```
show import ftpserver_1
```

show install logs

To display the software updates and images available on the configured repository, use the **show install logs** command.

show install logs [short | long] [page]

Syntax Description

short	Displays only the names of software updates and images on the configured repository
long	Displays the names and descriptions of software updates and images on the configured repository.
page	Displays command output one screen at a time.

Example

The following command displays the software updates and images available on the configured browser, one screen at a time:

```
show install updates page
2
NAME=EX-2.0a
```

show ipchains

To display the IP chains for the selected interface, use the **show ipchains** command.

show ipchains *eth<0-5>*

Syntax Description

eth<0-5>	Name of the interface port to be configured. Acceptable values are eth0-5.

Example

The following command displays the IP chains for the ethernet 0 interface:

```
show ipchains eth0
Chain ineth0 (1 references):
target     prot opt     source               destination
ports
ACCEPT     tcp  -y--l-  anywhere             ex.help     any ->   telt
ACCEPT     tcp  ------  anywhere             ex.help     any ->   telt
ACCEPT     tcp  ------  anywhere             ex.help     any ->   3345
ACCEPT     tcp  -y--l-  anywhere             ex.help     any ->   ssh
```

show hosts

To display your Cisco Ethernet Subscriber Solution Engine's host file, use the **show hosts** command.

show hosts [page]

Syntax Description

page	Displays command output one screen at a time.

Example

The following command displays your Cisco Ethernet Subscriber Solution Engine's host file one page at a time:

```
show hosts page
```

show maillog

To display the Cisco Ethernet Subscriber Solution Engine's mail log, use the **show maillog** command.

show maillog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's collector log, one page at a time:

```
show maillog page
/var/log/maillog
Dec 21 04:02:06 ex sendmail[11643]: EAA11643: from=root, size=307, cla
ss=0, pri=30307, nrcpts=1, msgid=<200112210402.EAA11643@ex.help>, rela
y=root@localhost
Dec 21 04:02:06 ex sendmail[11660]: EAA11643: SYSERR(root): Cannot exe
c /usr/bin/procmail: No such file or directory
Dec 21 04:02:06 ex sendmail[11643]: EAA11643: to=root, ctladdr=root (0
/0), delay=00:00:06, xdelay=00:00:00, mailer=local, stat=Operating
system error
```

show proc

To display the Cisco Ethernet Subscriber Solution Engine's active process statistics, use the **show proc** command.

show proc [page]

Syntax Description

page	Displays command output one screen at a time.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's active process statistics one page at a time:

```
show proc page
PID     ELAPSED    SZ                  STARTED TTY  COMMAND
    1    22:29:10   277 Thu Dec 20 13:42:29 2001 ?    init
    2    22:29:10     0 Thu Dec 20 13:42:29 2001 ?    kflushd
    3    22:29:10     0 Thu Dec 20 13:42:29 2001 ?    kupdate
    4    22:29:10     0 Thu Dec 20 13:42:29 2001 ?    kpiod
    5    22:29:10     0 Thu Dec 20 13:42:29 2001 ?    kswapd
    6    22:29:03     0 Thu Dec 20 13:42:36 2001 ?    kreiserfsd
   85    22:29:00     0 Thu Dec 20 13:42:39 2001 ?    kreiserfsd
   86    22:29:00     0 Thu Dec 20 13:42:39 2001 ?    kreiserfsd
   87    22:28:59     0 Thu Dec 20 13:42:40 2001 ?    kreiserfsd
   88    22:28:59     0 Thu Dec 20 13:42:40 2001 ?    kreiserfsd
   89    22:28:59     0 Thu Dec 20 13:42:40 2001 ?    kreiserfsd
  208    22:28:57   290 Thu Dec 20 13:42:42 2001 ?    watchdog
  322    22:28:51   342 Thu Dec 20 13:42:48 2001 ?    idled
  510    22:28:51   290 Thu Dec 20 13:42:48 2001 ?    syslogd
  519    22:28:50   361 Thu Dec 20 13:42:49 2001 ?    klogd
  637    22:28:48   327 Thu Dec 20 13:42:51 2001 ?    crond
  651    22:28:48   286 Thu Dec 20 13:42:51 2001 ?    inetd
17076       18:23   364 Fri Dec 21 11:53:16 2001 ?     \_ in.telnetd
17077       18:23   575 Fri Dec 21 11:53:16 2001 0     |   \_ login
-----------more-----------
```

show repository

To display the status or the access log of a configured repository, use the **show repository** command.

show repository {status | access-log} [page]

Syntax Description

status	Displays the status of the local repository
access-log	Displays the access-log of the local repository
page	Displays command output one screen at a time.

Example

This command displays the status of the configured repository:

```
show repository status
Repository Source: 171.69.212.146:9851
repository is running.
```

show route

To display the routes currently configured, use the show route command.

show route

Syntax Description

This command has no arguments or keywords.

Example

This command displays the currently configured routes

```
show route
Destination     Gateway Genmask         Flags Metric Ref    Use Iface
209.165.200.224 0.0.0.0 255.255.255.224 UH    0      0        0 eth0
209.165.200.225 0.0.0.0 255.255.255.224 U     0      0        0 eth0
209.165.200.254 0.0.0.0 255.255.255.224 U     0      0        0 lo
209.165.202.128 0.0.0.0 255.255.255.224 UG    0      0        0 eth0
```

show securitylog

To display the Cisco Ethernet Subscriber Solution Engine's security log information, use the **show securitylog** command.

show securitylog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's security log, one page at a time:

```
show securitylog page
/var/log/secure
Dec 20 13:45:23 ex in.tftpd[1381]: connect from 209.165.200.224
Dec 20 13:45:27 ex in.tftpd[1383]: connect from 209.165.200.224
Dec 20 13:45:31 ex in.tftpd[1385]: connect from 209.165.200.224
Dec 20 13:45:35 ex in.tftpd[1387]: connect from 209.165.200.224
Dec 20 13:45:39 ex in.tftpd[1389]: connect from 209.165.200.224
Dec 20 13:45:44 ex in.tftpd[1391]: connect from 209.165.200.224
Dec 20 13:45:48 ex in.tftpd[1393]: connect from 209.165.200.224
Dec 20 13:45:52 ex in.tftpd[1395]: connect from 209.165.200.224
Dec 20 13:45:56 ex in.tftpd[1397]: connect from 209.165.200.224
Dec 20 13:46:00 ex in.tftpd[1399]: connect from 209.165.200.224
Dec 20 13:46:04 ex in.tftpd[1412]: connect from 209.165.200.224
Dec 20 13:46:27 ex in.tftpd[1424]: connect from 209.165.200.224
Dec 20 13:46:31 ex in.tftpd[1426]: connect from 209.165.200.224
Dec 20 13:46:35 ex in.tftpd[1428]: connect from 209.165.200.224
Dec 20 13:46:39 ex in.tftpd[1430]: connect from 209.165.200.224
Dec 20 13:46:43 ex in.tftpd[1432]: connect from 209.165.200.224
Dec 20 13:46:47 ex in.tftpd[1434]: connect from 209.165.200.224
--More--
```

show snmp-server

To display the Cisco Ethernet Subscriber Solution Engine's SNMP configuration, use the **show snmp-server** command.

show snmp-server

Syntax Description

This command has no arguments or keywords.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's SNMP configuration:

```
show snmp-server
RW community string: private
        RO community string: public

        sysLocation: your site information
        sysContact: your contact information

        trap-forwarding is disabled
```

show ssh-version

To display the type of SSH enabled, use the ssh-version command.

show ssh-version

Syntax Description

This command has no arguments or keywords.

Example

This command displays the type of SSH that is enabled:

```
show ssh-version
SSH1, SSH2
```

show syslog

To display syslog information, use the **show syslog** command.

show syslog [page] [include *matchstring1* **[***matchstring2***]]**

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Usage Guidelines

Use this command to display syslog information.

To filter the command output to include only the records that contain the specified string(s) of characters, use the **include** option with one or two character strings to search for. If you include two strings, the command outputs only those records that contain both character strings.

Example

This command displays syslog information:

```
show syslog
Jun 20 16:04:23 ex syslogd 1.3-3: restart.
Jun 20 16:04:23 ex syslog: syslogd startup succeeded
Jun 20 16:04:23 ex kernel: klogd 1.3-3, log source = /proc/kmsg start.
Jun 20 16:04:23 ex kernel: Inspecting /boot/System.map-2.2.16-13bipse2
Jun 20 16:04:23 ex syslog: klogd startup succeeded
-----------more-----------
```

Related Command

interface

show tech

To display information necessary for Cisco's Technical Assistance Center to assist you, use the **show tech** command.

show tech [page]

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.

Example

This command displays system information necessary for Cisco's Technical Assistance Center to assist you.

```
show tech page
/bin/cat: /var/log/secure: Permission denied
Copyright (c) 1999-2000 by Cisco Systems, Inc.
Build Version (166) Mon Jun 11 16:56:23 PDT 2001
Linux/UID32 version 2.2.16-13bipsec.uid32 (gcc version egcs1
Uptime: 0 days 18 hours 35 mins

2 Ethernet interfaces
hostname ex
interface ethernet0 209.165.200.224 255.255.255.224 default-gateway
209.165.202.128
ip name-server 209.165.201.0
username admin epassword ************* privilege 15
eth0      Link encap:Ethernet  HWaddr 00:02:B3:35:FD:CC
          inet addr:209.165.200.224 Bcast:209.165.201.31
Mask:255.255.255.224
-----------more-----------
```

show telnetenable

To display the Cisco Ethernet Subscriber Solution Engine's Telnet status, use the **show telnetenable** command.

show telnetenable

Syntax Description

This command has no arguments or keywords.

Example

The following command shows if Telnet is enabled or disabled:

```
show telnetenable
telnet enable for: ALL
```

show tomcatlog

To display the Cisco Ethernet Subscriber Solution Engine's Tomcat log, use the **show tomcatlog** command.

show tomcatlog [page] | include *matchstring1 [matchstring2]*

Syntax Description

page	Displays command output one screen at a time. Press the Return key to display the next output screen. Press **Ctrl-c** to exit paged output and return to the command prompt.
include	Filters the command output to display only the records that contain the specified string of characters.
matchstring1	String of characters to search for in the command output.
matchstring2	(Optional) Another string of characters to search for in the command output.

Example

The following command displays the Cisco Ethernet Subscriber Solution Engine's tomcat log, one page at a time:

```
show tomcatlog page
/var/adm/CSCOets/log/tomcat.log
2001-12-20 01:43:06 - ContextManager: Adding context Ctx( /examples )
2001-12-20 01:43:06 - ContextManager: Adding context Ctx( /admin )
Starting tomcat. Check logs/tomcat.log for error messages
2001-12-20 01:43:06 - ContextManager: Adding context Ctx(  )
getUIProperties(): unhandled error could be a bad ui.properties
```

```
java.lang.NullPointerException
        at java.io.Reader.<init>(Reader.java:68)
        at java.io.InputStreamReader.<init>(InputStreamReader.java:96)
--More--
```

shutdown

To shut down the system in preparation for powering it off, use the **shutdown** command.

shutdown

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Use this command to shut down the Cisco ESSE in preparation for powering it off. All processes running on the Cisco ESSE will stop, and it will not respond until you power it off and back on.

You are prompted to verify the shutdown. Enter **yes** to continue, or **no** to cancel the shutdown.

Caution Never power the system off without running the **shutdown** command first. Doing so can destroy data and prevent the system from booting.

Example

This command shuts down the system:

```
shutdown
```

Related Commands

reload

snmp-server

To configure an simple network management protocol (SNMP) agent, use the **snmp-server** command.

snmp-server {community *community-name* **[RO|RW] | location** *sysLocation-info* **| contact** *sysContact-info***}**

no snmp-server {community *community-name* **| location | contact}**

Syntax Description

community	sets the community strings that permit access to the SNMP.
community-name	the community name string.
RO	read only.
RW	read / write.
location	sets the system location string.
sysLocation-info	the location string.
contact	sets the contact string.
sysContact-info	the contact string.

Example

This command sets an SNMP contact string:

```
snmp-server contact Dial System Operator at Beeper # 27345
```

ssh

To use SSH to connect to an external host, use the ssh command.

ssh [*options***]** *host* **[***command***]**

Syntax Description

options	Standard SSH options. For a list of these options, enter the **ssh** command without any arguments.

host	Name or IP address of host to which to connect.
command	Command for the external host to execute.

Example

Enter the following command to connect to an external host using SSH:

```
ssh 209.165.200.224
```

ssh-version

Use the ssh-version command to enable Secure Shell (SSH) 1, SSH 2, or both SSH 1 and SSH 2.

ssh-version {ssh1 | ssh2 | both}

Syntax Description

ssh1	Enables SSH 1
ssh2	Enables SSH 2
both	Enables both SSH 1 and SSH2

Example

This command enables ssh1:

```
ssh-version ssh1
```

telnet

To Telnet to an external host, use the telnet command.

telnet {*hostname* **|** *ip-address***} [***portnumber***]**

Syntax Description

hostname	Hostname of the external device.
ip-address	IP address of the external device.
portnumber	portnumber of the external device.

Example

Enter the following command to telnet to port 9851 of a system with the IP address 209.165.200.224:

```
telnet 209.165.200.224 9851
```

telnetenable

To configure Telnet access, use the **telnetenable** command.

telnetenable {enable [*ip-addresses* **|** *domains***] | disable | status}**

Syntax Description

enable	Enables Telnet access to the system.
disable	Disables Telnet access to the system.
status	Displays current access status.
ip-addresses	IP addresses of systems allowed Telnet access. If this argument is used, no other machines will be allowed access. Multiple IP address are allowed.
domains	Domains of systems allowed Telnet access. If this argument is used, machines with domains other than the specified domain will be denied Telnet access. Multiple domains are allowed.

Default

The default is **disable**.

Usage Guidelines

To enable Telnet access to the system for *all* IP source addresses, use the **telnetenable enable** command alone. To enable *specific* IP addresses, use the **telnetenable enable** command followed by the IP addresses.

Example

This command enables Telnet for all IP source addresses:

```
telnetenable enable
```

username

To create a new user account or change an account's properties, use the **username** command. Use the **no** form of the command to remove a user account.

username *name* **password** *password* **[privilege {0 | 15}]**

no username *name*

Syntax Description

name	Name of the user account to create or remove.
password	Specifies a password for the account.
password	The password for the account.
privilege	(Optional) Specifies the account privilege level.
0	Gives the account level 0 privileges. This is the default.
15	Gives the account level 15 privileges.

Usage Guidelines

Use the **username** command to change the properties of a user account. To assign a user CLI privilege level 15, use the **username** command. You cannot assign CLI privilege level 15 through the Web interface. Use the **no** form of the command to remove a user account. The default privilege level is 0 if you do not provide the privilege option.

Example

This command creates a user account named user1 with password password1 and privilege level 15:

```
username user1 password password1 privilege 15
```

This command removes the user account:

```
no username user1
```

Maintenance Image Commands

This section describes the commands that are available when the system is booted from the maintenance image. For more information about the maintenance image, refer to the *Installation and Configuration Guide for the Cisco Ethernet Subscriber Solution Engine*.

erase config

This command is identical to the level 15 **erase config** command. For a description, see the "erase config" section on page C-23.

fsck

To check and repair the filesystem, use the fsck command.

fsck

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Use the **fsck** command to check and repair the filesystem. The command might prompt you for confirmation before making certain repairs.

Example

The following command checks and repairs the filesystem:

```
fsck
```

reload

This command is identical to the level 15 **reload** command. For a description, see "reload" section on page C-40.

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C

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Q

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