



# CIMC Express

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Cisco Integrated Management Controller Express (Cisco CIMC-E) provides the same basic management features as the UCS-C Series Rackmount Server product line on Cisco SRE Internal Service Module-Services Ready Engine (Cisco SRE ISM) and Cisco SRE Service Module-Services Ready Engine (Cisco SRE SM).

## Contents

- [CIMC-E Overview, page 2](#)
- [Embedded Service Engine Overview, page 6](#)
- [Installing CIMC-E on the Embedded Service Engine, page 8](#)
- [Managing the Embedded Service Engine, page 20](#)
- [Managing the Server, page 25](#)
- [Viewing Server Properties, page 30](#)
- [Viewing CIMC-E Information, page 31](#)
- [Managing the Remote Console, page 31](#)
- [Managing User Accounts, page 33](#)
- [Configuring Network-Related Settings, page 39](#)
- [Configuring Communication Services, page 42](#)
- [Managing Certificates, page 44](#)
- [Configuring Platform Event Filters, page 47](#)
- [CIMC-E Firmware Management, page 49](#)
- [Viewing Logs, page 50](#)
- [Server Utilities, page 52](#)
- [CIMC-E Command Reference, page 55](#)



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- [Embedded Service Engine Command Reference, page 129](#)

## CIMC-E Overview

The Cisco Integrated Management Controller Express (CIMC-E) is the management service for the Cisco SRE SM. This section contains the following topics:

- [Management Interfaces, page 2](#)
- [Tasks You Can Perform in CIMC-E, page 2](#)
- [No Operating System or Application Provisioning or Management, page 2](#)
- [CIMC-E GUI, page 3](#)

## Management Interfaces

You can use a web-based GUI or SSH-based CLI to access, configure, administer, and monitor the server. Almost all tasks can be performed in either interface, and the results of tasks performed in one interface are displayed in another. However, you cannot do the following:

- Use CIMC-E GUI to invoke CIMC-E CLI
- View a command that has been invoked through CIMC-E CLI in CIMC-E GUI
- Generate CIMC-E CLI output from CIMC-E GUI

## Tasks You Can Perform in CIMC-E

You can use CIMC-E to perform the following server management tasks:

- Power on, power off, power cycle, reset, and shut down the module
- View server and module properties
- Manage remote presence
- Create and manage local user accounts and enable remote user authentication
- Configure network-related settings, including IPv4, VLANs, and network security
- Configure communication services, including HTTP and SSH
- Manage certificates
- Configure platform event filters
- Update CIMC-E firmware
- Monitor server status

## No Operating System or Application Provisioning or Management

CIMC-E provisions servers and, as a result, exists below the operating system on a server. Therefore, you cannot use it to provision or manage operating systems or applications on servers. For example, you cannot do the following:

- Deploy an OS, such as Windows or Linux

- Deploy patches for software, such as an OS or an application
- Install base software components, such as anti-virus software, monitoring agents, or backup clients
- Install software applications, such as databases, application server software, or web servers
- Perform operator actions, including restarting an Oracle database, restarting printer queues, or handling non-CIMC-E user accounts
- Configure or manage external storage on the SAN or NAS storage

## CIMC-E GUI

The CIMC-E GUI is a web-based management interface for Cisco SRE SMs. You can launch the CIMC-E GUI and manage the server from any remote host that meets the following minimum requirements:

- Java 1.4 or higher.
- Cisco recommends Internet Explorer 7.0.

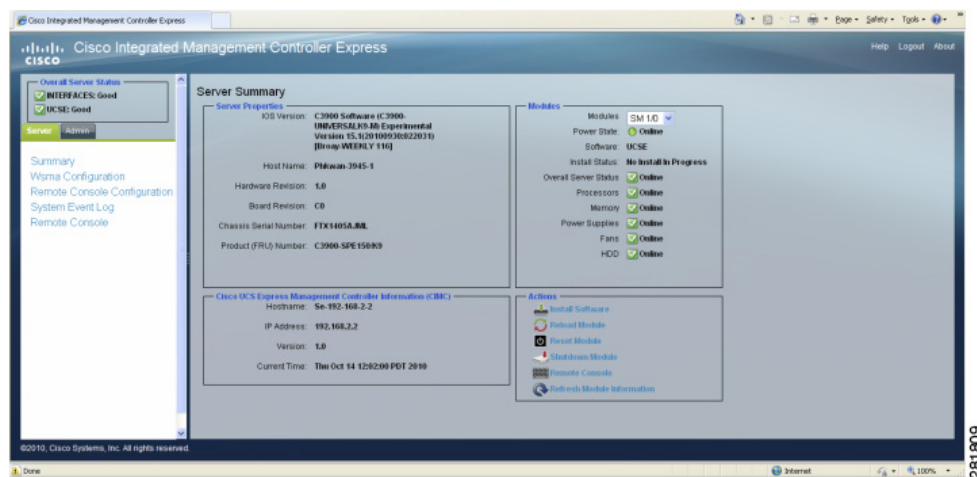
The CIMC-E GUI is described in the following sections:

- [CIMC-E Elements, page 3](#)
- [Logging In to CIMC-E, page 6](#)
- [Logging Out of CIMC-E, page 6](#)

## CIMC-E Elements

Figure 1 shows the CIMC-E GUI.

**Figure 1** Cisco Integrated Management Controller Express GUI



## Navigation Pane

The Navigation pane displays on the left side of the CIMC-E GUI. Clicking links on the Server or Admin tabs in the Navigation pane displays the selected pages in the Work pane on the right side of the CIMC-E GUI.

Table 1 describes the elements in the Navigation pane:

**Table 1**      **Navigation Pane Elements**

Element Name	Description
Overall Server Status area	The Overall Server Status area is found above the Server and Admin tabs.
Server tab	The Server tab is found in the Navigation pane. It contains links to the following pages: <ul style="list-style-type: none"> <li>• Summary</li> <li>• CIMC-E Configuration</li> <li>• Remote Console Configuration</li> <li>• System Event Log</li> <li>• Remote Console</li> </ul>
Admin tab	The Admin tab is found in the Navigation pane. It contains links to the following pages: <ul style="list-style-type: none"> <li>• Users Management</li> <li>• Network</li> <li>• Communication Services</li> <li>• Certificate Management</li> <li>• CIMC-E Log</li> <li>• Event Management</li> <li>• Firmware Management</li> <li>• Tech Support</li> </ul>

## Work Pane

The Work pane displays on the right side of the UI. Different pages appear in the Work pane, depending on what link you click on the Server or Admin tab.

Table 2 describes the elements and pages in the Work pane:

**Table 2**      **Work Pane Elements**

Page or Element Name	Description
Summary	On the page, you can view server properties, module status, and CIMC-E information. You can also perform actions like reloading and resetting the module.
CIMC-E Configuration	On the page, you can change the username, password, and URL.
Remote Console Configuration	On the page, you can change the IP address and port of the remote console.
System Event Log	On the page, you can view the system event log.
Remote Console	On the page, you can enter CIMC-E commands.

**Table 2 Work Pane Elements (continued)**

<b>Page or Element Name</b>	<b>Description</b>
User Management	<p>There are three tabs on the page:</p> <ul style="list-style-type: none"> <li>• Local Users—Use this tab to view local users.</li> <li>• Sessions—Use this tab to view current user sessions.</li> <li>• Create Users—Use this tab to create users.</li> </ul>
Network	<p>There are two tabs on the page:</p> <ul style="list-style-type: none"> <li>• Network Settings—Use this tab to set network properties.</li> <li>• VLAN Settings—Use this tab to set VLAN properties.</li> </ul>
Communications Services	<p>There are three areas on this page:</p> <ul style="list-style-type: none"> <li>• HTTP Properties—Use this area to set HTTP properties.</li> <li>• SSH Properties—Use this area to set SSH properties.</li> <li>• Client Information—This area displays client information.</li> <li>• HTTP Operation—Use this area to restart HTTP operations.</li> </ul>
Certificate Management	<p>There are two areas on this page:</p> <ul style="list-style-type: none"> <li>• Actions—Use this area to generate and upload a certificate.</li> <li>• Current Certificate—Use this area to view the current certificate for the server.</li> </ul>
CIMC-E Log	<p>On this page, you can view the CIMC-E Log.</p>
Event Management	<p>On this page, you can set up platform event filters.</p>
Firmware Upgrade	<p>On this page, you can install CIMC-E firmware from a client browser or TFTP server.</p>
Tech Support	<p>There are two tabs on this page:</p> <ul style="list-style-type: none"> <li>• View—Use this area to view technical support data.</li> <li>• Download—Use this area to download technical support data to a remote server.</li> </ul>

## Logging In to CIMC-E

To log in to CIMC-E, follow this procedure:

### Procedure

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- Step 1** In your web browser, type or select the web link for CIMC-E. For example, if the IP address of the Embedded Service Engine is 10.1.1.63 2.55.255.255.0, log in to http://10.1.1.63 in your web browser.
- Step 2** If a security dialog box displays, do the following:
- (Optional) Check the check box to accept all content from Cisco.
  - Click **Yes** to accept the certificate and continue.
- Step 3** In the log in window, enter your username and password.  
The default username is admin; the default password is password.
- Step 4** Click **Log In**.
- 

## Logging Out of CIMC-E

To log out of CIMC-E, follow this procedure:

### Procedure

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- Step 1** In the upper right of CIMC-E, click **Logout**.  
Logging out returns you to the CIMC-E log in page.
- Step 2** (Optional) Log back in or close your web browser.
- 

## Embedded Service Engine Overview

Cisco Integrated Services Routers Generation 2 (Cisco ISRs G2) have dual core CPUs on the motherboard. The first core runs Cisco IOS software as Cisco Integrated Services Routers (ISRs) do; the second core, or the *Embedded Service Engine*, is capable of running Linux-based applications.

The following Cisco ISR G2 platforms support the Embedded Service Engine:

- Cisco 2911
- Cisco 2921
- Cisco 2951
- Cisco 3925
- Cisco 3945

When the Embedded Service Engine is configured on a Cisco ISR G2, the infrastructure required to run an application on the Embedded Service Engine is partitioned between Cisco IOS software and the Embedded Service Engine.

When embedded applications are enabled, the Embedded Service Engine requires a compact flash card in the second compact flash slot. See [Table 3 on page 7](#) for further details.



**Note**

CIMC-E is the only application supported on the Embedded Service Engine in Cisco IOS Release 15.1(4)M.

CIMC-E is not supported on the ISM-SRE-300-K9.



**Note**

Cisco SRE-V is not supported on the ISM-SRE-300-K9.

## Prerequisites

### Compact Flash Card Requirements

Two compact flash cards are required for installing and running CIMC-E with Cisco IOS. The compact flash card in slot CF0 is used for running Cisco IOS and the compact flash card in slot CF1 is used for the Embedded Service Engine. In Cisco IOS, slot CF0 is shown as “flash0:” and slot CF1 is shown as “flash1:”.

**Table 3 Compact Flash Card Allocation**

Compact Flash Card Slot	Purpose	Compact Flash Size (MB)
CF0	Running Cisco IOS.	256 MB or higher.
CF1	Running CIMC-E on the Embedded Service Engine.	512 MB or higher.

### Router Memory Requirements

The minimum memory that is required by different router platforms for the Embedded Service Engine is shown in [Table 4](#).

**Table 4 Embedded Service Engine Minimum Memory Requirement**

1 GB	1.5 GB	2 GB
Cisco 2911	Cisco 2951	Cisco 3925
Cisco 2921	—	Cisco 3945

For all platforms, the maximum memory is the platform’s maximum supported memory.

## CIMC-E Product Files

[Table 5](#) lists the CIMC-E files contained in cimce-k9.vsem.1.0.2.tar.gz. These files are used for installation on the Cisco 2911 and Cisco 2921 platforms.

**Table 5** *CIMC-E Files Located in cimce-k9.vsem.1.0.2.tar.gz. Used for Installation on Cisco 2911 and Cisco 2921 Platforms*

Filename	Purpose
cimce-installer.vsem.1.0.2	CIMC-E rescue helper image. Helps to install the application on Cisco Embedded-Service-Engine.
cimce-k9.vsem.1.0.2.pkg	Main package for installing CIMC-E on Cisco Embedded Service Engines.
cimce-full.vsem.1.0.2.prt1	Package payload containing all data and executable files for a full installation of CIMC-E.
cimce-installer.vsem.1.0.2.prt1	Package payload containing all data and executable files for the installer subsystem associated with CIMC-E.
cimce-k9.vsem.1.0.2.pkg.install.sre	Installer TCL script.
cimce-k9.vsem.1.0.2.pkg.install.sre.header	Installer TCL script header.
cimce-k9.vsem.1.0.2.key	SRE keyfile.

Table 6 lists the CIMC-E files contained in cimce-k9.vsep.1.0.2.tar.gz. These files are used for installation on the Cisco 2951, Cisco 3925, and Cisco 3945 platforms.

**Table 6** *CIMC-E Files Located in cimce-k9.vsep.1.0.2.tar.gz. Used for Installation on Cisco 2951, Cisco 3925, and Cisco 3945 Platforms*

Filename	Purpose
cimce-installer.vsep.1.0.2	CIMC-E rescue helper image. Helps to install the application on Cisco Embedded-Service-Engine.
cimce-k9.vsep.1.0.2.pkg	Main package for installing CIMC-E on Cisco Embedded Service Engines.
cimce-full.vsep.1.0.2.prt1	Package payload containing all data and executable files for a full installation of CIMC-E.
cimce-installer.vsep.1.0.2.prt1	Package payload containing all data and executable files for the installer subsystem associated with CIMC-E.
cimce-k9.vsep.1.0.2.pkg.install.sre	Installer TCL script.
cimce-k9.vsep.1.0.2.pkg.install.sre.header	Installer TCL script header.
cimce-k9.vsep.1.0.2.key	SRE keyfile.

## Installing CIMC-E on the Embedded Service Engine

To install CIMC-E on the Embedded Service Engine, follow the procedures described in these sections:

- [Configuring the Embedded Service Engine \(Required\), page 9](#)
- [Installing CIMC-E on the Embedded Service Engine, page 12](#)
- [Configuring the Cisco ISR G2 for CIMC-E, page 14](#)
- [Accessing the CIMC-E CLI, page 18](#)



- [Configuring CIMC-E, page 19](#)
- [Verifying That CIMC-E Is Configured Properly, page 20](#)

## Configuring the Embedded Service Engine (Required)



### Note

You must perform the configuration steps in this section, even if the CIMC-E software was factory-installed by Cisco.

The new interface **Embedded-Service-Engine** has been added to existing **service-module** commands to manage the Embedded Service Engine. To configure the Embedded Service Engine, you have to:

1. Enter the configuration command **service-module enable** under the embedded-service-engine 0/0 interface.
2. Save the configuration to NVRAM.
3. Reboot the system.

You must reboot the system before you install an application on the Embedded Service Engine.

### SUMMARY STEPS

#### From the Host-Router CLI

1. **enable**
2. **configure terminal**
3. **interface Embedded-Service-Engine 0/0**
4. **service-module enable**
5. **ip address** *module-side-ip-address subnet-mask*  
or  
**ip unnumbered** *type number*
6. **service-module ip address** *module-side-ip-address subnet-mask*
7. **service-module ip default-gateway** *gateway-ip-address*
8. **no shutdown**
9. **exit**
10. **ip route** *prefix mask ip-address*
11. **end**
12. **copy running-config startup-config**
13. **show running-config**
14. **reload**

DETAILED STEPS

	Command or Action	Purpose
<b>From the Host-Router CLI</b>		
<b>Step 1</b>	<p><b>enable</b> <i>password</i></p> <p><b>Example:</b> Router&gt; enable Router&gt; <i>password</i> Router#</p>	Enters privileged EXEC mode on the host router. Enter your password if prompted.
<b>Step 2</b>	<p><b>configure terminal</b></p> <p><b>Example:</b> Router# configure terminal</p>	Enters global configuration mode on the host router.
<b>Step 3</b>	<p><b>interface Embedded-Service-Engine 0/0</b></p> <p><b>Example:</b> Router(config)# interface Embedded-Service-Engine 0/0</p>	Enters interface configuration mode for the slot and port where the Embedded Service Engine resides.
<b>Step 4</b>	<p><b>service-module enable</b></p> <p><b>Example:</b> Router(config-if)# service-module enable</p>	Enables the Embedded Service Engine on a service module interface and partitions hardware resources.
<b>Step 5</b>	<p><b>ip address</b> <i>module-side-ip-address subnet-mask</i></p> <p>or</p> <p><b>ip unnumbered</b> <i>type number</i></p> <p><b>Example:</b> Router(config-if)# ip address 10.10.10.1 255.255.0.0</p> <p>or</p> <p>Router(config-if)# ip unnumbered gigabitethernet 1/0</p>	<p>Specifies the IP address for the router side of the interface.</p> <ul style="list-style-type: none"> <li><i>router-side-ip-address subnet-mask</i>—IP address and subnet mask for the router.</li> </ul> <p>or</p> <p>Enables IP processing on an interface without assigning an explicit IP address to the interface.</p> <ul style="list-style-type: none"> <li><i>type</i>—Type of interface on which the router has an assigned IP address.</li> <li><i>number</i>—Number of the interface on which the router has an assigned IP address.</li> </ul> <p><b>Note</b> The unnumbered interface cannot be another unnumbered interface.</p>
<b>Step 6</b>	<p><b>service-module ip address</b> <i>module-side-ip-address subnet-mask</i></p> <p><b>Example:</b> Router(config-if)# service-module ip address 10.10.10.2 255.255.255.0</p>	<p>Specifies the IP address for the module side of the interface.</p> <ul style="list-style-type: none"> <li><i>module-side-ip-address</i>—IP address for the module.</li> <li><i>subnet-mask</i>—Subnet mask to append to the IP address; must be in the same subnet as the host router</li> </ul>

	Command or Action	Purpose
Step 7	<p><b>service-module ip default-gateway</b> <i>gateway-ip-address</i></p> <p><b>Example:</b> Router(config-if)# service-module ip default-gateway 10.10.10.1</p>	<p>Specifies the IP address of the default gateway for the module.</p> <ul style="list-style-type: none"> <li><i>gateway-ip-address</i>—IP address for the default router.</li> </ul>
Step 8	<p><b>no shutdown</b></p> <p><b>Example:</b> Router(config-if)# end</p>	<p>Restarts a disabled interface.</p>
Step 9	<p><b>exit</b></p> <p><b>Example:</b> Router(config-if)# end</p>	<p>Exits global configuration mode on the host router.</p>
Step 10	<p><b>ip route</b> <i>prefix mask ip-address</i></p> <p><b>Example:</b> Router# ip route 10.0.0.1 255.255.255.255 Embedded-Service-Engine0/0</p>	<p>Establishes static routes.</p> <p><b>Note</b> When the <b>ip unnumbered</b> command is configured on the Embedded Service Engine interface in <a href="#">Step 5</a>, you must use the <b>ip route</b> command to add a static route to the SM.</p>
Step 11	<p><b>end</b></p> <p><b>Example:</b> Router(config-if)# end</p>	<p>Returns to Privileged EXEC mode on the host router.</p>
Step 12	<p><b>copy running-config startup-config</b></p> <p><b>Example:</b> Router# copy running-config startup-config</p>	<p>Saves the router's new running configuration as the startup configuration.</p>
Step 13	<p><b>show running-config</b></p> <p><b>Example:</b> Router# show running-config</p>	<p>Displays the router's running configuration, so that you can verify address configurations.</p>
Step 14	<p><b>reload</b></p> <p><b>Example:</b> Router# reload Proceed with reload? [confirm]</p>	<p>Reloads the operating system.</p>

## Configuring the Embedded Service Engine: Example

In the following example, the Embedded Service Engine is enabled.

```
interface Embedded-Service-Engine0/0
 ip address 10.10.10.1 255.255.0.0
 service-module enable
 service-module ip address 10.10.10.2 255.255.0.0
 service-module ip default-gateway 10.10.10.1
!
```

The resources are divided between the first core and the Embedded Service Engine after the configuration has been saved to NVRAM and the system has been rebooted.

```
Router# show running-config
Router# copy running-config startup-config
Router# reload
Proceed with reload? [confirm]
```

## Installing CIMC-E on the Embedded Service Engine

Installing CIMC-E on the Embedded Service Engine is similar to installing an application on any SRE-enabled service module.



### Note

To stop the install while the files are being downloaded and before the actual installation begins, use the **service-module Embedded-Service-Engine 0/0 install abort** command. For more information, see [Cisco IOS Interface and Component Command Reference](#).

Once the installation begins, do not enter commands on the module until the “Installation successful...” message appears.

To install CIMC-E on the Embedded Service Engine, complete the following steps:

### SUMMARY STEPS

1. **enable**
2. **service-module embedded-service-engine 0/0 install url *url***
3. **service-module embedded-service-engine 0/0 status**
4. **exit**

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<pre>enable password</pre> <p><b>Example:</b>  Router&gt; enable  Router&gt; password  Router# </p>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
Step 2	<pre>service-module embedded-service-engine 0/0 install url url</pre> <p><b>Example:</b>  Router# service-module embedded-service-engine 0/0 install url  ftp://user:password@10.86.26.195/new/vsep/cimce-k9.vsep.1.0.2.pkg </p>	Uses Cisco SRE to install an application on a service module (Cisco SM-SRE). <ul style="list-style-type: none"> <li>• <b>url <i>url</i></b>—URL, as defined in RFC 2396, of the server and directory on which the application packages and Tcl script are located. The URL should point to the .bin or .pkg file on the FTP or HTTP server. The router downloads and installs all other files required to complete the application installation.</li> </ul>

	Command or Action	Purpose
Step 3	<pre>service-module embedded-service-engine 0/0 status</pre> <p><b>Example:</b> Router# service-module embedded-service-engine 0/0 status</p>	(Optional) Displays configuration information related to the hardware and software on an Embedded Service Engine service module.
Step 4	<pre>exit</pre> <p><b>Example:</b> Router# exit</p>	Exits privileged EXEC mode.

### Installing CIMC-E on the Embedded Service Engine: Example

The following is an example installation of the CIMC-E application on the Embedded Service Engine:

```
Router# service-module embedded-Service-Engine 0/0 install url
ftp://10.86.26.195/vsem/cimce-k9.vsem.1.0.2.pkg

Proceed with installation? [no]: yes
Loading nightly/BNDR/vsem/cimce-k9.vsem.1.0.2.pkg.install.sre !
[OK - 15482/4096 bytes]
partition_support is available.
Has enough memory and disk disk space for app install
rsrc_str is disk= 488 mem= 256
raid option -1
sku vsem
ios_version 15.1(20101031:104834)
ios_image c2900-universalk9-mz
pkg name cimce-k9.vsem.1.0.2.pkg
Resource requirements check completed successfully. Proceeding to Install...

CSL-2911#
CSL-2911#
Install successful on Embedded-Service-Engine0/0
```

The “Install successful...” message indicates that the installation process is finished.

The following example shows that CIMC-E was installed correctly:

```
Router# service-module embedded-Service-Engine 0/0 status

Service Module is Cisco Embedded-Service-Engine0/0
Service Module supports session via TTY line 2
Service Module is in Steady state
Service Module heartbeat-reset is enabled
Getting status from the Service Module, please wait..

Cisco CIMC-E Software 1.0
CIMCE Running on VSEM
Embedded Service Engine boot state is KERNEL UP

Module resource information:
CPU Frequency: 500 MHz
Memory Size: 256 MB
Disk Size: 488 MB

No install/uninstall in progress
```

## Configuring the Cisco ISR G2 for CIMC-E

To configure the Cisco ISR G2 for CIMC-E, perform the tasks described in the following sections.

- [Setting Up the HTTPS Server and Authentication, page 14](#)
- [Configuring the Web Services Management Agent, page 15](#)
- [Configuring Rollback \(WSMA Capability\), page 17](#)

### Setting Up the HTTPS Server and Authentication

The HTTPS server must be started.



#### Note

CIMC-E will not work if client authentication is enabled. For CIMC-E, local authentication is required.

#### SUMMARY STEPS

1. **enable**
2. **config terminal**
3. **ip http secure-server**
4. **ip http authentication local**
5. **exit**

#### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>enable</b> <i>password</i>  <b>Example:</b> Router> enable Router> <i>password</i> Router#	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
Step 2	<b>configure terminal</b>  <b>Example:</b> Router# config t	Enters global configuration mode.
Step 3	<b>ip http secure-server</b>  <b>Example:</b> Router(config)# ip http secure-server	Enables a secure HTTP (HTTPS) server.

	Command or Action	Purpose
Step 4	<b>ip http authentication local</b>  <b>Example:</b> Router(config)# ip http authentication local	Specifies a particular authentication method for HTTP server users. <ul style="list-style-type: none"> <li><b>local</b>—Indicates that the login username, password and privilege level access combination specified in the local system configuration (by the <b>username</b> global configuration command) should be used for authentication and authorization.</li> </ul>
Step 5	<b>exit</b>  <b>Example:</b> Router(config)# exit	Exits global configuration mode.

### Setting Up the HTTPS Server and Authentication: Example

The following example shows how to set up the HTTPS server and authentication.

```
Router# config t
Router(config)# ip http secure-server
Router(config)# ip http authentication local
Router(config)# exit
Router#
```

## Configuring the Web Services Management Agent

The Web Services Management Agent (WSMA) enables communication between CIMC-E and Cisco IOS software. A user must be configured with level 15 privileges. In addition, a WSMA profile must be set up to listen for both config and exec mode commands.

### SUMMARY STEPS

- config terminal**
- username** *name* **privilege** *privilege-level* **password** **0** *password*
- wsma profile listener** *profile-name*
- transport https path** *pathname*
- exit**
- wsma agent exec profile** *profile-name*
- wsma agent config profile** *profile-name*
- wsma agent notify profile** *profile-name*
- exit**

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>configure terminal</code>  <b>Example:</b> Router# <code>config t</code>	Enters global configuration mode.
Step 2	<code>username name privilege privilege-level password 0 password</code>  <b>Example:</b> Router(config)# <code>username wsmauser privilege 15 password 0 mypassword</code>	Establishes a username-based authentication system. <ul style="list-style-type: none"> <li>0—Specifies that an unencrypted password or secret (depending on the configuration) follows.</li> </ul>
Step 3	<code>wsma profile listener profile-name</code>  <b>Example:</b> Router(config)# <code>wsma profile listener wsma</code>	Configures and enables a WSMA listener profile and enters WSMA listener configuration mode.
Step 4	<code>transport https path pathname</code>  <b>Example:</b> Router(config-wsma-listen)# <code>transport https path /test</code>	Defines a transport configuration for a WSMA listener profile.
Step 5	<code>exit</code>  <b>Example:</b> Router(config-wsma-listen)# <code>exit</code>	Exits WSMA listener configuration mode.
Step 6	<code>wsma agent exec profile profile-name</code>  <b>Example:</b> Router(config)# <code>wsma agent exec profile wsma</code>	Enables the WSMA exec agent and associates it with a profile.
Step 7	<code>wsma agent config profile profile-name</code>  <b>Example:</b> Router(config)# <code>wsma agent config profile wsma</code>	Enables the WSMA config agent and associates it with a profile.
Step 8	<code>wsma agent notify profile profile-name</code>  <b>Example:</b> Router(config)# <code>wsma agent notify profile wsma</code>	Enables the WSMA notify agent and associates it with a profile.
Step 9	<code>exit</code>  <b>Example:</b> Router(config)# <code>exit</code>	Exits global configuration mode.

## Configuring the Web Services Management Agent: Example

The following example shows how to configure a WSMA listener profile named wsma:

```
Router# config t
```



```
Router(config)# username wsmauser privilege 15 password 0 mypassword
Router(config)# wsma profile listener wsma
Router(config-wsma-listen)# transport https path /cimce
Router(config-wsma-listen)# exit
Router(config)# wsma agent exec profile wsma
Router(config)# wsma agent config profile wsma
Router(config)# wsma agent notify profile wsma
Router(config)# exit
Router#
```

## Configuring Rollback (WSMA Capability)

You must enable WSMA to use rollback by configuring the Cisco IOS software to allow archiving of commands.

### SUMMARY STEPS

1. **config terminal**
2. **archive**
3. **log config**
4. **hidekeys**
5. **exit**
6. **path url**
7. **maximum number**
8. **exit**

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> Router# config t	Enters global configuration mode.
Step 2	<b>archive</b>  <b>Example:</b> Router(config)# archive	Enters archive configuration mode.
Step 3	<b>log config</b>  <b>Example:</b> Router(config-archive)# log config	Enters configuration change logger configuration mode.
Step 4	<b>hidekeys</b>  <b>Example:</b> Router(config-archive-log-cfg)# hidekeys	Suppresses the display of password information in configuration log files.

	Command or Action	Purpose
Step 5	<b>exit</b>  <b>Example:</b> Router(config-archive-log-cfg)# <b>exit</b>	Exits configuration change logger configuration mode.
Step 6	<b>path url</b>  <b>Example:</b> Router(config-archive)# <b>path flash:roll</b>	Specifies the location and filename prefix for the files in the Cisco IOS configuration archive.
Step 7	<b>maximum number</b>  <b>Example:</b> Router(config-archive)# <b>maximum 5</b>	Sets the maximum number of archive files of the running configuration to be saved in the Cisco IOS configuration archive.
Step 8	<b>exit</b>  <b>Example:</b> Router(config-archive)# <b>exit</b>	Exits archive configuration mode.

### Configuring Rollback (WSMA Capability): Example

The following example shows how to configure rollback.

```
Router# config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# archive
Router(config-archive)# log config
Router(config-archive-log-cfg)# hidekeys
Router(config-archive-log-cfg)# exit
Router(config-archive)# path flash:roll
Router(config-archive)# maximum 5
Router(config-archive)# exit
Router(config)#
```

## Accessing the CIMC-E CLI

To access the CIMC-E CLI, from any Linux workstation, enter:

```
ssh admin@Embedded-Service-Engine-Service-Module-IP-Address
```

as in the following example in which the Embedded Service Engine service module IP address is 10.0.0.2:

```
> ssh admin@10.0.0.2
```

```
admin@10.0.0.2's password:
```

```
se-10-0-0-2#
```



#### Note

The default username and password for CIMC-E is “admin” and “password”, respectively.

## Configuring CIMC-E

Once the Cisco ISR G2 has been properly configured, the CIMC-E software must be configured with settings that match those configured on the Cisco ISR G2 in the [“Configuring the Cisco ISR G2 for CIMC-E” section on page 14](#). To configure CIMC-E, log into the CIMC-E CLI using SSH as described in the [“Accessing the CIMC-E CLI” section on page 18](#). The following commands are found in the scope cimce.

### SUMMARY STEPS

1. **scope cimce**
2. **set username** *username*
3. **set password** *password*
4. **set url** *url*
5. **commit**

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>scope cimce</b>  <b>Example:</b> se-10-0-0-2# scope cimce	Enters cimce mode.
Step 2	<b>set username</b> <i>username</i>  <b>Example:</b> se-10-0-0-2 /cimce # set username wsmauser	Sets the username that CIMC-E uses to communicate with the router.
Step 3	<b>set password</b> <i>password</i>  <b>Example:</b> se-10-0-0-2 /cimce # set password mypassword	Sets the password that CIMC-E uses to communicate with the router.
Step 4	<b>set url</b> <i>url</i>  <b>Example:</b> se-10-0-0-2 /cimce # set url 10.0.0.2/cimce	Sets the URL of the router Embedded Service Engine IP address for communication with CIMC-E.
Step 5	<b>commit</b>  <b>Example:</b> se-10-0-0-2 /cimce # commit	Saves configuration changes.

### Configuring CIMC-E: Example

In the following example, the IP address of the Cisco ISR G2 router, as reachable from the Embedded Service Engine, is 10.0.0.5:

```
ssh admin@10.0.0.5
admin@10.0.0.5's password:
se-10-0-0-5# scope cimce
```

```

se-10-0-0-5 /cimce # set username wsmauser
se-10-0-0-5 /cimce *# set password <PASSWORD>
se-10-0-0-5 /cimce *# set url 10.0.0.5/cimce
se-10-0-0-5 /cimce *# commit
Username:          wsmauser
Password:          <hidden>
End Point:         10.0.0.5/cimce
New config changes have been saved
se-10-0-0-5 /cimce #

```

**Note**

The URL is the IP address of the Cisco ISR G2, followed by the path set up in the [“Configuring the Web Services Management Agent”](#) section on page 15.

The username and password setup here must correspond to the username and password setup in the [“Configuring the Web Services Management Agent”](#) section on page 15.

## Verifying That CIMC-E Is Configured Properly

To verify that the CIMC-E application is configured properly, use the **show hardware** command in the scope router. In the following example, the IP address of the Embedded Service Engine is 10.0.0.5:

```

ssh admin@10.0.0.5
admin@10.0.0.5's password:
se-10-0-0-5# scope router
se-10-0-0-5 /router# show hardware
Cisco IOS Software, C2900 Software (C2900-UNIVERSALK9-M)
Cisco CISCO2911/K9 (revision 1.0) with 729056K/57344K bytes of memory.
Chassis Serial Number   : FTX1405A1Z5
Chassis MAC Address     : 0000.e181.5150
se-10-0-0-5#

```

If CIMC-E is configured properly, you should see an output similar to this example when you run the **show hardware** command.

## Managing the Embedded Service Engine

This section contains the following topics:

- [Disabling the Embedded Service Engine, page 20](#)
- [Troubleshooting the Embedded Service Engine, page 22](#)

### Disabling the Embedded Service Engine

To disable the Embedded Service Engine, you have to:

1. Enter the configuration command **no service-module enable** under the embedded-service-engine 0/0 interface.
2. Save the configuration to NVRAM.
3. Reboot the system.

When you disable the Embedded Service Engine, all resources are returned to the first core.

## SUMMARY STEPS

### From the Host-Router CLI

1. **enable**
2. **configure terminal**
3. **interface Embedded-Service-Engine 0/0**
4. **no service-module enable**
5. **end**
6. **copy running-config startup-config**
7. **show running-config**
8. **reload**

## DETAILED STEPS

	Command or Action	Purpose
<b>From the Host-Router CLI</b>		
<b>Step 1</b>	<b>enable</b> <i>password</i>  <b>Example:</b> Router> enable Router> <i>password</i> Router#	Enters privileged EXEC mode on the host router. Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b>  <b>Example:</b> Router# configure terminal	Enters global configuration mode on the host router.
<b>Step 3</b>	<b>interface Embedded-Service-Engine 0/0</b>  <b>Example:</b> Router(config)# interface Embedded-Service-Engine 0/0	Enters interface configuration mode for the slot and port where the Embedded Service Engine resides.
<b>Step 4</b>	<b>no service-module enable</b>  <b>Example:</b> Router(config-if)# no service-module enable	Disables the Embedded Service Engine on a service module interface and returns hardware resources to the first core.
<b>Step 5</b>	<b>end</b>  <b>Example:</b> Router(config-if)# end	Returns to global configuration mode on the host router.
<b>Step 6</b>	<b>copy running-config startup-config</b>  <b>Example:</b> Router# copy running-config startup-config	Saves the router's new running configuration as the startup configuration.

	Command or Action	Purpose
Step 7	<b>show running-config</b>  <b>Example:</b> Router# show running-config	Displays the router's running configuration, so that you can verify address configurations.
Step 8	<b>reload</b>  <b>Example:</b> Router# reload Proceed with reload? [confirm]	Reloads the operating system.

## Disabling the Embedded Service Engine: Example

In the following example, the Embedded Service Engine is disabled:

```
interface Embedded-Service-Engine0/0
  no service-module enable
!
```

The resources are returned to the first core after the configuration has been saved to NVRAM and the system has been rebooted.

```
Router# copy running-config startup-config
Router# show running-config
Router# reload
Proceed with reload? [confirm]
```

## Troubleshooting the Embedded Service Engine

This section contains troubleshooting information for the following scenarios:

- [Verifying That the Embedded Service Engine Is Enabled, page 22](#)
- [Verifying System Resources, page 23](#)
- [Checking the Status of the Embedded Service Engine, page 23](#)
- [Verifying the Embedded Service Engine Boot Up, page 24](#)
- [Corrupt uboot Image, page 24](#)
- [Corrupt uboot Configuration, page 24](#)
- [Verifying Application Installation, page 25](#)

## Verifying That the Embedded Service Engine Is Enabled

From the Cisco IOS software prompt, enter the following command:

```
Router# show running-config
```

In the command output, verify that the line “service-module enable” is present under the Embedded-Service-Engine0/0 interface:

```
interface Embedded-Service-Engine0/0
  ip address 10.10.10.1 255.255.0.0
  service-module enable
  service-module ip address 10.10.10.2 255.255.0.0
```

```
service-module ip default-gateway 10.10.10.1
!
```

If you try to enable the Embedded Service Engine on a system that does not have enough memory, the following message is displayed:

```
2911B# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
2911B(config)# interface Embedded-Service-Engine 0/0
2911B(config-if)# service-module enable
```

**Memory size does not meet the requirements of Embedded-Service-Engine 0/0**

## Verifying System Resources

After enabling the Embedded Service Engine, saving the configuration, and rebooting the router, enter the **show diag** command. Verify that the Embedded Service Engine resources are shown as in the following example:

```
Show diag:
.
.
.
Embedded Service Engine 0/0 :
  Total platform memory : 2097152K bytes
  Total 2nd core memory : 262144K bytes
  Start of physical address for 2nd core : 0x20000000
  Number of blocks of memory for 2nd core : 1
  2nd core configured enabled
  L2 cache ways for 2nd core : 1
  CF1 for 2nd core
  Mac address of interface is 8843.e100.0006
  Mac address of 2nd core is 8843.e100.0007
```

## Checking the Status of the Embedded Service Engine

Use the **service-module status** command to check the status of the Embedded Service Engine:

```
C2951# service-module embedded-Service-Engine 0/0 status
Service Module is Cisco Embedded-Service-Engine0/0
Service Module supports session via TTY line 2
Service Module is in Steady state
Service Module heartbeat-reset is enabled

Getting status from the Service Module, please wait..

Cisco CIMCE Software 1.0
Fndn running on C2951
Embedded Service Engine boot state is KERNEL UP
No install/uninstall in progress
```

Check that the state is not in RESET or FAILED.

If the state is RESET:

- Verify that the Embedded Service Engine is enabled using the **service-module embedded-Service-Engine 0/0 status** command.
- Verify that the interface is not shut down using the **show interface embedded-service-engine** command.

If the state is FAILED, see the [“Corrupt uboot Image”](#) section on page 24.

## Verifying the Embedded Service Engine Boot Up

Check the console log to verify that the Embedded Service Engine boots up to the KERNEL.

```
*Sep 20 18:41:54.283: %SECONDCORE-5-BOOTSTAGE: ROMMON on 2nd core UP
*Sep 20 18:41:54.287: %SECONDCORE-5-BOOTSTAGE: UBOOT on 2nd core UP
*Sep 20 18:41:55.359: %SM_INSTALL-6-INST_RBIP: Embedded-Service-Engine0/0 received msg:
RBIP Registration Request
*Sep 20 18:41:56.203: %LINK-3-UPDOWN: Interface Embedded-Service-Engine0/0, changed state
to up
*Sep 08 18:46:23.639: %SECONDCORE-5-BOOTSTAGE: KERNEL on 2nd core UP
```

## Corrupt uboot Image

If the uboot image is corrupt, the following console messages are displayed:

```
Router#
*Sep 28 18:40:01.898: %SECONDCORE-3-UBOOT_BADMAGIC: Invalid Image magic is 0xD0A5468
expected 0x42553049
*Sep 28 18:40:01.898: %SECONDCORE-3-NOT_LAUNCHED: Second core not launched
*Sep 28 18:40:01.922: %SECONDCORE-3-UBOOT_BADMAGIC: Invalid Image magic is 0xD0A5468
expected 0x42553049
*Sep 28 18:40:01.922: %SECONDCORE-3-NOT_LAUNCHED: Second core not launched
*Sep 28 18:40:03.894: %LINK-3-UPDOWN: Interface Embedded-Service-Engine0/0, changed state
to down
```

If the uboot image is corrupt, do the following:

1. **enable**
2. **configure terminal**
3. **interface Embedded-Service-Engine 0/0**
4. **no service-module enable**
5. **service-module enable**
6. **end**

You do not have to save the configuration to NVRAM, and a reboot is not required.

## Corrupt uboot Configuration

Open a session with the Embedded Service Engine:

```
Router# service-module embedded-Service-Engine 0/0 session

Trying 10.10.10.1, 2002 ... Open

***

ServicesEngine Bootloader Version : 1.0

boot loader > show config

IP Address:          10.10.10.2
Subnet Mask:         255.255.0.0
TFTP Server:         10.10.10.1
```



```

Gateway:                10.10.10.1
Default Helper-file:    cimce-installer.vsep.eng_bld.prt1
Ethernet Interface:     internal
Default Boot:        disk
Default Bootloader:     primary
Bootloader Version:     1.0

```

If the Embedded Service Engine is stuck at the uboot prompt, it is possible that the uboot configuration is lost or corrupt. If the Default Boot field shown above is NULL, the uboot configuration read may have failed or the uboot configuration is corrupt. Enter the following command from the Cisco IOS software prompt:

```
Router# service-module embedded-service-engine 0/0 reset
```

## Verifying Application Installation

The following is an example installation of the CIMC-E application on the Embedded Service Engine:

```

Router# service-module embedded-Service-Engine 0/0 install url
ftp://example@10.86.26.195/new/vsep/cimce-k9.vsep.1.0.2.pkg

Proceed with installation? [no]: yes
Loading new/vsep/cimce-k9.vsep.1.0.2.pkg.install.sre !
[OK - 15049/4096 bytes]
partition_support is available.
Has enough memory and disk disk space for app install
rsrc_str is disk= 256 mem= 256
raid option -1
sku vsep
ios_version 15.1(20101009:200234)
ios_image c2951-universalk9-mz
pkg name cimce-k9.vsep.1.0.2.pkg
Resource requirements check completed successfully. Proceeding to Install....

```

To verify that CIMC-E was installed correctly, use the following command:

```

Router# service-module embedded-Service-Engine 0/0 status
Service Module is Cisco Embedded-Service-Engine0/0
Service Module supports session via TTY line 2
Service Module is in Steady state
Service Module heartbeat-reset is enabled
Getting status from the Service Module, please wait..

Cisco CIMC-E Software 1.0
CIMCE Running on VSEM
Embedded Service Engine boot state is KERNEL UP
No install/uninstall in progress

```

## Managing the Server

This section contains the following topics:

- [Configuring CIMC-E Properties, page 26](#)
- [Viewing Overall Server Status, page 27](#)
- [Shutting Down the Module, page 28](#)
- [Reloading the Module, page 29](#)

- [Resetting the Module, page 29](#)
- [Installing Software on the Module, page 29](#)

## Configuring CIMC-E Properties

To enable communication with CIMC-E, follow this procedure. This configuration can also be performed from the CIMC-E command line as described in the “[Configuring CIMC-E](#)” section on [page 19](#).

### Procedure

- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **CIMC-E Configuration**.
- Step 3** Enter the following information:

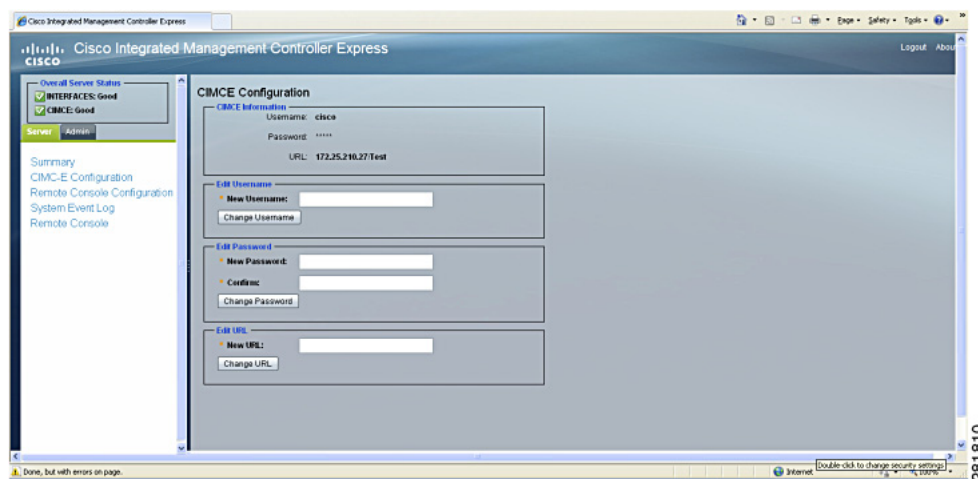
**Table 7** *CIMC-E Configuration Field Descriptions*

Name	Description
Username	Username for communicating with CIMC-E.
Password	Password for communicating with CIMC-E.
URL	URL of the router.

- Step 4** Click **Change Username** to change the username.
- Step 5** Click **Change Password** to change the password.
- Step 6** Click **Change URL** to change the URL.

The CIMC-E Configuration Pane is shown in [Figure 2](#).

**Figure 2** *CIMC-E Configuration Pane*



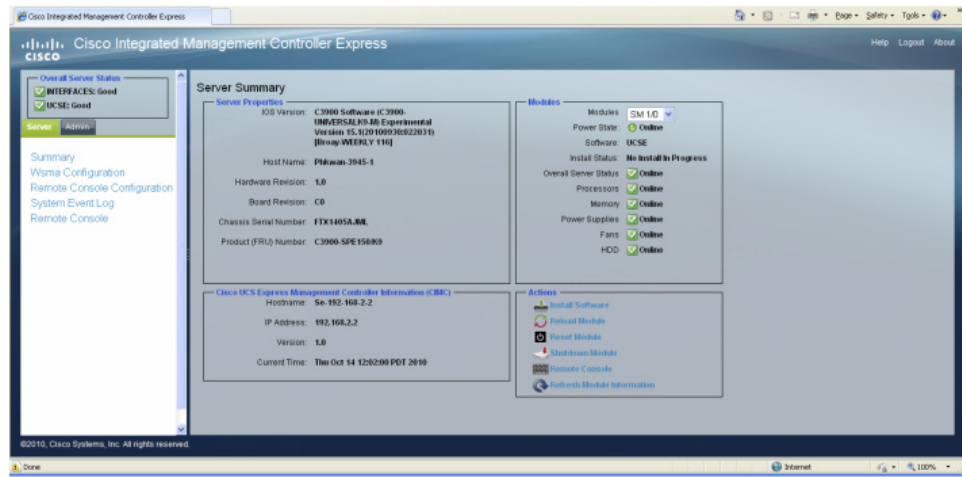
# Viewing Overall Server Status

To view overall server status, follow this procedure:

## Procedure

- Step 1** In the Overall Server Status area of the Navigation pane, view the Interfaces and CIMC-E status.
- Step 2** (Optional) The Server Summary pane shown in [Figure 3](#).

**Figure 3 Server Summary Pane**



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Review the following information in the Modules area of the Server Summary pane:

**Table 8**      **Module Summary Field Descriptions**

<b>Name</b>	<b>Description</b>
Power State field	The current power state.
Software field	The software running on the module, for example, CIMC-E.
Install Status field	Status of installation in progress. This can be: <ul style="list-style-type: none"> <li>• No install in progress</li> <li>• Install in progress</li> <li>• Aborting install</li> </ul>
Overall Server Status field	The overall health of the server. <ul style="list-style-type: none"> <li>• Online</li> <li>• Not available</li> </ul>
Processors field	The overall health of the processors.
Memory field	The overall health of the memory modules.
Power Supplies field	The overall health of the power supplies.
Fans field	The overall health of the fans.
HDD field	The overall health of the HDD.

## Shutting Down the Module

To shut down the module, follow this procedure:

### Before You Begin

You must have privileges for the module that you want to shut down.

### Procedure

- 
- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **Summary**.
- Step 3** In the Actions area, click **Shutdown Module**.
-

## Reloading the Module

To reload the module, follow this procedure:

### Before You Begin

You must have privileges for the module that you want to reload.

### Procedure

---

- Step 1** In the Navigation pane, click the **Server** tab.
  - Step 2** On the Server tab, click **Summary**.
  - Step 3** In the Actions area, click **Reload Module**.
- 

## Resetting the Module

To reset the module, follow this procedure:

### Before You Begin

You must have privileges for the module that you want to reset.

### Procedure

---

- Step 1** In the Navigation pane, click the **Server** tab.
  - Step 2** On the Server tab, click **Summary**.
  - Step 3** In the Actions area, click **Reset Module**.
- 

## Installing Software on the Module

To install software on the module, follow this procedure:

### Before You Begin

You must have privileges for the module on which you want to install software.

### Procedure

---

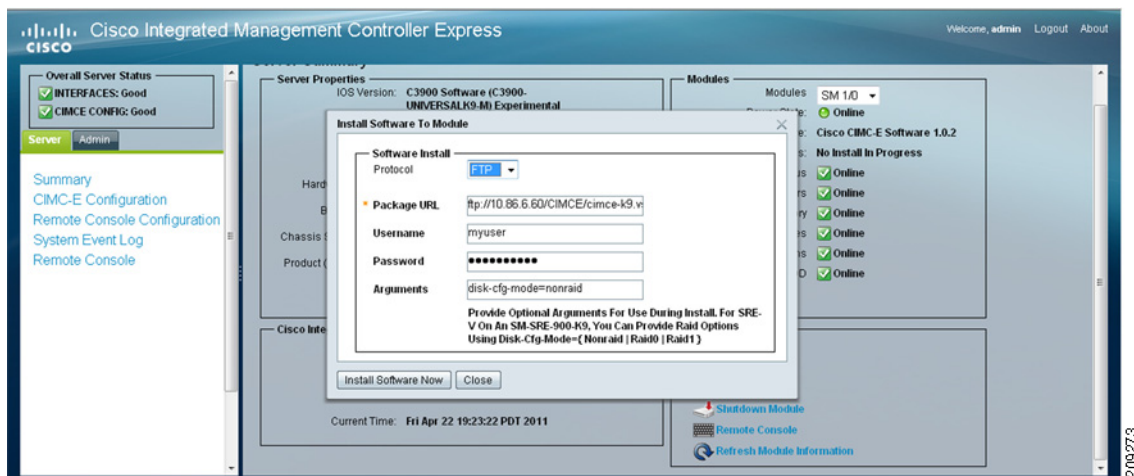
- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **Summary**.
- Step 3** In the Actions area, click **Install Software**.

**Step 4** In the Install Software to Module screen shown in [Figure 4](#), enter the following information:

**Table 9** *Install Software to Module Field Descriptions*

Field Name	Description
Package URL	URL of the file to be installed
Username	Username with privileges for the module
Password	Password for the username
Arguments	Name-value pair arguments for installation

**Figure 4** *Install Software to Module Screen*



**Step 5** Click **Install Software Now**.

## Viewing Server Properties

To view server properties, follow this procedure:

### Procedure

- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **Summary**.
- Step 3** In the Server Properties area, review the following information:

**Table 10** *Server Properties Field Descriptions*

Name	Description
Cisco IOS Version field	Cisco IOS software version
Host Name field	Server's host name
Hardware Revision field	Card hardware revision

**Table 10** *Server Properties Field Descriptions (continued)*

Name	Description
Board Revision field	System board revision
Chassis Serial Number field	Chassis serial number
Product (FRU) Number field	Field-replaceable unit number

## Viewing CIMC-E Information

To view CIMC-E information, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **Summary**.
- Step 3** In the CIMC-E Information area, review the following information:

**Table 11** *Server Properties Field Descriptions*

Name	Description
Hostname field	Host name of the Embedded Service Engine
IP Address field	IP address of the Embedded Service Engine
Version field	CIMC-E version
Current Time field	Time on CIMC-E

## Managing the Remote Console

This section contains the following topics:

- [Configuring the Remote Console, page 31](#)
- [Using the Remote Console, page 32](#)

## Configuring the Remote Console

To configure the remote console, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **Remote Console Configuration**.

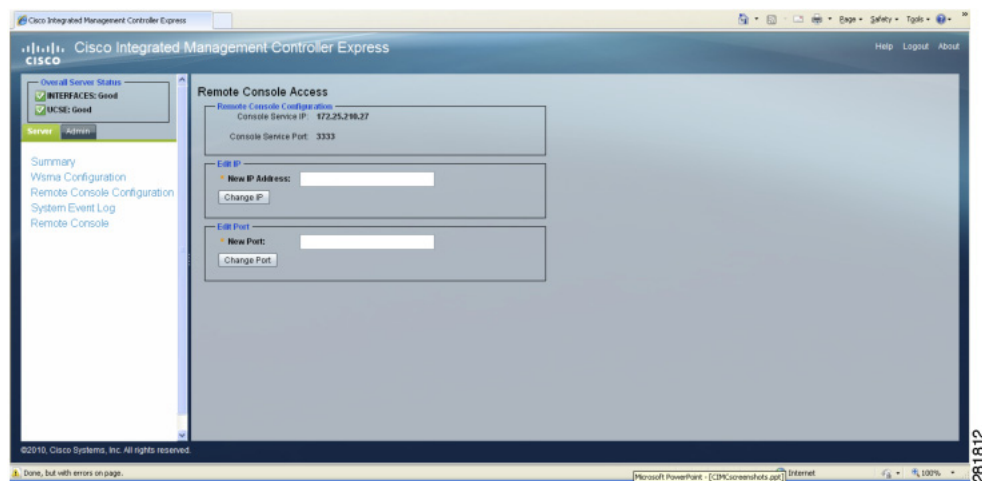
**Step 3** In the Remote Console Access pane shown in [Figure 5](#), enter the following information:

**Table 12 Remote Console Access Field Descriptions**

Name	Description
New IP Address field	Embedded Service Engine service module IP address.
New Port field	Port on the Embedded Service Engine that accepts Telnet connections. Port 23 is the common Telnet port.

**Step 4** Click **Change IP** or **Change Port** after entering the new information.

**Figure 5 Remote Console Access Pane**



**Note**

The information on this screen provides a way for the web browser to reach port 23 on the Embedded Service Engine. If Network Address Translation (NAT) is used on this port, enter the translated IP address and port to use. If NAT is not used on this port, enter the IP address of the Embedded Service Engine and use port 23.

## Using the Remote Console

You can use the remote console to telnet into an application on a router blade. For example, you can telnet into a Cisco SRE-V and accept Cisco Software Licensing (CSL) licenses.

### Procedure

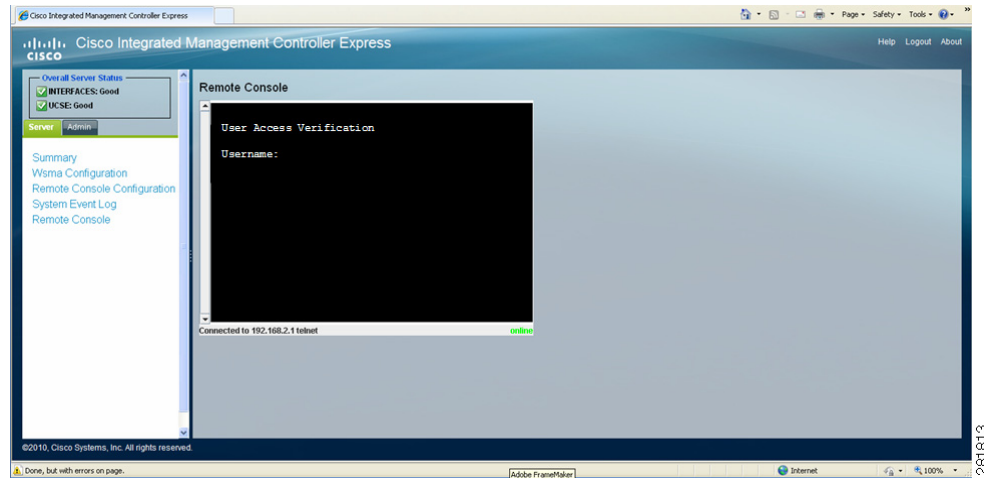
- Step 1** In the Navigation pane, click the **Server** tab.
- Step 2** On the Server tab, click **Remote Console**.



**Step 3** In the Remote Console pane, enter CIMC-E commands at the prompt.

The Remote Console Pane is shown in [Figure 6](#).

**Figure 6** Remote Console Pane



## Managing User Accounts

This section contains the following topics:

- [Creating Local Users, page 33](#)
- [Configuring User Privileges, page 35](#)
- [Viewing Local Users, page 37](#)
- [Viewing User Sessions, page 38](#)

## Creating Local Users

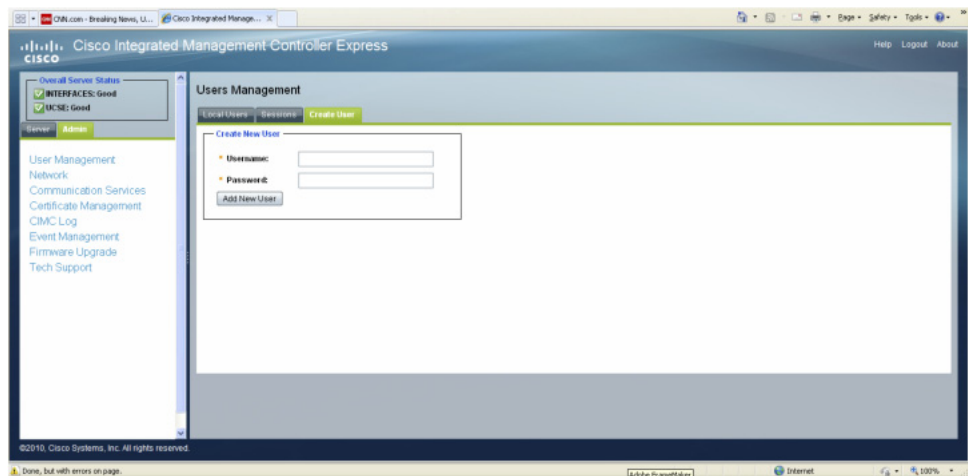
To create local users, follow this procedure:

### Before You Begin

You must log in as the admin user to configure local users.

The Create User screen is shown in [Figure 7](#).

**Figure 7** Create User Pane



**Procedure**

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **User Management**.
- Step 3** In the User Management pane, click the **Create User** tab.
- Step 4** To configure a local user, click the **Local User** tab.
- Step 5** Click in a row.
- Step 6** In the User Details dialog box, update the following properties:

**Table 13** User Properties

Name	Description
ID column	The unique identifier for the user.
Enabled check box	If checked, the user is enabled on the CIMC-E.
User Name column	The username for the user.

**Table 13** *User Properties (continued)*

<b>Name</b>	<b>Description</b>
Role column	<p>The role assigned to the user. This can be:</p> <ul style="list-style-type: none"> <li>• read-only—This user can view information but cannot make any changes.</li> <li>• user—This user can perform the following actions on the modules for which they have permissions: <ul style="list-style-type: none"> <li>– View all information This user can view information for all modules, regardless of permissions.</li> <li>– Manage the power control options such as power on, power cycle, and power off</li> <li>– Clear all logs (from the CLI)</li> </ul> </li> <li>• admin—This user can perform all actions available through the GUI and CLI.</li> </ul>

**Step 7** Enter password information.

**Step 8** Click **Save Changes**.

## Configuring User Privileges

To configure user privileges, follow this procedure:

### Procedure

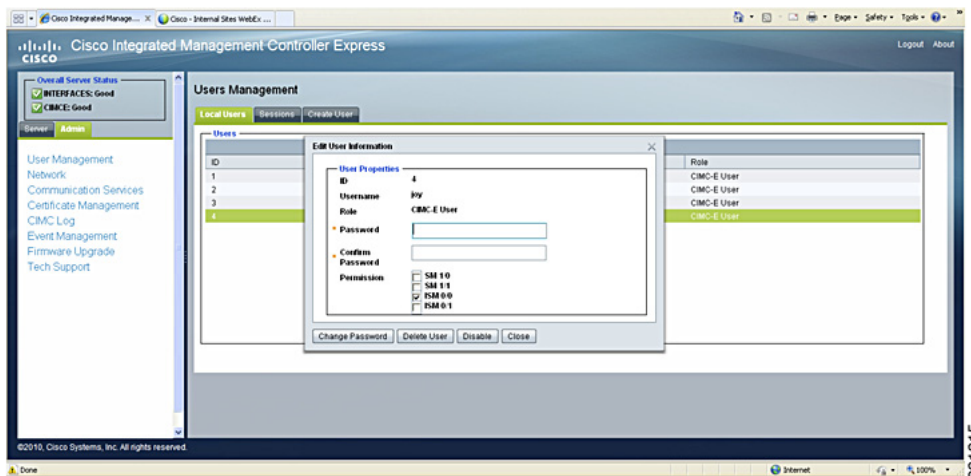
**Step 1** In the Navigation pane, click the **Admin** tab.

**Step 2** On the Admin tab, click **User Management**.

**Step 3** In the Local User tab, click in the local user's row.

**Step 4** The Edit User Information dialog box is shown in [Figure 8](#).

**Figure 8** Edit User Information Dialog Box



In the Edit User Information dialog box, you can update the following properties:

**Table 14** User Information

Name	Description
Password	The user's password.
Confirm Password	The user's password again, for confirmation.
Permission	The modules which the user can configure. Check all that apply.



**Note** For the admin user, you can only change the password. You cannot change the modules permissions for the admin user.

- Step 5** (Optional) To change the user's password, enter password information.
- Step 6** Click **Change Password**.
- Step 7** (Optional) To delete the user, click **Delete User**.
- Step 8** (Optional) To disable the user, click **Disable**.
- Step 9** (Optional) To assign permissions for modules, check the boxes for the appropriate modules.
- Step 10** Click **Close**.
- Step 11** Click **Change Password**, **Delete User**, **Disable**, **Close**.

# Viewing Local Users

To view local users, follow this procedure:

## Procedure

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **User Management**.
- Step 3** In the User Management pane, click the **Local Users** tab.
- Step 4** In the Local Users screen, shown in [Figure 9](#), view the following information about local users:



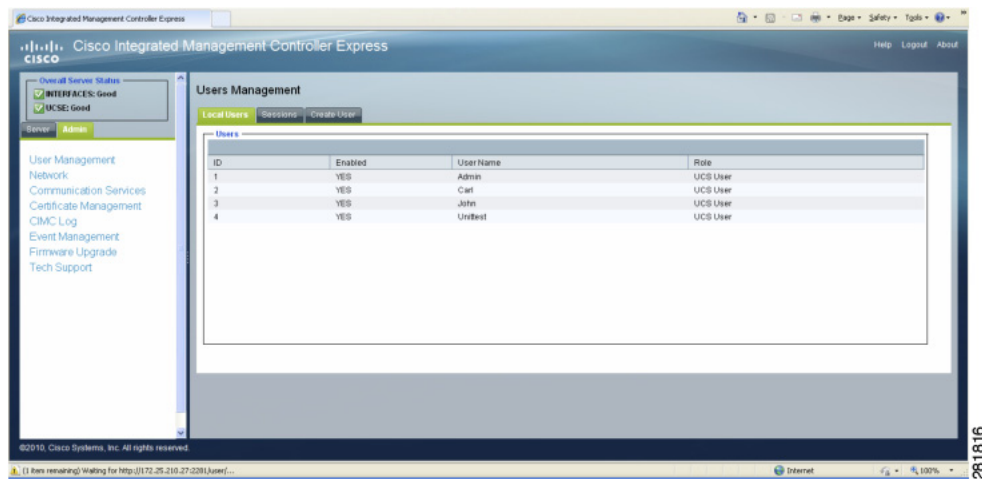
**Tip**

Click a column header to sort the table rows, according to the entries in that column.

**Table 15** Local Users Screen Field Descriptions

Name	Description
ID column	The unique identifier for the user.
Enabled column	Whether the user is enabled on CIMC-E.
User Name column	The username for the user.
Role column	The role assigned to the user.

**Figure 9** Local Users Pane



# Viewing User Sessions

To view user sessions, follow this procedure:

### Procedure

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **User Management**.
- Step 3** In the User Management pane, click the **Sessions** tab.
- Step 4** View the information about current user sessions shown in [Table 16](#):



**Tip**

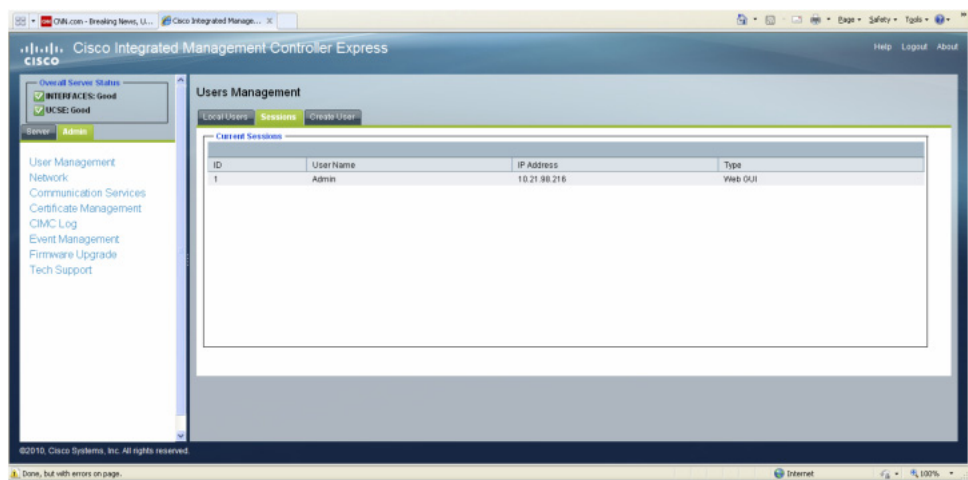
Click a column header to sort the table rows, according to the entries in that column.

**Table 16** Local Users Screen Field Descriptions

Name	Description
Session ID column	The unique identifier for the session.
User Name column	The username for the user.
IP Address column	The IP address from which the user accessed the server.
Type column	The method by which the user accessed the server.

The Sessions screen is shown in [Figure 10](#).

**Figure 10** Sessions Screen



# Configuring Network-Related Settings

This section contains the following topics:

- [Configuring NIC Properties, page 39](#)
- [Configuring IPv4, page 39](#)
- [Configuring Module Properties, page 40](#)
- [Configuring VLANs, page 41](#)

## Configuring NIC Properties

To configure NIC properties, follow this procedure:

### Before You Begin

You must log in as a user with admin privileges to configure the NIC.

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Network**.
  - Step 3** In the Network pane, click the **Network Settings** tab.
  - Step 4** In the NIC Properties area, select the interface:
- 

## Configuring IPv4

To configure IPv4, follow this procedure:

### Before You Begin

You must log in as a user with admin privileges to configure IPv4.

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Network**.
  - Step 3** In the Network pane, click the **Network Settings** tab.
  - Step 4** In the IPv4 Properties area, update the following properties:

**Table 17** *IPv4 Properties Field Descriptions*

Name	Description
Power State field	Whether module is Online or not.

**Table 17 IPv4 Properties Field Descriptions (continued)**

Name	Description
IP Address field	The IP address of the module.
IP Subnet field	The subnet.

**Step 5** Click **Save Changes** to save the updated properties.

**Step 6** Click **Shutdown** to shutdown IPv4.

## Configuring Module Properties

To configure module properties, follow this procedure:

### Before You Begin

You must log in as a user with admin privileges to configure module properties.

### Procedure

**Step 1** In the Navigation pane, click the **Admin** tab.

**Step 2** On the Admin tab, click **Network**.

**Step 3** In the Network pane, click the **Network Settings** tab.

**Step 4** In the Module Properties area, update the following properties:

**Table 18 Module Properties Field Descriptions**

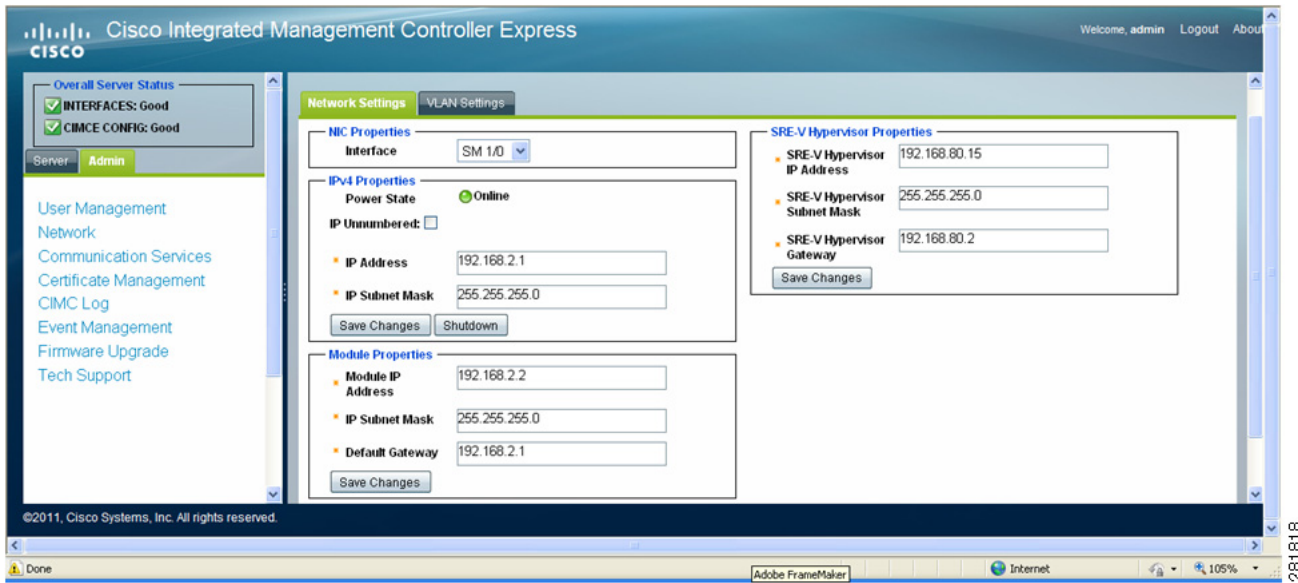
Name	Description
Module IP Address field	The IP address of the module.
IP Subnet Mask field	The subnet.
Default Gateway field	Default gateway of the module.

**Step 5** Click **Save Changes** to save the updated properties.



The Module Properties area of the Network Settings tab is shown in Figure 11.

Figure 11 Network Settings



## Configuring VLANs

To configure VLANs, follow this procedure:

### Procedure

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **Network**.
- Step 3** In the Network pane, click the **VLAN Settings** tab.
- Step 4** In the VLAN Properties area, update the following properties:

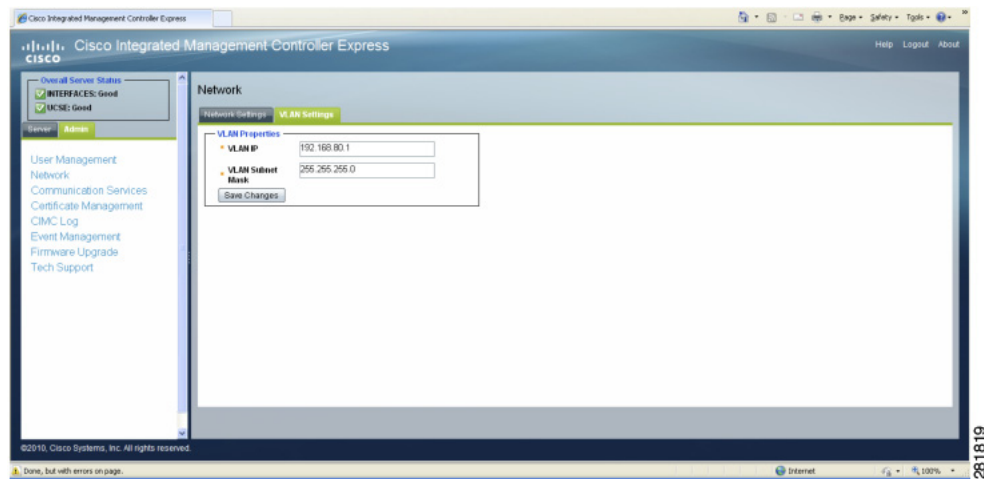
Table 19 VLAN Settings Field Descriptions

Name	Description
VLAN IP field	The IP address of the VLAN.
VLAN Subnet field	The subnet of the IP address.

- Step 5** Click **Save Changes** to save the updated properties.

The VLAN properties are shown in [Figure 12](#).

**Figure 12** VLAN Settings



## Configuring Communication Services

This section contains the following topics:

- [Configuring HTTP](#), page 42
- [Configuring SSH](#), page 43
- [Viewing Client Information](#), page 44
- [Restarting HTTP Operations](#), page 44

## Configuring HTTP

To configure HTTP, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Communication Services**.
  - Step 3** In the HTTP Properties area, update the Server Port field. The following properties are displayed, as shown in [Figure 13](#):

**Table 20** HTTP Properties Field Descriptions

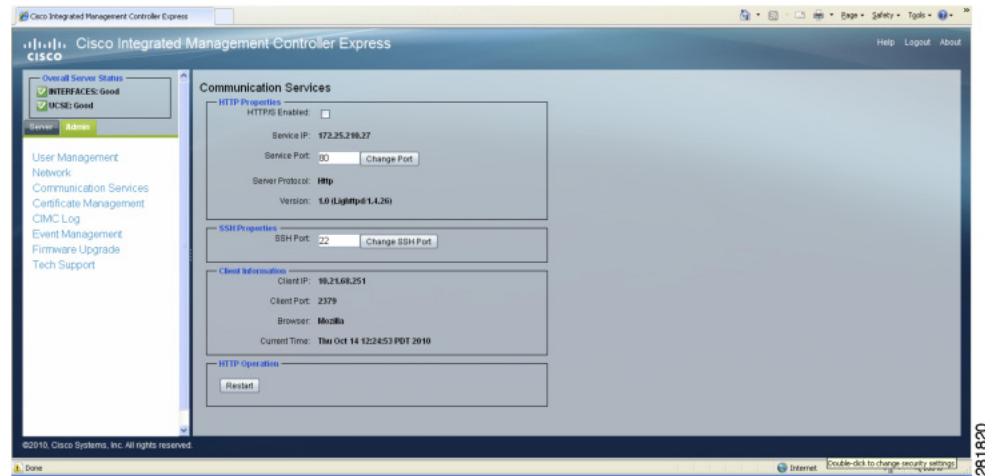
Name	Description
HTTP/S Enabled check box	Whether HTTP and HTTPS are enabled on the CIMC-E.
Server IP	IP address of the server.

**Table 20** HTTP Properties Field Descriptions (continued)

Name	Description
Service Port	The port to use for HTTP and HTTPS communication. The default is 80.
Server Protocol	HTTP or HTTPS.
Version	Protocol version.

The HTTP properties are shown in [Figure 13](#).

**Figure 13** Communication Services Pane



## Configuring SSH

You can configure the port used to connect via SSH to the CIMC-E CLI interface.

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Communication Services**.
  - Step 3** In the SSH Properties area, update the SSH Port field.
  - Step 4** Click **Change SSH Port**.
-

## Viewing Client Information

To view client information, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Communication Services**.
  - Step 3** In the Client Information area, View the following properties:

**Table 21**      *Client Information Field Descriptions*

Name	Description
Client IP	IP address of the client.
Client Port	Port the client is using for HTTP and HTTPS communication. The default is 80.
Browser	Client's browser.
Current Time	Time on the client's system.

---

## Restarting HTTP Operations

To restart HTTP operations, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Communication Services**.
  - Step 3** In the HTTP Operation area, click **Restart**.
- 

## Managing Certificates

The CIMC-E GUI supports the HTTPS protocol and so requires a privacy-enhanced mail (PEM) certificate to establish HTTPS connections. The two ways of getting a server certificate for the CIMC-E GUI to use are described in the following sections:

- You can use the default Cisco certificate by following the procedure in the [“Using the Default Cisco Certificate” section on page 45](#).
- You can use your own self-signed certificate. See the sections starting with [“Creating a Self-Signed Certificate” section on page 45](#).

**Note**

CIMC-E does not support the use of certificates signed by Certificate Authorities (CAs).

- [Using the Default Cisco Certificate, page 45](#)
- [Creating a Self-Signed Certificate, page 45](#)
- [Uploading a Server Certificate, page 46](#)
- [Viewing Current Certificate Information, page 46](#)

## Using the Default Cisco Certificate

To use the default Cisco certificate, follow this procedure:

### Procedure

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **Certificate Management**.
- Step 3** In the Actions area, click **Use Default Cisco Certificate**.

## Creating a Self-Signed Certificate

As an alternative to using a public Certificate Authority (CA) to generate and sign a server certificate, you can generate your own self-signed certificate. This section shows commands for generating a self-signed certificate using the OpenSSL certificate server running on Linux. For detailed information about OpenSSL, see <http://www.openssl.org>.

**Note**

These commands are to be entered on a Linux server with the OpenSSL package, not in the CIMC-E CLI.

### Before You Begin

Obtain and install a certificate server software package on a server within your organization.

### Procedure

From a Linux machine, you can use openssl to generate a self-signed certificate. To do so, enter these commands:

```
openssl genrsa -out key.pem 1024
openssl req -new -key key.pem -out request.pem [-batch]
openssl req -x509 -days 30 -key key.pem -in request.pem -out certificate.pem
cat key.pem certificate.pem > myNewKey.pem
```

### What to Do Next

Upload myNewKey.pem to the CIMC-E web server for use with HTTPS connections, as described in the following section.

## Uploading a Server Certificate

If you have created your own server certificate, you can use the GUI to upload it.

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Certificate Management**.
  - Step 3** In the Actions area, click **Upload Server Certificate**:
- 

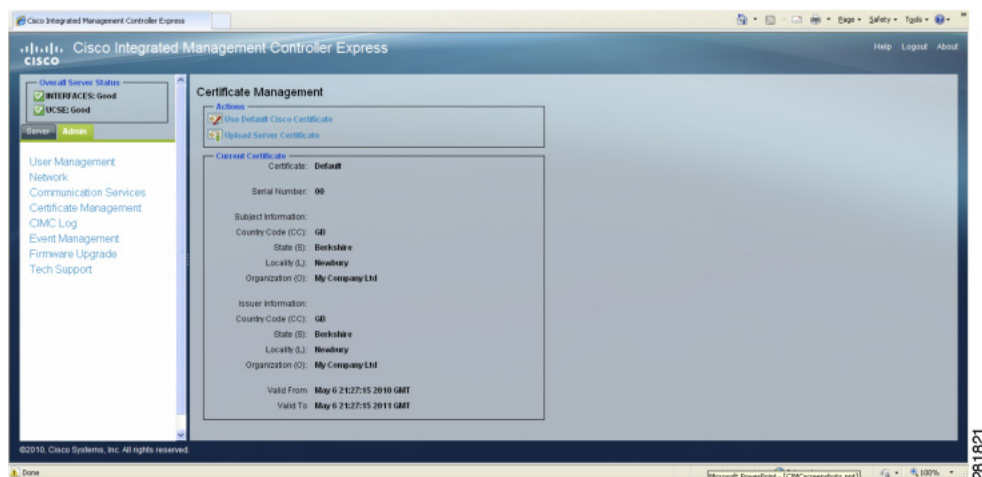
## Viewing Current Certificate Information

To view current certificate information, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
  - Step 2** On the Admin tab, click **Certificate Management**.
  - Step 3** The Current Certificate area is shown in [Figure 14](#).

**Figure 14** Certificate Management Pane



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View the following information about the current certificate:

**Table 22**      **Current Certificate Field Descriptions**

<b>Name</b>	<b>Description</b>
Certificate	Certificate name or default.
Serial Number	Certificate's serial number.
<b>Subject Information</b>	
Country Code (CC)	The country in which the company resides.
State (S)	The state or province in which the company requesting the certificate is headquartered.
Locality (L)	The city or town in which the company requesting the certificate is headquartered.
Organization (O)	The organization requesting the certificate.
<b>Issuer Information</b>	
Country Code (CC)	The country in which the company resides.
State (S)	The state or province in which the company requesting the certificate is headquartered.
Locality (L)	The city or town in which the company requesting the certificate is headquartered.
Organization (O)	The organization requesting the certificate.
Valid From	Date and time the certificate starts being valid.
Valid To	Date and time the certificate is no longer valid.

## Configuring Platform Event Filters

This section contains the following topics:

- [Platform Event Filters, page 47](#)
- [Enabling Platform Event Alerts, page 48](#)
- [Disabling Platform Event Alerts, page 48](#)

## Platform Event Filters

A platform event filter (PEF) can trigger an action and generate an alert when a critical hardware-related event occurs. For each PEF, you can choose the action to be taken (or take no action) when a platform event occurs. You can also choose to generate and send an alert when a platform event occurs. Alerts are sent as an SNMP trap, so you must configure an SNMP trap destination before the alerts can be sent.

You can globally enable or disable the generation of platform event alerts. When disabled, alerts are not sent even if PEFs are configured to send them.

## Enabling Platform Event Alerts

To enable platform event alerts, follow this procedure:

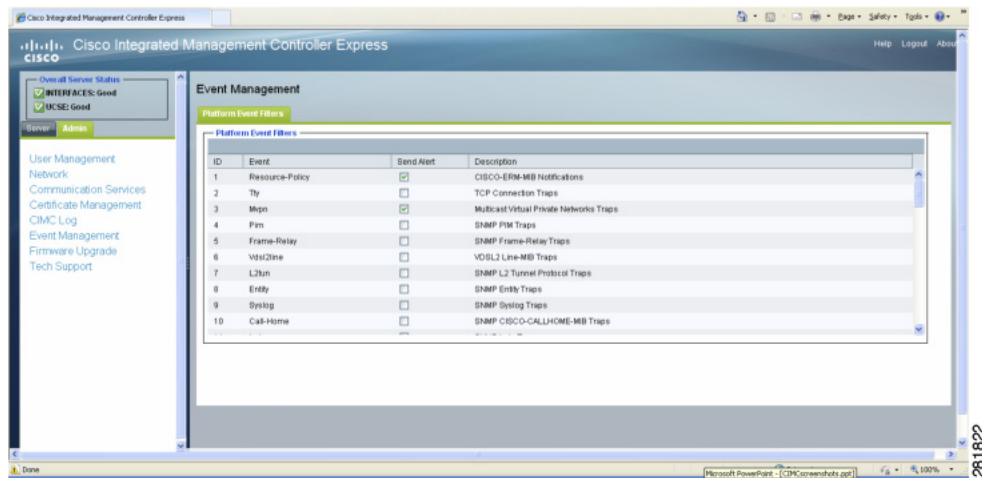
### Before You Begin

You must log in as a user with admin privileges to enable platform event alerts.

### Procedure

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **Event Management**.
- Step 3** In the Platform Event Filters tab, shown in [Figure 15](#), check the **Send Alert** check box for each event for which you want to send alerts.

**Figure 15** *Event Management Screen*



## Disabling Platform Event Alerts

To disable platform event alerts, follow this procedure:

### Before You Begin

You must log in as a user with admin privileges to disable platform event alerts.

### Procedure

- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **Event Management**.
- Step 3** In the Platform Event Filters tab, uncheck the **Send Alert** check box for each event you want to disable.



# CIMC-E Firmware Management

This section contains the following topics:

- [Overview of Firmware, page 49](#)
- [Obtaining CIMC-E Firmware from Cisco, page 49](#)
- [Installing CIMC-E Firmware, page 49](#)

## Overview of Firmware

After you have obtained a new firmware image from Cisco, you can use it to update the firmware on your server. Cisco also provides release notes with each image, which you can obtain from the same website from which you obtained the image.

**Note**

When you update the firmware, you can either upgrade an older firmware version to a newer one, or downgrade a newer firmware version to an older one.

Updating CIMC-E firmware is a process that occurs separately from products on other modules, so these modules do not have to be shutdown. When you update firmware, the CIMC-E transfers the selected firmware version to the Embedded Service Engine. You can install the firmware from an FTP server. The install process always overwrites the firmware in the Embedded Service Engine.

## Obtaining CIMC-E Firmware from Cisco

To obtain CIMC-E firmware from Cisco, follow this procedure:

**Procedure**

- Step 1** In a web browser, navigate to the web link provided by Cisco to obtain firmware images for your server.
- Step 2** Select one or more firmware images and copy them to a network server.
- Step 3** Read the release notes provided with the image or images.

**What to Do Next**

Install the CIMC-E firmware on the server.

## Installing CIMC-E Firmware

To install the CIMC-E firmware, follow this procedure:

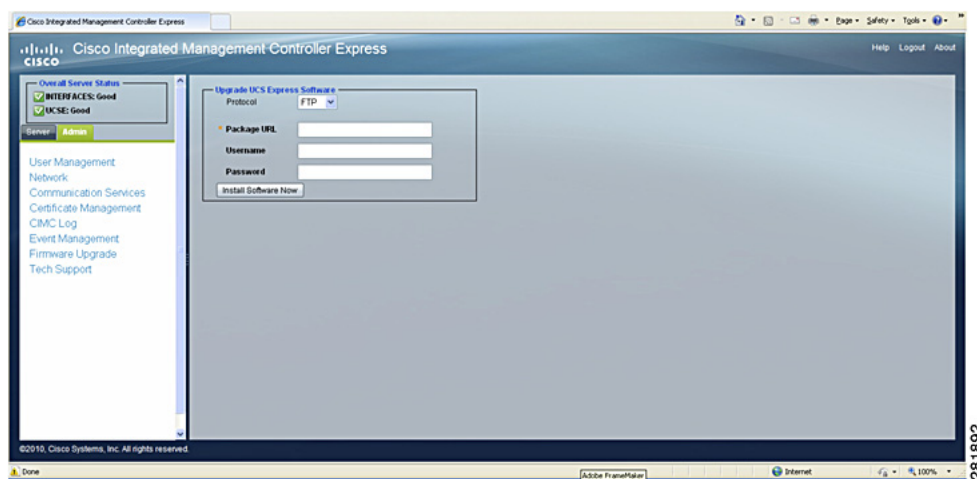
**Before You Begin**

- Obtain the CIMC-E firmware from Cisco as described in the [“Obtaining CIMC-E Firmware from Cisco” section on page 49](#).
- You must log in as a user with admin privileges to install CIMC-E firmware through the browser.

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **Firmware Management**.
- Step 3** In the Actions area, click **Install CIMC-E Firmware through Browser Client**.
- Step 4** In the Install Firmware dialog box, shown in [Figure 16](#), do one of the following:
- Click **Browse** and use the Choose File dialog box to select the firmware image that you want to install.
  - Enter the full path and filename of the firmware image that you want to install.

**Figure 16** *Firmware Upgrade*



- Step 5** Click **Install Firmware**.
- 

## Viewing Logs

This section contains the following topics:

- [CIMC-E Log, page 50](#)
- [System Event Log, page 51](#)

## CIMC-E Log

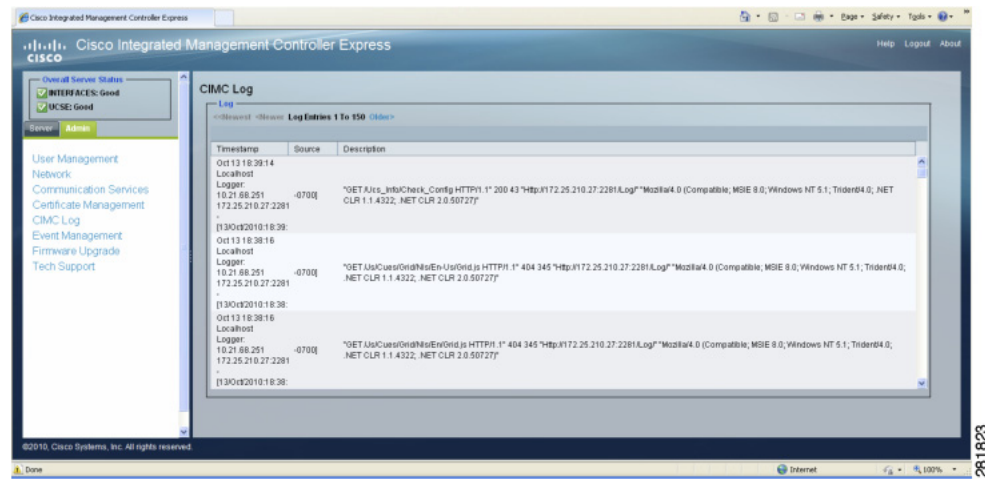
To view the CIMC-E Log, follow this procedure:

### Procedure

- 
- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **CIMC Log**.

**Step 3** The CIMC-E Log is shown in [Figure 17](#).

**Figure 17** *CIMC-E Log Example*



Review the following information for each CIMC-E event in the log.

**Table 23** *CIMC-E Log Field Descriptions*

Name	Description
Timestamp	The date and time the event occurred.
Source	The software module that logged the event.
Description	A description of the event.

**Step 4** Click **<Newer** or **<Older** to move backward and forward through the pages of CIMC-E events or click **<<Newest** to move to the top of the list.

By default, the newest CIMC-E events are displayed at the top of the list.

**Step 5** Click the column heading (**Timestamp**, **Source**, or **Description**) to sort the log by that column.

## System Event Log

The system event log records any action that is performed on a managed module, such as, installing software, performing a reset, or changing IP addresses. To view the System Event Log, follow this procedure:

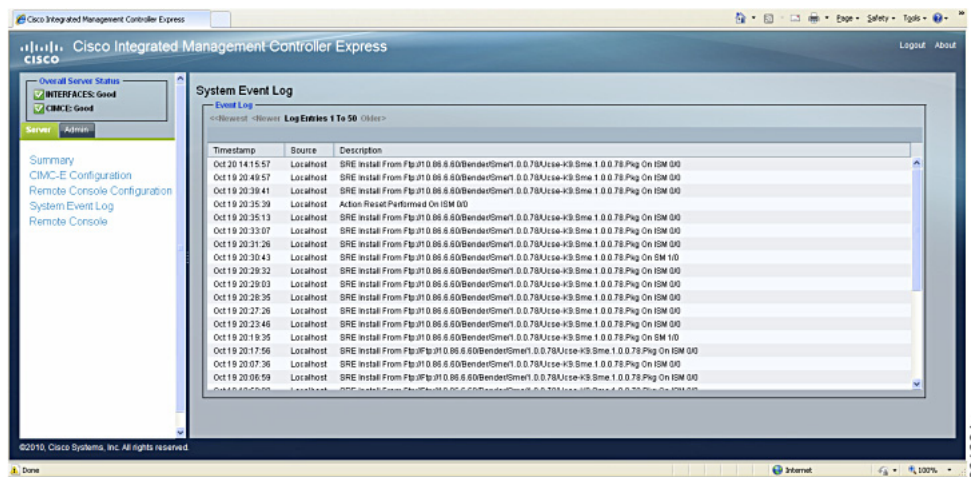
### Procedure

**Step 1** In the Navigation pane, click the **Server** tab.

**Step 2** On the Server tab, click **System Event Log**.

**Step 3** The System Event Log is shown in [Figure 18](#).

**Figure 18** System Event Log Example



Review the following information for each system event in the log:

**Table 24** System Event Log Field Descriptions

Name	Description
Timestamp	The date and time the event occurred.
Source	The software module that logged the event.
Description	A description of the event.

**Step 4** Click **<Newer** or **<Older** to move backward and forward through the pages of CIMC-E events or click **<<Newest** to move to the top of the list.

By default, the newest CIMC-E events are displayed at the top of the list.

**Step 5** Click the column heading (**Timestamp**, **Source**, or **Description**) to sort the log by that column.

## Server Utilities

This section contains the following topics:

- [Exporting Technical Support Data, page 52](#)
- [Rebooting CIMC-E, page 54](#)

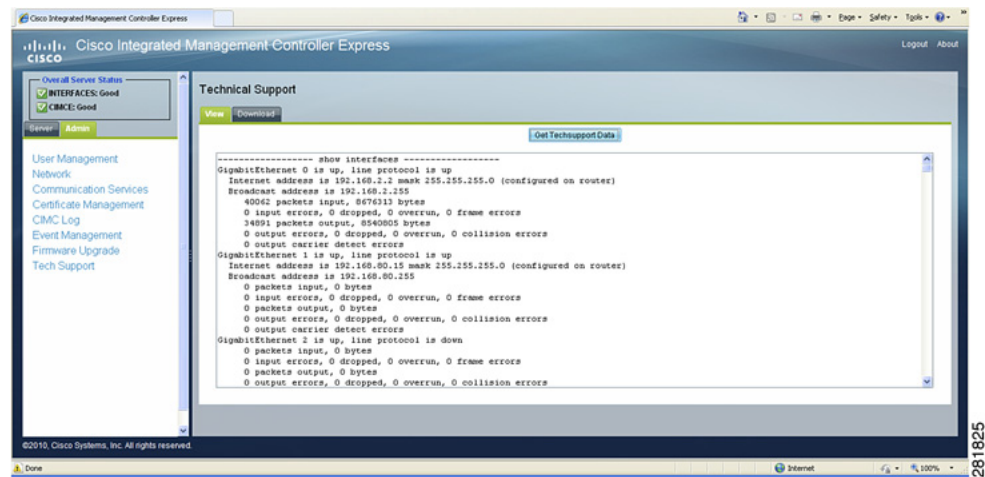
## Exporting Technical Support Data

Perform this task when requested by Cisco Technical Support. This utility creates a summary report containing configuration information, logs, and diagnostic data that will help Technical Support in troubleshooting and resolving a technical issue.

**Procedure**

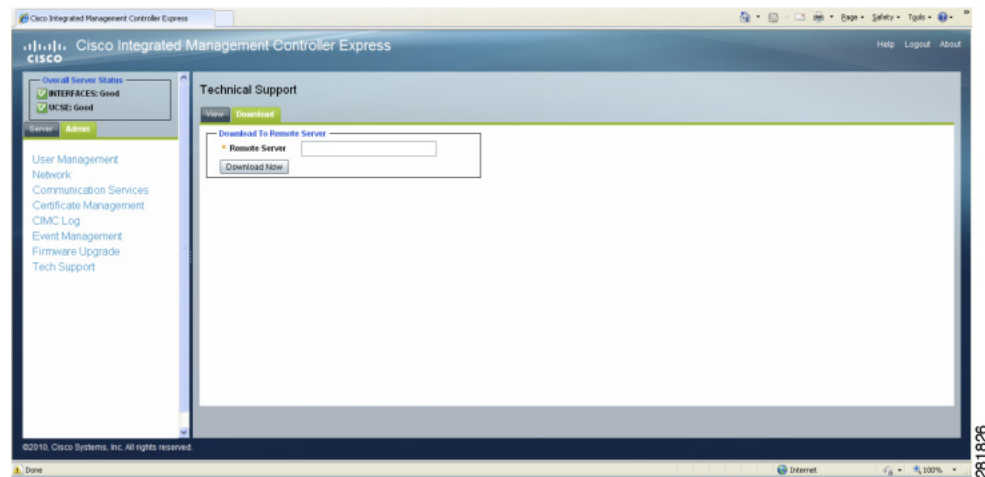
- Step 1** In the Navigation pane, click the **Admin** tab.
- Step 2** On the Admin tab, click **Tech Support**.
- Step 3** On the View tab, click **Get Techsupport Data**. [Figure 19](#) shows an example of technical support data.

**Figure 19** *Get Tech Support Data*



- Step 4** Click the **Download** tab shown in [Figure 20](#).

**Figure 20** *Download Tab*



- Step 5** In the Download to Remote Server area, enter the remote server name.
- Step 6** Click **Download Now**.

**What to Do Next**

Provide the generated report file to Cisco Technical Support.

## Rebooting CIMC-E

On rare occasions, such as an issue with the current running firmware, troubleshooting a server may require you to reboot CIMC-E. This procedure is not part of the normal maintenance of a server. After you reboot the CIMC-E, you are logged off and the CIMC-E will be unavailable for a few minutes.

To reboot CIMC-E, enter the following command:

```
Router# service-module embedded-service-engine 0/0 reload
```

```
Do you want to proceed with reload?[confirm]
```

# CIMC-E Command Reference

This command reference documents commands for CIMC-E. You must open a session on the service module to access the CIMC-E commands.

The following commands are new or have been modified:

## Scope router

- [scope router](#)
- [show hardware](#)
- [show log](#)
- [set logbuffer](#)
- [set loglevel](#)
- [clear log](#)

## Scope syslog

- [scope syslog](#)
- [create server](#)
- [show servers](#)
- [delete server](#)

## Scope service-module

- [scope service-module](#)
- [scope module port](#)
- [reload](#)
- [reset](#)
- [show statistics](#)
- [show status \(service-module/module port\)](#)
- [shutdown](#)

## Scope interface

- [scope interface](#)
- [show description](#)
- [show stat](#)
- [show summary](#)
- [scope interface port](#)
- [show status \(interface/interface port\)](#)
- [set ip](#)
- [set mask](#)
- [set module-gateway](#)
- [set module-ip](#)
- [set module-mask](#)

- **set power noshutdown**
- **set power shutdown**
- **set unnumbered-interface**

**Scope user**

- **scope user**
- **create username**
- **set password**
- **create permissions**
- **delete username**
- **delete permissions**
- **show all**
- **show username**
- **show permissions**

**Scope cimce**

- **scope cimce**
- **set url**
- **set username**
- **set password**
- **set sshport**
- **show config**
- **show logs**
- **show log (cimce)**
- **show sshport**
- **tail**

**Scope http**

- **scope http**
- **set port**
- **set ssl enable**
- **set ssl disable**
- **set cert default**
- **show port**
- **show ssl**
- **show status (cimce/http)**
- **shutdown (cimce/http)**
- **start (cimce/http)**
- **restart (cimce/http)**
- **upload cert url**



**Scope syslog**

- [scope syslog \(cimce\)](#)
- [set server](#)
- [set syslog disable](#)
- [show server \(cimce/syslog\)](#)

# scope router

To enter router mode, use the **scope router** command.

**scope router**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None

---

**Command Modes** Router (/router)

---

Command History	Release	Modification
	1.0	This command was introduced.

---



---

**Usage Guidelines** You use router mode to set router properties, display system information, and enter commands on the console.

---

**Examples** This example shows how to enter router mode:

```
Router# scope router
router /router #
```

# show hardware

To display hardware specifications of the router, use the **show hardware** command in router mode.

**show hardware**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Router (/router)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Examples** The following example displays hardware specifications for the router.:

```
router /router # show hardware
```

```
Cisco IOS Software, C2900 Software (C2900-UNIVERSALK9-M), Experimental Version  
15.1(20100215:211240) [jquan-tb18 200]  
Cisco CISCO2911/K9 (revision 1.0) with 745472K/40960K bytes of memory.  
Chassis Serial Number      : FTX1405A1Z5  
Chassis MAC Address       : 0000.e181.5150
```

# show log

To display the system log, use the **show log** command in router mode.

## show log

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Router (/router)

Command History	Release	Modification
	1.0	This command was introduced.

**Examples** The following example displays the system log:

```
router /router # show log

Log Buffer (4096 bytes):
May 14 14:51:30.554: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.1.1.60 port 514
stopped - CLI initiated
May 14 14:51:57.842: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.1.1.60 port 514
stopped - CLI initiated
May 14 14:51:58.842: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.168.24.4 port 514
started - CLI initiated
May 14 14:52:04.862: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.168.24.4 port 514
stopped - CLI initiated
May 16 01:47:22.502: %SECONDCORE-5-BOOTSTAGE: CPU on 2nd core SHUTDOWN
May 16 01:47:22.542: %SECONDCORE-5-BOOTSTAGE: ROMMON on 2nd core UP
May 16 01:47:23.022: %SECONDCORE-5-BOOTSTAGE: UBOOT on 2nd core UP
May 16 01:57:22.542: %SECONDCORE-5-BOOTSTAGE: CPU on 2nd core SHUTDOWN
May 16 01:57:22.586: %SECONDCORE-5-BOOTSTAGE: ROMMON on 2nd core UP
May 16 01:57:23.062: %SECONDCORE-5-BOOTSTAGE: UBOOT on 2nd core UP
May 17 14:09:45.261: %SECONDCORE-5-BOOTSTAGE: KERNEL on 2nd core UP
May 17 14:09:46.521: %LINK-3-UPDOWN: Interface Embedded-Service-Engine0/0, changed state
to down
May 17 14:09:47.521: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Embedded-Service-Engine0/0, changed state to down
May 17 14:10:33.913: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Embedded-Service-Engine0/0, changed state to up
May 17 14:42:27.825: %SECONDCORE-5-BOOTSTAGE: KERNEL on 2nd core SAFE FOR RESET
May 17 14:42:27.825: %SECONDCORE-5-BOOTSTAGE: CPU on 2nd core SHUTDOWN
May 17 14:42:29.825: %LINK-3-UPDOWN: Interface Embedded-Service-Engine0/0, changed state
to down
May 17 14:42:30.825: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Embedded-Service-Engine0/0, changed state to down
May 17 14:42:37.865: %SECONDCORE-5-BOOTSTAGE: ROMMON on 2nd core UP
May 17 14:42:38.345: %SECONDCORE-5-BOOTSTAGE: UBOOT on 2nd core UP
May 17 14:42:39.241: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Embedded-Service-Engine0/0, changed state to up
May 17 14:43:29.133: %SECONDCORE-5-BOOTSTAGE: KERNEL on 2nd core UP
May 17 14:43:30.009: %LINK-3-UPDOWN: Interface Embedded-Service-Engine0/0, changed state
to down
```

```
May 17 14:43:31.009: %LINEPROTO-5-UPDOWN: Line protocol on Interface  
Embedded-Service-Engine0/0, changed state to down  
May 17 14:44:16.437: %LINEPROTO-5-UPDOWN: Line protocol on Interface  
Embedded-Service-Engine0/0, changed state to up
```

# set logbuffer

To set the size of the log buffer, use the **set logbuffer** command in router mode.

**set logbuffer** *number*

<b>Syntax Description</b>	<i>number</i>	Size of the log buffer in bytes. Must be at least 4096 and not more than 2147483648.
---------------------------	---------------	--

<b>Command Default</b>	4096	
------------------------	------	--

<b>Command Modes</b>	Router (/router)	
----------------------	------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Usage Guidelines</b>	To save changes, you must enter the <b>commit</b> command.	
-------------------------	--	--

<b>Examples</b>	<p>This example sets the size of the log buffer to 8192 bytes:</p> <pre>router /router # set logbuffer 8192 router /router # commit Configuration updated successfully.</pre>	
-----------------	---	--

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.

# set loglevel

To set the level of logging, use the **set loglevel** command in router mode.

**set loglevel** [0-7 | *level*]

<b>Syntax Description</b>	0-7   <i>level</i>	<p>Level of logging. Must be one of the following numbers or corresponding words:</p> <ul style="list-style-type: none"> <li>0 (emergencies)—Saves all emergency messages.</li> <li>1 (alerts)—Saves all activities that need immediate action and those of a more severe nature.</li> <li>2 (critical)—Saves all critical conditions and those of a more severe nature,</li> <li>3 (errors)—Saves all error messages and those of a more severe nature</li> <li>4 (warnings)—Saves all warning messages and those of a more severe nature.</li> <li>5 (notifications)—Saves all notification messages and those of a more severe nature.</li> <li>6 (informational)—Saves all logging messages available.</li> <li>7 (debugging)—Saves all debugging messages available.</li> </ul>
---------------------------	--------------------	--

**Command Default** 3 (errors)

**Command Modes** Router (/router)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines**

Setting a specific log level saves messages less than or equal to the configured level. For example, when you set the log level at 5-notification, all events generating messages with a log level of 4 or less are written into the log file.

The logging system's log levels are used to identify the urgency with which you might want to address log issues. The 0-emergency setting is the most severe level of logging, while 6-info is the least severe, saving mostly informational log messages.

To save changes, you must enter the **commit** command.

**Examples** This example sets the log level to 7 bytes:

```
router /router # set loglevel 7
router /router # commit
```

Configuration updated successfully.

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>commit</b>	Saves configuration changes.

---



# clear log

To clear the system log, use the **clear log** command in router mode.

**clear log**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Router (/router)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Examples** The following example clears the system log:

```
router /router # clear log  
The operation completed successfully.
```

# scope syslog

To enter syslog mode, use the **scope syslog** command.

**scope syslog**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Syslog (/router/syslog)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** You use syslog mode to configure and manage syslog servers.

**Examples** This example shows how to enter router mode:

```
Router# scope router
router /router # scope syslog
router /router/syslog #
```

# create server

To create a syslog server, use the **create server** command in syslog mode.

**create server** *ip-address*

<b>Syntax Description</b>	<i>ip-address</i>	IP address of the syslog server.
---------------------------	-------------------	----------------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Syslog (/router/syslog)	
----------------------	-------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Examples</b>	<p>This example creates a syslog server with the IP address 172.1.1.60:</p> <pre>router /router/syslog # <b>create server 172.1.1.60</b> Configuration updated successfully.</pre>	
-----------------	--	--

# show servers

To display information about the syslog servers, use the **show servers** command in syslog mode.

**show servers**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Syslog (/router/syslog)

Command History	Release	Modification
	1.0	This command was introduced.

**Examples** The following example displays the system log:

```
router /router/syslog # show servers
Logging to 192.1.1.60 (udp port 514, audit disabled,
authentication disabled, encryption disabled, link down),
0 message lines logged,
0 message lines rate-limited,
0 message lines dropped-by-MD,
xml disabled, sequence number disabled
filtering disabled
```

# delete server

To delete a syslog server, use the **delete server** command in syslog mode.

**delete server** *ip-address*

<b>Syntax Description</b>	<i>ip-address</i>	IP address of the syslog server to be deleted.
---------------------------	-------------------	--

<b>Command Modes</b>	Syslog (/router/syslog)	
----------------------	-------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Examples</b>	<p>The following example deletes a syslog server:</p> <pre>router /router/syslog # <b>delete server 172.1.1.60</b> Configuration updated successfully.</pre>
-----------------	--

# scope service-module

To enter service-module mode, use the **scope service-module** command.

**scope service-module**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Service-module (/service-module)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** You use service-module mode to set service-module properties, display system information, and enter commands on the console.

**Examples** This example shows how to enter service-module mode:

```
Router# scope service-module
router /service-module #
```

# scope module port

To enter *module port* mode, use the **scope module port** command in service-module mode.

**scope module port**

Syntax Description	module	ISM or SM.
	port	Slot/port of the ISM or SM.

**Command Default** None

**Command Modes** *Module port (/service-module/module port)*

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** You use service-module *module port* mode to set properties and display information for the service module in the specified *slot/port*.

**Examples** This example shows how to enter service-module *module port* mode:

```
router /service-module # scope ism 0/0
router /service-module/ISM 0/0 #
```

# reload

To perform a graceful shutdown and reboot of the service module in the specified port, use the **reload** command in service-module *module port* mode.

## reload

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Service-module *module port* (/service-module/*module port*)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel.

**Examples** The following example shows how to gracefully shut down the module and reboot the operating system:

```
router /service-module/ISM 0/0# reload
```



# reset

To reset the service module in the specified port, use the **reset** command in service-module *module port* mode.

**reset**

---

## Syntax Description

This command has no arguments or keywords.

---

## Command Modes

Service-module *module port (/service-module/module port)*

---

## Command History

Release	Modification
1.0	This command was introduced.

---

## Usage Guidelines

At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel.



**Caution**

Because you may lose data, use the **reset** command only to recover from a shutdown or failed state.

---

## Examples

The following example shows how to reset the service module hardware:

```
router /service-module/ISM 0/0# reset
```

```
Use reset only to recover from shutdown or failed state
Warning: May lose data on the NVRAM, nonvolatile file system or unsaved configuration!
```

## show statistics

To display reset and reload information for the service module in the specified port, use the **show statistics** command in service-module *module port* mode.

**show statistics**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Service-module *module port* (/service-module/*module port*)

Command History	Release	Modification
	1.0	This command was introduced.

**Examples** The following example displays statistics for the Cisco ISM in the 0/0 port:

```
router /service-module/ISM 0/0# show statistics
```

```
Module Reset Statistics:
CLI reset count = 0
CLI reload count = 1
Registration request timeout reset count = 0
Error recovery timeout reset count = 0
Module registration count = 3
The last IOS initiated event was a cli reload at *19:31:00.318 UTC Fri Jul 30 20 10
```

## show status (service-module/module port)

To display status information for the service module in the specified port, use the **show status** command in service-module *module port* mode.

**show status**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Service-module *module port* (/service-module/module port)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to:

- Display the service module software release version
- Check the service module status (steady or down)
- Display hardware information for the service module, including CPU, memory, and interface information

**Examples** The following example displays status information for Cisco ISM in the 0/0 port:

```
router /service-module/ISM 0/0 # show status

Service Module is Cisco Embedded-Service-Engine0/0
Service Module supports session via TTY line 2
Service Module is in Steady state
Service Module heartbeat-reset is enabled
Getting status from the Service Module, please wait..

Cisco CIMC-E Software 1.0
UCSE Running on VSEM
Embedded Service Engine boot state is KERNEL UP

Module resource information:
CPU Frequency: 500 MHz
Memory Size: 256 MB
Disk Size: 488 MB

No install/uninstall in progress
```

# shutdown

To gracefully shut down an Embedded Service Engine service module, use the **shutdown** command in service-module *module port* mode.

## shutdown

### Syntax Description

This command has no arguments or keywords.

### Command Modes

Service-module *module port* (/service-module/*module port*)

### Command History

Release	Modification
1.0	This command was introduced.

### Usage Guidelines

At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel.

This command brings down the operating system of the specified service module in an orderly fashion to protect the hard drive. When the system is shut down, the module can be removed from the router.

### Examples

The following example shows how to gracefully shut down the service module:

```
router /service-module/ISM 0/0 # shutdown
```

Shutdown is used for Online removal of Service Module.  
Use service module reset command to recover from shutdown.

WARNING: Confirm that the service-module status shows 'is Shutdown' before removing the module or powering off the system !

# scope interface

To enter interface mode, use the **scope interface** command.

**scope interface**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Interface (/interface)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** You use interface mode to set interface properties, display interface information, and enter commands on the console.

**Examples** This example shows how to enter interface mode:

```
Router # scope interface
router /interface #
```

# show description

To display the descriptive information for the interface, use the **show description** command in interface mode.

## show description

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Interface (/interface)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display information about the interface.

**Examples** The following example displays descriptive information for the interface:

```
router /interface # show description

Interface      Status      Protocol Description
Em0/0          up          up          $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
Gi0/0          up          up          $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
Gi0/1          admin down  down
Gi0/2          admin down  down
```

# show stat

To display statistics for the interface, use the **show stat** command in interface mode.

## show stat

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Interface (/interface)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display performance statistics and status information for the interface.

**Examples** The following example displays statistics for the interface:

```
cimce/interface # show stat

Embedded-Service-Engine0/0
  Switching path  Pkts In   Chars In   Pkts Out   Chars Out
  Processor       250       33014     169        52830
  Route cache     8927     2643609   8170       994438
  Total          9177     2676623   8339       1047268

GigabitEthernet0/0
  Switching path  Pkts In   Chars In   Pkts Out   Chars Out
  Processor       1316     94523     1338       143909
  Route cache     8170     994438   8921       2643089
  Total          9486    1088961   10259      2786998

Interface GigabitEthernet0/1 is disabled
Interface GigabitEthernet0/2 is disabled
```

# show summary

To display summary information for the interface, use the **show summary** command in interface mode.

## show summary

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Interface (/interface)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display summary information for the interface.

**Examples** The following example displays summary information for the interface:

```
router /interface # show summary
```

```
*: interface is up
IHQ: pkts in input hold queue      IQD: pkts dropped from input queue
OHQ: pkts in output hold queue     OQD: pkts dropped from output queue
RXBS: rx rate (bits/sec)           RXPS: rx rate (pkts/sec)
TXBS: tx rate (bits/sec)           TXPS: tx rate (pkts/sec)
TRTL: throttle count

Interface                IHQ      IQD      OHQ      OQD      RXBS      RXPS      TXBS      TXPS      TRTL
-----
*Embedded-Service-Engine0/0  0        0        0        1        0        0        0        0        0
*GigabitEthernet0/0        0        0        0        0        0        0        0        0        0
GigabitEthernet0/1        0        0        0        0        0        0        0        0        0
GigabitEthernet0/2        0        0        0        0        0        0        0        0        0
```



# scope *interface port*

To enter *interface port* mode, use the **scope interface port** command in interface mode.

**scope interface port**

Syntax Description	interface	GigabitEthernet, ISM, or SM.
	port	Slot/port of the GigabitEthernet, ISM, or SM interface.

**Command Default** None

**Command Modes** *Interface port (/interface/interface port)*

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** You use *interface port* mode to set properties and display information for the specified *interface port*.

**Examples** This example shows how to enter interface *interface port* mode:

```
router /interface # scope ISM 0/0
router /interface/ISM 0/0 #
```

# show status (interface/interface port)

To display configuration information related to the hardware and software on the interface, use the **show status** command in interface *interface port* mode.

**show status**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Interface *interface port (/interface/module port)*

Command History	Release	Modification
	1.0	This command was introduced.

**Examples** The following example displays status information for Cisco ISM in the 0/0 port:

```
router /interface/ISM 0/0 # show status

ISM0/0 is administratively down, line protocol is down
  Hardware is PSE2, address is 0000.e198.8230 (bia 0000.e198.8230)
  Internet address is 4.4.4.4/24
  MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full Duplex, 1Gbps, media type is internal
  output flow-control is XON, input flow-control is XON
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:03, output 00:00:03, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/60 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    125119 packets input, 10774946 bytes, 0 no buffer
    Received 55319 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast, 0 pause input
    13304 packets output, 4252490 bytes, 0 underruns
    0 output errors, 0 collisions, 6 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier, 0 pause output
    0 output buffer failures, 0 output buffers swapped out

ISM0/0 is administratively down, line protocol is down
  Hardware is PSE2, address is 0000.e198.8230 (bia 0000.e198.8230)
  Internet address is 4.4.4.4/24
  MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
```

```
Keepalive set (10 sec)
Full Duplex, 1Gbps, media type is internal
output flow-control is XON, input flow-control is XON
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:03, output 00:00:03, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/60 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 125119 packets input, 10774946 bytes, 0 no buffer
  Received 55319 broadcasts (0 IP multicasts)
   0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
   0 watchdog, 0 multicast, 0 pause input
 13304 packets output, 4252490 bytes, 0 underruns
   0 output errors, 0 collisions, 6 interface resets
   0 unknown protocol drops
   0 babbles, 0 late collision, 0 deferred
   0 lost carrier, 0 no carrier, 0 pause output
   0 output buffer failures, 0 output buffers swapped out
```

# set ip

To set the IP address of the interface, use the **set ip** command in interface *interface port* mode.

**set ip** *ip-address* [**unnumbered**]

Syntax Description		
	<i>ip-address</i>	IP address of the interface.
	<b>unnumbered</b>	Enables IP processing on an interface without assigning an explicit IP address to the interface.

Command Default	None
-----------------	------

Command Modes	Interface <i>interface port</i> (/interface/module port)
---------------	--

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines**

The **set ip** command and the **set mask** command must be entered together. Entering one command without the other is not supported. If you use the **unnumbered** keyword, you must enter the **set unnumbered-interface** command to specify the interface on which the router has an assigned IP address. The order in which the commands are entered does not matter. An error message is displayed if only one of the commands is entered before the **commit** command is entered.

To save changes, you must enter the **commit** command.

**Examples**

This example sets the IP address and mask on the ISM 0/0 interface:

```
router /interface/ISM 0/0 # set ip 10.0.0.100
router /interface/ISM 0/0 *# set mask 255.255.255.0
router /interface/ISM 0/0 *# commit
Configuration updated successfully.
```

This example creates an unnumbered interface:

```
router /interface/SM 2/0 # set ip unnumbered
router /interface/SM 2/0* # set unnumbered-interface GigabitEthernet0/0
router /interface/SM 2/0* # commit
Configuration updated successfully.
```

Related Commands	Command	Description
		<b>commit</b>

<b>Command</b>	<b>Description</b>
<b>set mask</b>	Sets the mask of the interface.
<b>set unnumbered-interface</b>	Enables IP processing on an interface without assigning an explicit IP address to the interface.

# set mask

To set the mask of the interface, use the **set mask** command in interface *interface port* mode.

**set mask** *mask*

<b>Syntax Description</b>	<i>mask</i>	Mask of the interface.
---------------------------	-------------	------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Interface <i>interface port</i> (/interface/module port)	
----------------------	--	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** The **set ip** command and the **set mask** command must be entered together. Entering one command without the other is not supported. The order in which the commands are entered does not matter. An error message is displayed if only one of the commands is entered before the **commit** command is entered. To save changes, you must enter the **commit** command.

**Examples** This example sets the IP address and mask on the ISM 0/0 interface:

```
router /interface/ISM 0/0 # set ip 10.0.0.100
router /interface/ISM 0/0 *# set mask 255.255.255.0
router /interface/ISM 0/0 *# commit
Configuration updated successfully.
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
		<b>commit</b>
	<b>set ip</b>	Sets the IP address of the interface.

# set module-gateway

To set the gateway IP address for the interface, use the **set module-gateway** command in interface *interface port* mode.

**set module-gateway** *ip-address*

<b>Syntax Description</b>	<i>ip-address</i>	IP address of the module gateway.
---------------------------	-------------------	-----------------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Interface <i>interface port</i> (/interface/module port)	
----------------------	--	--

Command History	Release	Modification
	1.0	This command was introduced.

<b>Usage Guidelines</b>	The gateway must be reachable by the interface.	
-------------------------	---	--

<b>Examples</b>	<p>This example sets the gateway IP address on the ISM 0/0 interface:</p> <pre>router /interface/ISM 0/0 # set module-gateway 172.168.1.1 router /interface/ISM 0/0 *# commit Configuration updated successfully.</pre>	
-----------------	---	--

Related Commands	Command	Description
	commit	Saves configuration changes.

# set module-ip

To set the IP address of the module, use the **set module-ip** command in interface *interface port* mode.

**set module-ip** *ip-address*

<b>Syntax Description</b>	<i>ip-address</i>	IP address of the interface.
---------------------------	-------------------	------------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Interface <i>interface port</i> (/interface/module port)	
----------------------	--	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** The **set module-ip** command and the **set module-mask** command must be entered together. Entering one command without the other is not supported. The order in which the commands are entered does not matter. An error message is displayed if only one of the commands is entered before the **commit** command is entered. To save changes, you must enter the **commit** command.

**Examples** This example sets the IP address and mask on the ISM 0/0 interface:

```
router /interface/ISM 0/0 # set module-mask 255.255.255.0
router /interface/ISM 0/0 *# set module-ip 172.168.1.101
router /interface/ISM 0/0 *# commit
Configuration updated successfully.
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>set module-mask</b>	Sets the mask of the module.



# set module-mask

To set the mask of the module, use the **set module-mask** command in interface *interface port* mode.

**set module-mask** *mask*

<b>Syntax Description</b>	<i>mask</i>	Mask of the interface.
---------------------------	-------------	------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Interface <i>interface port</i> (/interface/module <i>port</i> )	
----------------------	--	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** The **set module-ip** command and the **set module-mask** command must be entered together. Entering one command without the other is not supported. The order in which the commands are entered does not matter. An error message is displayed if only one of the commands is entered before the **commit** command is entered. To save changes, you must enter the **commit** command.

**Examples** This example sets the IP address and mask on the ISM 0/0 interface:

```

router /interface/ISM 0/0 # set module-mask 255.255.255.0
router /interface/ISM 0/0 *# set module-ip 172.168.1.101
router /interface/ISM 0/0 *# commit
Configuration updated successfully.
    
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>set module-ip</b>	Sets the IP address of the module.

# set power noshutdown

To power on the interface, use the **set power noshutdown** command in interface *interface port* mode.

**set power noshutdown**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Interface *interface port* (/interface/module *port*)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** To save changes, you must enter the **commit** command.

**Examples** This example turns the ISM 0/0 interface power on:

```
router /interface/ISM 0/0 # set power noshutdown
router /interface/ISM 0/0 *# commit
Configuring power for interface ISM 0/0
Configuration updated successfully.
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.

# set power shutdown

To power down the interface, use the **set power shutdown** command in interface *interface port* mode.

**set power shutdown**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Interface *interface port* (*interface/module port*)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** To save changes, you must enter the **commit** command.

**Examples** This example turns the ISM 0/0 interface power down:

```
router /interface/ISM 0/0 # set power shutdown
router /interface/ISM 0/0 *# commit
Configuring power for interface ISM 0/0
Configuration updated successfully.
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.

# set unnumbered-interface

To enable IP processing on an interface without assigning an explicit IP address to the interface, use the **set unnumbered-interface** command in interface *interface port* mode.

**set unnumbered-interface** *type number*

Syntax Description	type	Interface on which the router has assigned an IP address. The interface cannot be an unnumbered interface. For more information, use the question mark (?) online help function.
	number	Interface or subinterface number. For more information about the numbering syntax for your networking device, use the question mark (?) online help function.

**Command Default** None

**Command Modes** Interface *interface port (/interface/module port)*

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** You must use the **set ip** command with the **unnumbered** keyword in conjunction with this command. You do not have to specify a mask for an unnumbered interface. The order in which the commands are entered does not matter. An error message is displayed if only one of the commands is entered before the **commit** command is entered.

To save changes, you must enter the **commit** command.

**Examples** This example creates an unnumbered interface:

```
router /interface/SM 2/0 # set ip unnumbered
router /interface/SM 2/0* # set unnumbered-interface GigabitEthernet0/0
router /interface/SM 2/0* # commit
Configuration updated successfully.
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.
	<b>set ip</b>	Sets the IP address of the interface.

# scope user

To enter user mode, use the **scope user** command.

**scope user**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None

---

**Command Modes** User (/user)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Usage Guidelines** It is important to note that users are restricted in the following ways:

- On initial bootup, only one user will exist: admin. The password will be “password”.
- Only admin can create new users.
- Only admin can delete existing users.
- admin cannot be removed.
- For a given user, userA, only userA and admin can change passwords for userA.

---

**Examples** This example shows how to enter user mode:

```
Router# scope user  
router /user #
```

# create username

To create a user and enter user *username* mode, use the **create username** command in user mode.

**create username** *username*

<b>Syntax Description</b>	<i>username</i>	Username for the new user.
---------------------------	-----------------	----------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	User (/user)	
----------------------	--------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines**

It is important to note that users are restricted in the following ways:

- On initial bootup, only one user will exist: admin. The password will be “password”.
- Only admin can create new users
- Only admin can delete existing users.
- admin cannot be removed.
- For a given user, userA, only userA and admin can change passwords for userA.

To save changes, you must enter the **commit** command.

You must create a password using the **set password** command when you create a username.

**Examples**

This example shows how to create a user:

```

router /user # create username myuser
router /user/username cisco *# set password mypassword
router /user/username cisco *# commit
User myuser successfully added.
Password for user myuser successfully updated.
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>set password</b>	Sets a password for a username.

# set password

To set a password for a username, use the **set password** command in user *username* mode.

**set password** *password*

<b>Syntax Description</b>	<i>password</i>	Password for the username.
---------------------------	-----------------	----------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	User <i>username</i> (/user/ <i>username</i> )	
----------------------	--	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** For a given user, userA, only userA and admin can change passwords for userA. To save changes, you must enter the **commit** command.

**Examples** This example shows how to set a password for user myuser:

```

router /user # scope username myuser
router /user/username myuser # set password newpass
router /user/username myuser *# commit
Password for user myuser successfully updated.
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.

# create permissions

To create permissions for a username, use the **create permissions** command in user *username* mode.

**create permissions** *module port*

Syntax Description	<i>module</i>	ISM or SM.
	<i>port</i>	Slot/port of the ISM or SM.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	User <i>username</i> (/user/ <i>username</i> )
----------------------	--

Command History	Release	Modification
	1.0	This command was introduced.

<b>Usage Guidelines</b>	Use this command to grant a user permission to configure the specified module and port.
-------------------------	---

<b>Examples</b>	<p>This example shows how to create permissions for user myuser:</p> <pre>router /user # <b>scope username myuser</b> router /user/username myuser # <b>create permissions SM 1/0</b> Permission successfully added.</pre>
-----------------	--



# delete username

To delete a user, use the **delete username** command in user mode.

**delete username** *username*

<b>Syntax Description</b>	<i>username</i>	Username to delete.
---------------------------	-----------------	---------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	User (/user)	
----------------------	--------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Usage Guidelines</b>	To save changes, you must enter the <b>commit</b> command.	
-------------------------	--	--

<b>Examples</b>	<p>This example shows how to delete the user myuser:</p> <pre>router /user # delete username myuser router /user *# commit User myuser successfully deleted.</pre>	
-----------------	--	--

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.

# delete permissions

To delete permissions for a user, use the **delete permissions** command in user *username* mode.

**delete permissions** *module port*

<b>Syntax Description</b>	<i>module</i>	ISM or SM.
	<i>port</i>	Slot/port of the ISM or SM.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	User <i>username</i> (/user/ <i>username</i> )
----------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Usage Guidelines</b>	Use this command to delete a user’s permission to configure the specified module and port.
-------------------------	--

<b>Examples</b>	This example shows how to delete permissions for user myuser:
	<pre>router /user # <b>scope username myuser</b> router /user/username myuser # <b>delete permissions SM 1/0</b> Permission successfully deleted.</pre>

# show all

To display the usernames of all users, use the **show all** command in user mode.

**show all**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** User (/user)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display the usernames for all user defined in CIMC-E.

**Examples** This example displays the usernames defined in CIMC-E:

```
router /user # show all

admin
myuser
```

# show username

To display the information about a specific user, use the **show username** command in user mode.

**show username** *username*

<b>Syntax Description</b>	<i>username</i>	Username for which to display information.
<b>Command Default</b>	None	
<b>Command Modes</b>	User (/user)	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display the groups to which the user belongs and the privileges the user has.

**Examples** This example displays information for the user myuser:

```
cimce/user # show username myuser
```

```
User Name:      myuser
Group(s):      cimce users
CIMCE Privileges: CIMC-E User
```

# show permissions

To display permissions for a user, use the **show permissions** command in user *username* mode.

**show permissions**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None

---

**Command Modes** User *username* (/user/*username*)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Usage Guidelines** Use this command to display the modules and ports for which a user has permission to configure.

---

**Examples** This example displays permissions for the user myuser:

```
router /user # scope username myuser  
router /user/username myuser # show permissions  
sm1/0
```

# scope cimce

To enter cimce mode, use the **scope cimce** command.

```
scope cimce
```

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None

---

**Command Modes** Cimce (/cimce)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Usage Guidelines** You use cimce mode to set CIMC-E properties, display system information, and enter commands on the console.

---

**Examples** This example shows how to enter cimce mode:

```
Router# scope cimce  
router /cimce #
```

# set url

To set the URL of the router for communication with CIMC-E, use the **set url** command in cimce mode.

```
set url url
```

<b>Syntax Description</b>	<i>url</i> URL of the router.
---------------------------	-------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Cimce (/cimce)
----------------------	----------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines**

To enable communications between CIMC-E and the router, you must set the following:

- URL of the router
- Username
- Password

Use this command to set the URL of the router. Use the **set username** command to set the username. Use the **set password** command to set the password.

To save changes, you must enter the **commit** command.

**Examples**

This example sets the URL of the router to 172.168.24.52 and shows a username and password that were created previously:

```
router /cimce # set url 172.168.24.52/test
router /cimce *# commit
Username:      myuser
Password:      <hidden>
End Point:     172.168.24.52/test
New config changes have been saved
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>set password</b>	Sets the password that CIMC-E uses to communicate with the router.
	<b>set username</b>	Sets the username that CIMC-E uses to communicate with the router.

# set username

To set the username that CIMC-E uses to communicate with the router, use the **set username** command in cimce mode.

**set username** *username*

<b>Syntax Description</b>	<i>username</i>	Username that CIMC-E uses to communicate with the router.
---------------------------	-----------------	---

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Cimce (/cimce)
----------------------	----------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines**

To enable communications between CIMC-E and the router, you must set the following:

- URL of the router
- Username
- Password

Use this command to set the username. Use the **set password** command to set the password. Use the **set url** command to set the URL of the router.

To save changes, you must enter the **commit** command.

**Examples**

This example sets the username that CIMC-E uses to communicate with the router:

```
router /cimce # set username myuser
router /cimce *# commit
Username:      myuser
Password:     <hidden>
End Point:    172.168.24.52/test
New config changes have been saved
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>set password</b>	Sets the password that CIMC-E uses to communicate with the router.
	<b>set url</b>	Sets the URL of the router for communication with CIMC-E.



# set password

To set the password that CIMC-E uses to communicate with the router, use the **set password** command in cimce mode.

**set password** *password*

<b>Syntax Description</b>	<i>password</i>	Password that CIMC-E uses to communicate with the router.
---------------------------	-----------------	---

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Cimce (/cimce)
----------------------	----------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** To enable communications between CIMC-E and the router, you must set the following:

- URL of the router
- Username
- Password

Use this command to set the password. Use the **set username** command to set the username. Use the **set url** command to set the URL of the router.

To save changes, you must enter the **commit** command.

**Examples** This example sets the password that CIMC-E uses to communicate with the router:

```
router /cimce # set password mypassword
router /cimce *# commit
Username:      myuser
Password:     <hidden>
End Point:    172.168.24.52/test
New config changes have been saved
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>set url</b>	Sets the URL of the router for communication with CIMC-E.
	<b>set username</b>	Sets the username that CIMC-E uses to communicate with the router.

# set sshport

To set the SSH port for communication with CIMC-E, use the **set sshport** command in cimce mode.

**set sshport** *ssh-port*

<b>Syntax Description</b>	<i>ssh-port</i>	Port number for SSH communications.
<b>Command Default</b>	None	
<b>Command Modes</b>	Cimce (/cimce)	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.
<b>Usage Guidelines</b>	This is the SSH port used to log in to the CIMC-E CLI interface. To save changes, you must enter the <b>commit</b> command.	
<b>Examples</b>	<p>This example sets the SSH port to 2222:</p> <pre>router /cimce # set sshport 2222 router /cimce *# commit</pre>	
<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.

# show config

To display the CIMC-E configuration on the router, use the **show config** command in cimce mode.

## show config

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Cimce (/cimce)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display the username, password, and URL configured for CIMC-E communication on the router:

**Examples** The following example displays the CIMC-E configuration:

```
router /cimce # show config

Username:      myuser
Password:     <hidden>
End Point:    172.168.24.52/test
Last Modified: Mon May 17 11:10:11 EDT 2010
```

# show logs

To display information about the CIMC-E log files, use the **show logs** command in cimce mode.

## show logs

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Cimce (/cimce)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display all the CIMC-E log filenames. Use the **show log** command to display the contents of a specific log file.

**Examples** The following example displays the CIMC-E logs:

```
router /cimce # show logs
SIZE                LAST_MODIFIED_TIME                NAME
  17844 Tue May 04 17:39:15 America/New_York 2010    lighttpd_access.log
  742613 Mon May 17 10:58:24 America/New_York 2010    messages.log
  18882 Mon May 17 10:42:19 America/New_York 2010    lighttpd_error.log
```

Related Commands	Command	Description
	show log	Saves configuration changes.

# show log (cimce)

To display the contents of a specific CIMC-E log file, use the **show log** command in cimce mode.

**show log** *logname*

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Cimce (/cimce)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display the contents of a specific log file. Use the **show logs** command to display all the CIMC-E log filenames.

**Examples** The following example displays the contents of the `lighttpd_error.log` file:

```
router /cimce # show log lighttpd_error.log

2010-04-28 20:38:11:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-02 02:52:31:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-03 19:43:17:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/server.c.1503) server stopped
by UID = 0 PID = 7413
2010-05-04 21:37:14:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-06 03:59:32:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-07 17:55:04:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/server.c.1503) server
stopped by UID = 0 PID = 6822
2010-05-07 17:56:13:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-07 14:26:31:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-09 05:33:32:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-10 14:24:33:
(/local/source/lineups/bender/opensource/lighttpd-1.4.26/src/server.c.1503) server stopped
by UID = 0 PID = 6212
2010-05-10 14:25:18:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-10 20:07:31:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-10 20:21:32:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/log.c.166) server started
2010-05-10 20:34:32:
(/local/source/lineups/bender2/opensource/lighttpd-1.4.26/src/log.c.166) server started
```

■ show log (cimce)

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show logs</b>	Displays information about the CIMC-E log files

# show sshport

To display the SSH port used for CIMC-E communications, use the **show sshport** command in cimce mode.

**show sshport**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Cimce (/cimce)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display SSH port set with the **set sshport** command.

**Examples** The following example displays the contents of the lighttpd\_error.log file:

```
router /cimce # show sshport
Port: 2222
```

Related Commands	Command	Description
	<b>set sshport</b>	Sets the SSH port for communication with CIMC-E.

# tail

To display the specified number of lines of the specified log file, use the **tail** command in cimce mode.

**tail** *logname number-of-lines*

Syntax Description	Log file to display.
<i>logname</i>	
<i>number-of-lines</i>	Number of lines to display.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Cimce (/cimce)
----------------------	----------------

Command History	Release	Modification
	1.0	This command was introduced.

**Examples** This example displays the last five lines of the messages.log file:

```
router /cimce # tail messages.log 5

<195>May 17 11:11:16 localhost ntpd[1375]: ERROR ntp ntp ntp Error lookup
/sw/proto/ntp/stat/1 failed
<195>May 17 11:15:32 localhost ntpd[1375]: ERROR ntp ntp ntp Error lookup
/sw/proto/ntp/stat/refserver11 failed
<195>May 17 11:15:32 localhost ntpd[1375]: ERROR ntp ntp ntp Error lookup
/sw/proto/ntp/stat/1 failed
<195>May 17 11:15:32 localhost ntpd[1375]: ERROR ntp ntp ntp Error lookup
/sw/proto/ntp/stat/refserver11 failed
<195>May 17 11:15:32 localhost ntpd[1375]: ERROR ntp ntp ntp Error lookup
/sw/proto/ntp/stat/1 failed
```



# scope http

To enter http mode, use the **scope http** command in cimce mode.

**scope http**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None

---

**Command Modes** Http (/cimce/http)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Usage Guidelines** You use http mode to configure HTTP services.

---

**Examples** This example shows how to enter http mode:

```
router /cimce # scope http
router /cimce/http #
```

# set port

To set the HTTP port for communication with CIMC-E, use the **set port** command in http mode.

```
set port port
```

<b>Syntax Description</b>	<i>port</i>	Port number for SSH communications.
---------------------------	-------------	-------------------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Http (/cimce/http)	
----------------------	--------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Usage Guidelines</b>	<p>This is the HTTP/S port used when logging into the CIMC-E GUI interface.</p> <p>To save changes, you must enter the <b>commit</b> command.</p>	
-------------------------	---	--

<b>Examples</b>	<p>This example sets the port to 8080:</p> <pre>router /cimce/http # set port 8080 router /cimce/http *# commit Configuring HTTP service port Port is set to: 8080 Please restart the HTTP server to apply the new change</pre>	
-----------------	---	--

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.

# set ssl enable

To enable HTTP SSL service for CIMC-E, use the **set ssl enable** command in http mode.

**set ssl enable**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Http (/cimce/http)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** To save changes, you must enter the **commit** command.

**Examples** This example enables SSL:

```
router /cimce/http # set ssl enable
router /cimce/http *# commit
Configuring HTTP SSL service
SSL is set to: enable
Please restart the HTTP server to apply the new change
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.

# set ssl disable

To disable HTTP SSL service for CIMC-E, use the **set ssl disable** command in http mode.

**set ssl disable**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Http (/cimce/http)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** To save changes, you must enter the **commit** command.

**Examples** This example disables SSL:

```
router /cimce/http # set ssl disable
router /cimce/http *# commit
Configuring HTTP SSL service
SSL is set to: disable
Please restart the HTTP server to apply the new change
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.

# set cert default

To use the default Cisco server certificate for CIMC-E, use the **set cert default** command in http mode.

**set cert default**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Http (/cimce/http)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** To save changes, you must enter the **commit** command.

**Examples** This example configures the router to use the default Cisco server certificate:

```
router /cimce/http # set cert default
router /cimce/http *# commit
Configuring HTTP Certificate
Certificate set to factory default.
Please restart the HTTP server for
changes to take effect.
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.

# show port

To display the HTTP port used for CIMC-E communications, use the **show port** command in http mode.

**show port**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Http (/cimce/http)

---

Command History	Release	Modification
	1.0	This command was introduced.

---



---

**Usage Guidelines** Use this command to display the HTTP port set with the **set port** command.

---

**Examples** The following example displays the HTTP port:

```
router /cimce/http # show port
Current Port:      8080
```

---

Related Commands	Command	Description
	<b>set port</b>	Sets the HTTP port for communication with CIMC-E.

---

# show ssl

To display the HTTP SSL service status, use the **show ssl** command in http mode.

```
show ssl
```

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Http (/cimce/http)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** Use this command to display the SSL status set with the **set ssl enable** or **set ssl disable** command.

**Examples** The following example shows that SSL is disabled:

```
router /cimce/http # show ssl
Current SSL Status:    "disable"
```

Related Commands	Command	Description
	<b>set ssl disable</b>	Disables HTTP SSL service for CIMC-E.
	<b>set ssl enable</b>	Enables HTTP SSL service for CIMC-E.

## show status (cimce/http)

To display the HTTP service status, use the **show status** command in http mode.

**show status**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Http (/cimce/http)

---

Command History	Release	Modification
	1.0	This command was introduced.

---



---

**Usage Guidelines** Use this command to display the HTTP service status.

---

**Examples** The following example shows that the HTTP service is running:

```
router /cimce/http # show status
HTTP Service is currently running
```

---

Related Commands	Command	Description
	<b>set ssl disable</b>	Disables HTTP SSL service for CIMC-E.
	<b>set ssl enable</b>	Enables HTTP SSL service for CIMC-E.

---



# shutdown (cimce/http)

To gracefully shut down HTTP service for CIMC-E, use the **shutdown** command in http mode.

**shutdown**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Http (/cimce/http)

---

Command History	Release	Modification
	1.0	This command was introduced.

---

---

**Examples** The following example shows how to gracefully shut down HTTP service for CIMC-E:

```
router /cimce/http # shutdown
Shutting down HTTP service
HTTP service has been shutdown
```

---

Related Commands	Command	Description
	restart	Restarts HTTP service for CIMC-E.

---

## start (cimce/http)

To start HTTP service for CIMC-E, use the **start** command in http mode.

**start**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Http (/cimce/http)

---

Command History	Release	Modification
	1.0	This command was introduced.

---



---

**Examples** The following example starts the HTTP service for CIMC-E:

```
router /cimce/http # start
```

---

Related Commands	Command	Description
	<b>restart</b>	Restarts HTTP service for CIMC-E.

---

# restart (cimce/http)

To restart HTTP service for CIMC-E, use the **restart** command in http mode.

**restart**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Http (/cimce/http)

---

Command History	Release	Modification
	1.0	This command was introduced.

---

---

**Usage Guidelines** Use this command to restart HTTP service after it has been shut down using the **shutdown (cimce/http)** command.

---

**Examples** The following example restarts the HTTP service for CIMC-E:

```
router /cimce/http # restart
```

---

Related Commands	Command	Description
	<b>shutdown</b>	Gracefully shuts down HTTP service for CIMC-E

---

# upload cert url

To upload a server certificate from a server for CIMC-E, use the **upload cert url** command in http mode.

**upload cert url** *url*

<b>Syntax Description</b>	<i>url</i>	URL of the FTP or HTTP server.
---------------------------	------------	--------------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Http (/cimce/http)	
----------------------	--------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

**Usage Guidelines** The certificate file must be on an FTP or HTTP server. Use the **restart** command to restart the HTTP server and make changes take effect.

**Examples** This example uploads a certificate from an FTP server:

```
router /cimce/http # upload cert url ftp://192.1.1.60/pub/good.pem
Certificate uploaded successfully.
Please restart the HTTP server for changes
to take effect.
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.
	<b>restart (cimce/http)</b>	Restarts HTTP service for CIMC-E.

# scope syslog (cimce)

To enter syslog mode, use the **scope syslog** command in cimce mode.

**scope syslog**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None

---

**Command Modes** Syslog (/cimce/syslog)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Usage Guidelines** You use syslog mode to configure syslog services.

---

**Examples** This example shows how to enter syslog mode:

```
router /cimce # scope syslog  
router /cimce/syslog #
```

## set server

To set the syslog server for CIMC-E, use the **set server** command in syslog mode.

```
set server server
```

<b>Syntax Description</b>	<i>server</i>	URL of the syslog server.
---------------------------	---------------	---------------------------

<b>Command Default</b>	None	
------------------------	------	--

<b>Command Modes</b>	Syslog (/cimce/syslog)	
----------------------	------------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

<b>Usage Guidelines</b>	To save changes, you must enter the <b>commit</b> command.	
-------------------------	--	--

<b>Examples</b>	<p>This example sets the syslog server to 192.1.1.60:</p> <pre>router /cimce/syslog # set server 192.1.1.60 router /cimce/syslog *# commit</pre> <p>The operation completed successfully.</p>	
-----------------	---	--

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>commit</b>	Saves configuration changes.

# set syslog disable

To disable syslog for CIMC-E, use the **set syslog disable** command in syslog mode.

**set syslog disable**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Syslog (/cimce/syslog)

Command History	Release	Modification
	1.0	This command was introduced.

**Usage Guidelines** To save changes, you must enter the **commit** command.

**Examples** This example disables syslog:

```
router /cimce/syslog # set syslog disable
router /cimce/syslog *# commit
Syslog disabled successfully.
```

Related Commands	Command	Description
	<b>commit</b>	Saves configuration changes.

## show server (cimce/syslog)

To display the URL of the syslog server for CIMC-E, use the **show server** command in syslog mode.

**show server**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Modes** Syslog (/cimce/syslog)

---

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	1.0	This command was introduced.

---

---

**Examples** This example displays the URL of the syslog server for CIMC-E:

```
router /cimce/syslog # show server  
Log server address: 192.1.1.60
```



# Embedded Service Engine Command Reference

This command reference documents commands for the Embedded Service Engine.

The following configuration command is new:

- **service-module enable**

The following EXEC commands are new:

- **interface embedded-service-engine 0/0**
- **service-module embedded-service-engine 0/0 install**
- **service-module embedded-service-engine 0/0 password-reset**
- **service-module embedded-service-engine 0/0 reload**
- **service-module embedded-service-engine 0/0 reset**
- **service-module embedded-service-engine 0/0 session**
- **service-module embedded-service-engine 0/0 shutdown**
- **service-module embedded-service-engine 0/0 statistics**
- **service-module embedded-service-engine 0/0 status**
- **show interface embedded-service-engine 0/0**

For information about other commands used with this feature, see the *Cisco IOS Interface and Hardware Component Command Reference* at

[http://www.cisco.com/en/US/docs/ios/interface/command/reference/ir\\_book.html](http://www.cisco.com/en/US/docs/ios/interface/command/reference/ir_book.html).

For information about all Cisco IOS commands, use the Command Lookup Tool at

<http://tools.cisco.com/Support/CLILookup> or the *Cisco IOS Master Command List, All Releases*, at [http://www.cisco.com/en/US/docs/ios/mcl/allreleasemcl/all\\_book.html](http://www.cisco.com/en/US/docs/ios/mcl/allreleasemcl/all_book.html).

# service-module enable

To enable the Embedded Service Engine on a service module interface and partition hardware resources, use the **service-module enable** command in interface configuration mode. To disable the Embedded Service Engine and return hardware resources to the first core, use the **no** form of this command.

**service-module enable**

**no service-module enable**

**Syntax Description** This command has no arguments or keywords.

**Command Default** The Embedded Service Engine is not enabled.

**Command Modes** Interface configuration (config-if)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** Cisco Integrated Services Routers Generation 2 (Cisco ISRs G2) have dual core CPUs on the motherboard. The first core runs Cisco IOS software; the second core, or the *Embedded Service Engine*, is capable of running Linux-based applications. Use this command to enable the Embedded Service Engine and partition hardware resource between the first core and the Embedded Service Engine. To enable the Embedded Service Engine, you have to:

1. Enter the configuration command **service-module enable** under the embedded-service-engine 0/0 interface.
2. Save the configuration to NVRAM.
3. Reboot the system.

You must reboot the system before you install an application on the Embedded Service Engine.

To disable the Embedded Service Engine, you have to:

1. Enter the configuration command **no service-module enable** under the embedded-service-engine 0/0 interface.
2. Save the configuration to NVRAM.
3. Reboot the system.

After the system has been rebooted, hardware resources are returned to the first core.

**Examples** In the following example, the Embedded Service Engine is enabled:

```
interface Embedded-Service-Engine0/0
ip address 10.10.10.1 255.255.0.0
service-module enable
```

```
service-module ip address 10.10.10.2 255.255.0.0
service-module ip default-gateway 10.10.10.1
```

In the following example, the Embedded Service Engine is disabled:

```
interface Embedded-Service-Engine0/0
no service-module enable
```

# interface embedded-service-engine 0/0

To configure an interface on the router that connects to an Embedded Service Engine, use the **interface embedded-service-engine 0/0** command in global configuration mode. This command does not have a no form.

**interface embedded-service-engine 0/0**

**Syntax Description** This command has no arguments or keywords.

**Command Default** The interface is not configured.

**Command Modes** Global configuration (config)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** This command enters interface configuration mode to configure the interface between the router and the Embedded Service Engine.

**Examples** The following example shows how to enter interface configuration mode for the Embedded Service Engine:

```
Router(config)# interface embedded-service-engine 0/0
```

Related Commands	Command	Description
	<b>ip unnumbered</b>	Enables IP processing on an interface without assigning an explicit IP address to the interface.
	<b>service-module ip address</b>	Specifies the IP address of the module side of the interface.
	<b>show interface embedded-service-engine 0/0</b>	Displays status, traffic data, and configuration information about the Embedded Service Engine interface.

# service-module embedded-service-engine 0/0 install

To use Cisco SRE to install an application on a service module (Cisco SM-SRE), use the **service-module embedded-service-engine 0/0 install** command in privileged EXEC configuration mode.

```
service-module embedded-service-engine 0/0 install url url [script filename] [argument
"string"] [force]
```

## Syntax Description

<b>url</b> <i>url</i>	Address of FTP or HTTP server, as defined in RFC 2396, on which application packages and Tcl scripts are located.
<b>script</b>	(Optional) Changes name of Tcl script to be run from default value to script specified by <i>filename</i> argument.
<i>filename</i>	Name of Tcl script.
<b>argument</b>	(Optional) Installer will not present options for the variable specified in the <i>string</i> argument.
<i>string</i>	Alphanumeric characters of variable to be passed directly to the Tcl script via the command line. Variable must be enclosed in quotation marks (“ ”)
<b>force</b>	(Optional) Tcl script automatically proceeds with install without prompting for user input.

## Command Modes

Privileged EXEC (#)

## Command History

Release	Modification
15.1(4)M	This command was introduced.

## Usage Guidelines

This command uses a common module-dependent bootloader on Cisco SRE to install a Linux-based application, such as Cisco Unity Express or Cisco AXP, on a service module (Cisco SM-SRE).

The slash mark (/) is required between the *slot* argument and the *port* argument.

You can only issue one instance of this command at a time on a router. You cannot use this command to install an application on two or more services engine modules in the same router at a time.

The Tcl script to be run must reside in the same FTP or HTTP server and directory as the application packages to be installed. If a credential is required, the username and password must be embedded in the URL, as shown in the following example:

```
Router# service-module embedded-service-engine 0/0 install url
ftp://username:passwd@server.com/axp
```

If two or more of the optional keyword/argument combinations are used with this command, they must be issued in the order presented in the command syntax. For example, you cannot use the **force** keyword before the **script** or **argument** keywords nor the **argument** keyword before the **script** keyword when you issue this command.

Use the **script filename** keyword/argument combination with this command to specify that the Cisco IOS software use a Tcl script other than the default installer during the installation.

Use the **argument** “*string*” keyword/argument combination with this command to manually provide variables during the installation process and bypass the user interaction feature of the installer. The variable must include the left and right quotation marks (“ ”).

Use the **force** keyword with this command to install an application without prompting for user input. If you use this keyword and if the application requires you to provide certain variables during the installation, you should also use the **argument** “*string*” keyword/argument combination to manually provide the required variables because the **force** keyword will direct the installer to bypass all user interaction during the installation.

To stop the install while the Tcl script is being downloaded, use the **service-module sm install abort** command. This command cannot be used once the actual installation begins.

## Examples

The following example shows how to use this command to run a “help.sre” Tcl script rather than the default installation Tcl script:

```
Router# service-module embedded-service-engine 0/0 install url ftp://server.com/cimce
script help.sre argument arg1
Router#
```

The following example shows the messages displayed on the module console during a successful installation using Cisco SRE:

```
Feb 6 19:09:22.526 EDT: %SM_INSTALL-6-INST_PROG: Service-Module-SM 1/0 PROGRESSING:
Validating package signature ...1 .
Feb 6 19:09:23.058 EDT: %SM_INSTALL-6-INST_PROG: Service-Module-SM 1/0 PROGRESSING:
Parsing package manifest files ...1 .
Feb 6 19:09:44.742 EDT: %SM_INSTALL-6-INST_PROG: Service-Module-SM 1/0 PROGRESSING:
Starting payload download1 .
Feb 6 19:09:52.022 EDT: %SM_INSTALL-6-INST_PROG: Service-Module-SM 1/0 PROGRESSING:
Performing Hot install ...1 .
Install successful on Service-Module-SM 1/0 Feb 6 19:10:28.826 EDT:
%SM_INSTALL-6-INST_SUCC: Service-Module-SM 1/0 SUCCESS: install-completed .
```

## Related Commands

Command	Description
<b>service-module embedded-service-engine 0/0 install abort</b>	Stops the install and returns to the boot-loader prompt.

# service-module embedded-service-engine 0/0 password-reset

To reset the password for the Embedded Service Engine, use the **service-module embedded-service-engine password-reset** command in privileged EXEC mode.

**service-module embedded-service-engine 0/0 password-reset**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Privileged EXEC (#)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** Use this command to reset the Embedded Service Engine password. You can then open a session on the Embedded Service Engine without a password.

**Examples** The following example resets the password on the Embedded Service Engine. After resetting the password, opening a session does not require a password.

```
Router# service-module embedded-service-engine 0/0 password-reset
Router# service-module embedded-service-engine 0/0 session

Trying 10.86.25.94, 2002 ... Open

CORE2-VSEP#
```

Related Commands	Command	Description
	<b>service-module embedded-service-engine 0/0 session</b>	Begins a configuration session for an Embedded Service Engine service module through a console connection.

# service-module embedded-service-engine 0/0 reload

To perform a graceful shutdown and reboot of the Embedded Service Engine, use the **service-module embedded-service-engine 0/0 reload** command in privileged EXEC mode.

## service-module embedded-service-engine 0/0 reload

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC (#)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel.

**Examples** The following example shows how to gracefully shut down the module and reboot the operating system:

```
Router# service-module embedded-service-engine 0/0 reload
Do you want to proceed with reload?[confirm]
```

Related Commands	Command	Description
	<b>interface embedded-service-engine 0/0</b>	Configures an interface on the router that connects to an Embedded Service Engine and enters interface configuration mode.
	<b>service-module embedded-service-engine 0/0 reset</b>	Resets the service module hardware.
	<b>service-module embedded-service-engine 0/0 shutdown</b>	Gracefully shuts down the service module.
	<b>show diag</b>	Displays controller information for service modules.
	<b>show interfaces embedded-service-engine 0/0</b>	Displays basic interface configuration information for the Embedded Service Engine.



# service-module embedded-service-engine 0/0 reset

To reset the Embedded Service Engine service module hardware, use the **service-module embedded-service-engine 0/0 reset** command in privileged EXEC mode.

**service-module embedded-service-engine 0/0 reset**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC (#)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel.



Because you may lose data, use the **service-module embedded-service-engine 0/0 reset** command only to recover from a shutdown or failed state.

**Examples** The following example shows how to reset the service module hardware:

```
Router# service-module embedded-service-engine 0/0 reset
```

```
Use reset only to recover from shutdown or failed state
Warning: May lose data on the NVRAM, nonvolatile file system or unsaved configuration!
Do you want to reset?[confirm]
```

Related Commands	Command	Description
	<b>interface embedded-service-engine 0/0</b>	Configures an interface on the router that connects to an Embedded Service Engine and enters interface configuration mode.
	<b>service-module embedded-service-engine 0/0 reload</b>	Performs a graceful shutdown and reboot of the service module operating system.
	<b>service-module sm embedded-service-engine 0/0 shutdown</b>	Gracefully shuts down the service module.
	<b>show diag</b>	Displays controller information for service modules.
	<b>show interface embedded-service-engine 0/0</b>	Displays basic interface configuration information for service modules.

# service-module embedded-service-engine 0/0 session

To begin a configuration session for an Embedded Service Engine service module through a console connection, use the **service-module embedded-service-engine 0/0 session** command in privileged EXEC mode.

**service-module embedded-service-engine 0/0 session [clear]**

<b>Syntax Description</b>	<b>clear</b> (Optional) Clears the service module configuration session.
---------------------------	--

<b>Command Modes</b>	Privileged EXEC (#)
----------------------	---------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	15.1(4)M	This command was introduced.

**Usage Guidelines**

Only one session at a time is allowed into the service module from the service module interface.

After starting a session, you can perform any service module configuration task. You first access the service module console in a user-level shell. To access the privileged EXEC command shell, where most commands are available, use the **enable** command.

After you finish configuration tasks and exit the service module console session, use this command with the **clear** keyword to clear the session. At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel.

**Examples**

The following example shows a session being opened for an Embedded Service Engine:

```
Router# service-module embedded-service-engine 0/0 session
Trying 10.10.10.1, 2129 ... Open
SE-Module con now available
Press RETURN to get started!
SE-Module> enable
```

The following example clears the session that had been used to configure the Embedded Service Engine in slot 1:

```
Router# service-module embedded-service-engine 0/0 session clear
[confirm]
[OK]
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>enable</b>	Enters privileged EXEC mode.
	<b>interface</b>	Configures an interface and enters interface configuration mode.

<b>Command</b>	<b>Description</b>
<b>show diag</b>	Displays controller information for a service module.
<b>show interface embedded-service-engine 0/0</b>	Displays basic interface configuration information for service modules.

# service-module embedded-service-engine 0/0 shutdown

To gracefully shut down an Embedded Service Engine service module, use the **service-module embedded-service-engine 0/0 shutdown** command in privileged EXEC mode.

## service-module embedded-service-engine 0/0 shutdown

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC (#)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** At the confirmation prompt, press **Enter** to confirm the action or **n** to cancel. This command brings down the operating system of the specified service module in an orderly fashion to protect the hard drive. When the system is shut down, the module can be removed from the router.

**Examples** The following example shows how to gracefully shut down the service module:

```
Router# service-module embedded-service-engine 0/0 shutdown
```

```
Do you want to proceed with shutdown?[confirm]
Use service module reset command to recover from shutdown.
```

```
WARNING: Confirm that the service-module status shows 'is Shutdown' before removing the
module or powering off the system !
```

Related Commands	Command	Description
	<b>interface embedded-service-engine 0/0</b>	Configures an interface on the router that connects to an Embedded Service Engine and enters interface configuration mode.
	<b>service-module embedded-service-engine 0/0 reload</b>	Performs a graceful shut down and reboot of the Embedded Service Engine operating system.
	<b>service-module embedded-service-engine 0/0 reset</b>	Resets the hardware on the Embedded Service Engine.
	<b>show diag</b>	Displays controller information for service modules.
	<b>show interface embedded-service-engine 0/0</b>	Displays basic interface configuration information for Embedded Service Engines.

# service-module embedded-service-engine 0/0 statistics

To display reset and reload information for an Embedded Service Engine service module and its Cisco IOS software, use the **service-module embedded-service-engine 0/0 statistics** command in EXEC mode.

**service-module embedded-service-engine 0/0 statistics**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

User EXEC (>  
Privileged EXEC (#)

## Command History

Release	Modification
15.1(4)M	This command was introduced.

## Examples

The following example displays information for a service module in slot 1:

```
Router# service-module embedded-service-engine 0/0 statistics
```

```
Module Reset Statistics:
CLI reset count = 0
CLI reload count = 0
Registration request timeout reset count = 1
Error recovery timeout reset count = 1
Module registration count = 1
```

## Related Commands

Command	Description
<b>interface embedded-service-engine 0/0</b>	Configures an interface on the router that connects to an Embedded Service Engine and enters interface configuration mode.
<b>service-module embedded-service-engine 0/0 reload</b>	Performs a graceful shutdown and reboot of the Embedded Service Engine operating system.
<b>service-module embedded-service-engine 0/0 reset</b>	Resets the Embedded Service Engine hardware.
<b>service-module embedded-service-engine 0/0 shutdown</b>	Gracefully shuts down the Embedded Service Engine.
<b>show interface embedded-service-engine 0/0</b>	Displays basic interface configuration information for Embedded Service Engines.

# service-module embedded-service-engine 0/0 status

To display configuration information related to the hardware and software on an Embedded Service Engine service module, use the **service-module embedded-service-engine 0/0 status** command in privileged EXEC mode.

**service-module embedded-service-engine 0/0 status**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC (#)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** Use this command to:

- Display the Embedded Service Engines software release version
- Check the Embedded Service Engine status (steady or down)
- Display hardware information for the Embedded Service Engine, including CPU, memory, and interface information

**Examples** The following example displays information for an Embedded Service Engine:

```
Router# service-module embedded-service-engine 0/0 status
```

```
Service Module is Cisco Embedded-Service-Engine0/0
Service Module supports session via TTY line 2
Service Module is in Steady state
Service Module heartbeat-reset is enabled
Getting status from the Service Module, please wait..
```

```
Cisco CIMC-E Software 1.0
CIMCE Running on VSEM
Embedded Service Engine boot state is KERNEL UP
```

```
Module resource information:
CPU Frequency: 500 MHz
Memory Size: 256 MB
Disk Size: 488 MB
```

```
No install/uninstall in progress
```

Related Commands	Command	Description
	<b>interface embedded-service-engine 0/0</b>	Configures an interface on the router that connects to an Embedded Service Engine and enters interface configuration mode.
	<b>show diag</b>	Displays controller information for service modules.
	<b>show interface embedded-service-engine 0/0</b>	Displays basic interface configuration information for Embedded Service Engines.

# show interface embedded-service-engine 0/0

To display status, traffic data, and configuration information about the Embedded Service Engine 0/0 interface, use the **show interface embedded-service-engine 0/0** command in user EXEC or privileged EXEC mode.

## show interface embedded-service-engine 0/0

**Syntax Description** This command has no arguments or keywords.

**Command Modes** User EXEC (>)  
Privileged EXEC (#)

Command History	Release	Modification
	15.1(4)M	This command was introduced.

**Usage Guidelines** This command displays interface information for the Embedded Service Engine 0/0 interface.

**Examples** The following example displays status, traffic data, and configuration information about the interface to the SM-SRE installed in the router.

```
Router# show interface embedded-service-engine 0/0

Embedded-Service-Engine0/0 is up, line protocol is up
  Hardware is Embedded Service Engine, address is 8843.e1b2.eff5 (bia 8843.e1b2.eff5)
  Interface is unnumbered. Using address of GigabitEthernet0/0 (10.86.25.94)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:27, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/64/0/0 (size/max/drops/flushes); Total output drops: 4
  Queueing strategy: fifo
  Output queue: 0/60 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    33420 packets input, 3249092 bytes, 0 no buffer
    Received 53 broadcasts (0 IP multicasts)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    66908 packets output, 74463378 bytes, 0 underruns
    0 output errors, 0 collisions, 8 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Router#
```



Table 25 describes the significant fields shown in the display.

**Table 25** *show interface embedded-service-engine Field Descriptions*

Field	Description
Hardware, address	Hardware type and address.
MTU	Maximum transmission unit (MTU) of the service module interface.
BW	Bandwidth of the interface, in kbps.
DLY	Delay of the interface, in microseconds.
reliability	Reliability of the interface as a fraction of 255 (255/255 is 100 percent reliability), calculated as an exponential average over 5 minutes.
txload	Transmit load on the interface as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes.
rxload	Receive load on the interface as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes.
Encapsulation	Encapsulation method assigned to the interface.
loopback	Indicates whether or not loopback is set.
Keepalive	Indicates whether or not keepalives are set and the interval between keepalives if they have been set.
ARP type	Type of Address Resolution Protocol (ARP) assigned.
ARP Timeout	Length of ARP timeout.
Last input	Number of hours, minutes, and seconds since the last packet was successfully received by the interface and processed locally on the router. This field is useful for detecting when a dead interface failed.  <b>Note</b> This field is not updated by fast-switched traffic.
output	Number of hours, minutes, and seconds since the last packet was successfully transmitted by the interface. This field is useful for detecting when a dead interface failed.
output hang	Number of hours, minutes, and seconds (or never) since the interface was last reset because a transmission took too long. When the number of hours in any of the “last” fields exceeds 24 hours, the number of days and hours is printed. If that field overflows, asterisks are printed.

**Table 25** *show interface embedded-service-engine Field Descriptions (continued)*

Field	Description
Last clearing	<p>Time at which the counters that measure cumulative statistics (such as number of bytes transmitted and received) shown in this report were last reset to zero. Note that variables that might affect routing (for example, load and reliability) are not cleared when the counters are cleared.</p> <p>Asterisks (***) indicate that the elapsed time is too large to be displayed.</p>
Input queue	<p>Number of packets in the input queue. Each number is followed by a slash, the maximum size of the queue, the number of packets dropped because of a full queue, and the number of times that queued packets have been discarded.</p>
Total output drops	<p>Number of packets in the output queue that have been dropped because of a full queue.</p>
Queueing strategy	<p>Queueing strategy applied to the interface, which is configurable under the interface. The default is first-in, first-out (FIFO).</p>
Output queue	<p>Number of packets in the output queue, and the maximum size of the queue. Each number is followed by a slash.</p>
5 minute input rate, 5 minute output rate	<p>Average number of bits and packets transmitted per second in the last 5 minutes. If the interface is not in promiscuous mode, it senses network traffic that it sends and receives (rather than all network traffic).</p> <p>The 5-minute input and output rates should be used only as an approximation of traffic per second during a given 5-minute period. These rates are exponentially weighted averages with a time constant of 5 minutes. A period of four time constants must pass before the average will be within 2 percent of the instantaneous rate of a uniform stream of traffic over that period.</p> <p><b>Note</b> The 5-minute period referenced in this output is a load interval that is configurable under the interface. The default value is 5 minutes.</p>
packets input	<p>Total number of error-free packets received by the system.</p>
bytes	<p>Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system.</p>

**Table 25** *show interface embedded-service-engine Field Descriptions (continued)*

<b>Field</b>	<b>Description</b>
no buffer	Number of received packets discarded because there was no buffer space in the main system. Compare with ignored count. Broadcast storms on Ethernets and bursts of noise on serial lines are often responsible for no input buffer events.
Received...broadcasts	Number of broadcasts received.
runts	Number of packets that are discarded because they are smaller than the minimum packet size of the medium. For instance, any Ethernet packet that is less than 64 bytes is considered a runt.
giants	Number of packets that are discarded because they exceed the maximum packet size of the medium. For example, any Ethernet packet that is greater than 1518 bytes is considered a giant.
throttles	Number of times that the interface requested another interface within the router to slow down.
input errors	Errors that include runts, giants, no buffer, cyclic redundancy checksum (CRC), frame, overrun, and ignored counts. Other input-related errors can also cause the input errors count to be increased, and some datagrams may have more than one error; therefore, this sum may not balance with the sum of enumerated input error counts.
CRC	Errors created when the CRC generated by the originating LAN station or far-end device does not match the checksum calculated from the data received. On a LAN, this usually indicates noise or transmission problems on the LAN interface or the LAN bus itself. A high number of CRCs is usually the result of collisions or a station that is transmitting bad data.
frame	Number of packets received incorrectly that have a CRC error and a noninteger number of octets. On a LAN, this is usually the result of collisions or a malfunctioning Ethernet device.
overrun	Number of times that the receiver hardware was unable to hand received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
ignored	Number of received packets that were ignored by the interface because the interface hardware ran low on internal buffers. These buffers are different from system buffer space described. Broadcast storms and bursts of noise can cause the ignored count to increase.

**Table 25** *show interface embedded-service-engine Field Descriptions (continued)*

<b>Field</b>	<b>Description</b>
input packets with dribble condition detected	Number of packets with dribble condition. Dribble bit error indicates that a frame is slightly too long. This frame error counter is incremented just for informational purposes; the router accepts the frame.
packets output	Total number of messages that have been transmitted by the system.
bytes	Total number of bytes, including data and MAC encapsulation, that have been transmitted by the system.
underruns	Number of times that the transmitter has run faster than the router could handle. This may never be reported on some interfaces.
output errors	Sum of all errors that prevented the final transmission of datagrams out of the interface that is being examined. Note that this may not balance with the sum of the enumerated output errors, because some datagrams may have more than one error, and others may have errors that do not fall into any of the specifically tabulated categories.
collisions	Number of messages that have been retransmitted because of an Ethernet collision. This is usually the result of an overextended LAN (Ethernet or transceiver cable too long, more than two repeaters between stations, or too many cascaded multiport transceivers). A packet that collides is counted only once in output packets.
interface resets	Number of times an interface has been completely reset. This can happen if packets that were queued for transmission were not sent within several seconds. On a serial line, this can be caused by a malfunctioning modem that is not supplying the transmit clock signal or by a cable problem. If the system notices that the carrier detect line of a serial interface is up, but the line protocol is down, it periodically resets the interface in an effort to restart it. Interface resets can also occur when an interface is looped back or shut down.
babbles	Count of frames greater than 1518 bytes that have been transmitted, indicating that the transmitter has been on the interface longer than the time necessary to transmit the largest frame.
late collision	Number of late collisions. A collision becomes a late collision when it occurs after the preamble has been transmitted.

**Table 25** *show interface embedded-service-engine Field Descriptions (continued)*

<b>Field</b>	<b>Description</b>
deferred	Deferred indicates that the chip, while ready to transmit a frame, had to defer because the carrier was asserted.
lost carrier	Number of times that the carrier was lost during transmission.
no carrier	Number of times that the carrier was not present during the transmission.
output buffer failures	Number of failed buffers.
output buffers swapped out	Number of buffers swapped out.

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show controllers embedded-service-engine 0/0</b>	Displays controller information for the Embedded Service Engine.

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