Cisco CNS Configuration Engine Administration for Internal Directory Mode

This chapter describes the Cisco CNS Configuration Engine administration tasks for Internal Directory mode including information about:

Levels of Access

In Internal Directory mode, there are two categories of users who have access to device information:

- Administrator
- Operator

An Administrator has the higher access level of the two categories; full access to device and user information. An Operator has access to only order entry and operator password-related tasks.

For example, an Administrator can access all the functional areas of the user interface. Whereas, an Operator only has access to Order Entry and Tools functions.

How to Log In and Out of the System

You can connect to the system by means of:

- Telnet
- System console

How to Log In

To log into the system, follow these steps:

Step 1 Launch your web browser.

This user interface is best viewed using Microsoft Internet Explorer, version 5.5 or later.

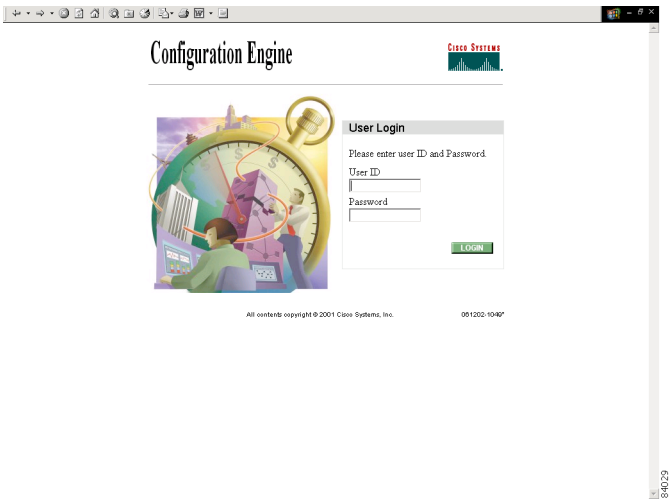
Step 2 Go to the Cisco CNS Configuration Engine URL.

For example: **http://<***ip_address***>/config/login.html**

Note If encryption is set during Setup (see "Encryption Settings" section on page 2-6), use **https://<***ip_address***>/config/login.html**.

The login window appears (see Figure 3-1).

Figure 3-1 Logging In to the Configuration Server



Step 3 Enter your **User ID**.

This is the value for the **ConfigService AdminID** parameter that you entered during **Setup**.

Step 4 Enter your password.

Step 5 Click **LOGIN**.

For an Administrator, the full-function Cisco CNS Configuration Engine Home page appears (see Figure 3-2).

For an Operator, a limited-function Cisco CNS Configuration Engine Home page appears where the active tabs are **Home**, **Order Entry**, and **Tools** (see Figure 3-3).

Figure 3-2 Administrator Home Page

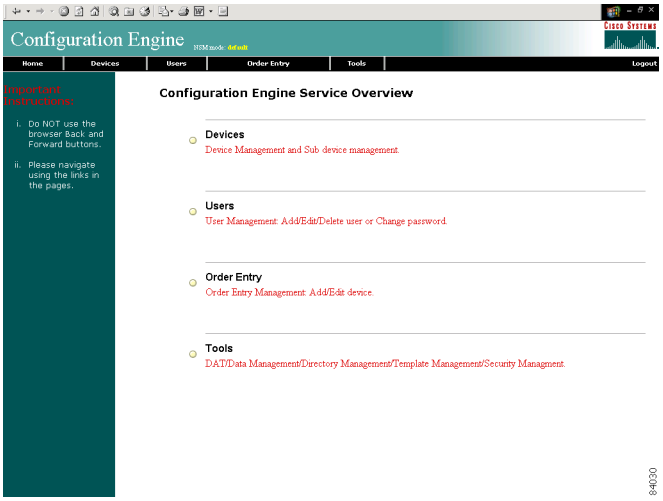
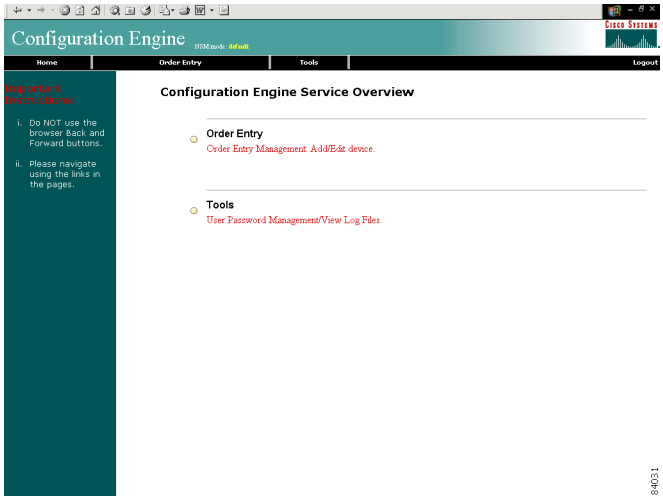


Figure 3-3 Operator Home Page



How to Log Out

To log out of the system, click the **Logout** button.

Operator-Level Operations

After logging into the Cisco CNS Configuration Engine, an Operator has access to the following functions:

- Order Entry
  - New Order
  - Edit Order

  - Subdevice Order
- Tools
  - Change Password
  - View Event Log

The order entry functions of creating a new device configuration order, editing an existing order, and managing subdevice orders are available to both Administrator and Operator.

Under tools, an Operator has access to the password editor (for changing or resetting only their own password), and the event log.

Device Configuration Order Entry

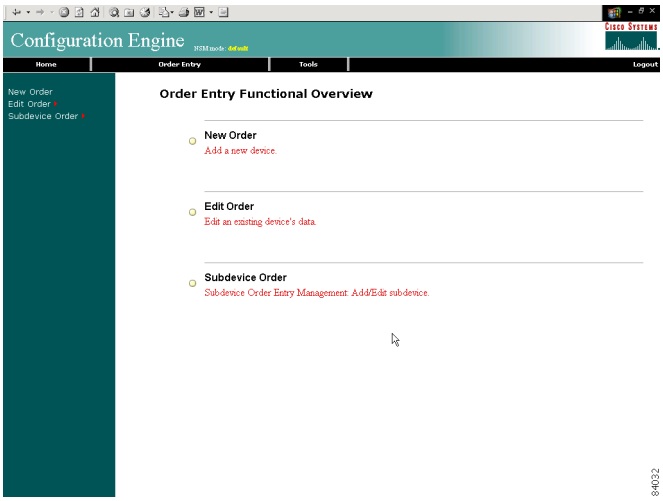
To conduct device configuration order entry operations as an Operator, follow these steps:

Step 1 From the Home page, click **Order Entry**.

The Order Entry page appears (see Figure 3-4).

Step 2 To add and edit device configuration orders, see "Device Configuration Order Entry" section on page 3-24.

Figure 3-4 Order Entry for Operator-Level User



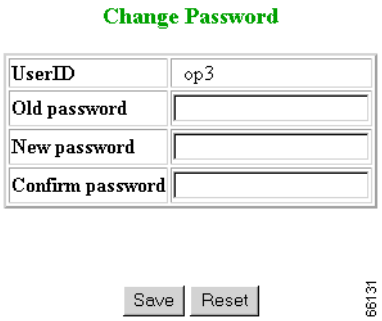
How to Change or Reset a Password at the Operator Level

To change or reset a password at the operator level, follow these steps:

Step 1 From the Home page, click **Tools**.

The password editor appears (see Figure 3-5).

Figure 3-5 Operator Password Editor



Step 2 Enter your old password.

Step 3 Enter your new password, then repeat.

Step 4 To clear your entries, click **Reset**.

Step 5 To save your edits, click **Edit**.

Step 6 To return to the main menu, click on the **Tools** tab.

How to View the Event Log

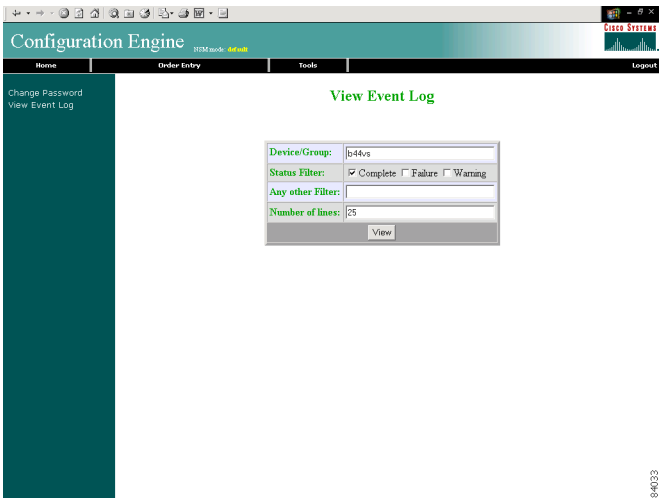
As an operator, to view the Event Log, follow these steps:

Step 1 From the Home page, click **Tools**.

Step 2 To view the Event Log, click **View Event Log**.

The Event Log control panel appears (see Figure 3-6)

Figure 3-6 Operator-Level Event Log Control Panel



Administrator-Level Operations

In Internal Directory mode, an Administrator can access all of the functions provided by the Cisco CNS Configuration Engine user interface including managing user accounts and devices.

How to Manage User Accounts

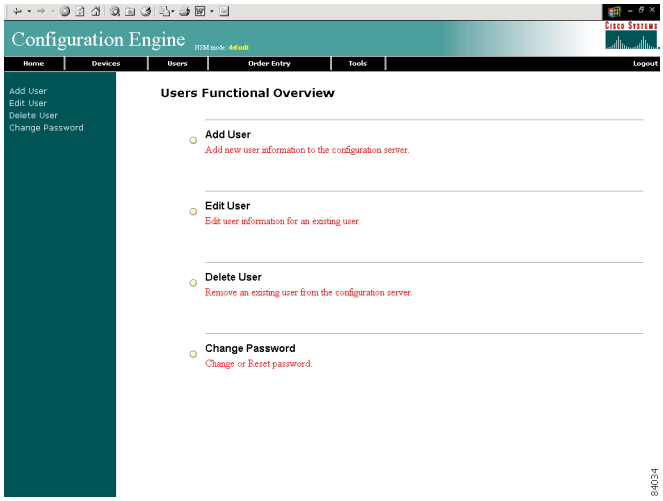
To begin managing user accounts, follow these steps:

Step 1 Log into the system (see "How to Log In and Out of the System" section on page 3-1).

Step 2 From the Home page, click on the **Users** tab.

A functional overview of the user administration options appears (see Figure 3-7).

Figure 3-7 User Administration Overview



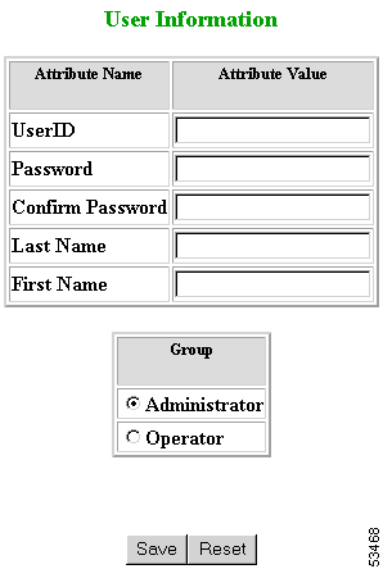
How to Add a User Account

To add a user account, follow these steps:

Step 1 From the User Administration page, click **Add User**.

The User Information dialog box appears (see Figure 3-8).

Figure 3-8 User Information



Step 2 Enter a valid value (no spaces) in the **UserID** field.

Step 3 Enter a password in the **Password** field.

Step 4 Confirm the password by entering it again in the **Confirm Password** field.

Step 5 Enter the user's last name in the **Last Name** field.

Step 6 Enter the user's first name in the **First Name** field.

Step 7 In the Group pane, click the radio button that classifies the privilege level (**Administrator**, **Operator**) of this user.

Step 8 To clear your entries, click **Reset**.

Step 9 To save your entries, click **Save**.

Step 10 To return to the main menu, click on the **User** tab.

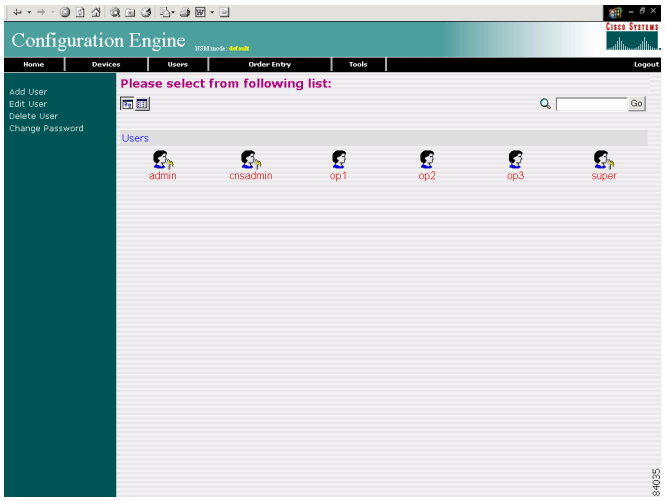
How to Edit a User Account

To edit a user account, follow these steps:

Step 1 From the User Administration page, click **Edit User**.

A list of users appears (see Figure 3-9).

Figure 3-9 User List

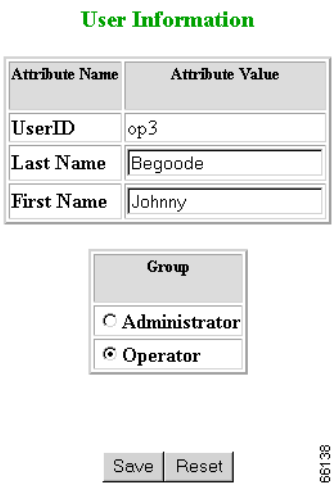


Step 2 From the User List, click on the icon for the user account you wish to edit.

Note Administrator-level users are shown with a key icon associated with the figure icon.

The User Information page appears (see Figure 3-10).

Figure 3-10 User Information



Step 3 To modify the user ID, enter a valid value (no spaces) in the **UserID** field.

Step 4 To modify the user's last name, edit the **Last Name** field.

Step 5 To modify the user's first name, edit the **First Name** field.

Step 6 To modify the user group status, click the appropriate radio button in the **Group** pane.

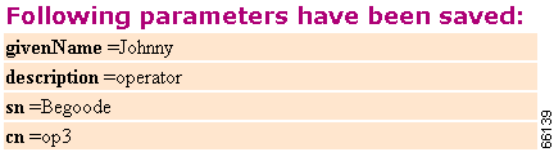
Step 7 To clear your entries, click **Reset**.

Step 8 To save your entries, click **Save**.

User information update status appears (see Figure 3-11).

Step 9 To return to the main menu, click on the **User** tab.

Figure 3-11 User Information Update Status



How to Delete a User Account

To delete a user account, follow these steps:

Step 1 From the User Administration page, click **Delete User**.

Step 2 From the user list (see Figure 3-9), click on the icon for the user account you wish to delete.

Step 3 To return to the main menu, click on the **User** tab.

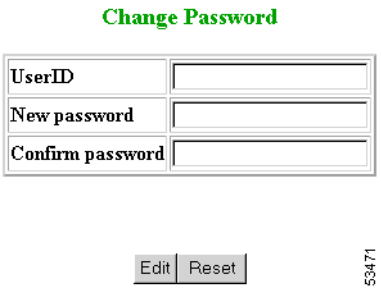
How to Change or Reset a User Password

To change or reset a user password, follow these steps:

Step 1 From the User Administration page, click **Change Password**.

The Change Password dialog box (see Figure 3-12) appears.

Figure 3-12 Change Password



Step 2 Enter the **UserID** for the user account password you want to change or reset.

Step 3 Enter the new password in the **New password** field.

Step 4 Enter the new password again in the **Confirm password** field.

Step 5 To clear your entries, click **Reset**.

Step 6 To save the new password, click **Edit**.

Step 7 To return to the main menu, click on the **Users** tab.

How to Change Account Privilege Level

To change the privilege level of a user account, follow these steps:

Step 1 From the User Administration page, click **Edit User**.

Step 2 Choose the user in question from the user list (see Figure 3-9).

The User Information page appears (see Figure 3-13).

Figure 3-13 User Information

Step 3 In the Group pane, click the radio button that classifies the privilege level (Administrator, Operator) of this user.

Step 4 To clear your entries, click **Reset**.

Step 5 To save your entries, click **Save**.

Step 6 To return to the main menu, click on the **User** tab.

How to Manage Devices

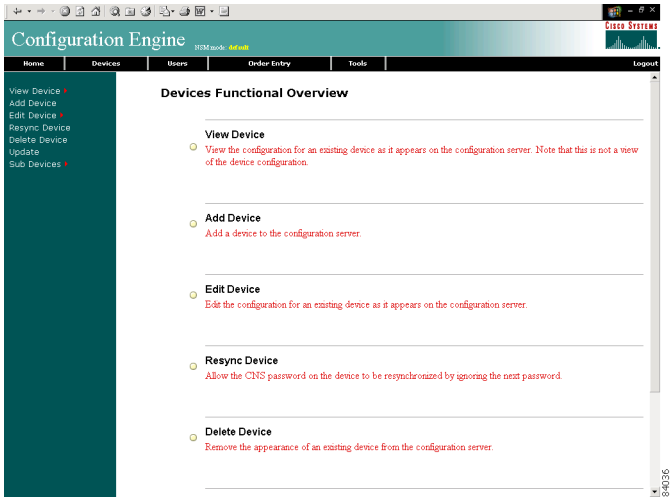
To begin managing devices, follow these steps:

Step 1 Log into the system (see "How to Log In and Out of the System" section on page 3-1).

Step 2 From the Home page, click on the **Devices** tab.

A functional overview of the device administration options appears (see Figure 3-14).

Figure 3-14 Device Administration Overview



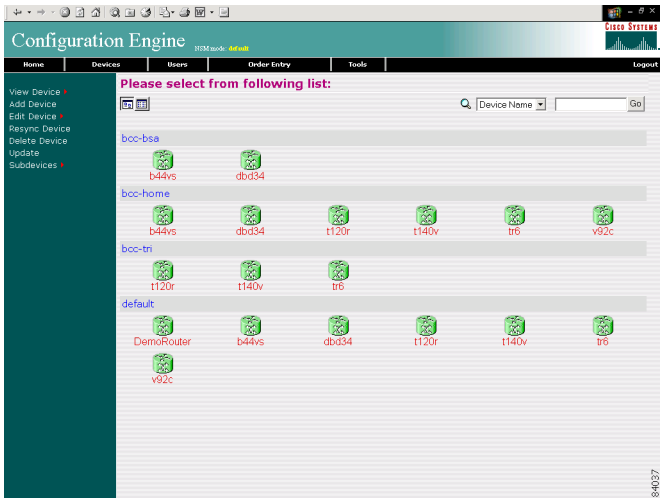
How to View Device Configuration

To view a device configuration, follow these steps:

Step 1 From the Devices Functional Overview page, click **View Device**.

The Device List page appears (see Figure 3-15).

Figure 3-15 Device List



Step 2 Click on the icon for the device configuration you wish to view.

The Configuration for that device appears.

Note The device configuration displayed is the configuration as it appears at the configuration server. It may not be the configuration running on the device.

Step 3 To return to the main menu, click on the **Devices** tab.

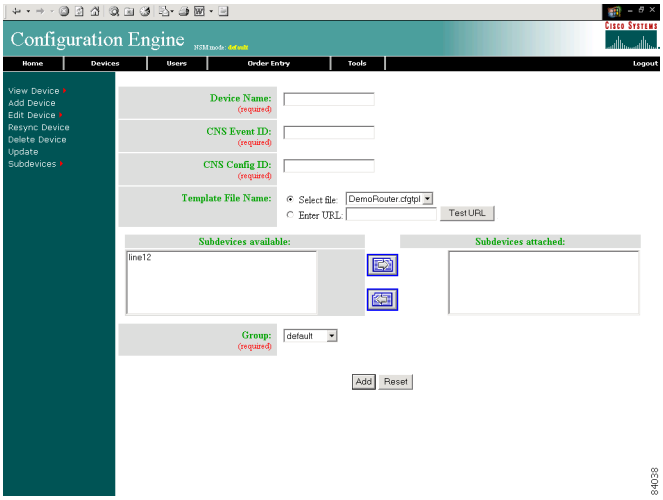
How to Add a Device

To add the logical appearance of a device to the configuration server, follow these steps:

Step 1 From the Devices Functional Overview page, click **Add Device**.

The Device Information page appears (see Figure 3-16).

Figure 3-16 Device Information Page



Step 2 Enter a valid value (no spaces) in the **Device Name** field.

Step 3 Accept the default value that appears or enter another valid value (no spaces) in the **Event ID** field.

Step 4 Accept the default value that appears or enter another valid value (no spaces) in the **Config ID** field.

The ConfigID must match the one used to manage this particular device.

Step 5 Choose a template file.

To use a template on your Cisco CNS Configuration Engine:

a. Choose **Select file**.

b. Use the pull-down menu to choose a template.

OR

To use an external template:

a. Choose **Enter URL**.

b. Enter the full URL for the server, directory, and filename where the template is stored. Currently, only **http** is supported.

c. To test access to the external template, click **Test URL**.

If the server is unavailable or the external template cannot be accessed, an error appears. You can still save this logical device, but the template is not available until you have access to the external template.

Step 6 If applicable (modular router), choose subdevices.

Step 7 Choose a group.

Tip Use the Group Manager under DAT (see "How to Add a Group" section on page 5-13) to set up groups before you add a device.

Step 8 To clear your entries, click **Reset**.

Step 9 To add this device, click **Add**.

Step 10 To return to the main menu, click on the **Devices** tab.

How to Edit a Device

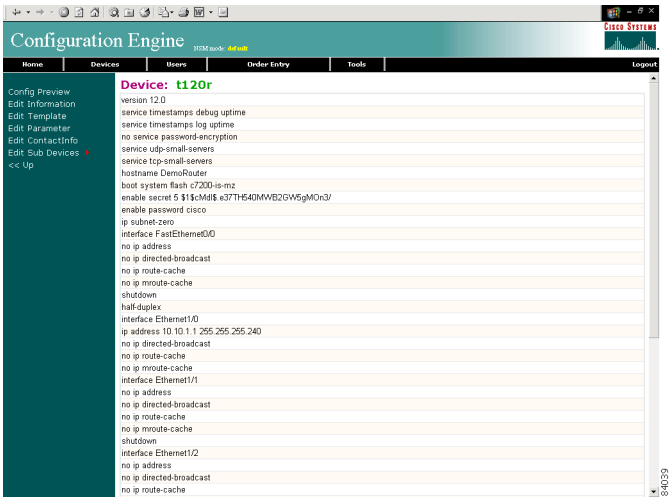
To edit information associated with a particular device, follow these steps:

Step 1 From the Devices Functional Overview page, click **Edit Device**.

Step 2 From the Device List page (see Figure 3-15), click on the icon for the device you wish to edit.

The device configuration appears with a menu of edit functions in the left pane (see Figure 3-17).

Figure 3-17 Device Configuration



Step 3 From the left pane, choose the edit function you want to use.

Step 4 To go back to the Device List page, in the left pane, click **<< Up**.

Step 5 To return to the main menu, click on the **Devices** tab.

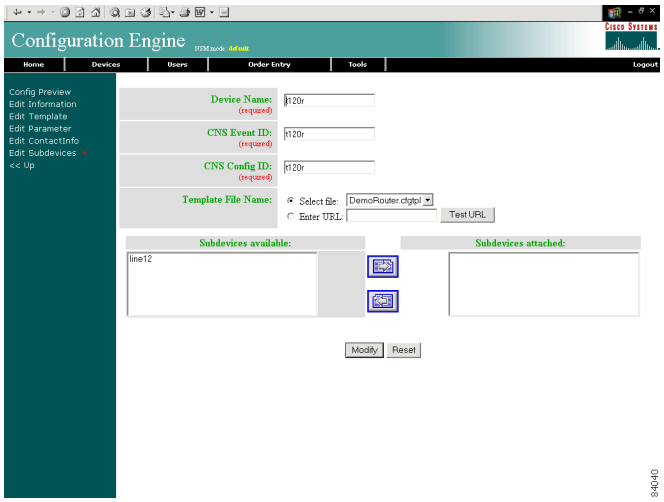
How to Edit Device Information

To edit device information, follow these steps:

Step 1 From the Edit Device page, click **Edit Information**.

The device information dialog box appears (see Figure 3-18).

Figure 3-18 Device Information Editor



Step 2 To modify the device name, enter a valid value (no spaces) in the **Device Name** field.

Step 3 To modify the EventID, enter a valid value (no spaces) in the **Event ID** field.

Step 4 To modify the ConfigID, enter a valid value (no spaces) in the **Config ID** field.

Step 5 Modify the template file as required.

Step 6 Use the Arrow buttons to modify the status of subdevices attached to this device.

Step 7 To clear your entries, click **Reset**.

Step 8 To update device information, click **Modify**.

Step 9 To return to the main menu, click on the **Devices** tab.

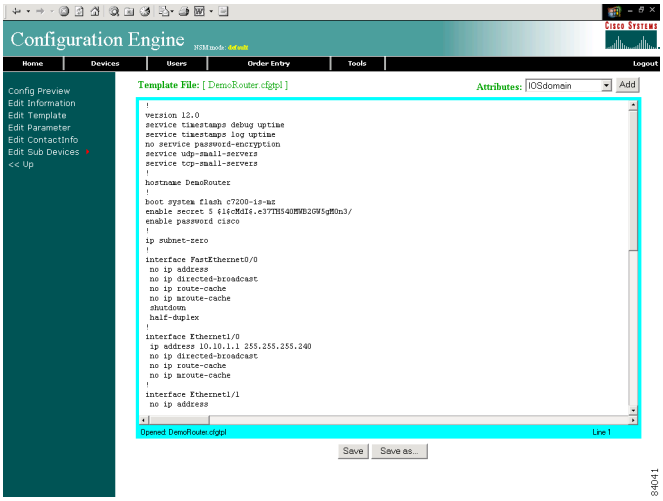
How to Edit Device Templates

To edit a device template, follow these steps:

Step 1 From the Edit Device page, click **Edit Template**.

The template editor appears (see Figure 3-19).

Figure 3-19 Template Editor



Step 2 In the **Attributes** field, click the drop-down arrow.

Step 3 Choose the attribute you wish to add to the template, then click **Add**.

Step 4 Repeat Steps 2 and 3 for all attributes you wish to add to the template file.

Step 5 Delete all unusable strings from the template file.

Step 6 Edit strings as necessary.

The default multi-line begin and end tags are **^[** and **^]** respectively. The delimiter for these tags are: ~ ! @ ^ & * - = |. Do not use # or %.

A multi-line test banner might be:

```
banner exec ^[*
    This is a Test Banner
    1. Hi
    2. Hello
    3. Test is 1234567890*
^]
```

Step 7 To save your edits, click **Save**.

Step 8 To save this version as a new template, click **Save as**.

Step 9 To return to the main menu, click on the **Devices** tab.

How to Edit Device Parameters

To edit device parameters, follow these steps:

Step 1 From the Edit Device page, click **Edit Parameter**.

The parameters editor appears.

Step 2 Edit all active lines as required.

Step 3 To save your edits, click **Save Parameters**.

Step 4 To return to the main menu, click on the **Devices** tab.

How to Edit Contact Information

To edit contact information related to the physical location of a device, follow these steps:

Step 1 From the Edit Device page, click **Edit ContactInfo**.

The contact information appears.

Step 2 Edit all active fields as required.

Step 3 To clear your entries, click **Reset**.

Step 4 To save your edits, click **Update**.

Step 5 To return the to the main menu, click on the **Devices** tab.

How to Re-synchronize a Device

To re-synchronize a device, follow these steps:

Step 1 From the Devices Functional Overview page (see Figure 3-14), click **Resync Device**.

Step 2 From the Device Selection page (see Figure 3-15), click on the icon for the device you wish to re-synchronize.

Step 3 In the confirmation window that appears, click **Ok**.

Step 4 To return to the main menu, click on the **Devices** tab.

How to Delete a Device

To delete the logical appearance of a device from the configuration server, follow these steps:

Step 1 From the Devices Functional Overview page (see Figure 3-14), click **Delete Device**.

Step 2 From the Device Selection page (see Figure 3-15), click on the icon for the device you wish to delete.

Step 3 To return to the main menu, click on the **Devices** tab.

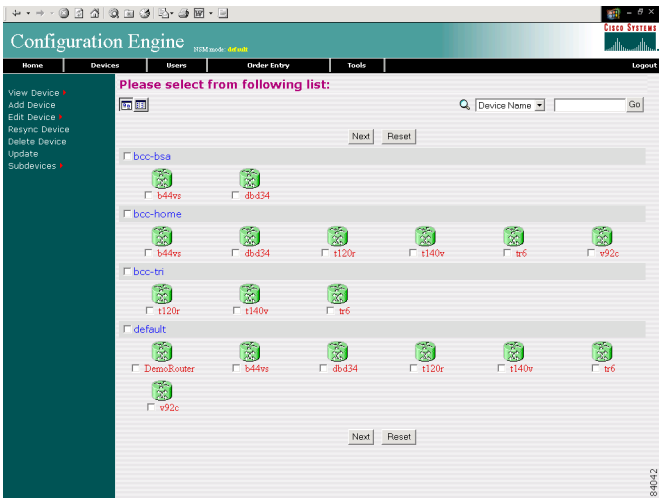
How to Update a Device Configuration

To send an updated version of the configuration to a device, follow these steps:

Step 1 From the Devices Functional Overview page, click **Update**.

The Device Update List page appears (see Figure 3-20).

Figure 3-20 Device Update List



Step 2 Click on the check box next to the icon for the device(s) or group(s) you wish to update.

Step 3 Click **Next**.

The update task dialog box appears (see Figure 3-21)

Figure 3-21 Update Task

Step 4 Choose the **Config Action** task you require.

- Write – applies the configuration without causing it to persist in NVRAM.
- Persist – applies the change and causes it to persists in NVRAM.

Step 5 If required, check the **Syntax Check** check-box.

Step 6 Click **Update Device via Event**.

Step 7 To return to the main menu, click on the **Devices** tab.

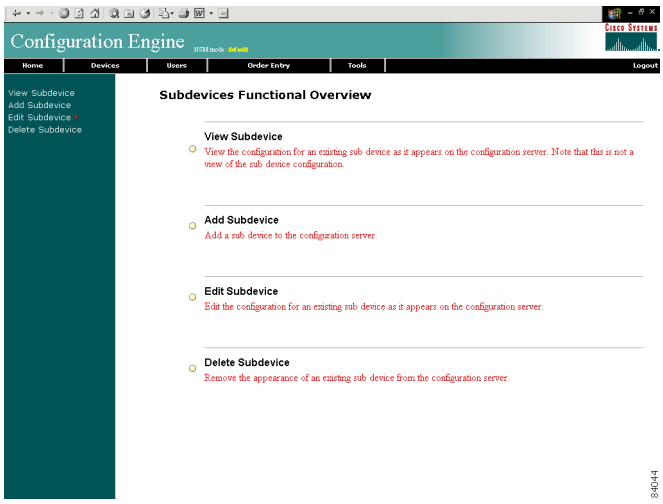
Working with Subdevices

A subdevice is a configuration object for network modules in a modular router. When working with subdevices, it is very important to pick the correct type of interface card or module.

To work with subdevices, from the Devices Functional Overview page, click **Subdevices**.

The Subdevices Functional Overview page appears (see Figure 3-22).

Figure 3-22 Subdevices



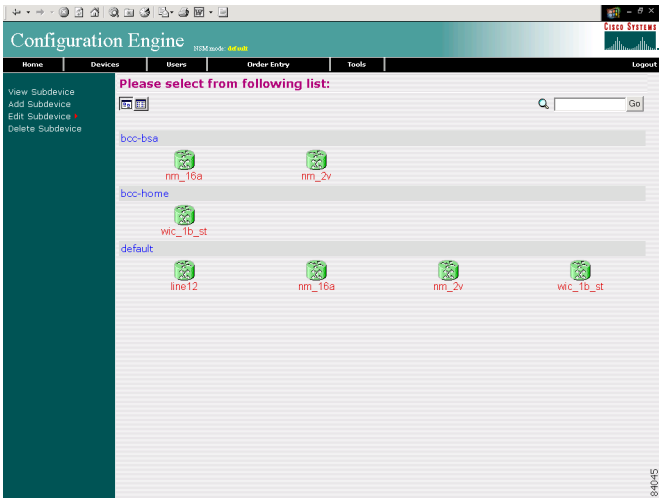
How to View Subdevices

To view subdevices, follow these steps:

Step 1 From the Subdevices Functional Overview page, select **View Subdevice**.

The list of subdevices appears (see Figure 3-23).

Figure 3-23 Subdevice List



Step 2 Click on the icon for the device configuration you wish to view.

The Configuration for that device appears.

Note The subdevice configuration displayed is the configuration as it appears at the configuration server. It may not be the configuration running on the subdevice.

Step 3 To return to the main menu, click on the **Devices** tab.

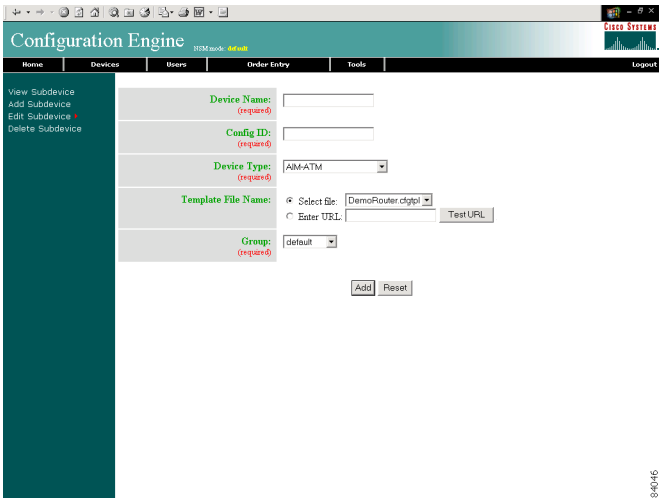
How to Add Subdevices

To add the logical appearance of a subdevice to the configuration server, follow these steps:

Step 1 From the Subdevices Functional Overview page, click **Add Subdevice**.

The Subdevice Information page appears (see Figure 3-24).

Figure 3-24 Subdevice Information Page



Step 2 Enter a valid value (no spaces) in the **Device Name** field.

Step 3 Accept the default value that appears or enter another valid value (no spaces) in the **Config ID** field.

Step 4 From the **Device Type** pull-down menu, choose the type of device to which this subdevice is associated.

Device type is the name of the network module as defined in the Cisco product catalog (price list).

Step 5 Choose a template file.

To use a template on your Cisco CNS Configuration Engine:

a. Choose **Select file**.

b. Use the pull-down menu to choose a template.

OR

To use an external template:

a. Choose **Enter URL**.

b. Enter the full URL for the server, directory, and filename where the template is stored. Currently, only **http** is supported.

c. To test access to the external template, click **Test URL**.

If the server is unavailable or the external template cannot be accessed, an error appears. You can still save this logical subdevice, but the template is not available until you have access to the external template.

Step 6 Choose a group.

Step 7 To clear your entries, click **Reset**.

Step 8 To add this device, click **Add**.

Step 9 To return to the main menu, click on the **Devices** tab.

How to Edit Subdevices

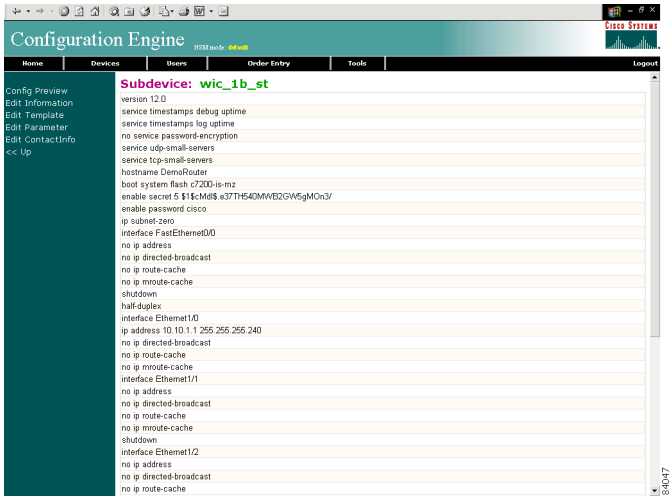
To edit information associated with a particular subdevice, follow these steps:

Step 1 From the Subdevices Functional Overview page, click **Edit Subdevice**.

Step 2 From the Subdevice List page (see Figure 3-23), click on the icon for the subdevice you wish to edit.

The subdevice configuration appears with a menu of edit functions in the left pane (see Figure 3-25).

Figure 3-25 Subdevice Configuration



Step 3 From the left pane, choose the edit function you want to use.

Step 4 To go back to the Device List page, in the left pane, click **<< Up**.

Step 5 To return to the main menu, click on the **Devices** tab.

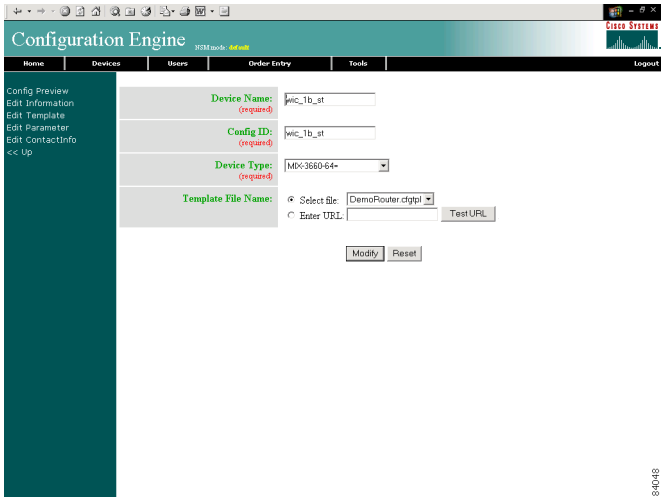
How to Edit Subdevice Information

To edit subdevice information, follow these steps:

Step 1 From the Edit Subdevice page, click **Edit Information**.

The subdevice information editor dialog box appears (see Figure 3-26).

Figure 3-26 Device Information Editor



Step 2 To modify the device name, enter a valid value (no spaces) in the **Device Name** field.

Step 3 To modify the ConfigID, enter a valid value (no spaces) in the **Config ID** field.

Step 4 To modify the device type, choose the appropriate device.

Step 5 To modify the template filename, choose a new template filename.

Step 6 Modify the template file as required.

Step 7 Use the Arrow buttons to modify the status of subdevices attached to this device.

Step 8 To clear your entries, click **Reset**.

Step 9 To update device information, click **Modify**.

Step 10 To return to the main menu, click on the **Devices** tab.

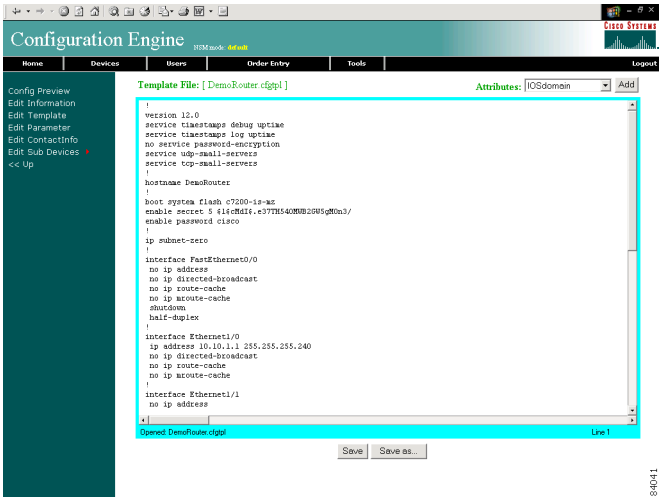
How to Edit Subdevice Template

To edit a device template, follow these steps:

Step 1 From the Edit Subdevice page, click **Edit Template**.

The template editor appears (see Figure 3-27).

Figure 3-27 Template Editor



Step 2 In the **Attributes** field, click the drop-down arrow.

Step 3 Choose the attribute you wish to add to the template, then click **Add**.

Step 4 Repeat Steps 2 and 3 for all attributes you wish to add to the template file.

Step 5 Delete all unusable strings from the template file.

Step 6 Edit strings as necessary.

The default multi-line begin and end tags are **^[** and **^]** respectively. The delimiter for these tags are: ~ ! @ ^ & * - = |. Do not use # or %.

A multi-line test banner might be:

```
banner exec ^[*
    This is a Test Banner
    1. Hi
    2. Hello
    3. Test is 1234567890*
^]
```

Step 7 To save your edits, click **Save**.

Step 8 To save this version as a new template, click **Save as**.

Step 9 To return to the main menu, click on the **Devices** tab.

How to Edit Subdevice Parameters

To edit subdevice parameters, follow these steps:

Step 1 From the Edit Subdevice page, click **Edit Parameter**.

The parameters editor appears.

Step 2 Modify parameters values as required.

Step 3 To save your edits, click **Save Parameters**.

Step 4 To return to the main menu, click on the **Devices** tab.

How to Edit Contact Information

To edit contact information related to the physical location of a device, follow these steps:

Step 1 From the Edit Device page, click **Edit ContactInfo**.

The contact information appears.

Step 2 Edit all active fields as required.

Step 3 To clear your entries, click **Reset**.

Step 4 To save your edits, click **Update**.

Step 5 To return the to the main menu, click on the **Devices** tab.

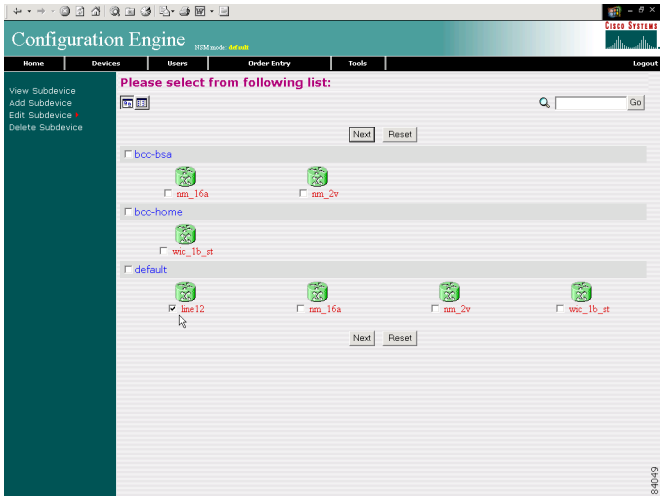
How to Delete Subdevices

To delete the logical appearance of a subdevice from the configuration server, follow these steps:

Step 1 From the Subdevices Functional Overview page (see Figure 3-22), click **Delete Device**.

The Subdevice Selection list appears (see Figure 3-28).

Figure 3-28 Subdevice Selection List



Step 2 From the Subdevice Selection list, check the subdevices you wish to delete.

Step 3 To proceed, click **Next**.

A status page appears indicating that the subdevice has been selected for deletion (see Figure 3-29).

Figure 3-29 Delete Subdevice

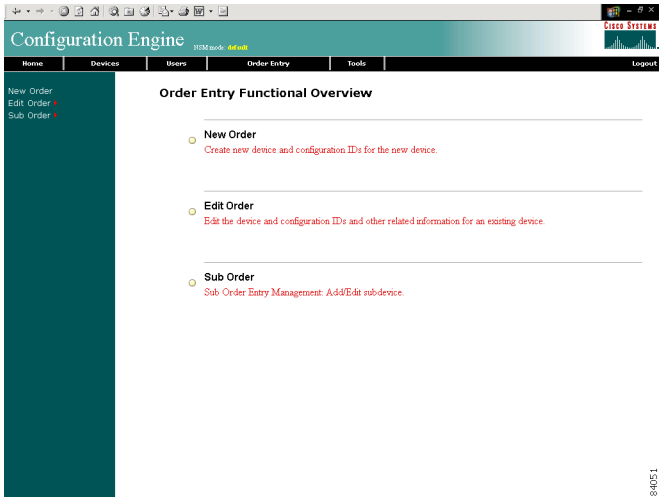
Step 4 To delete this subdevice, click **Delete**.

Step 5 To return to the main menu, click on the **Devices** tab.

Device Configuration Order Entry

To conduct device configuration order entry tasks, from the Home page, click the **Order Entry** tab. The Order Entry page appears (see Figure 3-30).

Figure 3-30 Device Configuration Order Entry



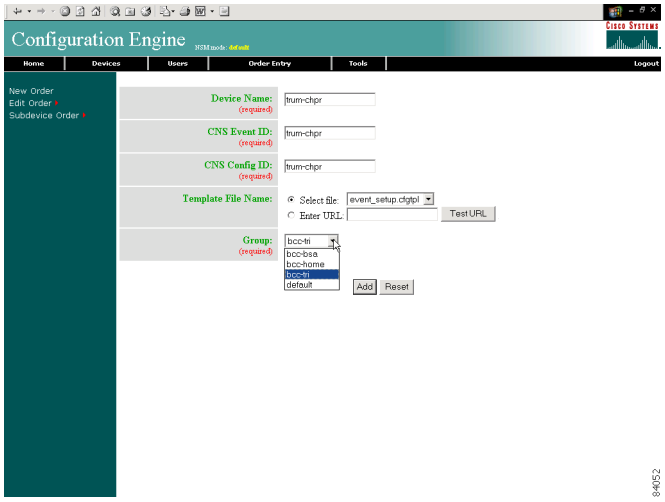
How to Enter an Order for a New Device Configuration

To enter a new device configuration order, follow these steps:

Step 1 From the Order Entry Functional Overview page, click **New Order**.

The order information dialog box appears (see Figure 3-31).

Figure 3-31 New Device Configuration Order



Step 2 Enter a valid value (no spaces) in the **Device Name** field.

Step 3 Enter a valid value (no spaces) in the **Event ID** field.

Step 4 Enter a valid value (no spaces) in the **Config ID** field.

Step 5 Choose a template file.

To use a template on your Cisco CNS Configuration Engine:

a. Choose **Select file**.

b. Use the pull-down menu to choose a template.

OR

To use an external template:

a. Choose **Enter URL**.

b. Enter the full URL for the server, directory, and filename where the template is stored. Currently, only **http** is supported.

c. To test access to the external template, click **Test URL**.

If the server is unavailable or the external template cannot be accessed, an error appears. You can still save this logical device, but the template is not available until you have access to the external template.

Step 6 Choose a group.

Tip Use the Group Manager under DAT (see "How to Add a Group" section on page 5-13) to set up groups before you add a device.

Step 7 To clear your entries, click **Reset**.

Step 8 To add this device, click **Add**.

Step 9 To return to the main menu, click on the **Order Entry** tab.

Editing an Existing Configuration Order

To edit an existing configuration order, follow these steps:

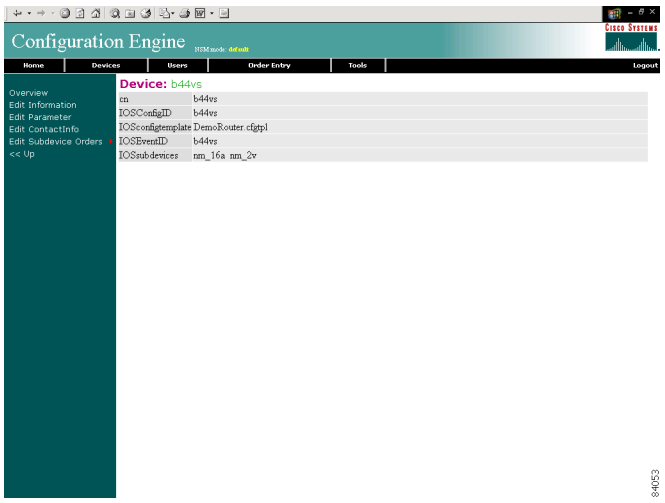
Step 1 From the Order Entry Functional Overview page, click Edit Order.

The Device List page appears (see Figure 3-15).

Step 2 Click on the icon for the device configuration order you wish to edit.

The device configuration order editor appears (see Figure 3-32) with a menu of edit functions in the left pane.

Figure 3-32 Device Configuration Order Editor



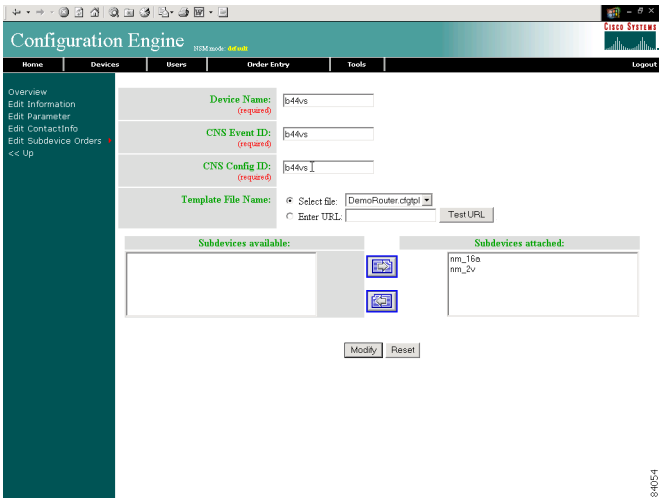
How to Edit Existing Order Information

To edit existing order information, follow these steps:

Step 1 From the Order Editor page, click Edit Information.

The order information dialog box appears (see Figure 3-33).

Figure 3-33 Order Information Editor



Step 2 To modify the device name, enter a valid value (no spaces) in the **Device Name** field.

Step 3 To modify the EventID, enter a valid value (no spaces) in the **Event ID** field.

Step 4 To modify the ConfigID, enter a valid value (no spaces) in the **Config ID** field.

Step 5 To modify the template filename, choose a new template filename.

Step 6 Modify the template file as required.

Step 7 To clear your entries, click **Reset**.

Step 8 To save your edits, click **Modify**.

Step 9 To return to the main menu, click on the **Order Entry** tab.

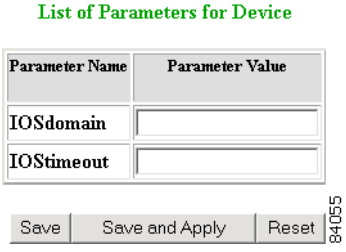
How to Edit Parameters

To edit parameter for an order, follow these steps:

Step 1 From the Order Editor page, click **Edit Parameters**.

The parameter editor appears (see Figure 3-34).

Figure 3-34 Parameter Editor



Step 2 Edit the value of the **IOSConfigID** field.

When a devices is added, the **IOSDeviceID** field is set to device name.

Step 3 To clear your entry, click **Reset**.

Step 4 To save your changes, click **Save**.

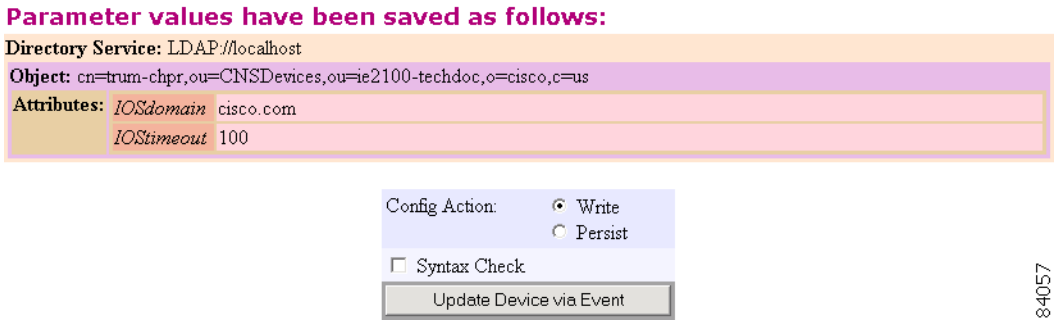
A parameter save status page appears (see Figure 3-35).

Figure 3-35 Parameter Save Status

Step 5 To save and apply your edits to the existing order, click **Save and Apply**.

A parameter save and apply status page appears (see Figure 3-36).

Figure 3-36 Parameter Save and Apply Status



Step 6 To return to the main menu, click on the **Order Entry** tab.

How to Edit Contact Information

To edit contact information for an existing order, follow these steps:

Step 1 From the Order Editor page, click **Edit ContactInfo**.

The contact information appears (see Figure 3-37).

Figure 3-37 Contact Information (Partial View)

Device Owner Information		Customer Support Information	
Firstname	Jim	Firstname	Jack
Lastname	Smith	Lastname	Fast
Street	303 Alvin Rd	Street	303 Alvin Rd
City	Hingham	City	Hingham
State	MA	State	MA
Zip	01234	Zip	01234
Country	USA	Country	USA
OfficePhone	617-555-8765	OfficePhone	617-555-0667
HomePhone	617-555-3847	HomePhone	617-555-9348
Cell	617-555-2763	Cell	617-555-2847
Pager	617-555-4698	Pager	617-555-5380
Email	jims@coms.com	Email	jfast@coms.com

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Step 2 Edit all active fields as required.

Step 3 To clear your entries, click **Reset**.

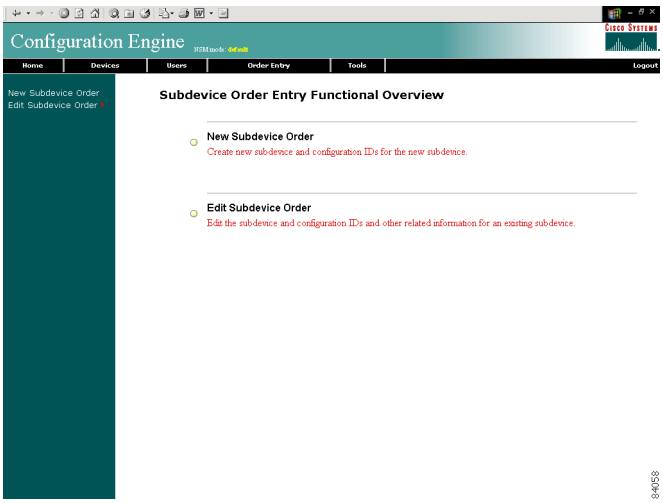
Step 4 To save your edits, click **Update**.

Step 5 To return the to the main menu, click on the **Order Entry** tab.

Managing Subdevice Configuration Orders

To enter new subdevice configuration orders or edit existing ones, from the Order Entry page, click **Subdevice Order**. The subdevice order entry page appears (see Figure 3-38).

Figure 3-38 Subdevice Order Entry



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How to Enter an Order for a New Subdevice Configuration

To enter an order for a new subdevice configuration, follow these steps:

Step 1 From the Subdevice Order page, click **New Subdevice Order**.

The subdevice information page appears (see Figure 3-24).

Step 2 Enter a valid value (no spaces) in the **Device Name** field.

Step 3 Accept the default value that appears or enter another valid value (no spaces) in the **Config ID** field.

Step 4 From the **Device Type** pull-down menu, choose the type of device to which this subdevice is associated.

Step 5 Choose a template file.

To use a template on your Cisco CNS Configuration Engine:

a. Choose **Select file**.

b. Use the pull-down menu to choose a template.

OR

To use an external template:

a. Choose **Enter URL**.

b. Enter the full URL for the server, directory, and filename where the template is stored. Currently, only **http** is supported.

c. To test access to the external template, click **Test URL**.

If the server is unavailable or the external template cannot be accessed, an error appears. You can still save this logical subdevice, but the template is not available until you have access to the external template.

Step 6 Choose a group.

Step 7 To clear your entries, click **Reset**.

Step 8 To add this device, click **Add**.

Step 9 To return to the main menu, click on the **Devices** tab.

How to Edit an Existing Order for a Subdevice Configuration

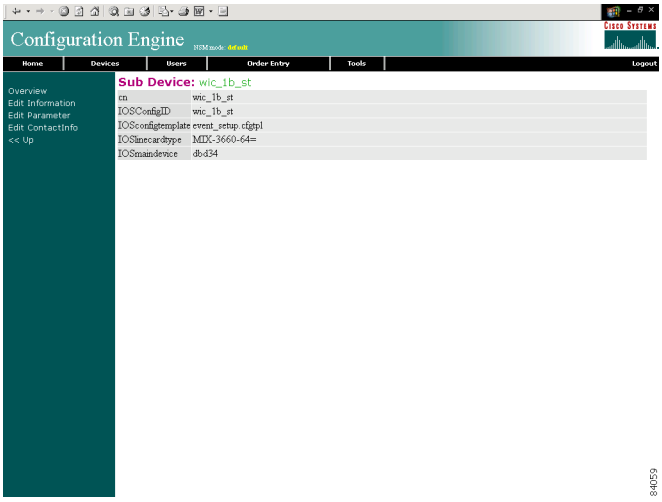
To edit an existing order for a new subdevice configuration, follow these steps:

Step 1 From the Subdevice Order page, click **Edit Subdevice Order**.

Step 2 From the Subdevice List page (see Figure 3-23), click on the icon for the subdevice you wish to edit.

The subdevice configuration appears with a menu of edit functions in the left pane (see Figure 3-39).

Figure 3-39 Edit Subdevice Order



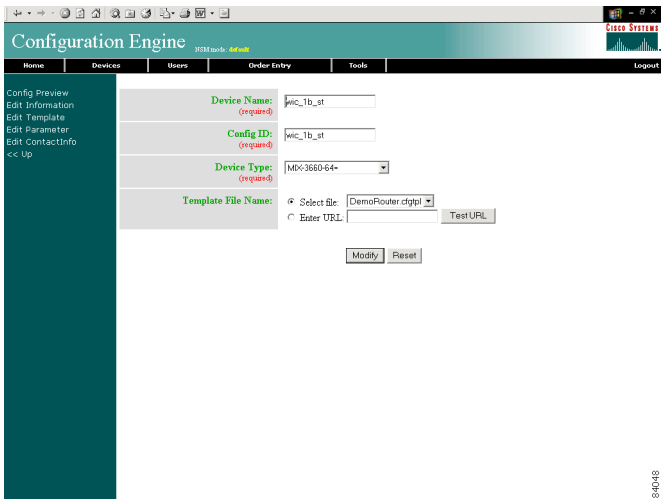
How to Edit Subdevice Information

To edit subdevice information, follow these steps:

Step 1 From the Edit Subdevice page, click **Edit Information**.

The subdevice information editor dialog box appears (see Figure 3-40).

Figure 3-40 Device Information Editor



Step 2 To modify the device name, enter a valid value (no spaces) in the **Device Name** field.

Step 3 To modify the ConfigID, enter a valid value (no spaces) in the **Config ID** field.

Step 4 To modify the device type, choose the appropriate device.

Step 5 To modify the template filename, choose a new template filename.

Step 6 Modify the template file as required.

Step 7 Use the Arrow buttons to modify the status of subdevices attached to this device.

Step 8 To clear your entries, click **Reset**.

Step 9 To update device information, click **Modify**.

Step 10 To return to the main menu, click on the **Devices** tab.

How to Edit Subdevice Parameters

To edit subdevice parameters, follow these steps:

Step 1 From the Edit Subdevice page, click **Edit Parameter**.

The parameters editor appears.

Step 2 Modify parameters values as required.

Step 3 To save your edits, click **Save Parameters**.

Step 4 To return to the main menu, click on the **Devices** tab.

How to Edit Contact Information

To edit contact information related to the physical location of a device, follow these steps:

Step 1 From the Edit Device page, click **Edit ContactInfo**.

The contact information appears.

Step 2 Edit all active fields as required.

Step 3 To clear your entries, click **Reset**.

Step 4 To save your edits, click **Update**.

Step 5 To return the to the main menu, click on the **Devices** tab.

Management Tools

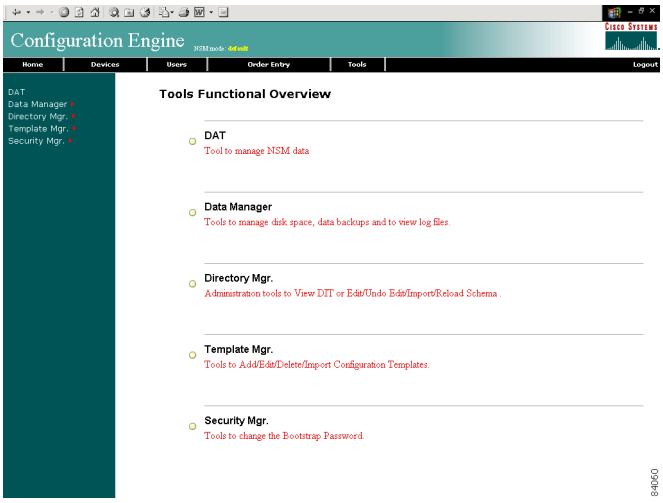
To use the management tools, from the Home page, click on the Tools tab.

The Tools page appears (see Figure 3-41).

From the Tools page, you can access the following management tools:

- DAT
- Data Manager
- Directory Manager
- Template Manager

Figure 3-41 Management Tools



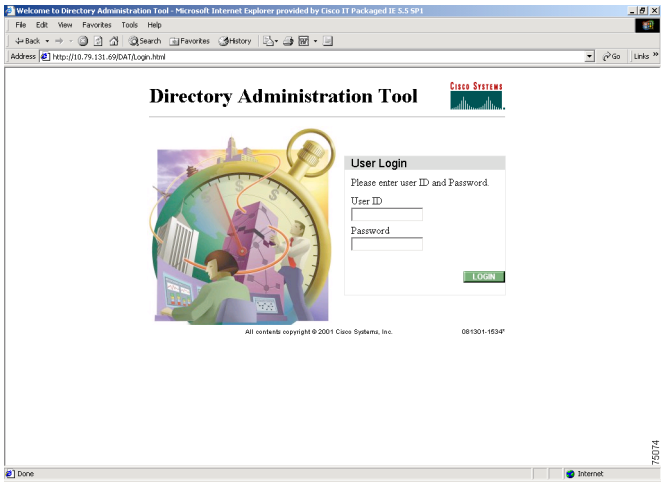
How to Use DAT

To connect to the user interface for the Directory Administration Tool (DAT), follow these steps:

Step 1 From the Tools main menu, click **DAT**.

The login window appears (see Figure 3-42).

Figure 3-42 Directory Administration Tool Login Window



Step 2 Enter your **User ID**.

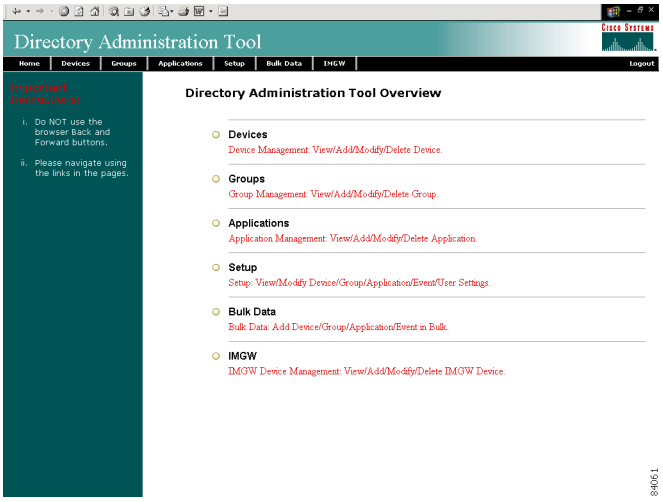
This is the LDAP proxy user name for the Cisco CNS Configuration Engine administrative account that you entered during **Setup**.

Step 3 Enter your LDAP proxy password.

Step 4 Click **LOGIN**.

The Directory Administration Tool Overview page appears (see Figure 3-43).

Figure 3-43 DAT Home Page



Step 5 From here, go to Chapter 5, "Directory Administration Tool" and follow the procedures for the tasks you want to run.

Managing Data

The data manager tools allows you to:

- Schedule data backups
- View various logs files

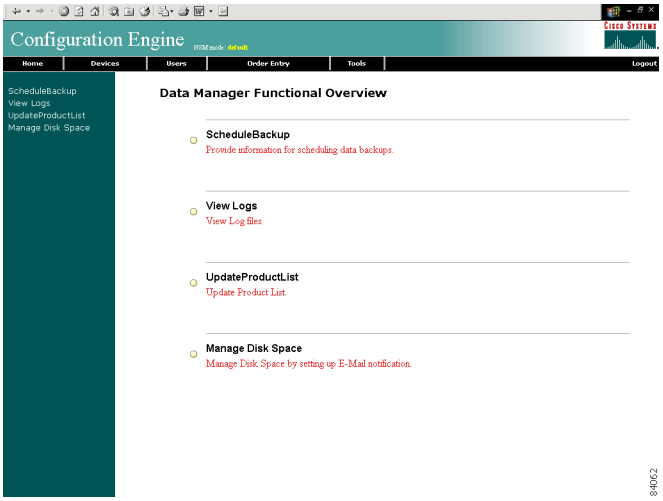
How to Schedule Data Backup

To schedule a data backup, follow these steps:

Step 1 From the Tools page, click **Data Manager**.

The Data Manager page appears (see Figure 3-44).

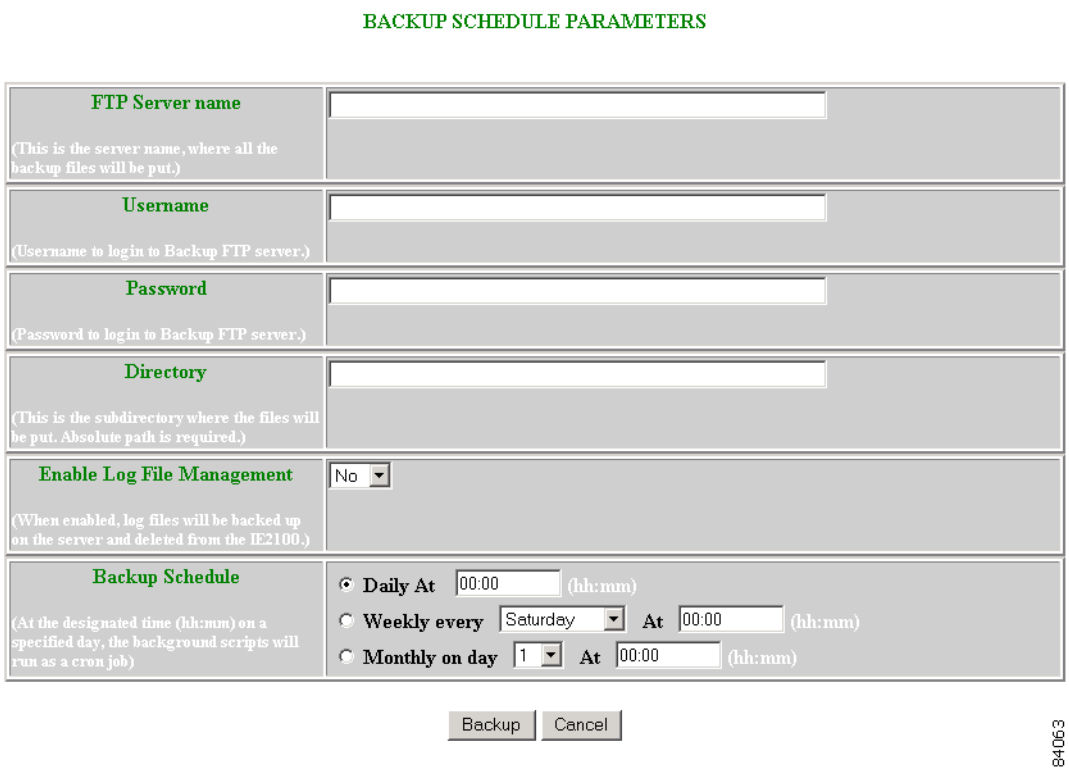
Figure 3-44 Data Manager



Step 2 Click **ScheduleBackup**.

The backup information dialog box appears (see Figure 3-45).

Figure 3-45 Backup Schedule Parameters



Step 3 To specify where you want the backup data to be stored, enter the FTP server name in the **FTP Server Name** field.

Step 4 To specify the username to log into the FTP server, enter a valid username in the **Username** field.

Step 5 To specify the password to use to log into the FTP server, enter a valid value in the **Password** field.

Step 6 To specify the subdirectory where the data file is put, enter the absolute path in the **Directory** field.

Step 7 Choose whether to **Enable Log File Management**.

Step 8 To specify the backup schedule, complete the fields in the **Backup Schedule** pane.

Note The time base for the CNS 2100 Series system should be set to Coordinated Universal Time (UTC).

Step 9 To cancel the backup operation, click **Cancel**.

Step 10 To start the backup operation, click **Backup**.

Step 11 To return to the main menu, click on the **Tools** tab.

For more information about backup and restore, see "Backup and Restore" section on page 3-54.

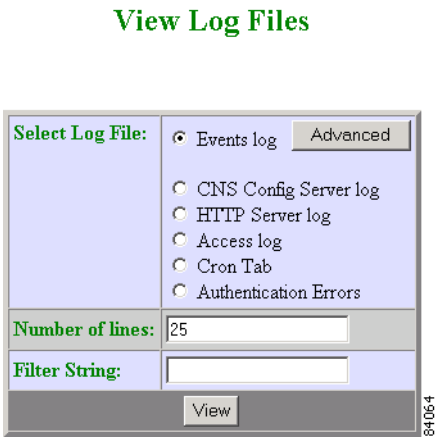
How to View Log Files

To view various log files, follow these steps:

Step 1 From the Group Manager page, click **View Logs**.

The View Log Files dialog box appears (see Figure 3-46).

Figure 3-46 Log File Viewer



Step 2 Choose the log file you want to view.

Step 3 Set the number lines you want to display.

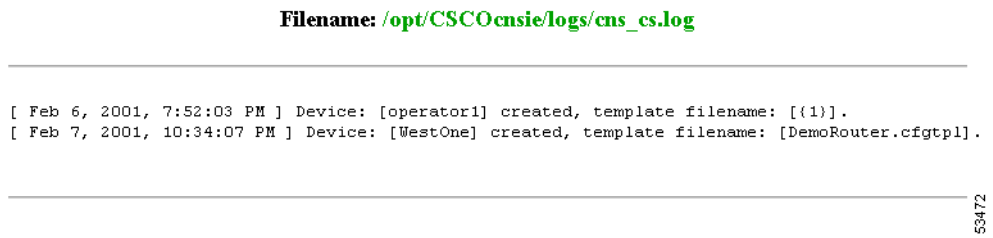
Step 4 To limit the report to display only specific entries, set a case-sensitive keyword filter, or leave blank.

Step 5 Click **View**.

A report displays (for an example see Figure 3-47).

Step 6 To return to the main menu, click on the **Tools** tab.

Figure 3-47 Log File



How to Update Product List

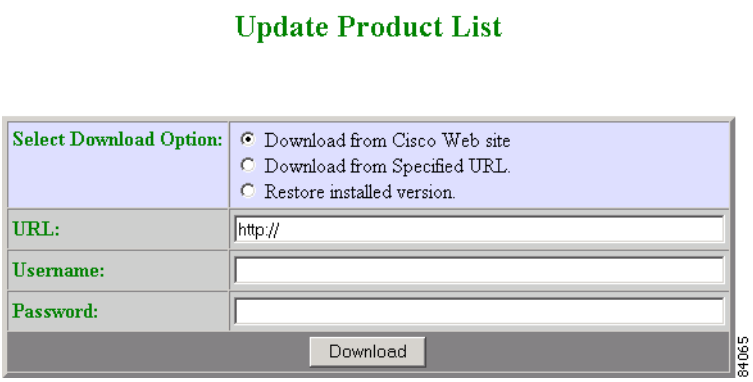
The product list is a mapping between product name of the network modules as specified in the pricing list and the numeric identification number stored in EPROM. As new products are added, this list grows and hence the need for the Cisco CNS Configuration Engine to update this list whenever new products are added. This list can be downloaded from the Cisco web site at: http://www.cisco.com.

To update the product list, follow these steps:

Step 1 From the Group Manager page, click **Update Product List**.

The Update Product List dialog box appears (see Figure 3-48).

Figure 3-48 Update Product List



Step 2 Select the appropriate download option.

Step 3 Enter the target URL.

Step 4 Enter your username and password.

Step 5 To download the product list, click **Download**.

Step 6 To return to the main menu, click on the **Tools** tab.

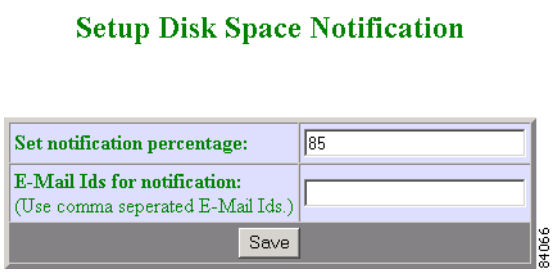
How to Manage Disk Space

To setup disk space e-mail notification of disk space usage, follow these steps:

Step 1 From the Group Manager page, click **Manage Disk Space**.

The Setup Disk Space Notification dialog box appears (see Figure 3-49).

Figure 3-49 Disk Space Notification



Step 2 Set the notification percentage to the value that triggers an e-mail notification.

Step 3 Set the appropriate e-mail address for notification e-mail.

Step 4 To save these entries, click **Save**.

Step 5 To return to the main menu, click on the **Tools** tab.

How to Manage Directory Content

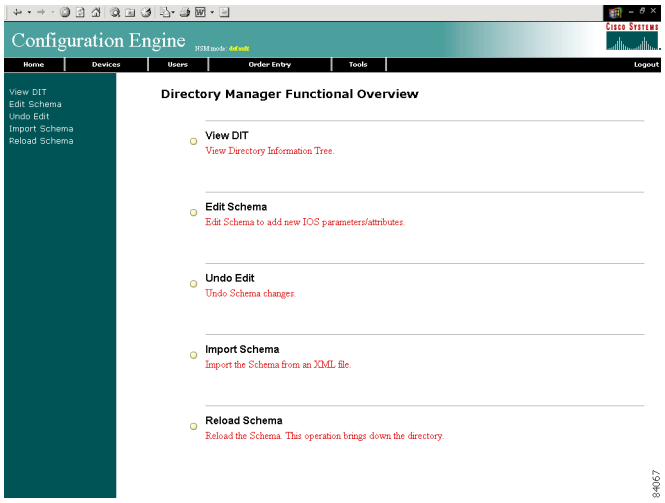
With the directory manager you can:

- View the directory information tree
- Edit the schema
- Import a schema from an XML file
- Reload the schema

To use the directory manager tool, click **Directory Mgr**.

The Directory Manager page appears (see Figure 3-50).

Figure 3-50 Directory Manager



How to View the Directory Information Tree

To view the directory information tree (DIT), click **View DIT**. The DIT appears (see Figure 3-51).

Figure 3-51 DIT (Partial View)

Output

```
Country /c=us

Organization /c=us/o=cisco

OrganizationalUnit /c=us/o=cisco/ou=lizard

Person /c=us/o=cisco/ou=lizard/cn=cnsadmin
  GivenName                          "Jeff"
  UserPassword                       "********"
  Description                        "administrator"
  Surname                            "Bray"

Person /c=us/o=cisco/ou=lizard/cn=dcdadmin
  UserPassword                       "********"
  Surname                            ""

Person /c=us/o=cisco/ou=lizard/cn=operator1
  GivenName                          "Go"
  UserPassword                       "********"
  Description                        "operator"
  Surname                            "Fast"

OrganizationalUnit /c=us/o=cisco/ou=lizard/ou=IOSConfigs

IOSConfigClass /c=us/o=cisco/ou=lizard/ou=IOSConfigs/cn=DemoRouter
  IOShostname                        "DemoRouter"
  IOSDeviceID                        "DemoRouter"
  IOSpassword                        "DemoRouter"
  IOSipaddress                       "10.10.1.1"
```

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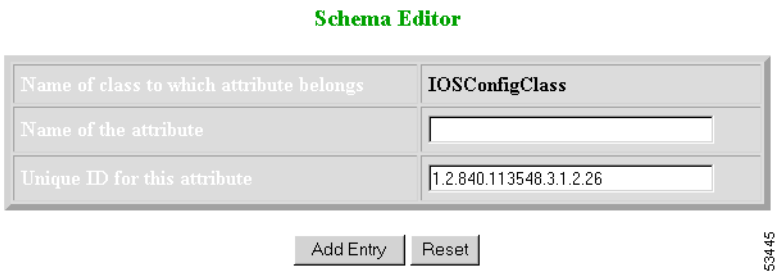
How to Edit the Schema

To edit the schema, follow these steps:

Step 1 From the Directory Manager page, click **Edit Schema**.

The schema editor appears (see Figure 3-52).

Figure 3-52 Schema Editor



Step 2 Enter the name of the new attribute in the **Name of the attribute** field.

Step 3 Accept or modify the **Unique ID** for this attribute.

Step 4 To clear your entries, click **Reset**.

Step 5 To add this attribute to the schema, click **Add Entry**.

Step 6 To return to the main menu, click on the **Tools** tab.

How to Undo Schema Edit

You can undo the last schema update and revert to the previous schema by clicking **Undo Edit** on the Directory Manager page.

How to Import Schema

You can import a schema accessible from your computer. However, the file must be in XML format and conform to the definitions specified in the document type definition (DTD) file shown here:

```
<!-- DTD for DAML             -->
<!-- Last updated: 2000-10-03 -->

<!ELEMENT daml (schema)>

<!-- SCHEMA -->
<!ELEMENT schema (class+,attribute-type+,link*)>

<!-- element types common to class and attribute-type -->

<!ELEMENT class (auxclass*,attribute+)>
<!ATTLIST class
  name      (#PCDATA)    #REQUIRED
  id        ID           #IMPLIED
  superior  IDREF    #IMPLIED
  type      (structural|abstract|auxiliary)  #REQUIRED
  description? #IMPLIED
```

```
>

<!ELEMENT auxclass EMPTY>
<!ATTLIST auxclass
  ref  IDREF        #REQUIRED
>

<!ELEMENT attribute EMPTY>
<!ATTLIST attribute
  ref       IDREF  #REQUIRED
  required  (true|false)  #REQUIRED
>

<!ELEMENT attribute-type EMPTY>
<!ATTLIST attribute-type
  name              (#PCDATA) #REQUIRED
  id                ID        #REQUIRED
  single-value      (true|false) "false"
  syntax            (string|integer|boolean|binary|key) "string"
>

<!ELEMENT link EMPTY>
<!ATTLIST link
  fromclass     IDREF         #REQUIRED
  fromattr      IDREF         #REQUIRED
  toclass       IDREF         #REQUIRED
  toattr        IDREF         #REQUIRED
>
```

For example, a valid schema would look like:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE dsml SYSTEM "dsml.dtd">
<dsml complete="true">
  <directory-schema>
   <attribute-type id="IOSe1ipaddress" single-value="true" obsolete="false"
user-modification="true">
     <name>IOSe1ipaddress</name>
     <object-identifier>1.2.840.113548.3.1.2.20</object-identifier>
     <syntax>string</syntax>
   </attribute-type>
   <class id="IOSConfigClass" superior="top" type="structural" obsolete="false">
     <name>IOSConfigClass</name>
     <object-identifier>1.2.840.113548.3.2.2.1</object-identifier>
     <attribute ref="1.2.840.113548.3.1.2.20" required="false"/>
   </class>
  </directory-schema>
</dsml>
```

To import a schema from an XML file accessible from your computer, follow these steps:

Step 1 From the Directory Manager page, click **Import Schema**.

The import schema dialog box appears (see Figure 3-53).

Figure 3-53 Import Schema

Step 2 Enter the filename of the schema you want to import in the **Schema Filename** field.

Use the browse function to locate the file, if needed.

Step 3 To clear your entries, click **Reset**.

Step 4 To import the file, click **Import**.

Step 5 To return to the main menu, click on the **Tools** tab.

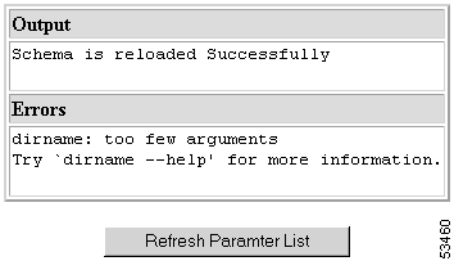
How to Reload the Schema

To reload the schema, follow these steps:

Step 1 From the Directory Manager page, click **ReloadSchema**.

The reload operation runs and a report displays (see Figure 3-54).

Figure 3-54 Reload Schema



Step 2 To refresh the parameters, click **Refresh Parameter List**.

Step 3 To return to the main menu, click on the **Tools** tab.

Templates and Template Management

When creating a template, it is possible to specify variables that will be contextually substituted. Many of these variables are available in the drop-down menu in the Template Editor (see Figure 3-58). It is also possible to create these files offline without the Template Editor and still use these variables.

The basic format of a template file is simply the text of the configuration to be downloaded to your device (see "Sample Template" section on page 3-43). However, you can put variable substitutions of the following form (for example, the variable name could be *iosipaddress*):

```
Internal directory mode:
   ${LDAP://this:attrName=iosipaddress}
```

```
External directory mode:
   ${LDAP://10.1.2.3/cn=Device1,ou=CNSDevices,o=cisco,c=us:attrName=iosipaddress}
```

It is possible to create segments of templates that can be included in other templates. For example, you might have an Ethernet configuration that would be used by multiple devices. In each device template, you could have:

```
#include /opt/CSCOcnsie/Templates/ethernet_setup.cfgtpl
```

Now, you could centralize all the administration for Ethernet configuration in one file.

Caution Circular includes of template files are not allowed.

Sample Template

The following sample is the configuration template for the DemoRouter (*DemoRouter.cfgtpl*), which is pre-loaded on your system:

```
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname DemoRouter
!
boot system flash c7200-is-mz
enable secret 5 $1$cMdI$.e37TH540MWB2GW5gMOn3/
enable password cisco
!
ip subnet-zero
!
interface FastEthernet0/0
 no ip address
 no ip directed-broadcast
 no ip route-cache
 no ip mroute-cache
 shutdown
 half-duplex
!
interface Ethernet1/0
 ip address 10.10.1.1 255.255.255.240
 no ip directed-broadcast
 no ip route-cache
 no ip mroute-cache
!
interface Ethernet1/1
 no ip address
 no ip directed-broadcast
 no ip route-cache
 no ip mroute-cache
 shutdown
!
interface Ethernet1/2
 no ip address
 no ip directed-broadcast
 no ip route-cache
```

```
 no ip mroute-cache
 shutdown
!
interface Ethernet1/3
 no ip address
 no ip directed-broadcast
 no ip route-cache
 no ip mroute-cache
 shutdown
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.10.1.1
ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
line con 0
 transport input none
line aux 0
line vty 0 4
 password cisco
 login
!
end
```

Templates for Modular Routers

The template mechanism for the devices has been enhanced to support modular routers. A modular router chassis includes slots in which you can install modules. You can install any module into any available slot in the chassis. Some modules like 2 Ethernet 2 WAN card slot module can in turn have sub slots to install interface cards or line cards. Device management has been extended to support subdevices representing line cards.

Additional attributes representing line card number, line card type, and subdevices have been added to the existing device object structure in the directory server in order to have the same structure to represent the main device or the subdevice.

Currently, card type is a string that maps to the product code of the network module. Since the EPROM data in the card stores part numbers only, not product codes, the part numbers are mapped to product codes. The user uses part numbers and the configuration server maps part number to product codes.

In the context of main device, the line card number and line card type fields make no sense and hence are set to NULL value. The subdevices field in the sub device (representing the line card) is set to NULL value.

New interface variable support has been added. These variables are included in the templates, which are parameterize with the interface numbers in the template. These are not attributes. They are special format variables that are replaced by the configuration server based on the interface information, which comes from the device. These variables only specify the relative position of the interface on the module and are replaced by the actual slot number, shelf-ID or port number. The interface variables are wrapped in percent sign (%) characters and specify the type, if any, and the relative position. The configuration server replaces these variables with the interface numbers. The interface type still has to be specified in the CLI using the following syntax:

Interface Variable = %[InterfaceType] RelativePosition%

For example:

%FastEthernet 0% for interface FastEthernet

%Serial 0% interface Serial

%T1 0% controller T1

%E1 0% controller E1

%voice-port 0% voice-port

Example 1:

A network module with two FastEthernet ports plugged in Slot 2 would be referred in the configuration CLI as FastEthernet 2/0 and FastEthernet 2/1 and referred in the template as FastEthernet %FastEthernet 0% and FastEthernet %FastEthernet 1%:

```
!
interface FatsEthernet 2/0
    ip address 10.10.1.1 255.255.255.0
!
interface FatsEthernet 2/1
    ip address 20.20.1.1 255.255.255.0
!
```

Templates for these CLIs would be:

```
!
interface FastEthernet %FastEthernet 0%
    ip address 10.10.1.1 255.255.255.0
!
interface FastEthernet %FastEthernet 1%
    ip address 20.20.1.1 255.255.255.0
!
```

Example 2 (Voice card with two ports plugged in slot 3):

```
!
voice-port 3/0/0
    description 4082224444
!
voice-port 3/0/0
    description 4082225555
!
```

Templates for these CLIs would be:

```
!
voice-port  %voice-port 0%
    description 4082224444
!
voice-port %voice-port 1%
    description 4082225555
!
```

The main device template does not include links to the subdevice templates. The subdevice templates are appended to the main device template. The line card number are a parameter in the subdevice templates.

All the CLI commands which reference a line card interface are specified in the subdevice template for that line card. This implies that any command in the global configuration mode, or otherwise, that refers to a particular line card interface is in the template for that subdevice (line card) and not in the main device template.

Only the CLI commands in the global configuration mode, and not pertaining to the any specific interface, are specified in the main device template.

The port number and channel number are not be template parameters since these are fixed for a given line card. The network administrator can configure specific channels on the interfaces by explicitly specifying the channels in the subdevice templates.

For example:

interface Serial %Serial 0%:0

Sample Templates for Modular Router

The names of the attributes for slot, slot-unit, line card type and so forth, are used for demonstration purposes.

Main Device Template

```
!
version 12.2
no parser cache
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 2600
!
logging rate-limit console 10 except errors
!
memory-size iomem 25
ip subnet-zero
!
!
!
no ip dhcp-client network-discovery
lcp max-session-starts 0
!
ip classless
no ip http server
!
call rsvp-sync
!
no mgcp timer receive-rtcp
!
mgcp profile default
!
dial-peer cor custom
!
!
!
!
line con 0
line aux 0
line vty 0 4
 login
```

```
line vty 5 15
 login
!
```

Fastethernet Template

```
Interface FastEthernet %FastEthernet 0%

ip address 10.0.0.1 255.0.0.0
shutdown
speed auto
```

Voice-port Template

```
voice-port  %voice-port 0%
playout-delay mode adaptive
!
voice-port %voice-port 1%
!
dial-peer voice 10 pots
destination-pattern 200
port %voice-port 0%
forward-digits all


voice-port  %voice-port 0%
!
dial-peer voice 20 pots
destination-pattern 100
port %voice-port 0%
!
voice-port  %voice-port 1%
```

Modular Router Events

Modular router events are published to the event bus and are accessible to applications connected to the bus. The IOS device publishes the system hardware configuration in the *cisco.cns.config.device-details* event after hardware discovery. The Cisco CNS Configuration Engine is configured to listen for this event, retrieve it and extract the hardware configuration of the device.

Following is the DTD of the *cisco.cns.config.device-details* event that the Cisco IOS device sends:

```
    <!ELEMENT device-details (config-id, connect-interface?, card-info*>
    <!ELEMENT config-id (#PCDATA)>
    <!ELEMENT connect-interface (#PCDATA)>
    <!ELEMENT card-info (card-info+)>
    <!ELEMENT card-info
(card-type,card-desc?,slot,daughter?,serial-number,part-number,hw-version?,board-revision?
,ports?,controller?,rma-number?,test-history?,eeprom-version?,eeprom-data?,interface?,cont
roller?,voice-port?)>
    <!ELEMENT card-type (#PCDATA)>
    <!ELEMENT card-desc (#PCDATA)>
    <!ELEMENT slot (#PCDATA)>
    <!ELEMENT daughter (#PCDATA)>
    <!ELEMENT serial-number (#PCDATA)>
    <!ELEMENT part-number (#PCDATA)>
    <!ELEMENT hw-version (#PCDATA)>
    <!ELEMENT board-revision (#PCDATA)>
    <!ELEMENT ports (#PCDATA)>
    <!ELEMENT controller (#PCDATA)>
    <!ELEMENT rma-number (#PCDATA)>
```

```
<!ELEMENT test-history (#PCDATA)>
<!ELEMENT eeprom-version (#PCDATA)>
<!ELEMENT eeprom-data (#PCDATA)>
<!ELEMENT interface (#PCDATA)>
<!ELEMENT controller (#PCDATA)>
<!ELEMENT voice-port (#PCDATA)>
```

Dynamic Templates

There may be times when the actual contents of a template needs to be dynamically generated. To do this, you would use the **#call** mechanism. This executes a JavaScript program whose output becomes part of the template. The program is re-executed each time a device asks for the template.

For example, you might want to distribute the load across the various event gateway processes without permanently assigning a device to a particular event gateway. This is useful because of the limit of 500 devices per event gateway daemon instance.

Let us take the following template as an example:

```
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname DemoRouter
#call /opt/CSCOcnsie/Templates/event_setup.js
```

Here is an example of an *event_setup.js* that one might use:

```
/*
 * An instance of Event Gateway resides on every odd port from 11011 to 11031.
 * This will choose a random one in this range so that devices are spread out
 * evenly among the various ports. Adjust the IP address in the println
 * statement to be the address of the IE2100 itself.
 */
var port = Math.floor(Math.random() * 11) * 2 + 11011;
println("cns event 10.1.6.131 " + port.toString());
```

The result of this combination would be a template that appears as follows:

```
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname DemoRouter
cns event 10.1.6.131 11017
```

The last line is programmatically determined and recalculated every time the template is requested by the device. So the next time a device requests this template, the last line might be:

```
cns event 10.1.6.131 11023
```

Simple modifications to *event_setup.js* could even be used to distribute devices across multiple CNS 2100 Series devices (by dynamically generating the IP address). It could also be used to affect any part of the device configuration—be it DNS servers or routing tables. Anything that is printed out by the JavaScript program becomes a dynamic part of the template.

Control Structures

The configuration template can include simple control structures such as, *if*, *else* and *elseif*. By using these control structures, the user can include or exclude a block of CLI commands based on a parameter stored in the directory.

The syntax for these **#** preprocessing control structures is as follows:

Syntax Description

#if <*URL*> = *constant*

cli-command(s)

#elseif <*URL*> = *constant*

cli-command(s)

#else

cli-command(s)

#endif

Where *constant* is an integer, boolean or a string in single quotes and the <*URL*> is a URL pointing to an attribute in the Directory or Database.

Note Nested **#if** and **#elseif** is NOT supported.

Usage Guidelines

The configuration template can include **#define** entries to define short names for long URLs.

The syntax for the **#define** preprocessing command is as follows

#define *definition-name* <*URL*> | *constant*

where <*URL*> is a reference to an attribute in the directory.

The configuration template can contain another **#** preprocessing command **#include,** which allows the inclusion of other configuration templates or the results of an ASP page.

The syntax for the **#** preprocessing command is as follows:

#include <*URL*> | '<*Filename*>' | <*Filename*>

Whenever an **#include** directive is encountered, it is replaced by the content of the file.

The following configuration template sample includes either IP sub-template or ISDN sub-template based on the value of the parameter protocol in the directory or database.

Examples

```
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname ${LDAP://this:attrName=IOShostname}
#if ${LDAP://this:attrName=IOSIPprotocol} = true then
    #include ${LDAP://this:attrName=IPsubTemplate}
```

```
#else
    #include ${LDAP://this:attrName=ISDNsubTemplate}
#endif
```

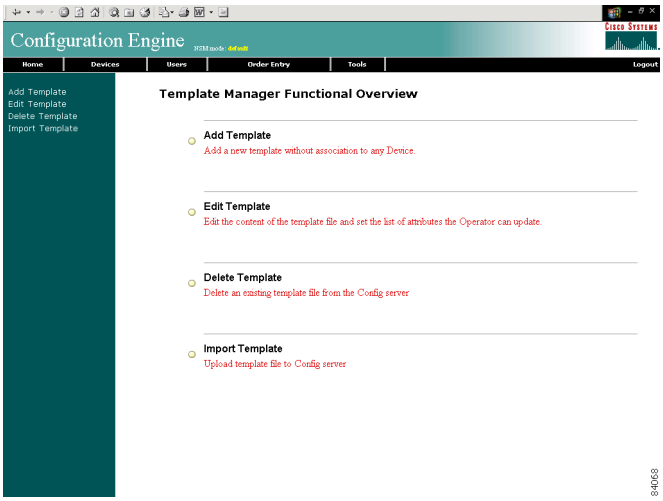
The parameter, `${LDAP://this:attrName=IPsubTemplate}` contains the location of the file.

How to Manage Templates

To use the template manager tool, click **Template Mgr**.

The Template Manager page appears (see Figure 3-55).

Figure 3-55 Template Manager



How to Add a Template

To add a template to the directory, follow these steps:

Step 1 From the Template Manager page, click **Add Template**.

A blank template page appears.

Step 2 To choose the attributes you want to be included in this template, use the **Attributes** menu.

Step 3 Enter the filename for this template in the **Template File** field.

Step 4 To save your entries, click **Save**.

Step 5 To return to the main menu, click on the **Tools** tab.

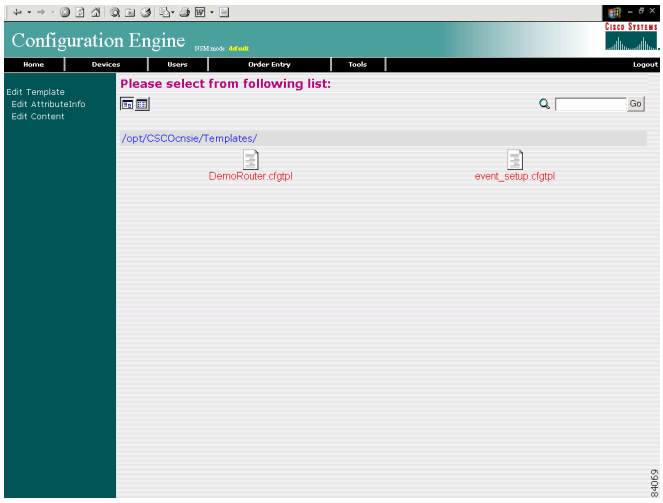
How to Edit a Template

To edit parameters (attribute information) and the content of a template, follow these steps:

Step 1 From the Template Manager page, click **Edit Template**.

The Template list appears (see Figure 3-56).

Figure 3-56 Template List



Step 2 Click on the icon for the template file you wish to edit.

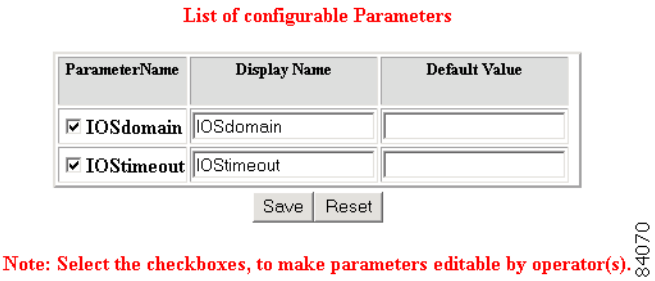
The template file appears.

Step 3 To edit parameters (attribute information), follow these steps:

a. From the template file page, click **Edit AttributeInfo**.

The list of configurable parameters appears (see Figure 3-57).

Figure 3-57 Parameter Editor



b. Edit the desired parameter fields.

Only selected (see check box) parameters appear in Order Entry.

The Display Name and Default Value appear when an operator edits parameters by means of Order Entry.

c. To clear your entries, click **Reset**.

d. To save your changes, click **Save**.

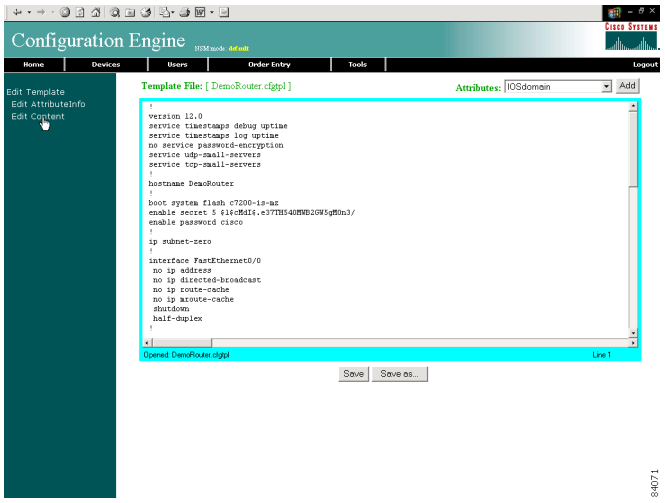
e. To return to the main menu, click on the **Tools** tab.

Step 4 To edit template content, follow these steps:

a. To edit the content of a template, from the template file page, click **Edit Content**.

The template content appears (see Figure 3-58).

Figure 3-58 Template Content



b. Edit the content by adding or deleting attributes.

c. To save your edits, click **Save**.

d. To save as a new template, click **Save as**.

e. To return to the main menu, click on the **Tools** tab.

How to Delete a Template

To delete a template, follow these steps:

Step 1 From the Template Manager page (see Figure 3-55), click **Delete Template**.

The template file list appears (see Figure 3-56).

Step 2 Select the template you wish to delete.

Step 3 Delete the desired template file.

Step 4 To return to the main menu, click on the **Tools** tab.

How to Import a Template

To import a template file to the configuration server from another location, follow these steps:

Step 1 From the Template Manager page, click **Import Template**.

Step 2 In the dialog box that appears, enter the name of the template file in the **Filename** field, if known, or browse your directory tree to choose the filename you desire.

Step 3 To clear the field, click **Reset**.

Step 4 To upload the template file, click **Upload**.

Step 5 To return to the main menu, click on the **Tools** tab.

Security Manager

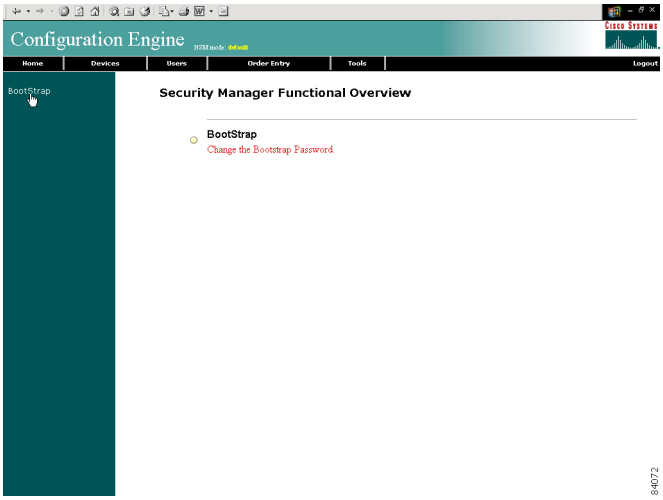
With the security manager tool you can change the bootstap password.

The bootstrap password is used to authenticate a Cisco IOS device before it connects to the Event Gateway. For additional information see "Authentication settings" section on page 2-7)

To use the security manager tool, from the Tools page, click **Security Mgr**.

The Security Manager page appears (see Figure 3-59).

Figure 3-59 Security Manager



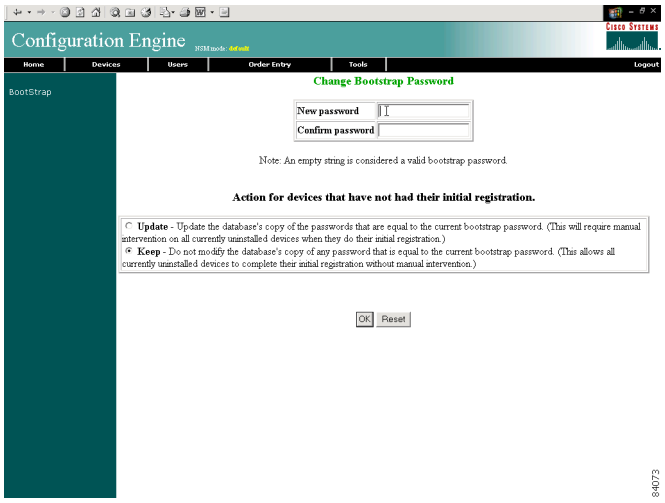
How to Change Bootstrap Password

To change the bootstrap password, follow these steps:

Step 1 From the Security Management page, click **BootStrap**.

The Change Bootstrap Password page appears (see Figure 3-60).

Figure 3-60 Change Bootstrap Password



Step 2 In the password dialog box, enter the new password.

Step 3 Confirm the new password.

Step 4 Choose (**Keep**, **Update** radio buttons) the subsequent action to the database regarding any password that is equal to the bootstrap password.

Step 5 To clear all entries, click **Reset**.

Step 6 To save the new password, click **OK**.

Step 7 To return to the main menu, click on the **Tools** tab.

Backup and Restore

This section explains how to backup and recover your directory store, templates, and certain configuration files.

Backup

The backup function is a script that takes the values you enter in the dialog box for scheduling backups under the Directory Manager (**Tools > Directory Mgr. > ScheduleBackup**) in the Configuration Registrar (see "How to Schedule Data Backup" section on page 3-34).

How the Backup Works

The backup sequence is as follows:

1. The backup script invokes backup commands for CNS Directory Service, template, and other configuration files.

   When the script backs up CNS Directory Service, it sets the directory in an inactive state until the backup completes.

2. When CNS Directory Service backup completes, the script restarts the directory server.

The script stores the database file in the `/extra` partition of the CNS 2100 Series system drive. All other files (templates, http.conf, jserv.properties, and so on) are saved as tar [tape archive] files, then zipped with the CNS Directory Service backup.

3. The zip file is sent, by means of FTP, to the server location specified by the Directory Manager ("How to Schedule Data Backup" section on page 3-34).
4. The file is copied to the `/extra/old` directory on the local CNS 2100 Series system.

   The `/extra/old` directory contains only one previous backup. Each backup operation overwrites this space with the new backup data.

Restore

To restore CNS Directory Service, template, and other configuration files to the CNS 2100 Series system, complete the following steps:

Step 1 Verify that the CNS 2100 Series system has IP connectivity.

For example, use the console interface to ping a known device on the network, such as the file server that has the backup file.

Step 2 Locate the backup file.

Step 3 Use FTP to transfer the backup file to the local / partition.

The backup file is in a zip format.

Step 4 Type the command:

zcat <*filename*>.gz | tar xvf -

where <*filename*> consists of a date/time notation. For example,
`backup<date_and_timestamp_of_backup>`

How to Restore the CNS Directory

To restore the CNS directory, complete these steps:

Step 1 Recompile and load the CNS directory schema by using the command:

su - dcdadmin -c /opt/CSCOcnsie/scripts/dclschemaload.txt

This command will fail if the CNS directory server is not running.

Step 2 Stop the CNS directory server by using the command:

su - dcdadmin -c dcdstop

(If the command fails, try running: **/etc/rc.d/init.d/NetAppDCL stop**)

Step 3 Restore the CNS Directory Service data (DIB) from the /extra directory that contains the DATABASE.DAT file with:

su - dcdadmin -c "dcbckdib /y restore /extra"

Step 4 Start the CNS directory server with the command:

su - dcdadmin -c dcdstart

Step 5 Restart the HTTP and IMGW services with the commands:

/etc/rc.d/init.d/httpd restart

/etc/rc.d/init.d/Imgw restart