Getting Started

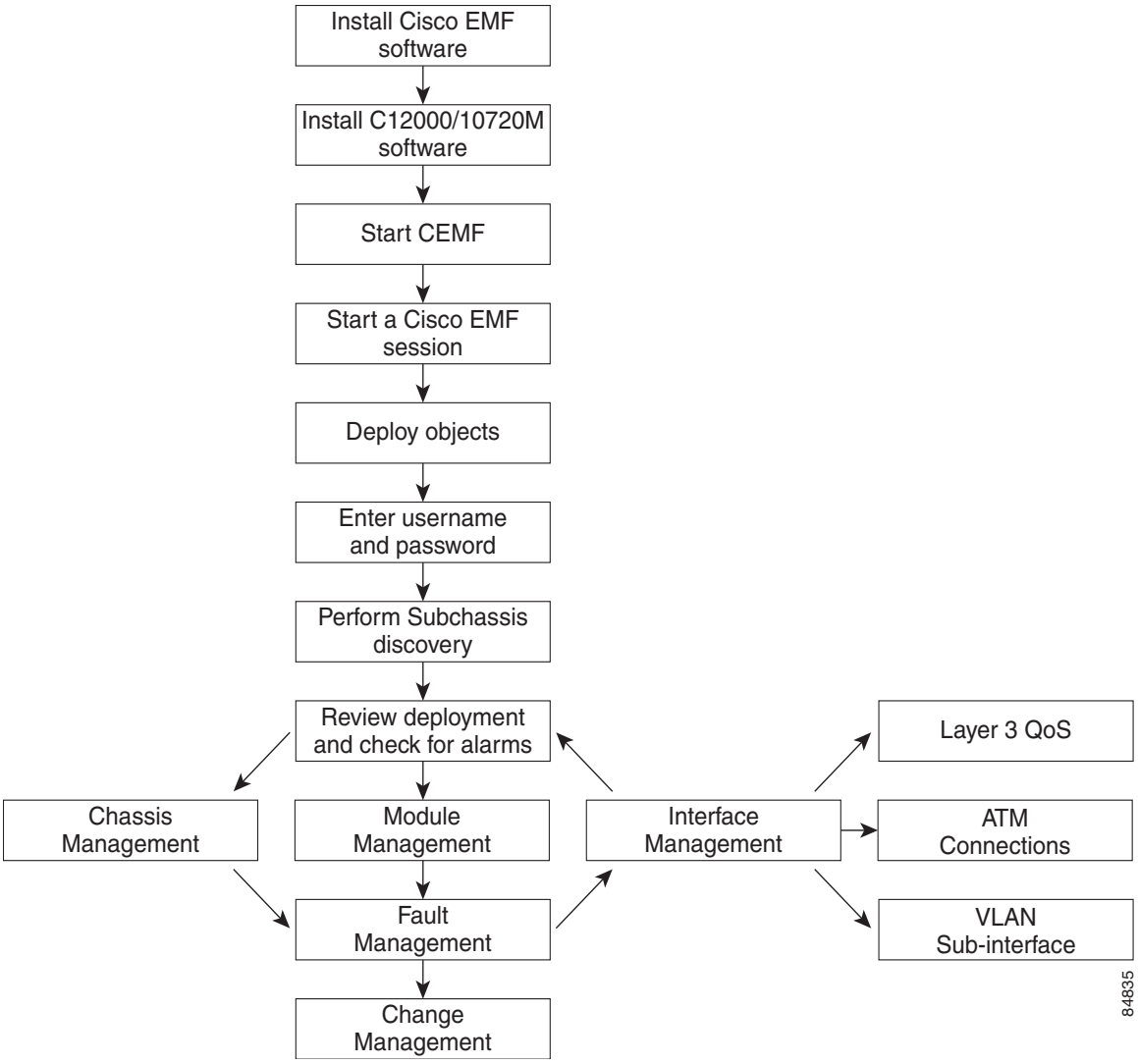
This chapter describes the typical tasks you should complete to start using the Cisco 12000/10720 Router Manager application. See Figure 3-1 on page 3-2 for further details.

This chapter provides the following information:

Cisco 12000/10720 Router Manager Workflow

Figure 3-1 outlines the steps involved in installing, configuring and using the Cisco 12000/10720 Router Manager application.

Figure 3-1 Workflow for Cisco 12000/10720 Router Manager



Starting Cisco EMF and Cisco 12000/10720 Router Manager

The Cisco 12000/10720 Router Manager application is viewed through the Cisco Element Management Framework (Cisco EMF). It is important to understand how Cisco EMF works before you use the Cisco 12000/10720 Router Manager application (refer to the *Cisco Element Management Framework User Guide* for further details). Cisco 12000/10720 Router Manager automatically starts when you start a Cisco EMF user session.

Note Each active Cisco EMF session uses a single Cisco EMF user license.

This section covers the following:

Starting a Cisco EMF User Session

Note Cisco EMF should already be running. When you try to invoke a Cisco EMF session, and if you receive a message that Cisco EMF is not running, contact your system administrator, or refer to the *Cisco Element Management Framework User Guide* for further details.

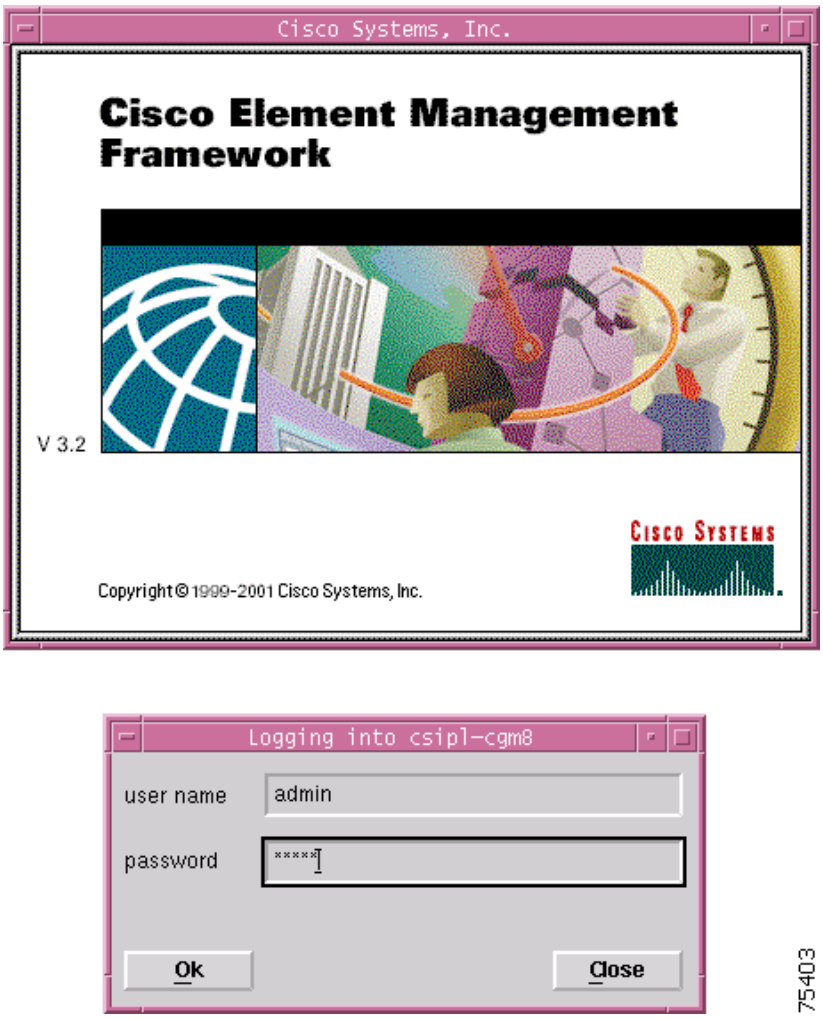
To start a Cisco EMF user session, proceed as follows:

Step 1 From the command line on the terminal window, enter <*CEMF_ROOT*>`/bin/cemf session`

Note <*CEMF_ROOT*> is the Cisco EMF installation root directory (for example, /opt/CEMF).

The Login window (see Figure 3-2) appears.

Figure 3-2 Login Window



Step 2 Enter a valid user name and password.

Step 3 Click **Ok** to proceed.

When an unknown user name or password is entered, an error is displayed. Click **Ok**, then enter a valid user name and password.

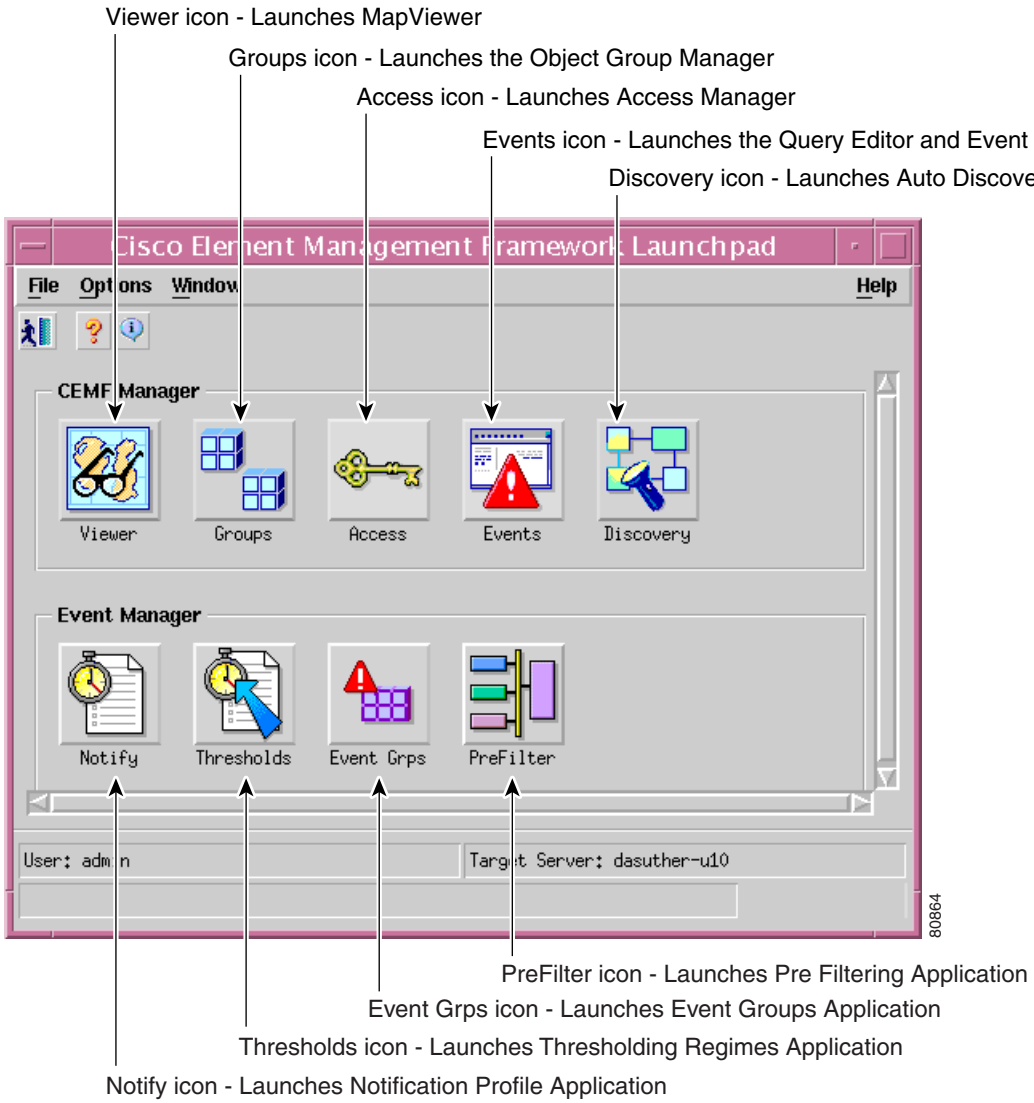
Note You have three attempts to enter a valid user name and password.After the third failed attempt the session does not start and the Login window closes.

When a valid user name and the password are entered, the session starts and the Cisco EMF Launchpad (see Figure 3-3) appears.

Launchpad

The icons displayed in the CEMF Manager and Event Manager panels on the Launchpad represent the applications provided by this Cisco EMF installation. Extra icons may appear when additional packages are installed. The icons (see Figure 3-3) represent the standard Cisco EMF tools.

Figure 3-3 Launchpad



Launching an Application

From the Launchpad**,** click the desired icon. The application is launched. A “busy” icon and a message in the status bar is displayed during launch. More than one instance of an application can be opened at any time.

Note If an application is already open, it appears in the Windows list. Click **Window** and choose the application you require from the drop down menu.

Map Viewer (Viewer)

MapViewer allows complete flexibility in viewing, building, and monitoring your network using graphical representations of network elements.

MapViewer is the primary entry point into the Cisco 12000/10720 Router Manager. When the MapViewer application is launched, a window appears corresponding to the highlighted map icon in the hierarchy pane. You can easily monitor the status of all network elements or abstractions of elements contained within the network and you can launch any of the additional applications on the Launchpad.

Refer to the *Cisco Element Management Framework User Guide* for further details on the MapViewer application.

Groups

Object Group Manager allows you to organize network elements into object groups. An object group is a collection of objects which are related in some way. They may all be the same type of equipment or all belong to the same customer.

Object groups can be built manually or by building a query. Some Cisco EMF subsystems may also build object groups which may be visible and usable by the Cisco EMF user.

Refer to the *Cisco Element Management Framework User Guide* for further details on the Object Group Manager application.

Access

User Access Control allows system administrators the opportunity to control the features of their system that can be accessed by various levels of personnel. This is important for secure network management.

Refer to the *Cisco Element Management Framework User Guide* for further details on the User Access Control application.

Event Browser (Events)

One of the most important aspects of Network Service Management is the ability to identify faults and other events on the network and to take action to resolve them quickly and efficiently. For example, there may be a power supply fault in a chassis which would require an engineer to be sent out to rectify the fault. This fault is critical to the running of the network and would need prompt attention.

In Cisco EMF, when a condition (fault) occurs on a managed object in the network, the system is notified immediately. Notification is shown as an event and can be viewed with the Event Browser (when configured to do so).

Refer to the *Cisco Element Management Framework User Guide Release 3.2* for further details on the Event Browser application.

Discovery

Discovery allow you to examine the network for IP and SNMP devices and create a managed object for each new device discovered. Auto-discovery can be opened from the Launchpad window or from a pop up menu available on selected objects.

Refer to the *Cisco Element Management Framework User Guide Release 3.2* for further details on the Auto-discovery application.

Notification Profiles

An important aspect of a monitoring system which captures and reacts to events on the network is when and how a network operator is informed of these events. The Event Manager uses notifications for this. For example, when the temperature of a line card rises 10 degrees above normal an e-mail might be sent to the network operator warning of a potential problem and a minor event might be generated if the temperature does not fall to within ten degrees of normal within twenty minutes.

Notification profiles are collections of notifications. Each notification profile has a name and description and can be accessed by all Event Manager users. Each includes a list of notifications, and is run following a trigger, which could be an event entering an event group, or a threshold breach in a thresholding regime. For example, when the first event is received by an event group a notification profile may be triggered which causes a sound to occur which alerts the operator. As well as audible alerts, a notification could be set up to display on screen, or to trigger an external notification such as an e-mail.

Refer to the *Cisco Element Management Framework User Guide Release 3.2* for further details on the Notification Profiles application.

Thresholding Regimes

A Thresholding Regime is a set of threshold conditions for specified object attributes which, when breached, causes one or more notification profiles to be run. The Thresholding Regime defines which attributes should be polled and on what period, and defines the thresholding conditions. The Thresholding Regime specifies object groups which contain the objects whose attributes will be polled.

Refer to the *Cisco Element Management Framework User Guide Release 3.2* for further details on the Thresholding Regimes application.

Event Groups

Event Groups allows you to organize network elements into event groups, and also view the status of these groups as scoreboards. Users can create, delete and modify event groups and scoreboards. Event groups are available to all users.

Event groups can be any combination of objects derived from the managed object class. These groups are set up using queries which can be configured to match your requirements. For example, you could choose to monitor a particular device, specify a time period, and choose to look at events which are warnings or critical. You define a query so that the event group only includes the events which meet the criteria you define. As soon as the group is created it starts monitoring against the criteria specified in the event query setup. Event groups created in the Event Groups application are persistent, they are not cleared when the application is closed.

The Event Groups application also enables you to view the events associated with an event group in a scoreboard format. This displays the overall status of the event group as a pie chart, with the associated severity color coding. A scoreboard also shows the total number of events which have entered the event group and the highest severity of the events in the group. An icon is displayed when a running notification has been set up for the event group.

Event Groups is opened from the Launchpad.

Refer to the *Cisco Element Management Framework User Guide Release 3.2* for further details on the Event Groups application.

PreFilter

Event pre-filtering allows any event generated by the network which matches the criteria established in the filter to be "filtered out", and thus not saved into the database.

Pre-filtering offers you the capability to eliminate unwanted or undesired events from entering the management system altogether. Pre-filtering is managed through the PreFilter application or from the Event Browser. The PreFilter application is launched via the PreFilter icon on the Launchpad.

The PreFilter manager window displays, listing each of the pre-filters established, in the order in which they are to be processed (from top to bottom).

Refer to the *Cisco Element Management Framework User Guide Release 3.2* for further details on the PreFilter application.

Quitting a Cisco EMF User Session

To quit the current Cisco EMF session, proceed as follows:

Step 1 Choose **File > Quit**. You see the question `Do you wish to quit the Cisco EMF Manager System?`.

Step 2 Click **Yes** to quit the session (all active applications are closed and the session terminates) or click **No** to return to the current Cisco EMF session.

Deployment

The first step toward managing a Cisco 12000/10720 Router is to deploy or pre-deploy the physical objects that you want to manage. Deploying a physical object creates a representative object in Cisco EMF and as a result, makes the Cisco 12000/10720 Router Manager application aware of the physical object's presence.

Cisco 12000/10720 Router Manager objects can be discovered automatically or deployed manually. For example, to deploy a chassis, you can use auto discovery or you can manually deploy the chassis. If you wish to deploy objects under the chassis, you can use subchassis discovery or manually deploy each object (interfaces are automatically created when you deploy each line card).

If all or most of your chassis objects are physically present and if you have a large amount of objects to deploy, you might want to automate these processes by using auto discovery. For example, if Cisco 12000/10720 Router Manager is installed into an existing network of Cisco 12000/10720 Routers, auto discovery can dramatically reduce the amount of operator input required. If you only want to deploy a few objects or if many of your objects are not yet physically present, you might want to deploy manually.

Cisco 12000/10720 Router Manager objects can be manually pre-deployed before the hardware arrives on-site. See "Pre-deployment" section on page 3-58 for further details.

The following supporting modules can be deployed using subchassis discovery only, no manual deployment is available for these modules:

- AC or DC power supply card
- Fan tray module
- Blower module

You can also deploy either of the following logical objects:

- SVC—See "Deploying an SVC Object" section on page 12-22
- PVC—See "Deploying a PVC Object" section on page 12-18
- VLAN Domain, VLAN and VLAN sub-interface—See "Deploying VLAN objects" section on page 13-4

Tip WRED (Weighted Random Early Detection) and CAR (Committed Access Rate) objects are not created using the deployment wizard. For details on creating these objects manually, see Chapter 11, "Layer 3 QoS."

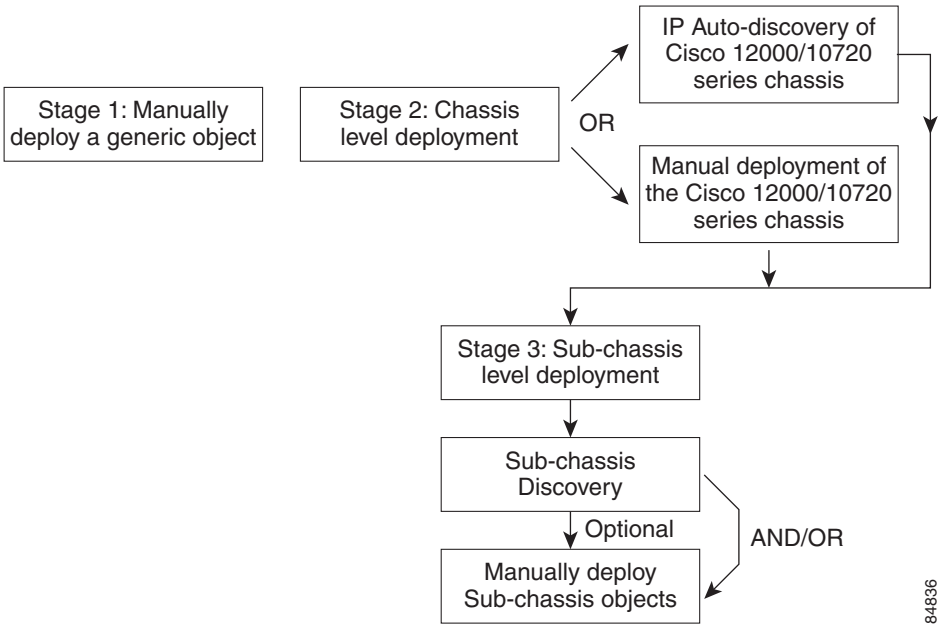
The Deployment section covers the following areas:

- Deployment Process Outline
- Manually Deploying a Generic Site Object
- IP Auto Discovery of the Cisco Chassis
- Manually Deploying a Cisco 12000/10720 Chassis
- Commissioning and Subchassis Discovery
- Manually Deploying Modules—Includes deploying line cards for 12000 Series router chassis and10720 chassis
- Pre-deployment

Deployment Process Outline

Producing a manageable Cisco 12000/10720 Router chassis in Cisco EMF is a three-stage process (see Figure 3-4).

Figure 3-4 Deployment Process Workflow



1. The first deployment stage is to manually deploy a Generic (Site) object. A Site object can be looked upon as a container object where you can deploy further objects that represent the Cisco 12000/10720 Router chassis, line cards and interfaces contained within the chassis. See "Manually Deploying a Generic Site Object" section on page 3-10 for further details.
2. The second deployment stage is at the chassis level. The Cisco 12000/10720 Router chassis can be auto discovered or manually deployed. See "IP Auto Discovery of the Cisco Chassis" section on page 3-19 or the "Manually Deploying a Cisco 12000/10720 Chassis" section on page 3-20 for further details.

Note You can pre-deploy objects (that is, manually predeploy objects) before the Cisco hardware arrives on-site. See "Pre-deployment" section on page 3-58 for further details.

3. The third deployment stage is at subchassis level. This involves either subchassis discovery or deploying subchassis objects (modules) manually. See "Commissioning and Subchassis Discovery" section on page 3-26 or the "Manually Deploying Modules" section on page 3-30 for further details.

Manually Deploying a Generic Site Object

Generic objects are non-technology specific objects. When deploying a generic object, the information you are prompted to provide differs according to the type and number of generic objects you are deploying.

Table 3-1 displays a list of generic objects that can be deployed using Cisco 12000/10720 Router Manager.

Table 3-1 Generic Object Deployment Templates

Object to be Deployed	Deployment Templates Available
Generic	Bay
	IP Device
	Region
	SNMP Agent
	SNMP MIB-2 Agent
	SNMP Proxied Device
	Site

This section provided an example that shows how to deploy a Site object. The deployment process differs slightly for other types of generic object.

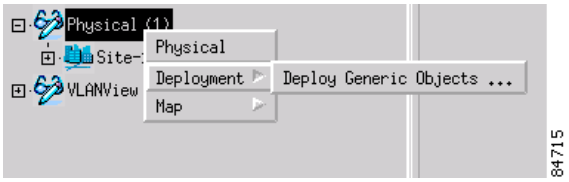
To deploy a Generic (Site) object, proceed as follows:

Step 1 Place the cursor over a relevant object to determine the objects you can deploy from. In this example we will deploy a Site object from the Physical view.

Step 2 Click and hold down the right mouse button.

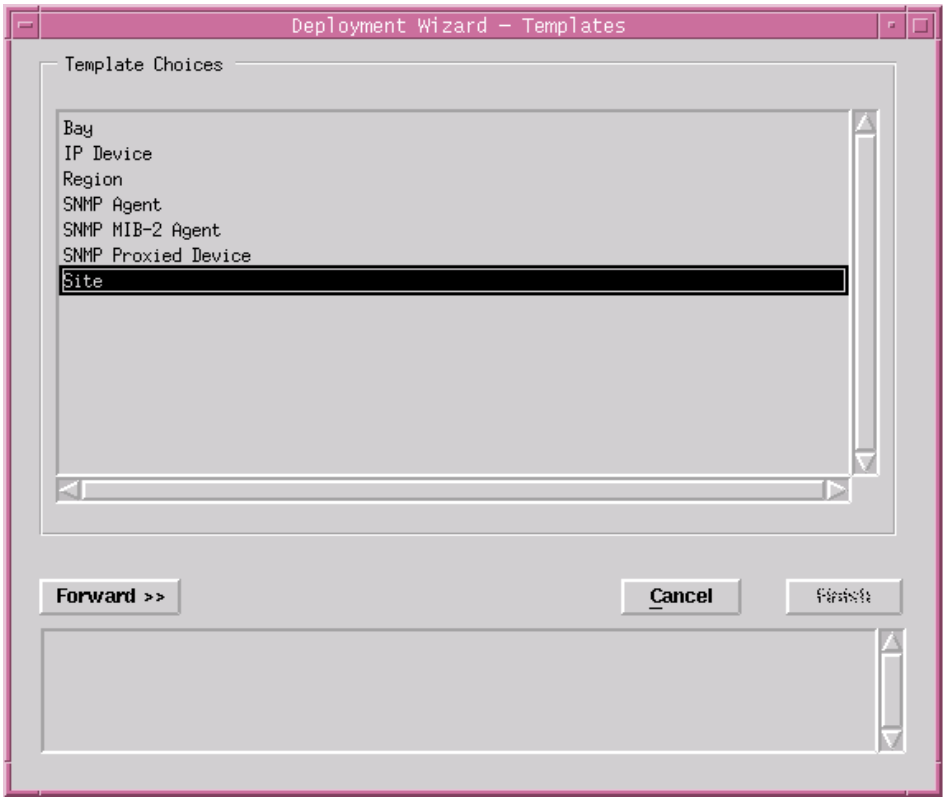
Step 3 Choose **Deployment>Deploy Generic Objects...**.

Figure 3-5 Deploying a Site Object



The Deployment Wizard - Templates window appears (see Figure 3-6) displaying a list of available generic object deployment profiles. Deployment profiles are templates that prompt you for the appropriate information required to deploy the selected object successfully.

Figure 3-6 Deployment Wizard - Templates Window

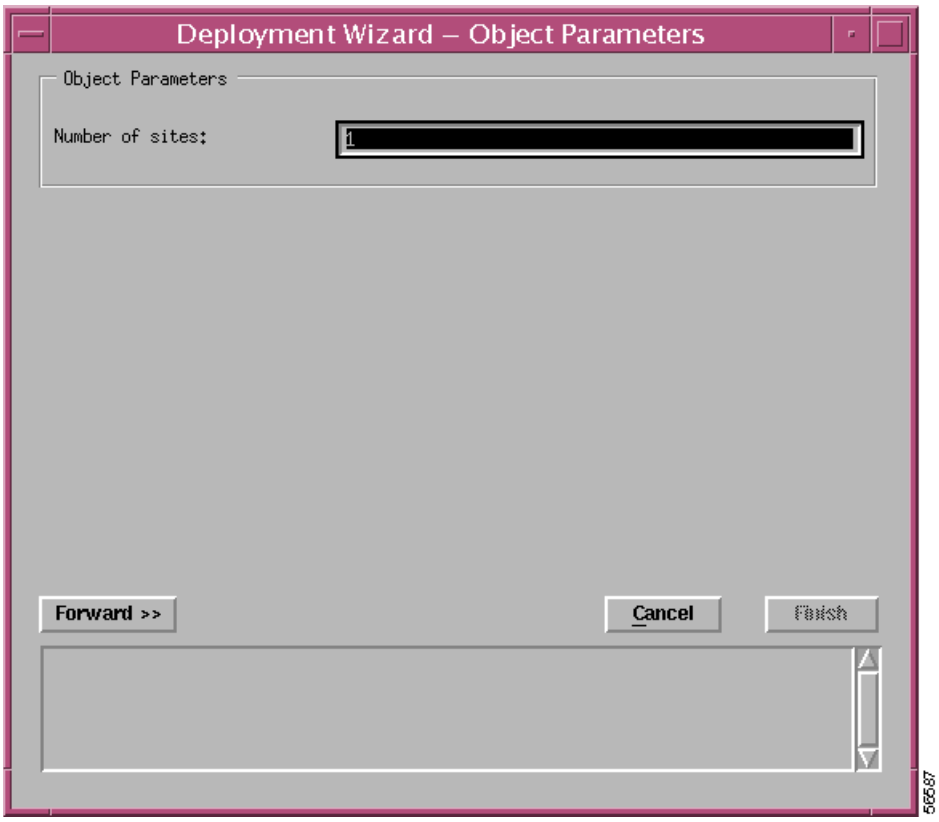


Step 4 Select the generic object that you wish to deploy from the list supplied. In this example (shown in Figure 3-6) shows the deployment profile for a Site object is selected. The Deployment Wizard steps through a series of windows that prompt you for the information required to deploy the Site object.

Step 5 Click **Forward**.

The Deployment Wizard - Object Parameters window appears (see Figure 3-7).

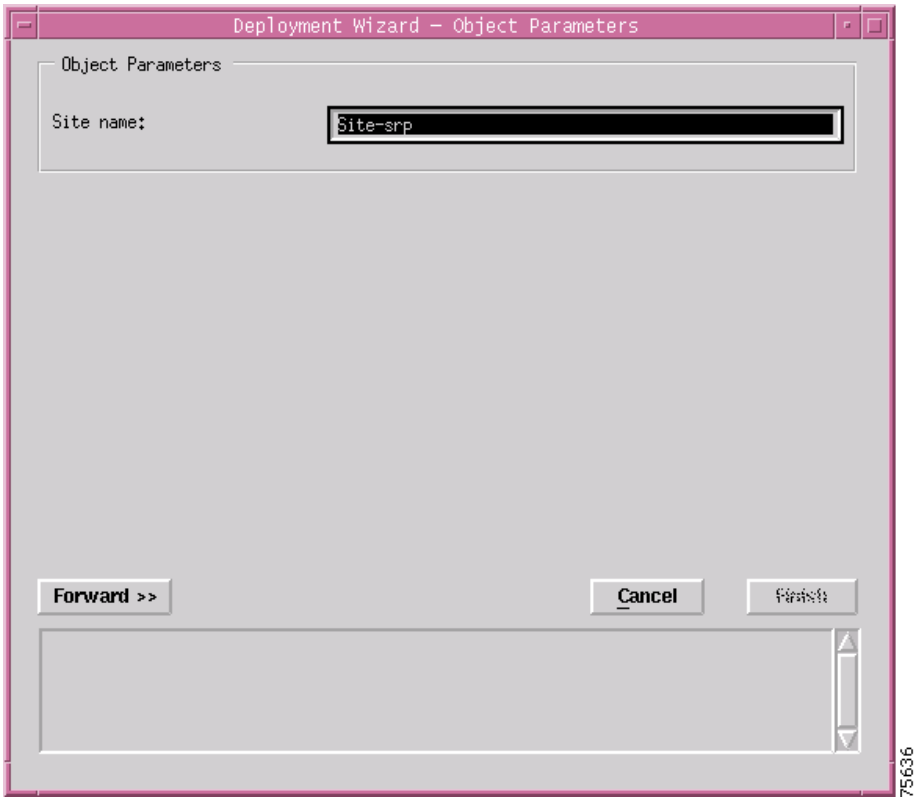
Figure 3-7 Deployment Wizard - Object Parameters Window (1 of 2)



Step 6 Enter the number of **Sites** required. A single site was entered in this example.

Step 7 Click **Forward**.

Figure 3-8 Deployment Wizard - Object Parameters Window (2 of 2)

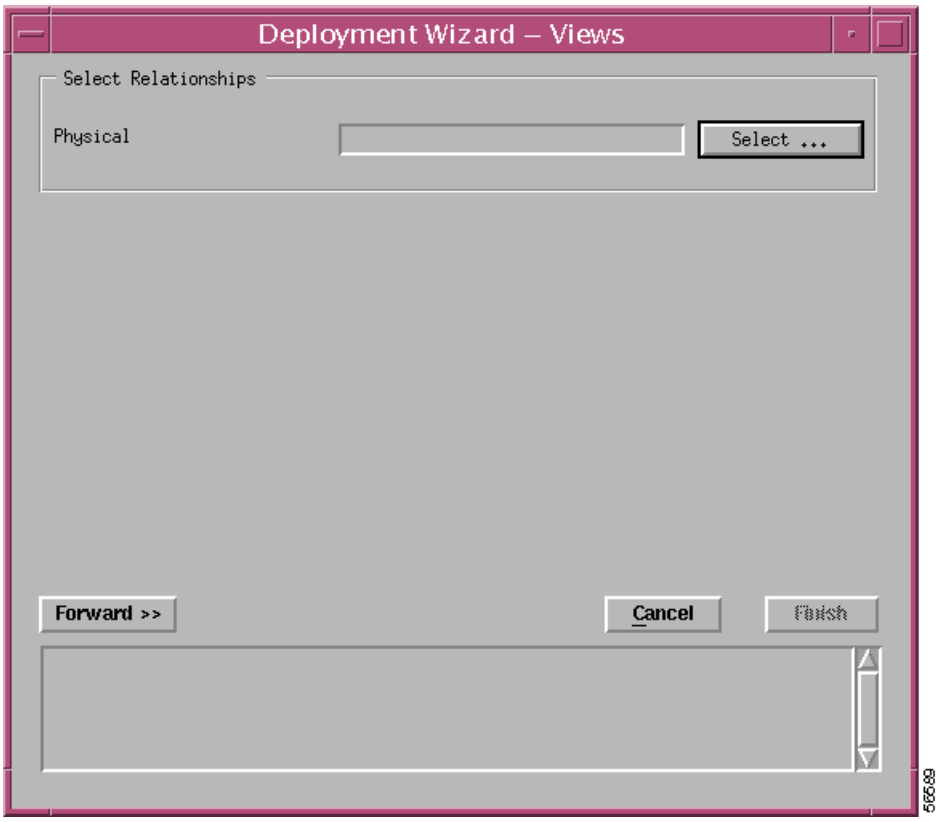


Step 8 Enter a Site name. Each Site must have a unique name. In this example the site is called **Site-srp**.

Step 9 Click **Forward**.

The Deployment Wizard - Views window appears.

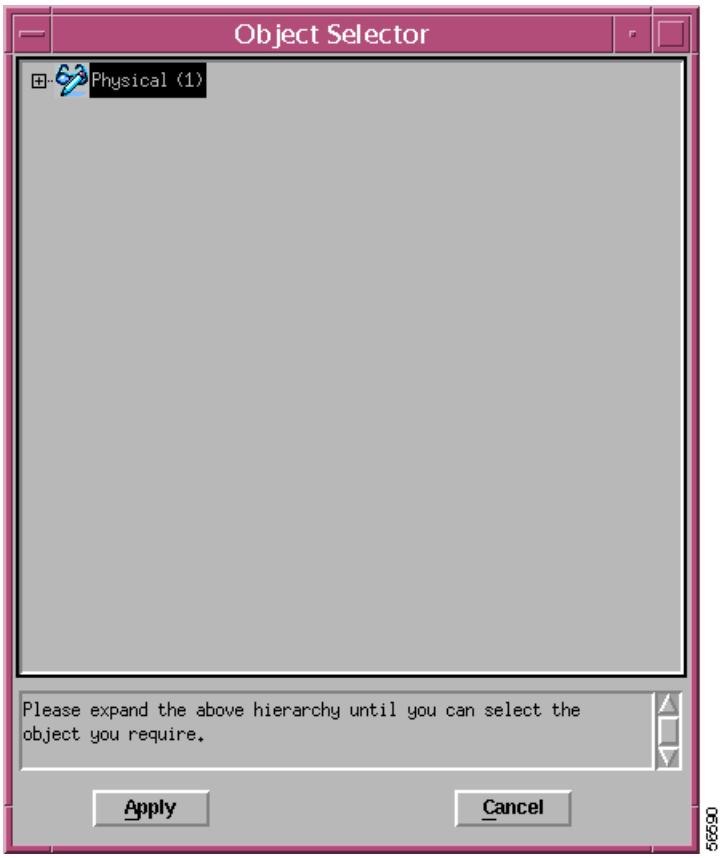
Figure 3-9 Deployment Wizard—Views Window



Step 10 Click **Select**, to select a physical view.

The Object Selector Window appears.

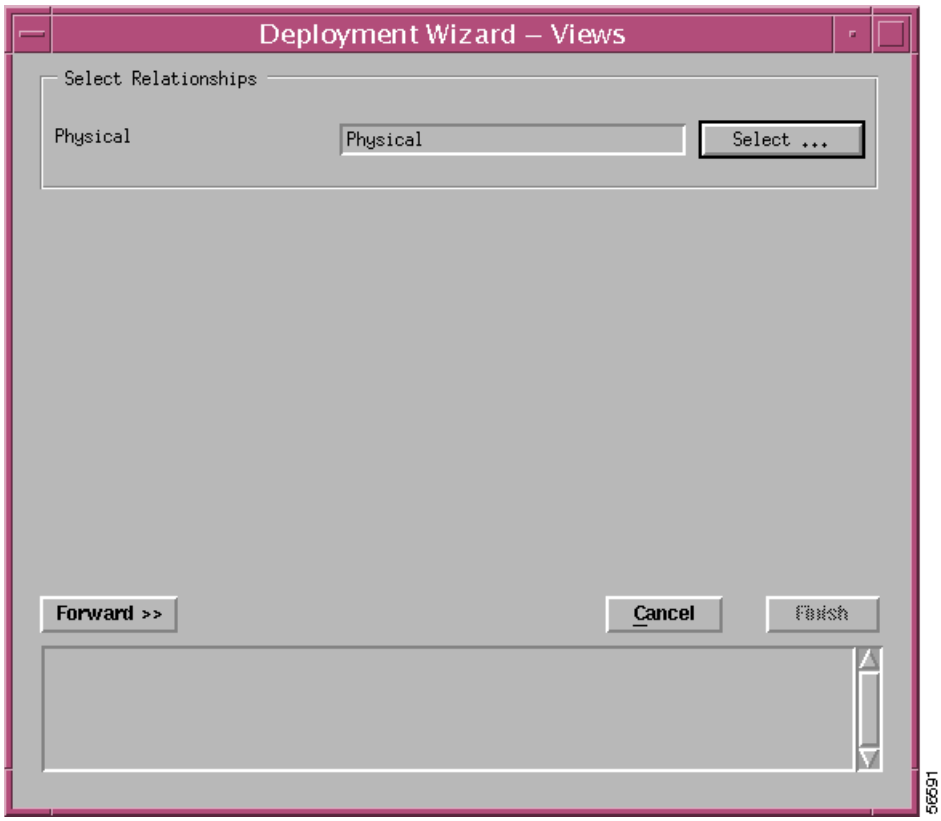
Figure 3-10 Object Selector



Step 11 Select the object where you wish to place the Site object.

Step 12 Click **Apply**. The Deployment Wizard - Views window re-appears with the selection displayed.

Figure 3-11 Deployment Wizard—Views Window

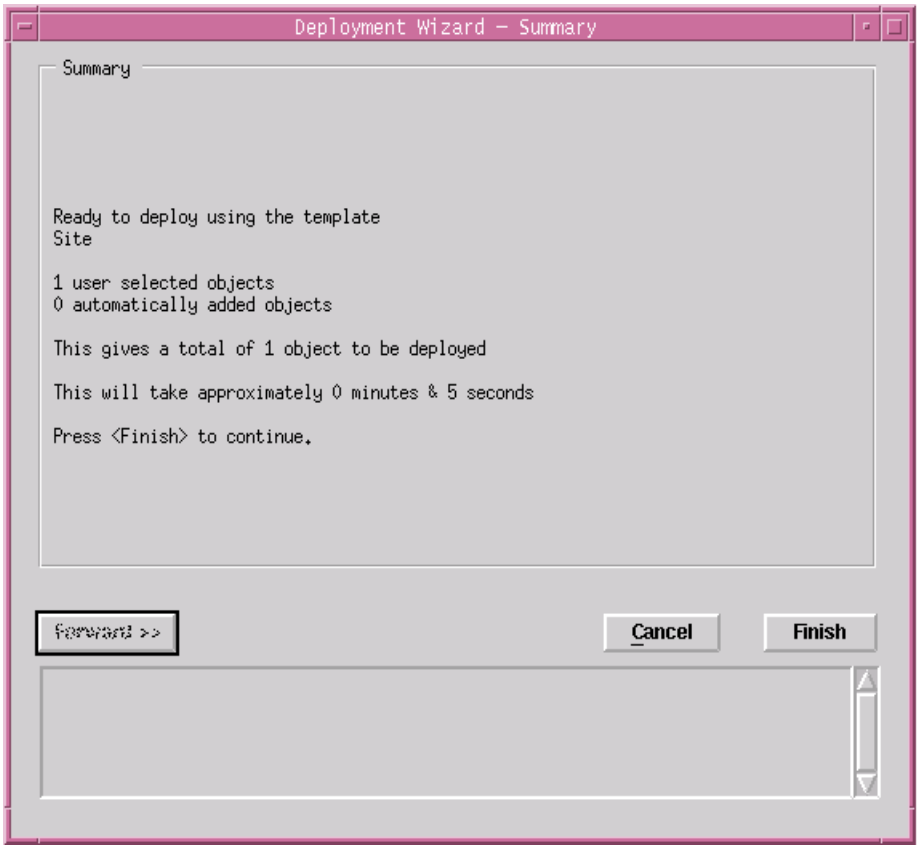


Step 13 Click **Forward**.

Note You are prompted to repeat Steps 8 to 13 if you are deploying more than one Site.

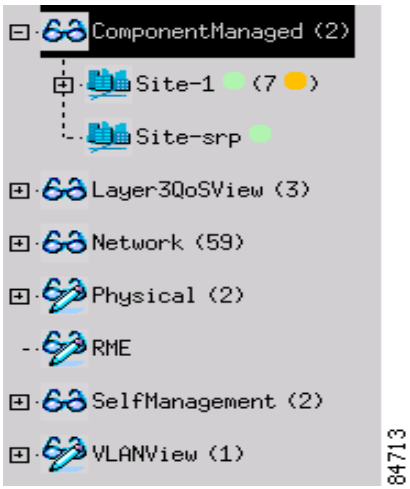
The Deployment - Wizard Summary window appears. The Summary window provides details of the object you are about to deploy.

Figure 3-12 Deployment Wizard—Summary Window



Step 14 Click **Finish** (when the Deployment Summary information is correct) to complete deployment and close the Deployment Wizard - Summary window. The new Site object (that is, Site-srp) is created and displayed in the Map Viewer window.

Figure 3-13 Example Showing the Newly Deployed Site-srp Object



Note This deployment procedure can be applied to the deployment of any of the generic objects although all of the steps may not apply to the particular generic object that you are deploying.

IP Auto Discovery of the Cisco Chassis

Auto discovery is the application that discovers existing Cisco 12000/10720 Routers, saving time and effort.

The auto discovery window can be opened from the Viewer or Discovery icon in the Launchpad. For further information, refer to the *Cisco Element Management Framework User Guide*.

The Auto discovery application has three mechanisms for discovering chassis:

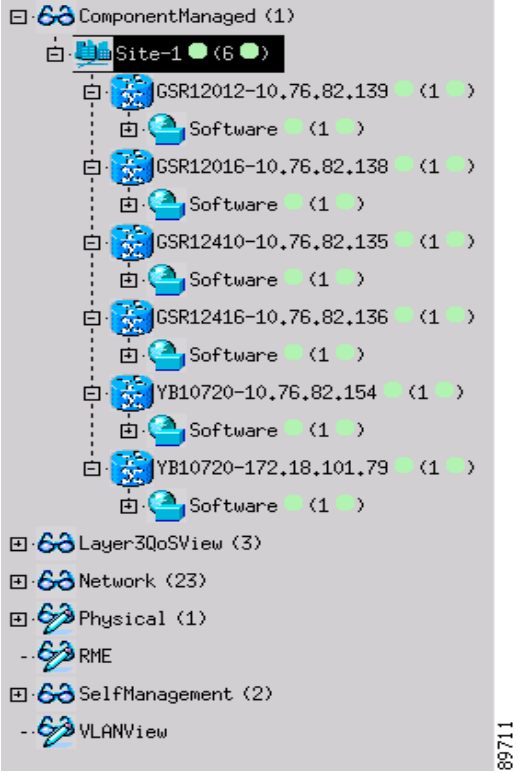
- IP—ICMP pings are used to find chassis in a given IP address range. This finds which IP devices exist, but does not discover what kind of device they are.
- SNMP—SNMP get requests are used to find chassis in a given IP address range. Several SNMP community strings can be used so that equipment with different community strings can be discovered in the same discovery session. The SNMP information returned by devices is used to work out what kind of device has been found.
- IP and SNMP—ICMP pings are used to find chassis and then SNMP requests are used to interrogate the chassis to find out what kind of chassis they are. This is the default mechanism.

Auto discovery can discover chassis on more than one subnetwork using multi-hop discovery. It can be scheduled to run at preset times (the *Cisco Element Management Framework User Guide* details how to set the schedules).

After the chassis is detected, an object representing the chassis is created and placed under the site from which auto discovery was launched. A map of the chassis is also created, as shown in Figure 3-21 on page 3-26.

Note If you wish to auto-discover a chassis that can be managed by Cisco 12000/10720 Router Manager, then the Physical Path option must be enabled and an appropriate Physical Path (terminated with a Site) must be selected. Provided this is done, the auto discovery application will create a chassis below the selected Physical Path for each discovered chassis.

Figure 3-14 Example of Auto Discovery



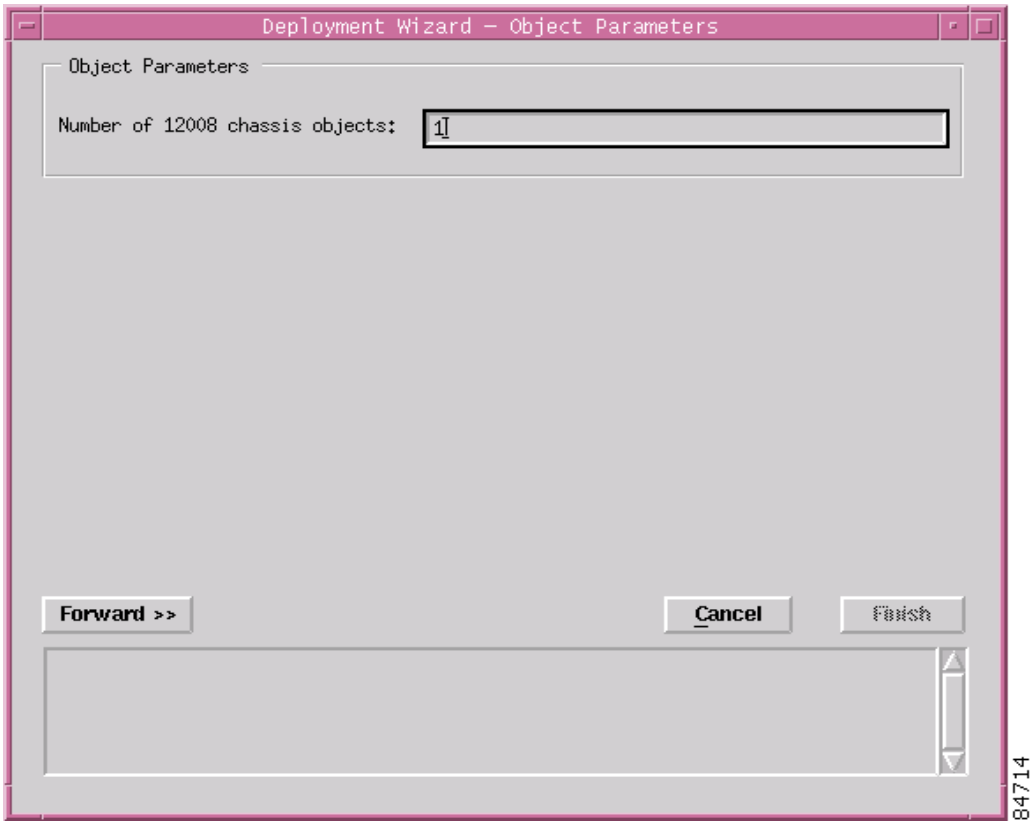
Manually Deploying a Cisco 12000/10720 Chassis

Tip It is recommended that you ping the Cisco 12000/10720 Router you intend to deploy to ensure the device can be contacted.

To deploy a chassis, proceed as follows:

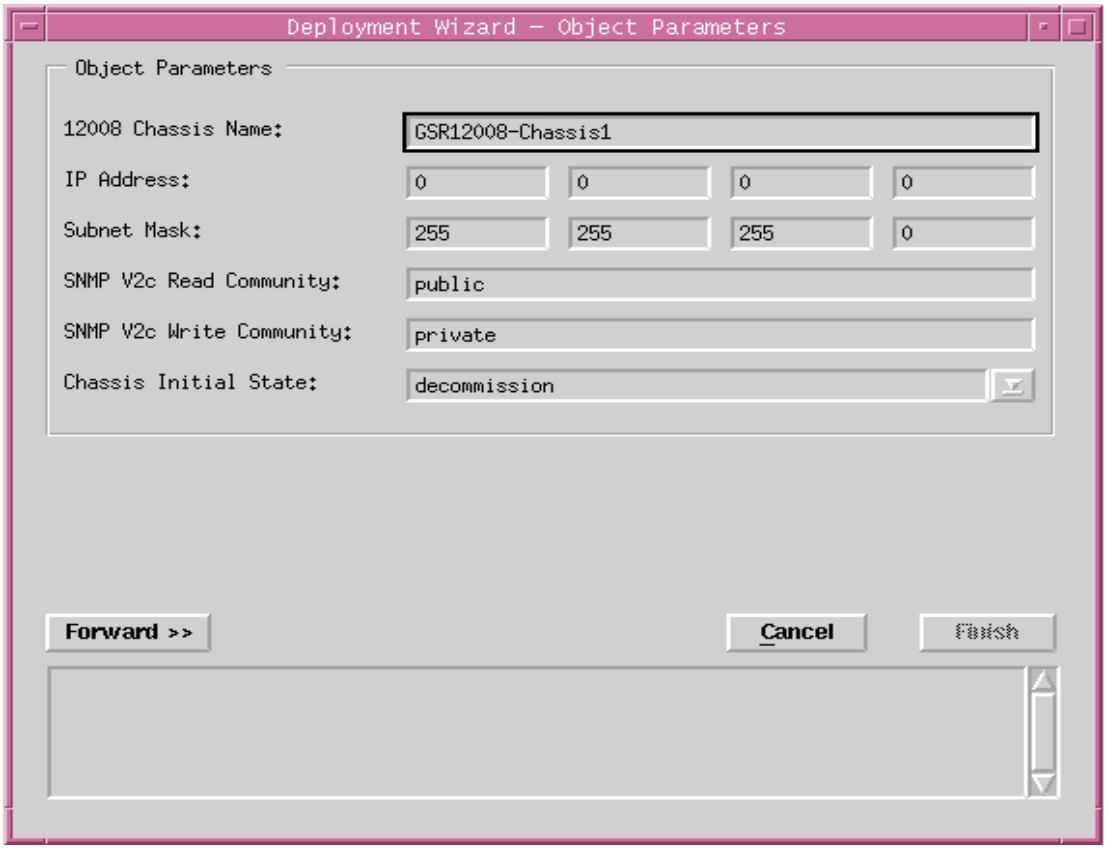
Step 1 In the Map Viewer, right click on the site object under which you wish to deploy the chassis, then choose **Deployment>Cisco 12000/10720 Manager>12008 or 12012 or 12016 or 12404 or 12406 or 12410 or 12416 or 10720>Chassis**. The Deployment Wizard appears.

Figure 3-15 Deployment Wizard—Object Parameters (1 of 3)



Step 2 Enter the number of **chassis** objects you want to deploy. Click **Forward**.

Figure 3-16 Deployment Wizard—Object Parameters Window (3 of 3)



Step 3 Enter the following information:

12000 Chassis Name—Type in a name (including prefix and suffix) for the chassis you are deploying. A default prefix appears (for example, "12008"). You can delete this prefix and use your own, or you can keep it and add your own suffix. This name must be unique.

IP Address—Type in the IP address for the chassis you are deploying.

Subnet Mask—The subnet mask for the IP address of the chassis.

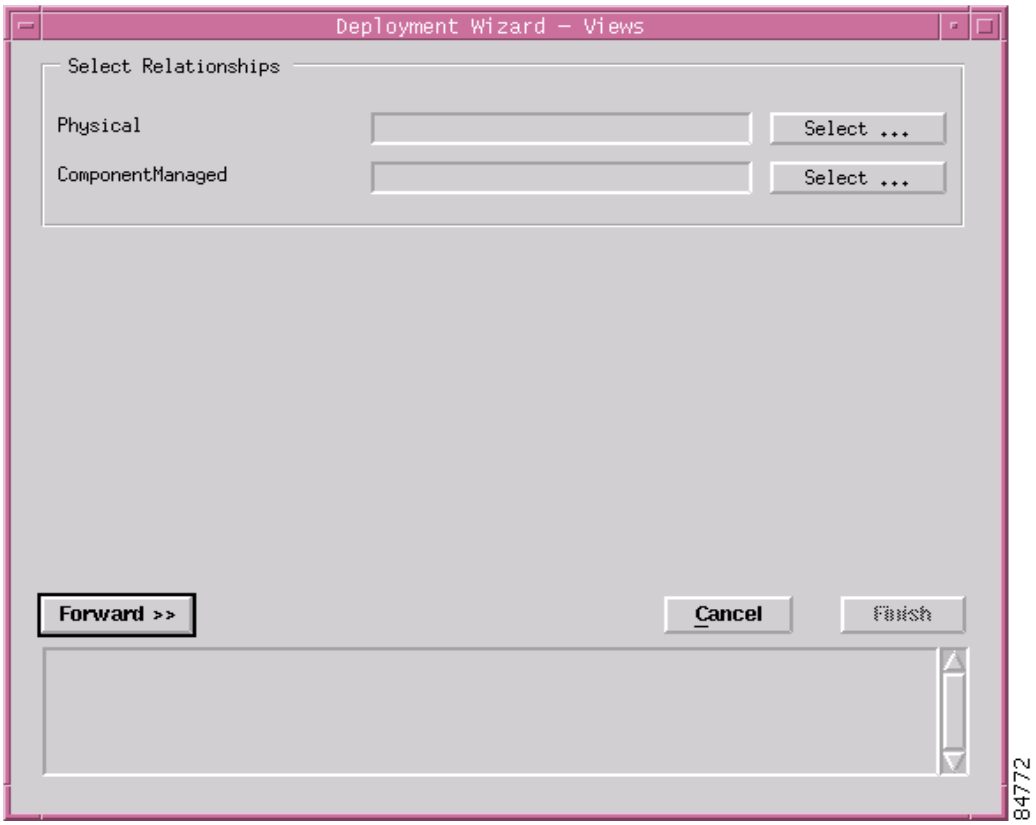
SNMP Details—Type in the SNMP read and write communities, and select the SNMP version. The default SNMP version is 2c.

Chassis Initial State—Specify the initial state for the chassis after deployment. The default initial state of the chassis is decommission. When the user selects commission, the chassis is automatically commissioned upon deployment.

Note Cisco 12000/10720 Router Manager allows the user to deploy a single chassis, more than once provided they have unique subnet masks.

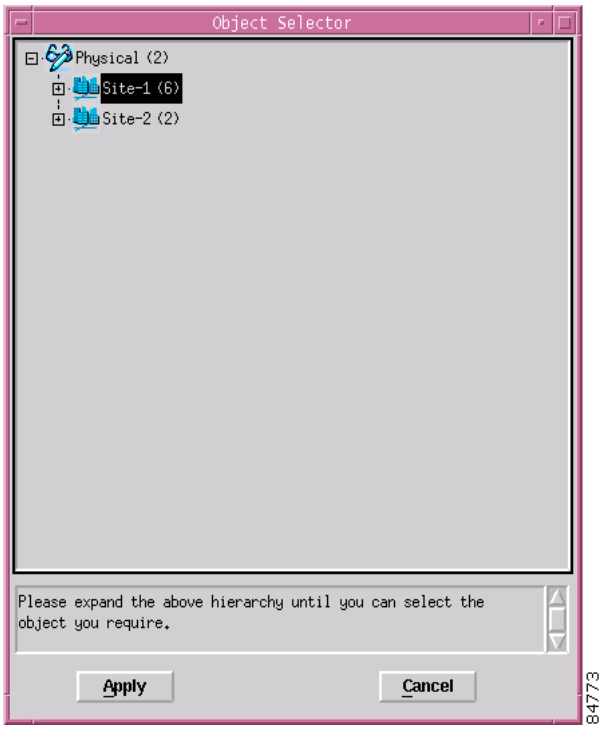
Step 4 Click **Forward** to continue. The Deployment Wizard-Views window appears.

Figure 3-17 Deployment Wizard—Views



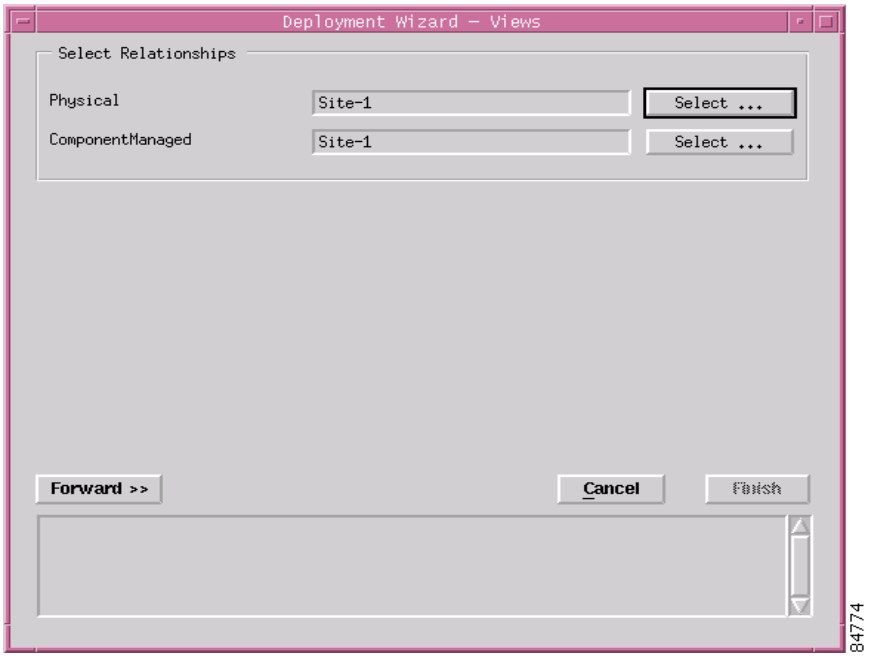
Step 5 Click on Select. The Object Selector window appears.

Figure 3-18 Object Selector Window



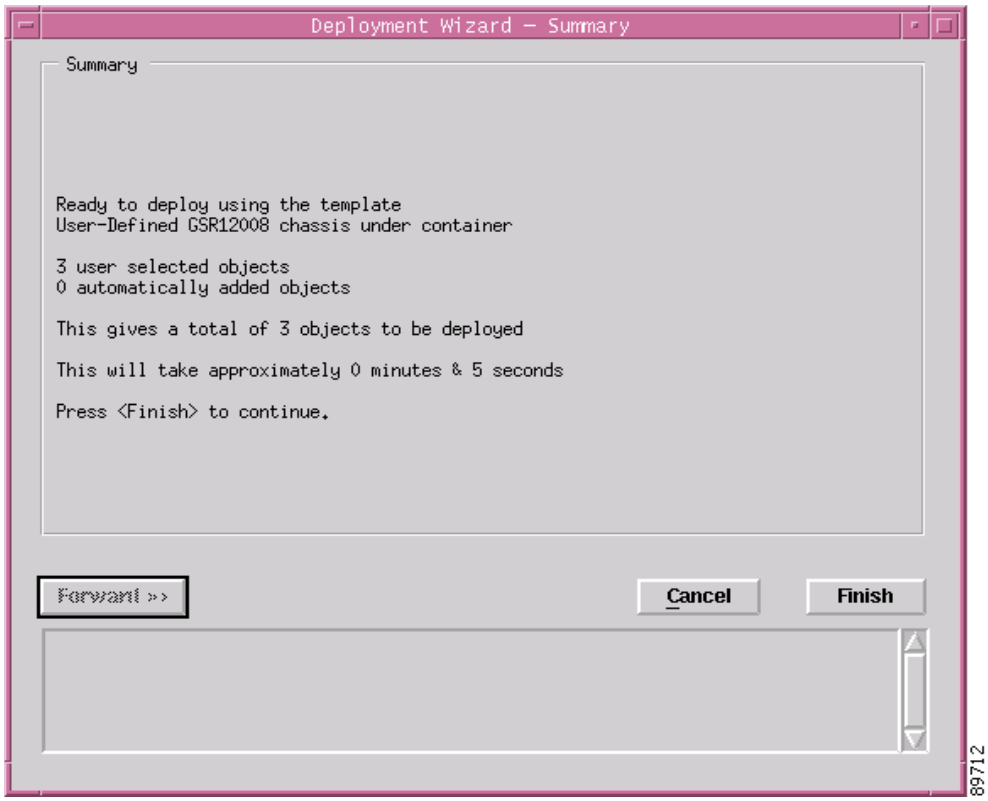
Step 6 Choose the site under which you want to deploy the chassis. Click Apply. The Deployment Wizard-Views window is displayed with the selected Site object.

Figure 3-19 Deployment Wizard—Views



Step 7 Click Forward. A Deployment Wizard Summary window is displayed.

Figure 3-20 Deployment Wizard Summary



Step 8 The Deployment Summary details appear in the Deployment Summary Screen. If the Deployment Summary information is correct, click **Finish**. If the Deployment Summary information is incorrect, click **Cancel** to stop deployment.

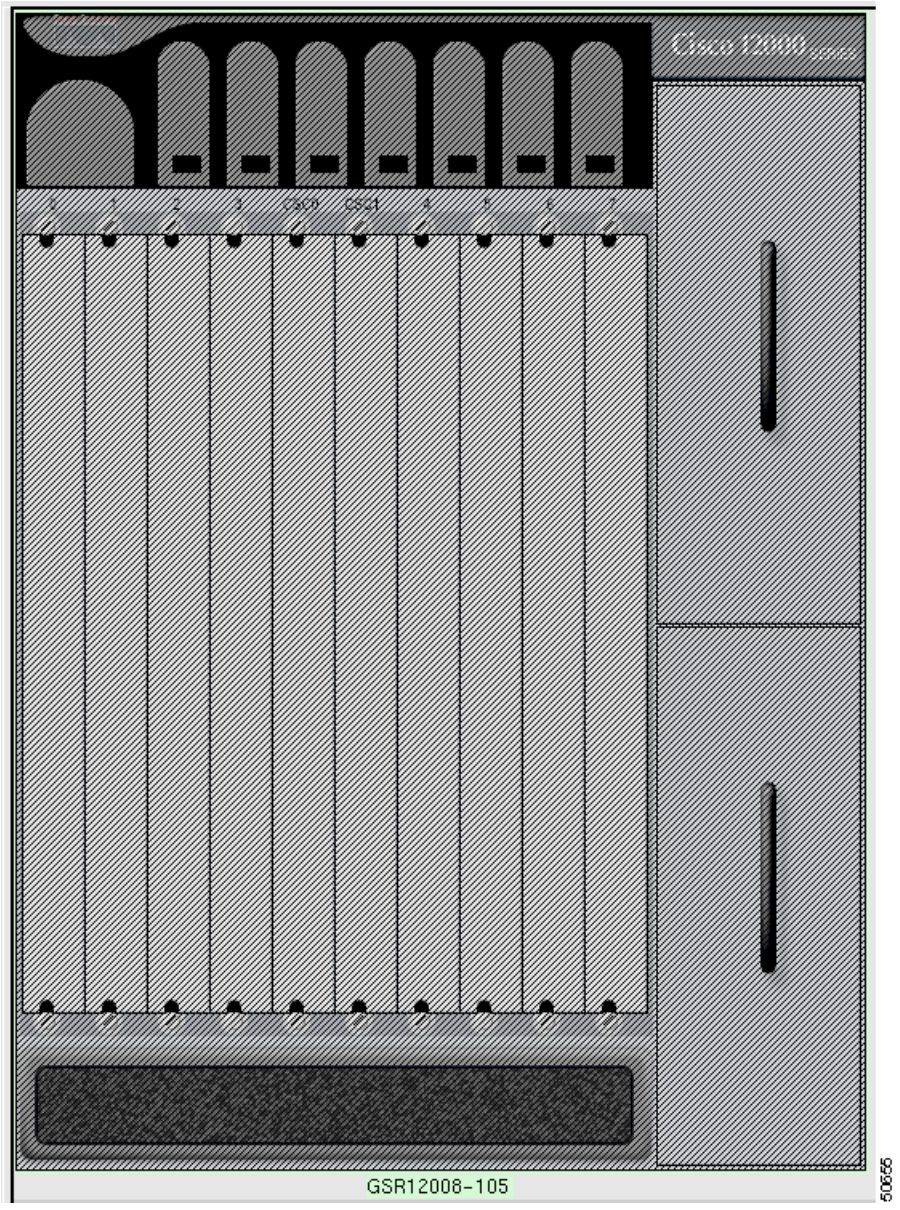
Step 9 To proceed, you have two options:

- To perform subchassis discovery, see "Commissioning and Subchassis Discovery" section on page 3-26
- If you wish to continue deploying individual modules, proceed to the "Manually Deploying Modules" section on page 3-30.

Commissioning and Subchassis Discovery

After you deploy a chassis, the next step in creating a manageable system is to commission the chassis (which begins the process of subchassis discovery). Figure 3-21 shows a Cisco 12008 chassis map in the Physical view before subchassis discovery. Subchassis discovery discovers all physical objects (that is, modules and interfaces) within the chassis and places them onto the chassis map.

Figure 3-21 Before Subchassis Discovery



Line cards and interfaces located within the chassis are discovered at this time. Commissioning not only discovers all the physical objects within the chassis, but also uploads the ATM connection objects (ATM PVC objects only) and initiates heartbeat polling that allows alarms to be raised on the chassis and all the physical objects within the chassis.

Because the chassis is the highest-level object, all objects under the chassis are commissioned as well when you commission the chassis. One level down, if you commission a GRP, you commission all physical objects underneath that level. If you commission a line card, you commission all interfaces on that line card, and so on. However, note that before you can commission any module within a chassis, the chassis object itself must be commissioned. This means that you must run subchassis discovery by commissioning the chassis before you can commission or decommission any individual objects under the chassis. If you do not want to actively manage all objects within the chassis, you can decommission the objects you are not ready to manage after commissioning the chassis.

Tip If you are not ready to commission the chassis, you can manually deploy modules within the chassis (for details, see "Manually Deploying Modules" section on page 3-30). Modules can also be commissioned individually, provided the chassis is commissioned.

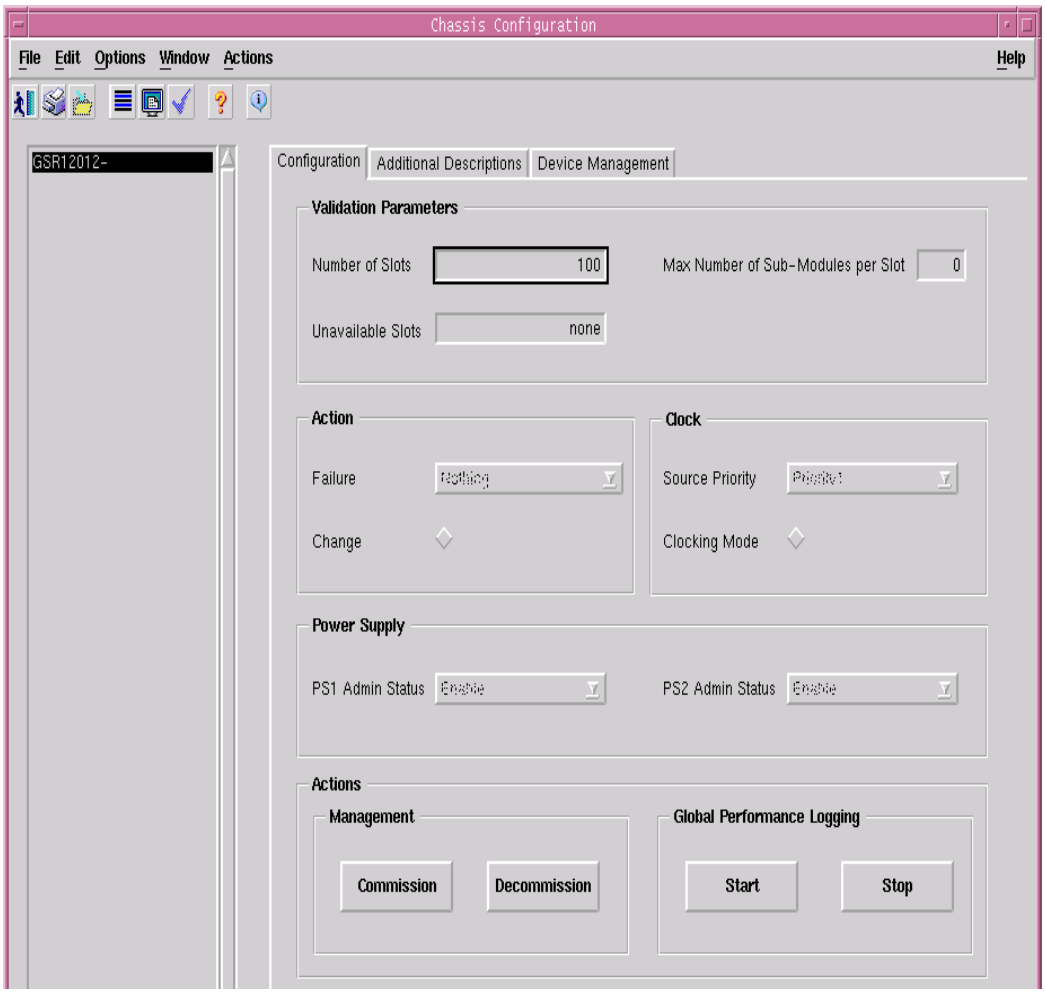
Commissioning a Chassis

When you commission a chassis, subchassis discovery begins automatically. Subchassis discovery discovers and commissions all objects within the chassis. Commissioning automatically starts active management (such as polling) on the chassis and all commissioned objects within the chassis.

To commission a chassis, proceed as follows:

Step 1 It is recommended that the Cisco IOS Username and Passwords are set correctly before proceeding. Right click on the Site object that contains the chassis you wish to commission, then choose **Cisco 12000/10720 Manager>Configuration>Chassis>Configuration**. The Chassis Configuration window appears.

Figure 3-22 Chassis Configuration Window



Step 2 Choose the **Chassis** you want to commission from the list box at left of the window. Cisco 12000/10720 Router Manager allows you to select and commission multiple chassis simultaneously.

Note To select a contiguous block of chassis, click on the first chassis; then, without releasing the mouse button, drag to the last desired entry and release. A subsequent click anywhere on the window deselects all previous selections. To extend a currently selected block of chassis, hold the **Shift** key down and click on the entry at the end of the group to be added. To add a non-contiguous entry to the selection group, hold down the **Ctrl** (Control) key and click on the entry to be added. It is recommended to commission at the most 15 chassis at a time.

Step 3 Configure the parameters displayed on the Configuration and Additional Description tabs, as required.

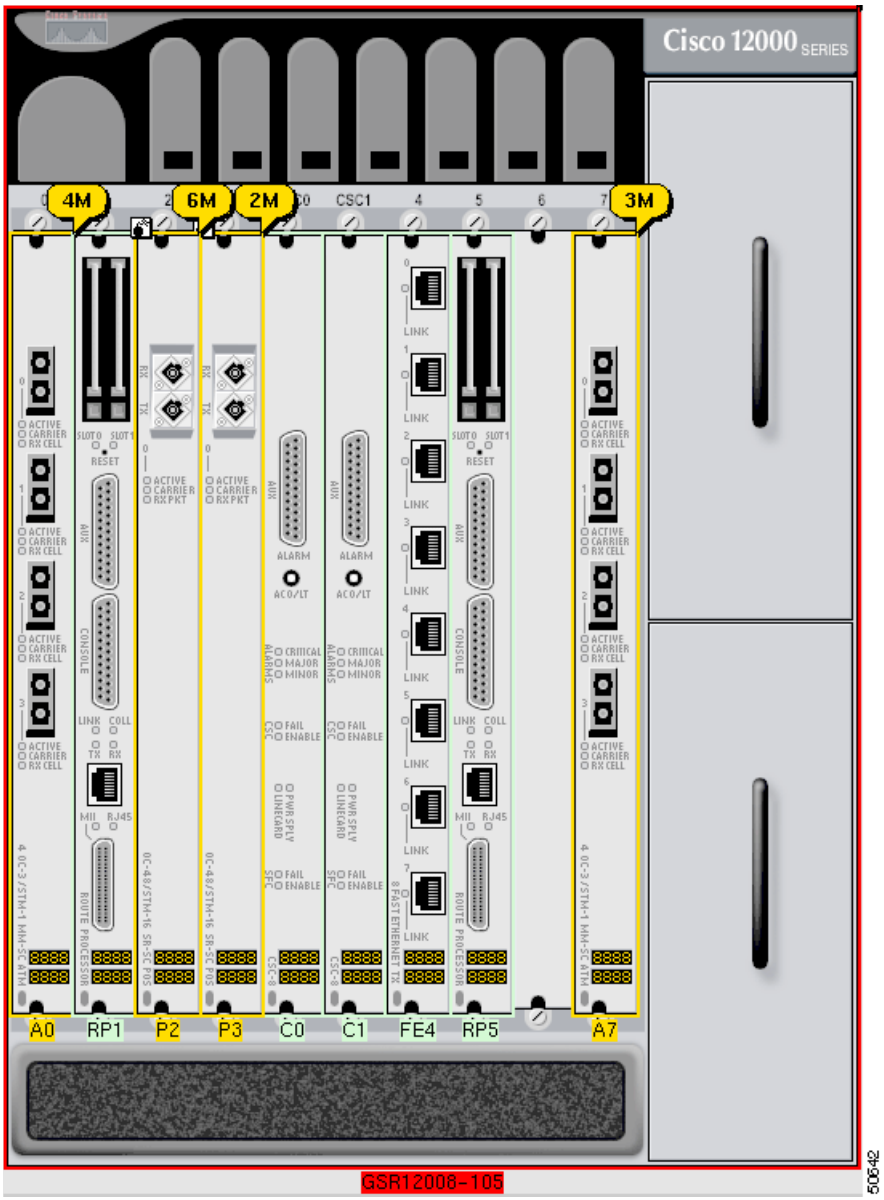
Note See "Chassis Configuration" section on page 4-7 for detailed information on the Chassis Configuration window.

Step 4 Click **Commission** (located in the Actions frame).

The chassis and all objects contained within are commissioned. A status report appears in the Commission Status area displaying whether the commission action succeeded or failed.

Figure 3-23 shows a Cisco 12008 chassis map in the Physical view after successful subchassis discovery. Modules and interfaces are automatically deployed within the chassis and enter the commissioned state. However, icons representing the physical objects appear in the Component Managed view.

Figure 3-23 After Subchassis Discovery



Note After commissioning a chassis you can configure and manage the chassis objects. See Chapter 4, "Managing Chassis," for further details.

Decommissioning a Chassis

Decommissioning a chassis, decommissions all the objects within the chassis, and active management (such as polling) stops on the chassis and on all objects within the chassis.

To decommission a chassis, proceed as follows:

Step 1 Right click on the chassis you want to decommission, then choose **Cisco 12000/10720 Manager>Configuration>Chassis>Configuration**.

The Chassis Configuration window appears (see Figure 3-22).

Step 2 Choose the **Chassis** you want to decommission in the Chassis list box at left of the window.

Step 3 Click **Decommission** (located in the Actions area). The chassis and all objects contained within the chassis are decommissioned. A status report appears in the Commission Status area, which shows whether the action has succeeded or failed.

Object States

After subchassis discovery all objects enter a specific state. See "Cisco 12000/10720 Router Manager Object States" section on page 2-13 for details about object states.

Manually Deploying Modules

This section details the procedure to manually deploy modules using the Deployment Wizard. You can manually deploy modules before they are physically present (for details, see "Pre-deployment" section on page 3-58). In this scenario, you need to manually deploy modules, as a subchassis discovery will not pick up their presence. You can also decommission these modules if you do not want active management to be carried out on them.

Deployable modules include the following:

- GRPs
- Line cards (ATM, POS, Ethernet, DS-3, SRP or Modular Ethernet)

Tip Supporting modules, such as AC or DC power supply cards, fan tray modules, and blower modules, can only be deployed through subchassis discovery. You cannot manually deploy these modules.

Note Manual deployment of SRP Modules is currently not supported.

User Named vs. Auto Named Module Deployment

When you deploy a module, you have two initial options:

- To deploy an auto-named module
- To deploy a user-named module

The user-named option allows you to name the module as you like. For example, if you have a specific naming scheme you want to use, then select the user-named option.

The auto-named option assigns an auto-generated name to the module, with the slot number appended to the name. For example, if you deployed an auto-named ATM line card in slot 5, the name given would be "A5." This option is most useful when you have numerous line cards of the same type to deploy. However, the line cards must be deployed in sequence within the slots. For example, if you wanted to deploy five ATM line cards in slots 1 to 5, then the auto-named option would be ideal.

Manually Deploying a GRP Card

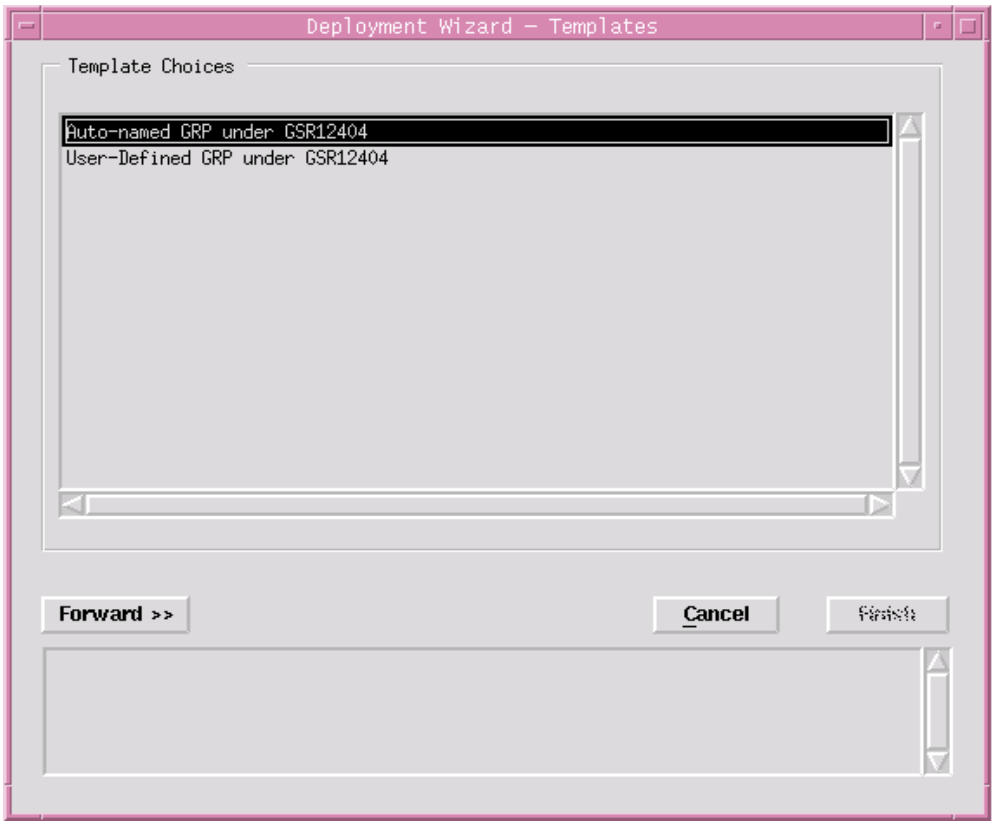
Each chassis must have at least one GRP card deployed. A second optional GRP card can be deployed for the purpose of redundancy.

Note This feature is not applicable to the 10720 chassis

To deploy a GRP, proceed as follows:

Step 1 Right-click on the slot within the chassis where you want the GRP to be deployed, then choose **Deployment>Cisco 12000/10720 Manager>Module>RP>GRP**. The Deployment Wizard appears.

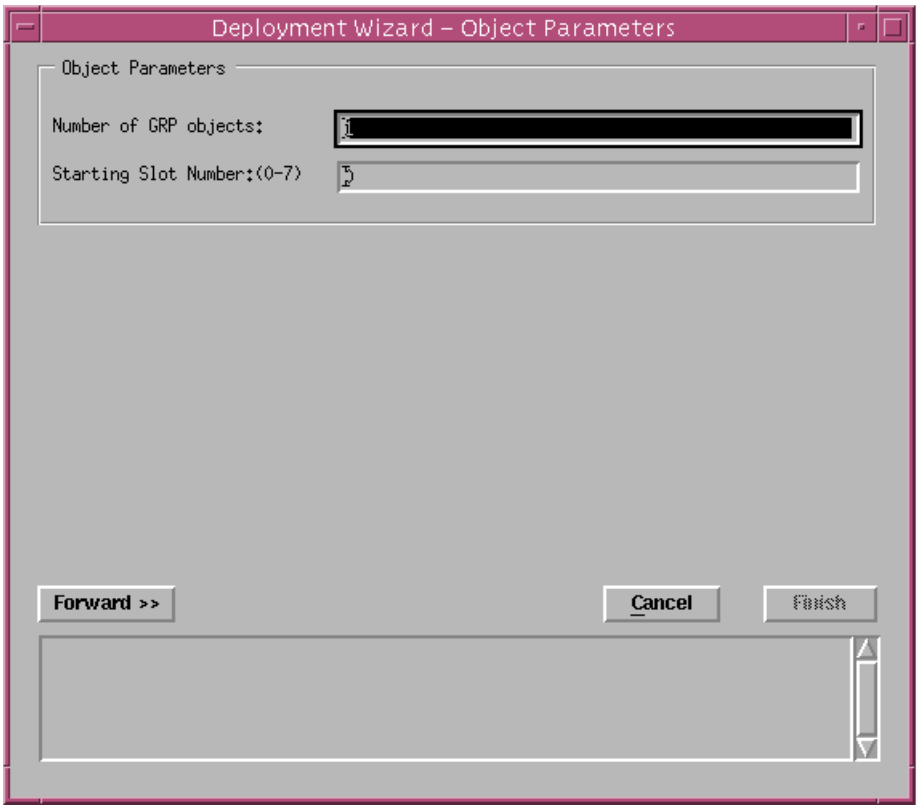
Figure 3-24 Deployment Wizard—Templates



Step 2 Choose one of the Template Choices from the list displayed (either auto-named or user-named deployment). Ensure that your choice is highlighted before continuing. See "User Named vs. Auto Named Module Deployment" section on page 3-31 for further information on auto vs. user named deployment.

Step 3 Click **Forward**. The Deployment Wizard - Object Parameters window appears.

Figure 3-25 Deployment Wizard—Object Parameters

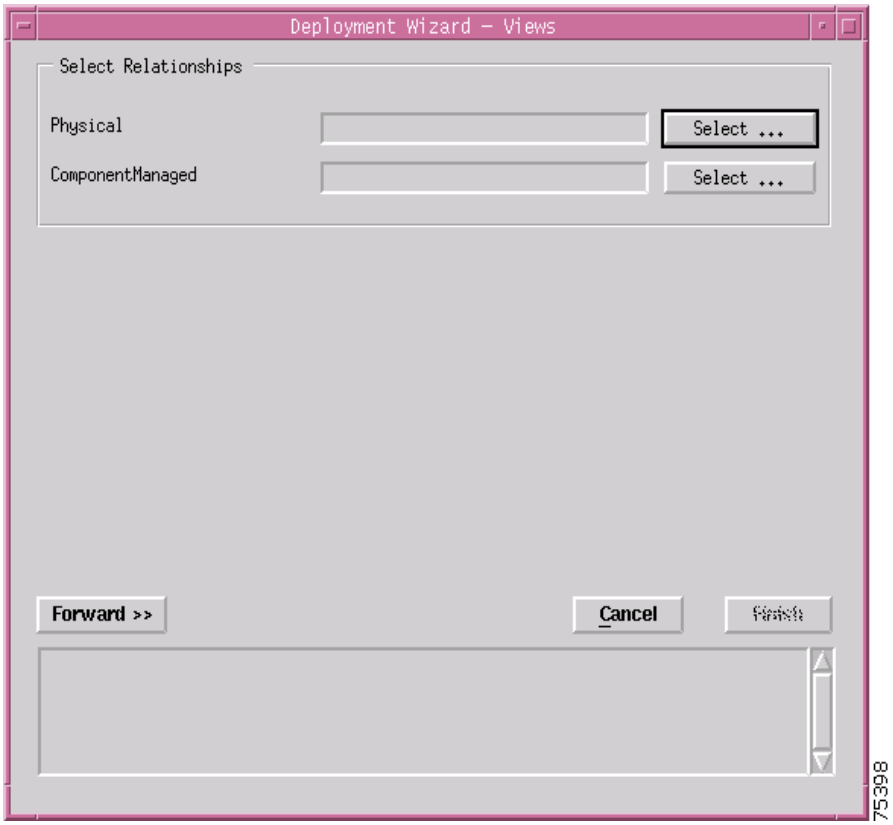


Step 4 Enter the Number of GRP objects you wish to deploy. Enter in the slot number where you want the GRP to be deployed. If you are deploying two GRPs, the primary GRP must be placed in a slot with a lower number than the secondary GRP.

Caution If you deploy a module in a slot that is already occupied, deployment will fail at the **Finish** point. Also deployment fails, if a module is deployed with a name that already exists in the EM.

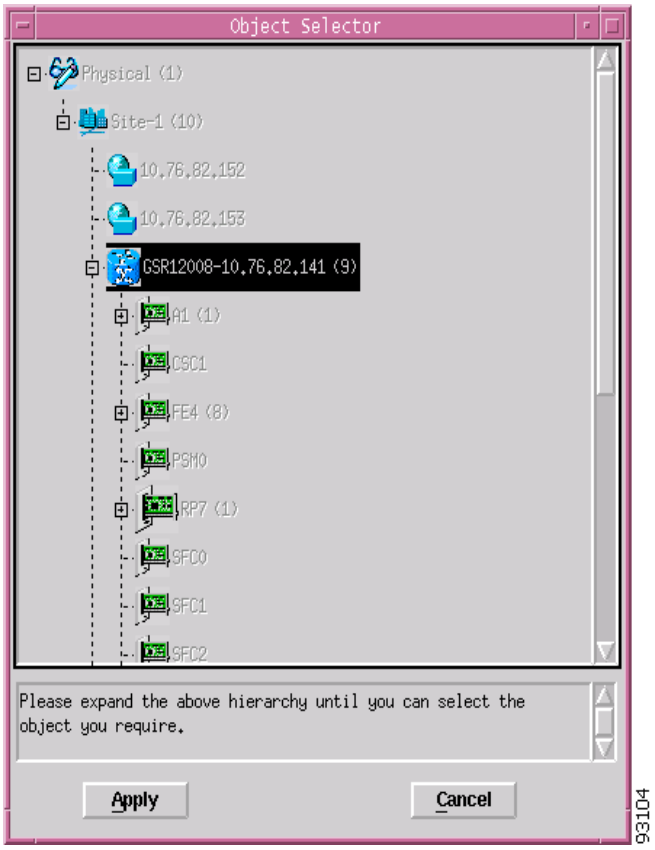
Step 5 Click **Forward**. The Deployment Wizard - Views window appears. Two Cisco 12000/10720 Router Manager views are displayed at the left side of the Deployment Wizard - Views window (that is, Physical and ComponentManaged).

Figure 3-26 Deployment Wizard—Views



Step 6 Click **Select**. The Object Selector window appears.

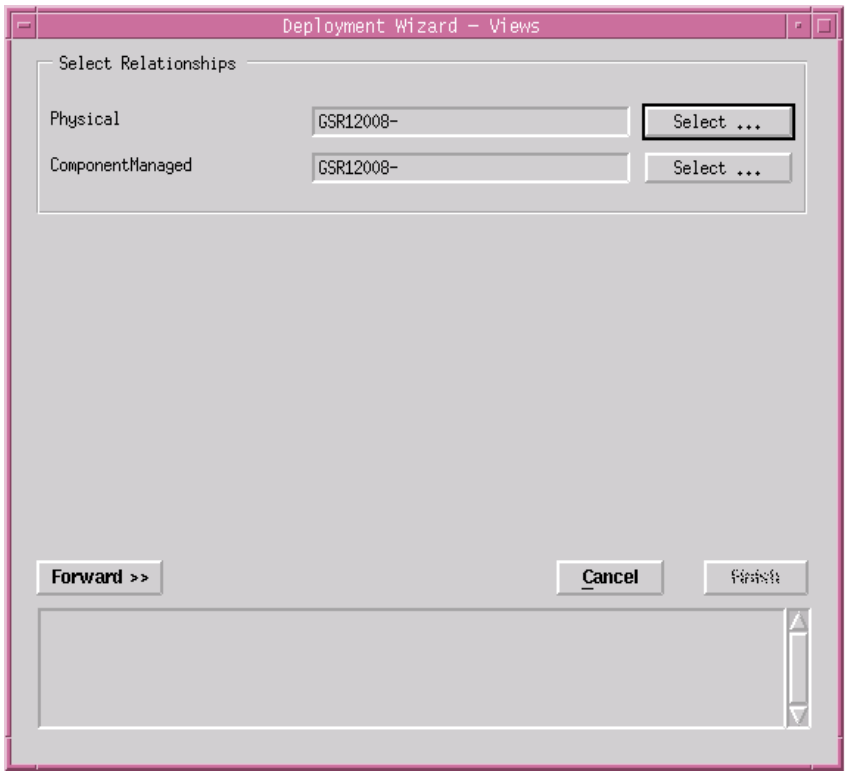
Figure 3-27 Object Selector Window



Step 7 Navigate through the hierarchy and choose the chassis that the GRP will be deployed within. Grayed out objects are not available for selection.

Step 8 Click **Apply**. The Deployment Wizard - Views window re-appears with the location where the object will be placed.

Figure 3-28 Deployment Wizard—Views

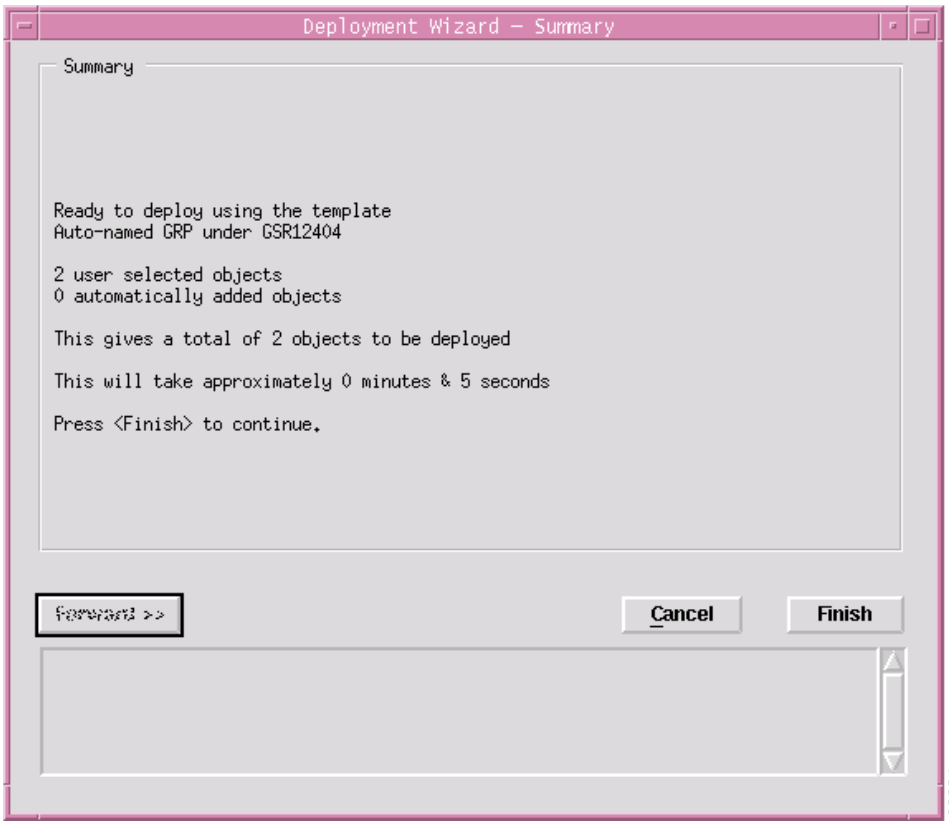


Step 9 Repeat Steps 6 to 8 to place the chassis object in each of the Physical and ComponentManaged views.

Note You are prompted to repeat steps 6 to 8 if you are deploying more than one GRP card.

Step 10 Click **Forward**. The Deployment Wizard-Summary window appears.

Figure 3-29 Deployment Wizard—Summary



Step 11 The deployment summary details appear in the Deployment Summary window. If the deployment summary information is correct, click **Finish**. If the deployment summary information is incorrect, click **Cancel** to stop deployment.

Note Two objects are deployed when deploying each GRP card: the GRP module object itself, and the Ethernet interface object, representing the Ethernet interface on the GRP.

Manually Deploying Line Cards

The Cisco 12000 Series Router chassis supports six types of technology specific line cards (ATM, POS, Ethernet, SRP, DS-3 and Modular Ethernet). See Table 3-2 to Table 3-7 for further details.

Line Cards Supported by Cisco 12000 Series Routers

Table 3-2 displays a list of the ATM line cards supported by Cisco 12000 Series Routers.

Table 3-2 ATM Line Cards Supported by Cisco 12000 Series Routers

Card Type	Cisco 12000/10720 Router Manager Menu Option	Card Description
atm-qoc3-sm	ATM > OC-3 4 > SM	4 Port OC3 ATM Single Mode (SM) Line Card
atm-qoc3-mm	ATM > OC-3 4 > MM	4 Port OC3 ATM Multi Mode (MM) Line Card
gsr-en-8oc3	ATM > OC-3-8 > SM	GSR enhanced 8 port OC3c/STM-1 ATM Line Card
sr-atm-en-8oc3-mm	ATM > OC-3-8 > MM	GSR enhanced 8 port OC3c/STM-1 Multimode ATM Line Card
atm-oc12-sm	ATM > OC-12 1 > SM	Single Port OC-12 Single Mode (SM) Line Card
atm-oc12-mm	ATM > OC-12 1 > MM	Single Port OC-12 Multi Mode (MM) Line Card
gsr-qoc12-sm	ATM > OC-12 4> SM	4 port OC12 ATM Single Mode (SM) Line Card
gsr-qoc12-mm	ATM > OC-12 4 > MM	4 port OC12 ATM Multi Mode (MM) Line Card
gsr-e48-atm-4oc12-mm-sr-sc	cannot be manually deployed	GSR Edge Engine 48, ATM, 4 port OC12/STM4Multi Mode Short Reach Line Card
gsr-e48-atm-4oc12-sm-ir-sc	cannot be manually deployed	GSR Edge Engine 48, ATM, 4 ports OC12/STM4 Single Mode Intermediate Reach Line Card

Table 3-3 displays a list of the POS line cards supported by Cisco 12000 Series Routers.

Table 3-3 POS Line Cards Supported by Cisco 12000 Series Routers

POS		
Card Type	**Cisco 12000/10720 Router Manager Menu Option**	**Card Description**
pos-qoc3-sm	POS > OC-3 4 > E4 SM	4 Port Packet Over SONET OC-3c/SM Single Mode Line Card
pos-qoc3-sm-l	POS > OC-3 4 > E4 SM-LR	4 Port Packet Over SONET OC-3c/STM-1 Single Mode Long Reach Line Card
pos-qoc3-mm	POS > OC-3 4 > E4 MM	4 Port Packet Over SONET OC-3c/MM Multi Mode Line Card
gsr-e48-pos-4oc3-mm-sr-mtrj	POS > OC-3 4 > E4+ MM-SR	4 Port POS OC 48 Multi Mode Short Reach Line Card
gsr-e48-pos-4oc3-sm-lr-lc	POS > OC-3 4 > E4+ SM-LR	4 Port POS OC 48 Single Mode long Reach Line Card
gsr-e48-pos-4oc3-sm-ir-lc	POS > OC-3 4 > E4+ >SM-IR	4 Port POS OC 48 Single Mode Intermediate Reach Line Card

Table 3-3 POS Line Cards Supported by Cisco 12000 Series Routers (continued)

POS		
Card Type	**Cisco 12000/10720 Router Manager Menu Option**	**Card Description**
pos-8oc3-mm	POS > OC-3 8 Port > E4 MM	8 Port OC3 Multimode POS
pos-8oc3-ir	POS > OC-3 8 Port > E4 SM	8 Port OC3 SM Intermediate Reach POS
pos-8oc3-lr	POS > OC-3 8 Port > E4 SM-LR	8 port OC3 SM Long Reach POS
gsr-e48-pos-8oc3-mm-sr-mtrj	POS > OC-3 8 Port > E4+ MM-SR	8 Port POS OC 3 multi MOde Short Reach Line Card
gsr-e48-pos-8oc3-sm-ir-lc	POS > OC-3 8 Port > E4+ SM-IR	8 Port POS OC 3 Single Mode Intermediate Reach Line Card
pos-oc12-sm	POS > OC-12 1 Port > SM	1 Port Packet Over SONET OC-12 Single Mode (SM) Line Card
pos-oc12-mm	POS > OC-12 1 Port > MM	1 Port Packet Over SONET OC-12 Multi Mode (MM) Line Card
pos-qoc12-sm-lr	POS > OC-12 4 Port > SM	4 Port (Quad) OC-12 POS Card, Single Mode, Long Reach
pos-qoc12-mm-sr	POS > OC-12 4 Port > MM	4 port (Quad) OC-12 POS Card, Single Mode, Short Reach
pos-en-qoc12-sr	POS > Enhanced OC-12 4 Port > MM	Enhanced 4 Port OC-12 Short Reach Line Card
pos-en-qoc12-ir	cannot be manually deployed	Enhanced 4 port OC-12 Intermediate Reach Line Card
pos-oc48-sm-lr-fc	POS > OC-48 > LR-FC	1 Port Packet Over Sonet OC-48, Single Mode, Long Reach, FC Connector Card
pos-oc48-sm-lr-sc	POS > OC-48 > LR-SC	1 Port Packet Over Sonet OC-48, Single Mode, Long Reach, SC Connector Card
pos-oc48-sm-sr-fc	POS > OC-48 > SR-FC	1 Port Packet Over SONET OC-48c/STM-16 Single Mode Short Reach with FC Connector
pos-oc48-sm-sr-sc	POS > OC-48 > SR-SC	1 Port Packet Over Sonet OC-48, Single Mode, Short Reach, SC Connector Card
pos-en-oc48-lr-fc	POS > Enhanced OC-48 > LR-FC	Enhanced OC-48 Long Reach FC Connector Line Card
pos-en-oc48-lr-sc	POS > Enhanced OC-48 > LR-SC	Enhanced OC-48 Long Reach SC Connector Line Card
pos-en-oc48-sr-fc	POS > Enhanced OC-48 > SR-FC	Enhanced OC-48 Short Reach FC Connector Line Card
pos-en-oc48-sr-sc	POS > Enhanced OC-48 > SR-SC	Enhanced OC-48 Short Reach SC Connector Line Card
pos-en-qoc48-sm-sr-sc	POS > Enhanced OC-48 4 > E4 SR-SC	4 Port (Quad) Enhanced OC-48 Short Reach SC Connector Line Card
pos-en-qoc48-sm-sr-fc	POS > Enhanced OC-48 4 > E4 SR-FC	4 Port (Quad) Enhanced OC-48 Short Reach FC Connector Line Card

Table 3-3 POS Line Cards Supported by Cisco 12000 Series Routers (continued)

POS		
Card Type	**Cisco 12000/10720 Router Manager Menu Option**	**Card Description**
pos-en-qoc48-sm-lr-sc	POS > Enhanced OC-48 4 > E4 LR-SC	4 Port (Quad) Enhanced OC-48 Long Reach SC Connector Line Card
pos-en-qoc48-sm-lr-fc	POS > Enhanced OC-48 4 > E4 LR-FC	4 Port (Quad) Enhanced OC-48 Long Reach FC Connector Line Card
gsr-e-qoc48-sm-sr-sc	POS > Enhanced OC-48 4 > E4+ SR-SC	4 Port Enhanced OC 48 Short Reach SC Connector Line Card
gsr-e-qoc48-sm-sr-fc	POS > Enhanced OC-48 4 > E4+ SR-FC	4 Port Enhanced OC 48 Short Reach FC Connector Line Card
gsr-e-qoc48-sm-lr-sc	POS > Enhanced OC-48 4 > E4+ LR-SC	4 Port Enhanced OC 48 Long Reach SC Connector Line Card
gsr-e-qoc48-sm-lr-fc	POS > Enhanced OC-48 4 > E4+ LR-FC	4 Port Enhanced OC 48 Long Reach FC Connector Line Card
pos-oc192-sm-sr-sc	POS > OC-192 1 > E4 SR-SC	OC-192 Short Reach SC Connector Line Card
pos-oc192-sm-sr-fc	POS > OC-192 1 > E4 SR-FC	OC-192 Short Reach FC Connector Line Card
pos-oc192-sm-ir-sc	POS > OC-192 1 > E4 IR-SC	OC-192 Intermediate Reach SC Connector Line Card
pos-oc192-sm-ir-fc	POS > OC-192 1 > E4 IR-FC	OC-192 Intermediate Reach FC Connector Line Card
pos-en-oc192-sm-vsr	POS > OC-192 1 > E4 VSR	Enhanced OC-192 Very Short Reach Line Card
gsr-e-oc192-sm-sr2-sc	POS > OC-192 1 > E4 SR2-SC	GSR Edge 1 Port OC 192 Short Reach 2 SC Connector Line Card
gsr-e-oc192-sm-sr2-fc	POS > OC-192 1 > E4 SR2-FC	GSR Edge 1 Port OC 192 Short Reach 2 FC Connector Line Card
pos-en-oc192-sm-sr2-sc	POS > OC-192 1 > E4+ SR2-SC	Enhanced 1 Port OC 192 Short Reach 2 SC Connector Line Card
pos-en-oc192-sm-sr2-fc	POS > OC-192 1 > E4+ SR2-FC	Enhanced 1 Port OC 192 Short Reach 2 FC Connector Line Card
gsr-e-oc192-sm-sr-sc	POS > OC-192 1 > E4+ SR-SC	1 Port OC 192 Short Reach SC Connector Line Card
gsr-e-oc192-sm-sr-fc	POS > OC-192 1 > E4+ SR-FC	1 Port OC 192 Short Reach FC Connector Line Card
gsr-e-oc192-sm-ir-sc	POS > OC-192 1 > E4+ IR-SC	1 Port OC 192 Intermediate Reach SC Connector Line Card
gsr-e-oc192-sm-ir-fc	POS > OC-192 1 > E4+ IR-FC	1 Port OC 192 Intermediate Reach FC Connector Line Card
gsr-e-oc192-vsr	POS > OC-192 1 > E4+ VSR-SC	Enhanced OC-192 Very Short Reach SC Connector Line Card
pos-16oc3-lr	POS > OC-3 16 > E4 LR	16 Port OC3 SM long Reach POS

Table 3-3 POS Line Cards Supported by Cisco 12000 Series Routers (continued)

POS		
Card Type	**Cisco 12000/10720 Router Manager Menu Option**	**Card Description**
pos-16oc3-ir	POS > OC-3 16 > E4 SM	16 Port OC3 SM Intermediate Reach POS
pos-16oc3-mm	POS > OC-3 16 > E4 MM	16 Port OC3 Multi Mode POS
gsr-e48-pos-16oc3-mm-sr-mtrj	POS> OC-3 16 > E4+ MM-SR	16 Port OC3 Multi Mode Short Reach POS
gsr-e48-pos-16oc3-sm-ir-lc	POS > ISE > OC-3 16 > IR	16 Port OC3 SM Intermediate Reach POS
gsr-e48-pos-qoc12-sm-ir-sc	POS > ISE > OC-12 4 > IR	4 Port OC12 SM Intermediate Reach POS
gsr-e48-pos-oc48-sm-ir-lc	POS > ISE > OC-48 1> IR	1 Port OC48 Intermediate Reach POS
gsr-e48-pos-oc48-sm-sr	POS > ISE > OC-48 1> SR	1 Port OC48 Short Reach POS
gsr-e48-pos-oc48-sm-lr	POS > ISE > OC-48 1> LR	1 Port OC48 Long Reach POS

Table 3-4 displays a list of the Ethernet line cards supported by Cisco 12000 Series Routers.

Table 3-4 Ethernet Line Cards Supported by Cisco 12000 Series Routers

Card Type	**Cisco 12000/10720 Router Manager Menu Option**	**Card Description**
gsr-1ge	Ethernet > Giga > 1 Port	1 Port Gigabit Ethernet Line Card
gsr-3ge	Ethernet > Giga > 3 Port	3 Port Gigabit Ethernet Line Card (trident)
gsr-10pge	Ethernet>Giga > 10 Port	10 port Gigabit Ethernet Line Card
gsr-8fe-tx	Ethernet > Fast > 8 Port > Copper	8 port Fast Ethernet card with Copper Interface
gsr-8fe-fx	Ethernet > Fast > 8 Port > Fiber	8 port Fast Ethernet card with Fiber Interface
gsr-1p10ge	Ethernet > 10Giga > 1 Port	1 Port 10Giga Ethernet Line Card
gsr-pa-1ge	Ethernet > Modular > Gigabit/ FastEthernet Card	1 Port Modular Gigabit Fast Ethernet Line Card
gsr-pa-3ge	Ethernet > Modular > Port Adaptor > 3 Port Gigabit	3 Port Modular Port Adaptor Gigabit Line Card
gsr-pa-24fe	Ethernet > Modular > Port Adaptor > 24 Port FastEthernet	24 Port Modular Port Adaptor Fast Ethernet Line Card

Table 3-5 displays a list of the DS-3 line cards supported by Cisco 12000 Series Routers.

Table 3-5 DS-3 Line Cards Supported by Cisco 12000 Series Routers

Card Type	Cisco 12000/10720 Router Manager Menu Option	Card Description
copper-6ds3	DS3 > 6 Port	6 Port Copper DS3 Interface Line Card
copper-12ds3	DS3 > 12 Port	12 Port Copper DS3 Interface Line Card

Table 3-6 displays a list of the E3 line cards supported by Cisco 12000 Series Routers.

Table 3-6 E3 Line Cards Supported by Cisco 12000 Series Routers

Card Type	Cisco 12000/10720 Router Manager Menu Option	Card Description
copper-6e3	E3 > 6 Port	6 Port E3 Interface Line Card
copper-1e3	E3 > 12 Port	12 Port E3 Interface Line Card

Table 3-7 displays a list of the SRP line cards supported by Cisco 12000 Series Routers.

Table 3-7 SRP Line Cards Supported by Cisco 12000 Series Routers

Card Type	Cisco 12000/10720 Router Manager Menu Option	Card Description
srp-oc12-sm-ir	cannot be manually deployed	1 Port OC-12 Single Mode SRP Intermediate Reach Line Card
srp-oc12-mm	cannot be manually deployed	1 Port OC-12 Multi Mode SRP Line Card
srp-oc48-sm-sr	cannot be manually deployed	1 Port OC-48 SRP Single Mode Short Reach Line Card
srp-oc48-sm-lr	cannot be manually deployed	1 Port OC-48 SRP Single Mode Long Reach Line Card
ssrp-e48-2oc12-sm-ir	cannot be manually deployed	2 Port OC 12 Single Mode Intermediate Reach Line Card
ssrp-e48-2oc12-sm-xr	cannot be manually deployed	2 Port OC 12 Single Mode Line Card
ssrp-oc192-sm-lr	cannot be manually deployed	GSR 1 port SONET based SRP OC-192c/STM-64
ssrp-oc192-sm-ir	cannot be manually deployed	OC 192 Single Mode Intermediate Reach Line Card
ssrp-oc192-sm-sr	cannot be manually deployed	OC 192 Single Mode Short Reach Line Card
ssrp-oc192-sm-vsr	cannot be manually deployed	OC 192 Single Mode Very Short Reach Line Card
gsr-dtp-dense48	cannot be manually deployed	A dual mode card. It can function as a 4xOC48 or 2xSRP48

Line Cards Supported by Cisco 10720 Routers

Table 3-8 displays a list of the SRP line cards supported by Cisco 10720 Routers.

Table 3-8 SRP Line Cards Supported by Cisco 10720 Routers

Card Type	Cisco 12000/10720 Router Manager Menu Option	Card Description
srp-oc48-sr	cannot be manually deployed	1 port OC-48c SRP SM short reach uplink card
srp-oc48-ir	cannot be manually deployed	1 port OC-48c SRP SM intermediate reach uplink card
ul-srp48-lr1	cannot be manually deployed	1 port OC-48c SRP SM long (40km) reach uplink card
ul-srp48-lr2	cannot be manually deployed	1 port OC-48c SRP SM long (80km) reach uplink card
ul-pos-srp48-sm-sr	POS > SR	c10720 OC-48c POS/SRP SM short reach uplink card
ul-pos-srp48-sm-ir	POS > IR	c10720 OC-48c POS/SRP SM intermediate reach uplink card
ul-pos-srp48-sm-lr1	POS > LR1	c10720 OC-48c POS/SRP SM Long Reach (40Km) uplink card
ul-pos-srp48-sm-lr2	POS > LR2	c10720 OC-48c POS/SRP SM Long Reach (80Km) uplink card

Table 3-9 displays a list of the Ethernet line cards supported by Cisco 10720 Routers.

Table 3-9 Ethernet Line Cards Supported by Cisco 10720 Routers

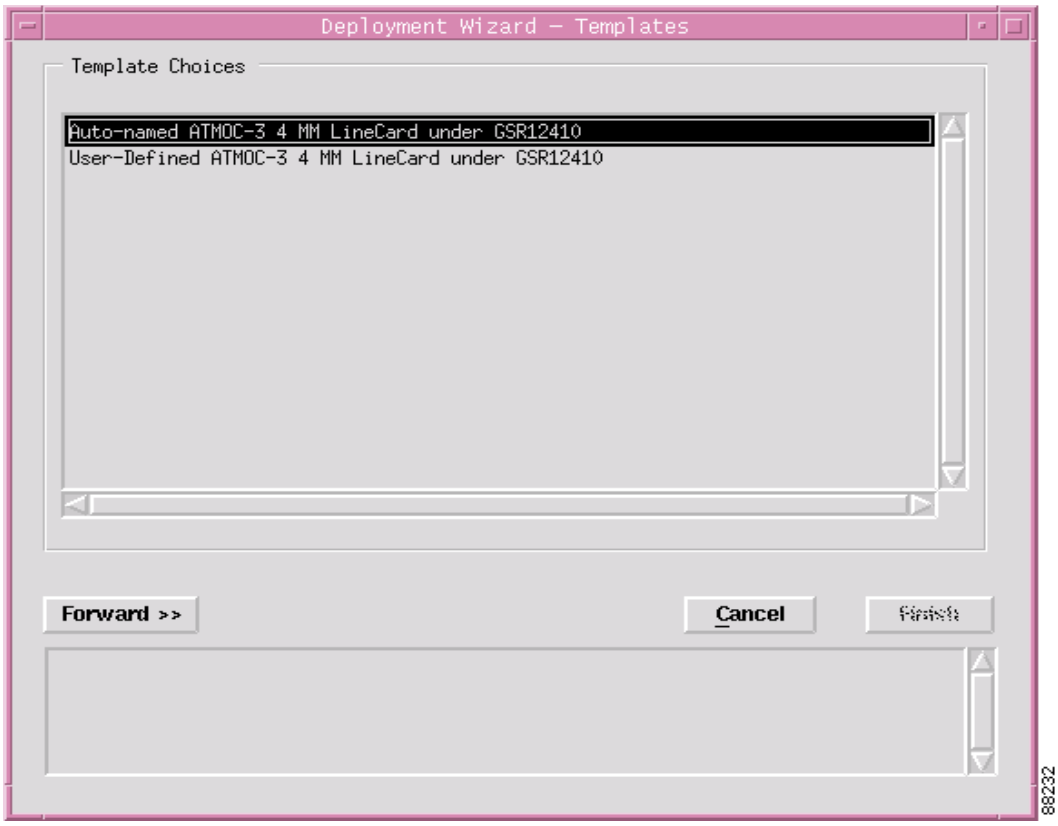
Card Type	Cisco 12000/10720 Router Manager Menu Option	Card Description
acc-24fe-tx	Fast > 24 Port	24 port fast Ethernet TX access card
acc-24fe-fx-mm	Fast > 24 Port	24 port fast Ethernet FX MM (2km) access card
acc-24fe-fx-sm	Fast > 24 Port	24 port fast Ethernet FX SM (15km) access card

To deploy a line card of any type, proceed as follows:

Step 1 Right click on the chassis object under which you want to deploy the line card, then choose **Deployment>Cisco 12000/10720 Manager>Module>ATM or POS or Ethernet or DS-3**, then choose the exact type of line card to be deployed (for example, OC-3 4 Port or OC12 1 Port). Now, choose the exact variant (for example, SM, or MM) if applicable.

The Deployment Wizard appears.

Figure 3-30 Deployment Wizard—Templates

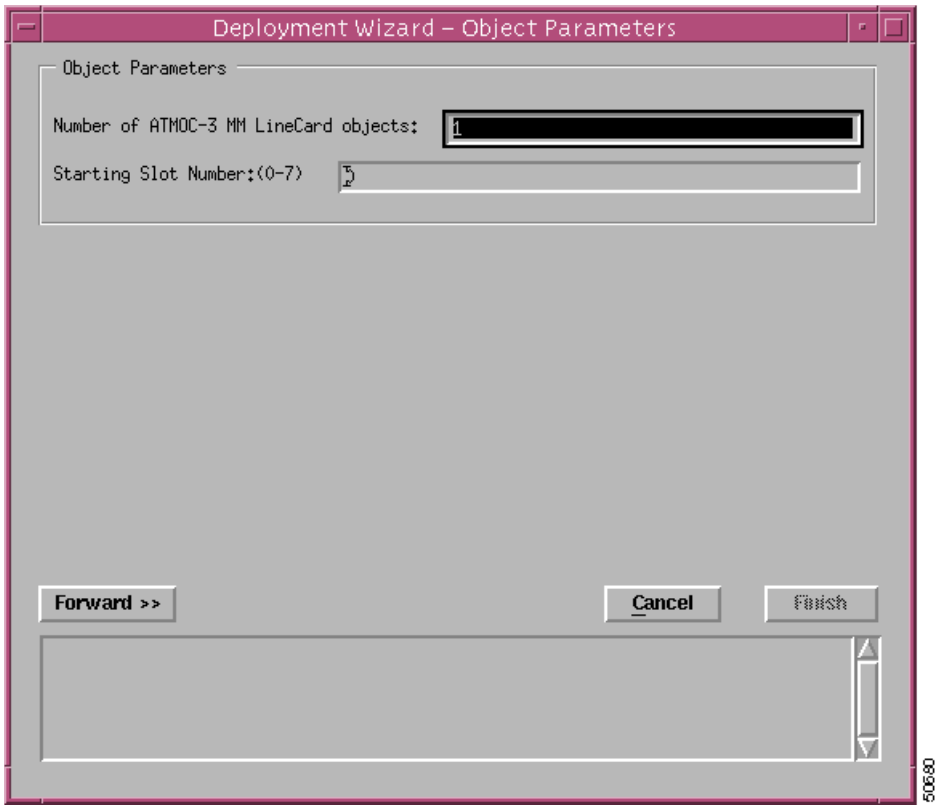


Step 2 Choose the type of deployment (either auto-named or user-named).

Step 3 Click **Forward**.

Note The sample windows displayed are for an ATM OC-3 4 port MM line card.

Figure 3-31 Deployment Wizard—Object Parameters



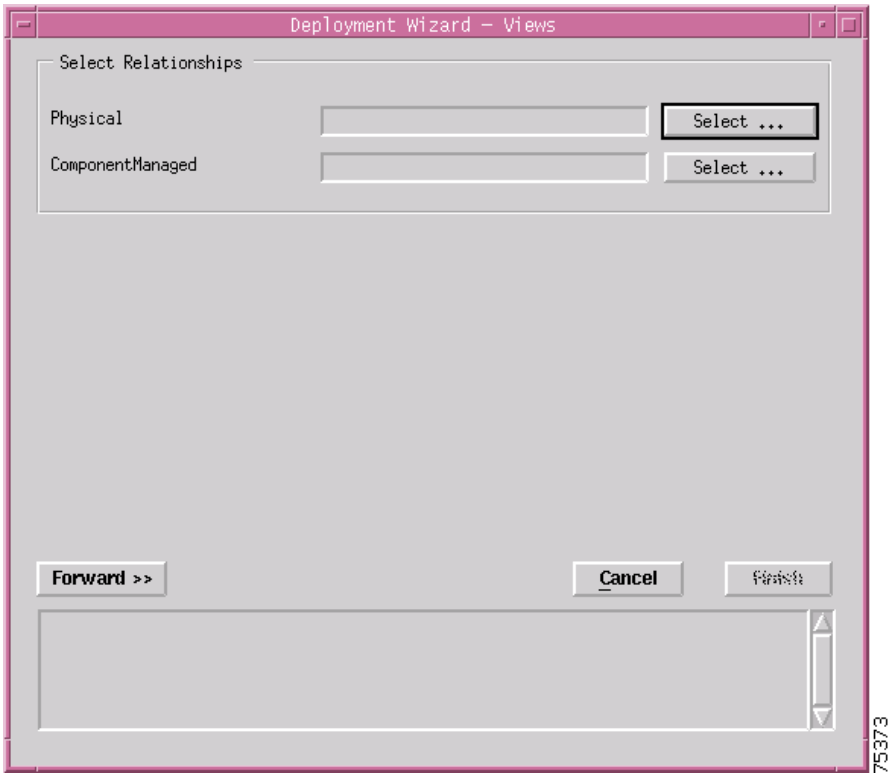
Step 4 Enter the number of line card objects you want to deploy.

Step 5 Enter the slot number where the card will be deployed.

Note Deployment will fail (at the **Finish** point later on) if you try to deploy a module in a slot that is already occupied.

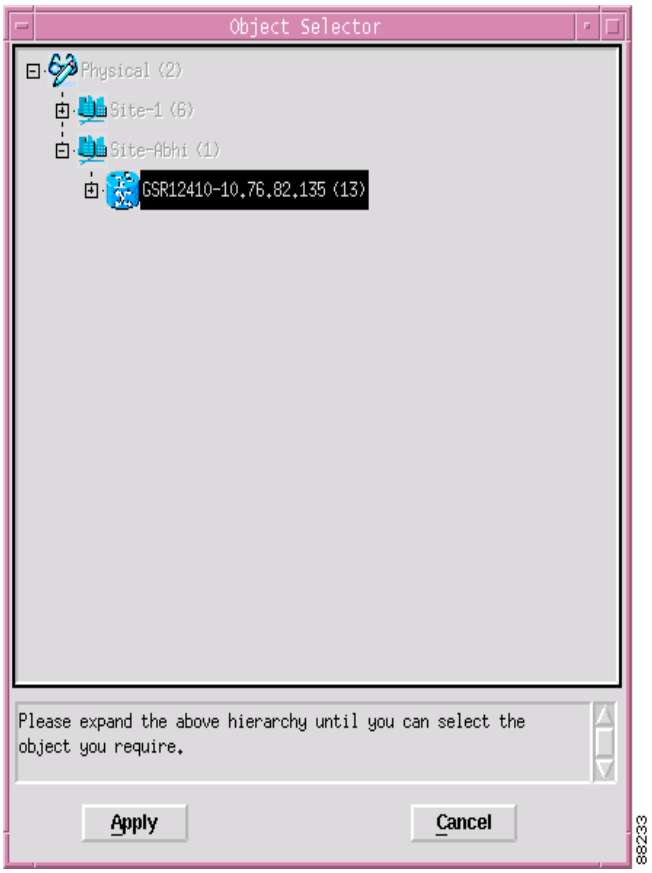
Step 6 Click **Forward**. The Deployment Wizard - Views window appears. Two Cisco 12000/10720 Router Manager views are displayed at the left side of the Deployment Wizard - Views window (that is, Physical and ComponentManaged).

Figure 3-32 Deployment Wizard—Views



Step 7 Click **Select** to choose where you wish to place the object within the view. The Object Selector window appears.

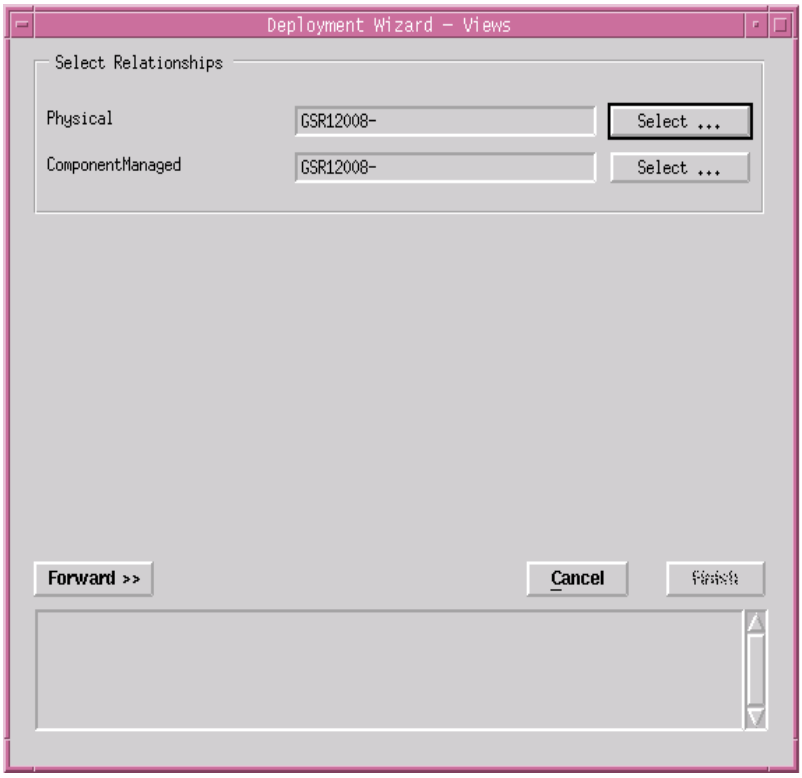
Figure 3-33 Object Selector Window



Step 8 Choose the chassis you want to place the ATM line card under. Objects which are not available for selection are greyed out. Click on the + sign to expand the view. Select the chassis under which you want to deploy the line card.

Step 9 Once you have highlighted your selection, click **Apply**. The Deployment Wizard - Views window re-appears with the location where the object will be placed.

Figure 3-34 Deployment Wizard—Views



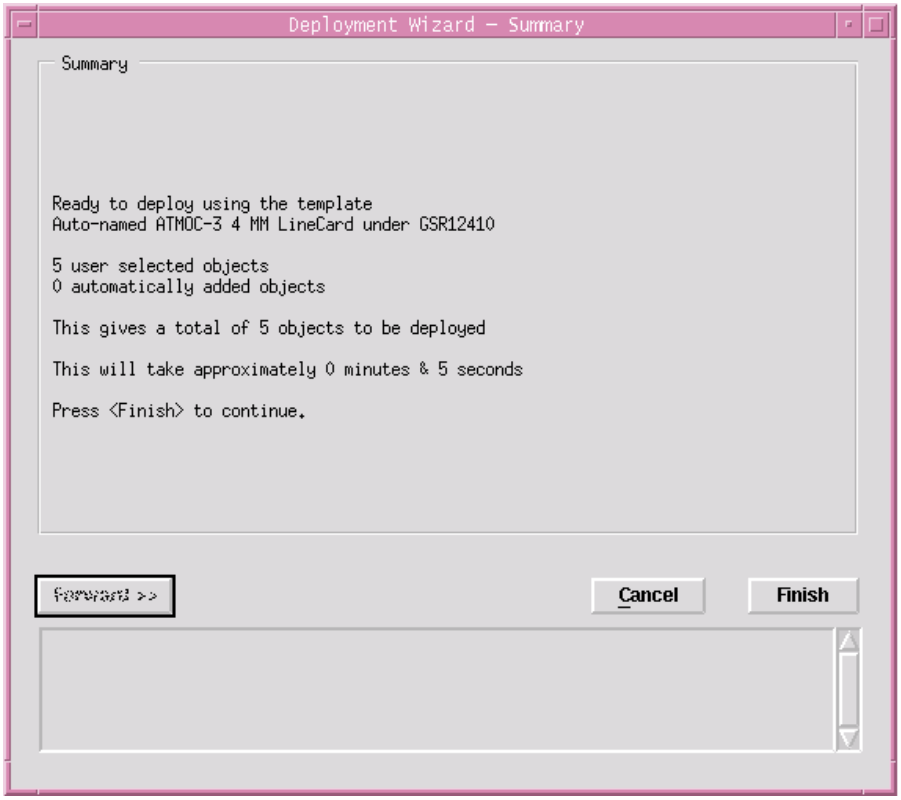
Step 10 Repeat Steps 7 to 9 to place the object in each of the Physical and ComponentManaged views.

Step 11 Click **Forward**.

Note You are prompted to repeat steps 4 through 11 if you are deploying multiple line cards.

The Deployment Wizard—Summary window appears.

Figure 3-35 Deployment Wizard—Summary



Step 12 The deployment summary details appear in the Deployment Summary window. If the information is correct, click **Finish**. Click **Cancel** if the information is incorrect, and the deployment process stops.

Note The number of objects deployed reflects the line card object plus the number of ports or interfaces on the line card. For example, if you have deployed an OC-3 4 port line card, 5 objects are deployed in total. The five objects are four interfaces and the actual line card.

Manually Deploying Supporting Modules

The Cisco 12000 Series Router chassis support the following supporting modules:

- Clock Scheduler Cards (CSCs)
- Switch Fabric Cards (SFCs)
- AC Power supply modules
- Fan tray modules
- Blower modules

Note The AC power supply, fan tray and blower modules can only be discovered during subchassis discovery (that is, they cannot be manually deployed).

The Cisco 12000 Series Router chassis supports the following CSC and SFC line cards. See Table 3-10 for further details.

Table 3-10 Cisco 12000/10720 Router Manager Supported CSC and SFC Line Cards

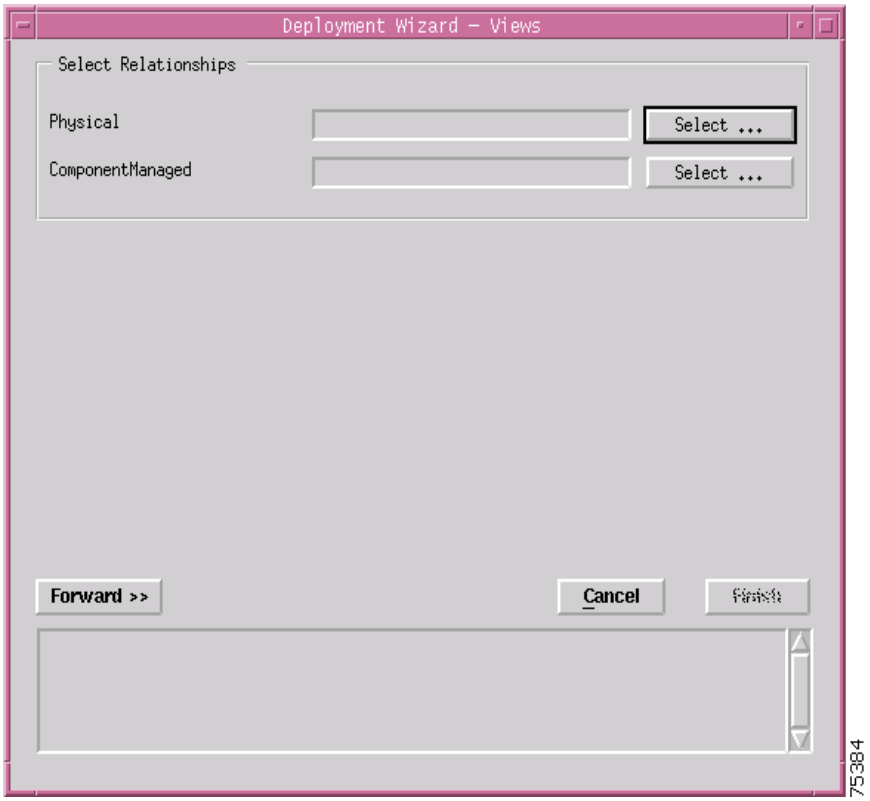
Card	Card Type	Card Description
CSC	CSC0	OC48 Clock Scheduler Card
	CSC4	OC48 ClockScheduler Card
	CSC8	OC48 Clock Scheduler Card
	CSC16	OC48 Clock Scheduler Card for 12016 chassis
	CSC16XOC192	OC192 Clock Scheduler Card for 12416 chassis
	CSC10XOC192	OC192 Clock Scheduler Card for 12410 chassis
	CSC6XOC192	OC192 Clock Scheduler Card for 12406 chassis
	CSCSFC64	Combined CSC-SFC card for 12404 chassis
SFC	SFC0	OC48 Switch Fabric Card
	SFC8	OC48 Switch Fabric Card
	SFC16	OC48 Switch Fabric Card for 12016 chassis
	SFC16XOC192	OC192 Switch Fabric Card for 12416 chassis
	SFC10XOC192	OC192 Switch Fabric Card for 12410 chassis
	SFC6XOC192	OC192 Switch Fabric Card for 12406 chassis

Deploying a Clock Scheduler Card

To deploy a clock scheduler card (CSC), proceed as follows:

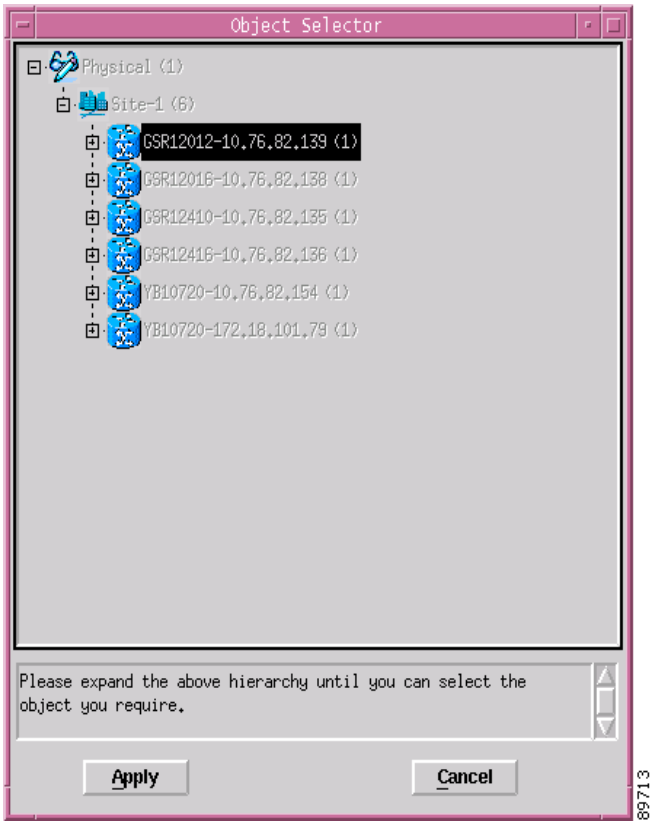
Step 1 Right click on the chassis under which you want to deploy the CSC, then choose the correct CSC card from the service menu **Deployment>Cisco 12000/10720 Manager>Module>CSC**. The Deployment Wizard—Views window appears.

Figure 3-36 Deployment Wizard—Views



Step 2 Click **Select** to choose where you wish to place the object within the view. Click on the + sign to expand the view if required. The Object Selector window appears.

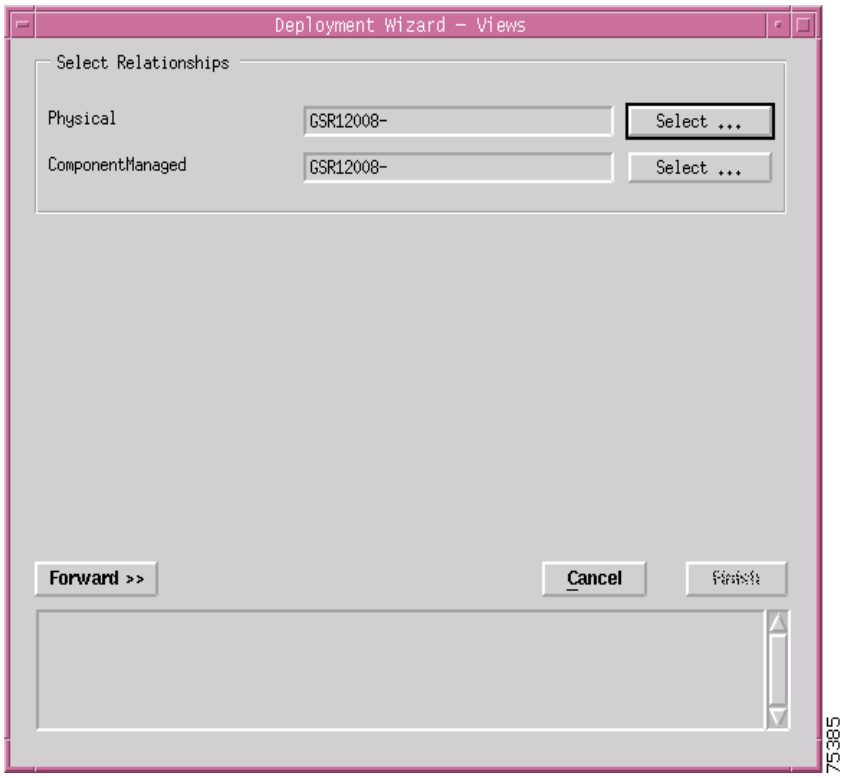
Figure 3-37 Object Selector Window



Step 3 Navigate through the hierarchy and choose where you wish to place the object within the view. Click on the + sign to expand the view if required.

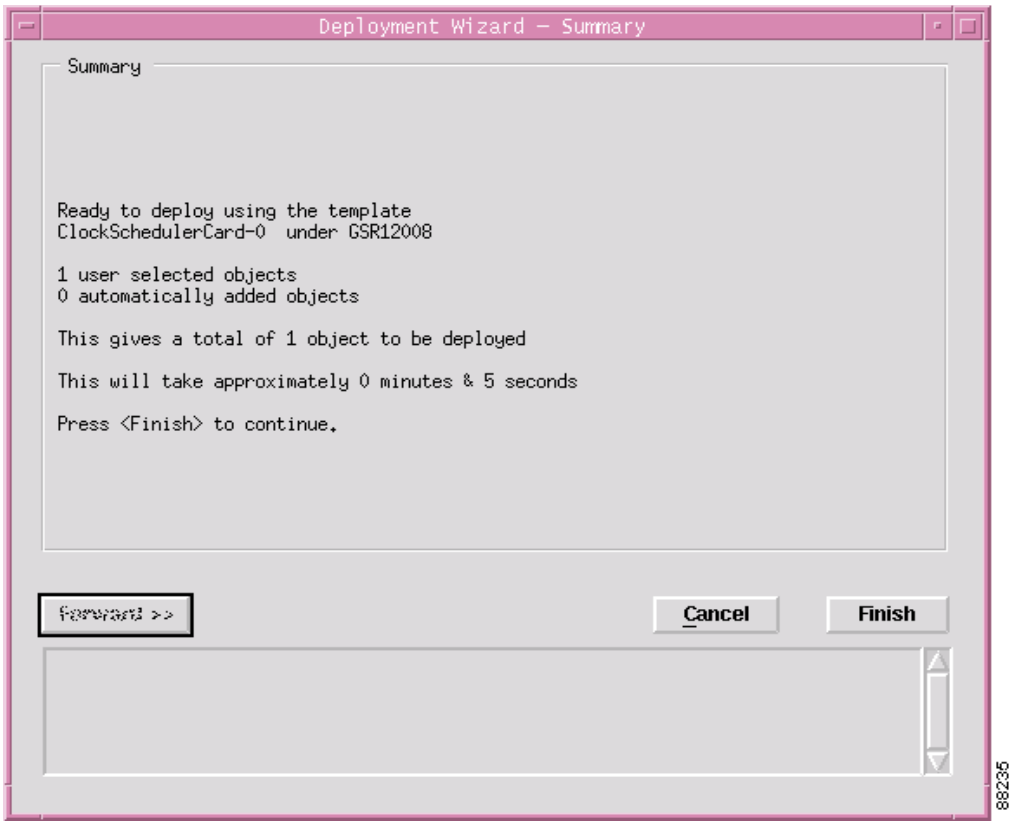
Step 4 Click **Apply**. The Deployment Wizard - Views window re-appears with the location where the object will be placed.

Figure 3-38 Deployment Wizard—Views



Step 5 Click **Forward**. The Deployment Wizard—Summary window appears.

Figure 3-39 Deployment Wizard—Summary



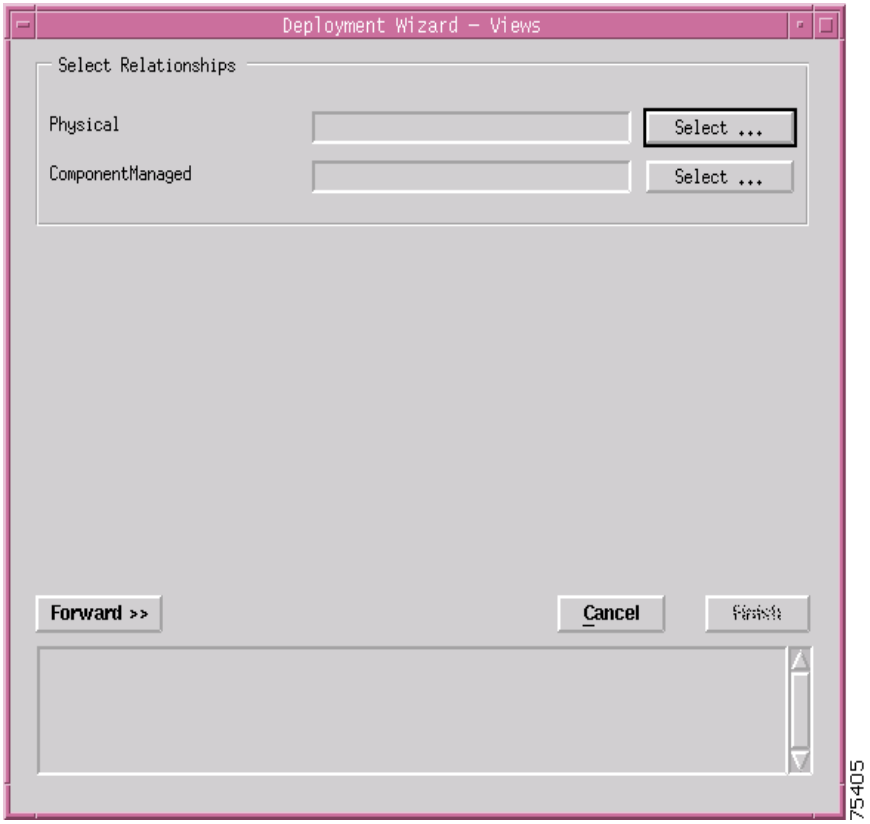
Step 6 The deployment summary details appear in the Deployment Summary window. If the information is correct, click **Finish**. If the information is incorrect, click **Cancel** to stop deployment.

Deploying a Switch Fabric Card

To deploy a switch fabric card (SFC), proceed as follows:

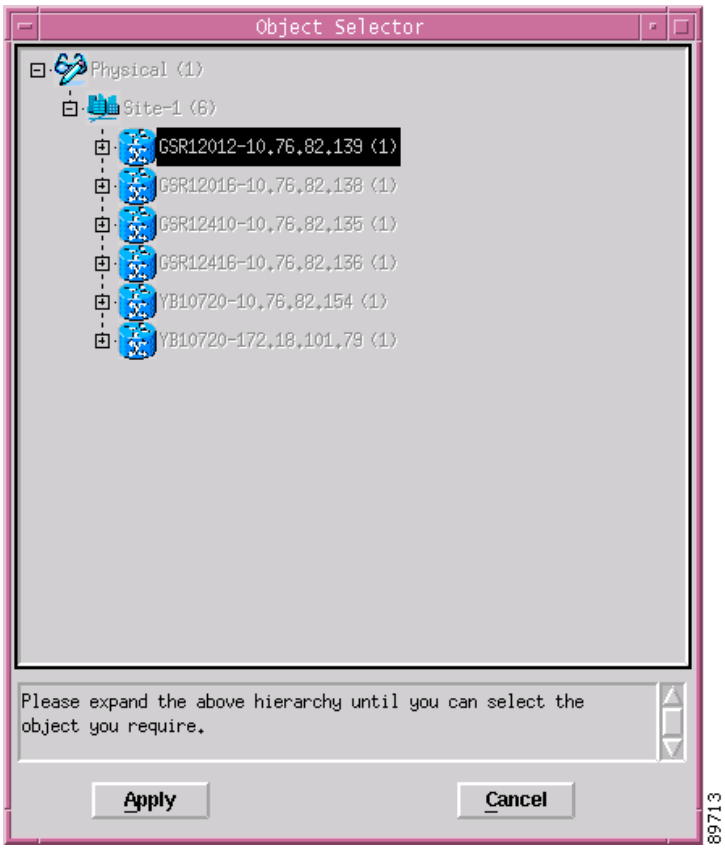
Step 1 Right click on the chassis you want to deploy the switch fabric card under, then choose the correct SFC card from the service menu **Deployment>Cisco 12000/10720 Manager>12008>Module>SFC**. The Deployment Wizard—Views window appears.

Figure 3-40 Deployment Wizard—Views



Step 2 Click **Select** to choose where you wish to place the object within the view. The Object Selector window appears.

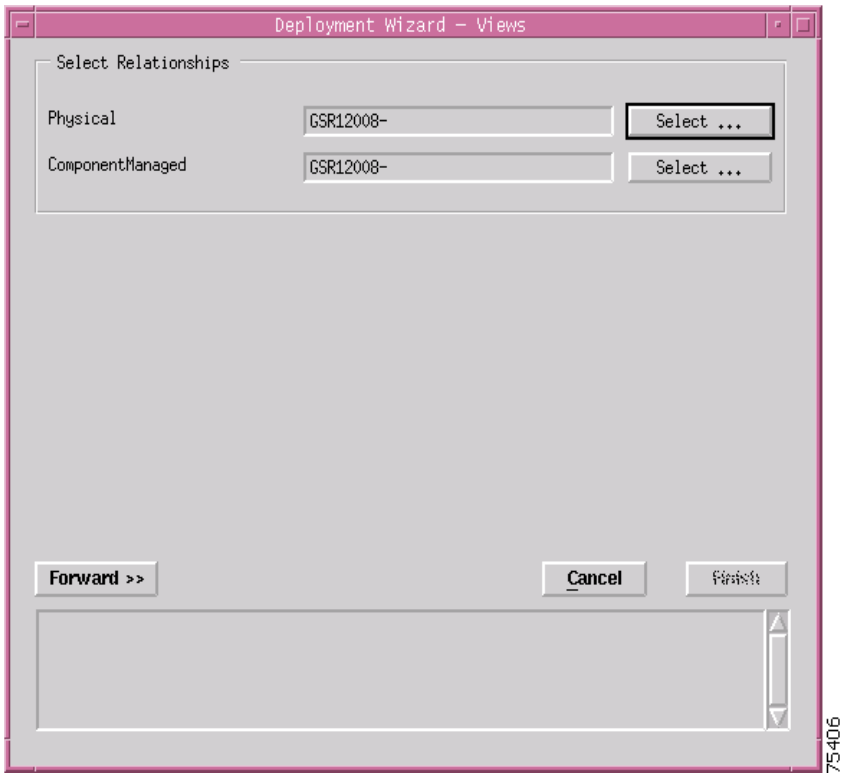
Figure 3-41 Object Selector Window



Step 3 Choose where you wish to place the object within the view. Click on the + sign to expand the view if required.

Step 4 Click **Apply**. The Deployment Wizard - Views window re-appears with the location where the object will be placed.

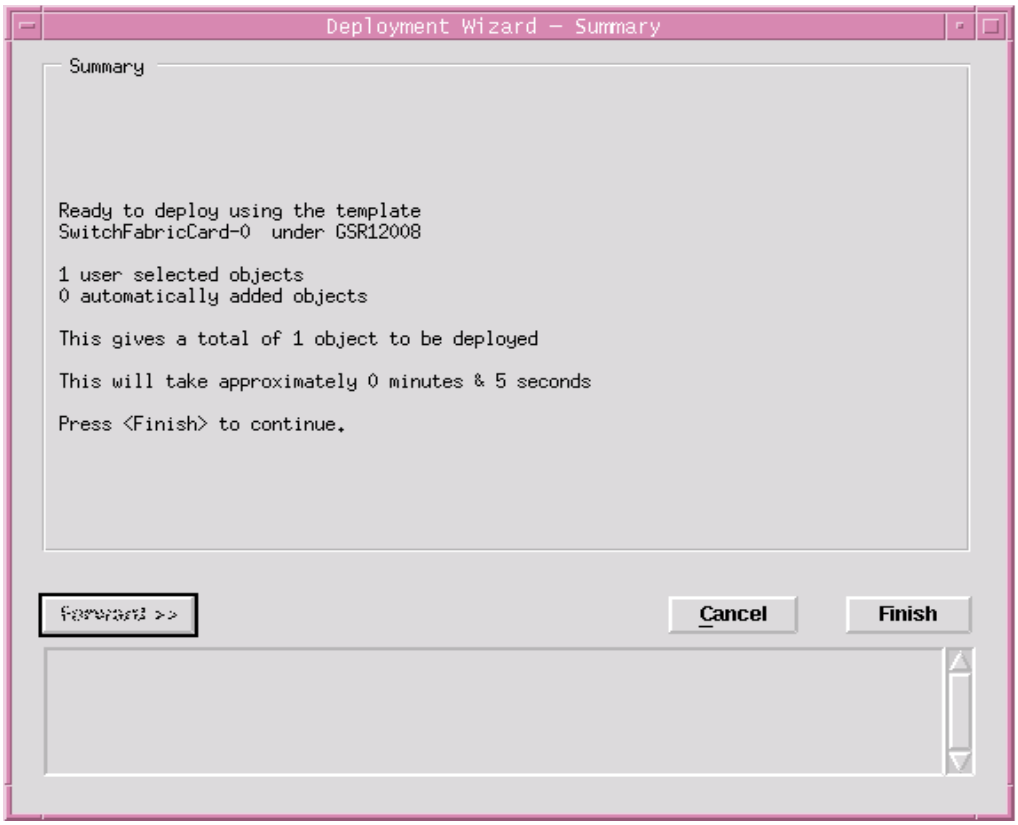
Figure 3-42 Deployment Wizard—Views



Step 5 Repeat Steps 2 to 4 to place the object in each of the Physical and ComponentManaged views.

Step 6 Click **Forward**. The Deployment Wizard—Summary window appears.

Figure 3-43 Deployment Wizard—Summary



Step 7 The deployment summary details appear in the Deployment Summary window. If the information is correct, click **Finish**. If the information is incorrect, click **Cancel** to stop deployment.

Pre-deployment

Cisco 12000/10720 Router Manager objects can be manually pre-deployed before the equipment arrives on-site. The following objects can be pre-deployed in Cisco 12000/10720 Router Manager:

- Cisco 12000/10720 Router chassis
- Line cards and interfaces

For example, if you know that you will be receiving a certain line card, you can manually predeploy that line card before it is actually present.

Note Manual Deployment of SRP modules is currently not supported.

Performing Pre-deployment

Say that you are expecting the following hardware:

- Cisco 12016 chassis and GRP(s)
- ATM and POS line cards (with respective interfaces)

To perform both manual pre-deployment and offline configuration, proceed as follows:

Step 1 Manually deploy a site object. See "Manually Deploying a Generic Site Object" section on page 3-10 for further details.

Step 2 Manually deploy the Cisco 12000 Series Router chassis under a site. See "Manually Deploying a Cisco 12000/10720 Chassis" section on page 3-20 for further details.

Step 3 Manually deploy GRP(s). See "Manually Deploying a GRP Card" section on page 3-31 for further details.

Step 4 Manually deploy the ATM line cards. ATM interfaces are deployed simultaneously. See "Manually Deploying Line Cards" section on page 3-38 for further details.

Step 5 Manually deploy the POS line cards. POS interfaces are deployed simultaneously. See "Manually Deploying Line Cards" section on page 3-38 for further details.

Now you have pre-deployed and thus created representative objects in Cisco 12000/10720 Router Manager for your expected hardware, modules, and interfaces. All of these objects will be in the Decommissioned state.