CHAPTER 3

Getting Started

After you install VlanDirector, you are ready to work with the application and become familiar with its features. VlanDirector is installed as part of CiscoWorks Switched Internetwork solutions (CWSI). Refer to the CD booklet that accompanied the CWSI software CD for system requirements and installation instructions.

This section provides information on network requirements, starting VlanDirector, how to in VlanDirector, and how to understand the VlanDirector network map and views.

Summary of Getting Started Tasks

The following is a list of the tasks to get started with VlanDirector. The procedure for completing each task follows this summary.

1. Check that your network is set up correctly to use VlanDirector.
2. Start VlanDirector, if it is not already running.
3. Learn how to navigate in VlanDirector.
4. Locate the online help system.
5. Create and modify VLAN configurations (Chapter 4).
6. Configure and manage VLAN links (Chapter 4).

Checking the Network Setup

Before you install the software, perform the following procedure to verify that your network is set up correctly:

Step 1 Make sure that the Cisco Discovery Protocol (CDP) is enabled on all switches in the network. Use the following command line interface (CLI) command on all switches:

```
set cdp enable all
```

Step 2 Verify that all interconnected switches are running the following system software versions:

Catalyst 5000 switches running VTP need system software version 2.1 or later.

Catalyst 5000 switches that are not running VTP need system software version 1.5 or later.

Catalyst 3000 switches need system software version 1.2 or later.

Catalyst 2900 switches need system software version 2.1 or later.

Catalyst 1200 switches need system software version 4.1 or later.

Step 3 If your network includes switches that support VTP, configure the VTP management domain using the following CLI command on the switch:

```
set vtp domain <name>
```

Replace <name> with the name of your management domain.

Step 4 Check that VTP is enabled (default setting) on all switches that support VTP.

Step 5 If a switch is interconnected with Fast Ethernet links and you want to configure it to carry more than one VLAN, verify that Inter-Switch Link (ISL) is enabled on both sides of the link. Refer to the *Catalyst 5000 Series Configuration Guide and Command Reference* for information on how to enable ISL.

Step 6 Verify that the network management station on which VlanDirector is running has Internet Protocol (IP) connectivity to each switch.You can do this by launching CiscoView for the switch.

Step 7 Determine if the community strings for any of your switches have been changed from the default values of *public* for the read-only community string and *private* for the read-write community string. If your community strings for the devices

differ from the default, verify that the format of the community string file you are using is correct. See Appendix A for more information on using community strings.

Starting VlanDirector

You can start VlanDirector from the UNIX command line, SunNet Manager, or HP OpenView.

- If you are starting VlanDirector from the UNIX command line, follow the procedure "Starting VlanDirector from the UNIX Command Line."
- If you are starting VlanDirector from SunNet Manager, follow the procedure "Starting VlanDirector from SunNet Manager."
- If you are starting VlanDirector from HP OpenView, follow the procedure "Starting VlanDirector from HP OpenView."

Starting VlanDirector from the UNIX Command Line

To start VlanDirector from the UNIX command line, follow these steps:

Step 1 If you have not already done so, set your environment variables as follows for VlanDirector:

```
source <install directory>/etc/install.cshrc
```

When entering this command, replace <install directory> with the directory and path name where VlanDirector is installed.

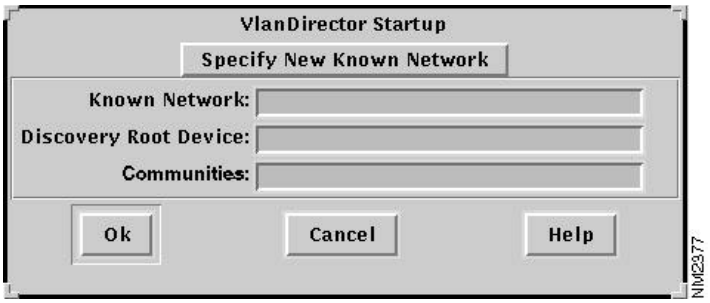
Step 2 Make sure that you are in a directory for which you have write permission, for example, your home directory.

Step 3 Enter the following command at the user-level system prompt:

```
vdirector
```

The VlanDirector Startup window is displayed as shown in Figure 3-1.

Figure 3-1 VlanDirector Startup Window



Step 4 In the Known Network field, enter a name for the known network that VlanDirector will discover.

If your network uses VTP, the name must be the same name as the management domain name defined by VTP on one of the switches configured on your network as a VTP server. All Catalyst 5000s are by default configured as VTP servers. You can check the management domain names by using the CLI on any Catalyst switch.

If your network does not support VTP, enter any name for the known network that is meaningful to you and that adheres to the conventions of the file system of the platform that you are using.

Step 5 In the Discovery Root Device field, enter the name (or IP address) of a switch from which to begin the discovery process. The switch can be any Catalyst 5000, Catalyst 3000, Catalyst 2900, or Catalyst 1200 device.

Step 6 In the Communities field, enter the name of the communities file or the community strings for the known network as described below:

- If you have not changed the community strings for your switches (the default values are *public* for read-only and *private* for read-write), complete the Communities field as follows:

  ```
  -wr private
  ```

- If you have changed the default values of the read-only or read-write community strings and the changed community strings are the same for all devices on the network, complete the Communities field as shown in the following example:

  ```
  -rd light -wr day
  ```

  In this example, light is the read-only community string for all devices on the network, and day is the read-write community string for all devices on the network.

- If you have changed the default values of the community strings and the strings are not the same for all devices on the network, enter the name of the community string file for the network. If you do not have a file, create one using the format and examples provided in Appendix A.

- If you want read-only access to the switches and you have not changed the default values of *public* for the read-only string or *private* for the read-write community string on any of your switches, leave the Communities field blank, and continue to the next step. With read-only access, you will not be able to perform configuration changes, such as adding ports to a VLAN.

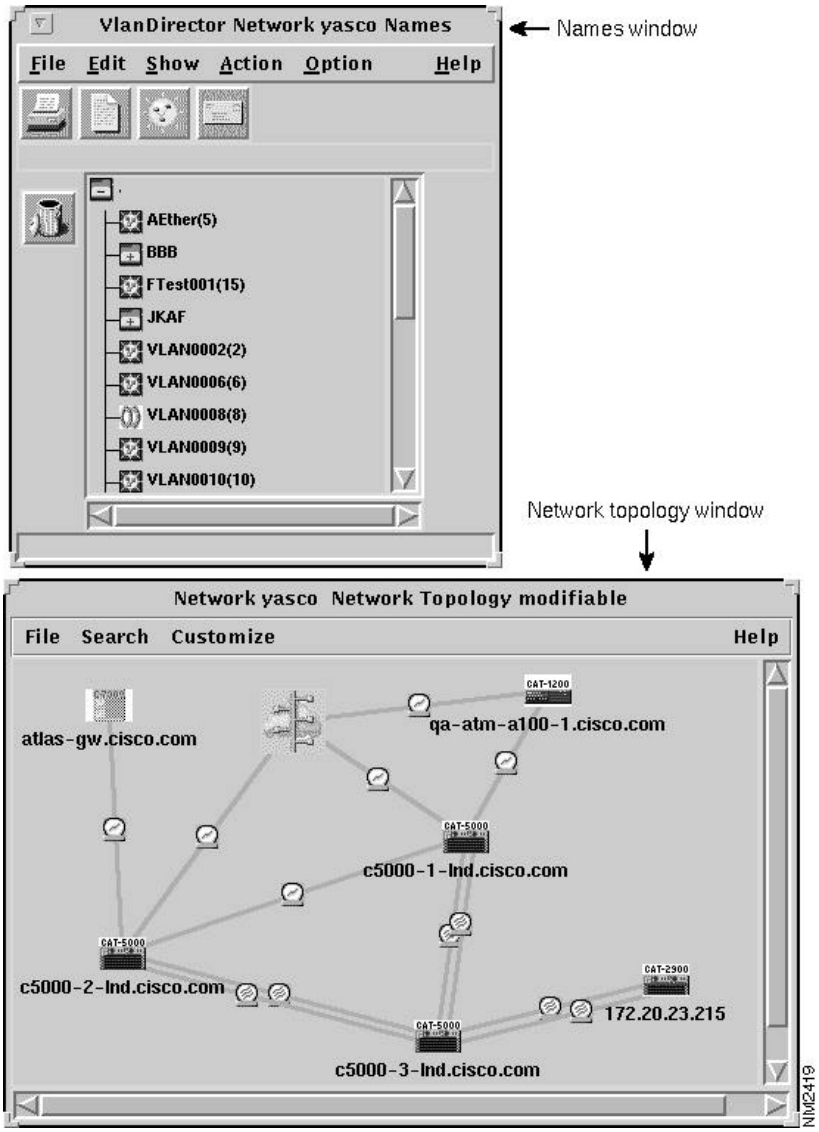
Step 7 Click **OK**.

The discovery process begins and the VlanDirector Names and Network Topology windows are displayed.

The magnifying glass icon stops moving and disappears when the discovery is completed. The length of time that the discovery takes varies, depending on your network and averages from 2 to 7 minutes.

After the discovery process has been completed, the Network Topology window displays the discovered network. Figure 3-2 shows examples of the Names and populated Network Topology windows after VlanDirector completes discovery.

Figure 3-2 VlanDirector Names and Network Topology Windows after Startup



For additional command line options, refer to Appendix B.

If problems occur when starting VlanDirector, make sure the PATH environment variable includes a path to VlanDirector executables. If you do not want to change your PATH environment variable, you can launch VlanDirector as follows:

```
<install directory>/bin/vdirector
```

When entering this command, replace <install directory> with the directory and path name where VlanDirector is installed.

Starting VlanDirector from SunNet Manager

To start VlanDirector from the SunNet Manager Tools menu, follow these steps:

Step 1 Save your existing SunNet Manager database.

Step 2 If you have not already done so, set your environment variables as follows for VlanDirector:

```
source <install directory>/etc/install.cshrc
```

Step 3 Restart SunNet Manager by entering the following command at the system prompt:

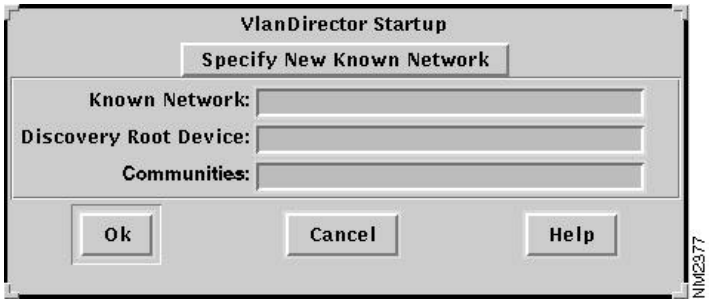
```
snm -i &
```

The SunNet Manager main window is displayed.

Step 4 To start VlanDirector, select **Tools>VlanDirector**

The VlanDirector Startup window is displayed as shown in Figure 3-3.

Figure 3-3 VlanDirector Startup Window



Step 5 In the Known Network field, enter a name for the known network that VlanDirector will discover. The name must be the same name as the management domain name defined by VTP on one of the switches configured on your network as a VTP server. All Catalyst 5000s are by default configured as VTP servers. You can check the management domain names by using the CLI on any Catalyst switch.

Step 6 In the Discovery Root Device field, enter the name (or IP address) of a switch from which to begin the discovery process. The switch can be any Catalyst 5000, Catalyst 3000, Catalyst 2900, or Catalyst 1200 device.

Step 7 In the Communities field, enter the name of the communities file or the community strings for the known network as described below:

- If you have not changed the community strings for your switches (the default values are *public* for read-only, and *private* for read-write), complete the Communities field as follows:

  ```
  -wr private
  ```

- If you have changed the default values of the read-only or read-write community strings and the changed community strings are the same for all devices on the network, complete the Communities field as shown in the following example:

  ```
  -rd light -wr day
  ```

In this example, light is the read-only community string for all devices on the network, and day is the read-write community string for all devices on the network.

- If you have changed the default values of the community strings and the strings are not the same for all devices on the network, enter the name of the community string file for the network. If you do not have a file, create one using the format and examples provided in Appendix A.
- If you want read-only access to the switches and you have not changed the default values of *private* for the read-only string or *public* for the read-write community string on any of your switches, leave the Communities field blank, and continue to the next step. With read-only access, you will not be able to perform configuration changes, such as adding ports to a VLAN.

Step 8 Click **OK**.

The discovery process begins and the VlanDirector Names and Network Topology windows are displayed.

The magnifying glass icon stops moving when the discovery is completed. The length of time that the discovery takes varies, depending on your network and averages from 2 to 7 minutes.

After the discovery process has been completed, the Network Topology window displays the discovered network. Figure 3-2 shows examples of the Names and populated Network Topology windows after VlanDirector completes discovery.

Starting VlanDirector from HP OpenView

To start VlanDirector from HP OpenView, follow these steps:

Step 1 If you have not already done so, set your environment variables as follows for VlanDirector:

```
source <install directory>/etc/install.cshrc
```

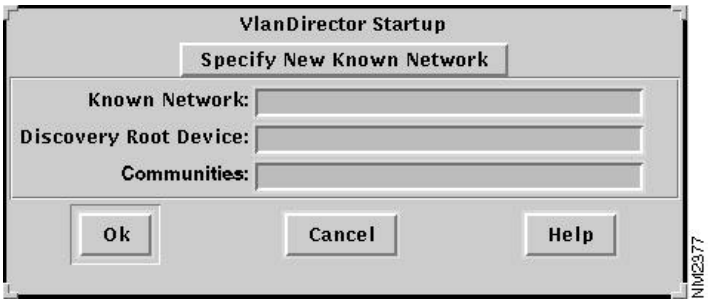
Step 2 Restart HP OpenView by entering the following at the UNIX system prompt:

```
ovw
```

Step 3 From the HP OpenView main window, select **Monitor**>**VlanDirector**.

The VlanDirector Startup window is displayed as shown in Figure 3-4.

Figure 3-4 VlanDirector Startup Window



Step 4 In the Known Network field, enter a name for the known network that VlanDirector will discover. The name must be the same name as the management domain name defined by VTP on one of the switches configured on your network as a VTP server. All Catalyst 5000s are by default configured as VTP servers. You can check the management domain names by using the CLI on any Catalyst switch.

Step 5 In the Discovery Root Device field, enter the name (or IP address) of a switch from which to begin the discovery process. The switch can be any Catalyst 5000, Catalyst 3000, Catalyst 2900, or Catalyst 1200 device.

Step 6 In the Communities field, enter the name of the communities file or the community strings for the known network as described below:

- If you have not changed the community strings for your switches (the default values are *public* for read-only, and *private* for read-write), complete the Communities field as follows:

  ```
  -wr private
  ```

- If you have changed the default values of the read-only or read-write community strings and the changed community strings are the same for all devices on the network, complete the Communities field as shown in the following example:

  ```
  -rd light -wr day
  ```

  In this example, light is the read-only community string for all devices on the network, and day is the read-write community string for all devices on the network.

- If you have changed the default values of the community strings and the strings are not the same for all devices on the network, enter the name of the community string file for the network. If you do not have a file, create one using the format and examples provided in Appendix A.

- If you want read-only access to the switches and you have not changed the default values of *public* for the read-only string or *private* for the read-write community string on any of your switches, leave the Communities field blank, and continue to the next step. With read-only access, you will not be able to perform configuration changes, such as adding ports to a VLAN.

Step 7 Click **OK**.

The discovery process begins and the VlanDirector Names and Network Topology windows are displayed.

The magnifying glass icon stops moving when the discovery is completed. The length of time that the discovery takes varies, depending on your network, and averages from 2 to 7 minutes.

After the discovery process has been completed, the Network Topology window displays the discovered network. Figure 3-2 shows examples of the Names and populated Network Topology windows after VlanDirector completes discovery.

Navigating in VlanDirector

VlanDirector combines the following navigational aids to help you become familiar with the user interface and perform VLAN configuration. If you are getting started with VlanDirector, familiarize yourself with these navigational aids before you perform VLAN configuration tasks.

- Multiple network and VLAN windows allowing you to switch between high-level topology maps and detailed device and port views.
- Names window from which you inititiate many VLAN configuration tasks
- Standard Motif GUI conventions, including drag-and-drop mouse functionality to perform VLAN configurations.
- Color-coding to indicate port status, VLAN membership, and selectable icons.
- Icons for identifying different device and link types, and pop-up device icon menus to execute commands on specific devices.

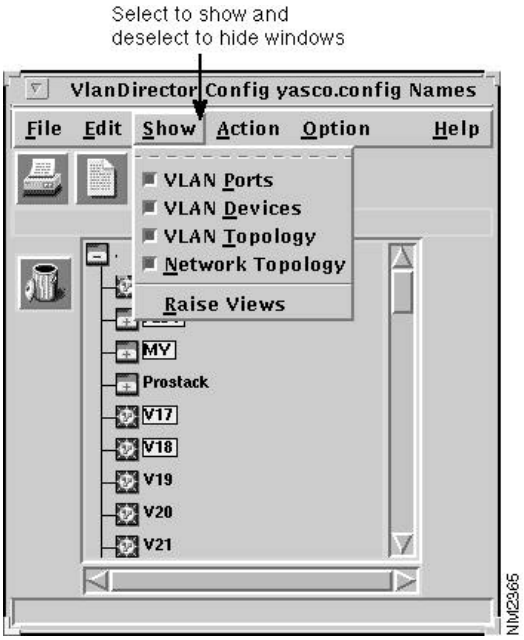
Network and VLAN Windows

Network maps and VLAN windows allow you to switch between high-level topology maps and detailed device and port views. You can hide or show views depending on which ones you want to use at a particular time. Figure 3-2 shows the windows that are displayed by default when you start VlanDirector.

To display all of the VlanDirector windows, do the following:

In the Names window, select Show, and then select the four VLAN view options in the Show menu as shown in Figure 3-5.

Figure 3-5 Displaying VlanDirector Windows



VlanDirector displays all of the topology and device windows as shown in Figure 3-6, and Table 3-1 provides a summary of what you can do from each window.

Figure 3-6 VlanDirector Windows

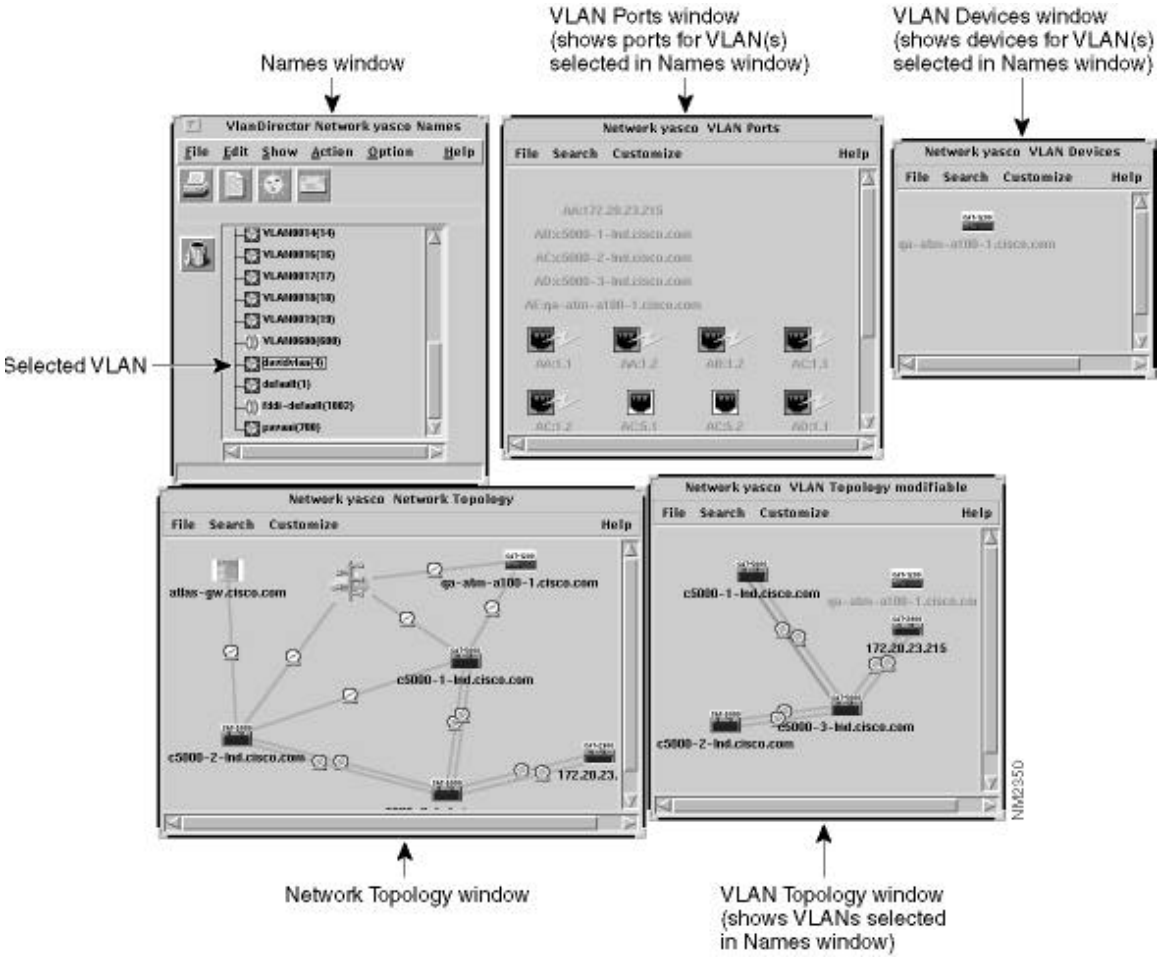


Table 3-1 VlanDirector Windows and What They Show

View	What it Shows	Tasks Performed
Names	Existing VLANs and folders	Select VLANs Create and delete VLANs Perform VLAN configuration tasks Show or hide other VlanDirector windows
Network Topology	The discovered known network Physical devices and physical links between them Any discovered but unmanageable devices (grayed out)	Display device and link attributes reports Add links to a VLAN Launch CiscoView for a device Exclude and drop devices from discovery Display device ports window Change link protocols
VLAN Topology	Devices and links enabled to carry VLANs between them	Add and delete VLAN links Launch CiscoView Display Device Ports by VLAN
VLAN Ports	Ports in a VLAN or VLANs selected in the Names window Differentiates between user and link ports VLAN membership by port label VLAN status by color of each port	Launch Device Ports window Display port attributes Launch CiscoView
VLAN Devices	VLAN devices for VLAN or VLANs selected in the Names window	Launch Device Ports window Launch CiscoView
Legends	Colors for selected VLANs	
Device Ports Popup	Ports for selected devices	Drag-and-drop ports to a VLAN Display port attributes
Device Ports by VLAN	Ports for selected VLANs	

Reorganizing Your Display

After Discovery, you might want to rearrange your network displays as follows so you can more easily see a network view. To do this, do the following:

Step 1 In the display in which you want to move icons, select **Customize**>**Modifiable**.

Step 2 If the Customize Menu is grayed out, change the Views option to Modifiable in the **Option**>**Properties**>**Installation**> **Views** window. The Views option is Modifiable by default.

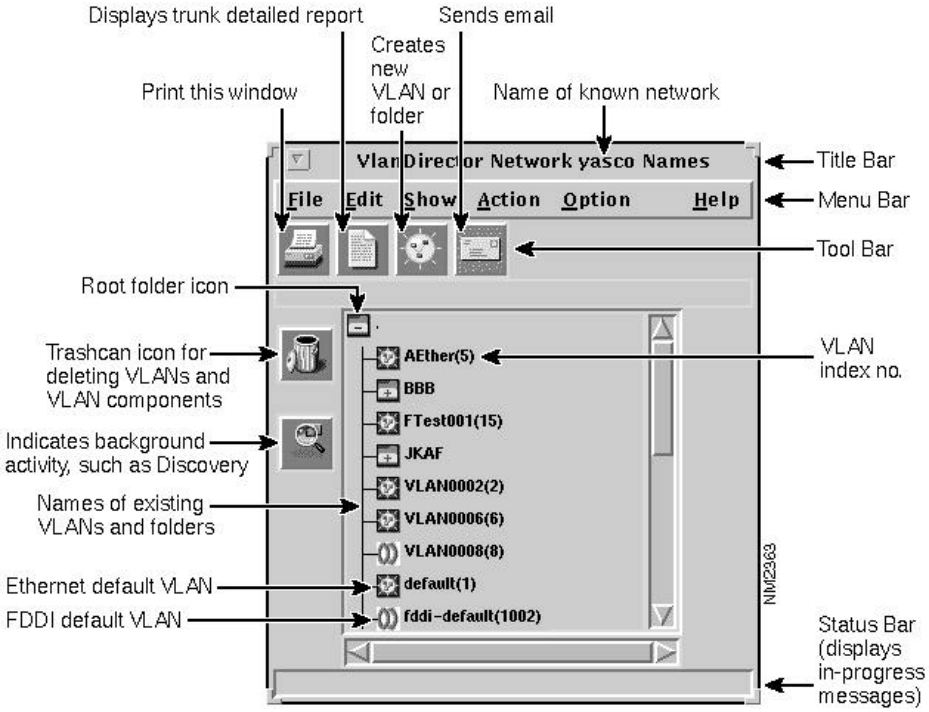
Step 3 Select the icons that you want to move and drag to the new location.

Understanding the Names Window

The Names window displays the names of existing VLANs and folders and enables you to perform many VlanDirector configuration tasks. Use this window to give a name to a new VLAN or to organize groups of VLANs into folders, in the same way that you would organize files into folders or directories.

The Names window also provides menu commands to manage configurations and known networks. Figure 3-7 shows the Names window.

Figure 3-7 Names Window



The Names window has the following characteristics:

Menu Bar

The menu bar contains the commands that enable you to work with VLAN configurations, create VLAN names, and control many operating characteristics of the application, such as which network views are displayed.

Tool Bar

Icons in the tool bar include a printer symbol, which prints the Names window; the paper symbol, which opens a Trunk Details Report window; the Create VLAN icon, which opens a create-dialog box for creating a VLAN name or folder; and the Send Email icon, which enables you to report problems or send feedback using email.

Icon Bar – Left Side of Pane

There are also icons appearing down the left side of the Names window. They include the trash can, the background activity icon, and the discrepancies icon. The background activity icon looks like a magnifying glass and is displayed whenever a process or action is in progress. When the icon is displayed, VlanDirector is performing a discovery of network devices or changing VLANs or their properties.

Central Scrollable Pane – Names List

VLANs and folder names appear in the central scrollable pane.

Status Bar

The message bar displays textual explanation of a tool bar function whenever you place the pointer over a tool bar icon.

The message bar also displays in-progress status messages whenever you initiate an action.

Icons and Popup Menus

Icons are used to depict devices and links. Device icons include the name and type of the device so you can easily identify it; for example, CAT-5000 indicates a Catalyst 5000 switch. The name of the switch is underneath the icon.

In some views, you can press and hold down the right mouse button on the device icon to display a popup menu listing command options for that device. For example, click on a device on the VLAN Devices window to display a popup menu containing command options for that device.

Figure 3-8 shows the device icons that are used in VlanDirector and what they mean. Figure 3-9 shows the port icons used in VlanDirector.

Figure 3-8 Network Topology Window Showing VlanDirector Icons

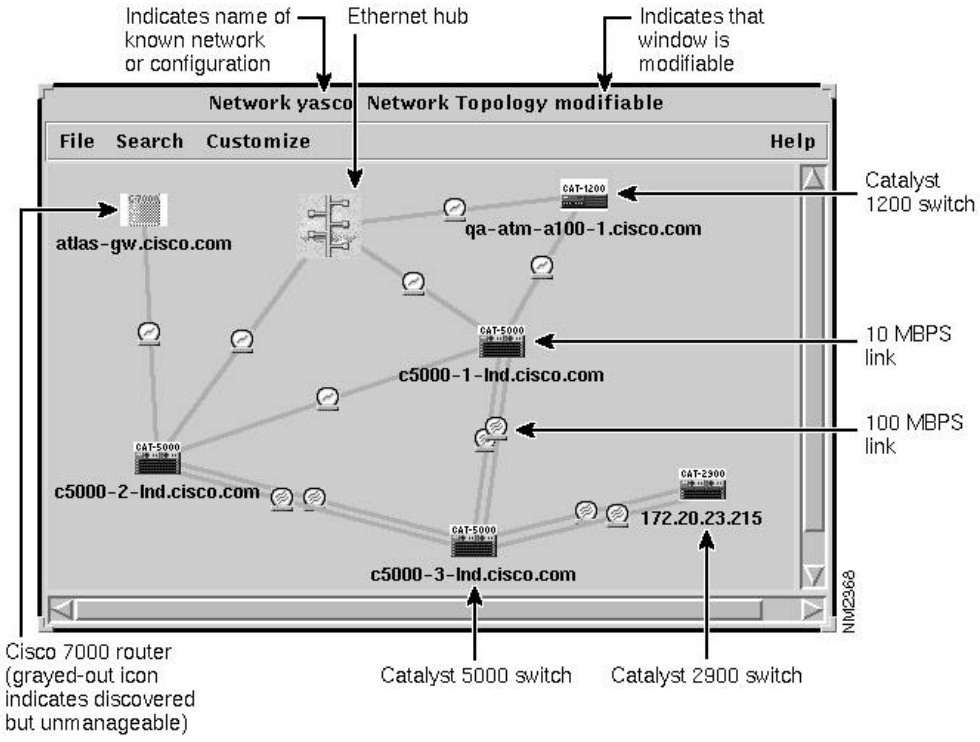


Figure 3-9 Port Icons in VlanDirector

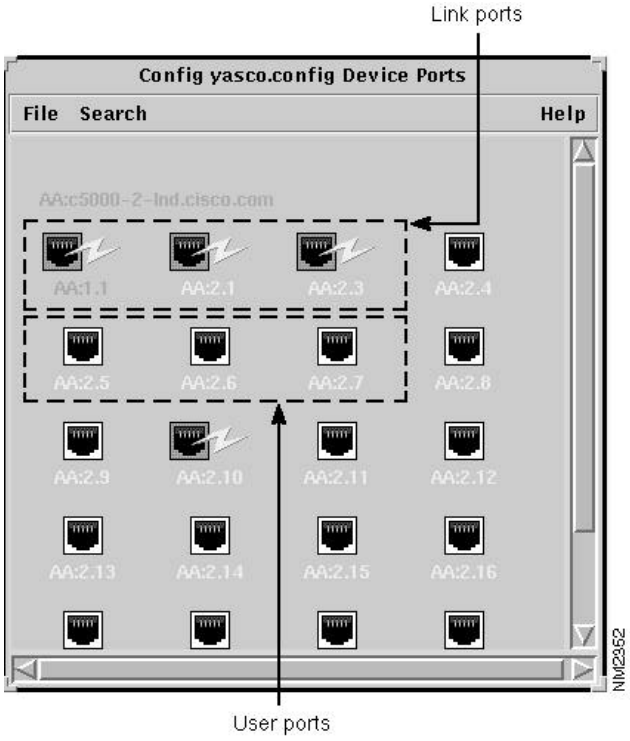
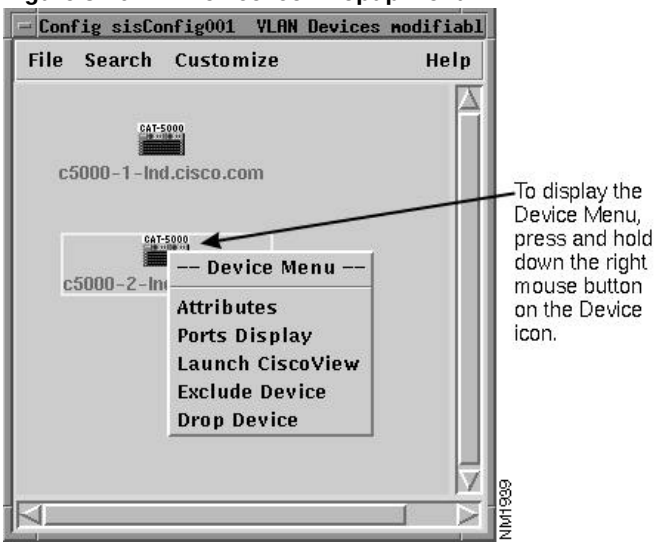


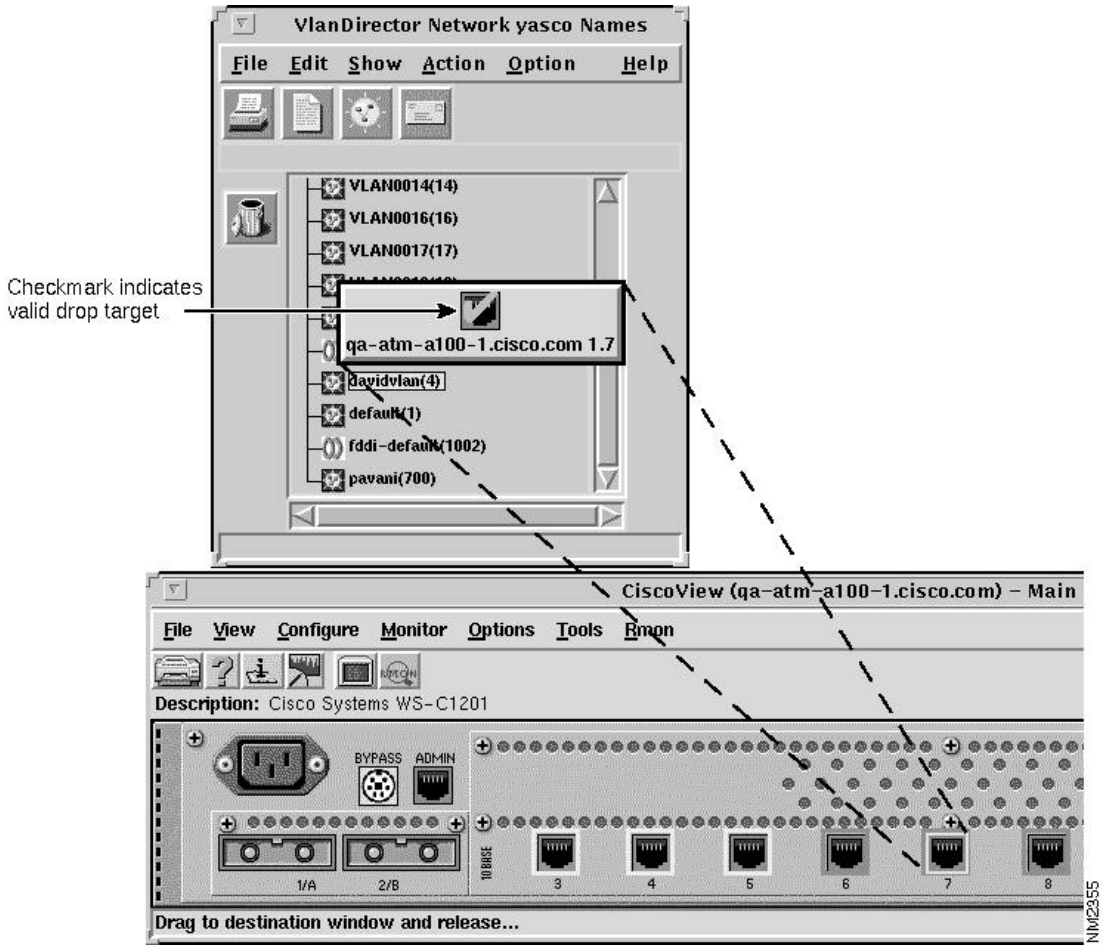
Figure 3-10 Device Icon Popup Menu



Using Drag-and-Drop

VlanDirector enables you to drag and drop icons. To drag and drop an icon to a target, select the icon and then drag it to the target. You can drag or drop a single icon or more than one icon simultaneously. For example, when adding a port to a VLAN, you can drag and drop a port from a CiscoView display to the VLAN name in the Names window or to the VLAN Ports window. Figure 3-11 shows an example of dragging a port from a CiscoView window to the Names window.

Figure 3-11 Example of Drag-and-Drop from CiscoView to VlanDirector



In this example, the port is dragged from the CiscoView display to the Names window. Similarly, you can drag multiple ports. Multiple ports are represented by a single port icon.

Sometimes when dragging from CiscoView, you need to drag on the LED rather than the port icon.

Single Selection

To drag and drop an icon, for example, a port:

Step 1 Select the icon by clicking the left mouse button.

Step 2 Press and hold down the middle mouse button (the left mouse button on NT systems) to drag the icon to the drop target and release the mouse button to drop the icon.

Multiple Selection

You can drag and drop multiple items of the same type. To drag and drop more than one item, for example, multiple ports:

Step 1 While holding down the **Shift** key, click on the items or icons to be dragged.

Step 2 Press and hold down the middle mouse button (the left mouse button on some systems) to drag the icon to the drop target and release the button to drop the icon.

Drop Targets

When you drag an item to a valid target, the icon that you are dragging displays a checkmark when you have reached a valid target.

When dragging over an invalid target, no checkmark is displayed.

A valid drop target cannot always accept a dropped icon or object. When this occurs, an error message is displayed. For example, if the VLAN Devices, Ports, or Topology window is displaying only one VLAN, it can accept a port from CiscoView. If it is displaying more than one VLAN, it cannot accept the port from CiscoView.

Dragging to the Trash Can

When dragging an item to the trash can, make sure that you move the arrowhead of the pointer attached to the upper-left corner of the dragged icon into the trash can.

Drag and Drop Tasks

Table 3-2 shows a list of common drag-and-drop tasks.

Table 3-2 Common Drag-and-Drop Tasks

Task	Drag From	Drag To
Add a port to a VLAN	CiscoView	VLAN Name in the Names window
	Device Ports	VLAN Name in the Names window
	CiscoView	VLAN Topology, Devices, or VLAN Ports window
	Device Ports	VLAN Topology, Devices, or VLAN Ports window
Add a link to a VLAN	Network Topology	VLAN Topology
	Network Topology	VLAN Names in Names window
Merge two VLANs	Names (VLAN to be merged)	Names (VLAN 2 or destination VLAN)
Remove a VLAN port	VLAN Ports	Trash can icon in Names window
	Device Ports by VLAN	Trash can icon in Names window
Delete a link with a single VLAN	VLAN Topology	Trash can icon in Names window
Delete a link with more than one VLAN	VLAN Topology	Trash can icon in Names window

Using CiscoView with VlanDirector

CiscoView is a device management application that enables you to display a graphical representation of each network device, display configuration and performance information, and perform minor troubleshooting tasks.

CiscoView is provided with VlanDirector. Use CiscoView with VlanDirector to add or delete ports to and from a VLAN by dragging and dropping ports from a CiscoView display into a VlanDirector display, as shown in Figure 3-11.

To start CiscoView, do one of the following:

- In the Names window, select **Action>Launch CiscoView**.
- Double-click on any device or port icon in any VlanDirector window.
- From a device icon popup menu, select Launch CiscoView.

Understanding Colors and Legends in VlanDirector

VlanDirector uses color to indicate port status, VLAN membership, and icon selection.

Port Status

CiscoView and VlanDirector use the following color-coded scheme to indicate port status.

Magenta – Testing

Green – Up

Brown – Down

Cyan – Dormant

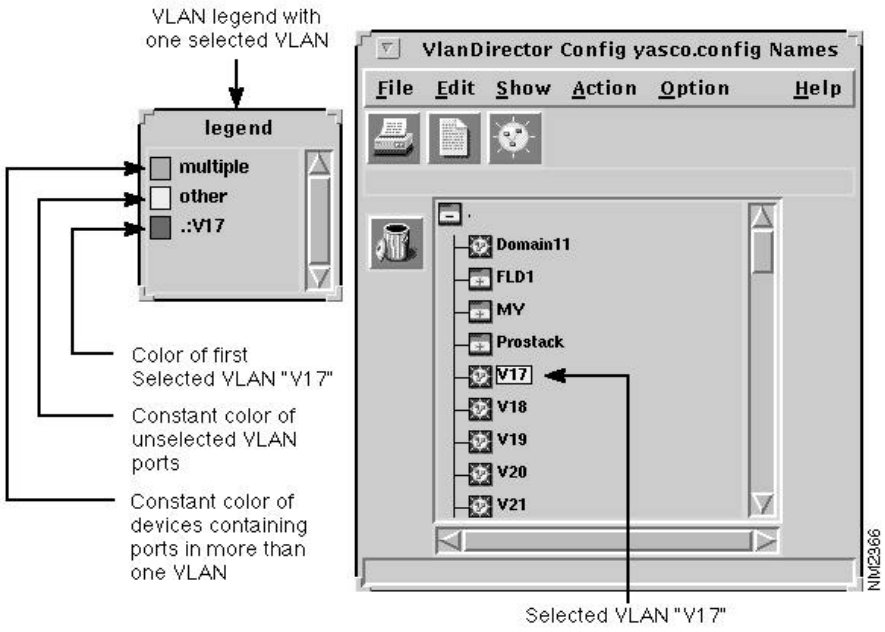
Red – Failure

Orange – Minor Alarm

VLAN Membership

To display the color-coded legend for VLAN membership, in the Names window select **Option>Show Legend,** if it is not already selected. The Legends window matches colors to selected VLANs. It also displays default colors of brown to identify switches with more than one VLAN defined and light gray to indicate unselected VLANs. When you have only one VLAN selected in the Names, the Legends window shows colors as in Figure 3-12.

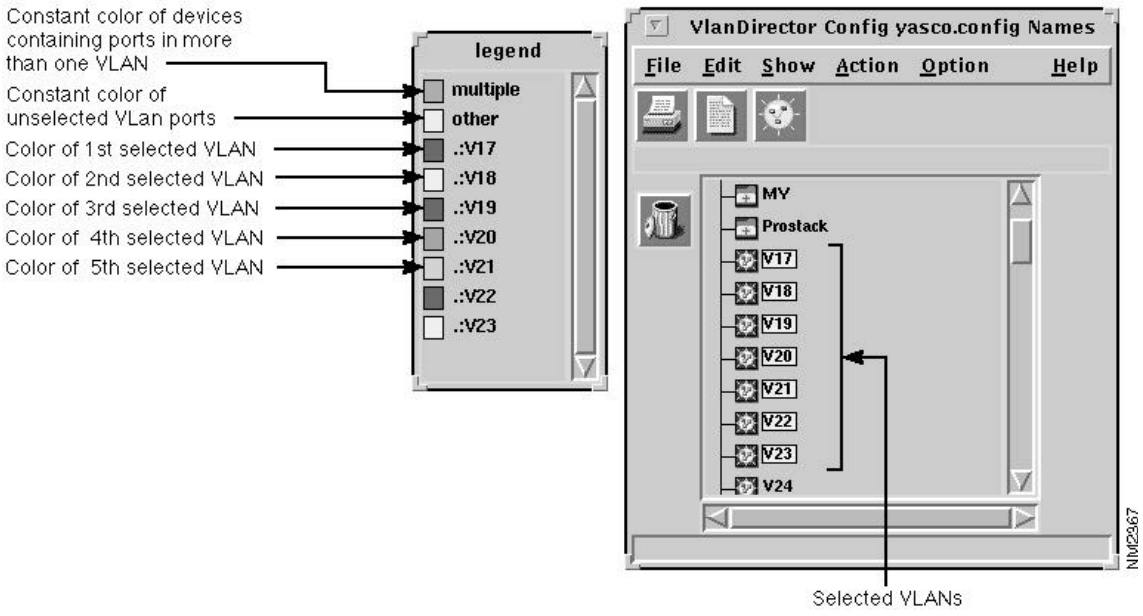
Figure 3-12 Legends Window with One VLAN Selected



- Brown indicates devices that contain ports belonging to different VLANs. A user port can belong to only one VLAN.
- Gray indicates unselected VLAN ports.
- Blue indicates the selected VLAN.

If you have more than one VLAN selected simultaneously, for example, if you have seven VLANs simultaneously selected using the Shift key while selecting, the Legends window shows the color assignment shown in Figure 3-13.

Figure 3-13 Legends Window with Multiple VLANs Selected



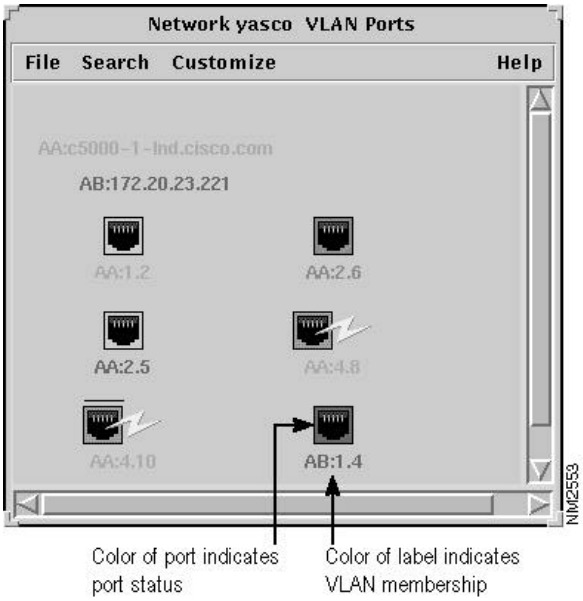
- Brown indicates devices that contain ports belonging to different VLANs. A port can belong to only one VLAN.
- Gray indicates unselected VLAN ports.
- Blue indicates the first selected VLAN.
- Yellow indicates the second selected VLAN.
- Purple indicates the third selected VLAN.
- Light purple (orchid2) indicates the fourth selected VLAN.
- Pink (plum1) indicates the fifth selected VLAN.

- Blue indicates the sixth selected VLAN.
- Yellow indicates the seventh selected VLAN.

Names of ports and devices in a selected VLAN are displayed in the VLAN Devices, Topology, or Ports window in the appropriate color according to the legend.

Figure 3-14 is an example of the VLAN Ports window showing port status and VLAN membership.

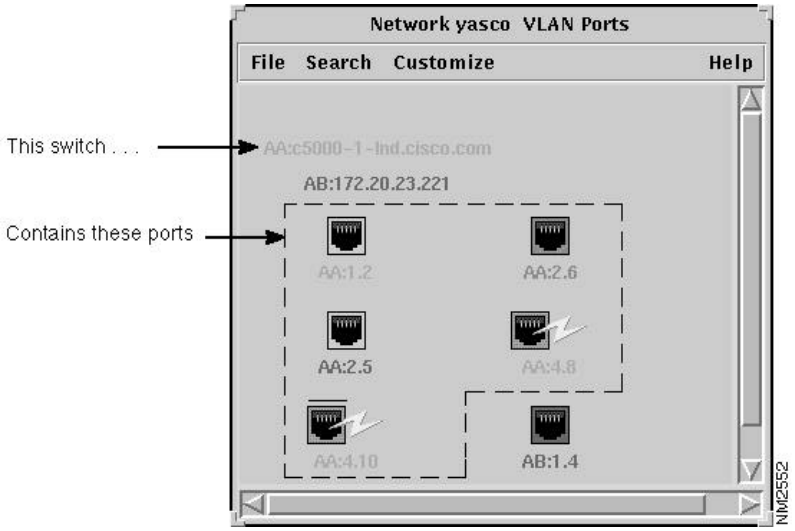
Figure 3-14 Identifying Port Status and VLAN Membership through Color



Identifying Switch Ports

The VLAN Ports window displays the ports in the VLAN(s) that you selected in the Names window. The names of switches that include VLAN ports are listed on the top left portion of the window. To determine what switch a port belongs to, match the two letters listed at the beginning of the label underneath the port with the corresponding letters in the list of switch names as shown in Figure 3-15.

Figure 3-15 Identifying Switch Ports



Icon Selection

VlanDirector uses color to indicate when an icon is selected or active and when certain operations are valid. Items such as folder names appear yellow when selected. Port device and link icons are outlined in yellow when selected.

Similarly, when dragging an icon from one window to another, VlanDirector uses color to indicate where you can drop the icon. For example, when dragging a port icon from CiscoView, VlanDirector indicates which window can accept that port by changing the inside border of the icon from beige to white.

Using the Context-Sensitive Online Help System

The VlanDirector application has an online help system that includes both task-oriented online help and context-sensitive online help on windows and error messages.

After you launch VlanDirector, use the help system to get information about using the VlanDirector interface, navigating within the product, and finding information on a specific topic.

Help is available in the following ways:

For this Information	Follow This Path from the Names Window
Display the help system	In the Names window, select **Help>Using Help**.
Search for information	From the help system's main window, click the Find button and specify any word, or use the Search button to search by topic.
Self-contained help system describing how to use the product features	In the Names window, select **Help>Contents**.
Version information	In the Names window, select **Help>About VlanDirector**.
Context-sensitive help on any VlanDirector window	Click the Help button in the window or search within the Help system.
Create a VLAN	**Help>Contents>Creating a New VLAN**
Managing links	In the Names window, select **Help > Contents> Configuring and Working with Links**
Error messages	Click Help in the Error Message window.

For this Information	Follow This Path from the Names Window
Making changes to VLANs	In the Names window**, select Help > Contents>Modifying and Deleting VLANs.**