C H A P T E R 5

Saving and Retrieving Known Networks

When you start VlanDirector, it runs the discovery process and creates a known network.

After you have configured VLANs and links on the known network, you can save and retrieve copies of it or later work with the known network again.

This section discusses the uses of known networks and configurations and how to store and retrieve them.

- Modifying Known Networks with Discovery
- Using Known Networks and Configurations
- Storing and Retrieving Known Networks and Configurations
- Comparing Configurations

Modifying Known Networks with Discovery

When you start VlanDirector, it automatically performs a discovery of your network.

VlanDirector finds or discovers the devices in the network using Cisco Discovery Protocol (CDP). VlanDirector can only discover devices that support CDP. The discovered devices and links between them form a known network. The known network can consist of up to 100 devices. The discovery process stops when it reaches the 100th device.

If your network uses VTP (that is, if one or more switches has VTP enabled), a known network corresponds to the management domain with the same name. This known network includes devices such as non-VTP devices, such as a Catalyst 1200, and devices that have not been initialized, such as a Catalyst 5000 that is capable of running VTP but is not currently running VTP.

VlanDirector displays a map of the discovered network in the VlanDirector Network Topology window. In a known network, devices, links, and ports are updated each time the discovery process is run. The discovery process is run on the interval you specify in the VlanDirector Properties window. The default interval is every 300 seconds.

You can exclude or include certain devices in the topology displays.

Instructions for the following ways to modify the devices to be discovered are provided in this chapter:

- Discovering a known network
- Starting discovery from VlanDirector
- Excluding devices from the known network
- Removing devices from the known network
- Extending the known network
- Changing the discovery interval
- Resolving network irregularities
- Discovering routers

Starting Discovery from VlanDirector

To restart the discovery process from VlanDirector, follow these steps:

Step 1 In the Names window, select **File>Open Network**.

The VlanDirector Open Network window is displayed. If VlanDirector is operating on a known network, the Open Network window starts up with the known network's name and discovery device.

Step 2 In the Known Network field, enter the name of a known network or select one from the pull-down list. If you specify the name of an existing known network, the name of its discovery root device is displayed in the Discovery Root Device field.

Step 3 In the Discovery Root Device field, enter the name for the discovery root device (the device from which to begin the discovery process), or select one from the pull-down list.

Step 4   Click OK to restart the discovery process.

Excluding a Device from the Known Network

If your known network includes devices that you do not want to manage using VlanDirector, you can exclude them. You might want to exclude them, for example, if your network has more than 100 devices, or you might want to exclude some devices to reduce the number of devices in the specified known network. You can also exclude a device that you do not want to manage in a known network, such as a Catalyst 1200 in a VTP environment.

You can exclude one device or multiple devices simultaneously using the following procedure:

Step 1   In the Network Topology window, select **Customize>Modify Managed Device List**.

The VlanDirector Modify Network window is displayed. This window enables you to include and exclude a device or devices from the known network.

Step 2   To exclude a device from the Included Devices list, select the name or IP address of the device you want to exclude.

Step 3   Click **Exclude**.

The selected device is removed from the Include list and added to the Exclude list.

Step 4   Click **OK**.

The device is removed from the known network.

Removing a Device from the Known Network

Excluding a device removes it from VlanDirector displays, but the device is retained in the VlanDirector database. If a device has been physically removed from the network, you might also want to remove it from the VlanDirector database. To do this, follow these steps:

Step 1   Select the device in the VlanDirector Network Topology or Devices window.

Step 2   Display the device icon popup menu using the right mouse button to click on the device.

Step 3 Select Drop Device from the popup menu.

The device is removed from the VlanDirector database. However, if a device still exists in the network, it will be discovered the next time the discovery process is run.

Adding a Device Back into the Known Network

You can include a previously excluded device or devices in the known network using the following procedure:

Step 1 In the Network Topology window, select **Customize>Modify Managed Device List**.

The VlanDirector Modify Managed Device window is displayed. This window enables you to include and exclude a device or devices from the Discovery process.

Step 2 To include a device from the Excluded Devices list, select the name or IP address of the device you want to include.

Step 3 Click Include.

Step 4 The selected device is removed from the Exclude list and added to the Include list.

Step 5 Click OK.

The device will be redisplayed in the VlanDirector displays after the next discovery.

Extending the Known Network

The discovered network will not extend beyond any routers that discovery encounters. You can use the following procedure to discover routers beyond the existing known network.

To extend a known network, complete the following steps:

Step 1 In the Network Topology window, select **Customize>Extend Network**.

The VlanDirector Extend Network window is displayed.

Step 2 In the Discovery Root Device field, specify the name of the device or the IP address from which to start the extended portion of the known network.

Step 3 Click OK to start the discovery process.

Changing the Discovery Interval

Depending on the requirements of the configuration you are performing, you might want to change the interval at which the Discovery process is repeated, for example, to reduce the network management traffic on a stable network. The default value is 300 seconds (5 minutes). To change the Discovery interval, follow these steps:

Step 1 From the Names window, select **Option>Properties**.

Step 2 From the VlanDirector Properties window, select Installation Management from the pull-down list.

Step 3 In the Properties Installation Management window Discovery Interval field, enter the new value for the Discovery interval. The default value is 300 seconds.

Step 4 Click OK.

Step 5 Restart the application or open a new network, using the command **File>Open Network,** for the change to take effect.

Resolving Network Irregularities

After the discovery process, the Names window might replace the discovery icon (the moving magnifying glass) with a large check mark. This indicates that VlanDirector discovered some discrepancies in the network. You can continue using VlanDirector with discrepancies, but you should evaluate the seriousness of the problem first. A discrepancy is an irregularity that can affect VlanDirector or actual network operation. To examine a discrepancy, in the Names window, select **Action>Show Discrepancies,** or click the Discrepancy icon in the Names window. After you display the Discrepancy window, the Discrepancy icon disappears.

Gray links in topology displays indicate a discrepancy on the link.

For information on Discrepancies, refer to "Responding to Discrepancies" in Chapter 8.

Routers to other "unmanageable" devices appear but are grayed-out. A device is unmanageable in one of the following situations:

- VlanDirector cannot communicate with the device using SNMP.

- You entered incorrect community string information.

- The device is unsupported by VlanDirector, for example, a Series 7000 router.

Discovery of Routers

VlanDirector does not discover routers, but includes the router icon and the connections by which CDP found it in the known network.

Using Known Networks or Saved Configurations

You can make changes that are implemented immediately on your network or defer changes until you are ready to implement them. For example, you might want to implement network changes on a particular day of the week for administrative reasons or during the night to minimize network disruption. Configurations can also be used to experiment with a configurations and to save versions for recovery.

For such circumstances, you can save and store images of networks, and later retrieve and apply these configurations to your network. You can also easily switch between known networks and configurations.

Known Network

A known network depicts the current state of the devices (up to 100), links, ports, protocols, and VLANs in the physical network. A known network corresponds to the management domain you specified on the CLI of at least one switch in your network. If the management domain contains more than 100 devices, the known network will contain only 100 of the devices that are in the management domain.

VlanDirector displays a map of the discovered network in the VlanDirector Network Topology window. In a known network, devices, links, and ports are updated each time the discovery process is run. The discovery process is run on the schedule you specify in the VlanDirector Properties window. The default interval is every 300 seconds.
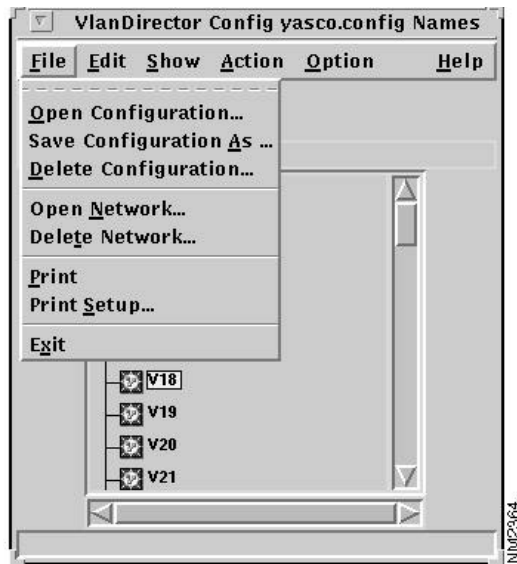
When using a known network, VlanDirector updates the network and VLAN views as added and deleted devices are discovered.

Creating a New Known Network

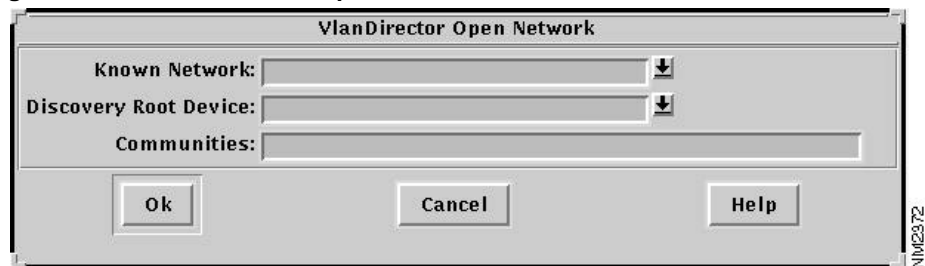To create a new known network, follow these steps:

Step 1 In the Names window, select **File>Open Network** as shown in Figure 5-1.

Figure 5-1   Creating a New Known Network

The VlanDirector Open Network window is displayed as shown in Figure 5-2.

Figure 5-2   VlanDirector Open Network Window

Step 2   In the Known Network field, enter a new name. The name must correspond to the name of an existing management domain.

Step 3   In the Discovery Root Device field, enter a name for the root device for the discovery process.

Step 4   In the Community String field, enter community string information (either a valid community string file or a read-only and read-write community string that applies to all network devices) that is appropriate to your network. For additional information on entering community strings, refer to Appendix A.

Step 5   Click OK.

The discovery process begins and the new network is created.

Making Changes to a Known Network

When you make changes to a known network, you can implement the changes immediately, or defer changes until you are ready to implement them. By default, VlanDirector applies changes immediately.

Sometimes this might not be desirable, as in the following examples.

- You have multiple changes to make simultaneously.

- You want to be very careful about the changes.

- You want to implement certain changes on a temporary basis.

In these circumstances, you can switch from working with a known network to a temporary configuration in which you can cautiously make changes and preview the changes before you apply them to the network. To operate in this temporary configuration mode, turn the Automatic Installation feature in VlanDirector to Off.

Turning Automatic Installation Off

Automatic Installation is On by default. To turn Automatic Installation Off, follow these steps:

Step 1   In the Names window, select **Option>Properties**.

The VlanDirector Properties window is displayed.

Step 2   From the pulldown list, select Installation Management.

The VlanDirector Properties Installation Management window is displayed.

Step 3   In the Auto Install field, select **Off**.

Step 4   Click OK.

When you are making changes change with the Auto Install option off, you are switched to a temporary configuration. Subsequent changes are made to the temporary configuration. After you are satisfied with the changes that you make, you can then apply changes to the known network as follows: In the Names Window, select **Action>Install All** or **Action>Install Selection**.

If you select **Action>Install All**, the temporary configuration is dropped and you switch back to the known network. If you enter **Action>Install Selection**, the temporary configuration is retained and you continue to work in the temporary configuration.

To change a temporary configuration to a saved configuration, select **File>Save As Configuration**, and specify the name for the saved configuration.

Saved Configuration

A saved configuration is a copy of the devices, ports, links, and VLANs of a known network which is not updated by the discovery process. It does not necessarily reflect the current state of the network and its devices. You might want to use a saved configuration as a master image of your network, or you might want to use a specific configuration on the network on certain days or times in the week.

To create a configuration, select **File>Save As Configuration** in the Names window. When VlanDirector operates on a saved configuration, it shows only the modifications you have made in the configuration and not the current state of devices in the network.

Configurations can be created, modified, and retrieved.

You can operate on an existing saved configuration, save a known network as a saved configuration, and save a temporary configuration as a saved configuration.

Summary of Differences between Known Network and Configuration

Table 5-1 summarizes the differences between a known network and a configuration.

Table 5-1   Differences Between Known Networks and Configurations

Known Network	Configuration
Created by discovery	Created from a known network or other configuration
Reflects the active or running network	Reflects a "snapshot" of the known network at the time that the configuration is created
Automatically updated by discovery	Not updated by discovery
Title bar includes the word "network"	Title bar includes the word "config"

Determining Your Mode of Operation

You can work in any one of the three modes, depending on your management requirements. You can determine which mode you are in by checking the window title on any of the views that you are currently working with. The title bar indicates the current mode. If you are working with a known network, the title bar includes the word Network. If you are working with a configuration, the title bar includes the word Config. If you are working with a temporary configuration, it includes the word Config and a name starting with *.vlv*, for example, *.vlvAAA03694*.

Storing and Retrieving Configurations and Known Networks

You can create and retrieve known networks and configurations.

Creating a New Known Network

To create a new known network, follow these steps:

Step 1   In the Names window, select **File>Open Network** .

Step 2   In the Known Network field, enter a new name.

Step 3 In the Discovery Root Device field, enter a name for the root device for the discovery process.

In the Community String field, enter community string information (either a valid community string file path name or a read-only and read-write community string that applies to all network devices) that is appropriate to your network. For additional information on community strings, refer to Appendix A.

Step 4 Click OK.

Retrieving a Saved Known Network

To retrieve a saved known network, follow these steps:

Step 1 In the Names window, select **File>Open Network**.

Select a known network from the pull-down list. You can accept the name in the Discovery Root Device field , select one from the pull-down list, or enter a device name or an IP address.

Step 2 In the Community String field, enter community string information (either a valid community string file or a read-only and read-write community string that applies to all network devices) that is appropriate to your network. Leave it blank if you have not changed the default community strings. For additional information on community strings, refer to Appendix B.

Step 3 Click OK to start the discovery process on the known network.

Saving a Known Network as a Configuration

To save a known network as a configuration, follow these steps:

Step 1 In the Names window, select **File>Save As Configuration**.

The VlanDirector Save As Configuration window is displayed.

Step 2 In the Configuration field, enter the name of the new configuration or select an existing name. Configuration names must be different from known network names.

Step 3 Click OK.

A configuration is created from the known network.

Deleting a Known Network

To delete unwanted known networks from a list of saved, known networks, follow these steps:

Step 1   In the Names window, select **File>Delete Network**. The VlanDirector Delete Network window is displayed.

Step 2   In the Known Network field, enter the name of the network to be deleted, or select a name from the pulldown list.

Step 3   Click OK.

The known network is deleted.

Deleting a Configuration

To delete unwanted configurations from a list of saved configurations, follow these steps:

Step 1   In the Names window, select **File>Delete Configuration**. The VlanDirector Delete Configuration window is displayed.

Step 2   In the Configuration field, enter the name of the configuration, or select one from the pulldown list.

Step 3   Click OK to delete the specified configuration.

Saving a Temporary Configuration as a Configuration

To save a temporary configuration as a configuration, follow these steps:

Step 1   In the Names window, select **File>Save Configuration As**.

The VlanDirector Save Configuration As window is displayed.

Step 2   In the Configuration field, enter the name under which you want to save the configuration, or select a name from the pull-down list.

Copying a Configuration

To copy a configuration, follow these steps:

Step 1 In the Names window, select **File>Save As Configuration**.

The VlanDirector Save As Configuration window is displayed.

Step 2 In the Configuration field, enter the name under which you want to save the configuration, or select a name from the pull-down list.

Step 3 Click OK.

Comparing Configurations

You can compare an existing configuration with a known network or another configuration. For example, if you made changes to a network configuration that then caused network problems, you might want to compare to a different configuration that did not result in those problems. To compare two configurations, or a configuration and a known network, do the following

Step 1 In the Names window, select **Action>Compare Configuration**.

The VlanDirector Compare Configuration window is displayed.

Step 2 In the Configuration field, enter the name of the configuration with which you want to compare the known network or configuration.

Step 3 Click OK.

The VLAN Director Differences Report is displayed as shown in Figure 5-3, indicating the differences in the configurations.

Figure 5-3   VlanDirector Differences Report

Interpreting the VlanDirector Differences Report

The VlanDirector Differences Report shows the differences between the saved configuration and your current configuration. For example, the report in Figure 5-3 indicates that the following changes need to be made to the current configuration to make it identical to the saved configuration:

Port 5 on Slot 3 of the device C5000-3-lnd.cisco.com must be made a member of the VLAN named vlan0003.

Port 6 on Slot 3 of the device C5000-3-lnd.cisco.com must be removed from the VLAN named vlan0032 and made a member of the VLAN named vlan0003.