



Configuring and Monitoring LANE Services

As the network administrator, you have notified that the company will be expanding to include two new buildings. These buildings will house additional engineers and other employees that the company plans on hiring.

Your current network configuration consists of two segments. On each segment, a VLAN exists for the Marketing department, called VLAN2. Both segments belong to the same VTP domain, called “San Jose.” See Figure 7-1.

In this scenario, you want to connect these VLANs through an ATM cloud by creating an ATM VLAN.



Note

The network design used in this scenario is intended to illustrate how to use Campus Manager applications to manage your network, not as guidelines for how to design your network. Consult the network design guidelines for that type of information.

Figure 7-1 *Current Network Configuration with San Jose VTP Domain*



To do this, refer to these sections:

- What You Need—Prerequisites
- How to Do It—Procedure
- Where You Should End Up—Verification

What You Need—Prerequisites

Before beginning, make sure you do the following:

- Understand Required LANE Components
- Prepare the ATM Devices
- Create a Master LAN Emulation Configuration Server (LECS)
- Create a Backup LAN Emulation Configuration Server (LECS)

In this scenario, you will use the following applications:

- Device command line interface (CLI)
- Topology Services

Understand Required LANE Components

Before beginning, make sure you understand the components required for LANE to function:

- LAN Emulation Configuration Server (LECS)
- LAN Emulation Server/Broadcast and Unknown Server (LEC/BUS)
- LAN Emulation Client (LEC)

See “LANE Components” in Chapter 7, “Configuring and Monitoring LANE Services” for detailed information about these components and their requirements.

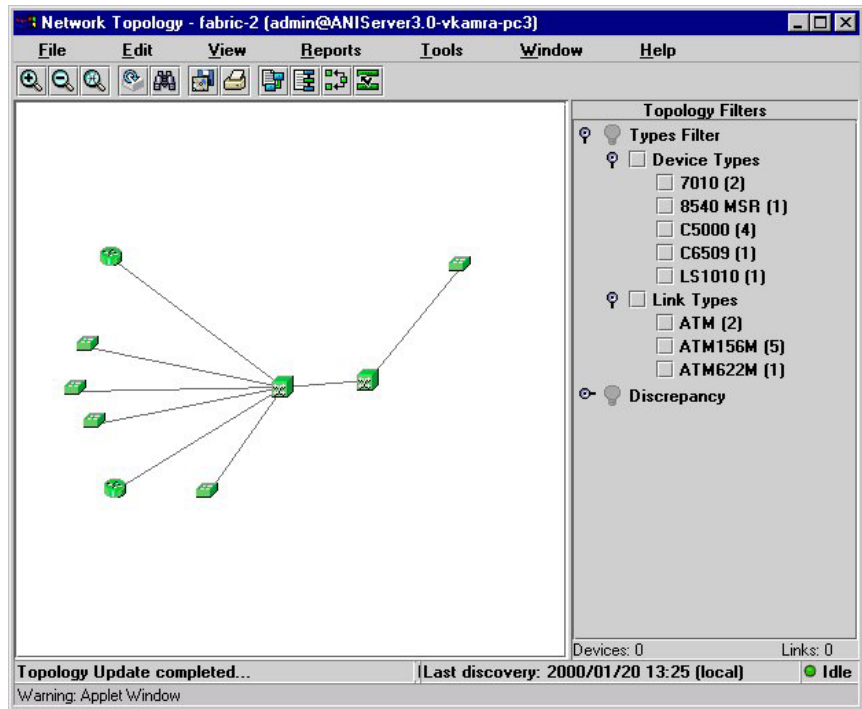
Prepare the ATM Devices

To prepare the ATM devices for LANE:

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- Step 1** Make sure that you have the correct software image version on the ATM devices.
 - Step 2** Make sure that all ATM switches appear on the topology view. Select **Campus Manager > Topology Services > Managed Domains > ATM Domains > fabric-2**.
 - Step 3** Select **View > Display View**. See Figure 7-2.
 - Step 4** If the switches do not appear, verify SNMP connectivity on the missing LANE devices.
 - Step 5** Make sure ILMI is turned on and is functioning properly on the required ATM interfaces.

The ANI Server requires SNMP and ILMI for proper discovery of ATM devices. If the ATM devices do not appear on the topology view, you may need to increase the SNMP timeout values. Do not increase the SNMP timeout for all devices because the discovery process will take much longer. For more information about increasing the SNMP timeout, refer to the *Getting Started with the CiscoWorks2000 Server* publication.

Figure 7-2 Topology View of ATM Domain Showing ATM Devices



32984

Create a Master LAN Emulation Configuration Server (LECS)

If the ATM Domain does not already have a master LECS, you must create one. To do so, perform the following steps:

- Step 1** Select **Campus Manager > Topology Services > Tools > LANE Management... > Configure Config Server...**. A window similar to the one shown in Figure 7-3 appears.
- Step 2** Select the ATM domain you wish to add the LECS to, in this case, fabric-2.

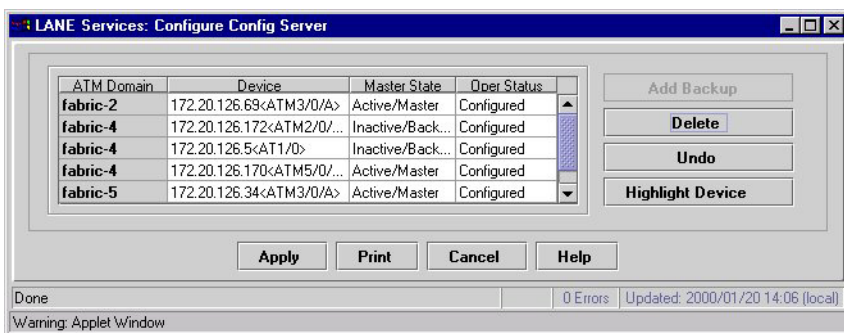
Topology Services displays the host name and module/port number of the best candidate for the LECS as the default entry in the Device column. You can accept this choice or click on the down arrow to select another device.

Notice that the Oper Status (operating status) column shows Not Configured. This means that the LECS has not been configured. Once you click **Apply**, the configuration will be updated on the switch and the status will change to Configured.

Step 3 Click **Apply**.

Step 4 You can add a backup LECS at this time by proceeding to Step 3 in the “Create a Backup LAN Emulation Configuration Server (LECS)” section.

Figure 7-3 *Configure Config Server Window*



Create a Backup LAN Emulation Configuration Server (LECS)

If a master LECS already exists, you can add a backup LECS by performing the following steps:

Step 1 Select **Campus Manager > Topology Services > Tools > LANE Management... > Configure Config Server...**

Step 2 Select the ATM domain to which you want to add the backup LECS, in this case fabric-2.

The Master State column should show the state of the master LECS as Active/Master and the Oper Status should show Configured.

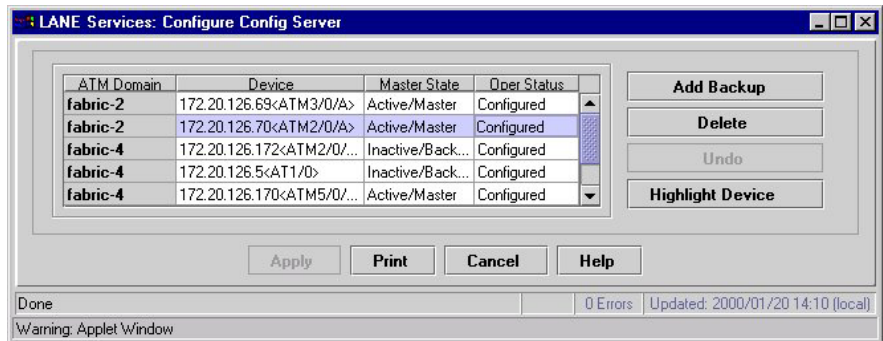
Step 3 Click Add Backup.

Another row is added. Notice that the fabric name is the same as the fabric you selected. Topology Services displays the host name and module/port number of the best candidate for the backup LECS as the default entry in the Device column. You can accept this choice or click on the down arrow to select another device.

Step 4 Click Apply.

Notice that the Oper Status (operating status) column shows Inactive/Backup. This means that the LECS has not been configured yet. After the configuration is updated on the switch, the status will change to Active/Backup.

Figure 7-4 Configure Config Server Window for Backup LECS



32986

How to Do It—Procedure

Before creating an ATM-VLAN, make sure you have at least one LECS in the ATM domain. See the “Prepare the ATM Devices” section.

Refer to the procedures to create an ATM-VLAN:

1. Create a LE/Broadcast Server
2. Create LAN Emulation Clients (LECs)
3. Rediscover the Network

Create a LE/Broadcast Server

Because you have already created VLAN 2 on each segment in your network, you need to add the LE/Broadcast server capability to the VLAN to extend the VLAN across the ATM network.

To create a LE/Broadcast server for VLAN 2:

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| Step 1 | Select Campus Manager > Topology Services > ATM Domains > <i>fabric name</i> , in this case fabric-2. |
| Step 2 | Select Tools > LANE Management > Add/Modify LANE Services... from the main window. A window similar to the one shown in Figure 7-5 appears.

See Table 7-1 for help filling in the required information. |
| Step 3 | Select the device you wish to use as the LE/Broadcast server for the ATM-VLAN.

Topology Services displays the host name and module/port number of the best candidate for the LE/Broadcast server as the default entry in the Device column. You can accept this choice or click on the down arrow to select another device. |
| Step 4 | Click Apply . |
| Step 5 | The LE/Broadcast server is added to the ATM-VLAN, and its operating status changes to Configured. |

Step 6 If you want to add a backup LE/Broadcast server now, click **Add Backup**.

Another row is added. Notice that the fabric name is the same as the fabric you selected. Topology Services displays the host name and module/port number of the best candidate for the backup LE/Broadcast server as the default entry in the Device column. You can accept this choice or click on the down arrow to select another device.

Step 7 Click **Apply**.

Notice that the Oper Status (operational status) column shows Not Configured. This means that the backup LE/Broadcast server has not been configured yet. After the configuration is updated on the switch, the status will change to Configured and the Master State column will show Inactive/Backup.

After creating a new LE Broadcast Server, an entry for a standalone ATM VLAN will immediately appear in the Standalone ATM VLANs folder inside the appropriate ATM fabric in the ATM Domains folder. To see the appropriate hybrid ATM VLAN entry for the VLAN (under the appropriate VTP domain) for which the LE Broadcast Server was created, you must first create a LAN Emulation Client for the new ATM VLAN and rediscovery your network.

Figure 7-5 Add LANE Services Window

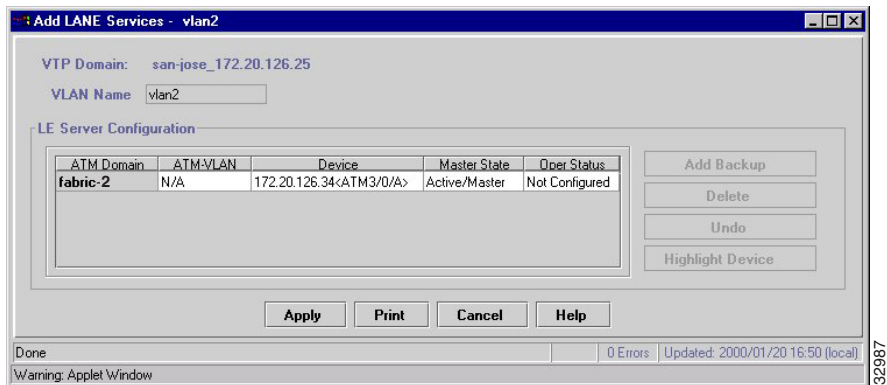


Table 7-1 Add LANE Services Window Fields

Field	Description
VTP Domain	Topology Services automatically displays the name of VTP domain that contains the associated VLAN. This field is not modifiable. In this scenario, San Jose is displayed.
VLAN Name	Topology Services automatically displays the name of the VLAN this ATM VLAN will be associated with. This field is not modifiable. In this scenario, VLAN2 is displayed.
LE/Broadcast Server Configuration	
ATM Domain	Topology Services automatically chooses and displays the name of the ATM domain that this LE/Broadcast server will belong to. The ATM domain name is the same as the VLAN name. In this scenario, VLAN2 is displayed.
ATM-VLAN	ATM VLAN this LE/Broadcast server will belong to.
Master State	Active/Master denotes a master LE/Broadcast server. Inactive/Backup denotes an LE/Broadcast server that is configured as a backup for the master LE/Broadcast server.
Oper Status	The status denotes whether the LE/Broadcast server is configured or not.

Create LAN Emulation Clients (LECs)

You must create an LEC on each required ATM device that will participate in the ATM-VLAN and map the VLAN to the ATM VLAN across the ATM interfaces (LECs).

Campus Manager does not support these functions. You can do this in these two ways:

- Manually through the device CLI.
- Automatically on some Cisco devices using VTP. (VTP performs this task during the set-up of each VLAN within the network.)

Refer to the device Command Reference or Configuration guide for more information about how to do this.

Rediscover the Network

If you want to view the changes you have made to your network before the next automatically scheduled discovery cycle, perform a manual discovery that is limited to the desired ATM domain.

To rediscover the ATM domain, perform these steps:

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| Step 1 | Select Campus Manager > Topology Services > ATM Domains > and select any ATM domain. In this case, you would select fabric-2. |
| Step 2 | Select View > Display View . |
| Step 3 | Select Edit > Select > All devices . |
| Step 4 | Then select Edit > Rediscover Device(s) . The ANI Server begins rediscovering only those devices that you have selected (those in the fabric-2 ATM domain). |
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Where You Should End Up—Verification

You have configured LANE components to your network and have added LANE capability to VLAN 2. Now you need to make sure that they are correctly configured and that the switches are operational (green icon on the topology view).

To check this, display the LANE components in your network:

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- Step 1** From the CiscoWorks2000 desktop, select **Campus Manager > Topology Services>Managed Views>VTP Domains>San Jose>VLAN 2**.
- Notice that a cloud icon has been added to the name to denote that the VLAN is now an ATM-VLAN.
- Step 2** Select **View>Display View**.
- Step 3** In the Topology Filters window, select LANE.
- Step 4** Click the check boxes for LE Clients, LE/B'cast Server, and LE Config Server to highlight switches with these components.
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■ Where You Should End Up—Verification