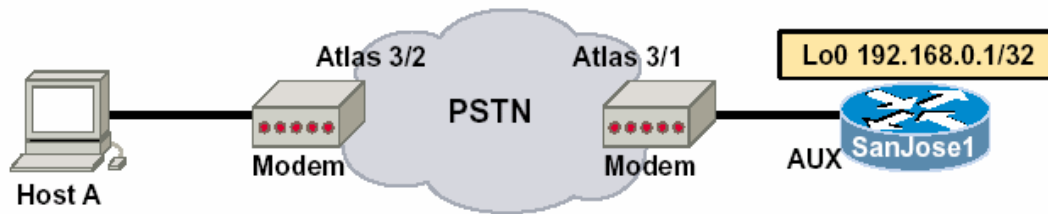## Configuring PPP Interactive Mode

Objective

In this lab, you will configure a Cisco router to connect asynchronously to a modem and use a workstation (Host A) to remotely dial in to the router. You will also configure PPP interactive mode, so that Host A's user can select between a PPP session and a router management EXEC session.

Scenario

The International Travel Agency wants you to configure dial-up access to the central router SanJose1. They would like you to set up access so that the remote user at Host A can dial up the router for either an EXEC management session on the router, or a PPP connection to the corporate LAN. This configuration will allow the dial-up user to choose between configuring the router remotely, and accessing the central site's network. Since the user may choose to access International Travel Agency's TCP/IP-based network, your configuration must account for assigning an IP address to Host A.

Step 1

Before beginning this lab, it is recommended that you reload the router after erasing its startup configuration. This will prevent you from having problems caused by residual configurations. Build and configure the network according to the above diagram, but do not configure SanJose1's AUX yet. Configure SanJose1 with the appropriate hostname **and Loopback 0 IP address** of 192.168.1.1. Use the Adtran Atlas 550 to simulate the PSTN. If you are using the Atlas 550, be sure the line cables from both modems are plugged into the octal FXS voice module ports of he Atlas 550 as labeled in the diagram.

Step 2

Configure SanJose1's AUX Interface.
```
SanJose1(config)#interface async 65
SanJose1(config-if)#ip address 192.168.8.1
255.255.255.0
SanJose1(config-if)#async mode interactive
SanJose1(config-if)#peer default ip address
192.168.8.5
```

The `async mode interactive` command allows the remote user to select between a PPP session and an EXEC session with the router. The `peer default ip address` command configures the router to assign an IP address to the dial-in host. An IP address is required in order for the remote host to access the International Travel Agency's TCP/IP corporate network.

Step 3

Configure the appropriate line so that it can communicate with the modem (line 65 is used here as an example, use `show line` to verify your router's number):

```
SanJose1(config)#line 65
SanJose1(config-line)#login
SanJose1(config-line)#password cisco
SanJose1(config-line)#speed 115200
SanJose1(config-line)#flowcontrol hardware
SanJose1(config-line)#modem inout
SanJose1(config-line)#transport input all
SanJose1(config-line)#stopbits 1
```

For this scenario, you will also configure this line to select PPP automatically:

```
SanJose1(config-line)#autoselect ppp
```

The `autoselect` command configures the Cisco IOS software to identify the type of connection being requested. This command is used on lines making different types of connections.

Finally, reverse Telnet to the modem, restore the modem's factory default settings (AT&F), and configure the modem to answer on the second ring (ATS0=2).

```
SanJose1#telnet 192.168.1.1 2065
Password: cisco
(no prompt) AT
OK
AT&F
ATS0=2
AT&W
```

- What port number will you use to establish a reverse Telnet session with the modem?_____

Now that your modem is configured, suspend the reverse Telnet session by pressing **Control-Shift-6** at the same time, release, then press **X**. You should be returned to the router prompt. From the router prompt, disconnect the reverse Telnet session to the modem:

```
SanJose1#disconnect
```

Since you will use Telnet and reverse Telnet in this exercise, configure SanJose1's virtual terminals with the following commands:

```
SanJose1(config)#line vty 0 4
SanJose1(config-line)#login
SanJose1(config-line)#password cisco
```

Step 4

In this step, you will verify that SanJose1 is accepting dial-up PPP connections from Host A. First, change the TCP/IP Properties of the network card to obtain an IP address automatically. Next, configure Dial-Up Networking (DUN) on Host A. The exact configuration steps for DUN will vary depending on the operating system used by Host A. If you are using Windows 9x/2000/Me, open the "Dial-Up Networking" folder and click on the "Make New Connection" icon If you are using the standard Adtran Atlas configuration, configure the connection to dial 555-6001 (port 1). Since you have not configured PPP authentication, no username or password for this connection is required. When you have named and completed the DUN configuration, double-click your connection's icon and establish a dial-up connection with SanJose1. If the connection fails, troubleshoot as necessary. Once your connection is established, check Host A's IP address. Remember that this address will be bound to the dial-up adapter (modem), and not a NIC.

1. What IP address has been assigned to the dial-up adapter?_____

Verify that Host A has TCP/IP connectivity to the corporate network by pinging SanJose1's Loopback interface of 192.168.0.1. If Host A does not receive a reply, troubleshoot as necessary.
From Host A, telnet to SanJose1 at 192.168.8.1 and enter the appropriate password. On SanJose1, issue the `show interface Async 65` command.

3. According to the output of the `show interface` command, what is the encapsulation set to? _____

Now that you have verified TCP/IP connectivity, exit the Telnet session and disconnect the dial-up link.

Step 5

In this step, you will verify that SanJose1 is accepting dial-up management (EXEC) sessions from Host A. First, right-click on your connection's icon in the "Dial-Up Networking" window and select "Properties." If you are using Windows 95/98, click the "Configure" button on the "General" tab, which will open the modem configuration window. In this window, select the "Options" tab, and check the box that says "Bring up terminal window

after dialing." If you are using Windows 2000, check the "Show terminal window" box on the "Security" tab.

Now establish the dial-up connection, as you did previously in Step 4. When the router answers the call, a terminal window should appear. Press the Enter key to trigger the router password prompt and then enter the appropriate password. While you are still connected, issue the `show interface Async 65` command on SanJose1

1. According to the output of the `show interface` command, what is the line encapsulation set to?_____

2. Note that the interface is not in an up-and-up state even though you have an established connection. Why is this so?_____

3. Has Host A's dial-up adapter been assigned an IP address?_____

Finally, since SanJose1 is using asynchronous interactive mode, you can begin a PPP session with the router by entering the appropriate command while in the management session. In your dial-up terminal window, type the following command:

```
RTA>ppp
```
You will see strings of character output, which are representations of PPP frames. Click on the **"Continue"** button at the bottom of the Dial-Up Networking terminal window. After a few seconds, check Host A's IP address. The dial-up adapter should now have the address 192.168.8.5. Verify that you have TCP/IP connectivity by Telnetting from Host A to SanJose1 via 192.168.8.1.