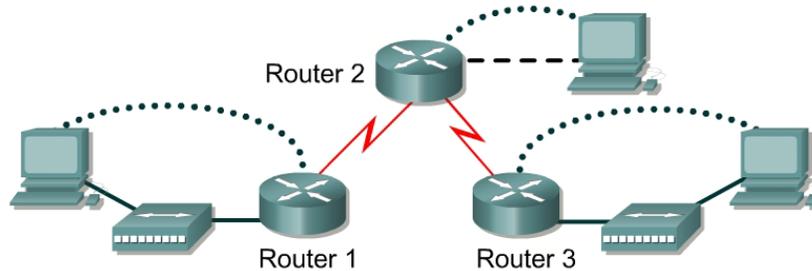## Lab 4.2.4 Advanced Telnet Operations

Router designation	Router Name	Enable secret password	Enable/VTY/ and Console passwords	Routing protocol	RIP network statements		
Router 1	GAD	class	cisco	RIP	192.168.14.0	192.168.15.0	
Router 2	BHM	class	cisco	RIP	192.168.15.0	192.168.13.0	192.168.16.0
Router 3	PHX	class	cisco	RIP	192.168.13.0	192.168.17.0	

Router designation	IP host name	Fast Ethernet 0 address	Interface type Serial 0	Serial 0 address	Interface type Serial 1	Serial 1 address	Subnet mask all addresses
Router 1	GAD	192.168.14.1	DCE	192.168.15.1	NA	No address	255.255.255.0
Router 2	BHM	192.168.16.1	DTE	192.168.15.2	DCE	192.168.13.1	255.255.255.0
Router 3	PHX	192.168.17.1	NA	No address	DTE	192.168.13.2	255.255.255.0

Straight-through cable	————	Console (Rollover)	••••••••••••
Serial cable	(red)	Crossover cable	– – – – – –

Objective

- Use the `telnet` command to remotely access other routers.

- Verify that the application layer between the source and the destination is working properly.

- Suspend a Telnet session.

- Engage in multiple Telnet sessions.

- Return to the suspended session.

- Disconnect from the Telnet session.

Background/Preparation

It is often desirable to have Telnet sessions to multiple routers simultaneously in order to check and compare configuration information. This lab focuses on the ability to Telnet to multiple routers, suspend those sessions, and switch between the active sessions. A list of active connections can also be displayed in the process.

Cable a network similar to the one in the diagram. Any router that meets the interface requirements may be used. Possible routers include 800, 1600, 1700, 2500, 2600 routers, or a combination. Refer to the chart at the end of the lab to correctly identify the interface identifiers to be used based on the

equipment in the lab. The configuration output used in this lab is produced from 1721 series routers. Any other router used may produce slightly different output. The following steps are intended to be executed on each router unless specifically instructed otherwise.

Start a HyperTerminal session as performed in the Establishing a HyperTerminal session lab.

Note: Go to the erase and reload instructions at the end of this lab. Perform those steps on all routers in this lab assignment before continuing.

Step 1 Configure the GAD, BHM and PHX routers using the tables

a. Configure the three routers as indicated in the Copying, Editing, and Pasting Configurations lab.

b. If there are any difficulties configuring hostname or passwords, refer to the Configuring Router Passwords lab.

If there are any difficulties configuring interfaces or the routing protocol, refer to the Configuring Host Tables lab.

c. Verify the routers configurations by performing a `show running-config` on each router. If not correct, fix any configuration errors and verify.

Step 2 Login to Router 1 and verify the connection to Routers 2 and 3

a. Login to the GAD router.

b. Verify the connection between the two routers. Ping the serial 0 interface of the BHM router. If the ping is not successful, return to Step 1 and troubleshoot the configuration.

Step 3 Telnet to a remote router

a. Enter `telnet` BHM if IP host tables were configured. Otherwise, enter *ip address* at the router prompt to connect to the BHM router.

Enter the password **cisco** to enter the router.

b. What prompt did the router display? _____

Step 4 Look at the interfaces on the remote router

a. Enter **show interface** at the router prompt.

b. Are both the serial 0 and the FastEthernet 0 interfaces up? _____

Step 5 Suspend the current Telnet session

a. Enter **Ctrl-Shift-6** followed by the **x** key.

This only suspends the session and returns to the previous router. It does not disconnect from this router.

b. What prompt did the router display? _____

Step 6 Establish another Telnet session

a. Enter **telnet** *router-name* if IP host tables were configured. Otherwise, enter **telnet** *ip address* at the router prompt to connect to the PHX router.

Enter the password **cisco** to enter the router.

b. What prompt did the router display? _____

Step 7 Suspend the current Telnet session

a. Enter **Ctrl-Shift-6** followed by the **x** key.

This only suspends the session and returns to the previous router. It does not disconnect from this router.

    b.   What prompt did the router display? _____

Step 8 Use the `show session` command to see the connections

    a.   Enter **show sessions** at the command prompt.

This will reveal that 2 sessions are in use.

Step 9 Resume the previously suspended Telnet session

    a.   Type **resume** and the number of the session that is to be resumed followed by the **Enter** key at the router prompt. The router will respond with:

```
[Resuming connection 1 to 192.168.X.X ... ]
```

    b.   Press the **Enter** key.

This will resume a Telnet session that was previously suspended.

    c.   What prompt did the router display? _____

Step 10 Use the `show session` command to see the connections

    a.   Enter **show sessions** at the command prompt.

    b.   How many sessions are shown? _____

    c.   There were two the last time. What is the difference? _____

Step 11 Close a Telnet session

    a.   Enter the command **exit** while in a Telnet session.

This will terminate the Telnet session.

    b.   What prompt did the router display? _____

       Note: Do not do this now. To disconnect from a suspended Telnet session, type **disconnect** and press **Enter**.

Step 12 Use the `show session` command to see the connections

    a.   Enter **show sessions** at the command prompt.

    b.   How many sessions are shown? _____

    c.   There were two on this router the last time. What is the difference?

       _____

Step 13 Resume the previously suspended Telnet session

    a.   Press the **Enter** key. The router will respond with:

```
[Resuming connection 1 to 192.168.X.X ... ]
```

Press the **Enter** key.

This will resume a Telnet session that was previously suspended.

    b.   What prompt did the router display? _____

Step 14 Close a Telnet session

Enter the command **exit** while in a Telnet session.

This will terminate the Telnet session.

Step 15 Problems with linked Telnet sessions on multiple routers

a. When working with Telnet, one of the most common problems is remembering the focus of the session. Focus means the device that is the focus of the commands that are being issued. Many times people Telnet to a router and then Telnet from that router to another and so on. Without host names, or if the routers have similar hostnames, confusion can happen. For example:

b. Telnet to the PHX router.

From the configuration prompt type **no hostname**.

Step 16 Telnet to the BHM router

a. Telnet to the BHM router.

From the configuration prompt type **no hostname**.

Step 17 Telnet back to the PHX router

a. Telnet back to the PHX router.

b. By looking at the prompt, it is not evident whether the Telnet worked or not.

Step 18 Telnet to the GAD router

a. Telnet to the GAD router.

From the configuration prompt type **no hostname**.

Step 19 Telnet to the BHM router

a. Telnet to the BHM router.

b. Type **show sessions**.

c. How many sessions are there running? _____

d. Why are there that many? _____

e. Now type **exit** three times.

f. What router are you on? _____

g. How many Telnet sessions are still open? _____

Step 20 Exiting from all sessions

a. Keep typing **exit** until the following prompt appears:

    Router con0 is now available

    Press RETURN to get started.

b. Scroll back up the HyperTerminal listing.

c. How many session closed messages were displayed? _____

d. Is that the number listed in the how many Telnet sessions are still open question? _____

Upon completion of the previous steps, logoff by typing **exit**. Turn the router off.

Erasing and reloading the router

Enter into the privileged EXEC mode by typing **enable**.

If prompted for a password, enter **class**. If "class" does not work, ask the instructor for assistance.

```
Router>enable
```

At the privileged EXEC mode, enter the command **erase startup-config**.

```
Router#erase startup-config
```

The responding line prompt will be:

```
Erasing the nvram filesystem will remove all files! Continue?
[confirm]
```

Press **Enter** to confirm.

The response should be:

```
Erase of nvram: complete
```

Now at the privileged EXEC mode, enter the command **reload**.

```
Router(config)#reload
```

The responding line prompt will be:

```
System configuration has been modified. Save? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Proceed with reload? [confirm]
```

Press **Enter** to confirm.

In the first line of the response will be:

```
Reload requested by console.
```

After the router has reloaded the line prompt will be:

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Press RETURN to get started!
```

Press **Enter**.

The router is ready for the assigned lab to be performed.

Router Interface Summary

Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2	Interface #5
800 (806)	Ethernet 0 (E0)	Ethernet 1 (E1)			
1600	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)	
1700	FastEthernet 0 (FA0)	FastEthernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)	
2500	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)	
2600	FastEthernet 0/0 (FA0/0)	FastEthernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)	
In order to find out exactly how the router is configured, look at the interfaces. This will identify the type of router as well as how many interfaces the router has. There is no way to effectively list all of the combinations of configurations for each router class. What is provided are the identifiers for the possible combinations of interfaces in the device. This interface chart does not include any other type of interface even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in IOS command to represent the interface.					