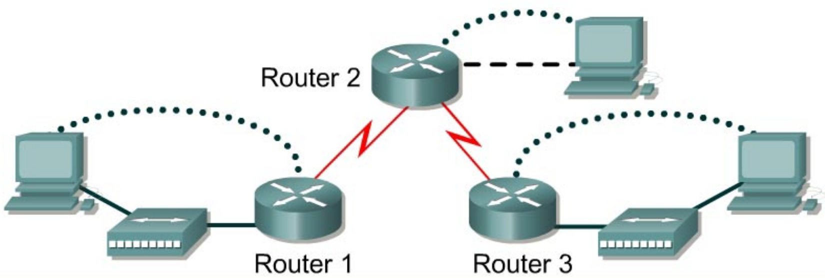
Lab 4.2.4 Advanced Telnet Operations – Instructor Version 2500



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	—Z—	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? BHM>

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 ~~Fast~~Ethernet 0 interfaces up? Yes

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? GAD#

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? PHX>

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? GAD#

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`** 1 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? BHM>

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? % No connections open

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

The last time the command was issued on the GAD router, this time it is issued from the BHM router.

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? GAD#

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? One session is shown connected to PHX.

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

The telnet session to BHM was closed in Step 11 so there is only 1 session left.

Step 13 Resume the previously suspended Telnet session

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

```
[Resuming connection 2 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? PHX>

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? Two

d. Why are there that many? There are two telnet sessions into the BHM router.

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

f. What router are you on? BHM>

g. How many Telnet sessions are still open? One

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? Five

d. Is that the number listed in the how many Telnet sessions are still open question? No

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)#reloadRouter#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.					


```
GAD#telnet phx
Trying PHX (192.168.17.1)... Open


User Access Verification

Password:
PHX>


GAD#show user
Conn Host                 Address              Byte   Idle Conn Name
   1 bhm                  192.168.16.1            0      0 bhm
*  2 phx                  192.168.17.1            0      0 phx

GAD#
[Resuming connection 2 to phx ... ]

GAD#
[Resuming connection 1 to bhm ... ]

BHM>exit

[Connection to bhm closed by foreign host]
GAD#phx
Trying PHX (192.168.17.1)... Open


User Access Verification

Password:
PHX>bhm
Trying BHM (192.168.16.1)... Open


User Access Verification

Password:
BHM>phx
Trying PHX (192.168.17.1)... Open


User Access Verification

Password:
PHX>gad
Trying GAD (192.168.14.1)... Open


User Access Verification

Password:
GAD>bhm
Trying BHM (192.168.16.1)... Open


User Access Verification
```



```
Password:
BHM>show sessions
% No connections open
BHM>exit

[Connection to bhm closed by foreign host]
GAD>exit

[Connection to gad closed by foreign host]
PHX>exit

[Connection to phx closed by foreign host]
BHM>exit

[Connection to bhm closed by foreign host]
PHX>exit

[Connection to phx closed by foreign host]
GAD#exit



GAD#show running-config
Building configuration...

Current configuration : 709 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname GAD
!
enable secret 5 $1$1jLu$0Kyymtnex1jGnNLXeBbyl0
enable password cisco
!
!
!
!
!
ip subnet-zero
ip host PHX 192.168.17.1
ip host BHM 192.168.16.1
!
!
!
!
interface Ethernet0
 ip address 192.168.14.1 255.255.255.0
!
interface Serial0
 no ip address
!
interface Serial1
 ip address 192.168.15.1 255.255.255.0
!
interface BRI0
 no ip address
```



```
 shutdown
!
router rip
 network 192.168.14.0
 network 192.168.15.0
!
ip classless
ip http server
!
!
line con 0
 password cisco
 logging synchronous
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end
```

```
BHM#show running-config
Building configuration...

Current configuration : 730 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname BHM
!
enable secret 5 $1$3paR$r57FdEaxs5i8TmC6/p7Gu1
enable password cisco
!
!
!
!
!
ip subnet-zero
ip host PHX 192.168.17.1
ip host GAD 192.168.14.1
!
!
!
!
interface Ethernet0
 ip address 192.168.16.1 255.255.255.0
!
interface Serial0
 ip address 192.168.15.2 255.255.255.0
 clockrate 56000
!
interface Serial1
 ip address 192.168.13.1 255.255.255.0
!
```



```
router rip
 network 192.168.13.0
 network 192.168.15.0
 network 192.168.16.0
!
ip classless
ip http server
!
!
line con 0
 password cisco
 logging synchronous
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end
```

```
PHX#show running-config
Building configuration...

Current configuration : 751 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname PHX
!
enable secret 5 $1$IDPr$uvmFGelwjStThFQkzUlnK/
enable password cisco
!
!
!
!
!
ip subnet-zero
ip host BHM 192.168.16.1
ip host GAD 192.168.14.1
!
!
!
!
interface Ethernet0
 ip address 192.168.17.1 255.255.255.0
!
interface Serial0
 ip address 192.168.13.2 255.255.255.0
 no fair-queue
 clockrate 56000
!
interface Serial1
 no ip address
 shutdown
```



```
!
interface BRI0
 no ip address
 shutdown
!
router rip
 network 192.168.13.0
 network 192.168.17.0
!
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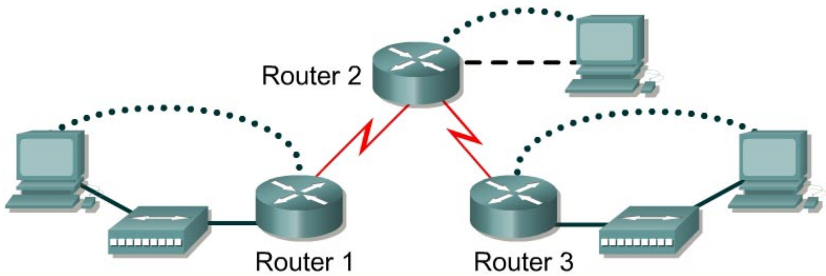
Lab 4.2.4 Advanced Telnet Operations – Instructor Version 2600



Router designation	Router Name	Enable secret password	Enable/VTY/ and Console passwords	Routing protocol	RIP network statements
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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	—Z—	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.

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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.

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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? `BHM>`

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? Yes

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? `GAD#`

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? `PHX>`

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? GAD#

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`** 1 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? BHM>

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? % No connections open.

c. There were two the last time. What is the difference? The last time the command was issued on the GAD router, this time it is issued from the BHM router.

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? GAD#

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? One session is shown connected to PHX.

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

The Telnet session to BHM was closed in Step 11 so there is only one session left.

Step 13 Resume the previously suspended Telnet session

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

```
[Resuming connection 2 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? PHX>

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? Two

d. Why are there that many? There are two Telent sessions into the BHM router.

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

f. What router are you on? BHM>

g. How many Telnet sessions are still open? One

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? Five

d. Is that the number listed in the how many Telnet sessions are still open question? No

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)#reloadRouter#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.					


```
GAD#telnet BHM
Trying BHM (192.168.16.1)... Open


User Access Verification

Password:



BHM>show interface Serial 0/0
Serial0/0 is up, line protocol is up
  Hardware is PowerQUICC Serial
  Internet address is 192.168.13.1/24
  MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
  Last input 00:00:08, output 00:00:03, output hang never
  Last clearing of "show interface" counters 00:15:01
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     91 packets input, 6184 bytes, 0 no buffer
     Received 91 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     89 packets output, 6056 bytes, 0 underruns
     0 output errors, 0 collisions, 10 interface resets
     0 output buffer failures, 0 output buffers swapped out
     1 carrier transitions
     DCD=up  DSR=up  DTR=up  RTS=up  CTS=up



BHM>show interface fa0/0
FastEthernet0/0 is up, line protocol is up
  Hardware is AmdFE, address is 0005.3201.94c0 (bia 0005.3201.94c0)
  Internet address is 192.168.16.1/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:37, output 00:00:02, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     16 packets input, 6032 bytes
     Received 16 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog
     0 input packets with dribble condition detected
     154 packets output, 34551 bytes, 0 underruns
     0 output errors, 0 collisions, 2 interface resets
```



```
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out


GAD#telnet PHX
Trying PHX (192.168.17.1)... Open

User Access Verification

Password:
PHX>

GAD#sho user
Conn Host                 Address              Byte  Idle Conn Name
   1 BHM                  192.168.16.1            0     0 BHM
*  2 PHX                  192.168.17.1            0     0 PHX

GAD#1
[Resuming connection 1 to BHM ... ]

BHM>show user
% No connections open
BHM>exi

[Connection to BHM closed by foreign host]

GAD#show user
Conn Host                 Address              Byte  Idle Conn Name
*  2 PHX                  192.168.17.1            0     1 PHX

GAD#1
% 1 is not an open connection
GAD#
GAD#2
[Resuming connection 2 to PHX ... ]

PHX>exit

[Connection to PHX closed by foreign host]
GAD#telnet PHX
Trying PHX (192.168.17.1)... Open


User Access Verification

Password:
PHX>en
Password:


PHX#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
PHX(config)#no hostname
Router(config)#exit
Router#telnet BHM
Trying BHM (192.168.16.1)... Open
```



```
User Access Verification

Password:
BHM>en
Password:
BHM#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
BHM(config)#no hostname
Router(config)#exit
Router#telnet GAD
Trying GAD (192.168.14.1)... Open


User Access Verification

Password:
GAD>en
Password:
GAD#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
GAD(config)#no hostname
Router(config)#exit
Router#t
00:21:09: %SYS-5-CONFIG_I: Configured from console by vty0 (192.168.15.2elnet
BHM
        ^
% Invalid input detected at '^' marker.



Router#telnet BHM
Trying BHM (192.168.16.1)... Open


User Access Verification

Password:
Router>enable
Password:
Router#show user
% No connections open
Router#show users
    Line       User       Host(s)              Idle       Location
   0 con 0                 idle                 00:06:31
  66 vty 0                 GAD                  00:00:00 PHX
* 67 vty 1                 idle                 00:00:00 GAD

  Interface      User        Mode                         Idle     Peer Address

Router#exit

[Connection to BHM closed by foreign host]
Router#write terminal
Building configuration...

Current configuration : 884 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
```



```
no service password-encryption
!
hostname Router
!
enable secret 5 $1$YWQ3$9yxnEcyZyFuFQThPcqjdl/
enable password cisco
!
ip subnet-zero
!
!
ip host PHX 192.168.17.1 192.168.13.2
ip host BHM 192.168.16.1 192.168.15.2 192.168.13.1
ip host GAD 192.168.14.1 192.168.15.1
!
call rsvp-sync
!
interface FastEthernet0/0
 ip address 192.168.14.1 255.255.255.0
 duplex auto

Router#exit

[Connection to GAD closed by foreign host]
Router#exit

[Connection to BHM closed by foreign host]



Router#show running-config
Building configuration...

Current configuration : 877 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
enable secret 5 $1$LpHj$7pWn7fjWUwPoWzRNzBbMx/
enable password cisco
!
ip subnet-zero
!
!
ip host PHX 192.168.17.1 192.168.13.2
ip host BHM 192.168.16.1 192.168.15.2 192.168.13.1
ip host GAD 192.168.14.1 192.168.15.1
!
call rsvp-sync
!
interface FastEthernet0/0
 ip address 192.168.17.1 255.255.255.0


Router#show sessions
% No connections open
```



```
Router#show users
    Line       User       Host(s)              Idle       Location
   0 con 0                 idle                 00:07:39
* 66 vty 0                 idle                 00:00:00 GAD

  Interface      User         Mode                         Idle     Peer Address

Router#show user
% No connections open
Router#exit

[Connection to PHX closed by foreign host]
Router#exit

Router con0 is now available

Press RETURN to get started.

User Access Verification

Password:
Router>en
Password:
Router#



Router#show running-config
Building configuration...

Current configuration : 884 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
enable secret 5 $1$YWQ3$9yxnEcyZyFuFQThPcqjdl/
enable password cisco
!
ip subnet-zero
!
!
ip host PHX 192.168.17.1 192.168.13.2
ip host BHM 192.168.16.1 192.168.15.2 192.168.13.1
ip host GAD 192.168.14.1 192.168.15.1
!
call rsvp-sync
!
interface FastEthernet0/0
 ip address 192.168.14.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0
 ip address 192.168.15.1 255.255.255.0
 no fair-queue
```



```
 clockrate 56000
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/1
 no ip address
!
router rip
 network 192.168.14.0
 network 192.168.15.0
!
ip classless
ip http server
!
dial-peer cor custom
!
line con 0
 password cisco
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end

Router#
```

```
Router#show running-config
Building configuration...

Current configuration : 930 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
enable secret 5 $1$R4a2$fw5JOv1b753yRuXQo/J1J1
enable password cisco
!
ip subnet-zero
!
!
ip host PHX 192.168.17.1 192.168.13.2
ip host BHM 192.168.16.1 192.168.15.2 192.168.13.1
ip host GAD 192.168.14.1 192.168.15.1
!
call rsvp-sync
!
!
interface FastEthernet0/0
```



```
 ip address 192.168.16.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0
 ip address 192.168.13.1 255.255.255.0
 no fair-queue
 clockrate 56000
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/1
 ip address 192.168.15.2 255.255.255.0
!
router rip
 network 192.168.13.0
 network 192.168.15.0
 network 192.168.16.0
!
ip classless
ip http server
!
!
dial-peer cor custom
!
line con 0
 password cisco
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end

Router#
```

```
Router#show running-config
Building configuration...

Current configuration : 877 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
enable secret 5 $1$LpHj$7pWn7fjWUwPoWzRNzBbMx/
enable password cisco
!
ip subnet-zero
!
```



```
!
ip host PHX 192.168.17.1 192.168.13.2
ip host BHM 192.168.16.1 192.168.15.2 192.168.13.1
ip host GAD 192.168.14.1 192.168.15.1
!
call rsvp-sync
!
!
! nterface FastEthernet0/0
 ip address 192.168.17.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0
 no ip address
 shutdown
 no fair-queue
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/1
 ip address 192.168.13.2 255.255.255.0
!
router rip
 network 192.168.13.0
 network 192.168.17.0
!
ip classless
ip http server
!
!
dial-peer cor custom
!
line con 0
 password cisco
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end

Router#
```

