NetSim®
NETWORK SIMULATOR®

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NetSim® NETWORK SIMULATOR®

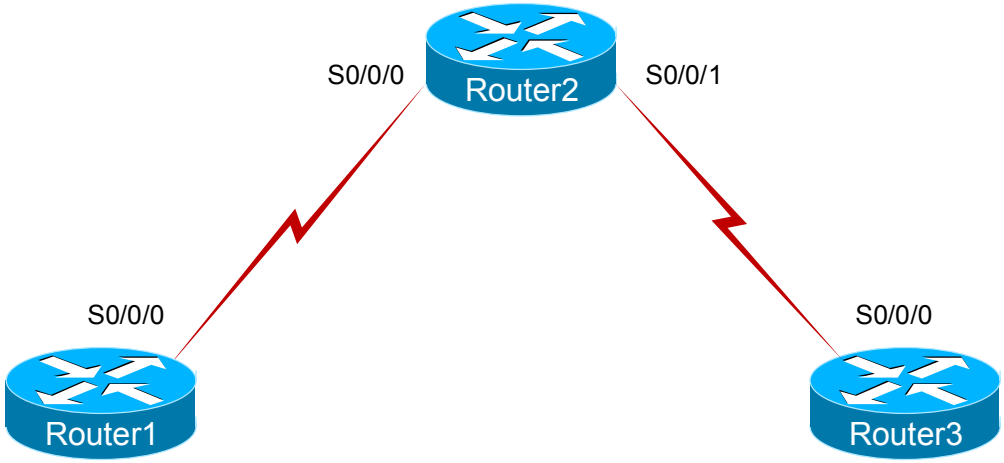
Stand-Alone Lab: Router Remote Access via Telnet

Objective

Learn how to access a router remotely by using Telnet. Configure all three routers with the appropriate settings.

Lab Topology

The Topology diagram below represents the NetMap in the Simulator.



Command Summary

Command	Description
clock rate *clock-rate*	sets the clock rate for a Data Communications Equipment (DCE) interface
configure terminal	enters global configuration mode from privileged EXEC mode
disconnect {*ip-address* | **console**}	closes an active console port or Telnet session
enable	enters privileged EXEC mode
end	ends and exits configuration mode
exit	exits one level in the menu structure
hostname *host-name*	sets the device name
interface *type number*	changes from global configuration mode to interface configuration mode
ip address *ip-address subnet-mask*	assigns an IP address to an interface
line vty 0 4	enters configuration mode for virtual terminal (Telnet) lines
login	enables password checking at login
no shutdown	enables an interface
password *password*	specifies the password that is required for a user to log in
resume [*connection*]	switches to an open local-area transport (LAT), Telnet, rlogin, or packet assembler/disassembler (PAD) session

Command	Description
show running-config	displays the active configuration file
show sessions	displays information about LAT, Telnet, or rlogin connections
telnet *ip-address*	starts the terminal emulation program from a PC, router, or switch; permits you to access devices remotely over the network

The IP addresses and subnet masks used in this lab are shown in the table below:

IP Addresses

Device	Interface	IP Address	Subnet Mask
Router1	Serial 0/0/0	34.25.67.1	255.255.255.0
Router2	Serial 0/0/0 Serial 0/0/1	34.25.67.2 10.10.10.2	255.255.255.0 255.255.255.0
Router3	Serial 0/0/0	10.10.10.1	255.255.255.0

Lab Tasks

Task 1: Enable Router Interfaces

In this task, you will establish a Telnet session between two routers.

1. Configure a host name of **Router1** on Router1, and configure remote access to Router1 using its virtual terminal (vty) lines. You can use each of the configured vty lines to access the router via Telnet. Routers in this lab support five vty lines, numbered 0 through 4.

2. Configure the router to require the use of a login password for remote access to Router1.

3. Configure **boson** as the password that will be used to authenticate the Telnet session.

4. Assign the appropriate IP address and subnet mask to Router1's Serial 0/0/0 interface; refer to the IP Addresses table. Enable the interface.

5. Configure Router2 with a host name of **Router2**.

6. Assign the appropriate IP address and subnet mask to Router2's Serial 0/0/0 interface; refer to the IP Addresses table. Configure a clock rate of 1000 Kbps, and enable the interface.

7. From Router2, Telnet to Router1's Serial 0/0/0 interface.

8. You will be prompted for a password. Type **boson** as the password, and press ENTER. Notice that

the router command prompt changes from `Router2` to `Router1`, which indicates that you have established a Telnet session to Router1. Pause the Telnet session by pressing the CTRL+SHIFT+6 key combination followed immediately by the X key. Notice that the command prompt changes back to `Router2`.

9. Display all active Telnet sessions, and then resume the Telnet session.

10. Because you have connected to Router1 again using Telnet, the command prompt has changed to Router1. Press the Ctrl+Shift+6 X key combination to return to Router2.

11. Disconnect the Telnet session.

Task 2: Enable Remote Access to Router3

In this task, you will enable Router2 to use Telnet to remotely access Router3.

1. On Router2, configure the appropriate IP address and subnet mask on the Serial 0/0/1 interface; refer to the IP Addresses table. Set a clock rate of 1000 Kbps, and enable the interface.

2. On Router3, configure a host name of **Router3** and configure the appropriate IP address and subnet mask; refer to the IP Addresses table. Enable the interface.

3. Enable Router2 to use Telnet to remotely access Router3; use **boson** as the password.

4. Telnet from Router2 to Router3.

5. How are the passwords you configured to enable remote access to Router1 and Router3 stored? _
What command could you issue to encrypt these passwords? _____

6. Disconnect Router2's Telnet session to Router3.

Lab Solutions

Task 1: Enable Router Interfaces

1. Issue the following commands to configure a host name of **Router1** on Router1 and to configure remote access to Router1 using its virtual terminal (vty) lines:

```
Router>enable
Router#configure terminal
Router(config)#hostname Router1
Router1(config)#line vty 0 4
```

You can use each of the configured vty lines to access the router via Telnet. Routers in this lab support five vty lines, numbered 0 through 4.

2. Issue the following commands to configure the router to require the use of a login password for remote access to Router1:

```
Router1(config-line)#login
```

3. Issue the following command to configure **boson** as the password that will be used to authenticate the Telnet session:

```
Router1(config-line)#password boson
```

4. Issue the following commands to assign the appropriate IP address and subnet mask to Router1's Serial 0/0/0 interface and to enable the interface:

```
Router1(config-line)#exit
Router1(config)#interface serial 0/0/0
Router1(config-if)#ip address 34.25.67.1 255.255.255.0
Router1(config-if)#no shutdown
```

5. Issue the following commands to configure Router2 with a host name of **Router2**:

```
Router>enable
Router#configure terminal
Router(config)#hostname Router2
```

6. Issue the following commands to assign the appropriate IP address and subnet mask to Router2's Serial 0/0/0 interface, to configure a clock rate of 1000 Kbps, and to enable the interface:

```
Router2(config)#interface serial 0/0/0
Router2(config-if)#ip address 34.25.67.2 255.255.255.0
Router2(config-if)#clock rate 1000000
Router2(config-if)#no shutdown
```

7. From Router2, issue the following commands to Telnet to Router1's Serial 0/0/0 interface:

```
Router2(config-if)#end
Router2#telnet 34.25.67.1
```

8. Type **boson** as the password, and press the Enter key. The router command prompt changes from `Router2` to `Router1`, which indicates that you have established a Telnet session to Router1. Pause the Telnet session by pressing the Ctrl+Shift+6 key combination followed immediately by the X key. Notice that the command prompt changes back to Router2.

```
Password:boson
Router1>Press Ctrl+Shift+6 X
Router2#
```

9. On Router2, issue the **show sessions** command to view all active Telnet sessions. Issue the **resume 1** command to resume the Telnet session. The number `1` indicates the session number of the session you want to resume. Sample output from the **show sessions** command is displayed below:

```
Router2#show sessions
Conn Host                Address             Byte  Idle Conn Name
*  1 34.25.67.1             34.25.67.1             0     9 34.25.67.1

Router2#resume 1
Resuming connection 1 to 34.25.67.1
Router1#
```

10. Because you have connected to Router1 again using Telnet, the command prompt has changed to Router1. Press Ctrl+Shift+6 X to return to Router2.

```
Router1#Press Ctrl+Shift+6 X
Router2#
```

11. Disconnect the session by issuing the **disconnect 1** command.

```
Router2#disconnect 1
Closing connection to 34.25.67.1
```

Task 2: Enable Remote Access to Router3

1. Issue the following commands on Router2 to configure the appropriate IP address, subnet mask, and clock rate:

```
Router2#configure terminal
Router2(config)#interface serial 0/0/1
Router2(config-if)#ip address 10.10.10.2 255.255.255.0
Router2(config-if)#clock rate 1000000
Router2(config-if)#no shutdown
```

2. Issue the following commands to configure Router3:

```
Router>enable
Router#configure terminal
Router(config)#hostname Router3
Router3(config)#interface serial 0/0/0
Router3(config-if)#ip address 10.10.10.1 255.255.255.0
Router3(config-if)#no shutdown
```

3. Issue the following commands to enable Router2 to remotely access Router3:

```
Router3(config-if)#exit
Router3(config)#line vty 0 4
Router3(config-line)#login
Router3(config-line)#password boson
```

4. Issue the following commands to start a Telnet session from Router2 to Router3:

```
Router2(config-if)#end
Router2#telnet 10.10.10.1
Trying 10.10.10.1 ... Open
Password:boson
Router3>
```

5. The passwords you configured to enable remote access to Router1 and Router3 are stored in plain text. You could issue the **service password-encryption** command to configure Router1 and Router3 to store all current and future passwords in encrypted form.

6. You should issue the following commands to end the Telnet session from Router2 to Router3:

```
Router3>Press Ctrl+Shift+6 X
Router2#disconnect 1
Closing connection to 10.10.10.1
```

Sample Configuration Script

Router1

```
Router1#show running-config
Building configuration...
!
Version 12.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router1
!
ip subnet-zero
!
ip cef
no ip domain-lookup
!
interface Serial0/0/0
 ip address 34.25.67.1 255.255.255.0
 no ip directed-broadcast
!
interface Serial0/0/1
 no ip address
 no ip directed-broadcast
 shutdown
!
interface FastEthernet0/0
 no ip address
 no ip directed-broadcast
 shutdown
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
 shutdown
!
ip classless
no ip http server
!
line con 0
line aux 0
line vty 0 4
 login
 password boson
!
no scheduler allocate
end
```