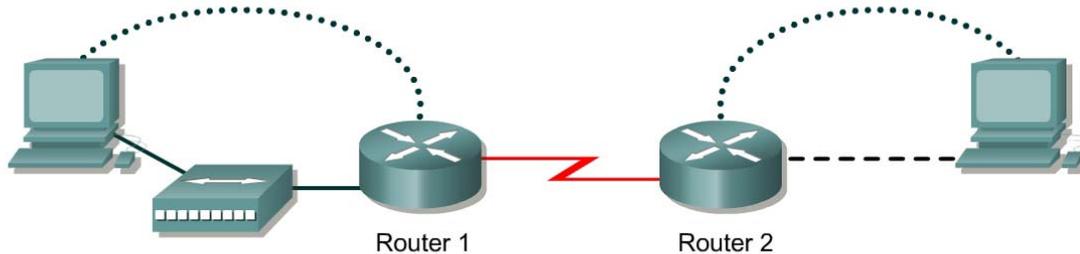## Lab 9.1.8 Last Route Update

Router Designation	Router Name	Fast Ethernet 0 Address	Interface type	Serial 0 Address	Subnet mask for both interfaces	Enable secret password	Enable, VTY and console password
Router 1	GAD	172.16.0.1	DCE	172.17.0.1	255.255.0.0	class	cisco
Router 2	BHM	172.18.0.1	DTE	172.17.0.2	255.255.0.0	class	cisco

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

Objective

- Gather information about routing updates and routing protocols.

Background/Preparation

Cable a network similar to the one in the diagram. Any router that meets the interface requirements displayed on the above diagram, such as. 800, 1600, 1700, 2500, 2600 routers, or a combination, may be used. Please 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 a 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 routers

a. On the routers, enter the global configuration mode and configure the hostname as shown in the chart. Then configure the console, virtual terminal, and enable passwords. If there is a problem doing this, refer to the Configuring Router Passwords lab. Next configure the interfaces according to the chart. If there is a problem doing this, refer to the Configuring Host Tables lab.

Finally configure the RIP routing. This is covered in the Configuring RIP lab if help is needed. Do not forget to save the configurations to the startup configuration file.

Step 2 Configure the hosts with the proper IP address, subnet mask and default gateway

Step 3 Verify that the internetwork is functioning by pinging the FastEthernet interface of the other router

a. From the host attached to GAD, is it possible to ping the BHM router FastEthernet interface?

_____

b. From the host attached to BHM, is it possible to ping the GAD router FastEthernet interface?

_____

c. If the answer is no for either question, troubleshoot the router configurations to find the error. Then do the pings again until the answer to both questions is yes.

Step 4 Make sure that routing updates are being sent

a. Type the command `debug ip rip` at the privileged EXEC mode prompt. Wait for at least 45 seconds.

b. Was there any output from the debug command? _____

c. Type `undebug all` to turn off debugging.

Step 5 Show the routing tables for each router

a. Examine the routing table entries, using command `show ip route` command on each router.

Step 6 Check the routing table for a specific route (IOS version must be at least 12.x)

a. From BHM privileged EXEC mode prompt enter `show ip route 172.16.0.0`.

b. When was the last update? _____

c. When did BHM receive the last RIP update? _____

Wait five seconds and enter `show ip route 172.16.0.0` a second time.

d. What has changed from first time? _____

Wait five seconds and enter `show ip route 172.16.0.0` a third time.

e. What has changed from second time? _____

f. What is the default update time for RIP? _____

Step 7. Check the ip rip database on the BHM router

a. Type `show ip rip database` from the privileged EXEC mode prompt.

b. When was the last update? _____

Wait five second and enter `show ip rip database`.

c. What has changed from the first time? _____

Wait five seconds and enter `show ip rip database`.

d. What has changed from the second time? _____

Step 8 Configure IGRP using AS number 101 on all routers. Leave RIP on all routers

Step 9 From BHM enter show ip route

    a.   List the routes shown in the routing table.

    _____

    b.   When did BHM receive the last IGRP update? _____

        Wait five seconds and enter `show ip route`.

    c.   What has changed from the first time? _____

        Wait five seconds and enter `show ip route`.

    d.   What has changed from the second time? _____

    e.   What is the default update time for IGRP? _____

Step 10 Check the routing protocol on router BHM

    a.   From the BHM privileged EXEC mode, enter `show ip protocols`.

    b.   What protocols are listed? _____

    c.   The next update is due in how many seconds for each protocol? _____

Upon completion of the previous steps, log off by typing **exit** and 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.					