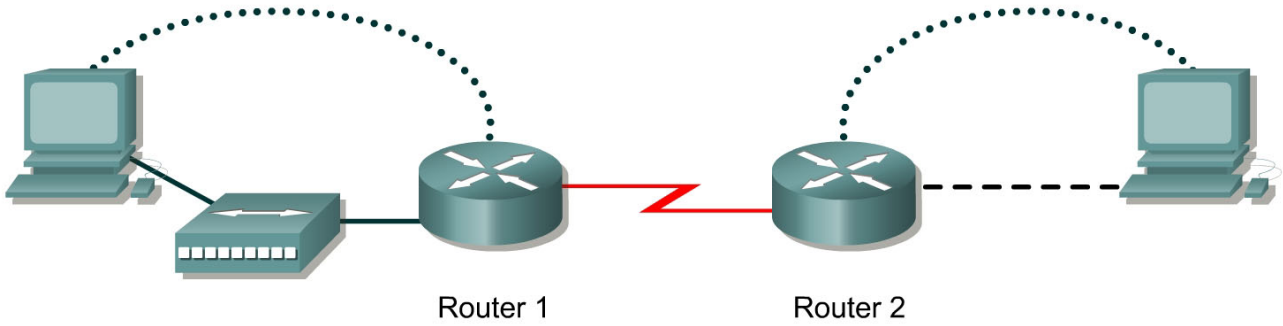
Lab Dynamic routing with RIP



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	
Console (Rollover)	
Crossover cable	

Objective

- Setup an IP addressing scheme using class B networks.
- Configure the RIP dynamic routing protocol on routers.

Background/Preparation

Setup a network similar to the one in the diagram. Any router that meets the interface requirements displayed in 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.

Note: Erase and reload all routers before you will start configure the routers.

Step 1 Configure the routers

- From the global configuration mode, configure the hostname as shown in the chart.
- Then configure the console, virtual terminal, and enable passwords.
- Next, configure the interfaces according to the chart.

Step 2 Check the routing table entries

a. Using the command **show ip route**, view the IP routing table for GAD.

GAD>**show ip route**

output eliminated

Gateway of last resort is not set

C 172.16.0.0/16 is directly connected, FastEthernet0
C 172.17.0.0/16 is directly connected, Serial0

b. Using the command **show ip route**, view the IP routing table for BHM.

BHM>**show ip route**

output eliminated

Gateway of last resort is not set

C 172.17.0.0/24 is directly connected, Serial0
C 172.18.0.0/24 is directly connected, FastEthernet0

Step 3 Configure the routing protocol on the GAD router

a. From the global configuration mode, enter the following:

GAD(config)#**router rip**
GAD(config-router)#**network 172.16.0.0**
GAD(config-router)#**network 172.17.0.0**
GAD(config-router)#**exit**
GAD(config)#**exit**

Step 4 Save the GAD router configuration

GAD#**copy running-config startup-config**

Step 5 Configure the routing protocol on the BHM router

a. From the global configuration mode, enter the following:

```
BHM(config)#router rip
BHM(config-router)#network 172.17.0.0
BHM(config-router)#network 172.18.0.0
BHM(config-router)#exit
BHM(config)#exit
```

Step 6 Save the BHM router configuration

```
BHM#copy running-config startup-config
```

Step 7 Configure the hosts with the proper IP address, subnet mask and default gateway

Step 8 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?

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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 9 Show the routing tables for each router

a.From the enable or privileged EXEC mode, examine the routing table entries using the

show ip route command on each router.

b. What are the entries in the GAD routing table?

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c. What are the entries in the BHM routing table?

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NOTE:
Don't erase configuration. You will use it in the next lab Basic Network/PC Troubleshooting process.