**Networking 1B – Routing Table Lab**

Instructions: This lab will test your ability to interpret routing tables. You must construct a five router topology (R1 through R5). Your network in the end should produce routing tables identical to those seen on page 2. Fill out this table to help assign IPs to the various interfaces on your routers.

|  |  |  |  |
| --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask |
| R1 |  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| R2 |  |  |  |
|  |  |  |
|  |  |  |
| R3 |  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| R4 |  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| R5 |  |  |  |
|  |  |  |
|  |  |  |

**Deciphering Routing Table Information**

C 10.10.10.4 /30 is directly connected, Serial 0/0/0

* C means directly connected
* 10.10.10.4/30 is the network address and subnet mask of this network
* Serial 0/0/0 is the interface to which this network is connected to the router

R 172.16.2.64 /27 [120/1] via 10.10.10.10, 00:00:09, Serial 0/0/1

* R means this network was learned from RIP and is NOT directly connected to this router
* [120/1] – This is the administrative distance and metric
  + administrative distance tells us what routing protocol is being used
    - The lower the administrative distance, the more trustworthy the route is
    - 120 – RIP, 110 – OSPF, 90 – EIGRP, 1 – Static
  + metric is the calculation of the route. It changes from routing protocol to routing protocol
    - /1, for RIP, means this network is 1 HOP away
* 172.16.2.64/27 is the network address and subnet mask of this network
* via 10.10.10.10 – This is the IP address of the neighboring router interface that told us about the network
* 00:00:09 – How long ago the information about this network was received/updated.
* Serial 0/0/1 – This is the interface this router will use to get to the destination network

**Hints:**

1. Start with the directly connected interfaces.
2. The Routers are all connected in a line.
3. The routers are not connected in sequential order. (Not R1, R2, R3….)
4. Auto-summary should be turned off so we can see the full routing table.
   1. ROUTER RIP
   2. NO AUTO-SUMMARY





