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Internetworking
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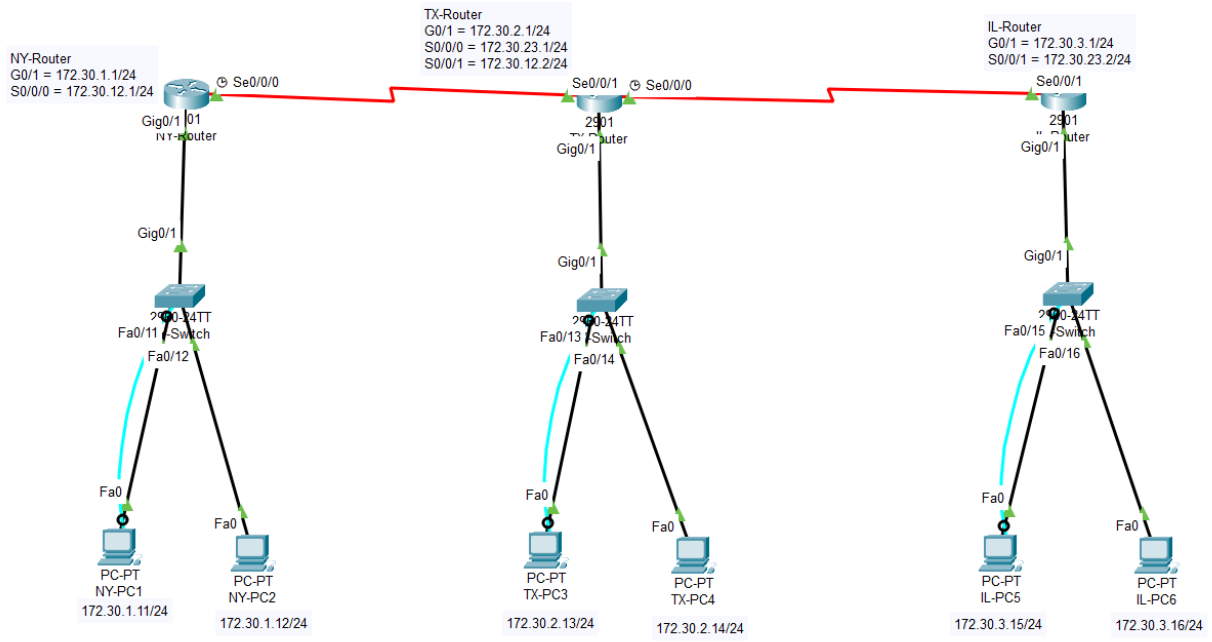
Lab 6 Lab Report

Lab Description:
Set up a Networking using Static Router, RIPv2 Routing, and EIGRP Routing.

Topography:



Syntax:

CLI Command	Description	Mode of Cisco OIS
ping	Used to ping ip addresses from a PC. You can ping other PC's or switches with this.	Windows CMD
Logging synchronous	Forces error messages to be on its own line, rather than interrupt a line that you're typing on.	Console Line
Enable	Enter Privileged Mode	User Mode
Conf t	Enter Global Configurator Mode	Privileged Mode
Line con 0	Enter the Console Line	Global Configurator Mode
Hostname	Used to name a switch or PC	Privileged Mode
Password	Used to set a password	Privileged Mode

Login	Used to require the password to utilize User Mode	Global Configurator Mode
Enable password	Used to set an unencrypted Privileged Password	Global Configurator Mode
Show ip interface brief (sh ip int brief)	Displays a brief list of all interfaces	Privileged Mode
vtp domain INETLAB	Renames the VTP domain from NULL to INETLAB	Global Configurator Mode
Vtp password cisco	Set a password within the VTP Domain	Global Configurator Mode
Vtp mode server/client	Sets the vtp mode between server or client, in the case of this lab.	Global Configurator Mode
Switchport mode access	Changes the mode of a switchport to access mode	Line configuration Mode (within a vlan)
Switchport trunk encapsulation dot1q	Sets up the switch to switch connect to use IEEE 802.1Q encapsulation	Within a vlan with a multi-Connection switch
Switchport mode trunk	Sets the mode for the switchport to trunk	Within a vlan
Spanning-tree vlan xx root primary	Setting up a spanning tree within a vlan, and setting it to root primary	Privileged mode
Encapsulation dot1q xx	Sets up a VLAN in IEEE 802.1Q within a router	ROUTER Line Configuration Mode(within a sub interface)
Ip route (ip) (SM) (ip)	Sets up a static IP Route	Interface Mode
Router rip	Sets the Router into RIP mode	Global Configuration
Version 2	Sets the RIP version to version 2	Global Configuration
Network (ip address)	Sets the Network for RIPv2 networking	Global Configuration

Verification:

B)

Display G0/1 Interface:

```
NY-Router(config)#do sh int g0/1
GigabitEthernet0/1 is up, line protocol is up (connected)
  Hardware is CN Gigabit Ethernet, address is 000b.beb7.1302 (bia 000b.beb7.1302)
  Internet address is 172.30.1.1/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is RJ45
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); 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
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 watchdog, 1017 multicast, 0 pause input
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
```

NY-Router

```
TX-Router#sh int g0/1
GigabitEthernet0/1 is up, line protocol is up (connected)
  Hardware is CN Gigabit Ethernet, address is 0030.a34a.a002 (bia 0030.a34a.a002)
  Internet address is 172.30.2.1/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is RJ45
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); 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
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 watchdog, 1017 multicast, 0 pause input
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
```

TX-Router

```
IL-Router#sh int g0/1
GigabitEthernet0/1 is up, line protocol is up (connected)
  Hardware is CN Gigabit Ethernet, address is 00e0.b056.0602 (bia 00e0.b056.0602)
  Internet address is 172.30.3.1/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is RJ45
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); 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
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 watchdog, 1017 multicast, 0 pause input
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
```

IL-Router

Display WAN Interfaces:

```
NY-Router#sh int s0/0/0
Serial0/0/0 is up, line protocol is up (connected)
  Hardware is HD64570
  Internet address is 172.30.12.1/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set, keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 1158 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
     DCD=up  DSR=up  DTR=up  RTS=up  CTS=up
```

NY-Router S0/0/0

```
TX-Router#sh int s0/0/1
Serial0/0/1 is up, line protocol is up (connected)
  Hardware is HD64570
  Internet address is 172.30.12.2/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set, keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 1158 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
     DCD=up  DSR=up  DTR=up  RTS=up  CTS=up
```

TX-Router S0/0/1

```
TX-Router#sh int s0/0/0
Serial0/0/0 is up, line protocol is up (connected)
  Hardware is HD64570
  Internet address is 172.30.23.1/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set, keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 1158 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
     DCD=up  DSR=up  DTR=up  RTS=up  CTS=up
```

TX-Router S0/0/0

```
IL-Router#sh int s0/0/1
Serial0/0/1 is up, line protocol is up (connected)
  Hardware is HD64570
  Internet address is 172.30.23.2/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set, keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 1158 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
     DCD=up  DSR=up  DTR=up  RTS=up  CTS=up
```

IL-Router S0/0/1

Display Interfaces:

```
NY-Router(config)#do sh ip int brief
Interface              IP-Address      OK? Method Status
Protocol
GigabitEthernet0/0     unassigned      YES unset  administratively down down
GigabitEthernet0/1     172.30.1.1      YES manual up                    up
Serial0/0/0            172.30.12.1     YES manual up                    up
Serial0/0/1            unassigned      YES unset  administratively down down
Serial0/1/0            unassigned      YES unset  administratively down down
Serial0/1/1            unassigned      YES unset  administratively down down
Serial0/2/0            unassigned      YES unset  administratively down down
Serial0/2/1            unassigned      YES unset  administratively down down
Serial0/3/0            unassigned      YES unset  administratively down down
Serial0/3/1            unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
```

NY-Router

```
TX-Router#sh ip int brief
Interface              IP-Address      OK? Method Status
Protocol
GigabitEthernet0/0     unassigned      YES unset  administratively down down
GigabitEthernet0/1     172.30.2.1      YES manual up                    up
Serial0/0/0            172.30.23.1     YES manual up                    up
Serial0/0/1            172.30.12.2     YES manual up                    up
Serial0/1/0            unassigned      YES unset  administratively down down
Serial0/1/1            unassigned      YES unset  administratively down down
Serial0/2/0            unassigned      YES unset  administratively down down
Serial0/2/1            unassigned      YES unset  administratively down down
Serial0/3/0            unassigned      YES unset  administratively down down
Serial0/3/1            unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
```

TX-Router

```
IL-Router#show ip int brief
Interface              IP-Address      OK? Method Status
Protocol
GigabitEthernet0/0     unassigned      YES unset  administratively down down
GigabitEthernet0/1     172.30.3.1      YES manual up                    up
Serial0/0/0            unassigned      YES unset  administratively down down
Serial0/0/1            172.30.23.2     YES manual up                    up
Serial0/1/0            unassigned      YES unset  administratively down down
Serial0/1/1            unassigned      YES unset  administratively down down
Serial0/2/0            unassigned      YES unset  administratively down down
Serial0/2/1            unassigned      YES unset  administratively down down
Serial0/3/0            unassigned      YES unset  administratively down down
Serial0/3/1            unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
```

IL-Router

Show Routing Table:

```
NY-Router(config)#do sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.30.0.0/16 is variably subnetted, 7 subnets, 2 masks
C       172.30.1.0/24 is directly connected, GigabitEthernet0/1
L       172.30.1.1/32 is directly connected, GigabitEthernet0/1
S       172.30.2.0/24 [1/0] via 172.30.12.2
S       172.30.3.0/24 [1/0] via 172.30.23.2
C       172.30.12.0/24 is directly connected, Serial0/0/0
L       172.30.12.1/32 is directly connected, Serial0/0/0
S       172.30.23.0/24 [1/0] via 172.30.12.2
```

NY-Router

```
TX-Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.30.0.0/16 is variably subnetted, 8 subnets, 2 masks
S       172.30.1.0/24 [1/0] via 172.30.12.1
C       172.30.2.0/24 is directly connected, GigabitEthernet0/1
L       172.30.2.1/32 is directly connected, GigabitEthernet0/1
S       172.30.3.0/24 [1/0] via 172.30.23.2
C       172.30.12.0/24 is directly connected, Serial0/0/1
L       172.30.12.2/32 is directly connected, Serial0/0/1
C       172.30.23.0/24 is directly connected, Serial0/0/0
L       172.30.23.1/32 is directly connected, Serial0/0/0
```

TX-Router

```
IL-Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.30.0.0/16 is variably subnetted, 7 subnets, 2 masks
S       172.30.1.0/24 [1/0] via 172.30.12.1
S       172.30.2.0/24 [1/0] via 172.30.23.1
C       172.30.3.0/24 is directly connected, GigabitEthernet0/1
L       172.30.3.1/32 is directly connected, GigabitEthernet0/1
S       172.30.12.0/24 [1/0] via 172.30.23.1
C       172.30.23.0/24 is directly connected, Serial0/0/1
L       172.30.23.2/32 is directly connected, Serial0/0/1
```

IL-Router

D)

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.30.2.13

Pinging 172.30.2.13 with 32 bytes of data:

Request timed out.
Reply from 172.30.2.13: bytes=32 time=24ms TTL=126
Reply from 172.30.2.13: bytes=32 time=18ms TTL=126
Reply from 172.30.2.13: bytes=32 time=16ms TTL=126

Ping statistics for 172.30.2.13:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 16ms, Maximum = 24ms, Average = 19ms

C:\>ping 172.30.3.15

Pinging 172.30.3.15 with 32 bytes of data:

Request timed out.
Reply from 172.30.3.15: bytes=32 time=32ms TTL=125
Reply from 172.30.3.15: bytes=32 time=22ms TTL=125
Reply from 172.30.3.15: bytes=32 time=19ms TTL=125

Ping statistics for 172.30.3.15:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 19ms, Maximum = 32ms, Average = 24ms
```

NY-PC1 to TX-PC3 and IL-PC5

E)

Texas Routers Routing table:

```
TX-Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.30.0.0/16 is variably subnetted, 8 subnets, 2 masks
S       172.30.1.0/24 [1/0] via 172.30.12.1
C       172.30.2.0/24 is directly connected, GigabitEthernet0/1
L       172.30.2.1/32 is directly connected, GigabitEthernet0/1
S       172.30.3.0/24 [1/0] via 172.30.23.2
C       172.30.12.0/24 is directly connected, Serial0/0/1
L       172.30.12.2/32 is directly connected, Serial0/0/1
C       172.30.23.0/24 is directly connected, Serial0/0/0
L       172.30.23.1/32 is directly connected, Serial0/0/0
```

J)

```
NY-Router#sh ip protocol
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 1 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  GigabitEthernet0/1    22
  Serial0/0/0           22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
          172.30.0.0
Passive Interface(s):
Routing Information Sources:
          Gateway         Distance      Last Update
          172.30.12.2           120      00:00:17
Distance: (default is 120)
```

NY-Router Routing Protocols

```
TX-Router#sh ip protocol
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 6 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  GigabitEthernet0/1    22
  Serial0/0/0           22
  Serial0/0/1           22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
          172.30.0.0
Passive Interface(s):
Routing Information Sources:
          Gateway         Distance      Last Update
          172.30.12.1           120      00:00:21
          172.30.23.2           120      00:00:22
Distance: (default is 120)
```

TX-Router Routing Protocols

```
IL-Router#sh ip protocol
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 9 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  GigabitEthernet0/1    22
  Serial0/0/1           22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
          172.30.0.0
Passive Interface(s):
Routing Information Sources:
          Gateway         Distance      Last Update
          172.30.23.1           120      00:00:15
Distance: (default is 120)
```

IL-Router Routing Protocols

K)

```
TX-Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.30.0.0/16 is variably subnetted, 8 subnets, 2 masks
S       172.30.1.0/24 [1/0] via 172.30.12.1
C       172.30.2.0/24 is directly connected, GigabitEthernet0/1
L       172.30.2.1/32 is directly connected, GigabitEthernet0/1
S       172.30.3.0/24 [1/0] via 172.30.23.2
C       172.30.12.0/24 is directly connected, Serial0/0/1
L       172.30.12.2/32 is directly connected, Serial0/0/1
C       172.30.23.0/24 is directly connected, Serial0/0/0
L       172.30.23.1/32 is directly connected, Serial0/0/0
```

TX-Router Routing Table

O)

```
NY-Router#sh ip protocol

Routing Protocol is "eigrp  307 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  Redistributing: eigrp 307
  EIGRP-IPv4 Protocol for AS(307)
    Metric weight K1=1, K2=0, K3=1, K4=0, K5=0
    NSF-aware route hold timer is 240
    Router-ID: 172.30.1.1
    Topology : 0 (base)
      Active Timer: 3 min
      Distance: internal 90 external 170
      Maximum path: 4
      Maximum hopcount 100
      Maximum metric variance 1

  Automatic Summarization: disabled
  Automatic address summarization:
  Maximum path: 4
  Routing for Networks:
     172.30.0.0
  Routing Information Sources:
    Gateway         Distance      Last Update
    172.30.12.2     90            1090953
  Distance: internal 90 external 170

Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 12 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  GigabitEthernet0/1    22
  Serial0/0/0           22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
          172.30.0.0
Passive Interface(s):
Routing Information Sources:
          Gateway         Distance      Last Update
          172.30.12.2           120      00:00:21
Distance: (default is 120)
```

NY-Router Routing Protocol

```
TX-Router#sh ip protocol

Routing Protocol is "eigrp  307 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  Redistributing: eigrp 307
  EIGRP-IPv4 Protocol for AS(307)
    Metric weight K1=1, K2=0, K3=1, K4=0, K5=0
    NSF-aware route hold timer is 240
    Router-ID: 172.30.2.1
    Topology : 0 (base)
      Active Timer: 3 min
      Distance: internal 90 external 170
      Maximum path: 4
      Maximum hopcount 100
      Maximum metric variance 1

  Automatic Summarization: disabled
  Automatic address summarization:
  Maximum path: 4
  Routing for Networks:
     172.30.0.0
  Routing Information Sources:
    Gateway         Distance      Last Update
    172.30.12.1     90            1090995
    172.30.23.2     90            1101205
  Distance: internal 90 external 170

Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 15 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  GigabitEthernet0/1    22
  Serial0/0/0           22
  Serial0/0/1           22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
          172.30.0.0
Passive Interface(s):
Routing Information Sources:
          Gateway         Distance      Last Update
          172.30.12.1           120      00:00:07
          172.30.23.2           120      00:00:07
Distance: (default is 120)
```

TX-Router Routing Protocol

```
IL-Router#sh ip protocol

Routing Protocol is "eigrp  307 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  Redistributing: eigrp 307
  EIGRP-IPv4 Protocol for AS(307)
    Metric weight K1=1, K2=0, K3=1, K4=0, K5=0
    NSF-aware route hold timer is 240
    Router-ID: 172.30.3.1
    Topology : 0 (base)
      Active Timer: 3 min
      Distance: internal 90 external 170
      Maximum path: 4
      Maximum hopcount 100
      Maximum metric variance 1

  Automatic Summarization: disabled
  Automatic address summarization:
  Maximum path: 4
  Routing for Networks:
    172.30.0.0
  Routing Information Sources:
    Gateway         Distance      Last Update
    172.30.23.1     90            1101223
  Distance: internal 90 external 170

Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 4 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  GigabitEthernet0/1    22
  Serial0/0/1           22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
         172.30.0.0
Passive Interface(s):
Routing Information Sources:
          Gateway         Distance      Last Update
          172.30.23.1          120      00:00:00
Distance: (default is 120)
```

IL-Router Routing Protocol

A decent amount has changed between the two, in which the most apparent one is that there is now a section for EIGRP, as well as the routing protocol for RIP. There is now also an Automatic Summarization section, which in this case is disabled.

P)

```
TX-Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.30.0.0/16 is variably subnetted, 8 subnets, 2 masks
S       172.30.1.0/24 [1/0] via 172.30.12.1
C       172.30.2.0/24 is directly connected, GigabitEthernet0/1
L       172.30.2.1/32 is directly connected, GigabitEthernet0/1
S       172.30.3.0/24 [1/0] via 172.30.23.2
C       172.30.12.0/24 is directly connected, Serial0/0/1
L       172.30.12.2/32 is directly connected, Serial0/0/1
C       172.30.23.0/24 is directly connected, Serial0/0/0
L       172.30.23.1/32 is directly connected, Serial0/0/0
```

TX-Router Routing Table

Conclusion:

This lab, while taking a lot of time to complete compared to the other labs, it was not an extremely difficult lab. The main issue I had with the lab was understanding dynamic routing as I was not in the class in which it was taught due to being in Atlantic City for the MAAC Basketball tournament. With the help of the Networking Lab, specifically the worker Fred (as he was the only one there at that time). After he assisted me in learning how to use RIPv2 and EIGRP, it was easier than first expected.