**Name – Jain Samkitkumar Hasmukhlal Roll. No. - 20**

**Assignment 4A – Static**

**Configuration:**

**Router 0:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.1 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

Router(config)#ip route 30.0.0.0 255.0.0.0 20.0.0.2

**Router 1:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 30.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.2 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

Router(config)#ip route 10.0.0.0 255.0.0.0 20.0.0.1

**Results of above configuration are:**

Packet Tracer PC Command Line 1.0

PC>ipconfig

IP Address......................: 10.0.0.2

Subnet Mask.....................: 255.0.0.0

Default Gateway.................: 10.0.0.1

**PING**

PC>ping 30.0.0.3

Pinging 30.0.0.3 with 32 bytes of data:

Reply from 30.0.0.3: bytes=32 time=156ms TTL=126

Reply from 30.0.0.3: bytes=32 time=157ms TTL=126

Reply from 30.0.0.3: bytes=32 time=156ms TTL=126

Reply from 30.0.0.3: bytes=32 time=157ms TTL=126

Ping statistics for 30.0.0.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 156ms, Maximum = 157ms, Average = 156ms

**Show ip route:**

**Router 0:**

Router#show ip route

Codes: C - connected, S - static, I - IGRP, 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

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, Serial2/0

S 30.0.0.0/8 [1/0] via 20.0.0.2

**Router 1:**

Router#show ip route

Codes: C - connected, S - static, I - IGRP, 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

S 10.0.0.0/8 [1/0] via 20.0.0.1

C 20.0.0.0/8 is directly connected, Serial2/0

C 30.0.0.0/8 is directly connected, FastEthernet0/0

**Name – Jain Samkitkumar Hasmukhlal Roll. No. - 20**

**Assignment 4B – RIP**

**Configuration:**

**Router 0:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.1 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

**Router 1:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 30.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.2 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

**RIP**

**ROUTER 0**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router rip

Router(config-router)#network 10.0.0.1

Router(config-router)#network 20.0.0.1

**ROUTER 1**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router rip

Router(config-router)#network 20.0.0.2

Router(config-router)#network 30.0.0.1

**Results of above configuration are:**

Packet Tracer PC Command Line 1.0

PC>ipconfig

IP Address......................: 10.0.0.2

Subnet Mask.....................: 255.0.0.0

Default Gateway.................: 10.0.0.1

**PING**

PC>ping 30.0.0.3

Pinging 30.0.0.3 with 32 bytes of data:

Reply from 30.0.0.3: bytes=32 time=146ms TTL=126

Reply from 30.0.0.3: bytes=32 time=106ms TTL=126

Reply from 30.0.0.3: bytes=32 time=92ms TTL=126

Reply from 30.0.0.3: bytes=32 time=62ms TTL=126

Ping statistics for 30.0.0.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 62ms, Maximum = 146ms, Average = 101ms

**Show ip route: (Router 0)**

Router#show ip route

Codes: C - connected, S - static, I - IGRP, 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

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, Serial2/0

R 30.0.0.0/8 [120/1] via 20.0.0.2, 00:00:14, Serial2/0

**Show ip protocols: (Router 0)**

Router#show ip protocols

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 1, receive any version

Interface Send Recv Triggered RIP Key-chain

FastEthernet0/0 1 2 1

Serial2/0 1 2 1

Automatic network summarization is in effect

Maximum path: 4

Routing for Networks:

10.0.0.0

20.0.0.0

Passive Interface(s):

Routing Information Sources:

Gateway Distance Last Update

20.0.0.2 120 00:00:01

Distance: (default is 120)

**Name – Jain Samkitkumar Hasmukhlal Roll. No. - 20**

**Assignment 4C – EIGRP**

**Configuration:**

**Router 2:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.1 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

**Router 0:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 30.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.2 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

**EIGRP**

**ROUTER 0**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router eigrp 1

Router(config-router)#network 10.0.0.1

Router(config-router)#network 20.0.0.1

**ROUTER 2**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router eigrp 1

Router(config-router)#network 20.0.0.2

Router(config-router)#network 30.0.0.1

**Results of above configuration are:**

Packet Tracer PC Command Line 1.0

PC>ipconfig

IP Address......................: 10.0.0.2

Subnet Mask.....................: 255.0.0.0

Default Gateway.................: 10.0.0.1

**PING**

PC>ping 50.0.0.2

Pinging 50.0.0.2 with 32 bytes of data:

Reply from 50.0.0.2: bytes=32 time=156ms TTL=124

Reply from 50.0.0.2: bytes=32 time=141ms TTL=124

Reply from 50.0.0.2: bytes=32 time=141ms TTL=124

Reply from 50.0.0.2: bytes=32 time=156ms TTL=124

Ping statistics for 50.0.0.2:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 141ms, Maximum = 156ms, Average = 148ms

**Show ip route: (Router 2)**

Router#show ip route

Codes: C - connected, S - static, I - IGRP, 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

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, Serial2/0

D 30.0.0.0/8 [90/20514560] via 20.0.0.2, 00:07:01, Serial2/0

D 40.0.0.0/8 [90/21026560] via 20.0.0.2, 00:07:01, Serial2/0

D 50.0.0.0/8 [90/21029120] via 20.0.0.2, 00:06:59, Serial2/0

**Show ip protocols: (Router 2)**

Router#show ip protocols

Routing Protocol is "eigrp 1 "

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

EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0

EIGRP maximum hopcount 100

EIGRP maximum metric variance 1

Redistributing: eigrp 1

Automatic network summarization is in effect

Automatic address summarization:

Maximum path: 4

Routing for Networks:

10.0.0.0

20.0.0.0

Routing Information Sources:

Gateway Distance Last Update

20.0.0.2 90 7132

Distance: internal 90 external 170

**Name – Jain Samkitkumar Hasmukhlal Roll. No. - 20**

**Assignment 4D – OSPF**

**Configuration:**

**Router 2:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.1 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

**Router 0:-**

Continue with configuration dialog? [yes/no]: n

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 30.0.0.1 255.0.0.0

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial2/0

Router(config-if)#ip address 20.0.0.2 255.0.0.0

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

**OSPF**

**ROUTER 0**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router ospf 1

Router(config-router)#network 10.0.0.1 0.255.255.255 area 1

Router(config-router)#network 20.0.0.1 0.255.255.255 area 1

**ROUTER 2**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router ospf 1

Router(config-router)#network 20.0.0.2 0.255.255.255 area 1

Router(config-router)#network 30.0.0.1 0.255.255.255 area 1

**Results of above configuration are:**

Packet Tracer PC Command Line 1.0

PC>ipconfig

IP Address......................: 10.0.0.2

Subnet Mask.....................: 255.0.0.0

Default Gateway.................: 10.0.0.1

**PING**

PC>ping 50.0.0.2

Pinging 50.0.0.2 with 32 bytes of data:

Reply from 50.0.0.2: bytes=32 time=140ms TTL=124

Reply from 50.0.0.2: bytes=32 time=125ms TTL=124

Reply from 50.0.0.2: bytes=32 time=157ms TTL=124

Reply from 50.0.0.2: bytes=32 time=141ms TTL=124

Ping statistics for 50.0.0.2:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 125ms, Maximum = 157ms, Average = 140ms

**Show ip route: (Router 2)**

Router#show ip route

Codes: C - connected, S - static, I - IGRP, 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

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, Serial2/0

O 30.0.0.0/8 [110/782] via 20.0.0.2, 00:00:15, Serial2/0

**Show ip protocols: (Router 2)**

Router#show ip protocols

Routing Protocol is "ospf 1"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 20.0.0.1

Number of areas in this router is 1. 1 normal 0 stub 0 nssa

Maximum path: 4

Routing for Networks:

10.0.0.0 0.255.255.255 area 1

20.0.0.0 0.255.255.255 area 1

Routing Information Sources:

Gateway Distance Last Update

20.0.0.2 110 00:00:30

Distance: (default is 110)