Week - 4

Experiment : Static Routing and Default Routing Configure.

10	23/10/2024
	Aim > Configure default route, Static route to the route
	1 20 0 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	procedure ->
1.	Select 2 pcs and 3 Routers from the Look (Generic), Connect 3 nowters each other Using Serial DCF.
-	connect one pa to router o and another pa to router
2.	Config TP address for the PCs
-	PCO = 10.0.0.10
	PC1 = 40.0.0.10.
3.	Set the Gateway for the Both PCs. PCO = 10.0.0.1
	P(0 = 10.0.0.1
	P(1 = 40.0.0.1
-	
	10 establish connection between Pco and nouter o
1	Follow these Commands in router (LI)
	interes laceled at 100
11	nterface fastethernet 0/0.
	if address 10.00.1 255.0.0.0.
3.	C SKEMBON,
To	establish Connection between souter o and nowters
-	Tollow these Commands >
4	n mouter O CHI,
	nable
	onfig terminal.
3. in	terface Jenial 2/0
4. ip	address 20.0.0.1 255.0.0.0.

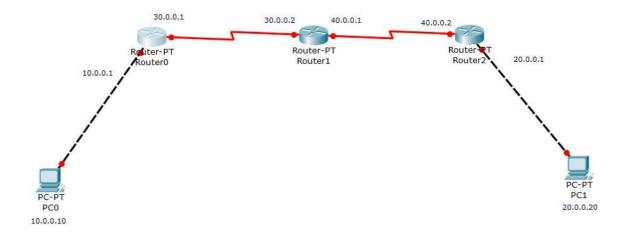
11	E a contract
	In router 1 ChI,
3	tnable
	config terminal.
8,	interface Serial 2/0
	ip address 20.0.0.2 255.0.0.0
	To establish connection between Pcp and router 2
	follow these Commands =>
2	In router 2 CHI,
1	(nable
2	config terminal.
3,	Interface fastethand 0/0
4.	ip address 40.0.0.1 255.0.0.0
5.	no Shutdown
	To establish Connection blw muter 1 and router 2 Foll
	these Commands =>
	In router 2 CHI
1	enable
2.	Config teominal.
3.	Interface Serial 3/0
	1p address 30.0.0.2 255-0.0.0
	In muter 1 CHI,
	enable
9	Config terminal Interface Serial 3/0
3.	Interface devial 5/0
4-	IP address 30.0.0.1 255.0.0.0.
- 1	

12	
	1 1 200 51
-	To establish the connection between mouter 4 and PCO >
-	In router 1 CLT,
1	enable
2.	ip mute 10.0.0.0 255.0.0.0 20.0.0.1
9.	If mule 1200
4.	exit.
	To establish the connection between muter 1 and PC1 =>
	In route of CLT,
	enable.
	a la traces al
2	ip route 40.0.0.0 255.0.0.0 30.0.0.2
4.	exit.
4	CAIT.
-	Topologia
LAHOL L IN	Topology > 30.0.01 30.0.0.2
:	20.0.0.1 20.0.02 SUIVINI Sealo sealo sealo seslo
10.0.0.1	Factor Router 1 Router 2 &
	1 VAS Prostant COL
	o FaO
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PC0	PC 1 40-0.0.10
126 10	0.0.10
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13	
	Observation > If All the Societies and Per are connected each other if All the Societies and Per are from Peo and Pel, we can.
*	All the Soutens and Pcs are connected each of the con. we ping all the devices from Pco and Pc1, we con. we ping all the devices from Pco and Pc1, we con.
	Till The devices from received which are send,
	All the Soutens and per and per and per and per all the devices from PCO and PCI. Which are send, Successfully able to view the packets which are send,
	recieve and lost graphich are send is equal to recieve
	recieve and lost which we send is equal to recieve if all the packets muchich wie send is equal to recieve.
	If all the packets anchich wie struct established. Then the connection successfully established.
=>	
	Connection established from router 0 => Connection established from router 0 => Connection established from router 0 => Connected, Fastethermet 0/0.
	c 10.0.0.0/8 is directly commented Serial 2/0
	c 10.0.0.0/8 is directly connected, Serial 2/0
	s + 0.0.0.0 /0 [1/0] via 20.0.0.2
	Connection established from router 1 =>
	S 10.0.0.0/8 [1/0] via 20.0.0.1
	c 20.0.0.018 is directly connected Serial 310
	c 30.0.0.018 is directly connected Serial 3/0
.0.0.1	s 40.0.0.0/8 [1/0] via 30.0.0.2
	connection established from muter 2 =>
	c 30.0.0.0/8 connected. Serial 3/0
	c 40.0.0.018 connected pastetheunet 0/0
	s* 0.0.0.0/0 [1/0] via 30.0.0.1
	To check the connection Follow these Commands,
10	enable
2	Show ip noute.
1	
18	

	14
-	Output =>
-	See per -
	Pc > ping 10.0.0.1
	pinging 10.0.0.1 with 32 bytes of data:
1	Reply from 10.0.0.1 bytes=32 time=4me TTL=128
4	Reply from 10.0.0.1 bytes=32 time=4ms TTL=128.
	Reply from 10.0.0.1 bytes=32 time=4mg TTL=128
	Reply from 10.0.0.1 bytes=32 time=4ms TTX=128
de	Packets: Sent = 4 Recieved = 4 lost = 0 (0x loss)
	ping 20.0.0.1
	Ping 20.0.0.2
	ping 30.0.0.1
	ping 30.0.0.2
	Ping 40.0.0.3
	ping 40-0-0.10.
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	the custom many harmalatin management
	care cale comete senal 310
	10 Colds remarked and themselved to 10
	et occopinated as account
	To show the connection those Commande
	The plant of the second
	DESTROY IN THE SECONDARY OF THE SECONDAR

Initial Topology:



ROUTER 0:

```
Router#enable
Router#config 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 shut
Router(config-if)#
%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) #interface Serial2/0
Router(config-if) #ip address 30.0.0.1 255.0.0.0
Router(config-if) #no shut
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
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
     10.0.0.0/8 is directly connected, FastEthernet0/0
C
     30.0.0.0/8 is directly connected, Serial2/0
```

```
Router(config) #ip route 0.0.0.0 0.0.0.0 30.0.0.2
Router (config) #exit
Router#
%SYS-5-CONFIG I: Configured from console by console
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 30.0.0.2 to network 0.0.0.0
C
     10.0.0.0/8 is directly connected, FastEthernet0/0
     30.0.0.0/8 is directly connected, Serial2/0
    0.0.0.0/0 [1/0] via 30.0.0.2
Router(config) #ip route 0.0.0.0 0.0.0.0 30.0.0.2
Router (config) #exit
Router#
%SYS-5-CONFIG I: Configured from console by console
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
       {
m 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 30.0.0.2 to network 0.0.0.0
     10.0.0.0/8 is directly connected, FastEthernet0/0
     30.0.0.0/8 is directly connected, Serial2/0
    0.0.0.0/0 [1/0] via 30.0.0.2
ROUTER 1:
Router(config-if) #interface Serial3/0
Router(config-if) #ip address 30.0.0.2 255.0.0.0
Router(config-if) #no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
Router(config-if) #interface Serial2/0
Router(config-if) #ip address 40.0.0.1 255.0.0.0
Router(config-if) #no shut
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#
```

```
Router>enable
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
       ^{\star} - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route
Gateway of last resort is not set
     30.0.0.0/8 is directly connected, Serial3/0
     40.0.0.0/8 is directly connected, Serial2/0
Router(config) #ip route 10.0.0.0 255.0.0.0 30.0.0.0
Router(config) #ip route 20.0.0.0 255.0.0.0 40.0.0.2
ROUTER 2:
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config) #interface FastEthernet1/0
Router(config-if) #ip address 20.0.0.1 255.0.0.0
Router(config-if) #no shut
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
Router(config-if) #interface Serial3/0
Router(config-if) #ip address 40.0.0.2 255.0.0.0
Router(config-if) #no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
Router>enable
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
       El - 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
     20.0.0.0/8 is directly connected, FastEthernet1/0
     40.0.0.0/8 is directly connected, Serial3/0
```

```
Router(config) #ip route 0.0.0.0 0.0.0.0 40.0.0.1
Router (config) #exit
Router#
%SYS-5-CONFIG I: Configured from console by console
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 40.0.0.1 to network 0.0.0.0
    20.0.0.0/8 is directly connected, FastEthernet1/0
    40.0.0.0/8 is directly connected, Serial3/0
C
S*
   0.0.0.0/0 [1/0] via 40.0.0.1
```

PC 0 PING RESULTS:

```
C:\>ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 30.0.0.1: bytes=32 time<lms TTL=255

Ping statistics for 30.0.0.1:

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

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\>ping 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data:

Reply from 30.0.0.2: bytes=32 time=2ms TTL=254

Reply from 30.0.0.2: bytes=32 time=1ms TTL=254

Reply from 30.0.0.2: bytes=32 time=1ms TTL=254

Reply from 30.0.0.2: bytes=32 time=1ms TTL=254

Ping statistics for 30.0.0.2:

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

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

```
C:\>ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=4ms TTL=254
Reply from 40.0.0.1: bytes=32 time=3ms TTL=254
Reply from 40.0.0.1: bytes=32 time=3ms TTL=254
Reply from 40.0.0.1: bytes=32 time=3ms TTL=254
Ping statistics for 40.0.0.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 3ms, Maximum = 4ms, Average = 3ms
```

```
C:\>ping 40.0.0.2

Pinging 40.0.0.2 with 32 bytes of data:

Reply from 40.0.0.2: bytes=32 time=6ms TTL=253

Reply from 40.0.0.2: bytes=32 time=2ms TTL=253

Reply from 40.0.0.2: bytes=32 time=5ms TTL=253

Reply from 40.0.0.2: bytes=32 time=2ms TTL=253

Ping statistics for 40.0.0.2:

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

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 6ms, Average = 3ms
```

```
C:\>ping 20.0.0.20

Pinging 20.0.0.20 with 32 bytes of data:

Reply from 20.0.0.20: bytes=32 time=2ms TTL=125

Reply from 20.0.0.20: bytes=32 time=4ms TTL=125

Reply from 20.0.0.20: bytes=32 time=4ms TTL=125

Reply from 20.0.0.20: bytes=32 time=2ms TTL=125

Ping statistics for 20.0.0.20:

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

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 4ms, Average = 3ms
```

PC1 PING RESULTS:

```
C:\>ping 40.0.0.2

Pinging 40.0.0.2 with 32 bytes of data:

Reply from 40.0.0.2: bytes=32 time=1ms TTL=255

Reply from 40.0.0.2: bytes=32 time<1ms TTL=255

Reply from 40.0.0.2: bytes=32 time<1ms TTL=255

Reply from 40.0.0.2: bytes=32 time<1ms TTL=255

Ping statistics for 40.0.0.2:

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

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
C:\>ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=1ms TTL=254

Reply from 40.0.0.1: bytes=32 time=1ms TTL=254

Reply from 40.0.0.1: bytes=32 time=3ms TTL=254

Reply from 40.0.0.1: bytes=32 time=1ms TTL=254

Ping statistics for 40.0.0.1:

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

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 3ms, Average = 1ms
```

```
C:\>ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 30.0.0.1: bytes=32 time=8ms TTL=253

Reply from 30.0.0.1: bytes=32 time=4ms TTL=253

Reply from 30.0.0.1: bytes=32 time=4ms TTL=253

Reply from 30.0.0.1: bytes=32 time=2ms TTL=253

Ping statistics for 30.0.0.1:

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

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 8ms, Average = 4ms
```

```
C:\>ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data:

Reply from 10.0.0.10: bytes=32 time=8ms TTL=125

Reply from 10.0.0.10: bytes=32 time=5ms TTL=125

Reply from 10.0.0.10: bytes=32 time=2ms TTL=125

Reply from 10.0.0.10: bytes=32 time=4ms TTL=125

Ping statistics for 10.0.0.10:

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

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 8ms, Average = 4ms
```

FINAL TOPOLOGY:

