

Program4

Aim: To configure default and static routes for connection of routers

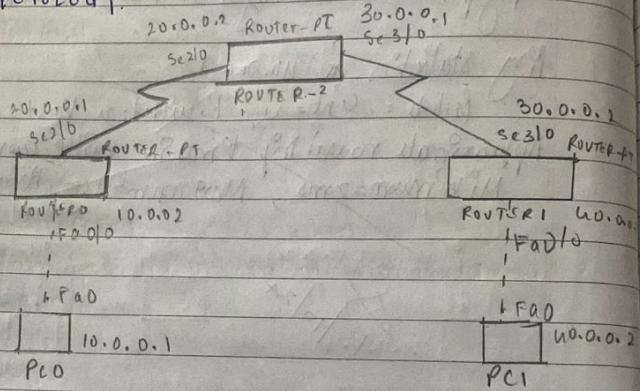
Procedure along with the topology

22/10/21

LAB-04

AIM: To configure default and static routes in connection of routers

TOPOLOGY:



CONFIGURATION

- Configure the PCs and routers as per the IP addresses, add gateway for the PCs
(do not use IP address host commands)
- Open CLI of routers in config mode type
ip route 0.0.0.0 0.0.0.0 20.0.0.2 (static)

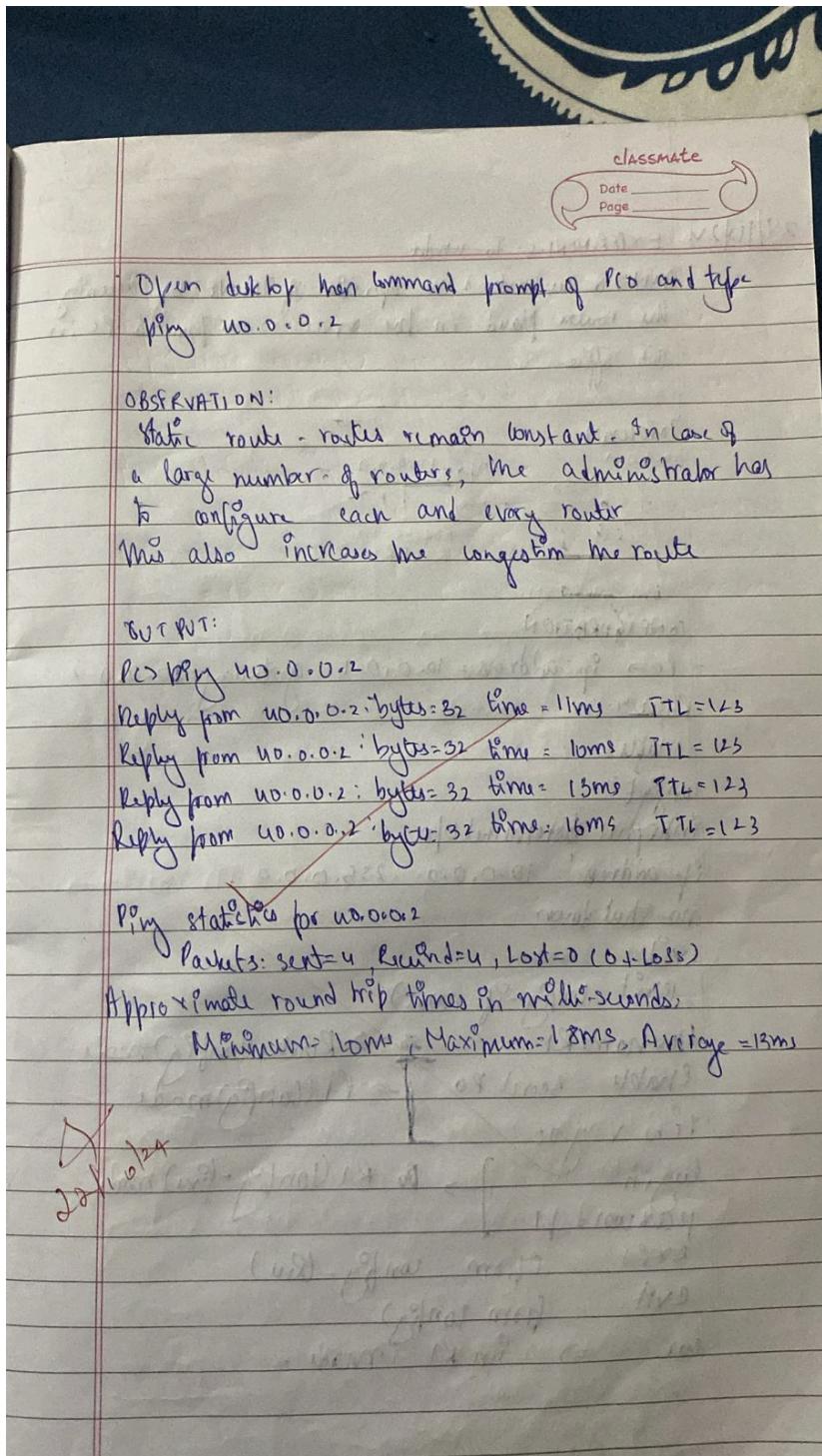
PC Router 1

ip route 0.0.0.0 0.0.0.0 30.0.0.1 (static)

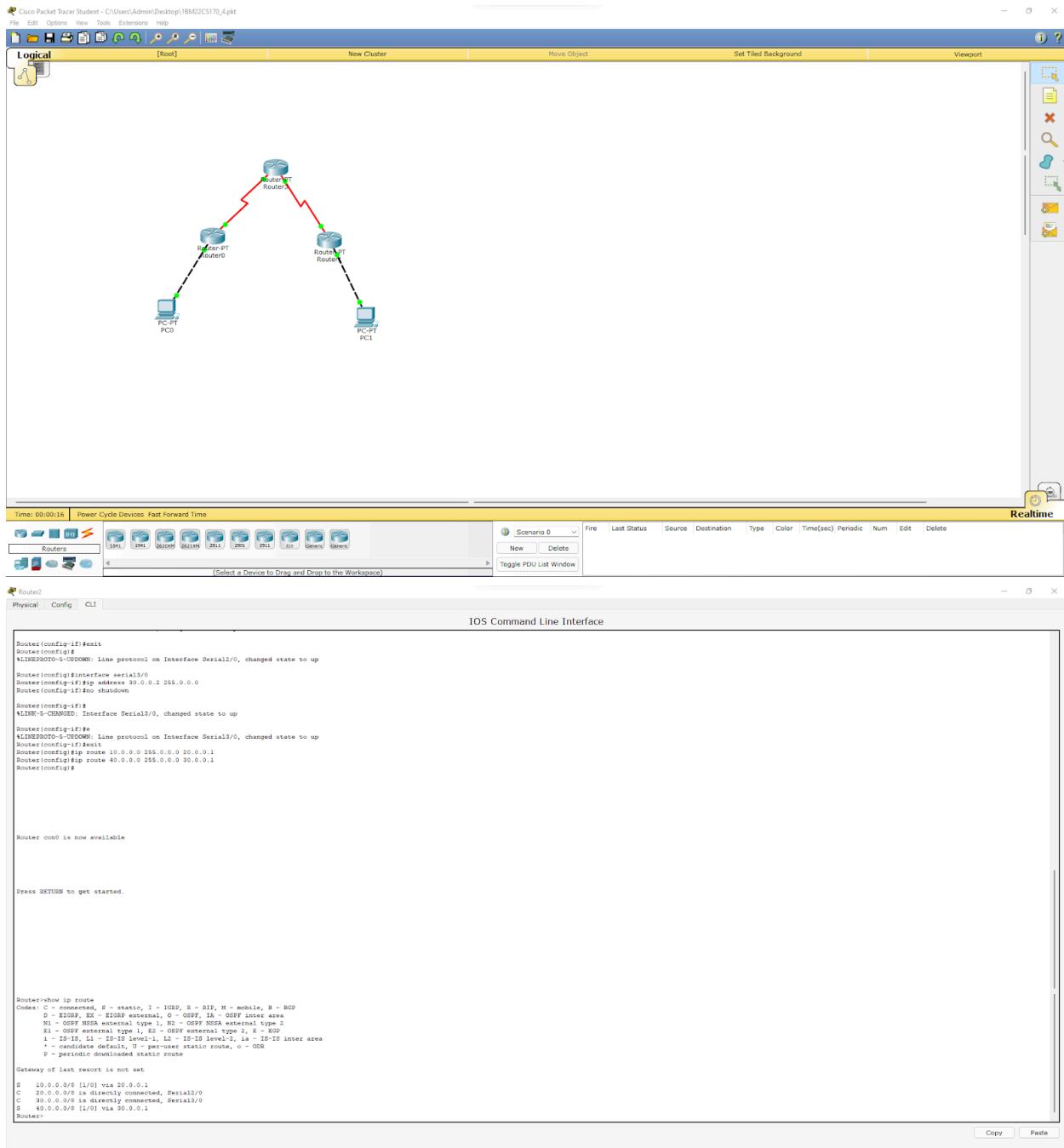
Router 2 (Default)

ip route 10.0.0.0 255.0.0.0 20.0.0.1

ip route 10.0.0.0 255.0.0.0 30.0.0.2



Screen shots/ output



Router#

Physical Config CLI

IOS Command Line Interface

```

Router>enable
Router(config)#
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 49.0.0.2
  * IP address
Router(config-if)#ip address 49.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
  * LINE=6-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
  * Invalid input detected at `''' marker.

Router(config-if)#exit
  * Invalid input detected at `''' marker.

Router(config-if)#exit
  * Invalid input detected at `''' marker.

Router(config-if)#exit
  * LINE=6-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
  * Invalid input detected at `''' marker.

Router(config-if)#exit
  * LINE=6-CHANGED: Interface Serial2/0, changed state to up
  * LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config)#ip address 20.0.0.0 255.0.0.0 20.0.0.2
  * Invalid input detected at `''' marker.

Router(config)#ip route 20.0.0.0 255.0.0.0 30.0.0.2
Router(config)#ip route 10.0.0.0 255.0.0.0 30.0.0.2
Router(config)#
  * SYS=4-CONFIG_1: Configured from console by console

Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       E1 - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2, E2 - EGP
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       L1 - Layer 1, L2 - Layer 2, L3 - Layer 3, * - NHRP route, o - ODR
       ? - 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 30.0.0.2
S  20.0.0.0/8 [1/0] via 30.0.0.2
S  30.0.0.0/8 is directly connected, Serial2/0
C  49.0.0.0/8 is directly connected, FastEthernet0/0
Routes#

```

Router#

Physical Config CLI

IOS Command Line Interface

```

System Bootstrap, Version 12.1(8)T2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.
DT 1001 (PT202004) processor (revision Gw200) with 60416K/5120K bytes of memory

Readonly ROMMON initialized

Self decompressing the image
*****[REDACTED]***** (OK)

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San Jose, California 95134-1706

Cisco Internetwork Operating System Software
IOS (tm) PT1000 Software (PT1000-I-M), Version 12.2(2B), REL10K SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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Compiled Wed 27-Apr-04 19:01 by minwang

DT 1001 (PT202004) processor (revision Gw200) with 60416K/5120K bytes of memory

Processor board ID PT0123 (0123)
PT2005 processor part number 0, mask 01
Memory running software
2.20 software, Version 3.0.0
4 FastEthernet/IEEE 802.3 interface(s)
3 Low-speed serial/ynch/asynch interface(s)
200K bytes of non-volatile configuration memory
63488K bytes of ATA CompactFlash (Read/Write)

--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable
Router(config)#
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
  * LINE=5-CHANGED: Interface FastEthernet0/0, changed state to up
  * LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

```

```
Packet Tracer PC Command Line 1.0
Ping 40.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.1: bytes=32 time=1ms TTL=128
Reply from 40.0.0.1: bytes=32 time=1ms TTL=128
Reply from 40.0.0.1: bytes=32 time=1ms TTL=128
Ping statistics for 40.0.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
Ping 40.0.0.1
Ping 40.0.0.1 with 32 bytes of data:
Reply from 40.0.0.1: bytes=32 time=1ms TTL=128
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 = 1ms, Average = 1ms
PC>
```

Observation

Open desktop then command prompt of PC and type
ping 192.0.0.2

OBSERVATION:

Static route - routes remain constant. In case of a large number of routers, the administrator has to configure each and every router. This also increases the length of the route.

BUT PWT:

PC> ping 192.0.0.2

Reply from 192.0.0.2: bytes=32 time=11ms TTL=123

Reply from 192.0.0.2: bytes=32 time=10ms TTL=123

Reply from 192.0.0.2: bytes=32 time=13ms TTL=123

Reply from 192.0.0.2: bytes=32 time=16ms TTL=123

Ping static route for 192.0.0.2

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

Approximate round trip times in milliseconds:

Minimum=10ms, Maximum=18ms, Average=13ms

28/10/2021