

Karthick VM

Batch – CIS -1.3

Mock Assessment -2 – Networks

You are a Network Engineer working for LTIMindtree.,

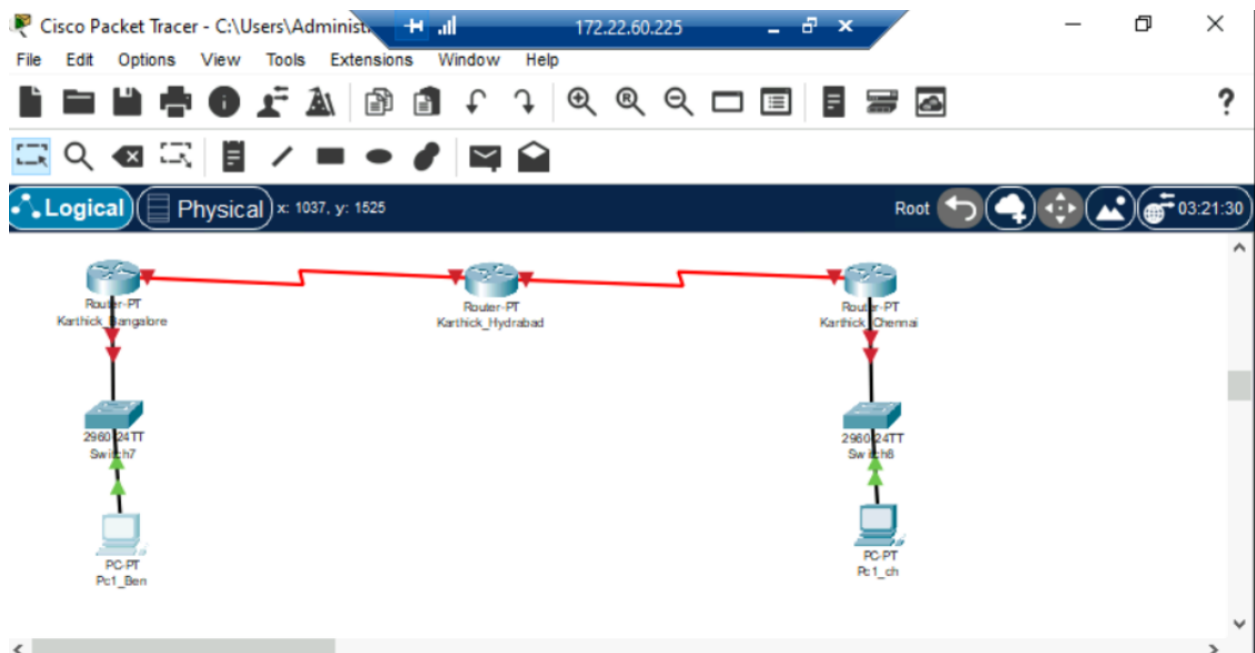
a growing IT company with three offices:

- Head Office (HO) – Located in Bangalore
- Branch Office 1 (BO1) – Located in Hyderabad
- Branch Office 2 (BO2) – Located in Chennai

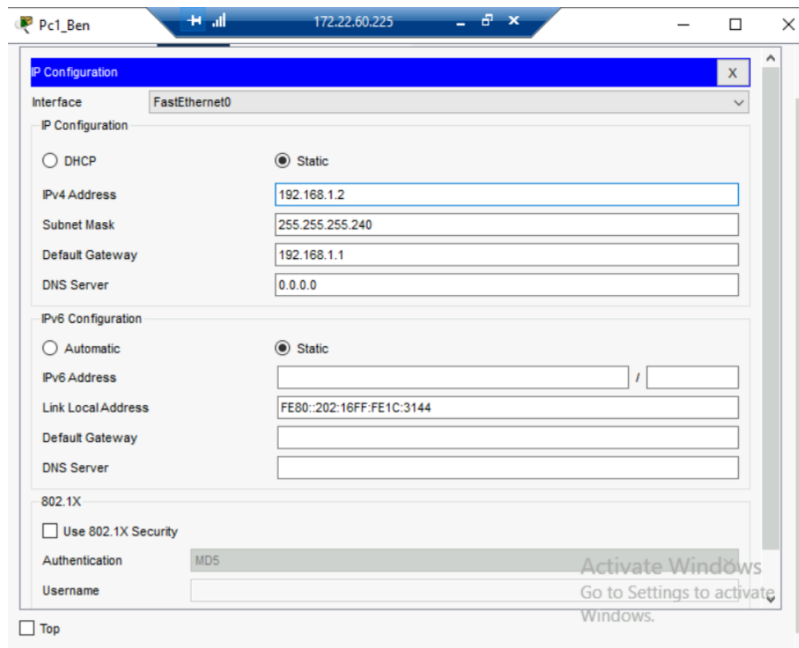
Each office is connected through leased lines, and you are tasked to implement a dynamic routing protocol to ensure that all networks in all branches can communicate efficiently.

1.Create Topology, Assign IP Address, Give name to Routers(Yourname_Bangalore),Enable secret and telnet password.

- Connection Establishment



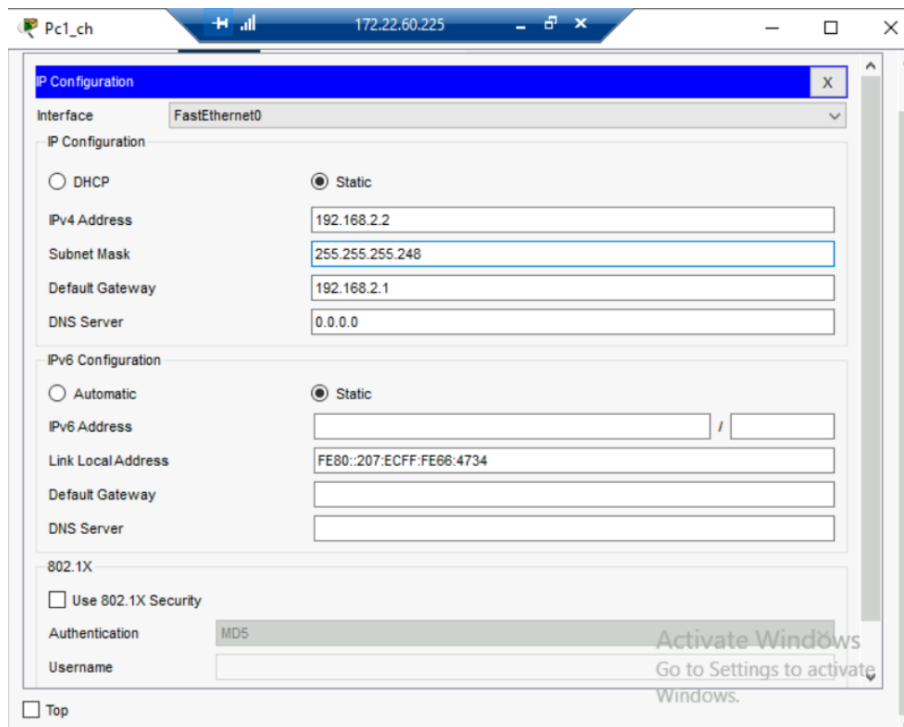
- IP Addressing
 - PC1 – Bengaluru



The screenshot shows the IP Configuration window for PC1_Ben. The window title is "Pc1_Ben" with a status bar showing "172.22.60.225". The "Interface" dropdown is set to "FastEthernet0". Under "IP Configuration", the "Static" radio button is selected. The fields are filled with: IPv4 Address: 192.168.1.2, Subnet Mask: 255.255.255.240, Default Gateway: 192.168.1.1, and DNS Server: 0.0.0.0. Under "IPv6 Configuration", the "Static" radio button is selected. The fields are: IPv6 Address: (empty), Link Local Address: FE80::202:16FF:FE1C:3144, Default Gateway: (empty), and DNS Server: (empty). Under "802.1X", the "Use 802.1X Security" checkbox is unchecked. The "Authentication" dropdown is set to "MD5", and the "Username" field is empty. A watermark "Activate Windows Go to Settings to activate Windows." is visible in the bottom right.

IP Configuration	
Interface: FastEthernet0	
IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.1.2
Subnet Mask	255.255.255.240
Default Gateway	192.168.1.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::202:16FF:FE1C:3144
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	

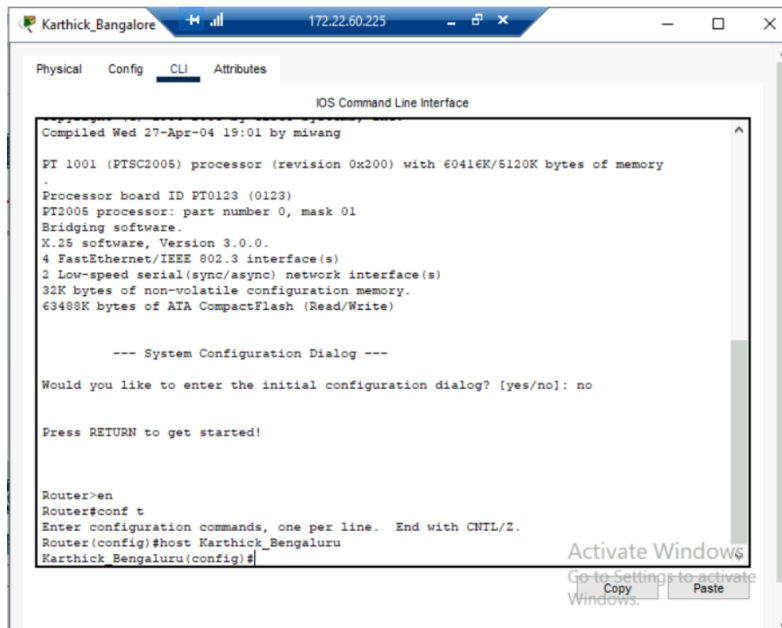
- PC1 - Chennai



The screenshot shows the IP Configuration window for PC1_ch. The window title is "Pc1_ch" with a status bar showing "172.22.60.225". The "Interface" dropdown is set to "FastEthernet0". Under "IP Configuration", the "Static" radio button is selected. The fields are filled with: IPv4 Address: 192.168.2.2, Subnet Mask: 255.255.255.248, Default Gateway: 192.168.2.1, and DNS Server: 0.0.0.0. Under "IPv6 Configuration", the "Static" radio button is selected. The fields are: IPv6 Address: (empty), Link Local Address: FE80::207:ECFF:FE66:4734, Default Gateway: (empty), and DNS Server: (empty). Under "802.1X", the "Use 802.1X Security" checkbox is unchecked. The "Authentication" dropdown is set to "MD5", and the "Username" field is empty. A watermark "Activate Windows Go to Settings to activate Windows." is visible in the bottom right.

IP Configuration	
Interface: FastEthernet0	
IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.2.2
Subnet Mask	255.255.255.248
Default Gateway	192.168.2.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::207:ECFF:FE66:4734
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	

- Give name to Routers(Yourname_Bangalore)



The screenshot shows a Cisco IOS Command Line Interface window. The title bar indicates the user is 'Karthick_Bangalore' and the IP address is '172.22.60.225'. The window has tabs for 'Physical', 'Config', 'CLI', and 'Attributes', with 'CLI' selected. The main text area displays the following information:

```
IOS Command Line Interface

Compiled Wed 27-Apr-04 19:01 by mivang

PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

--- System Configuration Dialog ---

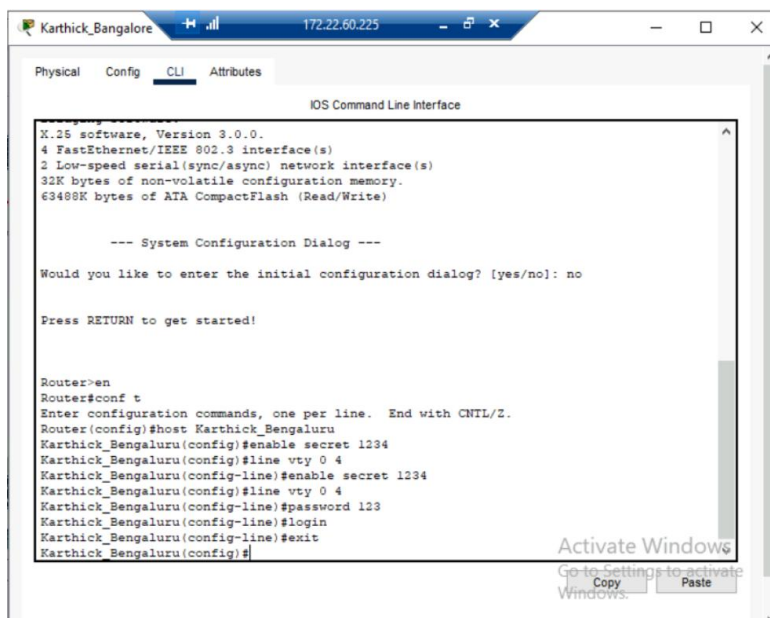
Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#host Karthick_Bangaluru
Karthick_Bangaluru(config)#
```

An 'Activate Windows' watermark is visible in the bottom right corner of the window.

- Enable Password



The screenshot shows the same Cisco IOS Command Line Interface window as before, but with additional configuration commands entered. The main text area displays the following information:

```
IOS Command Line Interface

X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#host Karthick_Bangaluru
Karthick_Bangaluru(config)#enable secret 1234
Karthick_Bangaluru(config)#line vty 0 4
Karthick_Bangaluru(config-line)#enable secret 1234
Karthick_Bangaluru(config-line)#line vty 0 4
Karthick_Bangaluru(config-line)#password 123
Karthick_Bangaluru(config-line)#login
Karthick_Bangaluru(config-line)#exit
Karthick_Bangaluru(config)#
```

An 'Activate Windows' watermark is visible in the bottom right corner of the window.

- Configuring the router
 - Bengaluru

```

Karthick_Bangalore 172.22.60.225
IOS Command Line Interface
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#int fa0/0
Karthick_Bangalore(config-if)#ip address 192.168.1.1 255.255.255.240
Karthick_Bangalore(config-if)#no shutdown
Karthick_Bangalore(config-if)#exit
Karthick_Bangalore(config)#int se2/0
Karthick_Bangalore(config-if)#ip address 10.0.0.1 255.0.0.0
Karthick_Bangalore(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Karthick_Bangalore(config-if)#exit
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#
Karthick_Bangalore(config)#

```

Go to Settings to activate Windows.

- Hyderabad

```

Karthick_Hydrabad 172.22.60.225
IOS Command Line Interface

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Karthick_Hydrabad
Karthick_Hydrabad(config)#int se2/0
Karthick_Hydrabad(config-if)#ip address 10.0.0.2 255.0.0.0
Karthick_Hydrabad(config-if)#no shutdown

Karthick_Hydrabad(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Karthick_Hydrabad(config-if)#exit
Karthick_Hydrabad(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

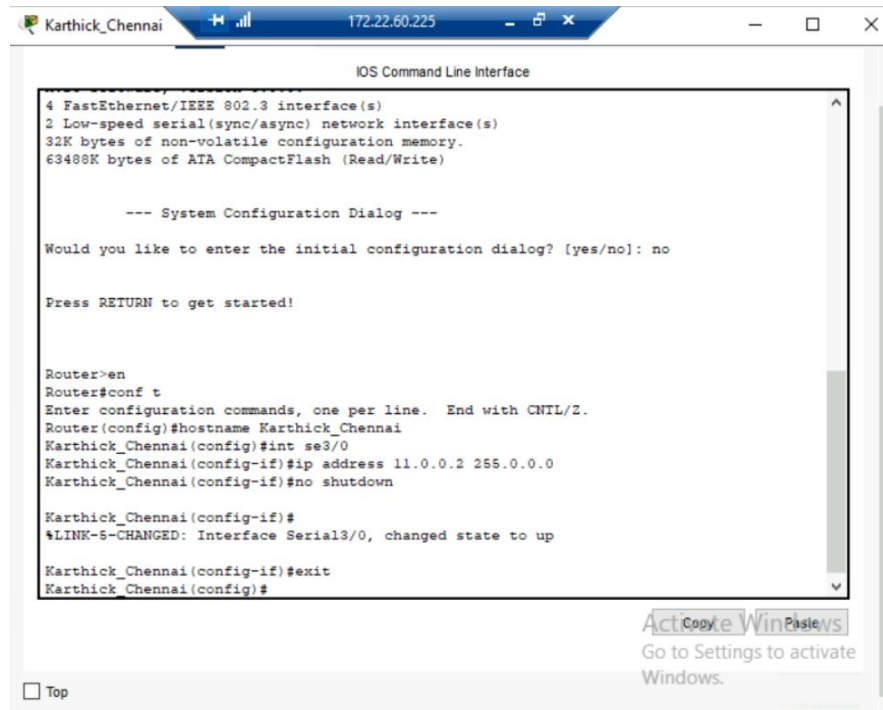
Karthick_Hydrabad(config)#int se3/0
Karthick_Hydrabad(config-if)#ip address 11.0.0.1 255.0.0.0
Karthick_Hydrabad(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Karthick_Hydrabad(config-if)#exit
Karthick_Hydrabad(config)#

```

Go to Settings to activate Windows.

- Chennai



The screenshot shows the IOS Command Line Interface for a router named 'Karthick_Chennai'. The interface displays system information at the top, followed by a 'System Configuration Dialog' asking to enter initial configuration (answered 'no'). The user enters 'en' to enter enable mode and 'conf t' to enter configuration mode. The configuration commands shown are: 'hostname Karthick_Chennai', 'interface serial 3/0', 'ip address 11.0.0.2 255.0.0.0', and 'no shutdown'. The interface status changes to 'up'. The user then enters 'exit' to return to configuration mode.

```
IOS Command Line Interface

4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no

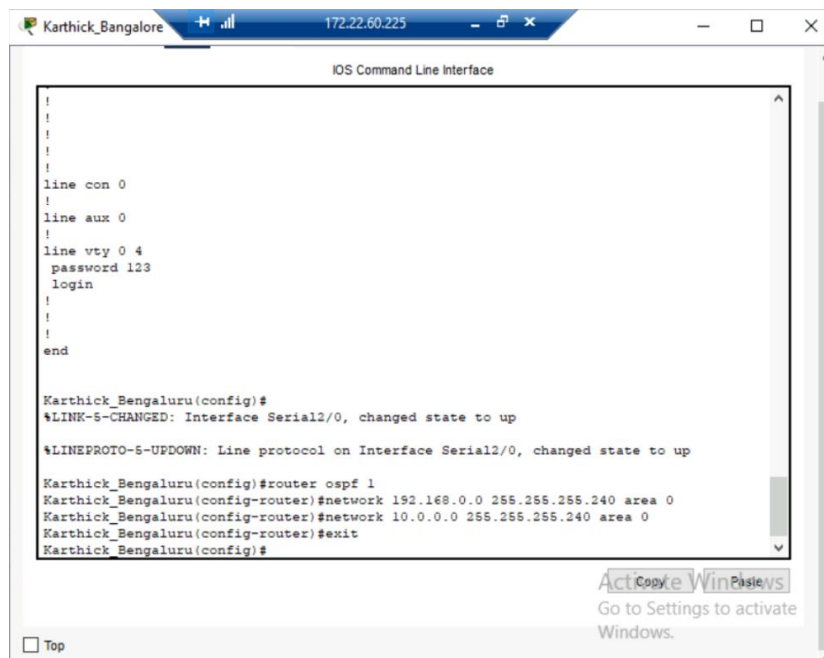
Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Karthick_Chennai
Karthick_Chennai(config)#int se3/0
Karthick_Chennai(config-if)#ip address 11.0.0.2 255.0.0.0
Karthick_Chennai(config-if)#no shutdown

Karthick_Chennai(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
Karthick_Chennai(config-if)#exit
Karthick_Chennai(config)#
```

2. Configure OSPF with Same Area-0 and show routing table, neighbor table

- Configuring ospf routing protocol at routers → Bengaluru



The screenshot shows the IOS Command Line Interface for a router named 'Karthick_Bengaluru'. The configuration starts with setting line protocols for console, auxiliary, and vty ports. Then, the user enters 'en' and 'conf t' to enter configuration mode. The configuration commands shown are: 'router ospf 1', 'network 192.168.0.0 255.255.255.240 area 0', and 'network 10.0.0.0 255.255.255.240 area 0'. The user then enters 'exit' to return to configuration mode.

```
IOS Command Line Interface

!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
password 123
login
!
!
!
end

Karthick_Bengaluru(config)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Karthick_Bengaluru(config)#router ospf 1
Karthick_Bengaluru(config-router)#network 192.168.0.0 255.255.255.240 area 0
Karthick_Bengaluru(config-router)#network 10.0.0.0 255.255.255.240 area 0
Karthick_Bengaluru(config-router)#exit
Karthick_Bengaluru(config)#
```

- Hydrabad

```

Karthick_Hydrabad
172.22.60.225

IOS Command Line Interface

Karthick_Hydrabad(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Karthick_Hydrabad(config)#int se3/0
Karthick_Hydrabad(config-if)#ip address 11.0.0.1 255.0.0.0
Karthick_Hydrabad(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Karthick_Hydrabad(config-if)#exit
Karthick_Hydrabad(config)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Karthick_Hydrabad(config)#router ospf
% Incomplete command.
Karthick_Hydrabad(config)#router ospf 1
Karthick_Hydrabad(config-router)#network 10.0.0.0 255.0.0.0 area 0
Karthick_Hydrabad(config-router)#
00:31:16: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.1.1 on Serial2/0 from LOADING to FULL, Loading Done

Karthick_Hydrabad(config-router)#network 11.0.0.0 255.0.0.0 area 0
Karthick_Hydrabad(config-router)#exit
00:31:38: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.2.1 on Serial3/0 from LOADING to FULL, Loading Done

Karthick_Hydrabad(config)#
  
```

Top

- Chennai

```

Karthick_Chennai
172.22.60.225

IOS Command Line Interface

Karthick_Chennai(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

Karthick_Chennai(config-if)#exit
Karthick_Chennai(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Karthick_Chennai(config)#int fa0/0
Karthick_Chennai(config-if)#ip address 192.168.2.0 255.255.255.248
Bad mask /29 for address 192.168.2.0
Karthick_Chennai(config-if)#ip address 192.168.2.1 255.255.255.248
Karthick_Chennai(config-if)#no shutdown

Karthick_Chennai(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

Karthick_Chennai(config-if)#exit
Karthick_Chennai(config)#router ospf 1
Karthick_Chennai(config-router)#network 192.168.2.0 255.255.255.248 area 0
Karthick_Chennai(config-router)#network 11.0.0.0 255.0.0.0 area 0
Karthick_Chennai(config-router)#exit
Karthick_Chennai(config)#
00:31:20: %OSPF-5-ADJCHG: Process 1, Nbr 11.0.0.1 on Serial3/0 from LOADING to FULL, Loading Done
  
```

Top

- Neighbor Table

```
Karthick_Chennai#
Karthick_Chennai#
Karthick_Chennai#show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
11.0.0.1	0	FULL/ -	00:00:33	11.0.0.1	Serial3/0

```
Karthick_Chennai#
```

☐ Top

Activate Windows
Go to Settings to activate Windows.

```
Karthick_Bengaluru(config)#do show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
11.0.0.1	0	FULL/ -	00:00:36	10.0.0.2	Serial2/0

```
Karthick_Bengaluru(config)#
Karthick_Bengaluru(config)#
Karthick_Bengaluru(config)#
```

☐ Top

Activate Windows
Go to Settings to activate Windows.

```
Karthick_Hydrabad(config)#do show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.168.2.1	0	FULL/ -	00:00:38	11.0.0.2	Serial3/0
192.168.1.1	0	FULL/ -	00:00:36	10.0.0.1	Serial2/0

```
Karthick_Hydrabad(config)#
```

☐ Top

Activate Windows
Go to Settings to activate Windows.

- Routing Table

Karthick_Hydrabad 172.22.60.225

IOS Command Line Interface

```

line aux 0
!
line vty 0 4
  login
!
!
end

Karthick_Hydrabad(config)#do sh rout
Karthick_Hydrabad(config)#do sh 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, Serial2/0
C    11.0.0.0/8 is directly connected, Serial3/0
O    192.168.2.0/29 is subnetted, 1 subnets
     192.168.2.0 [110/65] via 11.0.0.2, 00:06:03, Serial3/0

Karthick_Hydrabad(config)#

```

Top

Karthick_Bangalore 172.22.60.225

Physical Config CLI Attributes

IOS Command Line Interface

```

% Invalid input detected at '^' marker.

Karthick_Bangaluru(config)#do show ip ospf neighbor

Neighbor ID    Pri   State           Dead Time   Address        Interface
11.0.0.1       0     FULL/ -         00:00:36    10.0.0.2       Serial2/0

Karthick_Bangaluru(config)#
Karthick_Bangaluru(config)#do sh 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, Serial2/0
O    11.0.0.0/8 [110/128] via 10.0.0.2, 00:07:31, Serial2/0
O    192.168.1.0/28 is subnetted, 1 subnets
     192.168.1.0 is directly connected, FastEthernet0/0
C    192.168.2.0/29 is subnetted, 1 subnets
     192.168.2.0 [110/129] via 10.0.0.2, 00:07:21, Serial2/0

Karthick_Bangaluru(config)#

```



```
Karthick_Chennai(config)#exit
Karthick_Chennai#
%SYS-5-CONFIG_I: Configured from console by console

Karthick_Chennai#
Karthick_Chennai#
Karthick_Chennai#show ip ospf neighbor

Neighbor ID      Pri   State           Dead Time   Address        Interface
11.0.0.1         0    FULL/-          00:00:33    11.0.0.1       Serial3/0

Karthick_Chennai#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

O    10.0.0.0/8 [110/128] via 11.0.0.1, 00:08:24, Serial3/0
C    11.0.0.0/8 is directly connected, Serial3/0
     192.168.2.0/29 is subnetted, 1 subnets
C      192.168.2.0 is directly connected, FastEthernet0/0

Karthick_Chennai#
```

3.Show Ping. And take telnet last PC to 1st router.

- Ping

```
Command Prompt

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=13ms TTL=125
Reply from 192.168.1.2: bytes=32 time=11ms TTL=125
Reply from 192.168.1.2: bytes=32 time=14ms TTL=125
Reply from 192.168.1.2: bytes=32 time=12ms TTL=125

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 14ms, Average = 12ms

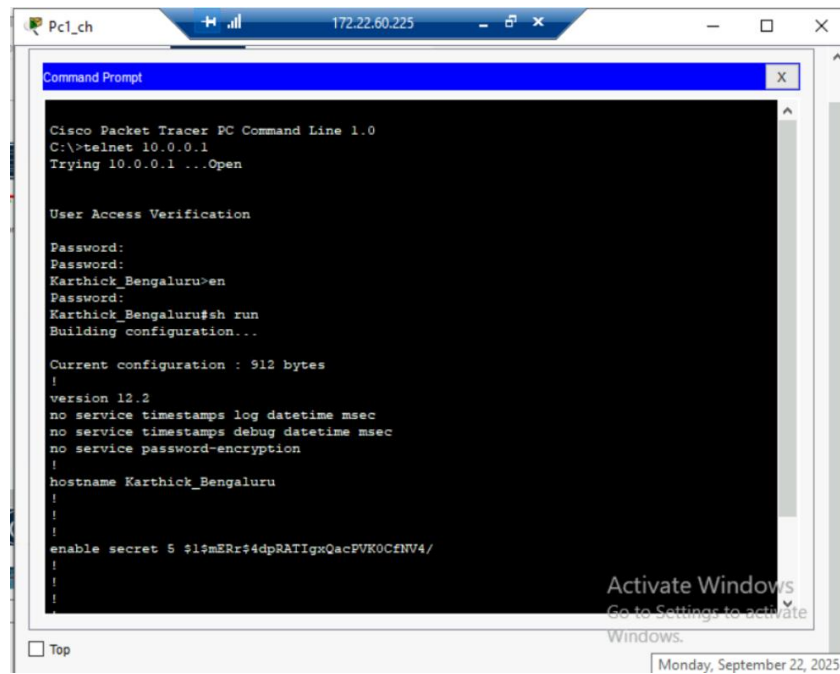
C:\>
C:\>
C:\>
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=2ms TTL=253
Reply from 192.168.1.1: bytes=32 time=2ms TTL=253
Reply from 192.168.1.1: bytes=32 time=3ms TTL=253
Reply from 192.168.1.1: bytes=32 time=3ms TTL=253

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 3ms, Average = 2ms
```

- Telnet Access



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device named 'Pc1_ch' with IP address '172.22.60.225'. The command prompt displays the following sequence of commands and outputs:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>telnet 10.0.0.1
Trying 10.0.0.1 ...Open

User Access Verification

Password:
Password:
Karthick_Bengaluru>en
Password:
Karthick_Bengaluru#sh run
Building configuration...

Current configuration : 912 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Karthick_Bengaluru
!
!
enable secret 5 $1$mERr$4dpRATlgxQacPVK0CfNV4/
!
!
```

An 'Activate Windows' watermark is visible in the bottom right corner of the command prompt window. The status bar at the bottom of the application window shows 'Monday, September 22, 2025'.