



ADVANCED COMPUTER NETWORK

PRACTICAL NO 2

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Aim: Create a network with three routers with OSPF and each router associated network will have minimum three PC. Show connectivity.

Show PC Connectivity:

Machine name	IP Address
PC_PT_PC0	10.0.0.2
PC_PT_PC1	10.0.0.3
PC_PT_PC2	10.0.0.4
PC_PT_PC3	20.0.0.2
PC_PT_PC4	20.0.0.3
PC_PT_PC5	20.0.0.4
PC_PT_PC6	30.0.0.2
PC_PT_PC7	30.0.0.3
PC_PT_PC8	30.0.0.4

Source Code:

Flow Of Program:

1] Connect PC_PT_PC0, PC_PT_PC1 and PC_PT_PC2 with Switch 0 and Switch 0 with Router 0 and configure it as follows:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/0
```

```
Router(config-if)#no shutdown
```

```
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)#exit
```

```
Router(config)#interface FastEthernet0/0
```

```
Router(config-if)#ip address 10.0.0.1 255.0.0.0
```

```
Router(config-if)#ip address 10.0.0.1 255.0.0.0
```

```

Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#no shutdown
Router(config-if)#ip address 50.50.50.2 255.0.0.0
Router(config-if)#ip address 50.50.50.2 255.0.0.0
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(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#no shutdown
Router(config-if)#ip address 70.70.70.3 255.0.0.0
Router(config-if)#ip address 70.70.70.3 255.0.0.0
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

OSPF Configuration:

```

Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 50.0.0.0 0.255.255.255 area 0
Router(config-router)#network 70.0.0.0 0.255.255.255 area 0
Router(config-router)#exit

```

2] Connect PC_PT_PC3, PC_PT_PC4 and PC_PT_PC5 with Switch 1 and Switch 1 with Router 1 and configure it as follows:

```

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#no shutdown
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)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#no shutdown
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
ip address 50.50.50.2 255.0.0.0
Router(config-if)#ip address 50.50.50.2 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#no shutdown
Router(config-if)#ip address 60.60.60.2 255.0.0.0
Router(config-if)#ip address 60.60.60.2 255.0.0.0
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

OSPF Configuration:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 2
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#network 50.0.0.0 0.255.255.255 area 0
Router(config-router)#network 60.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
```

3] Connect PC_PT_PC6, PC_PT_PC7 and PC_PT_PC8 with Switch 2 and Switch 2 with Router 2 and configure it as follows:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/0
```

```
Router(config-if)#no shutdown
```

```
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)#exit
```

```
Router(config)#interface FastEthernet0/0
```

```
Router(config-if)#ip address 30.0.0.1 255.0.0.0
```

```
Router(config-if)#ip address 30.0.0.1 255.0.0.0
```

```
Router(config-if)#
```

```
Router(config-if)#exit
```

```
Router(config)#interface Serial2/0
```

```
Router(config-if)#no shutdown
```

```
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
ip address 60.60.60.3 255.0.0.0
```

```
Router(config-if)#ip address 60.60.60.3 255.0.0.0
```

```
Router(config-if)#
```

```
Router(config-if)#exit
```

```
Router(config)#interface Serial3/0
```

```
Router(config-if)#no shutdown
```

```
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
ip address 70.70.70.3 255.0.0.0
```

```
Router(config-if)#ip address 70.70.70.3 255.0.0.0
```

```
Router(config-if)#
```

OSPF Configuration:

```
Router>en
```

```
Router#conf t
```

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

```
Router(config)#router ospf 3
```

```
Router(config-router)#network 30.0.0.0 0.255.255.255 area 0
```

```
Router(config-router)#network 60.0.0.0 0.255.255.255 area 0
```

```
Router(config-router)#network 70.0.0.0 0.255.255.255 area 0
```

```
Router(config-router)#exi
```

00:55:44: %OSPF-5-ADJCHG: Process 3, Nbr 60.60.60.2 on Serial2/0 from LOADING to FULL, Loading Done

Output:

