



**DEPT. Of Computer Science Engineering**

**SRM IST, Kattankulathur – 603 203**

**Sub Code & Name: 18CSS202J – COMPUTER COMMUNICATION**

<b>Experiment No</b>	9
<b>Title of Experiment</b>	To demonstrate Single area and Multiarea OSPF Using Cisco Packet Tracer.
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<b>Register Number</b>	RA1911033010017
<b>Date of Experiment</b>	28/04/2021

**Mark Split Up**

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Oral Viva / Online Quiz	5	
2	Execution	10	
<b>Total</b>		<b>15</b>	

**Staff Signature with date**

**AIM:** To perform Single area OSPF

**PROCEDURE:**

Step 1: Open cisco packet tracer and create a new file.

Step 2: Add all the components – PCs, Switches and Router and wire all the components.

Step 3: Click PC-> Desktop->IP Configuration, to assign IP address 10.0.0.2 and Default gateway as 10.0.0.1. and similarly assign IP address , Default gateway for other PCs.

Step 4: Click on Router0->Physical and attach module into the router and ON the switch similarly go for Router1.

Step 5: Now take a wire to connect Router0 to Router1.

Step 6: Now Click on Router->CLI(Command Line Interface) to write the command for establishing a network connection.

Step 7: It will display "Continue with configuration dialog? [yes/no]:".Give "no" and Press enter which move on to user mode.

Step 8: Type "en" and press enter. Now you get into the Privileged Mode,

Step 9: Type "conf t" and press enter to get into global configuration mode.

Step 10: Now configure router interface by checking it through hovering it on red arrow and type "int Gig0/0/0" as per your local router interface.

Step 11: Type "ip address 10.0.0.1 255.0.0.0" ip address and subnet mask then give "no shut" to make this interface and line protocol up. And then type "exit".

Step 12: Type "int Se0/1/0" as pr your router serial path and then type "ip address 30.0.0.1 255.0.0.0" and then "no shut". And then type "exit".

Step 13: Type "router ospf 1" which config to transfer route information.

Step 14: Type "network 10.0.0.0 0.255.255.255 area 0" to make router config protocol up. And then type "network 30.0.0.0 0.255.255.255 area 0" for router 2 network line.

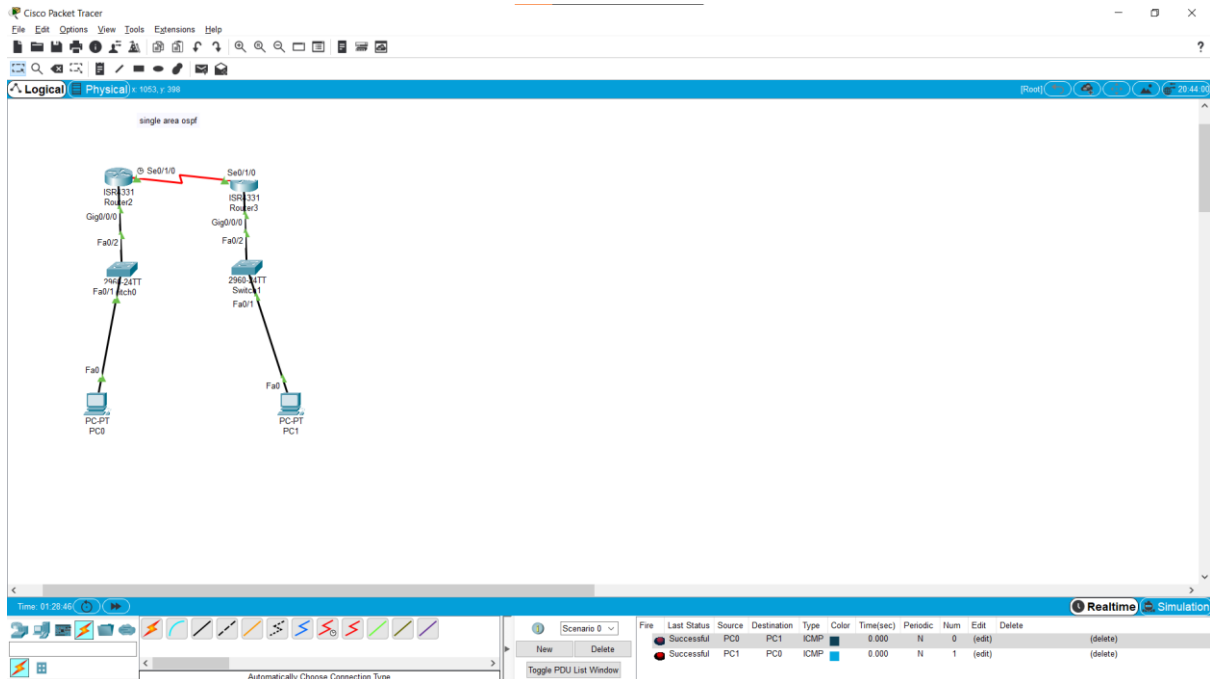
Step 15: Now type "exit" to get into config mode.

Step 14: Similarly type the above steps for configuring 2nd router connection.

Step 15: At last assign the message from one PC to other and simulate the environment.

# Single Area OSPF

Screenshot:



CLI code:

## 1<sup>st</sup> Router

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to
up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

Router(config-if)#exit
Router(config)#int Se0/1/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up
```

```

Router(config)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0,
changed state to up

Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 30.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
00:11:34: %OSPF-5-ADJCHG: Process 1, Nbr 30.0.0.2 on Serial0/1/0
from LOADING to FULL, Loading Done

```

## 2<sup>nd</sup> Router

```

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/0
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 GigabitEthernet0/0/0, changed state to
up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

Router(config-if)#exit
Router(config)#int Se0/1/0
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 Serial0/1/0, changed state to up

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0,
changed state to up

Router(config)#router ospf 1
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#network 30.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
00:11:24: %OSPF-5-ADJCHG: Process 1, Nbr 30.0.0.1 on Serial0/1/0
from LOADING to FULL, Loading Done

```

**AIM:** To perform Multi area OSPF

**PROCEDURE:**

Step 1: Open cisco packet tracer and create a new file.

Step 2: Add all the components – PCs, Switches and Router and wire all the components.

Step 3: Click PC-> Desktop->IP Configuration, to assign IP address 10.0.0.2 and Default gateway as 10.0.0.1. and similarly assign IP address , Default gateway for other PCs.

Step 4: Click on Router0->Physical and attach module into the router and ON the switch similarly go for Router1.

Step 5: Now take a wire to connect Router0 to Router1.

Step 6: Now Click on Router->CLI(Command Line Interface) to write the command for establishing a network connection.

Step 7: It will display "Continue with configuration dialog? [yes/no]:".Give "no" and Press enter which move on to user mode.

Step 8: Type "en" and press enter. Now you get into the Privileged Mode,

Step 9: Type "conf t" and press enter to get into global configuration mode.

Step 10: Now configure router interface by checking it through hovering it on red arrow and type "int Gig0/0/0" as per your local router interface.

Step 11: Type "ip address 10.0.0.1 255.0.0.0" ip address and subnet mask then give "no shut" to make this interface and line protocol up. And then type "exit".

Step 12: Type "int Se0/1/0" as pr your router serial path and then type "ip address 30.0.0.1 255.0.0.0" and then "no shut". And then type "exit".

Step 13: Type "router ospf 1" which config to make router ospf protocol.

Step 14: Type "network 10.0.0.0 0.255.255.255 area 0" to make router config protocol up. And then type "network 30.0.0.0 0.255.255.255 area 0" for router 2 network line. And type "exit".

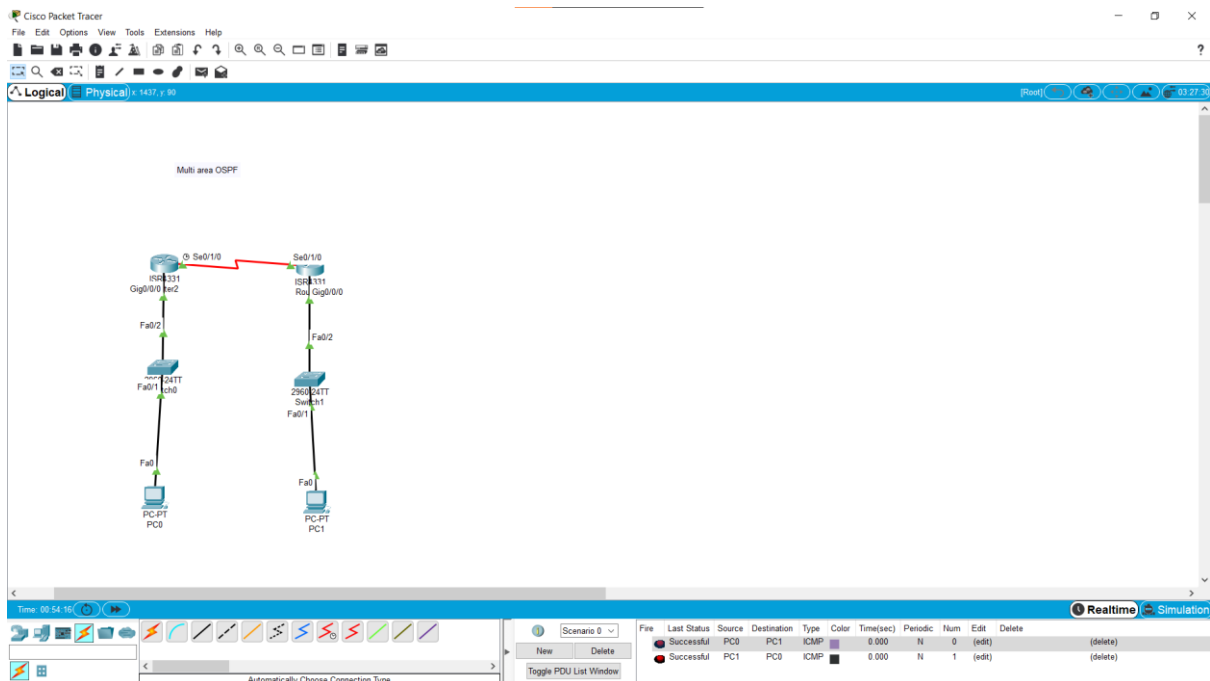
Step 15: Similarly type the above steps for configuring 2nd router connection.

Step 16: Note that type "router ospf 2" which config to make router ospf protocol.

Step 17: At last assign the message from one PC to other and simulate the environment.

# Multi Area OSPF

Screenshot:



CLI code:

## 1<sup>st</sup> Router

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

Router(config-if)#exit
Router(config)#int Se0/1/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to down
Router(config-if)#exit
```

```

Router(config)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0,
changed state to up

Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 30.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
00:05:13: %OSPF-5-ADJCHG: Process 1, Nbr 30.0.0.2 on Serial0/1/0
from LOADING to FULL, Loading Done

```

## 2<sup>nd</sup> Router

```

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int Gig0/0/0
Router(config-if)#ip address 20.0.0.0 255.0.0.0
Bad mask /8 for address 20.0.0.0
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 GigabitEthernet0/0/0, changed state to
up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

Router(config-if)#exit
Router(config)#int Se0/1/0
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 Serial0/1/0, changed state to up

Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0,
changed state to up

Router(config)#router ospf 2
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#network 30.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
00:05:01: %OSPF-5-ADJCHG: Process 2, Nbr 30.0.0.1 on Serial0/1/0
from LOADING to FULL, Loading Done

```

**RESULT:** Connection was made successfully.