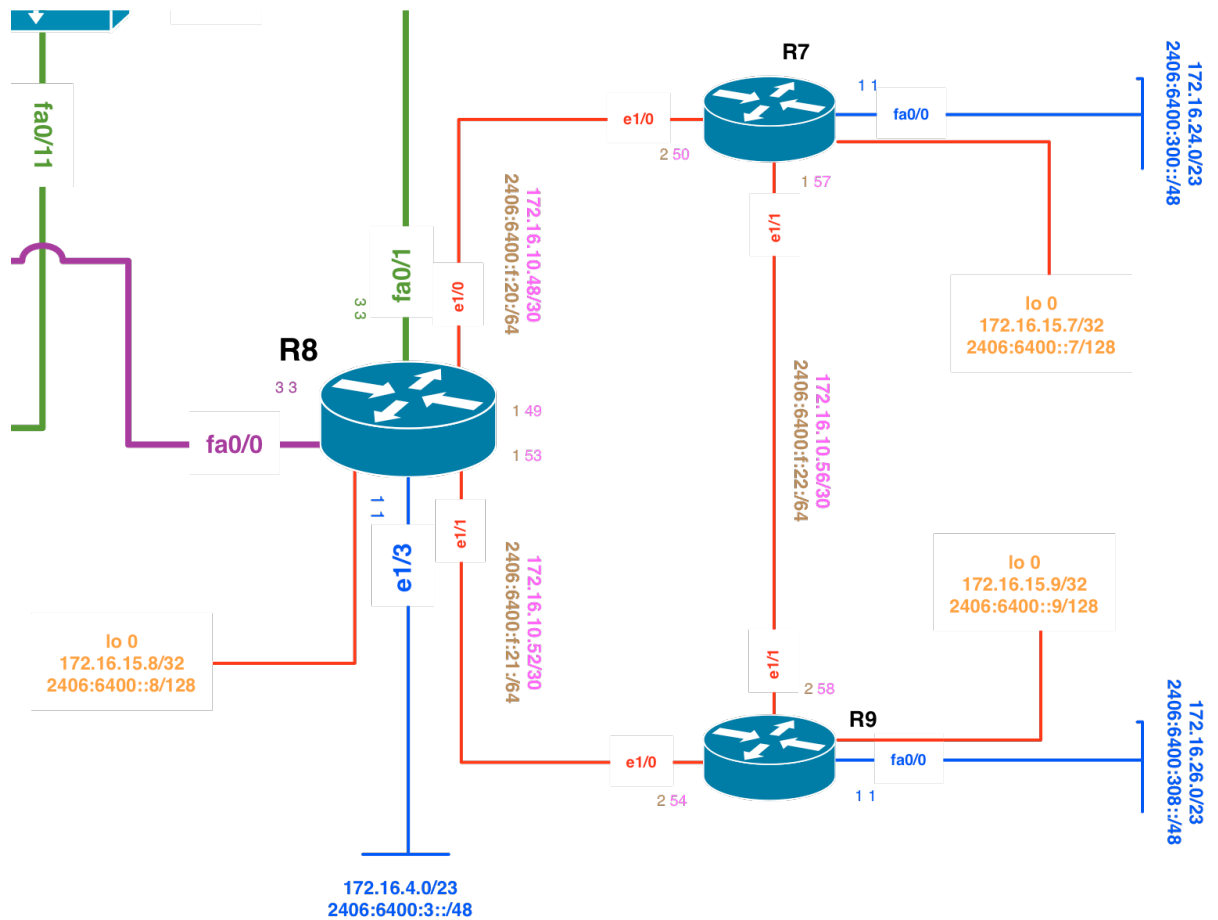


Standard router configuration for training ISP network Region3:



Basic Conf Router7:

```

config t
hostname Router7
ip cef
no ip domain-lookup
no ip http server
no ip http secure-server
no ip finger
no service pad
no service udp-small-servers
no service tcp-small-server
no ip bootp server
no ip source-route
logging source-interface loopback 0
logging buffered 16384
service timestamps debug datetime msec
service timestamps log datetime msec
clock timezone AEST 10
    
```

```
ip routing
ip subnet-zero
ip classless
line console 0
logging synchronous
transport preferred none
exit
exit
wr
```

Basic Conf Router8:

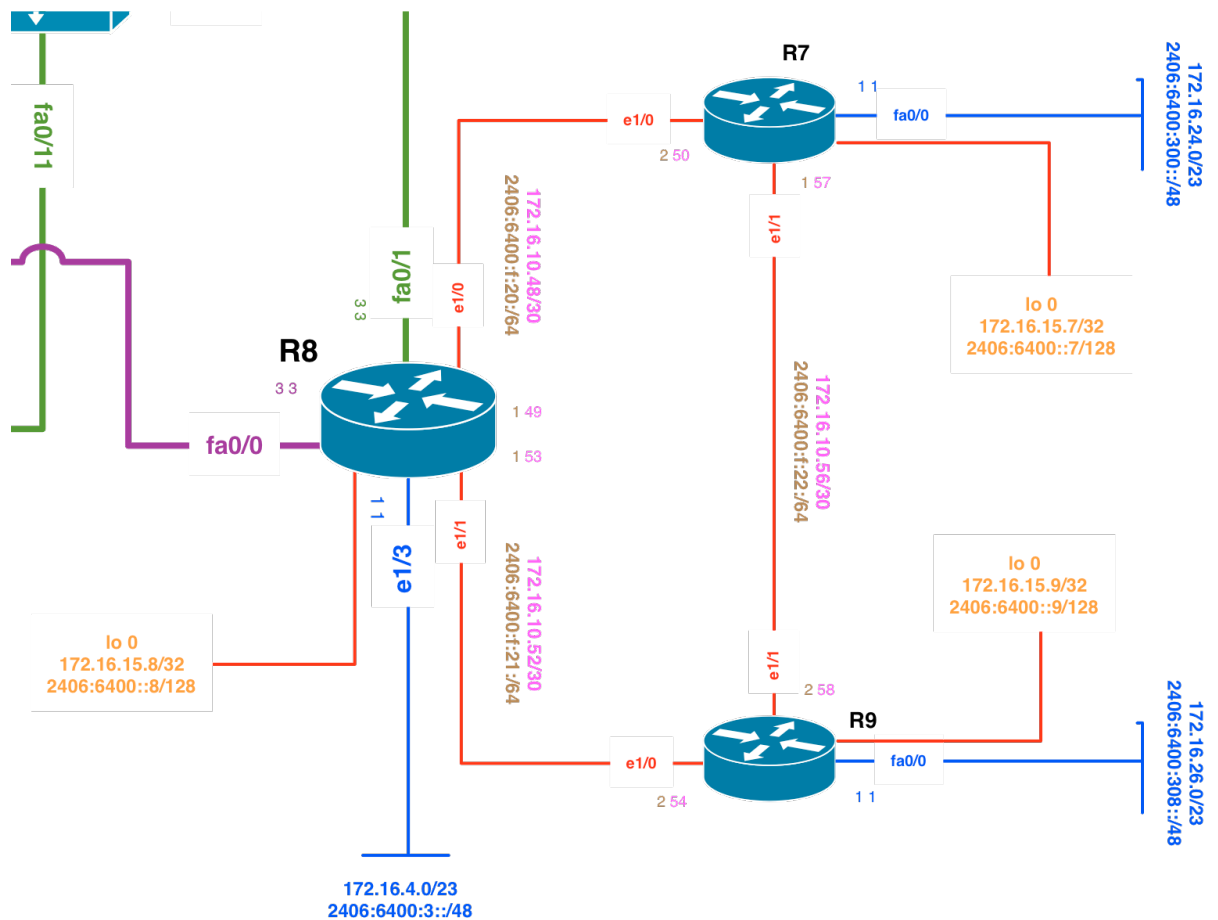
```
config t
hostname Router8
ip cef
no ip domain-lookup
no ip http server
no ip http secure-server
no ip finger
no service pad
no service udp-small-servers
no service tcp-small-server
no ip bootp server
no ip source-route
logging source-interface loopback 0
logging buffered 16384
service timestamps debug datetime msec
service timestamps log datetime msec
clock timezone AEST 10
ip routing
ip subnet-zero
ip classless
line console 0
logging synchronous
transport preferred none
exit
exit
wr
```

Basic Conf Router9:

```
config t
hostname Router9
ip cef
no ip domain-lookup
no ip http server
no ip http secure-server
no ip finger
```

```
no service pad
no service udp-small-servers
no service tcp-small-server
no ip bootp server
no ip source-route
logging source-interface loopback 0
logging buffered 16384
service timestamps debug datetime msec
service timestamps log datetime msec
clock timezone AEST 10
ip routing
ip subnet-zero
ip classless
line console 0
logging synchronous
transport preferred none
exit
exit
wr
```

Interface configuration of training ISP network Region 3:



IPv4 Interface Conf Router7:

```

config t
interface loopback 0
description Router7 Loopback
no ip redirects
no ip directed-broadcast
no ip unreachables
ip address 172.16.15.7 255.255.255.255
no shutdown
interface e1/0
description WAN R7-R8
no ip redirects
no ip directed-broadcast
no ip unreachables
ip address 172.16.10.50 255.255.255.252
no shutdown
interface e1/1
description WAN R7-R9
no ip redirects
no ip directed-broadcast
  
```

```
no ip unreachable
ip address 172.16.10.57 255.255.255.252
no shutdown
interface fa0/0
description Router7 customer network
no ip redirects
no ip directed-broadcast
no ip unreachable
no cdp enable
ip address 172.16.24.1 255.255.255.0
no shutdown
exit
exit
wr
```

Verify point-to-point connectivity:

```
ping 172.16.10.49
ping 172.16.10.58
```

IPv6 Interface Conf Router7:

```
config t
ipv6 unicast-routing
ipv6 cef
interface loopback 0
ipv6 address 2406:6400:0000:0000::7/128
ipv6 enable
interface e1/0
ipv6 address 2406:6400:000F:0020::2/64
ipv6 enable
interface e1/1
ipv6 address 2406:6400:000F:0022::1/64
ipv6 enable
interface fa0/0
ipv6 address 2406:6400:0300:0000::1/48
ipv6 enable
exit
exit
wr
```

Verify point-to-point connectivity:

```
ping 2406:6400:000F:0020::1
ping 2406:6400:000F:0022::2
```

IPv4 Interface Conf Router8:

```
config t
interface loopback 0
description Router8 Loopback
no ip redirects
no ip directed-broadcast
no ip unreachableables
ip address 172.16.15.8 255.255.255.255
no shutdown
interface e1/0
description WAN R8-R7
no ip redirects
no ip directed-broadcast
no ip unreachableables
ip address 172.16.10.49 255.255.255.252
no shutdown
interface e1/1
description WAN R8-R9
no ip redirects
no ip directed-broadcast
no ip unreachableables
ip address 172.16.10.53 255.255.255.252
no shutdown
interface fa0/0
description Purple Transport Link
no ip redirects
no ip directed-broadcast
no ip unreachableables
ip address 172.16.12.3 255.255.255.0
no shutdown
interface fa0/1
description Green Transport Link
no ip redirects
no ip directed-broadcast
no ip unreachableables
ip address 172.16.13.3 255.255.255.0
no shutdown
interface e1/3
description Router8 DC net
no ip redirects
no ip directed-broadcast
no ip unreachableables
ip address 172.16.4.1 255.255.255.0
no shutdown
exit
exit
```

wr

Verify point-to-point connectivity:

ping 172.16.10.50

ping 172.16.10.54

Verify transport link:

ping 172.16.12.1

ping 172.16.12.2

ping 172.16.12.4

ping 172.16.13.1

ping 172.16.13.2

ping 172.16.13.4

IPv6 Interface Conf Router8:

config t

ipv6 unicast-routing

ipv6 cef

interface loopback 0

ipv6 address 2406:6400:0000:0000::8/128

ipv6 enable

interface e1/0

ipv6 address 2406:6400:000F:0020::1/64

ipv6 enable

interface e1/1

ipv6 address 2406:6400:000F:0021::1/64

ipv6 enable

interface fa0/0

ipv6 address 2406:6400:000D:0000::3/48

ipv6 enable

interface fa0/1

ipv6 address 2406:6400:000E:0000::3/48

ipv6 enable

interface e1/3

ipv6 address 2406:6400:0003:0000::1/48

ipv6 enable

exit

exit

wr

Verify point-to-point connectivity:

ping 2406:6400:000F:0020::2

ping 2406:6400:000F:0021::2

Verify transport link:

```
ping 2406:6400:000D:0000::1
ping 2406:6400:000D:0000::2
ping 2406:6400:000D:0000::4
ping 2406:6400:000E:0000::1
ping 2406:6400:000E:0000::2
ping 2406:6400:000E:0000::4
```

IPv4 Interface Conf Router9:

```
config t
interface loopback 0
description Router9 Loopback
no ip redirects
no ip directed-broadcast
no ip unreachable
ip address 172.16.15.9 255.255.255.255
no shutdown
interface e1/0
description WAN R9-R8
no ip redirects
no ip directed-broadcast
no ip unreachable
ip address 172.16.10.54 255.255.255.252
no shutdown
interface e1/1
description WAN R9-R7
no ip redirects
no ip directed-broadcast
no ip unreachable
ip address 172.16.10.58 255.255.255.252
no shutdown
interface fa0/0
description Router9 customer network
no ip redirects
no ip directed-broadcast
no ip unreachable
no cdp enable
ip address 172.16.26.1 255.255.255.0
no shutdown
exit
exit
wr
```


Verify point-to-point connectivity:

```
ping 172.16.10.57
```

```
ping 172.16.10.53
```

IPv6 Interface Conf Router9:

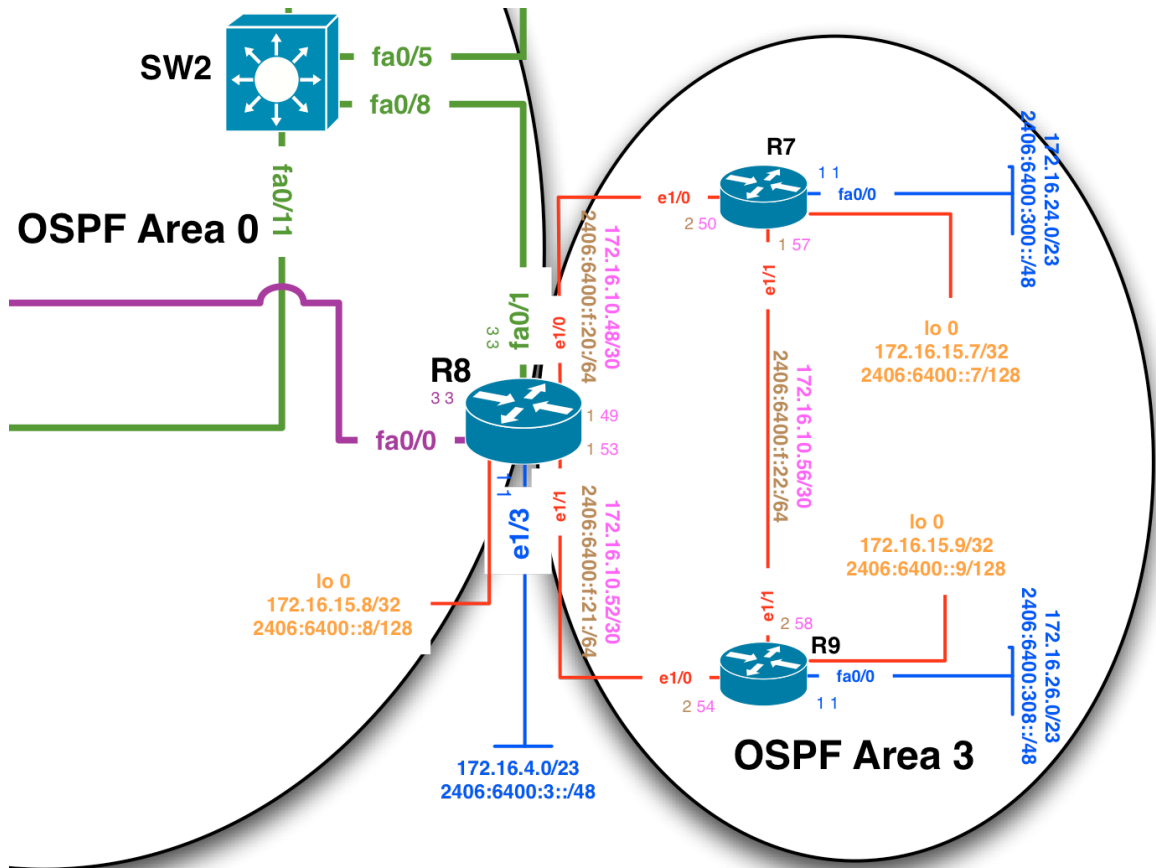
```
config t
ipv6 unicast-routing
ipv6 cef
interface loopback 0
ipv6 address 2406:6400:0000:0000::9/128
ipv6 enable
interface e1/0
ipv6 address 2406:6400:000F:0021::2/64
ipv6 enable
interface e1/1
ipv6 address 2406:6400:000F:0022::2/64
ipv6 enable
interface fa0/0
ipv6 address 2406:6400:0308:0000::1/48
ipv6 enable
exit
exit
wr
```

Verify point-to-point connectivity:

```
ping 2406:6400:000F:0021::1
```

```
ping 2406:6400:000F:0022::1
```

Configuration of OSPF in training ISP network Region3:



IPv4 OSPF Conf Router7:

```

conf t
router ospf 17821
log-adjacency-changes
passive-interface default
network 172.16.15.7 0.0.0.0 area 3
no passive-interface e1/0
network 172.16.10.48 0.0.0.3 area 3
no passive-interface e1/1
network 172.16.10.56 0.0.0.3 area 3
exit
exit
wr
  
```

Verify IPv4 OSPF Configuration:

```

sh ip ospf neighbor
sh ip ospf database
sh ip route ospf
ping [router1....up to router12 loopback] !!!!!
  
```

```
ping [all WAN interface & transport interface] !!!!!
ping [any datacenter prefix] .....
ping [any customer prefix] .....
debug ip ospf packet
debug ip ospf adj
```

IPv6 OSPF Conf Router7:

```
config t
interface loopback 0
ipv6 ospf 17821 area 3
interface e1/0
ipv6 ospf 17821 area 3
interface e1/1
ipv6 ospf 17821 area 3
exit
exit
wr
```

Verify IPv6 OSPF Configuration:

```
sh ipv6 ospf neighbor
sh ipv6 ospf database
sh ipv6 route ospf
ping [router1....up to router12 loopback] !!!!!
ping [all WAN interface & transport interface] !!!!!
ping [any datacenter prefix] .....
ping [any customer prefix] .....
debug ipv6 ospf packet
debug ipv6 ospf adj
```

IPv4 OSPF Conf Router8:

```
config t
router ospf 17821
log-adjacency-changes
passive-interface default
network 172.16.15.8 0.0.0.0 area 0
no passive-interface e1/0
network 172.16.10.48 0.0.0.3 area 3
no passive-interface e1/1
network 172.16.10.52 0.0.0.3 area 3
no passive-interface fa0/0
network 172.16.12.0 0.0.0.255 area 0
no passive-interface fa0/1
network 172.16.13.0 0.0.0.255 area 0
exit
```

```
exit
wr
```

Verify IPv4 OSPF Configuration:

```
sh ip ospf neighbor
sh ip ospf database
sh ip route ospf
ping [router1....up to router12 loopback] !!!!!
ping [all WAN interface & transport interface] !!!!!
ping [any datacenter prefix] .....
ping [any customer prefix] .....
debug ip ospf packet
debug ip ospf adj
```

IPv6 OSPF Conf Router8:

```
config t
interface loopback 0
ipv6 ospf 17821 area 0
interface fa0/0
ipv6 ospf 17821 area 0
interface fa0/1
ipv6 ospf 17821 area 0
interface e1/0
ipv6 ospf 17821 area 3
interface e1/1
ipv6 ospf 17821 area 3
exit
exit
wr
```

Verify IPv6 OSPF Configuration:

```
sh ipv6 ospf neighbor
sh ipv6 ospf database
sh ipv6 route ospf
ping [router1....up to router12 loopback] !!!!!
ping [all WAN interface & transport interface] !!!!!
ping [any datacenter prefix] .....
ping [any customer prefix] .....
debug ipv6 ospf packet
debug ipv6 ospf adj
```

IPv4 OSPF Conf Router9:

```
config t
router ospf 17821
log-adjacency-changes
```

```
passive-interface default
network 172.16.15.9 0.0.0.0 area 3
no passive-interface e1/0
network 172.16.10.52 0.0.0.3 area 3
no passive-interface e1/1
network 172.16.10.56 0.0.0.3 area 3
exit
exit
wr
```

Verify IPv4 OSPF Configuration:

```
sh ip ospf neighbor
sh ip ospf database
sh ip route ospf
ping [router1....up to router12 loopback] !!!!!
ping [all WAN interface & transport interface] !!!!!
ping [any datacenter prefix] .....
ping [any customer prefix] .....
debug ip ospf packet
debug ip ospf adj
```

IPv6 OSPF Conf Router9:

```
config t
interface loopback 0
ipv6 ospf 17821 area 3
interface e1/0
ipv6 ospf 17821 area 3
interface e1/1
ipv6 ospf 17821 area 3
exit
exit
wr
```

Verify IPv6 OSPF Configuration:

```
sh ipv6 ospf neighbor
sh ipv6 ospf database
sh ipv6 route ospf
ping [router1....up to router12 loopback] !!!!!
ping [all WAN interface & transport interface] !!!!!
ping [any datacenter prefix] .....
ping [any customer prefix] .....
debug ipv6 ospf packet
debug ipv6 ospf adj
```