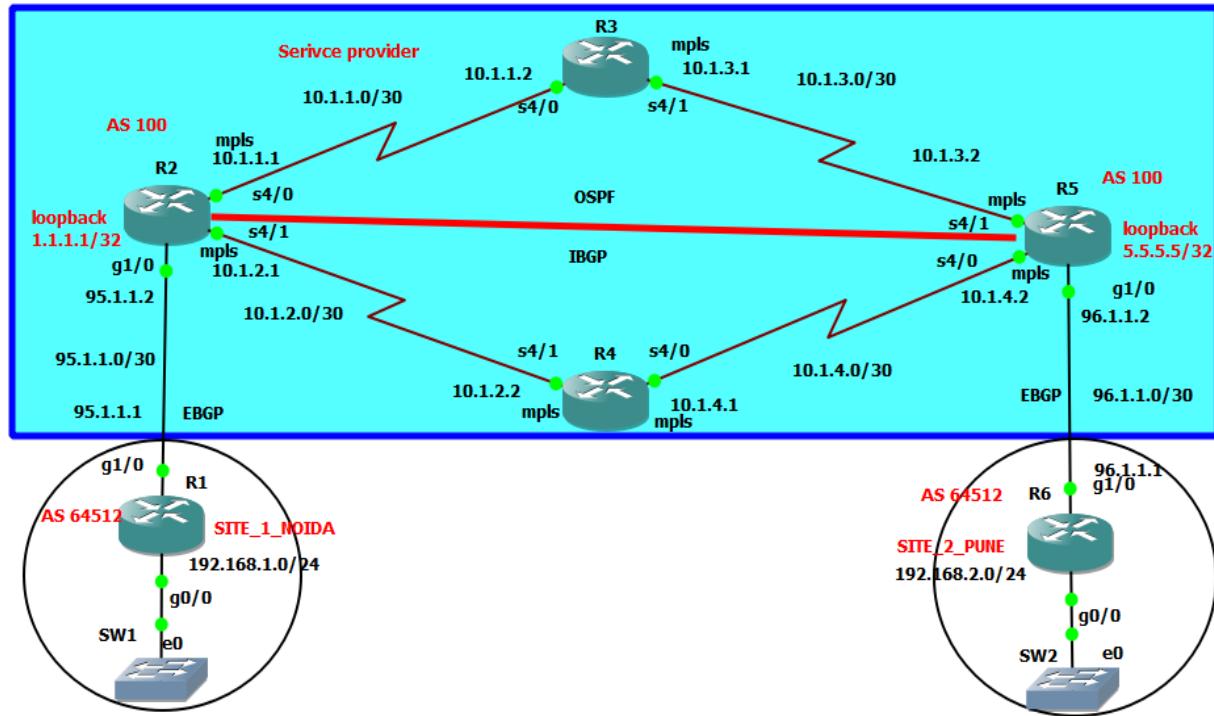


How to connect two sites with using BGP & MPLS – (Service provider sample topology)-



Summary of this lab –

1. R2, R3, R4 & R5 I'm using OSPF for IBGP connectivity
2. Between R1 & R2 – EBGP and R5 & R6 – EBGP

Configuration what I have done on the router –

```
> SITE_1_NOIDA#show run | section bgp
> router bgp 64512
> no synchronization
> bgp router-id 1.1.1.1
> bgp log-neighbor-changes
> network 192.168.1.0
> neighbor 95.1.1.2 remote-as 100
> neighbor 95.1.1.2 allowas-in
> no auto-summary
```

- SITE_1_NOIDA#
- R2#**show run | section bgp**
- router bgp 100
- no synchronization
- bgp router-id 2.2.2.2
- bgp log-neighbor-changes
- neighbor 5.5.5.5 remote-as 100
- neighbor 5.5.5.5 update-source Loopback1
- neighbor 5.5.5.5 next-hop-self
- neighbor 95.1.1.1 remote-as 64512
- no auto-summary
- R2#
- R5#**show run | section bgp**
- router bgp 100
- no synchronization
- bgp router-id 5.5.5.5
- bgp log-neighbor-changes
- neighbor 1.1.1.1 remote-as 100
- neighbor 1.1.1.1 update-source Loopback1
- neighbor 1.1.1.1 next-hop-self
- neighbor 96.1.1.1 remote-as 64512
- no auto-summary
- R5#
- SITE_2_PUNE#**show run | section bgp**
- router bgp 64512
- no synchronization
- bgp router-id 6.6.6.6
- bgp log-neighbor-changes
- network 192.168.2.0
- neighbor 96.1.1.2 remote-as 100
- neighbor 96.1.1.2 allowas-in
- no auto-summary
- SITE_2_PUNE#

OSPF configuration for IBGP connectivity –

```
> R2#
> interface Serial4/0
> ip ospf 100 area 0
> interface Serial4/1
> ip ospf 100 area 0
> interface Loopback1
> ip ospf 100 area 0
```

```
> R3#show run | section ospf
```

```
> router ospf 100
> log-adjacency-changes
> network 0.0.0.0 255.255.255.255 area 0
> R3#
```

```
> R4#show run | section ospf
```

```
> router ospf 100
> log-adjacency-changes
> network 0.0.0.0 255.255.255.255 area 0
> R4#
```

```
> R5#
```

```
> interface Serial4/0
> ip ospf 100 area 0
> interface Serial4/1
> ip ospf 100 area 0
> interface Loopback1
> ip ospf 100 area 0
```

MPLS configuration –

```
> R2#
interface Serial4/0
mpls
interface Serial4/1
mpls
```

```
> R3#
interface Serial4/0
mpls
interface Serial4/1
mpls
> R4#
interface Serial4/0
mpls
interface Serial4/1
mpls
> R5#
interface Serial4/0
mpls
interface Serial4/1
mpls
```

Now you can verify that both sites are able to communicate or not – lets try –

```
SITE_1_NOIDA#ping 192.168.2.1 source gigabitEthernet 0/0
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.1, timeout is 2 seconds:
Packet sent with a source address of 192.168.1.1
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 48/76/104 ms
SITE_1_NOIDA#
```

```
SITE_2_PUNE#ping 192.168.1.1 source gigabitEthernet 0/0
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
Packet sent with a source address of 192.168.2.1
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 48/63/80 ms
SITE_2_PUNE#
```

As you can see that both sites are able to communicate to each other.

Now lets try traceroute –

```
SITE_1_NOIDA#traceroute 192.168.2.1 source gigabitEthernet 0/0
Type escape sequence to abort.
Tracing the route to 192.168.2.1
1 95.1.1.2 12 msec 12 msec 4 msec
2 10.1.2.2 [MPLS: Label 17 Exp 0] 48 msec 48 msec 52 msec
3 10.1.4.2 52 msec 60 msec 64 msec
4 96.1.1.1 52 msec 56 msec 20 msec
SITE_1_NOIDA#
```

MPLS

```
SITE_2_PUNE#traceroute 192.168.1.1 source gigabitEthernet 0/0
Type escape sequence to abort.
Tracing the route to 192.168.1.1
1 96.1.1.2 16 msec 20 msec 20 msec
2 10.1.3.1 [MPLS: Label 16 Exp 0] 56 msec 48 msec 56 msec
3 10.1.1.1 20 msec 32 msec 36 msec
4 95.1.1.1 60 msec 64 msec 52 msec
SITE_2_PUNE#
```

MPLS

Theory part will be uploaded shortly.

Request you to please like, share & don't forget to comment so that I can enhanced my technical skills.

Thank you everyone for supporting me.

You can directly contact to me on this e-mail id to get more notes. –
umesh11238@gmial.com

Thank you –

Umesh Prajapati.

Umesh prajapati