

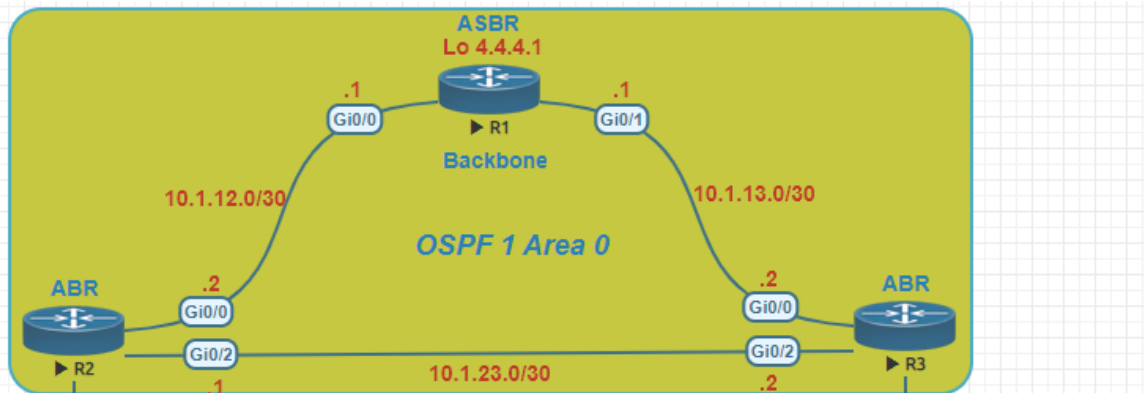
## OSPF RID (Router ID):

- o RID is a unique identifier of Router in Open Shortest Path First (OSPF) network.
- o RID must be unique within the autonomous system in Open Shortest Path First.
- o Through Router ID (RID) Routers identify each other in AS (Autonomous System).
- o Router ID is 32-bit long number same as Internet Protocol version 4 (IPV4) address.
- o IPv4 address is also 32 bits in length you can use IPv4 address as a RID (Router ID).
- o **Manual configuration => Loopback interface => Active interface** while selecting RID.
- o If assigned Router ID (RID) manually, OSPF will not look in next two options to use.
- o When multiple IP addresses are available, OSPF always pick highest IP address for RID.
- o For network, stability always set RID by **router-id** command or using loopback interfaces.

## Routers Selection RID:

An Open Shortest Path First (OSPF) Router looks in three places for RID (Router ID):

- o In Open Shortest Path First (OSPF) Router look **Manual** configuration of router ID.
- o In Open Shortest Path First (OSPF) Router look Highest IP address on **loopback** interface.
- o In Open Shortest Path First (OSPF) Router look Highest IP address on **physical** interface.



### R1 Manual configuration of router ID

```
R1(config)#router ospf 1
R1(config-router)#router-id 1.1.1.1
R1(config-router)#network 10.1.12.0 0.0.0.3 area 0
R1(config-router)#network 10.1.13.0 0.0.0.3 area 0
R1(config-router)#network 4.4.4.4 0.0.0.0 area 0
```

```
R1(config)#do show ip ospf
Routing Process "ospf 1" with ID 1.1.1.1
Start time: 00:07:56.659, Time elapsed: 00:01:07.798
Supports only single TOS(TOS0) routes
```

R1 Highest IP address on loopback interface

```
R1(config)#router ospf 1
R1(config-router)#no router-id 1.1.1.1
```

```
R1#show ip ospf
Routing Process "ospf 1" with ID 4.4.4.1
Start time: 00:07:56.659, Time elapsed: 00:02:21.964
Supports only single TOS(TOS0) routes
Supports opaque LSA
```

R1 Highest IP address on physical interface

```
R1#show ip int br
R1(config)#interface loopback 0
R1(config-if)#no ip address
R1#clear ip ospf process
Reset ALL OSPF processes? [no]: y
```

```
R1#show ip ospf
Routing Process "ospf 1" with ID 10.1.13.1
Start time: 00:07:56.659, Time elapsed: 00:05:50.545
Supports only single TOS(TOS0) routes
Supports opaque LSA
```

```
R1#show ip ospf database
```

```
OSPF Router with ID (10.1.13.1) (Process ID 1)
```

```
Router Link States (Area 0)
```

Link ID	ADV Router	Age	Seq#	Checksum	Link count
10.1.13.1	10.1.13.1	41	0x80000006	0x00AD13	2

```
R1(config)#router ospf 1
R1(config-router)#router-id 229.4.4.4
R1(config-router)#do show ip os d
```

```
OSPF Router with ID (229.4.4.4) (Process ID 1)
```

```
Router Link States (Area 0)
```

Link ID	ADV Router	Age	Seq#	Checksum	Link count
229.4.4.4	229.4.4.4	5	0x80000008	0x00FA12	2