

```
R1:
conf t
int g0/0
Desc conn to Transit NW
ip add 10.123.1.1 255.255.255.224
no sh
int g1/0
Desc Conn to Stub NW
ip add 192.168.1.1 255.255.255.0
no sh
exit
```

```
Router ospf 1
router-id 1.1.1.1
net 10.123.1.0 0.0.0.31 area 1234
net 192.168.1.0 0.0.0.255 area 1234
passive-interface g1/0
exit
```

```
/27
GM 255.255.255.255
SNM 255.255.255.224
WCM 0.0.0.31
```

```
-----
R3:
conf t
int e0/0
Desc conn to Transit NW
ip add 10.123.1.3 255.255.255.224
no sh
int e0/1
Desc LAN 1
ip add 192.168.2.2 255.255.255.0
no sh
int e0/2
ip add 192.168.3.3 255.255.255.0
no sh
exit
```

```
Router ospf 1
router-id 3.3.3.3
net 10.123.1.0 0.0.0.31 area 1234
net 192.168.0.0 0.0.255.255 area 1234
Passive-interface Default
no passive-interface e0/0
exit
```

```
R2:
R2:
conf t
int e0/0
```

```
Desc conn to Transit NW
ip add 10.123.1.3 255.255.255.224
no sh
int s2/0
Desc P2p Connection with R4
ip add 10.24.1.2 255.255.255.248
no shut
exit
```

```
Router ospf 1
router-id 2.2.2.2
net 0.0.0.0 255.255.255.255 area 1234
exit
```

```
R4:ABR
conf t
int s2/0
Desc P2p Connection with R2 in Area 1234
ip add 10.24.1.4 255.255.255.248
no shut
int e0/0
Desc conn to R5 in area 0
ip add 10.45.1.4 255.255.255.0
no sh
exit
```

```
Router ospf 1
Router-id 4.4.4.4
net 10.24.1.0 0.0.0.7 area 1234
net 10.45.1.0 0.0.0.255 area 0
exit
```

```
/29
GM 255.255.255.255
SNM 255.255.255.248
WCM 0.0.0.7
```

```
R5:ABR
conf t
int e0/0
Desc conn to R4 in area 0
ip add 10.45.1.5 255.255.255.0
no sh
int e0/1
Desc conn to R6 in area 56
ip add 10.56.1.5 255.255.255.0
no sh
exit
```

```
Router ospf 1
```

```
Router-id 5.5.5.5
net 10.45.1.5 0.0.0.0 area 0
net 10.56.1.5 0.0.0.0 area 56
exit
```

```
R6:ASBR
```

```
conf t
int e0/0
Desc conn to R5 in area 56
ip add 10.56.1.6 255.255.255.0
no sh
int e0/1
Desc conn to external NW rip
ip add 172.17.67.6 255.255.255.0
no sh
int e0/2
Desc conn to external NW Eigrp 1
ip add 172.17.68.6 255.255.255.0
no sh
exit
```

```
Router rip
```

```
ver 2
no auto
net 172.17.67.0
Redistribute ospf 1 metric 1
exit
```

```
Router eigrp 1
```

```
net 172.17.68.6 0.0.0.0
Redistribute ospf 1 metric 1 1 1 1 1
exit
```

```
Router ospf 1
```

```
Router-id 6.6.6.6
net 10.56.1.6 0.0.0.0 area 56
Redistribute rip subnets
redistribute eigrp 1 subnets metric-type 1
exit
```

```
R7:RIP
```

```
conf t
int e0/0
Desc conn to external NW rip
ip add 172.17.67.7 255.255.255.0
no sh
int lo0
ip add 172.16.6.6 255.255.255.0
exit
```

```
router rip
```

```
ver 2
no au
net 172.16.0.0
```

```
net 172.17.0.0
exit
```

ABR Summ on R4

```
Router ospf 1
area 1234 range 192.168.0.0 255.255.252.0
exit
```

```
8 8 x cost
192.168.1.0/24 85
192.168.2.0/24 95
192.168.3.0/24 95
```

```
128 64 32 16 8 4 |2 1
1 0 0 0 0 0 0 1
3 0 0 0 0 0 0 1 1
And 0 0 0 0 0 0 0 0
```

ASBR Summ on R6

```
172.16.1.0
172.16.2.0
```

```
router ospf 1
Summary-address 172.16.0.0 255.255.252.0
exit
```

=====

Sequence

1 bit= MSB

Signed integer

0 =Positive

1 =Negative

8421

```
Mxxx xxxx xxxx xxxx  xxxx xxxx xxxx  xxxx
1000 0000 0000 0000  0000 0000 0000  0001
8   0   0   0   0   0   0   1
8   F   F   F   F   F   F   F
0000 0000 0000 0000  0000 0000 0000  0001
0111 1111 1111 1111  1111 1111 1111  1111
7   F   F   F   F   F   F   F
```

0X80000001 TO 0X7FFFFFFF

LSA type 1 generated every ospf router (DR,BDR,p2p,P2Mp) generates LSA type 1 called Router LSA
LSA type 1 propogated with in area.
LSA type 2 generated by DR called Network LSA
Netmask /27

Attached routers

RID/ip add of DR

LSA type 3 generated by ABR called Summary LSA

LSA type 4 generated by ABR to inform other areas the presence of ASBR in of its connected areas called Summary ASB (RID of ASBR)

LSA type 5 generated by ASBR called External LSA.