

```
R1:
conf t
int e0/0
Desc conn to internet
ip add 1.1.1.1 255.255.255.0
no shut
int e0/1
Desc LAN
ip add 10.1.1.1 255.255.255.0
no shut
exit

!ip route 0.0.0.0 0.0.0.0 1.1.1.4
```

```
Router bgp 1
neig 1.1.1.4 remote-as 4
net 1.1.1.0 mask 255.255.255.0
exit
```

```
R2:
conf t
int e0/0
Desc conn to internet
ip add 2.2.2.2 255.255.255.0
no shut
int e0/1
Desc LAN
ip add 10.2.2.2 255.255.255.0
no shut
exit
```

```
!ip route 0.0.0.0 0.0.0.0 2.2.2.4
```

```
Router bgp 2
neig 2.2.2.4 remote-as 4
net 2.2.2.0 mask 255.255.255.0
exit
```

```
R3:
conf t
int e0/0
Desc conn to internet
ip add 3.3.3.3 255.255.255.0
no shut
int e0/1
Desc LAN
ip add 10.3.3.3 255.255.255.0
no shut
exit
```

```
!ip route 0.0.0.0 0.0.0.0 3.3.3.4
```

```
Router bgp 3
neig 3.3.3.4 remote-as 4
```

```
net 3.3.3.0 mask 255.255.255.0
exit
```

Internet:

```
conf t
int e0/0
Desc conn to AS 1
ip add 1.1.1.4 255.255.255.0
no sh
int e0/1
Desc conn to AS 2
ip add 2.2.2.4 255.255.255.0
no sh
int e0/2
Desc conn to AS3
ip add 3.3.3.4 255.255.255.0
no sh
exit
```

Router bgp 4

```
neig 1.1.1.1 remote-as 1
neig 2.2.2.2 remote-as 2
neig 3.3.3.3 remote-as 3
net 1.1.1.0 mask 255.255.255.0
net 2.2.2.0 mask 255.255.255.0
net 3.3.3.0 mask 255.255.255.0
exit
```

=====  
Phase 1:

R1:HUB

Int tun 1

```
ip add 192.168.1.1 255.255.255.0
tunnel source e0/0
tunnel mode gre multipoint
tunnel key 123
ip nhrp network-id 123
ip nhrp map multicast dynamic
ip nhrp authentication dmvpn
Bandwidth 4000
ip mtu 1400
ip tcp adjust-mss 1360
exit
```

R2:Spoke-1

Int tun 1

```
ip add 192.168.1.2 255.255.255.0
tunnel source e0/0
tunnel Dest 1.1.1.1
tunnel key 123
ip nhrp network-id 123
ip nhrp nhs 192.168.1.1 nmba 1.1.1.1 multicast
```

```
ip nhrp authentication dmvpn
ip nhrp registration no-unique
Bandwidth 4000
ip mtu 1400
ip tcp adjust-mss 1360
exit
```

R3:Spoke-1

```
Int tun 1
ip add 192.168.1.3 255.255.255.0
tunnel source e0/0
tunnel Dest 1.1.1.1
tunnel key 123
ip nhrp network-id 123
lip nhrp nhs 192.168.1.1 nmba 1.1.1.1 multicast
ip nhrp nhs 192.168.1.1
ip nhrp map 192.168.1.1 1.1.1.1
ip nhrp map multicast 1.1.1.1
ip nhrp authentication dmvpn
ip nhrp hold 100
Bandwidth 4000
ip mtu 1400
ip tcp adjust-mss 1360
exit
```

R1,R2,R3  
! Adv tunnel ip /LAN

```
router eigrp 1
net 192.168.1.0
net 10.0.0.0
exit
```

Phase1  
R1:Hub

Disable split horizon

```
int tun 1
no ip split-horizon eigrp 1
exit
```

```
Summ on HUB
int tun 1
ip summary-address eigrp 1 10.0.0.0/8
exit
```

Phase 2 with Eigrp  
R1

```
int tun 1
no ip next-hop-self eigrp 1
```

R2/R3

```
int tun 1
no tunnel Dest 1.1.1.1
tunnel mode gre multipoint
exit
```

Phase 3:

-----

```
int tun 1
ip next-hop-self eigrp 1
ip nhrp redirect
exit
```

Spokes

```
int tun 1
ip nhrp shortcut
exit
```

-----

Phase 1/Phase 2 -ospf

R1-Hub

```
router ospf 1
net 192.168.1.0 0.0.0.255 area 0
net 10.0.0.0 0.255.255.255 area 0
exit
```

```
int tun 1
ip ospf network broadcast
ip ospf pri 255
exit
```

R2/R3-Spokes

```
router ospf 1
net 192.168.1.0 0.0.0.255 area 0
net 10.0.0.0 0.255.255.255 area 0
exit
```

```
int tun 1
ip ospf network broadcast
ip ospf pri 0
exit
```

=====

PHASE 2 ospf

R2/R3

```
int tun 1
no tunnel Dest 1.1.1.1
tunnel mode gre multipoint
```

=====

Dmvpn with ipsec

R1/R2/R3

```
crypto isakmp policy 10
  encr aes
  hash md5
  authentication pre-share
  group 2
exit
```

```
crypto isakmp key cisco123 address 0.0.0.0
```

phase 2

```
cry ipsec transform-set tset esp-aes esp-sha-hma
mode transport
exit
```

```
crypto ipsec profile PROF
  set transform-set tset
exit
```

```
int tun 1
tunnel protection ipsec profile PROF
exit
```

=====

