Eigrp Stub:

R1
```
conf t
int e0/1
Desc conn to LAN
ip add 10.1.1.1 255.255.255.0
no shut
int e0/0
Desc conn to R2
ip add 192.168.12.1 255.255.255.0
no shut
int s2/0
Desc conn to R3
ip add 192.168.13.1 255.255.255.0
exit

router eigrp 1
net 10.1.1.1 0.0.0.0
net 192.168.12.0
net 192.168.13.0
exit
```

R3:
```
conf t
int e0/1
Desc conn to LAN
ip add 10.3.3.3 255.255.255.0
no shut
int e0/0
Desc conn to R2
ip add 192.168.23.3 255.255.255.0
no shut
int s2/0
Desc conn to R3
ip add 192.168.13.3 255.255.255.0
exit

router eigrp 1
net 10.3.3. 0.0.0.0
net 192.168.23.0
net 192.168.13.0
exit
```

R4:
```
Conf t
int e0/0
Desc conn to R2
ip add 192.168.24.4 255.255.255.0
no shut
int e0/1
Desc LAN
ip add 10.4.4.4 255.255.255.0
no sh
int lo 0
ip add 172.16.0.1 255.255.255.0
int lo 1
ip add 172.16.1.1 255.255.255.0
```

```
router eigrp 1
net 192.168.24.0
net 10.4.4.4 0.0.0.0
net 172.16.0.0 0.0.255.255
exit


R2:
conf t
int e0/0
Desc conn to R4
ip add 192.168.24.2 255.255.255.0
no sh
int e0/1
Desc conn to R1
ip add 192.168.12.2 255.255.255.0
no sh
int e0/2
Desc conn to R3
ip add 192.168.23.2 255.255.255.0
no sh

router eigrp R2
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface Ethernet0/1
   summary-address 172.16.0.0 255.255.254.0
  exit-af-interface
  !
  af-interface Ethernet0/2
   summary-address 172.16.0.0 255.255.254.0
  exit-af-interface
  !
  topology base
   redistribute ospf 1 match internal external 1 external 2 metric 10000 10 255 1
1500
  exit-af-topology
  network 0.0.0.0
  eigrp stub summary redistributed leak-map RM-LK
 exit-address-family
!
i
route-map RM-LK permit 10
 match ip address 1
!
!
access-list 1 permit 10.1.1.0 0.0.0.255
!
================================================
Eigrp Fast convergence with BFD:
------------------------------------------------------
R1
conf  t
int e0/0
ip add 10.12.1.1 255.255.255.0
no sh
int e0/1
```

```
ip add 10.13.1.1 255.255.255.0
no sh
int lo 0
ip add 1.1.1.1 255.0.0.0
exit

router ei 1
net 0.0.0.0
bfd all-interfaces
exit

int r e0/0-1
bfd interval 50 min_rx 50 multiplier 3
exit

R2:
conf  t
int e0/0
ip add 10.12.1.2 255.255.255.0
no sh
int e0/1
ip add 10.24.1.2 255.255.255.0
no sh
exit

router ei 1
net 0.0.0.0
bfd all-interfaces
exit

int r e0/0-1
bfd interval 50 min_rx 50 multiplier 3
exit

R3:
conf  t
int e0/0
ip add 10.13.1.3  255.255.255.0
no sh
int e0/1
ip add 10.34.1.3 255.255.255.0
no sh
Delay 1100
exit

router ei 1
net 0.0.0.0
bfd all-interfaces
exit

int r e0/0-1
bfd interval 50 min_rx 50 multiplier 3
exit


R4:
conf  t
int e0/0
ip add 10.24.1.4  255.255.255.0
```

```
no sh
int e0/1
ip add 10.34.1.4 255.255.255.0
no sh
int lo 0
ip add 4.4.4.4 255.0.0.0
exit

router ei 1
net 0.0.0.0
bfd all-interfaces
exit

int r e0/0-1
bfd interval 50 min_rx 50 multiplier 3
exit
```

Eigrp Repair path with LFA -FFR

```
R1
conf  t
int g1
ip add 10.12.1.1 255.255.255.0
no sh
int g2
ip add 10.13.1.1 255.255.255.0
no sh
delay 2
int lo 0
ip add 1.1.1.1 255.0.0.0
exit

int r g1,g2
bfd interval 50 min_rx 50 multiplier 3
exit

R2
conf  t
int g1
ip add 10.12.1.2 255.255.255.0
no sh
int g2
ip add 10.24.1.2 255.255.255.0
no sh
exit

int r g1,g2
bfd interval 50 min_rx 50 multiplier 3
exit


R3:
conf  t
int g1
ip add 10.13.1.3 255.255.255.0
no sh
```

```
delay 2
int g2
ip add 10.34.1.3 255.255.255.0
no sh
exit

int r g1,g2
bfd interval 50 min_rx 50 multiplier 3
exit

R4:
conf  t
int g1
ip add 10.24.1.4 255.255.255.0
no sh
delay 2
int g2
ip add 10.34.1.4 255.255.255.0
no sh
exit

int r g1,g2
bfd interval 50 min_rx 50 multiplier 3
exit
====================================
R1
router eigrp r1
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface GigabitEthernet1
   bfd
  exit-af-interface
  !
  af-interface GigabitEthernet2
   bfd
  exit-af-interface
  !
  topology base
   fast-reroute per-prefix all
  exit-af-topology
  network 0.0.0.0
 exit-address-family
!

R2
router eigrp r2
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface GigabitEthernet1
   bfd
  exit-af-interface
  !
  af-interface GigabitEthernet2
   bfd
  exit-af-interface
  !
  topology base
```

```
   fast-reroute per-prefix all
  exit-af-topology
  network 0.0.0.0
 exit-address-family
!

R3
router eigrp r3
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface GigabitEthernet1
   bfd
  exit-af-interface
  !
  af-interface GigabitEthernet2
   bfd
  exit-af-interface
  !
  topology base
   fast-reroute per-prefix all
  exit-af-topology
  network 0.0.0.0
 exit-address-family
!

R4
router eigrp r4
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface GigabitEthernet1
   bfd
  exit-af-interface
  !
  af-interface GigabitEthernet2
   bfd
  exit-af-interface
  !
  topology base
   fast-reroute per-prefix all
  exit-af-topology
  network 0.0.0.0
 exit-address-family
!

sh ip cef
sh ip route 4.0.0.0
============================================================

Hub and Spoke topology with static eigrp neig
------------------------------------------------------------------------------
R1: Hub
R2/R3 : Spokes


R1
conf t
int e0/0
```

```
ip add 1.1.1.1 255.255.255.0
no sh
int lo 0
ip add 10.1.1.1 255.0.0.0
exit

router eigrp 1
neig 1.1.1.2  e0/0
neig 1.1.1.3  e0/0
net 10.0.0.0
net 1.1.1.1 0.0.0.0
exit


R2
conf t
int e0/0
ip add 1.1.1.2 255.255.255.0
no sh
int lo 0
ip add 20.2.2.2 255.0.0.0
exit

router eigrp 1
neig 1.1.1.1  e0/0
net 20.0.0.0
net 1.1.1.2 0.0.0.0
exit

R3
conf t
int e0/0
ip add 1.1.1.3 255.255.255.0
no sh
int lo 0
ip add 30.3.3.3  255.0.0.0
exit

router eigrp 1
neig 1.1.1.1  e0/0
net 30.0.0.0
net 1.1.1.3  0.0.0.0
exit

In a hub & spoke setup ,Hub cannot advertise the routes it learn
from one spoke to another because of split horizan rule.

Split horizan rule: Routes learned on an interface cannot be advertised
                                back on same interface.

To allow spokes to receive routes from other spokes ,disable split horizan rule
on Hub

int e0/0
no ip split horizan eigrp 1
exit

Spokes communicate with each other via hub
To allow direct spoke to spoke communication
```

```
R1
int e0/0
no ip next-hop-self eigrp 1
exit
```