```
Eigrp modes
Classic mode   Composite metric  32
 K1=1 (BW)
K2=0 (Load)
K3=1 (Delay)
K4=0 (Reliability)
K5=0 (Mtu)

K=0-128

Named mode : Wide metric 64 bit
 K1=1 (BW)
K2=0 (Load)
K3=1 (Delay)
K4=0 (Reliability)
K5=0 (Mtu)
K6=0 Energy/jitter



[K1 * bandwidth * 256 + (K2 * bandwidth) / (256 - load)
+ K3 * delay * 256] * [K5 / (reliability + K4)]

[1 * bandwidth * 256 + (0 * bandwidth) / (256 - load)
+ 1 * delay * 256] * [0 / (reliability + 0)]

[1 * bandwidth * 256 + 1 * delay * 256] * [0 / (reliability + 0)]

when K5=0 the equation=1
[1 * bandwidth * 256 + 1 * delay * 256]  * 1

[1 * bandwidth * 256 + 1 * delay * 256]

Metric =256 *( BW+Delay)

Scaled BW =10^7/min BW in the path
Scaled Delay =Sum of delay/10


Processing delay  -Variable
Queing delay       -Variable
Serialization delay  --> Constant
propogation       -Variable



Internal -90     D
External -170 D EX
Summary   5

============================================================
R1:
conf t
int e0/0
Desc conn to R2
ip add 10.12.1.1 255.255.255.0
no sh
int e0/1
Desc conn to LAn
```

```
ip add 192.168.1.1 255.255.255.0
no sh
exit


R2:
conf t
int e0/0
Desc conn to R1
ip add 10.12.1.2 255.255.255.0
no sh
int s2/0
Desc conn to R3
ip add 10.23.1.2 255.255.255.0
no shut
int e0/1
Desc conn to LAn
ip add 192.168.2.2 255.255.255.0
no sh
exit


R3:
conf t
int s2/0
Desc conn to R2
ip add 10.23.1.3 255.255.255.0
no sh
int e0/0
Desc conn to LAn
ip add 192.168.3.3 255.255.255.0
no sh
exit

==================================================
R1
ip add
sh ip int br | ex un
router eigrp 1
no auto
net 10.12.1.1 0.0.0.0
net 192.168.1.1 0.0.0.0
exit

Net/SNM
sh ip route | in C

router eigrp 1
net 10.12.1.0 255.255.255.0
net 192.168.1.0 255.255.255.0
exit

NET/WCM
WCM=GM-SNM
/24
GM   255.255.255.255
SNM=255.255.255.0
WCM   0.0.0.255
```

/16
GM   255.255.255.255
SNM=255.255.0.0
WCM   0.0.255.255

/8
GM   255.255.255.255
SNM=255.0.0.0
WCM   0.0.0.255
/27
GM 255.255.255.255
SM 255.255.255.224
WC 0.0.0.31
/30
GM 255.255.255.255
SM 255.255.255.252
WC 0.0.0.3

10.1.1.0
10.1.2.0
10.1.3.0

net 10.1.0.0 0.0.255.255

Router Eigrp 1
net 0.0.0.0
exit

Router Eigrp 1
net 10.12.1.0 0.0.0.255
net 192.168.1.0

Router Eigrp 1
net 10.0.0.0 0.255.255.255
==========
Hello
Update
Query
Reply
ACk
SIA-Query
SIA-Reply

CM=(307200)

metric= {10^7/min BW + Sum(Delay)/10 } * 256
           = { 10000000/10000 + (1000+1000)/10} * 256
           ={ 1000+ 200} *256
         =1200*256

3,07,200.

R1
router eigrp 1
no auto
passive interface default
no passive interface e0/0

```
net 192.168.1.1 0.0.0.0
net 10.12.1.1 0.0.0.0
exit


R2:
router eigrp 1
net 10.12.1.0 255.255.255.0
exit


sh ip eigrp topology
sh ip eigrp neig
sh ip route eigrp
sh ip protocol
sh ip eigrp interfaces det


Authentication:
-per interface
- classic mode Supports Md5

R1

key chain abc
key 1
key-string cisco123
exit

Int e0/0
ip authentication mode eigrp 1 md5
ip authentication key-chain eigrp 1 abc
exit

R2:

key chain xyz
key 1
key-string cisco123
exit

Int e0/0
ip authentication mode eigrp 1 md5
ip authentication key-chain eigrp 1 xyz
exit


Timers:
R1
int e0/0
ip hello-interval eigrp 1  1
ip hold-time eigrp 1 3
exit


R2#sh ip eigrp nei
EIGRP-IPv4 Neighbors for AS(1)
H   Address                 Interface              Hold    Uptime   SRTT   RTO  Q
Seq
```

			(sec)	(ms)	Cnt	Num
0	10.12.1.1	Et0/0	2	00:03:24	15	100 0 4