

EIGRP Tables:

EIGRP uses different tables for its Routing Operation. Mainly, three types of Tables are used in EIGRP (Enhanced Interior Gateway Routing Protocol). These EIGRP Tables are.

1) Neighbor Table 2) Topology Table and 3) Routing Table

EIGRP Neighbor Table	Lists all directly connected neighbors Next Hop Router Interfaces
EIGRP Topology Table	List all learned Routes from all EIGRP Destination Metric
Global Routing Table	Best routes from EIGRP topology table will be copied to the routing table.

Neighbor Table:

Neighbor table includes all neighbors that is directly connected to router using EIGRP. In simple words, next hop router and the interfaces. EIGRP (Enhanced Interior Gateway Routing Protocol) has a specific Neighbor Table for each Layer 3 protocols. You can see the EIGRP Neighbor Table with “show ip eigrp neighbors” command. In EIGRP Neighbor Table you can see the ip address of the neighbor, the interface you access to the neighbor, the interface uptime etc.

Topology Table:

EIGRP uses this table to store all routes, which it learned from neighbors. It contains a list of all destinations and routes advertised by neighboring routers. The EIGRP Topology table contains everything that EIGRP has learned. It keeps all the Successor and Feasible Successor routes. Means it keeps the best routes and the alternatives routes. You can check EIGRP Topology Table with “show ip eigrp topology” command. Topology Table has backup routes. If the router lost their best route from their routing table, then the topology table provides the backup path as the best path to the routing table.

Routing Table:

EIGRP stores single best (Successor) route for each destination in this table. Router uses this table to forward the packet. There is a separate routing table for each routed protocol. EIGRP Routing Table is the table which keeps the Best Routes to any destinations. This Best Routes are Successors. You can see the EIGRP Routing Table with “show ip route eigrp” command. The best route from the topology table is transferred in the Routing Table.

EIGRP Neighbor Table Explanation:

```
R1#show ip eigrp neighbors
EIGRP-IPv4 Neighbors for AS(1)
H   Address                Interface                Hold Uptime    SRTT   RT0  Q   Seq
   (sec)                   (ms)                  Cnt  Num
1   10.1.13.2                Gi0/1                   10 01:47:19    28   168  0   15
0   10.1.12.2                Gi0/0                   14 01:47:30    30   180  0   20
R1#
```

H (Handle)	Lists the neighbors in the order this router was learned
Address	The IP address of the neighbors
Interface	The interface of the local router on which this Hello packet was received
Hold	The amount of time left before neighbor is considered in "down" status
Uptime	How long the neighbor has been up
SRTT	(Smooth Round Trip Time): The number of milliseconds it takes to send an EIGRP packet to neighbor and receive an acknowledgment packet back
RTO	(Retransmission Timeout): if a multicast has failed, then a unicast is sent to that particular router, the RTO is the time in milliseconds that the router waits for an acknowledgement of that unicast.
Q Cnt	(Q Count): Shows the number of queued EIGRP packets. It is usually 0
Seq Num	The sequence number of the last update EIGRP packet received

EIGRP Topology Table Explanation:

```
R1#show ip eigrp topology
EIGRP-IPv4 Topology Table for AS(1)/ID(4.4.4.1)
Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 172.16.8.0/24, 1 successors, FD is 131072
   via 10.1.12.2 (131072/130816), GigabitEthernet0/0
P 172.30.2.0/24, 1 successors, FD is 3104
   via 10.1.13.2 (3104/2848), GigabitEthernet0/1
P 192.168.2.0/24, 1 successors, FD is 3328
   via 10.1.13.2 (3328/3072), GigabitEthernet0/1
P 10.1.12.0/30, 1 successors, FD is 2816
   via Connected, GigabitEthernet0/0
```

AS	Autonomous System number 1
Codes	Passive is good and Active is bad
Sia Status (Stuck in Active)	EIGRP has not received a reply to a query packet from one of the neighbors within the allowed time about 3 minutes.
1 Successors	The best path In this case only one way to get to the destination
FD is 131072	Feasible Distance: Total distance to get to the destination
131072/130816	First, one is Feasible Distance. The second Value is Advertised Distance

EIGRP Routing Table Explanation:

```
R1#show ip route eigrp
```

```
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR
```

```
Gateway of last resort is not set
```

```
10.0.0.0/8 is variably subnetted, 7 subnets, 2 masks
D    10.1.23.0/30 [90/3072] via 10.1.13.2, 01:51:56, GigabitEthernet0/1
      [90/3072] via 10.1.12.2, 01:51:56, GigabitEthernet0/0
D    10.1.24.0/30 [90/3072] via 10.1.12.2, 01:51:30, GigabitEthernet0/0
D    10.1.35.0/30 [90/3072] via 10.1.13.2, 01:51:55, GigabitEthernet0/1
172.16.0.0/24 is subnetted, 9 subnets
```

D	Shows this is an EIGRP learnt route
10.1.35.0/30	Destination learn network and 30 is subnet mask.
90	90, is the Administrative Distance of EIGRP.
3072	This is the metric, Total distance to get to the destination
10.1.13.2	The neighbor that advertised the route.
01:51:55	Time since the route was learnt.
GigabitE0/1	The outbound interface going towards the destination.