

EIGRP - Enhanced IGRP (Routing Protocol)

(Advanced Distance Vector IP Routing Protocol, a interior gateway protocol - uses a composite metric composed of Bandwidth, Delay, Reliability, and Load)

Cisco Proprietary - classful (subnet mask information is not sent with the routing updates)

administrative distance - Internal 90 / External 170

Networks Updates and Hellos to its neighbors using IP Protocol 88

EIGRP sends hello packets every 5 seconds on high bandwidth links and every 60 seconds on low bandwidth multipoint links.

To change the interval between hello packets:
`ip hello-interval eigrp autonomous-system-number seconds`

On very congested and large networks, the default hold time might not be sufficient time for all routers to receive hello packets from their neighbors. In this case, you may want to increase the hold time.

To change the hold time, use the following command in interface configuration mode:
`ip hold-time eigrp autonomous-system-number seconds`

The hold time is typically three times the hello interval, by default, 15 seconds and 180 seconds.

Topology Database

(Stores all known routes to a destination and the metrics used to calculate the least-cost path)

Can store up to six routes to a destination network (For redundant paths).

A primary route - *active route*
Successor - *passive route or feasible successor.*

Path-cost calculation decisions are made from information contained in the routing table using bandwidth and delay - local and adjacent routers

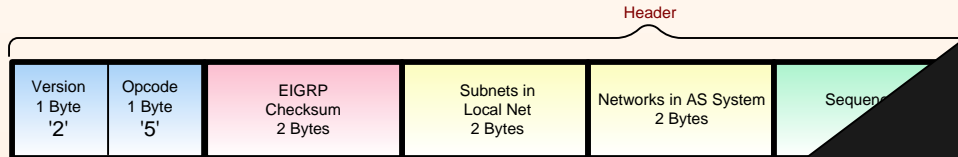
There is one **Neighbor Table** for each protocol. When a neighbor sends a Hello, it advertises its IP address. The **HoldTime** is the amount of time a neighbor must be reachable and operational. In other words, if a neighbor does not send a Hello within the HoldTime, the HoldTime expires, DUAL is informed, and the neighbor is removed from the Neighbor Table.

EIGRP Neighbor

(Only change)

Neighbor

Hold



EIGRP is sent using IP datagrams with IP protocol 88 (EIGRP).

- 0x01=Update
- 0x02=Request
- 0x03=Query
- 0x04=Reply
- 0x05=Hello/Ack
- 0x06=IPX SAP

Route Tagging

Used to distinguish routes.
By defining a different tag.

eigrp log-neighbor-changes

Enable logging of Enhanced IGRP neighbor adjacency changes.

CISCO EIGRP Configuration

```
>router eigrp 3100 <1-65,535> ASN number
> network 172.16.0.0
> network 192.168.0.0 Associate networks with
> redistribute eigrp 5400
> default-metric <number> Ensure proper
> passive-interface S0 Restricts
```

```
sh ip route eigrp
sh ip eigrp neighbors
sh ip eigrp topology
sh ip eigrp traffic
sh ip eigrp
```

Note: EIGRP bandwidth