

## EIGRP (Enhanced Interior Gateway Protocol)

### Important terms used in EIGRP

**Successor:** A route (or routes) selected as the primary route(s) used to transport packets to reach destination. Note that successor entries are kept in the routing table of the router.

**Feasible successor:** A route (or routes) selected as backup route(s) used to transport packets to reach destination. Note that feasible successor entries are kept in the topology table of a router.

**DUAL (Diffusing Update Algorithm):** Enhanced IGRP uses DUAL algorithm to calculate the best route to a destination

### Important Command in EIGRP

1. **Show ip eigrp topology** : To display entries in the EIGRP topology table, use the show ip eigrp topology command in EXEC mode.
2. **show ip eigrp neighbours** : To display the neighbors discovered by EIGRP, use the show ip eigrp neighbors command in EXEC mode. It shows when neighbors become active and inactive. The neighbor parameters displayed include Address, Interface, Holdtime, Uptime, Q, Seq Num, SRTT, and RTO.
3. **show ip route eigrp** : Displays the EIGRP routes installed in the route table.
4. **Show ip eigrp interface:** Use the show ip eigrp interfaces command to determine on which interfaces EIGRP is active, and to find out information about EIGRP relating to those interfaces. The details shown include interfaces on which EIGRP is configured, numbered of directly connected EIGRP neighbours on each interface, Mean SRTT, etc.

### Routing metrics used by EIGRP

**Bandwidth:** This represents the maximum throughput of a link.

**MTU (Maximum Transmission Unit):** This is the maximum message length that is acceptable to all links on the path. The larger MTU means faster transmission of packets.

**Reliability:** This is a measurement of reliability of a network link. It is assigned by the administrator or can be calculated by using protocol statistics.

**Delay:** This is affected by the bandwidth and queuing delay.

**Load:** Load is based among many things, CPU usage, packets processed per sec

Like IGRP, EIGRP uses only bandwidth and delay of the line to determine the best path to a remote network by default.

### Important Features of EIGRP

1. Unlike RIP and IGRP, EIGRP updates are not periodic. EIGRP updates are sent only when there is a topological change in the network.
2. In EIGRP, the router doing the summarization will build a route to null0 for the summarized address. This ensures that the packets that are not destined for any network are routed to null and thus dropped.
3. EIGRP provides the option of disabling route summarization. The command no auto-summary can be used for this purpose. This option is not available in RIP and IGRP.
4. You can summarize routes in EIGRP at any arbitrary bit boundary
5. Supports discontinuous networks.
6. Best path selection using DUAL algorithm.