EIGRP

* EIGRP:- Ehanced interior gateway routing protocol
* Layer 3 protocol
* Protocol no .88
* Multicast address 224.0.0.10
* By default maximum hops =100
* But we can extend upto 255

EIGRP has two AD value

Internal=90

External= 170

* EIGRP uses dual algorithm for metric calculation
* EIGRP protocol is the protocol which support unequal path load balancing.
* By default maximum 4 path but we can extend upto 32

EIGRP has metric weight which used to calculate metric .

by default band width and delay uses for metric calculation

* K1- Bandwidth
* K2- Load
* K3-Delay
* K4- reliability
* K5- MTU

Metric =256\* [(10^7/least bandwidth )+delay from source to destination /10]

EIGRP neighborship criteria -

AS no must match

K weight must match

Subnet must match

EIGRP timer

* Hello time- this is the interval between hello packet by default 5 sec.
* Hold down- this time defines that how long a neighbor can be stored in EIGRP neighbor table if hello packet are not received any more longer by default 15 sec
* CD- Cumlative distance- total metric from source to destination of all path available
* FD- Feasible distance - best/ least metric from source to destination
* RD- reported distance –total metric from neighbor of source to destination

Successor – this is the best path among all the available path will least distance is considered as best path

Feasible successor- A path with second lowest distance (second best path ) is considered as feasible successor

EIGRP also support unequal path load balancing it means that routers , are place inside routing – table with unmatchable metric value in this router forward traffic on all available link with link different share count

The packet types used by EIGRP are:-  
1.Hello- Neighborship is discovered and maintained by Hello Packets.  
2.Acknowledgment - ACK packets are used to acknowledge the receipt of update, query and reply packets. Acknowledgment packets are Unicast.  
3.Update - EIGRP uses Update messages to send Routing information to neighbors. Update packets can be sent to a single neighbor using unicast or to a group of neighbors using multicast.  
4.Query -  Query packets are used when EIGRP router has lost path (Successor) to a certain network and does not have any backup paths (Feasible Successor). Router sends query packets to its neighbors asking them if they have information about this particular network. Query packets are multicast.  
5.Reply -  Reply packets are used in response to the query packets. Reply packets are unicast to the originator of the query.

RTP-reliable transport protocol

* It is not protocol it is a feature of EIGRP
* Cisco proprietary
* To track acknowledgment of EIGRP Packet
* Update /ack
* query
* reply/ reliable

How we configure EIGRP?  
Router(config)# router eigrp 100  
Router(config-router)# network 172.16.1.0 0.0.0.255  
Router(config-router)# network 10.16.1.0 0.0.0.255  
Router(config-router)# no auto-summary

Give some commands to troubleshoot EIGRP?  
#showip route - It shows full Routing Table.  
#show ip route eigrp - It shows only EIGRP routes (routes learned through EIGRP protocol) in the routing table.  
#show ipeigrpneighbors - It shows  EIGRPNeighbor Table.  
#show ipeigrp topology - It shows EIGRP Topology Table.