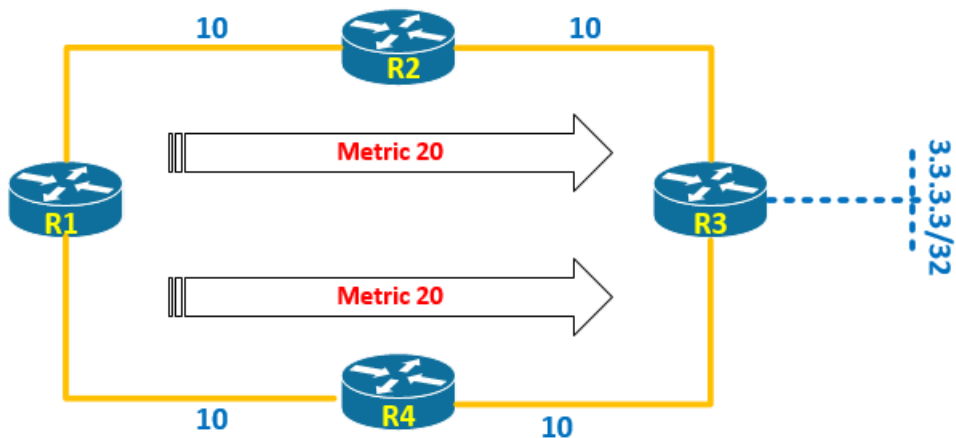


EIGRP Load Balancing:

Every routing protocol supports equal cost path load balancing. In addition, EIGRP also support unequal cost path load balancing. Load balancing is a router's capability to distribute traffic over all of its network ports that are the same metric from the destination address. By default, the Cisco IOS balances between a maximum of four equal-cost paths for IP.

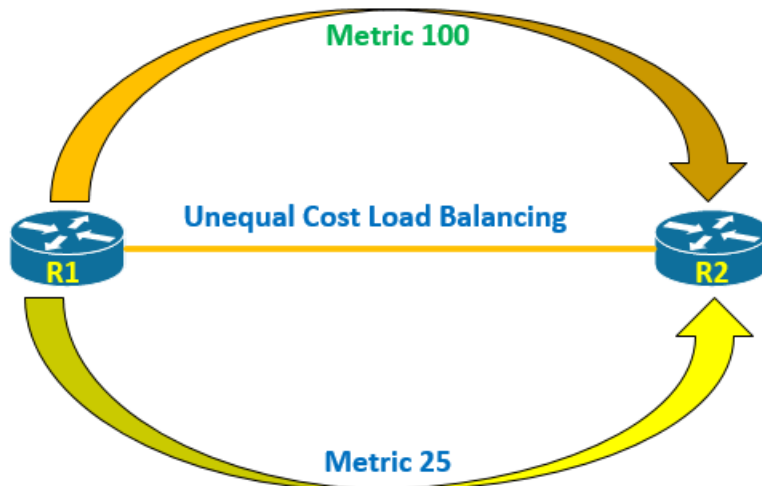
EIGRP Equal Cost:

By default, EIGRP supports equal-cost load balancing over four links. Equal cost means that multiple routes must have the same metric to reach a destination, so that router can choose to load balance across equal cost links. Using **maximum-path** router configuration command, to request up to 16 equally good routes to be kept in the routing table. Set **maximum-path** to 1 to disable load balancing. in situations where same route is learnt from different neighbors and has same metric then both these routes are installed and load balancing is done. Since the metric is same it's known as equal cost load balancing. Equal cost load balancing is done automatically. We can have up to six equal paths for load balancing, the default paths are four.



EIGRP Unequal Cost:

EIGRP can also balance traffic across multiple routes that have different metrics; this is called Unequal-Cost Load Balancing. The degree to which EIGRP performs load balancing is controlled by the variance multiplier router configuration command. The multiplier is a variance value, between 1 and 128, used for load balancing. The default is 1, which means equal-cost load balancing. The multiplier defines the range of metric values that are accepted for load balancing. Variance value can be used to configure load balancing on Cisco EIGRP using several routes with unequal metric value. If metrics are different then load balancing will not occur automatically. Thus a command called “variance” needs to be used. This command makes EIGRP load balance even on unequal metrics. The variance used is a multiplier to the FD (Feasible Distance) of successor. The default variance value is 1, which means equal cost load balancing.



Variance:

Variance is the Feasible distance (FD) for a route multiplied by the EIGRP variance multiplier. Dividing the feasible successor metric by the successor route metric provides the variance multiplier. The variance multiplier is whole number & any remainders should always round up.

