

Lab Report No: 08

Lab Report Name: Introduction to Enhanced Interior Gate Way Routing Protocol (EIGRP) on packet tracer.

Objectives:

- Here are the basic set of commands that we can apply on router CLI mode in order to apply EIGRP on router.
- This section describes some details about Cisco's EIGRP implementation.

Description:**Some question on EIGRP:****How much bandwidth and processor resources does EIGRP use?**

The bandwidth utilization issue has been addressed by implementing partial and incremental updates. Therefore, only when a topology change occurs does routing information get sent. Regarding processor utilization, the feasible successor technology greatly reduces the total processor utilization of an AS by requiring only the routers that were affected by a topology change to perform the route recomputation. Furthermore, the route recomputation only occurs for routes that were affected. Only those data structures are accessed and used. This greatly reduces search time in complex data structures.

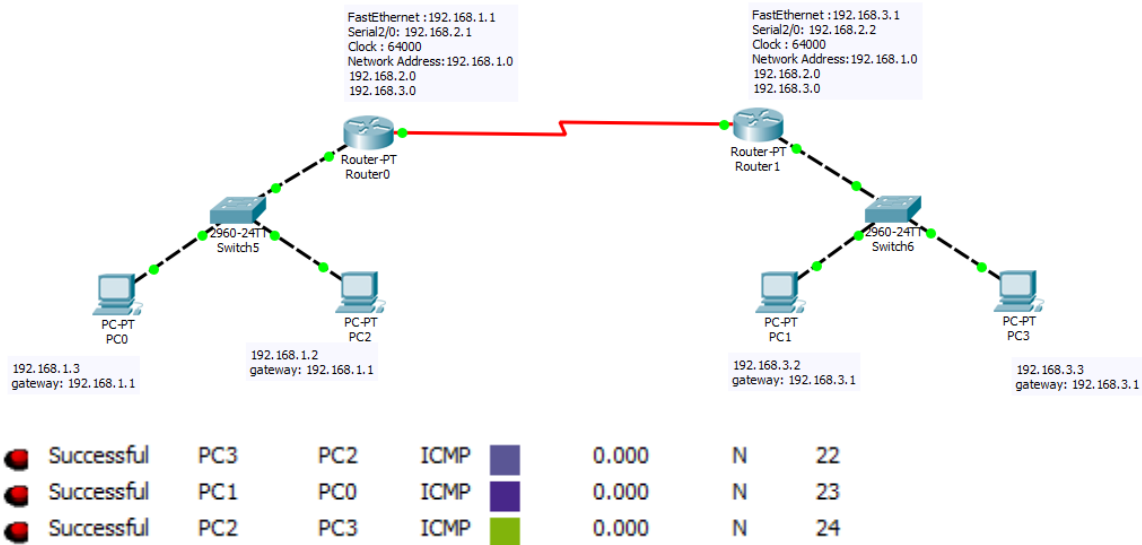
Does IP-EIGRP support aggregation and variable length subnet masks?

Yes it does. IP-EIGRP performs route aggregation the same way IGRP does. That is, subnets of an IP network are not advertised over another IP network. The subnet routes are summarized into a single network number aggregate. In addition, IP-EIGRP will allow aggregation on any bit boundary in an IP address and can be configured at network interface granularity.

Does EIGRP support areas?

No, a single EIGRP process is analogous to an area of a link-state protocol. However, within the process, information can be filtered and aggregated at any interface boundary. If one wants to bound the propagation of routing information, multiple routing processes can be configured to achieve a hierarchy. Since DUAL itself limits route propagation, multiple routing processes are typically used to define organizational boundaries.

Now, we are going to apply EIGRP on the following topology.



CLI command for EIGRP:

Router(config)# router eigrp 100	Turns on the EIGRP process. 100 is the autonomous system number, which can be a number between 1 and 65,535.
	All routers in the same autonomous system must use the same autonomous system number.
Router(config-router)# network 10.0.0.0	Specifies which network to advertise in EIGRP.
Router(config-if)# bandwidth x	Sets the bandwidth of this interface to <i>x</i> kilobits to allow EIGRP to make a better metric calculation.
	TIP: The bandwidth command is used for metric calculations only. It does not change interface performance.
Router(config-router)# no network 10.0.0.0	Removes the network from the EIGRP process.

Router#show ip eigrp neighbors	Displays the neighbor table.
Router#show ip eigrp neighbors detail	Displays a detailed neighbor table.
	TIP: The show ip eigrp neighbors detail command verifies whether a neighbor is configured as a stub router.
Router#show ip eigrp interfaces	Shows information for each interface.
Router#show ip eigrp interfaces serial 0/0	Shows information for a specific interface.
Router#show ip eigrp interfaces 100	Shows information for interfaces running process 100.
Router#show ip eigrp topology	Displays the topology table.
	TIP: The show ip eigrp topology command shows you where your feasible successors are.
Router#show ip eigrp traffic	Shows the number and type of packets sent and received.
Router#show ip route eigrp	Shows a routing table with only EIGRP entries.

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Router(config)#router eigrp 10
Router(config-router)#network 192.168.1.0
Router(config-router)#network 192.168.2.0
Router(config-router)#exit
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SO here the EIGRP is applied here in packet tracer.

Conclusion: EIGRP is an enhanced version of IGRP. The same distance vector technology found in IGRP is also used in EIGRP, and the underlying distance information remains unchanged.