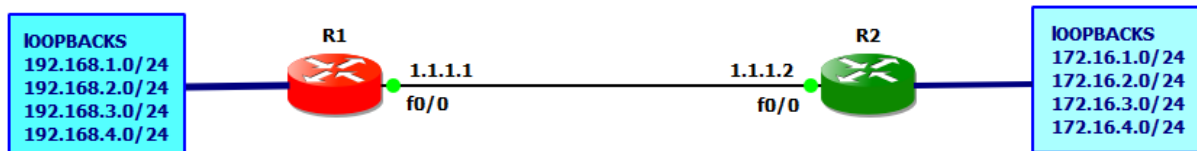


EIGRP Summarization:

Auto-Summarization:

Auto Summarization is a feature, which allows Routing Protocols to summarize its routes to their classful networks automatically. By default, EIGRP has auto summary feature enabled. Because of this, routes are summarized to classful address at network boundaries in the routing updates. The Auto-Summarization can be disabled with a command of no auto-summary from the router prompt.



Commands	Description
R1(config)#router eigrp 1	Enter EIGRP mode
R1(config-router)#network 0.0.0.0	Advertise all networks
R1(config-router)#no auto-summary	Disable auto summary feature
R2(config)#router eigrp 1	Enter EIGRP mode
R2(config-router)#network 0.0.0.0	Advertise all network
R2(config-router)#no auto-summary	Disable auto summary feature
R1#show ip route eigrp	View routing table for EIGRP all four networks of 172 present in table
R2(config)#router eigrp 1	Enter EIGRP mode
R2(config-router)#auto-summary	Enable auto summary feature
R1#show ip route eigrp	Again, view routing table for EIGRP Only summary route 172.16.0.0/16

Manual Summarization:

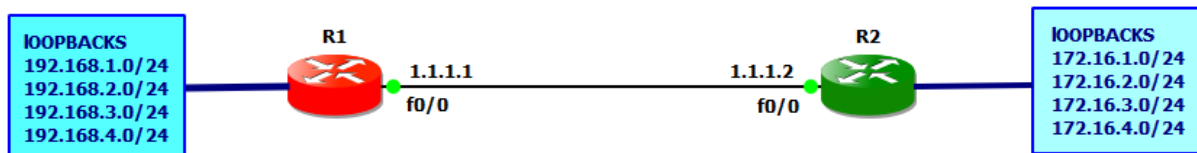
The manual summarization is a process of creating a summary route that will be used to represent multiple routes and can be used to reduce the sizes of routing tables in a network. Manual summarization is configured differently on different protocols.

Advantages of Summarization:

Saves Memory	Routing tables will be smaller which reduces memory requirements.
Saves Bandwidth	There are less routes to advertise so we save some bandwidth.
Saves CPU Cycles	Less packets to process and smaller routing tables to work on.
Stability	Prevents routing table instability due to flapping networks.

EIGRP Summarization:

By default, EIGRP has auto summary feature enabled. Because of this, EIGRP automatically summarizes networks at the classful boundary. One of the advantages of EIGRP over other routing protocol like, OSPF is that manual summarization can be done on any router within a network. A single route can be used to represent multiple routes, which reduces the size of routing tables in a network. Manual summarization is configured on a per-interface basis on EIGRP. The syntax of the command is (config-if) ip summary-address eigrp ASN SUMMARY_ADDRESS SUBNET_MASK



Commands	Description
R1(config)#router eigrp 1 R1(config-router)#network 0.0.0.0 R1(config-router)#no auto-summary	Enter EIGRP mode Advertise all networks Disable auto summary feature
R2(config)#router eigrp 1 R2(config-router)#network 1.0.0.0 R2(config-router)#no auto-summary	Enter EIGRP mode Advertise only 1 network Disable auto summary feature
R2#show ip route eigrp	View routing table for EIGRP all four networks of 192.168. present
R1(config)#interface f0/0 R1(config-if)#ip summary-address eigrp 1 192.168.0.0 255.255.248.0	Enter interface mode facing R2 Enter summary route to send
R2#show ip route eigrp	Check again routing table only summary route 192.168.0.0/21 only
R1#show ip route eigrp	Checking summary route in R1 192.168.0.0/21 is a summary, Null0
R1(config)#interface f0/0 R1(config-if)#no ip summary-address eigrp 1 192.168.0.0 255.255.248.0 255 R1(config-if)#ip summary-address eigrp 1 192.168.0.0 255.255.248.0 255	Enter interface mode of R1 Remove the summary route configure before Set summary route again with AD 255 to remove Null0 in R1 table