
Networkforyou
Welcome
To
Network for you
EIGRP Stubs
Networkforyou

EIGRP Stubs:

- Stub routing is one way to limit queries.
- Stub routers do not advertise any EIGRP-learned routes from one neighbor to other EIGRP neighbors.
- EIGRP stub routing feature improves network stability and reduces resource utilization.
- When EIGRP stub is configured without any type, by default is connected + summary.
- EIGRP Stubs can be extremely useful when building a scalable EIGRP Routed network.

Keyword	Description	Advertises	Receives
Receive-only	Router only receives and advertises nothing	-	All
Connected	Router only advertises connected networks	Connected	All
Static	Router only advertises statics routes	Static	All
Summary	Router only advertises summary routes	Summary	All
Redistribute	Router only advertises redistributed routes	External	All

Receive-Only:

- When this keyword is used, the stub router does not advertise any prefixes.
- Instead, it only receives, or accepts, prefixes advertised to it by its neighbor.

Connected:

- The connected keyword configures the stub router to advertise connected subnets.
- These are subnets on any interface directly connected to the router.

Static:

- The static keyword configures the stub router to advertise static routes.

Summary:

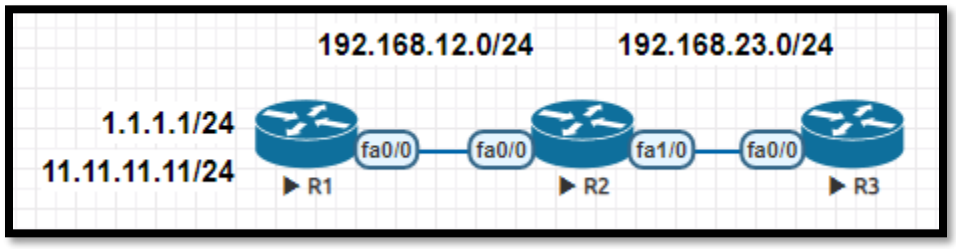
- The summary keyword configures the stub router to advertise summary routes.
- When the **eigrp stub** is used, the stub router advertises **all connected subnets and all summary routes.**
- To verify what type of stub routes your router is advertising use the **show ip protocols** command.

Leak-Map:

- With EIGRP Stub leak-map you can allow some of the routes to be advertised by using summary routes.

- The leak-map just allows you to advertise a specific prefix within the range of a summary advertisement. Configures a router as a stub router that advertises only route prefixes that match a specific ip prefix-list.

Lab Time:



R1 Configuration	R2 Configuration	R3 Configuration
en config t hostname R1 int f0/0 ip add 192.168.12.1 255.255.255.0 no sh int lo 0 ip add 1.1.1.1 255.255.255.0 int lo 1 ip add 11.11.11.11 255.255.255.0 router eigrp 1 network 0.0.0.0 no auto-summary ---------- Check for All Router R1, R2 and R3 #show ip route eigrp Let Configure Stub receive-only router eigrp 1 eigrp stub receive-only	en config t hostname R2 int f0/0 ip add 192.168.12.2 255.255.255.0 no sh int f1/0 ip add 192.168.23.2 255.255.255.0 no sh router eigrp 1 network 0.0.0.0 no auto-summary	en config t hostname R3 int f0/0 ip add 192.168.23.3 255.255.255.0 no sh router eigrp 1 network 0.0.0.0 no auto-summary

Output without Eigrp Stub

```
R3#sh ip route  eigrp
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      1.0.0.0/24 is subnetted, 1 subnets
D        1.1.1.0 [90/158720] via 192.168.23.2, 00:02:52, FastEthernet0/0
      11.0.0.0/24 is subnetted, 1 subnets
D        11.11.11.0 [90/158720] via 192.168.23.2, 00:02:52, FastEthernet0/0
D     192.168.12.0/24 [90/30720] via 192.168.23.2, 00:02:52, FastEthernet0/0
```

Output after applying EIGRP Stub receive-only (Now R1 is Receiving only not giving his routes)

```
R3#sh ip route  eigrp
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set     Now that Route is not there

D     192.168.12.0/24 [90/30720] via 192.168.23.2, 00:06:10, FastEthernet0/0
```

Now let me remove EIGRP Stub receive-only from R1
router eigrp 1
no eigrp stub receive-only

```
R2(config)#router eigrp 1
R2(config-router)#eigrp stub connected
R3#show ip route eigrp
R2(config)#router eigrp 1
R2(config-router)#no eigrp stub connected
R2(config)#router eigrp 1
R2(config-router)#eigrp stub static
R2(config-router)#redistribute static
R2(config)#ip route 1.1.1.1 255.255.255.255 192.168.12.1
R3#show ip route eigrp
R2(config)#router eigrp 1
R2(config-router)#no eigrp stub static
R2(config-router)#no redistribute static
R2(config)#no ip route 1.1.1.1 255.255.255.255 192.168.12.1
R2(config)#router eigrp 1
R2(config-router)#eigrp stub summary
R2(config-if)#interface f1/0
R2(config-if)#ip summary-address eigrp 1 1.1.0.0 255.255.0.0
R3#show ip route eigrp
R2(config)#router eigrp 1
R2(config-router)#no eigrp stub summary
```


EIGRP Leak Map Configuration

```
R2(config)#ip access-list standard test1
R2(config-std-nacl)#permit 1.1.1.0 0.0.0.255
R2(config)#route-map abc
R2(config-route-map)#match ip address test1
R2(config)#router eigrp 1
R2(config-router)#eigrp stub
R2(config-router)#eigrp stub leak-map abc
R3#show ip route eigrp
```

EIGRP Stub:

This is the default stub configuration if additional syntax is not specified, the default stub will send both connected and summary routes and receive all routes from upstream neighbors.

EIGRP Stub Connected:

Configures a router as a stub router that advertises only directly connected routes. This type of stub can be used in conjecture with the other stub types excluding receive-only.

EIGRP Stub Leak-Map:

Configures a router as a stub router that advertises only route prefixes that match a specific ip prefix-list.

EIGRP Stub Receive-Only:

Configures an EIGRP router as a stub router that will ONLY receive routes from upstream and not advertise any routes to its neighboring routers. When using this stub type; static routes must be configured upstream to reach networks within this stub area.

EIGRP Stub Redistribute:

Configures an EIGRP router as a stub router that will only advertise redistributed routes. This type of stub can be used in conjecture with the other stub types excluding receive-only.

EIGRP Stub Static:

Configures an EIGRP router as a stub router that will only advertise static routes. This type of stub can be used in conjecture with the other stub types excluding receive-only.

EIGRP Stub Summary:

Configures an EIGRP router as a stub router that will only advertise summary routes. This type of stub can be used in conjecture with the other stub types excluding receive-only.