CCNP BSCI Notes - Scalable EIGRP

Configuring EIGRP Enabling EIGRP:

```
Router(config)# router eigrp <ASN>
```

Adding a network to EIGRP:

```
Router(config-router)# network <network> [wildcard mask]
```

All interfaces belonging to the specified network will become EIGRP capable and advertised via EIGRP. EIGRP will summarize to classful boundaries by default. An interface can be set to "passive" to prevent advertisement:


```
Router(config-router)# passive-interface <interface>
```

] If an interface is included in the network configuration but set to passive, it will still be included in EIGRP advertisements. If an interface is not included in an EIGRP network, it will not be advertised in EIGRP. **Summarization** Summarization is key to preventing looping route queries (which leads to SIA condition). Disable automatic summarization to classful addresses:


```
Router(config-router)# no auto-summary
```

] Configure manual summarization on an interface:

```
Router(config-if)# ip summary-address eigrp <ASN> <network> <subnet mas
```

Stub Routers Stub routers participate minimally in EIGRP, which reduces utilization of memory and CPU on the router. Often used in lieu of static routes in a hub-spoke topology to provide a standard configuration for all spoke routers.

```
Router(config-router)# eigrp stub [options]
```

         receive-only - Prevents the router from advertising any routes   connected - Permits advertisement of connected networks (default)   static - Permits redistribution of static routes   summary - Advertises summary routes

(default) **Load Balancing** EIGRP automatically load balances across equal-cost links. Unequal-cost load balancing is enabled by specifying a variance. Feasible successors with a feasible distance less than (best path FD * variance) will be proportionally utilized.


```
Router(config-router)# variance <multiplier>
```

Variance can be between 1 and 128; default is 1 (equal-cost only).

EIGRP Tuning

EIGRP timers do not have to match for two routers to form an adjacency. Default hello timer:
         High-bandwidth links (>= T1): 5 seconds
         Low-bandwidth links (< T1): 60 seconds Hello timers are modified per interface:

```
Router(config-if)# ip hello-interval eigrp <ASN> <seconds>
```

Default hold timer = 3 * Reconfiguring the hold timer is done in seconds, not as a multiplier: &#

; Router(config

Authentication Authentication types: Plain-text password (insecure)   MD5 hash Configuring MD5 authentication on an interface:

```
Router(config-if)# ip authentication mode eigrp <ASN> md5
Router(config-if)# ip authentication key-chain eigrp <ASN> <chain name>
Router(config)# key chain <chain name>
Router(config-keychain)# key 1
Router(config-keychain-key)# key-string <password>
```

Bandwidth Manipulation Bandwidth of an interface can be administratively configured:

```
Router(config-if)# bandwidth <kilobits>
```

The bandwidth setting will not affect the actual interface speed, only the value used in metric calculation. This is

useful for
serial
interfaces
which
connect to
a DSU
operating
at a slower
speed.
EIGRP
assumes
all virtual
circuits on
an
interface
receive an
equal
share of
the total
bandwidth.
 By
default,
EIGRP
will use no
more than
50% of an
interface's
bandwidth.
This can
be
adjusted as
such:
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Monitoring   show ip eigrp neighbors   show ip eigrp topology   show ip eigrp traffic   show ip eigrp interfaces   show ip route eigrp **Debugging**   debug eigrp packet   debug ip eigrp neighbors   debug ip eigrp   debug ip eigrp summary