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**Welcome  
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Network for you  
EIGRP Troubleshooting**



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## EIGRP Troubleshooting:

There are a number of items that cause problems with EIGRP neighbor adjacencies:

- **Uncommon subnet:** EIGRP neighbors with IP addresses that are not in the same subnet.
- **K value mismatch:** By default bandwidth and delay are enabled for the metric calculation. We can enable load and reliability as well but we have to do it on all EIGRP routers.
- **AS mismatch:** The autonomous system number has to match on both EIGRP routers in order to form a neighbor adjacency.
- **Layer 2 issues:** EIGRP works on layer 3 of the OSI-model. If layer 1 and 2 are not working properly we'll have issues with forming a neighbor adjacency.
- **Access-list issues:** It's possible that someone created an access-list that filters out multicast traffic. EIGRP by default uses 224.0.0.10 to communicate with other EIGRP neighbors.
- **NBMA:** Non Broadcast Multi Access networks like frame-relay will not allow broadcast or multicast traffic by default. This can prevent EIGRP from forming EIGRP neighbor adjacencies.
- EIGRP uses IP protocol 88 & uses multicast address 224.0.0.10 for hellos & routing updates.
- Troubleshooting EIGRP is not so complex if knowing the most common causes of EIGRP issues.
- In EIGRP, Neighbor must be configured with the **same EIGRP AS number.**
- **K-Values must match on EIGRP neighbors.**
- EIGRP Authentication must be properly applied.
- In Dynamic Protocol Enhanced Interior Gateway Routing Protocol Physical Link Reachability.
- EIGRP Hold time must be greater than Hello interval.
- Check for **Misconfigured Route-Filtering Technologies ACLs , Route-Maps , Prefix-Lists.**
- **Mismatched autonomous system numbers** - Both routers need to be using the same AS No.
- Network statement must identify IP address of interface want to include in EIGRP process.
- **The passive interface feature** suppresses the sending and receiving of hello packets.
- **An Access Control List** may be denying packets to the EIGRP multicast address 224.0.0.10.
- **Timers do not have to match**, if not configured correctly, neighbor adjacencies could flap.
- Someone configured a distribute-list so EIGRP routing information is being filtered.
- **Split-horizon** is preventing advertisement of dynamic Protocol EIGRP routing information.
- **The Redistribution** has been configured but information from EIGRP is not being used.

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## EIGRP Troubleshooting Commands

```
R1#show ip eigrp neighbors
R1#show ip interface brief
R1#show ip protocols
R1#debug eigrp packets
R1#show ip eigrp interfaces
R1#show run | section router eigrp
R1#show run interface ethernet0/0
R1#show key chain
R1#show ip eigrp interfaces detail ethernet 0/0
R1#show access-lists
R1#show ip eigrp topology
R1#show ip eigrp topology all-links
R1#show ip eigrp neighbors detail
R1#show ip eigrp interfaces
R1#show ip route eigrp
R1#show ip protocols | include filter
R1#show ip route
R1#debug ip eigrp neighbors
R1#debug ip eigrp summary
R1#debug ip eigrp
R1#show ip eigrp topology active
```

## Hints for EIGRP Troubleshooting

- Make sure same AS number is in use.
- Make sure EIGRP neighbors on the same subnet.
- Make sure same IP subnets on both sides.
- Make sure there is no mismatch mask between neighbors.
- Make sure same K value is in use.
- Make sure there is no access-list blocking the communication.

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