Cisco – Troubleshooting EIGRP

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Troubleshooting EIGRP

Introduction

This document provides troubleshooting information for common problems with Enhanced Interior Gateway Routing Protocol (EIGRP). To see more information, or to go to the next flowchart, click the command boxes in red.

If you have the output of a **show tech−support** or **show ip eigrp topology** *x.x.x.x* command from your Cisco device, you can use to display potential issues and fixes. To use , you must be a registered user, be logged in, and have JavaScript enabled. You can use Output Interpreter to display potential issues and fixes. To use Output Interpreter, you must be a registered user, be logged in, and have JavaScript enabled.

Troubleshooting Flowchart

```
        ┌─────────┐
        │  Main   │
        └─────────┘
             │
             ▼
     ┌────────────────┐
     │ Which symptom  │
     │ best describes │
     │ your problem?  │
     └────────────────┘
             │
             ▼
┌──────────────────────────────────┐        ┌──────────────────────┐
│ Local EIGRP router not establishing EIGRP │───────▶│ EIGRP Neighbor Check │
│ neighbors with neighboring router │        └──────────────────────┘
└──────────────────────────────────┘
             │
             ▼
┌──────────────────────────────────┐        ┌──────────────────────┐
│ Routes (static/ dynamic) not being │───────▶│ EIGRP Redistribution │
│ redistributed into EIGRP          │        │       Check          │
└──────────────────────────────────┘        └──────────────────────┘
             │
             ▼
┌──────────────────────────────────┐        ┌──────────────────────┐
│ Routes missing from routing table │───────▶│ EIGRP Route Check    │
│ (show ip route x.x.x.x command displays │  └──────────────────────┘
│            nothing)               │
└──────────────────────────────────┘
             │
             ▼
┌──────────────────────────────────┐        ┌──────────────────────────────────┐
│ Receiving "Not on Common Subnet"  │───────▶│ For more information, see What Do EIGRP "Not On │
│            message                │        │ Common Subnet" Messages          │
└──────────────────────────────────┘        │              Mean?               │
             │                               └──────────────────────────────────┘
             ▼
┌──────────────────────────────────┐        ┌──────────────────────────────────┐
│       Variance not working        │───────▶│ For more information on variance, see How Does │
└──────────────────────────────────┘        │ Unequal Cost Path Load Balancing │
             │                               │ (Variance) Work in IGRP and EIGRP? If this doesn't │
             │                               │ help solve the problem, proceed to open a case with │
             │                               │              the TAC.            │
             ▼                               └──────────────────────────────────┘
┌──────────────────────────────────┐
│ Seeing routes Stuck In Active (SIA) │
└──────────────────────────────────┘        ┌──────────────────────────────────┐
                                             │ It is important to understand what a SIA route is │
                                             │ and what causes it. Please see Enhanced Interior │
                                             │ Gateway Routing Protocol for detailed information │
                                             │ and suggestions for troubleshooting the cause. │
                                             │ If you continue to have problems, please open a │
                                             │         case with the TAC.       │
                                             └──────────────────────────────────┘
```

Tools Information

For additional resources, refer to Cisco TAC Tools for Routing Protocol Technologies.

Related Information

- **IP Routing Top Issues**
- **EIGRP Support Page**
- **More EIGRP Technical Tips**

Cisco – Troubleshooting EIGRP

Troubleshooting EIGRP: Neighbor Check

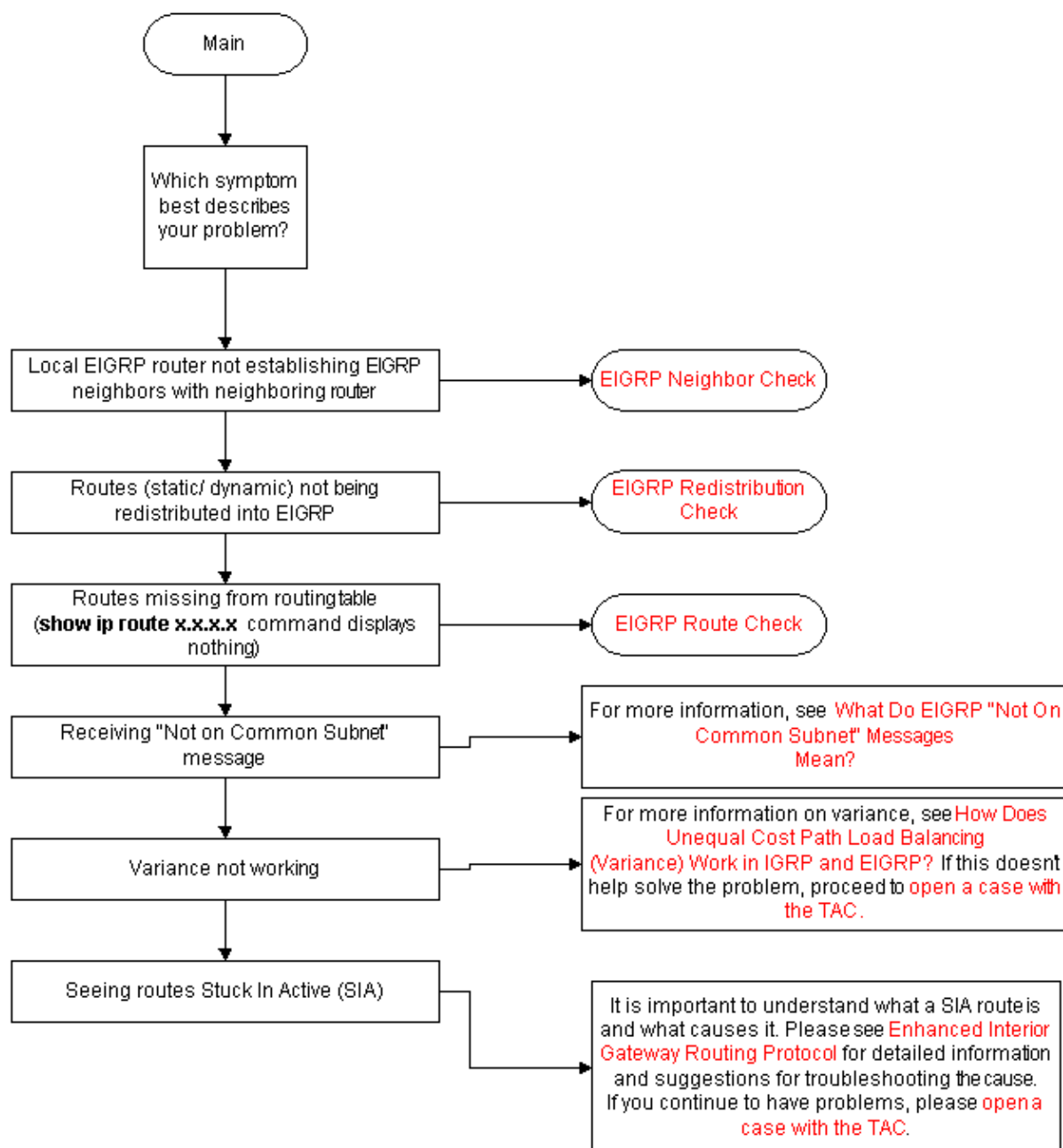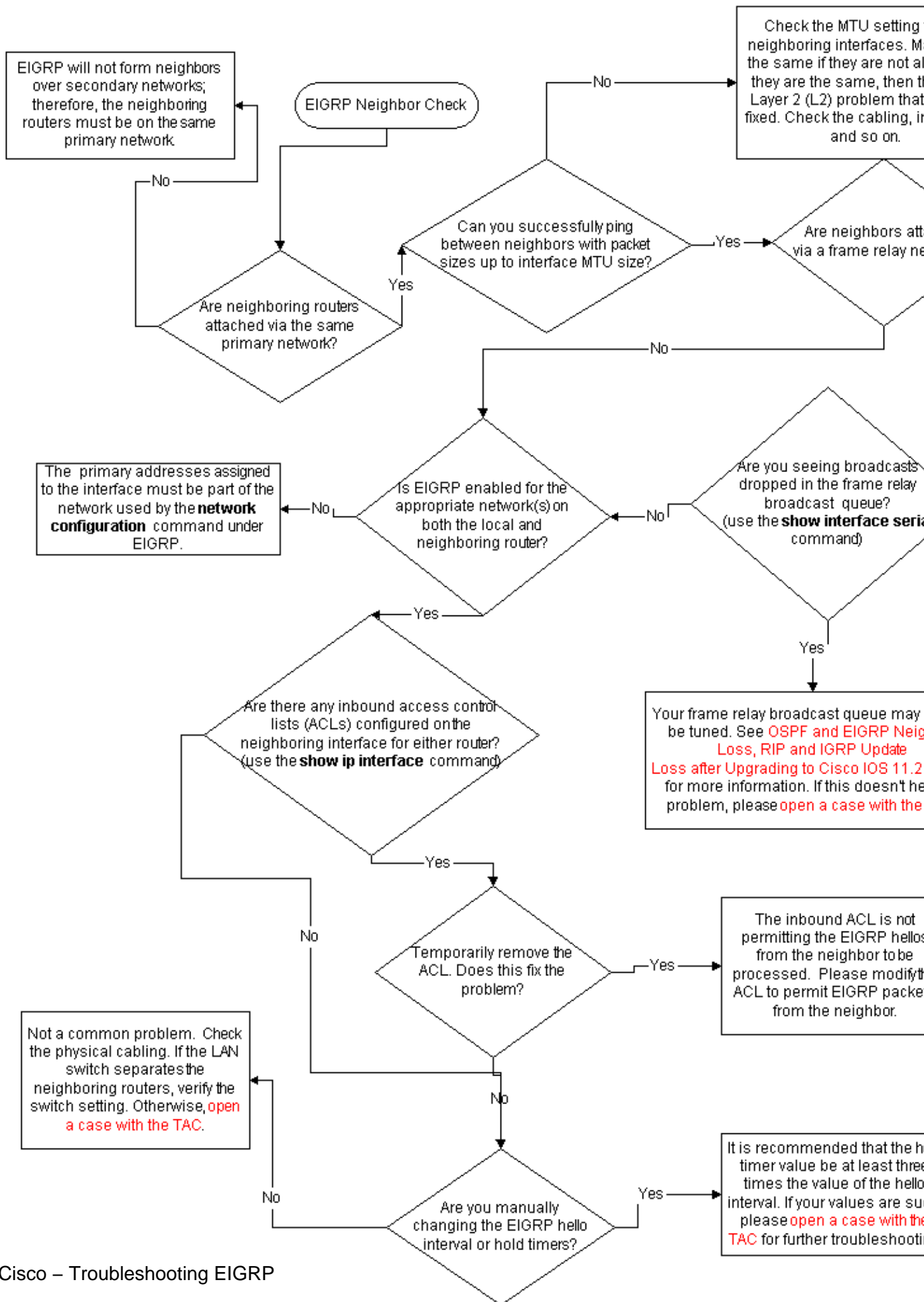## Introduction

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If you have the output of a **show interface serial**, **show tech−support**, **show ip eigrp neighbor**, or **show ip eigrp topology** *x.x.x.x* command from your Cisco device, you can use to display potential issues and fixes. To use , you must be a registered user, be logged in, and have JavaScript enabled. You can use Output Interpreter to display potential issues and fixes. To use Output Interpreter, you must be a registered user, be logged in, and have JavaScript enabled.

Troubleshooting Flowchart

EIGRP Neighbor Check

EIGRP will not form neighbors over secondary networks; therefore, the neighboring routers must be on the same primary network.

No ← Are neighboring routers attached via the same primary network?

Yes → Can you successfully ping between neighbors with packet sizes up to interface MTU size?

No → Check the MTU setting [...] neighboring interfaces. M[...] the same if they are not al[...] they are the same, then th[...] Layer 2 (L2) problem that [...] fixed. Check the cabling, i[...] and so on.

Yes → Are neighbors att[...] via a frame relay ne[...]

No → Is EIGRP enabled for the appropriate network(s) on both the local and neighboring router?

The primary addresses assigned to the interface must be part of the network used by the **network configuration** command under EIGRP.

No ← Is EIGRP enabled for the appropriate network(s) on both the local and neighboring router?

No → Are you seeing broadcast[...] dropped in the frame relay broadcast queue? (use the **show interface seria**[...] command)

Yes → Your frame relay broadcast queue may [...] be tuned. See OSPF and EIGRP Neig[...] Loss, RIP and IGRP Update Loss after Upgrading to Cisco IOS 11.2 [...] for more information. If this doesn't he[...] problem, please open a case with the [...]

Yes ↓ Are there any inbound access control lists (ACLs) configured on the neighboring interface for either router? (use the **show ip interface** command)

Yes → Temporarily remove the ACL. Does this fix the problem?

Yes → The inbound ACL is not permitting the EIGRP hellos from the neighbor to be processed. Please modify th[...] ACL to permit EIGRP packe[...] from the neighbor.

No ↓

No → Not a common problem. Check the physical cabling. If the LAN switch separates the neighboring routers, verify the switch setting. Otherwise, open a case with the TAC.

No → Are you manually changing the EIGRP hello interval or hold timers?

Yes → It is recommended that the h[...] timer value be at least three[...] times the value of the hello[...] interval. If your values are su[...] please open a case with the [...] TAC for further troubleshooti[...]

Cisco – Troubleshooting EIGRP

Tools Information

For additional resources, refer to Cisco TAC Tools for Routing Protocol Technologies.

Related Information

- **IP Routing Top Issues**
- **EIGRP Support Page**
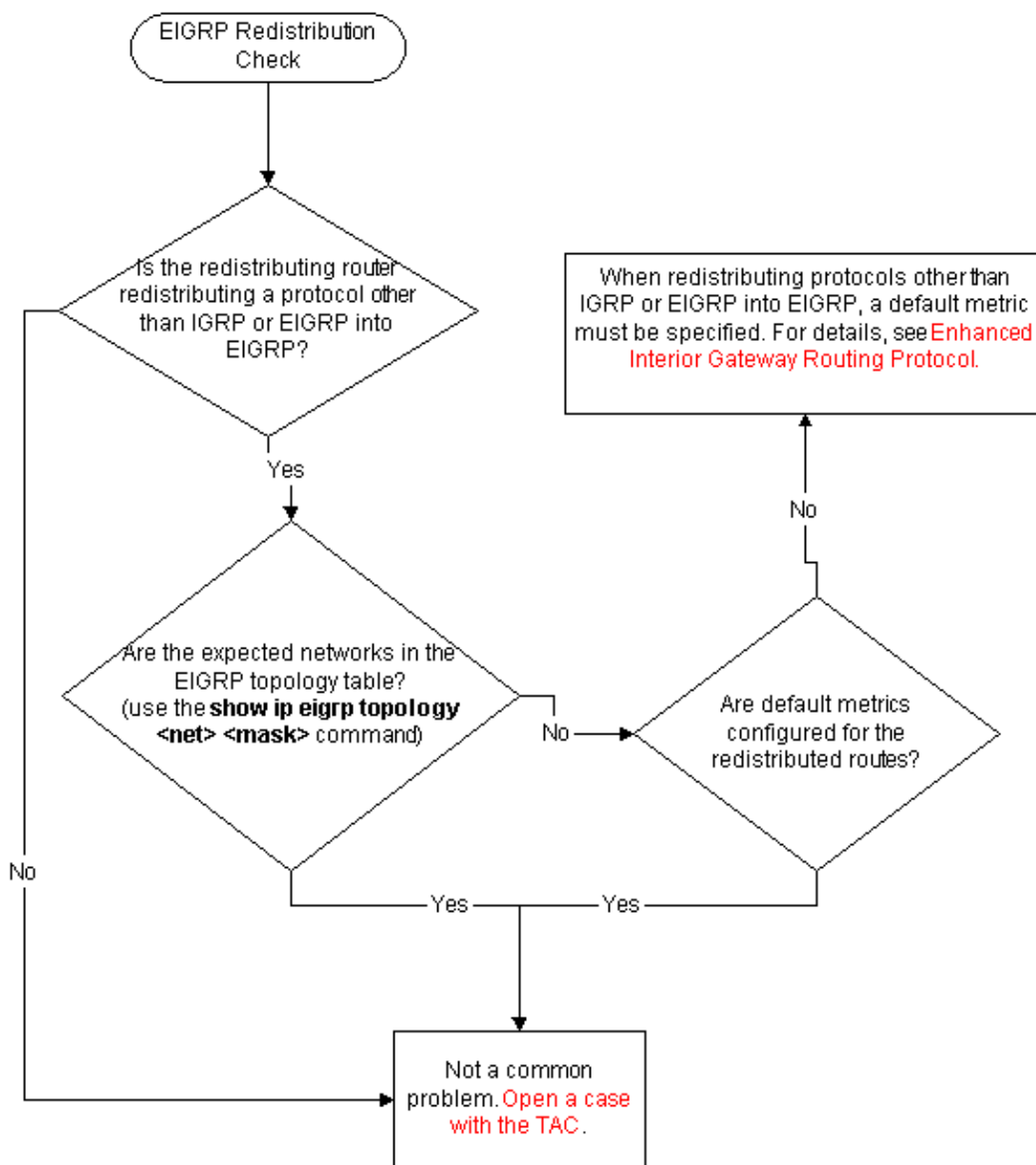- **More EIGRP Technical Tips**

Troubleshooting EIGRP: Redistribution Check

Introduction

This document provides troubleshooting information for common problems with Enhanced Interior Gateway Routing Protocol (EIGRP). To see more information, or to go to the next flowchart, click the command boxes in red.

If you have the output of a **show ip eigrp topology** *x.x.x.x* command from your Cisco device, you can use to display potential issues and fixes. To use , you must be a registered user, be logged in, and have JavaScript enabled. You can use Output Interpreter to display potential issues and fixes. To use Output Interpreter, you must be a registered user, be logged in, and have JavaScript enabled.

Troubleshooting Flowchart

Tools Information

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Related Information

- **IP Routing Top Issues**
- **EIGRP Support Page**
- **More EIGRP Technical Tips**

Cisco – Troubleshooting EIGRP

Troubleshooting EIGRP: Route Check

Introduction
Troubleshooting Flowchart
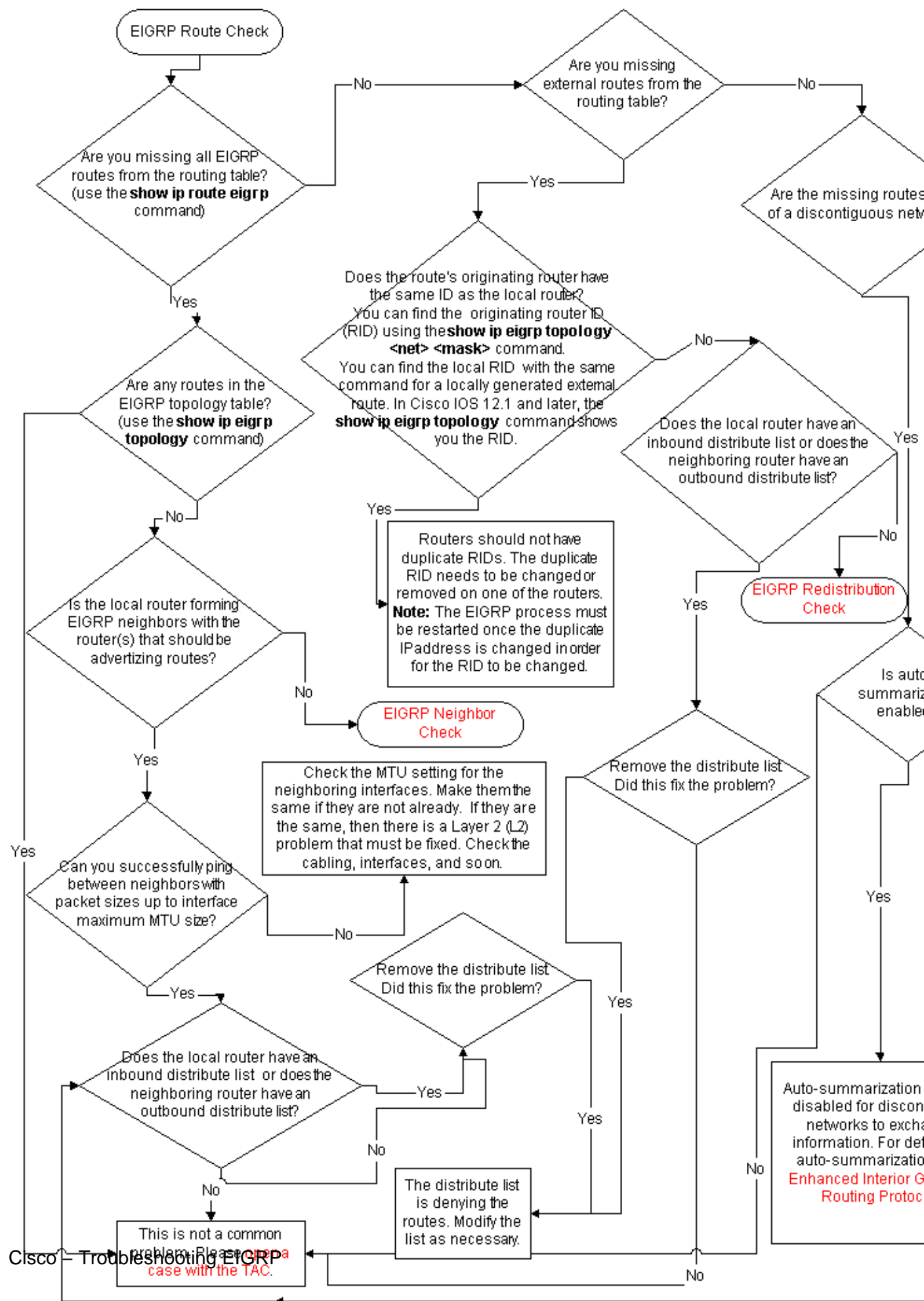**Tools Information**
Related Information

Introduction

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Troubleshooting Flowchart

EIGRP Route Check

Are you missing all EIGRP routes from the routing table? (use the **show ip route eigrp** command)

— No →

Are you missing external routes from the routing table?

— No →

Are the missing routes of a discontiguous net...

Yes ↓

Does the route's originating router have the same ID as the local router? You can find the originating router ID (RID) using the **show ip eigrp topology <net> <mask>** command. You can find the local RID with the same command for a locally generated external route. In Cisco IOS 12.1 and later, the **show ip eigrp topology** command shows you the RID.

— No →

Does the local router have an inbound distribute list or does the neighboring router have an outbound distribute list?

Yes ↓ / No →

EIGRP Redistribution Check

Yes ↓

Are any routes in the EIGRP topology table? (use the **show ip eigrp topology** command)

— No ↓

Yes →

Routers should not have duplicate RIDs. The duplicate RID needs to be changed or removed on one of the routers.
Note: The EIGRP process must be restarted once the duplicate IP address is changed in order for the RID to be changed.

Is the local router forming EIGRP neighbors with the router(s) that should be advertizing routes?

— No → EIGRP Neighbor Check

Yes ↓

Is auto summariz... enable...

Check the MTU setting for the neighboring interfaces. Make them the same if they are not already. If they are the same, then there is a Layer 2 (L2) problem that must be fixed. Check the cabling, interfaces, and so on.

Remove the distribute list Did this fix the problem?

Yes ↓

Can you successfully ping between neighbors with packet sizes up to interface maximum MTU size?

— No ↑

Yes →

Remove the distribute list Did this fix the problem?

Yes →

Does the local router have an inbound distribute list or does the neighboring router have an outbound distribute list?

— Yes →

No ↓

Yes ↓

The distribute list is denying the routes. Modify the list as necessary.

No →

This is not a common problem. Please open a case with the TAC.

Auto-summarization ... disabled for discon... networks to excha... information. For def... auto-summarizatio... Enhanced Interior G... Routing Protoc...

No

Tools Information

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Related Information

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- **More EIGRP Technical Tips**