Common OSPF Error Messages and Troubleshooting Tips

OSPF: Mismatched Hello Parameters

Cause: Hello or dead timers differ between neighbors.

Troubleshooting Tips:

- Use 'show ip ospf interface' to check timer values.

- Ensure both routers have matching hello and dead intervals.

- Adjust timers using 'ip ospf hello-interval' and 'ip ospf dead-interval'.

OSPF: Authentication Failed

Cause: Authentication type or password mismatch.

Troubleshooting Tips:

- Verify authentication method (none, simple, MD5) on both ends.

- Check for typos in passwords or keys.

- Use 'show ip ospf interface' to confirm authentication settings.

OSPF: Duplicate Router ID Detected

Cause: Two routers have the same router ID.

Troubleshooting Tips:

- Use 'show ip ospf' to view router IDs.

- Manually configure unique router IDs using 'router-id' command.

- Restart OSPF process after changing router ID.

OSPF: Neighbor Down

Cause: Loss of adjacency due to interface or config issues.

Troubleshooting Tips:

- Check interface status ('show ip interface brief').

- Verify timers, area types, and authentication.

- Look for physical link issues or flapping interfaces.

OSPF: MTU Mismatch

Cause: Different MTU sizes on connected interfaces.

Troubleshooting Tips:

- Use 'show interface' to check MTU values.

- Match MTU settings on both sides.

- Avoid disabling MTU checking unless necessary.

OSPF: Area Type Mismatch

Cause: One router is configured for a stub/NSSA area, the other is not.

Troubleshooting Tips:

- Use 'show ip ospf' and 'show ip ospf interface' to verify area types.

- Ensure both routers agree on area type.

- Reconfigure area settings if needed.

OSPF: Network Type Mismatch

Cause: Different OSPF network types (e.g., broadcast vs. point-to-point).

Troubleshooting Tips:

- Use 'show ip ospf interface' to check network type.

- Match network types on both ends.

- Adjust using 'ip ospf network' command.

OSPF: No Hello Packets Received

Cause: Interface down, passive interface, or filtering.

Troubleshooting Tips:

- Ensure interface is not configured as passive.

- Check for ACLs or firewalls blocking OSPF.

- Use packet capture tools to verify Hello packets.

OSPF: SPF Calculation Errors

Cause: Corrupt LSAs or frequent topology changes.

Troubleshooting Tips:

- Use 'show ip ospf database' to inspect LSAs.

- Investigate unstable links or flapping interfaces.

- Clear OSPF process if necessary ('clear ip ospf process').