

Packet Tracer Lab 8 Solution Guide

Data Center Link Degradation

Incident ID: INC-1008

Objective

This lab focuses on identifying and restoring EtherChannel redundancy following scheduled maintenance.

Although network connectivity remains operational, one member of a critical EtherChannel has been placed into an administrative down state, reducing redundancy between the Core and Distribution switches.

The objective is to troubleshoot the issue using a structured methodology, identify the root cause, restore redundancy, and validate that the EtherChannel is operating normally.

Root Cause

One EtherChannel member interface (FastEthernet0/23 on SW-D1) was administratively shut down during scheduled maintenance.

Symptoms Observed

- Internal connectivity operational
- DNS resolution operational
- Application server reachable
- EtherChannel redundancy lost
- One EtherChannel member interface inactive

BridgeOpsOne

Troubleshooting Process

1. Verify connectivity by pinging company resources.
2. Verify EtherChannel status using:

show etherchannel summary

3. Identify the inactive EtherChannel member.
4. Compare interface configurations.
5. Restore the affected interface.
6. Verify both EtherChannel members are active.

Commands Used

ping

show etherchannel summary

show running-config

show interfaces trunk

configure terminal

interface fa0/23

no shutdown

channel-group 1 mode active

Resolution

conf t

interface fa0/23

no shutdown

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```
channel-group 1 mode active
```

```
end
```

```
write memory
```

Validation

- Both EtherChannel member interfaces show **(P)**.
- Port-Channel status displays **Po1(SU)**.
- bridgeopsone.com successfully resolves.
- Internal connectivity remains operational.
- Both EtherChannel member interfaces participate in Port-Channel1.
- Full link redundancy restored.

Key Takeaways

- EtherChannel provides redundancy without disrupting network connectivity.
- Loss of a member interface does not necessarily result in an outage.
- Always verify redundancy after maintenance activities.
- Compare interface configurations when troubleshooting Layer 2 issues.
- Validate both infrastructure health and customer connectivity after completing repairs.