

# Packet Tracer Lab 24 Solution Guide

## Critical Site Outage

Incident ID: INC-1024

### Objective

This lab focuses on identifying and restoring headquarters connectivity following scheduled infrastructure maintenance.

Although regional branch offices remain operational and continue communicating locally, centralized headquarters services have become unavailable.

The objective is to troubleshoot the issue using a structured methodology, identify the root cause, restore headquarters connectivity, and validate enterprise services.

### Root Cause

The routed uplink interface connecting **R-HQ** to the headquarters core switch (**GigabitEthernet0/0**) was placed into an administratively down state during scheduled maintenance.

As a result:

- Headquarters LANs became isolated.
- Centralized services became unreachable.
- Enterprise routing remained operational between branch routers.
- Headquarters resources became inaccessible.

### Symptoms Observed

- Local branch communication operational.
- Branch default gateways reachable.
- Branch-to-branch communication operational.

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- Headquarters resources unreachable.
- DNS server unreachable.
- File server unreachable.
- Headquarters routed uplink administratively down.

## Troubleshooting Process

### Step 1 — Verify Local Connectivity

ping 192.168.50.1

Should succeed.

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### Step 2 — Verify Branch Connectivity

ping 192.168.70.10

Should succeed.

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### Step 3 — Verify Headquarters Connectivity

ping 192.168.40.10

Fails.

ping 192.168.10.10

Fails.

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### Step 4 — Verify Interface Status

On R-HQ

show ip interface brief

**Students should identify:**

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GigabitEthernet0/0

Administratively Down

This is the primary indicator.

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## Step 5 — Verify Routing

**show ip route**

Students should observe that branch routing remains operational while headquarters resources remain unavailable.

## Commands Used

ping

show ip interface brief

show ip route

show running-config

## Resolution

**conf t**

**interface gigabitEthernet0/0**

**no shutdown**

**end**

**write memory**

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Allow OSPF to reconverge if necessary.

## Validation

Successful resolution should include:

- Successful ping to **192.168.40.10**
- Successful ping to **192.168.40.20**
- Successful access to headquarters departmental resources.
- Branch connectivity maintained.
- Headquarters infrastructure restored.

## Key Takeaways

- Critical infrastructure failures can affect centralized enterprise services while branch offices continue operating locally.
- Always validate local connectivity before assuming a complete network outage.
- Core infrastructure failures often present differently than routing or WAN failures.
- Interface status should be verified early during enterprise incident response.
- Follow a structured troubleshooting methodology and validate all business services after repairs.