

Packet Tracer Lab 1 Solution Guide Users Cannot Reach the Internet

Incident ID: INC-1001

Objective

This lab focuses on identifying and resolving a network connectivity issue affecting multiple users within a small office environment.

Users are unable to access external resources or internet services following scheduled network changes completed earlier in the day.

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

Root Cause

The DHCP pool OFFICE-LAN assigns an incorrect default gateway (192.168.10.254) instead of 192.168.10.1.

Symptoms Observed

- Internet access unavailable
- DNS resolution failing
- Local device communication functional
- Devices receiving IP addresses successfully
- External resources unreachable
- Browser connectivity failing

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Troubleshooting Process

1. Run ipconfig and observe the incorrect default gateway.
2. Verify local connectivity.
3. Ping 192.168.10.254 (should fail).
4. Ping 8.8.8.10 (should fail).
5. Review the OFFICE-LAN DHCP pool using show running-config.

Commands Used

ipconfig

ping

show running-config

show ip dhcp pool

show ip interface brief

ipconfig /release

ipconfig /renew

Resolution

conf t

ip dhcp pool OFFICE-LAN

no default-router 192.168.10.254

default-router 192.168.10.1

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end

write memory

Then run:

ipconfig /release

ipconfig /renew

ipconfig

Verify the Default Gateway is 192.168.10.1.

Validation

- Ping 192.168.10.1 succeeds.
- Ping 8.8.8.10 succeeds.
- Client receives 192.168.10.1 as the default gateway after DHCP renewal.
- Successful connectivity to the simulated external network.

Key Takeaways

- Follow a structured troubleshooting methodology
- Validate assumptions before escalating issues
- DHCP issues often resemble DNS or routing problems
- Successful IP assignment does not always indicate full connectivity
- Default gateway configuration is critical for external communication
- Troubleshooting should isolate where communication begins to fail