Week 4 – Concept Map Template/ Verification Log

Course: NET-1111 – Cisco I: Introduction to Networks

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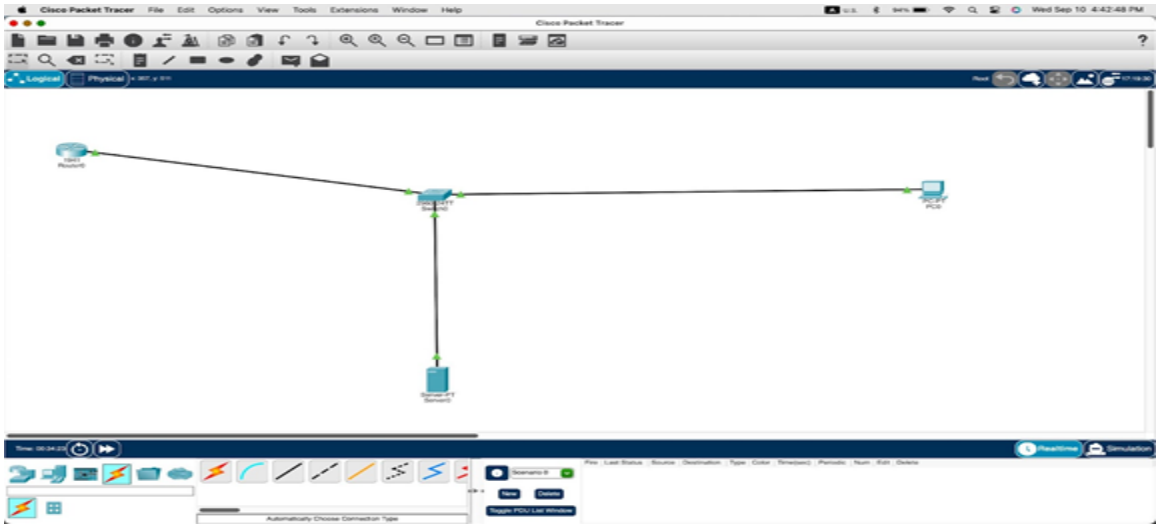
Instructions:

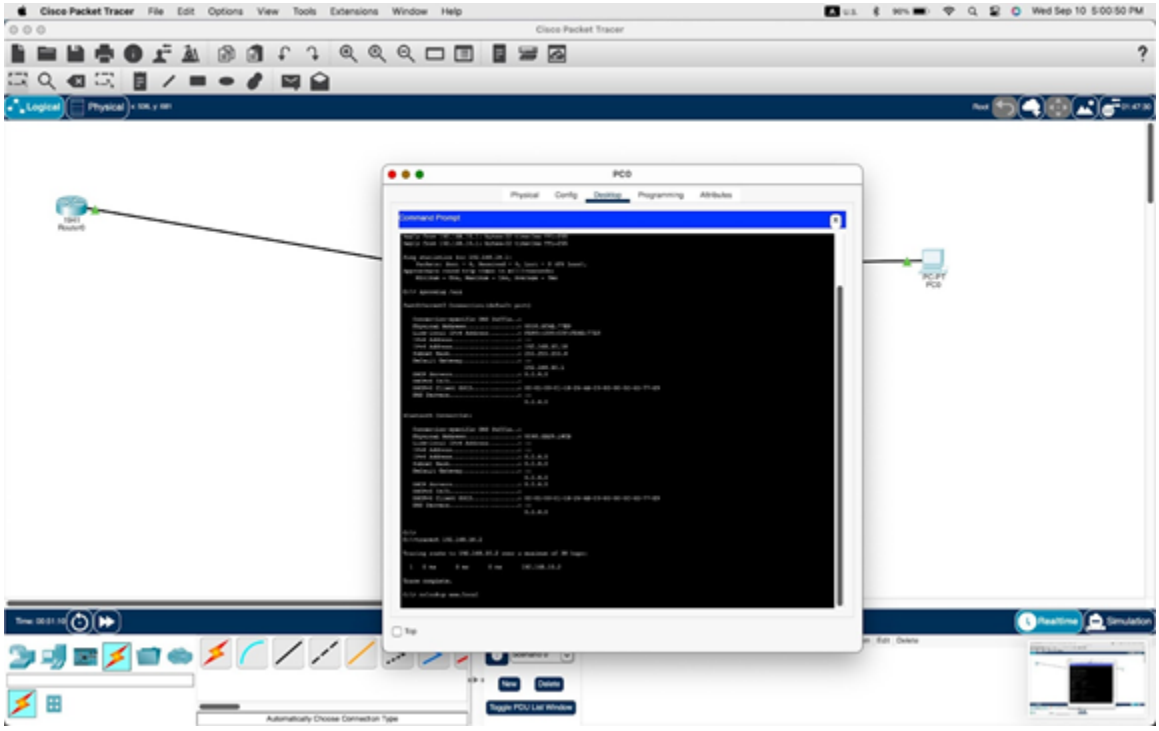
Create a one-page concept map that shows the journey from host to default gateway. Use arrows, shapes, or hand-drawn diagrams. You may draw by hand and take a photo, or use digital tools. Be sure to include the following elements:

• Host IP configuration (IP, subnet mask, default gateway)
• ARP request/response
• Switch forwarding decision
• Router/gateway handling
• Return traffic back to host

Space for Sketch

[Attach a screenshot, scanned image, or photo of your concept map here.]





Verification log

Ping to 192.168.10.1

returned replies with <1 ms latency and 0% packet loss, showing the PC can reach its default gateway (confirms L3 reachability and that ARP resolved the gateway's MAC). ping is useful because it quickly verifies basic connectivity and packet loss.

Troubleshooting Tip

If you see "Request timed out," check ipconfig /all for correct gateway, then arp -a and the switch/router interface status.

ipconfig /all

shows the host has IPv4 192.168.10.10/24, default gateway 192.168.10.1 and DNS 192.168.10.2 — this confirms the host addressing and DNS are set correctly. This command is useful because wrong IP/mask/GW values are the most common cause of lost connectivity.

Troubleshooting tip:

If the default gateway or DNS is missing/wrong, fix the PC's IP settings or check DHCP scope settings.

tracert 192.168.10.2

shows a single hop to 192.168.10.2 (hop 1), which means the server is on the same LAN and the path is direct. tracert is useful because it displays each hop on the route and helps locate where latency or packet loss appears.

Troubleshooting tip (if it shows * * * on a hop):

If a hop shows *, that node may be dropping ICMP TTL-expired packets or a firewall is blocking ICMP — check router/firewall settings.

nslookup www.local

returned address 192.168.10.2 using DNS server 192.168.10.2, proving DNS name resolution is working. nslookup is useful because it isolates DNS problems: if you can ping the IP but nslookup fails, the issue is DNS not connectivity.

Troubleshooting tip (if it fails):

If nslookup times out or returns Non-existent domain, verify the DNS server IP in ipconfig, ensure the DNS service is running on the server, and check DNS records.