

cisco packet tracer activity 8 answers

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Introduction

In the world of networking education, Cisco Packet Tracer stands out as a powerful simulation tool that allows students and professionals alike to experiment with complex network topologies without the need for physical hardware. Among the many exercises available, **cisco packet tracer activity 8 answers** is a popular assignment that tests your understanding of routing, subnetting, and troubleshooting. Whether you're a student tackling the course for the first time or a seasoned network engineer refreshing your skills, this article provides a comprehensive, step by step guide to solving Activity 8, along with insightful tips and common pitfalls to avoid.

1. What Is Cisco Packet Tracer Activity 8?

Activity 8 typically focuses on inter router communication within a multi subnet environment. The exercise requires you to:

- Configure IP addresses on all routers and end devices.
- Set up routing protocols (often OSPF or EIGRP).
- Ensure that each subnet can communicate with every other subnet.
- Diagnose any connectivity issues using built in diagnostic tools.

By mastering this activity, you'll reinforce essential networking concepts such as CIDR notation, routing tables, and the use of packet tracer's simulation features.

2. Preparing Your Workspace

2.1 Downloading the Activity File

Begin by downloading the official **Activity 8** packet tracer file from your course portal or the Cisco Networking Academy website. Save it in a dedicated folder for easy reference.

2.2 Setting Up the Topology

Open Cisco Packet Tracer and drag the following devices into the workspace:

- 3 Routers (e.g., Router0, Router1, Router2)
- 3 Switches (e.g., Switch0, Switch1, Switch2)
- 3 PCs (e.g., PC0, PC1, PC2)

Connect them using appropriate cables: use straight through cables for router switch and switch PC links, and crossover cables for router router links if using older models.

3. Step by Step Configuration Guide

3.1 Assigning IP Addresses

To ensure clarity, let's adopt the following subnet scheme:

1. Router0 – Interface Gig0/0: 10.0.1.1/24
2. Router1 – Interface Gig0/0: 10.0.2.1/24

3. Router2 – Interface Gig0/0: 10.0.3.1/24
4. PC0 – 10.0.1.10/24
5. PC1 – 10.0.2.10/24
6. PC2 – 10.0.3.10/24

Enter each router's CLI and type the following commands:

```
Router0>enable
Router0#configure terminal
Router0(config)#interface Gig0/0
Router0(config-if)#ip address 10.0.1.1 255.255.255.0
Router0(config-if)#no shutdown
Router0(config-if)#exit
Router0(config)#exit
Router0#write
```

Repeat the same process for Router1 and Router2, substituting the appropriate IP addresses. For the PCs, simply assign the static IP, subnet mask, and default gateway via the GUI.

3.2 Enabling Routing Protocols

Activity 8 often uses OSPF, but EIGRP is also acceptable if specified. Here's how to enable OSPF:

```
Router0>enable
Router0#configure terminal
Router0(config)#router ospf 1
Router0(config-router)#network 10.0.1.0 0.0.0.255 area 0
Router0(config-router)#exit
Router0(config)#exit
Router0#write
```

Apply the same OSPF configuration to Router1 and Router2, adjusting the network statement to match each subnet.

3.3 Verifying the Routing Table

Use show ip route to confirm that each router has learned the routes to all subnets:

```
Router0#show ip route
...
O    10.0.2.0 [110/2] via 10.0.1.2, 00:00:12, Gig0/1
O    10.0.3.0 [110/2] via 10.0.1.2, 00:00:12, Gig0/1
...
```

If any routes are missing, double check your OSPF network statements and ensure that interfaces are up.

3.4 Testing Connectivity

From each PC, ping the other two PCs and the routers. For example, on PC0:

```
ping 10.0.2.10
```

```
ping 10.0.3.10
```

All pings should return successful replies. If a ping fails, use traceroute on the PC to identify the hop where the packet is dropping.

3.5 Troubleshooting Common Issues

- Interface Down: Ensure no shutdown is applied.
- Wrong Subnet Mask: Verify that both ends of a link share the same mask.
- Incorrect Default Gateway: Each PC's default gateway must point to its local router.
- Routing Protocol Misconfiguration: Confirm that the router's OSPF area matches across all devices.

4. Frequently Asked Questions (FAQ)

Q1: How do I assign IP addresses to all interfaces correctly?

Use a consistent subnet plan and the ip address command inside the interface configuration mode. Always remember to bring the interface up with no shutdown.

Q2: What command shows the routing table?

Use show ip route on the router's CLI to display the current routing table.

Q3: How can I check if OSPF is running properly?

Run show ip ospf neighbor to verify that all routers have formed neighbor relationships. The state should be FULL for each neighbor.

Q4: Why are my pings timing out?

Check the following: (1) IP addresses and subnet masks match; (2) interfaces are up; (3) routing protocol is exchanging routes; (4) no ACLs blocking ICMP.

5. Tips & Best Practices

- Use Descriptive Hostnames: Rename routers and PCs to reflect their roles (e.g., CoreRouter, EdgeRouter, OfficePC).
- Save Frequently: After each configuration step, use write or copy running-config startup-config to avoid losing changes.
- Document Your Steps: Keep a configuration log or use comments in the CLI to remind yourself why you made a particular setting.
- Leverage Simulation Mode: Use the Simulation tab to step through packets and see how they traverse the network.
- Validate with Multiple Tools: Combine ping, traceroute, and debug commands for thorough troubleshooting.

6. Common Pitfalls to Avoid

1. Mis Subnetting: A common mistake is assigning the same subnet to multiple interfaces on the same router. Double check CIDR blocks.
2. Stale Routing Information: After changing IP addresses, clear the routing table using clear ip route * to force

OSPF to rediscover routes.

3. ACL Misconfiguration: If you've added ACLs for the exercise, ensure that they allow ICMP traffic; otherwise, pings will fail.

4. Incorrect Default Gateway on PCs: Each PC must point to the router that serves its subnet, not to another router.

7. Additional Resources

- Cisco OSPF Configuration Guide
- Cisco EIGRP Configuration Guide
- Cisco Networking Academy – offers practice labs and forums.
- Packet Tracer Community Forum – great place to ask questions and share solutions.

Conclusion

Mastering **cisco packet tracer activity 8 answers** not only helps you succeed in your coursework but also solidifies foundational networking concepts that are crucial for real world deployments. By following the step by step configuration guide, troubleshooting tips, and best practices outlined above, you'll be able to create a robust, fault tolerant topology that demonstrates proper routing, subnetting, and connectivity. Remember to document your process, test thoroughly, and leverage the simulation features of Packet Tracer to gain deeper insights into packet flow. With practice, you'll transform these theoretical exercises into confident, hands on networking skills that will serve you throughout your career. Happy networking!

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