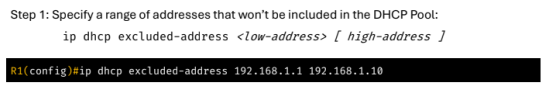
1.You configured a DHCP pool in a 192.168.1.0/24 network, but want to reserve .1 to .10. Which command should you use?

a. ip dhcp reserved-address 192.168.1.1 192.168.1.10
b. ip dhcp hold-address 192.168.1.1 10
c. ip dhcp excluded-address 192.168.1.1 192.168.1.10
d. ip dhcp no-leasing 192.168.1.1-192.168.1.10

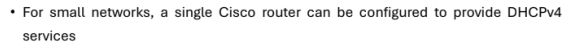
Explanation: When configuring a DHCP server, the `ip dhcp excluded-address` command is used to prevent specific IP addresses from being assigned to DHCP clients. This command reserves the addresses so they can be manually assigned to devices that need static IP addresses (like servers, printers, or network equipment). The command takes the starting and ending IP addresses of the range you want to exclude.



2.Which device can act as a DHCPv4 server on small networks?*

a. Switch
b. Router
c. Access Point
d. PC

Explanation: While technically multiple devices can function as DHCP servers (including some switches, PCs, and dedicated servers), routers are the most common and practical DHCP servers for small networks. Most consumer and small business routers come with built-in DHCP server functionality. They're ideally positioned at the network edge where they can assign IP addresses and provide default gateway information.



3. In which messages does a DHCP client accept the offered IP?*

a. DHCPACK
b. DHCPDISCOVER
c. DHCPREQUEST
d. DHCPOFFER

Explanation: The DHCP process follows this sequence:

1. DHCPDISCOVER - Client broadcasts to find DHCP servers
2. DHCPOFFER - Server offers an IP address
3. DHCPREQUEST - Client indicates acceptance of the offered IP address
4. DHCPACK - Server acknowledges the client's acceptance

The DHCPREQUEST message is where the client formally accepts the offered IP address.

4. What does DHCPv4 mean?

a. A dynamic host configuration protocol meant for IP addressing.

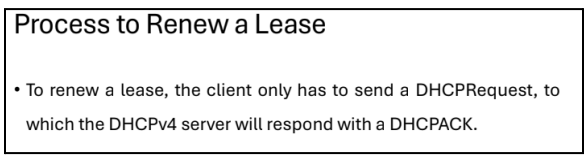
b. A dynamic host configuration protocol meant for automatic IPv4 addressing
c. A dynamic host configuration protocol meant for automatic IPv6 addressing.
d. The fourth version of dynamic host configuration protocol generation.

Explanation: DHCPv4 stands for Dynamic Host Configuration Protocol version 4. It's specifically designed to automatically assign IPv4 addresses to devices on a network. The "v4" distinguishes it from DHCPv6, which performs similar functions for IPv6 addressing.

5. Which of the following is TRUE about the DHCP lease renewal process?

a. The client always gets a new IP address
b. The server must send a DHCPOFFER again
c. The client sends DHCPDISCOVER
d. The client sends a DHCPREQUEST, and the server responds with DHCPACK

Explanation: During the lease renewal process, the client doesn't need to rediscover the server or receive a new offer. Instead, it sends a DHCPREQUEST message directly to the server that previously assigned its IP, requesting an extension of the lease. If approved, the server responds with a DHCPACK message confirming the renewal.



6. Why must you configure "ip helper-address" on a router interface?

a. To assign static IPs
b. To prevent ARP spoofing
c. To forward DHCP messages across subnets
d. To assign VLAN tags
e.

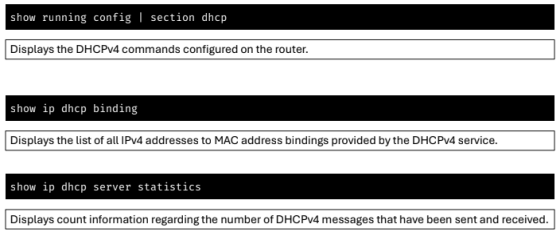
Explanation: DHCP relies on broadcast messages, which routers typically don't forward between subnets. The `ip helper-address` command configures the router to forward specific UDP broadcasts (including DHCP) to a specified server IP address. This allows DHCP clients in one subnet to reach a DHCP server located in another subnet.

7. After enabling DHCP, a student reports IP conflict with another PC. What command helps verify IP-MAC bindings?

a. show running-config
b. show ip dhcp binding
c. show arp
d. show mac-address-table
e.

Explanation: The `show ip dhcp binding` command displays the IP addresses that have been assigned by the DHCP server along with their corresponding MAC addresses and lease times. This information helps troubleshoot IP conflicts by showing

which MAC addresses are assigned which IP addresses.



8. What does the "default-router" command in DHCP Pool config define?

a. DNS Server
b. Subnet Mask
c. IP Address Range
d. Default Gateway
e.

Explanation: The `default-router` command in a DHCP pool configuration specifies the default gateway IP address that will be provided to DHCP clients. This is the router IP address that clients will use to communicate with devices outside their subnet.

9. You configured DHCP but no device gets an address. You verify there's no "ip dhcp excluded-address". What's next?

a. Change IP range
b. Check if DHCP service is enabled
c. Restart the router
d. Use ping to test the pool

Explanation: When troubleshooting DHCP, after confirming there are no exclusions blocking address assignment, the next logical step is to verify that the DHCP service itself is actually enabled on the router. Even with proper configuration, DHCP won't work if the service isn't running.

10. In a multi-VLAN environment with inter-VLAN routing, which statement is TRUE regarding DHCP?

a. Each VLAN must have its own DHCP server
b. One DHCP pool can assign addresses to multiple VLANs
c. DHCP broadcast is forwarded only within the VLAN
d. A router or L3 switch must act as a relay if the DHCP server is in another VLAN

Explanation: In a multi-VLAN environment, DHCP broadcasts won't cross VLAN boundaries without assistance. If the DHCP server is in a different VLAN from the clients, a router or Layer 3 switch must be configured as a DHCP relay agent (using `ip helper-address`) to forward the DHCP requests between VLANs.

11.A PC in VLAN 10 doesn't get an IP from the DHCP server in a different subnet. What's most likely missing?

a. Subnet mask mismatch
b. VLAN assignment on PC
c. "ip helper-address" on router
d. "dns-server" not set on DHCP pool

Explanation: When a DHCP server is in a different subnet than the client, DHCP broadcasts won't reach the server without assistance. The most likely missing

configuration is the `ip helper-address` command on the router interface for VLAN 10, which would forward the DHCP broadcasts to the server in the other subnet.

12.What is the lease time set by this command: `lease 5 0 30`

a. hours, 0 minutes, 30 seconds
b. 5 seconds, 0 minutes, 30 hours
c. 5 days, 0 hours, 30 minutes
d. 5 minutes, 0 hours, 30 days

Explanation: In Cisco IOS, the `lease` command format is `lease days [hours [minutes]]`. So `lease 5 0 30` sets a lease time of 5 days, 0 hours, and 30 minutes.

13. What is the function of `ip dhcp excluded-address` **command?**

a. Deletes an IP address from the DHCP pool.
b. Reserves an IP address from being leased in the DHCP pool.
c. Extends DHCP lease time.
d. Forces static IP configuration on that IP address.a

Explanation: The `ip dhcp excluded-address` command prevents specified IP addresses from being assigned to DHCP clients. These addresses are "excluded" from the DHCP pool, allowing them to be manually assigned to devices that require static IP addresses.