



Cisco

Exam Questions CCST-Networking

Cisco Certified Support Technician (CCST) NetworkingExam

NEW QUESTION 1

A host is given the IP address 172.16.100.25 and the subnet mask 255.255.252.0. What is the CIDR notation for this address?

- A. 172.16.100.25 /23
- B. 172.16.100.25 /20
- C. 172.16.100.25 /21
- D. 172.16.100.25 /22

Answer: D

Explanation:

The CIDR (Classless Inter-Domain Routing) notation for the subnet mask 255.255.252.0 is /22. This notation indicates that the first 22 bits of the IP address are used for network identification, and the remaining bits are used for host addresses within the network¹. References :=

•Subnet Cheat Sheet – 24 Subnet Mask, 30, 26, 27, 29, and other IP Address CIDR Network References

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•Subnet Mask to CIDR Notation: The given subnet mask is 255.255.252.0. To convert this to CIDR notation:

•Convert the subnet mask to binary: 11111111.11111111.1111100.00000000

•Count the number of consecutive 1s in the binary form: There are 22 ones.

•Therefore, the CIDR notation is /22. References:

•Understanding Subnetting and CIDR: Cisco CIDR Guide

NEW QUESTION 2

DRAG DROP

Move each cloud computing service model from the list on the left to the correct example on the right

Note: You will receive partial credit for each correct answer.

Cloud Computing Service Models

IaaS

PaaS

SaaS

Examples

Three virtual machines are connected by a virtual network in the cloud.

Model

Users access a web-based graphics design application in the cloud for a monthly fee.

Model

A company develops applications using cloud-based resources and tools.

Model

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

? Three virtual machines are connected by a virtual network in the cloud.

? Users access a web-based graphics design application in the cloud for a monthly fee.

? A company develops applications using cloud-based resources and tools.

? IaaS (Infrastructure as a Service): Provides virtualized hardware resources that customers can use to build their own computing environments.

? PaaS (Platform as a Service): Offers a platform with tools and services to develop, test, and deploy applications.

? SaaS (Software as a Service): Delivers fully functional applications over the internet that users can access and use without managing the underlying infrastructure.

References:

? Cloud Service Models: Understanding IaaS, PaaS, SaaS

? NIST Definition of Cloud Computing:NIST Cloud Computing

NEW QUESTION 3

What is the most compressed valid format of the IPv6 address 2001:0db8:0000:0016:0000:001b: 2000:0056?

- A. 2001:db8: : 16: : 1b:2:56
- B. 2001:db8: : 16: : 1b: 2000: 56
- C. 2001:db8: 16: :1b:2:56
- D. 2001:db8: 0:16: :1b: 2000:56

Answer: D

Explanation:

IPv6 addresses can be compressed by removing leading zeros and replacing consecutive groups of zeros with a double colon (::). Here??s how to compress the address 2001:0db8:0000:0016:0000:001b:2000:0056:

? Remove leading zeros from each segment:

? Replace the longest sequence of consecutive zeros with a double colon (::). In this case, the two consecutive zeros between the 16 and 1b:

Thus, the most compressed valid format of the IPv6 address is 2001:db8:0:16::1b:2000:56.

References:=

? Cisco Learning Network

? IPv6 Addressing (Cisco)

NEW QUESTION 4

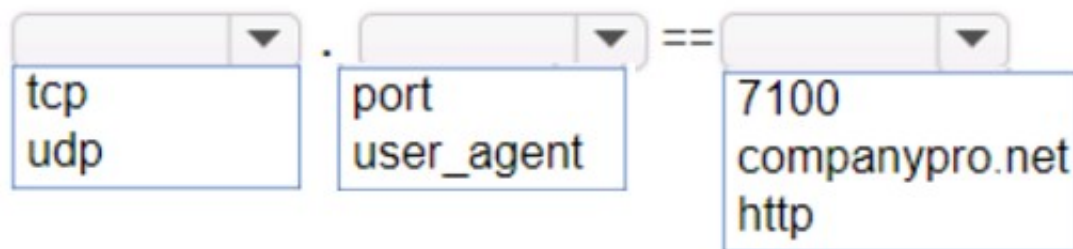
HOTSPOT

An app on a user's computer is having problems downloading data. The app uses the following URL to download data:

<https://www.companypro.net:7100/api>

You need to use Wireshark to capture packets sent to and received from that URL. Which Wireshark filter options would you use to filter the results? Complete the command

by selecting the correct option from each drop-down list. Note: You will receive partial credit for each correct selection.



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

To capture packets sent to and received from the

URL <https://www.companypro.net:7100/api> using Wireshark, you would use the following filter options:

? Protocol:tcp

? Filter Type:port

? Port Number:7100

This filter setup in Wireshark will display all TCP packets that are sent to or received from port 7100, which is the port specified in the URL for the API service. Since HTTPS typically uses TCP as the transport layer protocol, filtering by TCP and the specific port number will help isolate the relevant packets for troubleshooting the app's data download issues.

? cp: The app is using HTTPS, which relies on the TCP protocol for communication.

? port: The specific port number used by the application, which in this case is 7100.

? 7100: This is the port specified in the URL (<https://www.companypro.net:7100/api>). This filter will capture all TCP traffic on port 7100, allowing you to analyze the packets related to the application's data download.

References:

? Wireshark Filters: Wireshark Display Filters

NEW QUESTION 5

A local company requires two networks in two new buildings. The addresses used in these networks must be in the private network range.

Which two address ranges should the company use? (Choose 2.) Note: You will receive partial credit for each correct selection.

- A. 172.16.0.0 to 172.31.255.255
- B. 192.16.0.0 to 192.16.255.255
- C. 11.0.0.0 to 11.255.255.255
- D. 192.168.0.0 to 192.168.255.255

Answer: AD

Explanation:

The private IP address ranges that are set aside specifically for use within private networks and not routable on the internet are as follows:

? Class A: 10.0.0.0 to 10.255.255.255

? Class B: 172.16.0.0 to 172.31.255.255

? Class C: 192.168.0.0 to 192.168.255.255

These ranges are defined by the Internet Assigned Numbers Authority (IANA) and are used for local communications within a private network.

Given the options: A. 172.16.0.0 to 172.31.255.255 falls within the Class B private range. B. 192.16.0.0 to 192.16.255.255 is not a recognized private IP range.

C. 11.0.0.0 to 11.255.255.255 is not a recognized private IP range. D. 192.168.0.0 to 192.168.255.255 falls within the Class C private range.

Therefore, the correct selections that the company should use for their private networks are

A and D. References: =

? Reserved IP addresses on Wikipedia

? Private IP Addresses in Networking - GeeksforGeeks

? Understanding Private IP Ranges, Uses, Benefits, and Warnings

NEW QUESTION 6

Which address is included in the 192.168.200.0/24 network?

- A. 192.168.199.13
- B. 192.168.200.13
- C. 192.168.201.13
- D. 192.168.1.13

Answer: B

Explanation:

- 192.168.200.0/24 Network: This subnet includes all addresses from 192.168.200.0 to 192.168.200.255. The /24 indicates a subnet mask of 255.255.255.0, which allows for 256 addresses.
 - 192.168.199.13: This address is in the 192.168.199.0/24 subnet, not the 192.168.200.0/24 subnet.
 - 192.168.200.13: This address is within the 192.168.200.0/24 subnet.
 - 192.168.201.13: This address is in the 192.168.201.0/24 subnet, not the 192.168.200.0/24 subnet.
 - 192.168.1.13: This address is in the 192.168.1.0/24 subnet, not the 192.168.200.0/24 subnet.
- References:
- Subnetting Guide: Subnetting Basics

NEW QUESTION 7

Which component of the AAA service security model provides identity verification?

- A. Authorization
- B. Auditing
- C. Authentication
- D. Accounting

Answer: C

Explanation:

The AAA service security model consists of three components: Authentication, Authorization, and Accounting.

- Authentication: This is the process of verifying the identity of a user or device. It ensures that only legitimate users can access the network or service.
- Authorization: This determines what an authenticated user is allowed to do or access within the network.
- Auditing/Accounting: This component tracks the actions of the user, including what resources they access and what changes they make.

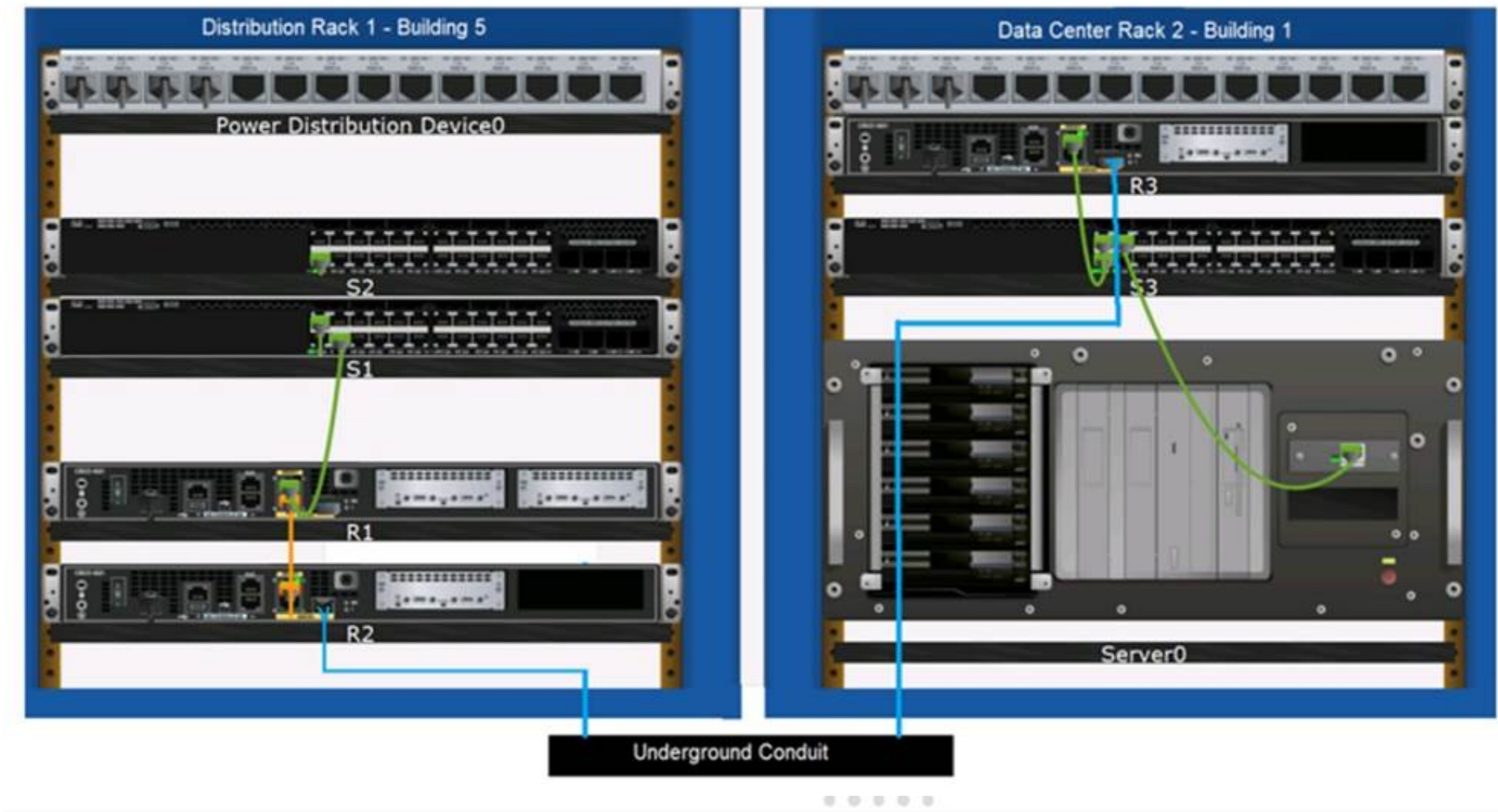
Thus, the correct answer is C. Authentication. References :=

- Cisco AAA Overview
- Understanding AAA (Authentication, Authorization, and Accounting)

NEW QUESTION 8

DRAG DROP

Examine the connections shown in the following image. Move the cable types on the right to the appropriate connection description on the left. You may use each cable type more than once or not at all.



Cable Types	Connections	
Coaxial Cable	Connects Switch S1 to Router R1 Gi0/0/1 interface	Cable Type
Console Cable	Connects Router R2 Gi0/0/0 to Router R3 Gi0/0/0 via underground conduit	Cable Type
Crossover UTP Cable	Connects Router R1 Gi0/0/0 to Router R2 Gi0/0/1	Cable Type
Fiber Optic Cable	Connects Switch S3 to Server0 network interface card	Cable Type
Straight-through UTP Cable		

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Based on the image description provided, here are the cable types matched with the appropriate connection descriptions:

Connects Switch S1 to Router R1 Gi0/0/1 interfaceCable Type: = Straight-through UTP Cable

Connects Router R2 Gi0/0/0 to Router R3 Gi0/0/0 via underground conduitCable Type

: = Fiber Optic Cable

Connects Router R1 Gi0/0/0 to Router R2 Gi0/0/1Cable Type: = Crossover UTP Cable

Connects Switch S3 to Server0 network interface cardCable Type: = Straight-through UTP Cable

The choices are based on standard networking practices where:

? Straight-through UTP cablesare typically used to connect a switch to a router or a network interface card.

? Fiber optic cablesare ideal for long-distance, high-speed data transmission, such as connections through an underground conduit.

? Crossover UTP cablesare used to connect similar devices, such as router-to-router connections.

These matches are consistent with the color-coded cables in the image: green for switch connections, yellow for router-to-router connections within the same rack, and blue for inter-rack connections. The use of these cables follows the Ethernet cabling standards.

? Connects Switch S1 to Router R1 Gi0/0/1 interface:

? Connects Router R2 Gi0/0/0 to Router R3 Gi0/0/0 via underground conduit:

? Connects Router R1 Gi0/0/0 to Router R2 Gi0/0/1:

? Connects Switch S3 to Server0 network interface card:

? Straight-through UTP Cable: Used to connect different devices (e.g., switch to router, switch to server).

? Crossover UTP Cable: Used to connect similar devices directly (e.g., router to router, switch to switch).

? Fiber Optic Cable: Used for long-distance and high-speed connections, often between buildings or data centers.

References:

? Network Cable Types and Uses: Cisco Network Cables

? Understanding Ethernet Cabling: Ethernet Cable Guide

NEW QUESTION 9

Which standard contains the specifications for Wi-Fi networks?

- A. GSM
- B. LTE
- C. IEEE 802.11
- D. IEEE 802.3
- E. EIA/TIA 568A

Answer: C

Explanation:

The IEEE 802.11 standard contains the specifications for Wi-Fi networks. It is a set of media access control (MAC) and physical layer (PHY) specifications for implementing wireless local area network (WLAN) computer communication in various frequencies, including but not limited to 2.4 GHz, 5 GHz, and 6 GHz1. This standard is maintained by the Institute of Electrical and Electronics Engineers (IEEE) and is commonly referred to as Wi-Fi. The standard has evolved over time to include several amendments that improve speed, range, and reliability of wireless networks.

References :=

•The Most Common Wi-Fi Standards and Types, Explained

•802.11 Standards Explained: 802.11ax, 802.11ac, 802.11b/g/n, 802.11a

•Wi-Fi Standards Explained - GeeksforGeeks

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NEW QUESTION 10

Examine the following output:

Examine the following command output:

```
C:\Admin>tracert www.cisco.com
5
over a maximum of 30 hops:

 1  <1 ms  <1 ms  <1 ms  2603-6081-943f-72ec-a240-a0ff-fe67-3c14.res6.big.com [2603:6081:943f:72ec:a240:a0ff:fe67:3c14]
 2  13 ms  11 ms  16 ms  2603-90b3-0a00-01bb-0000-0000-0000-0001.wifi6.biginternet.com [2603:90b3:a00:1bb::1]
 3  17 ms  25 ms  18 ms  lag-61.zblnnc1001h.netops.exchange.com [2001:db8:a000:0:4::8:d4c]
 4  16 ms  13 ms  11 ms  lag-29.drhmncev02r.netops.exchange.com [2001:db8:a000:0:4::2:152]
 5  *      *      *      Request timed out.
 6  *      *      *      Request timed out.
 7  19 ms  18 ms  27 ms  lag-0.pr2.dca10.netops.provider.com [2001:db8:1998:0:4::517]
 8  21 ms  32 ms  23 ms  2001:db8:1998:0:8::639
 9  16 ms  15 ms  18 ms  vlan-103.r10.spine101.iad03.fab.netarch.provider.com [2600:1408:b400:40b::1]
10  15 ms  17 ms  22 ms  vlan-110.r03.leaf101.iad03.fab.netarch.provider.com [2600:1408:b400:f03::1]
11  17 ms  17 ms  23 ms  vlan-104.r08.tor101.iad03.fab.netarch.provider.com [2600:1408:b400:2908::1]
12  25 ms  19 ms  19 ms  g2600-1408-c400-038d-0000-0000-0000-0b33.deploy.static.et.com [2600:1408:c400:38d::b33]

Trace complete.
```

Which two conclusions can you make from the output of the tracert command? (Choose 2.) Note: You will receive partial credit for each correct answer.

- A. The trace successfully reached the www.cisco.com server.
- B. The trace failed after the fourth hop.

- C. The IPv6 address associated with the www.cisco.com server is 2600:1408: c400: 38d: : b33.
- D. The routers at hops 5 and 6 are offline.
- E. The device sending the trace has IPv6 address 2600:1408:c400:38d :: b33.

Answer: AC

Explanation:

- Statement A: "The trace successfully reached the www.cisco.com server." This is true as indicated by the "Trace complete" message at the end, showing that the trace has reached its destination.
- Statement C: "The IPv6 address associated with the www.cisco.com server is 2600:1408:c400:38d::b33." This is true because the final hop in the trace, which is the destination, has this IPv6 address.
- Statement B: "The trace failed after the fourth hop." This is incorrect as the trace continues beyond the fourth hop, despite some intermediate timeouts.
- Statement D: "The routers at hops 5 and 6 are offline." This is not necessarily true. The routers might be configured to not respond to traceroute requests.
- Statement E: "The device sending the trace has IPv6 address 2600:1408:c400:38d::b33." This is incorrect; this address belongs to the destination server, not the sender. References:
- Understanding Traceroute: Traceroute Guide

NEW QUESTION 10

Which two statements are true about the IPv4 address of the default gateway configured on a host? (Choose 2.)
Note: You will receive partial credit for each correct selection.

- A. The IPv4 address of the default gateway must be the first host address in the subnet.
- B. The same default gateway IPv4 address is configured on each host on the local network.
- C. The default gateway is the Loopback0 interface IPv4 address of the router connected to the same local network as the host.
- D. The default gateway is the IPv4 address of the router interface connected to the same local network as the host.
- E. Hosts learn the default gateway IPv4 address through router advertisement messages.

Answer: BD

Explanation:

- Statement B: "The same default gateway IPv4 address is configured on each host on the local network." This is true because all hosts on the same local network (subnet) use the same default gateway IP address to send packets destined for other networks.
- Statement D: "The default gateway is the IPv4 address of the router interface connected to the same local network as the host." This is true because the default gateway is the IP address of the router's interface that is directly connected to the local network.
- Statement A: "The IPv4 address of the default gateway must be the first host address in the subnet." This is not necessarily true. The default gateway can be any address within the subnet range.
- Statement C: "The default gateway is the Loopback0 interface IPv4 address of the router connected to the same local network as the host." This is not true; the default gateway is the IP address of the router's physical or logical interface connected to the local network.
- Statement E: "Hosts learn the default gateway IPv4 address through router advertisement messages." This is generally true for IPv6 with Router Advertisement (RA) messages, but not typically how IPv4 hosts learn the default gateway address. References:
- Cisco Default Gateway Configuration: Cisco Default Gateway

NEW QUESTION 13

A user initiates a trouble ticket stating that an external web page is not loading. You determine that other resources both internal and external are still reachable. Which command can you use to help locate where the issue is in the network path to the external web page?

- A. ping -t
- B. tracer
- C. ipconfig/all
- D. nslookup

Answer: B

Explanation:

- The tracer command is used to determine the route taken by packets across an IP network. When a user reports that an external web page is not loading, while other resources are accessible, it suggests there might be an issue at a certain point in the network path to the specific web page. The tracer command helps to diagnose where the breakdown occurs by displaying a list of routers that the packets pass through on their way to the destination. It can identify the network segment where the packets stop progressing, which is valuable for pinpointing where the connectivity issue lies. References := Cisco CCST Networking Certification FAQs – CISCONET Training Solutions, Command Prompt (CMD): 10 network-related commands you should know, Network Troubleshooting Commands Guide: Windows, Mac & Linux - Comparitech, How to Use the Traceroute and Ping Commands to Troubleshoot Network, Network Troubleshooting Techniques: Ping, Traceroute, PathPing.
- tracer Command: This command is used to determine the path packets take to reach a destination. It lists all the hops (routers) along the way and can help identify where the delay or failure occurs.
 - ping -t: This command sends continuous ping requests and is useful for determining if a host is reachable but does not provide path information.
 - ipconfig /all: This command displays all current TCP/IP network configuration values and can be used to verify network settings but not to trace a network path.
 - nslookup: This command queries the DNS to obtain domain name or IP address mapping, useful for DNS issues but not for tracing network paths. References:
 - Microsoft tracer Command: tracer Command Guide
 - Troubleshooting Network Issues with tracer: Network Troubleshooting Guide

NEW QUESTION 15

Which information is included in the header of a UDP segment?

- A. IP addresses
- B. Sequence numbers
- C. Port numbers
- D. MAC addresses

Answer: C

Explanation:

The header of a UDP (User Datagram Protocol) segment includes port numbers. Specifically, it contains the source port number and the destination port number, which are used to identify the sending and receiving applications. UDP headers do not include IP addresses or MAC addresses, as those are part of the IP and Ethernet frame headers, respectively. Additionally, UDP does not use sequence numbers, which are a feature of TCP (Transmission Control Protocol) for ensuring reliable delivery of data segments¹.

References:=-

? Segmentation Explained with TCP and UDP Header

? User Datagram Protocol (UDP) - GeeksforGeeks

? Which three fields are used in a UDP segment header

=====

? UDP Header: The header of a UDP segment includes the following key fields:

? IP Addresses: These are included in the IP header, not the UDP header.

? Sequence Numbers: These are part of the TCP header, not UDP.

? MAC Addresses: These are part of the Ethernet frame header and are not included in the UDP header.

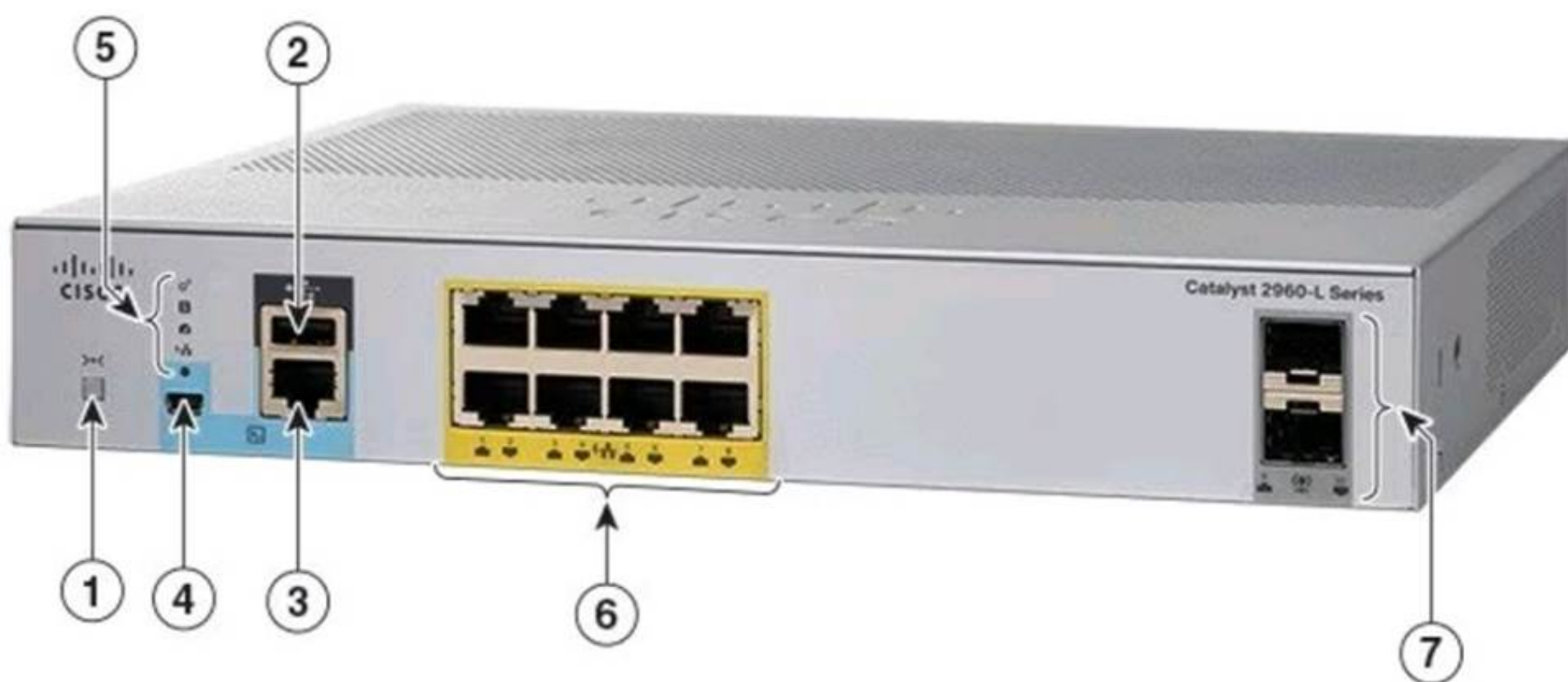
References:

? RFC 768 - User Datagram Protocol: RFC 768

? Cisco Guide on UDP: Cisco UDP Guide

NEW QUESTION 19

A Cisco PoE switch is shown in the following image. Which type of port will provide both data connectivity and power to an IP phone?



- A. Port identified with number 2
- B. Ports identified with numbers 3 and 4
- C. Ports identified with number 6
- D. Ports identified with number 7

Answer: C

Explanation:

In the provided image of the Cisco PoE switch, the ports identified with number 6 are the standard RJ-45 Ethernet ports typically found on switches that provide both data connectivity and Power over Ethernet (PoE). PoE ports are designed to supply power to devices such as IP phones, wireless access points, and other PoE-enabled devices directly through the Ethernet cable.

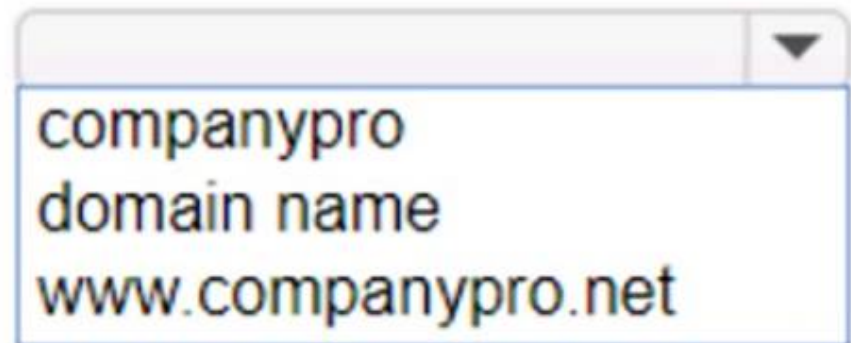
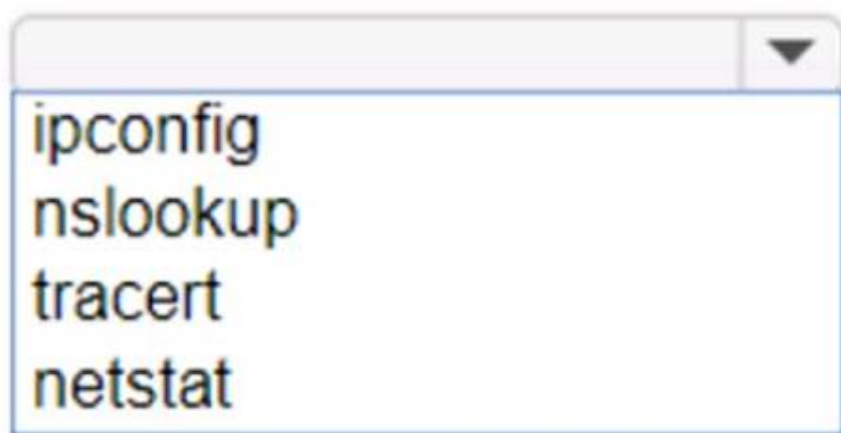
Ports:

- 2: Console port (for management and configuration)
- 3 and 4: Specific function ports (often for management)
- 6: RJ-45 Ethernet ports (capable of providing PoE)
- 7: SFP ports (for fiber connections, typically do not provide PoE) Thus, the correct answer is C. Ports identified with number 6. References :=
- Cisco Catalyst 2960-L Series Switches Data Sheet
- Cisco PoE Overview

NEW QUESTION 23

HOTSPOT

You want to list the IPv4 addresses associated with the host name www.companypro.net. Complete the command by selecting the correct option from each drop-down list.



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

To list the IPv4 addresses associated with the host name `www.companypro.net`, you should use the following command:

`nslookup www.companypro.net`

This command will query the DNS servers to find the IP address associated with the hostname provided. If you want to ensure that it returns the IPv4 address, you can specify the `-type=A` option, which stands for Address records that hold IPv4 addresses¹. However, the `nslookup` command by default should return the IPv4 address if available.

To list the IPv4 addresses associated with the host name `www.companypro.net`, you should use the `nslookup` command.

? Command: `nslookup`

? Target: `www.companypro.net` So, the completed command is:

? `nslookup www.companypro.net`

? `nslookup`: This command is used to query the Domain Name System (DNS) to obtain domain name or IP address mapping or for any other specific DNS record.

? `www.companypro.net`: This is the domain name you want to query to obtain its associated IP addresses. References:

? Using `nslookup`: `nslookup` Command Guide

NEW QUESTION 28

A user reports that a company website is not available. The help desk technician issues a `tracert` command to determine if the server hosting the website is reachable over the network. The output of the command is shown as follows:

```
C:\>tracert 192.168.1.10
Tracing route to 192.168.1.10 over a maximum of 30 hops:
 0  ms  0  ms  1  ms  192.168.5.1
 1  ms  0  ms  0  ms  10.0.1.1
 3 *      *      *      Request timed out.
 4  ms  1  ms  0  ms  10.0.0.2
 5  ms  1  ms  0  ms  192.168.1.10
```

What can you tell from the command output?

- A. The router at hop 3 is not forwarding packets to the IP address 192.168.1.10.
- B. The server address 192.168.1.10 is being blocked by a firewall on the router at hop 3.
- C. The server with the address 192.168.1.10 is reachable over the network.
- D. Requests to the web server at 192.168.1.10 are being delayed and time out.

Answer: C

Explanation:

The `tracert` command output shows the path taken to reach the destination IP address, 192.168.1.10. The command output indicates:

- Hops 1 and 2 are successfully reached.

- Hop 3 times out, meaning the router at hop 3 did not respond to the `tracert` request. However, this does not necessarily indicate a problem with forwarding packets, as some routers may be configured to block or not respond to ICMP requests.

- Hops 4 and 5 are successfully reached, with hop 5 being the destination IP 192.168.1.10, indicating that the server is reachable.

Thus, the correct answer is C. The server with the address 192.168.1.10 is reachable over the network.

References :=

- Cisco Traceroute Command

- Understanding Traceroute

The `tracert` command output indicates that the server with the address 192.168.1.10 is reachable over the network. The asterisk (*) at hop 3 suggests that the probe sent to that hop did not return a response, which could be due to a variety of reasons such as a firewall blocking ICMP packets or the router at that hop being configured not to respond to ICMP requests. However, since the subsequent hops (4 and 5) are showing response times, it means that the packets are

indeed getting through and the server is reachable12. References :=

- How to Use Traceroute Command to Read Its Results
- How to Use the Tracert Command in Windows

NEW QUESTION 29

DRAG DROP

Move the security options from the list on the left to its characteristic on the right. You may use each security option once, more than once, or not at all.
Note: You will receive partial credit for each correct answer.

Move the security options from the list on the left to its characteristic on the right. You may use each security option once, more than once, or not at all.
Note: You will receive partial credit for each correct answer.

Security Options

WEP

WPA2-Personal

WPA2-Enterprise

Characteristics

Uses a RADIUS server for authentication

Uses a minimum of 40 bits for encryption

Uses AES and a pre-shared key for authentication

Security Option

Security Option

Security Option

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

The correct matching of the security options to their characteristics is as follows:

- ? WPA2-Enterprise: Uses a RADIUS server for authentication
- ? WEP: Uses a minimum of 40 bits for encryption
- ? WPA2-Personal: Uses AES and a pre-shared key for authentication Here??s why each security option matches the characteristic:
- ? WPA2-Enterpriseuses a RADIUS server for authentication, which provides centralized Authentication, Authorization, and Accounting (AAA) management for users who connect and use a network service.
- ? WEP (Wired Equivalent Privacy)is an outdated security protocol that uses a minimum of 40 bits for encryption (and up to 104 bits), which is relatively weak by today??s standards.
- ? WPA2-Personal(Wi-Fi Protected Access 2 - Personal) uses the Advanced Encryption Standard (AES) for encryption and a pre-shared key (PSK) for authentication, which is shared among users to access the network.

These security options are essential for protecting wireless networks from unauthorized access and ensuring data privacy.

NEW QUESTION 31

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