

## Version: 28.0

### Question: 1

Refer to the exhibit:

```
Router1# show ip arp
```

Protocol	Address	Age(min)	Hardware Addr	Type	Interface
Internet	192.168.20.5	9	0000.0c07.f892	ARPA	FastEthernet0/0
Internet	192.168.60.5	8	0000.0c07.ac00	ARPA	FastEthernet0/1
Internet	192.168.20.1	-	0000.0c63.ae45	ARPA	FastEthernet0/0
Internet	192.168.40.5	9	0000.0c07.4320	ARPA	FastEthernet0/2
Internet	192.168.60.1	-	0000.0c63.1300	ARPA	FastEthernet0/1
Internet	192.168.40.1	-	0000.0c36.6965	ARPA	FastEthernet0/2

**Data Frame:**

Source MAC	Source IP	Destination MAC	Destination IP
0000.0c07.f892	192.168.20.5	0000.0c63.ae45	192.138.40.5

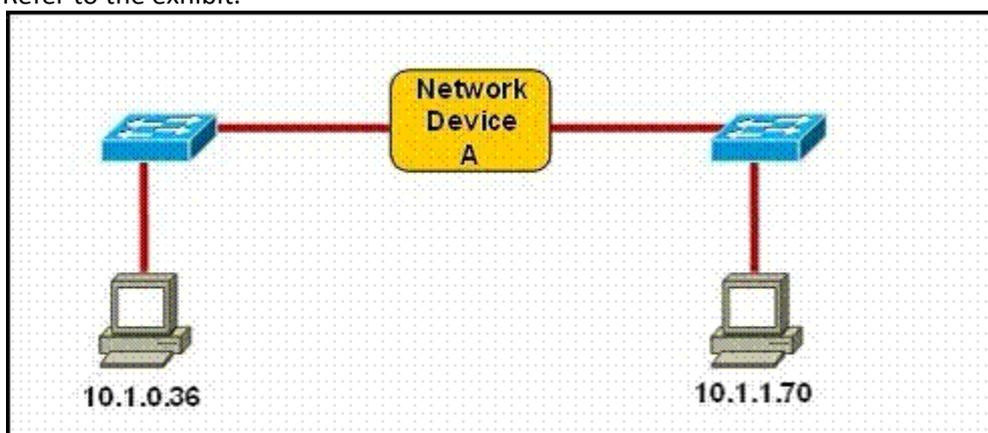
What will Router1 do when it receives the data frame shown? (Choose three.)

- A. Router1 will strip off the source MAC address and replace it with the MAC address 0000.0c36.6965.
- B. Router1 will strip off the source IP address and replace it with the IP address 192.168.40.1.
- C. Router1 will strip off the destination MAC address and replace it with the MAC address 0000.0c07.4320.
- D. Router1 will strip off the destination IP address and replace it with the IP address of 192.168.40.1.
- E. Router1 will forward the data packet out interface FastEthernet0/1.
- F. Router1 will forward the data packet out interface FastEthernet0/2.

**Answer: A, C, F**

### Question: 2

Refer to the exhibit.



Which three statements correctly describe Network Device A? (Choose three.)

- A. With a network wide mask of 255.255.255.128, each interface does not require an IP address.
- B. With a network wide mask of 255.255.255.128, each interface does require an IP address on a unique IP subnet.
- C. With a network wide mask of 255.255.255.0, must be a Layer 2 device for the PCs to communicate with each other.
- D. With a network wide mask of 255.255.255.0, must be a Layer 3 device for the PCs to communicate with each other.
- E. With a network wide mask of 255.255.254.0, each interface does not require an IP address.

**Answer: B, D, E**

### Question: 3

Which layer in the OSI reference model is responsible for determining the availability of the receiving program and checking to see if enough resources exist for that communication?

- A. transport
- B. network
- C. presentation
- D. session
- E. application

**Answer: E**

### Question: 4

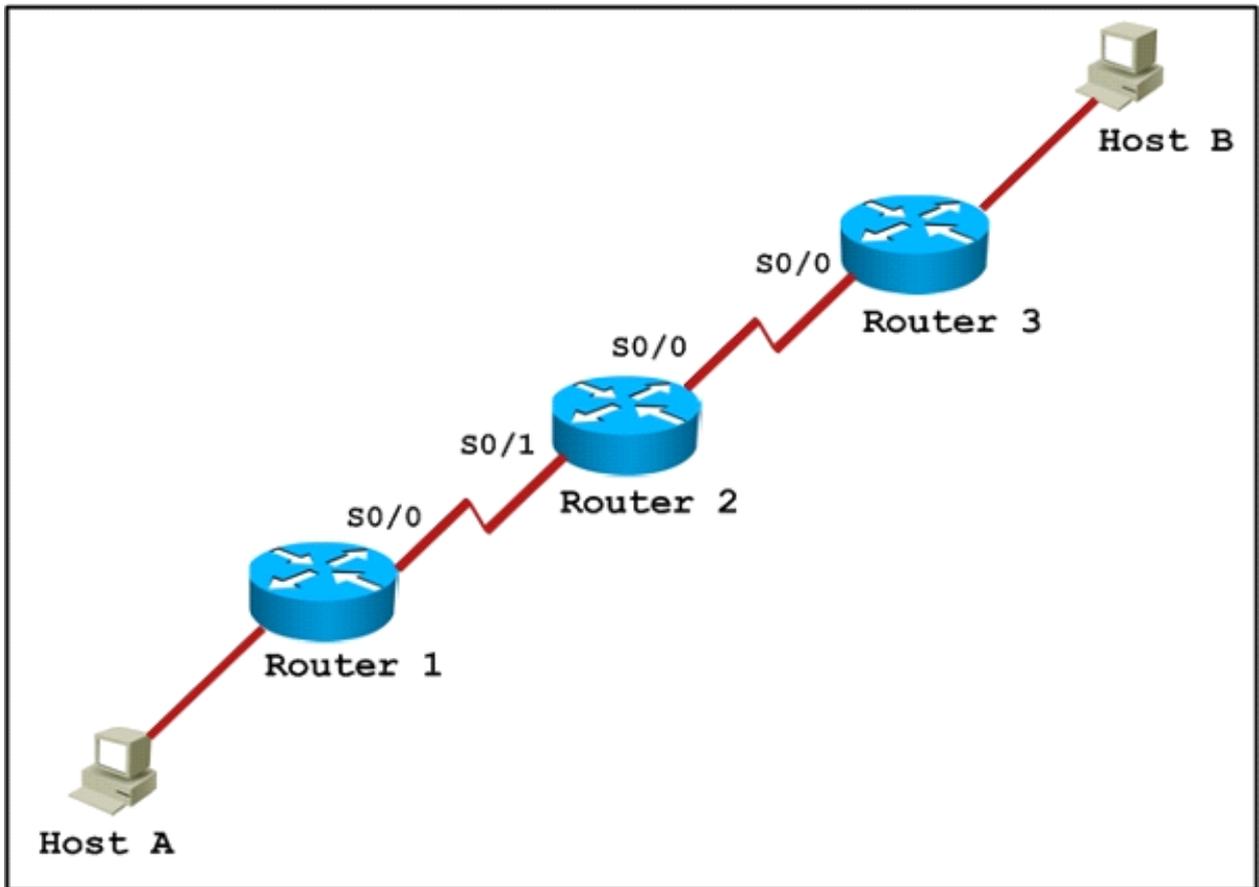
Which of the following describes the roles of devices in a WAN? (Choose three.)

- A. A CSU/DSU terminates a digital local loop.
- B. A modem terminates a digital local loop.
- C. A CSU/DSU terminates an analog local loop.
- D. A modem terminates an analog local loop.
- E. A router is commonly considered a DTE device.
- F. A router is commonly considered a DCE device.

**Answer: A, D, E**

### Question: 5

Refer to the exhibit.



Host A pings interface S0/0 on router 3. What is the TTL value for that ping?

- A. 252
- B. 253
- C. 254
- D. 255

**Answer: B**

**Question: 6**

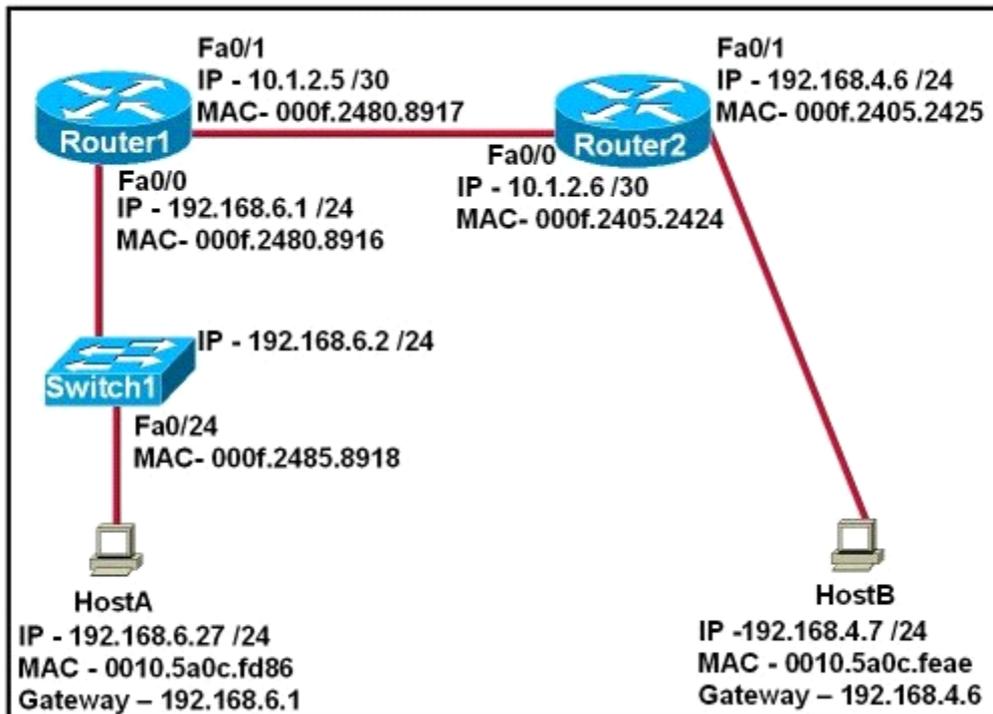
A network administrator is verifying the configuration of a newly installed host by establishing an FTP connection to a remote server. What is the highest layer of the protocol stack that the network administrator is using for this operation?

- A. application
- B. presentation
- C. session
- D. transport
- E. internet
- F. data link

**Answer: A**

**Question: 7**

Refer to the exhibit.



After HostA pings HostB, which entry will be in the ARP cache of HostA to support this transmission?

- A.
- | Interface Address | Physical Address | Type    |
|-------------------|------------------|---------|
| 192.168.4.7       | 000f.2480.8916   | dynamic |
- B.
- | Interface Address | Physical Address | Type    |
|-------------------|------------------|---------|
| 192.168.4.7       | 0010.5a0c.feae   | dynamic |
- C.
- | Interface Address | Physical Address | Type    |
|-------------------|------------------|---------|
| 192.168.6.1       | 0010.5a0c.feae   | dynamic |
- D.
- | Interface Address | Physical Address | Type    |
|-------------------|------------------|---------|
| 192.168.6.1       | 000f.2480.8916   | dynamic |
- E.
- | Interface Address | Physical Address | Type    |
|-------------------|------------------|---------|
| 192.168.6.2       | 0010.5a0c.feae   | dynamic |
- F.
- | Interface Address | Physical Address | Type    |
|-------------------|------------------|---------|
| 192.168.6.2       | 000f.2485.8918   | dynamic |

- Exhibit A
- Exhibit B
- Exhibit C
- Exhibit D
- Exhibit E
- Exhibit F

**Answer: A**

**Question: 8**

A network interface port has collision detection and carrier sensing enabled on a shared twisted pair network. From this statement, what is known about the network interface port?

- A. This is a 10 Mb/s switch port.
- B. This is a 100 Mb/s switch port.
- C. This is an Ethernet port operating at half duplex.
- D. This is an Ethernet port operating at full duplex.
- E. This is a port on a network interface card in a PC.

**Answer: C**

### Question: 9

A receiving host computes the checksum on a frame and determines that the frame is damaged. The frame is then discarded. At which OSI layer did this happen?

- A. session
- B. transport
- C. network
- D. data link
- E. physical

**Answer: D**

### Question: 10

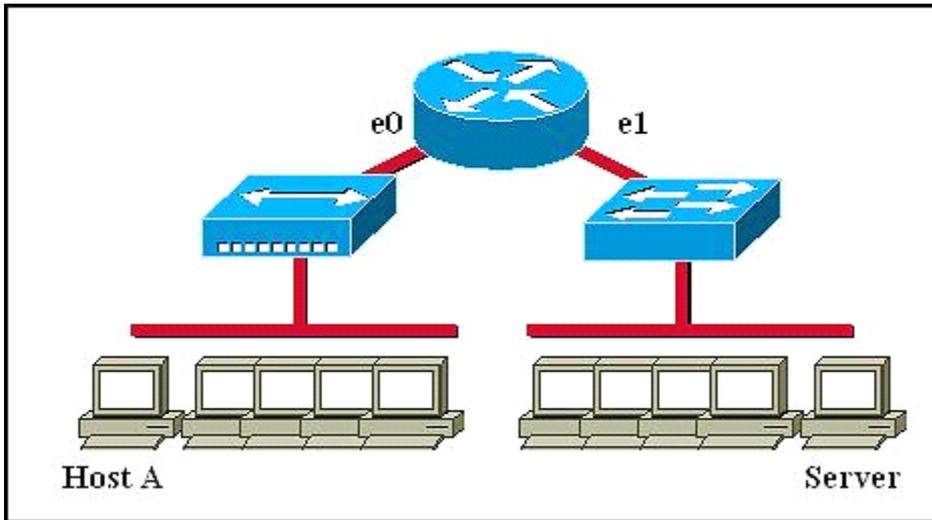
Which of the following correctly describe steps in the OSI data encapsulation process? (Choose two.)

- A. The transport layer divides a data stream into segments and may add reliability and flow control information.
- B. The data link layer adds physical source and destination addresses and an FCS to the segment.
- C. Packets are created when the network layer encapsulates a frame with source and destination host addresses and protocol-related control information.
- D. Packets are created when the network layer adds Layer 3 addresses and control information to a segment.
- E. The presentation layer translates bits into voltages for transmission across the physical link.

**Answer: A, D**

### Question: 11

Refer to the graphic.



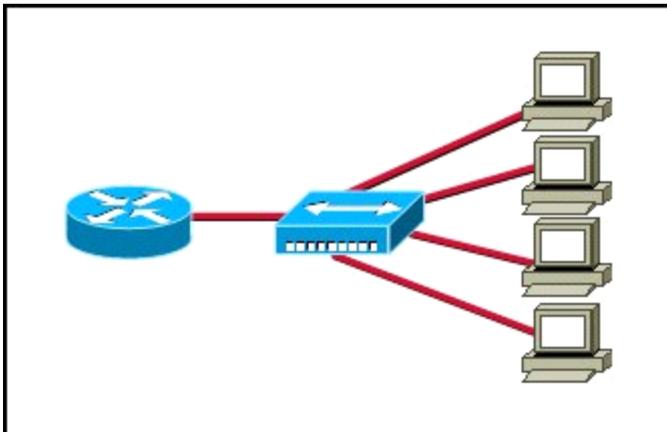
Host A is communicating with the server. What will be the source MAC address of the frames received by Host A from the server?

- A. the MAC address of router interface e0
- B. the MAC address of router interface e1
- C. the MAC address of the server network interface
- D. the MAC address of host A

**Answer: A**

**Question: 12**

Refer to the exhibit.



What two results would occur if the hub were to be replaced with a switch that is configured with one Ethernet VLAN? (Choose two.)

- A. The number of collision domains would remain the same.
- B. The number of collision domains would decrease.
- C. The number of collision domains would increase.
- D. The number of broadcast domains would remain the same.
- E. The number of broadcast domains would decrease.
- F. The number of broadcast domains would increase.

**Answer: C, D**

### Question: 13

Which three statements accurately describe Layer 2 Ethernet switches? (Choose three.)

- A. Spanning Tree Protocol allows switches to automatically share VLAN information.
- B. Establishing VLANs increases the number of broadcast domains.
- C. Switches that are configured with VLANs make forwarding decisions based on both Layer 2 and Layer 3 address information.
- D. Microsegmentation decreases the number of collisions on the network.
- E. In a properly functioning network with redundant switched paths, each switched segment will contain one root bridge with all its ports in the forwarding state. All other switches in that broadcast domain will have only one root port.
- F. If a switch receives a frame for an unknown destination, it uses ARP to resolve the address.

**Answer: B, D, E**

### Question: 14

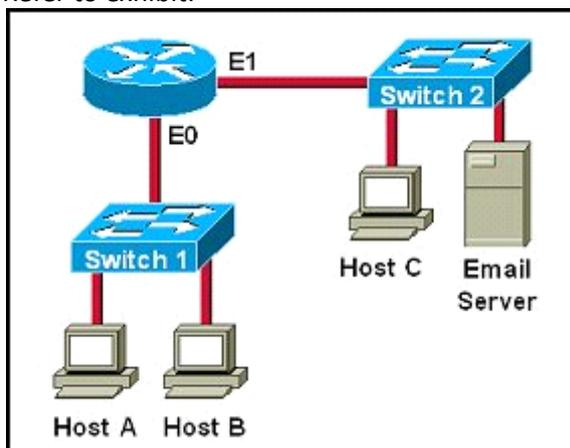
Where does routing occur within the DoD TCP/IP reference model?

- A. application
- B. internet
- C. network
- D. transport

**Answer: B**

### Question: 15

Refer to exhibit:



Which destination addresses will be used by Host A to send data to Host C? (Choose two.)

- A. the IP address of Switch 1
- B. the MAC address of Switch 1
- C. the IP address of Host C
- D. the MAC address of Host C
- E. the IP address of the router's E0 interface

F. the MAC address of the router's E0 interface

**Answer: C, F**

### Question: 16

#### SIMULATION

A corporation wants to add security to its network. The requirements are:

Host C should be able to use a web browser (HTTP) to access the Finance Web Server.

Other types of access from host C to the Finance Web Server should be blocked.

All access from hosts in the Core or local LAN to the Finance Web Server should be blocked.

All hosts in the Core and on local LAN should be able to access the Public Web Server.

You have been tasked to create and apply a numbered access list to a single outbound interface. This access list can contain no more than three statements that meet these requirements.

Access to the router CLI can be gained by clicking on the appropriate host.

All passwords have been temporarily set to "cisco".

The Core connection uses an IP address of 198.18.209.65.

The computers in the Hosts LAN have been assigned addresses of 192.168.78.1 – 192.168.78.254.

host A 192.168.78.1

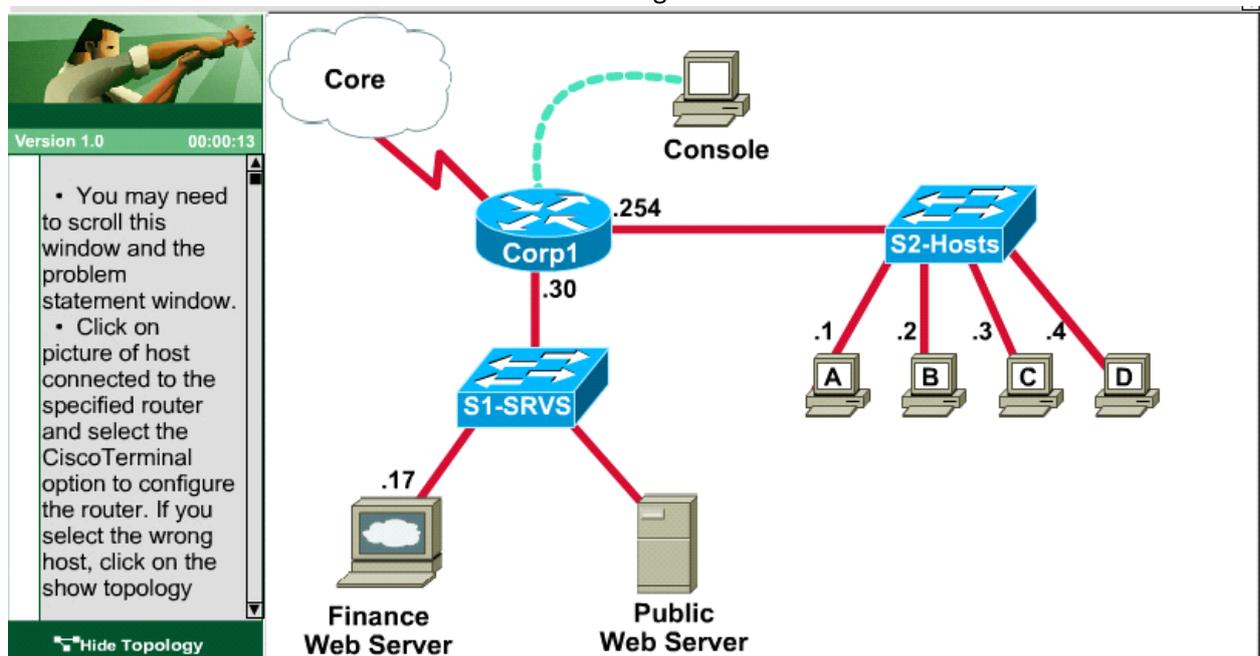
host B 192.168.78.2

host C 192.168.78.3

host D 192.168.78.4

The Finance Web Server has been assigned an address of 172.22.146.17.

The Public Web Server in the Server LAN has been assigned an address of 172.22.146.18.





Version 1.0 00:02:36

- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Show Topology

CiscoTerminal



Version 1.0 00:03:33

- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Show Topology

CiscoTerminal

```
Corp1 con0 is now available

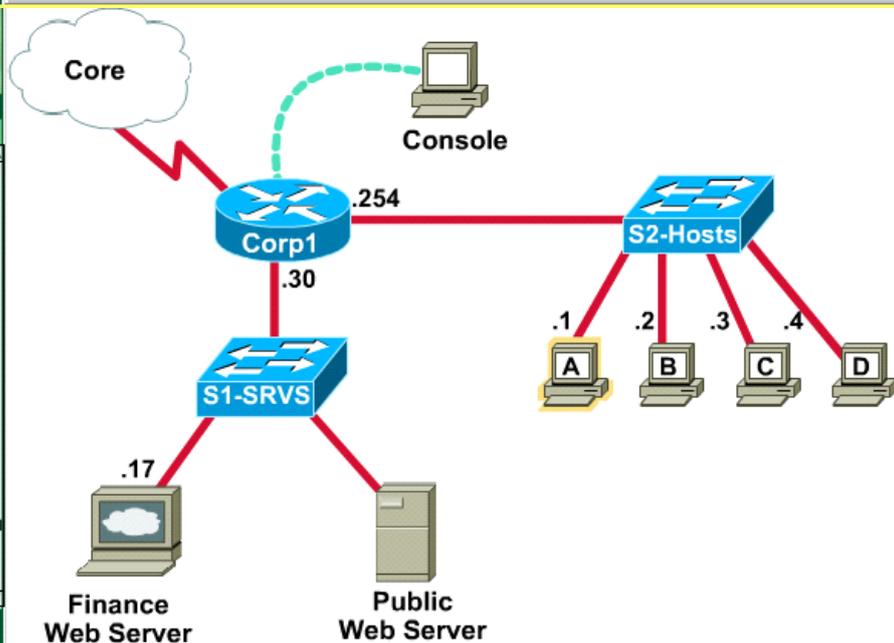
Press RETURN to get started.
```



Version 1.0 00:08:11

- To access a host, simply click on picture of host that you want to use and configure it. Certain hosts have dotted lines that represent the serial "console" cables.
- The help command does not display all commands of the help system. The help supports the first level of help

Hide Topology



Version 1.0 00:04:3

- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Click on the "X" button on the top right corner to close the browser window and view the Topology.

Address **http://** Go

Done Internet

Version 1.0 00:04:3

- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology

Click on the "X" button on the top right corner to close the browser window and view the Topology.

Address **http://** Go

Done Internet

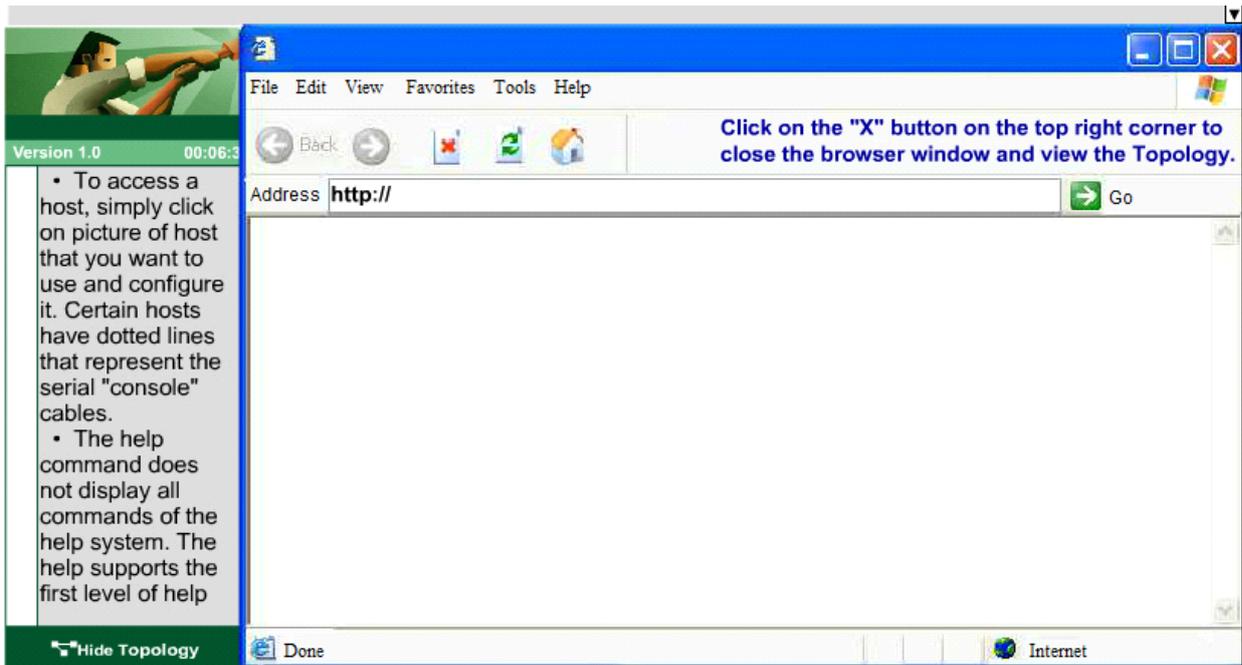
Version 1.0 00:06:3

- To access a host, simply click on picture of host that you want to use and configure it. Certain hosts have dotted lines that represent the serial "console" cables.
- The help command does not display all commands of the help system. The help supports the first level of help

Click on the "X" button on the top right corner to close the browser window and view the Topology.

Address **http://** Go

Done Internet



## Answer:

We should create an access-list and apply it to the interface that is connected to the Server LAN because it can filter out traffic from both S2 and Core networks. To see which interface this is, use the

“show ip int brief” command:

```
Corp1#show ip int brief
Interface          IP-Address      OK? Method Status  Protocol
FastEthernet0/0    192.168.125.254 YES manual  up      up
FastEthernet0/1    172.22.109.30  YES manual  up      up
Serial10/0         192.168.94.65  YES manual  up      up
Corp1#
```

From this, we know that the servers are located on the fa0/1 interface, so we will place our numbered

access list here in the outbound direction.

Corp1#configure terminal

Our access-list needs to allow host C – 192.168.125.3 to the Finance Web Server 172.22.109.17 via HTTP (port 80), so our first line is this:

```
Corp1(config)#access-list 100 permit tcp host 192.168.125.3 host 172.22.109.17 eq 80
```

Then, our next two instructions are these:

Other types of access from host C to the Finance Web Server should be blocked.

All access from hosts in the Core or local LAN to the Finance Web Server should be blocked.

This can be accomplished with one command (which we need to do as our ACL needs to be no more than 3 lines long), blocking all other access to the finance web server:

```
Corp1(config)#access-list 100 deny ip any host 172.22.109.17
```

Our last instruction is to allow all hosts in the Core and on the local LAN access to the Public Web Server (172.22.109.18)

```
Corp1(config)#access-list 100 permit ip host 172.22.109.18 any
```

Finally, apply this access-list to Fa0/1 interface (outbound direction)

```
Corp1(config)#interface fa0/1
```

```
Corp1(config-if)#ip access-group 100 out
```

Notice: We have to apply the access-list to Fa0/1 interface (not Fa0/0 interface) so that the access-list can filter traffic coming from both the LAN and the Core networks.

To verify, just click on host C to open its web browser. In the address box type `http://172.22.109.17` to check if you are allowed to access Finance Web Server or not. If your configuration is correct then you can access it.

Click on other hosts (A, B and D) and check to make sure you can't access Finance Web Server from these hosts. Then, repeat to make sure they can reach the public server at 172.22.109.18. Finally, save the configuration

```
Corp1(config-if)#end
```

```
Corp1#copy running-config startup-config
```