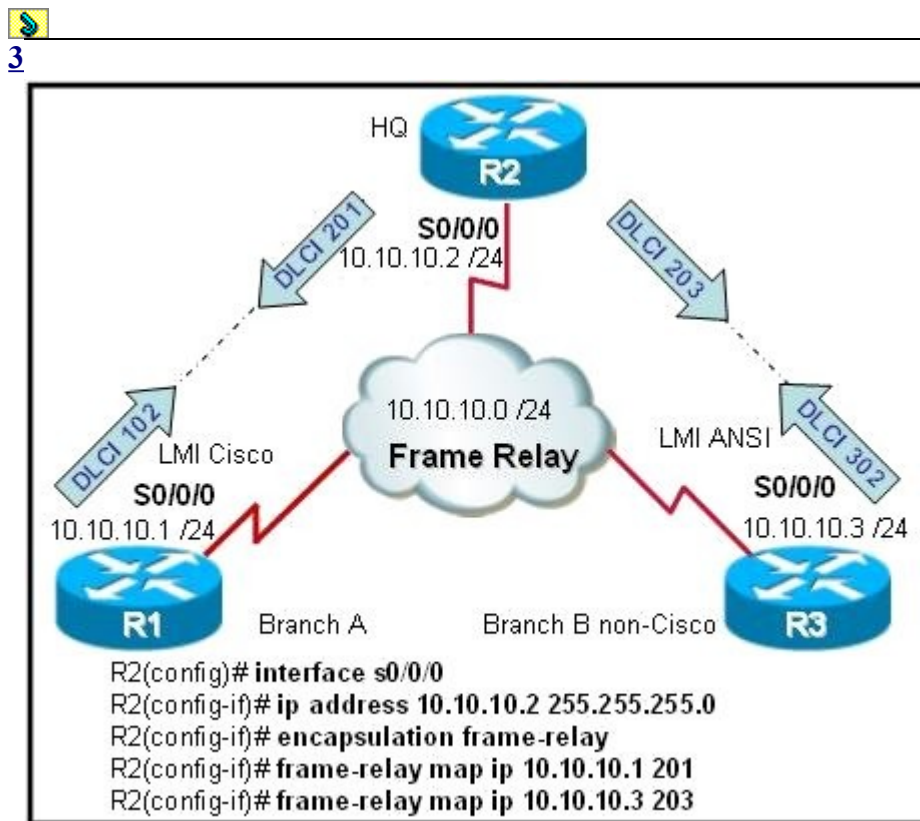


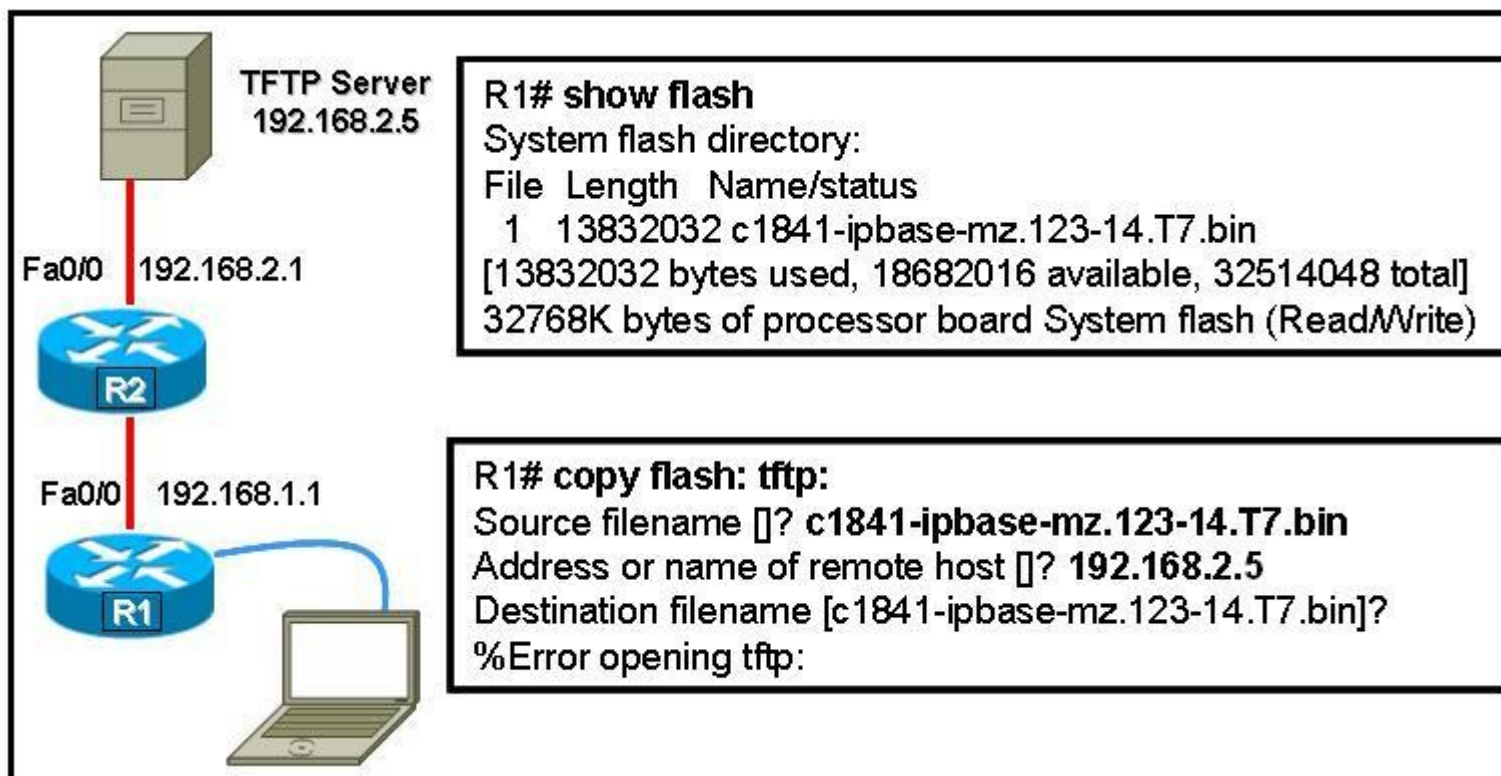
- 1 Which wireless solution can provide mobile users with non line-of-sight broadband Internet access at speeds comparable to DSL or cable?
- Wi-Fi
 - WiMAX
 - satellite
 - Metro Ethernet

- 2 What effect would the Router1(config-ext-nacl)# **permit tcp 172.16.4.0 0.0.0.255 any eq www** command have when implemented inbound on the f0/0 interface?
- All TCP traffic is permitted, and all other traffic is denied.
 - The command is rejected by the router because it is incomplete.
 - All traffic from 172.16.4.0/24 is permitted anywhere on any port.
 - Traffic originating from 172.16.4.0/24 is permitted to all TCP port 80 destinations.



Refer to the exhibit. Branch A has a Cisco router. Branch B has a non-Cisco router set for IETF encapsulation. After the commands shown are entered, R2 and R3 fail to establish the PVC. The R2 LMI is Cisco, and the R3 LMI is ANSI. The LMI is successfully established at both locations. Why is the PVC failing?

- The PVC to R3 must be point-to-point.
- LMI types must match on each end of a PVC.
- The **ietf** parameter is missing from the **frame-relay map ip 10.10.10.3 203** command.
- The PVCs at R2 use different encapsulation types. A single port can only support one encapsulation type.



Refer to the exhibit. The network administrator is adding R1 to an existing network. As a part of the corporate IT process, the administrator attempts to back up the router Cisco IOS software of R1 and receives the output shown. The network administrator then attempts unsuccessfully to ping the TFTP server from the console session. What should be done next to isolate this problem?

From R2, validate that interface Fa0/0 is operational.

From the TFTP server, verify that the software on the TFTP server is operational.

From the TFTP server, confirm there is enough room on the TFTP server for the Cisco IOS software.

From the console session, make sure that R1 has a route to the network where the TFTP server resides.



5 Which three guidelines would help contribute to creating a strong password policy? (Choose three.)

Once a good password is created, do not change it.

Deliberately misspell words when creating passwords.

Create passwords that are at least 8 characters in length.

Use combinations of upper case, lower case, and special characters.

Write passwords in locations that can be easily retrieved to avoid being locked out.

Use long words found in the dictionary to make passwords that are easy to remember.



6 What will be the result of adding the command **ip dhcp excluded-address 172.16.4.1 172.16.4.5** to the configuration of a local router that has been configured as a DHCP server?

Traffic that is destined for 172.16.4.1 and 172.16.4.5 will be dropped by the router.

Traffic will not be routed from clients with addresses between 172.16.4.1 and 172.16.4.5.

The DHCP server function of the router will not issue the addresses between 172.16.4.1 and 172.16.4.5.

The router will ignore all traffic that comes from the DHCP servers with addresses 172.16.4.1 and 172.16.4.5.



7

Which three items are LCP options that can be configured for PPP? (Choose three.)

- CHAP
- Stacker
- IPCP
- CDPCP
- Multilink



8

A technician is talking to a colleague at a rival company and comparing DSL transfer rates between the two companies. Both companies are in the same city, use the same service provider, and have the same rate/service plan. What is the explanation for why Company A reports higher download speeds than Company B?

- Company B has a higher volume of POTS voice traffic than Company A.
- Company B shares the connection to the DSLAM with more clients than Company A.
- Company A only uses microfilters on branch locations.
- Company A is closer to the service provider.



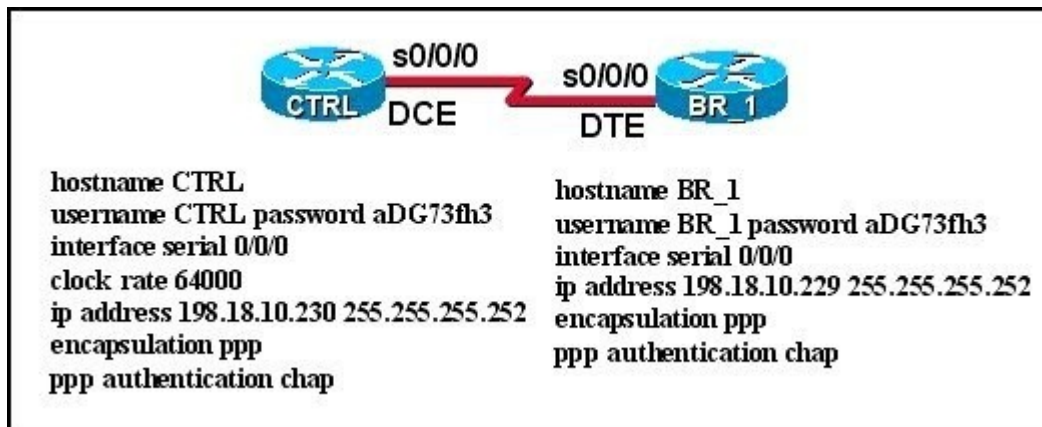
9

What are the symptoms when the s0/0/0 interface on a router is attached to an operational CSU/DSU that is generating a clock signal, but the far end router on the point-to-point link has not been activated?

- show controllers** indicates cable type DCE V.35. **show interfaces s0/0/0** indicates serial down, line protocol down.
- show controllers** indicates cable type DCE V.35. **show interfaces s0/0/0** indicates serial up, line protocol down.
- show controllers** indicates cable type DTE V.35. **show interfaces s0/0/0** indicates serial up, line protocol down.
- show controllers** indicates cable type DTE V.35. **show interfaces s0/0/0** indicates serial down, line protocol down.



10



Refer to the exhibit. The link between the CTRL and BR_1 routers is configured as shown in the exhibit. Why are the routers unable to establish a PPP session?

- The clock rate must be 56000.
- The usernames are misconfigured.
- The IP addresses are on different subnets.
- The clock rate is configured on the wrong end of the link.
- The CHAP passwords must be different on the two routers.
- Interface serial 0/0/0 on CTRL must connect to interface serial 0/0/1 on BR_1.

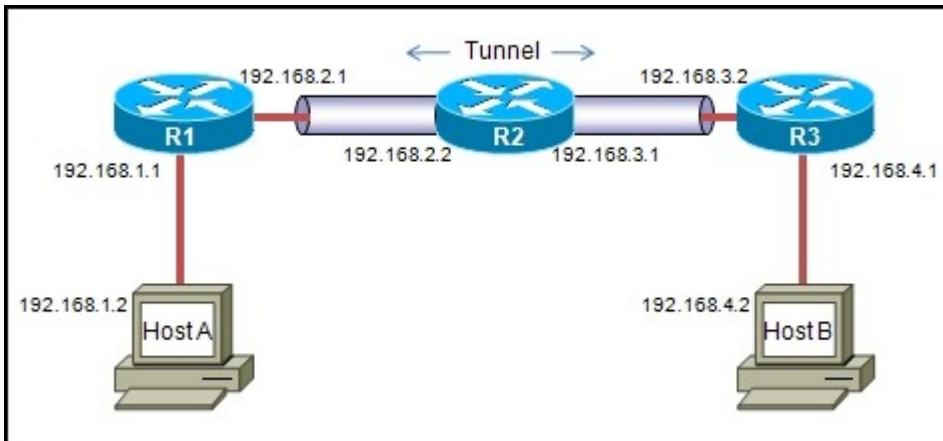


11 What are two main components of data confidentiality? (Choose two.)

- checksum
- digital certificates
- encapsulation
- encryption
- hashing



12



Refer to the exhibit. A packet is being sent from Host A to Host B through the VPN tunnel between R1 and R3. When the packet first arrives at R3, what are the source and destination IP addresses of the packet?

- Source 192.168.1.2 - Destination 192.168.4.2
- Source 192.168.3.1 - Destination 192.168.3.2
- Source 192.168.2.1 - Destination 192.168.3.2
- Source 192.168.3.1 - Destination 192.168.4.2

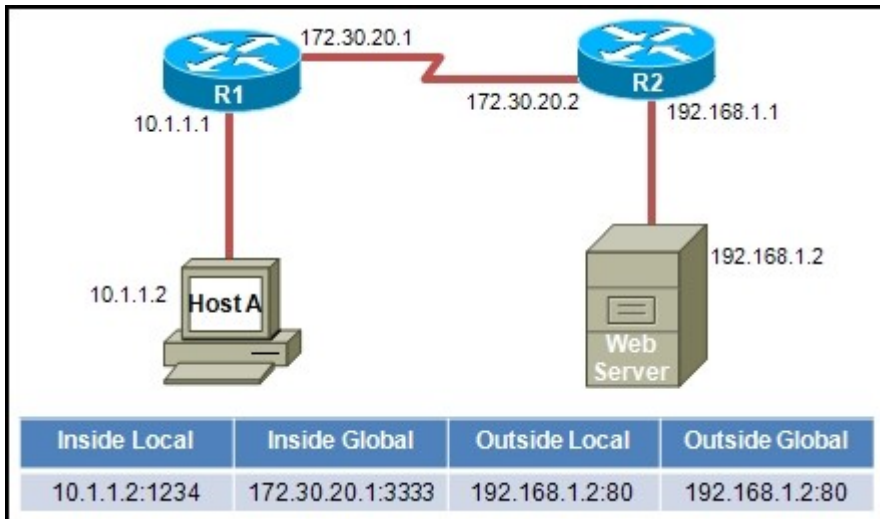


13 A technician has been asked to run Cisco SDM one-step lockdown on the router of a customer. What will be the result of this process?

- Traffic is only forwarded from SDM-trusted Cisco routers.
- Security testing is performed and the results are saved as a text file stored in NVRAM.
- The router is tested for potential security problems and any necessary changes are made.
- All traffic entering the router is quarantined and checked for viruses before being forwarded.



14



Refer to the exhibit. R1 is performing NAT overload for the 10.1.1.0/24 inside network. Host A has sent a packet to the web server. What is the destination IP address of the return packet from the web server?

- 10.1.1.2:1234
- 172.30.20.1:1234
- 172.30.20.1:3333
- 192.168.1.2:80

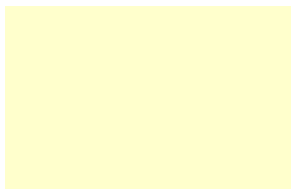


15 A system administrator must provide Internet connectivity for ten hosts in a small remote office. The ISP has assigned two public IP addresses to this remote office. How can the system administrator configure the router to provide Internet access to all ten users at the same time?

- Configure DHCP and static NAT.
- Configure dynamic NAT for ten users.
- Configure static NAT for all ten users.
- Configure dynamic NAT with overload.



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Which three statements are true about creating and applying access lists? (Choose three.)

Access list entries should filter in the order from general to specific.

One access list per port per protocol per direction is permitted.

Standard ACLs should be applied closest to the source while extended ACLs should be applied closest to the destination.

There is an implicit deny at the end of all access lists.

Statements are processed sequentially from top to bottom until a match is found.

The **inbound** keyword refers to traffic entering the network from the router interface where the ACL is applied.



17 A company is looking for a WAN solution to connect its headquarters site with four remote sites. What advantage would dedicated leased lines provide to the customer compared to a shared Frame Relay solution?

lower cost

lower latency and jitter

variable bandwidth capacity

fewer physical router interfaces



18

```
Serial0/0/0 is up, line protocol is down
Hardware is HD64570
Internet address is 10.1.1.1/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255
Encapsulation PPP, loopback not set, keepalive set (10 sec)
LCP Closed
Closed: LEXCP, BRIDGECP, IPCP, CCP, CDPCP, LLC2, BACP
<output omitted>
Queueing strategy: weighted fair
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 output buffer failures, 0 output buffers swapped out
  0 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up
```

Refer to the exhibit. This serial interface is not functioning correctly. Based on the output shown, what is the most likely cause?

improper LMI type

interface reset

PPP negotiation failure

unplugged cable



19 Which combination of Layer 2 protocol and authentication should be used to establish a link without sending authentication information in plain text between a Cisco and a non-Cisco router?

PPP with PAP

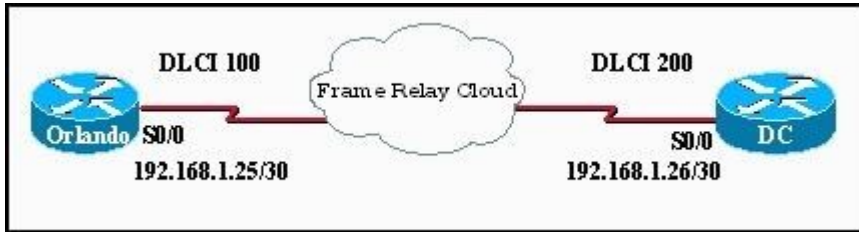
PPP with CHAP

HDLC with PAP

HDLC with CHAP



20



Refer to the exhibit. What is placed in the address field in the header of a frame that will travel from the DC office of ABC Company to the Orlando office?

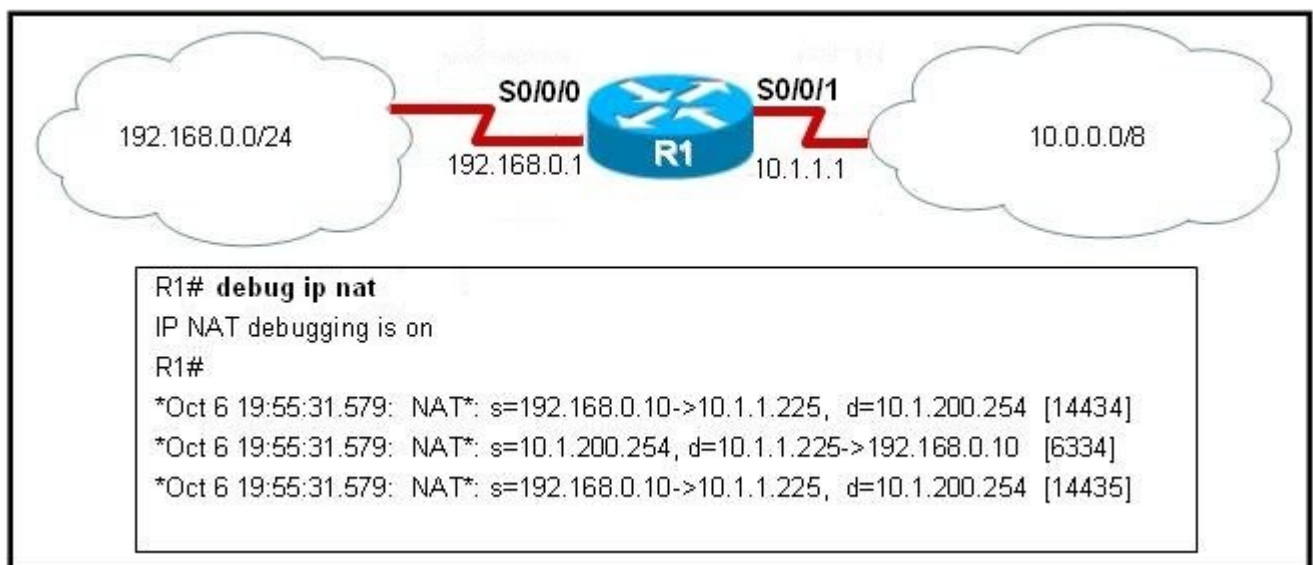
- MAC address of the Orlando router
- MAC address of the DC router
- 192.168.1.25
- 192.168.1.26
- DLCI 100
- DLCI 200

21

What is a major characteristic of a worm?

- malicious software that copies itself into other executable programs
- tricks users into running the infected software
- a set of computer instructions that lies dormant until triggered by a specific event
- exploits vulnerabilities with the intent of propagating itself across a network

22



Refer to the exhibit. What can be concluded from the exhibited output of the **debug ip nat** command?

- The 10.1.1.225 host is exchanging packets with the 192.168.0.10 host.
- The native 10.1.200.254 address is being translated to 192.168.0.10.
- The 192.168.0.0/24 network is the inside network.
- Port address translation is in effect.

23

Which three functions are provided by the Local Management Interface used in Frame Relay networks? (Choose three.)

- exchange information about the status of virtual circuits
- map DLCIs to network addresses
- provide flow control
- provide error notification
- provide congestion notification
- send keepalive packets to verify operation of the PVC



24

What can a network administrator do to recover from a lost router password?

- use the **copy tftp: flash:** command
- boot the router to bootROM mode and enter the **b** command to load the IOS manually
- telnet from another router and issue the **show running-config** command to view the password
- boot the router to ROM monitor mode and configure the router to ignore the startup configuration when it initializes



25

```
<output omitted>
ip dhcp pool 192Network
network 192.168.1.128 255.255.255.128
default-router 192.168.1.1
dns-server 192.168.1.1
!
interface FastEthernet0/0
ip address 192.168.1.1 255.255.255.128
duplex auto
speed auto
!
<output omitted>
```

Refer to the exhibit. A host connected to Fa0/0 is unable to acquire an IP address from this DHCP server. The output of the **debug ip dhcp server** command shows "DHCPD: there is no address pool for 192.168.1.1".

What is the problem?

- The 192.168.1.1 address has not been excluded from the DHCP pool.
- The pool of addresses for the 192Network pool is incorrect.
- The default router for the 192Network pool is incorrect.
- The 192.168.1.1 address is already configured on Fa0/0.



26

Which statement is true regarding wildcard masks?

- The wildcard mask and subnet mask perform the same function.
- The wildcard mask is always the inverse of the subnet mask.
- A "0" in the wildcard mask identifies IP address bits that must be checked.
- A "1" in the wildcard mask identifies a network or subnet bit.



27

A network administrator is instructing a technician on best practices for applying ACLs. Which suggestion should the administrator provide?

- Named ACLs are less efficient than numbered ACLs.
- Standard ACLs should be applied closest to the core layer.
- ACLs applied to outbound interfaces are the most efficient.
- Extended ACLs should be applied closest to the source that is specified by the ACL.


```
Router(config)# ip access-list extended Managers
Router(config-ext-nacl)# deny tcp 192.168.1.0 0.0.0.255 any eq telnet
Router(config-ext-nacl)# deny tcp 192.168.1.0 0.0.0.255 any eq www
Router(config-ext-nacl)# deny tcp 192.168.1.0 0.0.0.255 any eq ftp
```

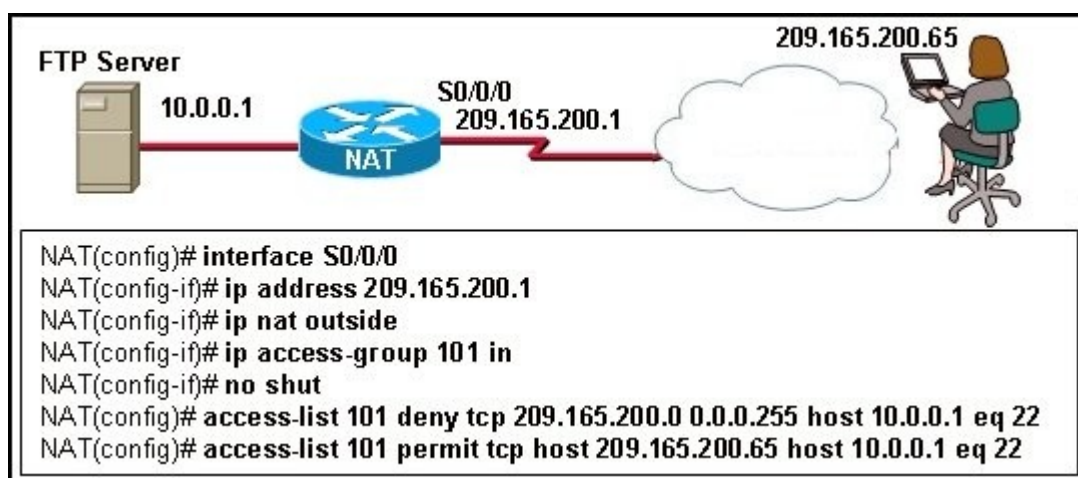
Refer to the exhibit. What happens if the network administrator issues the commands shown when an ACL called Managers already exists on the router?

The commands overwrite the existing Managers ACL.

The commands are added at the end of the existing Managers ACL.

The network administrator receives an error stating that the ACL already exists.

The commands will create a duplicate Managers ACL containing only the new commands being entered.



Refer to the exhibit. The SSH connections between the remote user and the server are failing. The correct configuration of NAT has been verified. What is the most likely cause of the problem?

SSH is unable to pass through NAT.

There are incorrect access control list entries.

The access list has the incorrect port number for SSH.

The **ip helper** command is required on S0/0/0 to allow inbound connections.

What three statements describe the roles of devices in a WAN? (Choose three.)

A CSU/DSU terminates a digital local loop.

A modem terminates a digital local loop.

A CSU/DSU terminates an analog local loop.

A modem terminates an analog local loop.

A router is commonly considered a DTE device.

A router is commonly considered a DCE device.



31 Which statement about a VPN is true?

- VPN link establishment and maintenance is provided by LCP.
- DLCI addresses are used to identify each end of the VPN tunnel.
- VPNs use virtual Layer 3 connections that are routed through the Internet.
- Only IP packets can be encapsulated by a VPN for tunneling through the Internet.



32

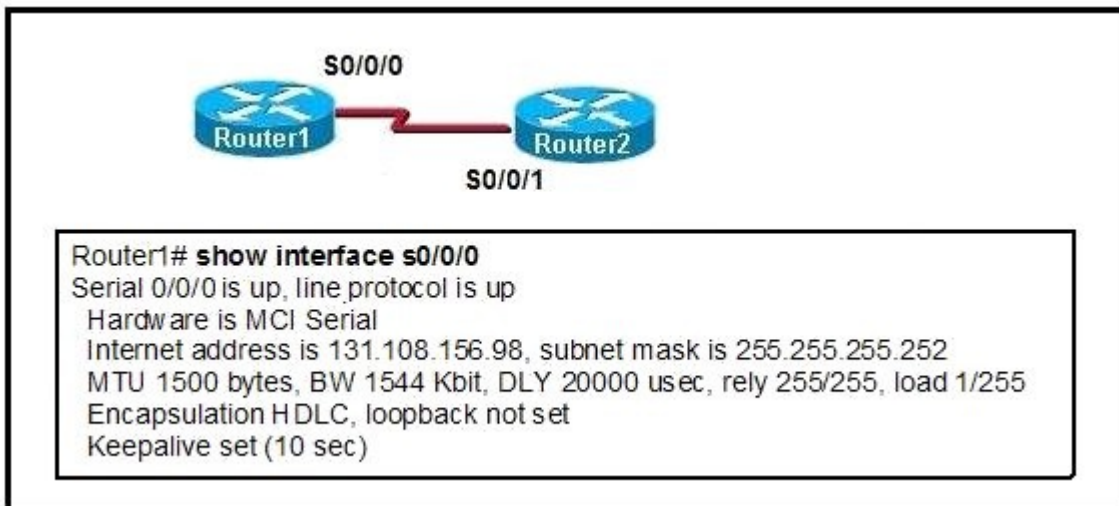
```
R1(config)# interface FastEthernet 0/0
R1(config-if)# ip address 10.0.1.254 255.255.255.0
R1(config-if)# exit
R1(config)# ip dhcp excluded
R1(config)# ip dhcp excluded-address 10.0.1.2 10.0.1.16
R1(config)# ip dhcp excluded-address 10.0.1.254
R1(config)# ip dhcp pool TEST
R1(dhcp-config)# network 10.0.1.0 255.255.255.0
R1(dhcp-config)# default-router 10.0.1.254
R1(dhcp-config)# dns-server 10.0.1.3
R1(dhcp-config)# domain-name netacad.net
```

Refer to the exhibit. How is the TCP/IP configuration information specified by the **default-router** and **dns-server** commands made available?

- The TCP/IP information is forwarded to a 10.0.1.3 to be supplied to DHCP clients.
- The TCP/IP information is used by DHCP clients that are configured to request a configuration from R1.
- The TCP/IP information is supplied to any DHCP client on the network connected to the FastEthernet 0/0 interface of R1.
- The TCP/IP information is applied to each packet that enters R1 through the FastEthernet 0/0 interface that are hosts on the 10.0.1.0 /24 network except packets from addresses 10.0.1.2, 10.0.1.16, and 10.0.1.254.



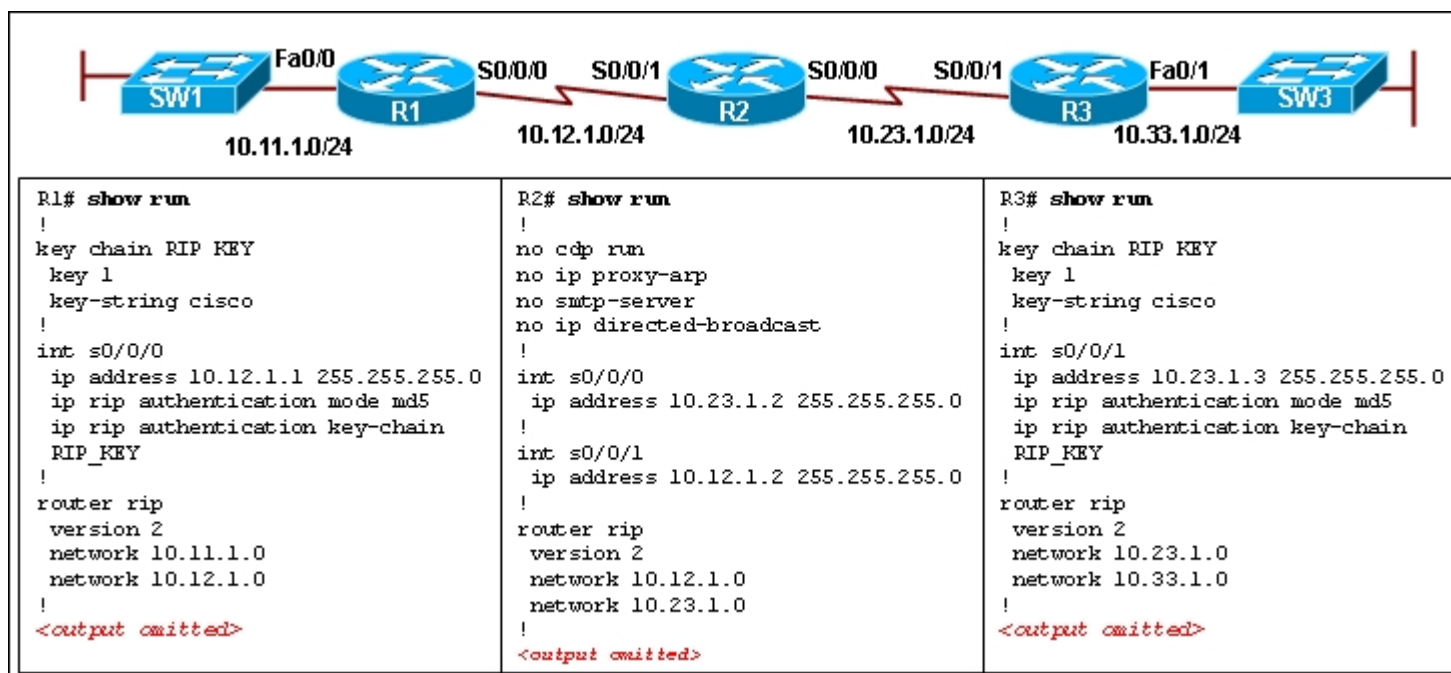
33



Refer to the exhibit. A technician issues the **show interface s0/0/0** command on R1 while troubleshooting a network problem. What two conclusions can be determined from the output shown? (Choose two.)

- The bandwidth has been set to the value of a T1 line.
- This interface should be configured for PPP encapsulation.
- There is no failure indicated in an OSI Layer 1 or Layer 2.
- The physical connection between the two routers has failed.
- The IP address of S0/0/0 is invalid, given the subnet mask being used.

34



Refer to the exhibit. RIPv2 has been configured on all routers in the network. Routers R1 and R3 do not receive routing updates. On the basis of the provided configuration, what should be enabled on router R2 to remedy the problem?

- proxy ARP
- CDP updates
- SNMP services
- RIP authentication



35

Which three statements accurately describe a security policy? (Choose three.)

It creates a basis for legal action if necessary.

It defines a process for managing security violations.

It defines acceptable and unacceptable use of network resources.

The remote access policy is a component of the security policy that governs acceptable use of e-mail systems.

It is kept private from users to prevent the possibility of circumventing security measures.

It provides step-by-step procedures to harden routers and other network devices.



36

An administrator is configuring a dual stack router with IPv6 and IPv4 using RIPng. The administrator receives an error message when trying to enter the IPv4 routes into RIPng. What is the cause of the problem?

RIPng is incompatible with dual-stack technology.

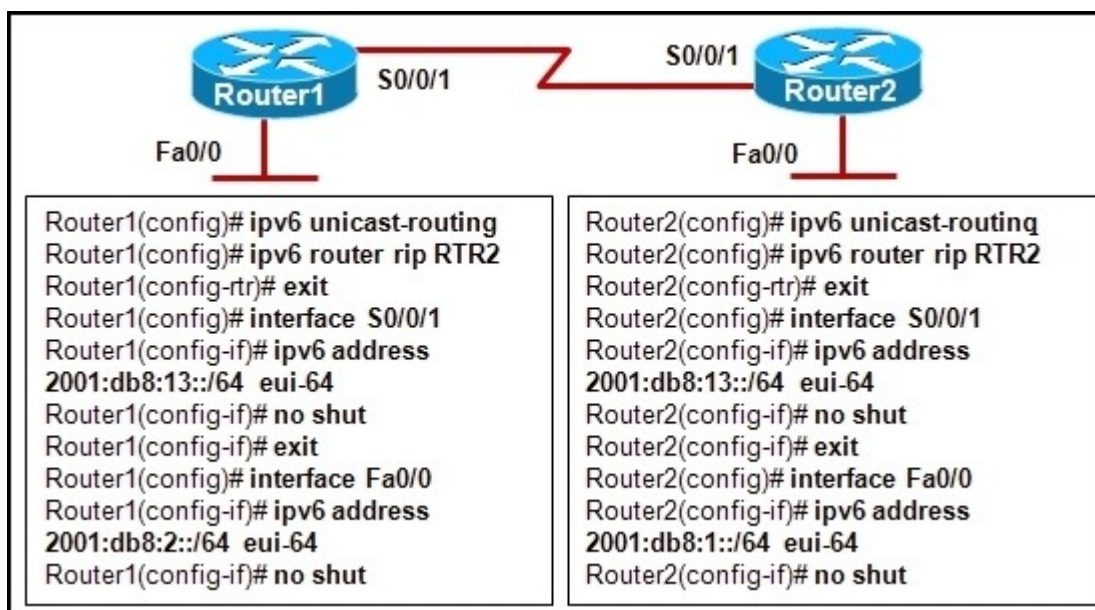
All interfaces have been configured with the incorrect IPv4 addresses.

RIPv1 or RIPv2 needs to be configured in addition to RIPng to successfully use IPv4.

When IPv4 and IPv6 are configured on the same interface, all IPv4 addresses are shut down in favor of the newer technology.



37



Refer to the exhibit. A network administrator has issued the commands that are shown on Router1 and Router2. A later review of the routing tables reveals that neither router is learning the LAN network of the neighbor router. What is most likely the problem with the RIPng configuration?

The serial interfaces are in different subnets.

The RIPng process is not enabled on interfaces.

The RIPng network command is not configured.

The RIPng processes do not match between Router1 and Router2.



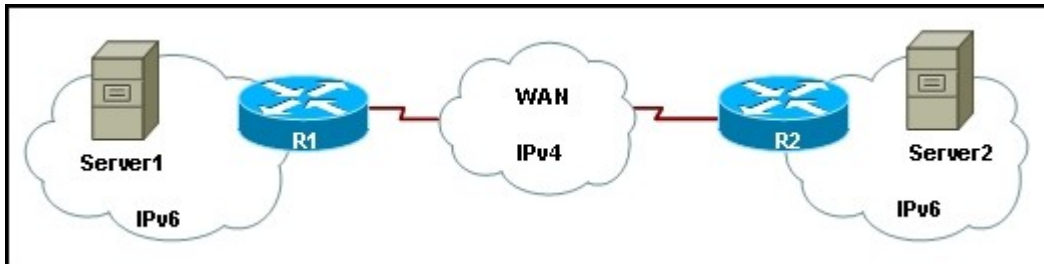
38

When configuring a Frame Relay connection, what are two instances when a static Frame Relay map should be used? (Choose two.)

- when the remote router is a non-Cisco router
- when the remote router does not support Inverse ARP
- when the local router is using IOS Release 11.1 or earlier
- when broadcast traffic and multicast traffic over the PVC must be controlled
- when globally significant rather than locally significant DLCIs are being used



39



Refer to the exhibit. Company ABC expanded its business and recently opened a new branch office in another country. IPv6 addresses have been used for the company network. The data servers Server1 and Server2 run applications which require end-to-end functionality, with unmodified packets that are forwarded from the source to the destination. The edge routers R1 and R2 support dual stack configuration. What solution should be deployed at the edge of the company network in order to successfully interconnect both offices?

- a new WAN service supporting only IPv6
- NAT overload to map inside IPv6 addresses to outside IPv4 address
- a manually configured IPv6 tunnel between the edge routers R1 and R2
- static NAT to map inside IPv6 addresses of the servers to an outside IPv4 address and dynamic NAT for the rest of the inside IPv6 addresses



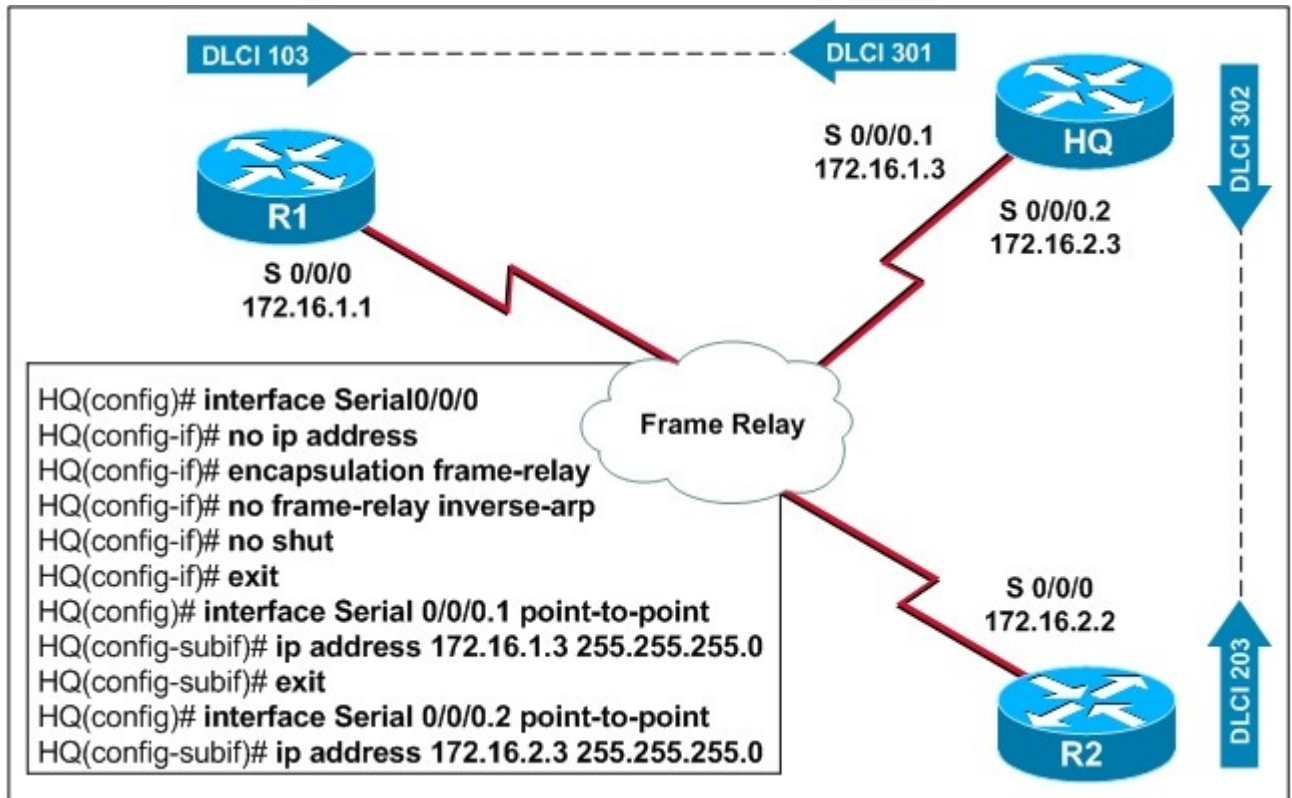
40

A router in a Frame Relay network needs to forward a message received from a host. What two methods does the router use to identify the correct VC to forward the message? (Choose two.)

- The router forwards the frame to all ports in the network and learns the address from the reply frame.
- The destination host IP address is embedded in the DLCI.
- The router searches Inverse ARP tables for maps of DLCIs to IP addresses.
- A table of static mappings can be searched.
- The router broadcasts a request for the required IP address.



41



Refer to the exhibit. You are a network administrator who has been tasked with completing the Frame Relay topology that interconnects two remote sites. How should the point-to-point subinterfaces be configured on HQ to complete the topology?

```

HQ(config-subif)#frame-relay interface-dlci 103 on Serial 0/0/0.1
HQ(config-subif)#frame-relay interface-dlci 203 on Serial 0/0/0.2
HQ(config-subif)#frame-relay interface-dlci 301 on Serial 0/0/0.1
HQ(config-subif)# frame-relay interface-dlci 302 on Serial 0/0/0.2
HQ(config-subif)#frame-relay map ip 172.16.1.1 103 broadcast on Serial 0/0/0.1
HQ(config-subif)#frame-relay map ip 172.16.2.2 203 broadcast on Serial 0/0/0.2
HQ(config-subif)#frame-relay map ip 172.16.1.1 301 broadcast on Serial 0/0/0.1
HQ(config-subif)#frame-relay map ip 172.16.2.2 302 broadcast on Serial 0/0/0.2
  
```


PVC Statistics for interface Serial0/0 (Frame Relay DTE)				
	Active	Inactive	Deleted	Static
Local	1	0	0	0
Switched	0	0	0	0
Unused	0	0	0	0

DLCI = 100, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial0

input pkts 1300	output pkts 1270	in bytes 22121000
out bytes 21802000	dropped pkts 4	in FECN pkts 147
in BECN pkts 192	out FECN pkts 259	out BECN pkts 214
in DE pkts 12	out DE pkts 34	
out bcast pkts 107	out bcast bytes 19722	

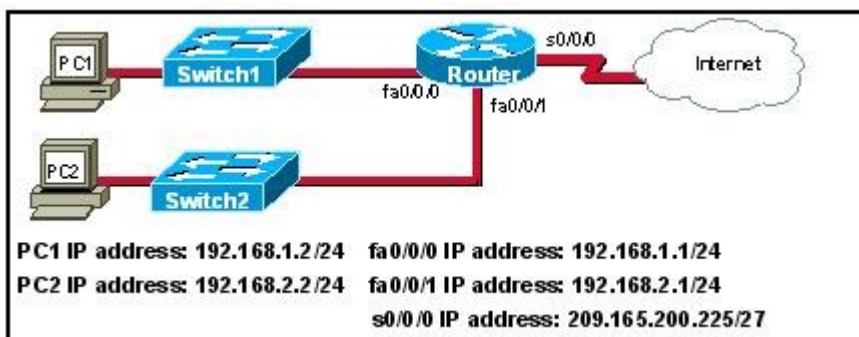
pvc create time 00:25:50, last time pvc status changed 00:25:40

Refer to the exhibit. Which two conclusions can be drawn from the output shown? (Choose two.)

- ☐ This network is experiencing congestion.
- ☐ The Frame Relay connection is in the process of negotiation.
- ☐ Data is not flowing in this network.
- ☐ The network is discarding eligible packets.
- ☐ The DLCI is globally significant.



43

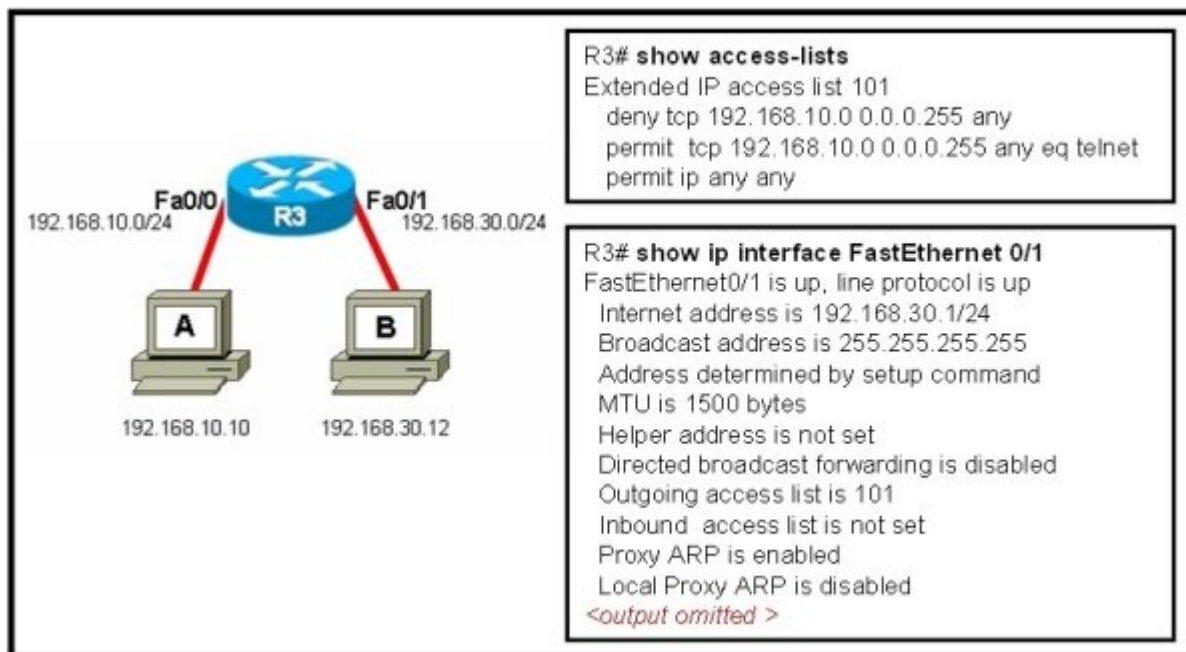


Refer to the exhibit. The network administrator creates a standard access control list to prohibit traffic from the 192.168.1.0/24 network from reaching the 192.168.2.0/24 network while still permitting Internet access for all networks. On which router interface and in which direction should it be applied?

- ☐ interface fa0/0/0, inbound
- ☐ interface fa0/0/0, outbound
- ☐ interface fa0/0/1, inbound
- ☐ interface fa0/0/1, outbound



44



Refer to the exhibit. Partial results of the **show access-lists** and **show ip interface FastEthernet 0/1** commands for router R3 are shown. There are no other ACLs in effect. Host A is unable to telnet to host B. Which action will correct the problem but still restrict other traffic between the two networks?

- Apply the ACL in the inbound direction.
- Apply the ACL on the FastEthernet 0/0 interface.
- Reverse the order of the TCP protocol statements in the ACL.
- Modify the second entry in the list to **permit tcp host 192.168.10.10 any eq telnet**.



- 45 What functionality do access control lists provide when implementing dynamic NAT on a Cisco router?
- defines which addresses can be translated
 - defines which addresses are assigned to a NAT pool
 - defines which addresses are allowed out of the router
 - defines which addresses can be accessed from the inside network



- 46 Which two statements are true about IPv6? (Choose two.)
- Security options are build into IPv6.
 - IPv6 addresses require less router overhead to process.
 - IPv6 can only be configured on an interface that does not have IPv4 on it.
 - There is no way to translate between IPv4 addresses and IPv6 addresses.
 - When enabled on a router, IPv6 can automatically configure link-local IPv6 addresses on all interfaces.



- 47 At what physical location does the responsibility for a WAN connection change from the user to the service provider?
- demilitarized zone (DMZ)
 - demarcation point
 - local loop
 - cloud



48

```
<output omitted>
!
username sdm privilege 15 password 0 sdm
!
ip http server
ip http authentication local
ip http secure-server
ip http timeout-policy idle 600 life 86400 requests 10000
!
<output omitted>
!
line con 0
line aux 0
line vty 0 4
 privilege level 15
 login local
 transport input none
```

Refer to the exhibit. A network administrator is trying to configure a router to use SDM but it is not functioning correctly. What could be the problem?

The username and password are not configured correctly.

The authentication method is not configured correctly.

The HTTP timeout policy is not configured correctly.

The vtys are not configured correctly.



49

An administrator is unable to receive e-mail. While troubleshooting the problem, the administrator is able to ping the local mail server IP address successfully from a remote network and can successfully resolve the mail server name to an IP address via the use of the **nslookup** command. At what OSI layer is the problem most likely to be found?

physical layer

data link layer

network layer

application layer



50

A network administrator added two switches and a new VLAN over the past weekend. How can the administrator determine if the additions and changes improved performance and availability on the company intranet?

Perform a baseline test and compare the current values to values that were obtained in previous weeks.

Interview departmental secretaries and determine if they think load time for web pages is improved.

Compare the hit counts on the company web server for the current week to the values that were recorded from previous weeks.

Performance on the intranet can be determined by monitoring load times of company web pages from remote sites.



51

A network administrator is working with an applications team to fix a problem that a server based application is having with response time. The administrator has examined the network portions of the data path and identified several possible problem areas. The applications team has simultaneously identified potential issues with the current release of software. The network administrator begins addressing the network issues while the applications team implements software patches.

Which statement applies to this situation?

Changes to the network will reveal problems that are caused by the new patches.

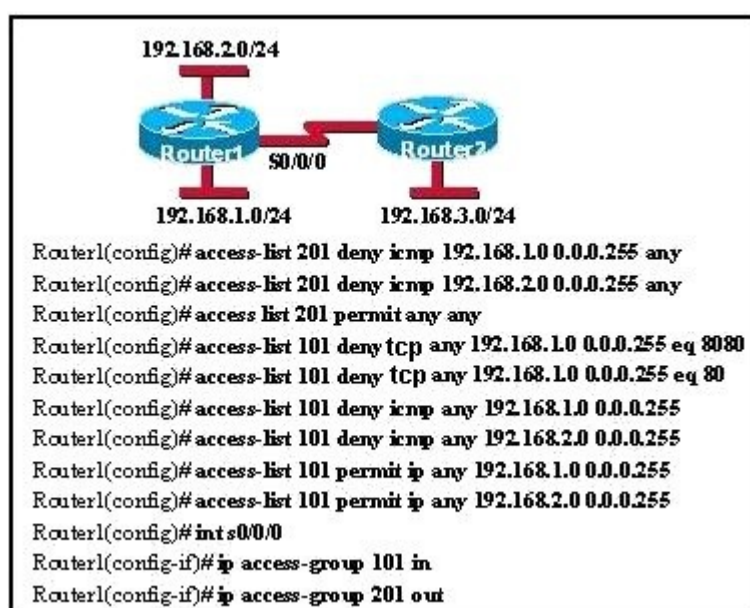
Scheduling will be more difficult if the network and software teams work independently.

It will be difficult to isolate the problem if two teams are implementing changes independently.

Results from changes will be easier to reconcile and document if each team works in isolation.



52



Refer to the exhibit. Which statement correctly describes how Router1 processes an FTP request entering interface s0/0/0, destined for an FTP server at IP address 192.168.1.5?

It matches the incoming packet to the **access-list 201 permit any any** statement and allows the packet into the router.

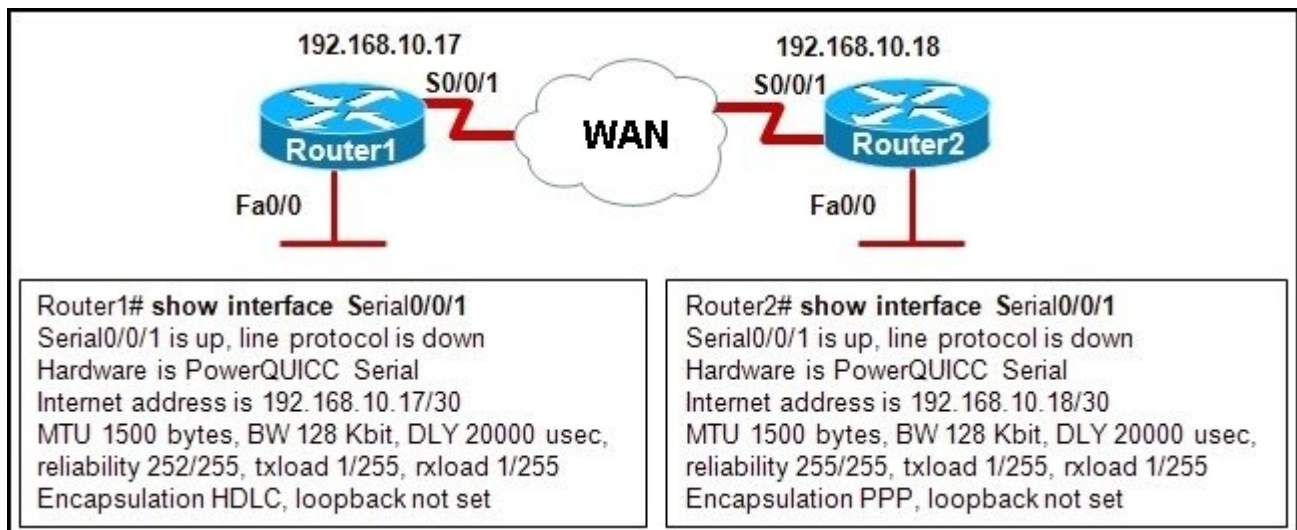
It reaches the end of ACL 101 without matching a condition and drops the packet because there is no **access-list 101 permit any any** statement.

It matches the incoming packet to the **access-list 101 permit ip any 192.168.1.0 0.0.0.255** statement, ignores the remaining statements in ACL 101, and allows the packet into the router.

It matches the incoming packet to the **access-list 201 deny icmp 192.168.1.0 0.0.0.255 any** statement, continues comparing the packet to the remaining statements in ACL 201 to ensure that no subsequent statements allow FTP, and then drops the packet.



53



Refer to the exhibit. From the output of the **show interface** commands, at which OSI layer is a fault indicated?

- application
- transport
- network
- data link
- physical