

Part 3

QUESTION 201

When a switch port is used as a VLAN trunk, which of the following trunk modes are valid? (Select all that apply.)

- A. blocking
- B. auto
- C. desirable
- D. on
- E. transparent
- F. learning
- G. off

Answer: B, C, D, G

Explanation:

A trunk port can be configured as one of the following 5 different modes: on, off, desirable, auto, or nonegotiate.

The table below is a summary of the configuration modes.

Mode	Function	DTP Frames Transmitted	Final State (Local Port)
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640-801

Auto(default)	Makes the port willing to convert the link to a trunk. The port becomes a trunk port if the neighboring port is set to on or desirable mode.	Yes, periodic.	Trunking
On	Puts the port into permanent trunking mode and negotiates to convert the link into a trunk. The port becomes a trunk port even if the neighboring port does not agree to the change.	Yes, periodic.	Trunking, unconditionally.
Nonegotiate	Puts the port into permanent trunking mode but prevents the port from generating DTP frames. You must configure the neighboring port manually as a trunk port to establish a trunk link. This is useful for devices that do not support DTP.	No	Trunking, unconditionally.
Desirable	Makes the port actively attempt to convert the link to a trunk link. The port becomes a trunk port if	Yes, periodic.	It will end up in trunking state only if the remote mode is on, auto, or desirable.

	the neighboring port is set to on, desirable, or auto mode.		
off	Puts the port into permanent non-trunking mode and negotiates to convert the link into a non-trunk link. The port becomes a non-trunk port even if the neighboring port does not agree to the change.	No in steady state, but will transmit informs to speed up remote end detection after the change from on.	Non-trunking

QUESTION 202

Which of following VLAN frame encapsulation types are configurable on a Cisco switch? (Select two answer choices.)

- A. VTP
- B. 802.1Q
- C. LLC
- D. ISL
- E. CDP
- F. PAP

Answer: B, D

Explanation:

ISL and 802.1Q are the two trunking encapsulations that can be configured on a Cisco switch. ISL is Cisco proprietary and 802.1Q is the IEEE standard method.

Incorrect Answers:

A. VTP is the VLAN Trunking Protocol, which is used to carry VLAN information across the trunks. The question is asking for the encapsulation options for the trunk, which will be used by VTP.

C. LLC is the Logical Link Control, which is a sub-layer of the data link layer.

E. CDP is the Cisco Discovery Protocol, which is used by Cisco devices to discover information on neighboring Cisco devices.

F. PAP is the Password Authentication Protocol, which is used as an authentication mechanism on PPP links.

QUESTION 203

Which VTP mode should a Cisco switch be set to if this switch is to add or delete

VLANs to a management domain?

- A. Transparent
- B. Server
- C. Auto
- D. Client
- E. User

Answer: B

Explanation:

VTP Modes:

If you intend to make a switch part of a VTP management domain, each switch must be configured in one of three possible VTP modes. The VTP mode assigned to a switch will determine how the switch interacts with other VTP switches in the management domain. The three VTP modes that can be assigned to a Cisco switch include server mode, client mode, and transparent mode. Each of these roles is outlined below:

Server Mode Once VTP is configured on a Cisco switch, the default mode used is Server Mode. In any given VTP management domain, at least one switch must be in Server Mode. When in Server Mode, a switch can be used to add, delete, and modify VLANs, and this information will be passed to all other switches in the VTP management domain.

Client Mode When a switch is configured to use VTP Client Mode, it is simply the recipient of any VLANs added, deleted, or modified by a switch in Server Mode within the same management domain. A switch in VTP client mode cannot make any changes to VLAN information.

Transparent Mode A switch in VTP Transparent Mode will pass VTP updates received by switches in Server Mode to other switches in the VTP management domain, but will not actually process the contents of these messages. When individual VLANs are added, deleted, or modified on a switch running in transparent mode, the changes are local to that particular switch only, and are not passed to other switches in the VTP management domain.

Based on the roles of each VTP mode, the use of each should be more or less obvious. For example, if you had 15 Cisco switches on your network, you could configure each of them to be in the same VTP management domain. Although each could theoretically be left in the default Server Mode, it would probably be easier to leave only one switch in this configuration, and then configure all remaining switches for VTP Client Mode. Then, when you need to add, delete, or modify a VLAN, that change can be carried out on the VTP Server Mode switch and passed to all Client Mode switches automatically. In cases where you need a switch to act in a relatively standalone manner, or do not want it to propagate information about its configured VLANs, use Transparent Mode.

Incorrect Answers:

- A. A switch in VTP Transparent Mode will pass VTP updates received by switches in Server Mode to other switches in the VTP management domain, but will not actually process the contents of these messages.
- C, E. These are not valid VTP modes.

D. Client mode merely accepts changes made by the switch that is connected and in SERVER mode.

QUESTION 204

What must an administrator do in order to successfully configure a VLAN trunk between two switches? (Select two answer choices)

- A. Set each end of the trunk line to IEEE 802.1Q encapsulation.
- B. Set the same VTP management domain name on both switches.
- C. Set all ports on the two switched as access ports.
- D. Configure one of the two switches as a VTP server.
- E. Connect the two switches using a rollover cable.
- F. Use a router to forward VTP traffic between the VLANs.

Answer: B, D

Explanation:

All servers that need to share VLAN information must use the same domain name, and a switch can only be in one domain at a time. This means that a switch can only share VTP domain information with other switches if they're configured into the same VTP domain. You can use a VTP domain if you have more than one switch connected in a network, but if you've got all your switches in only one VLAN, you don't need to use VTP. VTP information is sent between switches via a trunk port.

Switches advertise VTP management domain information, as well as a configuration revision number and all known VLANs with any specific parameters. There's also something called VTP transparent mode, in it, you can configure switches to forward VTP information through trunk ports, but not to accept information updates or update their VTP databases. At least one of the switches will need to be configured as the VTP server in order to pass the VLAN info.

Incorrect Answers:

- A. Although this is a valid option, it is not a requirement since using ISL as the encapsulation type is also a valid option.
 - E. A rollover cable is not used between switches for any of the port types.
 - F. Routers will be required for sending traffic from one VLAN to the other, but not to forward the actual VTP traffic.
-

QUESTION 205

Which of the following can be an expected outcome of a VLAN? (Select all that apply)

- A. VLANs logically divide a switch into multiple, independent switches at Layer 2.
- B. Trunk links can carry traffic for multiple VLANs.
- C. VLAN implementation significantly increases traffic due to added trunking information.
- D. VLANs can span multiple switches.

E. VLANs typically decrease the number of switches needed

Answer: A, B, D

Explanation:

VLANs give you the power of making virtual LAN networks to subdivide collision domains into smaller units of functionality, without being limited by physical location. A is correct because that is the exact function of a VLAN. B is correct because trunk links are used to carry traffic for multiple VLANs. D is correct because a VLAN can and often does span across multiple switches. VTP makes this possible.

Incorrect Answers:

C. Although trunking information does indeed add some level of overhead, the overall traffic overhead is greatly reduced through the use of VLANs.

E, F. The number of total switches needed in a network is the result of the number of devices on the entire LAN that need to be connected. Whether VLANs are used or not will have little, if any, impact on the total number of switches needed in a LAN.

QUESTION 206

How could a large corporation with many specialized divisions benefit from using VLANs on their networks? (Select three answer choices.)

- A. VLANs allow access to network services based on department, not physical location.
- B. VLANs utilize packet filtering to enhance network security.
- C. VLANs provide a low-latency, high bandwidth internetworking alternative.
- D. VLANs provide a method of communication between IP addresses in large networks.
- E. VLANs establish segmented broadcast domains in switched networks.
- F. VLANs can greatly simplify adding, moving, or changing hosts on the network.

Answer: A, E, F

Explanation:

VLANs establish broadcast domains in switched networks, so by virtue of having the option to create many efficient broadcast domains, congestion is reduced and network throughput is greatly enhanced. VLANs allow networks to be divided by department or resource needs, rather than by physical location. When people move departments, leave a department, or join a department, administration is easy and convenient with a few keystrokes.

Incorrect Answers:

B, D. These would be router functions at layer 3. Switches and VLANs operate at layer 2 of the OSI model.

C. The use of VLANs may actually increase the latency in some cases, as traffic from one VLAN to the other will need to be routed.

QUESTION 207

Which commands, when used together, would create an 802.1Q link? (Select two answer choices)

- A. Switch(vlan)# mode trunk
- B. Switch(config)# switchport access mode trunk
- C. Switch(config-if)# switchport mode trunk
- D. Switch(config-if)# switchport trunk encapsulation dot1q
- E. Switch(config)# switchport access mode 1
- F. Switch(vlan)# trunk encapsulation dot1q

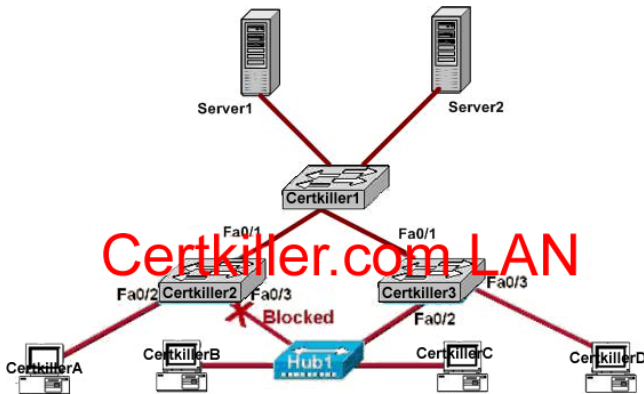
Answer: C, D

Explanation:

Creating this trunk link is a two step process. First you have to set the switchport mode to trunk, and then you configure the encapsulation. The giveaway on this question is the fact that to create a trunk on an interface, you have to be in interface configuration mode. So C sets the trunk, and D sets the encapsulation.

QUESTION 208

Exhibit



Assuming all hosts and servers are in the same VLAN, which statement is correct about the exhibit?

- A. Switch Certkiller 2 is the root bridge.
- B. Spanning Tree Protocol is not running.
- C. Host Certkiller D and Server1 are in the same network.
- D. No collisions can occur in traffic between Host Certkiller B and host Certkiller C.
- E. If Fa0/0 is down on Switch Certkiller 3, Host Certkiller 3 cannot access Server2

Answer: C

QUESTION 209

Which of the following are benefits of VLANs? Choose three

- A. They increase the size of collision domains.

- B. They allow logical grouping of users by function.
- C. They can enhance network security,
- D. They increase the size of broadcast domains while decreasing the number of the broadcast domains.
- E. They increase the number of broadcast domains while decreasing the size of the broadcast domains.
- F. They simplify switch administration.

Answer: B, C, E

Explanation:

There are many motivations for using VLANs, including these:

1. To group users by department, or by groups that work together, instead of by physical location. (B)
2. To reduce overhead by limiting the size of each broadcast domain (E)
3. To enforce better security by keeping sensitive devices on a separate VLAN (C)
4. To separate specialized traffic from mainstream traffic - for example, putting IP telephones on a separate VLAN from user PCs.

QUESTION 210

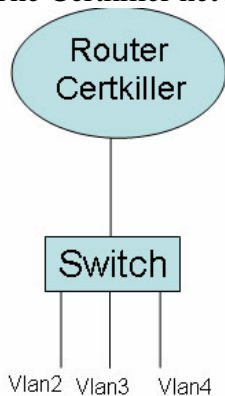
When a new trunk link is configured on an IOS based switch, which VLANs are allowed over the link?

- A. By default, all defined VLANs are allowed on the trunk.
- B. Each single VLAN, or VLAN range, must be specified with the switchport mode command.
- C. Each single VLAN, or VLAN range, must be specified with the vtp domain command.
- D. Each single VLAN, or VLAN range, must be specified with the vlan database command.

Answer: A

QUESTION 211

The Certkiller network Topology is displayed in the exhibit below:



A switch has been configured for three different VLANs: VLAN 2, VLAN 3, and

VLAN 4. For the purposes of communication between VLANs a router is to be added. Host from one VLAN should be able to reach the hosts in the other VLANs. Based on this requirement, what type of connection is acceptable between the router and switch?

- A. 10 Mbps Ethernet
- B. 56 kbps serial
- C. 100 Mbps Ethernet
- D. 1,544 Mbps serial
- E. 1000 Mbps Ethernet

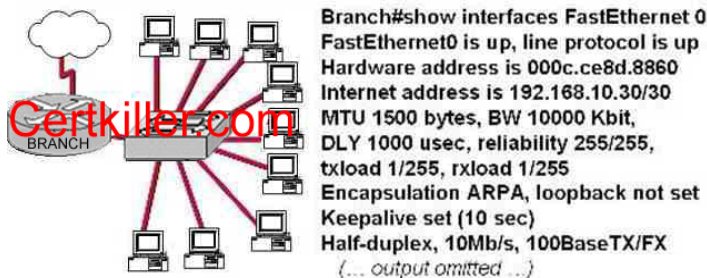
Answer: C, E

Explanation:

For all hosts to be able to reach each other, inter-VLAN routing will need to be configured. In order to provide Inter-VLAN routing between the router and the switch, a trunk will need to be set up. This trunk can be either ISL or 802.1Q. On a router, the interface that is to be used as the trunk can be 100 Mbps Ethernet, Gigabit Ethernet, or 10 Gigabit Ethernet. Therefore, only choices C or E are correct.

QUESTION 212

A router has been configured to provide the nine users on the branch office LAN with Internet access, as shown in the diagram below:



It is found that some of the users on the LAN cannot reach the Internet. Other users are not having any problems. Based on the topology and router output shown, which of the following commands should be issued on the router to correct the problem? (Select one).

- A. Branch(config-if)# no shutdown
- B. Branch(config-if)# duplex full
- C. Branch(config-if)# no keepalive
- D. Branch(config-if)# ip address 192.168.10.30 255.255.255.240
- E. Branch(config-if)# bandwidth 100
- F. Branch(config-if)# encapsulation 802.3

Answer: D

QUESTION 213

A router is configured as shown in the graphic. The switch is connected to the router over a VLAN trunk. The switch has been configured with three VLANs: VLAN1, VLAN2, and VLAN3. In addition, the IP address of the switch is 192.168.1.2. A host is being added to the switch on VLAN 2.

What is the correct default gateway for this computer?

- A. 192.168.1.1
- B. 192.168.1.2
- C. 192.168.2.1
- D. 192.168.2.2
- E. 192.168.3.1
- F. 192.168.3.2

Answer: C

The default gateway for this host should be the IP address of the local router on that VLAN. Based on the router configuration, this IP address is 192.168.2.1. In the router configuration, the number that follows the "encapsulation dot1q" command is the VLAN that is assigned to it. In this case, the PC host belongs to VLAN 2, so the subinterface fast Ethernet 0/0.2 is the one that should be chosen.

Incorrect Answers:

- A. This is the IP address that hosts in VLAN 1 should use as their default gateway.
- B. Even though this is the IP address of the switch itself as stated in the question, it should not be chosen as the default gateway for any of the hosts in any of the VLANs. This IP address would be used only to administer and make changes to the switch.
- D, F. These are incorrect choices.
- E. This is the IP address that hosts in VLAN 3 should use as their default gateway.

QUESTION 214

The LAN needs are expanding at the Certkiller corporate office, which is quickly growing. You are instructed to enlarge the area covered by a single LAN segment on the Certkiller network.

Which of the following are layer 1 devices that you can use? (Choose all that apply.)

- A. A switch.
- B. A router.
- C. A network adapter card.

- D. A hub.
- E. A repeater.

Answer: D E

Explanation:

A hub simply repeats the electrical signal and makes no attempt to interpret the electrical signal (layer 1) as a LAN frame (Layer 2). So, a hub actually performs OSI layer 1 functions, repeating an electrical signal, whereas a switch performs OSI layer 2 functions, actually interpreting Ethernet header information, particularly addresses, to make forwarding decisions. Hubs can be used to increase the number of stations that can be supported on a LAN.

Because the repeater does not interpret what the bits mean, but does examine and generate electrical signals, a repeater is considered to operate at Layer 1. Repeaters can be used to physically extend the LAN to greater distances.

QUESTION 215

You are experiencing intermittent issues relating to congestion with your network. What are the possible causes of congestion on a LAN? (Choose all that apply.)

- A. A broadcast domain with too many hosts.
- B. Full duplex operation.
- C. Broadcast storms.
- D. Multicasting.
- E. Network Segmentation.
- F. Low bandwidth.

Answer: A, C, F

Explanation:

A LAN segment with too many hosts can mean that there are a large number of stations contending for bandwidth. It can also mean an increase in the number of collisions on the segment, which can cause further congestion issues. Broadcast storms are the result of a large number of broadcasts sent over the LAN. Because each station listens to these broadcast messages, congestion can occur quickly. Finally, low bandwidth can simply mean that the LAN can not process all of the LAN traffic that is being sent. This can mean that TCP sessions are retransmitted, which can lead to additional congestion.

Incorrect Answers:

- B. This can alleviate congestion, as data can be sent and received at the same time. In addition, collisions are not possible in a full duplex LAN.
 - D. Multicasting can actually alleviate congestion issues, as single streams of information can reach multiple hosts at the same time, instead of using a series of point to point connections.
 - E. Segmentation breaks up a large LAN into multiple, smaller LANS. This will mean fewer hosts per broadcast domain.
-

QUESTION 216

Which type of cable should be used to make a connection between the Fa0/0 port on a router and the Fa0/0 port switch?

- A. Rollover cable
- B. Console cable
- C. Crossover cable
- D. Straight-through cable
- E. Serial cable

Answer: D

Explanation:

The Fast Ethernet ports on a switch and router are both RJ-45 ports. It means we have same devices at both ends. To connect similar devices we use a crossover cable.

QUESTION 217

What components are required to directly connect two PCs so they are able to participate in a simple peer-to-peer network? Choose three

- A. Straight-through cable
- B. Compatible network interfaces
- C. Networking protocol
- D. Hub
- E. Crossover cable
- F. router

Answer: B, C, E

Explanation:

This cable can be used to directly connect two computers to each other without the use of a hub or switch.

Crossover cables are terminated with CAT 5 RJ-45 (RJ stands for "Registered Jack") modular plugs. RJ-45 plugs are similar to those you'll see on the end of your telephone cable except they have eight versus four contacts on the end of the plug. Also, make sure the ends you select are rated for CAT 5 wiring.

QUESTION 218

What kind of cable should be used to establish a trunked line between two Catalyst 2950 switches?

- A. a straight-through cable
- B. an EIA/TIA-232 serial cable
- C. an auxiliary cable
- D. a modem cable
- E. a cross-over cable

Answer: E

Explanation:

A crossover cable is used to connect to same devices, or devices from the same OSI layer.

QUESTION 219

You have a server that's directly connected to a Cisco switch by way of its Fa0/1 port, and you don't want any other MAC addresses from any other servers to access this port. How would you accomplish this? (Select two answer choices)

- A. Configure port Fa0/1 to accept connections only from the static IP address of the server.
- B. Employ a proprietary connector type on Fa0/1 that is incompatible with other host connectors.
- C. Configure the MAC address of the server as a static entry associated with port Fa0/1.
- D. Bind the IP address of the server to its MAC address on the switch to prevent other hosts from spoofing the server IP address.
- E. Configure port security on Fa0/1 to reject traffic with a source MAC address other than that of the server.
- F. Configure an access list on the switch to deny server traffic from entering any port other than Fa0/1.

Answer: C, E

Explanation: You can configure a MAC address to be associated only with a particular port, with the restriction that frames destined to that MAC address have to enter through that particular port. So answer choice C is correct.

Another feature you can use is port security. It can preset a limit to the number of sources (including limiting to one) that can forward frames into the said port switch. When a device with a different MAC address than the one configured for port security is connected to the switch, the port will administratively shut itself down. The port will only forward traffic again after an administrator manually enables it.

Reference: CCNA Self-Study CCNA ICND exam certification Guide (Cisco Press, ISBN 1-58720-083-X) Pages 583-585.

QUESTION 220

Which switching mode provides the highest level of integrity and error-free transport, rather than maximizing speed?

- A) 802.1q forwarding
- B) VTP transparent mode
- C) cut-through
- D) store-and-forward
- E) fragment-free

F) frame-filtering

Answer: D

Explanation:

The Switch receives and stores all bits in the frame before forwarding the frame. This allows switch to check the FCS before forwarding the frame. The FCS is the frame check sequence, and the information contained in it is used by the switch to prevent frames with errors from being forwarded through the network.

Incorrect Answers:

E. The Switch performs the address table lookup as soon as the destination address field in the header is received. The first bits in the frame can be sent out to out port before the final bits in the incoming frame are received. This does not allow the switch to discard frames that fail the FCS check.

C. Cut through will not perform any error checking. This would be the best choice for ports where speed was most important.

QUESTION 221

A new switch is installed in the Certkiller network. This switch is to be configured so that VLAN information will be automatically distributed to all the other Cisco Catalyst switches in the network.

Which of the conditions below have to be met in order for this to occur? (Choose all that apply).

A. The switch that will share the VLAN information must be in the VTP Server mode.

B. The switches must be in the same VTP domain.

C. The switch that will share the VLAN information must be configured as the root bridge.

D. The switches must be configured to use the same VTP version.

E. The switches must be configured to use the same STP version.

F. The switches must be configured to use the same type of ID tagging.

Answer: A, B, F

Explanation:

For the VLAN information to pass automatically throughout the network, VTP must be set up correctly. In order for VTP to work, a VTP server is needed, the VLAN's must be in the same VTP domain, and the encapsulation on each end of the trunk must both set to either 802.1Q or ISL.

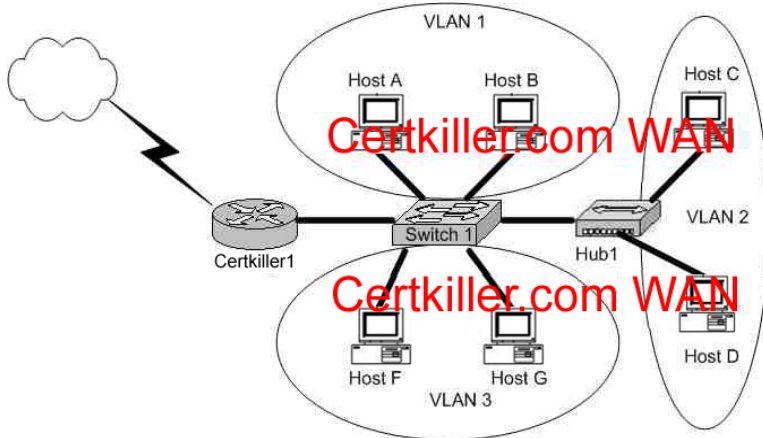
Incorrect Answers:

C. Root bridges and other functions of the Spanning Tree Protocol (STP) have no impact of the VTP configuration.

D, E. There is only one version of VTP and STP.

QUESTION 222

The Certkiller Network consists of a router, switch, and hub as shown below:



In accordance with the above diagram; which of the statements below correctly describe the switch port configuration and the router port configurations? (Select three answer choices)

- A. The Certkiller 1 WAN port is configured as a trunking port.
- B. The Certkiller 1 port connected to Switch1 is configured using subinterfaces.
- C. The Certkiller 1 port connected to Switch1 is configured as 10 Mbps.
- D. The Switch1 port connected to Certkiller 1 is configured as a trunking port.
- E. The Switch1 port connected to Host B is configured as an access port.
- F. The switch1 port connected to Hub1 is configured as full duplex.

Answer: B, D, E

Explanation:

B is correct because the diagram and the function match the description of a subinterface. Subinterfaces are needed because for inter-vlan communication, routing needs to take place. D is correct because all 3 VLAN's are trunked to reach the router. E is correct because access ports are correct in this case.

Incorrect Answers:

- A. This is incorrect because trunks only work between switches, and not between a router and a WAN.
- C, F. Although these may be true, we are not given enough information in this diagram to confirm it.

QUESTION 223

When you power up a Cisco router; in what memory is the start-up configuration normally stored in?

- A. RAM
- B. ROM
- C. FLASH
- D. NVRAM

Answer: D

Explanation:

The startup configuration is stored in the Non-Volatile RAM.

Incorrect Answers:

A, B. No configuration information is stored in RAM or ROM.

C. The IOS is normally stored in the flash memory, not the saved configuration.

QUESTION 224

You are the administrator of the Certkiller network and you have forgotten the password to one of your routers. After completing the password recovery procedure the router returned to its normal operation. The config-register was set back to the initial default value. What is this value?

A. 0x2112

B. 0x2104

C. 0x2102

D. 0x2142

E. 0x2100

Answer: C

Explanation:

The config-register's default factory setting is 0x2102. The following display the possible configuration register values and their meanings:

Configuration Register Values and their Meaning:

The table below contains some common settings which are valid on most platforms.

Note: Before changing the configuration register on your router to one of the values below, verify that it can be used by checking the appropriate hardware installation guide.

640-801

Configuration Register Setting	Router Behavior
0x102	<ul style="list-style-type: none">• Ignores break• 9600 console baud
0x1202	<ul style="list-style-type: none">• 1200 baud rate
0x2101	<ul style="list-style-type: none">A. Boots into bootstrapB. Ignores breakC. Boots into ROM if initial boot failsD. 9600 console baud rate
0x2102	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails• 9600 console baud rate default value for most platforms
0x2120	<ul style="list-style-type: none">• Boots into ROMmon• 19200 console speed
0x2122	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails• 19200 console baud rate
0x2124	<ul style="list-style-type: none">• NetBoot• Ignores break• Boots into ROM if initial boot fails• 19200 console speed
0x2142	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails
0x2902	<ul style="list-style-type: none">• 9600 console baud rate• Ignores the contents of Non-Volatile RAM (NVRAM) (ignores configuration)• Ignores break• Boots into ROM if initial boot fails• 4800 console baud rate
0x2922	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails• 38400 console baud rate
0x3122	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails• 57600 console baud rate
0x3902	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails• 2400 console baud rate
0x3922	<ul style="list-style-type: none">• Ignores break• Boots into ROM if initial boot fails• 115200 console baud rate

Reference:

http://www.cisco.com/en/US/products/hw/routers/ps133/products_tech_note09186a008022493f.shtml

Incorrect Answers:

D. This is the setting that would be used during the password recovery procedure.

QUESTION 225

Which of the commands below would you enter if you wanted to see the configuration register of your router?

- A. show boot
- B. show flash
- C. show register
- D. show version
- E. show config

Answer: D

Explanation:

To display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images, use the show version command in EXEC mode.

Example:

The following is sample output from the show version command:

```
Router1> show version
Cisco Internetwork Operating System Software
IOS (tm) 7200 Software (C7200-J-M), Experimental Version
11.3(19970915:164752) [
hampton-nitro-baseline 249]
Copyright (c) 1986-1997 by cisco Systems, Inc.
Compiled Wed 08-Oct-97 06:39 by hampton
Image text-base: 0x60008900, data-base: 0x60B98000
ROM: System Bootstrap, Version 11.1(11855) [beta 2], INTERIM SOFTWARE
BOOTFLASH: 7200 Software (C7200-BOOT-M), Version 11.1(472), RELEASE
Router1 uptime is 23 hours, 33 minutes
cisco 7206 (NPE150) processor with 57344K/8192K bytes of memory.
R4700 processor, Implementation 33, Revision 1.0 (512KB Level 2 Cache)
Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
8 Ethernet/IEEE 802.3 interface(s)
2 FastEthernet/IEEE 802.3 interface(s)
4 Token Ring/IEEE 802.5 interface(s)
4 Serial network interface(s)
```

1 FDDI network interface(s)
125K bytes of non-volatile configuration memory.
1024K bytes of packet SRAM memory.
20480K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
20480K bytes of Flash PCMCIA card at slot 1 (Sector size 128K).
4096K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x2102

QUESTION 226

Which three of the following basic network services are provided by the Cisco IOS?
(Select three answer choices)

- A. Defines the network topology
- B. Access to network resources
- C. Routing and switching functions
- D. Content Filtering
- E. Intrusion Detection

Answer: A, B, C

Explanation

These are all basic network services provided by all IOS versions. These services are included in all IOS versions and feature sets.

Incorrect Answers:

D. Content filtering, such as java applet stripping, URL filtering, virus removal, etc are not normally performed by Cisco router and switch IOS.

E. Intrusion detection and network security services are normally performed by firewalls and servers.

Reference:

CCNA Self-Study CCNA INTRO exam certification Guide (Cisco Press, ISBN 1-58720-094-5)

QUESTION 227

After logging into a router, you type in "enable" and then enter the correct password when prompted. What is the current router prompt symbol at this point?

- A. >
- B. #
- C. ?
- D. *
- E. All of the above
- F. None of the above

Answer: B

Explanation:

When you enter the privileged mode by typing enable the router prompt will change to a

character.

Incorrect Answers:

- A. This is the prompt given after initially logging on.
- C, D. These are not valid router prompts.

QUESTION 228

In the Cisco IOS, what is the definition of a global command?

- A. A command that can be entered in any configuration mode.
- B. A command that supports all protocols.
- C. A command that is implemented in all IOS versions.
- D. A command that is set once and affects the entire router.
- E. A command that is available in every release of IOS.

Answer: D

Explanation:

When you enter global configuration mode and enter a command, it is applied to the running configuration file that is currently running in ram. The configuration of a global command affects the entire router. An example of a global command is one used for the hostname of the router.

Incorrect Answers:

- A. Global configuration commands must be performed while in global configuration mode. For example, when you are in the interface configuration mode, you most likely will need to exit out into global mode to type in the commands.
- B. Global commands do not necessarily support every protocol.
- C. This is not necessarily true, since there are certain global commands that are supported on one feature set that are not on a different feature set of IOS.
- E. Global commands can become outdated, and can be replaced by newer commands in the newer releases of IOS.

QUESTION 229

You just purchased a refurbished router that contains a configuration from a previous deployment. What should you do, before entering a new configuration into the router?

- A. RAM should be erased and the router restarted.
- B. Flash should be erased and the router restarted.
- C. NVRAM should be erased and the router restarted.
- D. The new configuration should be entered and saved.

Answer: D

Explanation: It is never in your best interest to completely purge the contents of a

router. It's safer to save a new configuration and implement it later while the router is up and running, then it is to start from scratch. That way if there's a problem with the router, you'll be more likely to isolate it while it is still running on the original configuration.

QUESTION 230

After logging into a router and typing in a few show commands, you press the up arrow key. What will this do?

- A. It will recall the previous command line
- B. It will move the cursor one line up
- C. It will redisplay the current command line
- D. It will capitalize the command line
- E. None of the above

Answer: A

Explanation:

The up arrow key is used to recall the previous command line entry. The commands that were entered previously can be displayed by repeatedly pressing the up arrow key, or by entering the "show history" command.

QUESTION 231

After working on a router, some problems arise and you wish to view the commands that you recently entered. Which IOS command opens the history buffer and displays the most recently entered commands?

- A. Show history
- B. Show buffers
- C. Show typed commands
- D. Show terminal buffer
- E. Show command

Answer: A

Explanation:

The router will buffer previously entered commands. By default, the "show history" command will display the previous ten commands that were entered. To see the contents of the buffer you enter the show history command.

Incorrect Answers:

- B. This command will show the memory buffer information
 - C, D. These are invalid commands.
-

QUESTION 232

You have just purchased a brand new router and wish to have the router prompt you through the initial configuration commands. Which router mode does this describe?

- A. ROM Monitor mode
- B. SETUP mode
- C. Autoflash mode
- D. RXBOOT mode
- E. None of the above

Answer: B

Explanation:

Setup mode is a convenient mode that walks you through the setup procedure by prompting you with specific questions and options one by one.

QUESTION 233

After working all night and successfully configuring a Cisco router for the Certkiller network you save your changes on the startup config, reboot the router, and go out for a cigarette. When you return, none of your changes are active and the router boots to the initial configuration mode! Which of the choices below indicates the source of your problem?

- A. Hardware failure in NVRAM prevents the router from loading the config
- B. Startup-config in flash is corrupt and cannot be analyzed
- C. Router configuration-register set to bypass startup configuration
- D. Startup-config in NVRAM is corrupt and cannot be analyzed
- E. None of the above

Answer: C

Explanation:

The default configuration-register setting of 0x2102 loads the IOS from flash and the configuration from NVRAM.

However, for password recovery, you can set the register to 0x2142 and the startupconfig file in NVRAM will be bypassed. The problem described here is that the config register was not changed back to 0x2102 before the router was rebooted, so the active configuration is bypassed. Simply setting the config register back to 0x2102 will fix this problem.

Incorrect Answers:

A, B, D. All of these describe hardware or software errors. In the event that this is the problem, errors will be generated and the router will fail to boot properly. In these cases, the router will not return to the initial startup configuration.

QUESTION 234

While working in setup mode, a configuration line is typed incorrectly. What should you do to exit setup mode, without executing or saving any of the mistakes you made? (Select two answer choices)

- A. Type exit at the setup dialog.
- B. Type close at the setup dialog.
- C. Press the Ctrl-C key combination.
- D. Press the Ctrl-X key combination.
- E. Issue the copy startup-config command.
- F. Issue the 'write e' command.
- G. Issue the "write mem" command

Answer: A, C

Explanation:

The command 'exit' will set you back from wherever you were without saving any changes. Pressing Ctrl-C will do the same thing.

Incorrect Answers:

- B. This is an invalid command
- E. This command is used to save the configuration stored on NVRAM to a location.
- F. This will have the effect of erasing the running configuration, and setting the router configuration back to the factory default settings.
- G. This is an old command that is still supported on the latest Cisco IOS. It is short for "write memory" and has the same effect as the "copy running-config startup-config" command.

QUESTION 235

You are a senior network administrator at Certkiller , and while performing the password recovery procedure on your 2500 series Cisco router, you type in the following command:

```
o/r 0x2142
```

What is the purpose of this command?

- A. It is used to restart the router.
- B. It is used to bypass the configuration in NVRAM.
- C. It is used to enter ROM Monitor mode.
- D. It is used to view the lost password.
- E. It is used to save the changes to the configuration.

Answer: B

Explanation:

The o/r 0x2142 command changes the value of config-register to 2142 in a Cisco 2500 series router, so that the Router ignores the NVRAM contents and reverts to the initial setup configuration mode when it boots.

QUESTION 236

Which of the following commands will display the name of the IOS image file being used in a Cisco router?

- A. Router# show IOS
- B. Router# show version
- C. Router# show image
- D. Router# show protocols
- E. Router# show flash

Answer: B, E

The IOS command "Show flash" displays all the image files in it. There could be more than one file. However, "show version" displays the one that is currently in use by the router.

Incorrect answers:

A, C. These are invalid commands.

D. The command "show protocols" will show the routed protocols in use by the router and by interface conditions and their IP address, if configured.

QUESTION 237

After making changes to the router, you issue the "copy running-config startupconfig" command to save changes. After reloading the router, the router comes up in setup mode. You again make changes, save them, and reboot. Again, the router comes up in setup mode.

What is the most likely cause of this?

- A. The NVRAM is corrupted.
- B. The boot system commands were omitted in the configuration.
- C. The configuration register setting is incorrect.
- D. The upgraded configuration incompatible with the hardware platform.
- E. The upgraded IOS incompatible with the hardware.

Answer: C

Explanation:

When you enter the command, "copy running-config startup-config" you save your current settings to NVRAM. The problem described in this question is that it appears the router is set to bypass the NVRAM, making it come up in the initial configuration dialog. The most likely cause of a router with the configuration register settings set incorrectly is that the router recently went through the password recovery procedure.

QUESTION 238

You need to upgrade the IOS of an existing router on your network. The new IOS image is located on a TFTP server that you have set up within the network. What command should you issue in order to download the new IOS version?

- A. Router# copy tftp flash
- B. Router# copy flash run
- C. Router(config)# restore flash
- D. Router(config)# repair flash

- E. Router# copy flash tftp
- F. Router# copy start flash

Answer: A

The command "copy tftp flash" will copy the new IOS version upgrade from your networks TFTP server (assuming of course you have a TFTP server with the new version of IOS standing by).

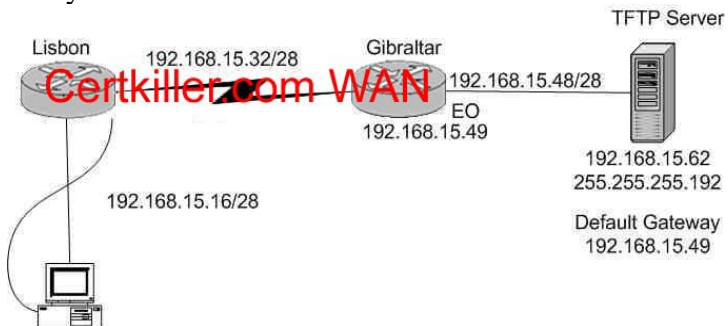
Incorrect Answers:

C, D. The copy tftp flash command should be issued from the enable command prompt. It is not necessary to go into configuration mode.

E. This will have the reverse effect, and will copy the IOS image on your router onto a folder in your TFTP server.

QUESTION 239

Study the exhibit below:



A systems administrator in Lisbon configured a new router to connect with his company's head office in Gibraltar. He attempted to create and save an image file of the new router on the TFTP server in Gibraltar but failed. Based on the information given by above exhibit, what is the underlying problem?

- A. The IP address of the TFTP server not correct.
- B. There is an incorrect subnet mask of the TFTP server.
- C. The default gateway of the TFTP server not properly set.
- D. The subnet mask on the Lisbon router not correct
- E. There is an incorrect IP address configured on E0 of the Gibraltar router

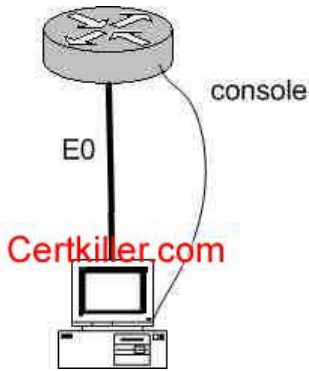
Answer: B

Explanation:

An incorrect subnet mask on the TFTP server is the cause of this problem. If you look at the subnet masks of all the other devices you'll notice that they are /28. If you rewrite the subnet mask of the TFTP server, of 255.255.255.192 you'll notice that it translates to a subnet mask of /26. A subnet mask of 255.255.255.240, which is a /28, applied to the TFTP server will fix this problem.

QUESTION 240

Study the exhibit below:



You just connected your computer directly to the E0 port of a router and you're running a console session. Which of the following steps below are required to successfully implement the "copy flash tftp" command and upload the flash image onto the TFTP server? (Select three answer choices)

- A. TFTP server software must be activated.
- B. TFTP server software must be running on the administrator's workstation.
- C. There must be space in the flash memory of the router to accommodate the file to be copied.
- D. The copy flash tftp command must provide the IP address of the administrator's workstation.
- E. The administrator's workstation must be on the same subnet as the router E0 interface.
- F. The Ethernet connection between the router and the administrator's workstation must be via straight-through cable.

Answer: B, D, E

Explanation:

The sole purpose of the 'copy flash tftp' command is to copy the routers configuration file to the TFTP server to save it. The first logical variable for this operation is that the TFTP software is actually running. So B is correct. D is correct because the IOS won't be able to send off if it doesn't even know where the TFTP server is. Finally, TFTP server must be on the same subnet as the connectivity must be direct and the TFTP and router will need to know how to reach each other.

Incorrect Answers:

- A. The TFTP can't just be activated, it has to be running in the right place.
- C. This is not valid because you aren't downloading into the flash, you're uploading out of the flash, so space isn't a concern.
- F. A cross over cable must be used when connecting from a PC directly into the router's Ethernet interface.

QUESTION 241

After issuing the "show version" command on your Cisco router, you notice that the image is named "C7200-ajs40-mx". What does the C7200 portion of the filename represent?

- A. The memory capacity requirements
- B. The hardware product platform
- C. The distribution channel
- D. The feature capabilities
- E. The run location and compression status

Answer: B

Explanation:

Cisco has a Cisco IOS image naming convention for identifying the platform or board for which the binary software is built, the package feature content of the image, and the area of memory used by the image at run time. The image name follows a three-part format: PPPPP-FFFF-MM

Where PPPPP represents the platform; FFFF represents features; and MM represents runtime memory and compression format. In this case, the C7200 means that it is a Cisco 7200 series router.

QUESTION 242

What kind of information can you deduce from an IOS image file name? (Select three answer choices)

- A. Distribution channel failures
- B. Feature capabilities
- C. Memory capacity needs
- D. Hardware product platform
- E. Programming language requirements
- F. Run location and compression status

Answer: B, D, F

Explanation:

Image Naming Conventions

You can identify the platform, features, and image location by the name of the image. The naming convention is platform-features-type for images that are stored on a UNIX system.

The platform variable indicates which platforms can use this image. Examples of platform variables include rsp (Cisco 7000 series with RSP7000 and Cisco 7500 series), c1600 (Cisco 1600 series), and c1005 (Cisco 1005).

The features variable identifies the feature sets supported by the image.

The type field can contain the following characters:

- f-The image runs from Flash memory.
- m-The image runs from RAM.
- r-The image runs from ROM.
- l-The image is relocatable.

- z-The image is zip compressed.
 - x-The image is mzip compressed.
-

QUESTION 243

After logging into the RtrB router, you issue the "show interface" command as displayed below:

```
RtrB#show interface serial0/0
Serial0/0 is up, line protocol is up
Hardware is PowerQUICC Serial
Internet address is 10.0.15.2/21
MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
Reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set
Keepalive set (10 sec)
LCP Open
Closed: IPXCP
Listen: CCP
Open: IPCP, CDPCP
Last input 00:00:00, output 00:00:00, output hang never
Last clearing of "show interface" counters 00:52:02
Input queue: 0/75/0/0 (size/max/drops/flushes): total output
drops: 0
Queuing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
```

After considering the effects of the command output illustrated in the exhibit above, which of the following protocols are operational on the serial link? (Select two options)

- A. PPP
- B. IP
- C. Compression
- D. IPX
- E. Multilink
- F. ATX

Answer: A, B

Explanation:

The interface displays show that the line protocol is up, so we can safely assume that everything is working from layers one and two. This interface is configured with PPP encapsulation, which is a layer two protocol that appears to be operational on this interface. The interface is also configured with a valid IP address and subnet mask, so IP is also operational on this interface.

Incorrect Answers:

C. There is nothing in the output displayed that would suggest any type of compression has been enabled on this interface.

- D. There is only an IP address configured on this interface. If IPX was enabled, there would be a layer 3 IPX address configured on it.
- E. Although multilink works with PPP to provide for the bonding of interfaces into a larger, logical interface, there is nothing that suggests that multilink has been enabled. PPP multilink uses bundle interfaces, and the bundle interface would have the IP address assigned to it, not the physical serial interface.
- F. There is nothing to suggest that this protocol has been enabled on this interface.

QUESTION 244

You wish to upgrade the IOS of a router without removing the image currently installed.

What command will display the amount of memory that is being used by the current IOS image and whether there is enough room available to hold both the current and new images?

- A. Router# show version
- B. Router# show flash
- C. Router# show memory
- D. Router# show buffers
- E. Router# show running-config
- F. All of the above

Answer: B

Explanation:

The "show flash" command is used to display the layout and contents of the flash memory file system. It will show name of the file system, as well as the number of bytes used and the number available within the flash memory.

QUESTION 245

The "show version" command was issued on a Certkiller router as shown below:

```
System Image file is "Flash: C2600-ik8035-m2.122-8.T5.bin"
```

```
Cisco 2620(MPC860)processor(revision 0x200) with 16384/2048K bytes of memory
```

```
Processor board ID JAD05076EF6  
MPC860 processor (revision 0x100) with 16384 Kbytes of DRAM  
Bringing up Software  
X.25 Software, Version 3.0.0  
2 FastEthernet/IEEE 802.3 interface(s)  
2 Serial(sync/async) network interface(s)  
2 Low speed serial(sync/async) network interface(s)
```

```
32K bytes of non-volatile configuration memory  
16384 bytes of processor board system flash (Read/Write)
```

```
Configuration register is 0x2102
```

The Network administrator at Certkiller .com wants to upgrade the IOS of this router. The new Image requires 64 MB of RAM & 16 MB for Storage of the File. Given the Output Shown in the Graphic, which of the following is true?

- A. This router meets the requirements for the new image.
- B. This router will require a DRAM upgrade to meet the requirements for the Image.
- C. This router will require a FLASH upgrade to meet the requirements for the Image.

D. This router will require a NVRAM upgrade to meet the requirements for the Image.

Answer: B

Explanation:

Based on the output above, the router above will not require a Flash memory upgrade, as only 16 MB is required and the Certkiller router does indeed have 16 MB of flash (16384 bytes). However, a DRAM upgrade is required, as 64 MB of RAM is needed but this router has only slightly more than 16 MB as shown by the 16384/2048 value.

QUESTION 246

You are a trainee technician at Certkiller , Inc. Your instructor tells you to backup an IOS image of a Cisco device to a Windows 2003 server on the network. What should you do first? (Choose all that apply.)

- A. Make sure that the network server can be accessed.
- B. Check that the authentication for access is set.
- C. Assure that the network server has adequate space for the code image.
- D. Verify any file naming and path requirements.
- E. Make sure that the server can load and run the bootstrap code.

Answer: A, B, C, D

Explanation:

In order to properly back up the Cisco IOS image onto a Windows server, you should ensure that the server is reachable and that you have the proper permissions to save files to the server. In addition to this, the server will need enough space to hold the backup file.

Incorrect Answers:

E. In order to simply back up the IOS file, the server needs to only be able to save it to a hard disk. It does not need to load, read, or boot the image.

QUESTION 247

The relevant system information regarding a Certkiller router is shown in the following display:

```
System image file is "flash:c2600-das35-m2.120.5.T1" 5.T1"

Cisco2621(MPC860)processor(revision 0x600) with 53248K/12288K bytes of memory
processor board ID JAD05280307(3536592999)
M860 processor:part number 0, mask 49.
Brigging software
x.2 software version 3.01
2 FastEthernet/IEEE 802.3 interface(s)
2 Serial(sync/async)network interface(s)
2 Low speed serial(sync/async)network interface(s)
16 terminal line(s)

32k bytes of non-volatile configuration memory.
16384k bytes of processor board System Flash (Read/Write)
```

Refer to the partial Command output shown. Which two statements are correct regarding the router hardware? (Choose Two)

- A. Total RAM Size is 32 KB.

- B. Total RAM Size is 16384 KB.(16 MB)
- C. Total RAM Size is 65536 KB.(64 MB)
- D. FLASH Size is 32 KB.
- E. FLASH Size is 16384 KB.(16 MB)
- F. FLASH Size is 65536 KB.(64 MB)

Answer: C, E

Explanation:

The RAM is found by adding up the memory, so in this case it is 53248K+12288K = 65536K. The Flash is found at the very bottom of the output, which is shown as 16384K

How Do I Know What Platform I Have?

Type the show version command at the enable command prompt of the router to see the platform, RAM, flash memory, and current version of code you are running.

This example shows a Cisco 2600 router with 48 MB of RAM (43617 K + 5534 K), 16 MB of flash memory (16384 K), and a code image called flash:c2600-jk8s-mz.122-6.bin.

```
wilson#show version
Cisco Internetwork Operating System Software
IOS (tm) C2600 Software (C2600-JK8S-M), Version 12.2(6), RELEASE SOFTWARE (fc2)
Copyright (c) 1986-2001 by Cisco Systems, Inc.
Compiled Wed 07-Nov-01 21:07 by pwade
Image text-base: 0x80008088, data-base: 0x814FF204

ROM: System Bootstrap, Version 11.3(2)XA3, PLATFORM SPECIFIC RELEASE SOFTWARE (fc1)

wilson uptime is 1 week, 2 days, 7 hours, 41 minutes
System returned to ROM by power-on
System image file is "flash:c2600-jk8s-mz.122-6.bin"

cisco 2611 (MPC860) processor (revision 0x202) with 43617K/5534K bytes of memory.
Processor board ID JAB03060692 (209339692)
M860 processor: part number 0, mask 49
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TNS3270 Emulation software.
2 Ethernet/IEEE 802.3 interface(s)
32K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash (Read/Write)

Configuration register is 0x2102

wilson#
```

Reference:http://www.cisco.com/en/US/products/sw/secursw/ps1018/products_tech_note09186a00800949e4.shtml

QUESTION 248

Which is the correct failback sequence for loading the Cisco IOS?

- A. ROM, Flash, NVRAM
- B. ROM, TFTP server, Flash
- C. Flash, TFTP server ROM
- D. Flash NVRAM, RAM

Answer: C

QUESTION 249

The Certkiller .com administrator has made changes to the router configuration but cannot remember if those changes were saved.

Which of the following commands allows the administrator to see the configuration

that will load when the router is restarted?

- A. Certkiller C# show memory
- B. Certkiller C# show startup-config
- C. Certkiller C# show running-config
- D. Certkiller C# show restart

Answer: B

Explanation:

Show startup-config command displays the contents of the NVRAM. When we reload a router, it loads the configuration from NVRAM. So, the administrator can check from the show startup-config command whether he has saved the temporary configurations from Running-config (RAM) to Startup-config (NVRAM).

QUESTION 250

Exhibit

- 1) The IOS image in flash is missing
- 2) No Network connectivity is available.
- 3) The router fallback IOS image is corrupt.

How will a Cisco 2600 series router respond if the conditions listed in the exhibit exist during the boot process?

- A. The router will enter setup mode.
- B. The router will enter ROM monitor mode.
- C. The router will enter global configuration mode.
- D. The boot will hang until an IOS is available.

Answer: B

Explanation:

Cisco router can look for IOS in FLASH, TFTP server, and ROM. The default option is to look for IOS only in FLASH, and in case the IOS in flash is corrupt, to look in ROM.

You can add the following commands to the configuration file to make a router to look for IOS image in FLASH, then TFTP server, then in ROM:

```
boot system flash ios_filename  
boot system TFTP ios_filename TFTP_address  
boot system rom
```

These 3 lines in the configuration file will force the router to look for IOS in the FLASH first, then in TFTP server, and then in rom.

QUESTION 251

Which command will reinitialize the router and totally replace the running configuration with the current startup configuration?

- A. Certkiller B# reload
- B. Certkiller B# copy tftp startup-config
- C. Certkiller B# copy startup.-config running-config
- D. Certkiller B# copy running-config flash
- E. Certkiller B# setup

Answer: A

Explanation:

Enter the copy system:running-config nvram:startup-config command to save your configuration changes to your startup configuration so that they will not be lost if there is a system reload or power outage. For example:

```
Router# copy system:running-config nvram:startup-config
Building configuration...
```

It might take a minute or two to save the configuration. After the configuration has been saved, the following output appears:

```
[OK]
```

```
Router#
```

On most platforms, this task saves the configuration to NVRAM. On the Class A Flash file system platforms, this task saves the configuration to the location specified by the CONFIG_FILE environment variable. The CONFIG_FILE variable defaults to NVRAM.

QUESTION 252

Exhibit

As a Certkiller.com instructor you are required to the following items to the correct order they are used when Cisco IOS based hardware is booted.

Item	Items, place here in order
TFTP	1st
ROM	2nd
NVRAM	3rd
FLASH	4th

A router consistently loses its configuration each time it reboots. Given the output shown in the graphic, what is the cause of this problem?

- A. Configuration register is misconfigured.

Answer: A

Explanation:

The value of the register 0x2142 means that the router should omit the startup configuration when it loads. To solve this problem change the value of the register to 0x2102

QUESTION 253

Drag and Drop

As a Certkiller.com instructor you are required to the following items to the correct order they are used when Cisco IOS based hardware is booted.

Item	Items, place here in order
	NVRAM
	FLASH
	TFTP
	ROM

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Answer:

As a Certkiller.com instructor you are required to the following items to the correct order they are used when Cisco IOS based hardware is booted.

Item	Items, place here in order
TFTP	1st
ROM	2nd
NVRAM	3rd
FLASH	4th

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QUESTION 254

A Cisco router has been configured, and the copy running-config startup-config command has been issued. When the router is power cycled, the router prompts with:

"Would you like to enter the initial configuration dialog? [yes/no]"

Why has this occurred?

- A. There is an error in the router DRAM.
- B. Te IOS image is corrupt.
- C. The configuration register is set to 0x2142.
- D. The TFTP server that contains the router configuration file is unreachable.
- E. A boot system configuration command has placed the router into setup mode.

Answer: C

QUESTION 255

What should be done prior to backing up an IOS image to a TFTP server? (Choose three)

- A. Make sure that the server can be reached across the network.
- B. Check the authentication for TFTP access to the server is set.

- C. Assure that the network server has adequate space for the IOS image.
- D. Verify file naming and path requirements.
- E. Make sure that the server can store binary files.
- F. Adjust the TCP window size to speed up the transfer.

Answer: A, C, D

QUESTION 256

The Certkiller A router is configured as shown below:

```
Certkiller A(config)# interface loopback 0  
Certkiller A(config-if)# ip address 192.168.16.24 255.255.255.255
```

As a result of this change, which of the statements below are true? (Select all valid responses)

- A. It creates a virtual, software only, interface.
- B. It provides a way to test the convergence of OSPF routing updates.
- C. The mask of 255.255.255.255 is called a host mask.
- D. It uses a wildcard mask of 255.255.255.255.
- E. It ensures that an interface is always active for OSPF processes.
- F. Loopback interfaces must be numbered 0.

Answer: A, C, E

Explanation:

When the OSPF process starts, the Cisco IOS uses the highest local IP address as its OSPF router ID. If a loopback interface is configured, that address is used regardless of its value.

A loopback interface is a logical, software interface that is always up.

A 32-bit mask is sometimes called a host mask, because it specifies a single host and not a network or subnetwork.

Incorrect Answers:

- B. The addition of a loopback interface will in no way test the convergence speed of any OSPF process.
 - D. A wildcard mask of value 255.255.255.255 will not check any of the bit values in the IP address.
 - F. A loopback interface can be any number from 1-255.
-

QUESTION 257

You want the text "Unauthorized access prohibited!" to be displayed before the login prompt every time someone tries to initiate a Telnet session to a router, as shown in the example below:

```
Router#telnet 192.168.15.1  
Trying 192.168.15.1 ... Open  
Unauthorized access prohibited!  
User Access Verification  
Password:
```

Which command can be used to configure this message?

- A. login banner x Unauthorized access prohibited! X
- B. banner exec y Unauthorized access prohibited! Y
- C. banner motd x Unauthorized access prohibited! X
- D. vtv motd "Unauthorized access prohibited!"

Answer: C

Explanation:

The message text that is displayed when users log into the router is called the "message of the day" banner, and it can be changed with the "banner motd" command as shown in answer choice C.

QUESTION 258

Exhibit:



```
Processor board ID JAD050/6E6B
M250 processor board
NVRAM contents:
K.25 software, Version 3.0.0
1 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(synch/asynch) network interface(s)
32K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash(Read/Write)

Configuration register is 0x2142
```

You need to troubleshoot a Cisco router at the Toronto office of Certkiller .com. The router loses its configuration each time it is rebooted. You study the output displayed in the exhibit.

What is the cause of the problem?

- A. The configuration register is misconfigured
- B. NVRAM failed POST
- C. There is insufficient flash memory
- D. There is insufficient RAM for the IOSD image
- E. There is insufficient NVRAM

Answer: A

Explanation:

The configuration register value of 0x2142 is used to bypass the saved NVRAM router configuration and is normally only used for password recovery procedures. The correct configuration register value is typically 0x2102. The following table displays some of the common values and their meanings:

Configuration Register Setting	Router Behavior
0x102	<ul style="list-style-type: none"> • Ignores break • 9600 console baud
0x1202	<ul style="list-style-type: none"> • 1200 baud rate
0x2101	<ul style="list-style-type: none"> • Boots into bootstrap • Ignores break • Boots into ROM if initial boot fails • 9600 console baud rate
0x2102	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 9600 console baud rate default value for most platforms
0x2120	<ul style="list-style-type: none"> • Boots into ROMmon • 19200 console speed
0x2122	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 19200 console baud rate
0x2124	<ul style="list-style-type: none"> • NetBoot • Ignores break • Boots into ROM if initial boot fails • 19200 console speed
0x2142	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 9600 console baud rate • Ignores the contents of Non-Volatile RAM (NVRAM) (ignores configuration)
0x2902	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 4800 console baud rate
0x2922	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 38400 console baud rate
0x3122	<ul style="list-style-type: none"> • Ignores break
	<ul style="list-style-type: none"> • Boots into ROM if initial boot fails • 57600 console baud rate
0x3902	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 2400 console baud rate
0x3922	<ul style="list-style-type: none"> • Ignores break • Boots into ROM if initial boot fails • 115200 console baud rate

QUESTION 259

From the Remote27 router, you attempt to telnet to a router named Certkiller 1 as shown below:

```
Reemote27#
```

```
Remote27#telnet Certkiller 1
```

```
Trying Certkiller 1 (10.0.0.1)... Open
```

```
Password required, but none set
```

```
[Connection to access1 closed by foreign host]
```

```
Remote27#
```

You are unable to connect to the Certkiller 1 router. Which of the following command sequences will correct this problem?

A. Certkiller 1(config)# line console 0

- Certkiller 1(config-line)# password cisco
- B. Remote27(config)# line console 0
- Remote27(config-line)# login
- Remote27(config-line)# password cisco
- C. Certkiller 1(config)# line vty 0 4
- Certkiller 1(conig-line)# login
- Certkiller 1(config-line)# password cisco
- D. Remote27(config)# line vty 0 4
- Remote27(config-line)# login
- Remote27(config-line)# password cisco
- E. Certkiller 1(config)# enable password cisco
- F. Remote27(config)# enable password cisco

Answer: C

Explanation:

The following describes the correct configuration guidelines for setting up telnet access to a router:

Background Information

If you try to telnet to a router that does not have a Telnet password configured, you will get the following error message:

```
Router-1#telnet 10.3.3.1
Trying 10.3.3.1 ... Open
Password required, but none set
[Connection to 10.3.3.1 closed by foreign host]
```

Configure

In this section, you are presented with the information to configure a Telnet password.

Configurations

This document uses this configuration:

- Router-2

In order to set up the router to allow Telnet access, use the line vty command. This command allows for the configuration of Virtual Terminal (VTY) lines for remote console access. You can configure the router to accept one or more Telnet sessions. It is strongly suggested that you configure password checking with the login and password line configuration commands. The example below configures the router to accept five sessions, with the password "letmein":

```
Router-2
Router-2(config)#line vty 0 4
Router-2(config-line)#login
% Login disabled on line 66, until
'password' is set
% Login disabled on line 67, until
'password' is set
% Login disabled on line 68, until
'password' is set
% Login disabled on line 69, until
'password' is set
% Login disabled on line 70, until
'password' is set
Router-2(config-line)#password letmein
```

Verify

To verify that the router is correctly configured for Telnet, issue the show running-config command.

```
Router-2#show running-config
```

```
Building configuration...
```

```
hostname Router-2
```

```
.
```

```
.
```

```
line vty 0 4
```

```
password letmein
```

```
login
```

```
.
```

```
.
```

```
!
```

```
end
```

You should now be able to telnet to the router.

```
Router-1#telnet
```

```
10.3.3.1
```

```
Trying
```

```
10.3.3.1 ... Open
```

```
User
```

```
Access Verification
```

```
Password:
```

```
letmein
```

```
Router-2#
```

```
Reference:
```

```
http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products\_configuration\_exam-ple09186a0080202614.shtml
```

QUESTION 260

After making some network changes you power off and then power on your Cisco router. What sequence of events occurs when a router is powered up?

- A. Perform POST, locate configuration statements, apply configuration statements, locate Cisco IOS software, and load Cisco IOS software.
- B. Locate Cisco IOS software, load Cisco IOS software, locate configuration statements, apply configuration statements, and perform POST.
- C. Test software routines, POST, load configuration files, load Cisco IOS software, test Cisco IOS software.
- D. POST, locate Cisco IOS software, load the Cisco IOS software, locate configuration statements, and apply configuration statements.
- E. Load and test IOS, load configuration files, test software routines, POST.

Answer: D

Explanation:

Upon initial start up, Cisco routers perform the following steps in order:

1. The router performs a power-on self-test (POST) to discover and verify the

hardware.

2. The router loads and runs bootstrap code from ROM.
3. The router finds the IOS or other software and loads it.
4. The router finds the configuration file and loads it into running config.

QUESTION 261

You are trying to connect directly into an existing Cisco router. You want to telnet to the local Cisco router using TCP/IP but cannot create a session.

What should you do to resolve the problem?

- A. Use a straight-through cable to connect your computer's COM port to the router's console port.
- B. Use a crossover cable to connect your computer's COM port to the router's console port.
- C. Use a straight-through cable to connect your computer's COM port to the router's Ethernet port.
- D. Use a crossover cable to connect your computer's Ethernet port to the router's Ethernet port.
- E. Use a rollover cable to connect your computer's Ethernet port to the router's Ethernet port.
- F. Use a straight-through cable to connect your computer's Ethernet port to the router's Ethernet port.

Answer: D

Explanation:

In order to connect directly to a router via telnet, you must connect to the router via one of the LAN ports. When connecting directly to the Ethernet port with a PC without the use of a switch or hub, a crossover cable must be used.

Incorrect Answers:

A, B, C. In order to telnet directly into the router via a TCP/IP connection, the COM port of the PC can not be used. The COM port is used for direct terminal emulation programs such as hyperterminal.

E. Rollover cables are used for console connections into the router, not for TCP/IP connections.

F. Straight through cables are used for connections into a switch or hub from the PC. It will not work for direct Ethernet connections into the router.

QUESTION 262

Exhibit

```
Certkiller C (config)#enable password Certkiller1
Certkiller C (config)#enable secret Certkiller2
Certkiller C (config)#line vty 0 4
Certkiller C (config)#enable password Certkiller3
Certkiller C (config-line)# Exit
Certkiller C (config)# enable Certkiller2
```

A Certkiller .com technician is connected to the router console port. After

configuring the commands displayed in the exhibit, the technician log out and then logs back in at the console. Which password does the technician need to enter at the router prompt get back into the privileged EXEC mode?

- A. Certkiller 1
- B. Certkiller 2
- C. Certkiller 3
- D. A password would not be required.

Answer: B

Explanation:

Certkiller 2 is the answer because the enable secret password is used to log back to the router. The enable password is used. The enable secret password always overwrites the enable password.

Answer c is incorrect because its for the vty

QUESTION 263

Drag and drop.

Your Certkiller.com boss asks you to match the descriptions to the corresponding router modes.

Router mode	Place description here
User EXEC mode	Place here
privileged EXEC mode	Place here
Global configuration mode	Place here
specific configuration mode	Place here
Setup mode	Place here

Descriptions, select from these

- Interactive configuration dialog
- Provides access to all other router commands
- Commands that affect interfaces/processes only
- Commands that affect the entire system
- Limited to basic monitoring commands

Answer:

Your Certkiller.com boss asks you to match the descriptions to the corresponding router modes.

Router mode	Place description here
User EXEC mode	Limited to basic monitoring commands
privileged EXEC mode	Provides access to all other router commands
Global configuration mode	Commands that affect the entire system
specific configuration mode	Commands that affect interfaces/processes only
Setup mode	Interactive configuration dialog

QUESTION 264

You are the network administrator at Certkiller . You need to perform password recovery on Router CK1 .

What must you modify in the password recovery process? (Choose two.)

- A. Configuration register
- B. NVRAM
- C. Boot flash
- D. CMOS
- E. Flash

Answer: A, B

Explanation:

Recovering a Lost Password

This section describes how to recover a lost enable password and how to enter a new enable secret password.

Password recovery consists of the following major processes:

Determining the Configuration Register Value

- With this process, you determine the configuration of the router, so that you may restore the configuration after the password is recovered.

Resetting the Router

- With this process, you reconfigure the router to its initial startup configuration. You then display the enable password, if one is used.

Resetting the Password

- If you are using an enable secret password, you enter a new password with this process. You then restore the router to its prior configuration.

Resetting the Configuration Register Value

- If you are using an enable password, you use this process to restore the router to its prior configuration.

QUESTION 265

Exhibit

```

Certkiller3# show interfaces serial 0/0
Serial0/0 is up, line protocol is down
Hardware is HD64581
Internet address is 192.168.100.1/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set

```

The result of the show interfaces serial 0/0 command is displayed in the exhibit. What command should be executed to make this interface operational?

- A. Certkiller C(config-if)# enable
- B. Certkiller C(config-if)# no keepalive
- C. Certkiller C(config-if)# encapsulation ppp
- D. Certkiller C(config-if)# no shutdown
- E. Certkiller C(config-if)# clockrate 56000
- F. Certkiller C(config-if)# line protocol up

Answer: D

Explanation:

no shutdown Enable the interface and the configuration changes you have just made on the interface.

Serial0 is administratively down, line protocol is up.

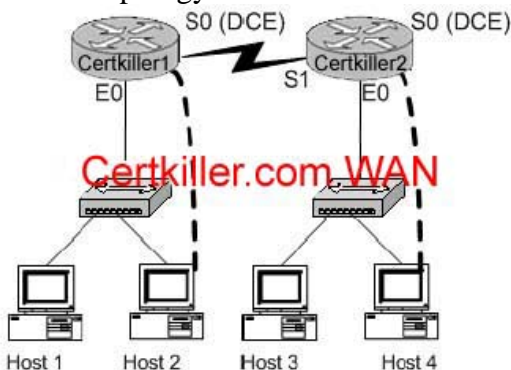
The possible causes for this state are

The following are some steps you can take to isolate the problem:

- The serial interface has been disabled with the **shutdown interface configuration** command.
- Different interfaces on the router are using the same IP address.
- Use the **show configuration** privileged EXEC command to display the serial port configuration. If "shutdown" is displayed after "interface Serial0," use the **no shutdown** interface configuration command to enable the interface.
- Use the **show interface** privileged EXEC command to display the IP addresses for all router interfaces. Use the **ip address** interface configuration command to assign unique IP addresses to the router interfaces.

QUESTION 266

Network topology exhibit:



You work as a network engineer at Certkiller .com. Assign the IP address of 192.168.174.27 and the default subnet mask to the E0 interface of the Certkiller 1 router. The router have been configured with the following specifications.

- The routers are named Certkiller 1 and Certkiller 2
- The password on each router is " Certkiller "

To configure the router click on a host icon that is connected to a router by a serial cable.

Answer:

```
Certkiller 1>
Certkiller 1>ena
Certkiller 1#config t
Enter configuration commands, one per line. End with CNTL/Z.
Certkiller 1(config)#interface ethernet 0
Certkiller 1(config-if)#ip address 192.168.174.27 255.255.255.0
Certkiller 1(config-if)#no shutdown
%LINK-3-UPDOWN: Interface Ethernet0, changed state to up
Certkiller 1(config-if)#^Z
%SYS-5-CONFIG_I: Configured from console by console
Certkiller 1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Explanation:

The question is asking you to configure the ip address 192.168.174.27 255.255.2 for the ethernet 0

you do this by logging into the router using the following commands:

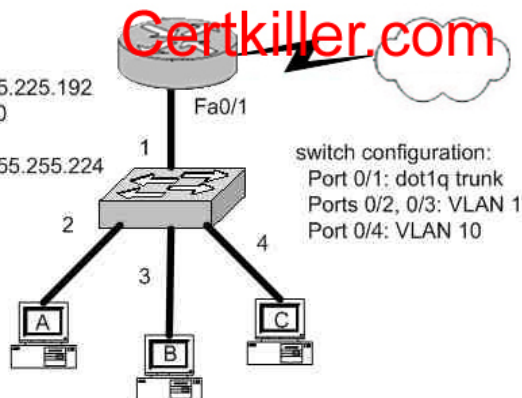
```
Ena
config terminal
specify interface which is ethernet 0
specify ip address
issue no shutdown to bring up the interface up
then exit or ctrl+z
finally save the configuration by using the command copy running-config
startup-config
```

QUESTION 267

Study the exhibit below:

Router configuration:

```
interface fastethernet 0/1.1
 encapsulation dot1q 1
 ip addr 192.1.1.65 255.255.225.192
interface fastethernet 0/1.10
 encapsulation dot1q 10
 ip addr 192.1.1.129 255.255.255.224
```



switch configuration:
Port 0/1: dot1q trunk
Ports 0/2, 0/3: VLAN 1
Port 0/4: VLAN 10

Which IOS commands should you enter if you wanted to link the router Certkiller 1

with switch port 1? (Select three answer choices)

- A. Switch(config)# interface fastethernet 0/1
- B. Switch(config-if)# switchport mode access
- C. Switch(config-if)# switchport mode trunk
- D. Switch(config-if)# switchport access vlan 1
- E. Switch(config-if)# switchport trunk encapsulation isl
- F. Switch(config-if)# switchport trunk encapsulation dot1q

Answer: A, C, F

Explanation:

Before you can begin, you have to get into the interface. Answer choice A is the only command in the selection that puts the IOS into interface mode. Once in the interface you have to set it to trunk mode, so choice C is correct. The switch port needs encapsulation. Answer choice E give you the choice of ISL and choice F gives you dot1q. Since the diagram suggests that the router is using 802.1Q, you must also use dot1q.

Incorrect Answers:

- B, D. We wish to set up a trunk over this connection, not set up a single VLAN.
- E. Both ends of the trunk must use the same trunk encapsulation type. Since the diagram shows that the router is set to 802.1Q, the switch must be set up similarly.

QUESTION 268

Which interface commands would you enter on a Catalyst 2900 switch, if your goal was to bring all VLAN traffic to another directly connected switch? (Select the two valid responses)

- A. Switch(config-if)# vlan all
- B. Switch(config-if)# switchport trunk encapsulation dot1q
- C. Switch(config-if)# switchport access vlan all
- D. Switch(config-if)# switchport mode trunk
- E. Switch(config-if)# switchport access vlan 303

Answer: C, D

Explanation:

In order to pass all VLAN traffic from one switch to another, a trunk is needed. In order to configure a trunk on a 2900 series switch, only these two commands are required.

Incorrect Answers:

- A. This is an invalid command.
 - B. This command does not need to be entered, as the trunk encapsulation for the Catalyst 2900 by default is dot1q
 - E. This will only accomplish setting up a single VLAN, numbered 303.
-

QUESTION 269

As a Certkiller trainee you are required to set the default gateway on a Cisco switch to the IP address of 192.168.1.115.

Which IOS command should you use?

- A. CertK Switch(config)# ip route-default 192.168.1.115
- B. CertK Switch(config)# ip default-gateway 192.168.1.115
- C. CertK Switch(config)# ip route 192.168.1.115 0.0.0.0
- D. CertK Switch(config)# ip default-network 192.168.1.115

Answer: B

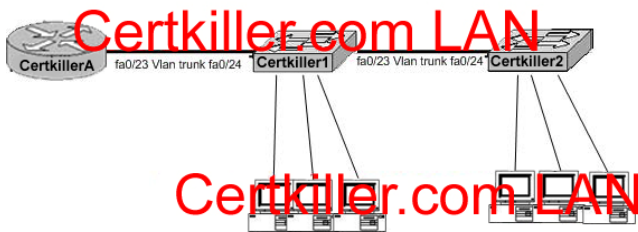
Explanation:

Use the "ip default-gateway" command to enter the IP address of the next-hop router interface that is directly connected to the switch where a default gateway is being configured. The default gateway receives IP packets with unresolved destination IP addresses from the switch.

Once the default gateway is configured, the switch has connectivity to the remote networks with which a host needs to communicate.

QUESTION 270

Exhibit, simulation



You work as a network technician at Certkiller .com. A new switch named Certkiller 2 is being added to Certkiller .com LAN. You will work to complete this process by first configuring the Certkiller 2 switch with IP address and default gateway. For the switch host address you should use the first available IP address on the management subnet. In addition, the switch needs to be configured to be in the same VTP domain as the Certkiller 1 switch, and also needs to be configured as a VTP client. Assume that the IP configuration and VTP configuration are completed and working.

You must accomplish the following-

- Determine and configure the IP host address of the new switch
- Determine and configure the default gateway of the switch
- Determine and configure the correct VTP domain name for the new switch
- Configure the new switch as a VTP Client

Answer:

Step 1: Determine & Configure the IP host address for the New switch

```
Certkiller 2 (config-line)# interface vlan 1
```

```
Certkiller 2 (config-line)# ip address A.D.C.D 255.255.255.0
```

Certkiller 2 (config-line)# no shutdown

Step 2: Configure the default gateway

Certkiller 2 (config)# ip default-gateway A.B.C.D

Step 3 & 4: Configure the Certkiller 2 switch as VTP Client and configure the correct VTP domain

Certkiller 2 (config)# vtp mode client

Certkiller 2 (config-line)# vtp domain Certkiller

Certkiller 2 (config-line)# vtp password Certkiller

Certkiller 2 (config-line)# vtp pruning

Explanation: Even though we don't have enough information to deduce the IP address but at least we know the step by step procedure to configure the switch Certkiller 2.

QUESTION 271

What is the purpose of assigning an IP address to a switch?

- A. Provides local hosts with a default gateway address
- B. Allows remote management of the switch.
- C. Allows the switch to respond to ARP requests between two hosts
- D. Ensures that hosts on the same LAN can communicate with each other.

Answer: B

Explanation:

Switch is a layer 2 device and doesn't use network layer for packet forwarding. The IP address may be used only for administrative purposes such as Telnet access.

QUESTION 272

You are securing a network for Certkiller and want to apply an ACL (access control list) to an interface of a router. Which one of the following commands would you use?

- A. permit access-list 101 out
- B. ip access-group 101 out
- C. apply access-list 101 out
- D. access-class 101 out
- E. ip access-list e0 out

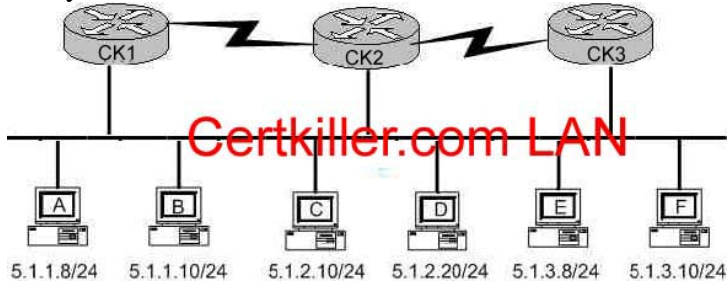
Answer: B

Explanation:

To enable an ACL on an interface and define the direction of packets to which the ACL is applied, the ip access-group command is used. In this example, the access list is applied to packets going out of the interface. Packets coming in on the interface are not checked against access list 101.

QUESTION 273

Study the exhibit below:



You're the systems administrator at Testing, and you create the following access control lists.

```
access-list 101 deny tcp 5.1.1.10 0.0.0.0 5.1.3.0 0.0.0.255 eq telnet
```

```
access-list 101 permit any any
```

You then enter the command "ip access-group 101 in" to apply access control list 101 to router CK1's e0 interface.

Which of the following Telnet sessions will be blocked as a result of your access lists? (Select all that apply)

- A. Telnet sessions from host A to host 5.1.1.10
- B. Telnet sessions from host A to host 5.1.3.10
- C. Telnet sessions from host B to host 5.1.2.10
- D. Telnet sessions from host B to host 5.1.3.8
- E. Telnet sessions from host C to host 5.1.3.10
- F. Telnet sessions from host F to host 5.1.1.10

Answer: D, F

Explanation:

All the telnet sessions from host B to network 5.1.3.0/24 will be denied. In addition, all telnet traffic to host B from the 5.1.3.0/24 network will not work, because the return telnet traffic will be denied.

QUESTION 274

Which of the following statements regarding the use of multiple access lists are valid when configuring a single interface on a Cisco router?

- A. Application of up to three access lists per protocol to a single interface.
- B. No more than two access lists per interface.
- C. One access list may be configured per direction for each Layer 3 protocol configured on an interface.
- D. The maximum number allowed varies due to RAM availability in the router.
- E. An infinite number of access lists that can be applied to an interface, from most specific to most general.
- F. Cisco IOS allows only one access list to an interface.

Answer: C

Explanation:

For each interface, one access list for each protocol (IP, IPX, etc) can be applied in the inbound direction, and one for the outbound direction.

Incorrect Answers:

B. It is true that no more than two access lists can be applied per interface (inbound and outbound). However, this applies per layer 3 protocol, so it is possible to configure more than 2 access lists per interface.

QUESTION 275

On the serial interface of a router, an inbound access list is configured to deny all traffic from UDP and TCP ports 21, 23, and 25. All other traffic is permitted. Based on this information, which types of traffic will be allowed through this interface? (Choose threee)

- A. SMTP
- B. DNS
- C. FTP
- D. Telnet
- E. HTTP
- F. POP3

Answer: B, E, F

Explanation:

Since all traffic that is not using the three ports specified is permitted, the correct answers are B, E and F. (DNS port 53, HTTP port 80, POP3 port 110).

Incorrect Answers:

- A. SMTP uses port 25, which is prohibited.
- C. FTP uses port 21, which is prohibited.
- D. Telnet uses port 23, which is prohibited.

QUESTION 276

The following access list below was applied outbound on the E0 interface connected to the 192.169.1.8/29 LAN:

```
access-list 135 deny tcp 192.169.1.8 0.0.0.7 eq 20 any
access-list 135 deny tcp 192.169.1.8 0.0.0.7 eq 21 any
```

How will the above access lists affect traffic?

- A. FTP traffic from 192.169.1.22 will be denied.
- B. No traffic, except for FTP traffic will be allowed to exit E0.
- C. FTP traffic from 192.169.1.9 to any host will be denied.
- D. All traffic exiting E0 will be denied.
- E. All FTP traffic to network 192.169.1.9/29 will be denied.

Answer: D

Explanation

When an access list is created, an implicit deny all entry is created at the end. Therefore, each access list created needs to have at least one permit statement, otherwise it will have the effect of prohibiting all traffic. If the intent in this example was to block only certain hosts from being able to FTP, then the following line should have been included at the end of the access list:

```
Router(config)#access-list 135 permit ip any any
```

QUESTION 277

Study the information and the relevant configuration file below for the Certkiller Branch router.

Hostname: Branch

PH# 123-6000, 123-6001

SPID1: 32055512360001

SPID2: 32055512360002

isdn switch-type basic-ni1

username Remote password cisco

interface bri0

ip address 10.1.1.1 255.255.255.0

encapsulation ppp

ppp authentication chap

isdn spid1 32055512360001

isdn spid2 32055512360002

dialer map ip 10.1.1.2 name Remote 1238001

dialer-list 1 protocol ip permit

What additional command must be executed on the Branch router before interesting traffic will initiate an ISDN call?

A. (config-if)# dialer-group 1

B. (config-if)# dialer-list 1

C. (config-if)# dialer map 1

D. (config-if)# dialer-route 1

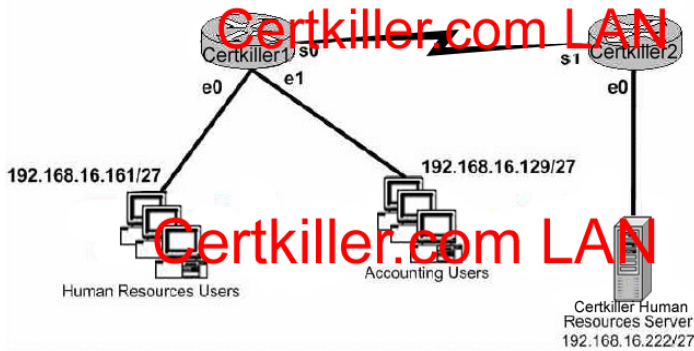
Answer: A

Explanation:

The "dialer-group #" command tells the access-list (used with the dialer-list # command), which interface to activate when it finds interesting traffic. The numbers at end of each command must match.

QUESTION 278

Study the following network diagram displaying the Certkiller network:



With the goal of preventing the accounting department from gaining access to the HR server, the following access list is created:

```
access-list 19 deny 192.168.16.128 0.0.0.31
```

```
access-list 19 permit any
```

All other traffic is to be permitted through the network. On which interface and in what direction should the access list be applied?

- A. Certkiller 1 S0, out.
- B. Certkiller 1 E1, in.
- C. Certkiller 1 E1, out.
- D. Certkiller 2 S1, in.
- E. Certkiller 2 E0, out.
- F. Certkiller 2 E0, in.

Answer: E

Explanation:

Since this is a standard access list it should be placed near the destination. Standard access lists only match against the source IP address, so placing this access list anywhere else will prevent traffic from the Accounting department to other areas of the network.

QUESTION 279

Which of the following commands would successfully implement an access list on a routers virtual terminal line? (Select only one answer choice)

- A. RouterTK(config-line)# access-class 10 in
- B. RouterTK(config-if)# ip access-class 23 out
- C. RouterTK(config-line)# access-list 150 in
- D. RouterTK(config-if)# ip access-list 128 out
- E. RouterTK(config-line)# access-group 15 out
- F. RouterTK(config-if)# ip access-group 110 in

Answer: A

Explanation:

To configure VTY you must be in the config-line mode. Virtual terminal sessions use VTY lines 0-4, and VTY access lists use the access-class command.

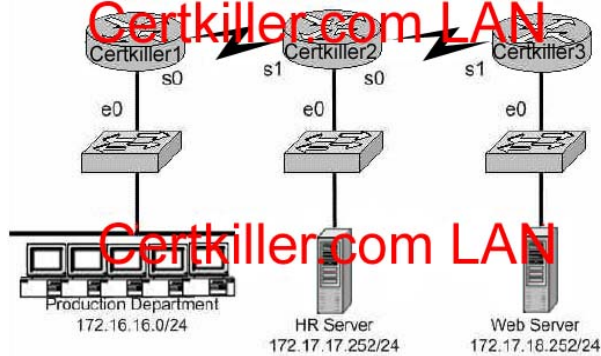
Incorrect Answers:

B. This is placed in the wrong configuration mode

C, D, E, F. The correct syntax for VTY lines is the access-class command, not the access-group or access-list commands.

QUESTION 280

The Certkiller network is displayed below:



You want to apply an access list to the e0 interface on the Certkiller 1 router, with the goal of halting HTTPS traffic from the Production Department from reaching the HR server via the Certkiller 2 router. Which of the following access lists would you use?

A. Permit ip any any

Deny tcp 172.16.16.0 0.0.0.255 172.17.17.252 0.0.0.0 eq 443

B. Permit ip any any

Deny tcp 172.17.17.252 0.0.0.0 172.16.16.0 0.0.0.255 eq 443

C. Deny tcp 172.17.17.252 0.0.0.0 172.16.16.0 0.0.0.255 eq 443

Permit ip any any

D. Deny tcp 172.16.16.0 0.0.0.255 172.17.17.252 0.0.0.0 eq 443

Permit ip any any

Answer: D

Explanation:

This access problem is very simple, it tells you where to put the access list, all you have to do is to select the right one. You have to deny all HTTP traffic (TCP port 80) from crossing router 1's e0 while, allowing everything else. This is accomplished in answer D.

Incorrect Answers:

A. The order of the statements are reversed. Since all traffic checked against an access list is performed in order from the top down, all traffic will match the first statement and be permitted.

B, C. Answers B & C are incorrect because the source addresses are incorrect.

QUESTION 281

What are some general guidelines regarding the placement of access control lists?
(Select two answer choices)

- A. You should place standard ACLS as close as possible to the source of traffic to be denied.
- B. You should place extended ACLS as close as possible to the source of traffic to be denied.
- C. You should place standard ACLS as close as possible to the destination of traffic to be denied.
- D. You should place extended ACLS should be places as close as possible to the destination of traffic to be denied.

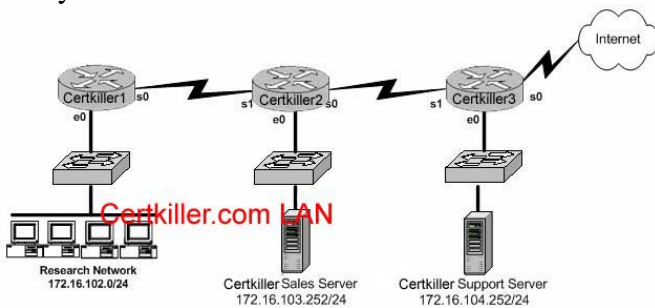
Answer: B, C

Explanation:

The question you have to ask yourself is: Do you want the access list before the routing decision, or after the routing decision? If an access list is extended, then it would restrict a lot of traffic, so it would be better to have such a list at the source so it could filter out the traffic before the router has to go through the trouble of sending it off. If an access list is standard, then it would be more efficiently placed closer to the destination.

QUESTION 282

Study the exhibit below:



You are a network security consultant and you've been contracted to prevent users on the Research Network and general Internet surfers from accessing the Certkiller Support server. However, you must allow access to all the other Certkiller users. So you create an access control list called `research_network` which contains the following lines:

```
deny 172.16.102.0 0.0.0.255 172.16.104.255 0.0.0.0
permit 172.16.0.0 0.0.255.255 172.16.104.252 0.0.0.0
```

Which of the following command sequences can satisfy your goals?

- A. Certkiller 1(config)# interface e0
Certkiller 1(config-if)# ip access-group research_network in
- B. Certkiller 2(config)# interface s1
Certkiller 2(config-if)# ip access-group research_network in
- C. Certkiller 3(config)# interface s1
Certkiller 3(config-if)# ip access-group research_network in
- D. Certkiller 1(config)# interface s0
Certkiller 1(config-if)# ip access-group research_network out

```
E. Certkiller 2(config)# interface s0
Certkiller 2(config-if)# ip access-group research_network out
F. Certkiller 3(config)# interface e0
Certkiller 3(config-if)# ip access-group research_network out
```

Answer: F

Explanation:

To enable the ACL on an interface and define the direction of packets to which the ACL is applied, the ip access-group command is used.

When referring to a router, these terms have the following meanings.

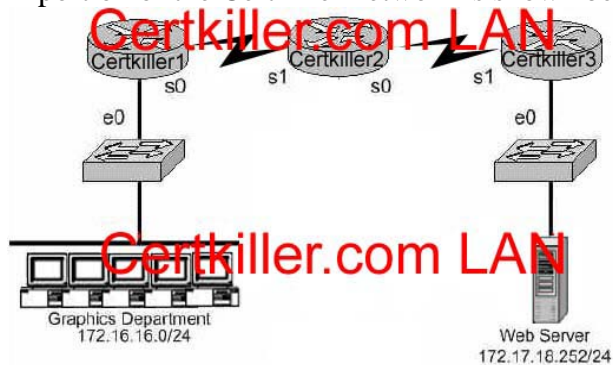
- Out - Traffic that has already been through the router and is leaving the interface; the source would be where it's been (on the other side of the router) and the destination is where it's going.
- In - Traffic that is arriving on the interface and which will go through the router; the source would be where it's been and the destination is where it's going (on the other side of the router).

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco Press, ISBN 1-58720-083-X) Page 433

QUESTION 283

A portion of the Certkiller network is shown below:



In order to prevent the Web Server from receiving telnet traffic from the Graphics Dept. users, an access is created denying this traffic. On which router, which interface and in which direction should you place the access list for maximum efficiency? (Select all that apply)

- A. Certkiller 1 Router
- B. Certkiller 3 Router
- C. serial 0
- D. Ethernet 0
- E. in
- F. out

Answer: A, D, E

Explanation:

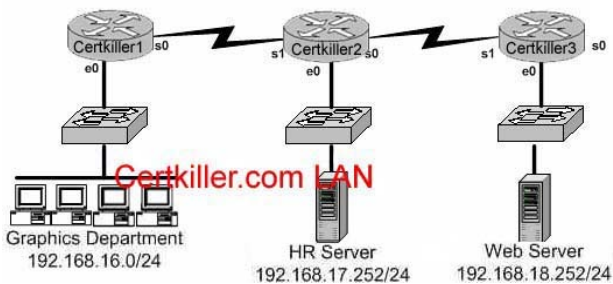
For maximum efficiency, the access list should be placed closest to the source of the traffic that you want to deny. The access list should be an inbound access list, on the e0 interface, on router Certkiller 1.

Incorrect Answers:

B, C, F. Placing the access list anywhere else would mean that the traffic would be permitted through the network, at least partially, before being dropped. This would result in inefficiency.

QUESTION 284

The Certkiller network consists of Cisco routers and switches as shown below:



Your goal is to prevent Telnet traffic originating from the Graphics Department to reach the Web server attached to Certkiller 3. However, you want to allow Telnet traffic to other destinations. To accomplish this, you configure the following access control list:

```
access-list 101 deny tcp any any eq 23
permit ip any any
```

On which router, in what direction, and which interface, should the access list be placed to most efficiently implement the above list? (Select three options)

- A. Certkiller 1
- B. Certkiller 2
- C. serial 0
- D. ethernet 0
- E. in
- F. out

Answer: A, D, E

QUESTION 285

You are the administrator of the Certkiller network which is composed of three routers connected together via a WAN as shown in the diagram. Your assignment is to configure and apply an access control list that will block telnet access to the Certkiller 1 router without inhibiting all other traffic. The access list won't need more than 3 statements and it should be applied to the Certkiller 3 router. The three routers are already connected and configured as follows:

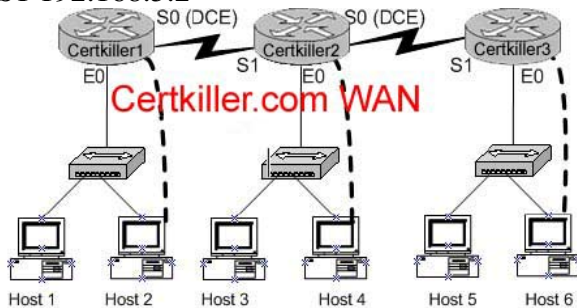
The routers are named: Certkiller 1, Certkiller 2, and Certkiller 3 respectively.

All three of them are using RIP as the routing protocol.
The serial 0 interfaces are providing clocking.
The default subnet mask is used on every interface.
The IP addresses and passwords are listed below.

Certkiller 1
E0 192.168.1.1
S0 192.168.118.1
Secret password: Certkiller

Certkiller 2
E0 192.168.121.1
S0 192.168.5.1
S1 192.168.118.2
Secret password: Certkiller

Certkiller 3
E0 192.168.134.1
S1 192.168.5.2



To configure the router click on the host icon that is connected to a router by a serial console cable.

Answer:
Certkiller 3>enable
:password
Certkiller 3#show access-lists (** redundant **)
Certkiller 3#config t
.Enter configuration commands, one per line. End with END
Certkiller 3(config)#access-list 101 deny tcp any 192.168.1.1 0.0.0.0 eq 23
Certkiller 3(config)#access-list 101 deny tcp any 192.168.118.0 0.0.0.0 eq 23
Certkiller 3(config)#access-list 101 permit ip any any
Certkiller 3(config)#interface Ethernet 0
Certkiller 3(config-if)#ip access-group 101 in
Certkiller 3(config-if)#exit
Certkiller 3(config)#interface serial 0
Certkiller 3(config-if)#ip access-group 101 in
Certkiller 3(config-if)#<CTRL-Z
..
Certkiller 3#copy running-config startup-config

Explanation:

You should deny access to telnet to the Certkiller 1 router and the access list should be applied in Certkiller 3 router (if the wording is correct). The destination addresses of Certkiller 1, namely 192.181.1.1 0.0.0.0 and 192.168.118.0, should be used.

QUESTION 286

Exhibit

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```
access-list 10 permit 172.29.16.0 0.0.0.255
access-list 10 permit 172.29.17.0 0.0.0.255
access-list 10 permit 172.29.18.0 0.0.0.255
access-list 10 permit 172.29.19.0 0.0.0.255
```

An access list was written with the four statements shown in the graphic. which single access list statement will combine all four of these statements into a single statements that will have exactly the same effect?

- A. access-list 10 permit 172.29.16.0 0.0.0.255
- B. access-list 10 permit 172.29.16.0 0.0.1.255
- C. access-list 10 permit 172.29.16.0 0.0.3.255
- D. access-list 10 permit 172.29.16.0 0.0.15.255
- E. access-list 10 permit 172.29.0.0 0.0.255.255

Answer: C

Explanation:

172.29.16.0 is an aggregate address for those 4. If you would write all these addresses in binary form and will mark the equal part, than you will see that it is 172.29.16.0.

QUESTION 287

Network topology exhibit



```
access-list 10 permit host 172.16.1.5
access-list 10 deny 172.16.1.0 0.0.0.255
access-list 10 permit any
```

The access list shown should deny all hosts located on network 172.16.1.0, except host 172.16.1.5, from accessing the 172.16.4.0 network. All other networks should be accessible. Which command sequence will correctly apply this access list?

- A. Certkiller 1(config)#interface fa0/0
Certkiller 1(config-if)#ip access-group 10 in
- B. Certkiller 1(config)#interface s0/0
Certkiller 1(config-if)#ip access-group 10 out
- C. Certkiller 2(config)#interface fa0/1
Certkiller 2(config-if)#ip access-group 10 out
- D. Certkiller 2(config)#interface fa0/0

```
Certkiller 2(config-if)#ip access-group 10 out  
E. Certkiller 2(config)#interface s0/1  
Certkiller 2(config-if)#ip access-group 10 out
```

Answer: D

QUESTION 288

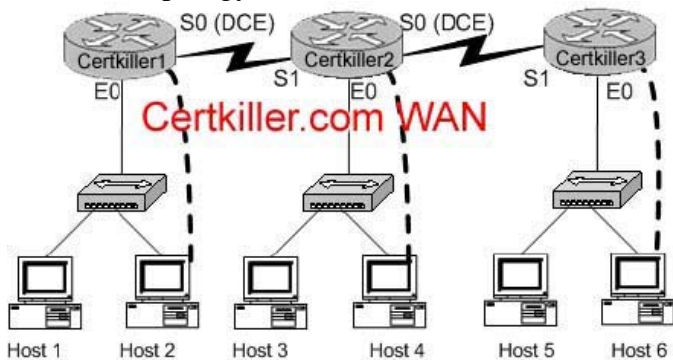
A network administrator wants to add a line to an access list that will block only Telnet access by the hosts on subnet 192.168.1.128/28 to the server at 192.168.1.5. What command should be issued to accomplish this task?

- A. access-list 101 deny tcp 192.168.1.128 0.0.0.15 192.168.1.5 0.0.0.0 eq 23
access-list 101 permit ip any any
- B. access-list 1 deny tcp 192.168.1.128 0.0.0.15 host 192.168.1.5 eq 23
access-list 1 permit ip any any
- C. access-list 1 deny tcp 192.168.1.128 0.0.0.255 192.168.1.5 0.0.0.0 eq 21
access-list 1 permit ip any any
- D. access-list 101 deny tcp 192.168.1.128 0.0.0.240 192.168.1.5 0.0.0.0 eq 23
access-list 101 permit ip any any
- E. access-list 101 deny ip 192.168.1.128 0.0.0.240 192.158.1.5 0.0.0.0 eq 23
access-list 101 permit ip any any
- F. access-list 101 deny ip 192.168.1.128 0.0.0.15 192.168.1.5 0.0.0.0 eq 23
access-list 101 permit ip any any

Answer: A

QUESTION 289

Network Topology Exhibit



You work as a network engineer at Certkiller .com. Three Certkiller stores have established network connectivity. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. The manager at the Certkiller site, Jack King, has decided to deny the ability of anyone from any other network to connect to the Certkiller 3 router with the ping command. Implement an access list on the Certkiller 3 router to deny this detection but allow all other types of traffic to pass. The access list should contain no

more than three statements. The routers have been configured with the following specifications:

The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.

RIP is the routing protocol.

Clocking signal is provided on the serial 0 interfaces.

The password on each router is " Certkiller ".

The subnet mask on all interfaces is the default mask.

The IP addresses are listed in the chart below.

Certkiller 1

E0 192.168.49.1

S0 192.168.51.1.

Certkiller 2

E0 192.168.53.1

S0 192.168.55.1

S1 192.168.51.2

Certkiller 3

E0 192.168.57.1

S1 192.168.55.2

To configure the router click on the host icon that is connected to a router by a serial console cable.

Answer:

Click on Host 6 to connect to and configure Certkiller 3.

configure terminal

access-list 101 deny icmp any 192.168.57.1 0.0.0.0

access-list 101 deny icmp any 192.168.55.2 0.0.0.0

access-list 101 permit ip any any

Interface s1

Ip access-group 101 in

interface ethernet0

ip access-group 101 out

ctrl z

copy running-config startup-config

QUESTION 290

You are the network administrator at Certkiller . You apply the following access list on the E0 outbound interface connected to the 192.168.1.8/29 LAN:

access-list 21 deny tcp 192.168.1.8 0.0.0.7 eq 20 any

access-list 21 deny tcp 192.168.1.8 0.0.0.7 eq 21 any

What will the effect of this access list be?

- A. All traffic will be allowed to out of E0 except FTP traffic.
- B. FTP traffic from 192.168.1.22 to any host will be blocked.
- C. FTP traffic from 192.168.1.9 to any host will be blocked.
- D. All traffic will be prevented from leaving E0.
- E. All FTP traffic to network 192.168.1.9/29 from any host will be blocked.

Answer: D

Explanation:

By default access list is having implicit deny statement at the end. In this example there is no permit statement, so it will deny all traffic exiting E0 Interface.

QUESTION 291

When configuring Frame Relay using point-to-point subinterfaces, which of the following must not be configured? (Select one)

- A. The local DLCI on each subinterface of the Frame Relay.
- B. The Frame Relay encapsulation on the physical interface.
- C. An IP address on the physical interface.
- D. The subinterface type as point-to-point

Answer: C

Explanation:

Frame Relay does not require IP addresses on physical interfaces. The IP addresses should be placed on each point to point sub-interface.

When configuring frame relay using point to point sub-interfaces, each sub-interface appears as a separate point to point link with a DLCI assigned to each one. The encapsulation needs to be applied only to the physical interface.

QUESTION 292

You are in the midst of configuring a router for a Frame Relay network. What could you do to prevent split horizon problems? (Select all that apply)

- A. Configure a separate sub-interface for each PVC. Assign a unique DLCI and subnet to each sub-interface.
- B. Configure each Frame Relay circuit as a point-to-point line to support multicast and broadcast traffic.
- C. Configure one sub-interface to disperse into multiple PVC connections to multiple remote router interfaces.
- D. Configure as many as possible sub-interfaces on the same subnet.
- E. Use the "no ip split-horizons" command on the physical interface.

Answer: A, E

Explanation:

The best solution is to configure subinterfaces for each virtual connection, because the individual virtual circuits can be maintained and split horizon can remain on. Routing update information that is received through one subinterface can be propagated to other subinterfaces, because each sub-interface is treated as a completely separate interface. Configuring Frame Relay subinterfaces ensures that a single physical interface is treated

as multiple virtual interfaces. This capability allows you to overcome split horizon rules so packets received on one virtual interface can be forwarded to another virtual interface, even if they are configured on the same physical interface. Another alternative to using sub-interfaces is to simply disable the split horizon mechanism as shown in choice E. Reference: http://www.cisco.com/warp/public/116/fr_faq.html

QUESTION 293

A new frame-relay network is being implemented and inverse ARP does not appear to be operating correctly. Which alternative command can be used to provide connectivity?

- A. frame-relay arp
- B. frame-relay map
- C. frame-relay interface-dlci
- D. frame-relay lmi-type
- E. frame-relay pvc

Answer: B

QUESTION 294

Which of the following Frame-Relay encapsulation commands would you use, if you had to connect your Cisco router to a non-Cisco router?

- A. CertK Router(config-if)# Encapsulation frame-relay dot1q
- B. CertK Router(config-if)# Encapsulation frame-relay aal5snap
- C. CertK Router(config-if)# Encapsulation frame-relay ietf
- D. CertK Router(config-if)# Encapsulation frame-relay isl
- E. None of the above

Answer: C

Explanation:

In general, the IETF Frame Relay encapsulation should be used when connecting a Cisco router to non-Cisco equipment across a Frame Relay network. The IETF Frame Relay encapsulation allows interoperability between equipment from multiple vendors.

Both Cisco and IETF encapsulations for Frame Relay can be configured on a per-virtual-circuit (VC) basis. This gives greater flexibility when configuring Frame Relay in a multi-vendor environment. A user can specify the Frame Relay encapsulation types to be used on different virtual circuits configured under the same physical interface.

Incorrect Answers:

- A, D. 802.1Q and ISL are trunking encapsulation types and have nothing to do with frame relay.
 - B. AAL 5 SNAP is an ATM encapsulation and is not related to frame relay.
-

QUESTION 295

The Certkiller Network is using ISDN to provide connectivity between Certkiller 1 and Certkiller 2 as shown below:

:



Assuming that the ISDN switch doesn't require SPIDs, which of the following commands would you implement to bring up the ISDN connection and provide connectivity between the two routers? (Select three answer choices)

- A. Router(config-if)# encapsulation HDLC
- B. Router(config)# dialer-list 1 protocol ip permit
- C. Router(config)# isdn switch-type type
- D. Router(config)# dialer map ip address name connection number
- E. Router(config-if)# dialer-group 1
- F. Router(config-if)# ip address address subnet mask

Answer: B, E, F

Explanation:

The dialer group number enables dialer-list on this interface. The dialer-list is to be defined in global configuration mode as shown in B. Finally, the interfaces should be configured with the proper IP address and subnet mask.

Incorrect Answers:

- A. ISDN BRI interfaces should be configured with PPP encapsulation.
- C. This is not always required, as the default switch type may be sufficient. In addition, if no SPIDs are required, then there is a good chance that the ISDN switch-type does not need to be explicitly defined.
- D. This command is using the incorrect syntax.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco Press, ISBN 1-58720-083-X) Page 310+337

QUESTION 296

You are about to configure PPP on the interface of a Cisco router. Which authentication methods could you use? (Select two answer choices)

- A. SSL
- B. SLIP
- C. PAP
- D. LAPB
- E. CHAP
- F. VNP

Answer: C, E

Explanation:

Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP) authenticate the endpoints on either end of a point-to-point serial link. Chap is the preferred method today because the identifying codes flowing over the link are created using a MD5 one-way hash, which is more secure than the clear-text passwords sent by PAP.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco Press, ISBN 1-58720-083-X) Page 314

QUESTION 297

Which of the following can LCP successfully negotiate during the establishment of a PPP connection? (Select three answer choices)

- A. Q.931
- B. IPCP
- C. multilink
- D. CHAP
- E. callback

Answer: C, D, E

Explanation:

PPP protocol constitutes of LCP and NCP whose functions are:

1. LCP negotiates control options: authentication, multilink, callback, compression and error detection.
 2. IPCP(IP Control protocol) is supported by NCP.
-

QUESTION 298

Your goal is to illustrate the five necessary steps of configuring dial-on-demand routing (DDR) on an ISDN BRI. Place the parameters on the right to the proper slot on the left. (Note: not all the parameters will be used)

Place here	Select from these	
Place 1st parameter here	unicast	<next-hop-address>
Place 2nd parameter here	dial string	dialer
Place 3rd parameter here	map	group
Place 4th parameter here	dialer-list	<protocol>
Place 5th parameter here		

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Answer:



QUESTION 299

You have just obtained a modular Cisco router with 2 serial connections and a BRI/U interface. What other physical piece of hardware is required in order to establish an ISDN connection?

- A. Nothing. The router is already suitable.
- B. A BRI WAN interface in the router.
- C. An external NT1 to terminate the local loop.
- D. A TA/NT1 device on the router.

Answer: A

Explanation:

For routers with an integrated BRI/U interface no other device needs to be installed; the line supplied by the telephone company is simply plugged directly into the router's BRI interface. This is true for modern router interfaces. Legacy ISDN connections required the use of additional hardware, such as an NT1 device in order to provide the correct ISDN signaling between the router and the carrier's ISDN network.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco Press, ISBN 1-58720-083-X) Page 331

QUESTION 300

In a lab, two routers are connected directly together using serial interfaces in a back-to-back configuration. No external DCE devices are being used. What additional command is needed to bring this link up?

- A. serial up
- B. clockrate
- C. clock rate
- D. dce rate
- E. dte rate

Answer: C

Explanation:

The clock rate command (two words), is used to provide clocking on a line where no

640-801

DCE device is located. Clocking must be provided by one end of this link. Normally in a point to point HDLC or PPP connection the clock rate is supplied by the network provider.

Incorrect Answers:

- A. This is an invalid command
- B. This command will not work. The clock rate command must use two words.
- D, E. These are invalid commands.