



Exam: 642-501

Title : Securing Cisco IOS Networks (SECUR)

Ver : 03.20.04

Note: Section A contains 66 questions. Section B contains 80 questions. The total number of questions is 146.

Section A

QUESTION 1 You are the administrator for Certkiller, Inc. Your job today is to configure a start accounting record for a Point-to-Point session to be sent to a TACACS+ server.

Which configuration command will do this?

- A. aaa accounting network default start-stop tacacs+
- B. aaa authentication ppp start tacacs+
- C. aaa authorization exec default tacacs+
- D. aaa authorization network default tacacs+
- E. aaa accounting network default stop-only tacacs+

Answer: A

Explanation:

```
aaa accounting {system | network | exec | command level} {start-stop |  
wait-start | stop-only} {tacacs+ | radius}
```

```
no aaa accounting {system | network | exec | command level}
```

network Runs accounting for all network-related service requests, including SLIP, PPP, PPP NCPs, and ARAP.

start-stop Sends a start accounting notice at the beginning of a process and a stop accounting notice at the end of a process. The start accounting record is sent in the background. The requested user process begins regardless of whether or not the start accounting notice was received by the accounting server.

tacacs+ Enables the TACACS-style accounting.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_command_summary_chapter09186a00800d9c0e.html

QUESTION 2 John at Certkiller Inc. just finished configuring multiple transform sets. Where does he have to specify the transform sets?

- A. router interface
- B. crypto map entry
- C. ACL
- D. ISAKMP policy

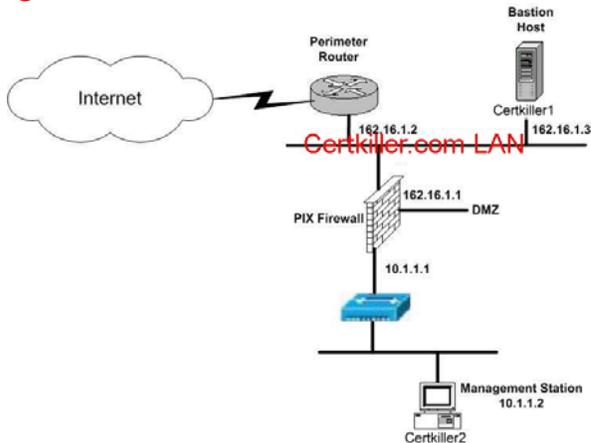
Answer: B

Explanation:

Crypto map set transform-set command:

Specifies which transform sets can be used with the crypto map entry. List multiple transform sets in order of priority, with the highest-priority transform set first.

Reference: Cisco Secure PIX Firewall (Cisco press) page 217

QUESTION 3 Exhibit:

You are the administrator at Certkiller Inc. and you need to add an ACL statement to protect against address spoofing when applied inbound on the external interface of the perimeter router.

Which one of these commands is correct?

- A. access-list 101 deny IP 162.16.1.0 0.0.0.255. 0.0.0.0 255.255.255.255
- B. access-list 101 deny UDP 162.16.1.0 255.255.0.0 0.0.0.0 255.255.255.255
- C. access-list 101 deny IP 162.16.1.0 255.255.255.0 0.0.0.0 255.255.255.255
- D. access list 101 permit IP 162.16.1.0 255.255.0.0 0.0.0.0 255.255.255.255

Answer: A

Explanation:

```
access-list 101 deny IP 162.16.1.0 0.0.0.255 0.0.0.0 255 255.255.255
```

access-list command - command to deny access to the 162.16.1.0 0.0.0.255 addresses from any address (0.0.0.0 255.255.255.255)

Reference: Managing Cisco Network Security (Cisco press) page Appendix C

QUESTION 4 Jacob at Certkiller Inc. was given the assignment to secure the network from giving out unauthorized information. His first step is to prevent the perimeter router from divulging topology information by telling external hosts which subnets are not configured.

Which command fits this objective?

- A. no source-route
- B. no ip route-cache
- C. no service udp-small-servers
- D. no ip unreachable

Answer: D

Explanation:

To enable the generation of Internet Control Message Protocol (ICMP) unreachable messages, use the ip unreachable command in interface configuration mode. To disable this function, use the no form of this command.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/ipras_r/ip1_i2g.htm#1082329

QUESTION 5 Exhibit:

```
service password-encryption
```

```
!
```

```
aaa new-model
```

```
aaa authentication login default line
```

```
aaa authentication login nologin name
```

```
aaa authentication login admin tacacs+ enable
```

```
aaa authentication ppp default tacacs+
```

```
!
```

```
enable secret 5 $1$WogB$7.0FLEFgB8Wp.C9eqNX9L/
```

```
!
```

```
!
```

```
interface Group-Async
```

```
ip unnumbered Loopback0
```

```
ip tcp header-compression passive
```

```
encapsulation ppp
```

```
async mode interactive
```

John at Certkiller Inc. is looking at this configuration to figure out what method authenticates through the vty port.

Which method is correct?

- A. no access permitted
- B. line password
- C. no authentication required
- D. default authentication used

Answer: B

Explanation:

Enabling Authentication for Login

Using the aaa authentication login command and the following keywords, you create one or more lists of authentication methods that are tried at login. The lists are used with the login authentication line configuration command.

Enter the following command in global configuration mode to enable authentication for login:

```
Switch# aaa authentication login {default | list-name} method1
[...[method3]]
```

The keyword list-name is any character string used to name the list you are creating. The method keyword refers to the actual method the authentication algorithm tries, in the sequence entered. You can enter up to three methods:

Keyword	Description
line	Uses the line password for authentication.
local	Uses the local username database for authentication.
tacacs+	Uses TACACS+ authentication.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps637/products_configuration_guide_chapter09186a008007f032.html#35679

QUESTION 6 You are the administrator in charge of the Management Center for VPN routers and are having problems communicating with other VPN routers.

Which protocol does the Management Center for VPN Routers use to communicate with VPN routers?

- A. SNMP
- B. HTTPS
- C. HTTP
- D. IPSec
- E. SSH
- F. AES

Answer: E

Explanation:

Prerequisites for Working with Router MC

Following are some prerequisites for working with Router MC:

- SSH must be enabled on your devices if you want to import or deploy to live devices.

Reference: Using Management Center for VPN Routers 1.2

QUESTION 7 Kathy is the administrator who is configuring IOS firewall IDS. She has two issues to consider when implementing IOS Firewall IDS. Which of these will she select? (Choose two)

- A. Signature length
- B. Memory usage
- C. Number of router interfaces
- D. Signature coverage
- E. Number of DMZs

Answer: B D

Explanation:

Memory and Performance Impact

The performance impact of intrusion detection will depend on the configuration of the signatures, the level of traffic on the router, the router platform, and other individual features enabled on the router such as encryption, source route bridging, and so on. Enabling or disabling individual signatures will not alter performance significantly, however, signatures that are configured to use Access Control Lists will have a significant performance impact. Because this router is being used as a security device, no packet will be allowed to bypass the security mechanisms. The IDS process in the Cisco IOS Firewall router sits directly in the packet path and thus will search each packet for signature matches. In some cases, the entire packet will need to be searched, and state information and even application state and awareness must be maintained by the router. For auditing atomic signatures, there is no traffic-dependent memory requirement. For auditing compound signatures, CBAC allocates memory to maintain the state of each session for each connection. Memory is also allocated for the configuration database and for internal caching.

Cisco IOS Firewall IDS Signature List

The following is a complete list of Cisco IOS Firewall IDS signatures. A signature detects patterns of misuse in network traffic. In Cisco IOS Firewall IDS, signatures are categorized into four types:

- Info Atomic
- Info Compound
- Attack Atomic
- Attack Compound

An info signature detects information-gathering activity, such as a port sweep.

An attack signature detects attacks attempted into the protected network, such as denial-of-service attempts or the execution of illegal commands during an FTP session.

Info and attack signatures can be either atomic or compound signatures. Atomic signatures can detect patterns as simple as an attempt to access a specific port on a specific host.

Compound signatures can detect complex patterns, such as a sequence of operations distributed across multiple hosts over an arbitrary period of time.

The intrusion-detection signatures included in the Cisco IOS Firewall were chosen from a broad cross-section of intrusion-detection signatures as representative of the most common network attacks and information-gathering scans that are not commonly found in an operational network.

The following signatures are listed in numerical order by their signature number in the Cisco Secure IDS Network Security Database. After each signature's name is an indication of the type of signature (info or attack, atomic or compound).

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_configuration_guide_chapter09186a00800ca7c6.html#1000971

QUESTION 8 James the administrator on Certkiller is trying to figure out which router table is modified or prevented from updating, if a rerouting attack occurs. (Choose one)

- A. ARP
- B. address
- C. bridging
- D. routing

Answer: D

Explanation:

Route filters can be set up on any interface to prevent learning or propagating routing information inappropriately. Some routing protocols (such as EIGRP) allow you to insert a filter on the routes being advertised so that certain routes are not advertised in some parts of the network.

Reference: Managing Cisco Network Security (Cisco press) page 233

QUESTION 9 John and Kathy are working on configuring the IOS firewall together. They are figuring out what CBAC uses for inspection rules to configure on a per-application protocol basis.

Which one of these is the correct one?

- A. ODBC filtering
- B. Tunnel, transport models, or both
- C. Alerts and audit trails
- D. Stateful failover

Answer: C

Explanation:

CBAC also generates real-time alerts and audit trails. Enhanced audit trail features use SYSLOG to track all network transactions. Real-time alerts send SYSLOG error messages to central management consoles upon detecting suspicious activity. Using CBAC inspection rules, you can configure alerts and audit trail information on a per-application protocol basis.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_configuration_guide_chapter09186a00800ca7c1.html

QUESTION 10 You are the network security administrator for Certkiller.com. Certkiller has just added TACACS+ AAA authentication to their remote access topology, requiring you to add two TACACS+ servers to the CertkillerPR perimeter router configuration. First, enable the router's AAA access control model and then add the two TACACS+ servers and their respective keys. Use the following values as necessary:

Parameter:	Value
TACACS+ Server Certkiller1 - IP address	10.10.1.2
TACACS+ Server Certkiller1 - Key	Certkiller1
TACACS+ Server Certkiller2 - IP address	10.10.1.3
TACACS+ Server Certkiller2 - Key	Certkiller2
Enable secret password is "Certkiller"	

Perimeter Router:

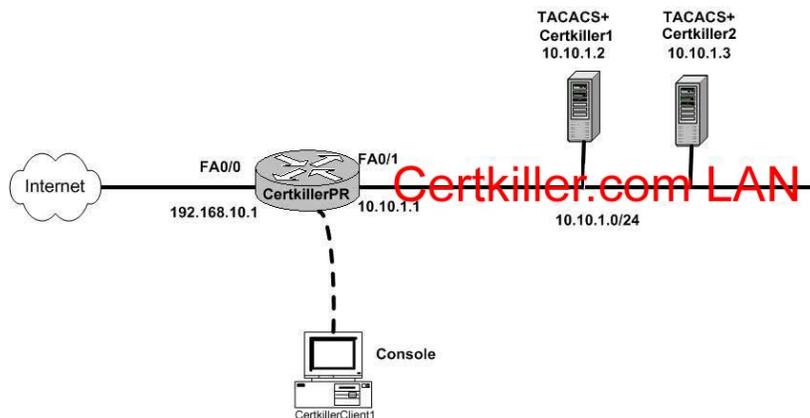
Name : CertkillerPR

FA0/0 : 192.168.10.1

FA0/1 : 10.10.1.1

Secret password: Certkiller

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

**Answer:****Explanation:**

CertkillerPR > enable (enter password [Certkiller] when prompted)

CertkillerPR # config t

CertkillerPR (config)# aaa new-model

CertkillerPR (config)# tacacs-server host 10.10.1.2

CertkillerPR (config)# tacacs-server key Certkiller1

CertkillerPR (config)# tacacs-server host 10.10.1.3
 CertkillerPR (config)# tacacs-server key Certkiller2

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps637/products_configuration_guide_chapter09186a008007f032.html#xtocid238207

QUESTION 11 Brain the security administrator is in charge of creating a security policy for Certkiller Inc.

Which two statements about the creation of a security policy are true? (Choose two)

- A. It helps Chief Information Officers determine the return on investment of network security at Certkiller Inc.
- B. It defines how to track down and prosecute policy offenders at Certkiller Inc.
- C. It helps determine which vendor security equipment or software is better than others.
- D. It clears the general security framework so you can implement network security at Certkiller Inc.
- E. It provides a process to audit existing network security at Certkiller Inc.
- F. It defines which behavior is and is not allowed at Certkiller Inc.

Answer: E F

Explanation:

Reasons to create a network security policy:

- Provides a process to audit existing network security
- Provides a general security framework for implementing network security
- Defines which behavior is and is not allowed
- Often helps determine which tools and procedures are needed for the organization
- Helps communicate consensus among a group of key decision-makers and defines responsibilities of users and administrators
- Defines a process for handling network security incidents
- Enables global security implementation and enforcement
- Creates a basis for legal action if necessary

Reference: Managing Cisco Network Security (Cisco press) page 43

QUESTION 12 You are the security administrator for Certkiller and you need to know what CBAC does on the Cisco IOS Firewall.

Which one of these is the best answer?

- A. Creates specific security policies for each user at Certkiller Inc.
- B. Provides additional visibility at intranet, extranet, and Internet perimeters at Certkiller Inc.
- C. Protects the network from internal attacks and threats at Certkiller Inc.
- D. Provides secure, per-application access control across network perimeters at Certkiller Inc.

Answer: D

Explanation:

Context-based Access Control (CBAC) examines not only network layer and transport layer information, but also examines the application-layer protocol information (such as FTP information) to learn about the state of TCP and UDP connections. CBAC maintains connection state information for individual connections. This state information is used to

make intelligent decisions about whether packets should be permitted or denied, and dynamically creates and deletes temporary openings in the firewall.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800d9815.html

QUESTION 13 John the security administrator is working on Cisco Easy VPN. His job today is to know what two IPSec attributes that are not supported by Cisco Easy VPN.

(Choose two)

- A. Tunnel mode
- B. Manual keys
- C. DH 2
- D. RSA digital signatures
- E. Pre-shared keys
- F. PFS

Answer: B F

Explanation:

Table 1 Non Supported IPSec Protocol Options and Attributes

Options	Attributes
Authentication Types	Authentication with public key encryption Digital Signature Standard (DSS)
Diffie-Hellman Group	1
IPSec Protocol Identifier	IPSEC_AH
IPSec Protocol Mode	Transport mode
Miscellaneous	Manual keys Perfect Forward Secrecy (PFS)

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide09186a0080087d1e.html

QUESTION 14 John the security administrator is configuring a Cisco router for IPSec using pre-shared keys, why should he configure a crypto map with two peers specified for redundancy?

- A. The second peer becomes the primary peer.
- B. The second peer monitors activity of the first peer.
- C. If the first peer cannot be contacted, the second peer is used.
- D. There are not circumstances in which you should do this.

Answer: C

Redundancy

You can define multiple peers by using crypto maps to allow for redundancy. If one peer fails, there will still be a protected path. The peer that packets are actually sent to is determined by the last peer that the PIX Firewall heard from (received either traffic or a negotiation request from) for a given data flow. If the attempt fails with the first peer, IKE tries the next peer on the crypto map list.

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2120/products_user_guide_chapter09186a00801aed88.html

QUESTION 15 Kathy is in charge of configuring a Cisco router for IKE using RSA signatures, before she initiates the crypto key generate rsa command, what should Kathy do?

- A. Kathy should generate general purpose keys.
- B. Kathy should save the command in the router configuration before she initiates the crypto key generate rsa command.
- C. Kathy should save the keys in a private configuration in NVRAM.
- D. Kathy should configure a hostname and IP domain name for your router.

Answer: D

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_command_summary_chapter09186a00800eeaf5.html#5887

QUESTION 16 Kathy is looking for the command that deletes all of the routers RSA keys.

Which command is correct?

- A. crypto key zeroize rsa
- B. crypto key remove rsa
- C. crypto key delete rsa
- D. crypto key remove rsa all

Answer: A

Explanation:

crypto key zeroize rsa

To delete all of your router's RSA keys, use the crypto key zeroize rsa global configuration command.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_command_summary_chapter09186a00800eeaf4.html#5124

QUESTION 17 John is the administrator at Certkiller Inc. and his assignment today is to find the two types of signature implementations that the IOS Firewall IDS can detect.

Which two are correct? (Choose two)

- A. Atomic
- B. Compound
- C. Dynamic

- D. Regenerative
- E. Cyclical
- F. Complex

Answer: A B

Explanation:

Cisco IOS Firewall IDS Signature List

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- Info Compound
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- Attack Compound

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_configuration_guide_chapter09186a00800ca7c6.html#78832

QUESTION 18 You are the administrator of Certkiller Inc. and your job today is to find out which Easy VPN feature enables two IPSec peers to determine if the other is still "alive"?

- A. Dead Peer Timeout
- B. Dead Peer Detection
- C. No Pulse Timer
- D. Peer Death Monitor
- E. Peer Heartbeat

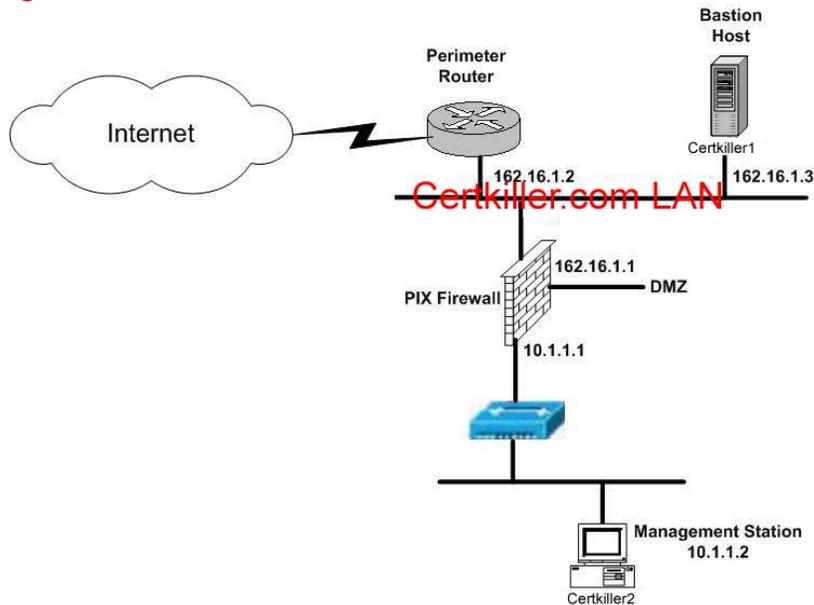
Answer: B

Enabling IKE Dead Peer Detection

To enable a Cisco IOS VPN gateway (instead of the client) to send IKE DPD messages, perform the following steps

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide09186a0080087d1e.html#1051234

QUESTION 19 Exhibit:

Greg has just started working as the security administrator at Certkiller Inc. His manager asked him to prevent Internet users from pinging the PIX. Which ACL statement should be configured on the external interface of the perimeter router?

- A. access-list 102 deny tcp any 162.16.1.1 0.0.0.0
- B. access-list 102 permit tcp any 162.16.1.1 0.0.0.0 echo
- C. access-list 102 deny icmp any 162.16.1.1 0.0.0.0 echo-reply
- D. access-list 102 deny icmp any 162.16.1.1 0.0.0.0 echo

Answer: D

Explanation:

Echo added to the end of the command implies no ping requests to the PIX.

Reference: Managing Cisco Network Security (Cisco press) pages 728

QUESTION 20 John is the administrator working on configuring the authentication proxy feature. He is not sure what the authentication proxy feature does on the Cisco IOS Firewall.

- A. Use a general policy applied across multiple Certkiller Inc. users
- B. Use a single security policy that is applied to an entire user group or subnet at Certkiller Inc.
- C. Apply specific security policies on a per-user basis at Certkiller Inc.
- D. Keep the Certkiller Inc. user profiles active even where there is no active traffic from the authenticated users.

Answer: C

The Cisco IOS Firewall authentication proxy feature allows network administrators to apply specific security policies on a per-user basis. Previously, user identity and related authorized access was associated with a user's IP address, or a single security policy had to be applied to an entire user group or sub network. Now, users can be identified and authorized on the basis of their per-user policy, and access privileges tailored on an individual basis are possible, as opposed to general policy applied across multiple users. With the authentication proxy feature, users can log in to the network or access the

Internet via HTTP, and their specific access profiles are automatically retrieved and applied from a Cisco Secure ACS, or other RADIUS, or TACACS+ authentication server. The user profiles are active only when there is active traffic from the authenticated users.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800d981d.html#1001076

QUESTION 21 John the security administrator at Certkiller Inc. needs to select three types of authentication supported by Cisco Secure ACS 3.0.1. (Choose three)

- A. HMAC
- B. EAP-TLS
- C. DH-1
- D. AAA
- E. LEAP
- F. EAP-MD5

Answer: B D F

Explanation:

EAP-MD5, EAP-TLS—In addition to supporting LEAP, Cisco Secure ACS supports EAP-MD5 and EAP-TLS authentication. EAP is an IETF RFC standard for carrying various authentication methods over any PPP connection. EAP-MD5 is a username/password method incorporating MD5 hashing for security. EAP-TLS is a method for authenticating both Cisco Secure ACS and users with X.509 digital certificates. This method also provides dynamic session key negotiation.

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2086/prod_release_note09186a00800ada4c.html

QUESTION 22 John the administrator is working on defending the network against attack. He needs to know which Cisco IOS feature defends against an unauthorized access attempt?

- A. IKE
- B. IPSO
- C. TCP intercept
- D. IOS ACLs
- E. CBAC

Answer: D

Access list permits who can enter and leave the network when it is applied to the interface of a perimeter router.

QUESTION 23 Certkiller.com, a fast food company, has recently expanded and assumed the responsibility for three additional brands of fast food. Due to this expansion the computer systems have been upgraded and sensitive data will now be transmitted between the offices. Jack, the network administrator of the Certkiller.com, has decided to implement a secure IPsec connection between the two offices. The Certkiller1 router has been completely configured. The Certkiller2 router has been configured but is missing

the IKE parameters.

IKE is enabled. Configure the following IKE parameters on the Certkiller2 router:

- The policy priority should be set to 200.
- The peer authentication method should be pre-shared keys.
- The encryption algorithm should be 3-des.
- DH group 2 should be used.
- The hash algorithm should be md5.
- The pre-shared key should be specified as "fast-food".
- The tunnel should be terminated on the serial interface.
- All other IKE parameters are set as default.
- You will not be able to initiate traffic to bring up the tunnel.

The routers have been configured with the following specifications:

- The routers are named Certkiller1 and Certkiller2.
- The secret password on the Certkiller2 router is "Certkiller"
- The IP addresses are shown.

LAB A

Name : Certkiller2

E0/0 : 10.0.12.3/24

S0/0 : 172.18.12.2/24

Secret Password: Certkiller

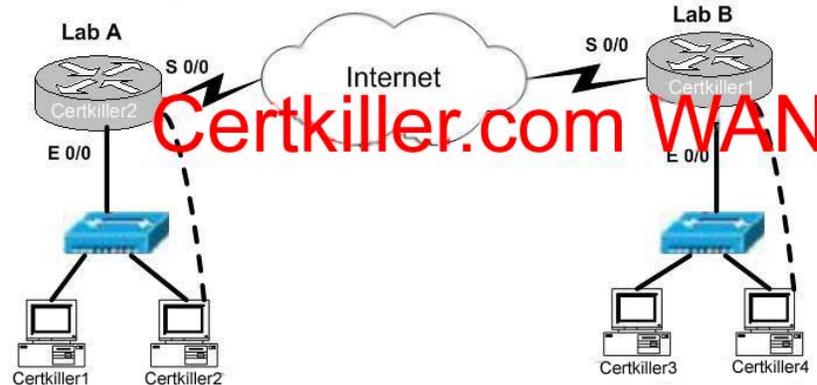
LAB B

Name: Certkiller1

E0/0: 10.0.30.3/24

S0/0: 172.18.37.2/24

Click on the picture of the host connected to a router by a serial console cable.



Answer:

```
Certkiller2 (config)# crypto isakmp enable
Certkiller2 (config)# crypto isakmp policy 200
Certkiller2 (config-isakmp)# encryption 3des
Certkiller2 (config-isakmp)# hash md5
Certkiller2 (config-isakmp)# authentication pre-share
Certkiller2 (config-isakmp)# group 2
Certkiller2 (config-isakmp)# crypto isakmp key fast-food address 172.18.37.2
```

Reference:

Configuring Internet Key Exchange Security Protocol

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800d9821.html

QUESTION 24 George is the administrator at Certkiller Inc. working on acquiring a position in the security department. He is studying the OSI layer model and is trying to find out which OSI layer does IPSec provide security services?

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

Answer: C

Explanation:

IPSec uses a type of encryption known as packet encryption. It is referred to as packet encryption because it takes place at the network layer, or layer 3 in the OSI reference model. Because this encryption takes place above the data link layer (layer 2), communication takes place in the form of distinct packets or datagrams, depending on which protocol controls the session (TCP or UDP). Packet encryption is often called end-to-end encryption because the encryption process takes place only at the source and destination endpoints

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2133/products_user_guide_chapter09186a00800e9586.html

QUESTION 25 John the administrator at Certkiller Inc. is looking at the router configuration to help him look for the following debug output, which two statements are true? (Choose two)

```
1d16h: %LINK-3-UPDOWN: Interface Serial3/0, changed state to up
*Mar 2 16:52:15.297: Se3/0 PPP: Treating connection as a dedicated line
*Mar 2 16:52:15.441: Se3/0 PPP: Phase is AUTHENTICATING, by this end
*Mar 2 16:52:15.445: Se3/0 CHAP: O CHALLENGE id 7 len 29 from 'NASx'
```

- A. The user identity is NASx.
- B. This is a connection attempt to an async port.
- C. The connection is established on serial interface 3/0.
- D. The client is attempting to setup a Serial Line Internet Protocol connection.
- E. The user is authenticating using CHAP.
- F. The DHCP server sends a get pass request to prompt for the password.

Answer: C E

Explanation:

1d16h: %LINK-3-UPDOWN: Interface Serial3/0, changed state to up

The "up" means the serial interface has connectivity.

The CHAP initiation sequence and three-way handshake occur as follows:

1. The PPP link is established after dialup.
2. The network access server (NAS) tells the remote client to use CHAP.
3. The remote client responds with an OK.
4. The three-way handshake occurs as follows:

- a. The network access server sends a challenge message to the remote client.
- b. The remote client replies with a one-way hash value.
- c. The network access server processes the received hash value. If it matches the station's own calculation, authentication is acknowledged.

Reference: Managing Cisco Network Security (Cisco press) page 123

QUESTION 26 John the security administrator at Certkiller Inc. is in charge of the IOS router firewall. His job today is to choose the three actions that the IOS Firewall IDS router may perform when a packet, or a number of packets in a session, match a signature. (Choose three)

- A. Forward packet to the Cisco IDS Host Sensor for further analysis.
- B. Set the packet reset flag and forward the packet through.
- C. Reset the TCP connection
- D. Drop the packet immediately.
- E. Return the packet to the sender.
- F. Send an alarm to the Cisco IDS Director or Syslog server.

Answer: C D F

Explanation:

The Cisco IOS Firewall IDS acts as an in-line intrusion detection sensor, watching packets and sessions as they flow through the router, scanning each to match any of the IDS signatures. When it detects suspicious activity, it responds before network security can be compromised and logs the event through Cisco IOS syslog or the Cisco Secure Intrusion Detection System (Cisco Secure IDS, formerly known as Net Ranger) Post Office Protocol; The network administrator can configure the IDS system to choose the appropriate response to various threats. When packets in a session match a signature, the IDS system can be configured to take these actions:

- . Send an alarm to a syslog server or a Cisco Secure IDS Director (centralized management interface)
- . Drop the packet
- . Reset the TCP connection

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800d9819.html

QUESTION 27 Jason is the security administrator at Certkiller Inc. and his assignment today is to find out in crypto map configuration mode, which command lets you manually specify the IPSec session keys with a crypto map entry?

- A. set crypto map
- B. set ipsec-manual
- C. no set security-association
- D. set security-association

Answer: D

set security-association level per-host

To specify that separate IP Security associations should be requested for each source/destination host pair, use the set security-association level per-host crypto map configuration command. To specify that one security association should be requested for

each crypto map access list permit entry, use the no form of this command.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_command_summary_chapter09186a0080087228.html#1018772

QUESTION 28 John is the administrator working on configuring the authentication proxy feature. He is not sure what the authentication proxy feature does on the Cisco IOS Firewall.

- A. Creates specific security polices for each user with Cisco Secure ACS, dynamic, peruser authentication and authorization.
- B. Creates specific authorization policies for each user with Cisco Secure ACS, dynamic, per-user security and authorization.
- C. Provides additional visibility at intranet, extranet, and Internet perimeters.
- D. Provides secure, per-application access control across network perimeters.

Answer: A

Explanation:

The Cisco IOS Firewall authentication proxy feature allows network administrators to apply specific security policies on a per-user basis. Previously, user identity and related authorized access was associated with a user's IP address, or a single security policy had to be applied to an entire user group or sub network. Now, users can be identified and authorized on the basis of their per-user policy, and access privileges tailored on an individual basis are possible, as opposed to general policy applied across multiple users. With the authentication proxy feature, users can log in to the network or access the Internet via HTTP, and their specific access profiles are automatically retrieved and applied from a Cisco Secure ACS, or other RADIUS, or TACACS+ authentication server. The user profiles are active only when there is active traffic from the authenticated users.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800d981d.html#1001076

QUESTION 29 Kathy is the security administrator at Certkiller Inc. and needs to identify two packet mode access methods. Choose two packet mode access methods.

(Choose two)

- A. Sync
- B. BRI
- C. Group-sync
- D. Telnet
- E. tty
- F. Async

Answer: B F

Explanation:

AAA and Packet-Mode Traffic

AAA technologies can also protect dialup access in the packet or interface mode via async, group-async, Basic Rate Interface (BRI) ISDN lines, or Primary Rate Interface

(PRI) ISDN interfaces on Cisco Routers.

Reference: Managing Cisco Network Security (Cisco press) page 114

QUESTION 30 John the administrator at Certkiller Inc. is working on securing the router passwords.

Which IOS command encrypts all clear text passwords in a router configuration?

- A. service password-encryption
- B. service password md5
- C. encrypt passwords
- D. enable password-encryption
- E. service password-encrypted

Answer: A

Explanation:

service password-encryption

To encrypt passwords, use the service password-encryption global configuration command.

Use the no form of this command to disable this service.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_command_summary_chapter09186a00800d9c26.html#xtocid188698

QUESTION 31 James the administrator of Certkiller Inc. is working on the IDS for the network. He needs to know what kind of signatures trigger on a single packet. (Choose one)

- A. Regenerative
- B. Cyclical
- C. Dynamic
- D. Atomic
- E. Compound

Answer: D

Signature structure

The signature structure indicates whether the signature implementation is either content or composite. Atomic signatures occur in a single packet, whereas composite signatures can be spread across multiple packets.

Reference: Cisco Secure Intrusion Detection System (Cisco press) page 192

QUESTION 32 Kathy is the administrator and is working on certificates as part of her daily duties. She needs to know what defines the standard certificate format.

- A. CEP
- B. CRLv2
- C. ISAKMP
- D. X.509v3

Answer: D

Explanation:

CA supports the following standards:

- X.509v3 certificates

- Public-Key Cryptography Standard #7 (PKCS #7)-A standard from RSA Data Security, Inc. used to encrypt and sign certificate enrollment messages.
- Public-Key Cryptography Standard #10 (PKCS #10)-A standard syntax from RSA Data Security, Inc. for certificate requests.
- RSA Keys-RSA is the public key cryptographic system developed by Ron Rivest, Adi Shamir, and Leonard Adleman. RSA keys come in pairs: one public key and one private key.

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2120/products_configuration_guide_chapter09186a008008993c.html

QUESTION 33 John the security administrator at Certkiller Inc. is in charge of securing the network against Chargen attacks.

Which two commands prevent a Chargen attack? (Choose two)

- A. no ip redirects
- B. no tcp-small-servers
- C. no ip-source route
- D. no chargen enable
- E. no udp-small-servers
- F. no service finger

Answer: B E

Explanation:

TCP and UDP "Small Services"

By default, Cisco devices up through IOS version 11.3 offer the "small services": echo, chargen, and discard. These services, especially their UDP versions, are infrequently used for legitimate purposes, but can be used to launch denial of service and other attacks that would otherwise be prevented by packet filtering.

For example, an attacker might send a DNS packet, falsifying the source address to be a DNS server that would otherwise be unreachable, and falsifying the source port to be the DNS service port (port 53). If such a packet were sent to the Cisco's UDP echo port, the result would be the Cisco sending a DNS packet to the server in question. No outgoing access list checks would be applied to this packet, since it would be considered to be locally generated by the router itself.

Although most abuses of the small services can be avoided or made less dangerous by anti spoofing access lists, the services should almost always be disabled in any router which is part of a firewall or lies in a security-critical part of the network. Since the services are rarely used, the best policy is usually to disable them on all routers of any description. The small services are disabled by default in Cisco IOS 12.0 and later software. In earlier

software, they may be disabled using the commands no service tcp-small-servers and no service udp-small-servers.

Reference:

http://www.cisco.com/en/US/tech/tk648/tk361/technologies_tech_note09186a0080120f48.shtml

QUESTION 34 John the administrator wants to know which type of key exchange mechanism is Diffie-Hellman.

- A. Private key exchange
- B. RSA keying
- C. Public key exchange
- D. AES key exchange

Answer: C

Explanation:

Diffie-Hellman is used to securely exchange public keys so that shared secret keys can be securely generated for use as DES keys.

Reference: Managing Cisco Network Security (Cisco press) page 467

QUESTION 35 John from security department at Certkiller Inc. is looking for an external database for CSACS for windows.

Which three external databases are supported by Cisco Secure ACS for Windows?

(Choose three)

- A. Token Server
- B. SQL-Linux
- C. Netware NDS
- D. ODBC
- E. Windows-NT/2000
- F. AAA

Answer: C D E

Explanation:

CSNT can authenticate users who are defined in Network Operating System Security databases or directory services, such as Novell NDS or Window NT accounts database, and it supports authentication forwarding to LDAP servers. ODBC support is available to rapidly import a large number of users.

Reference: Managing Cisco Network Security (Cisco press) page 183

QUESTION 36 John the security administrator for Certkiller Inc. needs to identify three character mode access methods. Choose three character mode access methods.

- A. ppp
- B. tty
- C. vty
- D. async
- E. acl
- F. aux

Answer: B C F

Explanation:

AAA and Character-Mode Traffic - AAA secure character-mode traffic during login sessions via the lines"

- Aux
- Console
- TTY

- VTY

Reference: Managing Cisco Network Security (Cisco press) page 113

QUESTION 37 Kathy from the security department at Certkiller Inc. wants to know what does a halfopen TCP session on the Cisco IOS Firewall mean.

- A. Session was denied.
- B. Session has not reached the established state.
- C. Three-way handshake has been completed.
- D. Firewall detected return traffic.

Answer: B

Explanation:

An unusually high number of half-open sessions (either absolute or measured as the arrival rate) could indicate that a denial-of-service attack is occurring. For TCP, "half-open" means that the session has not reached the established state. For UDP, "half-open" means that the firewall has detected traffic from one direction only.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_command_reference_chapter09186a00800d9806.html

QUESTION 38 Jason the administrator at Certkiller Inc. is wondering which module is audited first when packets enter an IOS Firewall IDS and match a specific audit rule?

- A. IP
- B. TCP
- C. ICMP
- D. Application level
- E. UDP

Answer: A

Explanation:

Packets going through the interface that match the audit rule are audited by a series of modules, starting with IP; then either ICMP, TCP, or UDP (as appropriate); and finally, the Application level.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1830/products_feature_guide_chapter09186a00800881c0.html

QUESTION 39 John the security Administrator at Certkiller Inc. is working on IPSec. He quizzes Kathy about AH.

He asks her which three statements about AH are true. (Choose three)

- A. AH encrypts the payload for data confidentiality.
- B. AH provides connectionless integrity for the IP datagrams.
- C. AH encapsulates the data.
- D. AH provides protection against replay.
- E. AH uses symmetric secret algorithms.
- F. AH provides data origin authentication for the IP datagrams.

Answer: B D F

Explanation:

Authentication Header - A security protocol that provides authentication and optional replay detection services. AH acts as a digital signature to ensure data in the IP packet has not been tampered with. AH does not provide data encryption and decryption services.

Reference: Managing Cisco Network Security (Cisco press) page 525

QUESTION 40 Kathy the security administrator for Certkiller Inc. is working on defending the network.

One of the attacks she is working to defend is SYN flooding and is looking to know which Cisco IOS feature defends against SYN flooding DoS attacks.

- A. Route authentication
- B. Encryption
- C. ACLs
- D. TCP intercept

Answer: D

Explanation:

The TCP intercept feature in Cisco IOS software protects TCP servers from SYN-flooding attacks, a type of DoS attack.

Reference: Managing Cisco Network Security (Cisco press) page 239

QUESTION 41 Jason the security manager at Certkiller Inc. is working on the PIX firewall. He needs to figure out which two types of commands are used for testing and verifying IPsec and ISAKMP? (Choose two)

- A. clear
- B. show
- C. interface
- D. crypto map
- E. crypto isakmp policy
- F. debug

Answer: B F

Explanation:

Testing and verifying the overall IPsec configuration:

The final step in configuring IPsec for pre-shared keys is to verify that all the IKE and IPsec values were configured correctly and to test it to ensure that it works properly. The PIX Firewall contains a number of show, clear, and debug commands that are useful for testing and verifying IKE and IPsec, which are summarized in this section.

Reference: Managing Cisco Network Security (Cisco press) page 221

QUESTION 42 John and Kathy are working together at Certkiller Inc. to find the more secure approach for pre-shared keys between peers.

Which one of these answers is correct?

- A. Specify the same key to share with multiple remote peers.
- B. Specify different keys to share between different pairs of peers.
- C. Specify different keys to share with multiple remote peers.
- D. Specify the same key to share between different pairs of peers.

Answer: B

Explanation:

Specify the shared keys at each peer. A given pre-shared key is shared between two peers. At a given peer you could specify the same key to share with multiple peers; however, a more secure approach is to specify different keys to share between different pairs of peers.

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2120/products_user_guide_chapter09186a0080106f69.html

QUESTION 43 Certkiller Inc. just hired a new security administrator named Paul. He is working on authentication proxy for his first project. He does not know how the user triggers the authentication proxy after the idle timer expires.

Which one of these answers is the right answer?

- A. Authenticates the user.
- B. Initiates another HTTP session.
- C. Enters a new username and password.
- D. Enters a valid username and password.

Answer: B

How the Authentication Proxy Works

When a user initiates an HTTP session through the firewall, the authentication proxy is triggered. The authentication proxy first checks to see if the user has been authenticated. If a valid authentication entry exists for the user, the connection is completed with no further intervention by the authentication proxy. If no entry exists, the authentication proxy responds to the HTTP connection request by prompting the user for a username and password.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800d981d.html

QUESTION 44 Jason the security administrator at Certkiller Inc. is not very good with crypto ACLs. He asked the security team what the two functions that crypto ACLs performs on outbound traffic. (Choose two)

- A. Selects outbound traffic that should be protected by IPsec.
- B. Bypasses outbound traffic that should be protected by IPsec.
- C. Select inbound traffic that should be protected by IPsec.
- D. Sends outbound traffic that should be protected by IPsec as clear text.
- E. Discards outbound traffic that should not be protected by IPsec.
- F. Discards outbound traffic that requires protection by IPsec.

Answer: A E

Crypto Access Lists

Crypto access lists are used to define which IP traffic will be protected by crypto and which traffic will not be protected by crypto. For example, access lists can be created to protect all IP traffic between Subnet A and Subnet Y or between Host A and Host B. (These access lists are similar to access lists used with the access-group command. With the access-group command, the access-list determines which traffic to forward or block at an interface.)

The access lists themselves are not specific to IPsec. It is the crypto map entry referencing the specific access list that defines whether IPsec processing is applied to the traffic matching a permit in the access list.

Crypto access lists associated with IPsec crypto map entries have four primary functions:

- Select outbound traffic to be protected by IPsec (permit = protect).
- Indicate the data flow to be protected by the new security associations (specified by a single permit entry) when initiating negotiations for IPsec security associations.
- Process inbound traffic to filter out and discard traffic that should have been protected by IPsec.
- Determine whether or not to accept requests for IPsec security associations on behalf of the requested data flows when processing IKE negotiation from the peer.

(Negotiation is only done for ipsec-isakmp crypto map entries.) In order for the peer's request to be accepted during negotiation, the peer must specify a data flow that is "permitted" by a crypto access list associated with an ipsec-isakmp crypto map command entry.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/iaabu/pix/pix_v52/ipsec/ipsec.htm#25257

QUESTION 45 John the security administrator at Certkiller Inc. is working on the IOS Firewall IDS. He needs to select the command used to enable alarming on the IOS Firewall IDS to finish his day of work.

Which one of these answers is correct?

- A. ip audit alarm
- B. ip audit syslog-server
- C. ip alarm syslog-server
- D. ip audit notify

Answer: D

Explanation:

ip audit notify

To specify the methods of event notification, use the ip audit notify global configuration command. Use the no form of this command to disable event notifications.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps5207/products_command_reference_chapter09186a00801a7f83.html

QUESTION 46 Kathy and John the security administrators are working on solving a few problems.

Finding out which three statements about ESP are true will help them solve the problems they have. (Choose three)

- A. ESP provides protection to the outer headers.
- B. ESP encapsulates the data.
- C. ESP uses symmetric secret key algorithms.
- D. ESP verifies the integrity of the ESP datagram.
- E. ESP uses asymmetric secret key algorithms.
- F. ESP encrypts the payload for data confidentiality.

Answer: B C F

Explanation:

ESP is a security protocol used to provide confidentiality (that is, encryption), data origin authentication, integrity, optional anti-replay service, and limited traffic flow confidentiality by defeating traffic flow analysis.

ESP provides confidentiality by performing encryption at the IP packet layer. It supports a variety of symmetric encryption algorithms.

Reference: Managing Cisco Network Security (Cisco press) page 529

QUESTION 47 John the security administrator at Certkiller Inc. is using Cisco Easy VPN and needs to know which of these statements are true about Cisco Easy VPN.

A. All members of a user group must originate on the same model and type of Cisco VPN Client.

B. Only VPN-enabled Cisco routers and PIX Firewalls may be used as Easy VPN servers.

C. The maximum amount of Cisco VPN Clients supported by a VPN server is 50.

D. Centrally managed IPSec policies are pushed to the Cisco VPN Clients by the VPN server.

Answer: D

Explanation:

The Easy VPN Server feature introduces server support for the Cisco VPN Client Release 3.x and later software clients and Cisco VPN hardware clients. The feature allows a remote end user to communicate using IP Security (IPSec) with any Cisco IOS Virtual Private Network (VPN) gateway. Centrally managed IPSec policies are "pushed" to the client by the server, minimizing configuration by the end user.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide09186a0080087d1e.html#69962

QUESTION 48 ESP is the main topic for the day at Certkiller Inc.

Which statement best describes ESP header?

A. It is inserted before an encapsulated IP header in tunnel mode.

B. It is inserted before an encapsulated IP header in transport mode.

C. It is inserted after the IP header and before the upper layer protocol header in tunnel mode.

D. It is inserted after the IP header and after the upper layer protocol header in transport mode.

Answer: A

Explanation:

In Tunnel Mode ESP, the original IP datagram is placed in the encrypted portion of the ESP and that entire ESP frame is placed within a datagram having unencrypted IP headers. The information in the unencrypted IP headers is used to route the secure datagram from origin to destination. An unencrypted IP Routing Header might be included between the IP Header and the ESP.

This mode allows a network device, such as a router, to act as an IPSec proxy. That is, the router performs encryption on behalf of the hosts. The source's router encrypts

packets and forwards them along the IPSec tunnel. The destination's router decrypts the original IP datagram and forwards it on to the destination system. The major advantage of tunnel mode is that the end systems do not need to be modified to enjoy the benefits of IP Security. Tunnel mode also protects against traffic analysis; with tunnel mode an attacker can only determine the tunnel endpoints and not the true source and destination of the tunneled packets, even if they are the same as the tunnel endpoints. As defined by the IETF, IPSec transport mode can only be used when both the source and the destination systems understand IPSec. In most cases, you deploy IPSec with tunnel mode. Doing so allows you to implement IPSec in the network architecture without modifying the operating system or any applications on your PCs, servers, and hosts.

In Transport Mode ESP, the ESP header is inserted into the IP datagram immediately prior to the transport-layer protocol header (such as TCP, UDP, or ICMP). In this mode, bandwidth is conserved because there are no encrypted IP headers or IP options. Only the IP payload is encrypted, and the original IP headers are left intact. This mode has the advantage of adding only a few bytes to each packet. It also allows devices on the public network to see the final source and destination of the packet. This capability allows you to enable special processing (for example, quality of service) in the intermediate network based on the information on the IP header. However, the Layer 4 header will be encrypted, limiting the examination of the packet. Unfortunately, by passing the IP header in the clear, transport mode allows an attacker to perform some traffic analysis. For example, an attacker could see when one CEO sent a lot of packets to another CEO. However, the attacker would only know that IP packets were sent; the attacker would not be able to determine if they were e-mail or another application. Reference: <http://www.cisco.com/warp/public/707/16.html>

QUESTION 49 Jason and Kathy the security administrators are making a game for the security to play.

They want the team to match the assigned default with the IKE policy parameter.

Place here	IKE Policy parameter	Select from these
Place here	message encryption algorithm	768 bit Diffie Hellman
Place here	ISAKMP established SAs lifetime	1 day
Place here	key exchange parameters	DES
Place here	peer authentication method	SHA 1
Place here	message integrity algorithm	RSA signature

Answer:

Place here	IKE Policy parameter	Select from these
DES	message encryption algorithm	
1 day	ISAKMP established SAs lifetime	
768 bit Diffie Hellman	key exchange parameters	
RSA signature	peer authentication method	
SHA 1	message integrity algorithm	

Explanation:

IKE Policy Parameters: Default Value

- Message encryption algorithm 56-bit DES-CBC
- ISAKMP established SAs lifetime 86,400 seconds (one day)
- Key Exchange parameters 768-bit Diffie-Hellman
- Peer authentication method RSA signature
- Message integrity algorithm SHA 1

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2120/products_user_guide_chapter09186a0080089916.html

QUESTION 50 Jason the security administrator was given the following configuration statement. After looking at the command, he knows two statements are true.

Which two are correct statements? (Choose two)

router(config)#aaa authentication login default tacacs+ none

- A. TACACS is the default login method for all authentication.
- B. No authentication is required to login.
- C. IF TACACS process is unavailable, no access is permitted.
- D. RADIUS is the default login method for all authentication.
- E. If the RADIUS process is unavailable, no login is required.
- F. IF the TACACS process is unavailable, no login is required.

Answer: A F

use TACACS+ authentication; if a Cisco Secure ACS is not available, use the NAS's local user database password. However, all other users can only use TACACS+: none - no authorization is performed.

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps4911/products_user_guide_chapter09186a008015c5c3.html

QUESTION 51 Kathy the security administrator was given the following configuration statement. After looking at the command, she knows three statements are true.

Which three are correct statements? (Choose three)

Router(config)#aaa accounting network wait-start radius

- A. The accounting records are stored in a TACACS+ server.
- B. Stop-accounting records for network service requests are sent to the TACACS+ server.

- C. The accounting records are stored on a RADIUS server.
- D. Start-accounting records for network service requests are sent to the local database.
- E. Stop-accounting records for network service requests are sent to the RADIUS server.
- F. The requested service cannot start until the acknowledgment has been received from the RADIUS server.

Answer: C, E, F

Explanation:

Router(config)#aaa accounting network wait-start radius

aaa accounting {system | network | connection | exec | command level} {start-stop | wait start | stop-only} tacacs+

. Use the aaa accounting command to enable accounting and to create named method lists that define specific accounting methods on a per-line or per-interface basis.

. Network - Enables accounting for all network-related requests, including SLIP, PPP, PPP network control protocols, and ARAP

. wait-start - This keyword causes both a start and stop accounting record to be sent to the accounting server. However, the requested user service does not begin until the start accounting record is acknowledged. A stop accounting record is also sent.

QUESTION 52 John the security administrator at Certkiller Inc. wants to know which three steps configure RSA keys. (Choose three)

- A. Configure a security algorithm.
- B. Configure the routers hostname and domain name.
- C. Manage RSA keys.
- D. Configure a hash algorithm.
- E. Configure encryption.
- F. Verify key configuration.

Answer: A, B, E

RSA-encrypted nonces – Public key cryptography requires that each party generate a pseudorandom number (a nonce) and encrypt it in the other party's RSA public key. Authentication occurs when each party decrypts the other party's nonce with a local private key and then uses the decrypted nonce to compute a keyed hash.

Reference: Managing Cisco Network Security (Cisco press) page 539

QUESTION 53 Kathy the security administrator is working on the IOS Firewall IDS feature. She needs to select the command used to configure the IOS Firewall IDS to globally disable a specific signature.

- A. ip audit signature sig-id global
- B. ip audit signature sig-id disable
- C. ip audit disable sig-id
- D. ip audit disable signature sig-id

Answer: B

Explanation:

ip audit signature

To attach a policy to a signature, use the ip audit signature command in global configuration mode. To remove the policy, use the no form of this command. If the policy disabled a signature, then the no form of this command reenables the signature. If

the policy attached an access list to the signature, the no form of this command removes the access list.

```
ip audit signature signature-id { disable | list acl-list }
```

```
no ip audit signature signature-id
```

Syntax Description

signature-id - Unique integer specifying a signature as defined in the Net Ranger Network Security Database.

Disable - Disables the ACL associated with the signature.

List - Specifies an ACL to associate with the signature.

acl-list - Unique integer specifying a configured ACL on the router. Use with the list

keyword.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps5207/products_command_reference_chapter09186a00801a7f83.html#1073162

QUESTION 54 Paul the security administrator is working to fight against DoS attacks. He has a lot of work to do, starting with knowing which three thresholds CBAC on the Cisco IOS Firewall provides against DoS attacks. (Choose three)

- A. Number of fully open sessions based upon time.
- B. Number of half-open sessions based upon time.
- C. Total number of half-open TCP or UDP sessions.
- D. Total number of fully open TCP or UDP sessions.
- E. Number of fully open TCP-only sessions per host.
- F. Number of half-open TCP-only sessions per host.

Answer: B C F

Half Open Sessions

An unusually high number of half-open sessions (connection requests that are not completed) could indicate that a DoS attack is occurring or that someone is conducting a port scan. CBAC measures both the Total number of half-open sessions and the rate of session establishment attempts. It counts total TCP and UDP half-open sessions and measures the rate of half-open session establishment once per minute. When the number of existing half-open sessions exceeds the max-incomplete high number, CBAC deletes half-open sessions as required to accommodate new connection requests. The software continues to delete half-open requests until the number of existing half-open sessions drops below max-incomplete low number.

Reference: Managing Cisco Network Security (Cisco press) page 273

QUESTION 55 Greg is working with the security team at Certkiller Inc., to find out which three statements about the crypto ipsec security-association lifetime command are true. (Choose three)

- A. Indicates data flow to be protected by IPSec.
- B. Selects outbound traffic to be protected by IPSec.
- C. Can optionally configure different IPSec SA lifetimes in crypto maps.
- D. Configures IKE SA lifetime values.
- E. IPSec SA lifetimes are negotiated during IKE Phase 2.

F. Configure global IPsec SA lifetime values used when negotiating IPsec SAs.

Answer: C E F

Explanation:

Use the `crypto ipsec security-association lifetime` command to configure global lifetimes for IPsec SAs. There are two lifetimes: a "timed" lifetime and a "traffic-volume" lifetime. A security association expires after the first of these lifetimes is reached.

The IPsec SA idle timers are different from the global lifetimes for IPsec SAs. The expiration of the global lifetimes is independent of peer activity. The IPsec SA idle timer allows SAs associated with inactive peers to be deleted before the global lifetime has expired.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide09186a00801541d4.html

QUESTION 56 James the security administrator is working on the Cisco Easy VPN. He needs to select the three types of IPsec encryption algorithms supported by Cisco Easy VPN. (Choose three)

- A. DES
- B. 3DES
- C. NULL
- D. ESP
- E. IPCOMP-LZS
- F. HMAC-MD5

Answer: A B C

Explanation:

Supported IPsec Protocol Options and Attributes
Encryption Algorithms (IPsec)

- DES
- 3DES
- NULL

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide09186a0080087d1e.html#1051234

QUESTION 57 John the security administrator is having issues with the IOS Firewall authentication proxy. He needs to know what the default idle time of an enabled IOS Firewall authentication proxy before he can start using it.

- A. 60 minutes
- B. 5 seconds
- C. 60 seconds
- D. 5 minutes

Answer: A

Explanation:

`ip auth-proxy auth-cache-time min` - Sets the global authentication proxy idle timeout value in minutes. If the timeout expires, user authentication entries are removed, along with any associated dynamic access lists. The default value is 60 minutes.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1830/products_feature_guide_chapter09186a00800a17ec.html

QUESTION 58 The security team at Certkiller Inc., is looking for the command that disables the chargen and echo services on an IOS router?

- A. no tcp-small-servers
- B. disable tcp small-services
- C. disable small services
- D. no service tcp-small-servers

Answer: D

By default, the Cisco router has a series of diagnostic ports enabled for certain UDP and TCP services including echo, chargen, and discard. When a host attaches to those ports, a small amount of CPU capacity is consumed to service these requests

Any network device that has UDP and TCP diagnostic services should be protected by a firewall or have the services disabled. For a Cisco router, this can be accomplished by using these global configuration commands.

no service udp-small-servers

no service tcp-small-servers

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps1018/products_tech_note09186a008017690e.shtml

QUESTION 59 The security team at Certkiller Inc., is looking for the command that lets you view any configured CA certificates?

- A. crypto key generate rsa
- B. show crypto key mypubkey rsa
- C. show crypto key pubkey-chain rsa
- D. show crypto ca certificates

Answer: D

show crypto ca certificates

To view information about your certificate, the CA's certificate, and any RA certificates, use the show crypto ca certificates EXEC command.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_command_summary_chapter09186a00800eeaf4.html#5347

QUESTION 60 John and Kathy are the security administrators at Certkiller Inc. with one job left for the day. They have to select the three RADIUS servers supported by the Cisco IOS Firewall authentication proxy.

Which three are the correct answers? (Choose three)

- A. Oracle
- B. DB2
- C. Cisco Secure ACS for Windows NT/2000
- D. Cisco Secure ACS for UNIX
- E. Lucent

F. TACACS+

Answer: C D E

Explanation:

The supported AAA servers are Cisco Secure ACS 2.3 for Windows NT, Cisco Secure ACS 2.3 for UNIX, TACACS+ server (vF4.02.alpha), Ascend RADIUS server - radius-980618 (required avpair patch), and Livingston (now Lucent), RADIUS server (v1.16).

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1830/products_feature_guide_chapter09186a00800a17ec.html

QUESTION 61 James the security administrator for Certkiller Inc. has to know which has algorithms is used to authenticate packet data before he can go any further. Which algorithm is used to authenticate packet data?

- A. MD5 and SHA
- B. DES and CBC
- C. RSA and SHA
- D. DH and RSA

Answer: A

Explanation:

- MD5 (HMAC variant)-MD5 (Message Digest 5) is a hash algorithm used to authenticate packet data. HMAC is a variant which provides an additional level of hashing.
- SHA (HMAC variant)-SHA (Secure Hash Algorithm) is a hash algorithm used to authenticate packet data. HMAC is a variant which provides an additional level of hashing.

Reference:

http://www.cisco.com/en/US/products/sw/secursw/ps2120/products_user_guide_chapter09186a0080089917.html

QUESTION 62 Kathy the administrator for Certkiller Inc. needs to type the command that enables the AAA access control system in the global configuration.

Answer: aaa new-model

Explanation:

To enable the AAA access control model, use the aaa new-model global configuration command.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_command_summary_chapter09186a00800d9c0d.html

QUESTION 63 The security team at Certkiller Inc. was asked the question, what attack is most often used in social engineering. They all answered this wrong.

What is the correct answer?

- A. Session fragment
- B. Unauthorized access
- C. Data manipulation
- D. Malicious applets

Answer: B

Explanation:

Social engineering is when someone attempts to manipulate others to access information or access without authorization. Social engineering has many levels, but they all have the same goal of gaining unauthorized information or access.

QUESTION 64 Jason the security administrator Certkiller Inc. wants to know by default, how long does a router wait before terminating an unattended line connection?

- A. 5 minutes
- B. 10 minutes
- C. 20 minutes
- D. 30 minutes

Answer: B

Explanation: In the page 76 of the MCNS book you see the right data is 10 minutes.

QUESTION 65 John the manager of the I.T. Department at Certkiller Inc. wants to know, what is the purpose of the ip host global configuration command.

- A. Associates an IP address.
- B. Removes name-to-address mapping.
- C. Binds eight addresses to a hostname.
- D. Defines a static host name-to-address mapping in the host cache.

Answer: D

Explanation:

To define a static host name-to-address mapping in the host cache, use the ip host command in global configuration mode. To remove the host name-to-address mapping, use the no form of this command.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgr/ipras_r/ip1_i1g.htm#1081846

QUESTION 66 Paul the security administrator at Certkiller Inc. must choose three major tasks that must be completed in order to support CA for Cisco routers in a site-to-site configuration. (Choose three)

- A. Configure an authentication proxy.
- B. Configure a CA server.
- C. Configure IKE.
- D. Test and verify IPsec.
- E. Test and verify the RADIUS server.
- F. Configure CA support.

Answer: C D F

Explanation:

Task 1: Prepare for IPsec

Task 2: Configure CA support

Task 3: Configure IKE for IPsec

Task 4: Configure IPsec

Task 5: Verify VPN configuration - Verify IPsec

Reference: Managing Cisco Network Security (Cisco press) page 646

Section B

QUESTION 1 What command configures the amount of time CBAC will wait for a TCP session to become established before dropping the connection in the state table?

- A. ip inspect global syn-establish (seconds)
- B. ip inspect tcp global syn-time (seconds)
- C. ip inspect global tcp syn (seconds)
- D. ip inspect tcp syn wait-time (seconds)

Answer: D

Explanation:

Use the IOS Firewall global configuration mode command `ip inspect tcp syn wait-time (seconds)` command to set the CBAC timeout value for TCP session establishment. The default is 30 seconds.

QUESTION 2 How do you enable the Nagle algorithm on an IOS router?

- A. ip nagle
- B. service nagle
- C. enable service nagle
- D. enable ip nagle

Answer: B

Explanation:

Use the global configuration mode command `service nagle` to enable the TCP congestion Nagle algorithm. The Nagle algorithm attempts to bunch traffic into fewer TCP packets, thus saving on bandwidth. This command is disabled by default.

QUESTION 3 What is the router IOS command to clear all IPSEC SA's?

- A. clear crypto ipsec sa
- B. clear crypto ipsec sa all
- C. clear crypto sa
- D. clear crypto ipsec sa *

Answer: C

Explanation:

Clear all IPSEC Security Associations on a router with the `clear crypto sa` command.

QUESTION 4 What OSI layers can CBAC filter on? Select all that apply.

- A. layer 4
- B. layer 3
- C. layer 2
- D. layer 7

Answer: A, B, D

Explanation:

Access lists can filter traffic based on layer 3 and layer 4 information, while CBAC can filter traffic based on layer 3, 4, and 7 (application layer) information.

QUESTION 5 How much disk space is required to install AAA CSACS 3.0 for Windows?

- A. 900mb
- B. 100mb
- C. 250mb
- D. 500mb

Answer: C

Explanation:

Installation of CSACS 3.0 on a Windows server will need at least 250Mb of disk space for installation, more if the user database will be stored on the machine.

QUESTION 6 What are the ACL number ranges for IP standard ACL's? Select all that apply.

- A. 1-99
- B. 100-199
- C. 1300-1999
- D. 800-1299

Answer: A, C

Explanation:

IP standard access lists can be numbered from 1-99 or from the expanded range of 1300-1999.

QUESTION 7 Which of the following correctly applies ACL 101 inbound on an interface?

- A. ip access-class 101 inbound
- B. ip access-group 101 in
- C. ip access-list 101 in
- D. ip access-range 101 inbound
- E. ip access-group 101 inbound
- F. ip access-list 101 inbound
- G. ip access-class 101 in
- H. ip access-range 101 in

Answer: B

Explanation:

After creating an access list, you must apply it to an interface with the access-group command in interface configuration mode, and specify the direction to monitor traffic with the in or out keyword.

QUESTION 8 Which of the following is NOT supported by CSACS 3.0?

- A. Radius/Tacacs+ secret keys
- B. installation on Windows NT
- C. SSL
- D. HTTP

Answer: C

Explanation:

You cannot use SSL to administratively connect to the CSACS AAA server in version 3.0, but you can in 3.1 and later.

QUESTION 9 Which of the following router commands will prevent a router from giving an attacker a valid IP address via DHCP?

- A. no tcp-dhcp-servers
- B. no service dhcp
- C. no ip dhcp servers
- D. no dhcp server

Answer: B

Explanation:

The IOS command no service dhcp will prevent the router from responding to DHCP requests on all interfaces. You cannot disable only certain interfaces, if you need to allow this service, apply proper ACL's.

QUESTION 10 By default, where does the IOS Firewall IDS engine send alarms to?

- A. CBAC
- B. Director platform
- C. CSACS
- D. DMZ
- E. syslog server

Answer: E

Explanation:

If an IDS info or attack signature is configured to generate an alarm, if no notification method is specified with the ip audit notify command, by default the IDS engine will send it to the syslog server.

QUESTION 11 Which of the following configurations restricts telnet access to a router by requiring the password cisco?

- A. line vty 0 4
login cisco
- B. line vty 0 4
set password cisco
login
- C. line vty 0 4
password cisco
login
- D. line vty 0 4
set login
set password cisco

Answer: C

Explanation:

To restrict telnet access to a Cisco router, you must configure the virtual terminal lines (VTY) that telnet uses. Require a login with the login line configuration command (enabled on vty lines by default). You must also set a password with the password

(password) line configuration command, or remote user telnet connections will be refused, informing them that a login is required, but no password is set.

QUESTION 12 What is the IOS Firewall command to send IDS alarms to a syslog server?

- A. ip audit notify syslog
- B. ip audit notify log
- C. ip audit notify logging
- D. ip audit specify logging
- E. ip audit specify syslog
- F. ip audit specify log

Answer: B

Explanation:

The IOS Firewall IDS engine can send alarms to a Director platform, or a syslog server. Use the command ip audit notify log to make the IDS engine send alarms to a syslog server. (You must also define the syslog server with the logging x.x.x.x command).

QUESTION 13 What IOS router command is entered to view all current IKE SA's?

- A. show ipsec
- B. show crypto isakmp sa
- C. show isakmp
- D. show crypto ipsec sa
- E. show ipsec sa
- F. show isakmp sa

Answer: B

Explanation:

View the status of current IKE Security Associations on a router with the show crypto isakmp sa command. (ISAKMP is the same process as IKE)

QUESTION 14 What are the two components of Cisco Easy VPN (EzVPN)?

- A. External
- B. Server
- C. Remote
- D. Master

Answer: B, C

Explanation:

Cisco EzVPN consists of two components: Easy VPN Server, and Easy VPN Remote. The EzVPN Server is the Head-End VPN device and can push a configuration to the EzVPN Remote device.

QUESTION 15 Which of the following commands correctly sets the IPSEC SA lifetime value to 30 minutes?

- A. crypto ipsec sa lifetime 30
- B. crypto ipsec security-association lifetime 1800
- C. crypto ipsec sa lifetime 1800
- D. crypto ipsec security-association lifetime 30

Answer: B

Explanation:

The IPSEC SA lifetime value can be configured between 120 and 86,400 seconds with the command: `crypto ipsec security-association lifetime (seconds)`. You can also set the IPSEC SA lifetime value in kilobytes transmitted with the `crypto ipsec security-association lifetime kilobytes (kilobytes)` command. Whenever either value (seconds elapsed or kilobytes transmitted) is reached, the Security Associations will need to be renegotiated. These commands can be entered in global configuration mode, thus applying them to all SA's, or can be configured in crypto map configuration mode. Lifetime values entered in crypto map configuration will override the global configuration values.

QUESTION 16 Which of the following correctly configures authentication and encryption for an IPSEC transform set?

- A. `crypto ipsec transform-set secure ah-hmac-md5 esp-des`
- B. `crypto ipsec transform-set secure ah-md5 esp-3des`
- C. `crypto ipsec transform-set secure esp-sha-hmac esp-3des`
- D. `crypto ipsec transform-set secure ah-md5 esp-des-hmac`

Answer: C

Explanation:

This transform set uses esp-3des for encryption, and uses esp-sha-hmac for authentication.

The transform set in answer D is close, but the authentication transform would need to read like this: `ah-md5-hmac`.

QUESTION 17 By default how long will CBAC monitor an idle TCP session in the state table before deleting the entry?

- A. 60 minutes
- B. 5 minutes
- C. 30 seconds
- D. 20 minutes

Answer: A

Explanation:

The default CBAC global TCP idle session timeout value is 3600 seconds (60 minutes). This can be overridden for specific protocols.

QUESTION 18 What are the available authentication options when configuring an IKE SA? Select all that apply.

- A. pre-shared keys
- B. SHA-1
- C. RSA signatures
- D. RSA encrypted nonces
- E. MD5

Answer: A, C, D

Explanation:

IKE SA peer authentication can be configured in 1 of 3 ways: pre-shared keys, RSA

Signatures, or RSA encrypted nonces. Pre-shared keys are used on small networks where entering the key at each peer doesn't encounter scalability issues. On larger networks where scalability is an issue, you can use RSA signatures (the default for IKE policy configuration), which use a Certificate Authority (CA) to allow peer authentication. You can also use RSA encrypted nonces which allows scalability without being forced to use a CA (public keys must still be exchanged).

QUESTION 19 Which of the following commands encrypts all router passwords?

- A. service config-passwords
- B. service running-encryption
- C. service password-encryption
- D. service encrypt-passwords

Answer: C

Explanation:

Using the global configuration command service password-encryption, causes all passwords to be encrypted so they are unreadable when the router configuration is viewed.

QUESTION 20 What type of IDS attack is spread out over multiple packets?

- A. atomic
- B. arbitrary
- C. aggregate
- D. compound

Answer: D

Explanation:

When an IDS signature attack uses multiple packets, it's called a compound attack. For the IOS Firewall to detect this type of attack, it must keep suspicious packets in memory to follow up on later packets of the session to see if it is an actual attack.

QUESTION 21 How do you configure the CBAC global UDP idle session timeout?

- A. ip inspect udp-session-timeout (seconds)
- B. ip inspect udp-idle (seconds)
- C. ip inspect udp-timeout (seconds)
- D. ip inspect udp idle-time (seconds)

Answer: D

Explanation:

Determine the global UDP idle session state table timeout value with the ip inspect udp idle time (seconds) command. This global value (along with the global tcp idle timeout) can be overridden on a per-protocol basis.

QUESTION 22 Which of the following is NOT an IOS Firewall default IKE policy parameter?

- A. MD5
- B. DH group 1
- C. DES
- D. Lifetime 86,400 seconds

E. RSA-Signatures

Answer: A

Explanation:

Answers A through E are the default IOS Firewall router IKE policy values, except for answer B, MD5. (The default IKE hash algorithm used is SHA-1).

QUESTION 23 Which of the following configuration register values will allow a Cisco router to go immediately into ROM mode at any time during a routers operation?

A. 0x2101

B. 0x2002

C. 0x2210

D. 0x2102

Answer: B

Explanation:

If bit 8 of the configuration register is off (0x2002) the router can be sent directly into ROM mode at any time if the break key is issued, losing the running configuration. If bit 8 is turned on (0x2102), the break key can only be issued within the first 60 seconds of router boot up.

QUESTION 24 Which of the following commands correctly sets the IOS Firewall IDS spam threshold?

A. ip audit smtp spam 500

B. ip audit smtp spam 500 notify

C. ip audit smtp name spam 500

D. ip audit ids spam 500

Answer: A

Explanation:

Set the threshold at which a spam alarm is triggered for the number of recipients in an email with the ip audit smtp spam (number) command.

QUESTION 25 Which of the following router commands correctly sets the location (URL) of a CA server into the router configuration?

A. Router (crypto-set)#enrollment mode (URL)

B. Router (crypto-ca)#enrollment mode (URL)

C. Router (ca-scep)#enrollment url (URL)

D. Router (ca-identity)#enrollment url (URL)

Answer: D

Explanation:

Specify the location of the CA server with the ca-identity configuration mode command enrollment url (URL).

QUESTION 26 Which of the following is NOT a component of AAA?

A. Authentication

B. Access

C. Administration

D. Authorization

E. Accounting

F. Authority

Answer: B, C, F

Explanation:

The three components of AAA are Authentication, Authorization, and Accounting.

QUESTION 27 Which of the following crypto map configuration commands are needed when manually entering keys instead of using IKE? Select all that apply.

A. set session-key inbound ah

B. set manual-key inbound ah

C. set session-key outbound esp

D. set manual-key outbound esp

Answer: A, C

Explanation:

If you don't use IKE and instead enter the keys manually, you must enter four keys at each peer in crypto map configuration. One key is for inbound AH, one for inbound ESP, one for outbound AH, and one for outbound ESP. The inbound key of one peer must match the outbound key of the other peer.

QUESTION 28 Which of the following correctly sets the IOS Firewall authentication-proxy idle timer to 20 minutes?

A. ip auth-proxy auth-cache 20

B. ip auth-proxy auth-time 20

C. ip auth-proxy auth-cache-time 20

D. ip auth-proxy idle 20

E. ip auth-proxy idle timer 20

Answer: C

Explanation:

Use the global configuration mode command ip auth-proxy auth-cache-time (minutes) to determine the acceptable idle period for users authenticated through the IOS Firewall before they must re-authenticate.

QUESTION 29 Which of the following commands can debug communications between an IOS router, and a CA server?

A. debug crypto dss exchange

B. debug crypto ca server

C. debug crypto ca engine

D. debug crypto pki messages

Answer: D

Explanation:

Monitor the communication between a router and a Certificate Authority (CA) server with the debug crypto pki messages command.

QUESTION 30 How do you set the threshold of half-open sessions CBAC will allow per minute before deleting them?

A. ip inspect one-minute incomplete (number)

- B. ip inspect one-minute (number)
- C. ip inspect one-minute high (number)
- D. ip inspect one-minute high incomplete (number)
- E. ip inspect max-incomplete minute high (number)

Answer: C

Explanation:

This command will set the number of new, half-open connections per minute CBAC will allow before deleting them. The default is 500 per minute.

QUESTION 31 Which of the following configures an authentication proxy rule for the IOS Firewall?

- A. ip inspect-proxy name proxy name http
- B. ip auth-proxy name proxy name http
- C. ip auth-rule proxy name http
- D. ip proxy-name proxy name http

Answer: B

Explanation:

Create an authentication proxy rule with the global configuration mode command ip auth proxy name (name) http. Apply the proxy rule to an interface to force users to authenticate through the firewall.

QUESTION 32 Which of the following are commands that can be entered on an IOS Firewall router to debug communications with a AAA server? Select all that apply.

- A. debug aaa all
- B. debug ip aaa
- C. debug aaa accounting
- D. debug tacacs

Answer: C, D

Explanation:

Use the debug tacacs command to just debug tacacs communication, or use a general command like debug aaa accounting for debugging tacacs and radius.

QUESTION 33 Which of the following Cisco IOS router commands will properly configure pre-shared keys for IKE authentication?

- A. Router(config-crypto)#authentication pre-share
- B. Router(config-policy)#authentication pre-share
- C. Router(config-isakmp)#authentication pre-share
- D. Router(config-ike)#authentication pre-share

Answer: C

Explanation:

Configure IKE policy parameters in isakmp configuration mode (Router(config-isakmp)#).

QUESTION 34 What directory do you place the three Cisco VPN client files (oem.ini, vpnclient.ini, .pcf) into?

- A. setup.exe

- B. syscon.exe
- C. startup.exe
- D. vpnclient.exe

Answer: A

Explanation:

The Cisco VPN software client supports the pre-configuration of VPN connections by placing three files (oem.ini, vpnclient.ini, .pcf) into the same directory as the VPN client setup.exe.

QUESTION 35 Which of the following router commands will allow all users to be authenticated, even if the TACACS+ server fails?

- A. aaa authentication list1 tacacs+ any
- B. aaa authentication list1 tacacs+ none
- C. aaa authentication list1 tacacs+ allow
- D. aaa authentication list1 tacacs+ disabled

Answer: B

Explanation:

The none keyword at the end of this aaa command allows the user to be authenticated by not requiring any form of authentication if the tacacs+ server is tried first, but did not respond.

QUESTION 36 Which of the following can be an IP extended ACL? Select all that apply.

- A. ACL 3601
- B. ACL 99
- C. ACL 1401
- D. ACL 100
- E. ACL 2101

Answer: D, E

Explanation:

An IP extended ACL can be numbered within any of the following ranges: 100-199, 2000-2699.

QUESTION 37 What EzVPN feature allows a Remote host to encrypt all data needing to go to the EzVPN Server, but sending all other traffic in clear text to its local ISP?

- A. Initial Contact
- B. DPD
- C. Split Tunneling
- D. Remote Administration

Answer: C

Explanation:

The Remote EzVPN client can be configured to use Split Tunneling which allows a connection to the EzVPN server, and a connection to the local ISP. This allows all traffic not destined to the EzVPN server to go to the ISP, unencrypted. If Split Tunneling is not used, all traffic will go to the EzVPN server encrypted, then rerouted out to the Internet to its final destination.

QUESTION 38 Which of the following are encryption algorithms? Select all that apply.

- A. MD5
- B. AES
- C. SHA-1
- D. DES
- E. IKE
- F. IPSEC

Answer: B, D

Explanation:

IKE and IPSEC are suites of protocols. MD5 and SHA-1 are hash protocols. DES, 3DES, and AES are encryption protocols.

QUESTION 39 What type of crypto map would you need to create if you are using IKE for IPSEC?

- A. crypto map map1 100 ipsec-manual
- B. crypto map map1 100 ike-dynamic
- C. crypto map map1 100 ipsec-isakmp
- D. crypto map map1 100 isakmp-key
- E. crypto map map1 100 dynamic

Answer: C

Explanation:

When creating a crypto map, specify that the map will use IKE with the ipsec-isakmp keyword. If you are not using IKE, and are instead using manual keys, enter the ipsec-manual crypto map keyword.

QUESTION 40 Which of the following Cisco IOS Firewall router commands will generate separate key pairs for RSA signatures and RSA encrypted nonces?

- A. crypto rsa generate special-keys
- B. crypto rsa generate association-keys
- C. crypto key generate rsa double-keys
- D. crypto key generate rsa usage-keys

Answer: D

Explanation:

When generating RSA keys, you can generate one pair (crypto key generate rsa) or two pairs (crypto key generate rsa usage-keys). If you generate one pair, it will be used for both RSA signatures, and RSA encrypted nonces. If you generate two pairs, each will have its own key pair.

QUESTION 41 Where are debugging messages sent to by default on a router?

- A. console line
- B. internal buffers
- C. vty lines
- D. syslog server

Answer: A

Explanation:

By default, output from a debug command will only be sent to the console connection. Use the no logging console command to disable it.

QUESTION 42 What Cisco VPN software client file has all the parameters of a VPN connection?

- A. .pst
- B. .pgs
- C. .pcf
- D. .pdn

Answer: C

Explanation:

A Profile Configuration File (.pcf) has all the parameters for a vpn connection. Multiple connections can be created and you can configure parameters such as Microsoft logon credentials, NT domain, Diffie-Hellman group, etc.

QUESTION 43 Which of the following cannot be configured on a router unless the IOS Firewall feature set is installed? Select all that apply.

- A. PAM
- B. Authentication Proxy
- C. IDS
- D. CBAC

Answer: A, B, C, D

Explanation:

CBAC, PAM, IDS, Authentication Proxy are the four main components of the Cisco IOS Firewall and cannot be configured until the IOS Firewall feature set is installed on the router.

QUESTION 44 By default, how many message recipients must an email have for the IOS Firewall to consider it a spam attack?

- A. 250
- B. 500
- C. 100
- D. 25

Answer: A

Explanation:

By default, the Cisco IOS Firewall will fire an alarm for a spam attack if an email contains 250 or more recipients.

QUESTION 45 What is the IOS version that first introduced EzVPN server?

- A. 12.2(6)T
- B. 12.3(1)T
- C. 12.2(5)T
- D. 12.2(8)T

Answer: D

Explanation:

Cisco 1700, 7100, and 7200 routers can act as an EzVPN server starting in IOS version 12.2(8)T.

QUESTION 46 What are the two Diffie-Hellman (DH) groups that the IOS EzVPN server supports?

- A. Group 2
- B. Group 1
- C. Group 3
- D. Group 4
- E. Group 5

Answer: A, E

Explanation:

The Cisco IOS EzVPN Server only supports Diffie-Hellman Groups 2 (1024 bit) and 5 (1536 bit). Group 1 (768 bit) is not supported.

QUESTION 47 What is the IOS Firewall IPSEC SA default lifetime value (in seconds)?

- A. 50,400
- B. 3,600
- C. 21,600
- D. 86,400

Answer: B

Explanation:

The default IPSEC SA lifetime value is set to 3600 seconds (1 hour). Do not confuse this IPSEC SA lifetime value with the ISAKMP (IKE) SA lifetime value which is set to 86,400 seconds (1 day) by default.

QUESTION 48 Which of the following AAA security server protocols can the IOS Firewall support? Select all that apply.

- A. MD5
- B. RSA Signatures
- C. TACACS+
- D. RADIUS
- E. CA

Answer: C, D

Explanation:

The IOS Firewall can communicate with a AAA server running either RADIUS or TACACS+.

QUESTION 49 What is the default mode TCP Intercept operates in?

- A. intercept
- B. aggressive
- C. 3-way
- D. responsive
- E. watch

Answer: A

Explanation:

TCP Intercept can be in either intercept mode or passive watch mode. In intercept mode, each TCP SYN packet will be intercepted and responded to on behalf of the server it is protecting. With passive watch mode, TCP Intercept monitors the connection to the server to make sure the connection becomes complete. If the server cannot complete the connection within a configurable time period, TCP Intercept will send a reset packet to the server, clearing up the server's resources.

QUESTION 50 Which of the following can ESP IPSEC transforms provide? Select all that apply.

- A. authentication
- B. key generation
- C. split tunneling
- D. encryption

Answer: A, D

Explanation:

AH is not needed in transforms to provide authentication, as ESP can provide encryption and authentication. Use this configuration if you are having conflicts with AH and NAT.

QUESTION 51 Which of the following access lists is CBAC unable to alter? Select all that apply.

- A. ACL 1335
- B. ACL 35
- C. ACL 135
- D. ACL 2335

Answer: A, B

Explanation:

CBAC does not alter standard IP access lists. Only an extended access list can be used to get the benefit of CBAC traffic filtering.

QUESTION 52 Which of the following commands can be used to verify your IOS Firewall IDS configuration? Select all that apply.

- A. show ip audit attack
- B. show ip audit statistics
- C. show ip audit all
- D. show ip audit tcp
- E. show ip audit info

Answer: B, C

Explanation:

To verify your IOS Firewall IDS configuration there are six options with the show ip audit command: all, configuration, interfaces, name, sessions, and statistics.

QUESTION 53 What is the range of the number of characters the IOS enable secret password can be?

- A. 1-20
- B. 1-25

C. 4-24

D. 4-30

Answer: B

Explanation:

An IOS enable secret password must be between 1 and 25 characters long. The first character cannot be a number.

QUESTION 54 What is the maximum key size you can generate when using RSA Encrypted Nonces as your IKE authentication method?

A. 256 bit

B. 768 bit

C. 2048 bit

D. 1024 bit

Answer: C

Explanation:

When generating keys for IKE RSA Encrypted Nonces, you must specify key lengths at a minimum of 360 bits and a maximum of 2048 bits.

QUESTION 55 Which of the following commands will alter the CBAC DNS timeout timer to 10 seconds?

A. ip inspect dns-server-timeout 10

B. ip inspect dns-server-timer 10

C. ip inspect dns-timeout 10

D. ip inspect dns-timer 10

Answer: C

Explanation:

To configure the time CBAC will keep a DNS session open in the state table, use the global configuration command ip inspect dns-timeout (seconds). The default is five seconds.

QUESTION 56 Which of the following commands specifies that the IOS Firewall IDS engine drops packets and resets tcp connections for information signatures?

A. ip audit name audit1 info attack drop reset

B. ip audit name audit1 info action drop reset

C. ip audit name audit1 info sig action drop reset

D. ip audit name audit1 sig info drop reset

Answer: B

Explanation:

Specify the action the IOS Firewall IDS engine should take (reset, drop, alarm) for informational and attacks signatures with the ip audit name command.

QUESTION 57 What is IP spoofing?

A. altering the source ip address in packets

B. sending large amounts of icmp packets to a broadcast address

C. altering ip routing tables

D. packet sniffing

Answer: A

Explanation:

An IP spoof is when an attacker changes the source IP address of network packets, usually in attempt to bypass access lists or to DOS the real IP source

QUESTION 58 Which of the following can act as a Cisco EzVPN Remote client? Select all that apply.

- A. 1700 router
- B. 7200 router
- C. VPN Software Client
- D. 3002 VPN Hardware Client

Answer: A, C, D

Explanation:

The following devices can act as the Remote in Cisco EzVPN: 800, 900, and 1700 series routers, PIX 501 firewall, the 3002 Hardware Client, and the VPN software client.

QUESTION 59 What operating systems can CSACS be installed on? Select all that apply.

- A. Windows 2000
- B. Unix
- C. Windows NT
- D. OS X
- E. Solaris

Answer: A, B, C

Explanation:

CSACS is AAA software that can be installed on Windows NT, Windows 2000, and Unix.

However, CSACS 3.2 can only be installed on Windows 2000 (or you can purchase a standalone appliance module from Cisco running 3.2 CSACS).

QUESTION 60 If CBAC is configured to inspect telnet traffic on an interface, how should outbound telnet traffic be configured in any ACL's?

- A. outbound telnet should be permitted in any acl's
- B. outbound telnet should be denied in any acl's
- C. telnet should not be referenced at all in the acl
- D. outbound telnet should be denied only if inbound telnet is allowed

Answer: A

Explanation:

ACL's need to allow the initial outbound traffic. If the traffic is not allowed outbound access, CBAC will not have a chance to monitor and restrict the return session traffic.

QUESTION 61 By default, after how many half-open sessions need to be in the state table before CBAC will begin to delete the half-open sessions?

- A. 500
- B. 250
- C. 1000

- D. 2000
- E. 100
- F. 50

Answer: A

Explanation:

By default, CBAC will begin to delete half-open sessions when there are 500 in the state table. It will keep deleting half-open sessions until the minimum half-open sessions threshold is met (default is 400).

QUESTION 62 What is the global IOS command that disables Cisco Discovery Protocol (CDP) completely?

- A. no cdp enable
- B. no cdp server
- C. no cdp process
- D. no cdp start
- E. no cdp run

Answer: E

Explanation:

Use the global configuration command no cdp run to disable CDP on all router interfaces. To disable CDP on an interface basis, go into interface configuration mode and enter no cdp enable.

QUESTION 63 What are the protocol numbers for ESP and AH?

- A. 84, 85
- B. 69, 70
- C. 50, 51
- D. 96, 97

Answer: C

Explanation:

The two IPSEC protocols ESP (encryption and authentication), and AH (authentication) are protocol numbers 50, and 51, respectively.

QUESTION 64 What is the EzVPN feature that allows a Remote host to re-establish a connection to a Server, if the Remote host is accidentally disconnected?

- A. Mode Configuration
- B. DPD
- C. Split Tunneling
- D. Initial Contact

Answer: D

Explanation:

Initial Contact is used by a host when first establishing a connection to the EzVPN Server, telling the Server to delete any previous SA's with the host. This is done because if a host is disconnected from the Server, and the Server is not aware of it, the host will not be able to reconnect with the Server unless the SA's are reset. Initial Contact makes sure the host can connect.

QUESTION 65 Which of the following commands enables TCP Intercept?

- A. tcp intercept enable
- B. ip tcp intercept enable
- C. ip tcp intercept enable list
- D. ip tcp intercept list

Answer: D

Explanation:

To enable TCP Intercept define an access list for hosts you want to protect, then reference that list with the ip tcp intercept list (list) command.

QUESTION 66 What is the minimum IOS version your NAS router must have in order to communicate with a AAA server such as CSACS 3.0 for Windows 2000?

- A. 12.3
- B. 11.1
- C. 11.5
- D. 12.0

Answer: B

Explanation:

To set your NAS router up to communicate with a AAA server, you must have at least IOS version 11.1.

QUESTION 67 Which of the following commands correctly references access list 120 in a crypto map?

- A. Router(config-crypto-map)#match address 120
- B. Router(config-crypto-map)#set peer 120
- C. Router(config-crypto-map)#set list 120
- D. Router(config-crypto-map)#match list 120

Answer: A

Explanation:

After defining a crypto map, and entering into crypto map configuration, you must specify the hosts needing encryption by defining those hosts in an access list and referencing that list with the match address (acl) command.

QUESTION 68 What must you change the configuration register value to, when you need to perform password recovery on a router?

- A. 0x2102
- B. 0x2142
- C. 0x2241
- D. 0x2410

Answer: B

Explanation:

Setting the configuration register value to 0x2142 will force the router upon a reboot, to boot the image from flash, but to ignore the startup configuration. This allows you to set an enable secret, then to copy the running configuration to the startup configuration, thus performing password recovery.

QUESTION 69 Which of the following commands disables an IOS Firewall IDS signature from being scanned?

- A. ip audit ids attack signature (sig#) disable
- B. ip audit ids signature (sig#) disable
- C. ip audit attack signature (sig#) disable
- D. ip audit signature (sig#) disable

Answer: D

Explanation:

Use the ip audit signature (signature number) disable command to stop the IOS Firewall from scanning traffic for that signature attack.

QUESTION 70 Which of the following is NOT supported by Cisco EzVPN?

- A. SHA-1
- B. MD5
- C. ESP
- D. AH

Answer: D

Explanation:

Authentication Header is not a supported IPSEC authentication protocol on Cisco EzVPN.

QUESTION 71 Which of the following router commands enables the AAA process?

- A. aaa new-model
- B. aaa setup-dbase
- C. aaa config-login
- D. aaa server-sync

Answer: A

Explanation:

The router global configuration command aaa new-model, enables aaa (radius, tacacs+) configuration commands on the router, and disables tacacs and xtacacs.

QUESTION 72 How many incomplete connections must a router have by default before TCP Intercept will start dropping incomplete connections?

- A. 500
- B. 1100
- C. 700
- D. 900
- E. 200

Answer: B

Explanation:

Once the number of incomplete connections (TCP SYN) reaches 1100, TCP Intercept will start deleting incomplete sessions (oldest session first, by default). Configure the incomplete session threshold with the ip tcp intercept max-incomplete high (number) command.

QUESTION 73 What is the RADIUS vendor-specific attribute number?

- A. 26
- B. 50
- C. 14
- D. 38

Answer: A

Explanation:

The vendor-specific RADIUS attribute (attribute number 26) allows vendors to create their own extended RADIUS attributes. Cisco is vendor ID number 9.

QUESTION 74 Which of the following is the default login URL for CSACS 3.0?

- A. http://127.0.0.1:4002
- B. http://127.0.0.1:2002
- C. http://127.0.0.1:2502
- D. http://127.0.0.1:4502

Answer: B

Explanation:

Use IP address 127.0.0.1 (local loopback) with port 2002 to access CSACS from the host CSACS is installed on. Substitute the local loopback with the IP address of the CSACS server to access the server remotely I.E. 192.168.10.10:2002.

QUESTION 75 Which of the following router commands can monitor AAA RADIUS?

- A. show radius errors
- B. show radius statistics
- C. show ip aaa
- D. show radius monitoring

Answer: B

Explanation:

Use the router command show radius statistics to view general RADIUS statistics for authentication and accounting.

QUESTION 76 Which of the following encryption protocols can the Cisco IOS Firewall support? Select all that apply.

- A. CAST
- B. Two fish
- C. DES
- D. 3DES
- E. AES

Answer: C, D, E

Explanation:

The Cisco IOS Firewall can support DES (56 bit), 3DES (168 bit), and AES (128, 192, 256 bit) encryption protocols for VPN tunnels.

QUESTION 77 What is the bit length of the Diffie-Hellman group 1 algorithm?

- A. 768 bits
- B. 512 bytes

- C. 512 bits
- D. 768 bytes

Answer: A

Explanation:

The Diffie-Hellman protocol uses complex mathematical algorithms to generate a secret key over an insecure link such as the Internet. Only the public keys are exchanged, the secret key that is generated is never sent over the link. Diffie-Hellman group 1 uses 768 bit keys.

QUESTION 78 Which of the following dynamically alters access lists?

- A. CBAC
- B. IPSEC
- C. Kerberos
- D. AAA

Answer: A

Explanation:

CBAC monitors traffic and dynamically alters access lists to allow specified return traffic.

CBAC then dynamically closes the hole(s) in the access list(s) once the session is finished.

QUESTION 79 What is the command to enable logging to all configured destinations (other than the console) on a router?

- A. logging facility
- B. logging enable
- C. logging on
- D. logging server
- E. logging messages
- F. logging enabled

Answer: C

Explanation:

Enable logging to destinations other than the console port, such as internal buffers, terminal monitor (telnet/vty line), or a syslog server with the logging on command.

QUESTION 80 How many IDS signatures can the Cisco IOS Firewall scan for?

- A. 207
- B. 59
- C. 426
- D. 12

Answer: B

Explanation:

The IDS component of the Cisco IOS Firewall can monitor 59 different IDS signature attacks.