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300-730

Implementing Secure Solutions with Virtual Private Networks



Sections

- 1. Site-to-site Virtual Private Networks on Routers and Firewalls
- 2. Remote access VPNs
- 3. Troubleshooting using ASDM and CLI
- 4. Secure Communications Architectures

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Exam A

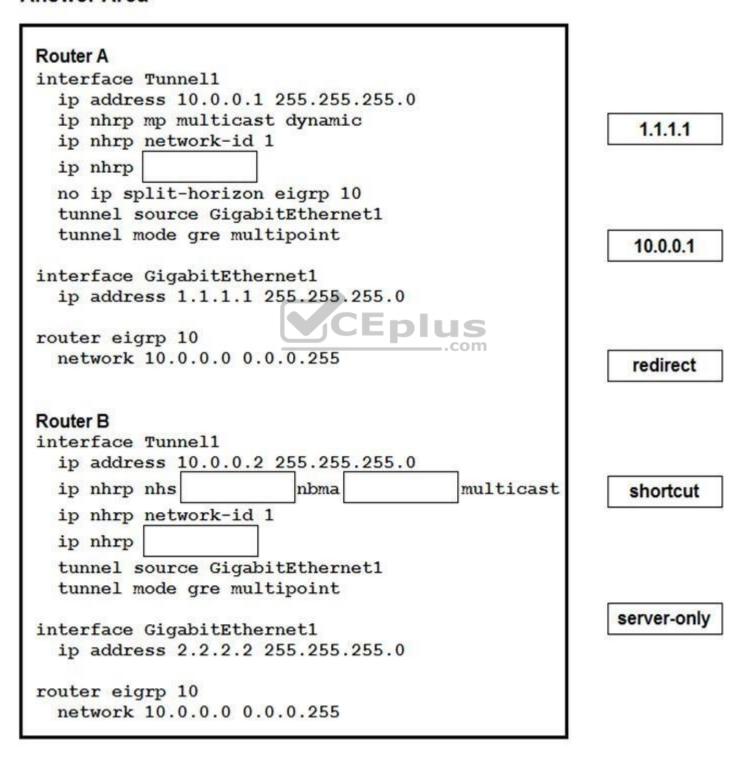
QUESTION 1 DRAG

DROP

Drag and drop the correct commands from the night onto the blanks within the code on the left to implement a design that allow for dynamic spoke-to-spoke communication. Not all comments are used.

Select and Place:

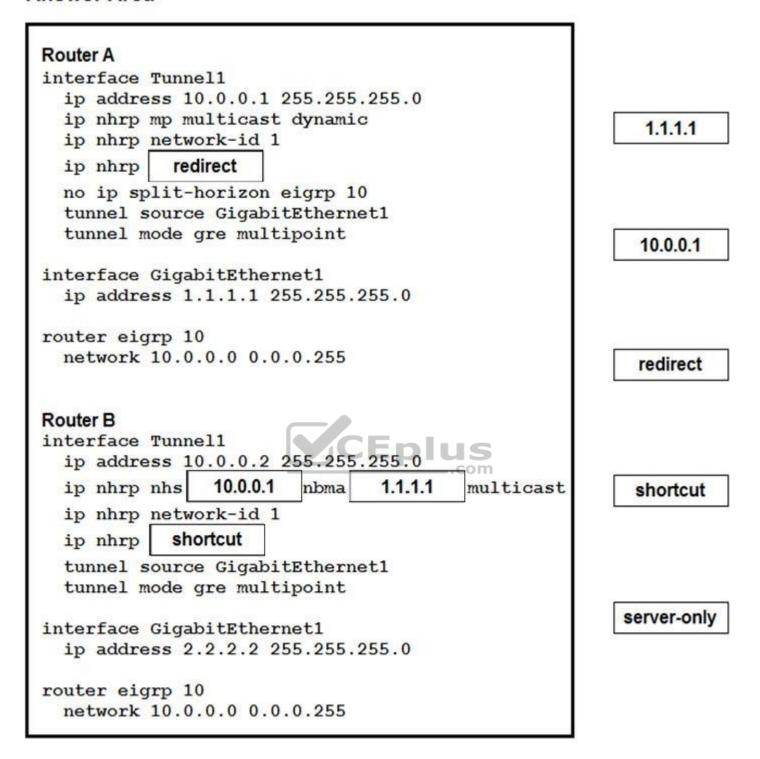
Answer Area



Correct Answer:



Answer Area



Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_dmvpn/configuration/xe-16/sec-conn-dmvpn-xe-16-book/sec-conn-dmvpn-summ-maps.html

QUESTION 2

A second set of traffic selectors is negotiated between two peers using IKEv2. Which IKEv2 packet will contain details of the exchange?

A. IKEv2 IKE_SA_INIT



- B. IKEv2 INFORMATIONAL
- C. IKEv2 CREATE_CHILD_SA
- D. IKEv2 IKE_AUTH

Correct Answer: B

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

QUESTION 3

```
HUB#show ip nhrp

10.0.0.2/32 via 10.0.0.2

Tunnel0 created 00:02:09, expire 00:00:01

Type: dynamic, Flags: unique registered used nhop NBMA address: 2.2.2.1

10.0.0.3/32 via 10.0.0.3

Tunnel0 created 00:13:25, 01:46:34

Type: dynamic, Flags: unique registered used nhop NBMA address: 3.3.3.1
```

Refer to the exhibit. The DMVPN tunnel is dropping randomly and no tunnel protection is configured. Which spoke configuration mitigates tunnel drops? A.

interface Tunnel0 ip address 10.0.0.2 255.255.255.0 no ip redirects ip nhrp map 10.0.0.1 1.1.1.1 ip nhrp map multicast 1.1.1.1 ip nhrp network-id 1 ip nhrp holdtime 20 ip nhrp nhs 10.0.0.1 ip nhrp registration timeout 120 ip nhrp shortcut tunnel source GigabitEthernet0/1 tunnel mode gre multipoint end





```
interface Tunnel0
   ip address 10.0.0.2 255.255.255.0
   no ip redirects
   ip nhrp map 10.0.0.1 1.1.1.1
   ip nhrp map multicast 1.1.1.1
   ip nhrp network-id 1
   ip nhrp holdtime 120
   ip nhrp nhs 10.0.0.1
   ip nhrp registration timeout 120
   ip nhrp shortcut
   tunnel source GigabitEthernet0/1
   tunnel mode gre multipoint
  end
  interface Tunnel0
   ip address 10.0.0.2 255.255.255.0
   no ip redirects
   ip nhrp map 10.0.0.1 1.1.1.1
   ip nhrp map multicast 1.1.1.1
   ip nhrp network-id 1
   ip nhrp holdtime 120
   ip nhrp nhs 10.0.0.1
   ip nhrp registration timeout 20
   ip nhrp shortcut
   tunnel source GigabitEthernet0/1
   tunnel mode gre multipoint
  end
  interface Tunnel0
   ip address 10.0.0.2 255.255.255.0
   no ip redirects
   ip nhrp map 10.0.0.1 1.1.1.1
   ip nhrp map multicast 1.1.1.1
   ip nhrp network-id 1
   ip nhrp holdtime 120
   ip nhrp nhs 10.0.0.1
   ip nhrp registration timeout 150
   ip nhrp shortcut
   tunnel source GigabitEthernet0/1
   tunnel mode gre multipoint
  end
B. C.
```







Correct Answer: D Section: Site-to-site Virtual Private Networks on Routers and

Firewalls Explanation

Explanation/Reference:

QUESTION 4

On a FlexVPN hub-and-spoke topology where spoke-to-spoke tunnels are not allowed, which command is needed for the hub to be able to terminate FlexVPN tunnels?

- A. interface virtual-access
- B. ip nhrp redirect
- C. interface tunnel
- D. interface virtual-template

Correct Answer: D

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

QUESTION 5

Which statement about GETVPN is true?

- A. The configuration that defines which traffic to encrypt originates from the key server.
- B. TEK rekeys can be load-balanced between two key servers operating in COOP.
- C. The pseudotime that is used for replay checking is synchronized via NTP.
- D. Group members must acknowledge all KEK and TEK rekeys, regardless of configuration.

Correct Answer: A

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:



```
interface: Tunnell
    Crypto map tag: Tunnell-head-0, local addr 192.168.0.1
   protected vrf: (none)
   local ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
   remote ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
   current peer 192.168.0.2 port 500
     PERMIT, flags={origin_is_acl,}
    #pkts encaps: 0, #pkts encrypt: 0, #pkts digest: 0
    #pkts decaps: 0, #pkts decrypt: 0, #pkts verify: 0
    #pkts compressed: 0, #pkts decompressed: 0
    #pkts not compressed: 0, #pkts compr. failed: 0
    #pkts not decompressed: 0, *pkts decompress failed: 0
    #send errors 0, #recv errors 0
    local crypto endpt.: 192.168.0.1, remote crypto endpt.: 192.168.0.2
    plaintext mtu 1438, path mtu 1500, ip mtu 1500, ip mtu idb GigabitEthernet1
     current outbound spi: 0x3D05D003(1023791107)
     PFS (Y/N): N, DH group: none
```

Refer to the exhibit. Which two tunnel types produce the **show crypto ipsec sa** output seen in the exhibit? (Choose two.)

- A. crypto map
- B. DMVPN
- C. GRE
- D. FlexVPN
- E. VTI



Correct Answer: BE

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

QUESTION 7 Which two changes must be made in order to migrate from DMVPN Phase 2 to Phase 3 when EIGRP is configured? (Choose two.)

- A. Add NHRP shortcuts on the hub.
- B. Add NHRP redirects on the spoke.
- C. Disable EIGRP next-hop-self on the hub.
- D. Enable EIGRP next-hop-self on the hub.
- E. Add NHRP redirects on the hub.

Correct Answer: CE

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:



ASA-4-751015 Local:0.0.0.0:0 Remote:0.0.0.0:0 Username:Unknown SA request rejected by CAC. Reason: IN-NEGOTIATION SA LIMIT REACHED

Refer to the exhibit. A customer cannot establish an IKEv2 site-to-site VPN tunnel between two Cisco ASA devices. Based on the syslog message, which action brings up the VPN tunnel?

- A. Reduce the maximum SA limit on the local Cisco ASA.
- B. Increase the maximum in-negotiation SA limit on the local Cisco ASA.
- C. Remove the maximum SA limit on the remote Cisco ASA.
- D. Correct the crypto access list on both Cisco ASA devices.

Correct Answer: B

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

QUESTION 9 Which two parameters help to map a VPN session to a tunnel group without using the tunnel-group list? (Choose two.)

- A. group-alias
- B. certificate map
- C. optimal gateway selection
- D. group-url
- E. AnyConnect client version

Correct Answer: BD

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

QUESTION 10 Which method dynamically installs the network routes for remote tunnel endpoints?

- A. policy-based routing
- B. CEF
- C. reverse route injection
- D. route filtering

Correct Answer: C

Section: Site-to-site Virtual Private Networks on Routers and Firewalls Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_vpnav/configuration/12-4t/sec-vpn-availability-12-4t-book/sec-rev-rte-inject.html

QUESTION 11 Which command identifies a Cisco AnyConnect profile that was uploaded to the flash of an IOS router?

- A. svc import profile SSL_profile flash:simos-profile.xml
- B. anyconnect profile SSL_profile flash:simos-profile.xml
- C. crypto vpn anyconnect profile SSL_profile flash:simos-profile.xml
- D. webvpn import profile SSL_profile flash:simos-profile.xml





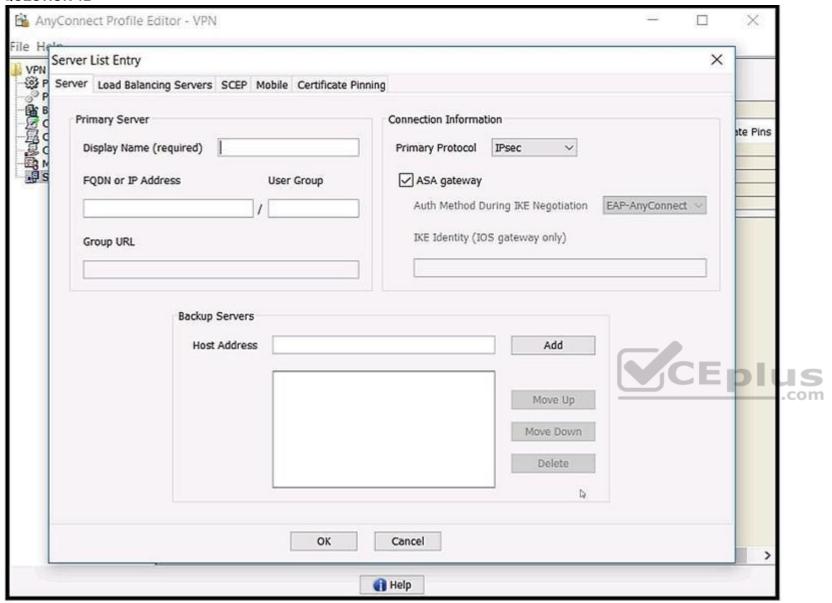
Correct Answer: C

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security/anyconnect-secure-mobility-client/200533-AnyConnect-Configure-Basic-SSLVPN-for-I.html

QUESTION 12



Refer to the exhibit. Which value must be configured in the User Group field when the Cisco AnyConnect Profile is created to connect to an ASA headend with IPsec as the primary protocol?

- A. address-pool
- B. group-alias
- C. group-policy
- D. tunnel-group

Correct Answer: D

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/security/vpn_client/anyconnect/anyconnect41/administration/guide/b_AnyConnect_Administrator_Guide_4-1/configure-vpn.html

QUESTION 13

```
aaa new-model
aaa authorization network local-group-author-list local
crypto pki trustpoint trustpoint1
enrollment url http://192.168.3.1:80
revocation-check crl
crypto pki certificate map certmap1 1
subject-name co cisco
crypto ikev2 authorization policy author-policy1
ipv6 pool v6-pool
ipv6 dns 2001:DB8:1::11 2001:DB8:1::12
ipv6 subnet-acl v6-acl
crypto ikev2 profile ikev2-profile1
match certificate certmap1
authentication local rsa-sig
authentication remote rsa-sig
pki trustpoint trustpoint1
aaa authorization group cert list local-group-author-list
author-policyl
virtual-template 1
crypto ipsec transform-set transform1 esp-aes esp-sha-hmac
crypto ipsec profile ipsec-profile1
set transform-set trans transform1
set ikev2-profile ikev2-profile1
interface Ethernet0/0
ipv6 address 2001:DB8:1::1/32
interface Virtual-Template1 type tunnel
ipv6 unnumbered Ethernet0/0
tunnel mode ipsec ipv6
tunnel protection ipsec profile ipsec-profile1
ipv6 local pool v6-pool 2001:DB8:1::10/32 48
ipv6 access-list v6-acl
permit ipv6 host 2001:DB8:1::20 any
permit ipv6 host 2001:DB8:1::30 any
```

Refer to the exhibit. What is configured as a result of this command set?

- A. FlexVPN client profile for IPv6
- B. FlexVPN server to authorize groups by using an IPv6 external AAA
- C. FlexVPN server for an IPv6 dVTI session







D. FlexVPN server to authenticate IPv6 peers by using EAP

Correct Answer: A

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_ike2vpn/configuration/xe-3s/sec-flex-vpn-xe-3s-book/sec-cfg-flex-clnt.html

QUESTION 14

Which two types of web resources or protocols are enabled by default on the Cisco ASA Clientless SSL VPN portal? (Choose two.)

A. HTTP

B. ICA (Citrix)

C. VNC

D. RDP

E. CIFS

Correct Answer: DE

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/security/asa/asa94/config-guides/cli/vpn/asa-94-vpn-config/webvpn-configure-gateway.html

QUESTION 15 Which configuration construct must be used in a

FlexVPN tunnel?

A. EAP configuration

B. multipoint GRE tunnel interface

C. IKEv1 policy

D. IKEv2 profile

Correct Answer: D

Section: Remote access VPNs Explanation

Explanation/Reference:

QUESTION 16

A Cisco AnyConnect client establishes a SSL VPN connection with an ASA at the corporate office. An engineer must ensure that the client computer meets the enterprise security policy. Which feature can update the client to meet an enterprise security policy?

A. Endpoint Assessment

B. Cisco Secure Desktop

C. Basic Host Scan

D. Advanced Endpoint Assessment

Correct Answer: D

Section: Remote access VPNs

Explanation

Explanation/Reference:

QUESTION 17 Which two features provide headend resiliency for Cisco AnyConnect clients? (Choose two.)

A. AnyConnect Auto Reconnect

B. AnyConnect Network Access Manager





C. AnyConnect Backup Servers

D. ASA failover

E. AnyConnect Always On

Correct Answer: CD

Section: Remote access VPNs Explanation

Explanation/Reference:

QUESTION 18

Cisco AnyConnect Secure Mobility Client has been configured to use IKEv2 for one group of users and SSL for another group. When the administrator configures a new AnyConnect release on the Cisco ASA, the IKEv2 users cannot download it automatically when they connect. What might be the problem?

A. The XML profile is not configured correctly for the affected users.

- B. The new client image does not use the same major release as the current one.
- C. Client services are not enabled.
- D. Client software updates are not supported with IKEv2.

Correct Answer: C

Section: Remote access VPNs Explanation

Explanation/Reference:

QUESTION 19

Under which section must a bookmark or URL list be configured on a Cisco ASA to be available for clientless SSLVPN users?

- A. tunnel-group (general-attributes)
- B. tunnel-group (webvpn-attributes)
- C. webvpn (group-policy)
- D. webvpn (global configuration)

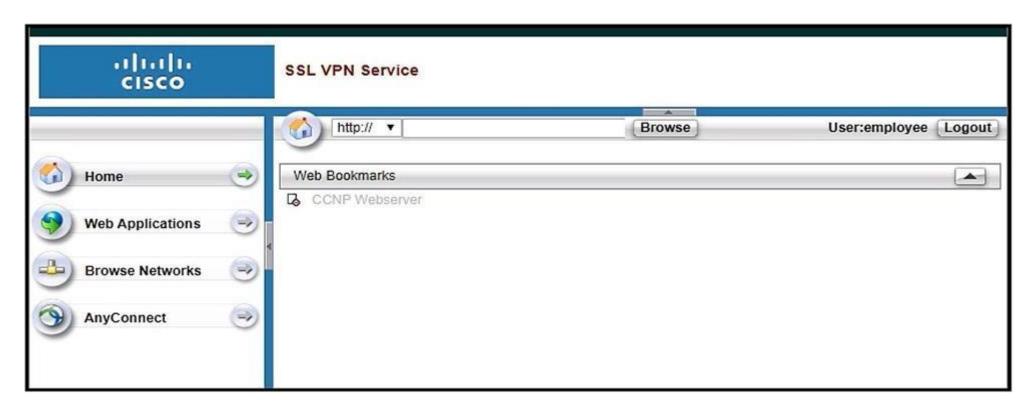
Correct Answer: D

Section: Remote access VPNs Explanation

Explanation/Reference:







Refer to the exhibit. Based on the exhibit, why are users unable to access CCNP Webserver bookmark?

- A. The URL is being blocked by a WebACL.
- B. The ASA cannot resolve the URL.C. The bookmark has been disabled.
- D. The user cannot access the URL.

Correct Answer: C

Section: Remote access VPNs Explanation

CEplus

Explanation/Reference:

QUESTION 21 Which two statements about the Cisco ASA Clientless SSL VPN solution are true? (Choose two.)

- A. When a client connects to the Cisco ASA WebVPN portal and tries to access HTTP resources through the URL bar, the client uses the local DNS to perform FQDN resolution.
- B. The **rewriter enable** command under the global webvpn configuration enables the rewriter functionality because that feature is disabled by default.
- C. A Cisco ASA can simultaneously allow Clientless SSL VPN sessions and AnyConnect client sessions.
- D. When a client connects to the Cisco ASA WebVPN portal and tries to access HTTP resources through the URL bar, the ASA uses its configured DNS servers to perform FQDN resolution.
- E. Clientless SSLVPN provides Layer 3 connectivity into the secured network.

Correct Answer: CD

Section: Remote access VPNs Explanation

Explanation/Reference:

QUESTION 22

Which feature allows the ASA to handle nonstandard applications and web resources so that they display correctly over a clientless SSL VPN connection?

- A. single sign-on
- B. Smart Tunnel
- C. WebType ACL
- D. plug-ins



Correct Answer: B

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/security/asa/asa90/configuration/guide/asa 90 cli config/vpn clientless ssl.html#29951

QUESTION 23 Which command automatically initiates a smart tunnel when a user logs in to the WebVPN portal page?

- A. auto-upgrade
- B. auto-connect
- C. auto-start
- D. auto-run

Correct Answer: C

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/security/asa/asa91/configuration/vpn/asa 91 vpn config/webvpn-configure-policy-group.html

QUESTION 24

XML profile

svc profile Profile1

<WindowsVPNEstablishment>AllowRemoteUsers</WindowsVPNEstablishment>

Refer to the exhibit. The customer must launch Cisco AnyConnect in the RDP machine. Which IOS configuration accomplishes this task? A.

crypto vpn anyconnect profile Profile 1 flash:RDP.xml webvpn context Context1 svc platform win seq 1 policy group PolicyGroup1 functions svc-enabled

crypto vpn anyconnect profile Profile 1 flash:RDP.xml webvpn context Context1 browser-attribute import flash:RDP.xml crypto vpn anyconnect profile Profile 1 flash:RDP.xml webvpn context Context1 policy group PolicyGroup1

В.

crypto vpn anyconnect profile Profile 1 flash:RDP.xml
webvpn context Context1
policy group PolicyGroup1
svc module RDP



Correct Answer: C

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://community.cisco.com/t5/vpn/starting-anyconnect-vpn-through-rdp-session-on-cisco-891/td-p/2128284

QUESTION 25



Refer to the exhibit. Which two commands under the tunnel-group webvpn-attributes result in a Cisco AnyConnect user receiving the AnyConnect prompt in the exhibit? (Choose two.)

- A. group-url https://172.16.31.10/General enable
- B. group-policy General internal
- C. authentication aaa
- D. authentication certificate
- E. group-alias General enable

Correct Answer: BE

Section: Remote access VPNs Explanation

Explanation/Reference:

QUESTION 26

Which requirement is needed to use local authentication for Cisco AnyConnect Secure Mobility Clients that connect to a FlexVPN server?

- A. use of certificates instead of username and password
- B. EAP-AnyConnect
- C. EAP query-identity
- D. AnyConnect profile

Correct Answer: D



Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security/flexvpn/200555-FlexVPN-AnyConnect-IKEv2-Remote-Access.html

QUESTION 27 Which IKE identity does an IOS/IOS-XE headend expect to receive if an IPsec Cisco AnyConnect client uses default settings?

A. *\$SecureMobilityClient\$*

B. *\$AnyConnectClient\$*

C. *\$RemoteAccessVpnClient\$*

D. *\$DfltlkeldentityS*

Correct Answer: B

Section: Remote access VPNs Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security/flexvpn/200555-FlexVPN-AnyConnect-IKEv2-Remote-Access.html





group-policy DfltGrpPolicy internal group-policy DfltGrpPolicy attributes banner none dns-server value 10.10.10.10 vpn-tunnel-protocol ssl-clientless default-domain value cisco.com address-pools value ACPool group-policy Admin Group internal group-policy Admin Group attributes vpn-simultaneous-logins 10 vpn-tunnel-protocol ikev2 ssl-clientless split-tunnel-policy tunnelall tunnel-group Admins type remote-access tunnel-group Admins general-attributes default-group-policy Admin Group tunnel-group Admins webvpn-attributes group-alias Admins enable tunnel-group Employee type remote-access tunnel-group Employee webvpn-attributes group-alias Employee enable webvpn enable outside anyconnect image disk0:/anyconnect-win-4.7.01076-webdeploy-k9.pkg 1 anyconnect enable tunnel-group-list enable

Refer to the exhibit. Which VPN technology is allowed for users connecting to the Employee tunnel group?

- A. SSL AnyConnect
- B. IKEv2 AnyConnect
- C. crypto map
- D. clientless

Correct Answer: B

Section: Remote access VPNs Explanation

Explanation/Reference:



```
Spoke1#
     local ident (addr/mask/prot/port): (192.168.1.1/255.255.255.255/47/0)
     remote ident (addr/mask/prot/port): (192.168.2.1/255.255.255.255/47/0)
     #pkts encaps: 200, #pkts encrypt: 200
     #pkts decaps: 0, #pkts decrypt: 0,
local crypto endpt.: 192.168.1.1,
remote crypto endpt.: 192.168.2.1
     inbound esp sas:
     spi: 034B32CA36 (1261619766)
     outbound esp sas:
     spi:0xD601918E (1760427022)
Spoke2#
     local ident (addr/mask/prot/port): (192.168.2.1/255.255.255.255/47/0)
     remote ident (addr/mask/prot/port): (192.168.1.1/255.255.255.255/47/0)
     #pkts encaps: 210, #pkts encrypt: 210,
     #pkts decaps: 200, #pkts decrypt: 200,
local crypto endpt.: 192.168.2.1,
remote crypto endpt.: 192.168.1.1
     inbound esp sas:
     spi: 03D601918E (1760427022)
     outbound esp sas:
     spi: 034BS2CA36 (1261619766)
```

Refer to the exhibit. An engineer is troubleshooting a new GRE over IPsec tunnel. The tunnel is established but the engineer cannot ping from spoke 1 to spoke 2. Which type of traffic is being blocked?

A. ESP packets from spoke2 to spoke1

B. ISAKMP packets from spoke2 to spoke1

C. ESP packets from spoke1 to spoke2

D. ISAKMP packets from spoke1 to spoke2

Correct Answer: A

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

QUESTION 30 Which command is used to troubleshoot an IPv6 FlexVPN spoke-to-hub connectivity failure?

A. show crypto ikev2 sa

B. show crypto isakmp sa

C. show crypto gkm

D. show crypto identity

Correct Answer: A

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security/flexvpn/116413-configure-flexvpn-00.pdf

QUESTION 31

In a FlexVPN deployment, the spokes successfully connect to the hub, but spoke-to-spoke tunnels do not form. Which troubleshooting step solves the issue?



- A. Verify the spoke configuration to check if the NHRP redirect is enabled.
- B. Verify that the spoke receives redirect messages and sends resolution requests.
- C. Verify the hub configuration to check if the NHRP shortcut is enabled.
- D. Verify that the tunnel interface is contained within a VRF.

Correct Answer: B

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_dmvpn/configuration/15-mt/sec-conn-dmvpn-15-mt-book/sec-conn-dmvpn-summ-maps.pdf

QUESTION 32 An engineer is troubleshooting a new DMVPN setup on a Cisco IOS router. After the show crypto isakmp sa command is issued, a response is returned of "MM_NO_STATE." Why does this failure occur?

- A. The ISAKMP policy priority values are invalid.
- B. ESP traffic is being dropped.
- C. The Phase 1 policy does not match on both devices.
- D. Tunnel protection is not applied to the DMVPN tunnel.

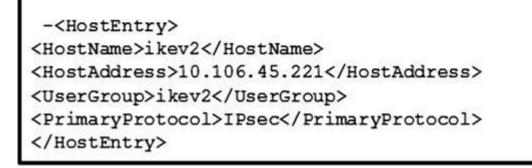
Correct Answer: B

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

QUESTION 33

```
tunnel-group IKEV2 type remote-access
tunnel-group IKEV2 general-attributes
address-pool split
default-group-policy GroupPolicy1
tunnel-group IKEV2 webvpn-attributes
group-alias ikev2 enable
```





Refer to the exhibit. The customer can establish a Cisco AnyConnect connection without using an XML profile. When the host "ikev2" is selected in the AnyConnect drop down, the connection fails. What is the cause of this issue? A.

The HostName is incorrect.

- B. The IP address is incorrect.
- C. Primary protocol should be SSL.
- D. UserGroup must match connection profile.



Correct Answer: D

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

Reference: https://community.cisco.com/t5/security-documents/anyconnect-xml-settings/ta-p/3157891

QUESTION 34

```
ISAKMP: (0):beginning Main Mode exchange
ISAKMP-PAK: (0):sending packet to 192.168.0.8 my port 500 peer port 500 (I) MM NO STATE
ISAKMP-PAK: (0):received packet from 192.168.0.8 dport 500 sport 500 Global (I) MM NO STATE
ISAKMP: (0):Old State = IKE I MM1 New State = IKE I MM2
ISAKMP: (0):found peer pre-shared key matching 192.168.0.8
ISAKMP: (0):local preshared key found
ISAKMP: (0): Checking ISAKMP transform 1 against priority 10 policy
ISAKMP: (0):
                 encryption AES-CBC
ISAKMP: (0):
                 kevlength of 256
                 hash SHA256
ISAKMP: (0):
ISAKMP: (0):
              default group 14
ISAKMP: (0):
                 auth pre-share
ISAKMP: (0):
                 life type in seconds
ISAKMP: (0):
                 life duration (basic) of 1200
ISAKMP: (0):atts are acceptable. Next payload is 0
ISAKMP-PAK: (0):sending packet to 192.168.0.8 my port 500 peer port 500 (I) MM SA SETUP
ISAKMP: (0):Old State = IKE I MM2 New State = IKE I MM3
ISAKMP-PAK: (0):received packet from 192.168.0.8 dport 500 sport 500 Global (I) MM SA SETUP
ISAKMP: (0):Old State = IKE I MM3 New State = IKE I MM4
ISAKMP: (0):found peer pre-shared key matching 192.168.0.8
ISAKMP: (1005):Old State = IKE I MM4 New State = IKE I MM4
ISAKMP: (1005):pre-shared key authentication using id type ID IPV4 ADDR
ISAKMP-PAK: (1005):sending packet to 192.168.0.8 my port 4500 peer port 4500 (I) MM KEY EXCH
ISAKMP: (1005):Old State = IKE I MM4 New State = IKE I MM5
ISAKMP-PAK: (1005):received packet from 192.168.0.8 dport 500 sport 500 Global (I) MM KEY EXCH
ISAKMP: (1005):phase 1 packet is a duplicate of a previous packet.
ISAKMP: (1005):retransmitting due to retransmit phase 1
ISAKMP: (1005):retransmitting phase 1 MM KEY_EXCH...
ISAKMP: (1005):: incrementing error counter on sa, attempt 1 of 5: retransmit phase 1
ISAKMP-PAK: (1005):sending packet to 192.168.0.8 my port 4500 peer port 4500 (I) MM KEY EXCH
ISAKMP-PAK: (1005):received packet from 192.168.0.8 dport 500 sport 500 Global (I) MM KEY EXCH
ISAKMP: (1005):phase 1 packet is a duplicate of a previous packet.
ISAKMP: (1005):retransmitting due to retransmit phase 1
```

Refer to the exhibit. A site-to-site tunnel between two sites is not coming up. Based on the debugs, what is the cause of this issue?

- A. An authentication failure occurs on the remote peer.
- B. A certificate fragmentation issue occurs between both sides.
- C. UDP 4500 traffic from the peer does not reach the router.
- D. An authentication failure occurs on the router.

Correct Answer: C

Section: Troubleshooting using ASDM and CLI

Explanation

Explanation/Reference:

QUESTION 35

```
IKEv2: (SESSION ID = 17, SA ID = 1): Processing IKE AUTH message
IKEv2: IPSec policy validate request sent for profile CloudOne with psh index 1.
IKEv2: (SESSION ID = 17, SA ID = 1):
IKEv2: (SA ID = 1): [IPsec -> IKEv2] Callback received for the validate proposal - FAILED.
IKEV2-ERROR: (SESSION ID = 17, SA ID = 1):: There was no IPSEC policy found for received TS
IKEv2: (SESSION ID = 17, SA ID = 1): Sending TS unacceptable notify
IKEv2: (SESSION ID = 17, SA ID = 1): Get my authentication method
IKEv2: (SESSION ID = 17, SA ID = 1):My authentication method is 'PSK'
IKEv2: (SESSION ID = 17, SA ID = 1): Get peer's preshared key for 68.72.250.251
IKEv2: (SESSION ID = 17, SA ID = 1): Generate my authentication data
IKEV2: (SESSION ID = 17, SA ID = 1): Use preshared key for id 68.72.250.250, key len 5
IKEv2:[IKEv2 -> Crypto Engine] Generate IKEv2 authentication data
IKEv2: [Crypto Engine -> IKEv2] IKEv2 authentication data generation PASSED
IKEv2: (SESSION ID = 17, SA ID = 1): Get my authentication method
IKEv2: (SESSION ID = 17,SA ID = 1):My authentication method is 'PSK'
IKEv2: (SESSION ID = 17, SA ID = 1): Generating IKE AUTH message
IKEv2: (SESSION ID = 17, SA ID = 1): Constructing IDr payload: '68.72.250.250' of type 'IPv4 address'
IKEv2: (SESSION ID = 17, SA ID = 1): Building packet for encryption.
Payload contents:
VID IDr AUTH NOTIFY (TS UNACCEPTABLE)
IKEv2: (SESSION ID = 17,SA ID = 1):Sending Packet [To 68.72.250.251:500/From 68.72.250.250:500/VRF i0:f0]
Initiator SPI : 3D527B1D50DBEEF4 - Responder SPI : 8C693F77F2656636 Message id: 1
IKEV2 IKE AUTH Exchange RESPONSE
Payload contents:
ENCR
```

Refer to the exhibit. Based on the debug output, which type of mismatch is preventing the VPN from coming up?

- A. interesting traffic
- B. lifetime
- C. preshared key
- D. PFS

Correct Answer: B

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

Explanation:

If the responder's policy does not allow it to accept any part of the proposed Traffic Selectors, it responds with a TS_UNACCEPTABLE Notify message.





```
*Nov 26 00:52:20.002: IKEv2:(SESSION ID = 1,SA ID = 1):Received Packet [From 10.10.10.1:500/To 10.10.10.2:500/VRF i0:f0]
Initiator SPI : D5684E1462991856 - Responder SPI : 2162145C95256F6A Message id: 1
IKEv2 IKE_AUTH Exchange RESPONSE
*Nov 26 00:52:20.002: IKEv2-PAK: (SESSION ID = 1, SA ID = 1):Next payload: ENCR, version: 2.0 Exchange type: IKE_AUTH, flags: RESPONDER MSG-RESPONSE Message id: 1, length: 236
Payload contents:
VID Next payload: IDr, reserved: 0x0, length: 20
 IDr Next payload: AUTH, reserved: 0x0, length: 12
   Id type: IPv4 address, Reserved: 0x0 0x0
 AUTH Next payload: SA, reserved: 0x0, length: 28
   Auth method PSK, reserved: 0x0, reserved: 0x0
 SA Next payload: TSi, reserved: 0x0, length: 40
 last proposal: 0x0, reserved: 0x0, length: 35
  Proposal: 1, Protocol id: ESP, SPI size: 4, #trans: 3 last transform: 0x3, reserved: 0x0: length: 8
   type: 1, reserved: 0x0, id: 3DES
   last transform: 0x3, reserved: 0x0: length: 8
  type: 3, reserved: 0x0, id: SHA96
   last transform: 0x0, reserved: 0x0: length: 8
   type: 5, reserved: 0x0, id: Don't use ESN
TSi Next payload: TSr, reserved: 0x0, length: 24
   Num of TSs: 1, reserved 0x0, reserved 0x0
                                                                          CEplus
   TS type: TS_IPV4_ADDR_RANGE, proto id: 0, length: 16
   start port: 0, end port: 65535
   start addr: 30.30.30.0, end addr: 30.30.30.255
TSr Next payload: NOTIFY, reserved: 0x0, length: 24
   Num of TSs: 1, reserved 0x0, reserved 0x0
   TS type: TS_IPV4_ADDR_RANGE, proto id: 0, length: 16
   start port: 0, end port: 65535
   start addr: 20.20.20.0, end addr: 20.20.20.255
NOTIFY(SET_WINDOW_SIZE) Next payload: NOTIFY, reserved: 0x0, length: 12
   Security protocol id: Unknown - 0, spi size: 0, type: SET_WINDOW_SIZE
NOTIFY(ESP_TFC_NO_SUPPORT) Next payload: NOTIFY, reserved: 0x0, length: 8
   Security protocol id: Unknown - 0, spi size: 0, type: ESP_TFC_NO_SUPPORT
NOTIFY(NON_FIRST_FRAGS) Next payload: NONE, reserved: 0x0, length: 8
   Security protocol id: Unknown - 0, spi size: 0, type: NON_FIRST_FRAGS
*Nov 26 00:52:20.003: IKEv2:(SESSION ID = 1,SA ID = 1):Process auth response notify
*Nov 26 00:52:20.003: IKEv2:(SESSION ID = 1,SA ID = 1):Searching policy based on peer's identity '10.10.10.1' of type 'IPv4 address'
*Nov 26 00:52:20.004: IKEv2-ERROR:(SESSION ID = 1,SA ID = 1):: Failed to locate an item in the database
*Nov 26 00:52:20.004: IKEv2:(SESSION ID = 1,SA ID = 1):Verification of peer's authentication data FAILED
*Nov 26 00:52:20.004: IKEv2:(SESSION ID = 1,SA ID = 1):Auth exchange failed
*Nov 26 00:52:20.004: IKEv2-ERROR: (SESSION ID = 1, SA ID = 1):: Auth exchange failed
Router#
*Nov 26 00:52:20.004: IKEv2:(SESSION ID = 1,SA ID = 1):Abort exchange
*Nov 26 00:52:20.004: IKEv2:(SESSION ID = 1,SA ID = 1):Deleting SA
```



Refer to the exhibit. The IKEv2 site-to-site VPN tunnel between two routers is down. Based on the debug output, which type of mismatch is the problem?

- A. preshared key
- B. peer identity
- C. transform set
- D. ikev2 proposal

Correct Answer: B

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

QUESTION 37

```
*Jul 16 20:21:25.317: ISAKMP (1004): received packet from 192.168.0.2 dport 500 sport 500 Global (R) MM_KEY_EXCH

*Jul 16 20:21:25.317: ISAKMP: reserved not zero on ID payload!

*Jul 16 20:21:25.317: %CRYPTO-4-IKMP_BAD_MESSAGE: IKE message from 192.168.0.2 failed its sanity check or is malformed
```

Refer to the exhibit. Which type of mismatch is causing the problem with the IPsec VPN tunnel?

- A. crypto access list
- B. Phase 1 policy
- C. transform set
- D. preshared key

Correct Answer: D

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security-vpn/ipsec-negotiation-ike-protocols/5409-ipsec-debug-00.html#ike





HUB configuration: crypto ikev2 profile default match identity remote fqdn domain cisco.com identity local fqdn hub.cisco.com authentication local rsa-sig authentication remote pre-shared-key cisco pki trustpoint CA aaa authorization group cert list default default virtual-template 1 SPOKE 1 configuration: crypto ikev2 profile default match identity remote fqdn domain cisco.com identity local fqdn spoke.cisco.com authentication local rsa-sig authentication remote pre-shared-key cisco pki trustpoint CA aaa authorization group cert list default default virtual-template 1 SPOKE 2 configuration: crypto ikev2 profile default match identity remote fqdn domain cisco.com identity local fqdn spoke2.cisco.com authentication local pre-shared-key flexvpn authentication remote rsa-sig pki trustpoint CA aaa authorization group cert list default default virtual-template 1

Refer to the exhibit. What is a result of this configuration?

- A. Spoke 1 fails the authentication because the authentication methods are incorrect.
- B. Spoke 2 passes the authentication to the hub and successfully proceeds to phase 2.
- C. Spoke 2 fails the authentication because the remote authentication method is incorrect.





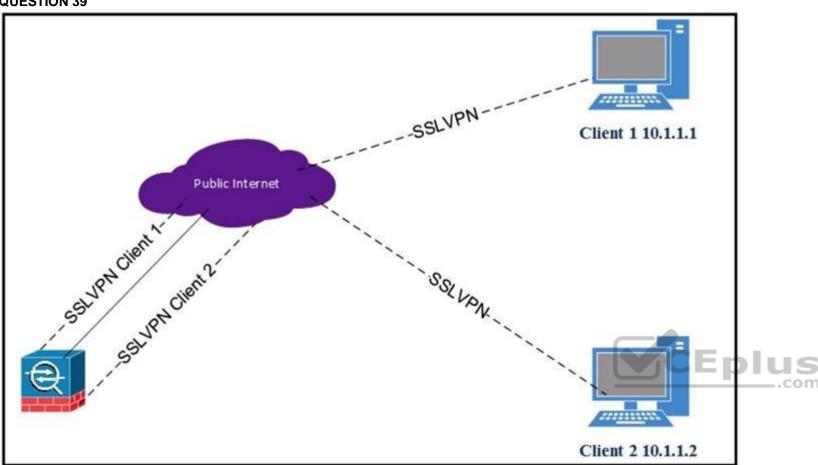
D. Spoke 1 passes the authentication to the hub and successfully proceeds to phase 2.

Correct Answer: A

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:

QUESTION 39



Refer to the exhibit. Client 1 cannot communicate with client 2. Both clients are using Cisco AnyConnect and have established a successful SSL VPN connection to the hub ASA. Which command on the ASA is missing?

A. dns-server value 10.1.1.2

B. same-security-traffic permit intra-interface

C. same-security-traffic permit inter-interface

D. dns-server value 10.1.1.3

Correct Answer: B

Section: Troubleshooting using ASDM and CLI Explanation

Explanation/Reference:



Ciscoasa# sh cap o trace packet-number 4 737 packets captured 10.99.117.195.56485 > 10.31.124.31.443: \$ 3919220036:3919220036(0) win 64240 <mss 1260,nop,wscale 8,nop,nop,sackOK> 4: 08:19:36.054181 Phase: 1 Type: CAPTURE Phase: 8 Subtype: Type: VPN Result: ALLOW Subtype: ipsec-tunnel-flow Result: ALLOW Config: Additional Information: Config: MAC Access list Additional Information: Phase: 2 Phase: 9 Type: ACCESS-LIST Type: NAT Subtype: Subtype: rpf-check Result: ALLOW Result: ALLOW Config: Config: nat(inside, outside) source static obj 172.16.0.0 24 interface Implicit Rule Additional Information: Additional Information: MAC Access list Phase: 10 Phase: 3 Type: NAT Subtype: per-session Type: UN-NAT Result: ALLOW Subtype: static Result: ALLOW Config: _.com Additional Information: Config: nat(inside, outside) source static obj 172.16.0.0 24 interface Additional Information: Phase: 11 NAT divert to egress interface inside Type: IP-OPTIONS Untranslate 10.31.124.31/443 to 172.16.0.0/443 Subtype: Result: ALLOW Phase: 4 Config: Type: ACCESS-LIST Additional Information: Subtype: log Result: ALLOW Phase: 12 Config: Type: FLOW-CREATION access-group global access 1 global Subtype: access-list global access 1 extended permit ip any any Result: ALLOW Additional Information: Config: Additional Information: Phase: 5 New flow created with id 123456, packet dispatched to next module Type: NAT Subtype: Phase: 13 Result: ALLOW Type: ROUTE-LOOKUP Subtype: Resolve Egress Interface Config: nat(inside, outside) source static obj 172.16.0.0 24 interface Result: ALLOW Additional Information: Config: Static translate 10.99.117.195/56485 to 10.99.117.195/56485 Additional Information: found next-hop 172.16.0.0 using egress ifc inside Phase: 6 Type: NAT Result: www.vceplus.com - Free Questions and wers of the courses a convert VCE to PDF - VCEplus.com Subtype: per-session

input-status: up

Result: ALLOW



Refer to the exhibit. An SSL client is connecting to an ASA headend. The session fails with the message "Connection attempt has timed out. Please verify Internet connectivity." Based on how the packet is processed, which phase is causing the failure?

A. phase 9: rpf-check

B. phase 5: NAT

C. phase 4: ACCESS-LIST

D. phase 3: UN-NAT

Correct Answer: D

Section: Troubleshooting using ASDM and CLI

Explanation

Explanation/Reference:

QUESTION 41 Which redundancy protocol must be implemented for IPsec stateless

failover to work?

A. SSO

B. GLBP

C. HSRP

D. VRRP

Correct Answer: C

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security-vpn/ipsec-negotiation-ike-protocols/17826-ipsec-feat.html

JESTION 42 Which technology works with IDags

QUESTION 42 Which technology works with IPsec

stateful failover?

A. GLBR

B. HSRP

C. GRE

D. VRRP

Correct Answer: B

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios/12_2/12_2y/12_2yx11/feature/guide/ft_vpnha.html#wp1122512

QUESTION 43

What are two functions of ECDH and ECDSA? (Choose two.)

A. nonrepudiation

B. revocation

C. digital signature

D. key exchange

E. encryption

Correct Answer: CD

Section: Secure Communications Architectures

Explanation

CEplus

Explanation/Reference:

Reference: https://tools.cisco.com/security/center/resources/next generation cryptography

QUESTION 44 What uses an Elliptic Curve key

exchange algorithm?

- A. ECDSA
- B. ECDHE
- C. AES-GCM
- D. SHA

Correct Answer: B

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://blog.cloudflare.com/a-relatively-easy-to-understand-primer-on-elliptic-curve-cryptography/

QUESTION 45 Which two remote access VPN solutions support

SSL? (Choose two.)

- A. FlexVPN
- B. clientless
- C. EZVPN
- D. L2TP
- E. Cisco AnyConnect

Correct Answer: BE

Section: Secure Communications Architectures

Explanation

CEplus

Explanation/Reference:

QUESTION 46

Which VPN solution uses TBAR?

- A. GETVPN
- B. VTI
- C. DMVPN
- D. Cisco AnyConnect

Correct Answer: A

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec conn getvpn/configuration/xe-3s/sec-get-vpn-xe-3s-book/sec-get-vpn.html

QUESTION 47 Which two commands help determine why the NHRP registration process is not being completed even after the IPsec tunnel is up? (Choose two.)

- A. show crypto isakmp sa
- B. show ip traffic
- C. show crypto ipsec sa
- D. show ip nhrp traffic
- E. show dmvpn detail



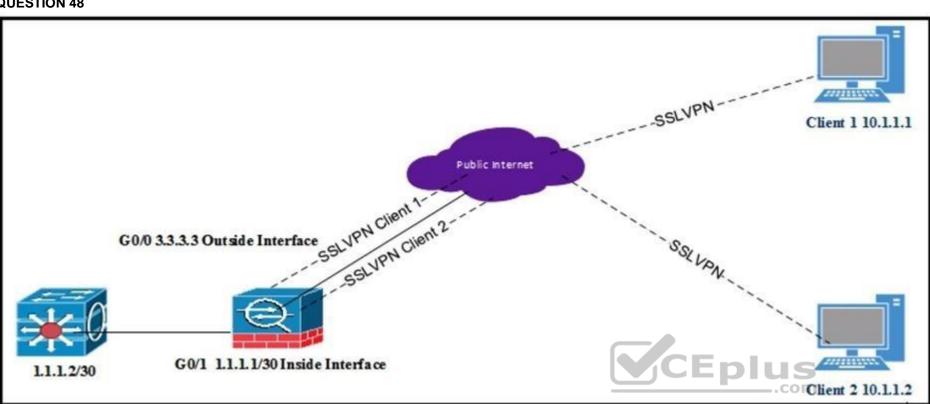
Correct Answer: AD

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 48



Refer to the exhibit. All internal clients behind the ASA are port address translated to the public outside interface that has an IP address of 3.3.3.3. Client 1 and client 2 have established successful SSL VPN connections to the ASA. What must be implemented so that "3.3.3.3" is returned from a browser search on the IP address?

- A. Same-security-traffic permit inter-interface under Group Policy
- B. Exclude Network List Below under Group Policy
- C. Tunnel All Networks under Group Policy
- D. Tunnel Network List Below under Group Policy

Correct Answer: D

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 49

Cisco AnyConnect clients need to transfer large files over the VPN sessions. Which protocol provides the best throughput?

- A. SSL/TLS
- B. L2TP
- C. DTLS
- D. IPsec IKEv1

Correct Answer: C



Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 50

```
crypto isakmp policy 10
encr aes 256
hash sha256
authentication pre-share
group 14
crypto isakmp key cisco address 0.0.0.0
crypto ipsec transform-set TS esp-aes 256 esp-sha256-hmac
mode transport
crypto ipsec profile CCNP
set transform-set TS
interface Tunnell
ip address 10.0.0.1 255.255.255.0
tunnel source GigabitEthernet1
tunnel mode ipsec ipv4
tunnel destination 172.18.10.2
tunnel protection ipsec profile CCNP
```



Refer to the exhibit. Which VPN technology is used in the exhibit?

- A. DVTI
- B. VTI
- C. DMVPN
- D. GRE

Correct Answer: B

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec conn vpnips/configuration/zZ-Archive/IPsec Virtual Tunnel Interface.html#GUID-EB8C433B-2394-42B9-997F-B40803E58A91

QUESTION 51

Which VPN does VPN load balancing on the ASA support?

- A. VTI
- B. IPsec site-to-site tunnels
- C. L2TP over IPsec
- D. Cisco AnyConnect

Correct Answer: D

Section: Secure Communications Architectures

Explanation

CEplus

Explanation/Reference:

QUESTION 52 Which parameter must match on all routers in a DMVPN

Phase 3 cloud?

A. GRE tunnel key

B. NHRP network ID

C. tunnel VRF

D. EIGRP split-horizon setting

Correct Answer: A

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 53 Which parameter is initially used to elect the primary key server from a group of key servers?

A. code version

B. highest IP address

C. highest-priority value

D. lowest IP address

Correct Answer: C

Section: Secure Communications Architectures

Explanation

CEplus

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/products/collateral/security/group-encrypted-transport-vpn/deployment_guide_c07_554713.html

QUESTION 54 A Cisco ASA is configured in active/standby mode. What is needed to ensure that Cisco AnyConnect users can connect after a failover event?

- A. AnyConnect images must be uploaded to both failover ASA devices.
- B. The vpnsession-db must be cleared manually.
- C. Configure a backup server in the XML profile.
- D. AnyConnect client must point to the standby IP address.

Correct Answer: A

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/security/asa/asa90/configuration/guide/asa 90 cli config/ha active standby.html

QUESTION 55 Which benefit of FlexVPN is a limitation of

DMVPN using IKEv1?

- A. GRE encapsulation allows for forwarding of non-IP traffic.
- B. IKE implementation can install routes in routing table.
- C. NHRP authentication provides enhanced security.
- D. Dynamic routing protocols can be configured.

Correct Answer: B



Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 56 What is a requirement for smart tunnels to function properly?

- A. Java or ActiveX must be enabled on the client machine.
- B. Applications must be UDP.
- C. Stateful failover must not be configured.
- D. The user on the client machine must have admin access.

Correct Answer: A

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/support/docs/security/asa-5500-x-series-next-generation-firewalls/111007-smart-tunnel-asa-00.html

QUESTION 57 Where is split tunneling defined for IKEv2 remote access clients on

a Cisco router?

- A. IKEv2 authorization policy
- B. Group Policy
- C. virtual template
- D. webvpn context

Correct Answer: B

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 58 Which technology is used to send multicast traffic over a site-to-site VPN?

- A. GRE over IPsec on IOS router
- B. GRE over IPsec on FTD
- C. IPsec tunnel on FTD
- D. GRE tunnel on ASA

Correct Answer: B

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 59 Which feature of GETVPN is a limitation of DMVPN and FlexVPN?

- A. sequence numbers that enable scalable replay checking
- B. enabled use of ESP or AH
- C. design for use over public or private WAN
- D. no requirement for an overlay routing protocol





Correct Answer: D

Section: Secure Communications Architectures

Explanation

Explanation/Reference:

QUESTION 60

```
ip access-list extended CCNP
permit 192.168.0.10
permit 192.168.0.11
webvpn gateway SSL Gateway
ip address 172.16.0.25 port 443
ssl trustpoint AnyConnect Cert
inservice
webvpn context SSL Context
gateway SSL Gateway
ssl authenticate verify all
inservice
policy group SSL Policy
  functions svc-enabled
  svc address-pool "ACPool" netmask 255.255.255.0
  svc dns-server primary 192.168.0.100
  svc default-domain cisco.com
default-group-policy SSL Policy
```



Refer to the exhibit. Cisco AnyConnect must be set up on a router to allow users to access internal servers 192.168.0.10 and 192.168.0.11. All other traffic should go out of the client's local NIC. Which command accomplishes this configuration?

A. svc split include 192.168.0.0 255.255.255.0

B. svc split exclude 192.168.0.0 255.255.255.0

C. svc split include acl CCNP

D. svc split exclude acl CCNP

Correct Answer: C

Section: Secure Communications Architectures

Explanation

Explanation/Reference: