Number: NSE7\_SDW-7.2

Passing Score: 800 Time Limit: 120 File Version: 1.0

Exam Code: NSE7\_SDW-7.2

**Exam Name: Fortinet NSE 7 - SD-WAN 7.2** 

## Exam A

#### **QUESTION 1**

Which are two benefits of using CLI templates in FortiManager? (Choose two.)

- A. You can reference meta fields.
- B. You can configure interfaces as SD-WAN members without having to remove references first.
- C. You can configure FortiManager to sync local configuration changes made on the managed device, to the CLI template.
- D. You can configure advanced CLI settings.

## Correct Answer: A, D

Section:

## **QUESTION 2**

Refer to the exhibit.

The device exchanges routes using IBGP.

Which two statements are correct about the IBGP configuration and routing information on the device? (Choose two.)

- A. Each BGP route is three hops away from the destination.
- B. ibgp-multipath is disabled.
- C. additional-path is enabled.
- D. You can run the get router info routing-table database command to display the additional paths.

## **Correct Answer: C, D**

Section:

#### **QUESTION 3**

```
config system sdwan
set fail-detect enable
set fail-alert-interfaces "port5"
config health-check
edit "Level3_DNS"
set update-cascade-interface enable
set members 1 2
next
edit "HQ"
set update-cascade-interface enable
set members 3
next
end
end
```

Based on the exhibit, which action does FortiGate take?

- A. FortiGate bounces port5 after it detects all SD-WAN members as dead.
- B. FortiGate fails over to the secondary device after it detects all SD-WAN members as dead.
- C. FortiGate brings up port5 after it detects all SD-WAN members as alive.
- D. FortiGate brings down port5 after it detects all SD-WAN members as dead.

Correct Answer: B Section:

## **QUESTION 4**

•			

```
config system sdwan
set fail-detect enable
set fail-alert-interfaces "port5"
config health-check
edit "Level3_DNS"
set update-cascade-interface enable
set members 1 2
next
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- D. FortiGate brings down port5 after it detects all SD-WAN members as dead.

## **Correct Answer: B**

Section:

#### **QUESTION 5**

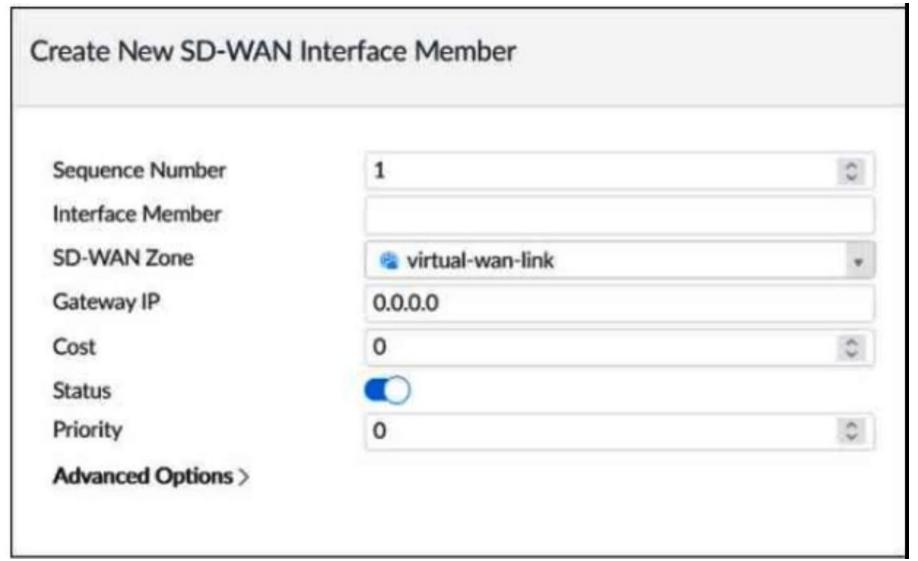
What are two benefits of choosing packet duplication over FEC for data loss correction on noisy links? (Choose two.)

- A. Packet duplication can leverage multiple IPsec overlays for sending additional data.
- B. Packet duplication does not require a route to the destination.
- C. Packet duplication supports hardware offloading.
- D. Packet duplication uses smaller parity packets which results in less bandwidth consumption.

Correct Answer: A, C

Section:

#### **QUESTION 6**



Which two SD-WAN template member settings support the use of FortiManager meta fields? (Choose two.)

- A. Cost
- B. Interface member
- C. Priority
- D. Gateway IP

Correct Answer: B, D

Section:

**QUESTION 7** 

```
# diagnose firewall shaper per-ip-shaper list
name FTP_5M
maximum-bandwidth 625 KB/sec
maximum-concurrent-session 5
tos ff/ff
packets dropped 65
bytes dropped 81040
        addr=10.1.0.1 status: bps=0 ses=1
        addr=10.1.0.100 status: bps=0 ses=1
        addr=10.1.10.1 status: bps=1656 ses=3
```

Which are two expected behaviors of the traffic that matches the traffic shaper? (Choose two.)

- A. The number of simultaneous connections among all source IP addresses cannot exceed five connections.
- B. The traffic shaper limits the combined bandwidth of all connections to a maximum of 5 MB/sec.
- C. The number of simultaneous connections allowed for each source IP address cannot exceed five connections.
- D. The traffic shaper limits the bandwidth of each source IP address to a maximum of 625 KB/sec.

Correct Answer: C, D Section:

# **OUESTION 8**

Which two statements are true about using SD-WAN to steer local-out traffic? (Choose two.)

- A. FortiGate does not consider the source address of the packet when matching an SD-WAN rule for local-out traffic.
- B. By default, local-out traffic does not use SD-WAN.
- C. By default, FortiGate does not check if the selected member has a valid route to the destination.
- D. You must configure each local-out feature individually, to use SD-WAN.

Correct Answer: B, D

Section:

# **QUESTION 9**

What three characteristics apply to provisioning templates available on FortiManager? (Choose three.)

- A. You can apply a system template and a CLI template to the same FortiGate device.
- B. A CLI template can be of type CLI script or Perl script.
- C. A template group can include a system template and an SD-WAN template.
- D. A template group can contain CLI templates of both types.
- E. Templates are applied in order, from top to bottom.

Correct Answer: B, D, E Section:

#### **Explanation:**

According to the FortiManager Administration Guide, provisioning templates are used to configure FortiGate devices in a consistent and efficient way. There are different types of templates, such as system, IPsec, SD-WAN, certificate, and CLI templates. Some characteristics of provisioning templates are:

You can apply a system template and a CLI template to the same FortiGate device, as long as they do not have conflicting settings1.

A CLI template can be of type CLI script or Perl script. A CLI script template contains FortiOS CLI commands, while a Perl script template contains Perl code that can generate FortiOS CLI commands2.

A template group can include a system template and an SD-WAN template, as well as other types of templates. A template group is a collection of templates that can be applied to multiple devices at once 3.

A template group can contain CLI templates of both types, as long as they do not have conflicting settings2.

Templates are applied in order, from top to bottom. The order of the templates in a template group determines the order in which they are applied to the devices 3.

#### **QUESTION 10**

Refer to the exhibit.

Which configuration change is required if the responder FortiGate uses a dynamic routing protocol to exchange routes over IPsec?

- A. type must be set to static.
- B. mode-cfg must be enabled.
- C. exchange-interface-ip must be enabled.
- D. add-route must be disabled.

**Correct Answer: D** 

Section:

## **QUESTION 11**

Refer to the exhibit.

```
id=20085 trace_id=847 func=print_pkt_detail line=5428 msg="vd-root:0 received a
packet(proto=6, 10.1.10.1:33920->74.125.195.93:443) from port3. flag [.], seq
2018554516, ack 4141536963, win 2238"
id=20085 trace_id=847 func=resolve_ip_tuple_fast line=5508 msg="Find an existing
session, id-000008c1, original direction"
id=20085 trace id=847 func=shaper handler line=821 msg="exceeded shaper limit, drop"
```

Which conclusion about the packet debug flow output is correct?

A. The original traffic exceeded the maximum packets per second of the outgoing interface, and the packet was dropped.

- B. The reply traffic exceeded the maximum bandwidth configured in the traffic shaper, and the packet was dropped.
- C. The original traffic exceeded the maximum bandwidth of the outgoing interface, and the packet was dropped.
- D. The original traffic exceeded the maximum bandwidth configured in the traffic shaper, and the packet was dropped.

**Correct Answer: D** 

Section:

**QUESTION 12** 

```
config router bgp
    set as 65000
    set router-id 10.1.0.1
    set ibgp-multipath enable
    set additional-path enable
    set additional-path-select 3
    config neighbor-group
        edit "Branches INET 0"
            set interface "T INET 0 0"
            set remote-as 65000
            set update-source "T_INET_0_0"
        next
        edit "Branches INET 1"
            set interface "T INET 1 0"
            set remote-as 65000
            set update-source "T_INET_1_0"
        next
        edit "Branches MPLS"
            set interface "T MPLS 0"
            set remote-as 65000
            set update-source "T_MPLS_0"
        next
    end
    config neighbor-range
        edit 1
            set prefix 10.201.1.0 255.255.255.0
            set neighbor-group "Branches INET 0"
        next
        edit 2
            set prefix 10.202.1.0 255.255.255.0
            set neighbor-group "Branches INET 1"
        next
        edit 3
            set prefix 10.203.1.0 255.255.255.0
            set neighbor-group "Branches MPLS"
        next
    end
end
```

The exhibit shows the BGP configuration on the hub in a hub-and-spoke topology. The administrator wants BGP to advertise prefixes from spokes to other spokes over the IPsec overlays, including additional paths. However, when looking at the spoke routing table, the administrator does not see the prefixes from other spokes and the additional paths.

Based on the exhibit, which three settings must the administrator configure inside each BGP neighbor group so spokes can learn other spokes prefixes and their additional paths? (Choose three.)

- A. Set additional-path to send
- B. Enable route-reflector-client
- C. Set advertisement-interval to the number of additional paths to advertise
- D. Set adv-additional-path to the number of additional paths to advertise
- E. Enable soft-reconfiguration

Correct Answer: A, B, D

Section:

## **QUESTION 13**

Refer to the exhibit, which shows an SD-WAN zone configuration on the FortiGate GUI.



Based on the exhibit, which statement is true?

- A. You can delete the virtual-wan-link zone because it contains no member.
- B. The corporate zone contains no member.
- C. You can move port1 from the underlay zone to the overlay zone.
- D. The overlay zone contains four members.

**Correct Answer: B** 

Section:

**Explanation:** 

Based on the exhibit, the 'corporate' zone contains no member (B). In the FortiGate GUI, zones without members do not display any interfaces listed under them, which is the case for the corporate zone in the exhibit. Reference: This conclusion is based on standard Fortinet GUI interpretation and the operational logic of SD-WAN zones as per Fortinet's guidelines and user interface standards.

#### **QUESTION 14**

What are two advantages of using an IPsec recommended template to configure an IPsec tunnel in an hub-and-spoke topology? (Choose two.)

- A. It ensures consistent settings between phase1 and phase2.
- B. It guides the administrator to use Fortinet recommended settings.
- C. It automatically install IPsec tunnels to every spoke when they are added to the FortiManager ADOM.
- D. The VPN monitor tool provides additional statistics for tunnels defined with an IPsec recommended template.

Correct Answer: A, B

Section:

## **Explanation:**

The use of an IPsec recommended template offers the advantage of ensuring consistent settings between phase1 and phase2 (A), which is essential for the stability and security of the IPsec tunnel. Additionally, it guides the administrator to use Fortinet's recommended settings (B), which are designed to optimize performance and security based on Fortinet's best practices.

Reference: The benefits of using IPsec recommended templates are outlined in Fortinet's SD-WAN documentation, which emphasizes the importance of consistency and adherence to recommended configurations.

#### **QUESTION 15**

What are two reasons why FortiGate would be unable to complete the zero-touch provisioning process? (Choose two.)

- A. The FortiGate cloud key has not been added to the FortiGate cloud portal.
- B. FortiDeploy has connected with FortiGate and provided the initial configuration to contact FortiManager
- C. The zero-touch provisioning process has completed internally, behind FortiGate.
- D. FortiGate has obtained a configuration from the platform template in FortiGate cloud.
- E. A factory reset performed on FortiGate.

**Correct Answer: A, C** 

Section:

## **QUESTION 16**

Which two statements describe how IPsec phase 1 main mode is different from aggressive mode when performing IKE negotiation? (Choose two)

- A. A peer ID is included in the first packet from the initiator, along with suggested security policies.
- B. XAuth is enabled as an additional level of authentication, which requires a username and password.
- C. A total of six packets are exchanged between an initiator and a responder instead of three packets.
- D. The use of Diffie Hellman keys is limited by the responder and needs initiator acceptance.

Correct Answer: B, C

Section:

#### **QUESTION 17**

```
FortiGate # diagnose sys session list
session info: proto=1 proto_state=00 duration=25 expire=34 timeout=0 flags=00000000
socktype=0 sockport=0 av idx=0 use=3
origin-shaper=
reply-shaper=
per ip shaper-
class id=0 ha id=0 policy dir=0 tunnel=/ vlan cos=0/255
state=dirty may dirty
statistic(bytes/packets/allow err): org=84/1/1 reply=84/1/1 tuples=2
tx speed(Bps/kbps): 0/0 rx speed(Bps/kbps): 0/0
orgin->sink: org pre->post, reply pre->post dev=5->4/4->5 gwy=192.168.73.2/10.0.1.10
hook=post dir=org act=snat 10.0.1.10:2246->8.8.8.8:8(192.168.73.132:62662)
hook=pre dir=reply act=dnat 8.8.8.8:62662->192.168.73.132:0(10.0.1.10:2246)
misc=0 policy_id=1 auth info=0 chk_client_info=0 vd=0
serial=000000a2c tos=ff/ff app_list=0 app=0 url cat=0
rpdb link id= 80000000 rpdb svc id=0 ngfwid=n/a
npu state=0x040000
total session 1
```

Based on the exhibit, which statement about FortiGate re-evaluating traffic is true?

- A. The type of traffic defined and allowed on firewall policy ID 1 is UDP.
- B. FortiGate has terminated the session after a change on policy ID 1.
- C. Changes have been made on firewall policy ID 1 on FortiGate.
- D. Firewall policy ID 1 has source NAT disabled.

Correct Answer: C

Section:

# **QUESTION 18**

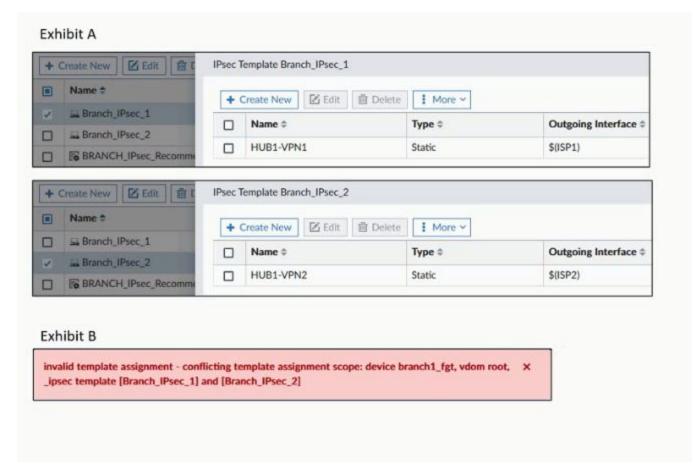


Exhibit A shows two IPsec templates to define Branch\_IPsec\_1 and Branch\_IPsec\_2. Each template defines a VPN tunnel. Exhibit B shows the error message that FortiManager displayed when the administrator tried to assign the second template to the FortiGate device. Which statement best explain the cause for this issue?

- A. You can assign only one template with a tunnel of fype static to each FortiGate device
- B. You can define only one IPsec tunnel from branch devices to HUB1.
- C. You can assign only one IPsec template to each FortiGate device.
- D. You should review the branch1 fgt configuration for the already configured tunnel with the name HUB1-VPN2.

## **Correct Answer: C**

#### Section:

## **Explanation:**

The error message in Exhibit B indicates a conflicting template assignment. This occurs because FortiManager does not allow the assignment of multiple IPsec templates that define VPN tunnels with the same name or settings to the same FortiGate device. The conflict arises from trying to assign a second IPsec template to a device that already has one assigned.

Reference: This is based on Fortinet's best practices and administrative guidelines which state that each FortiGate device should be assigned a unique IPsec template to avoid configuration conflicts.

## **QUESTION 19**

Which statement about using BGP for ADVPN is true?

- A. You must use BGP to route traffic for both overlay and underlay links.
- B. You must configure AS path prepending.
- C. You must configure BGP communities.
- D. IBGP is preferred over EBGP, because IBGP preserves next hop information.

## **Correct Answer: D**

Section:

#### **Explanation:**

ADVPN is a technology that allows dynamic creation of IPsec tunnels between branch sites without requiring pre-configured policies or keys. BGP is a routing protocol that can be used to exchange routes between ADVPN peers. IBGP is a type of BGP that runs between routers in the same autonomous system (AS), while EBGP is a type of BGP that runs between routers in different ASes. IBGP is preferred over EBGP for ADVPN, because IBGP preserves the next hop information of the routes, which is needed to establish the IPsec tunnels. EBGP changes the next hop information to the EBGP peer address, which may not be reachable by the ADVPN peers. Therefore, using IBGP for ADVPN avoids the need to configure additional static routes or redistribute routes between BGP and another routing protocol. Reference=ADVPN with BGP as the routing protocol, ADVPN, SD-WAN self-healing with BGP, Technical Tip: ADVPN with BGP as the routing protocol

The statement that IBGP is preferred over EBGP for ADVPN because IBGP preserves next hop information (D) is true. In a typical ADVPN deployment, it's beneficial to maintain next hop information across the network to ensure proper routing and optimal path selection.

Reference: This understanding comes from my knowledge of Fortinet's SD-WAN and ADVPN configurations, where BGP's behavior in terms of next hop preservation is a key consideration.

#### **QUESTION 20**

Which are three key routing principles in SD-WAN? (Choose three.)

- A. FortiGate performs route lookups for new sessions only.
- B. Regular policy routes have precedence over SD-WAN rules.
- C. SD-WAN rules have precedence over ISDB routes.
- D. By default, SD-WAN members are skipped if they do not have a valid route to the destination.
- E. By default, SD-WAN rules are skipped if the best route to the destination is not an SD-WAN member.

Correct Answer: B, D, E

Section: Explanation:

Study Guide 7.2, pages 125, 129, 151

## **QUESTION 21**

Refer to the exhibit.

```
session info: proto=6 proto state=11 duration=242 expire=3349 timeout=3600
flags=00000000 socktype=0 sockport=0 av idx=0 use=4
origin-shaper=
reply-shaper=
per ip shaper=
class id=0 ha id=0 policy dir=0 tunnel=/ vlan cos=0/255
state=log dirty may dirty ndr f00 app valid
statistic(bytes/packets/allow err): org=3421/20/1 reply=3777/17/1 tuples=3
tx speed(Bps/kbps): 0/0 rx speed(Bps/kbps): 0/0
orgin->sink: org pre->post, reply pre->post dev=7->3/3->7 gwy=0.0.0.0/0.0.0.0
hook=post dir=org act=snat 10.0.1.101:34676->128.66.0.1:22(192.2.0.1:34676)
hook=pre dir=reply act=dnat 128.66.0.1:22->192.2.0.1:34676(10.0.1.101:34676)
hook=post dir=reply act=noop 128.66.0.1:22->10.0.1.101:34676(0.0.0.0:0)
pos/(before, after) 0/(0,0), 0/(0,0)
misc=0 policy id=2 pol uuid idx=14721 auth info=0 chk client info=0 vd=0
serial=000032d9 tos=ff/ff app list=2000 app=16060 url cat=0
sdwan mbr seg=1 sdwan service id=2
rpdb link id=ff000002 rpdb svc id=0 ngfwid=n/a
npu state=0x001008
```

Which statement explains the output shown in the exhibit?

- A. FortiGate performed standard FIB routing on the session.
- B. FortiGate will not re-evaluate the session following a firewall policy change.

- C. FortiGate used 192.2.0.1 as the gateway for the original direction of the traffic.
- D. FortiGate must re-evaluate the session due to routing change.

**Correct Answer: D** 

Section:

# **Explanation:**

The snat-route-change option is enabled by default. This option enables FortiGate to re-evaluate the routing table and select a new egress interface if the next hop IP address changes. This option only applies to sessions in the dirty state. Sessions in the log state are not affected by routing changes.

## **QUESTION 22**

What are two common use cases for remote internet access (RIA)? (Choose two.)

- A. Provide direct internet access on spokes
- B. Provide internet access through the hub
- C. Centralize security inspection on the hub
- D. Provide thorough inspection on spokes

Correct Answer: B, C

Section:

# **Explanation:**

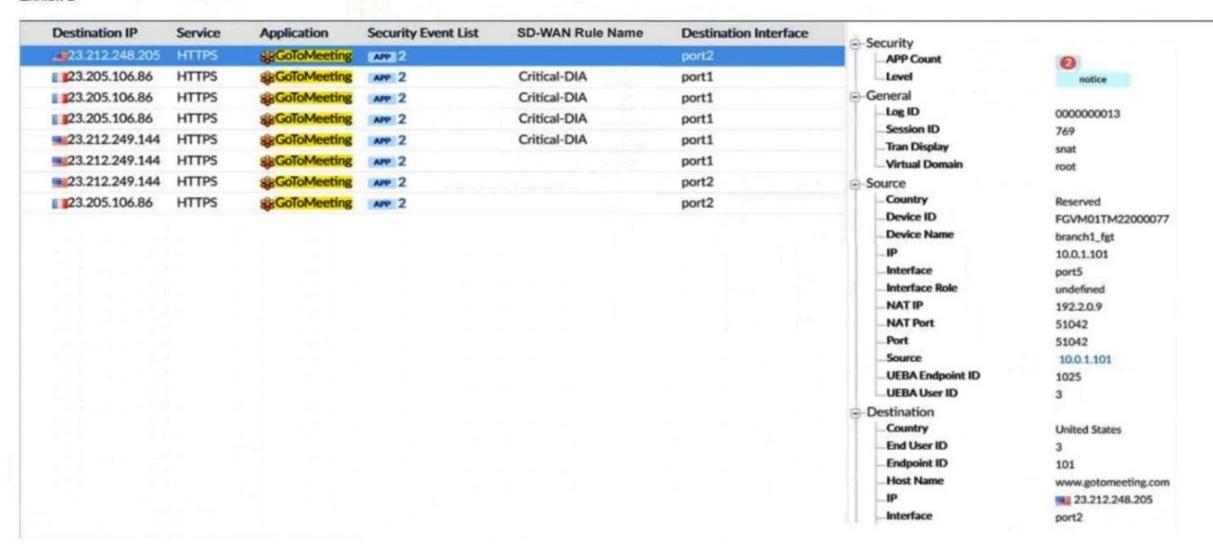
- B) Provide internet access through the hub: This involves routing branch or remote office internet traffic through a central hub, ensuring consistent security policies and possibly better management of network resources.
- C) Centralize security inspection on the hub: With this approach, all internet-bound traffic from various spokes is inspected at the hub, leveraging centralized security mechanisms for thorough inspection and policy enforcement.

## **QUESTION 23**

## Exhibit A

```
branchl fgt # diagnose sys sdwan service
Service(1): Address Mode(IPV4) flags=0x200 use-shortcut-sla
  Gen(8), TOS(0x0/0x0), Protocol(0: 1->65535), Mode(manual)
  Members (2):
   1: Seq_num(1 port1), alive, selected
    2: Seq num(2 port2), alive, selected
  Internet Service(3): GoToMeeting(4294836966,0,0,0 16354)
Microsoft.Office.365.Portal(4294837474,0,0,0 41468) Salesforce(4294837976,0,0,0 16920)
  Src address(1):
        10.0.1.0-10.0.1.255
Service(2): Address Mode(IPV4) flags=0x200 use-shortcut-sla
  Gen(7), TOS(0x0/0x0), Protocol(0: 1->65535), Mode(manual)
  Members (1):
    1: Seq_num(2 port2), alive, selected
  Internet Service(2): Facebook(4294836806,0,0,0 15832) Twitter(4294838278,0,0,0 16001)
  Src address(1):
        10.0.1.0-10.0.1.255
branch1 fgt # diagnose sys sdwan internet-service-app-ctrl-list
Facebook(15832 4294836806): 157.240.229.35 6 443 Tue Mar 8 12:24:04 2022
GoToMeeting(16354 4294836966): 23.205.106.86 6 443 Tue Mar 8 12:24:04 2022
GoToMeeting(16354 4294836966): 23.212.249.144 6 443 Tue Mar 8 12:24:39 2022
Salesforce (16920 4294837976): 23.212.249.11 6 443 Tue Mar 8 12:24:04 2022
branch1 fgt # get router info routing-table all
S*
        0.0.0.0/0 [1/0] via 192.2.0.2, port1
                  [1/0] via 192.2.0.10, port2
...
```

#### Exhibit B



An administrator is testing application steering in SD-WAN. Before generating test traffic, the administrator collected the information shown in exhibit A.

After generating GoToMeeting test traffic, the administrator examined the respective traffic log on FortiAnalyzer, which is shown in exhibit B. The administrator noticed that the traffic matched the implicit SD-WAN rule, but they expected the traffic to match rule ID 1.

Which two reasons explain why the traffic matched the implicit SD-WAN rule? (Choose two.)

- A. FortiGate did not refresh the routing information on the session after the application was detected.
- B. Port1 and port2 do not have a valid route to the destination.
- C. Full SSL inspection is not enabled on the matching firewall policy.
- D. The session 3-tuple did not match any of the existing entries in the ISDB application cache.

Correct Answer: A, D

Section:

**Explanation:** 

Study guide 7.2 Page 191

## **QUESTION 24**

```
config system sdwan
    set status enable
    set load-balance source-dest-ip-based
    config zone
        edit "virtual-wan-link"
        next
        edit "SASE"
        next
        edit "underlay"
        next
    end
    config members
        edit 1
            set interface "port1"
            set zone "underlay"
            set gateway 192.2.0.2
        next
        edit 2
            set interface "port2"
            set zone "underlay"
            set gateway 192.2.0.10
        next
    end
end
```

Which algorithm does SD-WAN use to distribute traffic that does not match any of the SD-WAN rules?

- A. All traffic from a source IP to a destination IP is sent to the same interface.
- B. All traffic from a source IP is sent to the same interface.
- C. All traffic from a source IP is sent to the most used interface.
- D. All traffic from a source IP to a destination IP is sent to the least used interface.

## **Correct Answer: A**

Section:

## **Explanation:**

Study Guide 7.2, page 176.

# **QUESTION 25**

Refer to the exhibits.

Exhibit A

```
config system sdwan
    config health-check
        edit "Passive"
            set detect-mode passive
            set members 3 4
        next
    end
end
config system sdwan
    config service
        edit 1
            set name "Facebook-YouTube"
            set src "all"
           set internet-service enable
            set internet-service-app-ctrl 15832 31077
           set health-check "Passive"
            set priority-member 3 4
           set passive-measurement enable
        next
    end
end
branch1_fgt # get application name status | grep "id: 15832" -B1
app-name: "Facebook"
id: 15832
branch1_fgt # get application name status | grep "id: 31077" -B1
app-name: "YouTube"
id: 31077
```

Exhibit B

```
config firewall policy
    edit 1
        set name "DIA"
        set uuid b973e4ec-5f90-51ec-cadb-017c830d9418
        set srcintf "port5"
        set dstintf "underlay"
        set action accept
        set srcaddr "LAN-net"
        set dstaddr "all"
        set schedule "always"
        set service "ALL"
        set passive-wan-health-measurement enable
        set utm-status enable
        set ssl-ssh-profile "certificate-inspection"
        set application-list "default"
        set logtraffic all
        set auto-asic-offload disable
        set nat enable
    next
end
branch1 fgt # diagnose sys sdwan zone | grep underlay -A1
Zone underlay index=3
         members(2): 3(port1) 4(port2)
```

Exhibit A shows the SD-WAN performance SLA configuration, the SD-WAN rule configuration, and the application IDs of Facebook and YouTube. Exhibit B shows the firewall policy configuration and the underlay zone status. Based on the exhibits, which two statements are correct about the health and performance of port1 and port2? (Choose two.)

- A. The performance is an average of the metrics measured for Facebook and YouTube traffic passing through the member.
- B. FortiGate is unable to measure jitter and packet loss on Facebook and YouTube traffic.
- C. FortiGate identifies the member as dead when there is no Facebook and YouTube traffic passing through the member.
- D. Non-TCP Facebook and YouTube traffic are not used for performance measurement.

Correct Answer: A, D

Section:

**Explanation:** 

Study Guide 7.2, pages 103 - 104. Another comment said 'because without using application Control on the firewall policy, SDWAN can't work' but there is a app control 'default' defined on config.

# **QUESTION 26**

## Exhibit A

```
fgt # show vpn ipsec phasel-interface T_INET 1
config vpn ipsec phasel-interface
       edit "T_INET_1"
           set type dynamic
           set interface "port2"
           set ike-version 2
           set keylife 28800
           set peertype any
           set net-device disable
           set proposal aes128-sha256
           set add-route disable
           set auto-discovery-sender enable
           set psksecret ENC MXtFGKOxLV+x4p3e9Xq2HGJoU+Q0gg5YMqiXb2T73fZpSXS/
           jv9oshWeQiNEjOJEtuqqD8mAw7G2ZLT1sR3/ihAaAY4tvjveS+9CuTnO0J2tuddoM9
           uz4vaBTNbNrh3/KhbJytsCag==
       next
end
```

#### Exhibit B

```
fgt # diag vpn tunnel list name T INET 1 0
list ipsec tunnel by names in vd 0
name=T_INET_1_0 ver=2 serial=a 100.64.1.9:0->192.2.0.9:0 tun id=192.2.0.9 tun id6=::10.0.0.10
dst_mtu=0 dpd-link=on weight=1
bound if=4 lgwy=static/1 tun=intf mode=dial inst/3 encap=none/74408 options[122a8]=npu rgwy-chg
frag-rfc run_state=0 role=primary acc
ept traffic=1 overlay id=0
parent=T INET 1 index=0
proxyid num=1 child num=0 refcnt=6 ilast=0 olast=42955943 ad=/0
stat: rxp=32 txp=0 rxb=1280 txb=0
dpd: mode=on-demand on=1 idle=20000ms retry=3 count=0 seqno=0
natt: mode=none draft=0 interval=0 remote port=0
fec: egress=0 ingress=0
proxyid=T_INET_1_0 proto=0 sa=1 ref=2 serial=1
src: 0:0.0.0.0-255.255.255.255:0
dst: 0:10.0.1.0-10.0.1.255:0
SA: ref=3 options=20603 type=00 soft=0 mtu=1280 expire=1774/0B replaywin=2048
seqno=1 esn=0 replaywin_lastseq=00000021 qat=0 rekey=0 hash_search_len=1
life: type=01 bytes=0/0 timeout=1791/1800
dec: spi=7c176e24 esp=aes key=16 8547efb42d148c6692fb2af0d01ff12d
ah=sha1 key=20 f0d3ac8192d2e79fbbe29162f9ccf406f1a161b5
enc: spi=809f9d49 esp=aes key=16 cb67f6d5f6alf9fe5ab38b953dd4782f
ah=sha1 key=20 d0182dfe827a4785d9493d46e3907d49465391fb
dec:pkts/bytes=64/2560, enc:pkts/bytes=0/0
npu flag=00 npu rgwy=192.2.0.9 npu lgwy=100.64.1.9 npu selid=6 dec npuid=0 enc npuid=0
```

Which two statements about the IPsec VPN configuration and the status of the IPsec VPN tunnel are true? (Choose two.)

- A. FortiGate does not install IPsec static routes for remote protected networks in the routing table. Most Voted
- B. The phase 1 configuration supports the network-overlay setting. Most Voted
- C. FortiGate facilitated the negotiation of the T\_INET\_1\_0\_0 ADVPN shortcut over T\_INET\_1\_0.
- D. Dead peer detection is disabled.

Correct Answer: A, B Section:

### **QUESTION 27**

two.)		

## Exhibit A

```
branch1 fgt # diagnose sys sdwan service 1
Service(1): Address Mode(IPV4) flags=0x200 use-shortcut-sla
 Gen(8), TOS(0x0/0x0), Protocol(0: 1->65535), Mode(manual)
  Service disabled caused by no destination.
 Members(2):
  1: Seg num(4 T INET 1 0), alive, selected
   2: Seq_num(5 T_MPLS_0), alive, selected
 Src address(1):
       10.0.1.0-10.0.1.255
branch1 fgt # get router info bgp community 65000:10
VRF 0 BGP table version is 3, local router ID is 10.0.1.1
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
             S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete
  Network
                                      Metric LocPrf Weight RouteTag Path
                   Next Hop
*>i10.1.0.0/24
                   10.202.1.254
                                        0 100 0 1 i <-/1>
* i
                   10.203.1.254
                                           0 100
                                                        0 1 i <-/->
Total number of prefixes 1
```

#### Exhibit B

```
branch1 igt (1) # show
config service
   edit 1
       set name "Corp"
       set route-tag 10
       set src "LAN-net"
       set priority-zone "overlay"
   next
end
config router bgp
    config neighbor
       edit "10.202.1.254"
           set soft-reconfiguration enable
           set interface "T_INET_1_0"
           set remote-as 65000
           set route-map-in "dc1-lan-rm"
           set update-source "T_INET_1_0"
       next
       edit "10.203.1.254"
            set soft-reconfiguration enable
            set interface "T MPLS 0"
           set remote-as 65000
           set route-map-in "dc1-lan-rm"
           set update-source "T_MPLS_0"
        next
    end
config router route-map
    edit "dc1-lan-rm"
       config rule
            edit 1
               set match-community "dc1-lan-c1"
               set set-route-tag 1
           next
        end
    next
end
```

Exhibit A shows the SD-WAN rule status and the learned BGP routes with community 65000:10.

Exhibit B shows the SD-WAN rule configuration, the BGP neighbor configuration, and the route map configuration.

The administrator wants to steer corporate traffic using routes tags in the SD-WAN rule ID 1.

However, the administrator observes that the corporate traffic does not match the SD-WAN rule ID 1.

Based on the exhibits, which configuration change is required to fix issue?

- A. In the dcl-lab-rm route map configuration, set set-route-tag to 10.
- B. In SD-WAN rule ID 1, change the destination to use ISDB entries.
- C. In the BGP neighbor configuration, apply the route map dcl-lab-rm in the outbound direction.
- D. In the dcl-lab-rm route map configuration, unset match-community.

## **Correct Answer: C**

Section:

## **QUESTION 28**

What are two advantages of using an IPsec recommended template to configure an IPsec tunnel in a hub-and-spoke topology? (Choose two.)

- A. VPN monitor tool provides additional statistics for tunnels defined with an IPsec recommended template.
- B. FortiManager automatically installs IPsec tunnels to every spoke when they are added to the FortiManager ADOM.
- C. IPsec recommended template guides the administrator to use Fortinet recommended settings.
- D. IPsec recommended template ensures consistent settings between phase1 and phase2

## Correct Answer: B, C

Section:

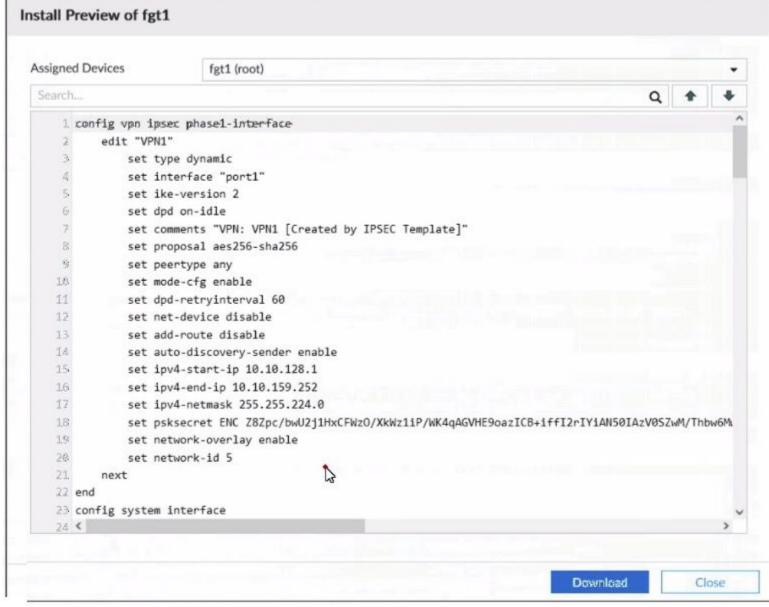
#### **Explanation:**

According to the SD-WAN 7.2 Study Guide, IPsec recommended templates are designed to simplify the configuration of IPsec tunnels in a hub-and-spoke topology. They have the following advantages:

FortiManager automatically installs IPsec tunnels to every spoke when they are added to the FortiManager ADOM. This reduces the manual effort and ensures that all spokes have the same configuration.

IPsec recommended template guides the administrator to use Fortinet recommended settings, such as encryption algorithms, key lifetimes, and dead peer detection. This ensures optimal performance and security of the IPsec tunnels.

# **QUESTION 29**Refer to the exhibit.



An administrator used the SD-WAN overlay template to prepare an IPsec configuration for a hub-and-spoke SD-WAN topology. The exhibit shows the installation preview for one FortiGate device. In the exhibit, which statement best describes the configuration applied to the FortiGate device?

- A. It is a hub device. It can send ADVPN shortcut offers.
- B. It is a spoke device that establishes dynamic IPsec tunnels to the hub. The subnet range is 10.10.128.0/23.
- C. It is a spoke device that establishes dynamic IPsec tunnels to the hub. It can send ADVPN shortcut requests.
- D. It is a hub device and will automatically discover the spoke devices that are in the SD-WAN topology.

#### **Correct Answer: C**

Section:

## **Explanation:**

According to the SD-WAN 7.2 Study Guide, the SD-WAN overlay template simplifies the configuration of IPsec tunnels in a hub-and-spoke topology. The template defines the following parameters:

type: dynamic for spokes, static for hubs

interface: the WAN interface to use for the IPsec tunnel network-overlay: enable for spokes, disable for hubs

network-id: a unique identifier for each spoke

auto-discovery-sender: enable for hubs, disable for spokes auto-discovery-receiver: enable for spokes, disable for hubs

Based on the exhibit, the FortiGate device has the following configuration:

type: dynamic interface: port1

network-overlay: enable

network-id: 5

auto-discovery-sender: disable auto-discovery-receiver: enable

Therefore, the FortiGate device is a spoke that establishes dynamic IPsec tunnels to the hub.It also has the network-overlay and auto-discovery-receiver options enabled, which means it can send ADVPN shortcut requests to other spokes when it receives a shortcut offer from the hub

## **QUESTION 30**

Which three matching traffic criteria are available in SD-WAN rules? (Choose three.)

- A. Type of physical link connection
- B. Internet service database (ISDB) address object
- C. Source and destination IP address
- D. URL categories
- E. Application signatures

#### Correct Answer: A, B, E

Section:

## **QUESTION 31**

Which two interfaces are considered overlay links? (Choose two.)

- A. LAG
- B. IPsec
- C. Physical
- D. GRE

Correct Answer: B, D

Section:

# **QUESTION 32**

Which SD-WAN setting enables FortiGate to delay the recovery of ADVPN shortcuts?

- A. hold-down-time
- B. link-down-failover
- C. auto-discovery-shortcuts
- D. idle-timeout

# **Correct Answer: A**

Section:

# **QUESTION 33**

Refer to the exhibits.

Exhibit A -

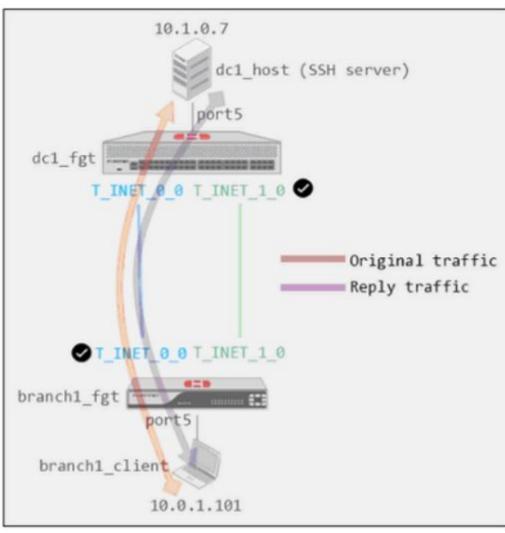


Exhibit B -

```
dcl_fgt # show system global
    set admin-https-redirect disable
    set admintimeout 480
    set alias "FortiGate-VM64"
    set hostname "dcl_fgt"
    set timezone 04
end

dcl_fgt # show system settings
    config system settings
    set tcp-session-without-syn enable
    set allow-subnet-overlap enable
    set gui-allow-unnamed-policy enable
    set gui-multiple-interface-policy enable
end
```

Exhibit A shows a site-to-site topology between two FortiGate devices: branch1\_fgt and dc1\_fgt. Exhibit B shows the system global and system settings configuration on dc1\_fgt.

When branch1\_client establishes a connection to dc1\_host, the administrator observes that, on dc1\_fgt, the reply traffic is routed over T\_INET\_0\_0, even though T\_INET\_1\_0 is the preferred member in the matching SD-WAN rule.

Based on the information shown in the exhibits, what configuration change must be made on dc1\_fgt so dc1\_fgt routes the reply traffic over T\_INET\_1\_0?

- A. Enable auxiliary-session under config system settings.
- B. Disable tp-session-without-syn under config system settings.
- C. Enable snat-route-change under config system global.
- D. Disable allow-subnet-overlap under config system settings.

Correct Answer: B Section:

## **QUESTION 34**

```
branch1 fgt # diagnose sys sdwan service 3
Service(3): Address Mode(IPV4) flags=0x200 use-shortcut-sla
  Gen(2), TOS(0x0/0x0), Protocol(0: 1->65535), Mode(priority), link-cost-factor(packet-
loss), link-cost-threshold(0), heath-check(VPN PING)
 Members (3):
   1: Seq num(3 T INET 0 0), alive, packet loss: 2.000%, selected
   2: Seq num(4 T MPLS 0), alive, packet loss: 4.000%, selected
    3: Seq num (5 T INET 1 0), alive, packet loss: 12.000%, selected
  Src address(1):
        10.0.1.0-10.0.1.255
  Dst address(1):
        10.0.0.0-10.255.255.255
branch1 fgt (3) # show
config service
    edit 3
        set name "Corp"
        set mode priority
        set dst "Corp-net"
        set src "LAN-net"
        set health-check "VPN PING"
        set link-cost-factor packet-loss
        set link-cost-threshold 0
        set priority-members 5 3 4
    next
end
```

The exhibit shows the SD-WAN rule status and configuration.

Based on the exhibit, which change in the measured packet loss will make T\_INET\_1\_0 the new preferred member?

- A. When all three members have the same packet loss.
- B. When T INET 0 0 has 4% packet loss.
- C. When T\_INET\_0\_0 has 12% packet loss.
- D. When T\_INET\_1\_0 has 4% packet loss.

## **Correct Answer: A**

Section:

## **QUESTION 35**

What are two benefits of using the Internet service database (ISDB) in an SD-WAN rule? (Choose two.)

- A. The ISDB is dynamically updated and reduces administrative overhead.
- B. The ISDB requires application control to maintain signatures and perform load balancing.
- C. The ISDB applies rules to traffic from specific sources, based on application type.
- D. The ISDB contains the IP addresses and port ranges of well-known internet services.

Correct Answer: A, D

Section:

#### **QUESTION 36**

Which statement about SD-WAN zones is true?

- A. An SD-WAN zone can contain only one type of interface.
- B. An SD-WAN zone can contain between 0 and 512 members.
- C. You cannot use an SD-WAN zone in static route definitions.
- D. You can configure up to 32 SD-WAN zones per VDOM.

**Correct Answer: D** 

Section:

## **Explanation:**

SD-WAN zones are a group of interfaces that share the same SD-WAN settings, such as health check, SLA, and load balancing. Some characteristics of SD-WAN zones are:

An SD-WAN zone can contain different types of interfaces, such as physical, VLAN, aggregate, and tunnel interfaces1.

An SD-WAN zone can contain up to 512 members1.

You can use an SD-WAN zone in static route definitions, as long as the destination interface is also an SD-WAN zone1.

You can configure up to 32 SD-WAN zones per VDOM1.

#### **QUESTION 37**

Which two statements about the SD-WAN zone configuration are true? (Choose two.)

- A. The service-sla-tie-break setting enables you to configure preferred member selection based on the best route to the destination.
- B. You can delete the default zones.
- C. The default zones are virtual-wan-link and SASE.
- D. An SD-WAN member can belong to two or more zones.

#### Correct Answer: A, C

Section:

#### **QUESTION 38**

Exhibit.

```
# diagnose sys sdwan health-check status

Health Check(Level3_DNS):
Seq(1 port1): state(alive), packet-loss(0.000%) latency(22.129), jitter(0.201), mos(4.393), bandwidth-up(10235), bandwidth-dw(10235), bandwidth-bi(20470) sla_map=0x0
Seq(2_ort2): state(alive), packet-loss(7.000%) latency(42.394), jitter(0.912), mos(4.378), bandwidth-up(10236), bandwidth-dw(10237), bandwidth-bi(20473) sla_map=0x0
Health Check(VPN_PING):
Seq(5 T_MPLS): state(alive), packet-loss(0.000%) latency(131.336), jitter(0.199), mos(4.330), bandwidth-up(9999999), bandwidth-dw(9999999), bandwidth-bi(19999998) sla_map=0x2
Seq(4 T_INET_1): state(alive), packet-loss(11.000%) latency(1.465), jitter(0.226), mos(4.398), bandwidth-up(10239), bandwidth-dw(10239), bandwidth-bi(20478) sla_map=0x1
Seq(3 T_INET_0): state(alive), packet-loss(0.000%) latency(1.440), jitter(0.245), mos(4.403), bandwidth-up(10239), bandwidth-dw(10239), bandwidth-bi(20478) sla_map=0x3
```

The exhibit shows the output of the command diagnose sys sdwan health-check status collected on a FortiGate device. Which two statements are correct about the health check status on this FortiGate device? (Choose two.)

A. The health-check VPN PING orders the members according to the lowest jitter.

- B. The interface T\_INET\_1 missed one SLA target.
- C. There is no SLA criteria configured for the health-check Level3 DNS.
- D. The interface T INET 0 missed three SLA targets.

## Correct Answer: A, C

Section:

## **Explanation:**

According to the FortiOS 6.4.2 Administration Guide, the health check status command displays the status of the health check probes for each SD-WAN member interface. The output includes the following information:

state: the current state of the interface, either alive or dead

packet-loss: the percentage of packets lost during the health check

latency: the average round-trip time in milliseconds

jitter: the variation in latency

mos: the mean opinion score, a measure of voice quality

bandwidth: the available bandwidth in kilobits per second for each direction (up, down, bi)

sla map: a bitmap that indicates which SLA criteria are met or failed

Based on the exhibit, the following statements are correct:

The health-check VPN\_PING orders the members according to the lowest jitter. This means that the interface with the lowest jitter value is listed first, followed by the next lowest, and so on 1. In the exhibit, the order is T MPLS, T INET 1, and T INET 0.

There is no SLA criteria configured for the health-check Level3\_DNS. This means that the health check does not use any SLA parameters to determine the state of the interface 2. In the exhibit, the sla map value is 0x0 for both port1 and port2, indicating that no SLA criteria are applied.

#### **QUESTION 39**

Refer to the exhibits.

Exhibit A

```
branch1 fgt (3) # show
config service
    edit 3
        set name "Corp"
        set mode sla
        set dst "Corp-net"
        set src "LAN-net"
        config sla
            edit "VPN PING"
                    set id 1
            next
            edit "VPN HTTP"
                    set id 1
            next
        end
        set priority-members 3 4 5
        set gateway enable
    next
end
```

Exhibit B -

```
branch1 fgt # diagnose sys sdwan service 3
Service(3): Address Mode(IPV4) flags=0x200 use-shortcut-sla
  Gen(1), TOS(0x0/0x0), Protocol(0: 1->65535), Mode(sla), sla-compare-order
  Members (2):
   1: Seq num(5 T MPLS 0), alive, sla(0x3), gid(0), cfg order(2), cost(0), selected
    2: Seg num(4 T INET 1 0), alive, sla(0x1), gid(0), cfg order(1), cost(0), selected
    3: Seg num(3 T INET 0 0), alive, sla(0x0), gid(0), cfg order(0), cost(0), selected
  Src address(1):
        10.0.1.0-10.0.1.255
  Dst address(1):
        10.0.0.0-10.255.255.255
branch1 fgt # get router info routing-table all | grep T
       10.0.0.0/8 [1/0] via T INET 0 0 tunnel 100.64.1.1
                   [1/0] via T INET 1 0 tunnel 100.64.1.9
S
        10.201.1.254/32 [15/0] via T INET 0 0 tunnel 100.64.1.1
        10.202.1.254/32 [15/0] via T INET 1 0 tunnel 100.64.1.9
S
        10.203.1.254/32 [15/0] via T MPLS 0 tunnel 172.16.1.5
branch1 fgt # diagnose sys sdwan member | grep T
Member(3): interface: T INET 0 0, flags=0x4 , gateway: 100.64.1.1, peer: 10.201.1.254,
priority: 0 1024, weight: 0
Member(4): interface: T INET 1 0, flags=0x4 , gateway: 100.64.1.9, peer: 10.202.1.254,
priority: 0 1024, weight: 0
Member(5): interface: T MPLS 0, flags=0x4 , gateway: 172.16.1.5, peer: 10.203.1.254,
priority: 0 1024, weight: 0
```

Exhibit A shows the configuration for an SD-WAN rule and exhibit B shows the respective rule status, the routing table, and the member status. The administrator wants to understand the expected behavior for traffic matching the SD-WAN rule.

Based on the exhibits, what can the administrator expect for traffic matching the SD-WAN rule?

- A. The traffic will be load balanced across all three overlays.
- B. The traffic will be routed over T INET 0 0.
- C. The traffic will be routed over T MPLS 0.
- D. The traffic will be routed over T\_INET\_1\_0.

Correct Answer: D
Section:

#### **OUESTION 40**

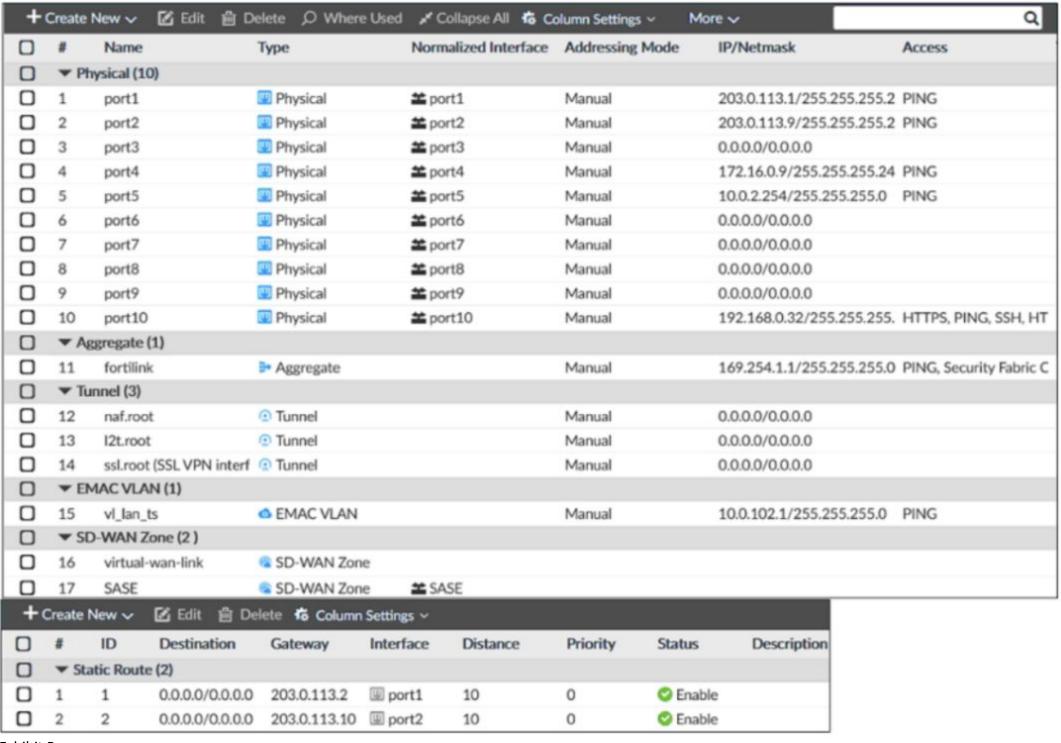


Exhibit B --

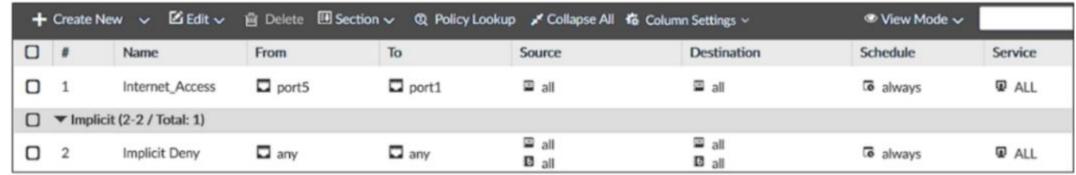


Exhibit A shows the system interface with the static routes and exhibit B shows the firewall policies on the managed FortiGate.

Based on the FortiGate configuration shown in the exhibits, what issue might you encounter when creating an SD-WAN zone for port1 and port2?

- A. port1 is assigned a manual IP address.
- B. port1 is referenced in a firewall policy.
- C. port2 is referenced in a static route.
- D. port1 and port2 are not administratively down.

## **Correct Answer: B**

Section:

# **QUESTION 41**

Which two settings can you configure to speed up routing convergence in BGP? (Choose two.)

- A. update-source
- B. set-route-tag
- C. holdtime-timer
- D. link-down-failover

# Correct Answer: C, D

Section:

## **QUESTION 42**

## Exhibit A

```
config duplication
        edit 1
            set srcaddr "10.0.1.0/24"
            set dstaddr "10.1.0.0/24"
            set srcintf "port5"
            set dstintf "overlay"
            set service "ALL"
            set packet-duplication force
        next
    end
branch1 fgt # diagnose sys sdwan zone
Zone SASE index=2
         members (0):
Zone overlay index=4
         members (3): 19 (T INET 0 0) 20 (T INET 1 0) 21 (T MPLS 0)
Zone underlay index=3
         members (2): 3 (port1) 4 (port2)
Zone virtual-wan-link index=1
         members (0):
1.274665 port5 in 10.0.1.101 -> 10.1.0.7: icmp: echo request
1.275788 T INET 0 0 out 10.0.1.101 -> 10.1.0.7: icmp: echo request
1.275790 T_INET_1 0 out 10.0.1.101 -> 10.1.0.7: icmp: echo request
1.275801 T MPLS 0 out 10.0.1.101 -> 10.1.0.7: icmp: echo request
1.278365 T INET 1 0 in 10.1.0.7 -> 10.0.1.101: icmp: echo reply
1.278553 port5 out 10.1.0.7 -> 10.0.1.101: icmp: echo reply
```

## Exhibit B

```
3.874431 T_INET_1_0 in 10.0.1.101 -> 10.1.0.7: icmp: echo request
3.874630 port5 out 10.0.1.101 -> 10.1.0.7: icmp: echo request
3.874895 T_INET_0_0 in 10.0.1.101 -> 10.1.0.7: icmp: echo request
3.875125 T_MPLS_0 in 10.0.1.101 -> 10.1.0.7: icmp: echo request
3.875054 port5 in 10.1.0.7 -> 10.0.1.101: icmp: echo reply
3.875308 T_INET_1_0 out 10.1.0.7 -> 10.0.1.101: icmp: echo reply
```

Exhibit A shows the packet duplication rule configuration, the SD-WAN zone status output, and the sniffer output on FortiGate acting as the sender. Exhibit B shows the sniffer output on a FortiGate acting as the receiver. The administrator configured packet duplication on both FortiGate devices. The sniffer output on the sender FortiGate shows that FortiGate forwards an ICMP echo request packet over three overlays, but it only receives one reply packet through T\_INET\_1\_0.

Based on the output shown in the exhibits, which two reasons can cause the observed behavior? (Choose two.)

- A. On the receiver FortiGate, packet-de-duplication is enabled.
- B. The ICMP echo request packets sent over T\_INET\_0\_0 and T\_MPLS\_0 were dropped along the way.
- C. The ICMP echo request packets received over T INET 0 0 and T MPLS 0 were offloaded to NPU.
- D. On the sender FortiGate, duplication-max-num is set to 3.

Correct Answer: A, D

Section: