

PREPARED BY KHATTAK FROM 'NETWORKTUT'

www.networktut.com

There are total 15 TTs. You will have 13 TTs in Exam.

ASW1 = 3 TTs

DWS1 = 3 TTs

R4 = 4 TTs

R2 = 1 TT

R1 = 4 TTs

ASW1

Port Security

Access Vlan

Switch to Switch Connectivity/Port channel

DSW1

IP Helper Address *(rare chances, no IP Helper Address TT in my exam)*

HSRP

Vlan Filter / Vlan Access Map

R4

DHCP Excluded Address (IP DHCP Server)

EIGRP Passive Interface (IPv4 EIGRP Routing)

EIGRP to OSPF Redistribution (IPv4 Route Redistribution)

EIGRP Wrong AS No *(rare chances, no EIGRP Wrong AS No TT in my exam)*

R2

IPv6 OSPF (OSPFv3)

R1

BGP Wrong Neighbours IP

BGP Network Address is missing in the IP Access List (IPv4 Layer3 Security)

10.2.x.x is missing in the NAT ACL

OSPF Authentication message-digest is missing in interface S0/0/0/0.12 (IPv4 OSPF Routing)

If Client 1 IP is 169.x.x.x or no IP, u have 5 TTs (ASW1 = 3TTs, DWS 1= 1TT, R4 = 1TT)

- Port Security - ASW1
- Access Vlan - ASW1
- Switch to Switch Connectivity/Port channel - ASW1
- IP Helper Address - DSW1 *(rare chances, no IP Helper Address TT in my exam)*
- DHCP Excluded Address - R4

If Client 1 IP is 10.x.x.x, u have 2 options:

Option 1:

If client can ping 10.1.1.1 or 10.1.1.2, u have 4TTs (All TTs are on R1)

If client can ping 10.1.1.1 or 10.1.1.2 then 3 TTs

- BGP Wrong Neighbours IP - R1
- BGP Network Address is missing in the IP Access List (IPv4 Layer3 Security) – R1
- 10.2.x.x is missing in the NAT ACL - R1

If client can't ping 10.1.1.1 but can ping 10.1.1.2 then 1 TT

- OSPF Authentication message-digest is missing in interface S0/0/0/0.12 (IPv4 OSPF Routing) - R1

Option 2:

If client can't ping 10.1.1.1 or 10.1.1.2, u have 4 TTs (DSW1 = 1 TT, R4 = 3TTs)

- Vlan Filter / Vlan Access Map - DWS 1
- EIGRP Passive Interface (IPv4 EIGRP Routing) - R4
- EIGRP to OPSF Redistribution (Route Redistribution) - R4
- EIGRP Wrong AS No - R4 *(rare chances, no EIGRP Wrong AS No TT in my exam)*

The rest 2 TT's are;

- HSRP - DWS 1
- IPV6 OSPF (OSPFv3) - R2

TTs Details.

If Client 1 IP is 169.x.x.x , u have 5 TTs (ASW1 = 3TTs, DWS 1= 1TT, R4 = 1TT)

Port Security – ASW1

If Client IP is 169.x.x.x then check ASW1 interface fa1/0/1 port security. There will be port security on interface fa1/0/1 (switchport port-security mac-address 0000.0000.0001).

Note: issue 'sh interfaces fa1/0/1' command on ASW1 and check fa1/0/1 status 'FastEthernet1/0/1 is down, line protocol is down (err-disabled)'

Configuration of ASW1

```
interface fa1/0/1
switchport mode access
switchport port-security
switchport port-security mac-address 0000.0000.0001
```

Ans1) ASW1

Ans2) Port security

Ans3) Issue no switchport port-security mac-address 0000.0000.0001 command followed by shutdown and no shutdown commands on port fa1/0/1 on ASW1

Access Vlan – ASW1

If Client IP is 169.x.x.x then check ASW1 interface fa1/0/1 port security. If there is no port security then check interface fa1/0/1 and fa1/0/2 are members of Vlan 10. In this TT, the Interface fa1/0/1 and fa1/0/2 are not members of Vlan 10.

Note: Client 1 & 2 are not able to ping each other.

Configuration of ASW1

```
interface FastEthernet1/0/1
switchport mode access
switchport access vlan 10          this statement is missing here
spanning-tree portfast
!
interface FastEthernet1/0/2
switchport mode access
switchport access vlan 10          this statement is missing here
spanning-tree portfast
```

Ans1) ASW1

Ans2) Access Vlan

Ans3) In configuration mode, using interface range FastEthernet1/0/1 – 2, then 'switchport access vlan 10' command

or

Issue 'switchport access vlan 10' command on interface fa1/0/1 and fa1/0/2 on ASW1

Switch to Switch Connectivity/Port channel – ASW1

If Client IP is 169.x.x.x and there is no port security on ASW1 interface fa1/0/1 and ASW1 interface fa1/0/1 and fa1/0/2 are members of Vlan 10. Check that Vlan10 is allowed on ASW1 interface PortChannel 13 and PortChannel 23. It will be (switchport trunk allowed vlan 1-9).

Note: Client 1 & 2 will be able to ping each other.

Configuration of ASW1

```
interface PortChannel 13
switchport mode trunk
switchport trunk allowed vlan 1-9
!
interface PortChannel 23
switchport mode trunk
switchport trunk allowed vlan 1-9
```

Ans1) ASW1

Ans2) Switch to switch Connectivity

Ans3) Issue 'switchport trunk allowed vlan 10,200' on Interface portchannel13 and portchannel 23 on ASW1

IP Helper Address – DSW1

If Client IP is 169.x.x.x and configurations on ASW1 are Ok. Check Vlan 10 configuration on DSW1 and confirm IP Helper address, R4 fa0/0 IP (ip helper-address 10.1.4.5). In this TT, there will be incorrect ip helper address.

Configuration of DSW1

```
interface Vlan10
ip address 10.2.1.1 255.255.255.0
ip helper-address 10.1.4.5
standby 10 ip 10.2.1.254
standby 10 priority 150
standby 10 preempt
standby 10 track 10 decrement 60
```

verify this correct statement here

Ans1) DSW1

Ans2)

Ans3)

Note: there are rare chances of this TT. In this TT, the *wrong ip helper address* will be mentioned. If there is no ip helper address mentioned then be careful. Don't go for this TT if ip helper address is missing.

DHCP Excluded Address – R4

If Client IP is 169.x.x.x and configurations on ASW1 and DSW1 are Ok then check DHCP excluded address statement on R4. It will be (`ip dhcp exclude 10.2.1.1-10.2.1.253`).

Configuration of R4

```
!  
ip dhcp exclude 10.2.1.1-10.2.1.253  
!
```

Ans1) R4

Ans2) DHCP or IP DHCP Server

Ans3) on R4 delete `ip dhcp exclude 10.2.1.1-10.2.1.253` and apply `ip dhcp-excluded 10.2.1.1-10.2.1.2`

If Client 1 IP is 10.x.x.x, u have 2 options:

Option 1:

If client can ping 10.1.1.1 or 10.1.1.2, u have 4TTs (All TTs are on R1)

BGP Wrong Neighbour IP – R1

Note: Client 1 can ping 209.65.200.226.

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241). If ping to 10.1.1.1 is Ok then ping 209.65.200.226. If ping is Ok then check R1 BGP neighbour IP configuration. There will be (`neighbor 209.56.200.226 remote-as 65002`).

Configuration on R1

```
router bgp 65001  
no synchronization  
bgp log-neighbor-changes  
network 209.65.200.224 mask 255.255.255.252  
neighbor 209.56.200.226 remote-as 65002  
no auto-summary
```

Ans1) R1

Ans2) BGP

Ans3) Under the BGP process, delete the 'neighbor 209.56.200.226 remote-as 65002' command and enter 'neighbor 209.65.200.226 remote-as 65002'

or

Change neighbour 209.56.200.226 remote-as 65002 statement to neighbor 209.65.200.226 remote-as 65002'

BGP Network Address is missing in the IP ACL (IPv4 Layer3 Security) – R1

Note: Even R1 is also not able to ping webserver.

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241). If ping to 10.1.1.1 is Ok then ping 209.65.200.226. If ping is not Ok then check if DWS1 can ping 209.65.200.226 or 209.65.200.241. If ping from DSW1 is not ok check that R1 can ping 209.65.200.241. If ping from R1 is also not ok then check R1 ACL for missing permit statement (`permit 209.65.200.224 0.0.0.3 any`).

Configuration on R1

```
!  
access-list 30 permit 209.65.200.224 0.0.0.3 any  
access-list 30 permit host 209.65.200.241  
access-list 30 deny 10.1.0.0 0.0.255.255  
access-list 30 deny 10.2.0.0 0.0.255.255  
!
```

Ans1) R1

Ans2) IP Access list

Ans3) Add permit statement for 209.65.200.224/30 network in access-list 30

10.2.x.x is missing in the NAT ACL – R1

Note: Client can't ping 209.65.200.226 but DSW1 and all Routers are able to ping webserver.

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241). If ping to 10.1.1.1 is Ok then ping 209.65.200.226. If ping is not Ok then check if DWS1 can ping 209.65.200.226 or 209.65.200.241. If ping from DSW1 is ok then check R1 NAT ACL for missing statement (`permit 10.2.0.0`)

Configuration on R1

```
!  
ip access-list standard nat_pool  
permit 10.1.0.0  
permit 10.2.0.0  
!
```

Ans1) R1

Ans2) NAT

Ans3) Add **permit 10.2.0.0** statement in nat_pool access-list

OSPF Authentication message-digest is missing in interface S0/0/0/0.12 – R1

Note: Client can't ping 10.1.1.1 but can ping 10.1.1.2.

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241). If ping to 10.1.1.1 is not Ok then ping 10.1.1.2. If ping is ok then check that (`ip ospf authentication message-digest`) is missing under Serial0/0/0/0.12 of R1.

Configuration on R1

```
interface Serial0/0/0/0.12 point-to-point
ip address 10.1.1.1 255.255.255.252
ip nat inside
ip ospf authentication message-digest
ip ospf message-digest-key 1 md5 TSHOOT
!
```

this statement is missing here

Configuration on R2

```
interface Serial0/0/0/0.12 point-to-point
ip address 10.1.1.2 255.255.255.252
ip ospf authentication message-digest
ip ospf message-digest-key 1 md5 TSHOOT
```

Ans1) R1

Ans2) IPv4 OSPF Routing

Ans3) ip ospf authentication message-digest command has to be added on s0/0/0/0.12

Option 2:

If client can't ping 10.1.1.1 or 10.1.1.2, u have 4 TTs (DSW1 = 1 TT, R4 = 3TTs)

Vlan Filter (Vlan Access Map) – DSW1

Note: Client 1 can't ping default gateway (10.2.1.254).

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241), 10.1.1.1 and 10.1.1.2. Ping default gateway (10.2.1.254). If ping to default gateway is failed then check vlan filter statement on DSW1 access map. (**vlan filter test1 vlan-list 10**).

Configuration on DWS1

```
vlan access-map test1 10
drop
match ip address 10
!
vlan filter test1 vlan-list 10
!
ip access-list standard 10
permit 10.2.0.0 0.0.255.255
!
interface VLAN10
ip address 10.2.1.1 255.255.255.0
```

Ans1) DSW1

Ans2) Vlan access map / Vlan ACL

Ans3) Remove vlan filter test1 from DSW1

EIGRP Passive Interface (IPv4 EIGRP Routing) – R4

Note: Client 1 can ping default gateway but cannot ping R4 fa0/0 (10.1.4.5)

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241), 10.1.1.1 and 10.1.1.2. Ping default gateway (10.2.1.254). If ping to default gateway is ok then ping R4 fa0/0 interface (10.1.4.5). If ping is failed then check (**passive-interface default**) statement in R4 EIGRP configuration.

Configuration on R4

```
router eigrp 10
passive-interface default
redistribute ospf 1 route-map OSPF->EIGRP
network 10.1.4.4 0.0.0.3
network 10.1.4.8 0.0.0.3
default-metric 10000 100 255 1 10000
no auto-summary
```

Answer 1) R4

Answer 2) IPv4 EIGRP Routing

Answer 3) Remove "Passive interface" under EIGRP 10

EIGRP to OSPF Redistribution (Router Redistribution) – R4

Note: Client 1 can ping R4 f0/0 but can't ping R4 s0/0/0/0.34 (10.1.1.10).

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241), 10.1.1.1 and 10.1.1.2. Ping default gateway (10.2.1.254). If ping to default gateway is ok then ping R4 fa0/0 interface (10.1.4.5). If ping is ok then ping R4 s0/0/0/0.34 (10.1.1.10). If ping is failed then check EIGRP redistribute statement in on R4 (`redistribute ospf 1 metric 100 10 255 1 1500 route-map EIGRP_to_OSPF`).

Note: Verify that EIGRP AS No is correct (`router eigrp 10`)

Configuration on R4

```
router eigrp 10
network 10.1.4.5 0.0.0.0
no auto-summary
redistribute ospf 1 metric 100 10 255 1 1500 route-map EIGRP_to_OSPF
!
router ospf 1
network 10.1.1.8 0.0.0.0 area 34
redistribute eigrp 10 subnets
!
route-map EIGRP->OSPF
match ip address 1
```

Ans1) R4

Ans2) Route redistribution

Ans3) Change the name in the redistribute command under OSPF process to EIGRP->OSPF on R4
Or delete the redistribute route-map EIGRP_to_OSPF and enter ... EIGRP->OSPF

EIGRP Wrong AS No – R4

Note: Client 1 can ping R4 f0/0 but can't ping R4 s0/0/0/0.34 (10.1.1.10).

If client IP is 10.x.x.x but client can't ping webserver (209.65.200.241), 10.1.1.1 and 10.1.1.2. Ping default gateway (10.2.1.254). If ping to default gateway is ok then ping R4 fa0/0 interface (10.1.4.5). If ping is ok then ping R4 s0/0/0/0.34 (10.1.1.10). If ping is failed then check EIGRP AS No on R4 (`router eigrp 1`).

Note: Verify that EIGRP redistribute statement is correct under OSPF process of R4 (`redistribute ospf 1 metric 100 10 255 1 1500 route-map EIGRP->OSPF`)

Configuration on R4

```
router eigrp 1
network 10.1.4.5 0.0.0.0
no auto-summary
```

Ans1) R4

Ans2) EIGRP

Ans3) Change EIGRP AS number from 1 to 10 on R4

or Change the AS on EIGRP routing process from 1 to 10 to match the AS number used DSW1 and DSW2

Note: There are rare chances of this TT.

The are 2 other TT's (DSW=1 TT and R2=1TT)

HSRP – DSW1

Check the MCQ of that ticket, the question will be related to HSRP....

HSRP has been configurationured between DSW1 and DSW2. DSW1 is configurationured to be active router but it never becomes active even though the HSRP communication between DSW1 and DSW2 is working.

Check 'standby 10 track 1 decrement 60' under interface vlan 10 configuration.

Configuration on DWS1

```
interface Vlan10
ip address 10.2.1.1 255.255.255.0
Standby 10 ip 10.2.1.254
standby 10 priority 200
standby 10 preempt
standby 10 track 1 decrement 60
```

Ans1) DSW1

Ans2) HSRP

Ans3) Change standby 10 track 1decrement 60 to standby 10 track 10 decrement 60

IPV6 OSPF – R2

Check the MCQ of that ticket, the question will be related to IPv6....

DSW1 and R4 cannot ping R2's loopback or R2's s0/0/0/0.12 IPv6 address. Initial troubleshooting shows and R2 is not an OSPFv3 neighbor on R3.

Check 'ipv6 ospf 6 area 0' under R2 IPv6 OSPF configuration.

Configuration on R2

```
ipv6 router ospf 6
router-id 2.2.2.2
!
interface s0/0/0/0.23
ipv6 address 2026::1:1/122
ipv6 ospf 6 area 0
```

this statement is missing here

Configuration on R3

```
ipv6 router ospf 6
router-id 3.3.3.3
!
interface s0/0/0/0.23
ipv6 address 2026::1:2/122
ipv6 ospf 6 area 0
```

Ans1) R2

Ans2) OSPFv3

Ans3) Add 'ipv6 ospf 6 area 0' under s0/0/0/0.23 on R2

642-832 Pass4Sure

<http://www.examcollection.com/cisco/Cisco.P4S.642-832.v2012-04-17.by.FB.57q.vce.file.html>