

Which protocols used to configure trunking on a switch?

- 802.1q

SwitchA(config)#interface fa0/0

SwitchA(config-if)#switchport access vlan 2

1. The switchport belongs only to VLAN 2.
2. By default, all switch ports are members of VLAN 1005.
3. Interface fa0/0 will be in both VLAN 1 (by default) and VLAN 2.
4. The exhibit shows interface fa0/0 to be dynamically mapped to VLAN 2.
5. A network host can be connected to this interface.

- 1 & 5

Refer to the exhibit. A router-on-a-stick configuration was implemented for VLANs 15, 30, and 45, according to the show running-config command output. PCs on VLAN 45 that are using the 172.16.45.0 /24 network are having trouble connecting to PCs on VLAN 30 in the 172.16.30.0 /24 network. Which error is most likely causing this problem?

- There is an incorrect IP address configured on GigabitEthernet 0/0.30.

VLAN is a switching technology that reduces the size of a broadcast domain.

- False

Which two link protocols are used to carry multiple VLANs over a single link?

- 802.1q & ISL

Which two link protocols are used to carry multiple VLANs over a single link?

1. VTP
2. 802.1q
3. IGP
4. ISL
5. 802.3u

- 2 & 4

VLAN is a switching technology that reduces the size of a broadcast domain.

- False

Which are the 2 trunking protocols?

- ISL & IEEE 802.1q

What is the default administrative distance of the OSPF routing protocol?

- 110

What type of route allows a router to forward packets even though its routing table contains no specific route to the destination network?

- Dynamic route

What happens to a static route entry in a routing table when the outgoing interface associated with that route goes into a down state?

- The Static route is removed from the routing table.

The network administrator of ABC Supermarket configures the router with the "ip route 172.16.1.0 255.255.255.0 172.16.2.2" command. How will this route appear in the routing table?

- S 172.16.1.0 [1/0] via 172.16.2.2

What does administrative distance refer to?

- The cost of a link between two neighboring routers.

Which parameter can be tuned to affect the selection of a static route as a

backup when a dynamic protocol is also being used?

- administrative distance

Refer to the exhibit. The network engineer for the company that is shown wants to use the primary ISP connection for all external connectivity. The backup ISP connection is used only if the primary ISP connection fails. Which set of commands would accomplish this goal.

- ip route 0.0.0.0 0.0.0.0 s0/0/0
- ip route 0.0.0.0 0.0.0.0 s0/1/0 10

There are two advantages of static routing over dynamic routing among these choices. What are these?

1. Static routing is more secure because it does not advertise over the network.
 2. Static routing scales well with expanding networks.
 3. Static routing requires very little knowledge of the network for correct implementation.
 4. Static routing uses fewer router resources than dynamic routing
 5. Static routing is relatively easy to configure for large networks.
- 1 & 4

Which command can you use to manually assign a static IPV6 address to a router interface?

- ipv6 address 2001:db8:2222:7272::72/64

A router has two FastEthernet interfaces and needs to connect to four vlans in the local network. How can you accomplish this task, using the fewest physical interfaces and without decreasing network performance?

- Implement a router-on-a-stick configuration.

What is the correct syntax of a floating static route?

- ip route 209.165.200.228 255.255.255.248 10.0.0.1 120

OSPF is configured using default classful addressing. With all routers and interfaces operational, how many networks will be in the routing table of R1 that are indicated to be learned by OSPF?

- 4

Which two statements are true for OSPF Hello packets?

1. They are used to negotiate correct parameters among neighboring interfaces.
 2. They are used to maintain neighbor relationships.
 3. They are used to determine the complete network topology.
 4. They are used for dynamic neighbor discovery.
 5. They are used to flood link-state information to all neighbors.
- 2 & 4

Why would a floating static route be configured with an administrative distance that is higher than the administrative distance of a dynamic routing protocol that is running on the same router?

- To be used as backup route

OSPF routing uses the concept of areas. What are the characteristics of OSPF areas?

1. Each OSPF area requires a loopback interface to be configured.
 2. Areas may be assigned any number from 0 to 65535.
 3. Area 0 is called the backbone area.
 4. Hierarchical OSPF networks do not require multiple areas.
 5. Multiple OSPF areas must connect to area 0.
 6. Single area OSPF networks must be configured in area 1.
- 2,3,5

Which protocols are used to configure trunking on a switch?

- 802.1q

Refer to the exhibit. The network engineer for the company that is shown wants to use the primary ISP connection for all external connectivity. The backup ISP connection is used only if the primary ISP connection fails. Which set of commands would accomplish this goal.

```
- ip route 0.0.0.0 0.0.0.0 s0/0/0
ip route 0.0.0.0 0.0.0.0 s0/1/0 10
```

Refer to the exhibit below. What routing solution will allow both PC A and PC B to access the Internet with the minimum amount of router CPU and network bandwidth utilization?

- Configure a static default route from R1 to Edge, a default route from Edge to the Internet, and a static route from Edge to R1.

switch is configured with all ports assigned to vlan 2 with full duplex FastEthernet to segment existing departmental traffic. What is the effect of adding switch ports to a new VLAN on the switch

- An additional broadcast domain will be created

What is an advantage of OSPF compared to RIP?

- Fast convergence

What are two functions of dynamic routing protocols?

1. to maintain routing tables
2. to assure low router overhead
3. to avoid exposing network information
4. to discover the network
5. to choose the path that is specified by the administrator

- 1 & 4

Which is the VLAN not tagged by 802.1q?

- Native VLAN

A switch is configured with all ports assigned to vlan 2 with full duplex FastEthernet to segment existing departmental traffic. What is the effect of adding switch ports to a new VLAN on the switch?

- An additional broadcast domain will be created.

Which two statements describe a routed switch port on a multilayer switch?

1. Layer 2 switching and Layer 3 routing are mutually supported.
2. The port is not associated with any VLAN.
3. The routed switch port supports VLAN subinterfaces.
4. The routed switch port is used when a switch has only one port per VLAN or subnet.
5. The routed switch port ensures that STP remains in the forwarding state.

- 2, 4

Refer to the given network diagram. Which command would be used on router A to configure a static route to direct traffic from LAN A that is destined for LAN C?

```
- A(config)# ip route 192.168.4.0 255.255.255.0 192.168.3.2
```

Which three elements must be used when you configure a router interface for VLAN trunking?

1. one physical interface for each subinterface
2. one IP network or subnetwork for each subinterface
3. a management domain for each subinterface
4. subinterface encapsulation identifiers that match VLAN tags
5. one subinterface per VLAN
6. subinterface numbering that matches VLAN tags

- 2,4,5

Refer to the exhibit. What information can be gathered from the output?

- Network 10.10.1.0 is reachable.

Refer to the exhibit. Which statement are true about interVLAN routing in the topology that is shown in the exhibit?

- The FastEthernet 0/0 interface on Router1 must be configured with subinterfaces.

A router has two FastEthernet interfaces and needs to connect to four vlans in the local network. How can you accomplish this task, using the fewest physical interfaces and without decreasing network performance?

- Implement a router-on-a-stick configuration.

A network engineer for a semiconductor company wants to use the primary ISP connection for all external connectivity. Refer at the diagram below. The backup ISP connection is used only if the primary ISP connection fails. Which set of commands would accomplish this goal?

- ip route 0.0.0.0 0.0.0.0 s0/0/0
- ip route 0.0.0.0 0.0.0.0 s0/1/0 10

Refer to the exhibit. The two connected ports on the switch are not turning orange or green. What would be the most effective steps to troubleshoot this physical layer problem?

A. Ensure that the Ethernet encapsulations match on the interconnected router and switch ports.

B. Ensure that cables A and B are straight-through cables.

C. Ensure cable A is plugged into a trunk port.

D. Ensure the switch has power.

E. Reboot all of the devices.

F. Reseat all cables.

- 2, 4, 6

A network administrator of Stark Industries has examined the routing table of a router and noted that the entry for the destination network 172.16.4.0/24 begins with the letter D. What does this letter signify?

- The route source was learned dynamically

Which classless routing protocol supports VLSM and CIDR, supports manual route summarization, and uses the multicast address 224.0.0.9?

- RIPv2

Refer to the exhibit. The user at Workstation B reports that Server A cannot be reached. What is preventing Workstation B from reaching Server A?

- The gateway for Workstation B is not on the same subnet.

A network administrator in XYZ Telecom is troubleshooting an EIGRP problem on a router and needs to confirm the IP addresses of the devices with which the router has established adjacency. The retransmit interval and the queue counts for the adjacent routers also need to be checked. What command will display the required information?

- Router#showipeigrp neighbors

Which two statements describe the process identifier that is used in the command to configure OSPF on a router?

Router(config)# router ospf 1

1. All OSPF routers in an area must have the same process ID.

2. Only one process number can be used on the same router.
3. Different process identifiers can be used to run multiple OSPF processes
4. The process number can be any number from 1 to 65,535.
5. Hello packets are sent to each neighbor to determine the processor identifier.
 - 3 & 4

What is the default number of equal-cost paths that can be placed into the routing of a Cisco OSPF router?

- 4

Which parameter would you tune to affect the selection of a static route as a backup, when a dynamic protocol is also being used?

- Hop count

Which statement describes a difference between the operation of inbound and outbound ACLs?

- Inbound ACLs are processed before the packets are routed while outbound ACLs are processed after the routing is completed.

What command sequence will configure a router to run OSPF and add network 10.1.1.0 /24 to area 0?

- router ospf 1
- network 10.1.1.0 0.0.0.255 area 0

Which statements are generally considered to be best practices in the placement of ACLs?

- Place standard ACLs close to the destination IP address of the traffic.

The following configuration line was added to router R1

```
Access-list 101 permit ip 10.25.30.0 0.0.0.255 any
```

What is the effect of this access list configuration?

- Permit all packets matching the first three octets of the source address to all destinations

If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict

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All hosts in the networks have been operational for several hours when the DHCP server goes down. What happens to the hosts that have obtained service from the DHCP server?

- The hosts will continue to communicate normally for a period of time.

Which statement is correct regarding the operation of DHCP

- If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict.

Which command will show you all the translations active on your router?

- show ipnat translations

Which command would you place on interface connected to the Internet?

- ip nat outside

Which command will allow you to see real-time translations on your router?

- debug ip nat

A network administrator is trying to add a new router into an established OSPF network. The networks attached to the new router do not appear in the routing tables of the other OSPF routers. Given

the information in the partial configuration shown below, what configuration error is causing this problem?

```
Router(config)# router ospf 1
Router(config-router)# network 10.0.0.0 255.0.0.0 area 0
- The network wildcard mask is configured improperly.
```

When a DHCP server is configured, which two IP addresses should never be assignable to hosts?

- Designated IP address to the DHCP server
1. IP address leased to the LAN
 2. Network or subnetwork IP address
 3. Manually assigned address to the clients
 4. IP address used by the interfaces
 5. Broadcast address on the network
- 2 & 6

Refer to the exhibit. The network administrator that has the IP address of 10.0.70.23/25 needs to have access to the corporate FTP server (10.0.54.5/28). The FTP server is also a web server that is accessible to all internal employees on networks within the 10.x.x.x address. No other traffic should be allowed to this server. Which extended ACL would be used to filter this traffic, and how would this ACL be applied?

1. access-list 105 permit ip host 10.0.70.23 host 10.0.54.5
2. access-list 105 permit tcp any host 10.0.54.5 eq www
3. access-list 105 permit ip any any
4. access-list 105 permit tcp host 10.0.54.5 any eq www
access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 20
access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 21
5. access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 20
access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 21
access-list 105 permit tcp 10.0.0.0 0.255.255.255 host 10.0.54.5 eq

www

- ```
access-list 105 deny ip any host 10.0.54.5
access-list 105 permit ip any any
6.R2(config)# interface gi0/0
R2(config-if)# ip access-group 105 in
7.R1(config)# interface gi0/0
R1(config-if)# ip access-group 105 out
8.R1(config)# interface s0/0/0
R1(config-if)# ip access-group 105 out
- 4 & 5
```

Which command is used to determine if an IP access list is enabled on a particular interface?

- Show ip interface

Which command is used to display the collection of OSPF link states?

- show ip ospf database

Which IPv4 address range covers all IP addresses that match the ACL filter specified by 172.16.2.0 with wildcard mask 0.0.1.255?

- 172.16.2.0 to 172.16.3.255

What two functions describe uses of an access control list?

1. ACLs assist the router in determining the best path to a destination.
  2. Standard ACLs can restrict access to specific applications and ports.
  3. ACLs provide a basic level of security for network access.
  4. ACLs can permit or deny traffic based upon the MAC address originating on the router.
  5. ACLs can control which areas a host can access on a network.
- 3 & 5

Which command will show you the summary of NAT configuration?

- show ip nat statistics

Which IPv6 ACL command entry will permit traffic from any host to an SMTP server on network 2001:DB8:10:10::/64?

- Permit tcp any host 2001:DB8:10:10::100 eq 25

Which item represents the standard IP ACL?

- access-list 50 deny 192.168.1.1 0.0.0.255

What is the default administrative distance of OSPF?

- 110

What are two benefits of using NAT?

1. NAT protects network security because private networks are not advertised.
2. NAT accelerates the routing process because no modifications are made on the packets.
3. Dynamic NAT facilitates connections from the outside of the network.
4. NAT facilitates end-to-end communication when IPsec is enable.
5. NAT eliminates the need to re-address all host that require external access.
6. NAT conserves addresses through host MAC-level multiplexing.

- 1 & 5

Which commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0?

1. Router(config)#router ospf 1
2. Router(config)#router ospf 0
3. Router(config)#router ospf area 0
4. Router(config-router)#network 192.168.16.0 0.0.0.255 area 0
5. Router(config-router)#network 192.168.16.0 0.0.0.255 0
6. Router(config-router)#network 192.168.16.0 255.255.255.0 area 0

- 1 & 4

What is the purpose of the DHCP server?

- To provide an IP configuration information to hosts

Which two characteristics are shared by both standard and extended ACLs?

Both kinds of ACLs can filter based on protocol type.  
Both can permit or deny specific services by port number.  
Both include an implicit deny as a final ACE.  
Both filter packets for a specific destination host IP address.  
Both can be created by using either a descriptive name or number.

- 3 & 5

Which parameter or parameters are used to calculate OSPF cost in Cisco routers?

- Bandwidth

Refer to the graphic. It has been decided that PC1 should be denied access to Server. Which 2 of the following commands are required to prevent only PC1 from accessing Server1 while allowing all other traffic to flow normally?

- 1 Router(config)# interface fa0/0  
Router(config-if)# ip access-group 101 out
- 2 Router(config)# interface fa0/0  
Router(config-if)# ip access-group 101 in
- 3 Router(config)# access-list 101 deny ip host 172.16.161.150 host 172.16.162.163  
Router(config)# access-list 101 permit ip any any

```
4 Router(config)# access-list 101 deny ip 172.16.161.150 0.0.0.255
172.16.162.163 0.0.0.0
5 Router(config)# access-list 101 permit ip any any
- 2 & 3
```

A network administrator needs to configure a standard ACL so that only the workstation of the administrator with the IP address 192.168.15.23 can access the virtual terminal of the main router. Which two configuration commands can achieve the task?

```
Router1(config)# access-list 10 permit host 192.168.15.23
Router1(config)# access-list 10 permit 192.168.15.23 0.0.0.0
Router1(config)# access-list 10 permit 192.168.15.23 0.0.0.255
Router1(config)# access-list 10 permit 192.168.15.23 255.255.255.0
Router1(config)# access-list 10 permit 192.168.15.23 255.255.255.255
- 1 & 2
```

Which of the following would be good reasons to run NAT?

1. You need to connect to the Internet and your hosts don't have globally unique IP addresses.
  2. You change to a new ISP that requires you to renumber your network.
  3. You don't want any hosts connecting to the Internet.
  4. You require two intranets with duplicate addresses to merge.
- 1, 2 and 4

What is the OSPF default frequency, in seconds, at which a Cisco router sends hello packets on a multiaccess network?

- 10

Which 2 commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0?

1. Router(config)#router ospf 1
  2. Router(config)#router ospf 0
  3. Router(config)#router ospf area 0
  4. Router(config-router)#network 192.168.16.0 0.0.0.255 area 0
  5. Router(config-router)#network 192.168.16.0 0.0.0.255 0
  6. Router(config-router)#network 192.168.16.0 255.255.255.0 area 0
- 1 & 4

The OSPF Hello protocol performs which of the following tasks?

- It provides dynamic neighbor discovery.
  - It detects unreachable neighbors in 90 second intervals.
  - It maintains neighbor relationships.
  - It negotiates correctness parameters between neighboring interfaces.
  - It uses timers to elect the router with the fastest links as the designated router.
  - It broadcasts hello packets throughout the internetwork to discover all routers that are running OSPF
1. It provides dynamic neighbor discovery.
  2. It detects unreachable neighbors in 90 second intervals.
  3. It maintains neighbor relationships.
  4. It negotiates correctness parameters between neighboring interfaces.
  5. It uses timers to elect the router with the fastest links as the designated router.
- 1 & 3

A network associate in Genesis Aerospace Industries has configured OSPF with the command:

```
City(config-router)# network 192.168.12.64 0.0.0.63 area 0
```

After completing the configuration, the associate discovers that not all the interfaces are participating in OSPF. Which three of the interfaces shown in the exhibit will participate in OSPF according to this configuration statement?

1. FastEthernet0/0
  2. FastEthernet0/1
  3. Serial0/0
  4. Serial0/1.104
  5. Serial0/1.103
  6. Serial0/1.102
- 2,3,6

Which two commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0?

1. Router(config)#router ospf 1
  2. Router(config)#router ospf 0
  3. Router(config)#router ospf area 0
  4. Router(config-router)#network 192.168.16.0 0.0.0.255 area 0
  5. Router(config-router)#network 192.168.16.0 0.0.0.255 0
  6. Router(config-router)#network 192.168.16.0 255.255.255.0 area 0
- 1 & 4

If a router has two interfaces and is routing both IPv4 and IPv6 traffic, how many ACLs could be created and applied to it?

- 8

Which command would you place on interface on a private network?

- ip nat inside

Refer to the exhibit. A junior network engineer in one of the biggest telecom company in the Philippines has prepared the exhibited configuration file. What two statements are true of the planned configuration for interface fa0/1?

1. The two FastEthernet interfaces will require NAT configured on two outside serial interfaces.
  2. Address translation on fa0/1 is not required for DMZ Devices to access the Internet.
  3. The fa0/1 IP address overlaps with the space used by s0/0.
  4. The fa0/1 IP address is invalid for the IP subnet on which it resides.
  5. Internet hosts may not initiate connections to DMZ Devices through the configuration that is shown.
- 2 & 5

Refer to the exhibit. If the router Cisco returns the given output and has not had its router ID set manually, what value will OSPF use as its router ID?

- 2.2.2.2

What are the two main types of access control lists (ACLs)?

1. Standard
  2. IEEE
  3. Extended
  4. Specialized
- 1 and 3

Which three features are of OSPF routing protocol?

1. Converge quickly
2. OSPF is a classful routing protocol

3. Identify the best route by use of cost
  4. Before exchanging routing information, OSPF routers find out neighbors
  5. OSPF is a classless routing protocol
- 1, 3, 4

Which three statements are generally considered to be best practices in the placement of ACLs?

1. Place standard ACLs close to the source IP address of the traffic.
  2. Place extended ACLs close to the destination IP address of the traffic.
  3. Filter unwanted traffic before it travels onto a low-bandwidth link.
  4. Place extended ACLs close to the source IP address of the traffic.
  5. Place standard ACLs close to the destination IP address of the traffic.
  6. For every inbound ACL placed on an interface, there should be a matching outbound ACL.
- 3,4,5

Which classless routing protocol supports VLSM and CIDR, bounded and triggered updates, and uses the multicast address of 224.0.0.10?

- EIGRP

Refer to the exhibit. R1 receives a packet destined for the IP address 192.168.2.10. Out which interface will R1 forward the packet?

- Serial0/0/1

R1 is configured with the default configuration of OSPF. From the following list of IP addresses configured on R1, which address will the OSPF process select as the router ID?

- 192.168.0.1

Refer to the exhibit. The network engineer in RMS Industries that is shown wants to use the primary ISP connection for all external connectivity. The backup ISP connection is used only if the primary ISP connection fails. Which set of commands would accomplish this goal.

- ip route 0.0.0.0 0.0.0.0 s0/0/0
- ip route 0.0.0.0 0.0.0.0 s0/1/0 10

Which factor directly affects the time to convergence?

- Size of the network

Refer to the exhibit. A router-on-a-stick configuration was implemented for VLANs 15, 30, and 45, according to the show running-config command output. PCs on VLAN 45 that are using the 172.16.45.0 /24 network are having trouble connecting to PCs on VLAN 30 in the 172.16.30.0 /24 network. Which error is most likely causing this problem?

- There is an incorrect IP address configured on GigabitEthernet 0/0.30