Cisco

Exam 642-813

Implementing Cisco IP Switched Networks (SWITCH)

Version: 29.2

[Total Questions: 196]

Topic 1, Implement VLAN based solution, given a network design and a set of requirements

Question No : 1 - (Topic 1)

Which statement is true about RSTP topology changes?

A. Any change in the state of the port generates a TC BPDU.
B. Only non-edge ports moving to the forwarding state generate a TC BPDU.
C. If either an edge port or a non-edge port moves to a block state, then a TC BPDU is generated.
D. Only edge ports moving to the blocking state generate a TC BPDU.
E. Any loss of connectivity generates a TC BPDU.

Answer: B

Explanation:
The IEEE 802.1D Spanning Tree Protocol was designed to keep a switched or bridged network loop free, with adjustments made to the network topology dynamically. A topology change typically takes 30 seconds, where a port moves from the Blocking state to the Forwarding state after two intervals of the Forward Delay timer. As technology has improved, 30 seconds has become an unbearable length of time to wait for a production network to failover or "heal" itself during a problem.

Topology Changes and RSTP
Recall that when an 802.1D switch detects a port state change (either up or down), it signals the Root Bridge by sending topology change notification (TCN) BPDUs. The Root Bridge must then signal a topology change by sending out a TCN message that is relayed to all switches in the STP domain. RSTP detects a topology change only when a non-edge port transitions to the Forwarding state. This might seem odd because a link failure is not used as a trigger. RSTP uses all of its rapid convergence mechanisms to prevent bridging loops from forming. Therefore, topology changes are detected only so that bridging tables can be updated and corrected as hosts appear first on a failed port and then on a different functioning port. When a topology change is detected, a switch must propagate news of the change to other switches in the network so they can correct their bridging tables, too. This process is similar to the convergence and synchronization mechanism-topology change (TC) messages propagate through the network in an ever-expanding wave.

Reference:

CCNP BCMSN Official Exam Certification Guide, Fourth Edition, Chapter 11: Advanced Spanning Tree Protocol, Rapid Spanning Tree Protocol, Topology Changes and RSTP, p.

269

Question No : 2 - (Topic 1)

Refer to the exhibit.
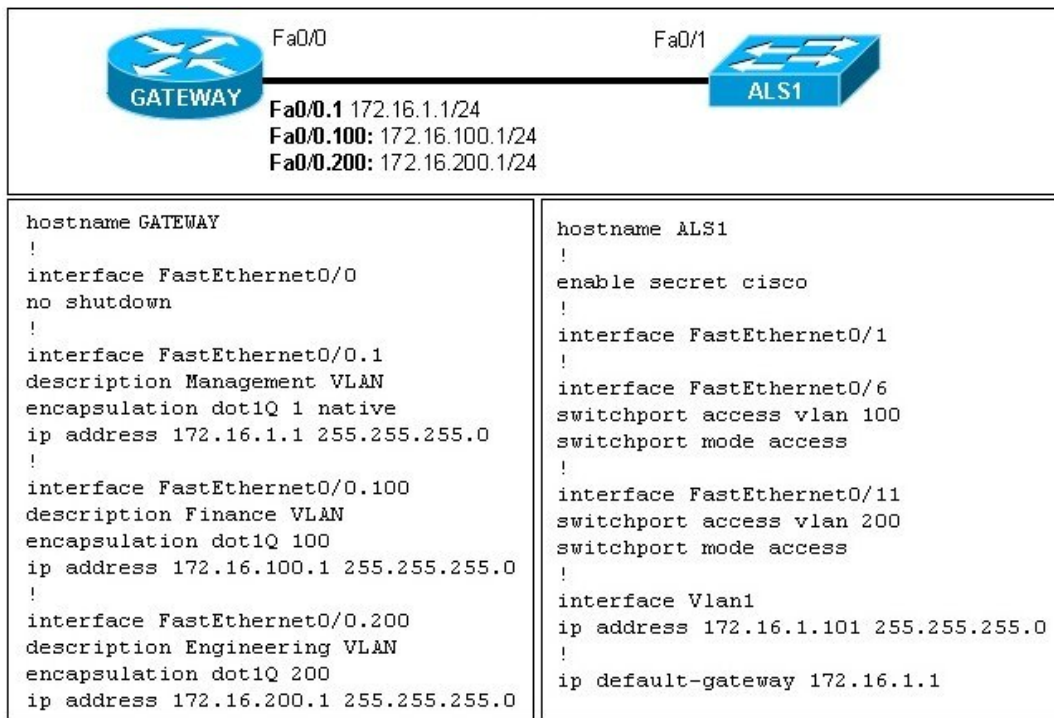
Why are users from VLAN 100 unable to ping users on VLAN 200?

A. Encapsulation on the switch is wrong.
B. Trunking must be enabled on Fa0/1.
C. The native VLAN is wrong.
D. VLAN 1 needs the no shutdown command.
E. IP routing must be enabled on the switch.

Answer: B

Explanation:

Switch supports multiple VLAN but have no Layer3 capability to route packets between those VLANs, the switch must be connected to router external to the switch. This setup is most efficiently accomplished by providing a single trunk link between the switch and the router that can carry the traffic of multiple VLANs, which can in turn be routed by the router.

For that trunk require between Router & Switch. So trunking need to be enable on Fa0/1.

http://www.cisco.com/en/US/tech/tk389/tk815/tk857/tsd_technology_support_sub-protocol_home.html

Question No : 3 - (Topic 1)

Refer to the exhibit.
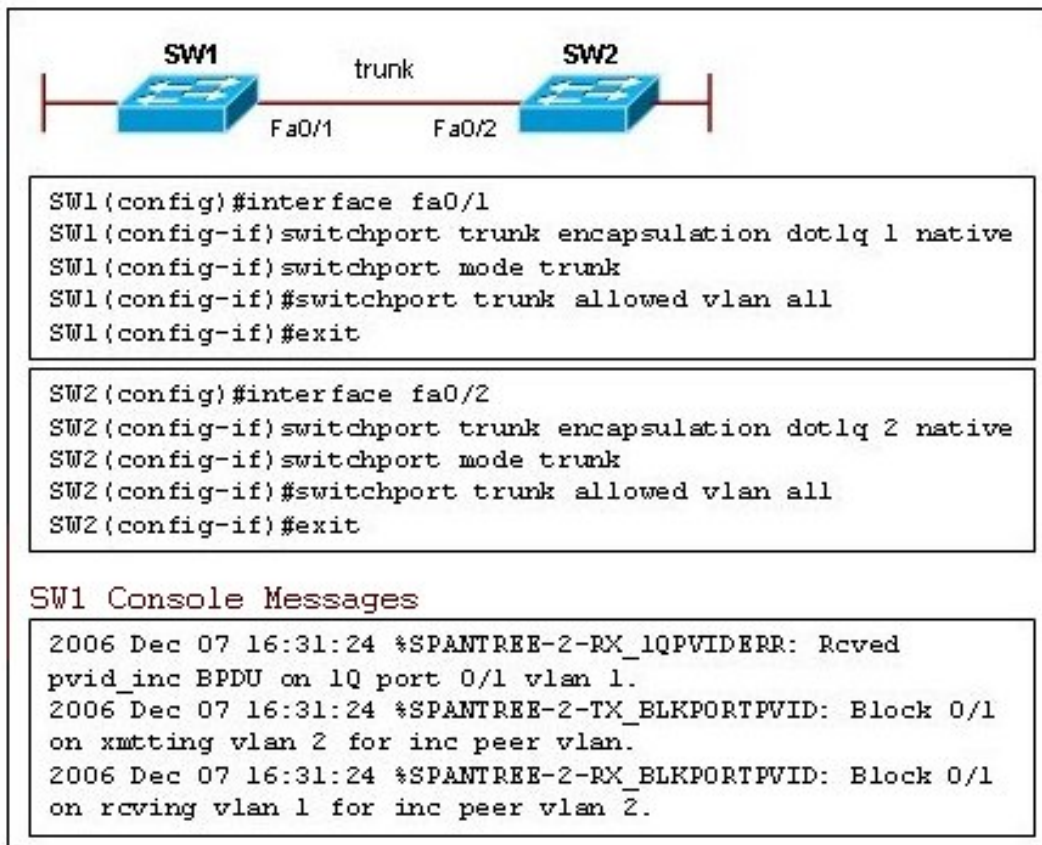
The link between switch SW1 and switch SW2 is configured as a trunk, but the trunk failed to establish connectivity between the switches. Based on the configurations and the error messages received on the console of SW1, what is the cause of the problem?

A. The two ends of the trunk have different duplex settings.
B. The two ends of the trunk have different EtherChannel configurations.
C. The two ends of the trunk have different native VLAN configurations.
D. The two ends of the trunk allow different VLANs on the trunk.

Answer: C

Explanation:

The native VLAN, if not explicitly configured, will default to the default VLAN, (VLAN1). The Native VLAN is configured for an 802.1Q Trunk port. 802.1Q trunks carry traffic from multiple VLANs by tagging the traffic with VLAN identifiers (Tagged Traffic) which identifies which packets are associated with which VLANs, and they can also carry non VLAN traffic from legacy switches or non 802.1Q compliant switches (Untagged Traffic). The switch will place untagged traffic on the Native VLAN by using a PVID identifier. Native VLAN traffic is not tagged by the switch. It is a best practice to configure the Native VLAN to be different than VLAN1 and to configure it on both ends of the trunk.

<hr>

Question No : 4 - (Topic 1)

When you create a network implementation for a VLAN solution, what is one procedure that you should include in your plan?

A. Perform an incremental implementation of components.
B. Implement the entire solution and then test end-to-end to make sure that it is performing as designed.
C. Implement trunking of all VLANs to ensure that traffic is crossing the network as needed before performing any pruning of VLANs.
D. Test the solution on the production network in off hours.

Answer: A

Explanation:

Cisco recommendations for implementation plan have the following items:

• Some examples of organizational objectives when developing a VLAN implementation plan could include: improving customer support, increasing competitiveness, and reducing costs.

• When creating a VLAN implementation plan, it is critical to have a summary implementation plan that lays out the implementation overview.

• Incremental implementation of components is the recommended approach when defining a VLAN implementation plan.

Reference:

http://www.ccnpguide.com/design-documentation/

Question No : 5 - (Topic 1)

You have just created a new VLAN on your network. What is one step that you should include in your VLAN-based implementation and verification plan?

A. Verify that different native VLANs exist between two switches for security purposes.
B. Verify that the VLAN was added on all switches with the use of the show vlan command.
C. Verify that the switch is configured to allow for trunking on the switch ports.
D. Verify that each switch port has the correct IP address space assigned to it for the new VLAN.

Answer: B

Explanation:

As part of verification plan you have to verify that the VLAN was added on all switches. The command show vlan can be used for this purpose.

Reference:

http://www.ccnpguide.com/design-documentation/

Question No : 6 - (Topic 1)

Which two statements describe a routed switch port on a multilayer switch? (Choose two.)

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

Answer: B,D

Explanation:

A routed port is a physical port that acts like a port on a router; it does not have to be connected to a router. A routed port is not associated with a particular VLAN, as is an access port. A routed port behaves like a regular router interface, except that it does not support VLAN subinterfaces. Routed ports can be configured with a Layer 3 routing

protocol. A routed port is a Layer 3 interface only and does not support Layer 2 protocols, such as DTP and STP. You can configure routed ports by putting the interface into Layer 3 mode with the no switchport interface configuration command. Then you have to assign an IP address to the port, enable routing, and assign routing protocol characteristics by using the ip routing and router protocol global configuration commands.

Reference:

http://www.cisco.com/en/US/docs/switches/lan/catalyst3750/software/release/12.1_19_ea1/configuration/guide/swint.html#wp1288561

Question No : 7 - (Topic 1)

On a multilayer Cisco Catalyst switch, which interface command is used to convert a Layer 3 interface to a Layer 2 interface?

A. switchport
B. no switchport
C. switchport mode access
**D.** switchport access vlan vlan-id

Answer: A

Explanation:
The switchport command puts the port in Layer 2 mode. Then, you can use other switchport command keywords to configure trunking, access VLANs, and so on.

Reference:

http://www.cisco.com/en/US/docs/switches/lan/catalyst3560/software/release/12.2_25_se/configuration/guide/swint.html#wp1415008

Question No : 8 - (Topic 1)

Refer to the exhibit.
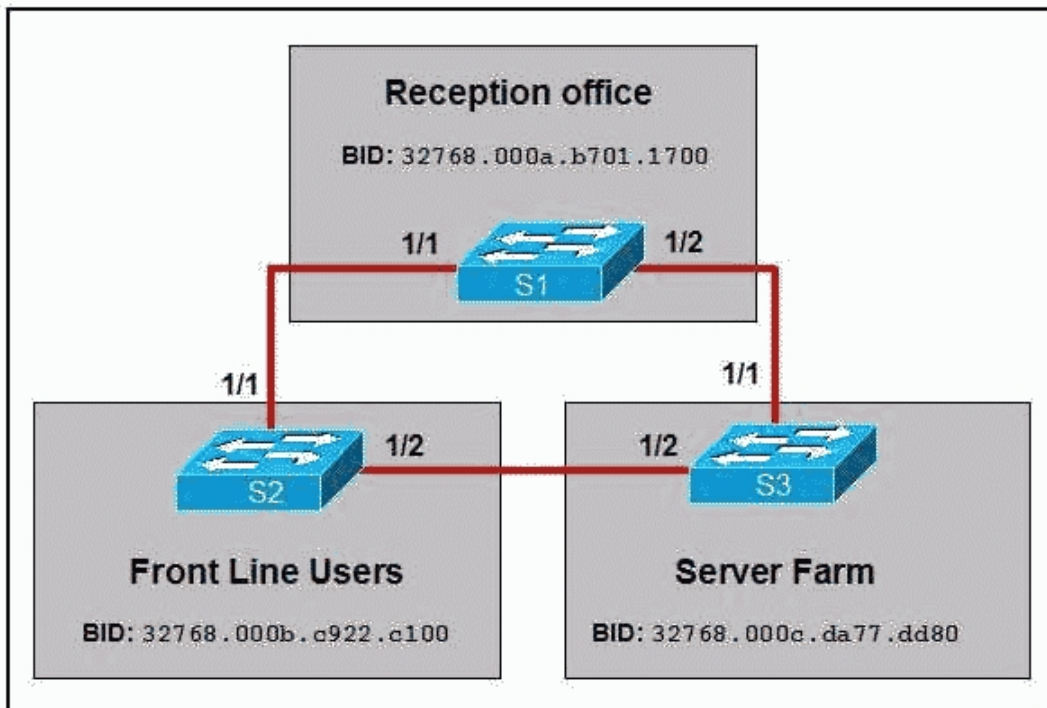
All network links are FastEthernet. Although there is complete connectivity throughout the network, Front Line users report that they experience slower network performance when accessing the server farm than the Reception office experiences. Which two statements are true? (Choose two.)

A. Changing the bridge priority of S1 to 4096 would improve network performance.
B. Changing the bridge priority of S1 to 36864 would improve network performance.
C. Changing the bridge priority of S2 to 36864 would improve network performance.
D. Changing the bridge priority of S3 to 4096 would improve network performance.
E. Disabling the Spanning Tree Protocol would improve network performance.
F. Upgrading the link between S2 and S3 to Gigabit Ethernet would improve performance.

Answer: B,D
Explanation: All three switches have the same bridge priority (32768 – default value) and S1 has the lowest MAC -> S1 is the root bridge and all traffic must go through it -> Front Line Users (S2) must go through S1 to reach Server Farm (S3). To overcome this problem, S2 or S3 should become the root switch and we can do it by changing the bridge priority of S1 to a higher value or lower the bridge priority value

Reference:

CCNP Self-Study CCNP BCMSN Official Exam Certification Guide, Fourth Edition, Chapter 9: Spanning Tree Configuration, STP Root Bridge, p. 219.

Question No : 9 - (Topic 1)

Refer to the exhibit.

```
interface FastEthernet 0/13
channel-group 1 mode desirable
```

What does the command channel-group 1 mode desirable do?

A. enables LACP unconditionally
B. enables PAgP only if a PAgP device is detected
C. enables PAgP unconditionally
D. enables EtherChannel only
E. enables LACP only if an LACP device is detected

Answer: C

Explanation:

The command channel-group 1 mode desirable enables PAgP unconditionally on the interface FastEthernet 0/13:

Switch (config-if)#channel-group 1 mode ?

Active Enable LACP unconditionally

Auto Enable PAgP only if a PAgP device is detected

Desirable Enable PAgP unconditionally

On Enable Etherchannel only

Passive Enable LACP only if a LACP device is detected

Reference:

http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/catos/5.x/configuration/guide/channel.html

Question No : 10 - (Topic 1)

Refer to the exhibit.

```
3560# show interface gigabitethernet 0/1 switchport
Name: Gi0/1
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL

3560# show vlan

VLAN Name                        Status   Ports
---- -------------------------- --------- -------------------------------
1    default                     active   Gi0/2, Gi0/3, Gi0/4, Gi0/5
2    VLAN0002                    active   Gi0/6, Gi0/7, Gi0/8, Gi0/9
                                          Gi0/10, Gi0/11, Gi0/12

1002 fddi-default                act/unsup
1003 token-ring-default          act/unsup
1004 fddinet-default             act/unsup
1005 trnet-default               act/unsup
```

Which two statements are true? (Choose two.)

A. Interface gigabitethernet 0/1 has been configured as Layer 3 ports.
B. Interface gigabitethernet 0/1 does not appear in the show vlan output because switchport is enabled.
C. Interface gigabitethernet 0/1 does not appear in the show vlan output because it is