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Topic Break Down

Topic	No. of Questions
Topic 1, Layer 2 Technologies	197
Topic 2, Infrastructure Security	45
Topic 3, Infrastructure Services	84
Topic 4, Mix Questions	608
Total	934

QUESTION NO: 1

A network engineer wants to ensure Layer 2 isolation of customer traffic using a private VLAN. Which configuration must be made before the private VLAN is configured?

A. Disable VTP and manually assign VLANs.

B. Ensure all switches are configured as VTP server mode.

C. Configure VTP Transparent Mode.

D. Enable VTP version 3.

ANSWER: C

Explanation:

You must configure VTP to transparent mode before you can create a private VLAN. Private VLANs are configured in the context of a single switch and cannot have members on other switches. Private VLANs also carry TLVs that are not known to all types of Cisco switches. Reference: http://www.ciscopress.com/articles/article.asp?p=29803&seqNum=6

QUESTION NO: 2

Which two actions can be configured for storm control violation? (Choose two.)

A. Shutdown

B. Trap

C. Notify admin

D. Discard Port

ANSWER: A B

QUESTION NO: 3

An engineer is configuring an EtherChannel between two switches using LACP. If the EtherChannel mode on switch 1 is configured to active, which two modes on switch 2 establish an operational EtherChannel? (Choose two.)

A. active

B. auto

C. desirable

D. on

E. passive

ANSWER: A E

QUESTION NO: 4

Which of the following sets of commands CANNOT be included in the plan to implement HSRP on a Layer 3 switch port?

A. interface port-channel no switchport

B. interface fastethernet no switchportip address

C. interface fastethernet switchport mode access

D. interface vlan ip address

ANSWER: C

Explanation:

The following set of commands cannot be included in the implementation plan to configure HSRP on a Layer 3 switch port:

interface fastethernet switchport mode access

This set of commands creates an access port on the switch. The access port can then be assigned to a VLAN. HSRP cannot be enabled on access ports. To enable HSRP on a switch port, the port has to be any of the following:

EtherChannel port Refers to a Layer 3 switch port used for EtherChannel

Routed port Refers to a Layer 3 port on a switch used for routing

Switch virtual interface (SVI) Refers to a Layer 2 switch port used for inter-VLAN routing

The interface port-channel and no switchport commands allow you to create a Layer 3 port-channel interface, which can be logically bound with other port-channel interfaces to form an EtherChannel. Port-channel interfaces can be configured as either Layer 2 or Layer 3 interfaces. The interface portchannel command is used to create a Layer 3 port-channel interface.

The following set of commands creates a routed port:

interface fastethernet no switchport ip address

Routed ports are physical Layer 3 interfaces that allow you to configure a switch as a router. The no switchport command allows the port to be used purely as a Layer 3 port. This command restarts the port thereby deleting any Layer 2 configuration settings on the switch.

The following set of commands is used to create an SVI, which is a logical interface that allows you to enable inter-VLAN routing on Layer 3 switches:

interface vlan ip address

SVIs are configured as VLAN interfaces and have at least one physical interface assigned to the VLANs.

Objective:

Infrastructure Services Sub-Objective:

Configure and verify first-hop redundancy protocols

References:

Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide, 12.2(37)SG > Configuring Layer 3 Interface > Configuring VLANs as Layer 3

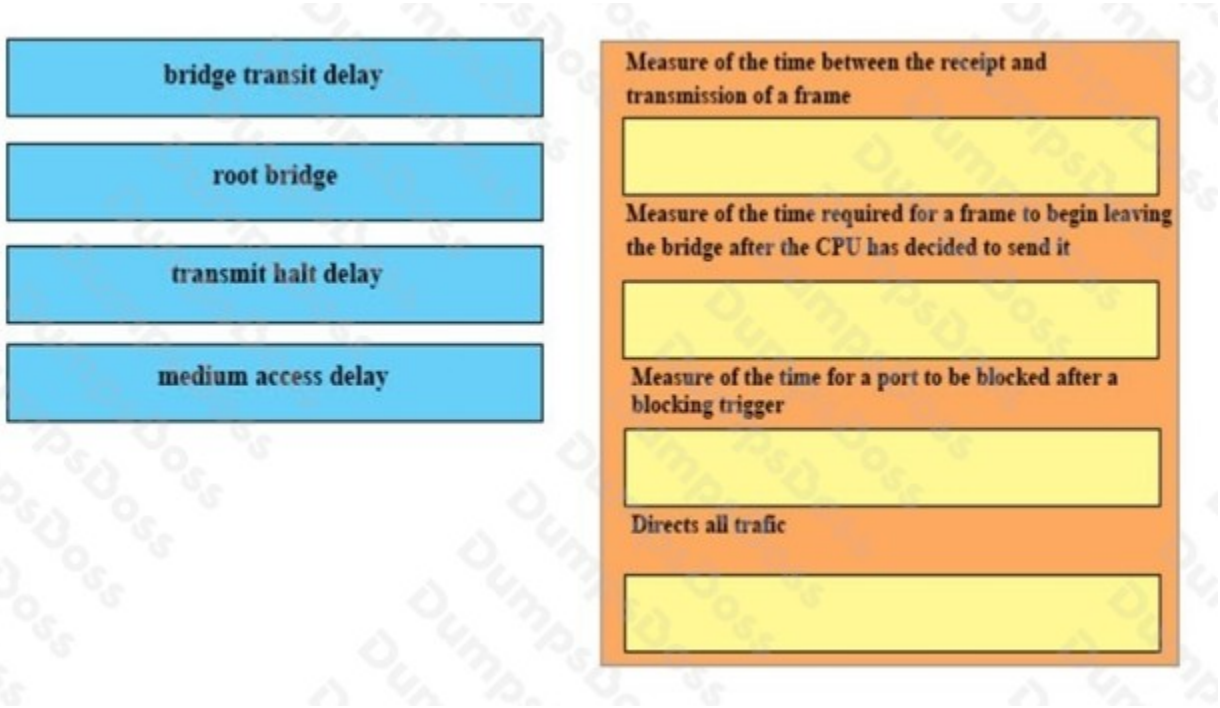
Interfaces

QUESTION NO: 5 - (DRAG DROP)

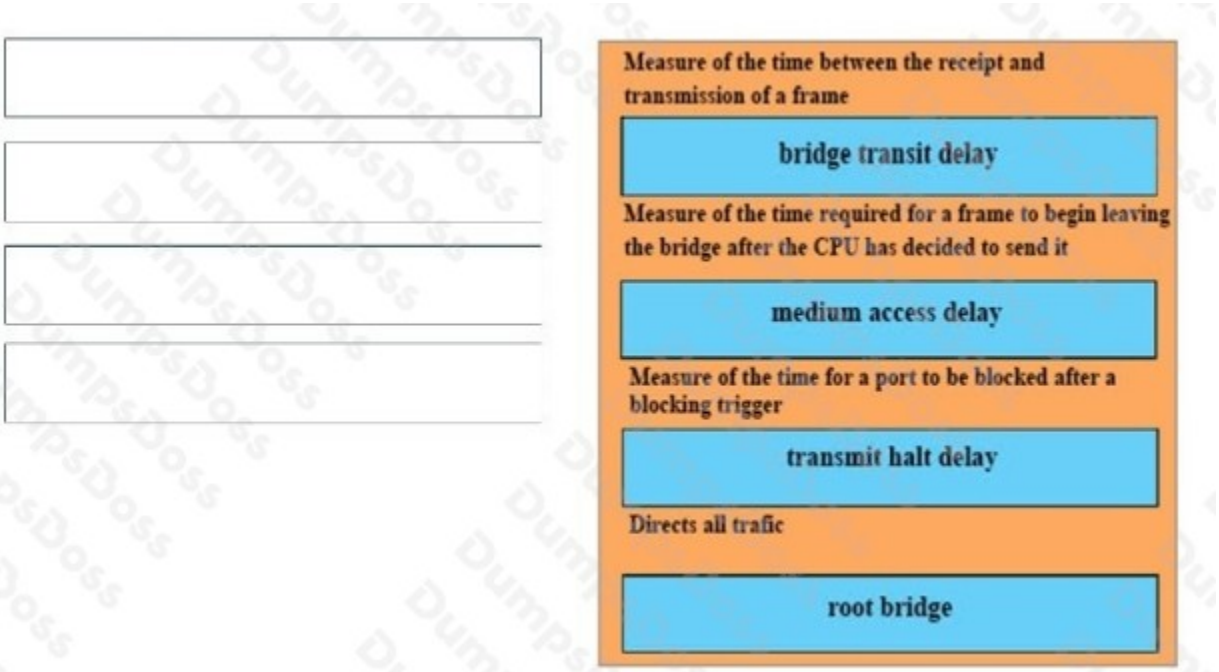
DRAG DROP

Drop the STP components from the left onto the correct descriptions on the right.

Select and Place:

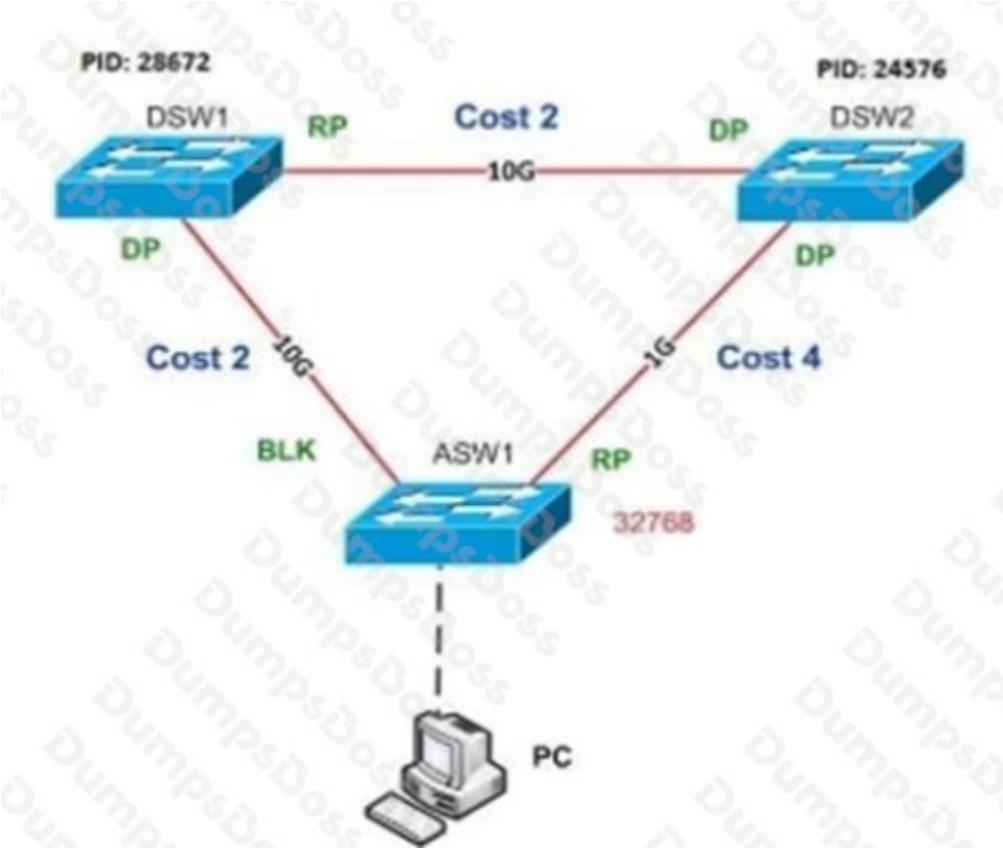


ANSWER:



QUESTION NO: 6

How will the traffic reach the core switch from AS switch to DS core switch?



(Based on a topology shown with one core, two distribution and two access switches on each distribution switch, with redundant links and bandwidth mentioned.)

A. ASW1 to DWS1 to core

B. ASW1 to DWS2 to core

C. ASW1 to DSW1 to DSW2 to core

D. ASW1 to DSW2 to DSW1 to core

ANSWER: B

QUESTION NO: 7

What is the maximum number of VLANs that can be assigned to an access switchport without a voice VLAN?

A. 0

B. 1

C. 2

D. 1024

ANSWER: B

Explanation:

A standard (non-voice VLAN port) access switch port can belong to only a single VLAN. If more than one VLAN is needed, the port should be configured as a trunk port.

QUESTION NO: 8

When a Layer 2 EtherChannel is configured, which statement about placement of the IP address is true?

A. The IP address is placed on the highest numbered member port.

B. The IP address is placed on the port-channel logical interface.

C. The IP address is placed on the lowest numbered member port.

D. The IP address is assigned via DHCP only.

ANSWER: B

QUESTION NO: 9

Which keyword can be applied to the spanning-tree priority command that allows the IT department to adjust the timers based on the number of switches between any two end stations?

A. root primary

B. priority

C. cost

D. diameter

E. hello-time

ANSWER: D

Explanation:

Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst3560/software/release/12-2_52_se/configuration/guide/3560scg/swstp.html

QUESTION NO: 10

Which three authentication methods does GLBP use? (Choose three.)

A. Single Sign On authentication

B. MD5 authentication

C. No authentication

D. Plain text authentication

E. DCSP authentication

F. 6-to-4 authentication

ANSWER: B C D

QUESTION NO: 11

Which three features of AAA with RADIUS are true? (Choose three.)

A. It encrypts the password for transmission

B. It encrypts the entire transmission

C. It integrates authorization and authentication functions

D. It separates authorization and authentication functions

E. It secures access to endpoint devices

F. It secures access to network devices

ANSWER: A C E

QUESTION NO: 12

Which two statements about VRRP are true? (Choose two.)

A. It requires each device in the group to participate in the same dynamic routing protocol.

B. Preemption is not supported.

C. It can use a single virtual address to provide default gateway redundancy.

D. It uses a shared VIP to support default gateway redundancy.

E. It support clear-text authentication only.

ANSWER: C E

QUESTION NO: 13

You want to configure your Catalyst 6500 switch to redirect certain IP traffic from VLANs 22 through 33 to the Gigabit Ethernet interface that resides at slot 4, port 1. The IP traffic to be redirected must match an ACL named tn1.

Which of the following sets of commands should you issue?

A. vlan access-map 22-33match ip address tn1action redirect gigabitethernet 4/1vlan filter tn1

B. vlan access-map ge1match ip address tn1action redirect gigabitethernet 4/1vlan filter ge1 vlan-list 22-33

C. vlan access-map tn1match ip address ge1action redirect gigabitethernet 4/1vlan filter tn1 vlan-list 22 33

D. vlan access-map ge1match ip address tn1action redirect gigabitethernet 4/1vlan filter ge1 vlan-list 22 33

ANSWER: B

Explanation:

To appropriately configure your Catalyst 6500 switch in this scenario, you should issue the following commands:

Switch(config) vlan access-map ge1

Switch(config-access-map) match ip address tn1

Switch(config-access-map) action redirect gigabitethernet 4/1

Switch(config-access-map) exit

Switch(config) vlan filter ge1 vlan-list 22-33

VLAN access control lists (VACLs) are used to control how packets are switched within a virtual local area network (VLAN). To configure a VACL, you shouldperform the following actions:

Define the VLAN access map by issuing the vlan access-map command.

Define the configured ACL that traffic must match for an action to be triggered by issuing the match command; any traffic that does not match the conditions specified by the configured ACL or ACLs is dropped.

Define the action that will be triggered when traffic matches the configured ACL by issuing the action command. Apply the VACL to one or more VLANs by issuing the vlan filter command.

The syntax for the vlan access-map command is vlan access-map map-name [sequence-number], where map-name is the name assigned to the VLAN access map. The optional sequence-number parameter defines the order in which the access map statements are checked. Therefore, the command vlan access-map ge1 creates a VLAN access map named ge1 with no sequence number.

The match command can filter traffic based on IP address, IPX address or Media Access Control (MAC) address. The syntax for the match command is match {ip address {acl-number | acl-name} | ipx address {acl-number | acl-name} | mac address acl-name}, where acl-number and acl-name are the number and name of the access list, respectively. Therefore, the commandmatch ip address tn1 specifies that only traffic that matches ACL tn1 will trigger the action specified in the action command.

The action command will configure the VACL to drop, forward, or redirect traffic that matches the access list specified in the match command. The syntax for the action command is action {drop | forward | redirect interface slot/port}. Therefore, the command action redirect gigabitethernet 4/1 will redirect traffic that matches the access list to Gigabit Ethernet interface 4-1.

The syntax for the vlan filter command is vlan filter map-name {vlan-list vlan-list}, where map-name is the name of the VLAN access map and vlan-list is the VLAN or VLANs that should be filtered by the VACL. Therefore, the command vlan filter ge1 vlan-list 22-33 applies the VLAN access map named ge1 to VLANs 22 through 33.

The following command set incorrectly specifies the VLAN access map and filter:

Switch(config)vlan access-map 22-33

Switch(config-access-map) match ip address tn1

Switch(config-access-map) action redirect gigabitethernet 4/1

Switch(config-access-map) exit

Switch(config) vlan filter tn1

The following command set incorrectly specifies the VLAN access map and the match statement. This command is also missing the required hyphen in the list of VLANs specified after the vlan-list keyword:

Switch(config) vlan access-map tn1

Switch(config-access-map) match ip address ge1

Switch(config-access-map) action redirect gigabitethernet 4/1

Switch(config-access-map) exit

Switch(config) vlan filter tn1 vlan-list 22 33

This following command is missing the required hyphen in the list of VLANs specified after the vlan-list keyword:

Switch(config) vlan access-map ge1

Switch(config-access-map) match ip address tn1

Switch(config-access-map) action redirect gigabitethernet 4/1

Switch(config-access-map) exit

Switch(config) vlan filter ge1 vlan-list 22 33

Objective:

Infrastructure Security Sub-Objective:

Configure and verify switch security features

References:

Cisco > Home > Support > Product Support > End-of-Sale and End-of-Life Products > Cisco Catalyst 6000 Series Switches > Configure > Configuration

Examples and Technotes > Securing Networks with Private VLANs and VLAN Access Control Lists

Cisco > Catalyst 4500 Series Switch Cisco IOS Command Reference, 12.2(52)SG > snmp ifindex clear through vtp v2-mode > vlan access-map

Cisco > Catalyst 4500 Series Switch Cisco IOS Command Reference, 12.2(52)SG > interface port-channel through shape > match

Cisco > Catalyst 4500 Series Switch Cisco IOS Command Reference, 12.2(52)SG > snmp ifindex clear through vtp v2-mode > vlan filter

Cisco > Catalyst 4500 Series Switch Cisco IOS Command Reference, 12.2(52)SG > aaa accounting dot1x default start-stop group radius through instance > action

QUESTION NO: 14

What are two advantages of LLDP over Cisco Discovery Protocol? (Choose two.)

A. LLDP supports Frame Relay.

B. LLDP supports ATM.

C. LLDP is vendor-agnostic.

D. LLDP supports checksums.

E. LLDP supports topology-change notification.

ANSWER: C E

Explanation:

Reference: https://www.cisco.com/en/US/technologies/tk652/tk701/technologies_white_paper0900aecd804cd46d.html

QUESTION NO: 15 - (SIMULATION)

SIMULATION

Lab Simulation - AAA dot1x

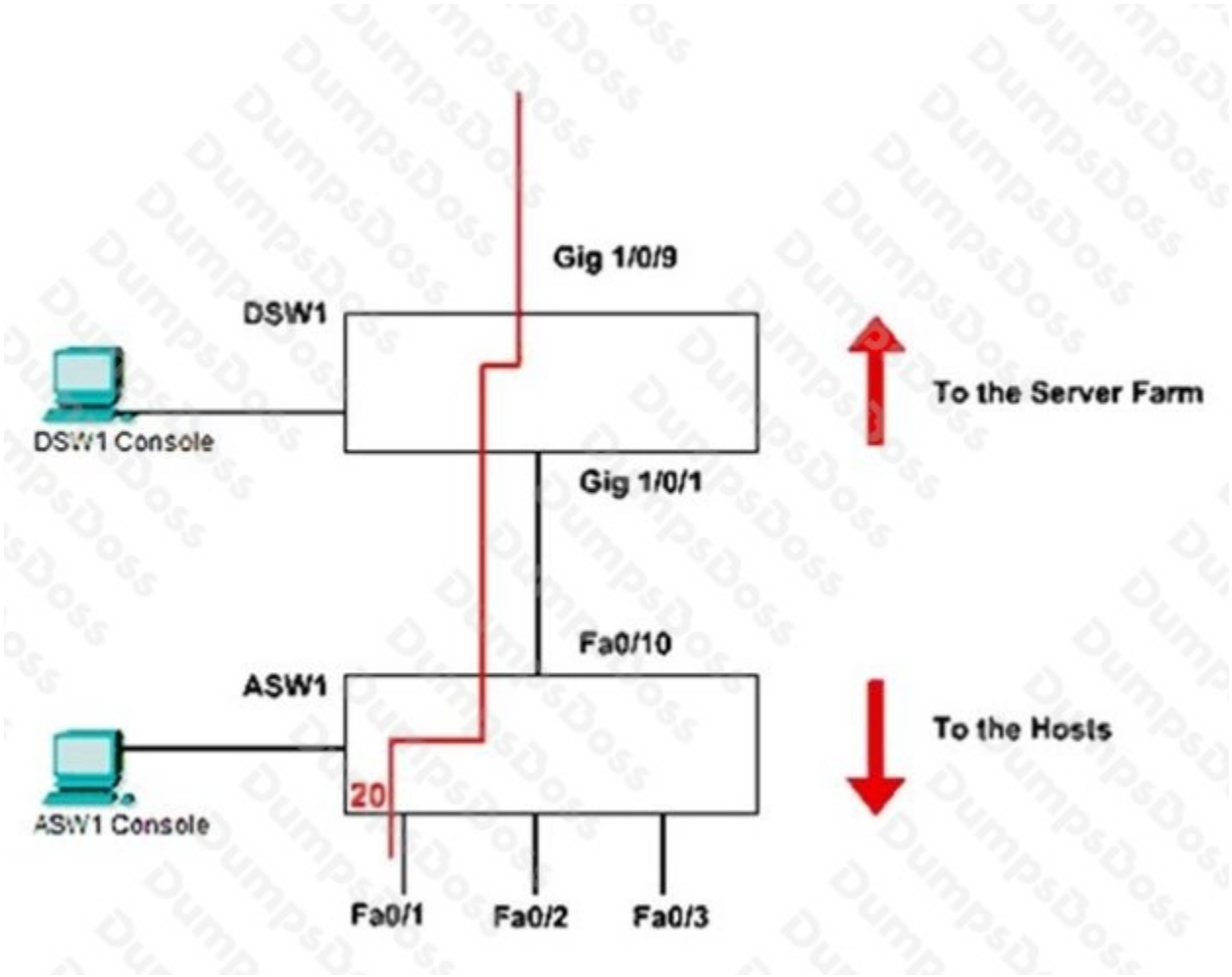
ABC.com is an IT company that has an existing enterprise network comprised of two layer 2 only switches; DSW1 and ASW1. The topology diagram indicates their layer 2 mapping. VLAN 20 is a new VLAN that will be used to provide the shipping personnel access to the server. Corporate polices do not allow layer 3 functionality to be enabled on the switches.

For security reasons, it is necessary to restrict access to VLAN 20 in the following manner:

Users connecting to VLAN 20 via portfO/1 on ASW1 must be authenticated before they are given access to the network. Authentication is to be done via a Radius server:

- Radius server host: 172.120.40.46
- Radius key: rad123
- Authentication should be implemented as close to the host as possible.
- Devices on VLAN 20 are restricted to the subnet of 172.120.40.0/24.
- Packets from devices in the subnet of 172.120.40.0/24 should be allowed on VLAN 20.
- Packets from devices in any other address range should be dropped on VLAN 20. ▪ Filtering should be implemented as close to the serverfarm as possible.

The Radius server and application servers will be installed at a future date. You have been tasked with implementing the above access control as a pre-condition to installing the servers. You must use the available IOS switch features.



ANSWER: See the explanation

Explanation:

1. Verification of Pre-configuration:

a. Check that the denoted vlan [vlan20] is created in both switches and ports [fa0/1 of ASW1] are assigned.

b. Take down the radius-server ip [172.120.39.46] and the key [rad123].

c. Take down the IP range [172.120.40.0/24] to be allowed the given vlan [vlan20]

Configure the Port based authentication on ASW1: Enable AAA on the switch:

ASW1> enable

ASW1# conf t

ASW1(config)# aaa new-model

The new-model keyword refers to the use of method lists, by which authentication methods and sources can be grouped or organized. Define the server along with its secret shared password:

ASW1(config)# aaa authentication dot1x default group radius ASW1(config)# radius-server host 172.120.39.46 key rad123

This command causes the RADIUS server defined on the switch to be used for 802.1x authentication. Enable 802.1x on the switch:

ASW1(config)# dot1x system-auth-control Configure Fa0/1 to use 802.1x:

ASW1(config)# interface fastEthernet 0/1

ASW1(config-if)# switchport mode access

ASW1(config-if)# dot1x port-control auto

Notice that the word “auto” will force connected PC to authenticate through the 802.1x exchange.

ASW1(config-if)# exit

ASW1# copy running-config startup-config

Filter the traffic and create vlan access-map to restrict the traffic only for a range on DSW1 Define an access-list:

DSW1> enable DSW1# conf t

DSW1(config)# ip access-list standard 10 (syntax: ip access-list {standard | extended} acl-name)

DSW1(config-ext-nacl)# permit 172.120.40.0 0.0.0.255 DSW1(config-ext-nacl)# exit

Define an access-map which uses the access-list above:

DSW1(config)# vlan access-map MYACCMAP 10 (syntax: vlan access-map map_name [0-65535]

)

DSW1(config-access-map)# match ip address 10 (syntax: match ip address {acl_number | acl_name})

DSW1(config-access-map)# action forward

DSW1(config-access-map)# exit

DSW1(config)# vlan access-map MYACCMAP 20

DSW1(config-access-map)# action drop (drop other networks) DSW1(config-access-map)# exit

Apply a vlan-map into a vlan:

DSW1(config)# vlan filter MYACCMAP vlan-list 20 (syntax: vlan filter mapname vlan-list list) DSW1# copy running-config startup-config

4. Note:

It is not possible to verify the configuration in this lab. All we have do the correct configurations. Most of the exam takers report that “copy runningconfig startup-config” is not working. It does not a matter. Do not try unwanted/wrong commands in the consoles. They are not real switches.

QUESTION NO: 16

What is cisco recommendation for RSPAN best practice?

A. you should configure remote vlan first

B. use different vlan for multiple/different switches

C. use different portchannel

ANSWER: A

QUESTION NO: 17

Which type of port can serve as a Cisco StackWise Virtual link?

A. a switched port only

B. a downlink port only

C. any physical port

D. an uplink port only

ANSWER: C

Explanation:

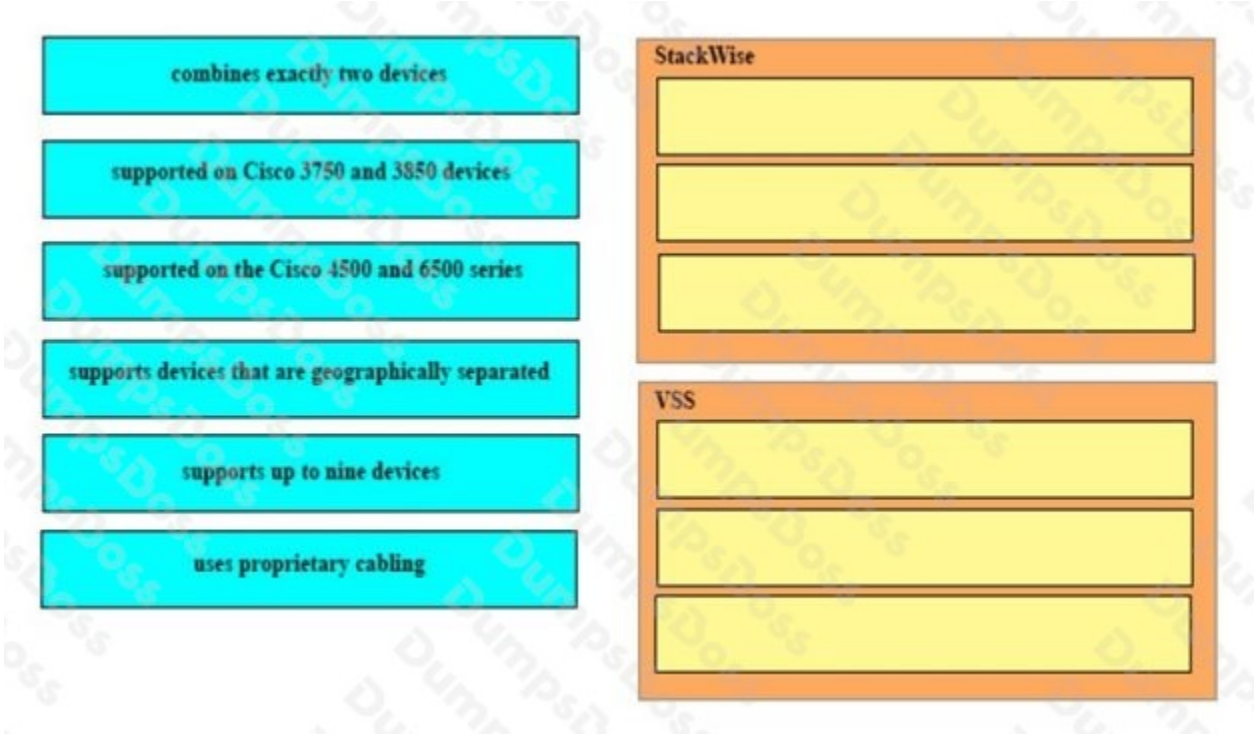
Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9500/software/release/16-6/configuration_guide/b_166_ha_9500/ b_166_ha_9500_chapter_01.pdf

QUESTION NO: 18 - (DRAG DROP)

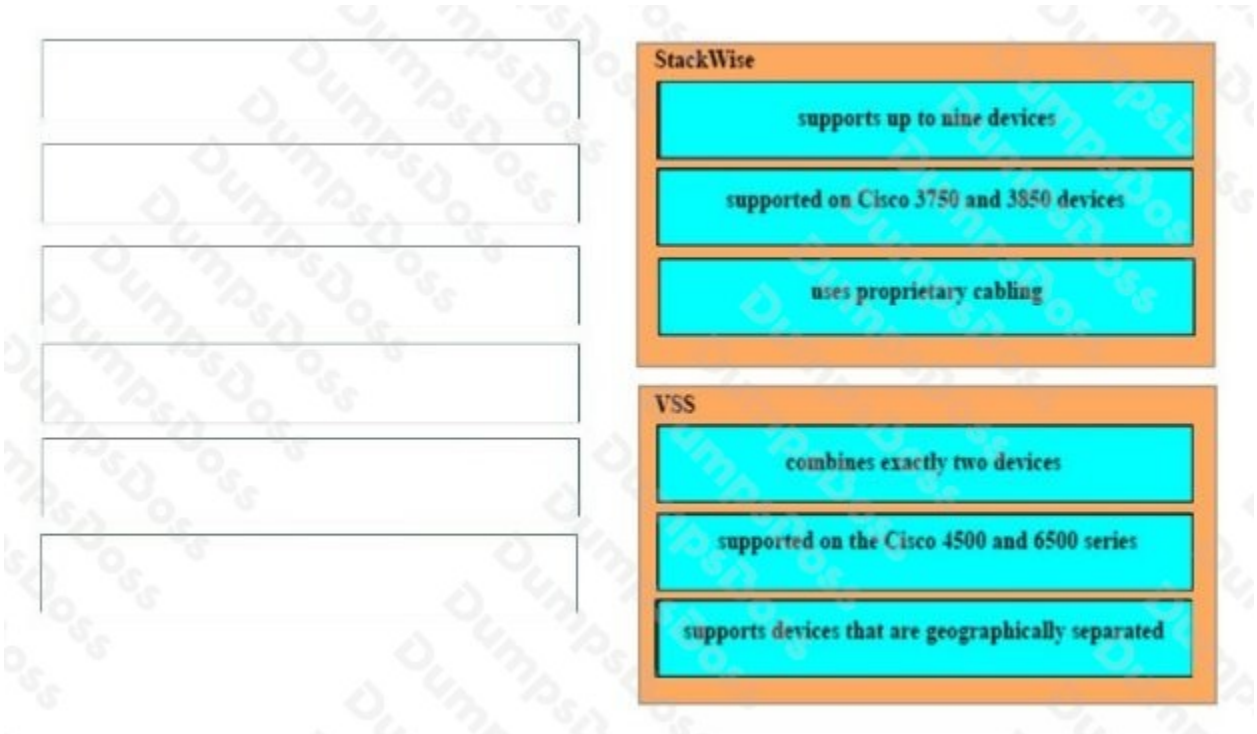
DRAG DROP

Drag and drop the descriptions of switching technologies from the left onto the correct technologies on the right.

Select and Place:



ANSWER:



QUESTION NO: 19

Which IOS commands do you enter in interface configuration mode to configure a switch port to actively negotiate to be an ISL trunk port if possible? (Choose two.)

A. switchport trunk isl

B. switchport mode dynamic auto

C. switchport trunk allowed vlan

D. switchport mode dynamic desirable

E. switchport trunk encapsulation isl

ANSWER: D E

Explanation:

Entering the IOS commands switchport mode dynamic desirable and switchport trunk encapsulation isl in interface configuration mode will allow a switch port to actively negotiate to be an ISL trunk port if possible.

Use the following steps to configure a port as an ISL trunk:

1. Enter the interface configuration.switch(config)# interface interface-id

2. Configure the port to use ISL encapsulation.switch(config-if)# switchport trunk encapsulation isl

3. Configure the port as a trunk port.switch(config-if)# switchport mode dynamic desirable

Note: Trunking modes can be configured as trunk, dynamic auto, dynamic desirable, nonegotiate, and access.

This allows DTP to actively negotiate to be a trunk if the other side is set to trunk, desirable , or auto. If one side is set to auto and the other side is also set to auto, no negotiations will occur.

The switchport allowed vlan command is also valid for configuring dot1q trunks, but is not required. By default, all VLANs are allowed on the trunk.

The other commands use incorrect syntax.

Objective:

Layer 2 Technologies Sub-Objective:

Configure and verify trunking

References:

Cisco > Cisco IOS Interface and Hardware Component Command Reference > squelch through system jumbomtu > switchport trunk Cisco > Cisco IOS Interface and Hardware Component Command Reference > I through K > interface

QUESTION NO: 20

Refer to the exhibit. Which three statements about the network environment of the interface that generated? (Choose three.)

```
Router# show vrrp
FastEthernet2/0/47 - Group 1
      State is Master
      Virtual IP address is 10.1.1.1
      Virtual MAC address is 0000.0c07.ac01
      Advertisement interval is 1.000 sec
      Preemption is enabled
          min delay is 0.000 sec
      Priority is 105
          Track object 1 state Down decrement 15
      Master Router is 10.1.1.2 (local), priority is 105
      Master Advertisement interval is 1.000 sec
      Master Down interval is 3.531 sec
```

A. The configured VRRP priority of the interface is 120

B. The device on which the interface resides is acting as a standby router

C. The Skew time .531 seconds

D. The Configured VRRP Priority of the interface is 105

E. If the priority of another router is higher than the priority of the master router, it becomes the master router

ANSWER: A C E