300-610^{Q&As}

Designing Cisco Data Center Infrastructure (DCID)

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QUESTION 1

A Cisco engineer is configuring MPLS VPN BGP at a customer site that is connected to the provider site by more than one path MPLS VPN BGP Local Convergence link protection is enabled. After the engineer installs the main forwarding path and the redundant backup path within the BGP, they assign a unique route distinguisher to each VRF table on all PE devices that serve as a backup to the link.

What is a prerequisite for this local convergence to work?

A. Interautonomous system option A (back-to-back VRF) is active.

B. BGP must support lossless switchover between operational paths

C. IP/GRE is enabled.

D. The system is performing a PE-CE link protection on both ends

Correct Answer: D

QUESTION 2

An engineer is designing a Multichassis EtherChannel topology in which two switches must appear as a single device to a third downstream switch? Which two technologies meet this requirement? (Choose two.)

A. HSRP

B. VSS

C. vPC

D. 802.1q

E. FEX

Correct Answer: BC

Reference: https://www.cisco.com/c/dam/en/us/products/collateral/switches/nexus-7000-series-switches/C07-572835-00_NX-OS_vPC_DG.pdf

QUESTION 3

Which orchestration tool must be used to manage VXLAN fabrics and includes a built-in dashboard and d real-time network health summary for managed devices?

A. Puppet

B. Cisco Intersight

C. Cisco Nexus Dashboard Fabric Controller

D. Ansible

Correct Answer: C

QUESTION 4

Which type of encoding is used on 8-Gbps links as compared to 10-Gbps links?

A. 8-Gbps links use 64B/66B encoding, and 10-Gbps links use 8B/10B encoding.

B. 8-Gbps links use 8B/10B encoding, and 10-Gbps links use 64B/66B encoding.

C. 8-Gbps links and 10-Gbps links use 8B/10B encoding.

D. 8-Gbps links and 10-Gbps links use 64B/66B encoding.

Correct Answer: B

2, 4, and 8 Gb Fibre Channel all use 8b/10b encoding. Meaning, 8 bits of data gets encoded into 10 bits of transmitted information – the two bits are used for data integrity. Well, if the link is 8Gb, how much do we actually get to use for data – given that 2 out of every 10 bits aren\'t "user" data? FC link speeds are somewhat of an anomaly, given that they're actually faster than the stated link speed would suggest. Original 1Gb FC is actually 1.0625Gb/s, and each generation has kept this standard and multiplied it. 8Gb FC would be 8×1.0625, or actual bandwidth of 8.5Gb/s. 8.5*.80 = 6.8. 6.8Gb of usable bandwidth on an 8Gb FC link.

10GE (and 10G FC, for that matter) uses 64b/66b encoding. For every 64 bits of data, only 2 bits are used for integrity checks. While theoretically this lowers the overall protection of the data, and increases the amount of data discarded in case of failure, that actual number of data units that are discarded due to failing serialization/deserialization is minuscule. For a 10Gb link using 64b/66b encoding, that leaves 96.96% of the bandwidth for user data, or 9.7Gb/s.

Reference: https://www.iol.unh.edu/sites/default/files/knowledgebase/10gec/10GbE_Cl49.pdf

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QUESTION 5

Refer to the exhibit.

FC Switch 1

Server 1 — 4 Gbps / 4 Gbps — Storage — 8 Gbps / 8 Gbps

VSAN 2
VSAN 3
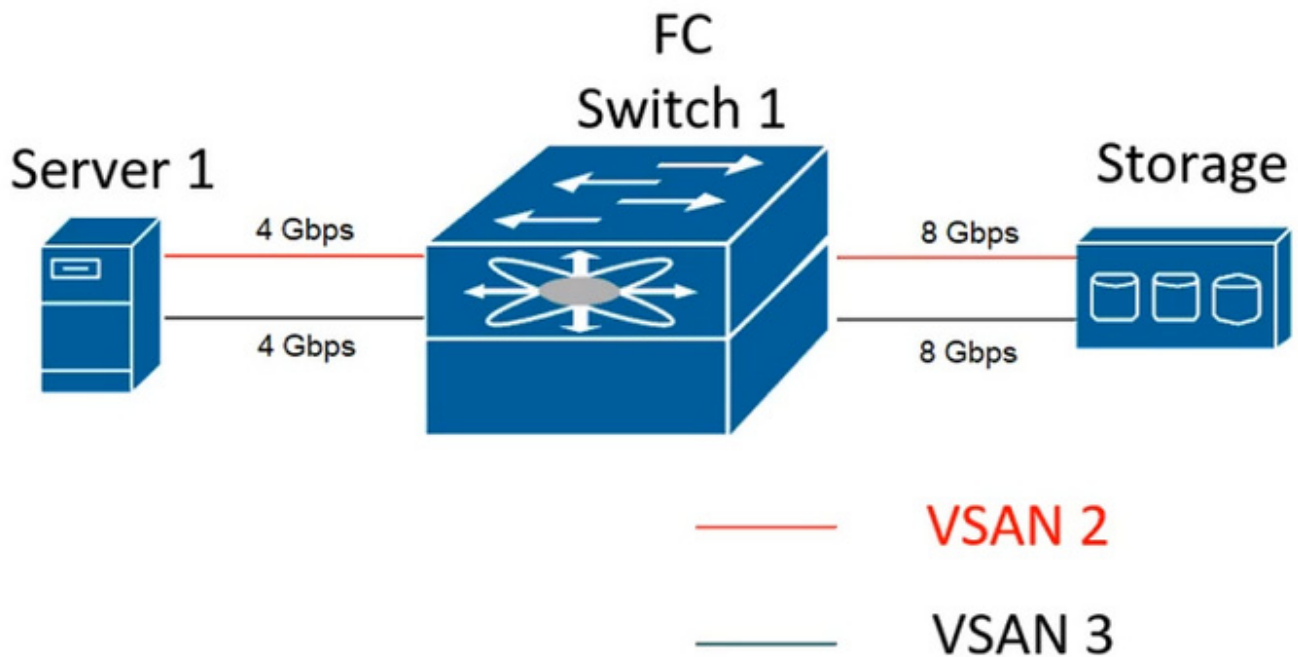
Server 1 fails to connect to the storage array over the Storage Area Network (SAN) of the Cisco MDS 9000 Series Switch. The requirements are to redesign the storage network and keep these considerations in mind:

1.

The traffic from each of the server must be redundant and isolated.

2.

The design must tolerate hardware and software failures and upgrades of SAN fabric devices. Which action must be taken to meet these requirements?

A. Enable NPV and F-Port-channel on ports that face Server 1 on the Fibre Channel switch to create redundant paths.

B. Create a SAN port channel that faces the storage device to sustain a link failure.

C. Add an additional supervisor to the Fibre Channel switch to support nondisruptive upgrades.

D. Place an additional Fibre Channel switch to create two physically independent storage fabrics.

Correct Answer: A

QUESTION 6

DRAG DROP

An engineer must deploy a SAN that meets these criteria:

The upstream director switch must be configured to minimize the number of issued domain IDs
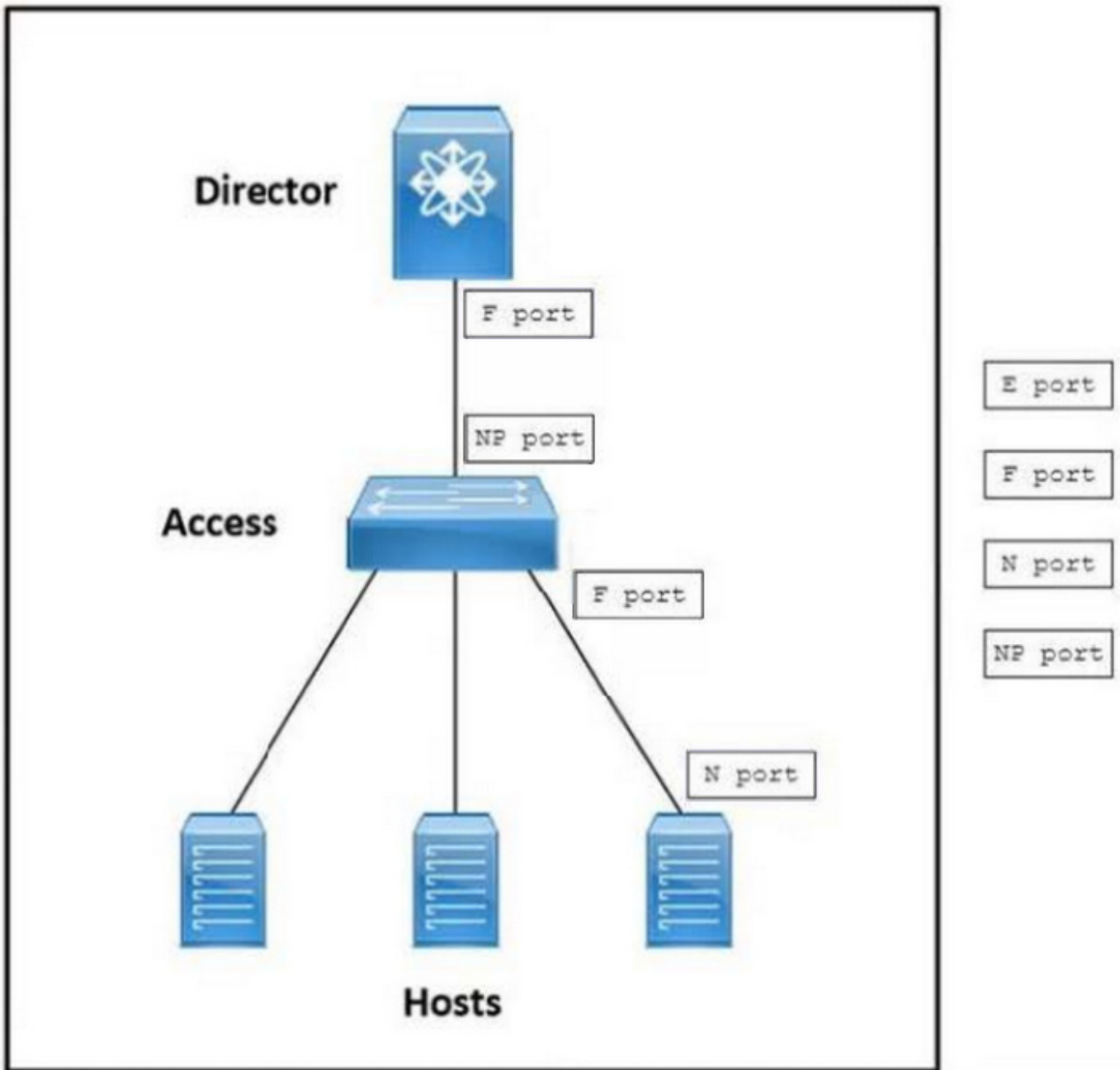
The access switch must aggregate multiple locally connected ports not a single uplink that shares the same domain ID as the upstream switch.

Drag and drop the port types from the right onto the boxes on the left to create a SAN topology that meets these requirements Not all port types are used Port types are used more than once.

Select and Place:
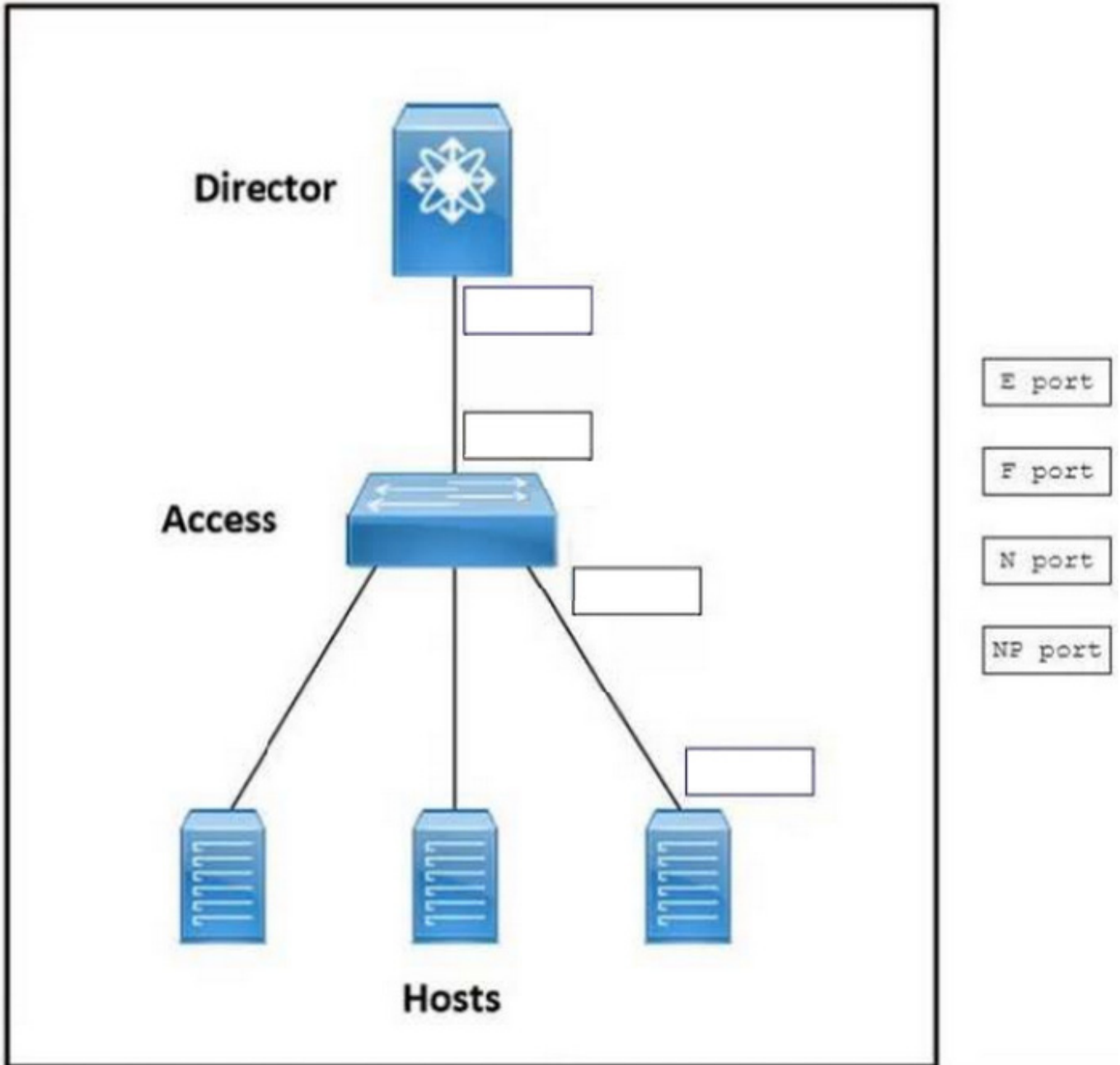
Correct Answer:

QUESTION 7

The end users report issues with datastore reachability between the newly installed virtual machines (VMs) and the storage array. The VMs are deployed on a Cisco C-Series server, directly connected with Cisco Nexus 5672UP switches over FCoE VLAN. The data traffic on VLAN 99, which is designated as a native VLAN, reaches its default gateway, but FCoE VLAN 99 fails to access the datastore.

Which action resolves the problem?

A. Implement FCoE traffic on VLAN 10 and data traffic on VLAN 99.

B. Implement host-facing FCoE ports as spanning-tree port type edge.

C. Configure the FCoE VLAN in the VSAN database before including it in the trunk port.

D. Configure the FCoE VLAN traffic on a separate interface from any other VLANs that traverse the network.

Correct Answer: A

QUESTION 8

A company owns a large-scale compute infrastructure that consists of over 1000 servers and virtual machines. The operational complexity continues to grow with additional policies and servers added to the environment. An infrastructure engineer is looking for an automation tool to reduce the operational complexity of configuring complex infrastructure. Because of the strict security requirements, the tool must be agentless, use the secure shell for transport, and be extendable using existing Python modules.

Which tool meets these requirements?

A. Puppet

B. NSO

C. Saltstack

D. Ansible

Correct Answer: D

QUESTION 9

What are two advantages of using Cisco vPC over traditional access layer designs? (Choose two.)

A. supports Layer 3 port channels

B. disables spanning-tree

C. no spanning-tree blocked ports

D. uses all available uplink bandwidth

E. maintains single control plane

Correct Answer: CD

vPC provides the following technical benefits:

1.

Eliminates Spanning Tree Protocol (STP) blocked ports

2.

Uses all available uplink bandwidth

3.

Allows dual-homed servers to operate in active-active mode

4.

Provides fast convergence upon link or device failure

5.

Offers dual active/active default gateways for servers vPC also leverages native split horizon/loop management provided by port-channeling technology: a packet entering a port-channel cannot immediately exit that same port-channel.

Reference: https://www.cisco.com/c/dam/en/us/td/docs/switches/datacenter/sw/design/vpc_design/vpc_best_practices_design_guide.pdf

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QUESTION 10

Refer to the exhibit.
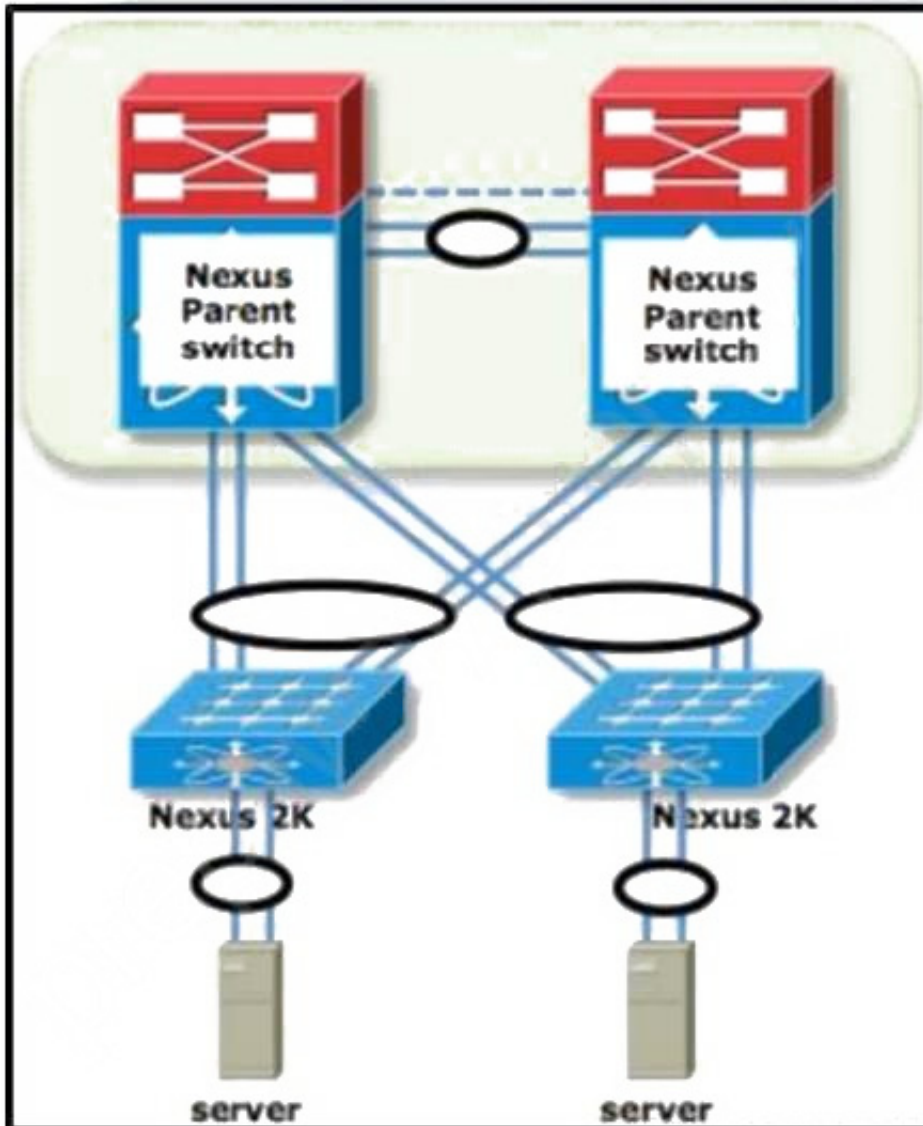
A Cisco engineer is configuring an active/active design that consists of Cisco Nexus 7000 Series Switches with Fabric Extenders using a vPC. The desired outcome is to allow the connection of servers/storage/devices to a single FEX, and use the FEX port channels to each parent switch to provide redundancy. The engineer configures FEX and FEX ID to be identical on both sides. During initial tests, an issue occurs with the straight-through FEX and active/active FEX configuration. What is the most probable reason?
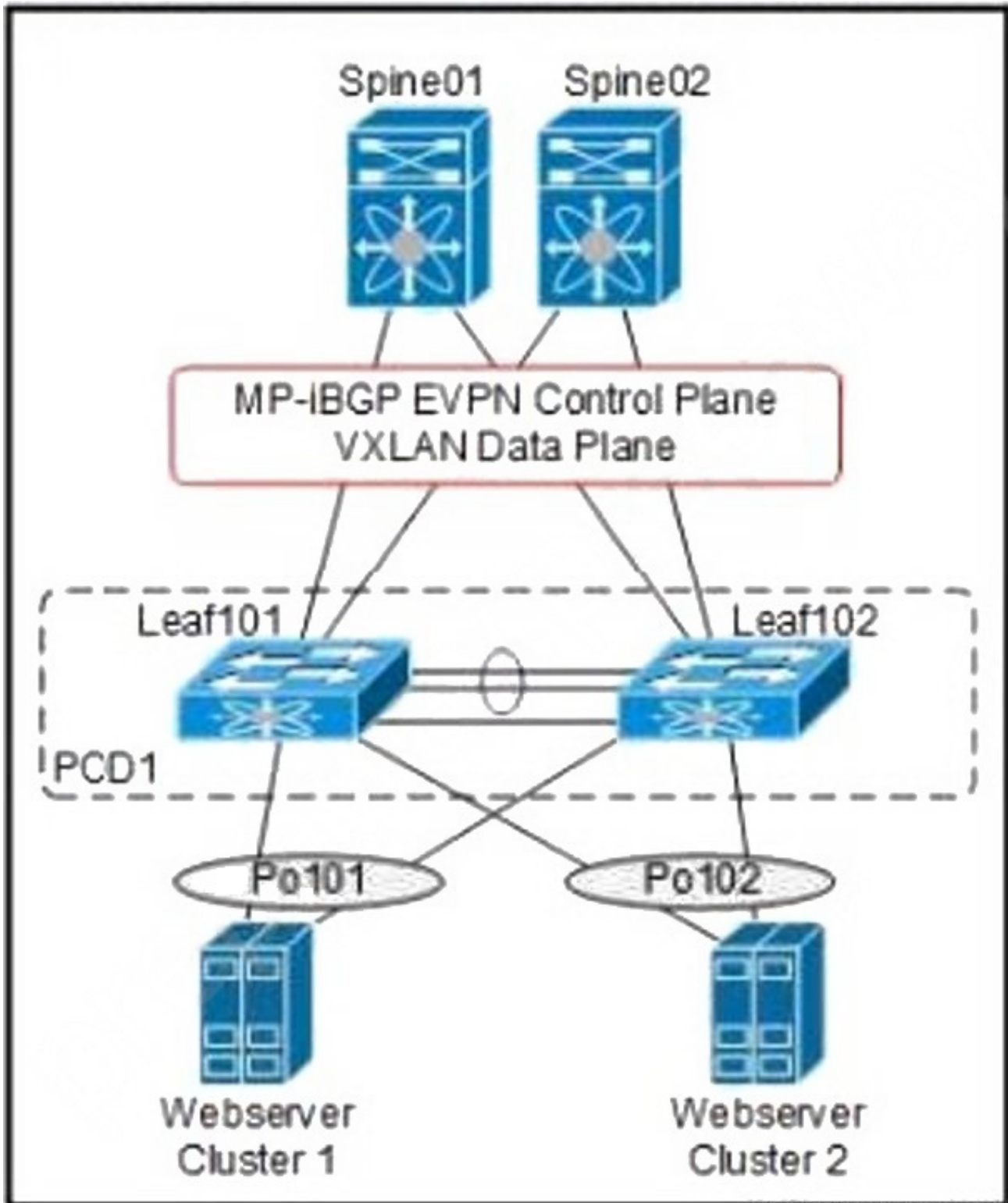
A. They are not enabled on vPC+ deployments.

B. FEX-AA is not a supported F-Series module.

C. They cannot exist on the same ASIC instance.

D. Full duplex is disabled for FEX connectivity.

Correct Answer: C

QUESTION 11

Refer to the exhibit.

An engineer must design a solution to support a customer\\'s rapidly growing online business. After consulting with the customer, the engineer determined:

1.

VXLAN multipod will provide the most optimal Layer 3 transport between web server clusters.

2.

Devices should be multihomed in an active/active configuration using LACP.

3.

No FEX or virtual switching is needed.

4.

vPC will be implemented to maximize throughput and provide redundancy for web server clusters.

Which feature must the engineer select to support this design?
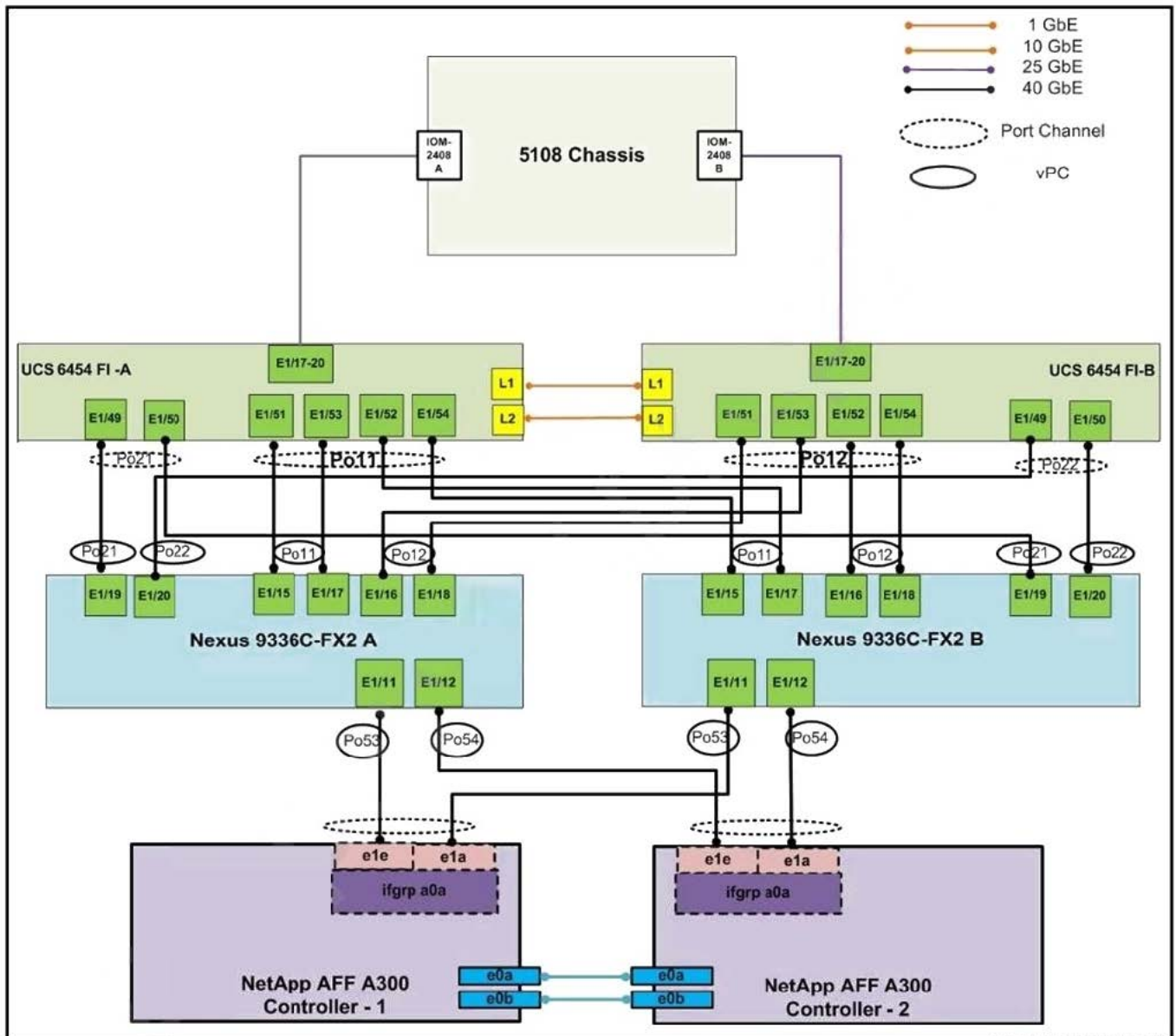
A. vPC+

B. single-sided vPC

C. enhanced vPC

D. double-sided vPC

Correct Answer: D

QUESTION 12

Refer to the exhibit.

A Cisco engineer is configuring a FlexPod data center for SAP with Cisco ACI, Cisco UCS Manager 4.0, and NetApp AFF A-Series. All systems and fabric links feature redundancy and provide end-to-end high availability. After the engineer sets the needed VLANs on the NetApp controller ports and adds them to the data broadcast domain, the engineer must make the storage disks visible for the UCS hosts. Which action must be taken on the UCS to accomplish this task?

A. Configure IQN pools for iSCSI boot.

B. Provide a storage virtual machine.

C. Create aggregates in ONTAP.

D. Enable HTTPS access on the servers.

Correct Answer: B

QUESTION 13

DRAG DROP

Drag and drop the components from the left onto the descriptions on the right that indicate what occurs to Fibre Channel fabric when that component fails.

Select and Place:

fabric interconnect	The Fibre Channel fabric fails for all of the connected Cisco UCS chassis.
FEX	The Fibre Channel fabric fails for one Cisco UCS chassis.
FEX link of the fabric interconnect	The Fibre Channel fabric fails for some of the servers within a Cisco UCS chassis.
converged network adapter	The Fibre Channel fabric fails for one server.

Correct Answer:

	converged network adapter
	FEX link of the fabric interconnect
	fabric interconnect
	FEX

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