



**640-864**

**Designing for Cisco Internetwork Solutions**

Q&A

DEMO Version

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**Topic 1, Main Questions****QUESTION NO: 1**

Which consideration is the most important for the network designer when considering IP routing?

- A. convergence
- B. scalability
- C. on-demand routing
- D. redistribution

**Answer: A**

**Explanation:** Convergence is most important because with delayed convergence outage recovery will be delayed as well.

**Link:** <http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/routed-ex.html#wp998414>

**QUESTION NO: 2**

You want to gather as much detail as possible during a network audit, to include data time stamping across a large number of interfaces, customized according to interface, with a minimal impact on the network devices themselves. Which tool would you use to meet these requirements?

- A. RMON
- B. SNMPV3
- C. NetFlow
- D. Cisco Discovery Protocol

**Answer: C**

**Explanation:**

NetFlow provides extremely granular and accurate traffic measurements and a high-level collection of aggregated traffic. The output of netflow information is displayed via the show ip cache flow command on routers. The Table shows a description of the fields for NetFlow output. Table. Netflow Output escription

Field	Description
Bytes	Number of bytes of memory that are used by the NetFlow cache
Active	Number of active flows
Inactive	Number of flow buffers that are allocated in the Netflow cache
Added	Number of flows that have been created since the start of the summary
Exporting flows	IP address and UDP port number of the workstation to which flows are exported
Flows exported	Total number of flows export and the total number of UDP datagrams
Protocol	IP protocol and well-known port number
Total Flows	Number of flows for this protocol since the last time that statistics were cleared
Flows/sec	Average number of flows this protocol per second
Packets/flow	Average number of packets per flow per second
Bytes/pkt	Average number of bytes for this protocol
Packets/sec	Average number of packets for this protocol per second

### QUESTION NO: 3

DataQuirk is a web-based medical transcription company for exotic-animal veterinarians. The company recently added a third ISP for international business. They are organizing the enterprise network into a fully operational Enterprise Edge.

To which two modules will the three ISPs be directly related? (Choose two)

- A. PSTN
- B. E- Commerce
- C. WAN/MAN
- D. Edge Distribution
- E. Internet Connectivity
- F. Remote Access VPN

**Answer: B,E**

**Explanation:** The purpose of ISP link is for serving customers & it is also providing internet connectivity to internal & external users, thus it falls into above 2 categories.

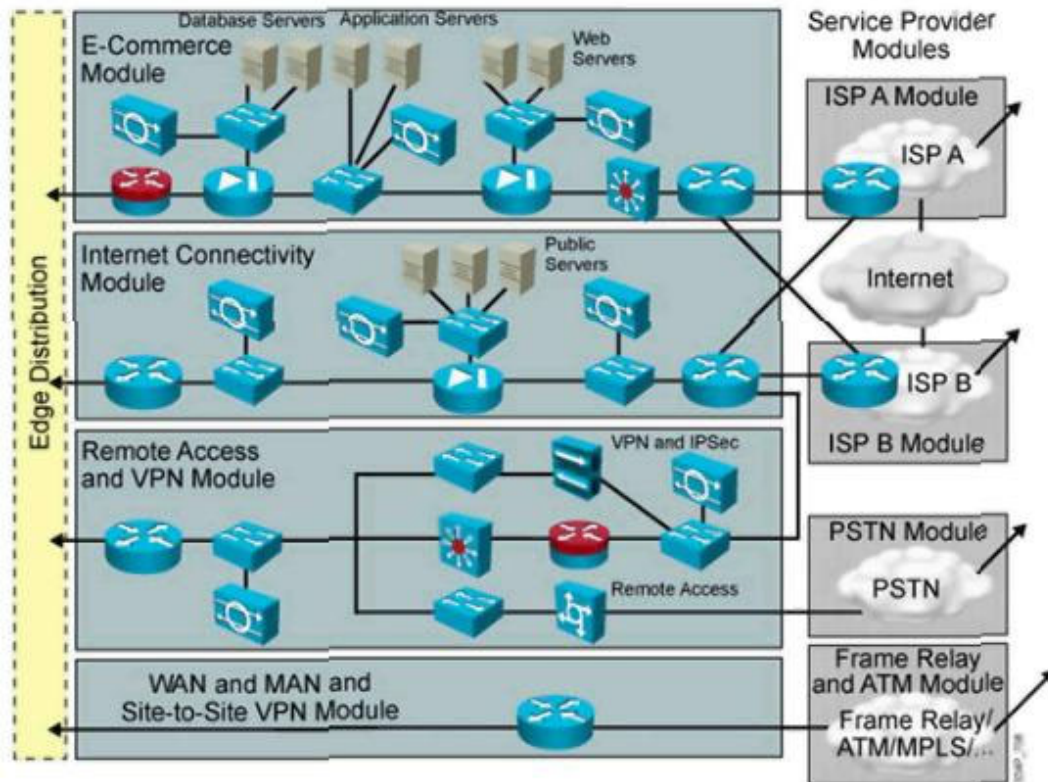
Explanation

The Enterprise Edge Module consists of the following modules:

- + E-commerce module: includes the devices and services necessary for an organization to provide e-commerce applications.
- + Internet connectivity module: provides enterprise users with Internet access.
- + VPN and remote access module: terminates VPN traf c and dial-in connections

from external users.+ WAN/ MAN and site-to-site module: provides connectivity between remote sites and the central site over various WAN technologies.

In these modules, only E-Commerce and Internet Connectivity modules will be directly related to the three ISPs.



Link: [http://leaman.org/ccna4/Chap\\_1.pdf](http://leaman.org/ccna4/Chap_1.pdf)

#### QUESTION NO: 4

Which two of these practices are considered to be best practices when designing the access layer for the enterprise campus? (Choose two)

- A. Implement all of the services (QoS, security, STP, and so on) in the access layer, offloading the work from the distribution and core layers.
- B. Always use a Spanning Tree Protocol; preferred is Rapid PVST+.
- C. Use automatic VLAN pruning to prune unused VLANs from trunked interface to avoid broadcast propagation.
- D. Avoid wasted processing by disabling STP where loops are not possible.
- E. Use VTP transparent mode to decrease the potential for operational error

**Answer: B,E**

**Explanation:**

When designing the building access layer, you must consider the number of users or ports required to size up the LAN switch. Connectivity speed for each host should also be considered.

Hosts might be connected using various technologies such as Fast Ethernet, Gigabit Ethernet, or port channels. The planned VLANs enter into the design.

Performance in the access layer is also important. Redundancy and QoS features should be considered.

The following are recommended best practices for the building access layer:

- Limit VLANs to a single closet when possible to provide the most deterministic and highly available topology.
- Use Rapid Per-VLAN Spanning Tree Plus (RPVST+) if STP is required. It provides the faster convergence than traditional 802.1d default timers.
- Set trunks to ON and ON with no-negotiate.
- Manually prune unused VLANs to avoid broadcast propagation (commonly done on the distribution switch).
- Use VLAN Trunking Protocol (VTP) Transparent mode, because there is little need for a common VLAN database in hierarchical networks.
- Disable trunking on host ports, because it is not necessary. Doing so provides more security and speeds up PortFast.
- Consider implementing routing in the access layer to provide fast convergence and Layer 3 load balancing.
- Use the **switchport host** commands on server and end-user ports to enable PortFast and disable channeling on these ports.
- Use Cisco STP Toolkit, which provides
- **PortFast:** Bypass listening-learning phase for access ports
- **Loop Guard:** Prevents alternate or root port from becoming designated in absence of bridge protocol data units (BPDU)
- **Root Guard:** Prevents external switches from becoming root
- **BPDU Guard:** Disables PortFast-enabled port if a BPDU is received

Cisco Press CCDA 640-864 Official Certification Guide Fourth Edition, Chapter 3, Page 85

## QUESTION NO: 5

With deterministic Wireless LAN Controller redundancy design, the different options available to the designer have their own strengths. Which one of these statements is an example of such a strength?

- A.** Dynamic load balancing, or salt-and-pepper access point design, avoids the potential impact of oversubscription on aggregate network performance.
- B.** N+N redundancy configuration allows logically grouping access points on controllers to minimize intercontroller roaming events.

- C.** N+N+1 redundancy configuration has the least impact to system management because all of the controllers are collocated in an NOC or data center
- D.** N+1 redundancy configuration uses Layer 3 intercontroller roaming, maintaining traffic on the same subnet for more efficiency.

**Answer: B**

**Explanation:** With such an arrangement there is no complex mesh of access points & controllers.

**Link:** <http://www.cisco.com/web/learning/le31/le46/cln/qIm/CCDA/design/understanding-wireless-network-controller-technology-3/player.html>

### QUESTION NO: 6

Which of these statements is true concerning the data center access layer design?

- A.** The access layer in the data center is typically built at Layer 3, which allows for better shaping of services across multiple servers.
- B.** With Layer 2 access, the default gateway for the servers can be configured at the access or aggregation layer.
- C.** A dual-homing NIC requires a VLAN or trunk between the two access switches to support the dual IP address on the two server links to two separate switches.
- D.** The access layer is normally not required, as dual homing is standard from the servers to the aggregation layer.

**Answer: B**

**Explanation:** With Layer 2 / 3, capabilities in-built access layer switches can have data & voice VLANs with interfaces; this is helpful in improving routing convergence.

Link:

[http://www.cisco.com/application/pdf/en/us/guest/netsol/ns432/c649/ccmigration\\_09186a00805fccbf.pdf](http://www.cisco.com/application/pdf/en/us/guest/netsol/ns432/c649/ccmigration_09186a00805fccbf.pdf)

### QUESTION NO: 7

Which one of these statements should the designer keep in mind when considering the advanced routing features?

- A.** one-way router redistribution avoids the requirement for state or default routes.
- B.** Redistribution, summarization, and filtering are most often applied between the campus core and enterprise edge.
- C.** Filtering only occurs on the routing domain boundary using redistribution.
- D.** Summarize routes at the core toward the distribution layer.

E. The hierarchical flexibility of IPv6 addressing avoids the requirement for routing traffic reduction using aggregation.

**Answer: B**

**Explanation:**

### QUESTION NO: 8

Which two statements about designing the Data Center Access layer are correct? (Choose two)

- A. Multiport NIC servers should each have their own IP address
- B. Layer 3 connectivity should never be used in the access layer
- C. Layer 2 connectivity is primarily implemented in the access layer
- D. Multiport NIC servers should never be used in the access layer
- E. Layer 2 clustering implementation requires servers to be Layer 2 adjacent

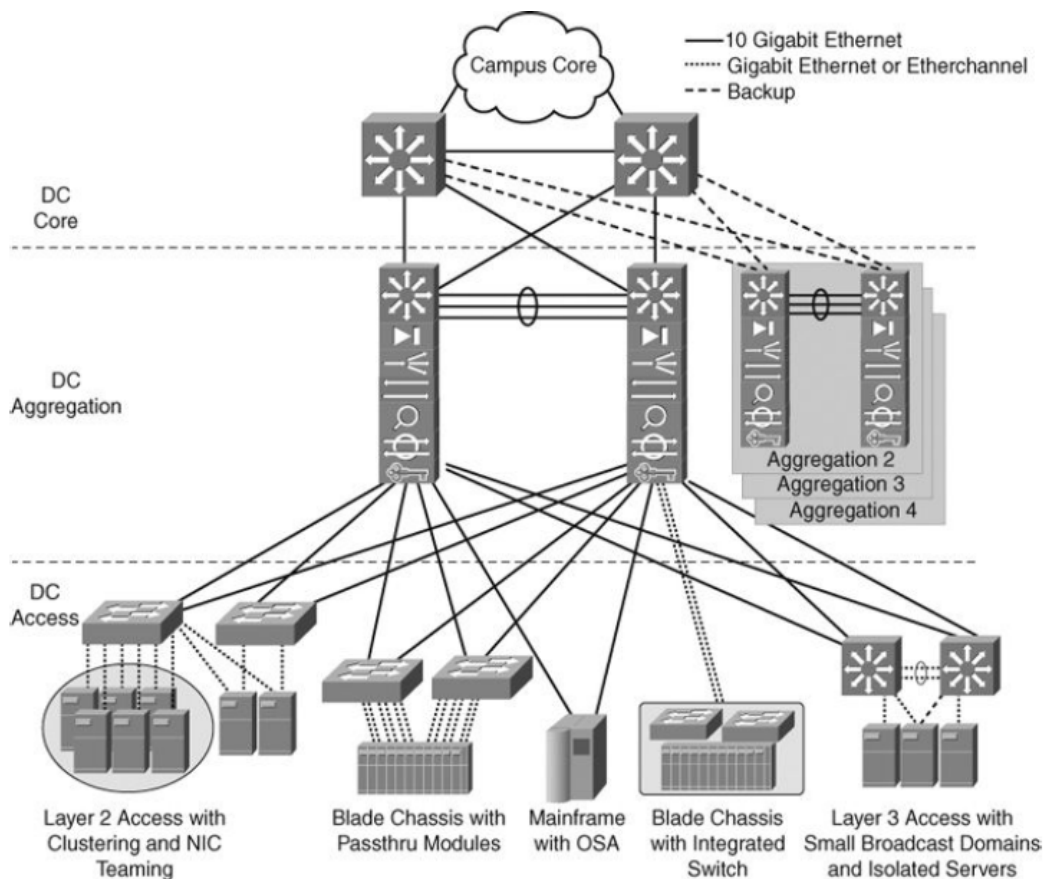
**Answer: C,E**

**Explanation:**

User access is primarily layer 2 in nature, layer 2 clustering is possible only in layer 2

Here is the explanation from the Cisco press CCDA certification guide

Figure 4-8. Enterprise Data Center Infrastructure Overview



## Defining the DC Access Layer

The data center access layer's main purpose is to provide Layer 2 and Layer 3 physical port density for various servers in the data center. In addition, data center access layer switches provide high-performance, low-latency switching and can support a mix of oversubscription requirements. Both Layer 2 and Layer 3 access (also called routed access) designs are available, but most data center access layers are built using Layer 2 connectivity. The Layer 2 access design uses VLAN trunks upstream, which allows data center aggregation services to be shared across the same VLAN and across multiple switches. Other advantages of Layer 2 access are support for NIC teaming and server clustering that requires network connections to be Layer 2 adjacent or on the same VLAN with one another.

CCDA 640-864 Official Certification Guide Fourth Edition, Chapter 4

### QUESTION NO: 9

Which IPv6 feature enables routing to distribute connection requests to the nearest content server?

- A. Link-local
- B. Site-local
- C. Anycast
- D. Multicast
- E. Global aggregatable

**Answer: C**

**Explanation:** **Anycast** is a network addressing and routing methodology in which datagrams from a single sender are routed to the topologically nearest node in a group of potential receivers all identified by the same destination address.

**Link:** <http://en.wikipedia.org/wiki/Anycast>

### QUESTION NO: 10

Which one of these statements is true about addressing redundancy within the WAN environment?

- A. The reliability and speed of DSL allow for cost savings by not including redundant links.
- B. CAMDM and dark fiber offer advanced redundancy features such as automatic backup and repair mechanism to cope system faults.

**C.** An SLA is one way to eliminate the need for redundancy.

**D.** The failure of a single SONET/SDH link or network element does not lead to failure of the entire network.

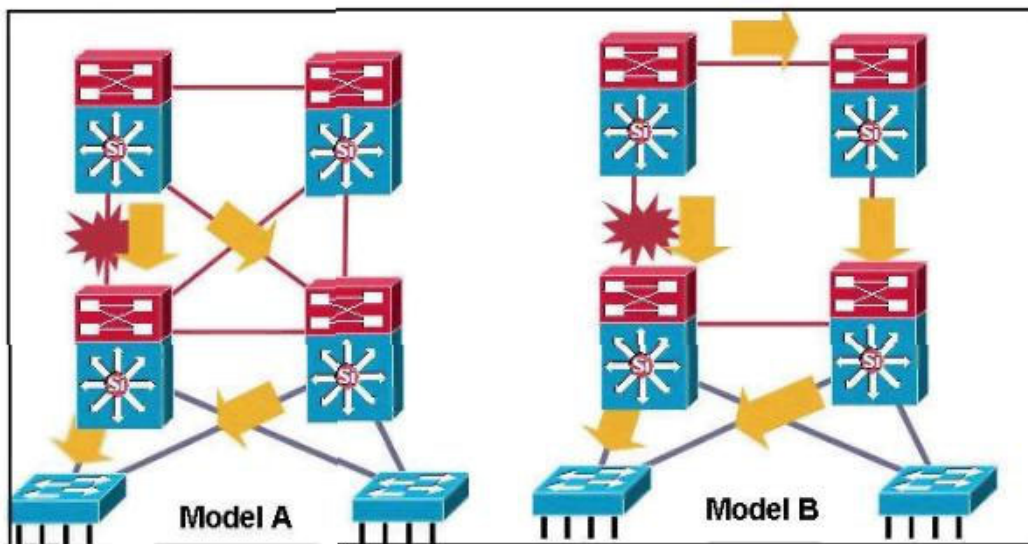
**Answer: D**

**Explanation:** Dual-Ring topologies are being used in WAN environment.

**Link:** [http://en.wikipedia.org/wiki/Ring\\_network](http://en.wikipedia.org/wiki/Ring_network)

## QUESTION NO: 11

Refer to the exhibit.



Model A is the recommended design for routing between Building Distribution switches and Campus Core switches. Which two statements describe the reasons? (Choose two)

- A.** Model A uses timer-based non-deterministic convergence.
- B.** Model A uses timer-based, providing fast convergence to the remaining path.
- C.** In Model A, a link or box failure does not require routing protocol convergence.
- D.** In Model A, the Layer 3 redundant equal cost links support fast convergence.

**Answer: C,D**

**Explanation:** Due to redundant links in place the routing protocols can select multiple equal cost paths and installs them as soon as one of the links goes down, such topology also can support load-balancing.

**Link:**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/HA\\_campus\\_DG/hacampusdg.html](http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/HA_campus_DG/hacampusdg.html)