GlobalITcert

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Certification Practice Exam Study Guide

Demo

Certification Study Guide

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QUESTION 1
Which layer 3 switching method utilizes a forwarding information base (FIB)?

A. Route caching
B. Demand-based switching
C. Flow-based switching
D. Topology-based switching

Answer: D

Explanation:
Cisco Express Forwarding (CEF) is an example of a topology-based switching mechanism that uses a FIB. CEF provides a topology-based switching mechanism that switches packets at hundreds of millions of packets per second, while maintaining high-speed services.
In a non-Cisco Express Forwarding implementation, the first packet of any flow needs to be processed by the CPU. This can lead to decreased performance, particularly if many new flows are being set up. In a Cisco Express Forwarding-based switch, the forwarding table is prepopulated based on the routing table. This helps to ensure both predictability in the event of a route flap and that CPU overload will not affect performance. All Cisco Catalyst switching products support Cisco Express Forwarding today.
Cisco Express Forwarding (CEF) switching is a proprietary form of scalable switching intended to tackle the problems associated with demand caching. With CEF switching, the information which is conventionally stored in a route cache is split up over several data structures. The data structures that provide optimized lookup for efficient packet forwarding include:
• The Forwarding Information Base (FIB) table - CEF uses a FIB to make IP destination prefix-based switching decisions. The FIB is conceptually similar to a routing table or information base. It maintains a mirror image of the forwarding information contained in the IP routing table. When routing or topology changes occur in the network, the IP routing table is updated, and these changes are reflected in the FIB. The FIB maintains next-hop address information based on the information in the IP routing table. This table is used in this topology based switching method.
Reference: Building Cisco Multilayer Switched Networks (Cisco Press) page 412.

QUESTION 2
New access layer switches are being installed in the 3-tiered GlobalITcert network. Which of the attributes below correctly describe the characteristics of access layer switches? (Choose all that apply.)

A. High port density to connect to end users.
B. Robust Layer 3 routing throughput
C. Inter-VLAN routing
D. Low cost
E. Security
F. None of the above

Answer: A, D

Explanation:
The Access Layer:
The main criteria for access devices are to provide this functionality with low-cost, high port density devices. Access layer switches should provide connections for as many end devices as possible, as fast as possible. Incorrect Answers:
B, C: Layer 3 (Inter VLAN) routing is processor intensive and should generally be used only in larger, more expensive distribution layer switches instead of at the access layer.
E: The use of security features such as access lists should be used at the distribution layer of the network. Reference: Building Cisco Multilayer Switched Networks (Cisco Press) page 21

QUESTION 3
In an effort to reduce the number of broadcast traffic within the GlobalITcert network, new Catalyst switches are being installed. Which of the following statements correctly describe Layer 2 broadcast traffic?

A. Layer 2 broadcast traffic is blocked by Layer 3 devices.
B. A new packet is sent each time the client requests it.
C. Each frame uses a special address for which only interested clients listen.
D. It is the most efficient way to send data to a small group of clients.
E. Each packet is refreshed when requested.

Answer: A

Explanation:
LAN broadcasts do not cross routers (Layer 3 devices). By default, routers do not forward any broadcast packets, unless the "IP helper-address" command is configured. Incorrect Answers:
B: Each broadcast is only send once.
C: Multicast is more efficient. Broadcast reach all clients, multicast will only reach the member of the multicast group.
D: All clients on the subnet receive the broadcast traffic.
E: Broadcast traffic is not refreshed or resent. Doing so could result in a broadcast storm. Reference: Building Cisco Multilayer Switched Networks (Cisco Press) page 17.

QUESTION 4
The GlobalITcert network is upgrading the network to use switches that are capable of multilayer switching. Which statement below best describes the concept of multilayer switching (MLS)?

A. Switches that operate at the access, distribution, and core layer at the design model.
B. An OSI Layer 1 and 2 bridging technique.
C. A technique to provide hardware switching of Layer 3 unicast packets.
D. A flow-based Layer 3 packet routing methodology.

Answer: C

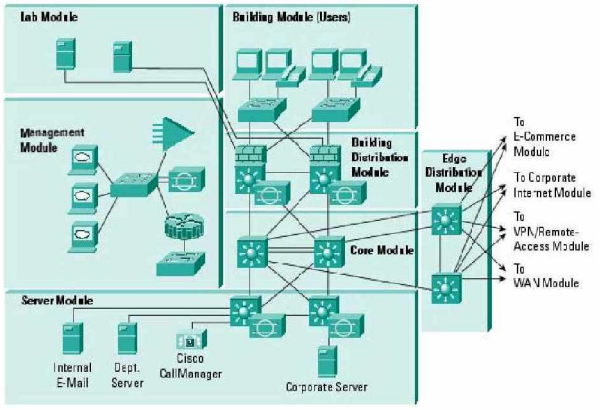
Explanation:
Switches are layer two devices originally developed to contain broadcasts. A multilayer switch is an improvement because it contains extra processing power to consider layer 3 address information, so it effectively works at more than one layer.
Multi-Layer Switching (MLS) has become a highly desired method of accelerating routing performance through the use of dedicated Application Specific Integrated Circuits (ASICs). Traditional routing is done through a central CPU and software. MLS offloads a significant portion of routing (packet rewrite) to hardware, and thus has also been termed switching. MLS and Layer 3 switching are equivalent terms.

QUESTION 5
In the Enterprise Composite Model, what are the four major modules of the Campus functional area? (Choose four)

A. Campus Infrastructure
B. Network Management
C. Server Farm
D. Edge Distribution (Enterprise Edge)
E. Access Distribution
F. Core Layer

Answer: B, C, D, F

Explanation:
Following is a detailed analysis of all of the modules contained within the enterprise campus. The following figure shows this campus:
Enterprise Campus Detail



Management Module
The primary goal of the management module is to facilitate the secure management of all devices and hosts within the enterprise architecture.
Core Module The core module in the network architecture is nearly identical to the core module of any other network architecture. It merely routes and switches traffic as fast as possible from one network to another. Building Distribution Module
This module provides distribution layer services to the building switches. These include routing, quality of service (QoS), and access control. Requests for data flow into these switches and onto the core, and responses follow the identical path in reverse.
Building Access Module This module is described as the extensive network portion that contains end-user workstations, phones, and their associated Layer 2 access points. Its primary goal is to provide services to end users. Server Module The server module's primary goal is to provide application services to end users and devices. Traffic flows on the server module are inspected by on-board intrusion detection within the Layer 3 switches. Edge Distribution Module This module aggregates the connectivity from the various elements at the edge. Traffic is filtered and routed from the edge modules and routed into the core. Incorrect Answers:
A: This is incorrect because 'Campus Infrastructure' refers to the collective of all network equipment on the campus.
E: This is incorrect because the 'Access Distribution' area is not a defined area, it is just a combination of the already familiar terms 'access' (from the OSI access layer) and 'distribution' (from this models Edge Distribution).

QUESTION 6
The GlobalITcert network is a large campus network. Which of the following layers are typically found on this type of campus network? (Select all that apply)

A. Access
B. Front
C. Distribution
D. Back
E. Core

Answer: A, C, E

Explanation:

An enterprise campus network can be broken down to small, medium, and large locations. In most instances large campus locations will have a three-tier design with a wiring closet component (Ethernet access layer), a distribution layer, and core layer. Small campus locations will likely have a two-tier design with wiring closet component (Ethernet access layer) and a backbone core (collapsed core and distribution layers). Medium-sized campus network designs will sometimes use a three-tier implementation or a two-tier implementation depending on the number of ports, service requirements, manageability, performance, and availability levels that are required.