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Section 1

1. Switches and Vlan assignment below:

Write 2 or more paragraphs on Layer 2 Switches vs Layer 3 Switches and their importance in Networking

A network switch: On a network, a switch is a hardware device that filters and forwards network packets, but

The term Layer 2 is adopted from the Open System Interconnect (OSI) model, which is a reference model for

Layer 2 CISCO switches are similar to bridges. They interconnect networks at layer 2, mostly at the MAC su

What is Layer 3 Switching?

A Layer 3 switch is a switch that performs routing functions in addition to switching. A client computer needs

This type of layer helps you to combine the functionality of a switch and a router. It acts as a switch to conne

This type of CISCO network switches support routing protocols. It helps to inspect incoming packets and ma

L3 support routing between virtual LANs, Improve fault isolation and it also Provide ease of security manage

Layer 2 switches are used to reduce traffic on the local network, whereas Layer 3 switches mostly used to In

The advantage of Layer 2 switches is that it helps to forward packets based on unique MAC addresses

The advantage of Layer 3 switches offers flow accounting and high-speed scalability.

The main drawback of Layer 2 switches is that it does not allow you to implement any intelligence while forw

The picture shows an example of a NETGEAR 5 port switch

VLAN : Short for virtual local area network, VLAN allows a network administrator to set up separate network

VLANs are also critical because they improve overall network efficiency by grouping devices that most frequ

Section 2

Networking Layer 3,

Define terms: Trunking, ICANN, IETF, BGP, Layer 3 Switch, IPv4, IPv6, Edge Routers, and APIPA

Write out the Class C Cheatsheet in under 2 minutes, how many times did it take to memorize and recognize

This is a cognizant assignment that does not require an application or a calculator. Write it out on paper usin

Resolve Class C sub mask shows all work.

192.168.11.0 /25

192.168.12.12 /26

192.168.25.32 / 28

Suggestions: Check the Network Tools folder to learn more on subnetting

An Internet Protocol (IP) Addressing for Class C is a dotted-decimal

Sample Correct: 192.168.110.11 /26 (subnet)
255.255.255.192 (sub mask)

Subnet Basics

A. What is the sub mask for Class C IP addresses below:

1. 192.168.11.0 /26

Therefore, Submask for 192.168.11.0/26 is 255.255.255.192

2. 192.168.122.33 /30

Therefore, Submask for 192.168.122.33/30 is 255.255.255.252

3. 192.168.11.0 /27 : Subnet mask = 255.255.255.224

Resolve Class C sub mask shows all work.

192.168.11.0 /25 submask = 255.255.255.128

192.168.12.12 /26 :

submask = 255.255.255.192 (see number 1 above for all work)

192.168.25.32 / 28,

submask = 255.255.255.240

B. What is the sub mask for Class B IP addresses below?

By default, Class B IPs are assigned 2 octets which is 16 bits when expressed as a submask in decimal it

4. 172.16.0.0 /18

Therefore, subnet mask for 172.16.0.0 /18 is 255.255.192.0

5. 172.16.0.0 /24

Therefore, subnet mask for 172.16.0.0 /24 is 255.255.0.0

6. 172.16.0.0 /22

Therefore, subnet mask for 172.16.0.0 /22 is 255.255.252.0

C. What is the sub mask for Class A IP addresses below:

By default, Class A IPs are assigned 1 octet which is 8 bits which when expressed as a submask in decimal it

7. 10.0.0.0 /10

Therefore, subnet mask for 10.0.0.0 /10 is = 255.192.0.0

8. 10.0.0.0 /14

Therefore, subnet mask for 10.0.0.0 /14 is = 255.240.0.0

Write 3 paragraphs for each title and add pictures/diagrams on each of these router algorithms and devices.

1. OSPF and RIPv2

2. EIGRP and IS-IS

3. BGP and AS

4. Stateful and Stateless connections differences

5. Edge routers and aggregation

6. Jumbo Frames Technology

7. MPLS

Routers are located on the Network layer 3, Routers like servers play specific roles for different type of network

EIGRP

OSPF

IS-IS

Ripv2