

EE4221 Lecture 4 Questions

VDC Networking - Advanced Ethernet Switching

Question 1.

An 8-port Ethernet switch has the following CAM table:

Ethernet Address	V L A N	1	2	3	4	5	6	7	8
1111.1111.1111	1				X				
2222.2222.2222	2						X		
3333.3333.3333	2			X					
4444.4444.4444	2		X						
5555.5555.5555	1								X

- If an Ethernet frame with source Ethernet address 5555.5555.5555 and destination address 0000.aaaa.aaaa is received by port 1 of the switch, which of the port(s) will be used for sending out the frame?
- Discuss how the contents the forwarding table change when the frame discussed in a) is received.
- Repeat a)&b) if an Ethernet frame with source Ethernet address 4444.4444.4444 and destination address 3333.3333.3333 is received by port 1 of the switch.
- Repeat a)&b) if an Ethernet frame with source Ethernet address 4444.4444.4444 and destination address ffff.ffff.ffff is received by port 1 of the switch after c).

VDC Networking - Networking Infrastructure

Q1. What is a benefit of network virtualization?

- a. Enhanced storm control
- b. Increased resource acquisition
- c. Improved manageability
- d. Better policy control

Q2. A virtual switch can connect to a physical switch by:

- a. a virtual NIC
- b. a physical NIC
- c. a virtual HBA
- d. a physical HBA

Q3. A virtual switch connects to 3 VMs, namely VM1, VM2 and VM3. An Ethernet frame is sent from VM1 to the virtual switch (with source address MAC-VM1 and destination address MAC-VM3). Which VM(s) will this frame be sent to by the virtual switch?

- a. VM2
- b. VM3
- c. Both VM2 and VM3
- d. It depends on the switching table of the virtual switch

Q4. What is the benefit of connecting multiple physical NICs to a virtual switch?

- a. To improve network speed
- b. To improve network availability
- c. Both a & b

VDS-Core Actions									
Summary Monitor Manage Related Objects									
Settings Alarm Definitions Tags Permissions Network Protocol Profiles Ports Resource Allocation									
 (no filter)									
Port ID	Name	Connectee	Runtime MAC Addr... 1	Port Group	DirectPath I/O	State	VLAN ID	Time Statistics Updat...	Broad
80		Server 2012 Tem...	00:50:56:b8:7d:92	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
104		Z-VRA-035996	00:50:56:b8:6b:32	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
43		View-Composer	00:50:56:b8:6b:26	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
76		Windows 7	00:50:56:b8:68:5b	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
48		Cisco UCS Platfo...	00:50:56:b8:67:18	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
85		PernixData	00:50:56:b8:62:d0	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
64		vCD	00:50:56:b8:5e:ab	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
13		Z-VRA-684572	00:50:56:b8:5c:92	Management-1	Inactive	 Link Up	VLAN access: 0	--	--
45		Zerto	00:50:56:b8:5c:80	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
75		View-CS	00:50:56:b8:59:d8	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
78		learn_puppet_ce...	00:50:56:b8:57:09	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
87		Prime96	00:50:56:b8:4b:d0	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
81		vCNS-Master	00:50:56:b8:48:9e	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
84		Prime95	00:50:56:b8:46:ba	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
67		Server 2008 R2 T...	00:50:56:b8:3c:49	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
47		Cisco UCS Platfo...	00:50:56:b8:2a:63	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
105		Z-VRA-220164	00:50:56:b8:2a:24	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
50		vCO	00:50:56:b8:29:10	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
55		vCD	00:50:56:b8:24:b3	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
103		Ubuntu Server 12...	00:50:56:b8:15:e8	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
49		Cisco UCS Platfo...	00:50:56:b8:13:86	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
65		DC2	00:50:56:b8:11:bb	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
52		vCenter-cloud	00:50:56:b8:07:d1	VM-1	Inactive	 Link Up	VLAN access: 0	--	--
74		Veeam	00:50:56:b8:03:8c	VM-1	Inactive	 Link Up	VLAN access: 0	--	--

Q5. The following questions refer to the address table of a vSwitch as shown above.

Q5a. A VM, connecting to port 80 of the vSwitch, sends an Ethernet frame with source address 0050.56b8.7d92 and destination address 0000.aaaa.aaaa to the vSwitch. Which of the port(s) will this frame be sent out by the switch?

Q5b. Repeat Q5a if the destination address of the frame is 0050.56b8.3c49.

Q5c. Repeat Q5a if the destination address is a broadcast one.

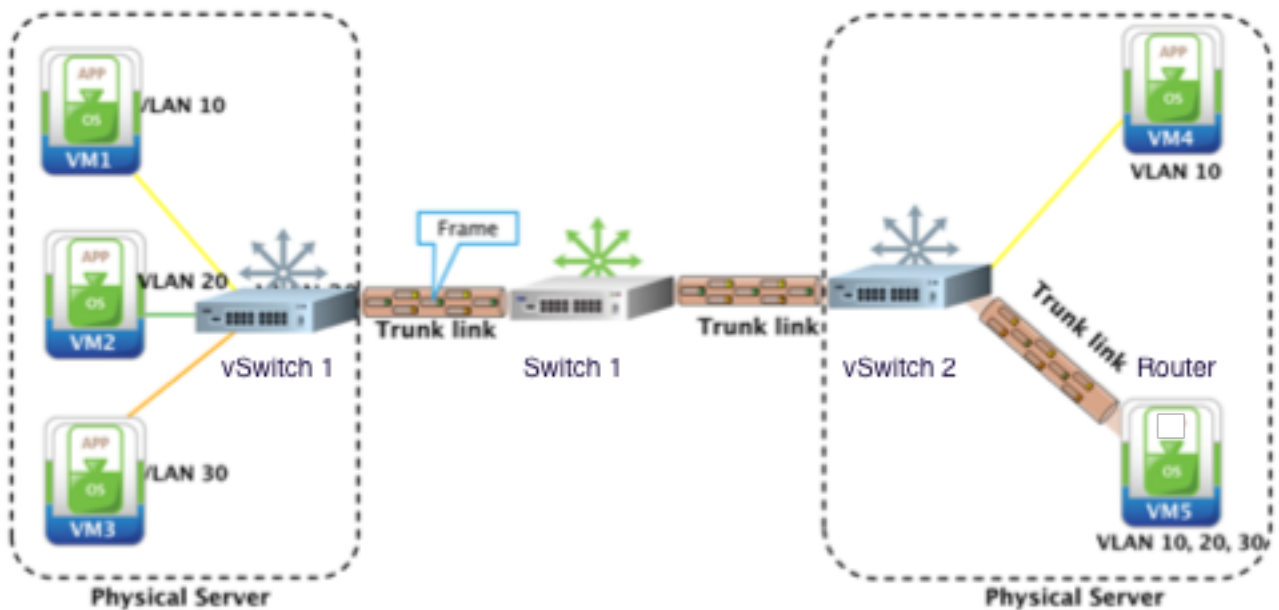
Q5d. An Ethernet frame, sent from the uplink port to the vSwitch, has a source address of 3333.3333.3333 and a destination address of 00:50:56:b8:3c:49. Which of the port(s) will this frame be sent out by the switch?

Q5e. Repeat Q5d if the destination address is 4444.4444.4444.

Q5f. Repeat Q5e if the destination address is a broadcast one.

VDC Networking - VLANs in VDC Networking

The following shows the network of a VDC.



Q1. An Ethernet frame carrying a ping is sent from VM1 to VM4. Describe the path that this frame will travel.

Q2. An Ethernet frame carrying a ping is sent from VM1 to VM3. Describe the path that this frame will travel.

Q3. For Q1. and Q2. above, in which links that VLAN tags will be used?