Chapter 27: Quiz – Virtualization (Answers) CCNPv8 ENCOR

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1. What is the function of a hypervisor?

- **to create VMs and provide hardware abstraction to support them**
- to create an isolated environment where containerized applications run
- to perform FCAPS functions for VNFs
- to centralize management of vSwitch configuration

Explanation: A hypervisor is a software process that abstracts the hardware layer from the operating systems allowing multiple virtual machines to run simultaneously.

2. What are three characteristics of containers on a host server? (Choose three.)

- **They all share the same OS.**
- **They are isolated from each other.**
- **They leverage the kernel of the host OS for a quick start.**
- They include a guest OS.
- They virtualize a physical server.
- They are resource intensive and require several minutes to start.

Explanation: A container is an isolated environment where containerized applications run. It contains the application and all dependencies needed for the application to run. The containers on a physical server all share the same OS, are isolated from each other, and leverage the kernel of the host operating system to allow for quick starts.

3. Which component of the ETSI NFV architectural framework is responsible for creating, maintaining, and tearing down VNF network services?

- **NFV orchestrator**
- OSS/BSS
- NFV element manager
- Virtualized Infrastructure Manager

Explanation: In the ETSI NFV architectural framework, the NFV orchestrator is responsible for creating, maintaining, and tearing down VNF network services.

4. What are two responsibilities of the NFV orchestrator in the ETSI NFV architectural framework? (Choose two.)

- **creating, maintaining, and tearing down VNF network services**
- **creating end-to-end network services over multiple VNFs**
- collecting performance measurements and fault information
- providing life cycle management of all NFVI resources
- performing all FCAPS functions for VNFs

Explanation: Within the ETSI NFV architectural framework, it is the NFV orchesrator that is responsible for creating, maintaining, and tearing down VNF network services and the creation of end-to-end network services.

5. What is a Linux based software solution package that includes virtualization, VNF lifecycle management, monitoring, device programmability, and hardware acceleration functions?

- **NFVIS**
- Cisco Enterprise NFV
- Cisco DNA
- Docker

Explanation: NFVIS uses Linux to drive the underlying hardware platforms and hosts the virturalization layer. NFVIS includes additional functions for virtualization, VNF lifecycle management, monitoring, device programmability, and hardware acceleration.

6. What are two container engines used to create, run, and manage containers in a virtual environment? (Choose two.)

- **rkt**
- **Docker**
- XenServer
- VServer
- SR-IOV

Explanation: Container engines create, run, and manage containers. Two popular engines include: rkt and Docker.

7. Which is an isolated environment that supports application services that share the underlying resources of the host operating system?

- **container**
- virtual machine
- hypervisor
- NFV infrastructure

Explanation: Containers are isolated environments which contain an application and all the dependencies which the application needs to run. Unlike a virtual machine, a container does not have a guest operating system and uses the resources of the host operating system.

8. What is a benefit of distributed virtual switching?

- **It provides configuration consistency across all the hosts that are part of the distributed switch.**
- It allows network traffic to flow between vSwitches within the same host.
- It allows multiple vSwitches to share the same pNIC.
- It provides increased packet throughput to I/O devices.

Explanation: vSwitches are created under a virtualized server and enable VMs to communicate with each other and with external networks. Distributed virtual switching reduces administrative overhead by providing configuration consistency across all the hosts that are part of the distributed switch.

9. Which three are I/O technologies used to reduce overhead and increase throughput in an OVS environment? (Choose three.)

- **OVS-DPDK**
- **PCI Passthrough**
- **SR-IOV**
- ETSI NFV
- MANO
- MSX

Explanation: In an OVS environment every packet received interrupts the CPU. The number of interrupts increases with high speed NICs and small packets. To avoid overhead and increase packet throughput, I/O technologies such as OVS-DPDK, PCI Passthrough and SR-IOV have been developed.

10. What is a characteristic of a bare-metal server?

- **It runs directly on hardware.**
- It runs in a container.
- It is typically used by clients.
- It runs on a hypervisor.

Explanation: A bare-metal server is one in which the host operating system run directly on the physical server hardware.

11. In a server virtualization environment, what component enables VMs that connect to vSwitches to communicate with external networks?

- **pNIC**
- vNIC
- virtual gateway
- emulated PCIe device

Explanation: In a virtualized server the vSwitch is connected to external networks through a physical NIC (pNIC).

12. In a virtualized environment, what device moves data between a pNIC and a vNIC?

- **vSwitch**
- I/O devices
- VNF manager
- VNF orchestrator

Explanation: There are physical NICs (pNICs) that connect to external networks and virtual NICs (vNICs) that connect to VMs. The vSwitch is responsible for moving data from the pNIC and sending it to the vNIC.

13. Which Cisco product provides MANO functionality to the Cisco NFV solution?

- **Cisco Digital Network Architecture (DNA) center**
- Cisco Enterprise Network Compute System (ENCS)
- Cisco Unified Computing System (UCS)
- Cisco Identity Services Engine (ISE)

Explanation: VNF management and NFV orchestration capabilities in the Cisco NFV solution are provided by Cisco DNA Center.

14. Which component of the ETSI NFV architectural framework is responsible for managing and controlling the NFVI hardware resources?

- **virtualized infrastructure manager**
- VNF manager
- NVF orchestrator
- element manager

Explanation: Within the ETSI NFV architectural framework, it is the virtualized infrastructure manager that is responsible for managing and controlling the NFVI hardware resources of the physical computer, storage, and network, and the virtualized resources.

15. Which is a characteristic of a vSwitch?

- **Network traffic cannot flow between vSwitches within the same virtualized server.**
- VMs connected to vSwitches can communicate with external networks through vNICs.
- Multiple vSwitches can share the same pNIC.
- Only one vSwitch can be created in a virtualized server

Explanation: vSwitches are created under a virtualized server and enable VMs to communicate with each other and with external networks. Multiple vSwitches can exist under the same virtualized server. However, traffic cannot flow directly between vSwitches.