9.2.5 Virtual Networking Facts

This lesson covers the following topics:

- Virtual networks
- Virtual networking devices

Virtual Networks

A virtual network is a computer network consisting of virtual and physical devices. Organizations generally use virtual devices to save money. By using less physical storage space, a company is able to have considerably more devices in a network while using very little space in a data center. With virtualization, companies can take advantage of the efficiencies and agility of software-based devices and storage resources.

The physical networking devices are responsible for forwarding of packets, while the virtual network (software) provides an intelligent abstraction that makes it easy to deploy and manage network services and underlying network resources.

Following are some network virtualization terms to be familiar with:

Term	Description
Virtual Local Area Network (VLAN)	Several physical LANs can function as a single logical LAN, or the partitioned network can be on a single router.
Virtual Area Network (VAN)	This is a virtual LAN running on top of a physical LAN. This configuration enables guest virtual machines on separate physical hosts to communicate.
Virtual Private Network (VPN)	A VPN is usually used as a secure tunnel over another network, connecting multiple remote end-points, such as routers. A multipoint VPN is a VPN connecting more than two end-points.
Virtual Machine (VM)	VMs are virtual computers that function like a physical computer. Virtual servers are virtual machines capable of providing services such as databases, email, domains, and applications. The traffic between virtual machines can be routed using virtual switches alongside virtual routers and virtual firewalls for network segmentation and data isolation.

Virtual Networking Devices

The following table describes virtual networking devices that can be used to create a more secure network.

Device	Description
Virtual switch (vSwitch)	Software that facilitates the communication between virtual machines by checking data packets before moving them to a destination. A vSwitch may be a part of

	software installed in the virtual machine or it may be part of the server firmware.
Virtual router (vRouter)	A software function that replicates the functionality of a physical router. Because virtual routing liberates the IP routing function from specific hardware, you can more freely move routing functions around a network.
Virtual firewall appliance (VFA)	Software that functions as a network firewall device that provides the usual packet filtering and monitoring. The VF can run as a traditional software firewall on a virtual machine.
Virtual machine monitor/hypervisor (VMM/hypervisor)	Software, firmware, or hardware that creates and runs virtual machines. A computer on which a hypervisor runs to provide one or more virtual machines is called a host machine. Each virtual machine is called a guest machine. The hypervisor provides the guest operating systems with a virtual operating platform and manages the execution of the guest operating systems.