6.14.5 Virtual Networking Facts

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 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 simply responsible for the 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
VLAN	Virtual Local Area Network. Several physical LANs can function as a single logical LAN, or the partitioned network can be on a single router.
VAN	Virtual Area Network. This is a virtual LAN running on top of a physical LAN. This configuration enables guest virtual machines on separate physical hosts to communicate.
VPN	Virtual Private Network. 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.
VM	Virtual Machine. 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.

These are some virtual networking devices that can be used to create a more secure network design:

Device	Description
vSwitch	Virtual Switch: Software that facilitates the communication between different virtual machines by checking data packets before moving them to a destination. A vSwitch may be already a part of software installed in the virtual machine or they may be part of the server firmware.
vRouter	Virtual Router: A software function that replicates the functionality of a physical router. Because virtual routing liberates the IP routing function from specific hardware, routing functions can be more freely moved around a network with the virtual version.
VFA	Virtual Firewall (Appliance): 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.
VMM/Hypervisor	Virtual Machine Monitor (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.