

vSphere & VMware Components

ESXi

Bare metal hypervisor installed directly on physical server. Responsible for creating and managing virtual machines, provides abstraction of CPU, memory, storage, and networking.

vCenter Server

The centralized management platform for vSphere environments. Manages multiple ESXi hosts and VMs from a single interface. Also distributes resources, enables high availability, and supports live migration of VMs.

vSphere Client

User interface to manage ESXi hosts and vCenter Server. Available as a web-based client (HTML5) and a standalone client.

vSphere Virtual Machine File System (VMFS)

VMware clustered file system that allows multiple ESXi hosts to share the same storage. Provides features like simultaneous access, optimized storage, and storage snapshots.

vSphere Networking

Enables VM-to-VM and VM-to-external communication. Components include: - Standard Switch: Basic networking for a single host - Distributed Switch: Centralized network management across multiple hosts

vSphere Storage

Provides different options to connect and manage storage: - NFS (file-based storage) - vSAN (VMware's hyper-converged storage)

vSphere Fault Tolerance

Provides continuous availability for crucial VMs by creating a live shadow instance of a VM. Protects against host failures with zero downtime.

Template Management

A VM template is a master copy of a virtual machine that includes OS installation, configured patches and updates, applications, and settings. Used to deploy multiple identical VMs without reinstalling OS/apps each time.

Linked Mode in vSphere

Linked mode allows you to connect and manage multiple vCenter Server systems. Useful in large environments with multiple vCenter servers. Types: - Enhanced Linked Mode (vSphere 6.0+): Uses vCenter SSO domain to connect vCenters. Provides: * Single pane of glass management * Global permissions * License sharing