VMWare 6.5 Foundations Exam Objectives

Section 1 – Install and Configure vCenter Server 6.x and ESXi 6.x Hosts

Objective 1.1 – Identify vSphere Architecture and Solutions for a given use case

* Explain available vSphere editions and features
  + <http://planetvm.net/blog/?p=2931>
  + Standard
    - Base edition
    - Contains
      * vMotion
      * Storage vMotion
      * HA
      * DP
      * Fault Tolerance
      * vShied Endpoint
      * vSphere Replication
      * Hot Add
      * vVols
      * Storage Policy Based management
      * Content Library
      * Storage APIs
  + Enterprise
    - Contains
      * Standard Plus
      * Reliable mem
      * Big Data Extensions
      * VirtualSerial port concentrator
      * DRS
      * SRM
  + Enterprise Plus
    - Contains
      * Enterprise Plus
        + Storage DRS
        + SIOC
        + NIOC
        + SR-IOV
        + Flash read cache
        + Video Grid vGPU
        + dvSwitcvh
        + Host profiles
        + Auto deploy
  + Standard with Operations management
    - Contains
      * Standard Plus
      * Operations Visibility and management
      * Performance Monitoring and predictive analytics
      * Capacity management and optimization
      * Change Configuration and Compliance Management
      * vSphere security hardening
  + Enterprise with Operations management
    - Contains
      * Enterprise Plus
      * Operations Visibility and management
      * Performance Monitoring and predictive analytics
      * Capacity management and optimization
      * Change Configuration and Compliance Management
      * vSphere security hardening
  + Remote Office/Branch Office Standard
    - Contains
      * Adds VM Capacity to existing Std, ent, ent+ system
      * Packs of 25 VMs
      * Feature set equivalent to standard
  + Remote Office/Branch Office Advanced
    - Contains
      * Adds VM Capacity to existing Std, ent, ent+ system
      * Packs of 25 VMs
      * Feature set equivalent to Ent plus
  + Essentials Standard
    - Contains
      * Very small enterprises
      * Vcenter with less features
      * Up to 3 servers with 2CPUs each
  + Essentials Advanced
    - Contains
      * Essentials Standard plus
      * vMotion
      * HA
      * DP
      * vShield Endpoint
      * vSphere replication
  + ESXi Hypervisor Free
    - Contains
      * Basic hypervisor
      * No central management
      * No advanced Features
* Explain the various data center solutions that interact with vSphere
  + VMWare Addin Products
    - Horizon
      * Extends vsphere into virtual desktop
    - Site Recovery manager
      * Gives active / passive DR capabilities with the ability to fail your virtual infrastructure to remote locations
    - VRealize
      * Operations management and insight along with orchestration
    - vCloud Suite
      * Gives the ability to create mulit tenant private clouds
    - NSX
      * Gives fine grained network virtuaization with distributed routing and fire-walling along with data protection
    - VSAN
      * Moves storage closer to computer by implementing a virtual SAN in your ESXi hosts
    - Airwatch
      * Enterprise mobility and builds on Horizon
* Explain ESXi and vCenter Server architectures
  + ESXi Standalone
    - ESXi Free hypervisor
    - Single server with no vCenter
    - Harder to manage
    - Does not scale well
  + Single Cluster
    - Essentials minimum
    - vCenter and shared storage
    - live migration and manageability
    - scalable to 64 hosts per cluster
  + many Specialised Clusters
    - most scalable
    - cloud enbironments
    - large deployments
    - VDI
    - Work, VDI, Management, etc are all separate clusters
    - Multiple vCenter Servers each managing diff cluster
  + Multiple vCenter Systems
    - Multiple vcenter servers in diff datacenters.
* Explain new solutions offered in the current version
  + <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/whitepaper/vsphere/vmw-white-paper-vsphr-whats-new-6-5.pdf>
  + <https://blogs.vmware.com/vsphere/2016/10/introducing-vsphere-6-5.html>
  + New features
    - vCenter Server
      * installs on MAC, Windows or Linux without plugins
      * Appliance
        + Migration Tool

Support for vCenter 5.5 and 6.0

* + - * + Improved appliance management

Stats now in tool no need to used command line

Better monitors DB to prevent crashes due to lack of space

Gracefull shutdown when DB is 95% to prevent corruption

Syslog settings

* + - * + Native high availability

Active/passive/witness nodes cloned from existing vCenter Server instance

Replication between nodes

PostgreSQL sync replication

Async file replication for data outside DB

* + - * + Native backup and restore

Backup restore from VAMI or API

Streamed over SCP, HTTP(s) or FTP(s)

* + - * + Update manager now part of Appliance
      * vSphere Web Client
        + inventory tree is now default view
        + home screen reorganized
        + manage tab renamed to configure
        + less reliance on plugins for many admin tasks
        + enhanced authentication plug-in available for Windows passthru or smartcard login
      * vSphere Client
        + HTML5
        + Not as full featured yet as the web client
      * Content Library
        + Can now mount ISO directly from library
        + Apply guest os customization specification during vm deployment
        + Update existing templates
    - vSphere Host Lifecycle management Enhancements
      * vSphere Update manager
        + fully integrated with Vshpere Appliance
      * VMWare Tools and virtual Hardware upgrades
        + Update manager can be used to update
        + Linux VMWare tools (tar tools) updates no longer require reboot
      * Host Profiles
        + Profile management Improvements

Updated graphical interface

Hierarchy possible by coping settings from one profile to one or many others

Host Customizations can now be managed via CSV

* + - * + Operational Enhancements

More informative Compliance checks

* + - Security
      * VM-Level Disk Encryption regardless of OS
      * Encryted vMotion
      * Secure boot model
        + Host and VM
        + Prevents images from being tampered with
    - Universal App Platform
      * Integrated containers
* Determine appropriate vSphere edition based on customer requirements
* Deploy a vSphere 6.x Content Library
  + Content Library
    - Storage location that can be used to hold VM Templates, ISOs and files
    - Deploy
      * VCenter inventory list
      * Content Libraries
      * Create New Library
      * Enter Name
      * Enter Type
        + Local Content Library

Accessible only in the vCenter Server

* + - * + Published Content Library

Availiable to other vCenter Servers

* + - * + Optimized Published Content Library

Optimized for lower CPU usage and faster streaming of content over HTTP

Cannot deploy VMs from optimized library

Use when library resides on remote server and Enhanced link Mode is not used.

* + - * + Subscribed Content Library

Library subscribed to another published content library

Sync contents

Read Only version of Published library

* + - * Select Data store
        + Path to local or remote storage where the contents will be located
* Differentiate Update Manager deployment options