

کمبو پک مجازی سازی و ذخیره سازی | Virtualization and storage combo pack

(ICM + Optimize + Storage (Based on DELL EMC

مروری بر دوره

در این دوره جامع قصد داریم تا شما را با ساختارها و نیازمندی های مربوط به دیتاسنترهای مبتنی بر نرم افزار که عمدتا با نام Software-defined data center از آن یاد می شود آشنا سازیم تا با یادگیری مفاهیم مربوط به Manage بتوانید به بهترین شکل ممکن یک دیتاسنتر را virtualize کنید. پس از این مرحله با مرور سرفصل های مربوط به دوره Optimize and Scale، شما با نحوه Optimize و Tuning محیط های پیچیده آشنا خواهید شد. تسلط در این دو حوزه به شما کمک خواهد نمود که بتوانید پروژه های مربوط به دیتاس مختلف را فارغ از ابعاد پروژه، پیاده سازی کنید.

در ادامه این دوره به سراغ تجهیزات ذخیره سازی شرکت Dell EMC و آشنایی با بسیاری از آن ها از جمله ،Unity VNX، Unity XT و ... خواهیم رفت. ورود به سرفصل های مربوط به آشنایی، نحوه پیکربندی و پیاده سازی تجهیز Unity، اصلی ترین و مهم ترین بخش از مباحث مربوط به حوزه استوریج این دوره جامع خواهد بود که از شما یک متخصص کار با این تجهیزات را می سازد. پرداختن به راهکارهای disaster recovery این دوره جامع مواهد بود که از شما یک متخصص **شده توسط کمپانی Dell EMC** و یکپارچه سازی آن ها با محصولات VMware از جمله دیگر

سرفصل ها

ICM + Optimize + Storage (Based on DELL EMC)





Course Introduction

- Introductions and course logistics
- Course objectives
- Describe the content of this course
- Gain a complete picture of the VMware certification system
- Familiarize yourself with the benefits of the VMware Education Learning Zone
- Identify additional resources

Introduction to vSphere and the Software-Defined Data Center

- Describe the topology of a physical data center
- Explain the vSphere virtual infrastructure
- Define the files and components of virtual machines
- Describe the benefits of using virtual machines
- Explain the similarities and differences between physical architectures and virtual architectures
- Define the purpose of ESXi
- Define the purpose of vCenter Server
- Explain the software-defined data center
- Describe private, public, and hybrid clouds

Creating Virtual Machines

- Introduce virtual machines, virtual machine hardware, and virtual machine files
- Identify the files that make up a virtual machine





- Discuss the latest virtual machine hardware and its features
- Describe virtual machine CPU, memory, disk, and network resource usage
- Explain the importance of VMware Tools™
- Discuss PCI pass-through, Direct I/O, remote direct memory access, and NVMe
- Deploy and configure virtual machines and templates
- Identify the virtual machine disk format

vCenter Server

- Introduce the vCenter Server architecture
- Deploy and configure vCenter Server Appliance
- Use vSphere Web Client
- Backup and restore vCenter Server
- Examine vCenter Server permissions and roles
- Explain the vSphere HA architectures and features
- Examine the new vSphere authentication proxy
- Manage vCenter Server inventory objects and licenses
- Access and navigate the new vSphere clients

Configuring and Managing Virtual Networks

- Describe, create, and manage standard switches
- Configure virtual switch security and load-balancing policies
- Contrast and compare vSphere distributed switches and standard switches
- Describe the virtual switch connection types
- Describe the new TCP/IP stack architecture
- Use VLANs with standard switches





Configuring and Managing Virtual Storage

- Introduce storage protocols and storage device types
- Discuss ESXi hosts using iSCSI, NFS, and Fibre Channel storage
- Create and manage VMFS and NFS datastores
- Describe the new features of VMFS v..
- Introduce vSAN
- Describe guest file encryption

Virtual Machine Management

- Use templates and cloning to deploy new virtual machines
- Modify and manage virtual machines
- Clone a virtual machine
- Upgrade virtual machine hardware to version ir
- Remove virtual machines from the vCenter Server inventory and datastore
- Customize a new virtual machine using customization specification files
- Perform vSphere vMotion and vSphere Storage vMotion migrations
- Create and manage virtual machine snapshots
- Create, clone, and export vApps
- Introduce the types of content libraries and how to deploy and use them

Resource Management and Monitoring

- Introduce virtual CPU and memory concepts
- Explain virtual memory reclamation techniques
- Describe virtual machine overcommitment and resource competition
- Configure and manage resource pools





- Describe methods for optimizing CPU and memory usage
- Use various tools to monitor resource usage
- Create and use alarms to report certain conditions or events
- Describe and deploy resource pools
- Set reservations, limits, and shares
- Describe expandable reservations
- Schedule changes to resource settings
- Create, clone, and export vApps
- Use vCenter Server performance charts and esxtop to analyze vSphere performance

vSphere HA, vSphere Fault Tolerance, and Protecting Data

- Explain the vSphere HA architecture
- Configure and manage a vSphere HA cluster
- Use vSphere HA advanced parameters
- Define clusterwide restart ordering capabilities
- Enforce infrastructural or intra-app dependencies during failover
- Describe vSphere HA heartbeat networks and datastore heartbeats
- Introduce vSphere Fault Tolerance
- Enable vSphere Fault Tolerance on virtual machines
- Support vSphere Fault Tolerance interoperability with vSAN
- Examine enhanced consolidation of vSphere Fault Tolerance virtual machines
- Introduce vSphere Replication
- Use vSphere Data Protection to back up and restore data





vSphere DRS

- Describe the functions and benefits of a vSphere DRS cluster
- Configure and manage a vSphere DRS cluster
- Work with affinity and anti-affinity rules
- Describe the new capabilities for what-if analysis and proactive vSphere DRS
- Highlight the evolution of vSphere DRS using predictive data from VMware vRealize® Operations Manager[™]
- Perform preemptive actions to prepare for CPU or memory changes
- Describe the vCenter Server embedded vSphere Update Manager, VMware vSphere® ESXi[™] Image Builder CLI, and VMware vSphere® Auto Deploy capabilities
- Use vSphere HA and vSphere DRS together for business continuity

vSphere Lifecycle Manager

- Recognize the importance of vCenter Server Update Planner
- Describe how VMware vSphere® Lifecycle Manager[™] works
- Describe how to update ESXi hosts using baselines
- Validate ESXi host compliance using a cluster image
- Describe how to upgrade VMware Tools and VM hardware

Network Scalability

- Configure and manage vSphere distributed switches
- Explain distributed switch features such as port mirroring, LACP, QoS tagging, and NetFlow





Storage Scalability

- Configure and assign virtual machine storage policies
- Configure VMware vSphere[®] Storage DRS[™] and VMware vSphere[®] Storage I/O Control

Host and Management Scalability

- Explain the uses of VMware vCenter[™] Converter[™]
- Define and use content libraries
- Describe and use host profiles

CPU Optimization

- Explain the CPU scheduler operation, NUMA support, and other features that affect CPU performance
- Use esxtop to monitor key CPU performance metrics

Memory Optimization

- Explain ballooning, memory compression, and host-swapping techniques for memory reclamation when memory is overcommitted
- Use esxtop to monitor key memory performance metrics

Storage Optimization

- Describe storage queue types and other factors that affect storage performance
- Use esxtop to monitor key storage performance metrics





Network Optimization

- Explain the performance features of network adapters
- Explain the performance features of vSphere networking
- Use esxtop to monitor key network performance metrics

Analyzing vSphere

• Explain how Proactive DRS enhances virtual machine availability

vCenter Server Availability and Performance

- Describe the high availability options for vCenter Server and VMware Platform Services Controller[™]
- Describe and use VMware vCenter Server® High Availability
- Identify the factors that influence vCenter Server performance

vSphere Security

- Recognize strategies for securing vSphere components, such as vCenter Server, ESXi hosts, and virtual machines
- Describe vSphere support for security standards and protocols
- Describe virtual machine security features
- Describe the components of a VM encryption architecture
- Describe KMS, and how to deploy
- Create, manage, and migrate encrypted VMs

Storage Concept





- Describe storage concepts
- Discuss the Unity and UnityXT and UnityVSA features and functionality
- Identify hardware components and LED indicators
- Install and configure Unity and UnityVSA (discuss install considerations)
- Perform administration operations via Unisphere
- Provision block and file storage + Concepts
- Perform snapshot and replication operations + Concepts
- Identify and replace failed CRUs
- Describe Storage best practice
- Describe the disaster recovery solutions

پیش نیاز ها

تجربه مدیریت سیستم (System administration) در سیستم عامل های Windows یا Linux

آشنایی با مفاهیم مقدماتی مربوط به کار با تجهیزات و دستگاه های ذخیره سازی

