



IT262: VM Essentials: Administration, Management & Best Practices

Training Description:

VM Essentials: Administration, Management & Best Practices is a comprehensive training course designed to provide participants with a strong foundation in virtualization technologies and VMware vSphere administration. The training course equips IT professionals with the knowledge and practical skills required to deploy, configure, manage and troubleshoot virtual infrastructure using VMware ESXi and vCenter Server.

Participants will gain hands-on experience in creating and managing virtual machines, configuring networking and storage, implementing high availability and resource optimization features, monitoring virtual environments and applying security best practices. The training course also introduces participants to disaster recovery concepts, backup strategies, performance optimization and operational best practices to ensure reliable and efficient virtualization environments.

By the end of the training course, participants will be capable of managing a VMware-based virtual infrastructure that supports modern enterprise workloads while improving system availability, scalability, and operational efficiency.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand virtualization concepts and VMware architecture
- ✓ Install and configure VMware ESXi hosts and vCenter Server
- ✓ Create and manage virtual machines efficiently
- ✓ Configure virtual networking and storage infrastructure
- ✓ Manage clusters, resource pools, and virtual resources
- ✓ Implement High Availability (HA) and Distributed Resource Scheduler (DRS)
- ✓ Monitor system performance and optimize resource utilization
- ✓ Secure VMware environments using industry best practices
- ✓ Perform backup, recovery, and disaster recovery planning
- ✓ Troubleshoot common VMware infrastructure issues
- ✓ Apply operational best practices for managing enterprise virtual environments

Training Designed for:

This training course is intended for System Administrators, Network Administrators, Infrastructure Engineers, Data Center Engineers, Cloud Administrators, Technical Support Engineers, IT Operations Personnel, Virtualization Engineers, Systems Engineers and IT Professionals responsible for VMware environments.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

INTRODUCTION TO VMWARE VIRTUALIZATION

- ❖ **Module 1: Virtualization Fundamentals**
 - Evolution of server virtualization
 - Benefits of virtualization
 - Hypervisor concepts
 - Type 1 vs. Type 2 hypervisors
 - VMware product portfolio
 - Virtual infrastructure architecture
- ❖ **Module 2: VMware ESXi Fundamentals**
 - ESXi architecture
 - Installing ESXi
 - Host configuration
 - Licensing
 - Initial setup
 - Host management interfaces
- ❖ **Module 3: Introduction to vCenter Server**
 - vCenter architecture
 - Deployment options
 - Connecting ESXi hosts
 - Inventory management
 - Datacenters and clusters
- ❖ **Hands-on Lab**
 - Install ESXi
 - Configure management network
 - Connect hosts to vCenter
 - Explore vSphere Client

DAY TWO:

VIRTUAL MACHINE ADMINISTRATION

- ❖ **Module 1: Creating and Managing Virtual Machines**
 - Virtual machine hardware
 - VM compatibility
 - Guest operating system installation
 - VM templates
 - Cloning virtual machines
 - Content libraries
- ❖ **Module 2: Virtual Networking**
 - Standard Virtual Switches (vSS)
 - Distributed Virtual Switches (vDS)
 - Port groups
 - VLAN configuration
 - Network adapters

- Network policies
- ❖ **Module 3: Virtual Storage**
 - Storage concepts
 - VMFS datastore
 - NFS datastore
 - iSCSI storage
 - Fibre Channel overview
 - Storage policies
- ❖ **Hands-on Lab**
 - Create virtual machines
 - Configure networking
 - Add storage
 - Clone VMs
 - Create templates

DAY THREE:

RESOURCE MANAGEMENT & AVAILABILITY

- ❖ **Module 1: Resource Allocation**
 - CPU management
 - Memory management
 - Resource pools
 - Reservations
 - Limits
 - Shares
- ❖ **Module 2: Cluster Management**
 - Creating clusters
 - Host management
 - Cluster settings
 - Admission control
- ❖ **Module 3: High Availability Features**
 - VMware HA
 - DRS
 - vMotion
 - Storage vMotion
 - Enhanced vMotion Compatibility (EVC)
- ❖ **Module 4: Snapshots**
 - Snapshot management
 - Best practices
 - Snapshot consolidation
 - Recovery scenarios
- ❖ **Hands-on Lab:**
 - Configure HA
 - Configure DRS
 - Perform vMotion
 - Configure resource pools
 - Manage snapshots

DAY FOUR:

MONITORING, SECURITY & PERFORMANCE

❖ **Module 1: Monitoring VMware Environment**

- Performance charts
- Alarms
- Event management
- Logs
- Health monitoring

❖ **Module 2: Performance Optimization**

- CPU optimization
- Memory optimization
- Storage optimization
- Network optimization
- Capacity planning

❖ **Module 3: VMware Security**

- Identity management
- User roles
- Permissions
- Certificates
- Secure host configuration
- Security hardening guidelines

❖ **Module 4: Backup & Recovery**

- VMware backup concepts
- VM recovery
- Disaster recovery overview
- Replication concepts
- Business continuity planning

❖ **Hands-on Lab:**

- Configure permissions
- Monitor performance
- Configure alarms
- Analyze resource utilization

DAY FIVE:

TROUBLESHOOTING & OPERATIONAL BEST PRACTICES

❖ **Module 1: Troubleshooting VMware Infrastructure**

- Host troubleshooting
- VM startup issues
- Network connectivity problems
- Storage failures
- Performance bottlenecks
- Log analysis

❖ **Module 2: Operational Best Practices**

- VMware lifecycle management
- Patch management
- Host maintenance mode

- Upgrade planning
- Documentation standards
- ❖ **Module 3: Automation Overview**
 - Introduction to PowerCLI
 - Basic automation concepts
 - Task scheduling
 - Routine administration
- ❖ **Module 4: Enterprise Virtualization Strategy**
 - Capacity management
 - Scalability planning
 - Hybrid cloud integration overview
 - Future trends in virtualization
 - Course review and knowledge assessment
- ❖ **Hands-on Lab:**
 - Troubleshoot common VMware issues
 - Perform host maintenance
 - Execute basic PowerCLI commands
 - Complete a comprehensive VMware administration scenario
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

USD\$ TBA - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

- 07:45 - 08:00 Morning Coffee / Tea
- 08:00 - 10:00 First Session
- 10:00 - 10:20 Recess (Coffee/Tea/Snacks)

10:20 - 12:20 Second Session
12:20 - 13:00 Recess (Prayer Break & Lunch)
13:00 - 14:00 Last Session

For training registrations or in-house enquiries, please contact:

Aisha Relativo - Training & Career Development Manager

aisha@cmc-me.com / training@cmc-me.com

Tel.: +971 2 665 3945 or +971 2 643 6653 | Mob.: +971 52 2954615