MERCURY

Operating System Linux in VM Virtual Machines

8 – 19 November 2026
Cairo (Egypt)



Dubai - UAE: +971 4 450 5697
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Amman - Jordan: +962 79 712 3347

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Ref: 15586_316014 **Date:** 8 – 19 November 2026 **Location:** Cairo (Egypt) **Fees:** 6500 Euro

Introduction:

Integrating the Linux Operating System Within VMs Virtual Machines presents a robust and scalable solution for modern IT infrastructures. This course will delve into Linux's intricate architecture and provide an understanding of its installation methods, including graphical installation processes. Participants will gain proficiency in essential and advanced Linux commands, ensuring efficient system management and operation.

The key aspects of the Linux Operating System On VMs Virtual Machines course will cover the critical procedures for backing up and restoring data and enhancing system reliability and continuity. Additionally, learners will be introduced to advanced shell scripting techniques, empowering them to automate tasks and streamline system operations effectively.

Beneath the umbrella of virtualization, creating virtual instances of Linux operating systems on VMs is a practice gaining traction for its numerous advantages. Discussing the advantages of virtual machines in the operating system, students will learn how to determine and install the best Linux distributions suited for VM environments. This segment will also focus on the benefits, such as isolated environments for testing and scalable deployments.

Targeted Groups:

- IT professionals.
- System administrators.
- Network administrators.
- DevOps engineers.
- Cloud architects.
- Data center managers.
- Security specialists.
- Software developers.
- Technical support staff.
- Linux enthusiasts.
- Infrastructure engineers.
- Virtualization specialists.
- Storage administrators.
- IT Consultanting.
- Technical trainers.

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Course Objectives:

By the end of this Linux Operating System On VMs Virtual Machines course, participants will:

- Understand the architecture of Redhat Linux.
- Learn various installation methods for Redhat Linux.
- Master the graphical installation process of Redhat Linux.
- Revise and practice top Redhat Linux commands.
- Develop skills in backing up and restoring Redhat Linux systems.
- Gain proficiency in advanced shell scripting techniques.
- Comprehend the concept and functionality of virtual machines.
- Describe the purpose and benefits of VMs.
- Differentiate between Type 1 and Type 2 hypervisors.
- Learn how to create virtual machines on both types of hypervisors.
- Grasp the basics of Linux security practices.
- Configure RAID NetApp for enhanced data redundancy and performance.
- Manage software packages efficiently in Redhat Linux.
- Perform offline updates of software packages.
- Identify and troubleshoot common problems in Redhat Linux.
- Manage user accounts and access controls.
- Implement authentication and authorization methods.
- Configure Linux network settings effectively.
- Set up and manage network bonds.
- Configure and manage firewalls in Redhat Linux.
- Utilize Logical Volume Manager LVM for disk space management.
- Implement and manage a Network File System NFS for file sharing.
- Understand and configure cluster file systems for high availability.
- Ensure robust system security and data protection.
- Automate system tasks using shell scripting.
- Enhance system performance through optimal configuration.
- Apply best practices in virtualization and Linux administration.
- Foster a deep understanding of Linux networking concepts.

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Targeted Competencies:

At the end of this Linux Operating System On VMs Virtual Machines training, participants competencies will:

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- Master Redhat Linux architecture.
- Proficiency in Redhat Linux installation methods.
- Skills in the graphical installation of Redhat Linux.
- Know top Redhat Linux commands.
- Expertise in backup and restore procedures.
- Advanced shell scripting capabilities.
- Understanding of virtual machine concepts.
- Familiar with VM types and hypervisors.
- Ability to create VMs on different hypervisors.
- Basic Linux security knowledge.
- Competence in RAID NetApp configuration.
- Effective package management skills.
- Capability to manage and update software offline.
- Troubleshooting and problem-solving skills.
- Account and access control management.
- Proficiency in authentication and authorization.
- Linux network configuration skills.
- Knowledge of network bonding techniques.
- Firewall management expertise.
- Skills in Logical Volume Manager LVM usage.
- Proficiency in Network File System NFS management.
- Understanding of cluster file system configurations.
- System performance optimization.
- Automation of system tasks through scripting.
- Best practices in virtualization and Linux administration.
- Deep understanding of Linux networking concepts.
- Effective data protection and system security strategies.

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Course Content:

Unit 1: Redhat Linux Operating System Architecture:

- Understand the core components of Redhat Linux.
- Learn about the kernel, system libraries, and utilities.
- Explore the file system hierarchy and its organization.
- Examine the boot process and system initialization.

Unit 2: Installation Methods and Graphic Installation:

- Discuss various methods to install Redhat Linux.
- Learn about installation from physical media and network sources.
- A step-by-step guide to graphical installation.
- Understand partitioning schemes and disk setup during installation.

Unit 3: Revision of Top Redhat Linux Commands:

- Review essential commands for file management.
- Learn commands for system monitoring and management.
- Explore commands for process management.
- Understand network-related commands.

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Unit 4: Backup and Restore Procedures:

- Learn about different backup tools available in Redhat Linux.
- Understand the importance of regular backups.
- Step-by-step guide to performing backups.
- Methods to restore data from backups.

Unit 5: Advanced Shell Scripting Techniques:

- Introduction to shell scripting basics.
- Learn advanced scripting techniques.
- Automate tasks using shell scripts.
- Debug and troubleshoot shell scripts.

Unit 6: Virtual Machines and Hypervisors:

- Understand the concept and benefits of virtual machines.
- Description of VMs and their functionalities.
- Learn about Type 1 and Type 2 hypervisors.
- Steps to create virtual machines on hypervisors.
- Manage and optimize VM performance.

Unit 7: Linux Security Fundamentals:

- Basics of Linux security principles.
- Learn about user and group management.
- Understand file permissions and ownership.
- Implement security best practices.
- Account and access-control management.
- Authentication and authorization.

Unit 8: RAID NetApp Configuration:

- Introduction to RAID levels and their benefits.
- Step-by-step guide to configuring RAID on NetApp.
- Understand data redundancy and performance improvement.
- Troubleshoot RAID configuration issues.

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Unit 9: Package Management and Software Updates:

- Learn about Redhat package management tools.
- Steps to install, update, and remove software packages.
- Perform offline updates.
- Troubleshoot common package management issues.

Unit 10: Network and System Management:

- Configure network settings in Redhat Linux.
- Learn about network bonding and its benefits.
- Manage firewalls using firewall-cmd.
- Implement Logical Volume Manager LVM for flexible disk management.
- Set up and manage the Network File System NFS.
- Understand and configure cluster file systems for high availability.
- Troubleshoot common network and system issues.