Publication date : 07/01/2024

Course : Linux, virtualize your systems with KVM

Practical course - 3d - 21h00 - Ref. DVM
Price : 1800 € E.T.

This course will provide you with the knowledge you need to use KVM through standard and vendor tools. You'll learn how to build a scalable storage infrastructure and master the process of creating, deploying and migrating virtual machines.

Teaching objectives

At the end of the training, the participant will be able to:

- Creating and managing virtual machines with KVM
- Migrating virtual machines
- Building redundant storage
- Manage virtual machines from the command line and via APIs

Intended audience

System administrators and engineers, responsible for integrating and managing virtual machines.

Prerequisites

Basic knowledge of Linux system administration.

Practical details

Hands-on work

Installation of KVM-related RedHat tools. Create virtual machines, extend storage. Cloning and moving virtual machines.

Course schedule

1 Virtualization platform overview

- Hypervisor, container, emulator, manager.
- Platform components: KVM, Libvirt, Qemu...

Hands-on work

Installation and familiarization with tools.

PARTICIPANTS

System administrators and engineers, responsible for integrating and managing virtual machines.

PREREQUISITES

Basic knowledge of Linux system administration.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 Getting to know the platform

- Installation of software components.
- Using the Virtual Machine Manager tool.
- Prepare storage and network configuration.

Hands-on work

Create virtual machines using the graphical interface or the command line.

3 GNU/Linux virtual machines

- Device management, console access.
- Types of emulated hardware, peripherals "Virtio".
- Hardware drivers for Linux and Windows host systems.
- Storage: different approaches.
- Network: host configuration elements.

Hands-on work

Management of memory and processors, storage and installation images.

4 Virtual machine management

- Extend virtual machine storage.
- Graphic tools for XML files.
- Backups, restores, snapshots, images.
- Cloning, deployment and troubleshooting of virtual machines.
- Analyze VM load and performance.

Hands-on work

Cloning of virtual machines, hot-swapping of disk space.

5 Virtual machine migration

- Online/offline migration to another KVM host.
- Linux and hardware changes: boot, loader, ramdisk.
- Import VirtualBox or VmWare VMs.
- P2V: status of available tools and implementation.

Hands-on work

Conversion of a VirtualBox or VMWare machine to KVM. P2V of a Linux machine.

6 High availability and storage virtualization

- Build redundant storage.
- Failover to backup server.
- Storage virtualization clusters. Access redundant storage, multipathing.

Hands-on work

Implementation: redundant master/slave storage, iSCSI and multipathing.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

7 Scripting commands and APIs

- Commands for Libvirt, KVM and Qemu.
- Create and clone machines using scripts.
- Interfaces for information gathering.

Hands-on work

Create and launch virtual machines from the command line.