

RH401 Red Hat Enterprise Deployment, Virtualization, and Systems Management

Course Summary

Description

This course is an intensive hands-on lab course in skills and methods critical to large-scale deployment and management of mission-critical Red Hat Enterprise Linux systems. This course focuses on the use of the Red Hat Network, including the Red Hat Network Satellite Server as a deployment method, and the use of Virtualization technology as a key deployment tool. A substantial part of the class is dedicated to the use of Virtualization in deployment. Virtualization topics include: an overview of virtualization; installing, configuring, and managing virtual machines; understanding the hypervisor; virtual machine snapshots; network configuration with virtualization.

Topics

- Understanding Systems Management
- Provisioning using DHCP and PXE
- Installing a Red Hat Network Satellite Server
- Building RPMs
- Using CVS to Manage Configuration Files
- Managing the Red Hat Network Satellite Server
- Red Hat Network Management and Provisioning
- Red Hat Network Proxy Server
- Saving Kernel Crash Dumps
- Red Hat Virtualization Overview
- Virtual Machine Management
- Installing and Configuring Virtual Machines
- Hypervisor Details
- Virtualization: Advanced Techniques

Audience

This course is aimed at senior Red Hat Enterprise Linux system administrators and other IT professionals working in enterprise environments and mission-critical systems.

Prerequisites

Students should have RHCE-level skills. A current RHCE certification is recommended, but not required.

Duration

Four days

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Course Outline

- I. Understanding Systems Management**
 - A. System management tasks
 - B. Standardization, centralization, and scalability
 - C. Provisioning and automation
 - D. Red Hat tools for system management
- II. Provisioning using DHCP and PXE**
 - A. Bare metal provisioning
 - B. Provisioning technologies: DHCP, TFTP, and PXE
 - C. Network installations
 - D. Configuring the Dynamic Host Configuration Protocol server
- III. Installing a Red Hat Network Satellite Server**
 - A. Features and advantages of the RHN Satellite Server
 - B. Types of RHN Satellite Servers
 - C. RHN Satellite Server hardware requirements
 - D. Understanding software channels
 - E. Installing an RHN Satellite Server
 - F. Populating an RHN Satellite Server
 - G. Troubleshooting an RHN Satellite Server installation
- IV. Building RPMs**
 - A. Building open source software
 - B. Using RPM macros
 - C. Writing custom spec files
 - D. Using rpmbuild to create and sign RPMs
 - E. Guidelines for custom RPMs
- V. Using CVS to Manage Configuration Files**
 - A. Basics of CVS for system administrators
 - B. Creating local and remote repository access
 - C. Structuring a CVS project
 - D. Using CVS to track, log, and reverse configuration changes
- VI. Managing the Red Hat Network Satellite Server**
 - A. Preparing a client to use an RHN Satellite Server
 - B. Using activation keys to script installations
 - C. Creating and managing custom channels
- VII. Red Hat Network Management and Provisioning**
 - A. Types of RHN service
 - B. Elements of a deployment system
 - C. Using custom channels in a deployment system
 - D. Using configuration channels to maintain system configuration
 - E. Automating installations through kickstart
- VIII. Red Hat Network Proxy Server**
 - A. Hosted RHN versus Proxy Server
 - B. Proxy Server software and hardware requirements
 - C. Installing RHN Proxy Server
 - D. Configuring clients to use a RHN Proxy Server
- IX. Saving Kernel Crash Dumps**
 - A. Saving crash signatures over the network
 - B. Saving crash dumps over the network
 - C. Configuring netdump servers
 - D. Configuring netdump clients
 - E. Saving crash dumps locally using kexec and kdump
- X. Red Hat Virtualization Overview**
 - A. Virtualization concepts and terminology
 - B. Hardware considerations

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Course Outline (cont'd)

XI. Virtual Machine Management

- A. Identifying virtual machines
- B. Virtualization management tools: xm, xentop virsh
- C. Creating and monitoring virtual machines
- D. Resource management
- E. Accessing consoles

XII. Installing and Configuring Virtual Machines

- A. Installing virtual machines
- B. Configuring virtual machine resources (CPU, memory, storage, network devices)

XIII. Hypervisor Details

- A. Understanding the hypervisor
- B. vnc console access
- C. xendomains

XIV. Virtualization: Advanced Techniques

- A. Snapshot storage
- B. Creating virtual private networks
- C. Masquerading virtual machines
- D. Physical and logical network separation