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

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