

HPE Performance Cluster Management Administration

Duration: 1.5 Days Course Code: H8PE9S

Overview:

The HPE Performance Cluster Manager (HPCM) administration course provides knowledge and practice installing HPCM, managing data networks, provisioning servers, creating and modifying server images, working with software repositories and image version control, automating post installation tasks, configuring services, reviewing security features, and troubleshooting.

Target Audience:

- Attend this class if you need to learn to install, configure and administer clusters managed with the HPE Performance Cluster Manager (HPCM)
- Experienced Linux system administrators

Objectives:

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| ■ At the conclusion of this course, you should be | ■ repositories |
| ■ able to: | ■ • Use image version control |
| ■ • Install HPCM | ■ • Automate post installation tasks |
| ■ • Add servers to the cluster | ■ • Configure shared filesystem, user accounts, |
| ■ • Manage data networks | ■ applications and updates |
| ■ • Provision nodes | ■ • Troubleshoot cluster services |
| ■ • Create and modify images and software | ■ • Review cluster security features |

Prerequisites:

H8PE8S: HPE Performance Cluster

Management Foundations

- The following Linux system administration

skills are prerequisites for this course:

- Edit text with the vi editor
- Recognize regular expression syntax
- Access documentation with man and info file

viewers

- Monitor, manage and maintain log files

- Enter common commands at the bash

command line; create and interpret basic

bash shell scripts

- Install and configure standard software components, services and security features
- Configure basic communication protocols
- Create and modify crontabs
- Monitor resources usage; be familiar with basic monitoring tools
- Install and configure a Linux distribution on a server
- Create, modify, and delete user accounts and group accounts
- Partition disks, manage filesystems and logical volumes
- Use RPM package management
- Install and use virtualized systems
- Understand basic hardware and hardware troubleshooting

Content:

Module 1: Install Cluster

- Describe HPCM features
- Define operating system slots
- Build cluster from ground up
- Provision node with GUI
- Provision node with command line

- Add nodes to the cluster
- Explore auto installation tools

Module 2: Discover

- Discover nodes
- Interpret cluster configuration files
- Review cluster services

Module 3: Data Networks

- Describe technologies
- Describe InfiniBand configuration
- Describe Intel Omni-Path configuration
- Describe software components
- Use diagnostic commands

Module 4: Manage Images

- Manage software repositories
- List software repositories

- Configure array services
- Install batch scheduler server on a compute node
- Install batch scheduler client on a compute node and in

ICE compute node

- Configure HPCM connectors to job schedulers
- Capture an image from a node (golden)
- Add RPMs to, remove RPMs from, and version control

compute images

- Add and remove RPMs from running compute nodes
- Clone an ICE-compute image
- Clean up old images on the lead node
- Add RPMs to ICE compute image Compare when and
- when not to use tmpfs root
- Determine which nodes use tmpfs root
- Configure nodes to use tmpfs root
- List tmpfs quota difference (rack leader quotas do not

- apply when ICE-compute nodes are in tmpfs)
- Set tmpfs mode
- Set disk mode

- Update kernel
- Update distribution
- Update HPCM

Module 7: Troubleshoot Cluster • Backup cluster

configuration

- Backup managed network switch configuration
- Use the central log repository

- Investigate log files
- Gather system information

- Interrogate iLOs, BMCs
- Confirm resources
- Create pdsh groups

- Investigate bond devices

- Inspect VLAN devices
- Capture a node crash dump

- Transfer an image from another slot or another system

and confirm that the image can be used.

- Inject faults

Module 8: Review Cluster Security

- Describe system administrator configurable security

tasks

• Add software repositories	• Show which mode a node has booted with	• Describe what makes cluster security different from
• Remove software repositories	• Show which mode a node is scheduled to boot into	standalone security (how would change X break the
• Create repository groups	• Perform a clone operating system slot operation	cluster)
• Customize an image by using RPM lists	■ Module 5: Automate Post Installation Tasks • Review conf.d scripts	• List ports used for each node role and for which
• Create a compute node image	• Exclude a conf.d script	interfaces
• Create an ICE-compute node image	• Use pre_reconf.sh	• List components with passwords
• Manage image version control	• Use reconfig.sh	– Admin node
• Check in an image into version control	• Develop post install and per-host customization scripts	– Flat compute nodes
• Compare differences between two versions of an image	Module 6: Configure Shared Filesystem, User Accounts, Applications, and Updates	– Rack leader nodes
• List the versions of an image	• NFS Export a filesystem on a compute node	– ICE compute nodes
• Deploy a specific version of an image	• Mount an NFS filesystem and create a user on an ICE compute node	– BMCs
• Push an ICE-compute image to a rack	• Manage user accounts	– CMCs
• Use parallel tools and inbuilt functionality to check differences between nodes	• Synchronize UIDs and GIDs, LDAP, etc.	– Ethernet network switches
• Enable hyperthreading	• Run an application on compute and ICE compute nodes	– InfiniBand and Omni-Path switches
• Disable hyperthreading	• Display BIOS settings	– IB/OPA switch BMCs
	• Upgrade firmware	– Storage controllers
		• List components that can have passwords applied

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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