

H5875S: HP-UX System and Network Administration for Experienced UNIX® System Administrators

Course Summary

Description

This fast-paced intensive course is designed for experienced Tru64, AIX, Solaris, Linux, or other UNIX® administrators who need to understand the differences between HP-UX and standard UNIX. It is essential that students have existing UNIX system administration experience. Successful completion of the course will help prepare students for the HP-UX Certified System Administrator (CSA) certification exam. The 5-day course is 50 percent lecture and 50 percent hands-on labs using HP servers.

Objectives

By the end of this course, participants will be able to:

- Configure and manage HP-UX peripherals and device files
- Configure and manage disk devices via LVM
- Configure and manage JFS file systems
- Configure HP-UX network connectivity and services
- Configure HP-UX kernel drivers and tunable parameters
- Shutdown, boot, and reboot HP-UX
- Install HP-UX OS software, applications, and patches

Topics

- Navigating the System Management Homepage (SMH)
- Configuring Hardware
- Configuring Device Special Files
- Managing Disk Devices
- Managing File Systems
- Managing Swap Space
- Maintaining Logical Volumes and File Systems
- Preparing for Disasters
- Accessing the System Console and the iLO/MP
- Booting PA-RISC Systems
- Booting Integrity Systems
- Managing System Startup
- Configuring IP Connectivity
- Configuring the HP-UX Kernel
- Managing Software with SD-UX
- Managing Patches with SD-UX
- Managing Depots with SD-UX
- Installing the OS with Ignite/UX

Audience

- Experienced UNIX system administrators who are new to HP-UX

Prerequisites

- Existing knowledge and system administration experience of a version of UNIX

Duration

Five days

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Course Outline

- I. Navigating the System Management Homepage (SMH)**
 - A. SAM and SMH overview
 - B. Launching the SMH GUI and TUI
 - C. Verifying SMH certificates
 - D. Logging into the SMH
 - E. Navigating the SMH interface
 - F. Launching SMH tools
 - G. Launching SMH tasks
 - H. Viewing SMH logs
 - I. Managing SMH access control
 - J. Managing SMH authentication
 - K. SMH and SIM integration concepts
- II. Configuring Hardware**
 - A. Hardware component overview
 - B. CPU, cell, crossbar, and Blade overview
 - C. SBA, LBA, and I/O overview
 - D. iLO/MP, core I/O, and interface adapter card overview
 - E. Internal disks, tapes, and DVD overview
 - F. Disk array, LUN, SAN, and multipathing overview
 - G. Partitioning overview
 - H. nPar, vPar, VM, and secure resource partition overview
 - I. HP Integrity entry-class rackmount servers
 - J. HP Integrity mid-range servers
 - K. HP Integrity high-end servers
 - L. HP BladeSystem
 - M. HP Integrity Superdome 2
 - N. Viewing the system hardware configuration
 - O. Viewing nPar, vPar, and VM hardware addresses
 - P. Hardware address concepts
 - Q. Legacy HBA, SCSI, and FC hardware address concepts
 - R. Agile View HBA, SCSI, and FC hardware address concepts
 - S. Viewing legacy hardware addresses
 - T. Viewing LUNs via Agile View
 - U. Viewing a LUN's lunpaths via Agile View
 - V. Viewing an HBA's lunpaths via Agile View
 - W. Viewing LUN health via Agile View
 - X. Viewing LUN attributes via Agile View
 - Y. Enabling and disabling lunpaths
 - Z. Slot address concepts
 - AA. Slot address components
 - BB. Viewing slot addresses
- CC. Installing interface cards with and without OL***
- DD. Installing new devices**
- III. Configuring Device Special Files**
 - A. DSF attribute concepts
 - B. DSF directories
 - C. Legacy DSF names
 - D. Persistent DSF names
 - E. LUN, disk, and DVD DSF names
 - F. Boot disk DSFs
 - G. Tape drive DSFs
 - H. Tape autochanger DSFs
 - I. Terminal, modem, and printer DSFs
 - J. Listing legacy DSFs
 - K. Listing persistent DSFs
 - L. Correlating persistent and legacy DSFs
 - M. Correlating persistent DSFs with lunpaths and WWIDs
 - N. Decoding legacy and persistent DSF attributes
 - O. Creating DSFs via insf, mksf, and mknod
 - P. Removing DSFs via rmsf
 - Q. Disabling and enabling legacy mode DSFs
- IV. Managing Disk Devices**
 - A. Disk partitioning concepts
 - B. Whole disk partitioning concepts
 - C. LVM disk partitioning concepts
 - D. LVM physical volume concepts
 - E. LVM volume group concepts
 - F. LVM logical volume concepts
 - G. LVM extent concepts
 - H. LVM extent size concepts
 - I. LVM versions and limits
 - J. LVM DSF directories
 - K. LVMv1 device files
 - L. LVMv2 device files
 - M. Creating physical volumes
 - N. Creating LVMv1 volume groups
 - O. Creating LVMv2 volume groups
 - P. Creating logical volumes
 - Q. Verifying the LVM configuration
 - R. Comparing disk space management tools

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Course Outline (con't)

V. Managing File Systems

- A. File system types
- B. HFS and VxFS comparison
- C. Creating file systems
- D. Mounting file systems
- E. Automatically mounting file systems
- F. Mounting CDFS file systems
- G. Mounting LOFS file systems
- H. Mounting ISO file systems
- I. Mounting MemFS file systems
- J.
- K. Managing Swap Space
- L. HP-UX memory concepts
- M. HP-UX swap concepts
- N. HP-UX swap types
- O. HP-UX pseudoswap
- P. Enabling swap via the CLI
- Q. Enabling swap via /etc/fstab
- R. Monitoring swap space
- S. Disabling swap
- T. Guidelines for configuring swap space

VI. Maintaining Logical Volumes and File Systems

- A. Defragmenting file systems
- B. Repairing corrupted file systems
- C. Monitoring free space
- D. Reclaiming wasted file system space
- E. Extending, reducing, and removing volume groups
- F. Extending, reducing, and removing logical volumes
- G. Extending and reducing file systems

VII. Preparing for Disasters

- A. Disaster recovery, mirroring, and DRD clone concepts
- B. Using DRD to minimize planned downtime
- C. Using DRD to minimize unplanned downtime
- D. Installing DRD
- E. Using the drd command
- F. Creating a DRD clone
- G. Synchronizing a DRD clone
- H. Verifying a DRD clone's status
- I. Accessing inactive images via DRD-safe commands
- J. Managing software via DRD-safe commands
- K. Managing kernel tunables via DRD-safe commands

- L. Accessing inactive images via other commands
- M. Activating and deactivating an inactive image
- N. Customizing the make_*_recovery archive contents
- O. Backing up the boot disk via make_tape_recovery
- P. Backing up the boot disk via make_net_recovery
- Q. Using a make_*_recovery archive
- R. Interacting with the recovery process

VIII. Accessing the System Console and the iLO/MP

- A. Management processor concepts
- B. Viewing MP/console ports
- C. Connecting MP serial and LAN ports
- D. Accessing the MP
- E. Navigating the MP menu and web interfaces
- F. Accessing nPar, vPar, and VM consoles
- G. Accessing the VFP, console log, and system event log
- H. Accessing the MP help menus
- I. Accessing the MP command menu
- J. Configuring the MP LAN interface
- K. Enabling MP remote access
- L. Managing MP user accounts and access levels
- M. Managing MP login sessions
- N. Rebooting via the MP

IX. Booting PA-RISC Systems

- A. HP-UX shutdown and reboot concepts
- B. PA-RISC boot process major players
- C. PA-RISC boot disk structures
- D. PA-RISC boot process overview
- E. Autoboot and manual boot concepts
- F. Interacting with the BCH and ISL/IPL

X. Booting Integrity Systems

- A. HP-UX shutdown and reboot concepts
- B. Integrity boot process major players
- C. Integrity boot disk structures
- D. Integrity boot disk system, OS, and HPSP structures
- E. Integrity and PA-RISC boot process comparison
- F. UEFI/EFI addressing concepts
- G. Autoboot and manual boot concepts

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Course Outline (con't)

- H. Booting from primary, alternate, and arbitrary boot devices
- I. Booting from Ignite-UX servers and recovery archives
- J. Managing boot menu settings
- K. Managing console settings
- L. Interacting with the UEFI/EFI shell
- M. Interacting with the hpux.efi OS loader

XI. Managing System Startup

- A. Configuring network services via `/etc/rc.config.d/` files
- B. Controlling network services via `/sbin/rc*.d/` directories and scripts
- C. Starting and stopping network services via `/sbin/init.d/` scripts
- D. Creating custom startup/shutdown scripts

XII. Configuring IP Connectivity

- A. Installing and verifying LAN software
- B. Configuring link layer connectivity
- C. Configuring IP connectivity
- D. Configuring IP multiplexing
- E. Configuring IP routing
- F. Configuring the system hostname and `/etc/hosts`
- G. Configuring network tunable parameters
- H. Configuring static and default routes
- I. Configuring the resolver
- J. Configuring the name service switch
- K. Troubleshooting network connectivity
- L. Configuring network services

XIII. Configuring the HP-UX Kernel

- A. Kernel configuration concepts
- B. Special kernel configurations
- C. Kernel configuration commands
- D. Modifying the current kernel configuration
- E. Creating a named configuration
- F. Copying and loading a configuration
- G. Kernel module concepts, states, and state changes
- H. Viewing and managing module states
- I. Kernel tunable concepts and types
- J. Viewing, managing, and monitoring kernel tunables
- K. Viewing, managing, and monitoring kernel resource alarms
- L. Kernel troubleshooting

- M. Viewing the kernel change log
- N. Booting from an alternate kernel
- O. Booting via override parameters
- P. Booting to tunable maintenance mode

XIV. Managing Software with SD-UX

- A. SD-UX software structure concepts
- B. SD-UX software depot concepts
- C. SD-UX IPD concepts
- D. SD-UX daemon and agent concepts
- E. Listing software
- F. Installing and updating software
- G. Removing software

XV. Managing Patches with SD-UX

- A. Patch concepts
- B. Patch naming convention concepts
- C. Patch supersession concepts
- D. Patch rating concepts
- E. Patch source concepts
- F. Patch tool concepts
- G. Downloading and installing HPSC patches
- H. Installing patches from DVD, tape, and directory depots
- I. Listing and removing patches

XVI. Managing Depots with SD-UX

- A. SD-UX depot server concepts and advantages
- B. Planning for depots
- C. Adding software and patches to a depot
- D. Removing software from a depot
- E. Registering or unregistering a depot
- F. Pulling and pushing software from a depot

XVII. Installing the OS with Ignite/UX

- A. Install source concepts
- B. Planning an install
- C. Choosing an operating environment
- D. Choosing an install-time security bundle
- E. Locating the source media
- F. Initiating a PA-RISC or an Integrity install
- G. Navigating the Ignite-UX menus
- H. Verifying an installation
- I. Completing post-install configuration tasks