# HP-UX Systems Administration Essential Operations

## Course Summary

**Description**

This course will teach the commands and methods needed to setup and manage an HP-UX system. The course will also use a problem solving approach in the lab exercises to teach system administrators advanced topics, for long-term management of the system.

Customized for: HP-UX 11i v1 v2 v3, PA-RISC & Itanium platforms

**Objectives**
At the end of this course, students will be able to:

- Install, update, and boot the HP-UX operating environment
- Set up user accounts and directories
- Prepare queues for use
- Perform backups for integrity and performance reasons
- Monitor the system for performance and do basic setup of network software and capabilities

**Topics**

- Advanced System Concepts for System Administrators
- System Installation and Updating
- Startup and Shutdown
- Managing of System Users
- Managing Printer Queues
- File System Concepts and Review
- Managing Disk and Tape Volumes
- Monitoring System Activity
- Maintaining System Integrity
- Network Setup and Configuration

**Prerequisites**

It is assumed that the student has successfully completed the Fundamentals of HP-UX course, or has equivalent system time as a user.

**Duration**

Five days

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*... to Your Success!"*

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## Course Outline

**I. Advanced System Concepts for System Administrators**
- A. Process concepts
- B. Shell command usage and review
- C. Optimizing system help information
- D. System administrator functions
- E. Using the root account
- F. HP-UX administrative tools
  1. commands
  2. SAM
  3. System Management Homepage

**II. System Installation and Updating**
- A. Installation types and methods
- B. Installing the HP-UX operating system (Ignite-UX)
- C. Updating HP-UX using update-ux
- D. HP-UX product control (swinstall, swlist, swremove)
- E. Obtaining and installing patches to HP-UX
- F. Rebuilding/reconfiguring the HP-UX kernel

**III. Startup and Shutdown**
- A. Comparison of PA-RISC and Itanium boot sequences
- B. Default bootstrap
- C. Boot Admin mode (PA-RISC) & EFI modes (Itanium)
- D. Boot to single-user mode
- E. Startup methods and procedures
- F. Shutdown procedures

**IV. Managing of System Users**
- A. /etc/passwd /etc/group files and contents
- B. Standard, Shadow, and Trusted modes
- C. UID and GID concepts
- D. Creation of a user account
- E. Controlling access by groups
- F. Login sequence
- G. Setting up user environment files
- H. Removing a user account

**V. Managing Printer Queues**
- A. Creation of an execution print queue
- B. Commands to manipulate queues
- C. Commands to manipulate jobs in queues

**VI. File System Concepts and Review**
- A. Whole disk and LVM disk layouts
- B. Device naming conventions
- C. File system structure contents
- D. Supported file types
- E. Special permission codes
- F. Manipulation of Access Control Lists (ACLs)

**VII. Managing Disk and Tape Volumes**
- A. Creating (disk) device files
- B. Creating file systems with newfs
- C. Changing file system attributes - tunefs & vxtunefs
- D. Checking file system structure with fsck
- E. mounting and umounting file systems
- F. open file control via fuser and lsof
- G. Using LVM on HP-UX
  1. physical volume creation (pvcreate)
  2. volume group creation (vgcreate)
  3. logical volume creation (lvcreate)
  4. controlling software mirroring and striping
  5. volume group and logical volume extensions
  6. file system extensions (fsadm)
- H. Commands to manipulate tape volumes:
  1. tar utility
  2. cpio utility
  3. (vx)dump and (vx)restore utilities
  4. fbackup and frestore utilities

**VIII. Monitoring System Activity**
- A. Informational Utilities
- B. The vmstat utility
- C. The iostat utility
- D. The sar utility
- E. The netstat utility

**IX. Maintaining System Integrity**
- A. Login and user accounting
- B. Command/process level accounting
- C. Disk space usage utilities
- D. Using cron tables
- E. Basic CDE data files and setups

**X. Network Setup and Configuration**
- A. Automated methods: sam and /etc/set_parms
- B. TCP/IP address selection
- C. Host names and related files
- D. Configuring network devices
- E. Defining routers and subnet addressing
- F. Network testing with ping
- G. Network utilities: telnet,rlogin, rcp, remsh

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