

## **AIX System Administration - Part I Training Course**

**Total Duration: 40 Days**

### **Course Contents - DAY 1**

#### **Course Introduction**

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

#### **Session 1: INTRODUCTION TO THE P-SERIES AND AIX**

- A Brief History
- RISC Technology
- P-Series Product Range For The Power6
- P-Series Product Range For The Power7
- The AIX Operating System
- Useful Commands
- Workshop Session

#### **Session 2: AIX INSTALLATION**

- Installation Media
- Installation - PCI P-Series Servers
- Console and Language Definition
- Main Installation and Maintenance Menu
- Installation Settings
- The Installation
- AIX Graphical Installer
- Configuration Assistant Menu
- Workshop Session

#### **Session 3: STARTUP AND SHUTDOWN**

- Normal Startup
- The Boot Sequence
- The INIT Process
- AIX Run Levels
- The System Resource Controller

- The ALOG Logging Utility
- System Shutdown Methods
- Workshop Session

#### **Session 4: AIX ADMINISTRATION TOOLS**

- System Management Tools
- SMIT
- SMIT Dialogue Screens
- SMIT Special Characters And Keys
- SMIT and Functions Keys
- SMIT Output Screen
- Recording SMIT Sessions
- The smit Command
- IBM Systems Management Console
- Workshop Session

#### **Session 5: AIX ON-LINE DOCUMENTATION**

- AIX Documentation
- The man Command
- AIX Information Centre Documentation Options
- Infocenter
- Anatomy of the Infocenter
- Workshop Session

#### **AIX System Administration - Part I Training Course**

##### **Course Contents - DAY 2**

#### **Session 6: SOFTWARE INSTALLATION AND MAINTENANCE**

- Software Installation
- Software - Units of Installation
- Bundles
- Naming Conventions
- Installation Directories
- Update and Maintenance Bundles
- The Fix Level Recommendation Tool (FLRT)

- Software States
- SMIT Installation Menus
- Install and Update Software
- Installing Bundles
- Installing Patches and Fixes
- Finding Out About Installed Software
- Maintaining Software
- Workshop Session

### **Session 7: DEVICES**

- Devices
- Predefined Database
- Customized Database
- Device States
- AIX Location Codes (Non-SCSI Devices)
- AIX Location Codes (SCSI Devices)
- AIX Location Codes VS Physical Location Codes
- Listing Devices
- Configuring Devices
- Manually Configured Devices
- Smit Devices Menu
- The mkdev Command
- The chdev Command
- The rmdev Command
- Useful Device Names to Remember
- Logical Volume Structures
- Documenting Hardware Setup
- Workshop Session

### **Session 8: SERIAL DEVICES**

- LAN Connected Devices
- Serial Connections
- SMIT Menu

- Defining a TTY
- Terminfo Database
- Useful Commands
- Workshop Session

#### **Session 9: PRINTERS AND QUEUES**

- Queueing Concepts
- Other Software Interfaces
- The Spooling Directories
- The qconfig File
- SMIT Menus
- Adding a Print Queue
- Managing Print Queue Attributes
- The qprt Command
- Queue Status Information
- Workshop Session

### **AIX System Administration - Part I Training Course**

#### **Course Contents - DAY 3**

#### **Session 10: USERS AND GROUPS**

- Users and Groups In AIX
- The /etc/passwd File
- Long User and Group Name Support
- Verify and Change User Name Limit
- Verify and Change User Name Limit through the Command Line
- Listing User Information
- Adding a New User
- The /etc/group File
- Registering a New User
- Adding Users
- Adding a Group
- More about Groups
- More about Users

- Removing Users from the System
- Other Useful Commands
- Workshop Session

#### **Session 11: AIX SECURITY FEATURES**

- The security Directory
- The /etc/security/passwd File
- The /etc/security/user File
- The /etc/security/login.cfg File
- The /etc/security/group File
- Security Audit File
- Losing the Root User's Password
- Role Based Access Control
- Privileged Escalation with Set User
- Identification (SUID)
- Adding a Role to a User
- Creating a User Defined Role
- The Root User and Enhanced RBAC
- Disabling the Root User
- Enabling the Root User
- Disabling root user in WPARs
- Workshop Session

#### **Session 12: THE LOGICAL VOLUME MANAGER**

- The Logical Volume Manager
- AIX Disk Storage
- Physical Volumes and LVM
- Volume Group Descriptor Areas
- SMIT and Volume Groups
- Physical and Logical Storage
- Scalable Volume Groups
- Uses of Logical Volumes
- Mirroring

- LVM Hot Spare Disk in a Volume Group
- Enabling Hot Spare Disk Support in an Existing Volume Group
- Striping
- Disk Placement Policies
- Creating and Managing Logical Volumes
- Migrating Contents of Physical Volumes
- Other Useful Commands
- Workshop Session

## **AIX System Administration - Part I Training Course**

### **Course Contents - DAY 4**

#### **Session 13: PAGING SPACE**

- What is Paging Space?
- Paging Space Calculations
- Paging Space Placement on Disk
- Listing Paging Space
- Adding Paging Space:
  - mkps Command
  - smit mkps
- Changing Paging Space:
  - chps Command
  - smit chps
- Removing Paging Space:
  - rmps
  - smit rmps

#### **Session 14: AIX FILE SYSTEMS**

- AIX Filesystems
- AIX Supported Filesystems
- JFS Structure
- The Enhanced Journaled File System
- Dynamic Disk Inode Allocation
- On-Line File System Free Space Defragmentation

- JFS2 Enhancements
- JFS2 File System Shrink
- Shrink A File System Using Smit
- Disabling JFS2 logging
- JFS2 Snapshot Image
- Overview of JFS2 Snapshot
- Creation of a JFS2 Snapshot
- JFS Internal Snapshot
- Listing File System Information
- AIX 7.1 /admin/tmp System Directory
- Mount Points
- SMIT and Journaled File Systems
- Building A JFS on a Logical Volume
- Managing Existing Filesystems
- Checking and Repairing File Systems
- Removing a File System
- Workshop Session

#### **Session 15: BACKUP AND RESTORE**

- Backup and Restore
- Backup Media
- The mksysb and savevg Functions
- The backup Command
- The restore Command
- Using the cpio Command
- The cpio -o Command
- Using the find Command with cpio
- The cpio -i Command
- Using the cpio -p Command
- Using the tar Command
- Creating an Archive
- Reading/Verifying an Archive Further tar Options

- Tape Control Commands
- Workshop Session

## **AIX System Administration - Part I Training Course**

### **Course Contents - DAY 5**

#### **Session 16: SCHEDULING JOBS**

- Starting Background Jobs
- The nohup Command
- Using cron Processes
- Creating cron Processes
- Creating crontab Entries
- Using the crontab Command
- The at Command
- Authorisation for the at Command
- Creating a crontab Entry
- Using the at Command
- Workshop Session

#### **Session 17: TCP/IP CONFIGURATION**

- Overview
- Network Hardware
- Ethernet
- Network Software
- Network Addressing
- Routing
- Displaying Routing Tables
- Network Information Files
- Network Commands
- User Equivalence
- Displaying Network Details
- Remote Login
- Copying File
- Executing Remote Commands



- Testing Network Connectivity
- Client - Server Environment:
  - NFS - Network File System
  - DHCP - Dynamic Host Configuration Protocol
- Naming Services:
  - NIS - Network Information Service
  - DNS - Domain Name Service

#### **Session 18: NFS**

- Define NFS Terminology
- Client Side NFS
- Server Side NFS
- The /etc/exports File
- The /etc/filesystems File
- Exercise: Export a Resource
- Exercise: Use a Remote Filesystem

#### **Session 19: INTRODUCTION TO WORKLOAD PARTITIONS (wpars)**

- What are Workload Partitions?
- System WPARs
- System WPARs Observations
- System WPAR Examples
- WPAR File Systems
- Starting a WPA
- Logging in to a WPAR
- Stopping a WPAR
- Rebooting a WPAR
- Changing a WPAR
- Removing a WPAR
- Application WPARs
- Application WPARs Observations
- Application WPAR Examples
- Application / System WPAR Comparisons



- Workshop Session