Unix Fundamentals

This document provides the curriculum outline of the Knowledge, Skills and Abilities that a Unix administrator can be expected to demonstrate.

Duration: 5 Days

Hands-On Format: This hands-on class is approximately 80/20 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

Lab: **Koenig DC**

Module 1 - Introduction to the Unix Operating System
A brief history of UNIX
The UNIX kernel
The UNIX file system
Getting started navigating the file system
The file system structure
Directories and files
Pathnames
Navigating the file system

Module 2 - Basic commands
Command line syntax
Basic file handling commands
Basic Directory handling commands
Filename wildcard characters

Module 3 - Redirection and Pipes
Input redirection
Output redirection
Pipes

Module 4 - Introduction to the Vi editor
Overview of the vi editor
Basic functions
Switching to input mode
Other useful commands
Exercises: Using the vi editor

Module 5 - Searching and replacing text
Searching and replacing text using the vi editor
Using regular expressions (regex)
Using sed for search and replace
Searching for text with grep, egrep and grep

Module 6 - Recalling and editing commands
Overview
The bash shell
The korn shell

Module 7 - File permission and access control
Users and user groups
File access permissions
Changing file attributes
Switching users and user groups
Linking files

Module 8 - Filtering Text
Overview
The cut command
An introduction to awk
The ni command

Module 9 - Processes
What is a process?
Monitoring processes
Killing processes
Background processes
Job Control
Grouping commands

Module 10 - The user environment
Customising the profile or .bash_profile
Customising the .kshrc or .bashrc

Module 11 - More basic commands
The find command
Using xargs command
The locate command
The df command
The cut command
The sort command
Finding duplicate content
The finger and pinky commands

Module 12 - Getting started with shell script
What is a shell script?
Development guidelines
Creating and editing shell scripts
Naming and storing shell scripts
Executing shell scripts

Module 13 - Using variables
Environment variables
Local variables
Assigning values to variables
Assessing variable values
Using quotes
Delimiting variable names
Echo control sequences

Module 14 Hard-Disk
Adding hard disk
Creating partition, filesystem, mount point etc

Module 15. LVM
What is LVM
Creating lvm

Module 16 – Script
Using expr, read, if, test
Loop {while, until, for}