

# Sela.

U4

## Unix/Linux System Administration

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# Unix/Linux System Administration

U4 - Version: 1.1

 5 days Course

## Description:

The Unix/Linux System Administration course is designed to give experienced Unix/Linux users the skills and knowledge needed to be qualified system administrators. The course is presented in the Linux environment, however, examples from other versions of Unix are given throughout the course. The basic ideas and concepts encountered in this course are the same for all flavors of Unix. Participants are introduced to the key procedures of system booting and shutdown, maintaining file systems, backing up the system, maintaining printers, handling software updates, using and configuring NIS, NFS, and more.

Hands-on exercises will allow you to experience and solve problems in a learning environment. The participant will deal with and solve real-life problems. The participants can discuss the various aspects of the problem, various possible solutions, and try them all.

## Intended audience:

This course is intended for beginning Unix/Linux administrators who want to acquire the basic skills and knowledge needed to administer Unix/Linux machines as standalone workstations or in a network environment.

## Prerequisites:

Participants should be proficient with a Unix editor, understand file and directory structures, and understand shell mechanisms as well as basic fundamentals of shell programming. Participants should have attended the course "Becoming a Unix/Linux Power User" or have equivalent experience



## Objectives:

Participants will be able to install and maintain a Unix/Linux server, connect a Unix/Linux server to the network, and share resources on the network.

## Topics:

### The System Administrator

- Information resources: Books, Internet, Online documents.
- System administrator duties and tasks.

### Boot and Shutdown

- Run levels.
- Processes and daemons.
- Configure startup scripts. (Workshop)

### User Management

- Add user. (Workshop).
- User groups.
- User and system security.
- User environment (Workshop)
  - What not to do in startup scripts.
  - Other dot files
  - Shell startup scripts.

### File Management. (Workshop)



- Links: hard, symbolic
- Permission
  - Permission bits.
  - Special permission.
  - ACLs
- Quotas.
- File system structure.
- Manage disk storage
  - Partition,
  - Format,
  - Fix errors on disk,
  - Mount

## Networking.

- Network concepts overview
  - History.
  - ISO/OSI.
  - Layers description
- Name to address translation.
- File sharing with NFS. (Workshop)
- NIS. (Workshop)
- Services and inetd. (Workshop)

## Printing.

- Setting a printer.
- Printing to a remote printer.
- Printing to an MS Windows printer



## Backup

- Backup strategy.
- Selecting the backup devices and software.
- Automating the backup procedure. (Workshop)
- Third party product overview

## Automounter

- Automount requirements.
- Maps to define an Automount mechanism.
- Automounter. (Workshop)

## X11

- The Concept.
- How it works.
- Comparison to MS Windows.
- X11 setup files. (Workshop)
- Window manager and its startup files. (Workshop)
- XDM. (Workshop)

## System Administrator Tools.

- Monitor processes: truss/strace, ps top.
- Monitor network: lsof, netstat
- Working with files: strings, awk, od, du, df, find.
- Misc: which, whereis, dmesg, Logfiles.

## Operating System Installation. (Workshop)



- System installation.
- Linux/Solaris installation.
- Patches.
- Installing and removing packages (RPM).
- Download compile and install using source code.

## Kernel reconfig

- Get the kernel source code.
- Add new adapter and update drivers.
- Kernel upgrade. (Workshop)

## Installing from Source

- Where can you get the source code?
- What are the benefits of starting from source code products?
- Downloading and extracting the packages.
- Configuring the package.
- Installing the package.

## The proc Filesystem

- map of /proc.
- Process entries.
- Hardware information.
- Kernel information.
- Kernel settings.

## Monitoring the System

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- Swap space tunings.
- Detecting physical memory shortage.
- System resource loads: CPU, I/O, Disk.
- Raid disks.
- Setting limits to processes.
- Measuring network load.