LINUX ADMIN TRAINING

Self-Learning & Online Traning

Duration: 25+ (Hours)

SVR Technologies

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12+
MAIN TOPICS

60+
SUBTOPICS

100%
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Main Topic 01: Installation and Initialization

In this module, you will understand Linux architecture in general, booting process, how to install Centos7 OS, system initialization and some basic commands to get started.

- **Introduction**
- **Installation**
- **Linux Architecture**
- **Boot Process**
- **Kernel**
- **System Initialization**
- **GRUB(Modify the system boot loader)**
- **GUI**
- **CLI(Access a shell prompt and issue commands with correct syntax**
- **Use input-output redirection (>, >>, |, 2>, etc.)**
- **Create and edit text files**
- **Delete**
- **Copy**
- **Move files and directories**
- **Introduction to Bash Shell**
- **Basic Commands**
- **Editors**
- **Man Pages**
- **Boot systems into different targets manually & automatically**

Main Topic 02: Package management and Process Monitoring

In this module, you will learn about

a)Package management which includes installing, updating and removing software.

b)Topics on basic networking, tools needed etc.

c)CMD's to monitor system processes and resources.

- **Securing single-user mode (su login)**
- **Shutting down and rebooting the system**
- **RPM Package Manager**
- **Installing and Removing Software**
- **rpm Queries**

- **rpm Verification**
- **About yum**
- **Using yum**
- **Searching packages/files**
- **Configuring local Repositories**
- **What processes are?**
- **The properties of a process**
- **Parent processes and child processes**
- **Killing processes and sending signals to a process (kill, killall, xkill)**
- **How to start processes**
- **Monitor them**
- **Identify CPU/memory intensive processes**
- **Adjust process priority**
- **start/stop/check the status of network services**
- **Configure networking and hostname resolution statically or dynamically**

Main Topic 03: Important Files, Directories and Utilities

In this module, you will learn about how to manage services, important directories, files and configurations. Also included are topics on different data processing utilities.

- **Control services and Daemons**
- **Start and stop services and configure services to start automatically at boot**
- **/dev & /proc directories**
- **System documentation under /usr/share/doc**
- **Awk Command**
- **Sed Command**
- **Use grep and regular expressions to analyze text**
- **Archive, compress, unpack and uncompress files using tar, star, gzip, and bzip2, dump, restore, Locate and interpret log files**

Main Topic 04: System Services

In this module, you will learn how to configure NTP service, Schedule jobs, Secure communication and copying of files, X Window system etc.

- **Network Time Protocol**
- **X Windows**
- **SSH: Secure Shell(Access remote systems using ssh**
- **SCP**
- **Passwordless SSH**

- **Configure key-based authentication for SSH)**
- **Cron**
- **Controlling Access to cron**
- **System crontab Files**
- **Daily Cron Jobs**
- **Anacron Scheduler**
- **Schedule tasks using at**

Main Topic 05: User Administration

In this module, you will learn the concepts of user administration in Linux, how to add new user account, modify and delete existing user accounts etc. We will also discuss network users and file permission techniques.

- **Adding a New User Account**
- **User Private Groups**
- **Modifying / Deleting User Accounts**
- **Group Administration**
- **Password Aging Policies**
- **Switching Accounts**
- **Studo access**
- **Network Users**
- **Authentication Configuration**
- **SUID and SGID Executable**
- **SGID Directories**
- **The Sticky Bit**
- **Default File Permissions**
- **Changing file ownership (chown)**
- **Changing file group ownership (chgrp)**
- **Permissions on files**
- **Permissions on directories**
- **How permissions are applied**
- **Changing permissions (chmod)**
- **Access Control Lists (ACLs)**

Main Topic 06: File System Security and Management

In this module, you will understand the file system management which includes mounting, unmounting and automounter techniques. We will discuss details of file system security and also understand how permissions are applied.

- Device Recognition
- Disk Partitioning
- Managing Partitions
- Making Filesystems(vfat, ext4, and xfs)
- Mount and unmount CIFS and NFS network file systems
- Filesystems and types
- Labels
- tune2fs
- Mount Points and /etc/fstab
- Mounting Filesystems with mount
- Unmounting Filesystems
- Handling Swap Files and Partitions
- NFS server and NFS Client
- NFS share for group collaboration
- Mounting NFS Filesystems
- Automounter

Main Topic 07: Advanced File System Management

In this module, we will learn how to create the Quota System, Reporting Quota Status etc, LVM Creation, Network Tools, File types, diff b/w soft and hard links etc.

- Special file types
- Symbolic links (ln -s)
- Inodes and directory entries
- Hard links
- Preserving links while copying and archiving
- Configuring the Quota System
- Setting Quotas for Users
- Reporting Quota Status
- What is Logical Volume Manager (LVM)?
- Creating Logical Volumes

- **Resizing Logical Volumes**
- **Network Interfaces**
- **IPv4 Addresses**
- **Dynamic IPv4 Configuration**
- **Static IPv4 Configuration**
- **Device Aliases**
- **Routing Table**
- **Default Gateway**
- **Verify IP Connectivity**
- **Defining the Local Host Name**
- **Local Resolver**
- **Remote Resolvers**
- **Verify DNS Connectivity**
- **Network Tools**
- **NFS server and NFS Client**
- **NFS share for group collaboration**

Main Topic 08: Server Configurations

In this module, you will learn about DNS and Apache Configuration, Analyze and store logs.

- **Configure BIND to function as a caching-only DNS server**
- **Configure a caching-only name server to forward DNS queries**
- **Troubleshoot DNS client issues**
- **Configuring BIND options**
- **Configuring directory location for zone files**
- **Apache Overview**
- **Apache Server Configuration**
- **Virtual Hosts**
- **Apache Access Configuration**
- **Deploy a basic CGI application**
- **Configure TLS security**
- **Configure private directories**
- **Analyze and store logs**

Main Topic 09: Samba & Mail Services, Virtualization

In this module, you will learn about Samba (SMB) Service, Mail Service (SMTP) and Linux Virtualization.

- **Configure SMB to provide network share to clients**
- **Configure mail server to forward all emails to Central mail server**
- **Introduction to KVM Virtualization**
- **Virtual Machine installation**
- **Configuring Virtual Machines**
- **Install centos systems as virtual guests**
- **Configure systems to launch virtual machines at boot**

Main Topic 10: Advanced Security & Networking Concepts

In this module, you will learn about some advanced topics like SELinux, IPTables (Firewall Configuration), Aggregation & Bridging, Linux Containers.

- **SELinux Overview**
- **SELinux Tools**
- **SELinux Contexts**
- **SELinux Booleans**
- **Use SELinux port labeling to allow services to use non-standard ports**
- **Diagnose and address selinux policy violations**
- **Configure firewall settings**
- **N/W port security**
- **Route IP traffic and create static routes**
- **Boot level security (GRUB)**
- **Security need for TCP wrappers**
- **Configure aggregated links between two systems**
- **Use firewalld and associated mechanisms such as rich rules**
- **Zones and custom rules**
- **To implement packet filtering and configure network address translation (NAT)**
- **Use /proc/sys and sysctl to modify and set kernel runtime parameters**

Main Topic 11: IP Configuration, Kickstart Configuration

In this module, you will learn about IP configuration and how to perform kickstart installation using different services.

- **Ip configuration**
- **Kickstart installation using NFS**
- **HTTP services**
- **Setting Grub Password**
- **Setting root password for single user mode from Grub page**
- **Configure systems to mount file systems at boot by Universally Unique ID (UUID) or label**
- **List**
- **Create**
- **Delete partitions on MBR and GPT disks.**
- **Introduction to Shell scripting in 1hr.**
- **In this module, you will learn how to write efficient shell scripts, how to configure Kerberos system.**
- **Shell Scripting basics**
- **Loops**
- **Shell variables**
- **Arrays**
- **Writing scripts**

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