Linux System Administration (l, II, III)

This 15-day Linux System Administration training provides in-depth, hands-on learning from basic to advanced topics using CentOS 7. Participants will start with installation, user management, file systems, and networking. The course then moves into automation, LVM, SELinux, ACLs, and LDAP. Advanced modules cover DNS, Postfix, Apache, MariaDB, iSCSI, NFS, and shell scripting. Ideal for aspiring system administrators, this course builds the skills needed to manage and secure Linux environments in real-world enterprise settings..

Duration: 15 Days (8 Hours/day)

Lab: Koenig DC

Prerequisites for this course

In order to complete this course, learners should be able to:

- Basic knowledge of Linux operating systems and their use, including familiarity with the command-line interface (CLI)..

Outline for this course

Chapter 1 - Installing CentOS 7 Linux, Access CLI, Managing Files, getting help

- Installing CentOS 7
- Log in to a Linux system and run simple commands using the shell.
- Copy, move, create, delete, and organize files from the bash shell prompt. Resolve problems by getting help

Chapter 2 - Create, view, and edit text files from the command line

- Create, view, and edit text files from command output or in an editor.

Chapter 3 - Manage local Linux users and groups, Permissions

- Manage local Linux users and groups, and administer local password policies.
- Set Linux file system permissions on files and interpret the security effects of different permission settings.

Chapter 4 - Processes, Controlling Service and Daemons, Configure SSH, Analyze and store logs

- Obtain information about the system, and control processes running on it.
- Control and monitor network services and system daemons using systemd.
- Access and provide access to the cmd on remote systems securely using OpenSSH.

- Locate and accurately interpret relevant system log files for troubleshooting purposes.

Chapter 5 - Configuring Networking, archiving files, Configuring Package Manager

- Configure basic IPv4 networking
- Archive files and copy them from one system to another.
- Download, install, update, and manage software packages from EPEL and yum package repositories.

Chapter 6 - Access Linux file systems, configure virtualized system

- Access and inspect existing file systems on a CentOS 7 system.
- Create and use CentOS Linux virtual machines with KVM and libvirt.

Chapter 7 - Automate installation with Kickstart, using grep, VIM Editor, Schedule tasks

- Automate the installation of CentOS 7 Linux systems with Kickstart.
- Write regular expressions that, when partnered with grep, will allow you to quickly isolate or locate content within text files.
- Introduce the vim text editor, with which you can open, edit, and save text files.
- Schedule tasks to automatically execute in the future.

Chapter 8 - Manage processes priority, ACL, Manage SELinux security, LDAP Users and groups

- Influence the relative priorities at which Linux processes run.
- Manage file security using POSIX access control lists.
- Manage the Security Enhanced Linux behavior.
- Configure systems to use central identity management services.

Chapter 9 - Disk Management, LVM, Sharing and Accessing File using NFS

- Manage simple partitions and file systems.
- Manage logical volumes from the command line.
- Access (secure) NFS shares.

Chapter 10 - CIFS, Autofs, Understanding Boot Process, Firewall

- Use autofs and the command line to mount and unmount SMB file systems.
- Control and troubleshoot the CentOS 7 Linux boot process.
- Understanding and Configuring firewall.

Chapter 11 - Link Aggregation and bridging on CentOS Linux, Port security using advanced SELinux and firewalld

- Configure and troubleshoot advanced network interface functionality including bonding, teaming, and local software bridges
- Permit and reject access to network services using advanced SELinux and firewalld

Chapter 12 - Manage DNS Server on Centos Linux, Configure Postfix

- Set and verify correct DNS records for systems and configure secure DNS caching
- Relay all email sent by the system to an SMTP gateway for central delivery

Chapter 13 - Block based storage (iSCSI), File based Storage (NFS, CIFS)

- Provide and use networked iSCSI block devices as remote disks.
- Provide NFS exports and SMB file shares to specific systems and users

Chapter 14 - Configure MariaDB databases, Apache Web Server with virtual hosting

- Provide a MariaDB SQL database for use by programs and database administrators.
- Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts

Chapter 15 - BASH Shell Scripting, Configure the shell environment

- Write simple Bash shell scripts
- Use Bash conditionals and other control structures to write shell scripts Use environment variables, Bash aliases, and Bash functions