Linux Basics

by Jnaapti

Contents

Course Pre-requisites

The following document contains the list of commands and concepts that you should know before attending the training.

The UNIX Philosophy

- https://en.wikipedia.org/wiki/Unix_philosophy
- https://archive.org/details/ost-computer-science-the_art_of_unix_programming-1/page/n25

Linux Distributions

Different popular Linux distributions.

Redhat Based Distributions

Examples: Fedora, RHEL, CentOS

Package installer - yum

Debian Based Distributions

Examples: Debian, Ubuntu

Package installer - apt-get

About LTS editions

Absolute and Relative Paths

Basic understanding of the Linux filesystem. The root directory and its sub-directories. Difference between absolute and relative paths and how to use that in commands.

Basic Linux Commands

```
echo
ls
pwd
cat
# This is a comment
ls # Comments can also come at the end of a command like this
```

Working with Files

Creating files with content programmatically

```
touch
echo > file
echo >> file
cat # HEREDOC syntax
rm
cp
mv
```

Working with Directories

```
# Files starting with dot
mkdir
rmdir
# Home directory
rm -rf
cd # cd, cd ~ and /home/...
```

Working with Processes

Listing processes, knowing which process is consuming the highest CPU, killing a process.

```
ps
top
kill # Or ^C
echo $?
```

Working with Networks

Public and private networks and the following commands

```
ifconfig
ping
netstat -nltp
ssh
```

Understanding Network CIDR

- CIDR Calculator

Working with Services

```
systemctl
```

Working with Users

Users, Permissions and the use of sudo

```
sudo
```

Commands useful during piping

Familiar with the concept of Piping output of one command to another. Know the usage of the following commands during piping:

```
grep
sed
awk
head
tail
xargs
# Backslash in the end to continue on the next line
```

Command Line Text Editors

nano

vim

Variables and Environment variables

```
# Use of $
echo $PATH
echo $HOME
```

Short and Long Switches

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Exiting Shells

```
^D
```

Getting Help

```
ls --help
man ls
```

Resources

- Introduction to Linux [pdf]
- The Art of Unix Programming