LET'S TALK ABOUT

LINUX

LINUX COMMANDS TO LEARN

NOE TOVAR-MBA

INTRODUCTION

Hey there! So you're diving into the fascinating world of Linux administration, huh? Buckle up, my friend, because you're in for a thrilling ride!

Welcome to the world of Linux, where the penguins roam free, and sysadmins wield the power of the command line like wizards! In this eBook, we'll embark on an exciting adventure to unravel the essentials of Linux commands, equipping you to conquer the realm of server administration.

A Glimpse into Linux's Roots

Let's take a stroll down memory lane. Picture a young Linus Torvalds back in 1991, crafting the blueprint for an open-source operating system. Little did he know that his creation would grow into a global phenomenon, powering servers, devices, and even space exploration!

"Linux is a cancer that attaches itself in an intellectual property sense to everything it touches." - Steve Ballmer, former CEO of Microsoft.*

Imagine what Microsoft thought back then! But Linux persisted, thriving on the principles of collaboration and freedom.

The Distros Galore

Linux isn't a one-size-fits-all deal; it's more like a buffet with a plethora of distros to suit every taste. Whether you're into the elegance of Ubuntu, the bleeding edge of Arch, or the minimalism of Debian, there's a distro tailored just for you.

"The nice thing about Linux is that it always looks like you're at the controls of a spaceship." - Raymond Chen, Microsoft developer.

Expert analogy there! Linux does give you that sense of navigating through the cosmos with all the control at your fingertips.

Mastermind Behind the Penguiny Magic
Ah, Linus Torvalds, the maestro behind our beloved penguin-powered OS. His genius and a touch of rebellious spirit gave birth to Linux. In the words of the man himself:

> *"I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu)..." - Linus Torvalds in the initial announcement.*

Little did he know how big and professional it would become! Linus is the guiding star in the Linux galaxy, reminding us that even hobbies can change the world.

So, my Linux journeyer, get ready to embrace the power of the terminal, explore the diverse distros, and channel your inner sysadmin.

This eBook is your trusty guide on this exciting expedition.
May your commands be precise, and your servers forever stable!
Kindest Regards
Noe Tovar

SYSTEM INFORMATION

```
# Display Linux system information
uname -a

# Display kernel release information
uname -r

# Show operating system information such as distribution name and version
cat /etc/os-release
# Show how long the system has been running + load
uptime

# Show system host name
hostname

# Display all local IP addresses of the host.
hostname -I

# Show system reboot history
last reboot

# Show the current date and time
date

# Show this month's calendar
cal

# Display who is online
w

# Who you are logged in as
whoami
```

HARDWARE INFORMATION

```
# Display messages in kernel ring buffer
dmesg

# Display CPU information
cat /proc/cpuinfo

# Display memory information
cat /proc/meminfo

# Display free and used memory ( -h for human readable,
-m for MB, -g for GB.)
free -h

# Display PCI devices
lspci -tv

# Display USB devices
lsusb -tv

# Display DMI/SMBIOS (hardware info) from the BIOS
dmidecode

# Show info about disk sda
hdparm -i /dev/sda

# Perform a read speed test on disk sda
hdparm -tT /dev/sda

# Test for unreadable blocks on disk sda
badblocks -s /dev/sda
```

PERFORMANCE MONITORING AND STATISTICS

A# Display and manage the top processes
top
Interactive process viewer (top alternative)
htop
Display processor related statistics
mpstat 1
Display virtual memory statistics
vmstat 1
Display I/O statistics
iostat 1
Display the last 100 syslog messages (Use /var/log/syslog for Debian based systems.)
tail -100 /var/log/messages
Capture and display all packets on interface eth0
tcpdump -i eth0
Monitor all traffic on port 80 (HTTP)
tcpdump -i eth0 'port 80'
List all open files on the system
lsof
List files opened by user
lsof -u user
Display free and used memory (-h for human readable, -m for MB, -g for GB.)
free -h
Execute "df -h", showing periodic updates
watch df -h

USER INFORMATION AND MANAGEMENT

```
# Display the user and group ids of your current user.
id

# Display the last users who have logged onto the system.
last

# Show who is logged into the system.
who

# Show who is logged in and what they are doing.
w

# Create a group named "test".
groupadd test

# Create an account named john, with a comment of "John Smith" and create the user's home directory.
useradd -c "John Smith" -m john

# Delete the john account.
userdel john

# Add the john account to the sales group
usermod -aG sales john
```

FILE AND DIRECTORY COMMANDS

```
# List all files in a long listing (detailed) format
ls -al

# Display the present working directory
pwd

# Create a directory
mkdir directory

# Remove (delete) file
rm file

# Remove the directory and its contents recursively
rm -r directory

# Force removal of file without prompting for confirmation
rm -f file

# Forcefully remove directory recursively
rm -rf directory

# Copy file1 to file2
cp file1 file2

# Copy source_directory recursively to destination. If
destination exists, copy source_directory into destination,
otherwise create destination with the contents of
source_directory.
cp -r source_directory destination

# Rename or move file1 to file2. If file2 is an existing
directory, move file1 into directory file2
mv file1 file2
```

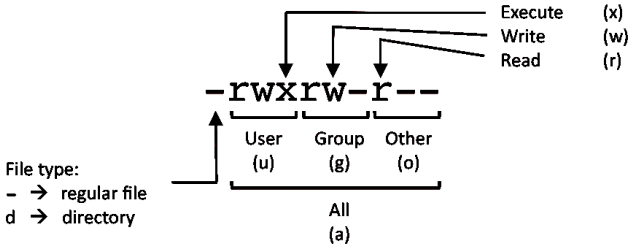
FILE AND DIRECTORY COMMANDS 2

```
# Create symbolic link to linkname
ln -s /path/to/file linkname

# Create an empty file or update the access and modification times of file.
touch file

# View the contents of file
cat file

# Browse through a text file
less file

# Display the first 10 lines of file


# Display the last 10 lines of file


# Display the last 10 lines of file and "follow" the file as it grows.
tail -f file
```

PROCESS MANAGEMENT

```
# Display your currently running processes
ps

# Display all the currently running processes on the system.
ps -ef

# Display process information for processname
ps -ef | grep processname

# Display and manage the top processes
top

# Interactive process viewer (top alternative)
htop

# Kill process with process ID of pid
kill pid

# Kill all processes named processname
killall processname

# Start program in the background
program &

# Display stopped or background jobs
bg

# Brings the most recent background job to foreground
fg

# Brings job n to the foreground
fg n
```

FILE PERMISSIONS



PERMISSION EXAMPLE

U	G	W	
rwx	rwx	rwx	chmod 777 filename
rwx	rwx	r-x	chmod 775 filename
rwx	r-x	r-x	chmod 755 filename
rw-	rw-	r--	chmod 664 filename
rw-	r--	r--	chmod 644 filename

Be sure when granting 777

LEGEND
U = User
G = Group
W = World

r = Read
w = write
x = execute
- = no access

NETWORKING

```
# Display all network interfaces and IP address
ip a

# Display eth0 address and details
ip addr show dev eth0

# Query or control network driver and hardware settings
ethtool eth0

# Send ICMP echo request to host
ping host

# Display whois information for domain
whois domain

# Display DNS information for domain
dig domain

# Reverse lookup of IP_ADDRESS
dig -x IP_ADDRESS

# Display DNS IP address for domain
host domain

# Display the network address of the host name.
hostname -i

# Display all local IP addresses of the host.
hostname -I

# Download http://domain.com/file
wget http://domain.com/file

# Display listening tcp and udp ports and
corresponding programs
netstat -nutlp
```

ARCHIVES

```
# Create tar named archive.tar containing directory.
tar cf archive.tar directory

# Extract the contents from archive.tar.
tar xf archive.tar

# Create a gzip compressed tar file name archive.tar.gz.
tar czf archive.tar.gz directory

# Extract a gzip compressed tar file.
tar xzf archive.tar.gz

# Create a tar file with bzip2 compression
tar cjf archive.tar.bz2 directory

# Extract a bzip2 compressed tar file.
tar xjf archive.tar.bz2
```

INSTALLING PACKAGES

```
# Search for a package by keyword.
yum search keyword

# Install package.
yum install package

# Display description and summary
information about package.
yum info package

# Install package from local file named
package.rpm
rpm -i package.rpm

# Remove/uninstall package.
yum remove package

# Install software from source code.
tar zxvf sourcecode.tar.gz
cd sourcecode
./configure
make
make install
```

SEARCH

```
# Search for pattern in file
grep pattern file

# Search recursively for pattern in directory
grep -r pattern directory

# Find files and directories by name
locate name

# Find files in /home/john that start with
"prefix".
find /home/john -name 'prefix*'

# Find files larger than 100MB in /home
find /home -size +100M
```

SSH LOGINS

```
# Connect to host as your local username.
ssh host

# Connect to host as user
ssh user@host

# Connect to host using port
ssh -p port user@host
```

FILE TRANSFERS

```
# Secure copy file.txt to the /tmp folder on server
scp file.txt server:/tmp

# Copy *.html files from server to the local /tmp folder.
scp server:/var/www/*.html /tmp

# Copy all files and directories recursively from server to the current system's /tmp folder.
scp -r server:/var/www /tmp

# Synchronize /home to /backups/home
rsync -a /home /backups/

# Synchronize files/directories between the local and remote system with compression enabled
rsync -avz /home server:/backups/
```

DISK USAGE

```
# Show free and used space on mounted filesystems
df -h

# Show free and used inodes on mounted filesystems
df -i

# Display disks partitions sizes and types
fdisk -l

# Display disk usage for all files and directories in human readable format
du -ah

# Display total disk usage off the current directory
du -sh
```

DIRECTORY NAVIGATION

```
# To go up one level of the directory tree.
(Change into the parent directory.)
cd ..

# Go to the $HOME directory
cd

# Change to the /etc directory
cd /etc
```

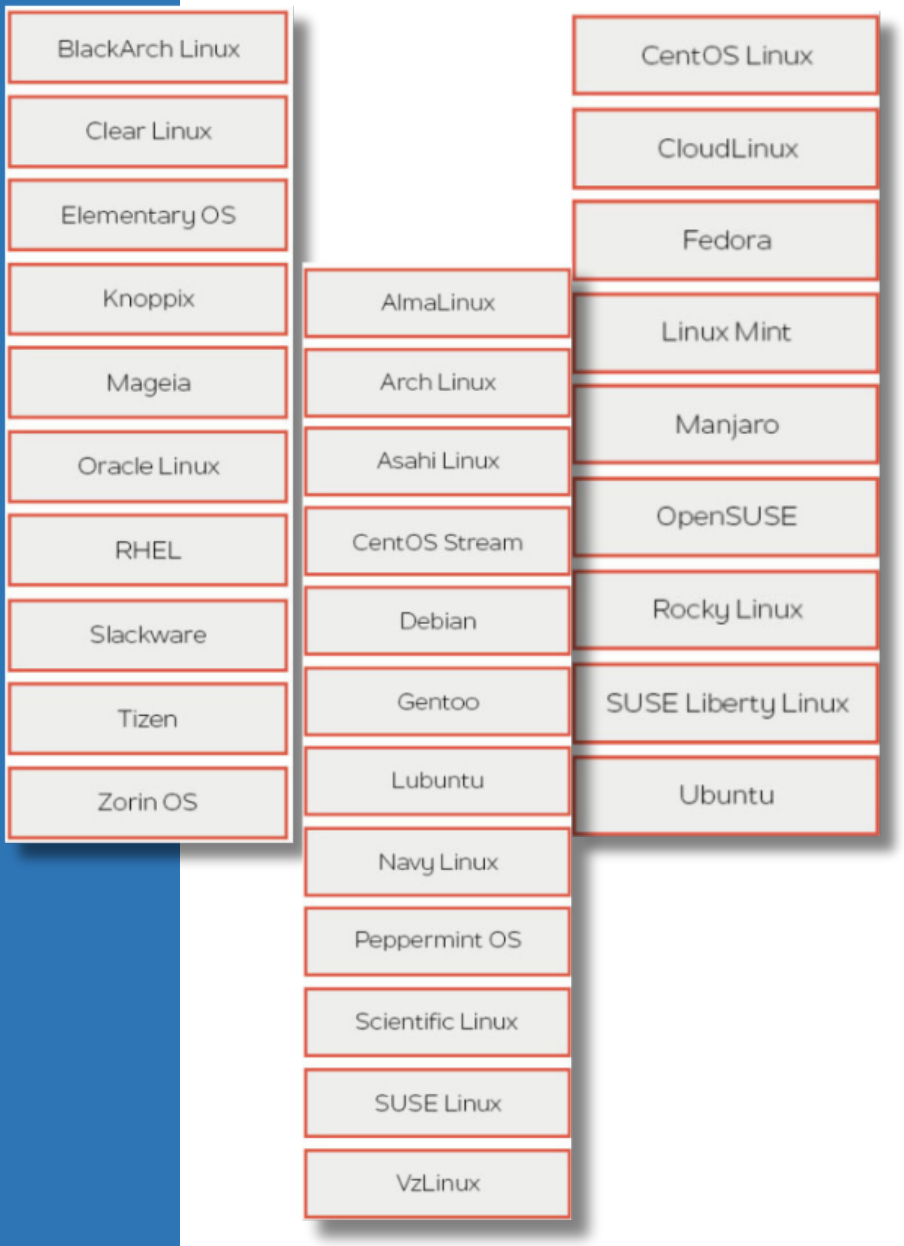
SECURITY

```
# Change the current user's password.
passwd
# Switch to the root account with root's environment. (Login shell.)
sudo -i
# Execute your current shell as root. (Non-login shell.)
sudo -s
# List sudo privileges for the current user.
sudo -l
# Edit the sudoers configuration file.
visudo
# Display the current SELinux mode.
getenforce
# Display SELinux details such as the current SELinux mode, the configured mode, and the loaded policy.
sestatus
# Change the current SELinux mode to Permissive. (Does not survive a reboot.)
setenforce 0
# Change the current SELinux mode to Enforcing. (Does not survive a reboot.)
setenforce 1
# Set the SELinux mode to enforcing on boot by using this setting in the /etc/selinux/config file.
SELINUX=enforcing
# Set the SELinux mode to permissive on boot by using this setting in the /etc/selinux/config file.
SELINUX=permissive
# Set the SELinux mode to disabled on boot by using this setting in the /etc/selinux/config file.
SELINUX=disabled
```

LOGGING AND AUDITING

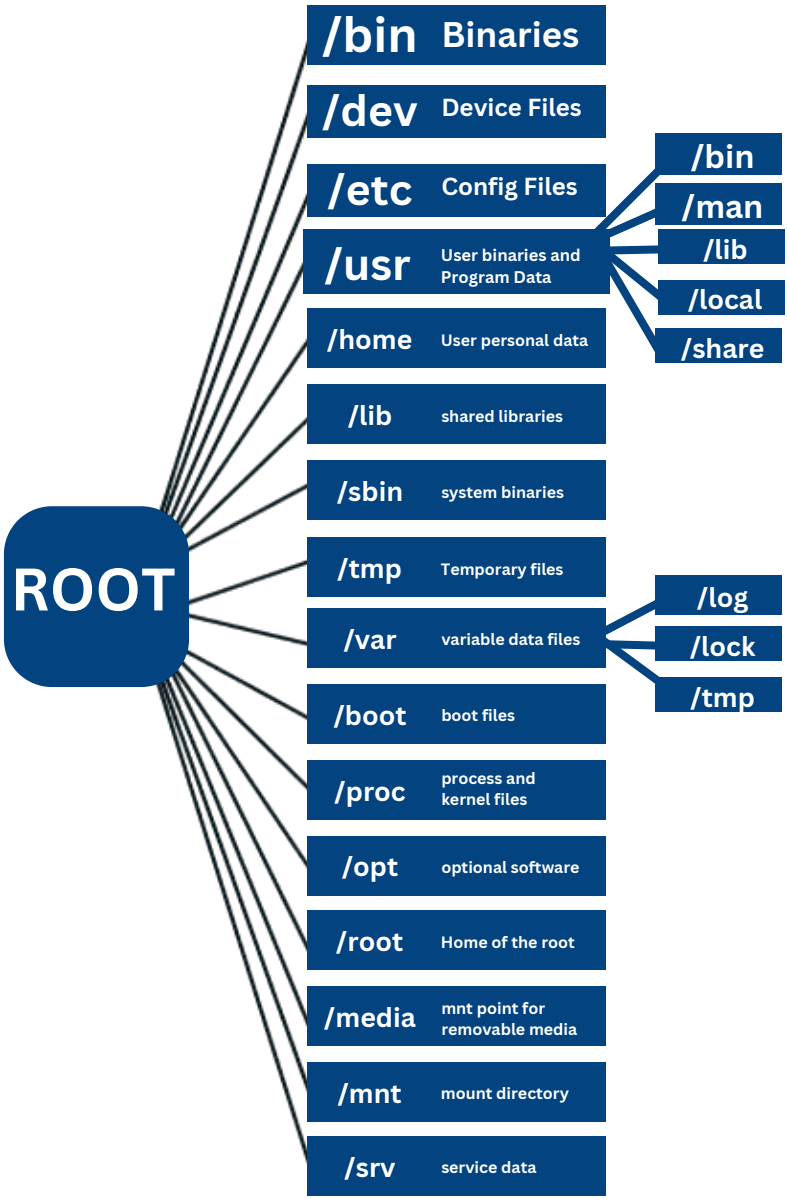
```
# Display messages in kernel ring buffer.
dmesg

# Display logs stored in the systemd journal.
journalctl

# Display logs for a specific unit (service).
journalctl -u servicename
```

LINUX DISTROS

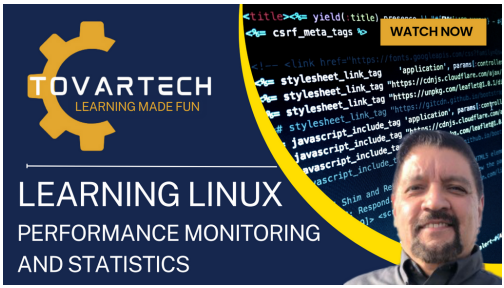


www.noe.tovartech.org

LINUX FILE STUCTURE

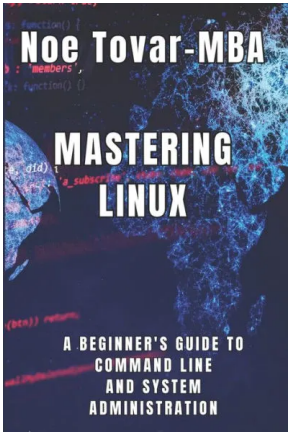


TRAINING VIDEOS ARE AVAILABLE
CLICK ACTIVE LINK BELOW



YOU CAN CONTINUE TO LEARN WITH MY BOOK.

Mastering Linux: A BEGINNER'S GUIDE TO COMMAND LINE AND SYSTEM ADMINISTRATION
by Noe Tovar MBA



AMAZON
BUY

BARNES & NOBLE
BUY