Basic Linux Commands

FOR DEVOPS PRACTICE

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Contents

System Information

`uname -r`	# Display kernel release information
`cat /etc/redhat-release`	# Show which version of Red Hat installed
`uptime`	# Show how long the system has been running
`hostname`	# Show system host name
`hostname -I`	# Display all local IP addresses of the host
`last reboot`	# Show system reboot history
`date`	# Show the current date and time
`cal`	# Show this month's calendar
`w`	# Display who is online
`whoami`	# Who you are logged in as

Hardware Information

`Dmesg`	# Display messages in kernel ring buffer
`cat /proc/cpuinfo`	# Display CPU information
`cat /proc/meminfo`	# Display memory information
`free -h`	# Display free and used memory (`-h` for human readable, `-m` for MB, `-g` for GB.)
`lspci -tv`	# Display PCI devices
`lsusb -tv`	# Display USB devices
`dmidecode`	# Display DMI/SMBIOS (hardware info) from the BIOS
`hdparm -i /dev/sda`	# Show info about disk sda
`hdparm -tT /dev/sda`	# Perform a read speed test on disk sda
`badblocks -s /dev/sda`	# Test for unreadable blocks on disk sda

Performance Monitoring and Statistics

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

User Information and Managements

`id`	# Display the user and group ids of your current user.
`last`	# Display the last users who have logged onto the system.
`who`	# Show who is logged into the system.
`w`	# Show who is logged in and what they are doing.
`groupadd test`	# Create a group named "test".
`useradd -c "John Smith" -m john`	# Create an account named john, with a comment of "John Smith" and create the user's home directory.
`userdel john`	# Delete the john account.
`usermod -aG sales john`	# Add the john account to the sales group

File and Directory Commands

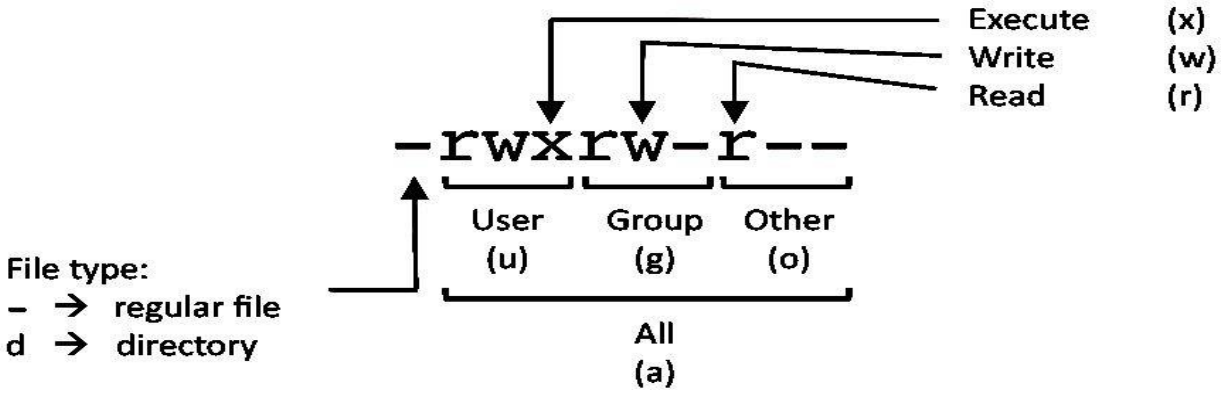
```
ls -al                          # List all files in a long listing (detailed) format
pwd                             # Display the present working directory
mkdir directory                 # Create a directory
rm file                         # Remove (delete) file
rm -r directory                 # Remove the directory and its contents recursively
rm -f file                      # Force removal of file without prompting for
                                confirmation
rm -rf directory                # Forcefully remove directory recursively
cp file1 file2                  # Copy file1 to file2
cp -r source_directory destination
                                # Copy source_directory recursively to
                                destination. If destination exists, copy
                                source_directory into destination,
                                otherwise create destination with the contents
                                of source_directory.
mv file1 file2                  # Rename or move file1 to file2. If file2 is an
                                existing directory, move file1 into directory file2
ln -s /path/to/file linkname    # Create symbolic link to linkname
touch file                      # Create an empty file or update the access
                                and modification times of file.
cat file                        # View the contents of file
less file                       # Browse through a text file
head file                       # Display the first 10 lines of file
tail file                       # Display the last 10 lines of file
tail -f file                    # Display the last 10 lines of file and "follow" the
                                file as it grows.
```

Process Management

```
ps                              # Display your currently running processes
ps -ef                          # Display all the currently running
```

	processes on the system.
`ps -ef | grep processname`	# Display process information for `processname`
`top`	# Display and manage the top processes
`htop`	# Interactive process viewer (top alternative)
`kill pid`	# Kill process with process ID of `pid`
`killall processname`	# Kill all processes named `processname`
`program &`	# Start `program` in the background
`bg`	# Display stopped or background jobs
`fg`	# Brings the most recent background job to foreground
`fg n`	# Brings job `n` to the foreground

File Permission



PERMISSION U G W	EXAMPLE
rwx rwx rwx	chmod 777 filename # Use sparingly!
rwx rwx r-x	chmod 775 filename
rwx r-x r-x	chmod 755
rw- rw- r--	chmod 664
rw- r-- r--	chmod 644

Networking

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

`ip addr show dev eth0` # Display eth0 address and details

`ethtool eth0` # Query or control network driver and hardware settings

`ping host` # Send ICMP echo request to `host`

`whois domain` # Display whois information for `domain`

`dig domain` # Display DNS information for `domain`

`dig -x IP_ADDRESS` # Reverse lookup of `IP_ADDRESS`

`host domain` # Display DNS IP address for `domain`

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

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

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

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

-n = display numeric Address

-u = Display UDP port

-t = display TCP port

-l = show only listening port

Archives {Tar Files}

`tar cf archive.tar directory`	# Create tar named `archive.tar` containing `directory`.
`tar xf archive.tar`	# Extract the contents from `archive.tar`.
`tar czf archive.tar.gz directory`	# Create a gzip compressed tar file name `archive.tar.gz`.
`tar xzf archive.tar.gz`	# Extract a gzip compressed tar file.
`tar cjf archive.tar.bz2 directory`	# Create a tar file with bzip2 compression
`tar xjf archive.tar.bz2`	# Extract a bzip2 compressed tar file.

Installing Packages

`yum search keyword`	# Search for a package by `keyword`.
`yum install package`	# Install `package`.
`yum info package`	# Display description and summary information about `package`.
`rpm -i package.rpm`	# Install package from local file named package.rpm
yum remove package	# remove/uninstall package.

Search

`grep pattern file`	# Search for `pattern` in `file`
`grep -r pattern directory`	# Search recursively for `pattern` in
`directory locate name`	# Find files and directories by name

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

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

SSH Login

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

ssh user@host                    # Connect to host as user

ssh -p port user@host            # Connect to host
yum remove package               # Remove/uninstall package.
```

File Transfers

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

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

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

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

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

Disk Usage

`df -h`	# Show free and used space on mounted filesystems
`df -i`	# Show free and used inodes on mounted filesystems
`fdisk -l`	# Display disks partitions sizes and types
`du -ah`	# Display disk usage for all files and directories in human readable format
`du -sh`	# Display total disk usage off the current directory

Directory Navigation

`cd ..`	# To go up one level of the directory tree. (Change into the parent directory.)
`cd`	# Go to the $HOME directory
`cd /etc`	# Change to the /etc directory