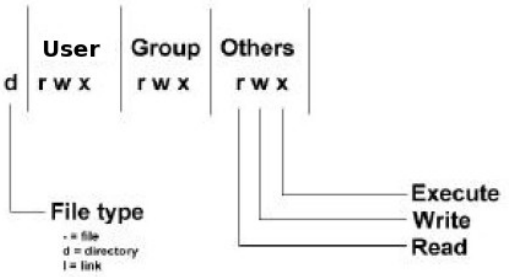
LINUX Cheat Sheet

Getting Started

- **ssh <login@><Servername | IP-Address>**
- **cd /Name/of/Directory**: Directory to access
  ~: Go to home directory
  -: Go to previous directory
  ls <options>
  -l: long listing format
  -a: List all files
  -t: Sort by modification time
  -r: Sort in reverse order
- **man <command>**: View manpage
- **mkdir <option> NewDirectory**
  -p: Create new directory including parent directory
- **rmdir OldDirectory**: Remove directory
- **df**: report file system disk space usage
  -h: Make printout human-readable

- **chmod**: Change file permissions
  e.g. revoke execute permissions: **chmod go-x file**




```
File  Edit  View  Search  Terminal  Help

< 10:06:37 | Tue Feb 23 | [-4] >
 >:df -h
Filesystem            Size  Used Avail Use% Mounted on
/dev/sda1             9.7G  765M  8.4G   9% /
tmpfs                 7.8G   16K  7.8G   1% /dev/shm
/dev/mapper/scratchvg-scratchlv
                      224G   57G  156G  27% /scratch
/dev/sda5             2.0G   36M  1.8G   2% /tmp
/dev/sda2              20G  4.0G   15G  22% /usr
/dev/sda6             2.0G  951M  918M  51% /var
AFS                   2.0T     0  2.0T   0% /afs
vf-g02.zih.tu-dresden.de:/vol/grp02/pkthme
                      2.0T  432G  1.6T  22% /amnt/remote/pkthafc.home
pkts08:/raid1         4.3T  4.1T  296G  94% /amnt/remote/pkts08.raid1
pkts08:/raid2          11T  8.9T  1.2T  89% /amnt/remote/pkts08.raid2
pkts07:/raid3/global_cluster/BaBar/RH_run/SL6_64_CN
                      1.1T  313G  691G  32% /amnt/remote/pkthafc.RH_run
cvmfs2                 69G   53G   16G  78% /cvmfs/atlas.cern.ch
bluearc:/phy           45T   40T  5.3T  89% /amnt/remote/ZIH.fast

< 10:06:42 | Tue Feb 23 | [-5] >
 >:
```

LINUX Cheat Sheet

Moving, Copying, Deleting & Viewing Files

- **mv <options> <file> <filename | directory >**
- **cp <options> <file> <filename | directory | server>**
  -r: Copy recursively
  -a: archive mode (preserve time, permissions etc.
- **rm <filename | directory>**: Remove file
- **less <file>**: Display file
- **head <file>**: Display first 10 lines file
- **tail <file>**: Display last 10 lines of file
- **cat <file>**: Paste file to stdout
- **rsync -av <file|directory> login@server:/directory**: Secure copying of files | directory
  -P | --progress: Show progress bar
  -u: Copy only files with newer time stamp
  --bwlimit=25000: Reduces bandwidth to 25000 KBytes per second

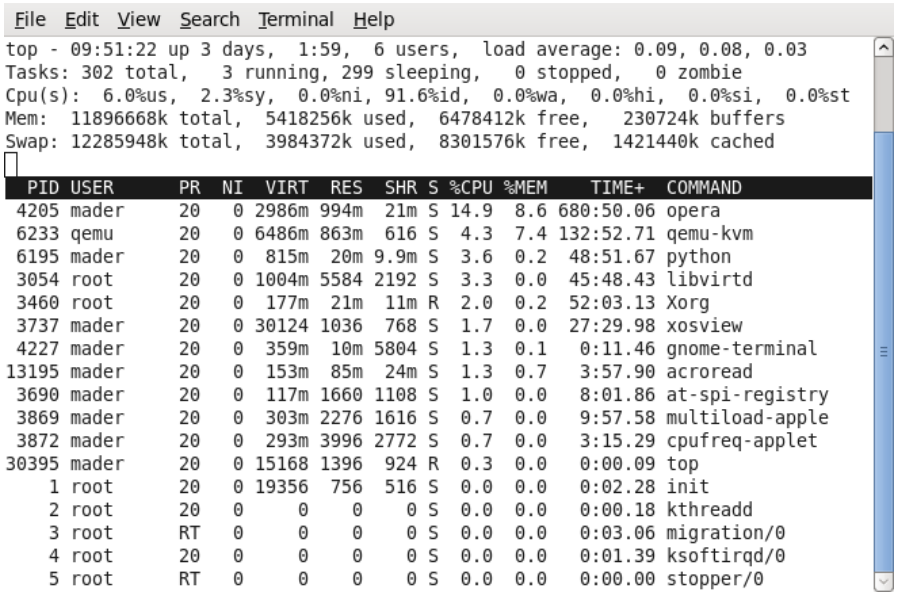
Finding Files & Text inside Files

- **find <StartDirectory> -name “filename”**
- **locate <file>**: find file using system database
- **which <program>**: find program unsing directories defined in $PATH
- **grep 'pattern' file | directory/file**: Search for pattern in file
  -i: Search is case in-sensitive
  -R: Search recursively this and all subdirectories

LINUX Cheat Sheet

Running and Monitoring Programs

- **screen**: Open independent session wich keeps running after logut
  -r <ID>: Reattach session
  -ls: List running screen session
  -D -r: Attach session. If necessary detach first and log out
  -x: Attach to a not detached session
  -S: Give the socket of the screen session a useful name
- **ps <options>**: Report snapshot of current processes
  aux: See every process on the system
- **top/htop**: Display linux tasks on system
- **./MyProgram &**: Start MyProgram as background process
- **w**: Show who is logged on and what they are doing
- **free**: Shows how much memory is available on node
- **uptime**: Shows number of users and average load



LINUX Cheat Sheet

Controls:

- **ctrl-c**: Abort running program
- **ctrl-z**: Suspend running program
  AtThePrompt> bg: Send process to background
  AtThePrompt> fg %n: Run job number n in foreground
  jobs: Show all running jobs in current session
- **ctrl-r**: Browse history for previous commands (see also history)
- **ctrl-a**: Move cursor to beginning of line
- **ctrl-e**: Move cursor to end of line
- **ctrl-d**: End session
- **nohup**: Release jobs from terminal
- **nice -n<nicelevel>**: Renice your jobs for fair CPU usage

LINUX Cheat Sheet

Assorted Commands

- **alias <shortcut=”command”>**
  no argument: List all aliases defined in the system
  shortcut=”command”: Define shortcut for command, e.g. alias ll=”ls -al”
- **yppasswd**: Change password
- **exit/logut**: Leave session

Archiving Files

- **tar zcf file.tar.gz MyFiles**
  z: Compress archive using gzip
  c: Create archive
  f: Next input is name of the archive file
  t: List files in archive
  x: Extract files from archive

LINUX Cheat Sheet

Final Example

Prompt:> ssh YourLogin@pktlogin.phy.tu-dresden.de
Prompt:> cp ~tutorial/Public/spread.exe .
Prompt:> cat spread.exe

```
#!/bin/bash
#
# Bash-script that scans pktf32 through pktf40 submits
# <command> to the machine
#

if [ $# == 0 ]; then
    echo "command missing"
    echo "Usage: sh ./spread.exe <command>"
else
    for i in {32..40}; do
        echo -n "sending $1 to pktf${i}:  "
        ssh -t pktf${i} "${1}" 2>/dev/null
    done
fi
```

Prompt:> sh ./spread.exe uptime

```
sending uptime to pktf32:   15:59:54 up 218 days,  4:11, 10 users,  load average: 1.01, 1.00, 1.00
sending uptime to pktf33:   15:59:54 up 128 days,  4:49,  6 users,  load average: 0.00, 0.00, 0.00
sending uptime to pktf34:   15:59:55 up 218 days,  4:14,  7 users,  load average: 0.00, 0.00, 0.00
sending uptime to pktf35:   15:59:55 up 218 days,  4:13,  9 users,  load average: 1.15, 1.03, 1.01
sending uptime to pktf36:   15:59:55 up 218 days,  4:13, 16 users,  load average: 0.00, 0.06, 0.10
sending uptime to pktf37:   15:59:55 up 218 days,  4:13, 36 users,  load average: 0.00, 0.00, 0.00
sending uptime to pktf38:   15:59:55 up 218 days,  4:13,  3 users,  load average: 0.28, 0.31, 0.45
sending uptime to pktf39:   15:59:55 up 218 days,  4:13,  9 users,  load average: 1.50, 1.14, 1.06
sending uptime to pktf40:   15:59:55 up 218 days,  4:11, 24 users,  load average: 0.05, 0.07, 0.03
```