

UNIX and the Shells

Ole Peter Smith, IME, UFG, ole@mat.ufg.br

24/04/2010

Life sure is a Mystery to be Lived
Not a Problem to be Solved...



- Beautiful Scientific Documents
- Classical Free Software
- Markup Language
- Thesis, automatic:
 - Bibliography
 - Contents
 - List of Tables, Figures
 - Index, References
- Slideshows: Beamer
- MikTeX, LyX, TexMaker, Kyle



Introdução

- UNIX vs. Linux
- Shell: Concha
- Bash: Bourne-Again Shell
- Csh: C Shell
- *Ssh: Secure Shell*
 - Remote Administration
 - File Transfer

O mais importante não é saber de tudo
O mais importante é saber onde pesquisar!



File Commands

- List: *ls*
 - *ls -l*
 - *ls -a*
 - *ls -tlf*
- Usage: *man command*
- Create: *touch*
- Move or rename: *mv*
- Copy: *cp*
 - *cp -p*
 - *cp -r*
- Remove: *rm*
 - *rm -f* (take care!!!!)
 - *rm -r*
- Content: *cat*
- Edit: *vi* or *vim*
- Symbolic Link: *ln -s*



Notable Files & Directories

- System Configuration dir: */etc*
- User Configuration dir, Home: '*~/*' (or '*/home/\$user*')
- Users: */etc/passwd*
-: user - uid - gid - shell - home - Gecho
- Groups: */etc/group*
-: gname - gid - members
- Known hosts */etc/hosts*
-: ip - hostname - hostname...
- File systems */etc/fstab*
-: dev mount-point - fs-type - options
- Network services */etc/services*
-: service-name - port/protocol
- */usr*, */var*, */home*,...
- */etc/grub*: Boot Loader



Permissions

- Owner and Group
`chown -R ole:teachers file|dir`
- Permissions: UGO
 - User
 - Group
 - Others
- Permissions: rwx
 - Read (4)
 - Write (2)
 - eXecute (1)
- `chmod ug+rw file|dir`
- `chmod 660 file`
- `chmod -R 770 dir`
- To list dir: `eXecutable`
- `chmod -R 722 ftp-dir`



Dir Commands

- Change directory: *cd*
- Go home: *cd*
- Go up: *cd ..*
- Make directory: *mkdir*
- Remove directory: *rmdir*
- Convenience: *pushd - popd*
- Current dir: *pwd*
- Listing dir: Executable



File System Commands

- Ext2 - Ext3 - ReiserFS - ...
- NTFS - FAT - VFAT - CDFS
- NFS - SMBFS
- ...
- Show mounted's: *df*
- Mount: *mount*
-: *mount -a*
- Unmount: *umount*
- Format: *mkfs*



Wildcards

- *grep expression file, [file, ...]*
- *ls *[03].txt*
- *ls | grep .c*
- *ls -l | grep ^d*
- *ls l*



Piping

- *grep expression file, [file, ...]*
- *echo blabla > test.txt*
- *echo blabla >> test.txt*
- *ls < filelist.txt*
- *ls -l | grep ^d*
- */usr/local/sbin/backup >> /var/log/backup.log &2 >1*



Shell Scripts

- First line of *run*:

```
#!/bin/sh
```

- *chown u+x run*
- Startup & Shutdown: */etc/init.d/*
 - */etc/init.d/apache2* start|stop|restart
 - Run-level: 0-6 (*/etc/inittab*)
 - */etc/rc[0-6].d/*: S55apache2 \Rightarrow *../init.d/apache2*
 - */etc/rc.local*: The Last to Run...
- Automatização
 - Crontab: Your PC Alive!



Shell Configuration Files

- Scripts that Runs before Prompt Starts...
- All Shells: *profile*
- Bash Shells: *bash.bashrc*
- System-wide: */etc/profile*, */etc/bash.bashrc*
- User specific: *~/.bash_profile*, *~/.bash.bashrc*
- */etc/bash.bashrc*:

```
...
alias vi=vim
alias lsa='ls -a'
alias lsl='ls -l'
alias lsd='ls -l | grep ^d'
```

- Dot-files: Hiddens

```
ls -a
```



Others

- *history*
- *grep*
- Search: *find*
 - *find / -name '*ole*.tex'*
- Remote access: *ssh - sftp - scp - sshd*
- Users: *adduser - addgroup*
- Schedule commands: *crontab -l -e*
- Backup: *tar - vdump*
- Graphics: *convert* (imagemagick)

