



Introduction to Bash video lecture

05 Directories



Directories, where do they come from?

- You now know that the filesystem is a tree of directories and how to walk around in it
- Where did all those directories come from?

Standard directories (in Debian/Ubuntu)

- When you install Ubuntu, the operating system comes with a filesystem with some standard directories (similar on most UNIXes)

```
rikard@newdelli:/$ ls --group-directories-first -p
bin/      etc/      lib64/    opt/      sbin/    tmp/      initrd.img
boot/     home/     lost+found/  proc/    snap/    usr/      initrd.img.old
cdrom/    lib/      media/     root/    srv/     var/      vmlinuz
dev/      lib32/    mnt/      run/     sys/     core      vmlinuz.old
rikard@newdelli:/$
```

Standard user directories (in Ubuntu)

- When you create a user, some special directories are created for you (on some operating systems/distributions but not all)

```
rikard@newdelli:~$ ls --group-directories-first -p1|grep ^[A-Z]
Desktop/
Documents/
Downloads/
Music/
Pictures/
Public/
Templates/
Videos/
rikard@newdelli:~$
```

Your home directory is your safe place

- You end up in your home when you start a shell for a reason
- This is where you should store all your files
- If the prefab directories don't cut it for you, you should create new ones
- Saving everything directly in ~ doesn't scale well, nor using ~/Desktop
- Keep your files in order, create directories and directory trees

Creating directories

- Use `mkdir` to create one or more directories
- Use `mkdir -p` to create a whole tree
`mkdir -p video/tv-series/battlestar_galactica/`
- Create directories for you work and files - keep things organized
- Use `rmdir` to remove (empty) directories
- Use `rm -r` to remove whole trees (and all their contents)
 - Use with care, there's no undelete
 - There is no undelete
 - Did we say, that there is no undelete?
 - And no frakkin Recycle Bin
 - Particularly not with a space in the directory name

Start right now

- Open a terminal and create some directories in your home, to use throughout this course
- Suggested names (if your course is not called intro-it, use some other name):
 - intro-it/bash-introduction
 - intro-it/bash-introduction/scripts
 - intro-it/bash-introduction/text-processing
 - intro-it/networking
 - intro-it/programming-intro
 - intro-it/webpage

Using tree to see the contents of a... eh.. tree

- Directories form a tree structure
- You can visualize that using the tree command (you may need to install it)

Using tree to see the contents of a... eh.. tree

```
rikard@newdelli:~/opt/progund/intro-it$ tree
```

```
├── bash-scripting-intro
│   ├── do_backup.sh
│   ├── do_backups.sh
│   └── exercises
│       ├── curriculum-tig015.pdf
│       ├── datetime_formatted.sh
│       ├── datetime.sh
│       ├── days-to-christmas.sh
│       ├── days-to-date.sh
│       ├── download_file.sh
│       ├── download_simple.sh
│       ├── environment_map.sh
│       ├── environment.sh
│       ├── grillbar.png
│       ├── network-info.sh
│       └── simple-network-info.sh
│
│   ├── file-with-echo
│   ├── say_hej.sh
│   └── welcome.sh
│
│   └── network-protocols-data
│       └── workshop
│           └── pic.html
│
└── README.md
```

```
4 directories, 19 files
```

More old-school

```
rikard@newdelli:~/opt/progund/intro-it$ tree --charset=ascii
```

```
.
|-- bash-scripting-intro
|   |-- do_backup.sh
|   |-- do_backups.sh
|   |-- exercises
|       |-- curriculum-tig015.pdf
|       |-- datetime_formatted.sh
|       |-- datetime.sh
|       |-- days-to-christmas.sh
|       |-- days-to-date.sh
|       |-- download_file.sh
|       |-- download_simple.sh
|       |-- environment_map.sh
|       |-- environment.sh
|       |-- grillbar.png
|       |-- network-info.sh
|       `-- simple-network-info.sh
|-- file-with-echo
|-- say_hej.sh
|-- welcome.sh
|-- network-protocols-data
|   |-- workshop
|   `-- pic.html
`-- README.md
```

```
4 directories, 19 files
```

More advantages of learning about directories

- Putting related stuff in a directory[tree] allows you to archive easily
- You can create an archive of the whole directory for backup or sharing
- Many programming languages, like Java, use directories a lot for organizing source code and applications
- You can change permissions of a whole directory tree, e.g. letting members of a group (each user belongs to at least one group) have full permissions in a directory where they work together
- Web pages are organized in directories