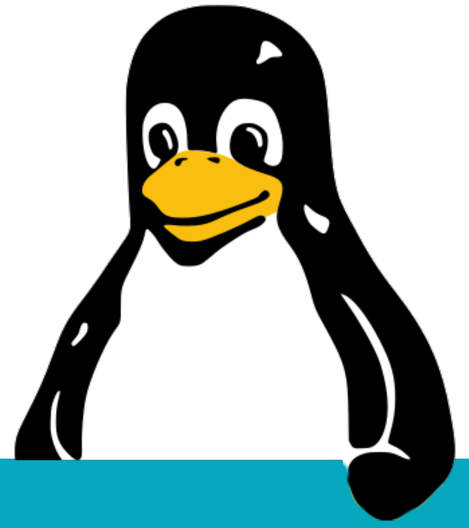
Linux, day 3



LAB: Files and directories

Command hints

sudo	Switch User and DO
mkdir	MaKe DIRectory
nano	Friendly editor
vi	Less-than-friendly editor
cp	CoPy
rm	ReMove
man	MANual (documentation)

Assignment

- Create two new directory trees:
  - "*~/staff/files*" and "*~/dummies/files*"
- Use "nano" or "vi" to put some text into:
  - *~/staff/files/staff-demo.txt*
  - *~/dummies/files/dummy-demo.txt*
- Move:
  - *~/staff/* to */home/staff/*
  - *~/dummies* to */home/dummies*

Recap

```
$ cd ~
$ mkdir -p staff/files dummies/files
$ vi staff/files/staff-demo.txt
$ vi dummies/files/dummies-demo.txt
$ sudo mv staff /home/
$ sudo mv dummies /home/
```

What will we do today?

- ~~Recap~~
- ~~Files and directories~~
- File permissions
- Git
- Closing: homework and Q&A

LAB: File permissions

Command hints

chmod	CHange MODe
chown	CHange OWNer
chgrp	CHange GRouP

Assignment

- */home/staff* and contents should have group "staff".
  - New files should automatically get group "staff".
  - Files should only be deletable by their creator.
  - Group "staff" should have full rights on all contents.

- Apply similarly for "dummies" on */home/dummies*.

Spoilers

```
$ sudo chgrp -R staff /home/staff
$ sudo chown -R opsuser /home/staff

$ sudo chmod g+s /home/staff /home/staff/files
$ sudo chmod +t /home/staff /home/staff/files
$ sudo chmod g+rwx /home/staff /home/staff/files
```

Spoilers

```
$ sudo chgrp -R dummies /home/dummies
$ sudo chown -R dummy1 /home/dummies

$ sudo chmod g+s /home/dummies /home/dummies/files
$ sudo chmod +t /home/dummies /home/dummies/files
$ sudo chmod g+rwx /home/dummies /home/dummies/files
```

What will we do today?

- ~~Recap~~
- ~~Files and directories~~
- ~~File permissions~~
- Git
- Closing: homework and Q&A

LAB: Git

What's the point again?

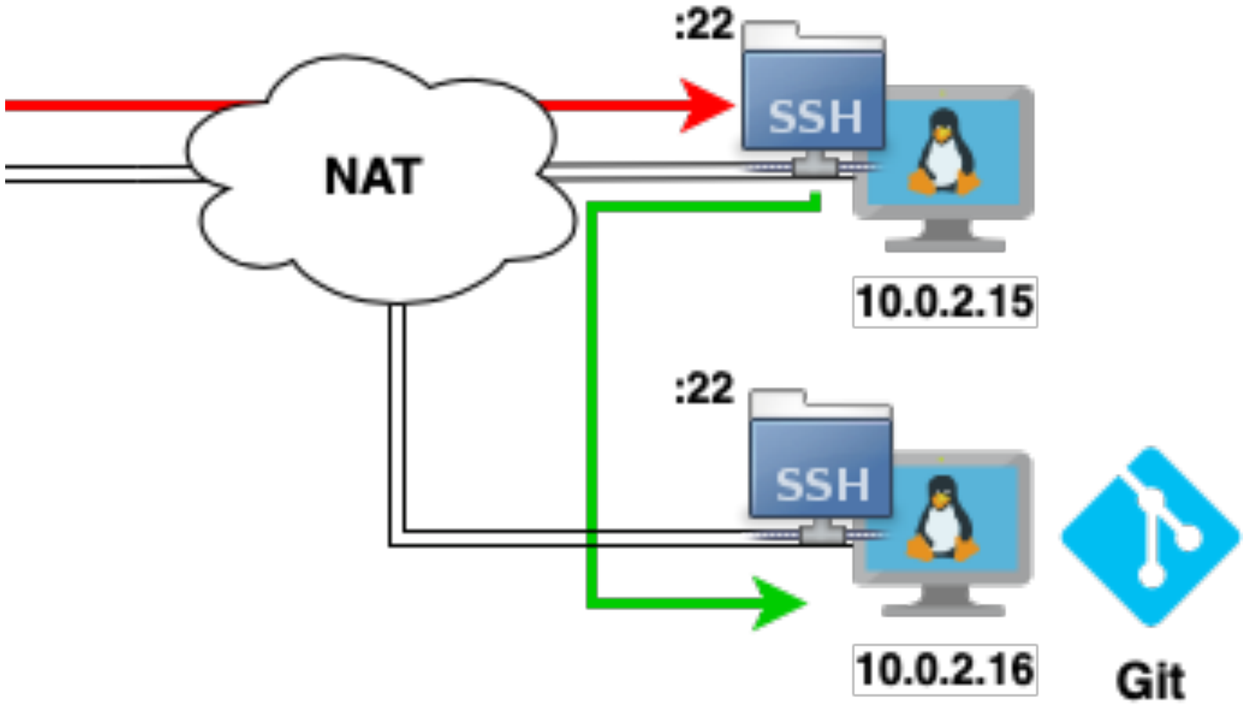
- Companies want teams to cooperate.
  - They will work on the same code.
  - When code is ready for release,
  - The central copy will be pushed to production.

Your own, "remote" repo

- We now have two VMs.
  - And we can SSH from Fedora to the other.

- Let’s make the Ubuntu VM our Git server.
  - So we can code on Fedora,
  - And push updates to the server.

Your own, "remote" repo



Setting up the server

- On the Ubuntu VM, make user account "git".
  - With homedir "*/home/git*".
  - And a password you won’t mind typing.

- Test that you can SSH from Fedora,
  - To the user "git" on the new VM.

Making a repo

- On the Ubuntu VM, login as user "git".
  - Configure their name and email (slide 70).

- Make the dir "*/home/git/firstrepo*".
- "*cd*" into "*firstrepo*" and init a Git repo.
  - Use: "*git init --bare*"!!
- See: Bare vs non-bare repositories

Cloning the repo

- On the Fedora VM, login as yourself.
- "*cd*" into your Documents folder.
- Clone the repository from the new VM:

```
$ git clone ssh://git@ubuntu:/home/git/firstrepo
```

Making a change

- On the Fedora VM, "*cd*" into the Git repo.
- Make a new file and commit the change.
- Then "*git push*" the update.

Comparing

- Compare the contents of:
  - The cloned git repo on your Fedora box.
  - The "bare" repo on the new VM.
  - "git log" on the two repository locations.

- Research question: where are the files on Ubuntu?!

What will we do today?

- ~~Recap~~
- ~~Git~~
- Closing: homework and Q&A

Closing

Homework

- Reading:
  - Chapter 3
  - Chapter 25

Homework

- Go do:
  - Download the free book "Pro Git".
  - Complete the "Git" lab.
  - Make a directory "~/Scripts" for your account.
    - Make it a Git repository.
    - We will use this for our scripts next week.

Reference materials

Resources

- Linux file paths
- FHS on Wikipedia
- Identifying file types in Linux
- Graphical vi cheatsheet
- Vim Adventures! (game to practice hotkeys)
- Nano cheatsheet

Resources

- Git internals
- Free book: Pro Git
- Intro to Git for security professionals
- Bare vs non-bare repositories
- Stop making shell aliases for SSH!