Operating System fundamentals

Finding an archiving files

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Course text

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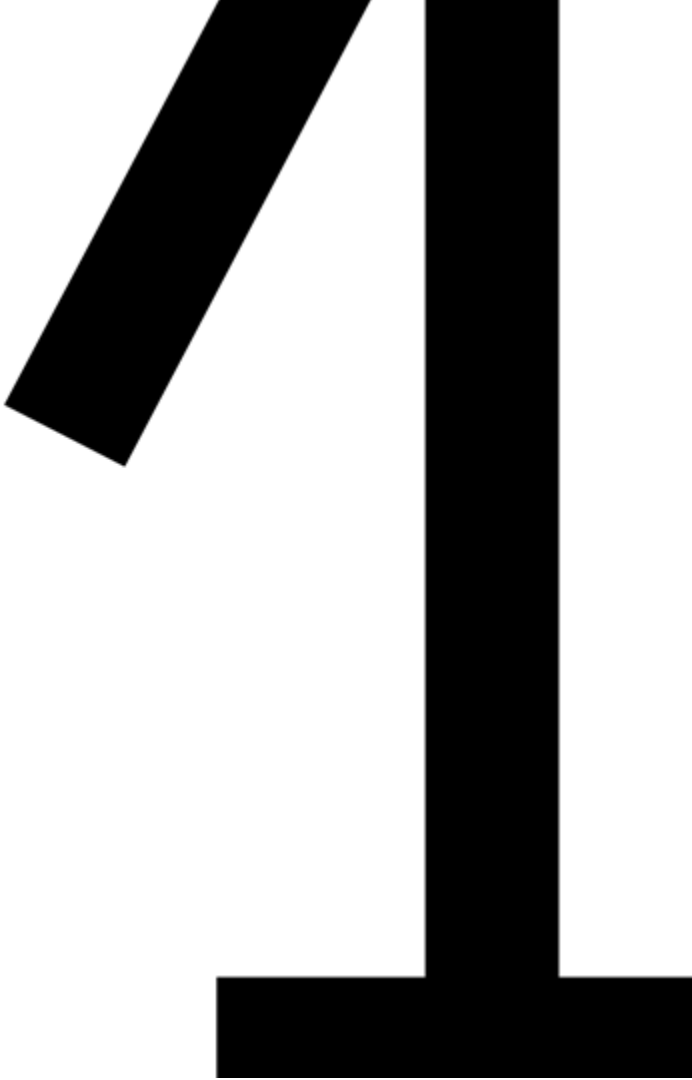
Finding files



Finding files with find

- find looks for files (not IN files)
- examples
  - **find / -name** "host"
  - **find / -name** "host" 2>/dev/null
  - **find / -name** "*host" 2>/dev/null
  - **find / -regex** ".*host" 2>/dev/null
- general (synopsis)
  - find [start-dir] [select-options] [action]

Select options

- type:
  - find ~ **-type f** -> look only for regular files
  - find ~ **-type d** -> look only for directories
- size:
  - find / **-size +100M** 2>/dev/null
  - find ~ **-size -1k**

Select options

1. group and user:

   find /opt **-group** docker

   -> look for files that belong to group acs10x

   find /home **-user** andrew

   -> look for files that belong to user andrew

Select options

mmin, mtime, amin, atime, cmin en ctime:

- (m = modify, a = access, c = create)
- (time=in days, min=in minutes)
- examples:
  - find / **-mmin 1** -> look for all files that were modified exactly 1 minute ago
  - find / **-amin -5** -> look for all files that were opened less than 5 minutes ago
  - find / **-ctime +3** -> look for all files that were created more than 3 days ago
  - find / **-mtime 7** -> look for all files that were modified exactly 7 days ago

Actions

- find / -user anita **-exec** mv {} /root/trash \;
- find / -user vbox -type f **-exec** grep -l 'Tania' {} \; 2>/dev/null

Exercise

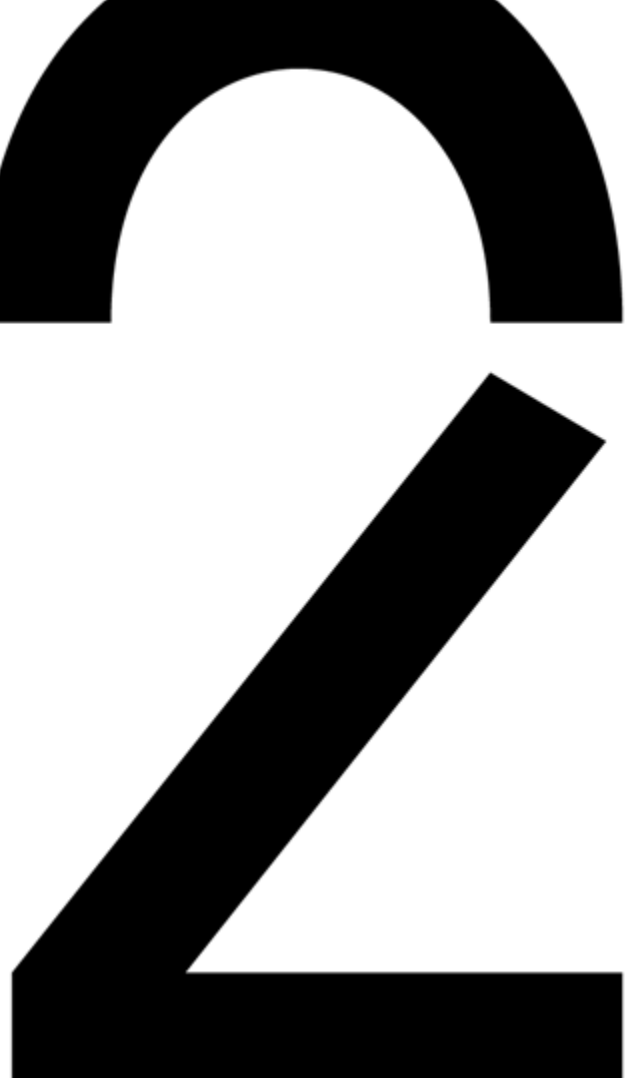
1. Find all files of user root that are in the directory /var and were modified within the last 24 hours

   How many did you find?

2. Find all files in /var/log that are larger than 512KiB and write that list to a file “big.list” in your home directory

3. Find all files in /opt/share larger then 2MB and copy them to your homefolder

Archiving files



The tar command

- Tape ARchiver
  - creates a kind of zip-file
  - standard not compressed
  - originally this file was written to tape
  - all meta-data of the files is preserved (owner permissions, create time, ...)

The tar command

- Main options:

  tar c → create a tar file

  tar x → extract a tar file

  tar t → show contents of a tar file

Tar examples

- tar **-cf** /tmp/backup.tar /home /etc -> create file
- tar **-t**f /tmp/backup.tar -> inspect contents
- tar –t**v**f /tmp/backup.tar -> add option v for verbosity
- tar **-x**f /tmp/backup.tar -> extract
- tar **-z**cf /tmp/backup.tgz /home -> use gzip
- tar **-z**cf /tmp/backup.tar.gz /home -> also gzip
- tar **-j**cf /tmp/backup.tar.bz2 /home -> use bzip2
- tar **-J**cf /tmp/backup.tar.xz /home -> use xz

Exercise

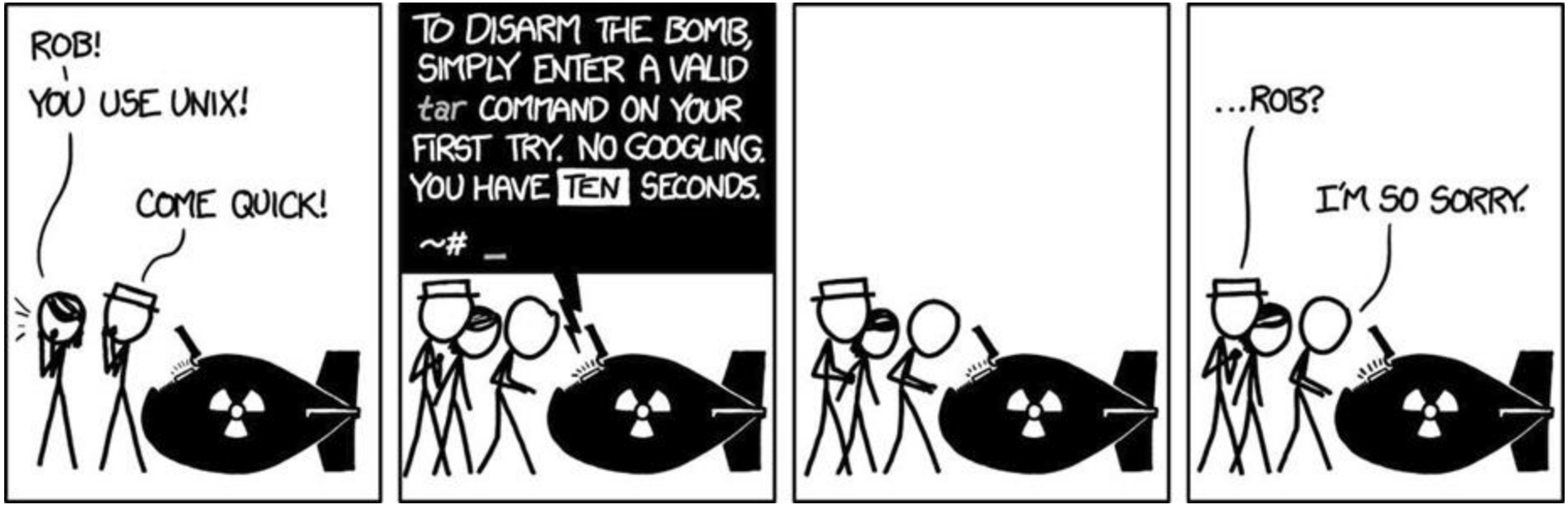
- Make a backup of your home folder and put that in /tmp folder in a file called ${USER}.tar using:
  - a uncompressed tar file
  - a compressed tar file (gzip)
  - a compressed tar file (bzip)

- Download the GNU "hello world" program
  - wget https://ftp.gnu.org/gnu/hello/hello-2.12.tar.gz
  - Create directory ~/hello
  - extract the tar file in the ~/hello directory
  - Run ./configure and make commands in the extracted folder
  - Run the ./hello program once it has been compiled

Exercise @home*, @in_your_virtual_machine

- Download the tor browser for Linux
  - look at the contents
  - extract the tar file in the ~/tor directory
  - start the browser

* KdG network admins don't allow you to surf there using the kdg network...
** You can only run this browser on a linux with a gui, such as alma in your virtualbox


ROB!
YOU USE UNIX!
COME QUICK!
TO DISARM THE BOMB, SIMPLY ENTER A VALID tar COMMAND ON YOUR FIRST TRY. NO GOOGLING. YOU HAVE TEN SECONDS.
~# _
...ROB?
I'M SO SORRY.

Transferring files

Transferring files

A system administrator needs to move files between servers very regularly

Different possibilities:

- ftp
- sftp
- **scp**
- rsync
- nfs
- …

Secure copy with scp

Uses the same protocol as ssh

- you can use the same username/password
- uses the same encryption

Secure copy with scp

- copy from local to remote:
  - scp localfile username@host:path
  - scp backup.tgz backup@mybackup.server.kdg.be:~/backups

- copy from remote to local:
  - scp username@host:path localpath
  - scp root@files005.police.belgium.eu:/data/secure/criminal/records/NilsCant.tar.gz .

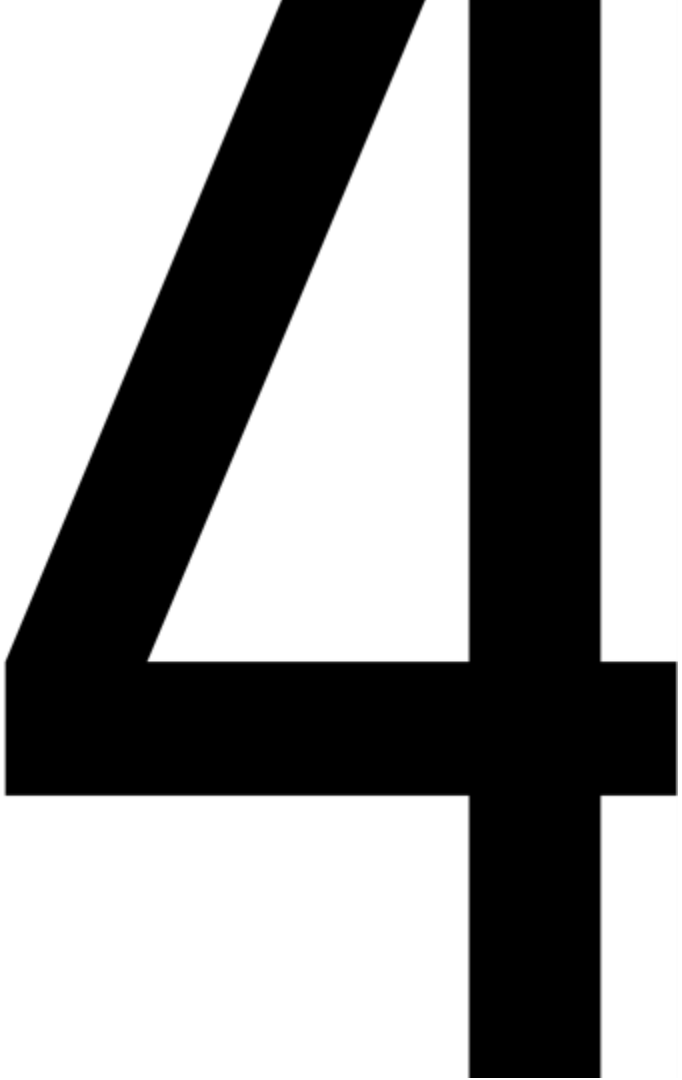
- copy a directory
  - use the -r option to recursively copy directories
  - scp –r root@files005.police.belgium.eu:/data/secure/criminal/records/ /tmp

Exercise

A. log in on the KdG server
create a gzipped backup of your home directory in a tar file
transfer this tar file to your own computer

B. Select a picture on your pc, rename it to your username.
(Keep the file extension .jpg, .png, .gif, ... or whatever)
Copy this picture from your computer to the folder
/opt/share/images on your class server.
Verify that the picture has arrived by using a browser to go to
http://IP_address_class_server/images

Exercises



Exercises

- KdG
  - 7.1.4 Exercise 1, 2, 3, 4
  - 7.2.4 Exercise 1, 2, 3
  - 7.3.4 Exercise 1, 2
- RedHat
  - geen

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