## File permissions

### Drwxrwxrwx 🡺

|  |  |  |  |
| --- | --- | --- | --- |
| d | rwx | rwx | rwx |
| File type, dit maakt technisch gezien geen deel uit van de permissions. *Directories hebben een “d”, files een “-“* | The permissions for the file owner | The permissions for the group owner | The permissions for other users / world |

| **Permission** | **Explanation** |
| --- | --- |
| r | The File can be read |
| w | The file can be written (that includes changes to permissions) |
| x | The file can be executed (such as scripts, programs, etc.) |
| – | No permission |

### Permissions aanpassen

Kan op 2 manier met chmod, een tekst en cijfer manier.

Tekst: man chmod, iets met g, u en o samen met =, + en –

Cijfer: elke usertype heeft een eigen cijfer met de eerste file owner, dan group owner en dan other users permissions

R = 4 🡺 Read + 4

W = 2 🡺 Write + 2

X = 1 🡺 Execute + 1

Voorbeeld: **chmod 761** zet file permissions naar: **rwxrw—x** wat je kan berekenen met:

* Owner: rwx = 4 + 2 + 1 = 7
* Group: rw- = 4 + 2 + 0 = 6
* Other: –x = 0 + 0 + 1 = 1

### Ownership aanpassen

To change the ownership of a file execute **chmod fileowner:groupowner**, a -R parameter will do that recursively for all subdirectories and files located in a directory.

## Default permissions (umask)

Files: rw-rw-rw- (666)  
Directories: rwxrwxrwx (777)

Umask= 0002 standaard

Umask -S = zegt welke umask

Eerste 0 mag ketsen

0 0 2 = 0: user(owner) 0:group 2:others

Het gaat hier bij umask om permissies die weggehaald worden dus 2: write permissions weggehaald bij ‘others’

Voorbeeld: other mogen niks doen = 007

### Oefeningen hierop

1. -rwxrwxrwx file1

touch file1  
chmod 777 file1

1. -rw-r--r-- file2

touch file2  
chmod 644 file2

1. -rw------- file3

touch file3  
chmod 600 file3

1. drwxr-xr-x subdir1

mkdir subdir1  
chmod 755 subdir1/

1. drwxr--r-- subdir2

mkdir subdir2  
chmod 744 subdir2/

1. dr-------- subdir3

mkdir subdir3  
chmod 400 subdir3/

Create a subdirectory in your homedirectory with 'public' as name. Change its permissions so only you could write to it and all other users will have read access.

mkdir public  
chmod 644 public/

Create a file in which everyone could write.

touch sluttyfile  
chmod 666 sluttyfile

## Users en groups

### Belangrijke files

/etc/passwd 🡺 Configuration file for all users

/etc/shadow 🡺 Configuration file for all users passwords

/etc/group 🡺 Configuration file for all groups

### Managing users

Whoami 🡺prints de user met wie je bent ingelogd

Passwd 🡺ww aanpassen van current user

passwd <USERNAME> 🡺 Changes the password for the user <USERNAME>

su <USERNAME> 🡺 Opens a new shell for the user <USERNAME>

useradd <USERNAME> 🡺 Adds a new user with name <USERNAME>

userdel <USERNAME> 🡺 Deletes the user <USERNAME>

usermod <USERNAME> 🡺 Modifies the settings for user <USERNAME>

### Managing groups

groupadd <GROUPNAME> 🡺 Adds a new group with name <GROUPNAME>

groupdel <GROUPNAME> 🡺 Deletes the group <GROUPNAME>

groupmod <GROUPNAME> 🡺 Modifies the settings for group <GROUPNAME>

**Sudo (substitude user do)**

You can add a user to the group “sudo” to give the user sudo privileges: **sudo usermod -aG sudo <USERNAME>**.

If you want to change the behavior of the “sudo” command enter: **sudo visudo**

### Visudo

Sudo visudo -f /etc/sudoers

/etc/sudoers Permissions configuration for the sudo command.  
/etc/sudoers.tmp The lock file, which prevents multiple simultaneous edits to sudoers.

**Sudoer directives**  
The following are examples of lines added to sudoers when you run visudo:

hope ALL=(ALL:ALL) ALL  
*User hope can run all commands as any user or group, logged in to any host that this configuration applies.*

%hope ALL=(ALL:ALL) ALL

*Same as above, except the permission apply to any member of the group hope (which may or may not include user hope).*

hope myhost=(mysqluser:mysqlusers) mysqldump

*User hope, when logged in to host myhost, may run the command mysqldump as user mysqluser or a member of group mysqlusers. For example, this directive would allow user hope to run this command:*

sudo -u mysqluser -g mysqlusers mysqldump