

MY FRIEND CARTESIUS

1 Logging in

To log in our account, each one of us has a different user name and password which they sent us at the beginning of the semester so you'll find it in your e-mail, where is also a link to change the password.

There are two ways to log in:

- If the IP-address is in SURFsara white list (for example, in uni computers):
`ssh username@cartesius.surfsara.nl` and enter password when asked.

For SURFsara to whitelist an IP-address, you can send an e-mail to `helpdesk@surfsara.nl` with your user name and the IP-address (which can be checked in <http://www.whatsmyip.org>).

- Otherwise, use the doornode: `ssh username@doornode.surfsara.nl`, enter password, choose which machine to use (even though Cartesius is only option) and enter password again.

2 Files management

Copying files:

- To copy a file from your computer (where is named `infile`) to Cartesius (to the location `dir` with the name `tofile`), type in your computer (should ask for password afterwards):

```
scp infile username@cartesius.surfsara.nl:dir/tofile
```

- To copy a file from Cartesius (that is located in `dir` and named `infile`) to your computer (and name it `outfile` there), type in your computer (should also ask for password):

```
scp username@cartesius.surfsara.nl:dir/infile outfile
```

Copying directories (ie, folders) is basically the same but with the `-r` flag:

- To copy a directory from your computer (where is named `indir`) to Cartesius (to the location `dir` with the name `todir`), type in your computer (should ask for password afterwards):

```
scp -r indir username@cartesius.surfsara.nl:dir/todir
```

- To copy a directory from Cartesius (that is located in `dir` and named `indir`) to your computer (and name it `outdir` there), type in your computer (should also ask for password):

```
scp -r username@cartesius.surfsara.nl:dir/indir outdir
```

Creating stuff:

- To create a directory named `newdir`: `mkdir newdir`
- To create a file named `newfile` with extension `ext`: `> newfile.ext`

Viewing and editing files (maybe not the best, but the only way I know):

- Open the file with `vi file.ext`, which also allows you to edit it after typing `i`
- To close it if no changes are made: press `CTRL + C` or `ESC` and write `:q`
- To close it if changes are made but do not want to be saved: press `CTRL + C` or `ESC` and write `:q!`
- To close it if no changes are made: press `CTRL + C` or `ESC` and write `:wq`

Removing stuff:

- Removing a file: `rm file.ext`
- Removing a directory: `rm -r dir`

3 Matlab

To use Matlab in Cartesius, validation from SURFsara is required. I have already got it and I guess that it's enough for all of us but if it doesn't work with your log-ins, send an e-mail to helpdesk@surfsara.nl to get validation.

To work in Matlab directly, just load the module and open Matlab, ie, type:

```
module load matlab
matlab
```

To just run a Matlab script, as `matlabprogram.m` that can be found in the folder Starting-MATLAB in Cartesius, only two lines are needed:

```
module load matlab
matlab -nodisplay < matlabprogram.m
```

This runs the code in the script and shows the results afterwards.

Another option is to compile the program and create a file, called in this case `matlabprogram`, that runs the code even without loading Matlab. For this, having already a script `matlabprogram.m`:

```
[1] module load matlab
[2] gcc -m matlabprogram.m (if there's more than one .m file, it would be gcc -m file1.m file2.m ...)
[3] module unload matlab
[4] module load mcr
[5] export MCR_CACHE_ROOT='mktemp -d /scratch-local/mcr.XXXXXXXXXX'
```

After this, calling `./matlabprogram` is enough to run it. However, from my experience trying this, if I exit Cartesius and log in again and want to use the command `./matlabprogram` again, it is necessary to repeat steps [4] and [5].

This info is taken from:

<https://userinfo.surfsara.nl/systems/cartesius/software/matlab>

4 Python

COMING SOON!

For the moment, the info is here:

<https://userinfo.surfsara.nl/systems/cartesius/software/python>