

Running OpenFOAM®

```
basic@openfoamTutorials:~$ simpleFoam
/*-----*
|=====|
| \ \ / / F ield           | OpenFOAM: The Open Source CFD Toolbox
| \ \ / / O peration      | Website:  https://openfoam.org
| \ \ / / A nd            | Version:   7
| \ \ / / M anipulation   |
|-----*
Build   : 7
Exec    : simpleFoam
Date    : Sep 01 2019
Time    : 09:00:00
Host    : "openfoamTutorials"
PID     : 52826
I/O     : uncollated
Case    : $FOAM_TUTORIALS/incompressible/simpleFoam/pitzDaily
nProcs  : 1
sigFpe  : Enabling floating point exception trapping (FOAM_SIGFPE).
fileModificationChecking : Monitoring run-time modified files using timeStampMaster
(fileModificationSkew 10)
allowSystemOperations : Allowing user-supplied system call operations

// *****
Create time

Create mesh for time = 0
```

Bahram Haddadi



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Contributors:

- Bahram Haddadi
- Christian Jordan
- Michael Harasek
- Sylvia Zibuschka
- Yitong Chen
- Jozsef Nagy



Technische Universität Wien
Institute of Chemical, Environmental
& Bioscience Engineering



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1. Running OpenFOAM® on a Local Linux PC (or virtual machine):

- Open a terminal
- Go to the OpenFOAM® installation directory (e.g. /opt/openfoam10) in the opened terminal
- Change to the etc directory in the OpenFOAM® installation directory
- Run the following command:

```
>. ./bashrc
```

- If a new terminal is opened, the same procedure should be repeated in that in order to activate OpenFOAM® in here.

2. Running OpenFOAM® on Remote Computers via SSH (e.g. server):

2.1. Windows:

- Run PuTTY (search for: PuTTY windows).
- Set the following:

```
Category>Session
```

Host name: openhost.university.edu

Connection type: SSH

```
Category>Connection>SSH>Tunnels
```

Source port: 5901

Destination: localhost:59**1

- Do not forget to press *Add!*

Please make sure that display is not used by others.

```
Category>Connection>Data
```

*Auto-login username: openFoamUser*²

```
Category>Session
```

Saved Sessions: openFoamUser

- Press *Save*.
- Now choose from “saved sessions” your session (*openFoamUser*) and press *Open*. In the opened Command (Prompt) window, it prompts for

¹ Display number

² Session ID

your password. The password is not echoed to the screen and the passwords are case sensitive.

- Immediately after entering your password, your computer will attempt to establish a connection to your server. If it is your first time connecting to that server, you will see a message asking you to confirm the identity of the machine. Make sure you entered the address properly, and type *yes*, followed by the *return* key, to proceed.
- Change to `etc` directory in OpenFOAM® installation directory
- Execute the following command:

```
>. ./bashrc
```

- To log out use whatever command is used to logout from the server you are logged into (typically `ctrl + d`).

2.2. Mac OS X and Linux:

- Open your Terminal application. You will see a window with a `$` or `>` symbol and a blinking cursor. From here, you may issue the following command to establish the SSH connection to your server (be careful about upper case 'L' in the `-gL`).

```
>ssh -gL 5901:localhost:59** openFoamUser@university.edu
```

- Immediately after issuing this command, your computer will attempt to establish a connection to your server. If it is your first time connecting to that server, you will see a message asking you to confirm the identity of the machine. Make sure you have entered the address properly, and type *yes*, followed by the *return* key, to proceed.
- You will then be prompted to enter your password. Type or copy/paste your SSH user password into the Terminal. You will not see the cursor moving while entering your password. This is normal. Once you are finished inputting your password, press *return* on your keyboard. At this point, you will be connected to your server remotely through SSH.
- Change to `etc` directory in OpenFOAM® installation directory
- Execute the following command:

```
>. ./bashrc
```

2.2.1. Running OpenFOAM® in Graphical Interface (VNC):

- Connect to remote machine via SSH connection using part B.

- Make sure [VNC Server](#) is installed on the remote machine and it is started (ask administrator for display number, port and other information, for starting VNC Server check FAQ)
- Install the appropriate [VNC Viewer](#) and run it (search for: vnc viewer):
VNC Server: localhost:01
- Press Connect
- Press Continue
- Enter your password
- Press *Ok*
- On VNC desktop open a terminal
- Change to etc directory in OpenFOAM® installation directory
- Execute the following command:

```
>. ./bashrc
```

If a new terminal in the VNC desktop is opened, the last two steps should be done in that to activate OpenFOAM® in there.