

# Appendix B

## Running OpenFOAM®

```
basic@openfoamTutorials:~$ simpleFoam
/*-----*
|=====|
| \      / | F i e l d           | 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
```

```
clean mesh for time = 0

clean time
// ***** //

ε(ρ)αβγδζηθικλμνξοπρστυφχψω : ν(ρ)αβγδζηθικλμνξοπρστυφχψω
(ε(ρ)αβγδζηθικλμνξοπρστυφχψω)
```

6<sup>th</sup> edition, April 2023



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ISBN 978-3-903337-02-2

Publisher: chemical-engineering.at

Available from: [www.fluidynamics.at](http://www.fluidynamics.at)

## 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: openFoamUser2
```

```
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

---

<sup>1</sup> Display number

<sup>2</sup> 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.

ISBN 978-3-903337-02-2



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