FEniCS Course

Lecture 1: Installation of FEniCS

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Installation

☞ Use official packages for Debian and Ubuntu

☞ Use drag and drop installation on Mac OS X

☞ Use VirtualBox + official FEniCS image

☞ Build from source (fenics-install.sh)

☞ Other options: Docker, Conda packages

http://fenicsproject.org/download/

Installation using Debian / Ubuntu packages

For latest Debian / Ubuntu release (currently 1.3):

Bash code

```bash
$ sudo apt-get update
$ sudo apt-get install fenics
```

For most recent FEniCS release (currently 1.5):

Bash code

```bash
$ sudo add-apt-repository
    ppa:fenics-packages/fenics
$ sudo apt-get update
$ sudo apt-get install fenics
$ sudo apt-get dist-upgrade
```
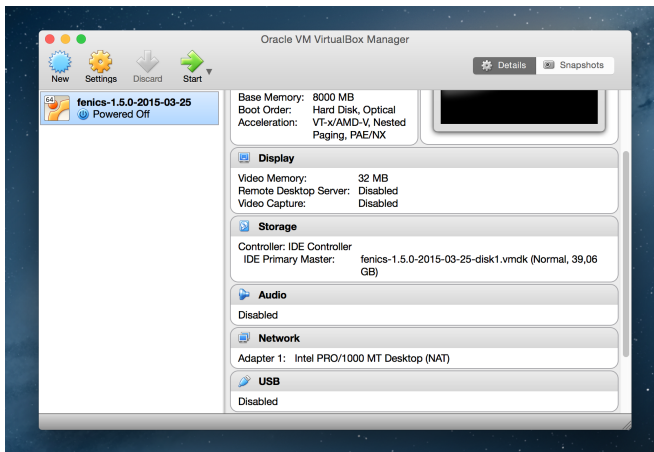
Installation using Mac packages

Download the Apple Disk Image (.dmg), click the image and then drag FEniCS into the Applications folder.

Installation using virtual machine images

Install VirtualBox, download FEniCS image (.ova), import into VirtualBox ("Import Appliance"), then press Start.

For file access, add shared folder under Settings - Shared Folders and enable Auto mount. Folder can be found under /media/. Must be accessed as root (or add user fenics to group vboxsf).

Installation from source

Automated installation from source:

Bash code

```bash
$ curl -s http://fenicsproject.org/fenics-install.sh | bash
```

Manual installation from source:

Bash code

```bash
<download and build Boost, MPI, PETSc, NumPy, SymPy, ...>
$ git clone git@bitbucket.org:fenics-project/ffc.git
$ cd ffc && sudo python setup.py install && cd ..
$ git clone git@bitbucket.org:fenics-project/dolfin.git
...
$ cd dolfin && cmake .. && make && sudo make install
```

For developers:

Bash code

```bash
$ git clone
    git@bitbucket.org:fenics-project/fenics-developer-tools.git
$ cd fenics-developer-tools
$ sudo python setup.py install
$ fenics-install-all.sh
```

The FEniCS challenge!

Install FEniCS on your laptop!

`http://fenicsproject.org/download/`

Does it work?

Python code

```python
from fenics import *

mesh = UnitCubeMesh(16, 16, 16)
plot(mesh)
interactive()
```