

Planning and Optimization

Setting Up the Virtual Machine

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Setup using Vagrant and VirtualBox

Install VirtualBox and Vagrant

VirtualBox: <https://www.virtualbox.org>

Vagrant: <https://www.vagrantup.com>

on Ubuntu 18.04:

```
$ sudo apt install virtualbox-qt vagrant
```

One-time setup of the Virtual Machine

Download the Vagrantfile from the course homepage and put it into an **empty directory**.

Open a console in that directory and execute `vagrant up`.
(This can take quite a long time.)

Logging in to the Virtual Machine

Open a console in the directory with the Vagrantfile and execute `vagrant ssh`.

Alternative Setup without Vagrant

- Feel free to try the setup without the VM.
 - Follow the steps in the “provision” section of the Vagrantfile and adapt them to your OS.
 - Easiest on Ubuntu but should be possible on any OS.
- But if you run into problems, please use the VM.
- For the exercises, we assume you are using the VM.

More Information

- Online documentation on setting up Fast Downward:
`http://www.fast-downward.org/`
`ObtainingAndRunningFastDownward.`
 - You can skip the optional information regarding the LP solver.
 - Note that we use our own repository, not
`hg.fast-downward.org`.
- Information on VAL:
`https://github.com/KCL-Planning/VAL.git`
- Information on INVALID:
`https://github.com/patrikhaslum/INVALID`
- Information on C++:
`https://cppreference.com/`

Testing the Setup

change into the base directory

```
$ cd /vagrant/planopt-hs20
```

test the demo

```
$ cd demo  
$ ./fast-downward.py ipc/gripper/prob01.pddl \  
  --search "astar(blind())"
```

On success:

- you should see, among other output, a line "Solution found!"
- the plan should be saved in a file `sas_plan`

compile the planner we will use in the first classroom exercise

```
$ cd ../classroom-exercise-1/fast-downward  
$ ./build.py
```