Planning and Optimization

Setting Up the Virtual Machine

Clemens Büchner, Thomas Keller, Silvan Sievers

Universität Basel

HS 2021

Setup using Vagrant and VirtualBox

Install VirtualBox

`https://www.virtualbox.org`

on Ubuntu 20.04:

```
$ sudo apt install virtualbox
```

Install Vagrant

Vagrant: `https://www.vagrantup.com`

on Ubuntu 20.04:

```
$ curl -fsSL https://apt.releases.hashicorp.com/gpg |
sudo apt-key add -
$ sudo apt-add-repository "deb [arch=amd64]
https://apt.releases.hashicorp.com $(lsb_release -cs)
main"
$ sudo apt-get update && sudo apt-get install vagrant
```

Setup using Vagrant and VirtualBox

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 (from now on)

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

Leaving Virtual Machine (do not now)

Execute `exit`.

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.
  - The official main repository is hosted on
    `https://github.com/aibasel/downward`
  - For the exercises, we use a separate repository containing different versions of Fast Downward:
    `https://github.com/aibasel-teaching/planopt-hs21`
- Information on VAL:
  `https://github.com/KCL-Planning/VAL.git`
- Information on INVAL:
  `https://github.com/patrikhaslum/INVAL`
- Information on C++:
  `https://cppreference.com/`

Testing the Setup

change into the base directory (paths will be relative to this)

```
$ cd /vagrant/planopt-hs21
```

compile the demo

```
$ cd demo/fast-downward
$ ./build.py
```

test the demo

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

On success:

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