Virtual Machine for marmoteMDP

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Marmote

Virtualbox for hosting Virtual Machines

Virtual Machine

- We use a pre-built virtual machine.
- It has been built with *Virtual Box* **6.0**.
- This allows us to obtain portability.

Virtualbox

- *You need to install Virtual Box* on your Computer
- Virtual box allows virtualization:
  an host system (your computer) is the host of an hosted system (the virtual machine).
- The hosted system works as an independant OS.
- For more details:
  The website : https://www.virtualbox.org/ is your friend.

Virtual Box installation

Download

Download the tarball for your architecture here :

https://www.virtualbox.org/wiki/Downloads

Installation Procedure

The installation procedures is described in the page associated with your architecture :

- for `Windows`:
  Download the installer file and run it;
- for `MacOS`:
  Download the installer file and run it;
- for `debian` like linux:
  -add a repository in "*source.list*"
  -install the virtual box package with `apt`.

Add the extension pack

Extension Pack

For additional properties install the *extension pack* (same file for all architectures) of virtualBox.

Download it on `www.virtualbox.org`.

Install it from the software `virtualbox`:
click on `fichier` $\rightarrow$ `parametres` $\rightarrow$ `extension` .

Configure VirtualBox

Adapt parameters of VM:

- The parameters of the VM have been chosen to be generic.
- The parameterscan be changed.
- The new parameters will be these of the virtual machine on your computer.
- The parameters should be adapted to your computer to get a better experience.

When you choose the values :

- the range of your parameters depends on your computer.
- the colour indicators are adapted to your computer(keep in the green values).

Configure VirtualBox (ctd.)

Configuration tab

1. System tab :
   - Mémoire Vive : it can be increased (above 2400Mo).
   - Système de pointage
   - Processor
2. Affichage tab :
   Ecran : Mémoire vidéo.
3. Réseau tab :
   Interface : NAT.

Display

It exists two modes:

- *Mode fenêtré* in which we have a button menu above the VM
- *Mode non fenêtré* in which the hosted system takes all the screen.

Configure the size of the screen (with the menu tab of VB):
`file` → `Parameters` → `Affichage`

Configure the the resolution of the screen (with `lubuntu`).
lower left-hand corner → `Preferences` → `Parametres de l'ecran`.

En cas de problèmes avec le clavier

Soit dans le mode non fenêtré :
aller dans entrée →clavier→ paramètres du clavier
Switcher entre le clavier de la machine virtuelle ou celui de virtualBox

Soit dans la machine virtuelle:
Clic droit sur barre des taches → ajouter un éléments au tableau de bord → ajouter une appliquette → clavier

Et choix du clavier:
Clic droit sur l'appliquette gestion du clavier → paramètre de gestion de clavier.
-Decocher garder les dispositions du systèmes
-Ajouter les layout qui sont adaptées à votre clavier à gauche

The VM used for the course

Description

- It runs with a Linux O.S. (`Lubuntu`)
- Some dedicated free softwares are already installed : compiler: `g++`; IDE: `geany`; utilities: `make`, `valgrind`.
- The marmote environment is already installed
- The projects for TP are configured.

User

An user has been created : *Charlotte la Marmotte*.

- `login` : *charlotte*
- `password` : *marmote*

Download and run the VM

Download

1. Create a directory `TP`
2. Download in the `working` directory the ova file from : this web page.

Run

1. Open `virtualbox`
2. Click on `Importer`.
   1. Browse to find `TP` directory
   2. select the file `marmoteVM.ova`
3. Once your VM is imported, your VM is ready you can start it
4. Your VM has the usb support activated.
   If the launching does not work then deactivate (or change parameters) the support of usb in the properties of the project.

The Marmote Environment

The marmote environment is installed in the VM.

- Location :
  The files are located in the `home/charlotte/marmote` repository.
  - `Documentation` contains two manual pages and a description of the package
  - `marmoteMDP_CPP` the library with the $C++$ image.
  - `pymarmoteMDP` the library with the python image.

Markov Decision process Lab

To use `marmoteMDP`

Check the Software

Build an example

1. Open the terminal in the Desktop
2. Go to in `marmoteMDP_CPP` directory.
3. `Build` the examples by typing `make`.

Run it

1. Launch the terminal
2. Go to in `marmoteMDP_CPP` directory.
3. type ./MDP_jouet

Markov Decision process Lab

To use `pymarmoteMDP`

Check the Software

Build an example

1. Open `spyder`
2. Go to in `pymarmoteMDP` directory.

Run it in spyder

1. Open the `pyMDPjouetxx.py` you want execute
2. Launch it