Howto RodosVM

The University of Würzburg offers a virtual machine (Rodos IDE) in which all necessary programs and source files are already installed so that you can start programming for RODOS.

Preparation

1) Please download the compressed [RodosVM Image](#)

   Download password: **info82021**

2) Please **unpack** the image, e.g., using [7zip](#).

VirtualBox Installation

1. Download VirtualBox >= version 4.3.16 from https://www.virtualbox.org/wiki/Downloads.
2. Install VirtualBox.
3. Download the VirtualBox Extension Pack from https://www.virtualbox.org/wiki/Downloads. Please note, the VirtualBox Extension Pack version number must be the same as VirtualBox version number.
4. Install the VirtualBox Extension Pack by clicking the extension pack file (*.vbox-extpack*).

Linux hosts only:

The open source virtualbox-host-module Expansion packs, as provided by various package managers, are only capable of forwarding USB 1.0. **You need the Oracle Expansion Pack in order to use USB 2.0 | 3.0 Forwarding** (which you will need for connecting to most target boards).

Download it manually & install it, e.g., using the bash command: **sudo VBoxManage extpack install --accept-license=sha256 </Path/to/ExtensionPack/ExtensionPackName>**

Creating the RodosVM

1. Open VirtualBox
2. Click **[New]** to create a new virtual machine.

3. Now the "Name and operating system" pop up opens, enter:
    1. Name: **RodosVM**
    2. Type: **Linux**
   3. Version: **Ubuntu (64-Bit)**

4. Click **[Next]**.
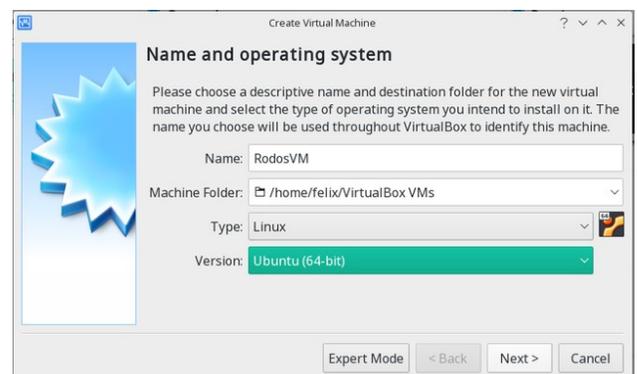
5. In the "Memory size" window, choose at least 2GiB (2048MiB).

6. Click **[Next]**
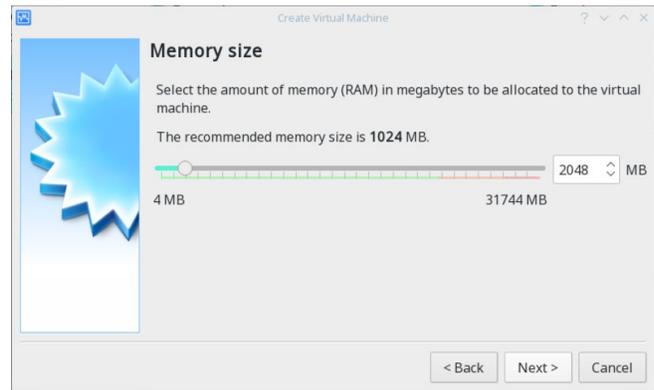
7. In the "Hard disk" window:

   1. choose:
      Use an exisiting virtual hard disk file

   2. Then click on the small **folder icon** right of the drop down menu

8. This opens the "Hard disk selector":

   1. Click **[Add]**
   2. in the directory explorer, find your unpacked RodosVM image.
   3. Click **[Open]**
   4. Back in the "Hard Disc Selector" window the image should now be shown & highlighted.
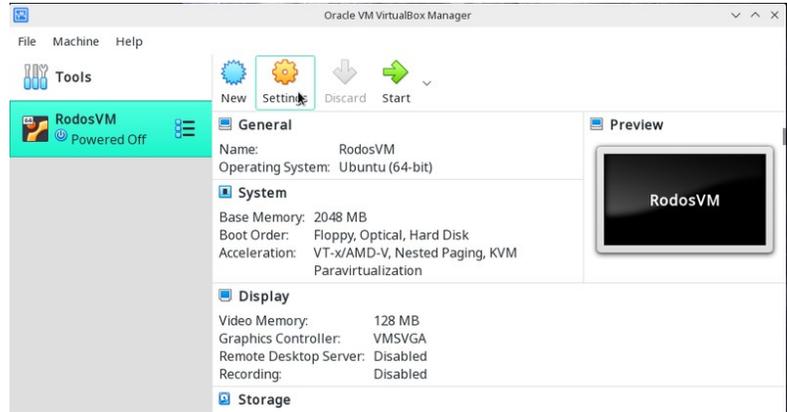   5. Click **[Choose]**
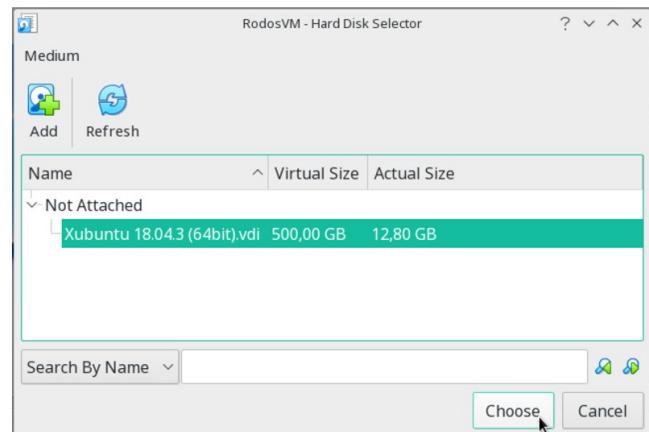
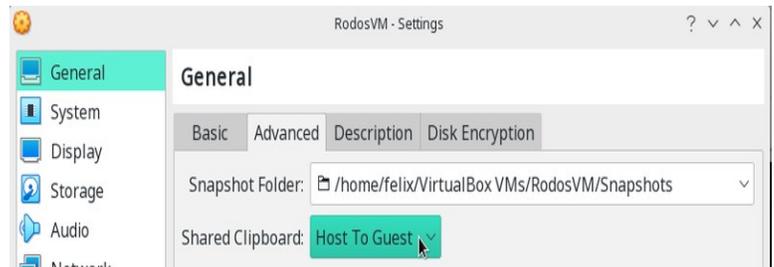9. This brings you back to the "Hard disk" window, click **[Create]**
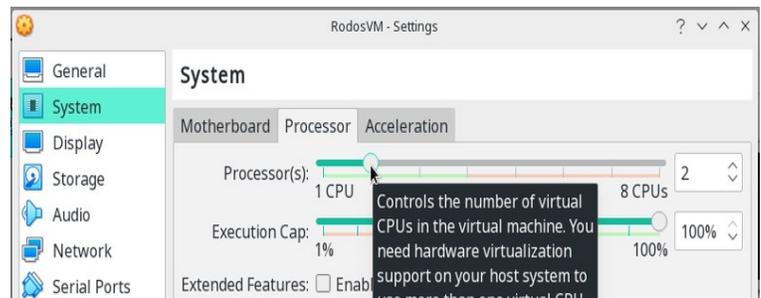
RodosVM Configuration

Please click [Settings] and choose the
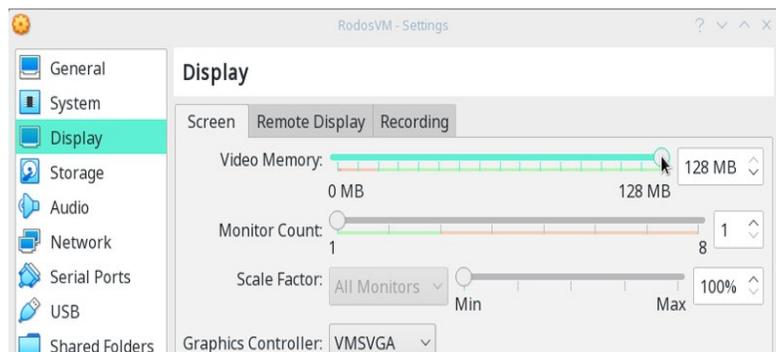following settings in the submenus:

General / Advanced:

in the drop down menu, choose
Shared Clipboard: "Host to Guest"

System / Processor:

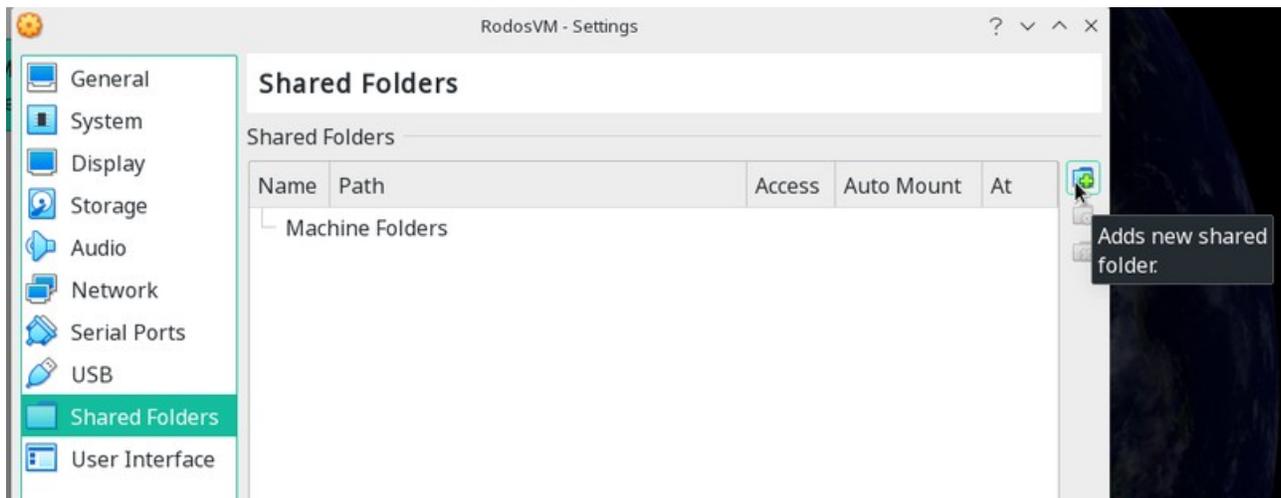**Processor(s)** slider:

leave it at 1 CPU

Display / Screen:
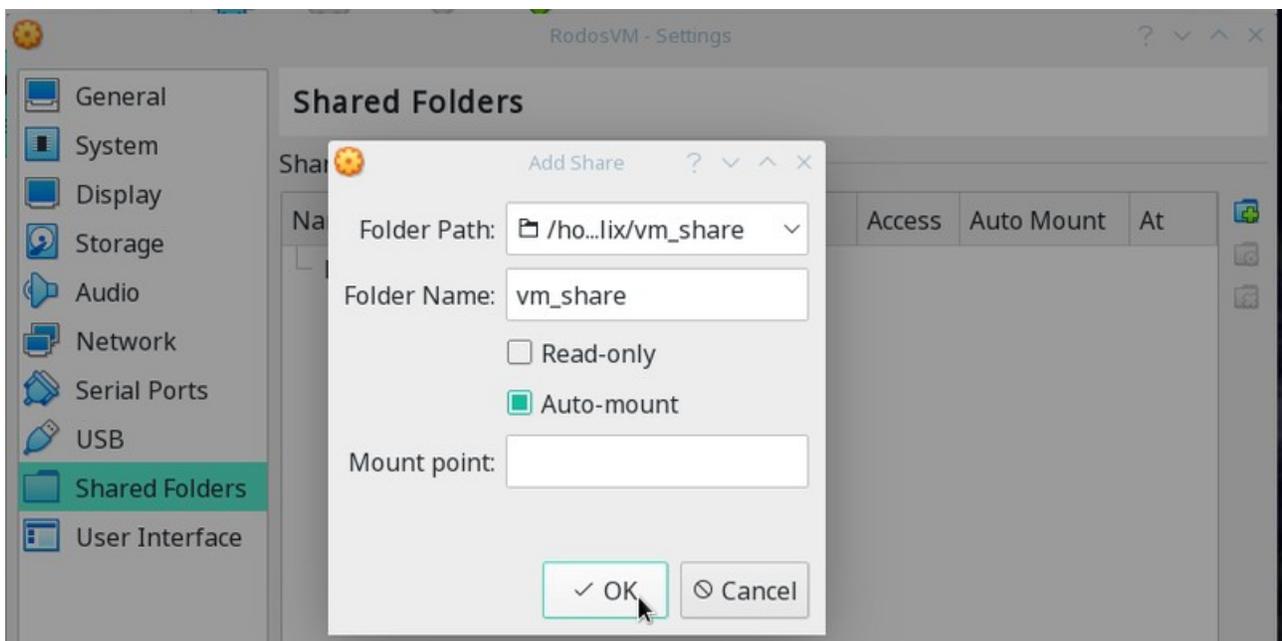
raise **VideoMemory** to **128MB**

Shared Folders

1. Click the small **folder+ icon** on the right to add a new shared folder.

2. This opens the **"Add share" window**, here:

    1. Folder Path-Dropdown: choose **Other..**

    2. this opens the file manager, you can choose a directory or create a new one for the shared folder, then click **[Ok]**

    3. Check the box next to **AutoMount**

    4. Click **[Ok]**.

(You don't need to specify a mount point, there is a default setting for this.)

Using the RodosVM

Your RodosVM should boot when you click on **[Start]**. This might take a moment.

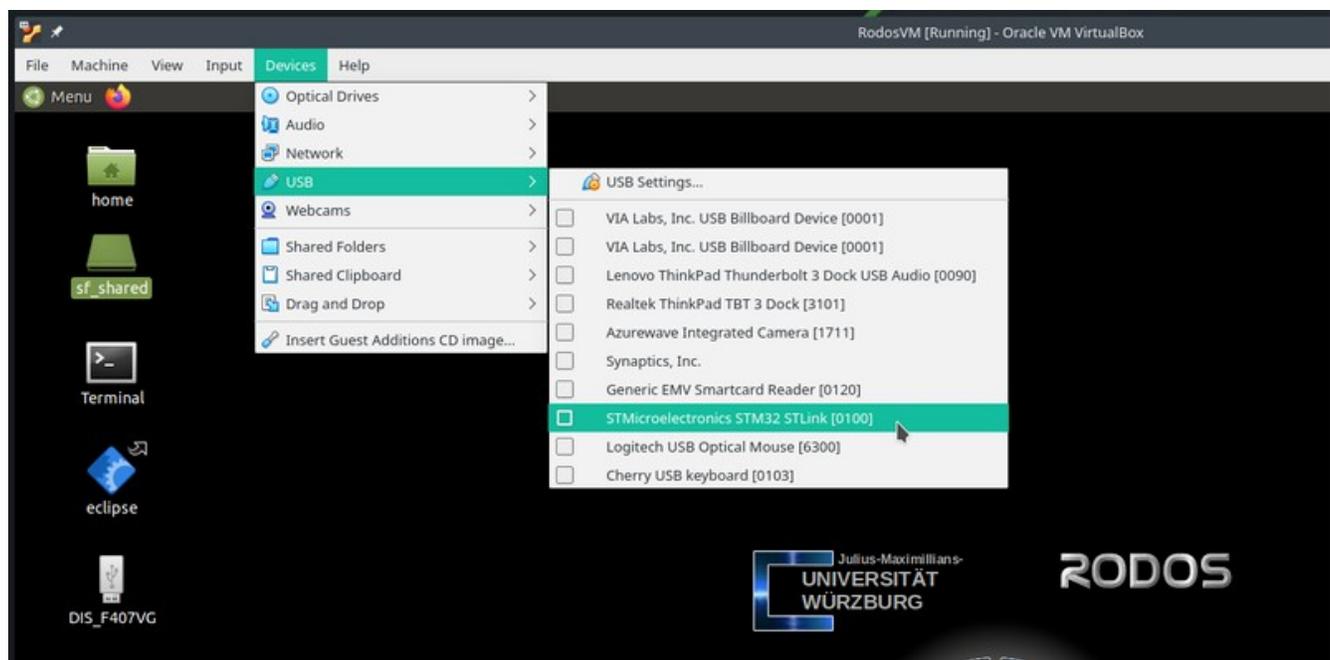At the login screen, enter these credentials:

User: rodos

Password: rodos2020

Final touches (1) - USB setup

When developing for hardware targets such as the Discovery Board, Gecko, etc., the corresponding USB ports must be forwarded on to the VM.

You can do this while running the vm via the VirtualBox Devices menu. Simply activate the desired device under **Devices>USB**.

(You need the VirtualBox expansion pack in order to have all options shown in the picture available.)

Final touches (2) - reinstalling the VirtualBox Guest Additions (if needed)

Although the virtual machine comes with installed guest additions, those might not work with your version of virtualbox. In this case you need to reinstall the virtualbox guest additions.

There is an howto for this at the end of this document.

Building and running the Rodos example

To make getting started with Rodos programming as easy as possible, we have created an Eclipse project featuring a minimal Rodos application.

You can find the example in the file manager under **/home/user/eclipse-projects/rodosTemplate**. When you click on the **Eclipse Icon** on the desktop, the Eclipse IDE opens and shows the Rodos example project "MyRodosApp".

Clicking on the **hammer symbol** at the top left starts the compilation. First the Rodos libraries are built and afterwards the example code. In the standard setting, the project is built for Linux so that it can be executed directly in the VM.

The terminal (bottom center) displays the build program's output (cmake and make). After a successful build, you can find the the executable "MyRodosApp" in the Project Explorer (left) under rodosTemplate/build-linux/my-rodos-app.
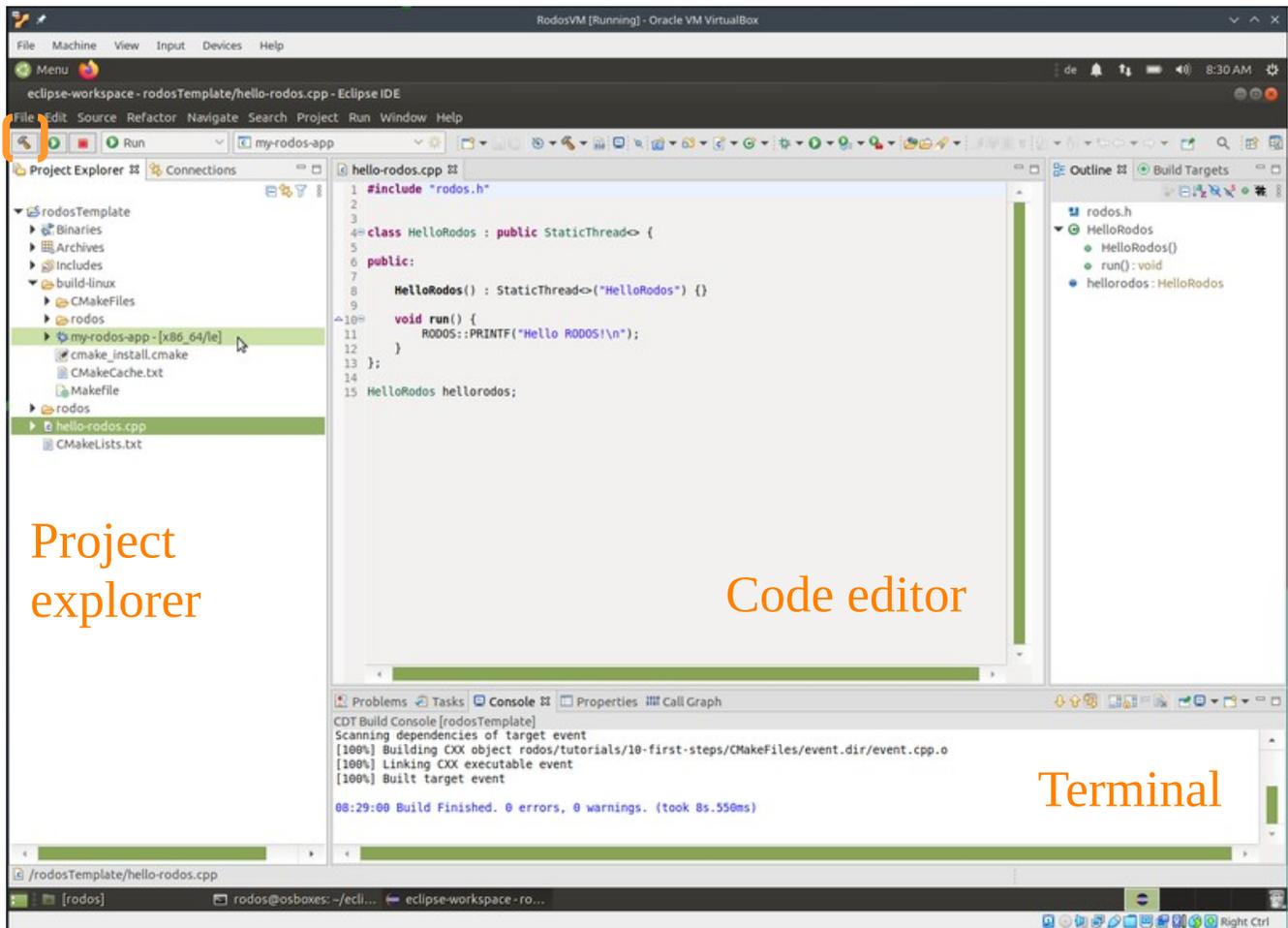
You can now click the "Run" button with the green play symbol to the right of the "Build" button to run the built executable.
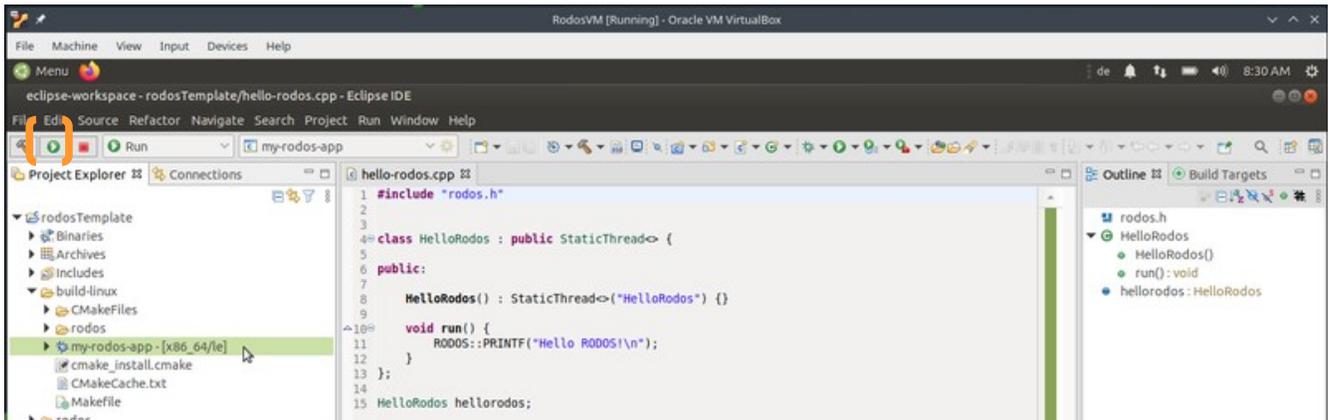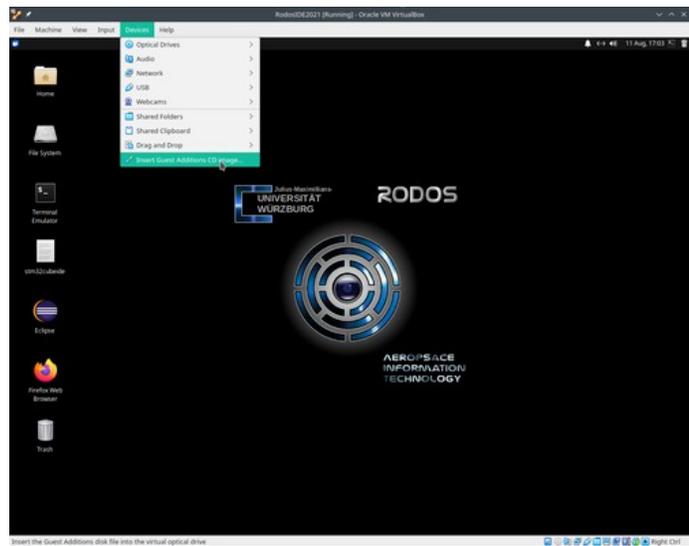

The terminal below will then show the output of the running programm:
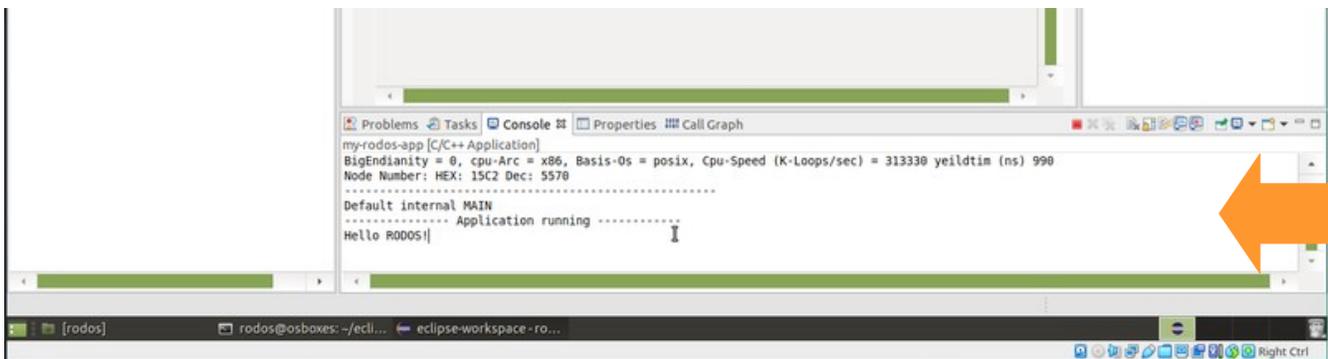
Congratulations, everything is up and running. Now you can start having fun with the Rodos IDE.
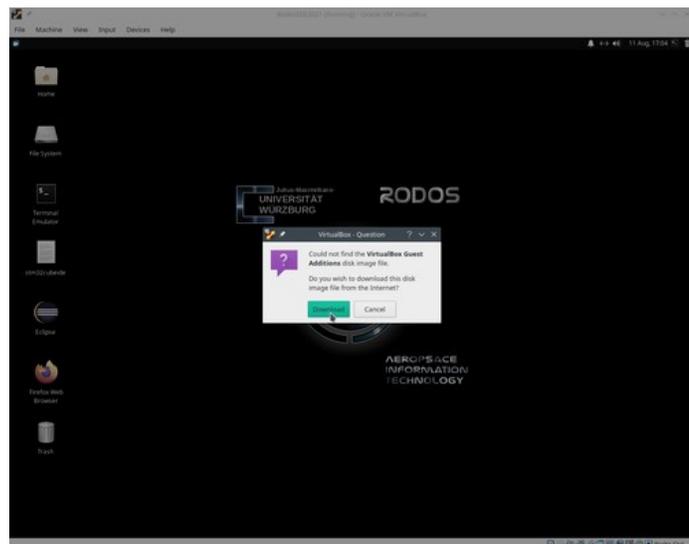
Reinstalling the VirtualBox Guest Additions

1. When the vm is running,

click on **[Devices]** > **[Insert Guest Additions CD image]**
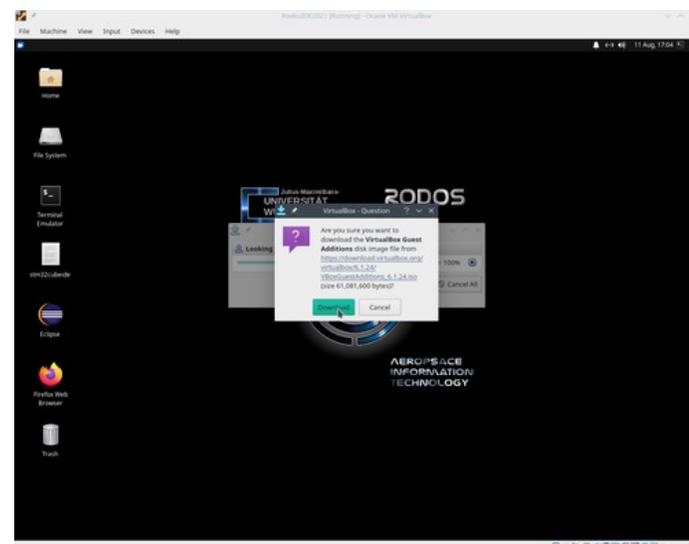

2. Virtualbox will then ask you if it should download the guest additions image.

   Click **[Download]**

3. In some cases VirtualBox will ask you again to confirm the download.
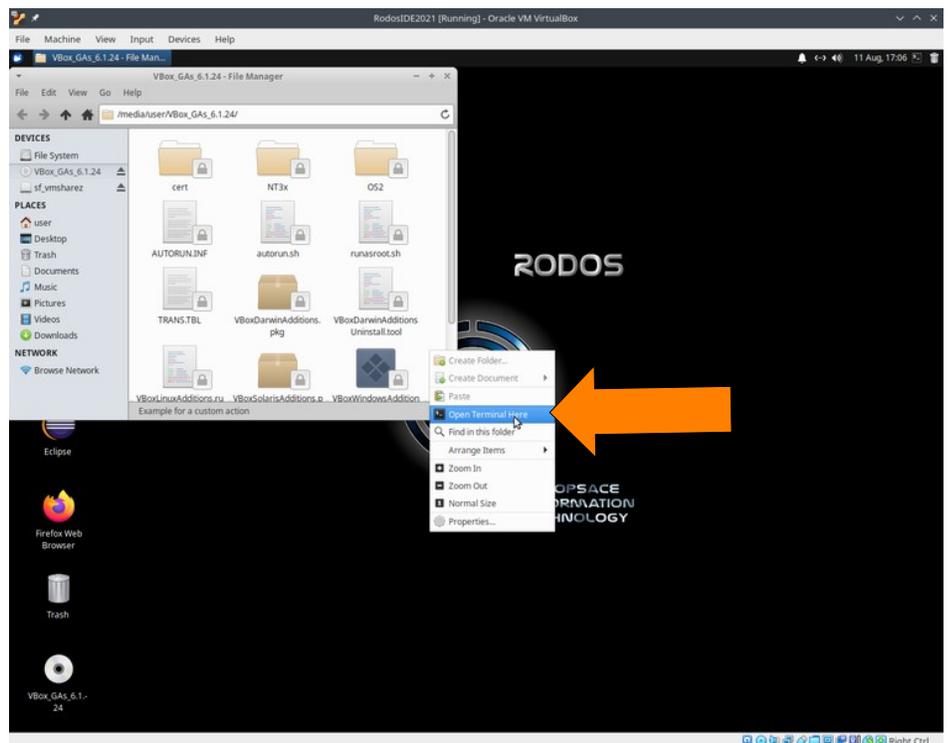
   Click **[Download]**

4. After virtualbox downloaded the image:

- the guest additions cd image can be seen
  on the vm's desktop.
- **Click** on it to open the folder
 containing the installation scripts.

5. This should open the folder in the File Manager:

1. Right click into the folder view, and
2. select **[Open Terminal Here]** in the drop down menu.

6. In the terminal type the following command: **sudo ./autorun.sh**

   then hit [RETURN].

7. When asked for your sudo passwort type: **rodos 2020**

   then hit [RETURN].

8. You should now see a console window showing the output of the installation script.

   Wait till it is finished, then hit any key.
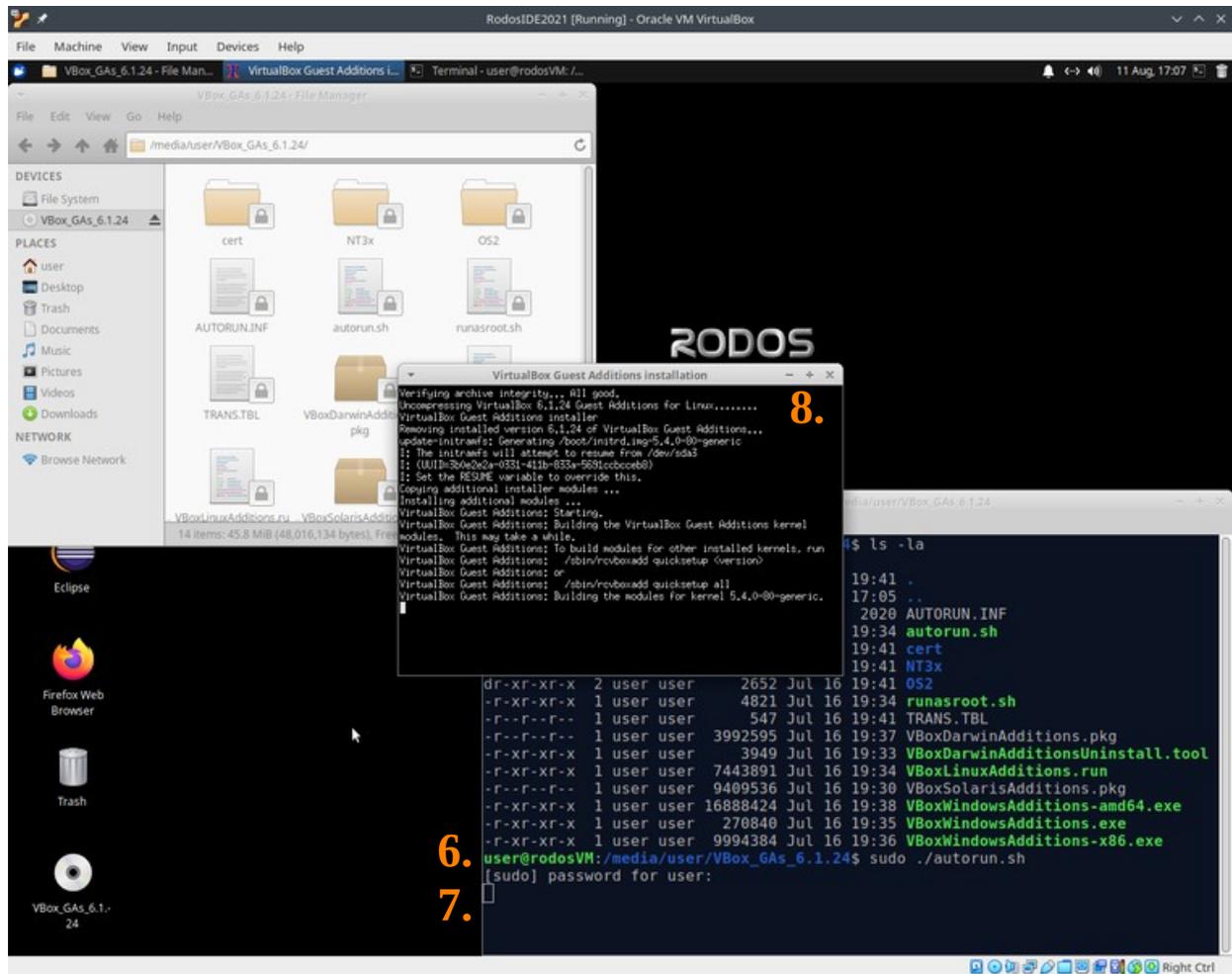
9. **Now shut down the vm.** On the next start, the shared folders should be working.