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Setting up the virtual machine (manual)

In the lab sessions of the course, you will get hands-on with some of the tools that you studied in class. Such tools sometimes require low-level configuration, which makes cumbersome the process of setting them up. To make the most out of the available time, we provide you with an Ubuntu virtual machine where all software is already installed and configured. Such tools are meant to work in a distributed fashion, however for practical reasons we provide you with their standalone version.

This manual describes the usage of the provided virtual machine. The virtual machine is offered in two different flavors, (i) you can remotely use the virtual machine via *Virtech*[1] where everything runs in UPC's Cloud, or (ii) you can download it and execute it in your personal laptop using *VirtualBox*. Both alternatives are described in the following sections.

1 Running the virtual machine in the cloud

Virtech is an on-demand virtual machine virtualisation environment. This service allows you to create, configure, modify and delete Linux virtual servers to a group of students. You can learn more about it at `http://inlab.fib.upc.edu/en/fibs-docent-cloud-service-virtech`. Next, we depict the list of steps in order to create your own virtual machine. Each team in BDM has access to their personal instance.

- Login to `https://virtech.fib.upc.edu` with your credentials. Credentials will be provided in the team's description in LearnSQL. Remember that you can also access Virtech from outside UPC, however in this case you will need to access via the VPN server. Learn more about UPC's VPN service at `https://www.fib.upc.edu/en/fib/it-services/vpn-upclink`. Once you successfully login, you will be prompted with the Dashboard page as in Figure 1.
- To start, you should then switch the to the VMs tab and you will see the one in Figure 2.
- Next, you should create your virtual machine. Select the template *master BD usuaris 2019*, and set a name and password (see Figure 3).

[1] `https://virtech.fib.upc.edu`

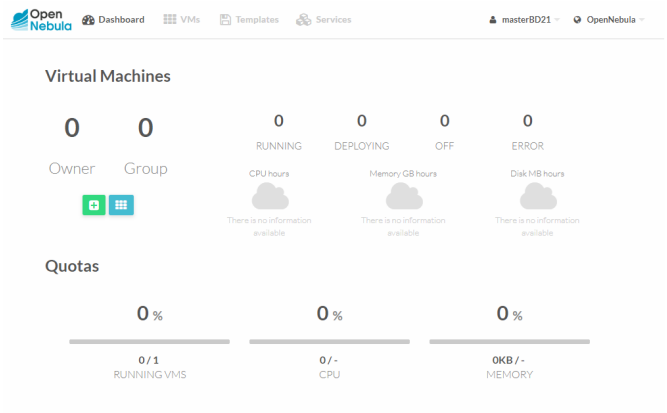

Figure 1: Dashboard

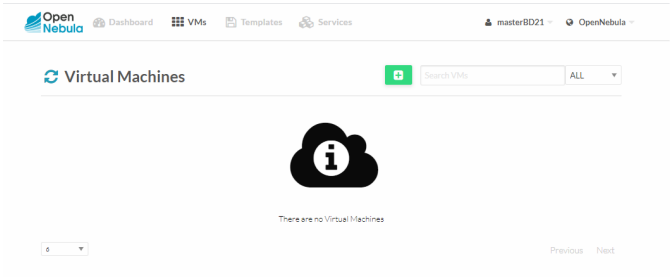

Figure 2: VMs Tab

- The process of deploying can take between 3 and 5 minutes, please be patient and press the refresh button to see its status. Once it has been successfully deployed, you should see a screen like the one in Figure 4.
- Next, click the left most icon (a screen) to access your instance in a new tab. You will be presented with Ubuntu's login screen in the browser. Login using the credentials you previously introduced, like in Figure 5.
- Once you log in, you can use the virtual machine. The web client is not that user friendly and we suggest you not to use it (e.g., the keyboard is not correctly mapped). Our recommendation is that you use an SSH client such as Putty or any other (see Section 3 for more details).

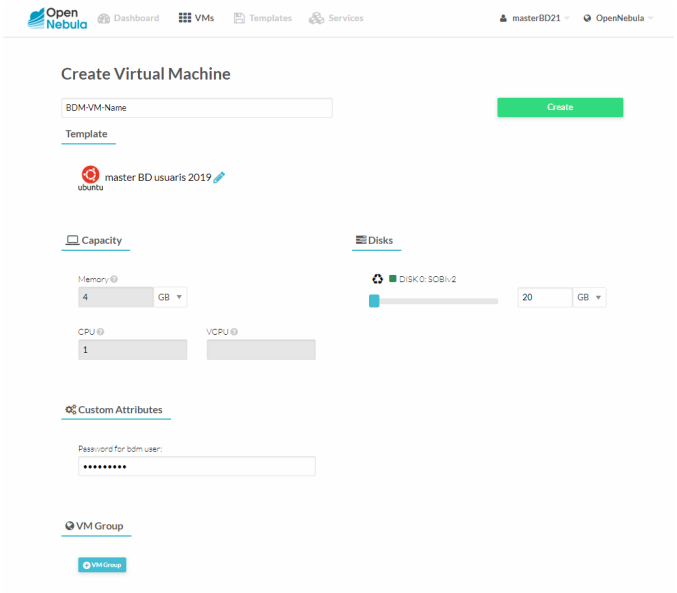

Figure 3: Creating a VM

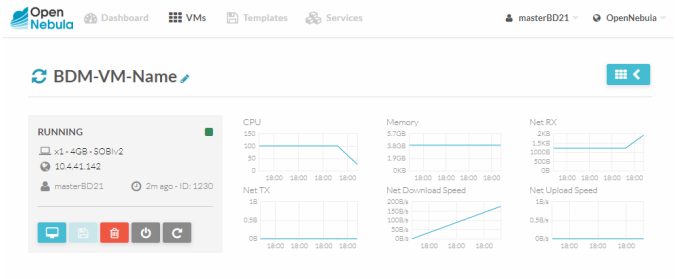

Figure 4: Deployed VM

2 Running the VM locally

If you do not want to use the Virtech environment, alternatively you might want to download the virtual machine to your personal laptop and use it in VirtualBox. Refer to the following link:

- `https://softdocencia.fib.upc.edu/software`
  - Download the `masterDB.ova` file.

In this case, the credentials for the virtual machine are username `bdm` and password `bdm`.

Figure 5: Logging in

3 Remote Shell

If you want to connect remotely to the VM, but not through the web client, follow the instructions:

1. Connect to UPC's VPN.
2. Make sure the VM is running and it is not powered off.
3. Use an ssh client (e.g., Putty)
   - Run `ssh bdm@[IP assigned to VM]`

     The password is the one you used at the time of creating the VM.

4 Sending files to the VM

From Linux, you can send files to the VM using *Nautilus* (the default file explorer). The following screenshot depicts how you can connect via the SFTP protocol. The process is reduced to specify in the *Connect to Server* form the following (like in Figure 6):

```
sftp://bdm@[IP address assigned to the running VM]
password: the one you assigned when creating the VM
```

Windows users can use *WinSCP* or *Filezilla*.

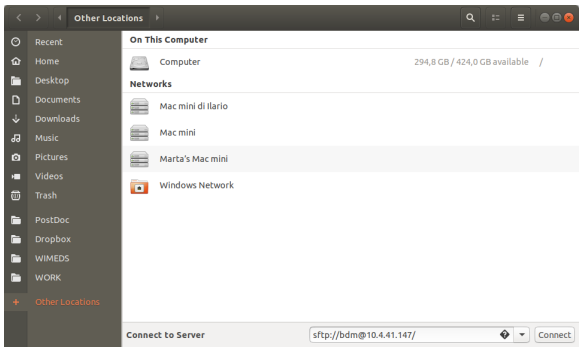

Figure 6: File transfer