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Hello everyone and welcome to "Open World", the computer-based layout show. Today, new domain: virtual machines. These can be very effective when we need to do something that is not possible on our operating system (like Windows for example). To help you understand, set up and manipulate these machines, here is an explanatory video produced by Léo Fantuz Chrobot, Thomas Guislin and Mathéo Niel.

Hello everyone and welcome to this explanatory video about virtual machines. Here, you will learn how to install and use them but first of all, what is a virtual machine?

Well, a virtual machine is simply a virtualized environment that runs on a physical machine, like a computer, for example. This makes it possible, for example, to use a completely virtual computer, making it possible, for example, to destroy your personal computer in the event of mishandling. So, as mentioned previously, we will explain to you what configuration and software to install in order to properly use your virtual machine, then secondly we will show you how to install and handle all of that.

To get started, you need to install virtual machine software, like VirtualBox, for example. On the official website, you can find all the installable versions. Once the installation is complete, we can now explain to you what steps are necessary in order to fully understand the software. To begin with, it is good to mention that several operating systems such as Windows for example can be installed on this machine (we will see how to do this later). Therefore, an installation of your machine is necessary on VirtualBox in order to use it. It is important to mention that this installation can be done automatically (this is also strongly recommended in order to avoid manual reinstallation with each new virtual machine created).

Once all this is done, one of the practical software that can be installed is git. But what is git? Well git is a mature and actively maintained open source version control system used by thousands of developers around the world. This allows you to share files with several members of a group. This software is an essential tool in the world of IT development, since it is a very effective tool when an IT project requires team work. Thus, on git, it is possible to create and manipulate several versions of our files interactively. The problem being this: git is not a GUI. In other words, the git history cannot be viewed graphically, but rather using a terminal like this. So, several software can solve this problem, like gitk, for example. Gitk is a graphical git repository browser, the first of its kind. This software allows us to manipulate our different versions of files in a completely graphic manner, greatly facilitating this part of team work.

Other much more intuitive software can also be installed, such as gitFiend, for example. This software has the same usefulness as gitk, however, its graphical interface allows a simpler understanding of your git history. Another problem with using git is that it requires access to the internet to be used.

Thus, another repository software allowing this time to use git in a so-called “local” way (without resorting to the use of the internet) is called Gitea. Gitea is software almost identical to gitlab (thus being a git repository site), but as mentioned previously, it can be used with a local address, therefore without internet (effective when you lose all contact with the outside world). This software (which can thus be installed on the virtual machine) allows you to access your repositories on the local address of your virtual machine, but also on that of your physical machine. This is its main use, allowing it to directly connect the virtual machine and the physical machine.

Now that you know all the software and functionalities necessary to properly install and operate your virtual machine, we can move on to the tutorial part allowing all of this to be set up.

To begin with, how do I install the virtual machine? Well first of all, you need to click on the “new” button and create your virtual machine using the information you want. Once this is done, you need a pre-configuration file under the “Vbox” or “viso” extension. This file is very often available in your VirtualBox files or installable on the internet and the latter as well as its configuration files can be modified in order to pre-configure your virtual machine as you wish, with the software and functionalities of your choice. So, if you want to launch an automatic installation, all you have to do is replace your “ISO” image with your “Vbox” or “viso” image, then launch your virtual machine to begin the installation. Once all this is done, you are now the happy owner of a fully configured virtual machine. Now let's move on to the software part.

If you have not already installed git during your pre-configuration, here are the commands to execute in your command terminal, obviously replacing the information in parentheses with your desired personal information. gitk should be installed automatically when installing git.

Now that git is installed, here are some commands that may be useful for this manipulation (Explanations of these commands are available on the git Wikipedia). By writing gitk in your command terminal at the location of your git working folder, this will open a gitk interface like here, allowing you to view the different versions of your repositories, such as old versions, different working branches and more.

The more intuitive version of git named GitFiend mentioned above can be installed on their official website. Once the “.deb” file is installed, simply write the following command in the command terminal at the exact location of your file to be able to install it. Then, opening this software in the location of your git working folder allows you to access a much clearer and intuitive interface. In addition, gitFiend allows you to make commits, branches (allowing you to work in the same folder simultaneously) and much more, without using any commands. Thus, tracking and managing the different versions of our git repository becomes much simpler.

Finally, how to install Gitea for local use? Well to start, go to the configuration of your VirtualBox virtual machine. Click the “Network” tab, then “Advanced,” then “Port Forwarding.” Next, click the small icon at the top right to create a new rule. Configure it as follows by modifying the name to the desired one. Then, to install Gitea, you will need to follow the different steps and command available on the official Gitea website in the “installation from binary” category. Once all these steps and commands have been completed, you can now launch Gitea by connecting to your local address named “localhost”. This will redirect you to the next page, allowing you to configure your Gitea server according to your desired information and features. Once you have completed this part, you can now access Gitea. This repository site allows you to create or import folders and files, delete them and much more. This site is therefore one of the most practical sites for handling your git repositories in order to work as a team.

There you go, you now know all the functionalities and software necessary for installing and using your virtual machine. You now know how to install a virtual machine, how to configure it automatically and how to manage your personal work using software that is sometimes specific to a certain operating system, thus requiring a virtual machine. Thank you for following this video and see you tomorrow for a new episode of “Open World”.