# Experiment 2

## Installation of Virtual -Box and Ubuntu Operating System

**What is VirtualBox ?**

VirtualBox is a powerful x86 and AMD64/Intel64 **virtualization** product for enterprise as well as home use. Not only is VirtualBox an extremely feature rich, **high-performance** product for enterprise customers, it is also the only professional solution that is freely available as **Open Source Software** under the terms of the GNU General Public License (GPL) version 3. Presently, VirtualBox runs on Windows, Linux, macOS, and Solaris hosts and supports a large number of guest operating system including but not limited to Windows (NT 4.0, 2000, XP, Server 2003, Vista, Windows 7, Windows 8, Windows 10), DOS/Windows 3.x, Linux (2.4, 2.6, 3.x and 4.x), Solaris and OpenSolaris, OS/2, and OpenBSD.

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**Installation of Virtual Box**

Download and install Oracle VirtualBox from the official website: **virtualbox.org**

Download the Ubuntu ISO image from the official website: **ubuntu.com**

1. **Create a New Virtual Machine:** Open VirtualBox and click the "New" button. Provide a name for your virtual machine, select "Linux" as the type, and choose the appropriate version (usually "Ubuntu (64-bit)"). Click "Next."

2. **Allocate Memory:** Choose how much RAM you want to allocate to the virtual machine. Ubuntu generally requires at least 2GB for smooth operation. You can allocate more if your host system has enough resources. Click "Next."

3. **Create a Virtual Hard Disk:** Choose the "Create a virtual hard disk now" option and click "Create."

4. **Virtual Hard Disk File Type:** Choose the default "VDI (VirtualBox Disk Image)" and click "Next."

5. **Storage on Physical Hard Disk:** You can choose between "Dynamically allocated" (which will grow as needed) or "Fixed size" (which will be a fixed size on your host system). Choose one and click "Next."

6. **File Location and Size**: Choose the location to save the virtual hard disk file and specify its size. At least 20-30GB is recommended for Ubuntu. Click "Create."

7. **Configure Settings:** In the VirtualBox manager, select your newly created virtual machine and click on "Settings." Here, you can configure various options such as processor cores, video memory, etc.

8. **Mount Ubuntu ISO:** In the "Settings" window, go to the "Storage" tab. Under the "Controller: IDE" section, click the icon that looks like a CD/DVD and choose "Choose a disk file." Select the Ubuntu ISO you downloaded.

9. **Start the Virtual Machine:** Click "OK" in the "Settings" window. Then, start the virtual machine by selecting it and clicking the "Start" button.

10. **Install Ubuntu:**The virtual machine will boot from the Ubuntu ISO. Follow the on-screen instructions to install Ubuntu. You'll need to select language, keyboard layout, and installation type. You can choose to install updates and third-party software during the installation process.

11. **Partitioning:** When prompted, choose the installation type. You can either erase the disk and install Ubuntu or choose "Something else" for manual partitioning.

12. **Complete Installation:** Follow the remaining steps to set up your user account, password, and system settings. Once the installation is complete, the virtual machine will restart.

13. **Install VirtualBox Guest Additions (Optional):** After Ubuntu is installed, it's recommended to install VirtualBox Guest Additions for better integration and performance. You can do this by selecting "Devices" in the VirtualBox menu of the running virtual machine window and choosing "Insert Guest Additions CD image."