

## Lab Setup Requirements

The following computer resources are recommended to install and run the Virtual Machine Manager (VMM) and VM instances:

- 8 GB RAM
- 40 GB of free hard disk space
- 2GHz processor with four or more physical cores
- Windows 10, MacOS 10.11 or later, Linux

We recommend to use Oracle VirtualBox.

## Setting up Virtual Box and Exploring the seed Lab

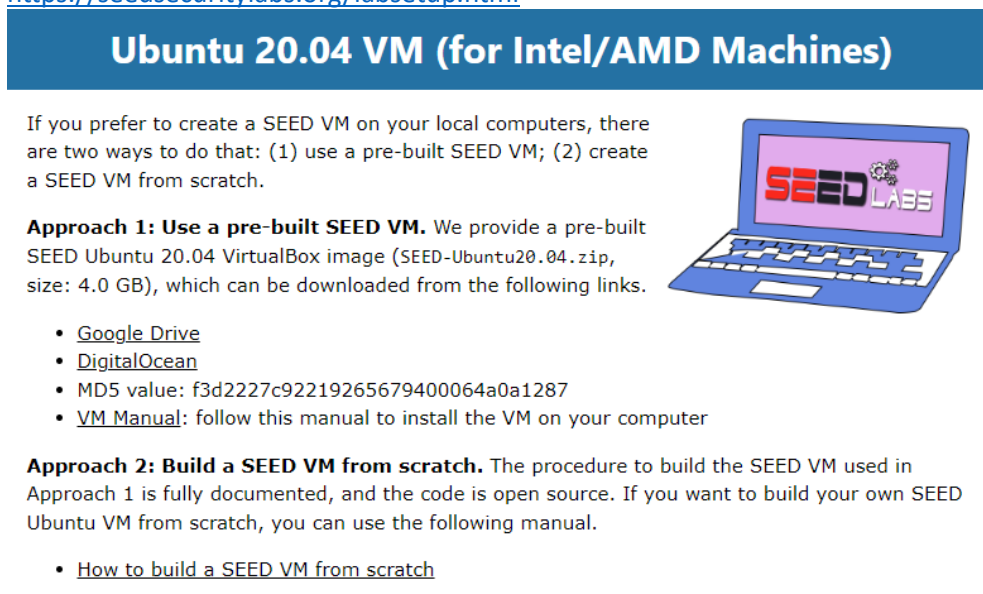
### Detailed instructions

1. Download VirtualBox from <https://www.virtualbox.org/wiki/Downloads> according to your OS and install it.



The screenshot shows the VirtualBox website. At the top, the word "VirtualBox" is written in large blue letters. Below it, the heading "Download VirtualBox" is followed by the text "Here you will find links to VirtualBox binaries and its source code." Underneath, there is a section titled "VirtualBox binaries" with the text "By downloading, you agree to the terms and conditions of the respective license." Below that, a section titled "VirtualBox 7.0.18 platform packages" lists several links: "Windows hosts", "macOS / Intel hosts", "Linux distributions", "Solaris hosts", and "Solaris 11 IPS hosts".

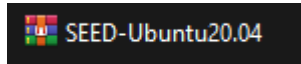
2. Download the Ubuntu 20.04 VM (for Intel/AMD Machines) from <https://seedsecuritylabs.org/labsetup.html>



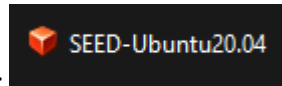
The screenshot shows the SEED Lab website. At the top, the heading "Ubuntu 20.04 VM (for Intel/AMD Machines)" is displayed. Below it, the text reads: "If you prefer to create a SEED VM on your local computers, there are two ways to do that: (1) use a pre-built SEED VM; (2) create a SEED VM from scratch." To the right of this text is an illustration of a laptop with "SEED LAB" on its screen. Below the text, there are two sections: "Approach 1: Use a pre-built SEED VM." and "Approach 2: Build a SEED VM from scratch." Approach 1 provides a link to a pre-built SEED Ubuntu 20.04 VirtualBox image (SEED-Ubuntu20.04.zip, size: 4.0 GB) and lists three links: "Google Drive", "DigitalOcean", and "VM Manual". Approach 2 states that the procedure to build the SEED VM used in Approach 1 is fully documented and the code is open source, and provides a link to "How to build a SEED VM from scratch".

Click on the **Google Drive** and download the SEED VM module.

3. Unpack the SEED VM module and there you will find the **Virtual Disk Image**

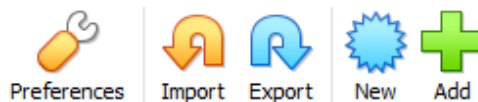


Note: For Windows users, you can use 7-Zip (<https://www.7-zip.org/>) to extract the downloaded archive. For Mac users, the pre-installed The Unarchiver can extract.



Virtual Disk Image ->

4. Open the Oracle VM virtual Box



### Welcome to VirtualBox!

The left part of application window contains global tools and lists all virtual machines and virtual machine groups on your computer. You can import, add and create new VMs using corresponding toolbar buttons. You can popup a tools of currently selected element using corresponding element button.

You can press the **F1** key to get instant help, or visit [www.virtualbox.org](http://www.virtualbox.org) for more information and latest news.



5. Click on the **New** icon and
6. You will see such display. Now make sure you name your Virtual Machine. Name it as **metcs690** and select the type as **Linux**. Change the version to **Ubuntu (64-bit)** and click on the **Next**.

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← Create Virtual Machine

### Name and operating system


Please choose a descriptive name and destination folder for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

Name:

Machine Folder:

Type:

Version:



7. Setup the size of for your VM and click on **Next**  
Recommended size: **15GB**

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← Create Virtual Machine

### Memory size

Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.

The recommended memory size is **2048 MB**.

4 MB 15360 MB 24576 MB

Next Cancel

8. Now you have to create a Virtual Machine. So, to create it click on the icon and add the **Image** of the Virtual Machine which you had downloaded.



Click on the icon

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← Create Virtual Machine

### Hard disk

If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select one from the list or from another location using the folder icon.

If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.

The recommended size of the hard disk is **32.00 GB**.

☐ Do not add a virtual hard disk

☐ Create a virtual hard disk now

☒ Use an existing virtual hard disk file

Empty

Create Cancel

metcs690\_ - Hard Disk Selector

Medium

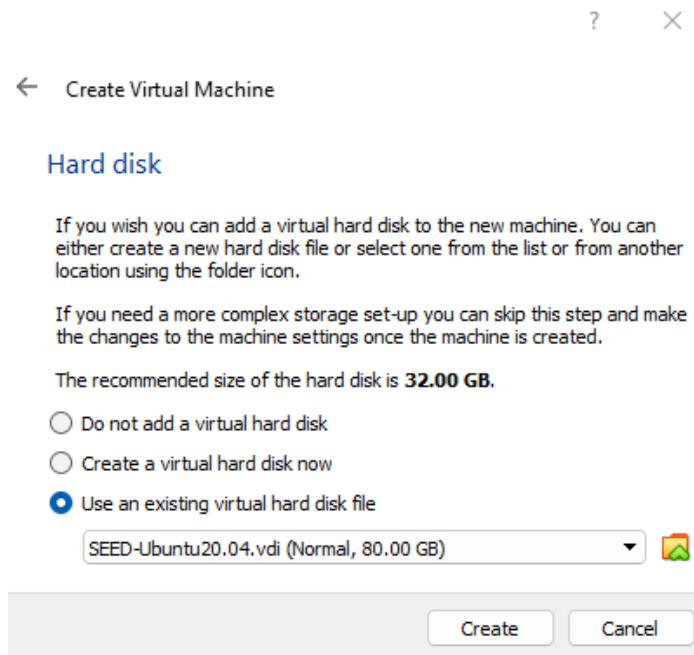
Add Refresh

Name	Virtual Size	Actual Size
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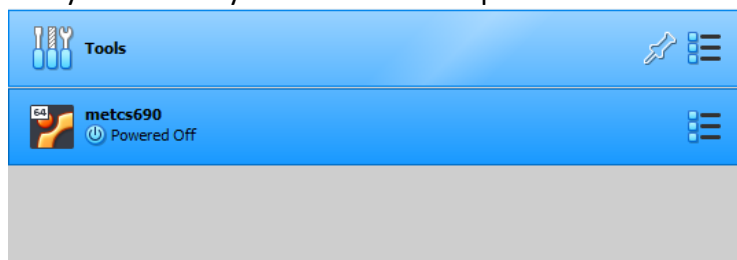
Search By Name

Choose Cancel

9. Now click on Create to create your own Virtual Machine.

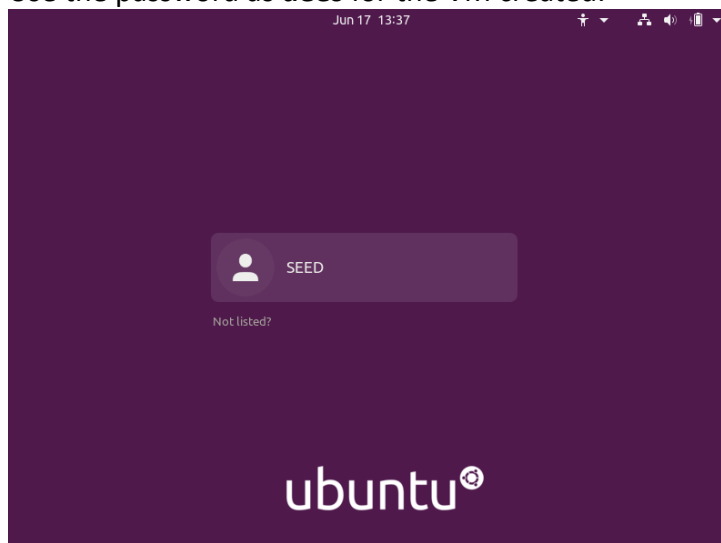


10. Once you click on **Create**, you can see that your Virtual Machin has been created and you are ready to use it to accomplish the tasks.



11. Now click on the start icon Start to run the VM.

12. Use the password as **dees** for the VM created.



13. You can download the respective setup files from the link provided  
<https://seedsecuritylabs.org/labs.html>

Click on **SEED Labs 2.0** and then click on **Network Security**



[SEED Labs 2.0](#)

**Network Security Labs**

	<b>Packet Sniffing and Spoofing Lab</b> Sniffing packets sent over the local network and spoofing various types of packets using Python and C.
	<b>ARP Cache Poisoning Attack Lab</b> Launch ARP cache poisoning attacks; use this attack to conduct man-in-the-middle attacks.
	<b>ICMP Redirect Attack Lab</b> Attacks at the IP layer, ICMP redirect attack, and man-in-the-middle attack.

**Note:**

1. You want to download the pre-built SEED VM, not to build SEED VM from scratch, unless you want extra work to challenge yourself.
2. Do not use older version like Ubuntu 16.04 VM or Ubuntu 12.04 VM