

Preparing LAB Environment

Objectives

- Introducing Hypervisors
- Prerequisites to install RHEL 9
- Downloading and Installing Oracle VirtualBox
- Installing RHEL 9 VM
- Importing IPA Server VM
- Connecting IPA Server and System VM on internal Network
- Adding extra interface on System VM for internet access
- Installing VirtualBox Guest Additions

Introducing Hypervisor

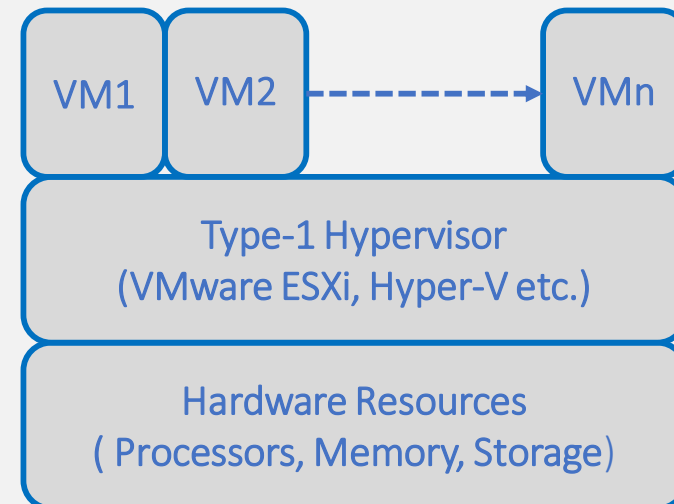
Hypervisor is a software that creates and runs virtual machines on host machine. Hypervisor abstracts the underlying resources of host machine and allows host machine to share the resources such as CPU, memory and storage among different virtual machines.

There are two different types of Hypervisors:

1> Type 1 Hypervisor (Bare metal or Native)

It is a software that is installed directly on the physical server on its hardware. There is no layer between hardware and hypervisor program, so no operating system is required to install Type-1 hypervisors. They are mainly used for Enterprise environments. They are designed to deliver better performance and stability.

Examples are, VMware ESXi, OpenStack, Hyper-V etc.

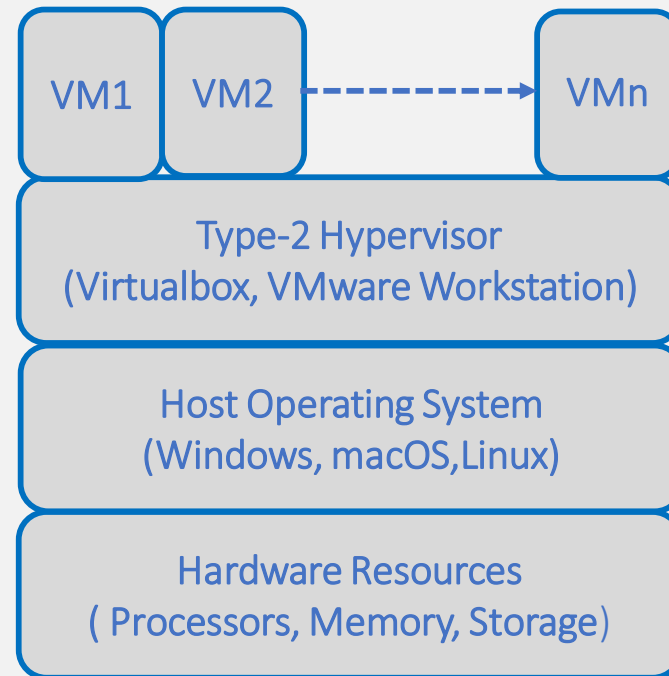


2> Type 2 Hypervisors (Hosted Hypervisors)

It is a software layer installed on the top of Operating System of host machine. So, there is an additional layer of host operating system between hardware and Hypervisor.

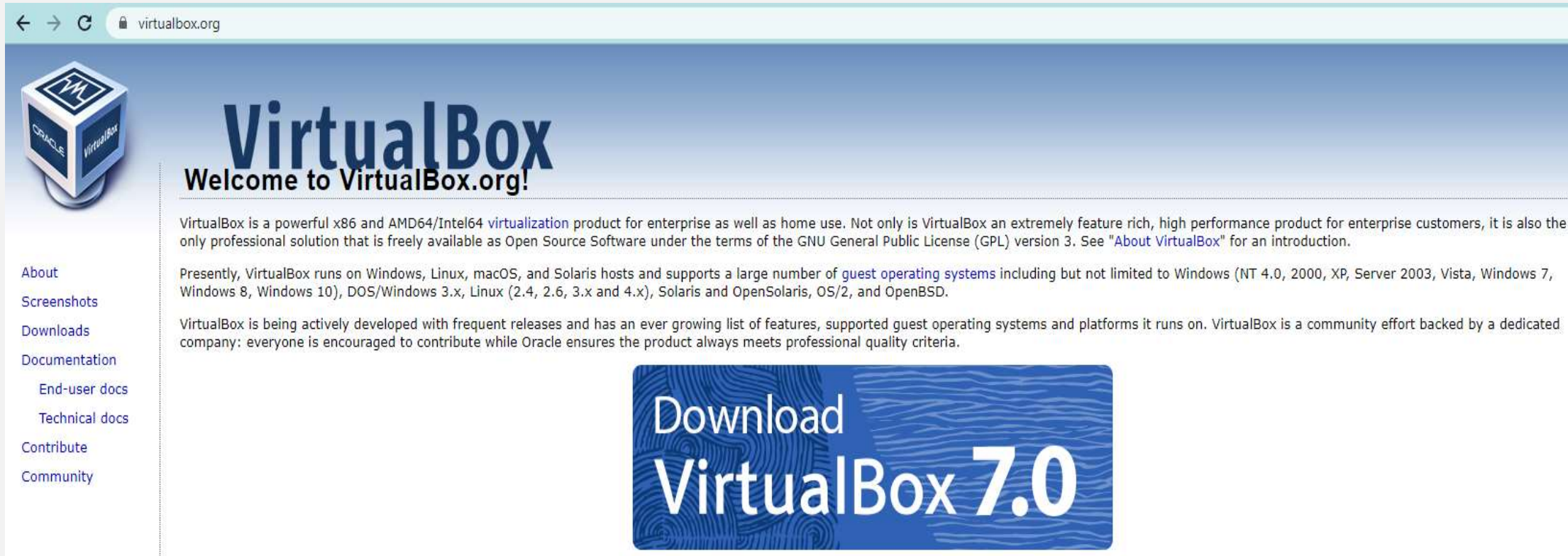
Examples of Type-2 Hypervisors are , Oracle VM Virtualbox ,VMware Workstation etc.

For this course , We will use Type-2 Hypervisor which is easier to use for everyone. We just need a Computer with OS installed on this.



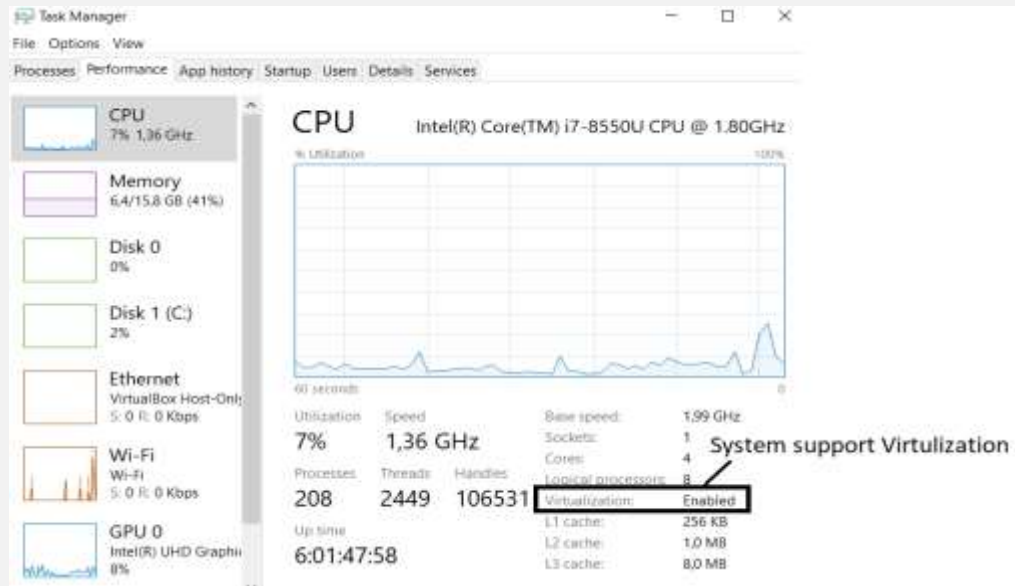
Downloading and Installing Virtualbox

We will visit [Oracle VM VirtualBox](https://www.virtualbox.org) (<https://www.virtualbox.org>) website to download Virtualbox and then it can be installed like a regular program on different Operating Systems.



The screenshot shows the homepage of the VirtualBox website. At the top left is the VirtualBox logo, a blue cube with the Oracle logo and the text 'VirtualBox'. To the right of the logo, the text 'VirtualBox' is written in a large, bold, blue font, followed by 'Welcome to VirtualBox.org!' in a smaller, bold, black font. Below this, there is a paragraph of text describing VirtualBox as a powerful x86 and AMD64/Intel64 virtualization product. To the left of the main content, there is a vertical navigation menu with links: 'About', 'Screenshots', 'Downloads', 'Documentation', 'End-user docs', 'Technical docs', 'Contribute', and 'Community'. At the bottom right of the main content area, there is a large blue button with white text that says 'Download VirtualBox 7.0'.

Prerequisites to install RHEL 9 VM & Downloading RHEL 9 ISO



The screenshot shows the Windows System Information window. The System Summary section is expanded, showing the following details:

Item	Value
OS Name	Microsoft Windows 10 Home
Version	10.0.18363 Build 18363
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	DESKTOP-CPOUUGM
System Manufacturer	Dell Inc.
System Model	Inspiron 7570
System Type	x64-based PC
System SKU	07EA

To download RHEL 9, Browse the URL and provide your Red hat Account Credentials.

<https://developers.redhat.com/products/rhel/download>

Depending on your CPU Architecture (Intel or ARM) , Download DVD ISO image file.

➤ Install RHEL 9 Virtual machine on Oracle VirtualBox using OS image file with disk space allocation as below :

Total Hard disk size	75 GiB
/	25 GiB
/home	8 GiB
/boot	512 MiB(Minimum Recommended)
RAM Memory	2+ GiB

Procedure :

- Open Oracle VirtualBox software and click on New on top.
- Set the Name of VM, ISO Image and tick option “Skip unattended installation” and then click Next..
- Select the RAM Memory(Base Memory) size of 2+ GiB and Number of processors. Then click Next..
- Set the Virtual Hard Disk Size to 75 GiB and Click Next and then finally Finish
- Power-on VM and follow the instructions for installation.

Importing IPA Server appliance

- Download [IPA Server.ova](#) file from Google drive link as mentioned below. You need to use your Gmail account credentials to download same or create new account.

https://drive.google.com/file/d/1dHv7vM55GvxPIF-b2-bDTGdNsHy0R6M/view?usp=drive_link

After having downloaded , Import the [IPA Server.ova](#) file in VirtualBox. You can do this by opening file(Or on Virtual Box menu bar, File → Import Appliance) and it will be automatically imported

- Wait for 3-5 minutes for import to complete and the start VM.
- Login to IPA Server using password as [password](#).

In next section, We will talk about different services hosted on IPA Server VM.