Linux Installation:

(CentOS vs. CentOS Stream, Take a snapshot of the VM)

hitbullseye

Table of Contents

- **CentOS (Community ENTerprise Operating System), usually known as CentOS Linux, is a free and open-source Linux distribution created by the community and based on RHEL. It's a free RHEL build that's popular for managing production workloads as well as desktop distribution.**
- **CentOS had a long and successful existence, garnering the admiration of thousands of Linux users until its untimely retirement on December 31, 2021. RedHat arbitrarily cancelled CentOS 8 in favor of CentOS Stream, the source and current development branch of RHEL, thereby ending support for the CentOS Project.**

Differences CentOS vs CentOS Stream

- CentOS Linux is a fork of Red Hat Enterprise Linux (RHEL) and so a descendant of RHEL. CentOS Stream, on the other hand, is a continuous delivery distribution and development branch of RHEL.
- CentOS Stream 9 is released ahead of RHEL 9's next minor release. Packages added to CentOS Stream are extensively vetted and reviewed to ensure that they match the RHEL inclusion criteria.

Differences CentOS vs CentOS Stream

- CentOS Linux is a point release, which implies that it makes small modifications to its next version, such as bug fixes and security updates. CentOS 8.3.2011, for example, is a rebuild of CentOS 8.3, which was published in 2020. CentOS Stream, on the other hand, is constantly being developed and is now the RHEL development branch.

Differences CentOS vs CentOS Stream

- CentOS Stream delivers the most recent software and system upgrades, which are evaluated before being moved to RHEL, because to its continuous development.
- Because CentOS Linux introduces fewer batches of updates with each consecutive release, you may have to wait a time to acquire the most recent modules or packages. In a nutshell, the frequency of CentOS Linux updates is minimal.

CentOS Linux's History

Let us now shift gears and look at the history of CentOS Linux, which was created in 2002 as a fork of CaOS Linux, an RPM-based Linux distribution led by Gregory Kurtzer.

- ***3.0 CentOS (2004):*** **CentOS 3.0 was the first public release of the CentOS operating system. It was published on March 19, 2004, and continued to be maintained until October 31, 2010.**
- ***4 CentOS (2005) :*** **CentOS 4.0, which succeeded CentOS 3, was launched on March 9, 2005. This was available till February 29, 2012.**

CentOS Linux's History

- ***5.0 CentOS (2007):*** **CentOS 5.0 was launched on April 12, 2007, marking the start of RHEL's 10-year support lifetime for CentOS. CentOS 4 was maintained for seven years, but CentOS 5 marked the beginning of a new era with a ten-year maintenance tenure. CentOS 5 was therefore maintained until March 31, 2017.**
- ***6th CentOS (2011):*** **CentOS 6 was launched on July 10, 2011 and will be supported until November 30, 2020.**

CentOS Linux's History

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Among the notable enhancements were:

- Version 2 of YUM was utilized.
- It supported Perl 5.10.1, PHP 5.3, and Python 2.6.6, to name a few.
- The X.Org 7.4 server was launched as the GNOME desktop's primary display manager.
- Multi-queue networking, wireless networking, IPv6, and the Netlabel kernel subsystem were all supported.

7.0 CentOS (2014):

- CentOS 7 was launched on July 7, 2014, beginning with CentOS 7.0-1406, with a third section in the version number marking the release month. Furthermore, CentOS began maintaining major and minor versions, both of which are based on RHEL. CentOS 7.0-1406, for example, is based on RHEL 7.

CentOS 7 was constructed using git.centos.org sources.
CentOS 7 included significant enhancements, including:

- Linux container support.
- Kernel version 3.10.0 was released.
- The default filesystem is XFS.
- Systemd took over the previous SysV init.
- The use of LVM snapshots with the ext4 and XFS filesystems.
- The default JDK is OpenJDK-7.
- 3D Graphics drivers and Open VMware Tools drivers are included.
- Upgrade from 6.5 to 7.0 in place.

8.0 CentOS (2019):

CentOS 8.0 was officially launched on September 24, 2019, with the following notable improvements:

- Linux kernel version 4.18.
- Enhancements to QEMU-KVM with the addition of sandboxing functionality.
- Along with build and Skopeo, Podman has supplanted Docker as the de-facto program for container deployment and management.
- DNF (Dandified Yum) has taken over as the default package manager from YUM.

8.0 CentOS (2019):

- The default desktop environment was GNOME 3.28, with Wayland as the display manager.
- Nftables took over as the principal framework for setting the system's firewall, replacing IPtables.
- Added support for a variety of architectures, including x86 64, IBM Power, IBM Z, and 64-bit ARM.
- Apache HTTP 2.4, Python 3.6, Ruby 2.5, Perl 5.26, MySQL 8.0, PostgreSQL 10, and Redis 6 are among the new software packages.
- CentOS 8.0 included Mercurial 4.8, Git 2.18, and Subversion 1.10 for developers.

The CentOS Stream

- CentOS Stream, as previously stated, is a constantly evolving distribution that is presently the upstream and developmental release for Red Hat Enterprise Linux. It is positioned as a bridge between Fedora Linux and RHEL, and it includes the most recent software packages. CentOS Stream was introduced to RHEL as a preview version. Simply described, it is a RHEL development rebuild that streamlines contributions to RHEL development. CentOS Stream is perfect for people that wish to experiment with RHEL on their machines for free.

The CentOS Stream

- CentOS Stream is not regarded as reliable enough for corporate support, hence it cannot replace CentOS Linux. Because it is constantly updated, there is a potential that an update can interfere with your production workloads, such as an updated library or a package that is unstable and not optimized for optimum performance.
- Rocky Linux and Alma Linux are suggested if you are switching from CentOS Linux and looking for a reliable and free edition of RHEL that can handle enterprise-grade workloads.

The CentOS Stream

- CentOS Stream 9 is the most recent release of CentOS Stream, and it was made available on December 3, 2021.
- CentOS Stream is a Linux development platform that enables Red Hat engineers to engage with members of the open-source community. Before releasing subsequent versions of Red Hat Enterprise Linux (RHEL), Red Hat develops the source code under CentOS Stream. As a result, it is regarded as a component of the open-source development approach. The introduction of this architecture makes CentOS Stream a preview of future Red Hat Enterprise Linux versions.

CentOS Stream is an important component in the development of Red Hat Enterprise Linux:

- ***Red Hat Enterprise Linux:*** **This is a fully supported production-ready enterprise operating system.**
- ***Fedora:*** **Fedora is the upstream project that serves as the basis for Red Hat Enterprise Linux (RHEL). Here are some outstanding operating system innovations.**

- ***CentOS Stream:*** **It gives an early look at future major and minor versions of Red Hat Enterprise Linux. CentOS Stream is positioned between RHEL and Fedora. It provides developers with a crystal-clear image of the forthcoming RHEL release. This enables developers to plan and create next-generation apps that will be compatible with future RHEL versions. Numerous Red Hat community members and ecosystem development partners contribute here before being incorporated into Red Hat Enterprise Linux.**

- It is similar to CentOS.
- It extracts new features before the RHEL distribution.
- It has the potential to have a large development community.
- This development platform is more nimble than the previous one.

CentOS Stream vs CentOS:

Inside CentOS Stream:

- **Red Hat's VP of Linux engineering, compared CentOS to a RHEL "nightly build"), making it essentially a developer-focused distro. This is much different from traditional CentOS Linux, which has traditionally been a downstream RHEL clone focusing on users who want a free version of RHEL.**

CentOS Stream vs CentOS:

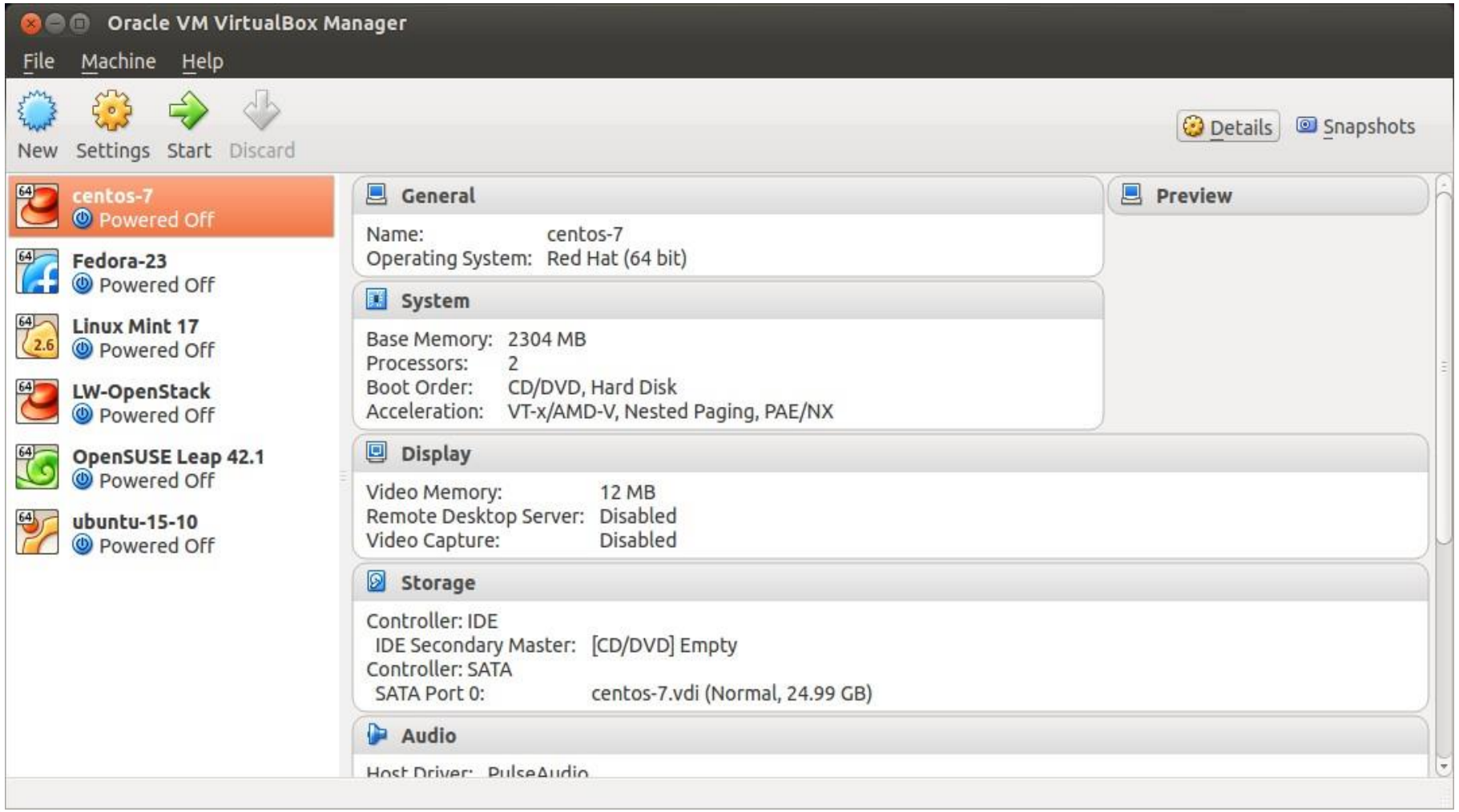
- ***What is a CentOS stream?***
- **CentOS Stream is a new Linux development platform from the CentOS Project designed to increase transparency and collaboration around the RHEL development process. Open to anyone, CentOS Stream provides early access to the development stream of the next release of RHEL.**
- ***Is CentOS and Linux same?***
- **Red Hat Enterprise Linux (RHEL) CentOS and Red Hat Enterprise Linux (RHEL)have the same functionality. The biggest difference is that CentOS Linux is a community-developed, free alternative to RHEL.**

Take a snapshot of the VM

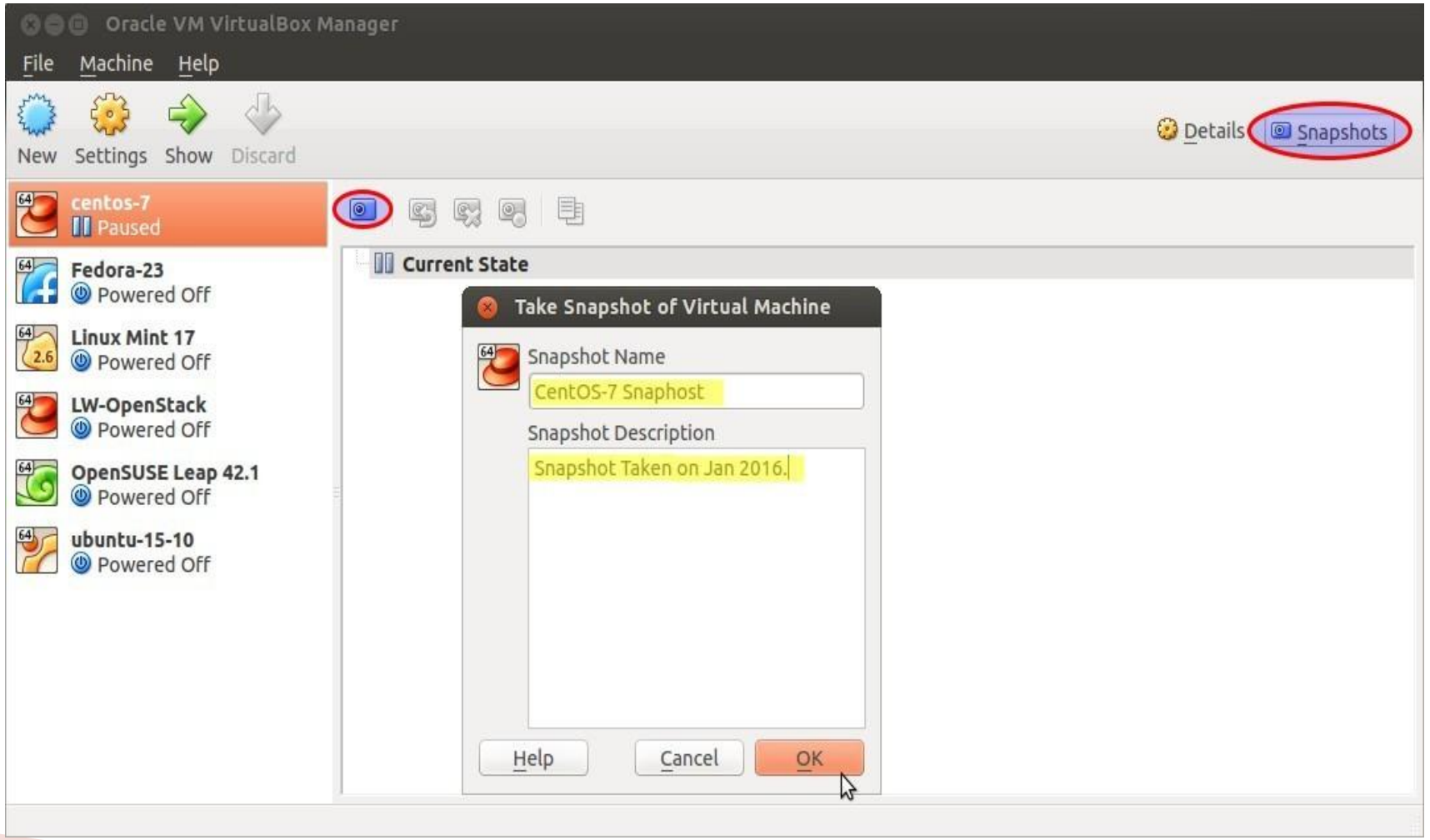
- VM Snapshot is a way to make a copy of a Virtual Machine (VM) at a certain point in time. Another way to say this is that VM snapshot is used to keep a VM in a certain state. In this lecture, we talk about how to create and restore VM snapshots in VirtualBox on Ubuntu Linux. I am assuming that VirtualBox is already installed on Ubuntu Linux and a couple of VMs are running on it.

Create VirtualBox VM Snapshot

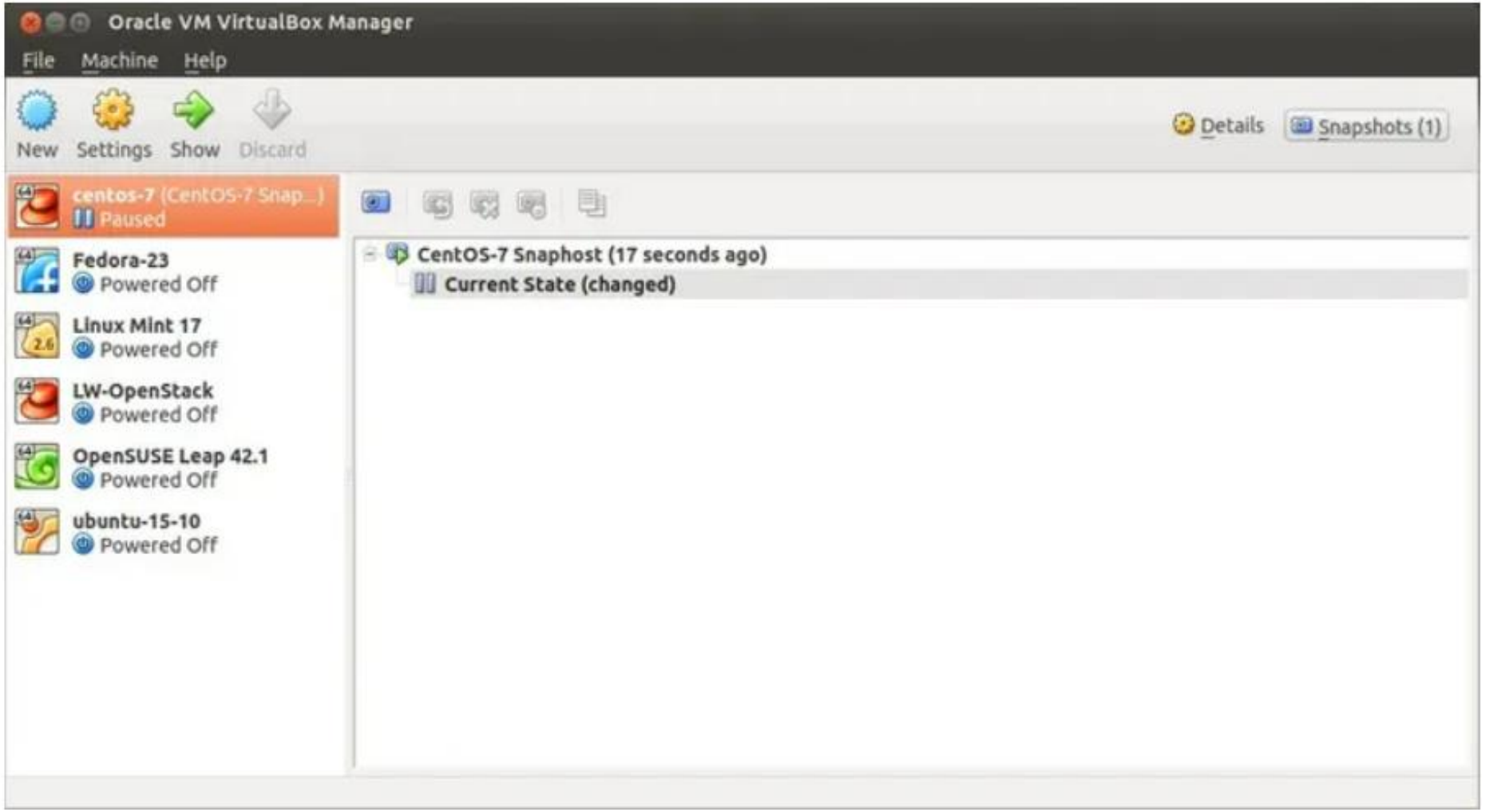
- **Step:1 Start the VirtualBox**



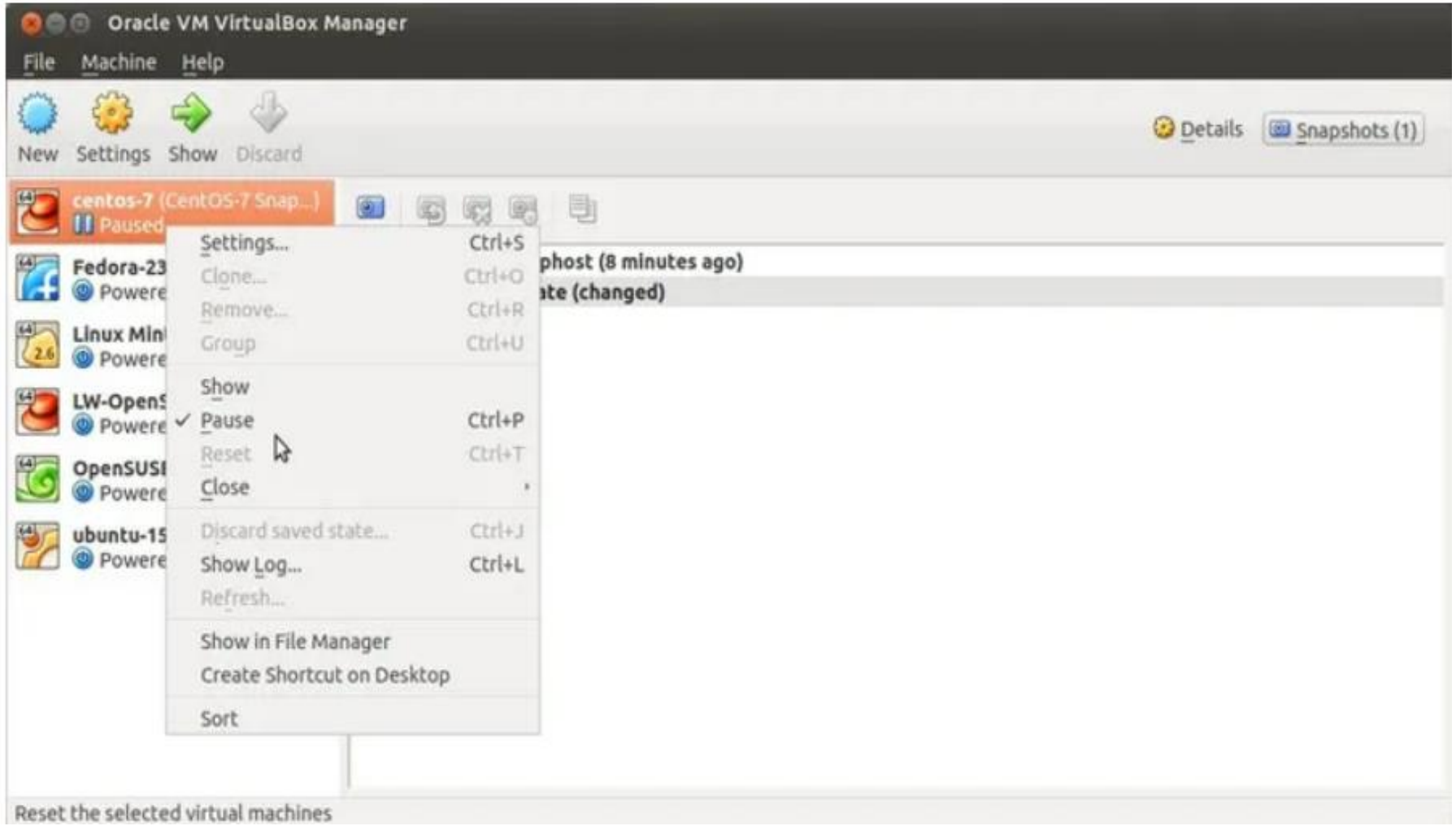
- **Step:2 Select the virtual machine for snapshot and then click on ‘Snapshots‘ option, in my case i am going to create a snapshot of CentOS 7 VM.**



- **specify the Snapshot Name and Description and then Click on ‘OK‘**

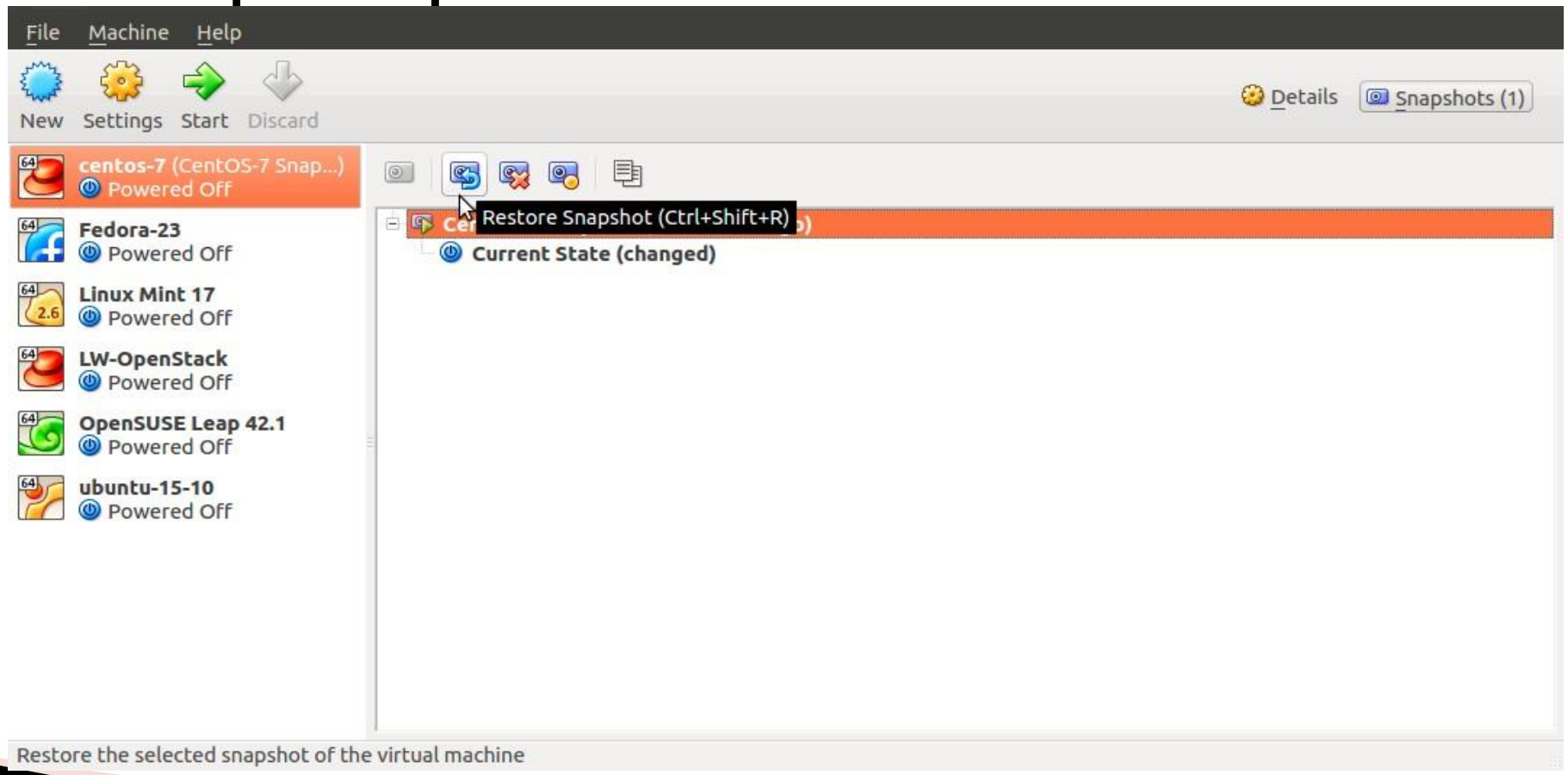


- **Note : When we try to take snapshot of running VM then Virtualbox manager will put that VM in Paused state , so once the snapshot task is completed then we can move the VM's state from Paused to Running.**

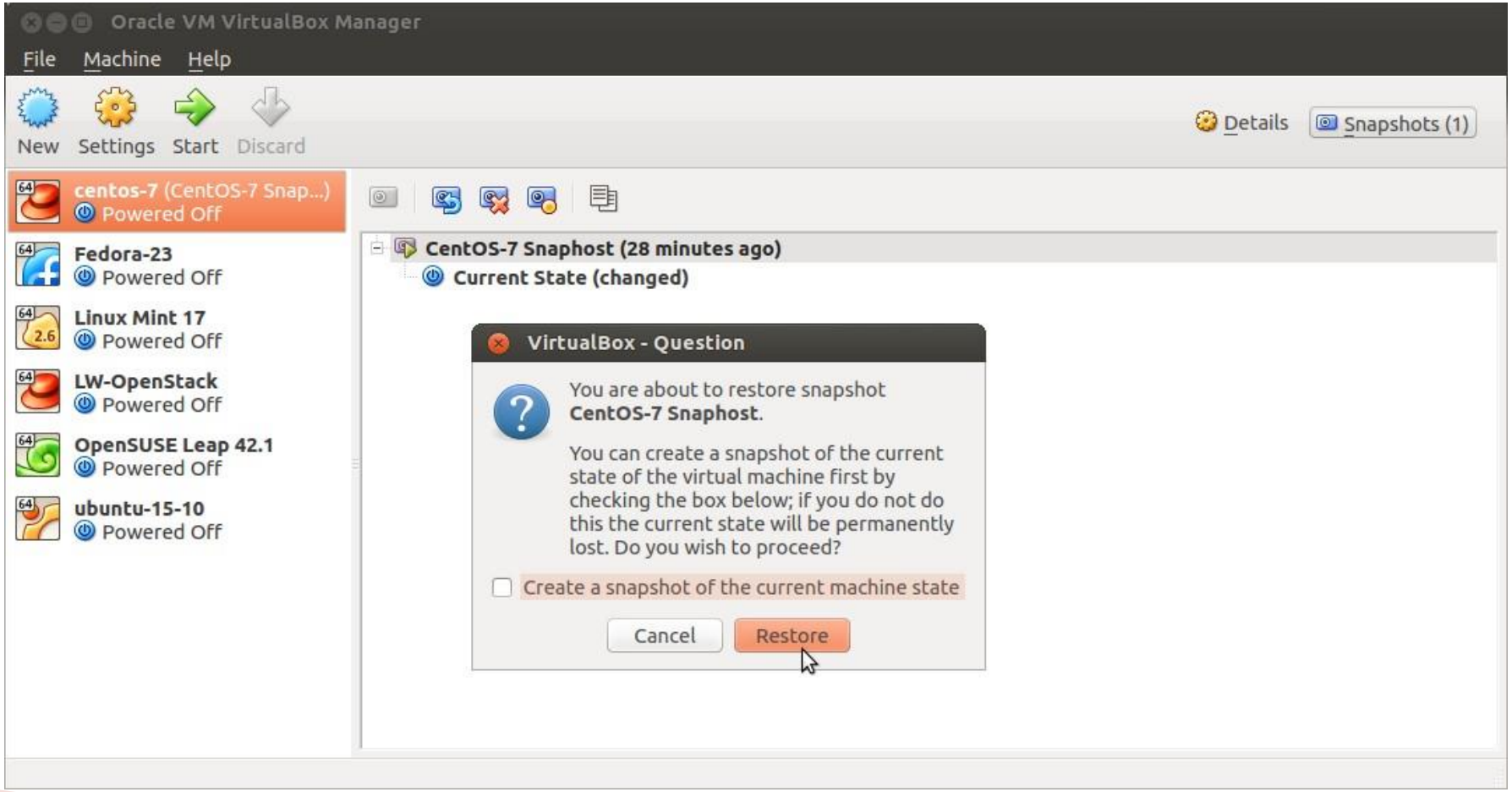


Restore VirtualBox VM from Snapshot

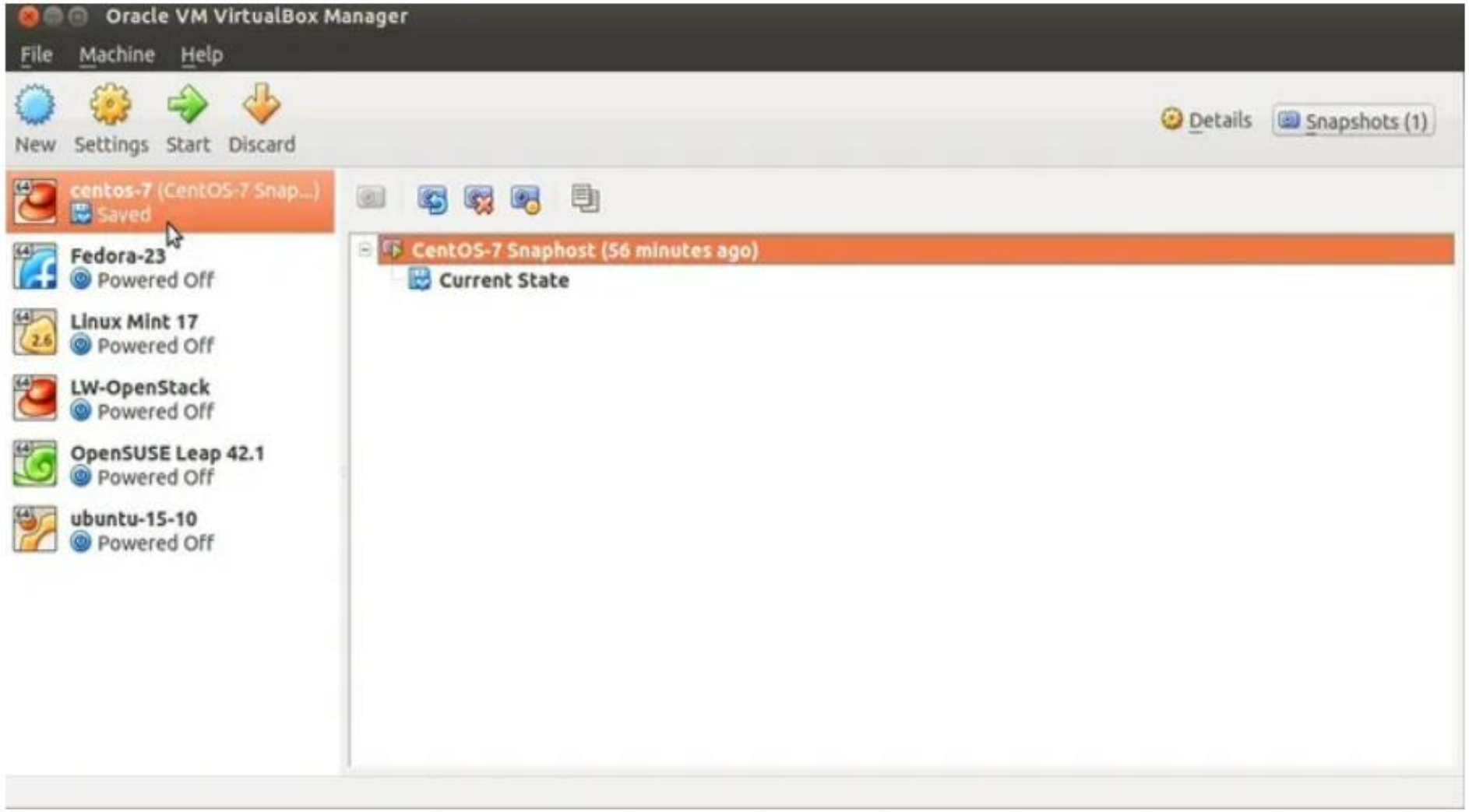
- **Step:1 Power off the Virtual Machine.**
- **Step:2 Select the VM and Go to ‘Snapshots‘ option and then click on “Restore Snapshot option”**



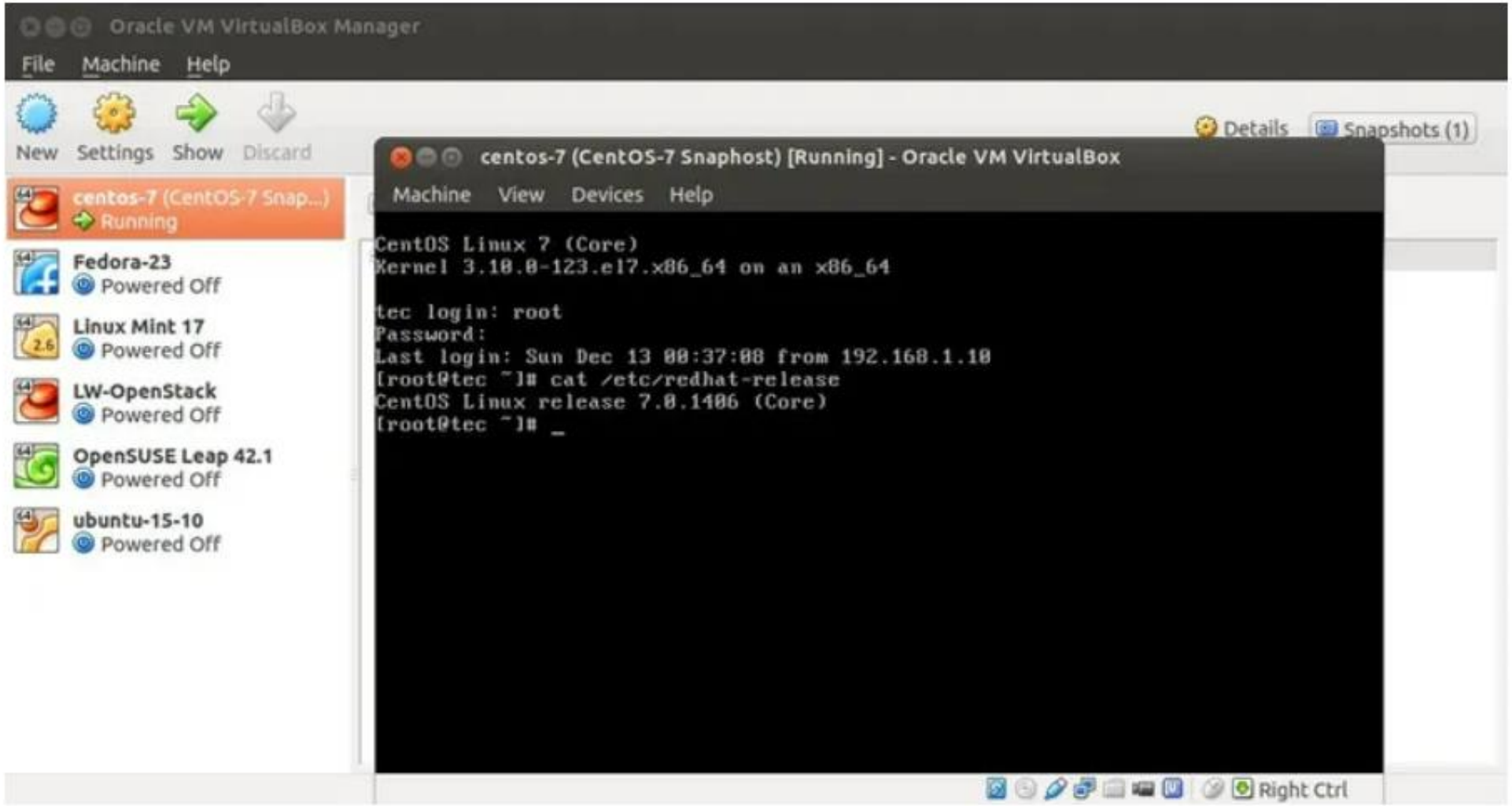
- **When we click on “Restore Snapshot” option , it will give us an option to create snapshot of current sate of the VM and if you don’t want the current state snapshot then untick the option (Current state will be deleted permanently).**



- **Click on “Restore” option to Restore the snapshot.**



Now Click on Start option to start the VM



THANK YOU

hitbullseye