MES'S WADIA COLLEGE OF ENGINEERING, PUNE - 01

SUBJECT: LABORATORY PRACTICE II (CLOUD COMPUTING) **NAME:**	
CLASS:	**ROLL NO.:**
SEMESTER: SEM-II	**YEAR:**
DATE OF PERFORMANCE:	**DATE OF SUBMISSION:**
EXAMINED:	

Assignment No-02

Title:- Installation and Configuration of virtualization using KVM.

Objective:-

To learn the concept of virtualization via KVM.

Outcome:

- Students will be able to understand concept of virtualization.
- Students will be able to understand KVM.

Prerequisite:-

Hardware Requirement:-

Desktop PC, Internet Connection

Software Requirement-

Ubuntu 18.04 or above.

Introduction:-

Theory:

KVM (for Kernel-based Virtual Machine) is a full virtualization solution for Linux on x86 hardware containing virtualization extensions (Intel VT or AMD-V). It consists of a loadable kernel module, kvm.ko that provides the core virtualization infrastructure and a processor specific module, kvm-intel.ko or kvm-amd.ko.

Using KVM, one can run multiple virtual machines running unmodified Linux or Windows images. Each virtual machine has private virtualized hardware: a network card, disk, graphics adapter, etc.

KVM is open source software. The kernel component of KVM is included in mainline Linux.

KVM converts Linux into a type-1 (bare-metal) hypervisor. All hypervisors need some operating system-level components—such as a memory manager, process scheduler, input/output (I/O) stack, device drivers, security manager, a network stack, and more—to run VMs. KVM has all these components because it's part of the Linux kernel. Every VM is implemented as a regular Linux process, scheduled by the standard Linux scheduler, with dedicated virtual hardware like a network card, graphics adapter, CPU(s), memory, and disks.

Steps:-

1. Check whether virtualization is enabled. To check the status run following command:

sudo dmesg | grep kvm

If there is no output, then virtualization is enabled otherwise the feature must be enabled in the bios.

2. Install the necessary packages

apt update

sudo apt install qemu-kvm libvirt-daemon-system virt-manager

3. Add current user to the libvirt group

sudo adduser $USER libvirt

4. Enable and start the libvirt service

sudo systemctl enable libvirtd.service --now

5. Log out of the desktop session and relogin.

6. Open the Virtual Machine Manager app from the application tray, an option titled "QEMU/KVM" should appear.

Conclusion:- Hence, we have successfully installed Kernel-based Virtual machine [KVM]. .

Questions:

1. Explain features of KVM.
2. Install the configure KVM on linux.