TYPE-2 HYPERVISOR INSTALLATION LAB MANUAL (DESKTOP VERSION)

Experiment Title

Installation and Configuration of a Type-2 Hypervisor Using Oracle VirtualBox and Ubuntu Desktop.

Objective

To install a hosted hypervisor on a computer, create a virtual machine, and successfully install a desktop operating system inside the virtual environment.

Learning Outcomes

- Understand hosted virtualization
- Install a Type-2 hypervisor
- Create and configure a virtual machine
- Allocate CPU, RAM, and storage
- Install a desktop operating system
- Verify successful virtualization

Pre-Lab Requirements

Hardware Requirements:

- Minimum 8 GB RAM (Recommended: 16 GB)
- At least 60 GB free disk space
- Processor with virtualization support

Software Requirements:

- Oracle VirtualBox (latest version)
- Ubuntu Desktop ISO (LTS version recommended)

Procedure

Step 1 – Download Oracle VirtualBox

Open a web browser → search “VirtualBox download” → open the official website → click Windows Hosts (or your OS version).

Expected Output: Installer file begins downloading.

Step 2 – Install VirtualBox

Double-click the downloaded file → Click Next → Next → Next → Yes → Install → Finish.

Expected Output: VirtualBox installs successfully and opens without errors.

Step 3 – Launch VirtualBox

Open VirtualBox from the desktop.

Expected Output: VirtualBox Manager dashboard appears with options like New, Settings, Import, and Start.

Step 4 – Create a New Virtual Machine

Click New → Name: Ubuntu-Desktop-Lab → Type: Linux → Version: Ubuntu (64-bit) → Next.

Set Memory to at least 4096 MB → Next.

Expected Output: Memory indicator remains green.

Step 5 – Create Virtual Hard Disk

Select “Create a virtual hard disk now” → Create → Choose VDI → Next → Dynamically Allocated → Next → Set disk to 50 GB → Create.

Expected Output: VM appears on left panel with status 'Powered Off'.

Step 6 – Configure Processor

Select VM → Settings → System → Processor → Assign minimum 2 CPUs → OK.

Expected Output: Processor bar remains green.

Step 7 – Attach Ubuntu Desktop ISO

Settings → Storage → Click Empty → Disk icon → Choose a disk file → Select Ubuntu ISO → OK.

Expected Output: ISO file name appears under storage controller.

Step 8 – Start the Virtual Machine

Select VM → Click Start.

Expected Output: Ubuntu welcome screen appears with 'Try Ubuntu' and 'Install Ubuntu'.

Step 9 – Install Ubuntu Desktop

Choose Install Ubuntu → Select Language → Continue → Keyboard default → Continue.

Select Normal Installation and Download updates → Continue.

Choose 'Erase disk and install Ubuntu' → Install Now → Continue.

Create username and password → Continue.

Expected Output: Installation begins and completes in about 10–20 minutes.

Step 10 – Restart the VM

Click Restart Now → Press Enter if prompted to remove installation media.

Expected Output: System reboots to graphical login screen.

Step 11 – First Login

Enter password → Press Enter.

Expected Output: Ubuntu Desktop loads completely with taskbar and applications.

Step 12 – Verify Successful Virtualization

Open Terminal (Ctrl + Alt + T) → Type 'lscpu' to view CPU details.

Type 'free -h' to verify RAM.

Open browser to confirm internet connectivity.

Expected Output: Hardware details and network function correctly.

Final Result

• Type-2 hypervisor installed

• Virtual machine created

• Ubuntu Desktop installed

• System boots correctly

• Internet functioning

• Resources allocated properly

Experiment Completed Successfully.

Common Errors and Quick Fixes

• VM is slow → Increase RAM or CPU cores.
• Only 32-bit versions visible → Enable virtualization in BIOS.
• VM not starting → Close other hypervisors.

Post-Lab Exercises

• Create another VM.
• Install a different operating system.
• Adjust RAM and observe performance.
• Take a VM snapshot.
• Clone a virtual machine.