

Experiment 1

Title: Install WSL, VirtualBox, and Create Virtual Machine with Linux OS (Ubuntu/LinuxMint/Debian)

Aim

To install and enable Windows Subsystem for Linux (WSL) on Windows and set up a Linux environment (Ubuntu/LinuxMint/Debian) using VirtualBox for learning and practicing Linux commands.

Requirements

1. **Hardware/Software Requirements:**
 - A Windows 10/11 system with internet connection
 - Virtualization enabled in BIOS
 - Windows Subsystem for Linux (WSL) feature
 - VirtualBox software
 - Linux ISO file (Ubuntu/LinuxMint/Debian)
 2. **Knowledge Requirements:**
 - Basic knowledge of operating systems
 - Understanding of virtualization concepts
 - Familiarity with Linux commands (basic)
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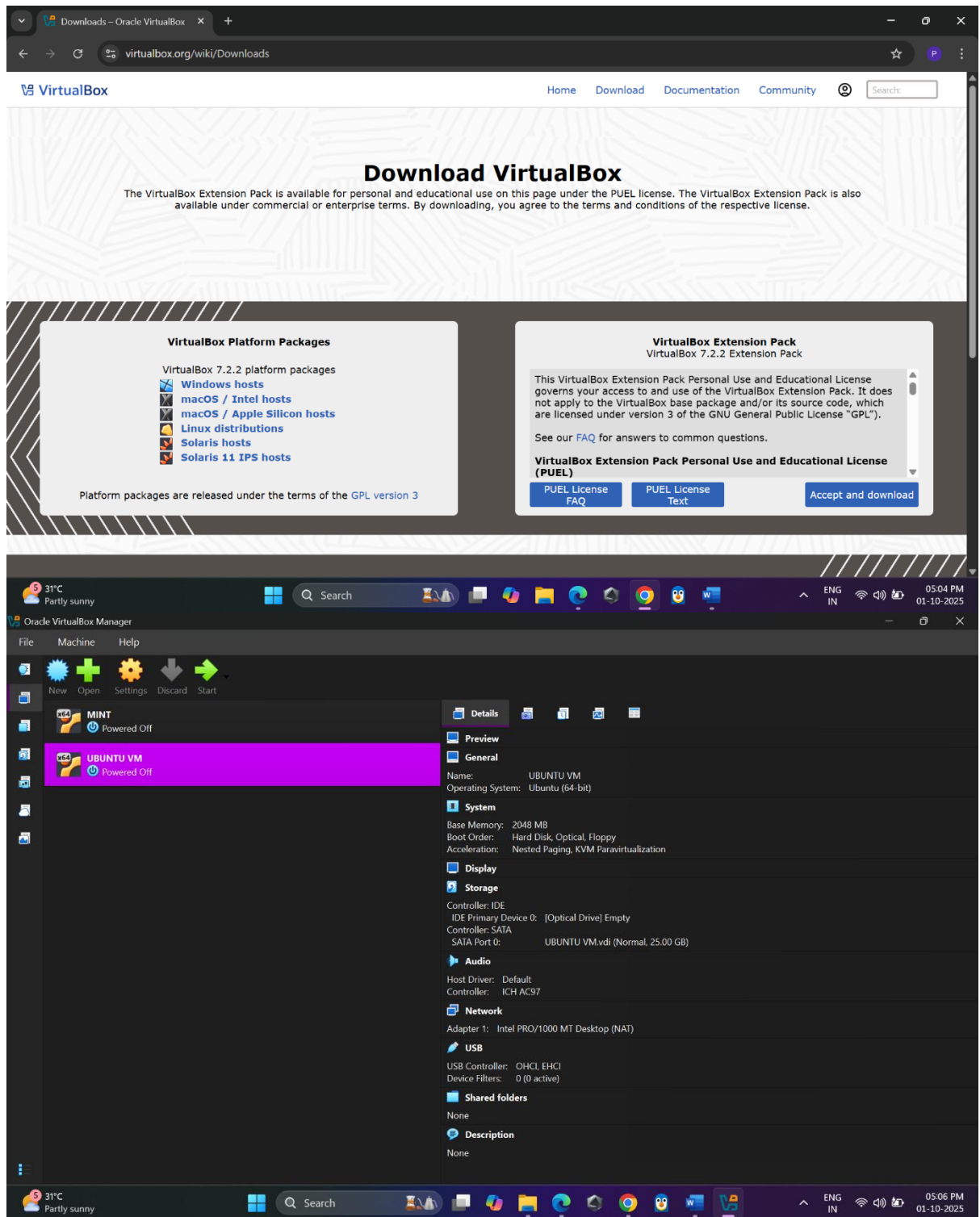
Procedure / Steps

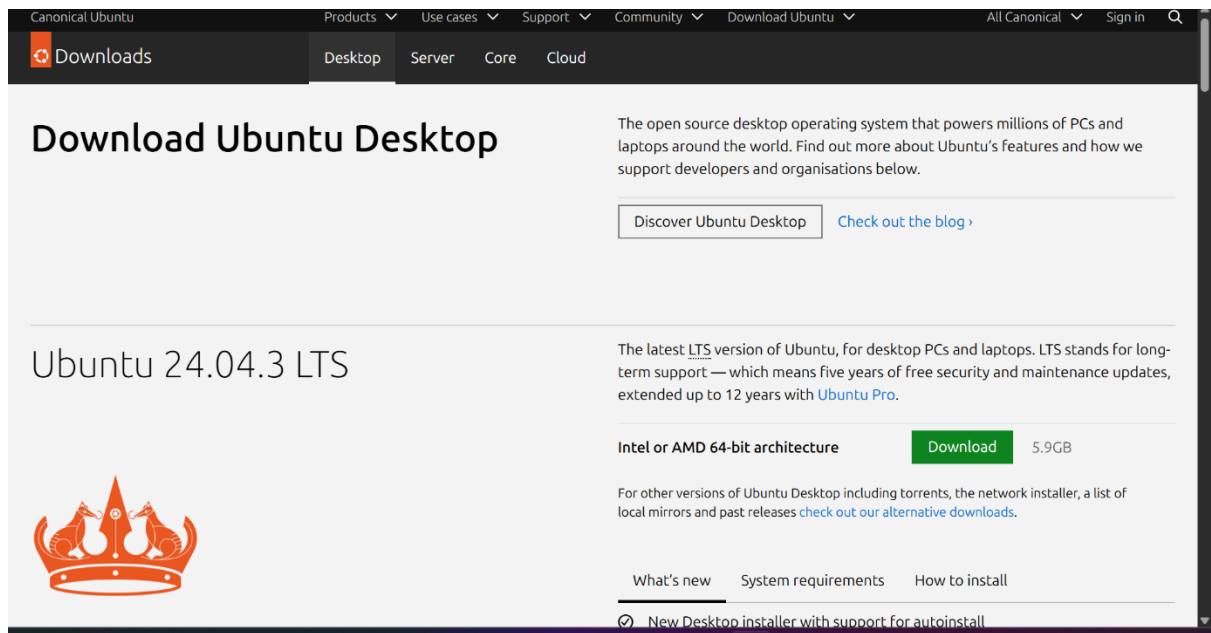
Part 1: Installing and Enabling WSL (Ubuntu) on Windows

1. Open **PowerShell** as Administrator.
2. Run the command:
3. `wsl --install`
4. Restart the system after installation.
5. Open the installed **Ubuntu** application from Start Menu.
6. Set up username and password for Ubuntu.

Part 2: Installing VirtualBox and Creating a Virtual Machine

1. Download and install **VirtualBox** from official website.
2. Download a Linux ISO file (Ubuntu/LinuxMint/Debian).
3. Open VirtualBox → Click on **New** → Enter name (e.g., Ubuntu VM).
4. Assign memory (RAM) and create virtual hard disk.
5. Select the downloaded Linux ISO as boot medium.
6. Start the Virtual Machine and follow installation steps for Linux OS





Observations

- WSL allowed direct access to Ubuntu shell on Windows without using a virtual machine.
- VirtualBox successfully created a virtual environment with Linux OS.
- Both WSL and VirtualBox provided Linux functionality but with different approaches:
 - WSL → Lightweight, runs directly on Windows kernel.
 - VirtualBox → Full virtual environment with its own hardware resources.

Conclusion

The experiment was successfully performed.

- WSL was installed and enabled, providing direct access to Ubuntu on Windows.
- VirtualBox was installed and configured with Linux OS.
- The difference between WSL (subsystem) and VirtualBox (virtualization software) was understood.
- The setup helps in practicing Linux commands and learning system administration in a Windows environment.