Selected files

1 printable files

LAB 0.md

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Mac Setup Guide: VS Code, VirtualBox & Ubuntu

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1. Installation Method

Chosen method Option A: Virtual Machine

2. Installation Process

1️⃣ Install VS Code

1. Open your browser and go to:
   https://code.visualstudio.com/
2. Download for **Mac (Apple Silicon)** version.
3. Extract the `.zip` → Move **Visual Studio Code.app** to `Applications`.
4. Open from **Launchpad** or `Applications`.
5. If blocked, allow in:

   System Settings → Privacy & Security → Allow App. 

2️⃣ Install VirtualBox (ARM64)

1. Go to:
   https://www.virtualbox.org/wiki/Downloads
2. Download **OS X hosts (ARM64)** version.
3. Open `.dmg` → Drag **VirtualBox.app** to `Applications`.
4. If blocked, allow in:
   System Settings → Privacy & Security → Allow App.

3️⃣ Download Ubuntu (ARM64)

1. Go to:
   https://ubuntu.com/download/desktop
2. Scroll to **Other versions → ARM**.
3. Download **Ubuntu 22.04 LTS ARM64**.
4. File will be a `.iso`.

4️⃣ Create Ubuntu VM in VirtualBox

1. Open **VirtualBox** → Click **New**.
   - **Name**: Ubuntu
   - **Type**: Linux
   - **Version**: Ubuntu (64-bit)
2. Allocate resources:
   - **Memory**: 4096 MB (4 GB)
   - **CPUs**: 2
   - **Storage**: 25 GB+
3. Attach ISO:
   - Go to **Settings → Storage → Empty disk → Choose Ubuntu `.iso`**.
4. Start VM and follow Ubuntu installation instructions.

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3. Terminal Outputs

1️⃣ lsb_release -a

The command lsb_release -a displays information about the Linux distribution you are running.

lsb_release = Linux Standard Base release.

-a option = shows all available details.

It typically outputs:

- Distributor ID (e.g., Ubuntu, Debian)
- Description (full name of the OS + version)

- Release (version number, e.g., 22.04)
- Codename (e.g., jammy, focal)

Sample Output:

2 uname -a

The command uname -a prints detailed system information about the Linux kernel and machine.

uname = Unix Name

-a option = shows all available details.

It typically outputs:

- Kernel name (e.g., Linux)
- Hostname of the machine
- Kernel release (version number)
- Kernel version (build details)
- Machine hardware name (e.g., x86_64)
- Processor type
- Hardware platform
- Operating system

Sample Output:

3 df -h

The command df -h displays the disk space usage of all mounted file systems.

df = disk free

-h option = human-readable format (sizes shown in KB, MB, GB instead of raw blocks).

It typically shows:

- Filesystem name (e.g., /dev/sda1)
- Size of the partition
- Used space
- Available space
- Percentage of usage
- Mount point (where the filesystem is attached, e.g., / or /home)

Sample Output:

4️⃣ free -m

The command free -m displays the system's memory (RAM and swap) usage in megabytes.

free = shows memory usage summary.

-m option = presents values in MB (megabytes).

It typically shows:

- *total*: total installed RAM
- *used*: RAM currently in use
- *free*: unused RAM
- *shared*: memory used by tmpfs/shmem
- *buff/cache*: memory used for disk caching
- *available*: RAM available for starting new applications
- *swap*: usage of swap space (virtual memory)

Sample Output:

4. Reflection

During installation, the main challenges I faced were:

- Setting up VirtualBox guest additions.
- Configuring correct RAM and disk size.
- Enabling virtualization in BIOS.

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5. Extra Questions

Q1. What are two advantages of installing Ubuntu in VirtualBox?

- Can run Ubuntu without affecting existing OS.
- Easy to take snapshots and revert to earlier states.

Q2. What are two advantages of dual booting instead of using a VM?

- Better performance (uses hardware directly).
- Access to full system resources (RAM, GPU, disk).b