

# Lab 1 - First Linux VM

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## POC Lab #1: Your First Linux VM & Basic Commands

### 1. Lab Title

Launch & Connect to Your First Linux VM

### 2. Objective

| Spin up or connect to a Linux VM, practice basic shell commands.

### 3. Prerequisites

- Computer with internet access
- (Optional) AWS account if using cloud VM

### 4. Environment Setup

- **Windows 11**

1. Enable WSL:

```
dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart  
wsl --install -d Ubuntu
```

2. Launch Ubuntu from Start menu.

3. For detailed installation steps, see Microsoft's WSL install guide:

<https://learn.microsoft.com/en-us/windows/wsl/install>

- **macOS (Intel)**

- Install **VirtualBox** ( `brew install --cask virtualbox` )
- Download a Linux ISO (e.g. Ubuntu Desktop) and create a VM.

- **macOS (M1/M2)**

- Install **Parallels Desktop** and import a Linux ARM image; or
- Use AWS Free Tier (see below).

- **AWS Free Tier (All platforms)**

1. Sign up: <https://aws.amazon.com/free/>
2. Launch an EC2 t2.micro instance (Ubuntu).
3. **Cost oversight:** Tag instance, set billing alerts in AWS Billing Dashboard.

- **Tablets**

- Use AWS CloudShell or other web-based lab (e.g. A Cloud Guru Sandbox).

## 5. Tasks

1. **Connect** to your VM (WSL is local; for AWS/VirtualBox use SSH):

```
ssh -i path/to/key.pem ubuntu@<your-public-ip>
```

2. **Explore** with these commands:

```
ls
alias ls='ls -ltraphi'
ls
ifconfig      # or: ip addr
whoami
```

3. **Play:** try the additional commands below.

## 6. Command Reference

| Command     | Purpose                                            | Example                |
|-------------|----------------------------------------------------|------------------------|
| pwd         | Print working directory                            | pwd                    |
| cd          | Change directory                                   | cd /var/log            |
| mkdir       | Make new directory                                 | mkdir lab1             |
| rmdir       | Remove empty directory                             | rmdir lab1             |
| touch       | Create an empty file                               | touch notes.txt        |
| cp          | Copy files or directories                          | cp file1.txt file2.txt |
| mv          | Move or rename                                     | mv old.txt new.txt     |
| rm          | Remove files (add <code>-r</code> for directories) | rm file.txt            |
| cat         | Concatenate & display file contents                | cat /etc/os-release    |
| grep        | Search text in files                               | grep "error" syslog    |
| head / tail | View start/end of a file                           | head -n5 syslog        |
| man         | Show manual page                                   | man ls                 |

| Command    | Purpose                             | Example                         |
|------------|-------------------------------------|---------------------------------|
| chmod      | Change file permissions             | chmod +x script.sh              |
| chown      | Change file owner/group             | sudo chown ubuntu:ubuntu ./file |
| df         | Report disk space usage             | df -h                           |
| du         | Estimate file/directory space usage | du -sh *                        |
| ps         | List running processes              | ps aux                          |
| top / htop | Monitor processes interactively     | top                             |
| history    | Show command history                | `history`                       |
| clear      | Clear the terminal screen           | clear                           |
| exit       | Log out of shell or close session   | exit                            |

## 7. Submission Requirements

- Screenshot or terminal log showing you ran at least **10 distinct commands** from the table above.
- Short write-up (1-2 sentences) on what each command did.

## 8. Further Reading / Resources

- [The Linux Command Line \(free PDF\)](#)
- [AWS EC2 Documentation](#)
- WSL docs: <https://docs.microsoft.com/windows/wsl>