

# Assignment 3 – Linux Practical Work

**Course:** Operating Systems

**Student:** Bek Madias

**Date:** 9/28/2025

## 1. Purpose of the Work

The purpose of this practical assignment is to:

- Interact with the Linux terminal
- Practice archiving and compression, text commands, and navigation
- Install and update packages
- Create and edit files using **nano** and **vim**
- Create and run a small Python program
- Practice searching, counting, and redirecting outputs
- Gain confidence in using the Linux command line step by step
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## 2. Preparation

As part of the preparation, I worked inside the **NDG Linux Essentials course** and completed **Chapter 9** and **Chapter 10** with their corresponding labs and exams. Here's what I practiced and learned:

### Lab 9 – Archiving and Compression

In this lab, I explored how to:

- Use the **tar** command to create and extract archives.
  - Example:
    - `tar -cvf archive.tar file1 file2`
    - `tar -xvf archive.tar`
- Apply different compression methods like **gzip** and **bzip2**.
  - Example:
    - `gzip file1.txt`
    - `gunzip file1.txt.gz`
- Combine archiving and compression in one step.
  - Example:
    - `tar -czvf archive.tar.gz myfolder/`
    - `tar -xzvf archive.tar.gz`
- Check archive contents without extracting (**tar -tvf**).

## Lab 10 – Working with Text

In this lab, I practiced working with text files using different commands:

- Viewing file contents with cat, more, and less.
- Searching for words inside files using grep.
  - Example:
    - grep "Linux" myfile.txt
- Sorting text with sort and removing duplicates with uniq.
- Redirecting outputs (>, >>) and using pipes (|) to combine commands.

## Exams and Quizzes

- Completed **Exam 9, Midterm Exam, and Exam 10** successfully.
- Screenshots of my **grades, attempt numbers** are attached as proof.

Link to: [Practical Linux Tasks 21 page](#)

The screenshot shows a web browser window with the following details:

- Address Bar:** https://www.netacad.com/launch?id=fb477d77-7adb-4d85-8db3-72f500f60315&tab=learning&assignment=2dd04d3-da20-4fcf-8255-fca17ca7b6ec&activeTab=assignment...
- Header:** Operating Systems | Tolegen Dan... | Cisco Networking Academy: Linu... | +
- System Status:** FPS N/A | GPU 0% | CPU 48% | LAT 1ms

The main content area displays the following information:

- Left Sidebar:**
  - POINTS:** 10
  - ATTEMPTS:** 1 / Unlimited
  - INSTRUCTIONS:** Chapter 10 Exam
- Category:** Cisco Networking Academy | NDG | Linux Essentials
- Section Title:** Chapter 10 Exam
- Previous Attempts:** 1 attempts with unlimited remaining
- Recent Attempt Details:** Sept. 28, 2025, 9:23 p.m. | 100% | 10 / 10 | View
- Text:** You have taken this assessment 1 times. You have an **unlimited** number of attempts remaining. Click the Begin button to get started. Make sure you complete all questions and submit your answers when you are done.
- Buttons:** Chapter 10 Exam (highlighted with a green box) and Begin Assessment

A screenshot of a Cisco Networking Academy Linux course page. The top navigation bar shows tabs for "Operating Systems | Tolegen Dan" and "Cisco Networking Academy: Linux". The main content area displays a "Midterm Exam (Modules 2-9)" section. On the left, there's a sidebar with "POINTS 40" and "ATTEMPTS 1 / Unlimited". The main content area shows "1 attempts with unlimited remaining" from "Sept. 28, 2025, 9:37 p.m." with a score of "95% 38 / 40" and a "View" link. Below this, instructions say "You have taken this assessment 1 times. You have an unlimited number of attempts remaining. Click the Begin button to get started. Make sure you complete all questions and submit your answers when you are done." A large green button labeled "Begin Assessment" is prominently displayed.

Operating Systems | Tolegen Dan... x Cisco Networking Academy: Linux x +

FPS N/A | GPU 0% | CPU 33% LAT N/A

https://www.netacad.com/launch?id=fb477d77-7adb-4d85-8db3-72f500f60315&tab=learning&assignment=4cef4376-2adf-4ca0-bfd1-37ec2d86d5aa&activeTab=assignmen...

Networking Academy CISCO NDG Linux Essentials

POINTS 10 CATEGORY Linux Essentials

ATTEMPTS 1 / Unlimited

INSTRUCTIONS Chapter 09 Exam

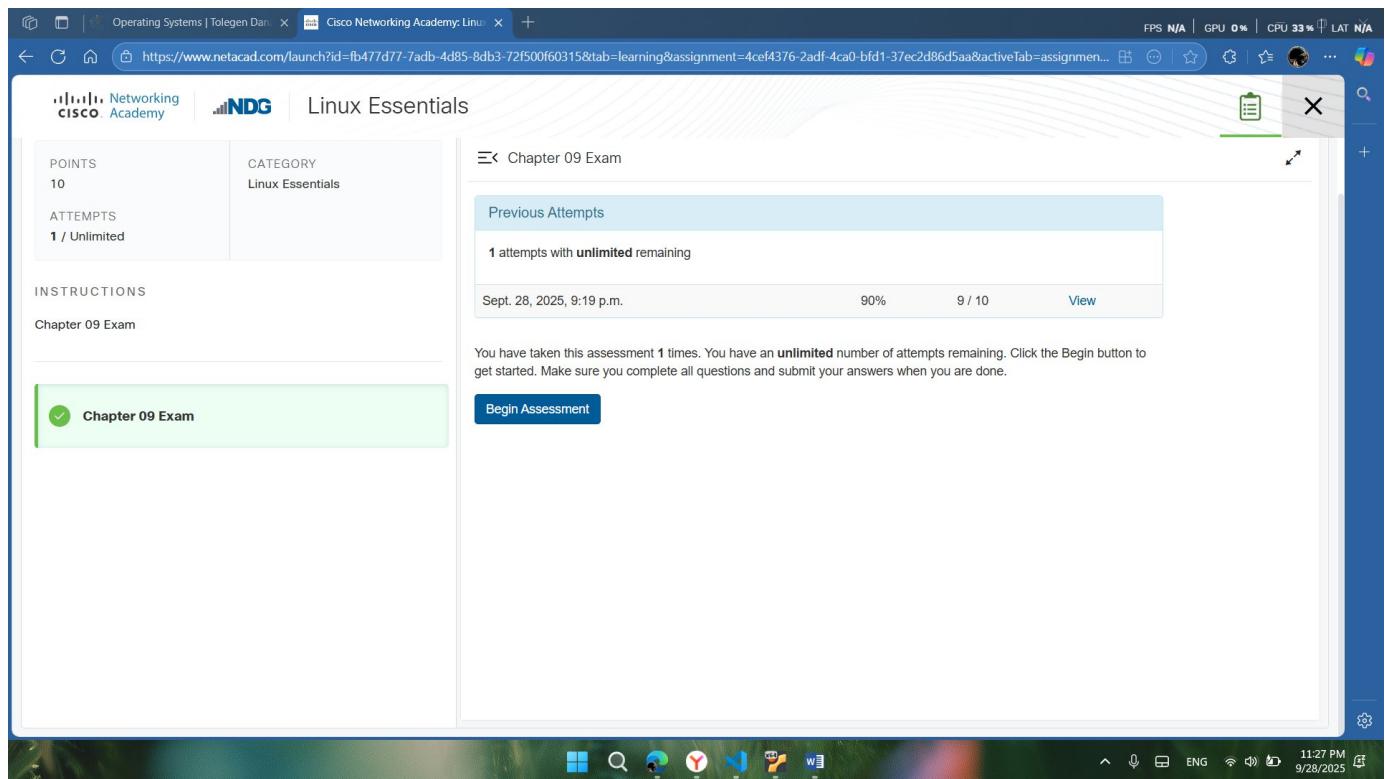
Chapter 09 Exam

Previous Attempts  
1 attempts with unlimited remaining

Sept. 28, 2025, 9:19 p.m. 90% 9 / 10 View

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Begin Assessment

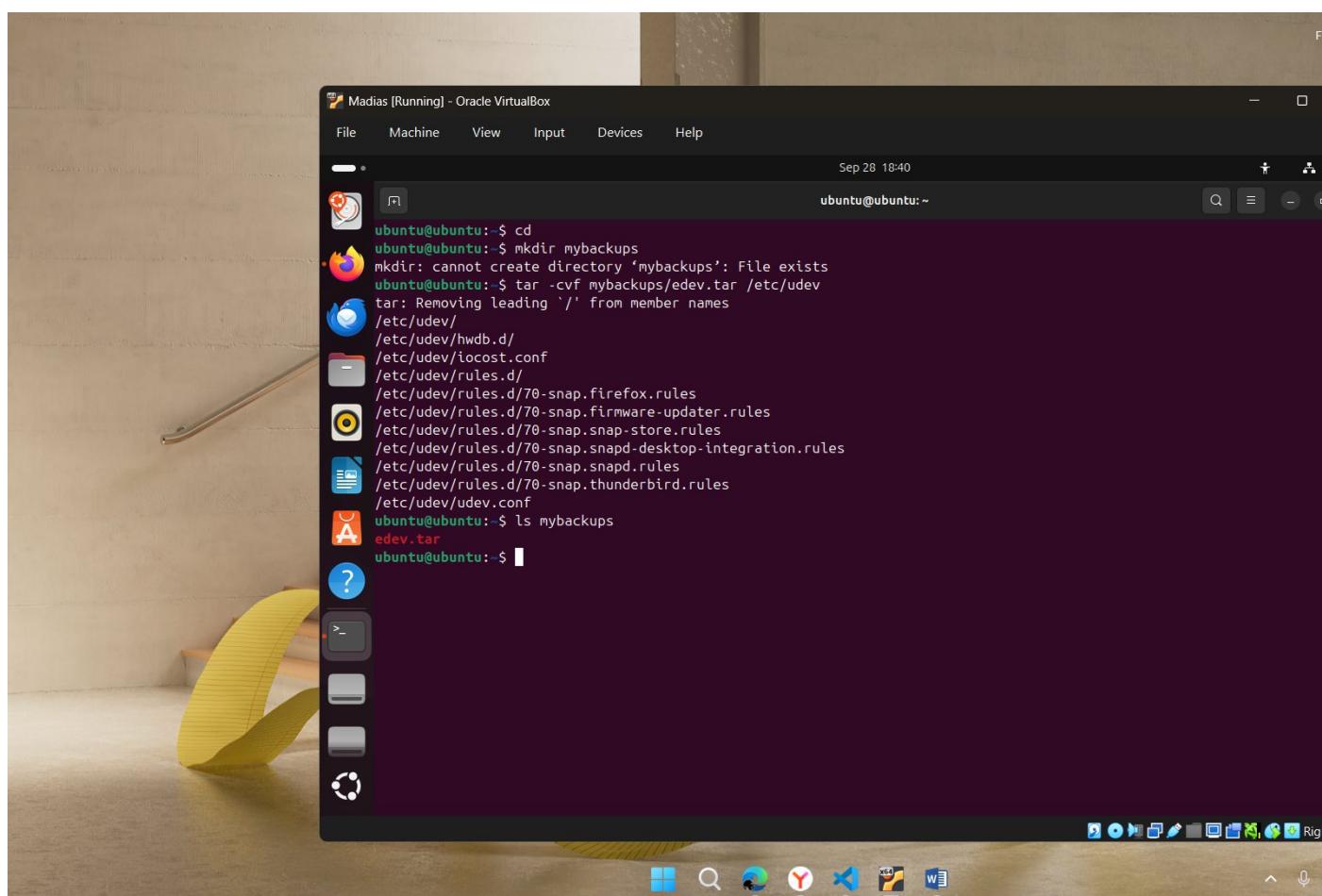


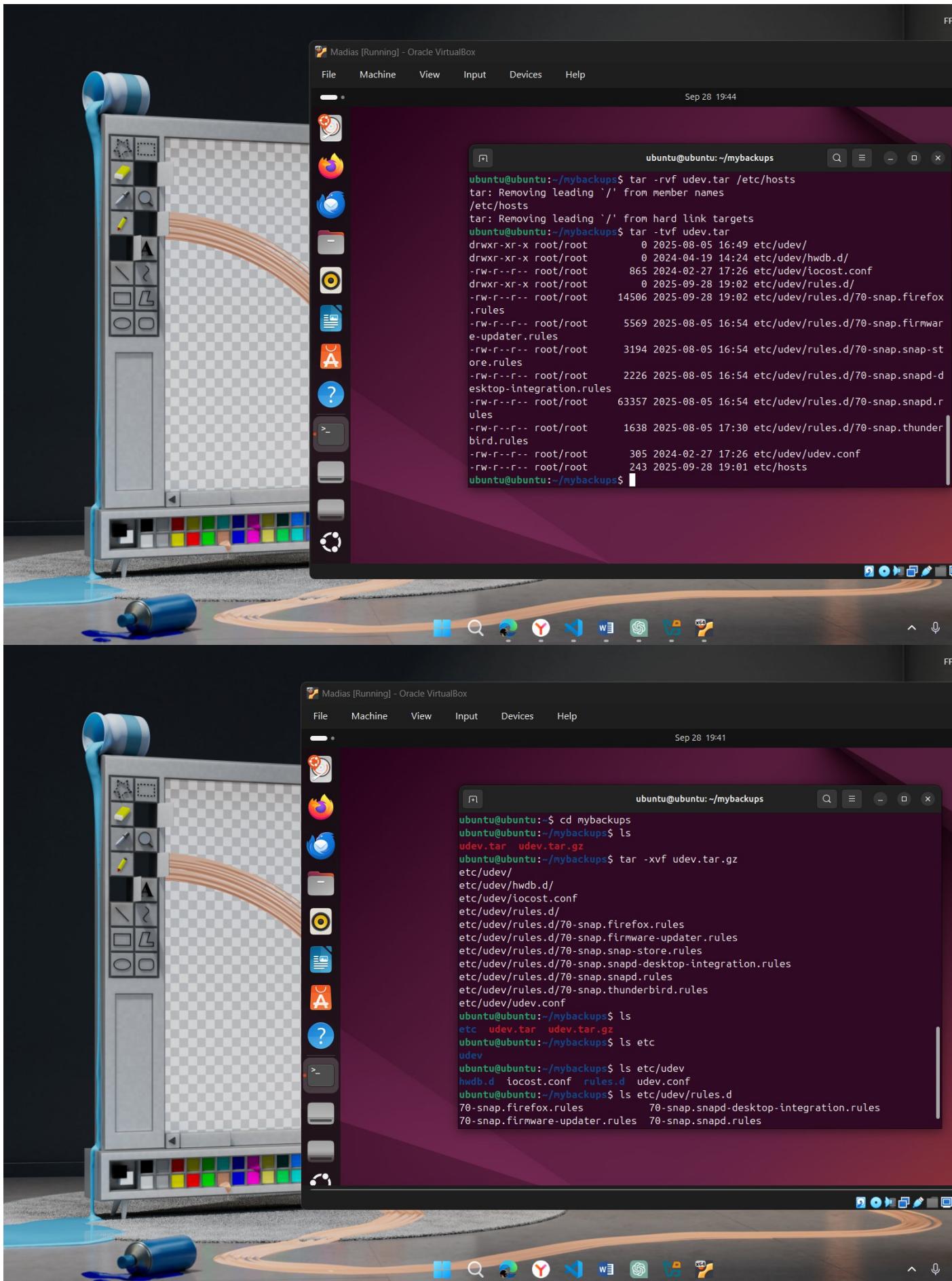
Madias [Running] - Oracle VirtualBox

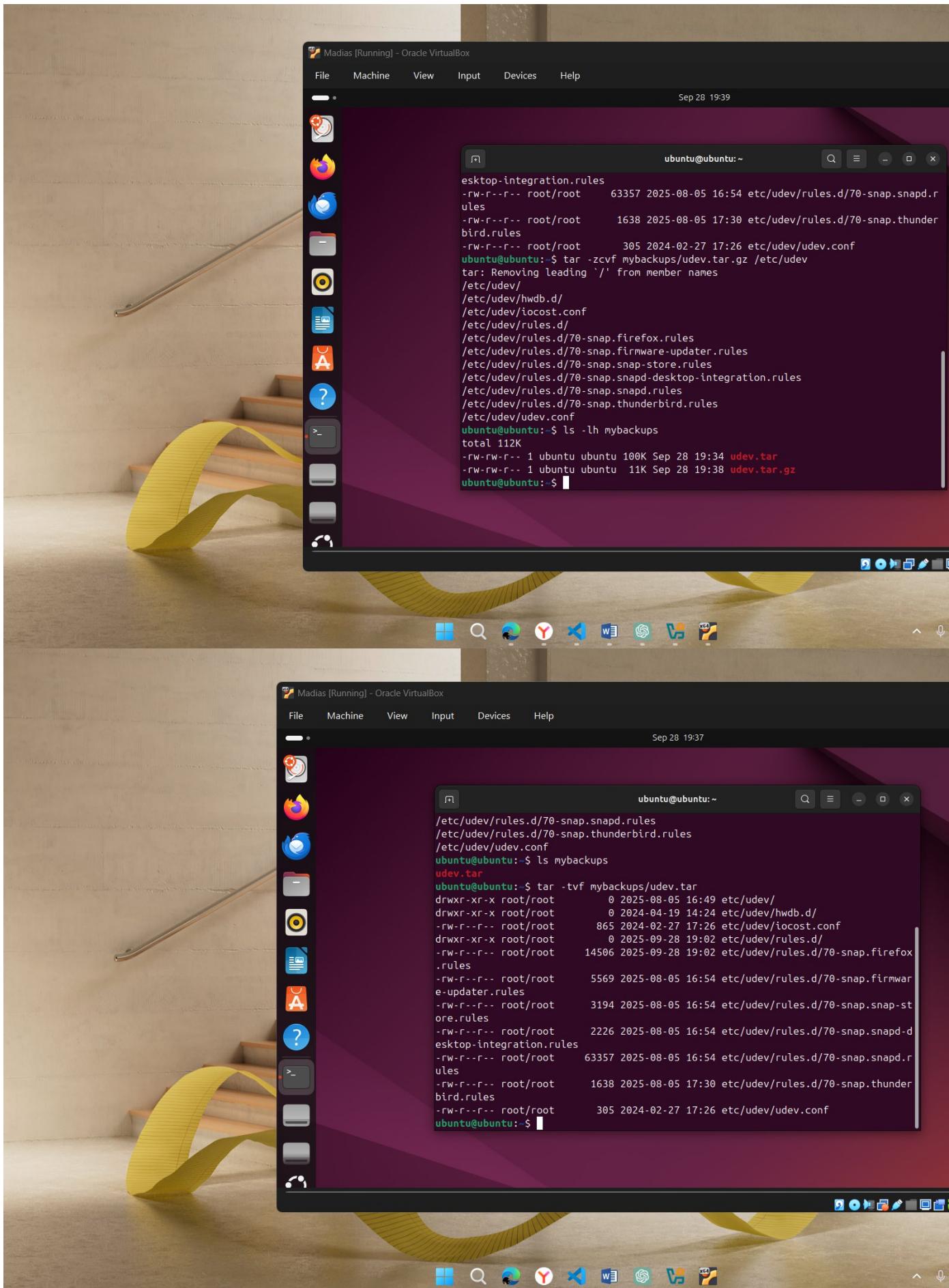
File Machine View Input Devices Help

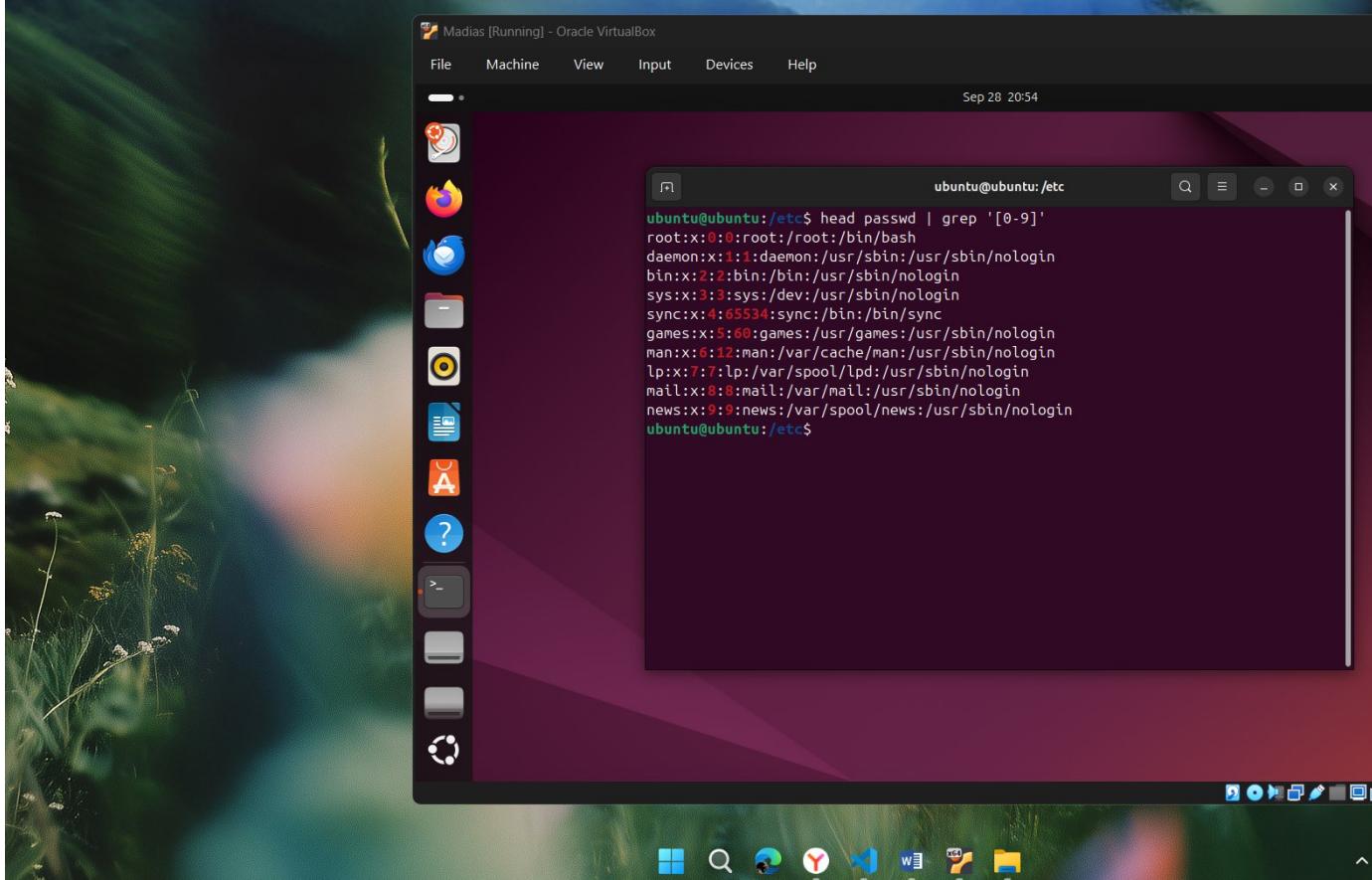
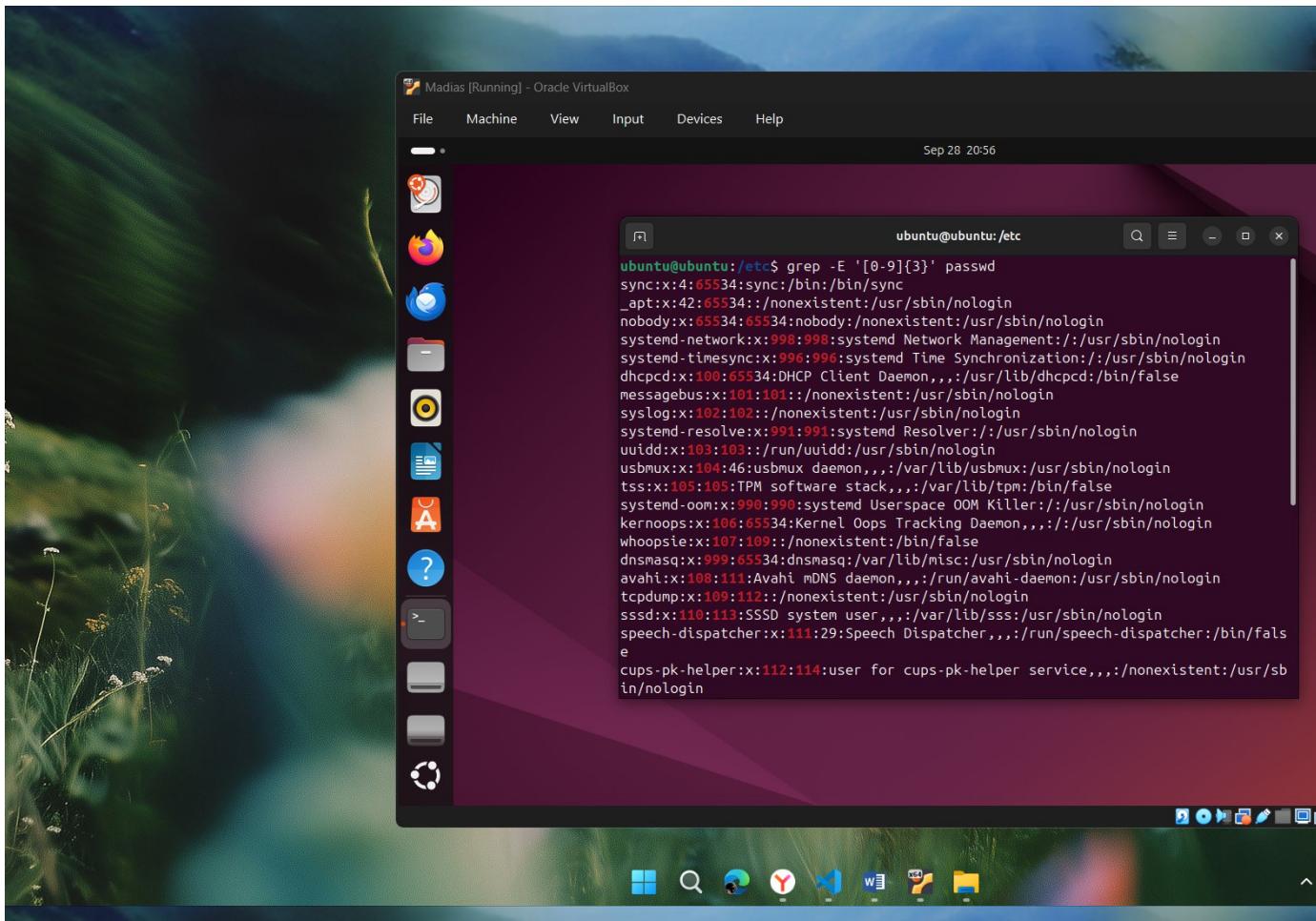
Sep 28 18:40 ubuntu@ubuntu:~

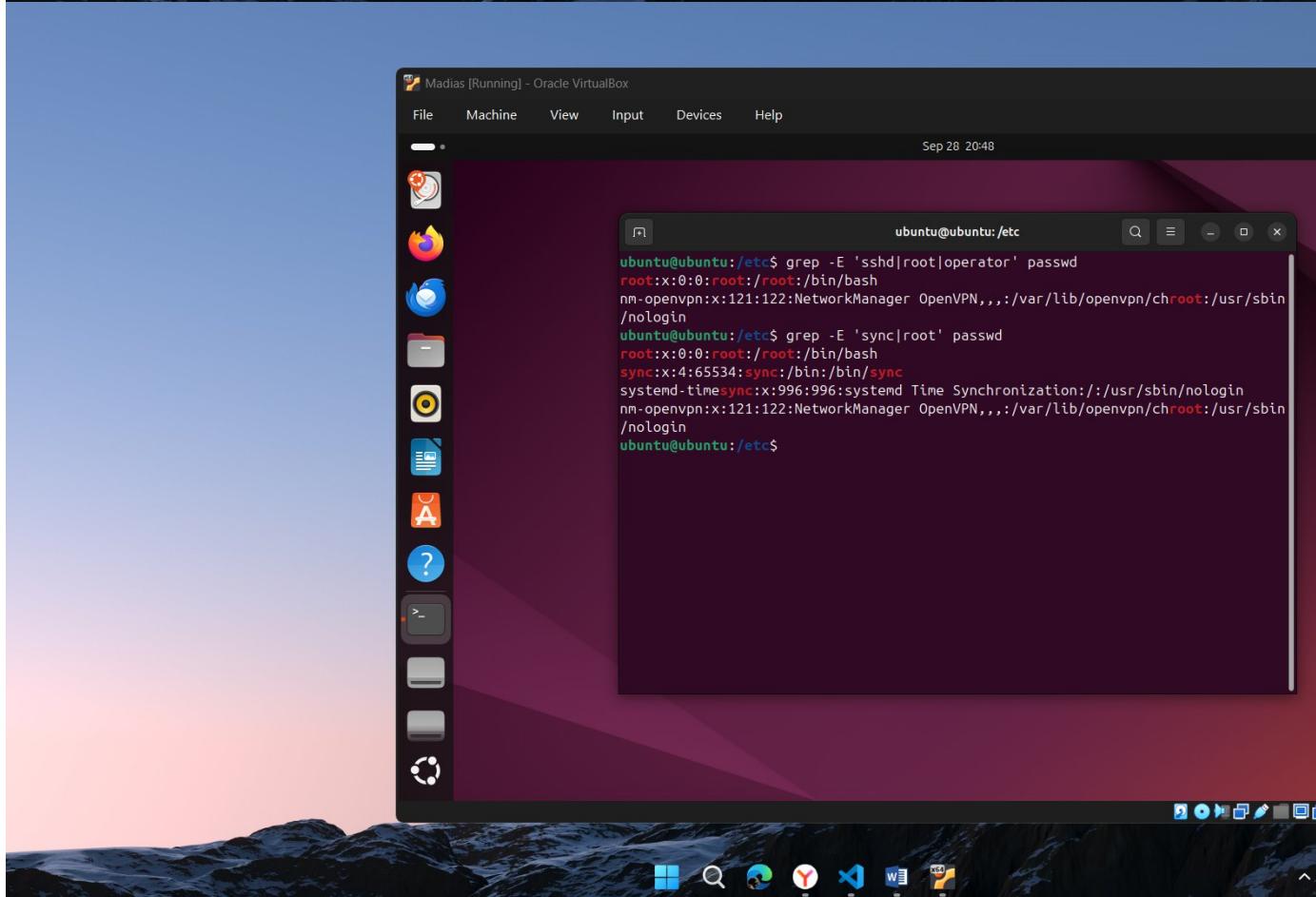
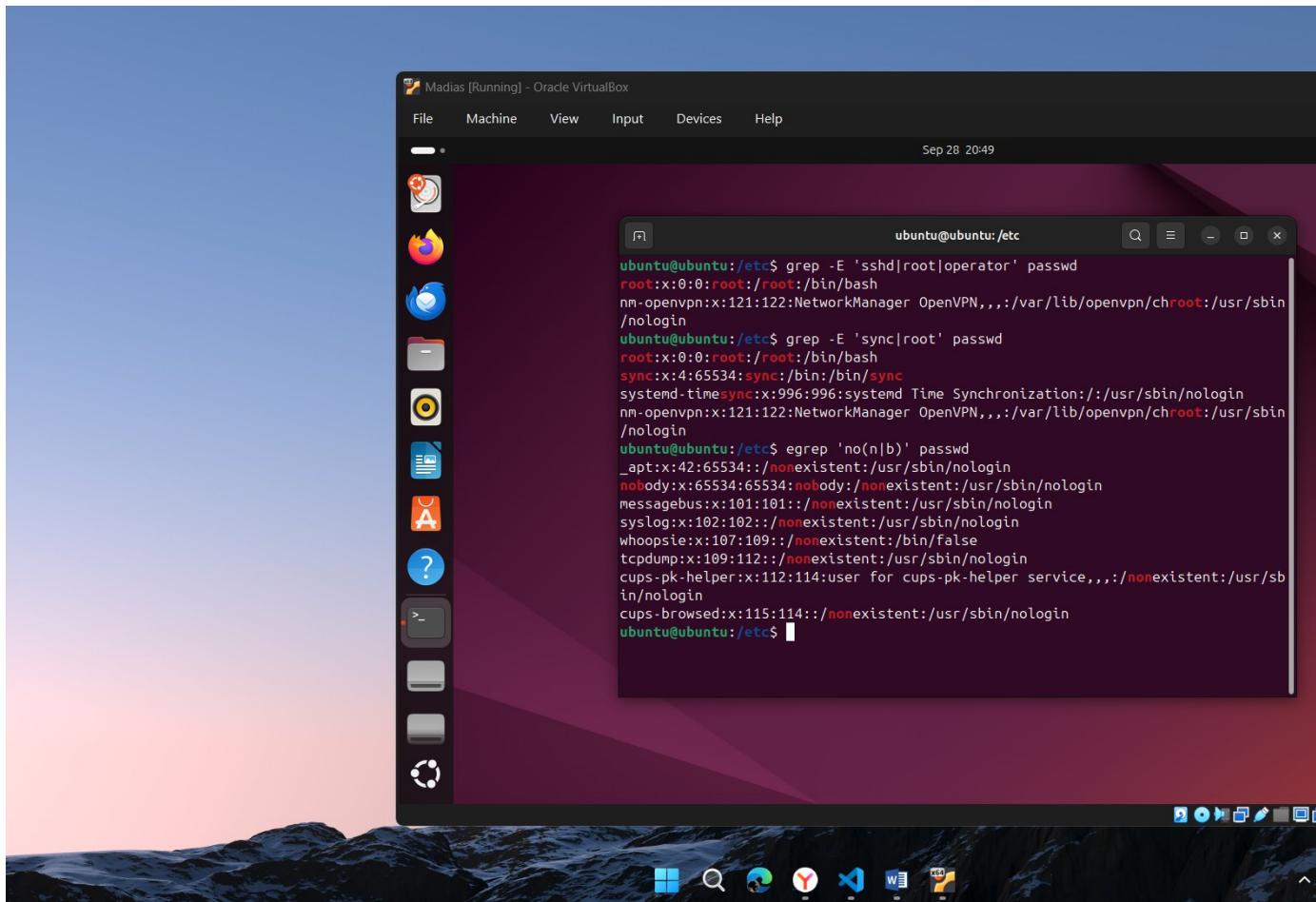
```
ubuntu@ubuntu:~$ cd
ubuntu@ubuntu:~$ mkdir mybackups
mkdir: cannot create directory 'mybackups': File exists
ubuntu@ubuntu:~$ tar -cvf mybackups/edev.tar /etc/udev
tar: Removing leading '/' from member names
/etc/udev/
/etc/udev/hwdb.d/
/etc/udev/iocost.conf
/etc/udev/rules.d/
/etc/udev/rules.d/70-snap.firefox.rules
/etc/udev/rules.d/70-snap.firmware-updater.rules
/etc/udev/rules.d/70-snap.snap-store.rules
/etc/udev/rules.d/70-snap.snapd-desktop-integration.rules
/etc/udev/rules.d/70-snap.snapd.rules
/etc/udev/rules.d/70-snap.thunderbird.rules
/etc/udev/udev.conf
ubuntu@ubuntu:~$ ls mybackups
edev.tar
ubuntu@ubuntu:~$
```

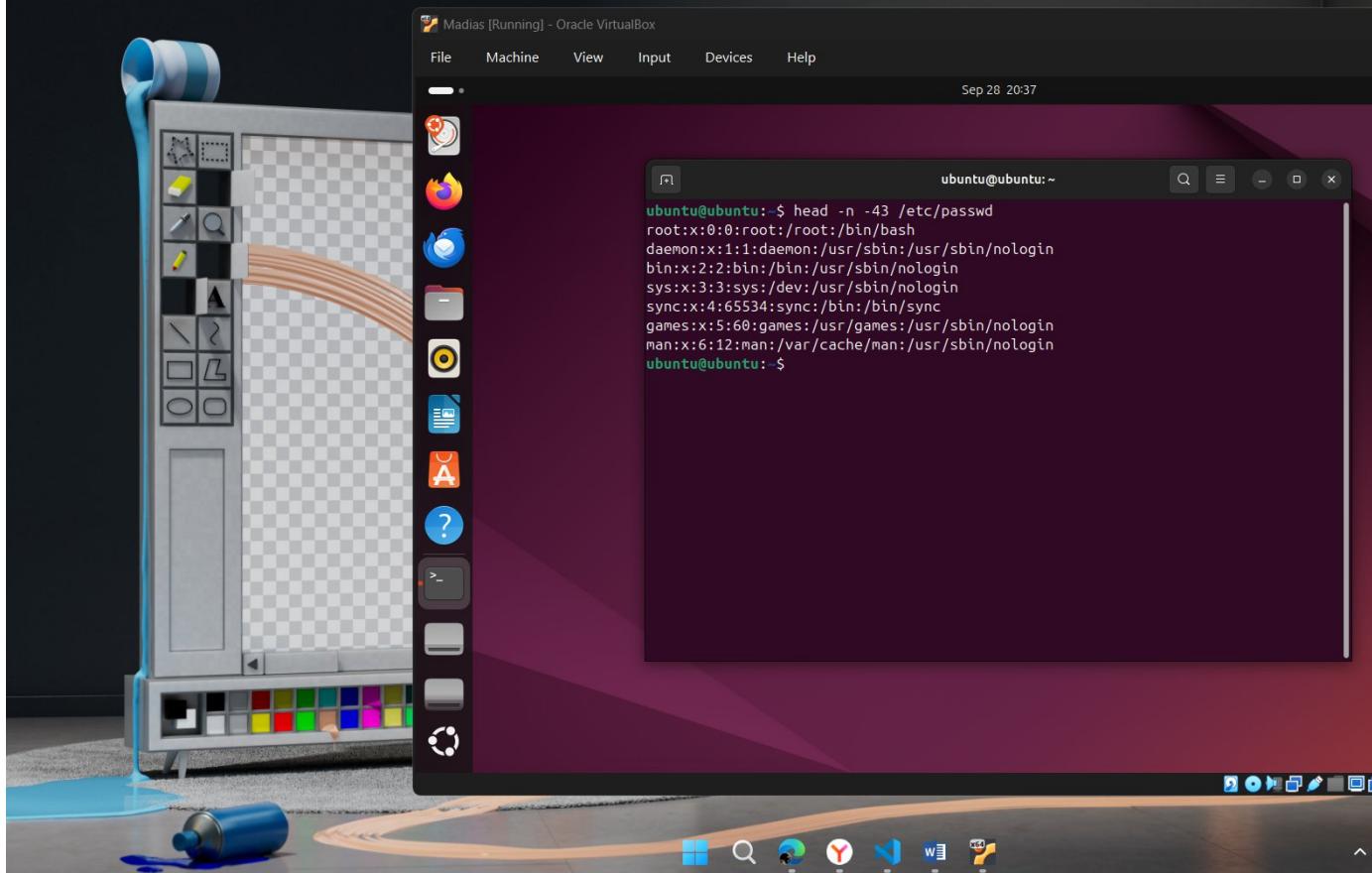
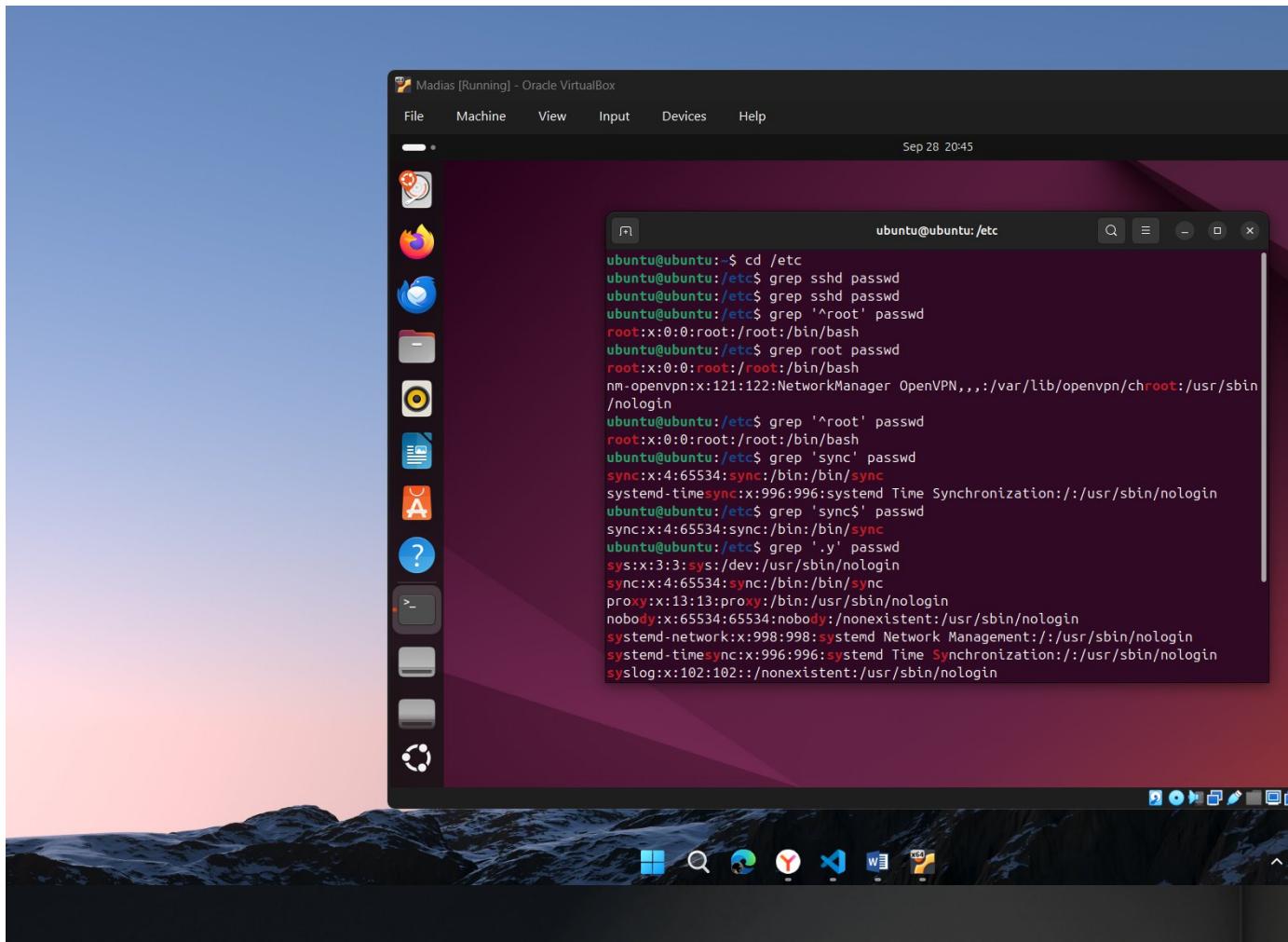


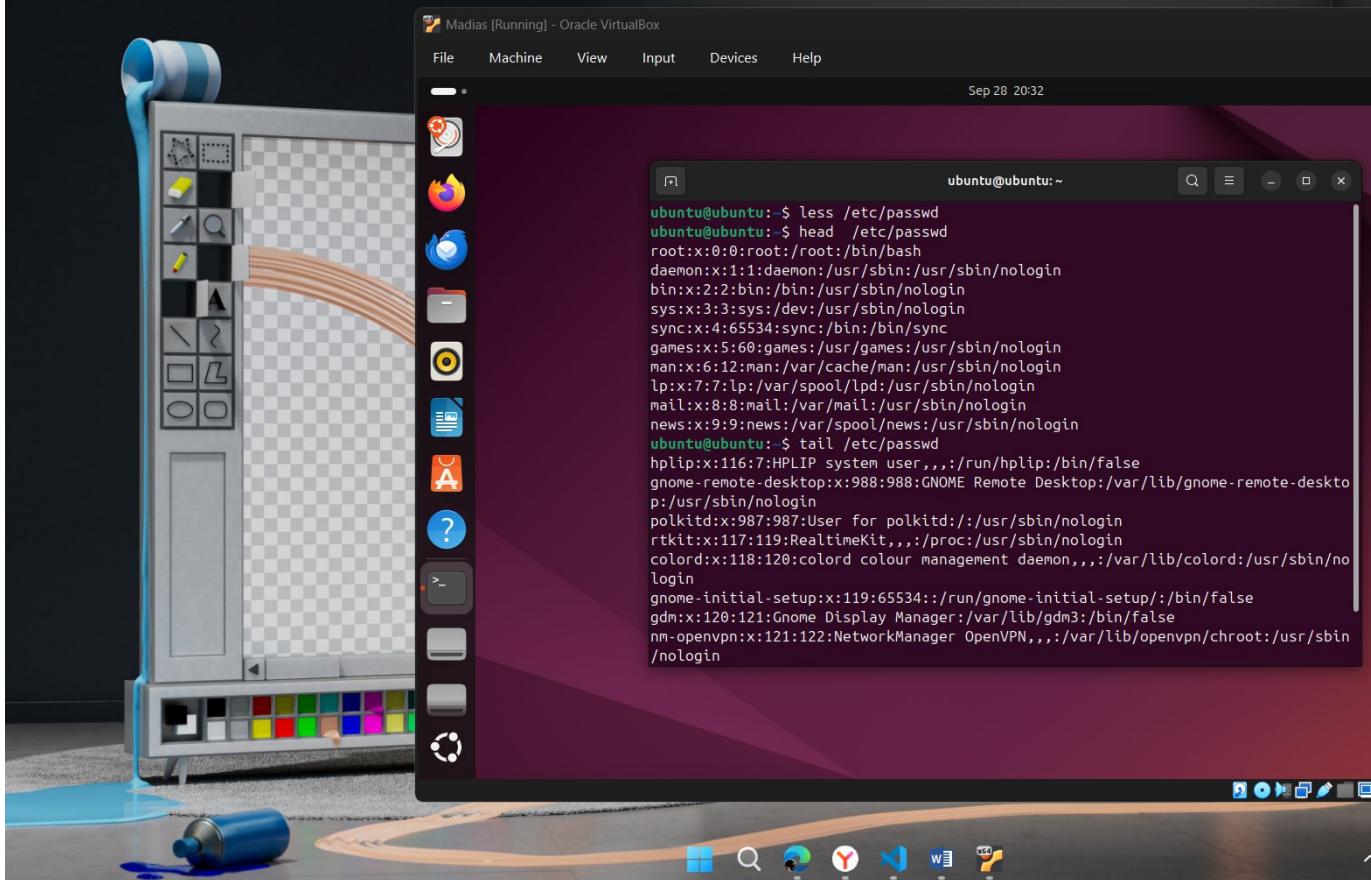
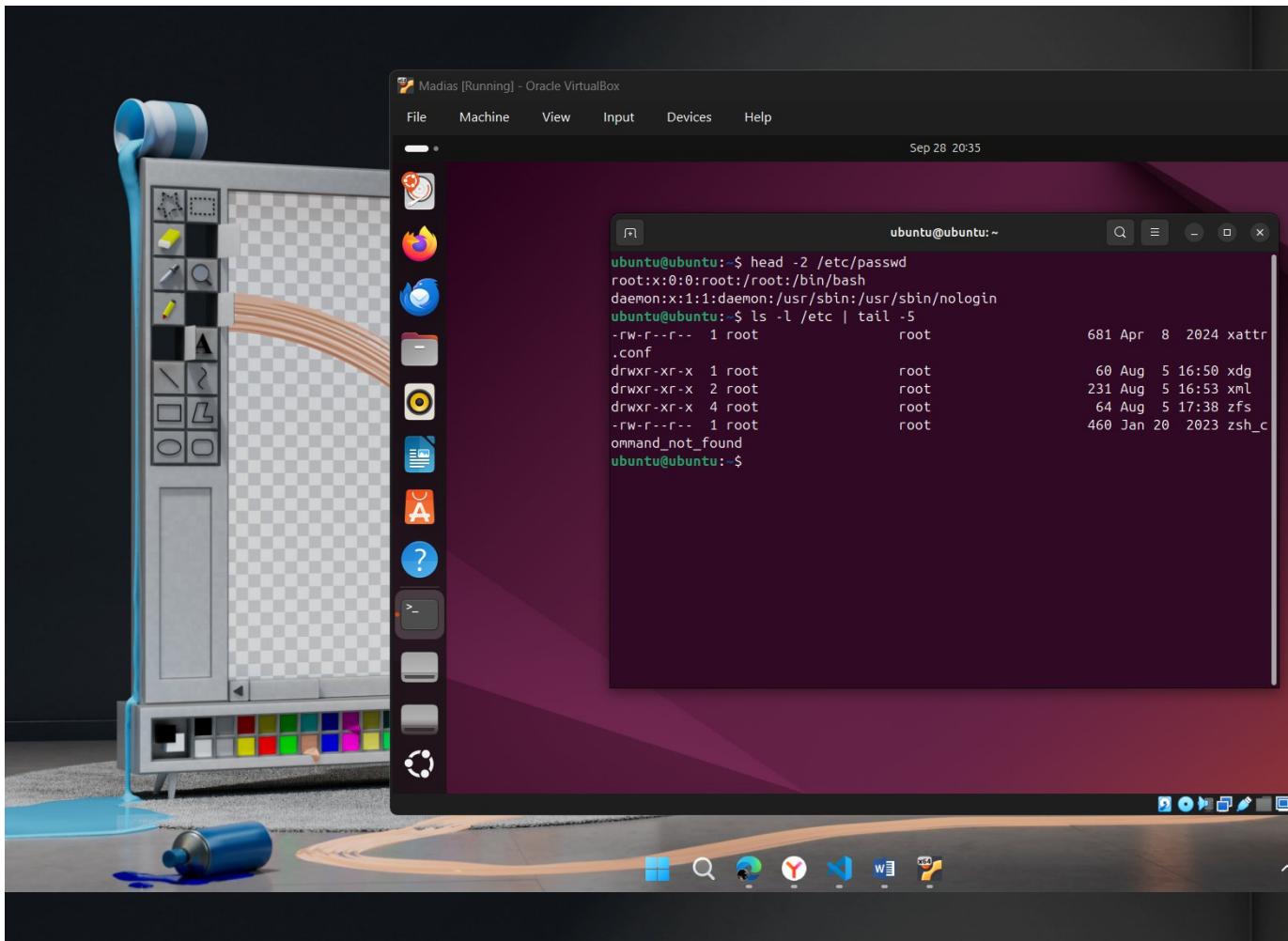


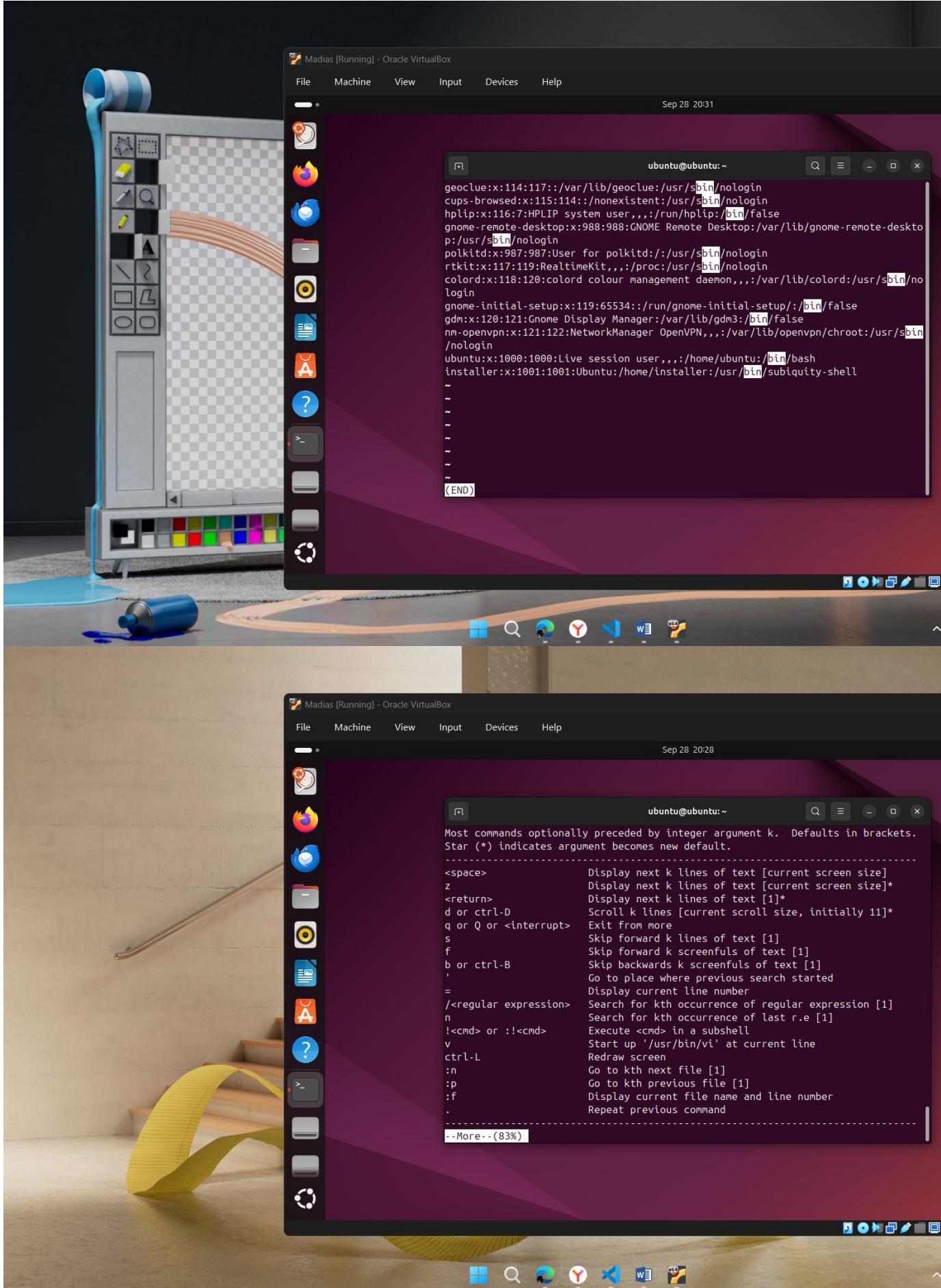


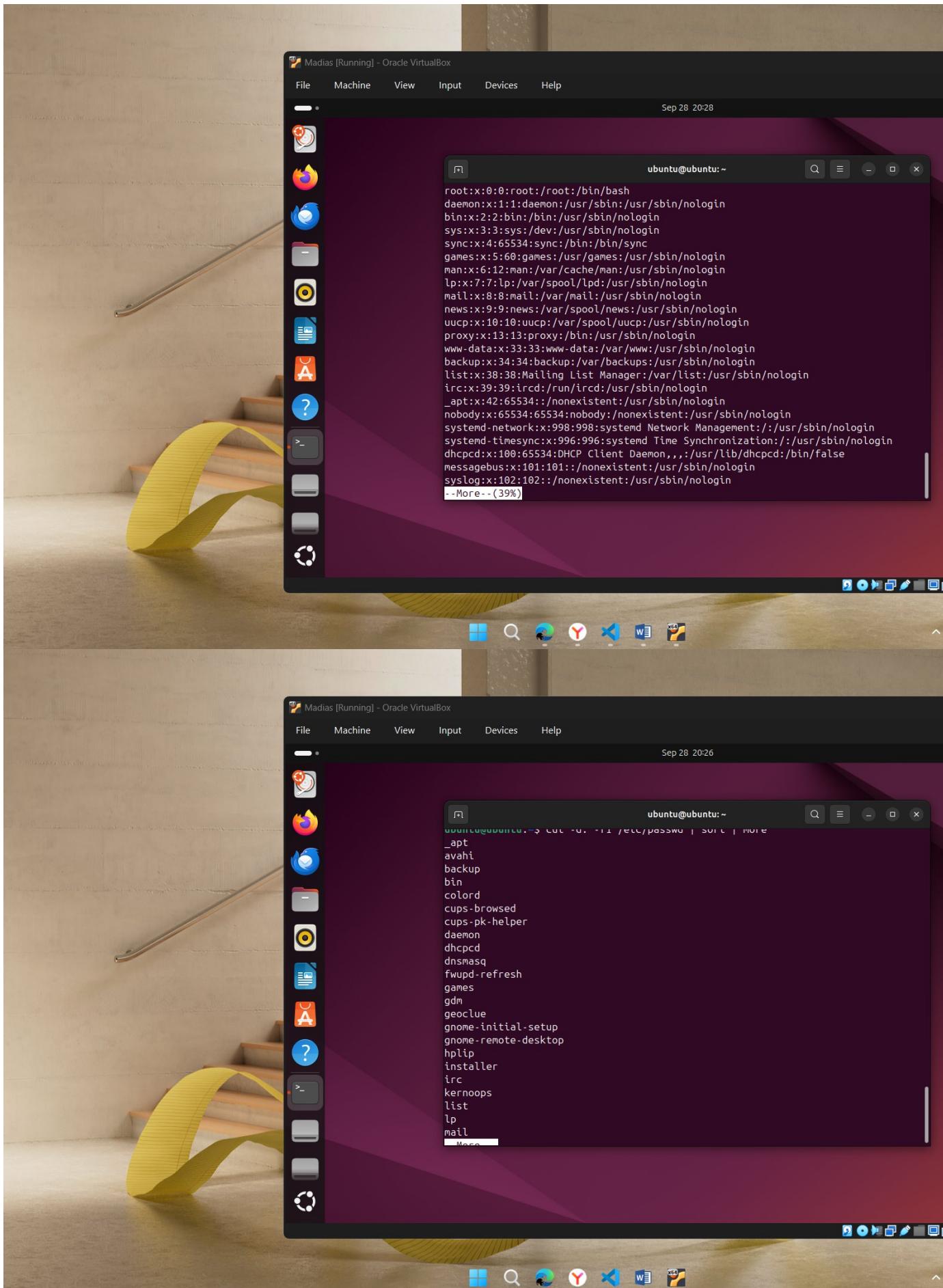


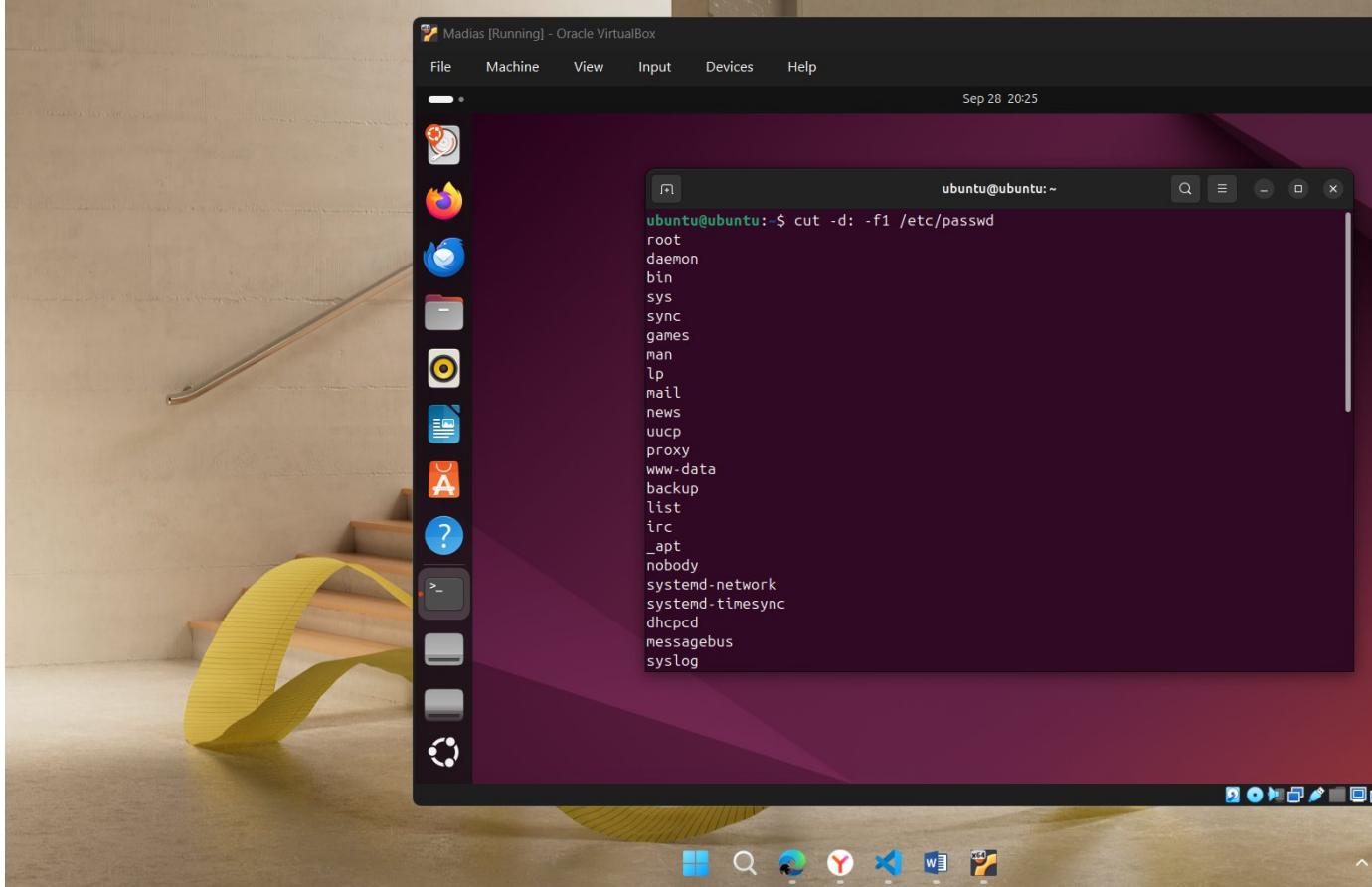
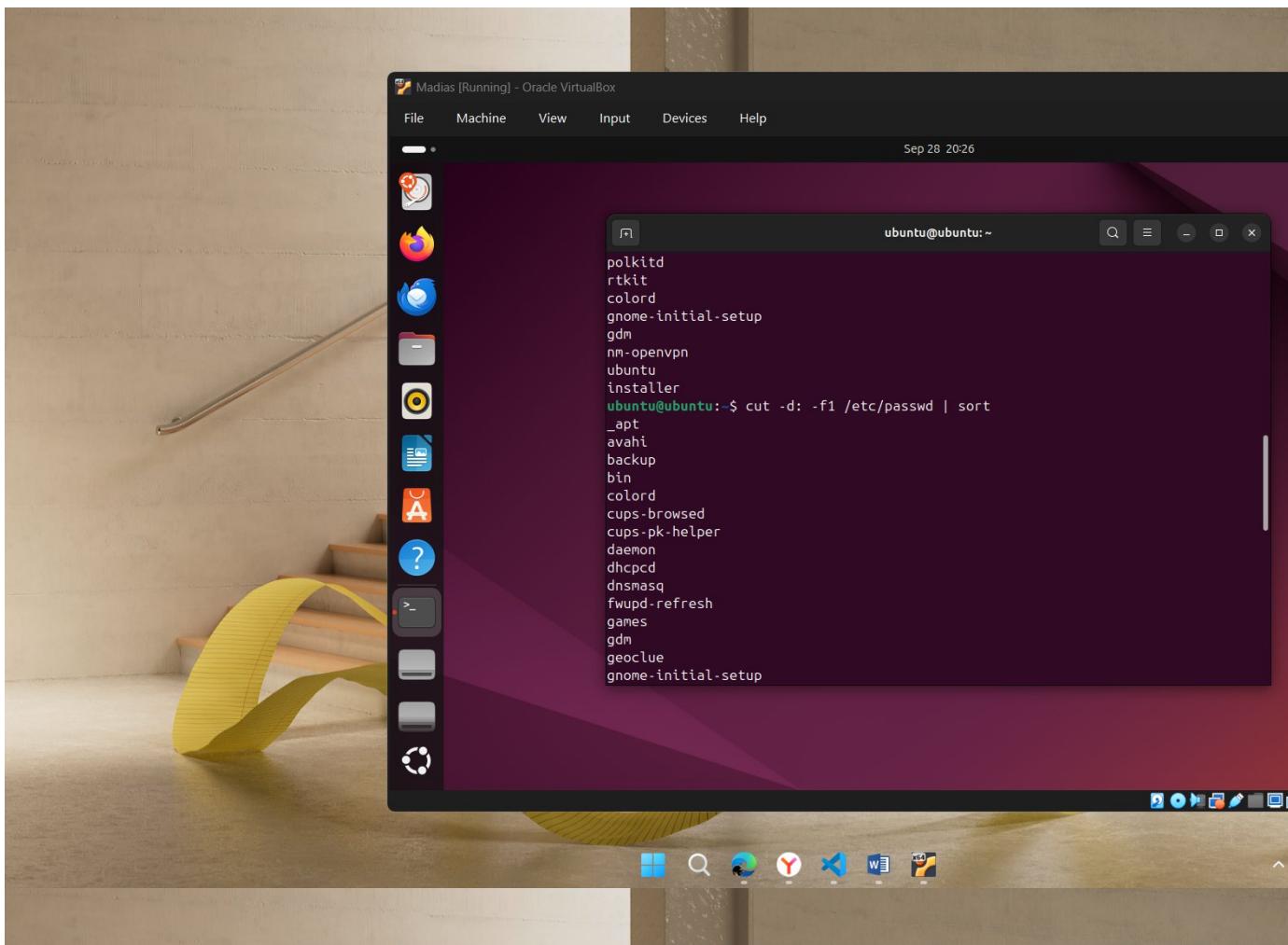


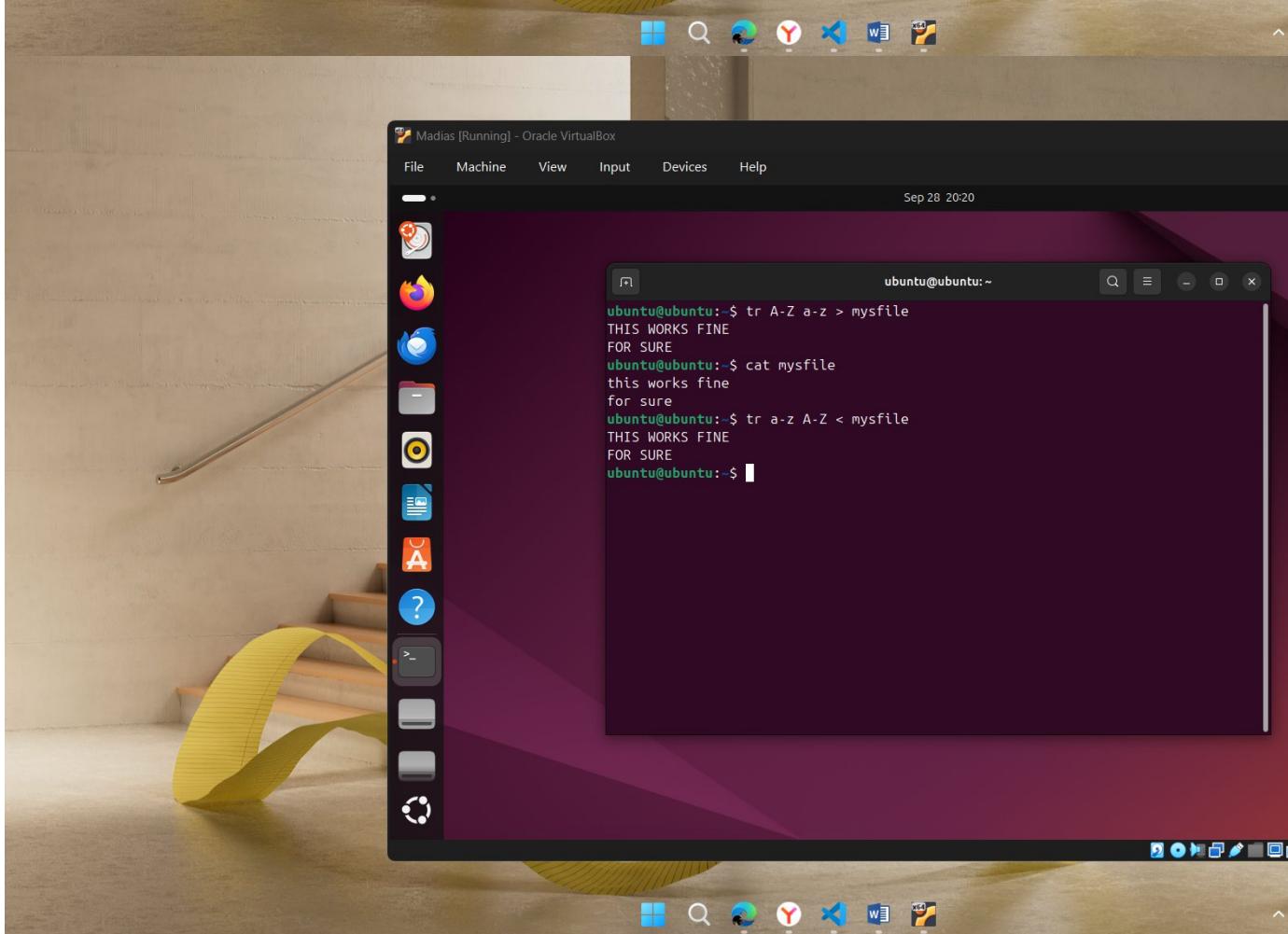
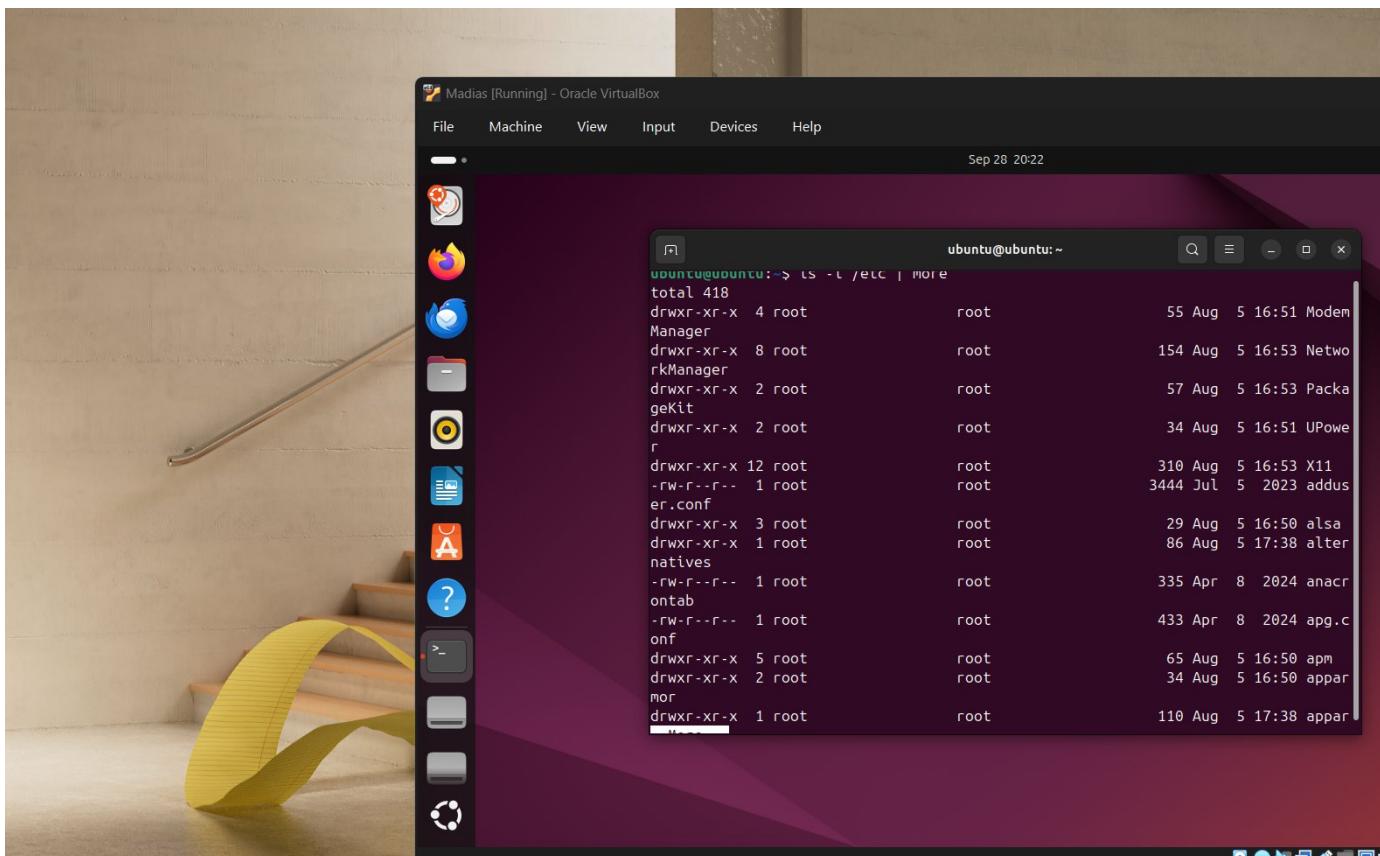


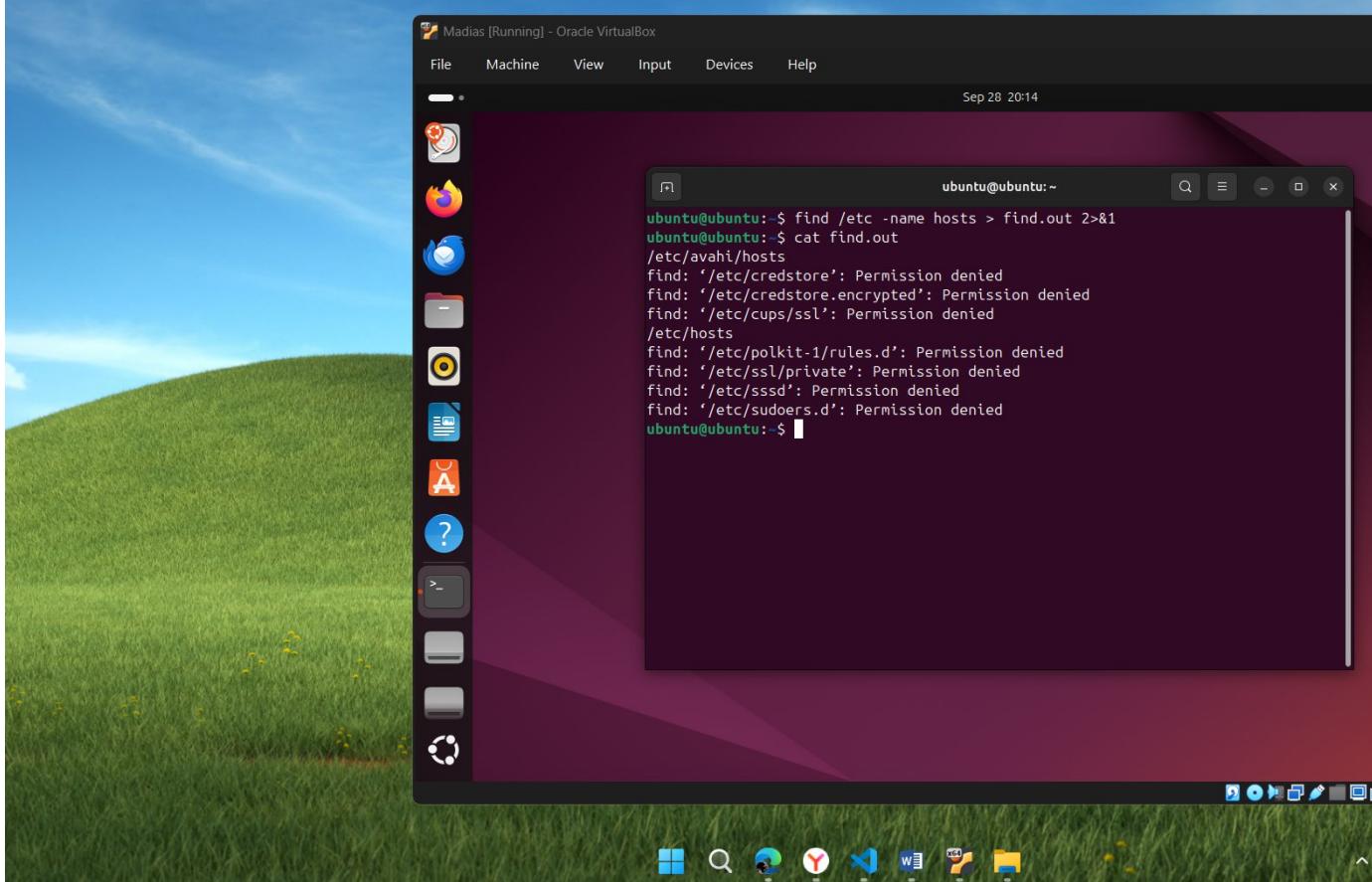
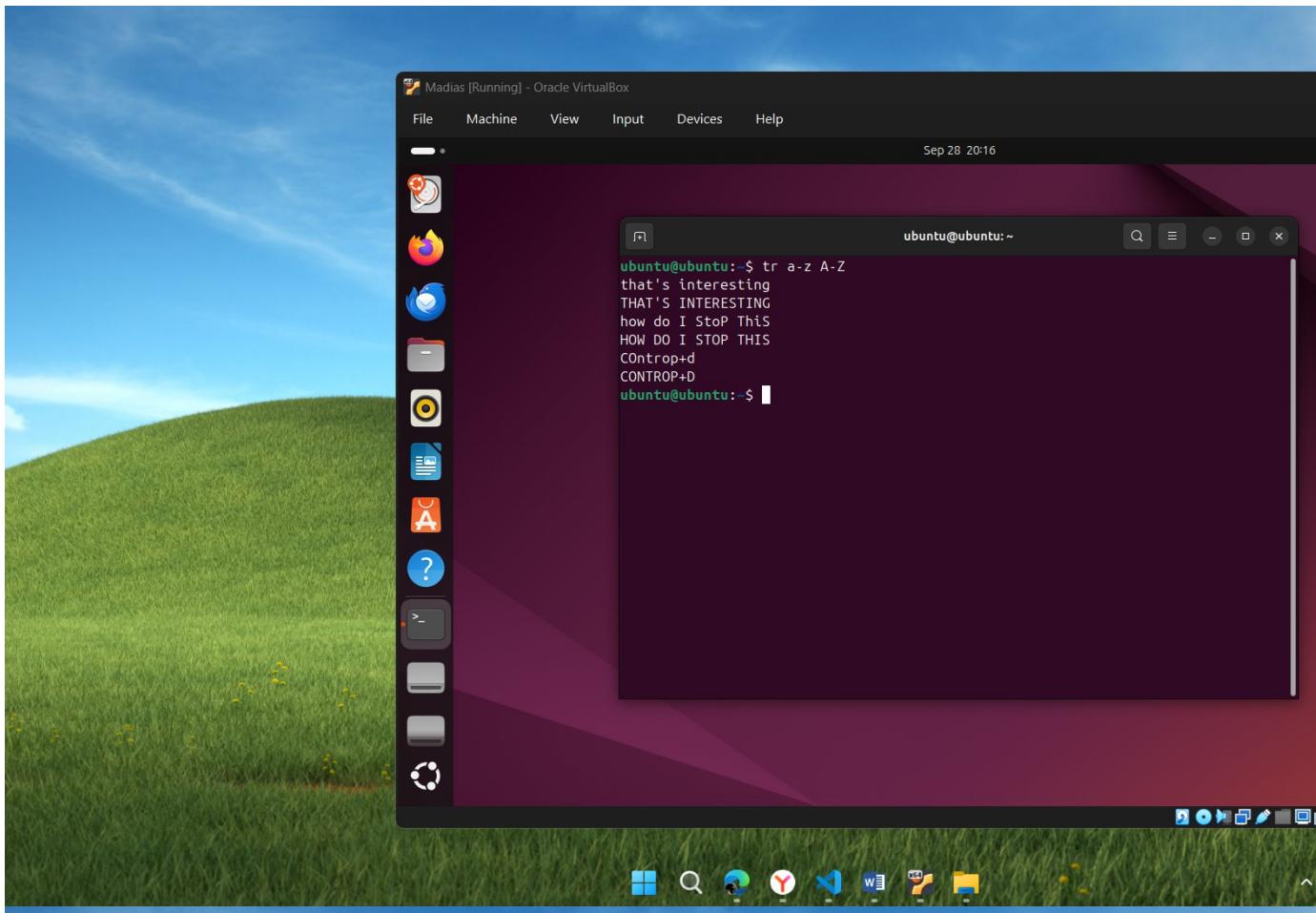


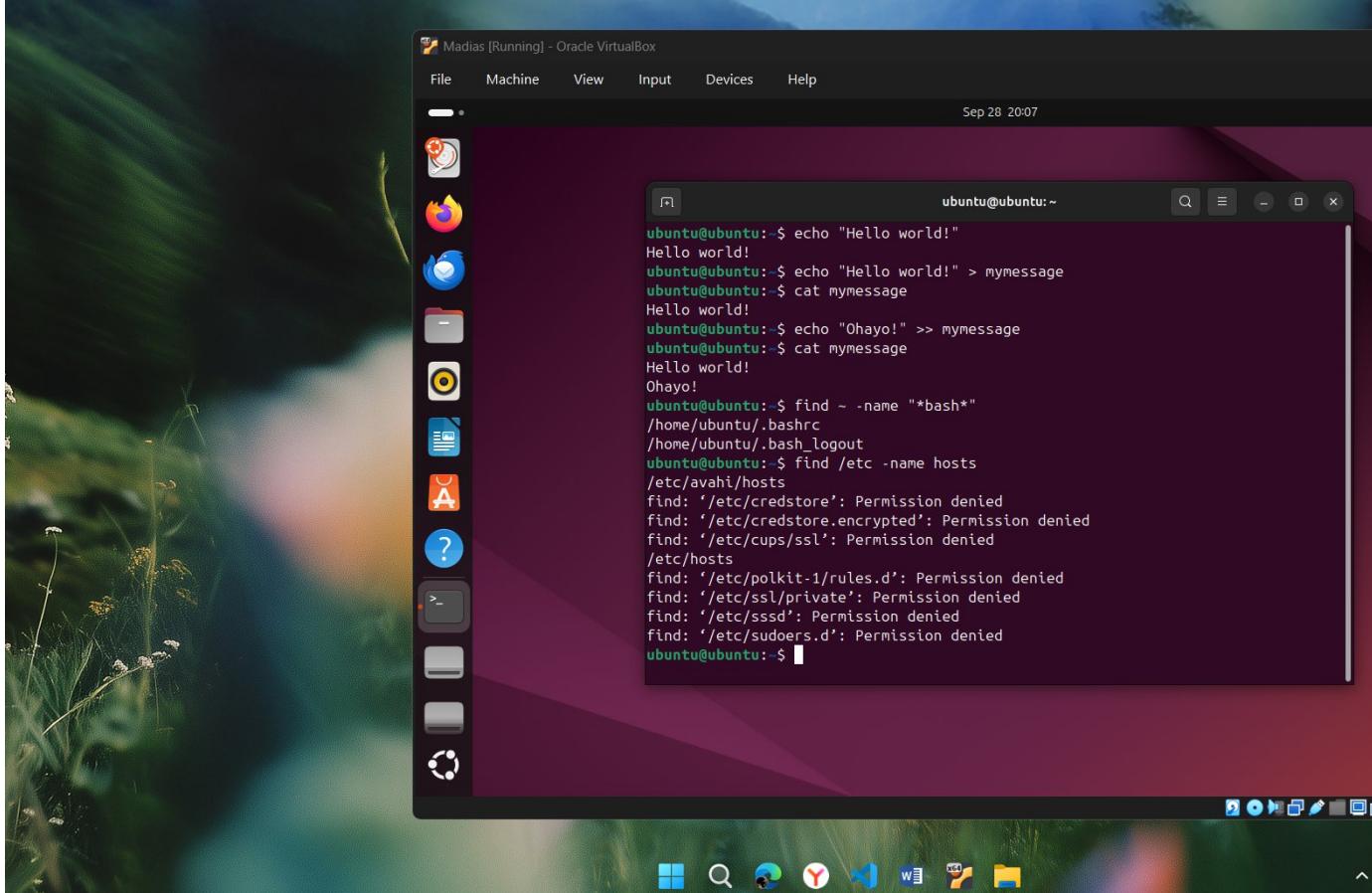
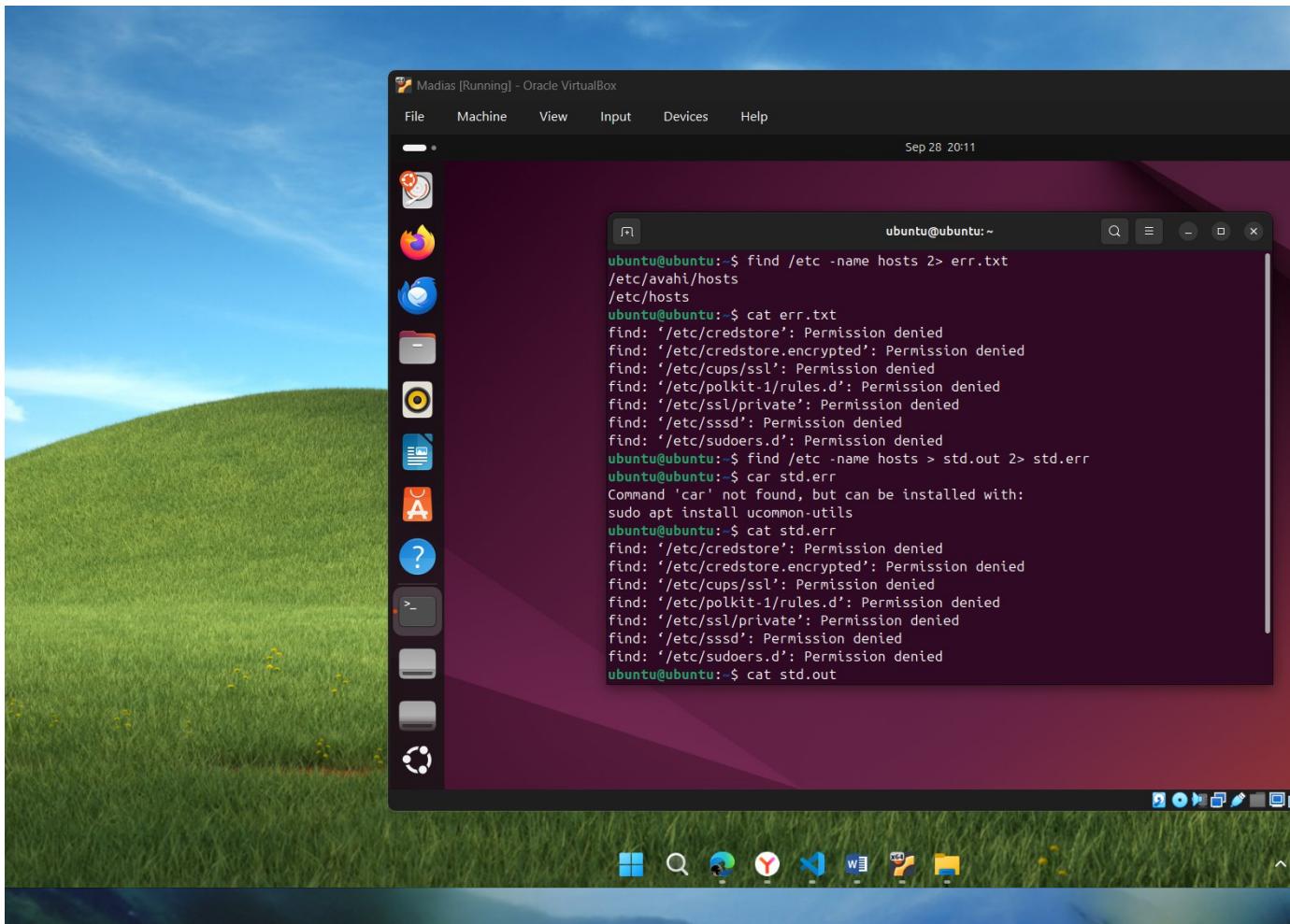


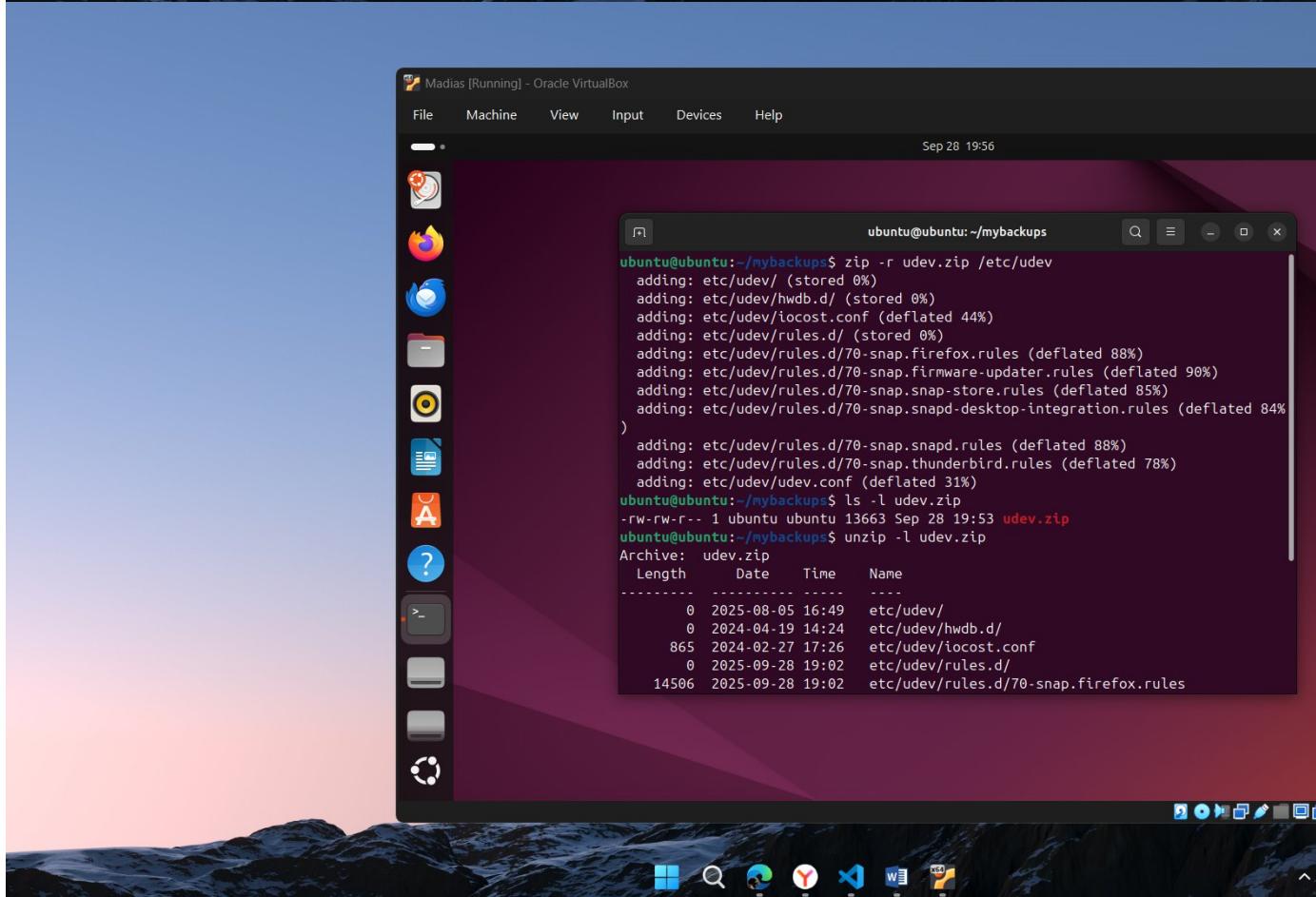
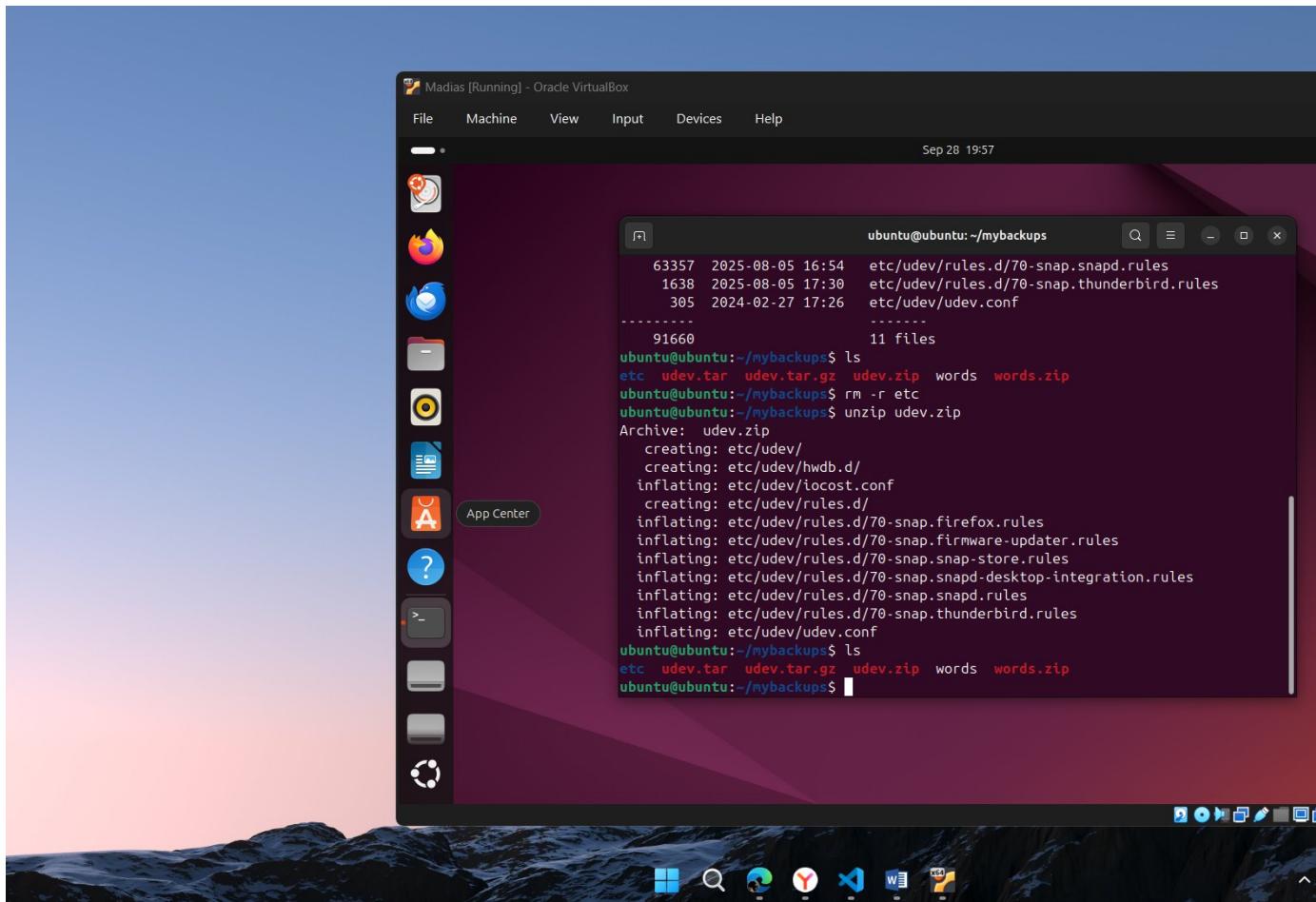


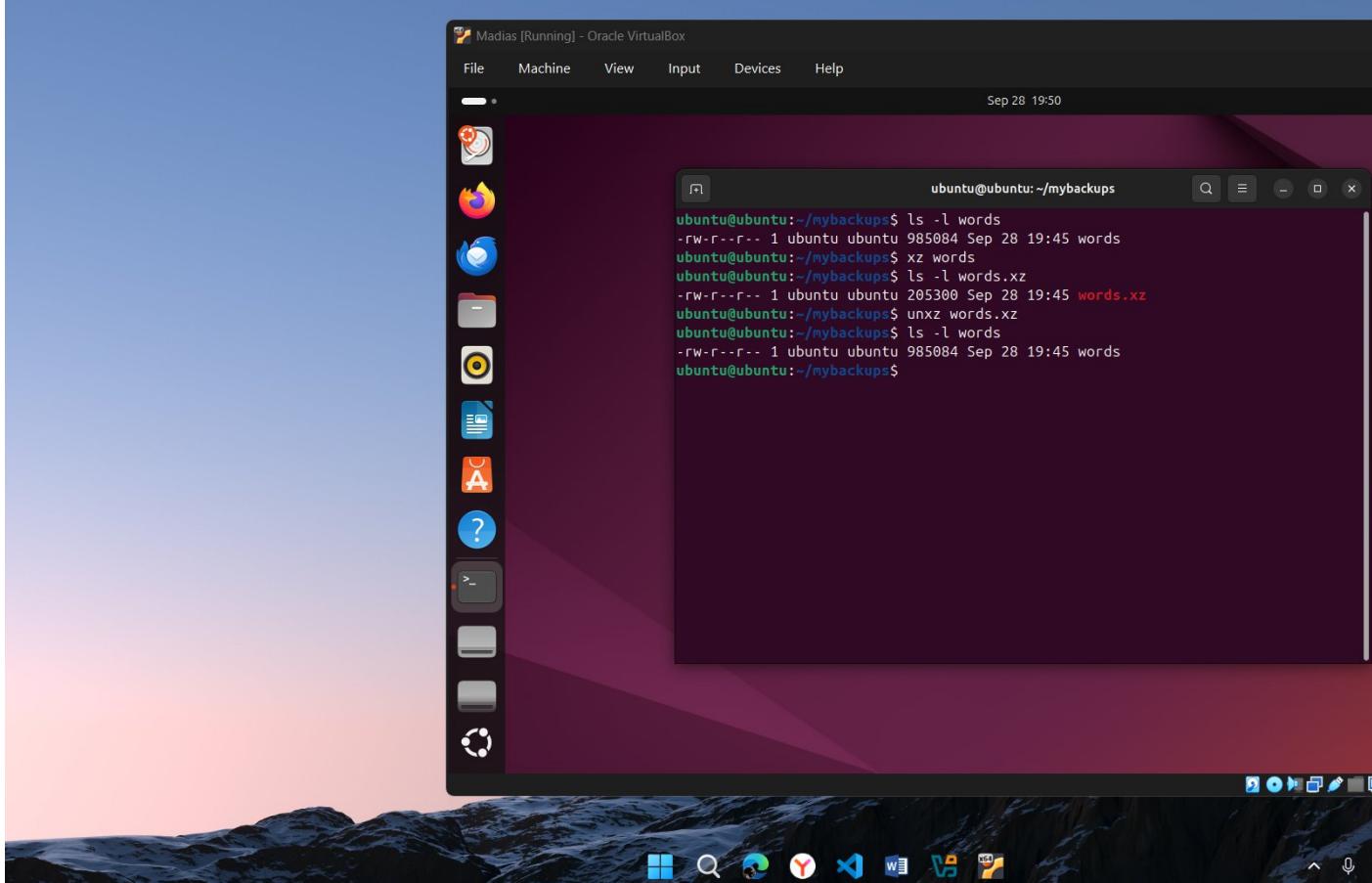
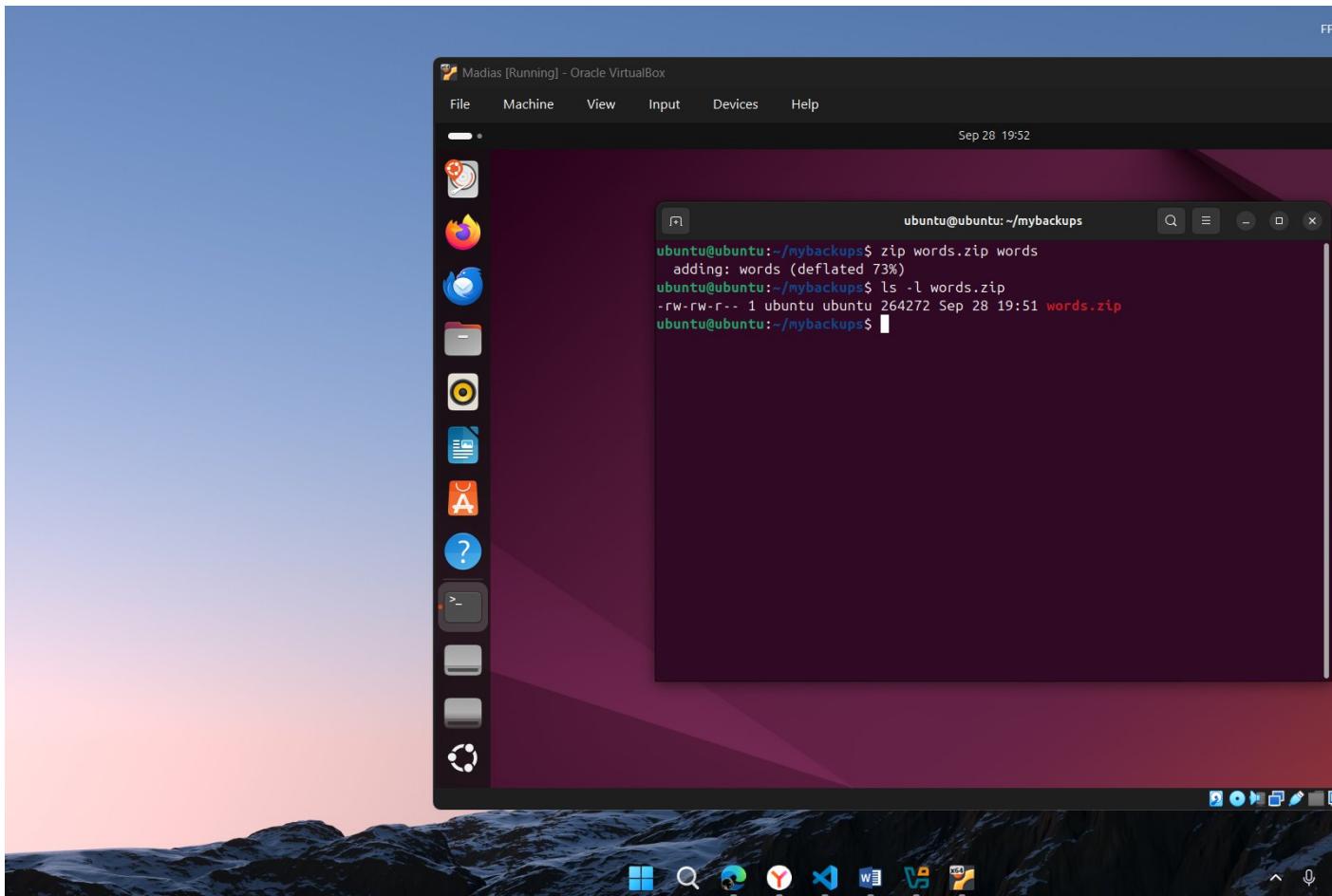


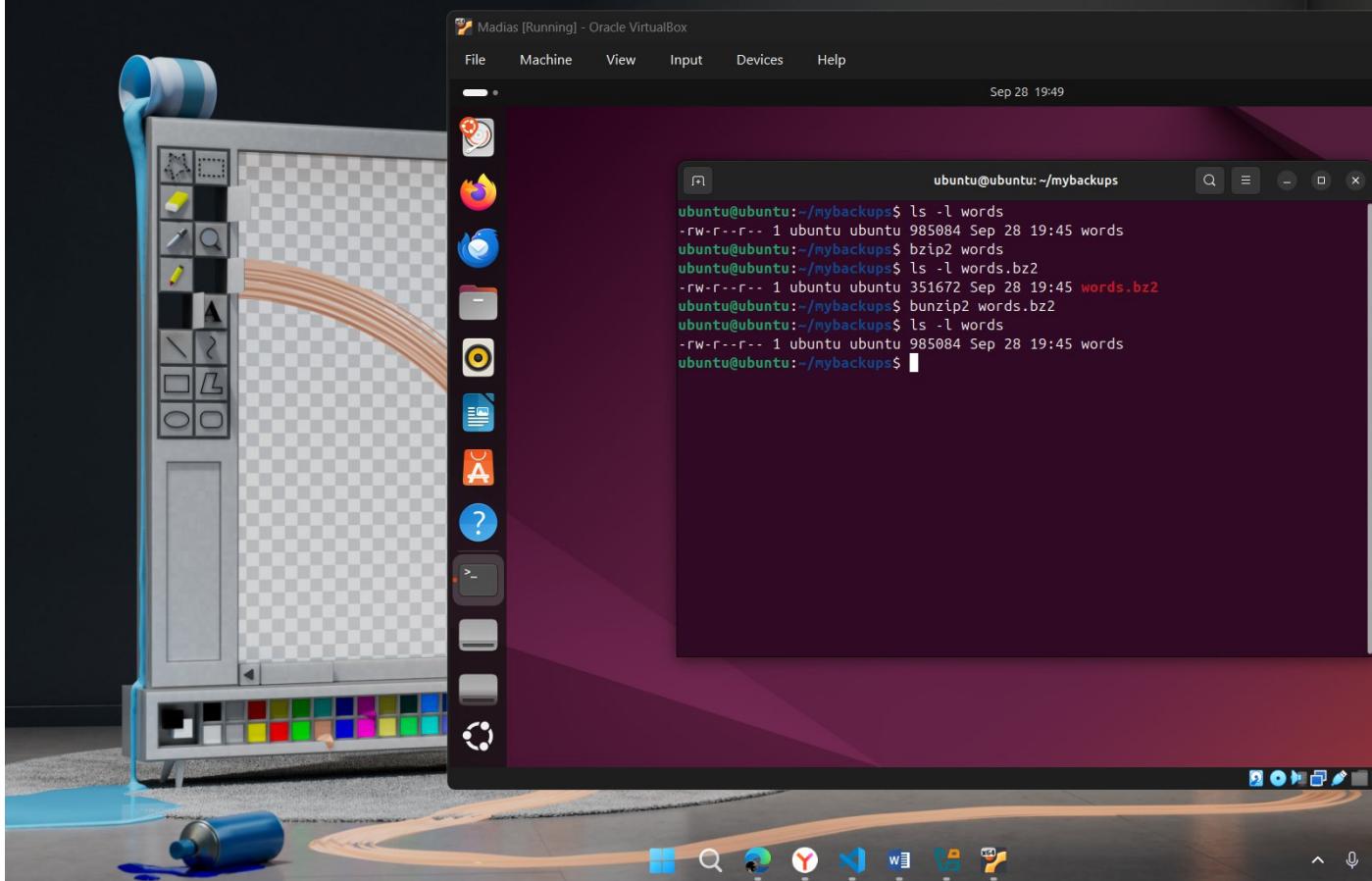
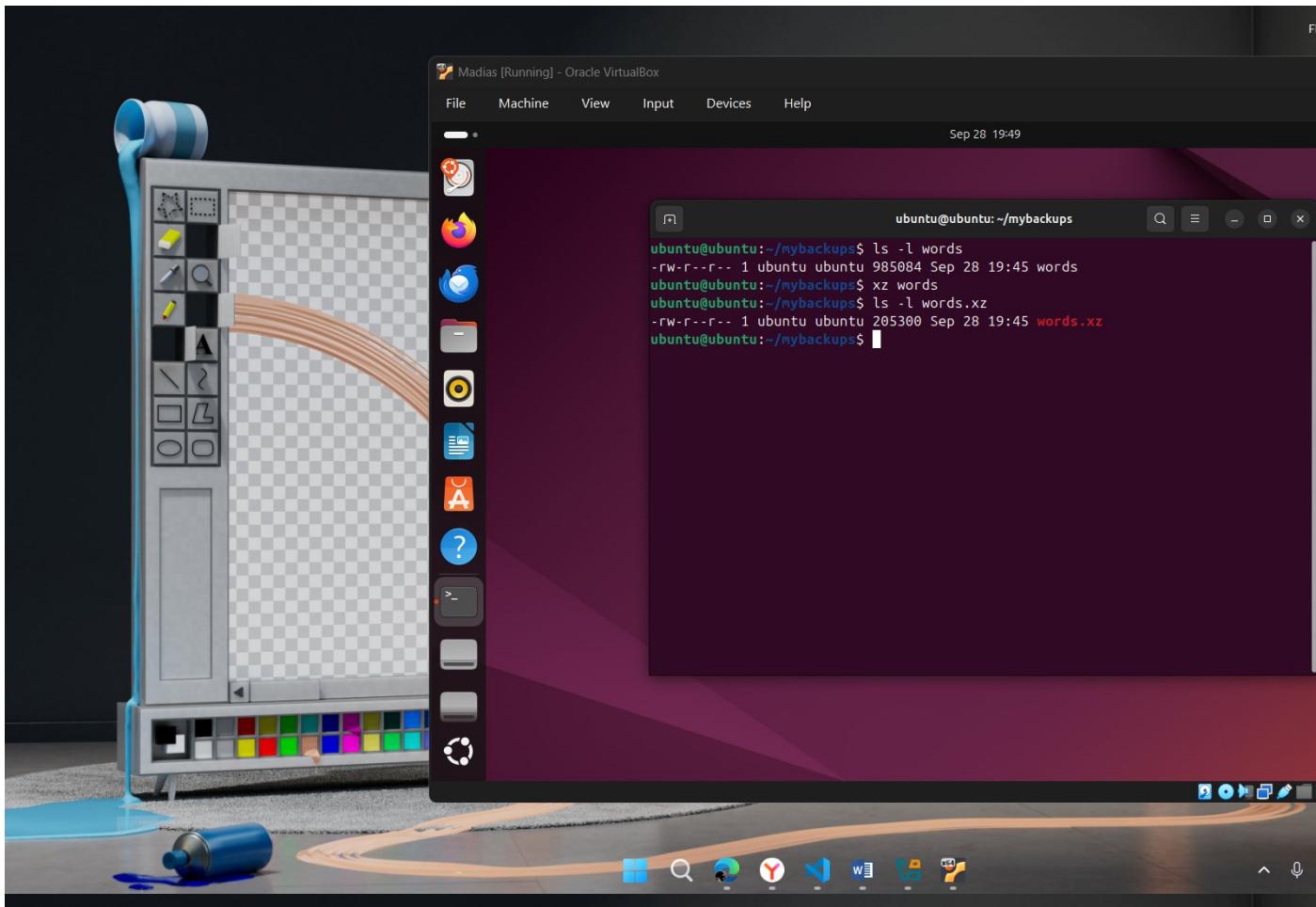


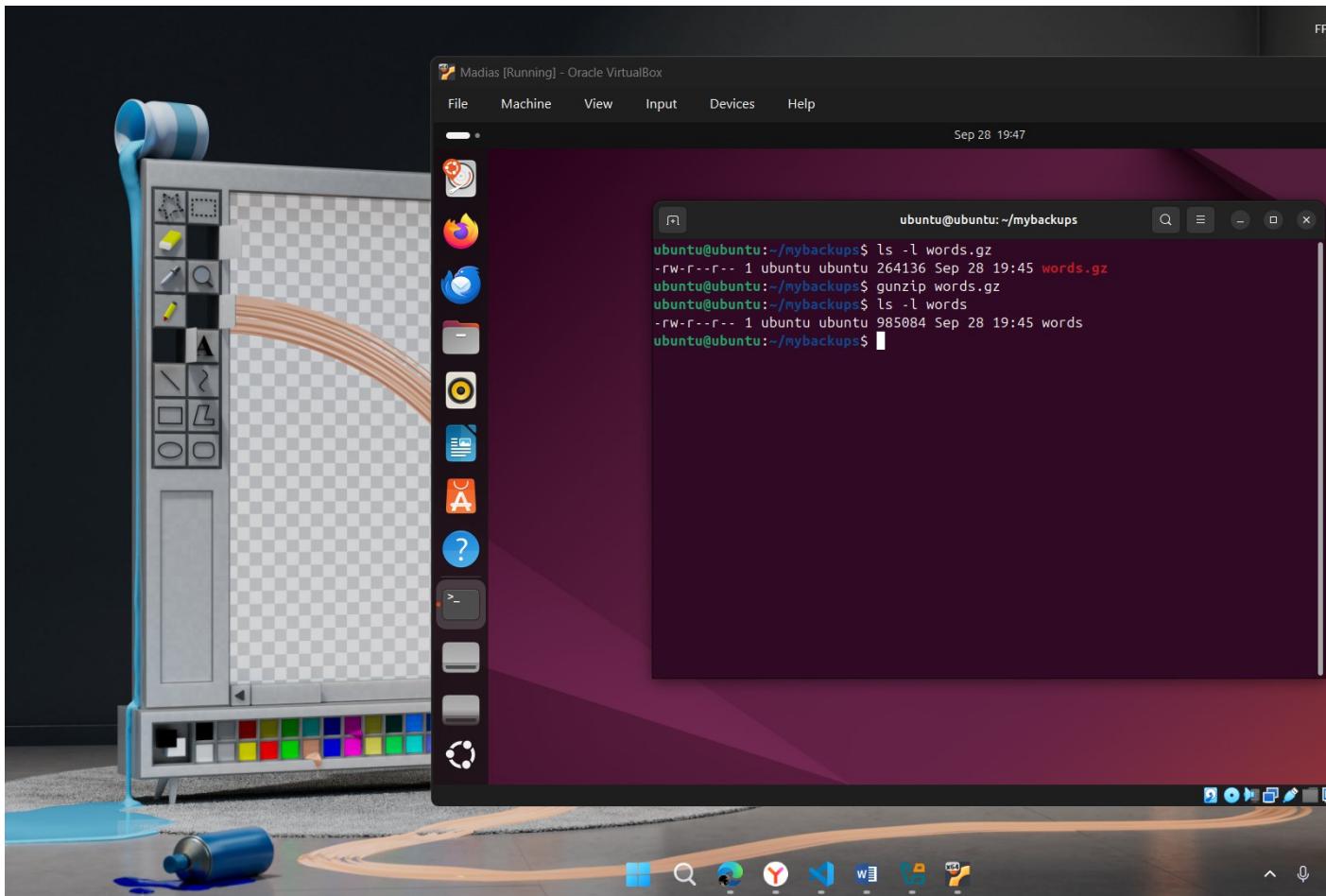




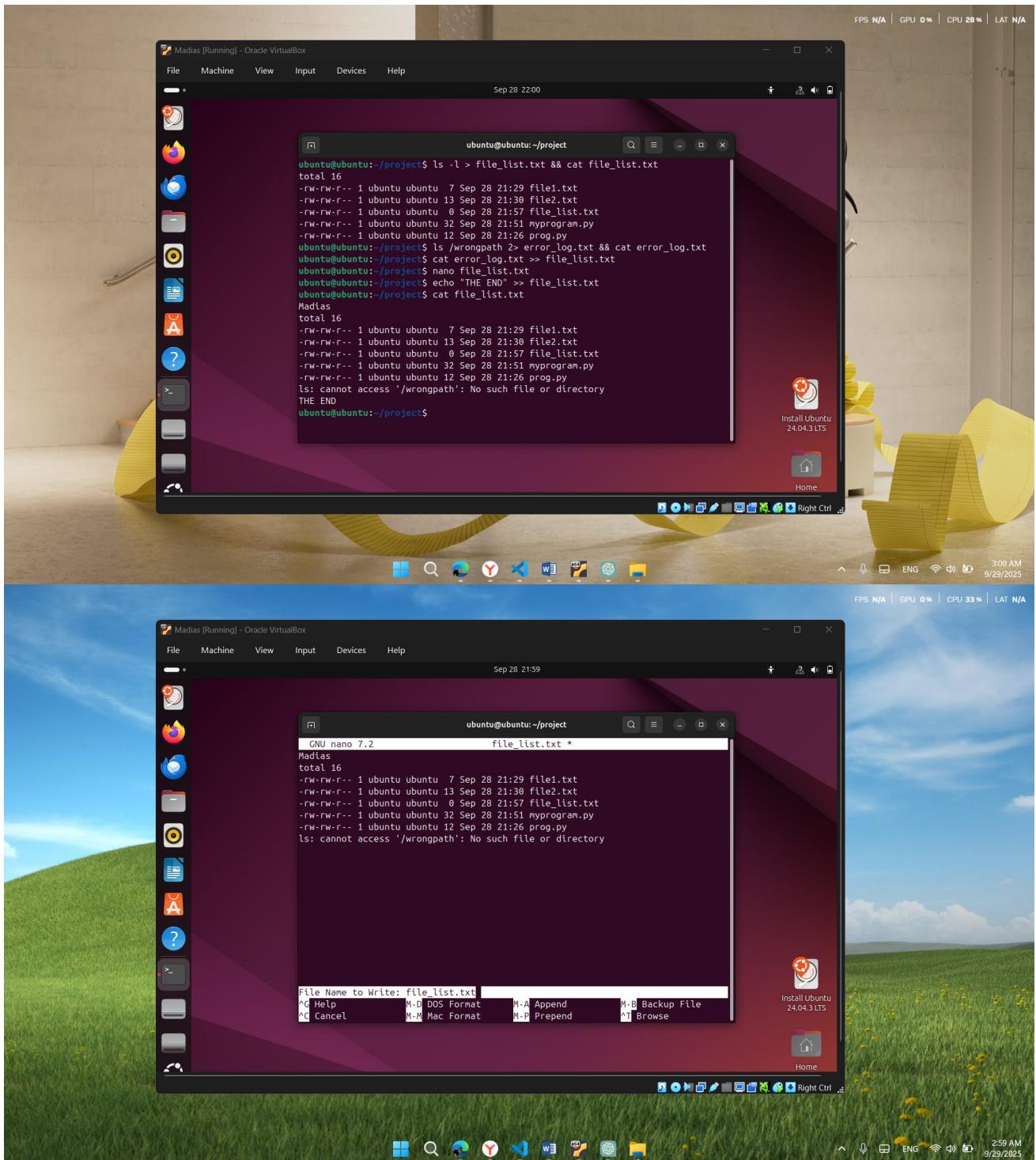


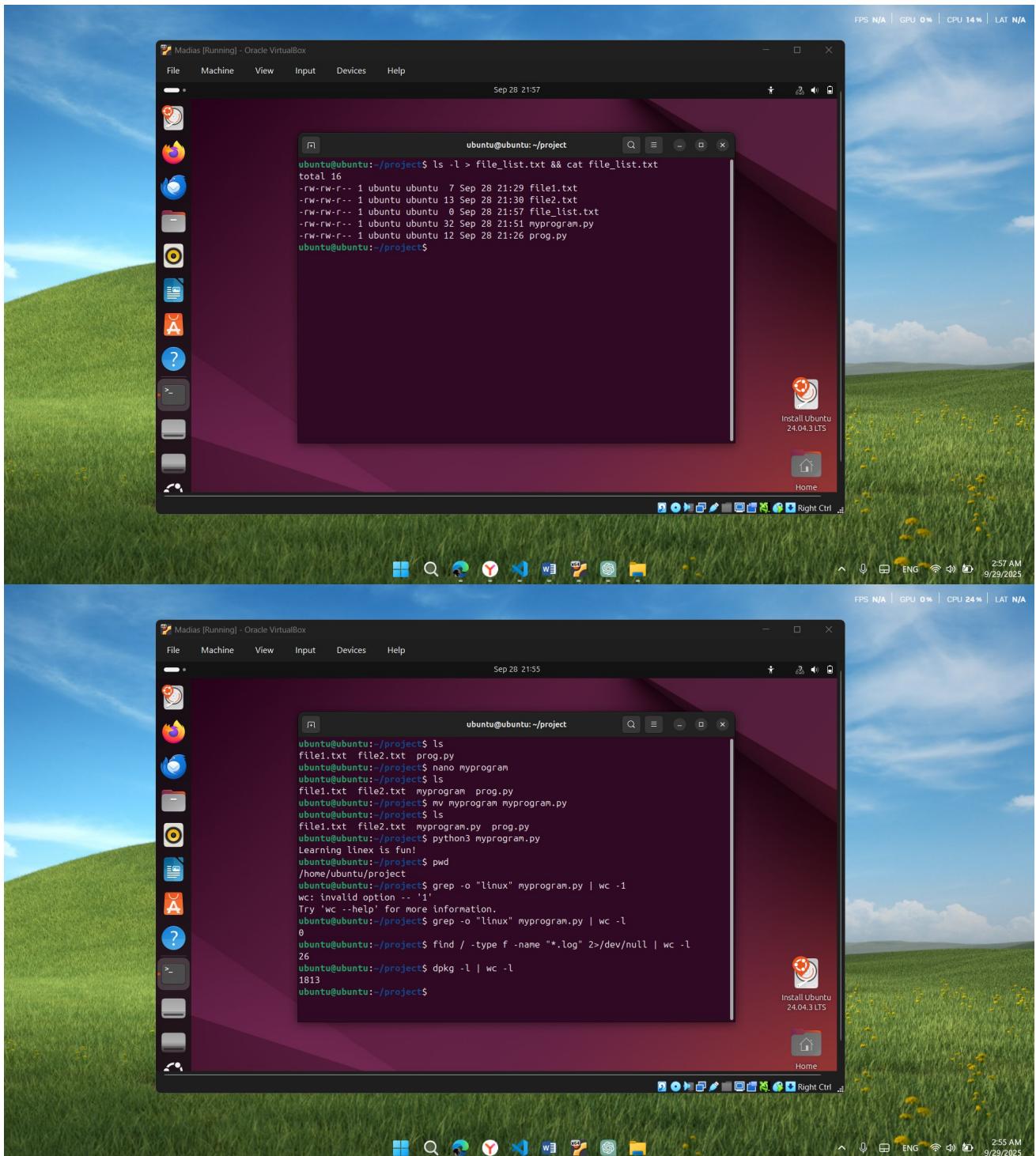


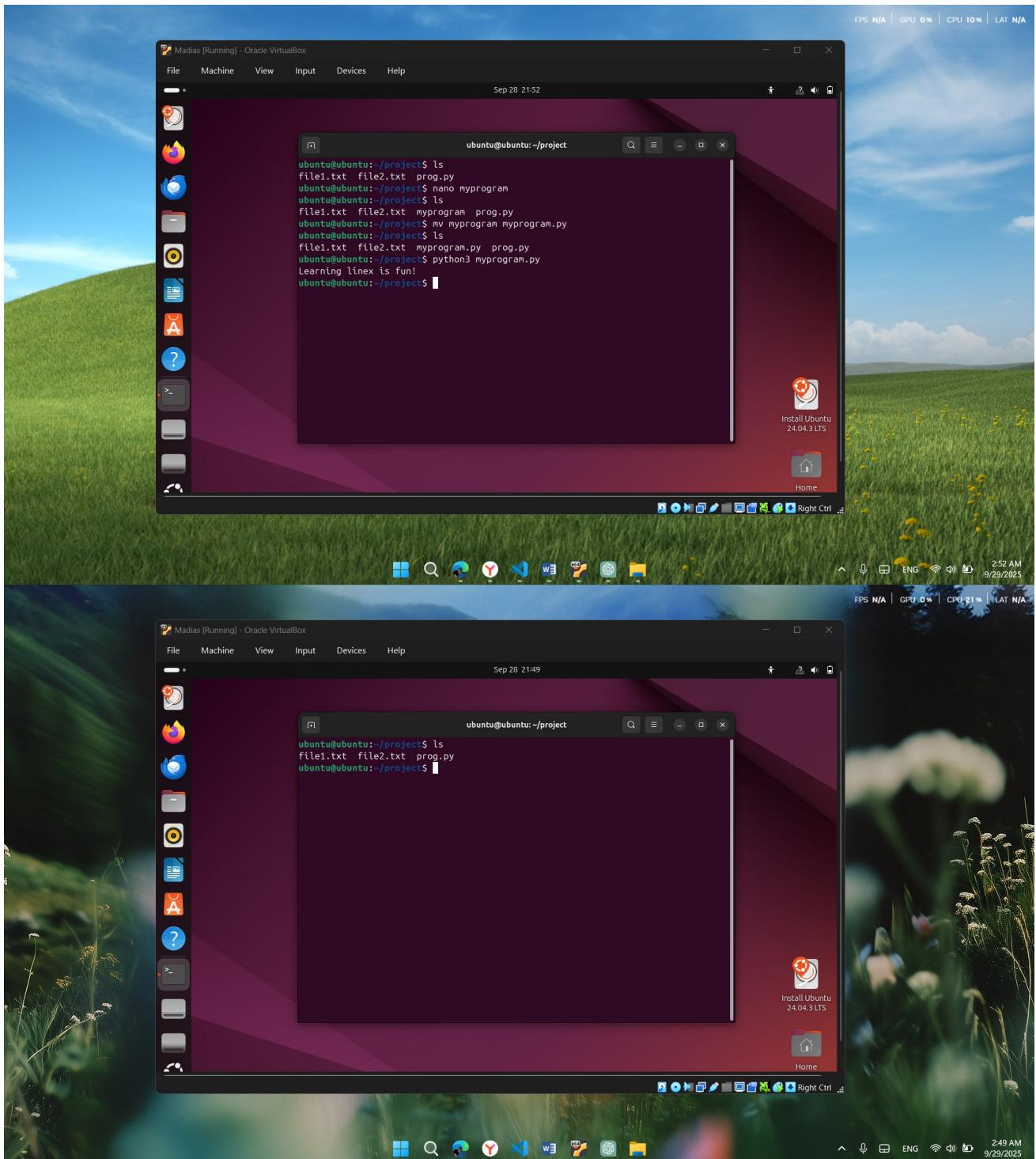


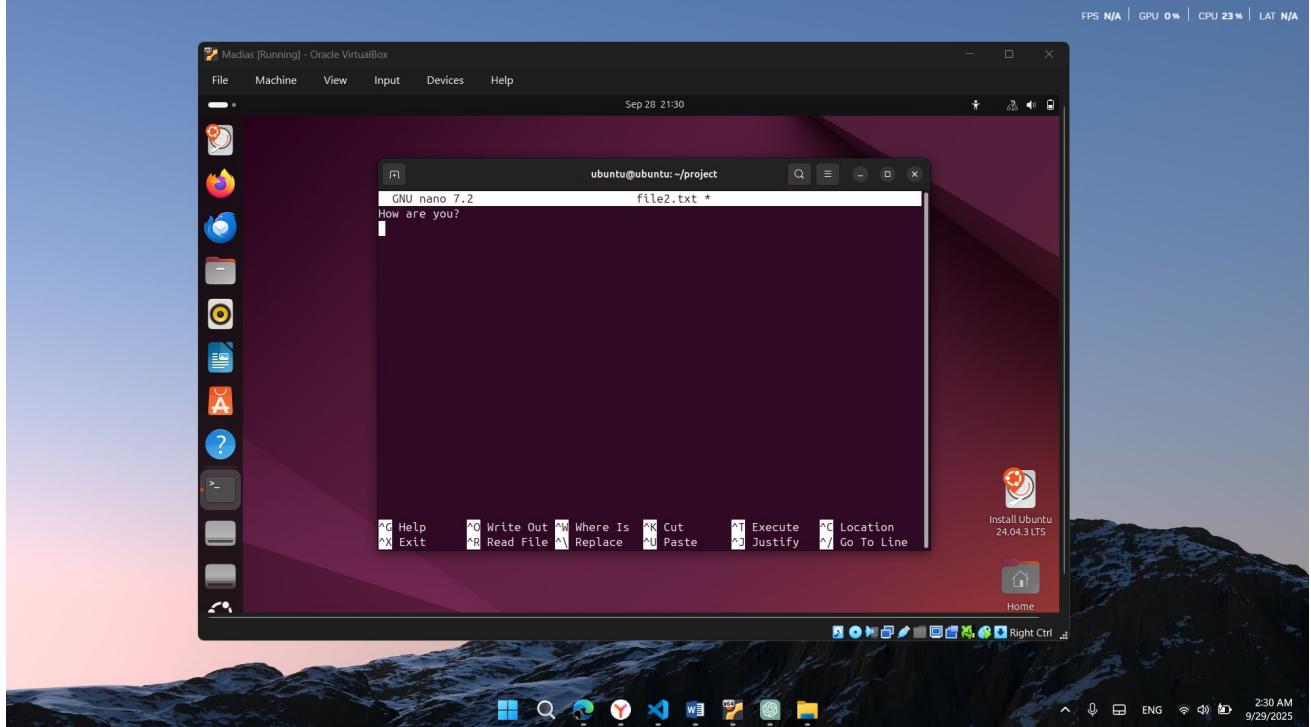
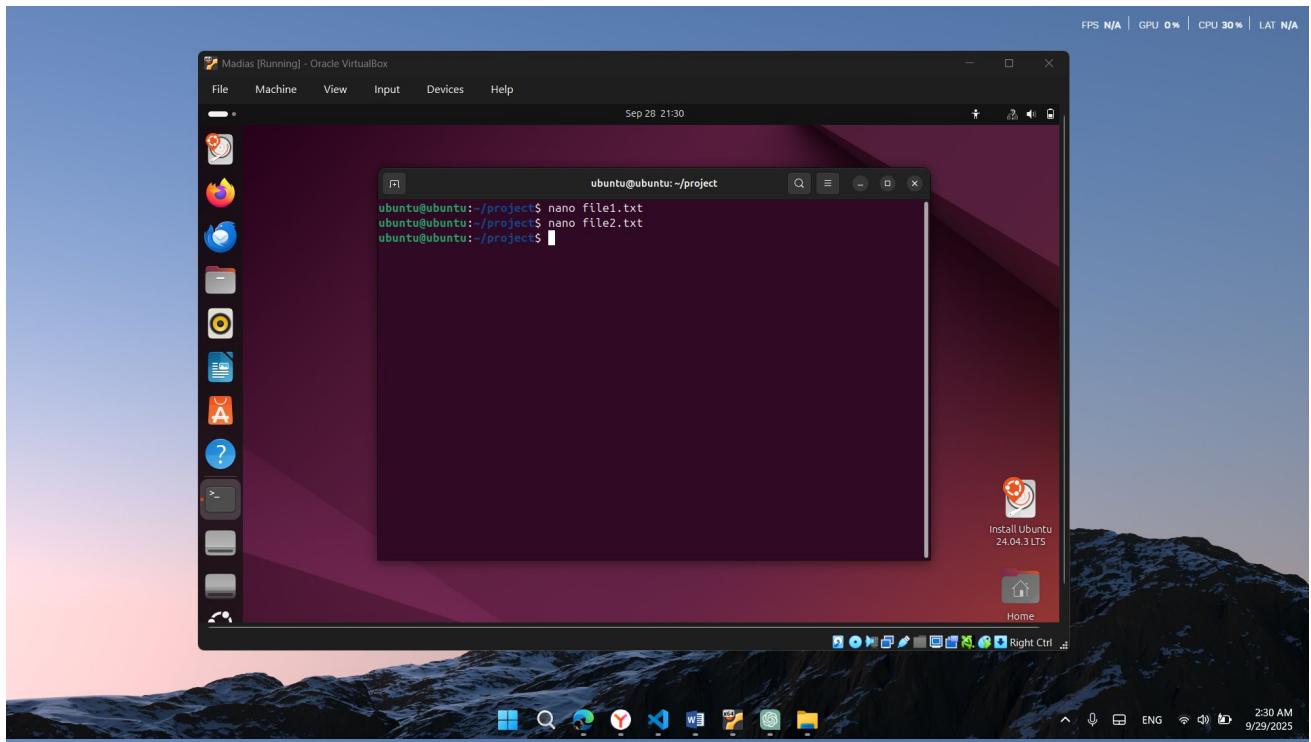


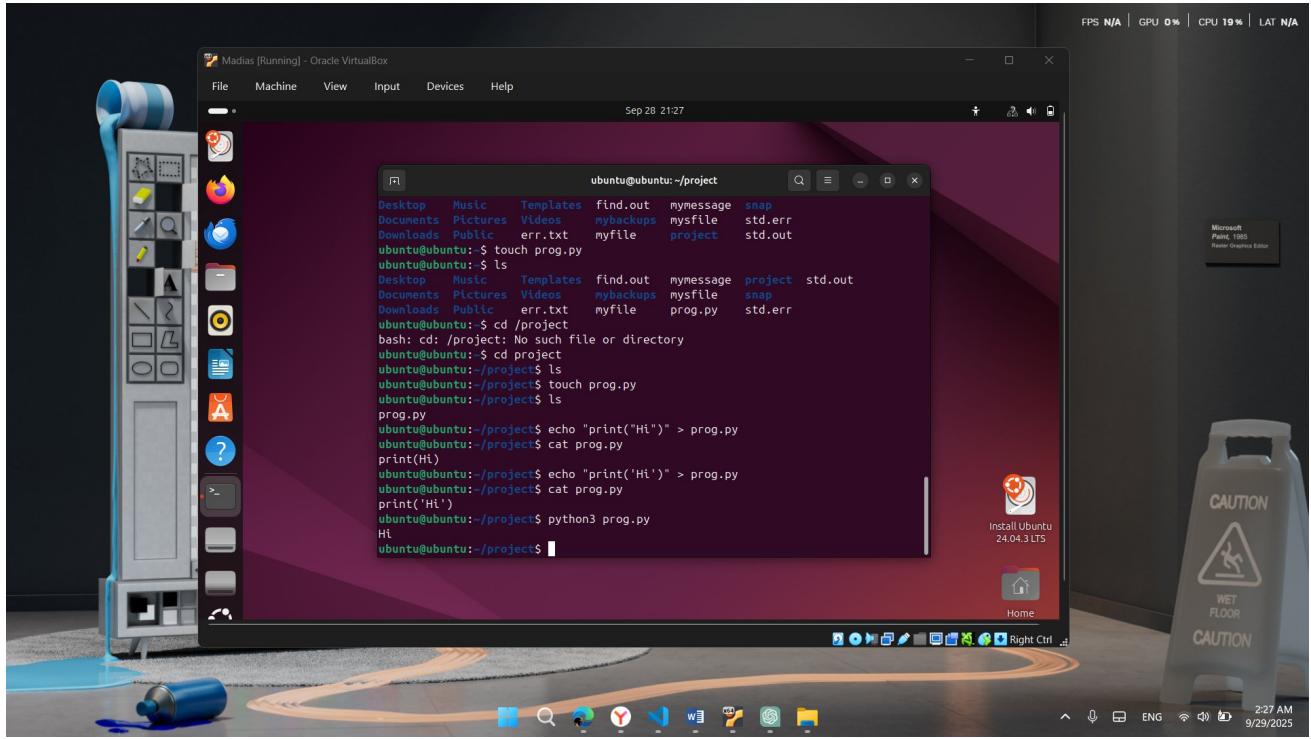
### 3. Practical Linux Tasks











## 5. Conclusion

In this practical work, I successfully:

- Navigated the Linux file system and viewed directories
- Installed and updated packages with apt
- Used **nano** and **vim** for file editing
- Created and executed a Python program
- Practiced searching, counting, and checking logs/packages
- Learned redirection of outputs and error handling
- Combined all tasks into a structured workflow

This assignment helped me become more confident in using the Linux terminal and understanding how different commands connect together.