Linux Installation and Basics*

Distributed Data Processing Environments

Lab Guide 0

This session aims at setting up a Linux environment for testing and then to learn basic shell commands.

Steps

1. Install VirtualBox from: `https://www.virtualbox.org/wiki/Downloads`. Confirm that command `virtualbox --version` runs from CMD.
2. Install Vagrant 2.4.1 from: `https://releases.hashicorp.com/vagrant/2.4.1/`. Confirm that command `vagrant version` runs from CMD and prints the correct version number.
3. Make sure that SSH is installed by running `ssh` on CMD. If not, install from: `https://bitvise.com/ssh-client-download`
4. Create, start, and configure a VM with Ubuntu Linux:
   - Open a command line window in an **empty folder**: Create folder in Explorer, click on right mouse button, and select "Open terminal here".
   - Run: `vagrant init cloud-image/ubuntu-24.04`
   - Run: `vagrant up`
   - Connect to the VM with: `vagrant ssh`
   - Select `bash` shell with: `sudo chsh -s /bin/bash vagrant`
   - Exit and re-enter VM.
5. Install a software package:
   - Update package lists with: `sudo apt update`
   - Install a software package with: `sudo apt install micro`
6. Try creating a simple Python program and running it.
7. Navigate the filesystem with: `ls`, `cd`, ...
8. Experiment with basic text manipulation commands: `grep`, ...
9. Experiment with command composition to perform simple data manipulation tasks.
10. At the end of the session:
    - Destroy the VM and cleanup with: `vagrant destroy`

Learning Outcomes Setup a locally hosted Linux environment. Apply basic shell commands to navigate the file system. Exploit text processing commands to do simple data manipulation.

*No restrictions on the use of AI tools.