Department of Computer Science

Assignment 1: VirtualBox

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Contents

Chapter 1

VirtualBox

1.1 Installation of VirtualBox and Creation of Multiple VMs

1.1.1 Download and Install VirtualBox:

1. Visit the VirtualBox website and download the appropriate version for your operating system.

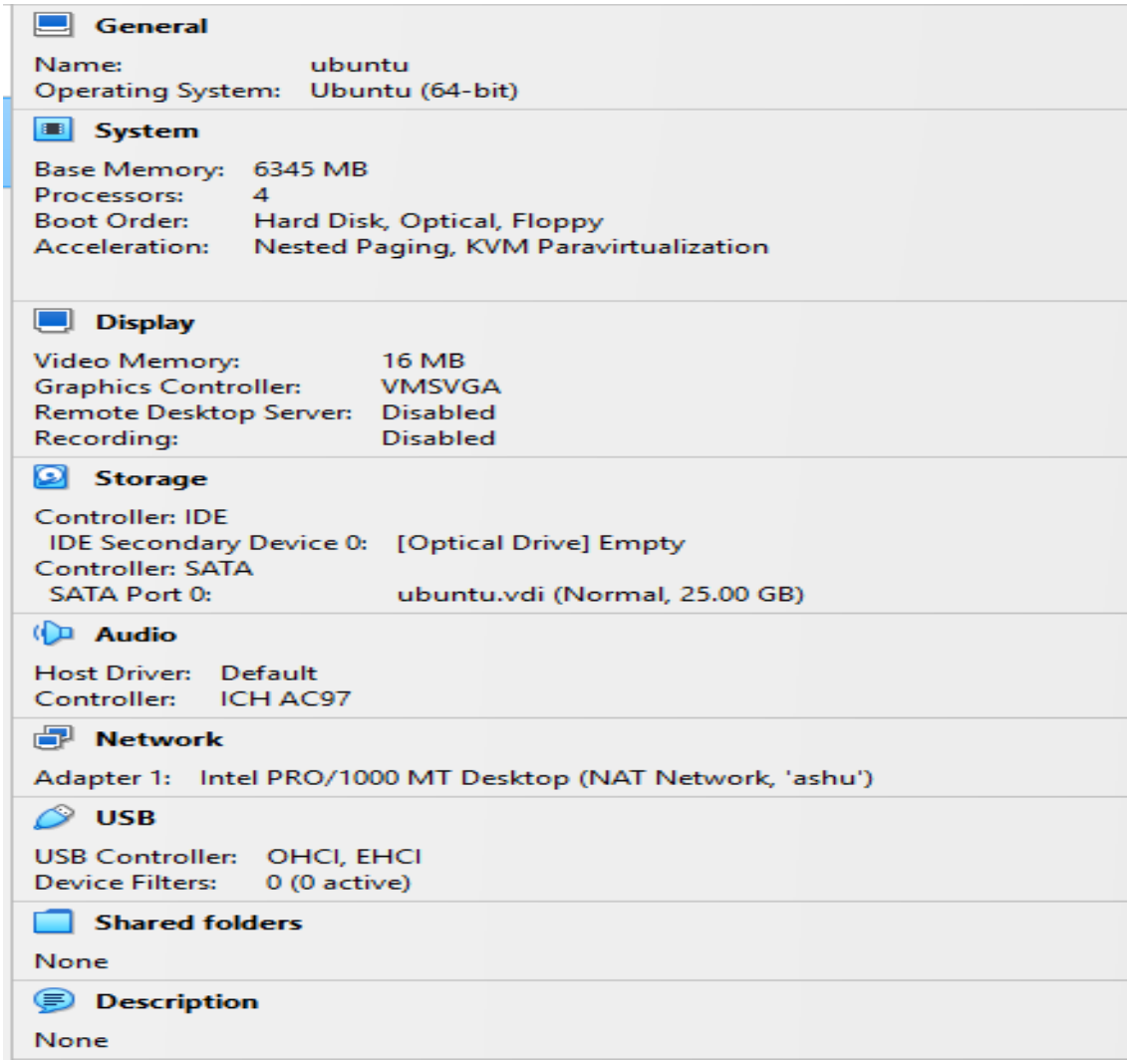
2. Follow the installation instructions for your OS.

1.1.2 Create Virtual Machines:

- **I have created two VMs : kali and Ubuntu.**

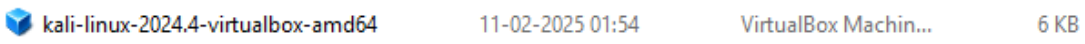
Ubuntu Server:

1. Open VirtualBox and click New to create a new VM.
2. Name your VM (e.g.,ubuntu), select the OS type (e.g., Linux, Ubuntu), and allocate memory (e.g., 2GB).
3. Create a virtual hard disk (e.g., 20GB) and select VDI as the file type.
4. final configuration of Ubuntu VM:

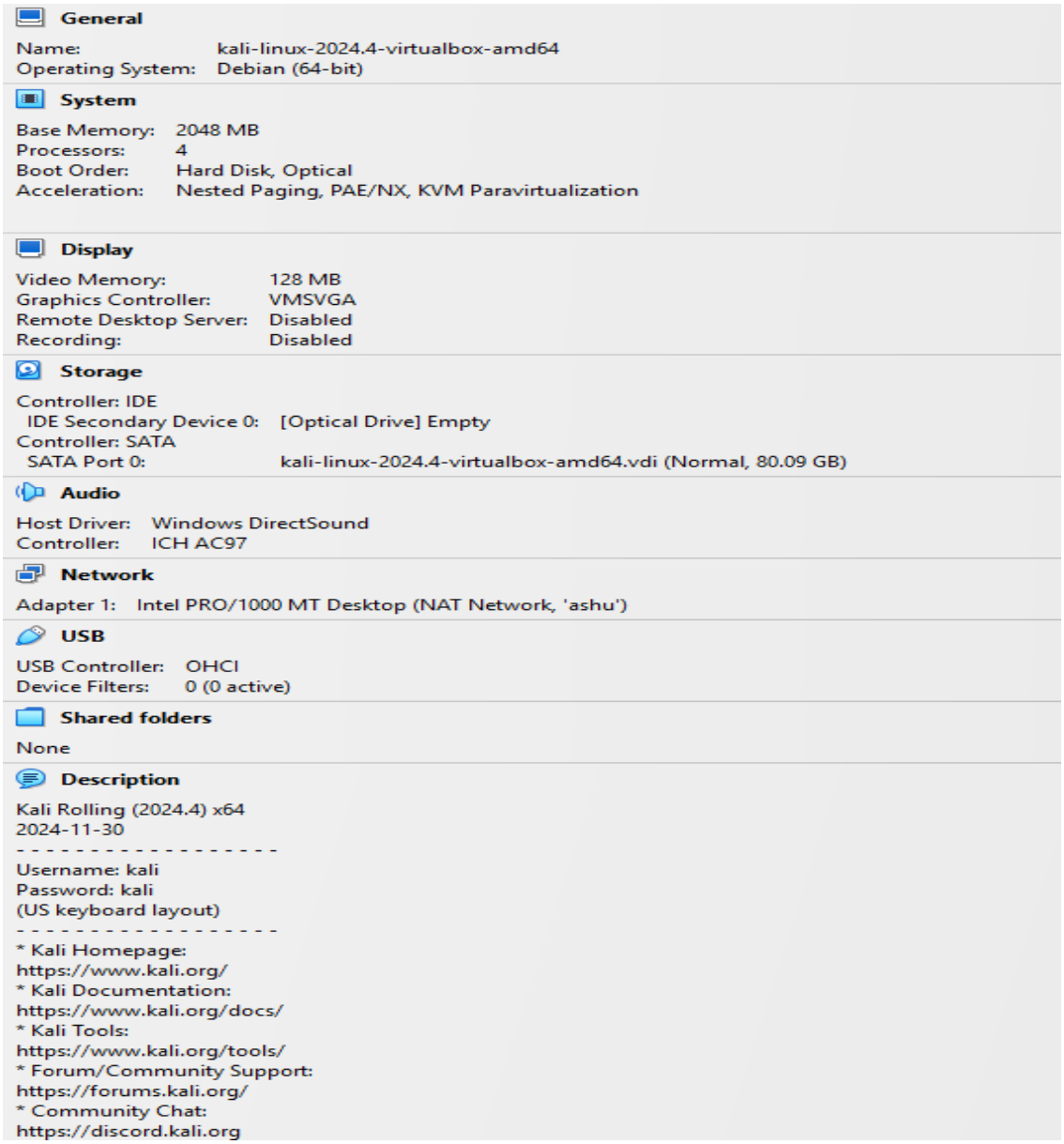


Kali Server:

1. Visit this website and download kali virtualbox.
2. Extract downloaded file by 7-zip.
3. Install vartualbox machine definition :



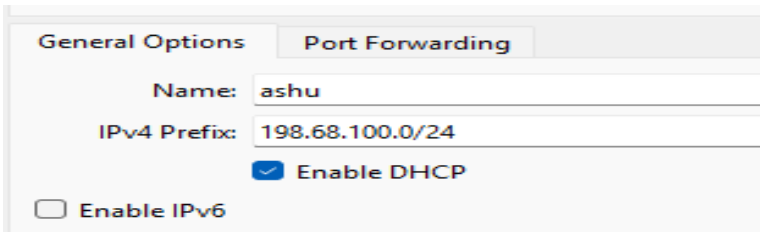
4. final configuration of Kali VM:



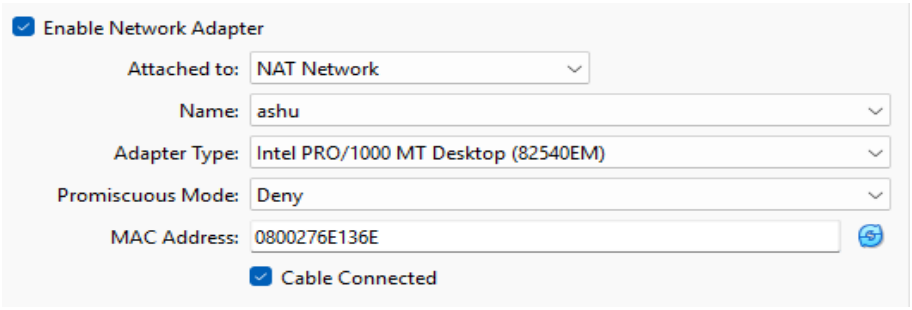
1.2 Configuration of Network Settings to Connect the VMs

1.2.1 Set Up Networking:

1. Go to File > Tools > Network Manager in VirtualBox and create a new Nat Networks (e.g., ashu) and set a static **IP (198.68.100.0)**.



2. Configure each VM to use this network:
   - Select a VM, go to Settings > Network, and enable Adapter.
   - Set Attached to to Nat Network Adapter and select ashu.



3. Repeat this in kali VM.

1.2.2 Static IPs:

1. Ubuntu VM : **198.68.100.5**
2. Kali VM : **198.68.100.4**

1.3 Deployment of a Simple Microservice Application

I have developed a microservice-based application with the following components and functionalities:

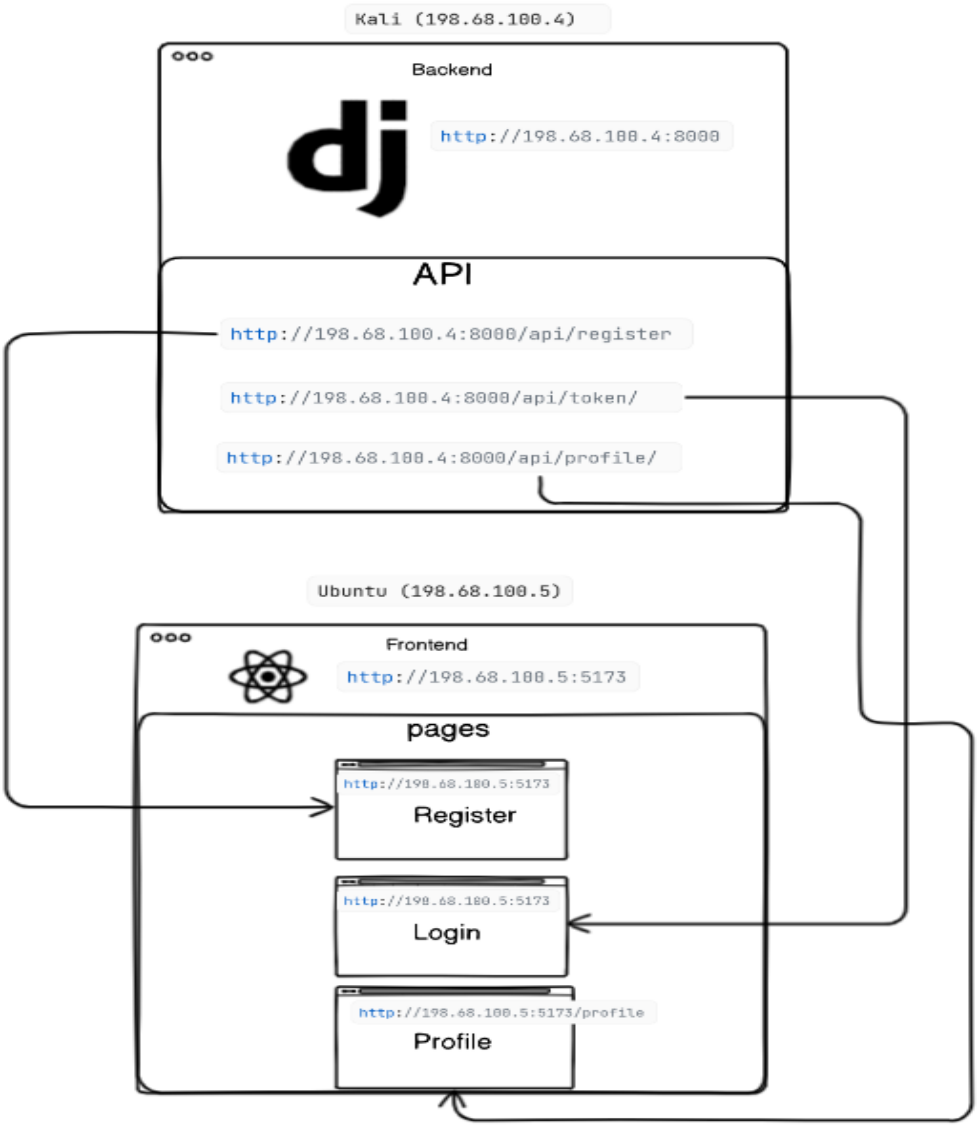
1. **Backend (API Gateway):**
   - Built using Django.
   - Hosted on a Kali Linux VM.
   - Provides RESTful APIs for: [User registration,User login,Profile details retrieval,User logout]
2. **Frontend:**
   - Built using Vite.
   - Hosted on an Ubuntu VM.
   - Provides a user interface for: [Registering new users,Logging in existing users,Displaying user profile details,Logging out users]

For more details, including setup instructions, refer to the README files for both the backend and frontend. Additionally, a VIDEO demonstration is available for a step-by-step walkthrough of the application.

Chapter 2

Architecture Design and Link

2.1 Architecture Design



2.2 Link

- Link to Source Code Repo
- Link to Recorded Video Demo