Ex.3(A-C) Virtualization: Installation and Configuration of Oracle VirtualBox & Kali Linux, and Execution of Linux Commands

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Aim:

To set up a virtualized environment using Oracle VirtualBox, install Kali Linux as a guest OS, and execute fundamental Linux commands.

3.a) Installation and Configuration of Oracle VirtualBox

Aim:

To install and configure Oracle VM VirtualBox.

Pre-requisites:

- Machine with Internet access
- Minimum 4 GB RAM
- Sufficient storage space

Steps:

1. Download Oracle VM VirtualBox:
    - Visit Oracle VirtualBox Official Site
    - Download installer for your OS (Windows/macOS/Linux).
2. Install Oracle VM VirtualBox (Example: Windows):
    - Launch Installer → Allow Changes → Click Next.
    - Choose Installation Options → Click Next.
    - Accept Network Interface Warning → Click Yes.
    - Click Install.

- Finish Installation and Launch VirtualBox.

3. Configure VirtualBox:
    - Open VirtualBox.
    - Click New → Name VM → Select Type (Linux/Windows) and Version.
    - Allocate:
        - Minimum 2 GB RAM
        - Create Virtual Hard Disk (20 GB recommended).
    - Start Virtual Machine and provide ISO to install OS.

Result:

Thus, Oracle VM VirtualBox was installed successfully.

3.b) Installation and Configuration of Kali Linux

Aim:

To install and configure Kali Linux in Oracle VirtualBox.

Pre-requisites:

- Oracle VM VirtualBox Installed
- 4 GB RAM and 20 GB Storage Minimum
- Kali Linux ISO image

Steps:

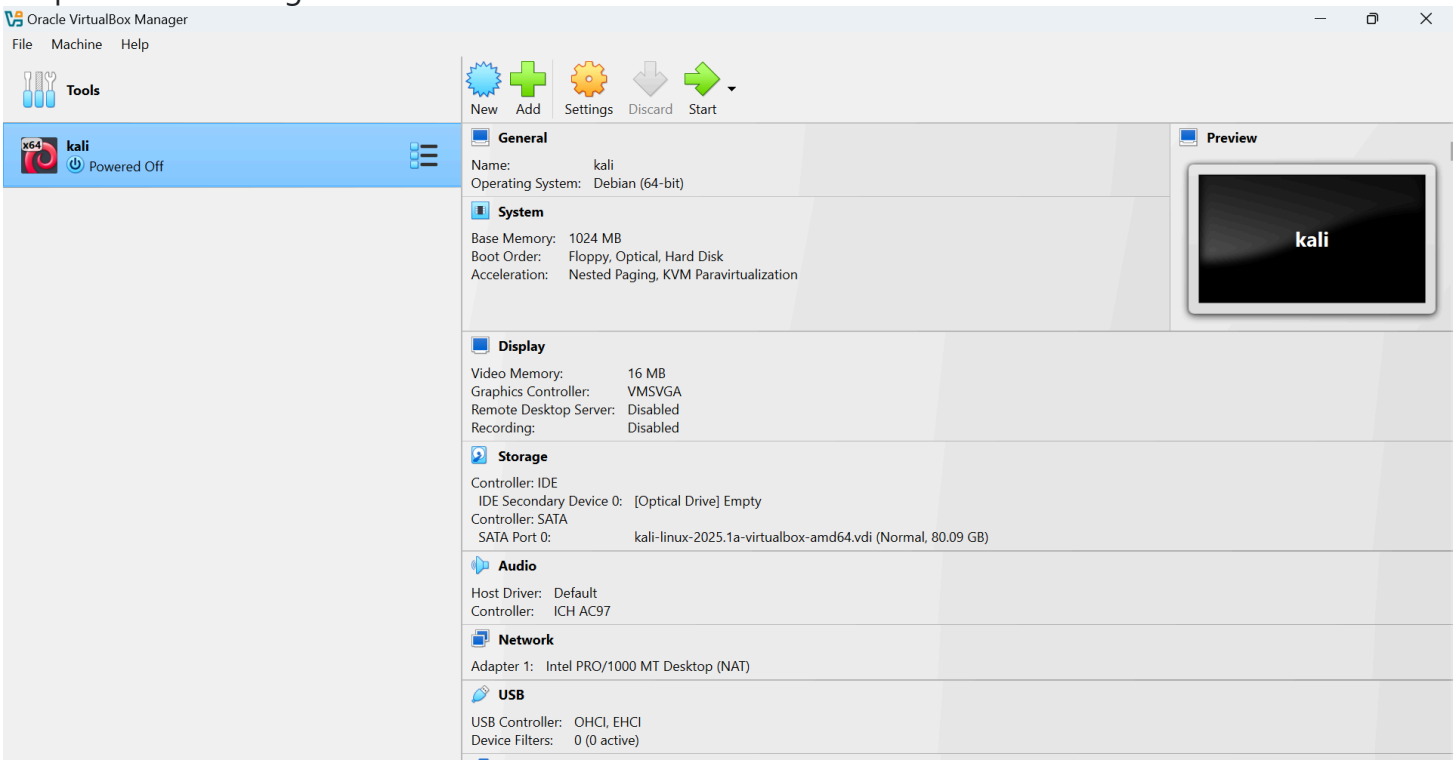
1. Download Kali Linux ISO:
    - Visit Kali Linux Official Site
    - Download 64-bit ISO (Installer version).
2. Create a New Virtual Machine:
    - Open VirtualBox → Click New.
    - Name: "Kali Linux" → Type: Linux → Version: Debian (64-bit).
3. Allocate Memory:
    - Minimum 2 GB RAM (recommended 4 GB).

4. Create Virtual Hard Disk:
    - Select VDI (VirtualBox Disk Image).
    - Choose Dynamically allocated.
    - Set Disk size to 20 GB or more.
5. Configure ISO Image:
    - Settings → Storage → Controller: IDE → Empty CD → Choose Disk File → Select Kali Linux ISO.
6. Start Installation:
    - Boot Virtual Machine → Choose Graphical Install.
    - Set Language, Region, Keyboard.
    - Configure Network → Set Hostname (e.g., kali).
    - Set root password.
    - Disk Partitioning: Use entire disk → All files in one partition.
    - Install System → Install GRUB Bootloader → Finish Installation.
7. Login to Kali Linux:
    - Use root credentials.
8. (Optional) Install Guest Additions:
    - Devices → Insert Guest Additions CD Image → Follow steps inside Kali.

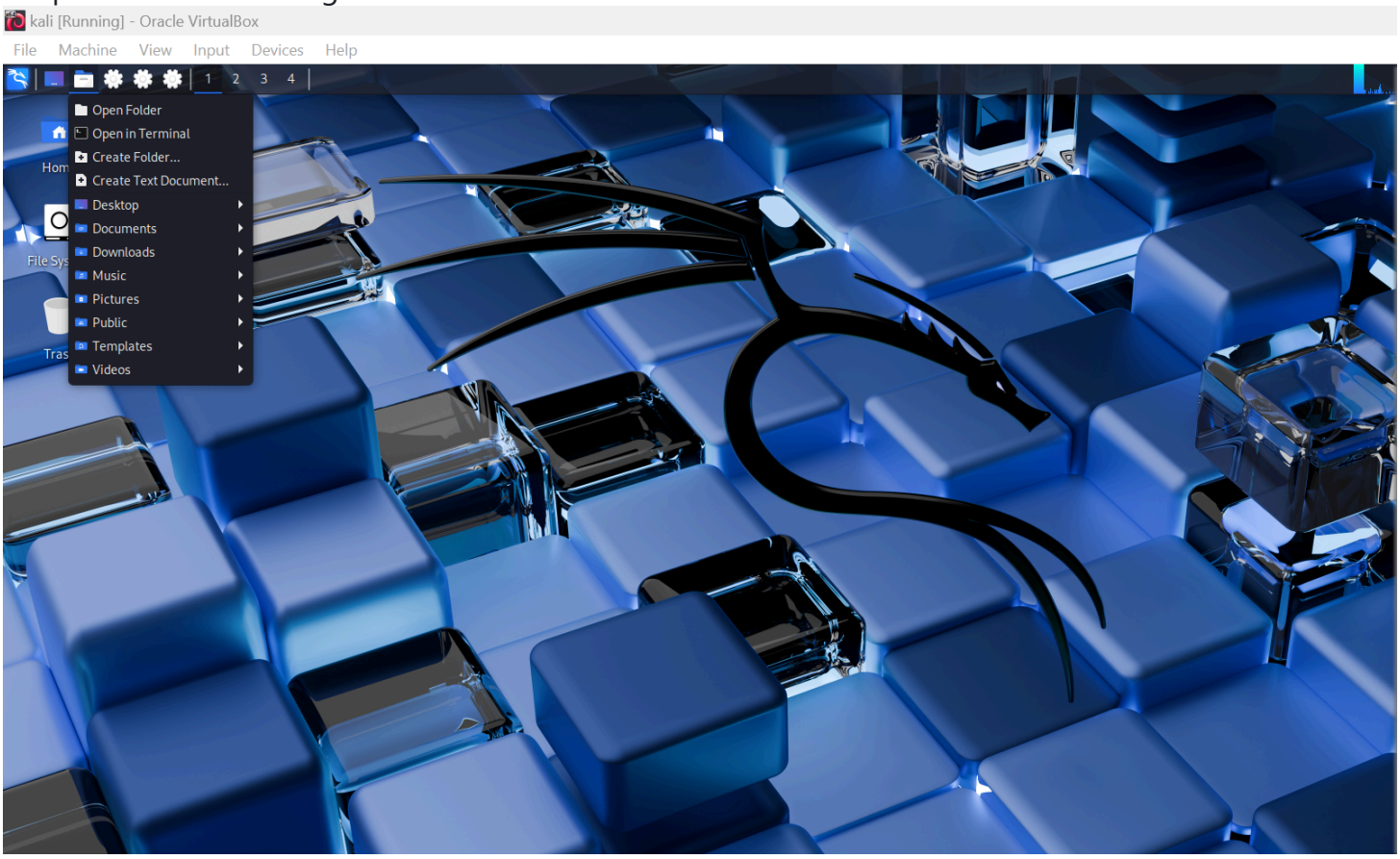
Snapshots:

AWS Account Creation Snapshot

Snapshot 1: Installing Oracle VirtualBox



Snapshot 2: Kali Running in Virtual



Result:

Thus, Kali Linux guest OS was installed and configured successfully.

3.c) Execution of Linux Commands in Kali

About Linux:

- Open-source operating system.
- Kernel manages communication between hardware and software.
- Commands are case-sensitive.

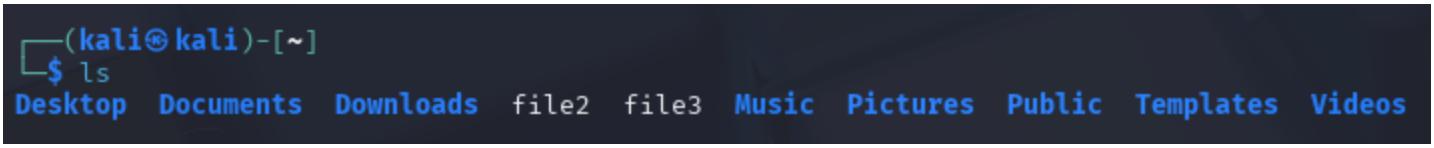
Linux Commands:

1. ls Command

   The ls command is used to display a list of content of a directory.

Syntax:

```
ls
```

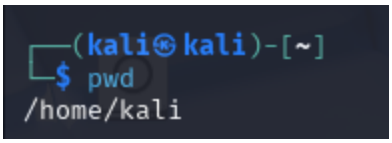


2. pwd Command

   The pwd command is used to display the location of the current working directory.

Syntax:

```
pwd
```

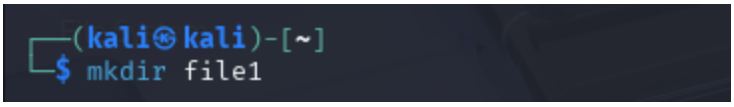


3. mkdir Command

   The mkdir command is used to create a new directory under any directory.

Syntax:

```
mkdir <directory_name>
```

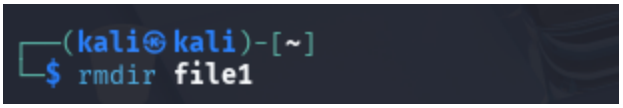


4. rmdir Command

   The rmdir command is used to delete a directory.

Syntax:

```
rmdir <directory_name>
```



5. cd Command The cd command is used to change the current directory

Syntax:

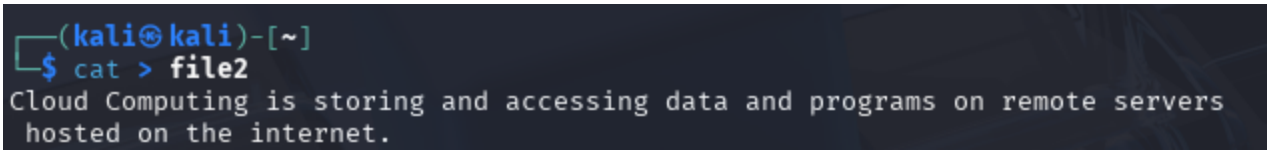
```
cd <directory_name>
```

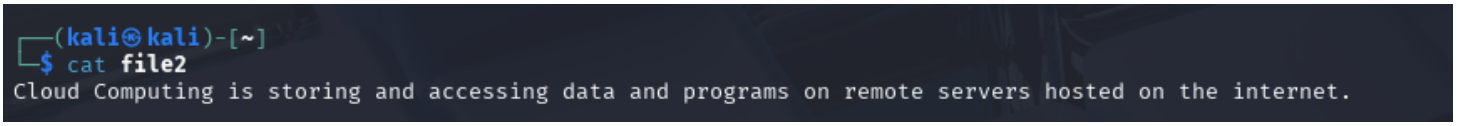
6. cat Command

   The cat command is a multi-purpose utility in the Linux system. It can be used to create a file, display content ofthe file, copy the content of one file to another file, and more.

Syntax:

```
cat [options] [file_name]
```



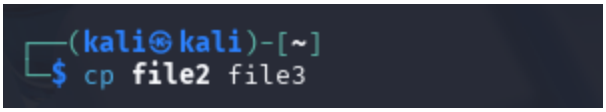


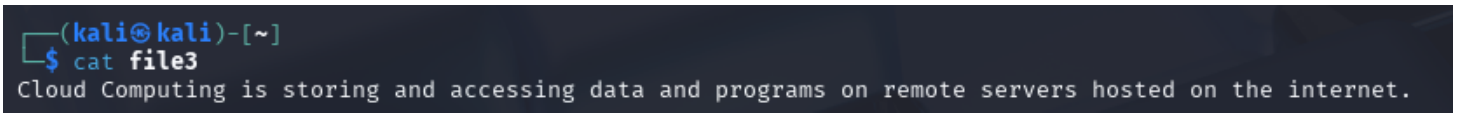
7. cp Command

   The cp command is used to copy a file or directory.

Syntax:

```
cp [source] [destination]
```



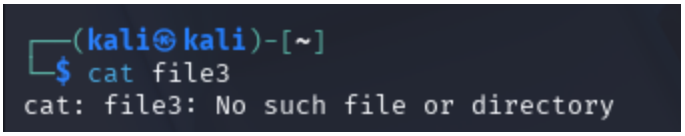


8. mv Command

   The mv command is used to move a file or a directory form one location to another location.

Syntax:

```
mv [source] [destination]
```

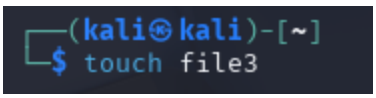


9. touch Command

   Create empty file.

Syntax:

```
touch [filename]
```



10. vi Command

    Edit file contents using editor.

Syntax:

```
vi [filename]
```

Result:

Thus, various Linux commands were executed successfully in Kali Linux virtual machine.