CompTIA Linux+

Using Debian Package Management

Introduction

Welcome to the **Using Debian Package Management** Practice Lab. In this module you will be provided with the instructions and devices needed to develop your hands-on skills.

Debian Package Management
Binary
Linux System

Learning Outcomes

In this module, you will complete the following exercise:

- Exercise 1 - Use Debian Package Management

After completing this lab, you will be able to:

- Manage Debian binary packages
- Find packages containing specific files or libraries
- Obtain package information

Exam Objectives

The following exam objectives are covered in this lab:

- **LPI:** 102.4 Use Debian package management
- **CompTIA:** 2.1 Given a scenario, conduct software installations, configurations, updates, and removals.

Note: *Our main focus is to cover the practical, hands-on aspects of the exam objectives. We recommend referring to course material or a search engine to research theoretical topics in more detail.*

Lab Duration

It will take approximately **1 hour** to complete this lab.

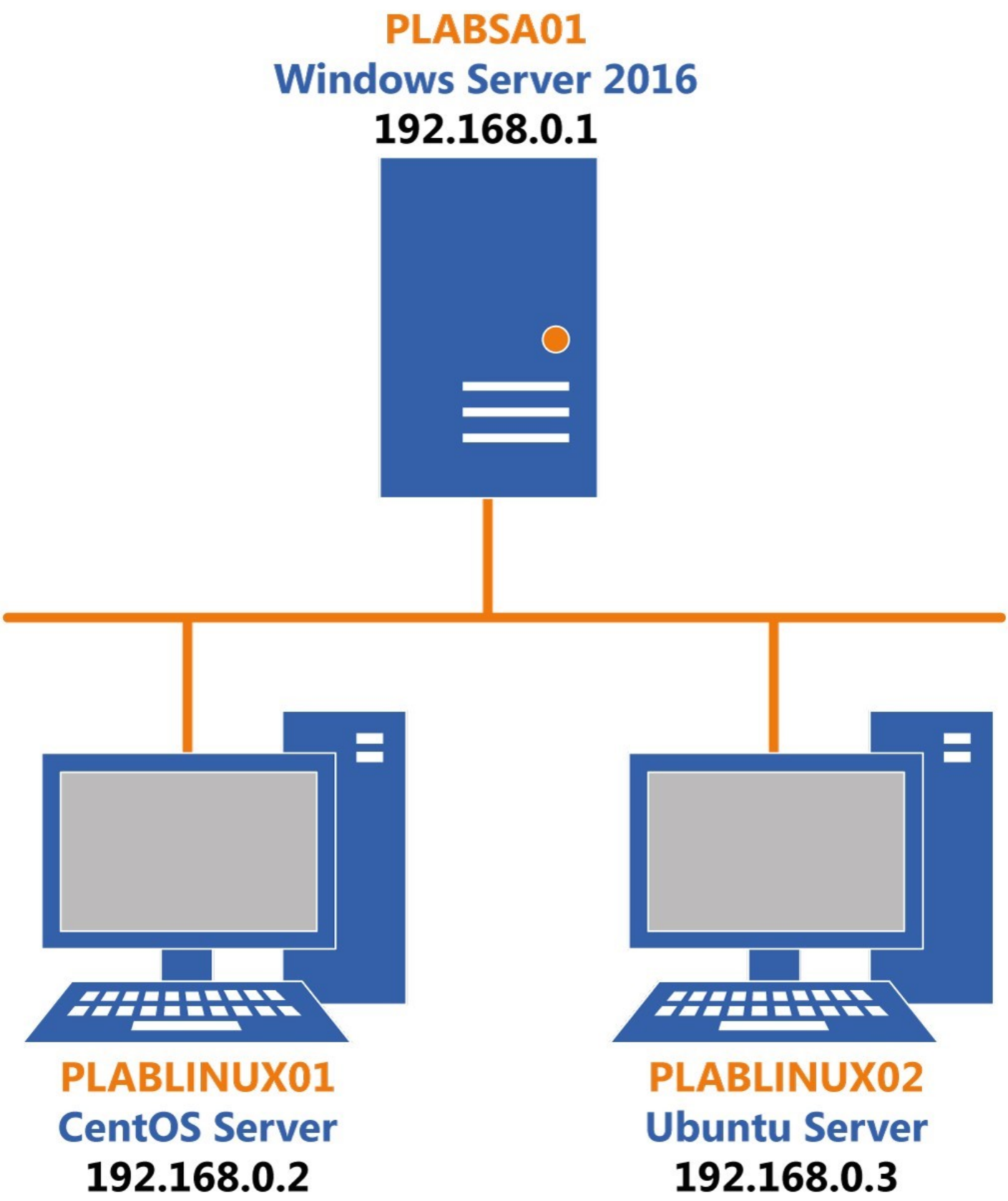
Help and Support

For more information on using Practice Labs, please see our **Help and Support** page. You can also raise a technical support ticket from this page.

Click Next to view the Lab topology used in this module.

Lab Topology

During your session, you will have access to the following lab configuration.



Depending on the exercises you may or may not use all of the devices, but they are shown here in the layout to get an overall understanding of the topology of the lab.

- **PLABSA01** (Windows Server 2016)
- **PLABLINUX01** (CentOS Server)
- **PLABLINUX02** (Ubuntu Server)

Click Next to proceed to the first exercise.

Exercise 1 - Using Debian Package Management

Debian packages are meant for Debian Linux distributions, such as Ubuntu and Mint. Debian packages are similar to RPM packages. However, the two cannot be used interchangeably without converting the format of the package.

In this exercise, you will understand how to install and remove Debian packages.

Learning Outcomes

After completing this exercise, you will be able to:

- Log into a Linux System
- Manage Debian binary packages
- Find packages containing specific files or libraries
- Obtain package information

Your Devices

You will be using the following device in this lab. Please power these on now.

- **PLABLINUX02** (Ubuntu Server)

Task 1 - Manage Debian Binary Packages

Debian packages are operating system and CPU neutral. This means that a Debian package can work with any kind of Debian distribution and CPU type. The extension for Debian packages is **.deb**. In this task, you will install and remove **the apache2** package.

To manage Debian binary packages, perform the following steps:

Step 1

On the desktop, right-click and select **Open in Terminal**.

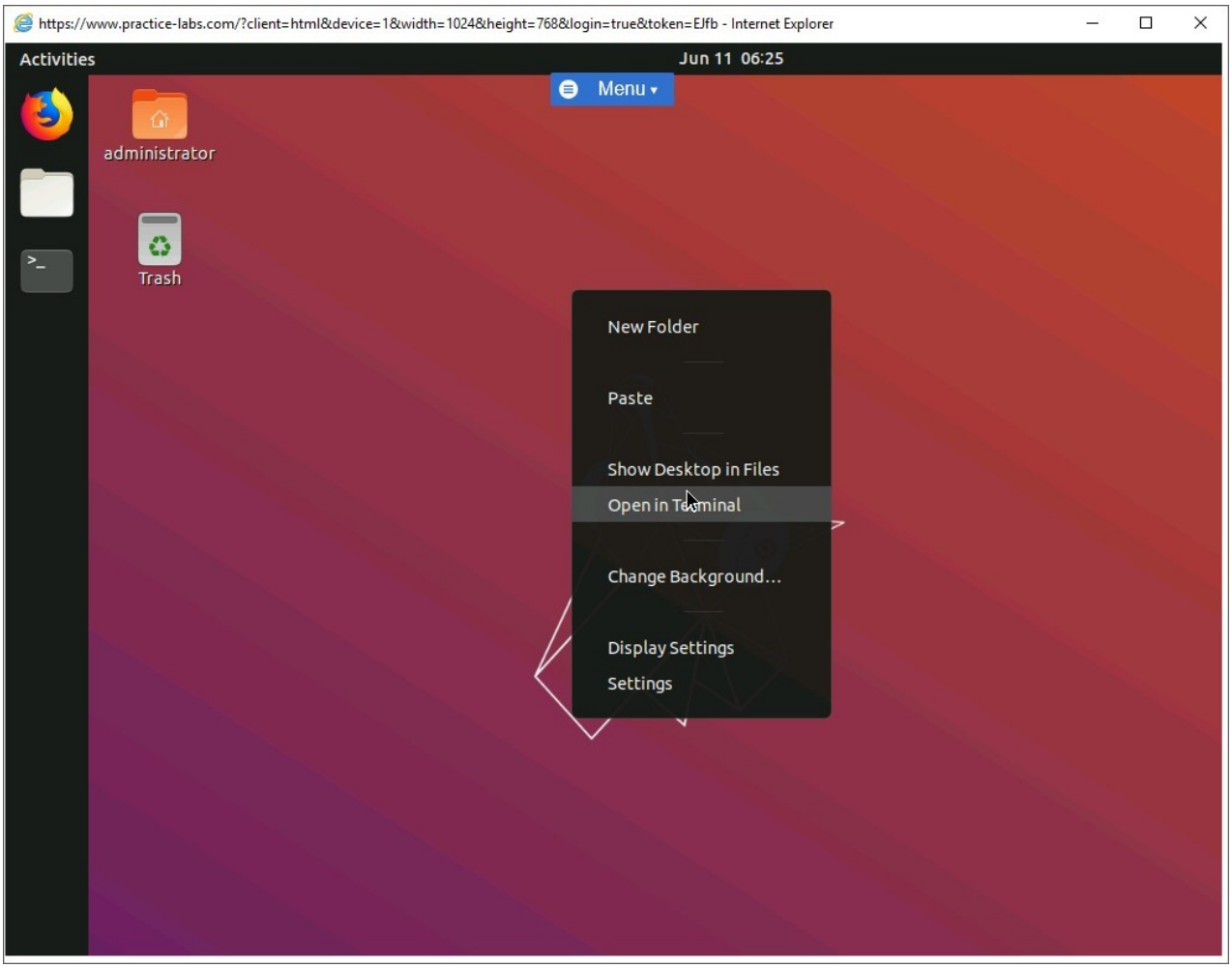


Figure 1.1 Screenshot of PLABLINUX02: Selecting the Open Terminal option from the context menu.

Step 2

Before you begin the installation of a package, you can update the local package index. To do this, type the following command:

```
sudo apt update
```

Press **Enter**.

When prompted to provide an administrator password, type the following password: `Passw0rd`

Press **Enter**.

The package reading is initiated. Notice that all packages are up to date.

> ***Note:*** *There will be chances that when you run the lab, there are new updates that are released. Therefore, the result may vary at that point of time. You can also run the sudo apt upgrade command after running the update command. The upgrade parameter will upgrade the existing packages.*

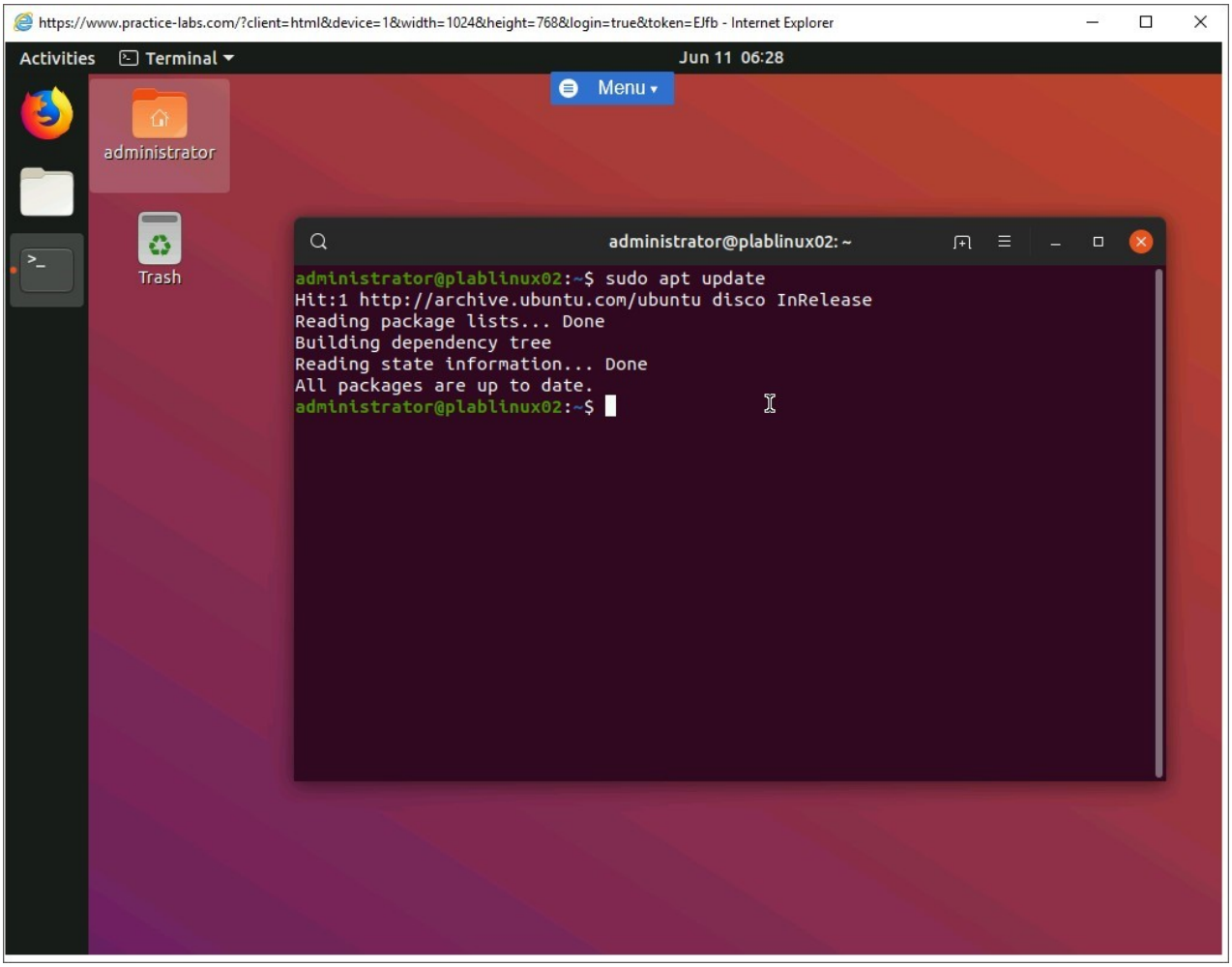


Figure 1.2 Screenshot of PLABLINUX02: Updating the packages.

Step 3

Clear the screen by entering the following command:

```
clear
```

***Note**: The clear command is used before every step to enable the learners to get a clear view of the output of each command. Otherwise, it is not mandatory to use the clear command before every command.*

You will now install a package named **apache2**.

To install the **apache** package, type the following command:

```
sudo apt install apache2
```

Press **Enter**.

Notice the use of the sudo command. This command is required here because you are not logged in as root. The apt-get command is used to install, upgrade, or remove the package. The install parameter helps you install the package.

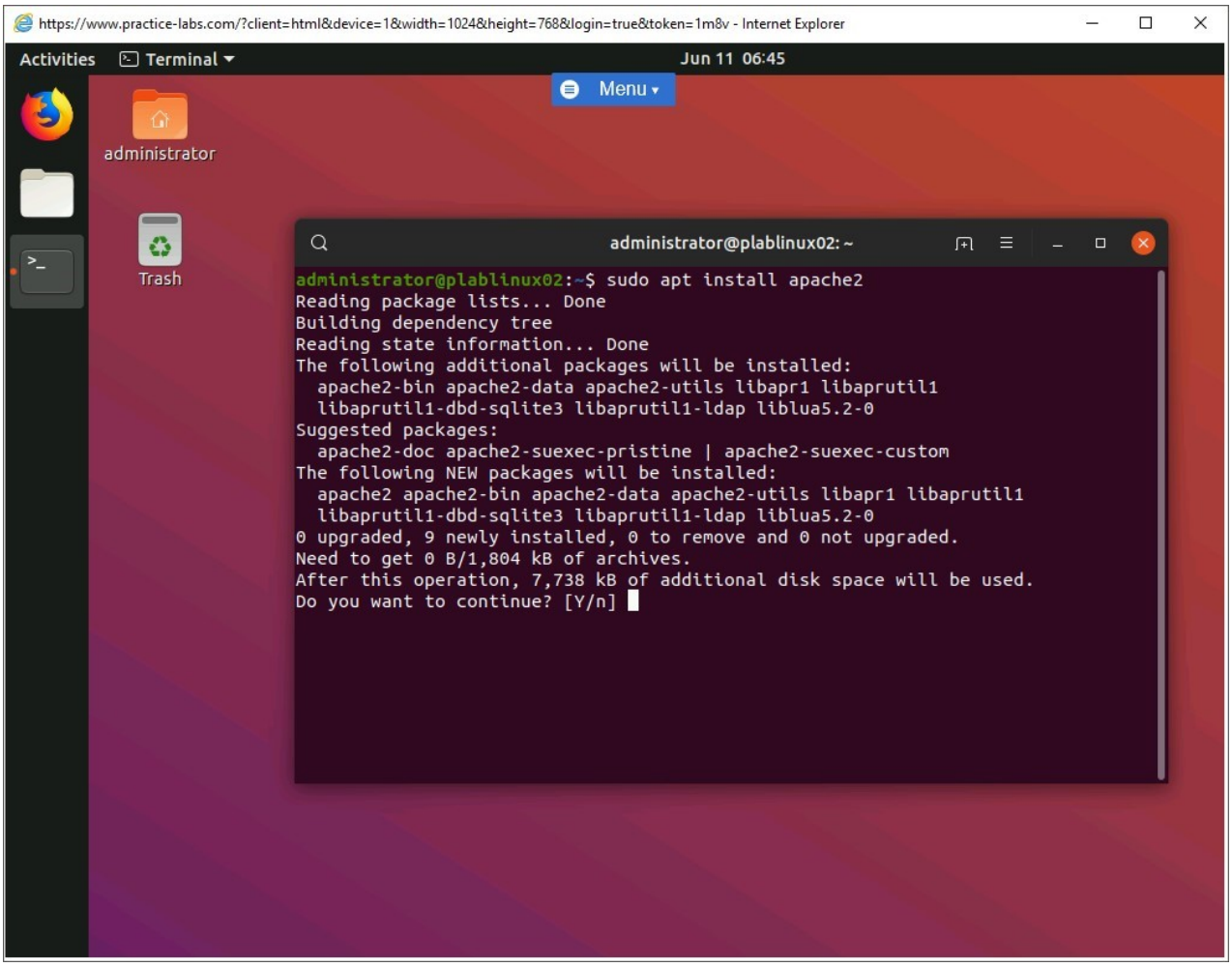


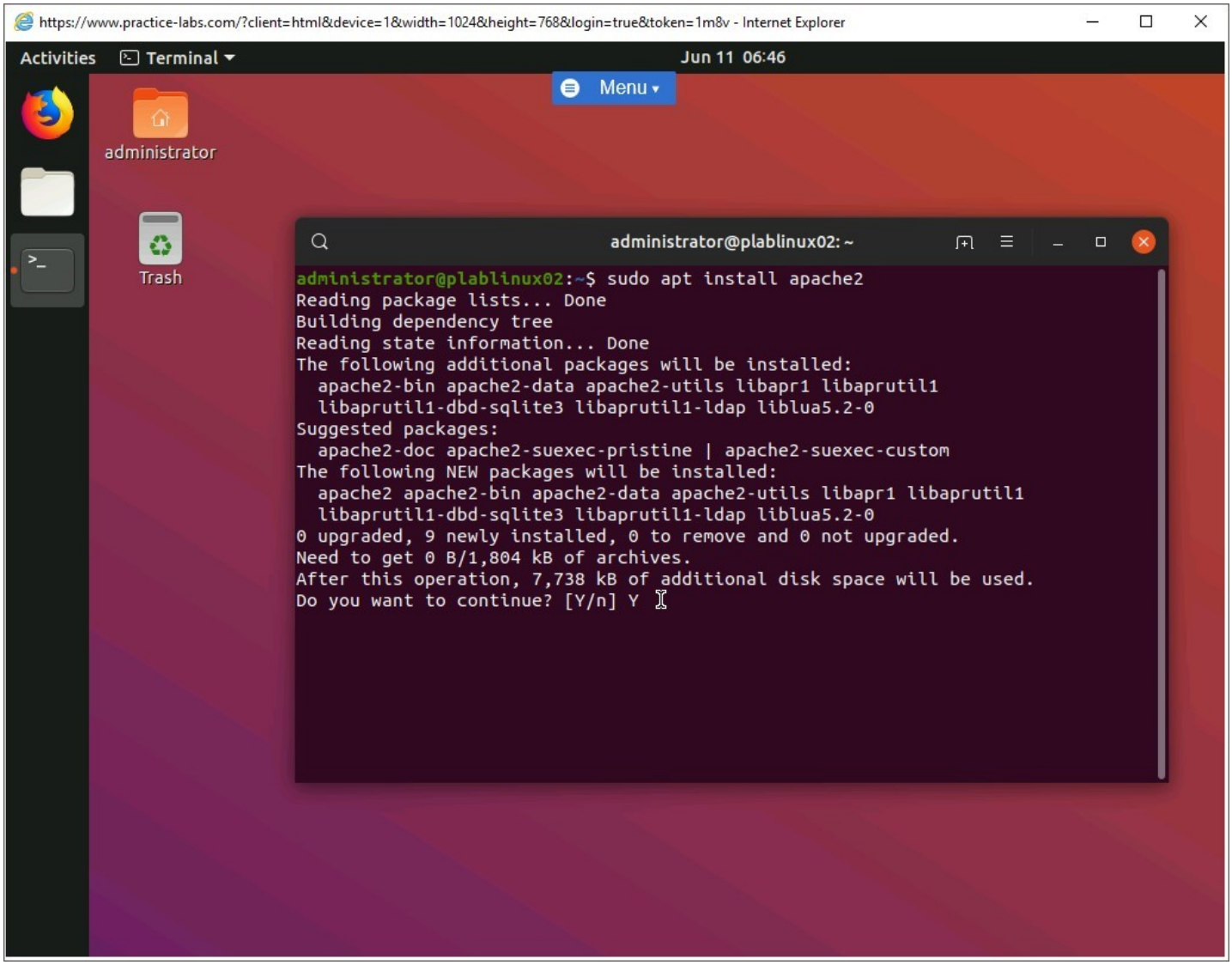
Figure 1.3 Screenshot of PLABLINUX02: Installing the apache2 package.

Step 4

After going through the dependencies, you are prompted to continue or discontinue the installation. Type the following to continue:

```
Y
```

Press **Enter**.



Step 5

After the packages are downloaded, they are installed. Finally, the installation is complete, and you are navigated back to the administrator command prompt.

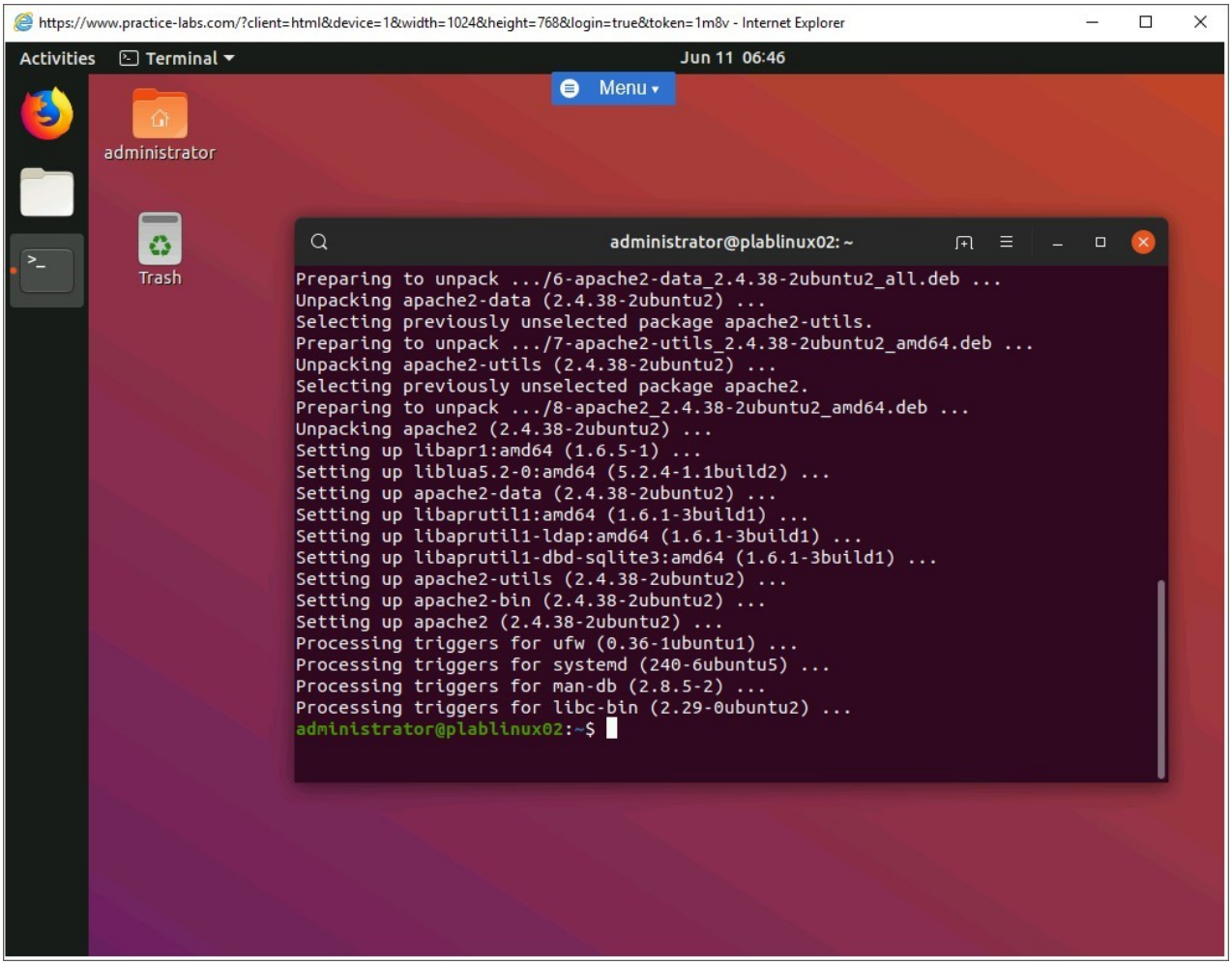


Figure 1.5 Screenshot of PLABLINUX02: Showing the completion of installation.

Step 6

During installation, Apache registers itself with UFW. With this registration, UFW creates several profiles that can be used to enable or disable access to Apache through the firewall. To see the list of profiles, type the following command:

```
sudo ufw app list
```

Press **Enter**.

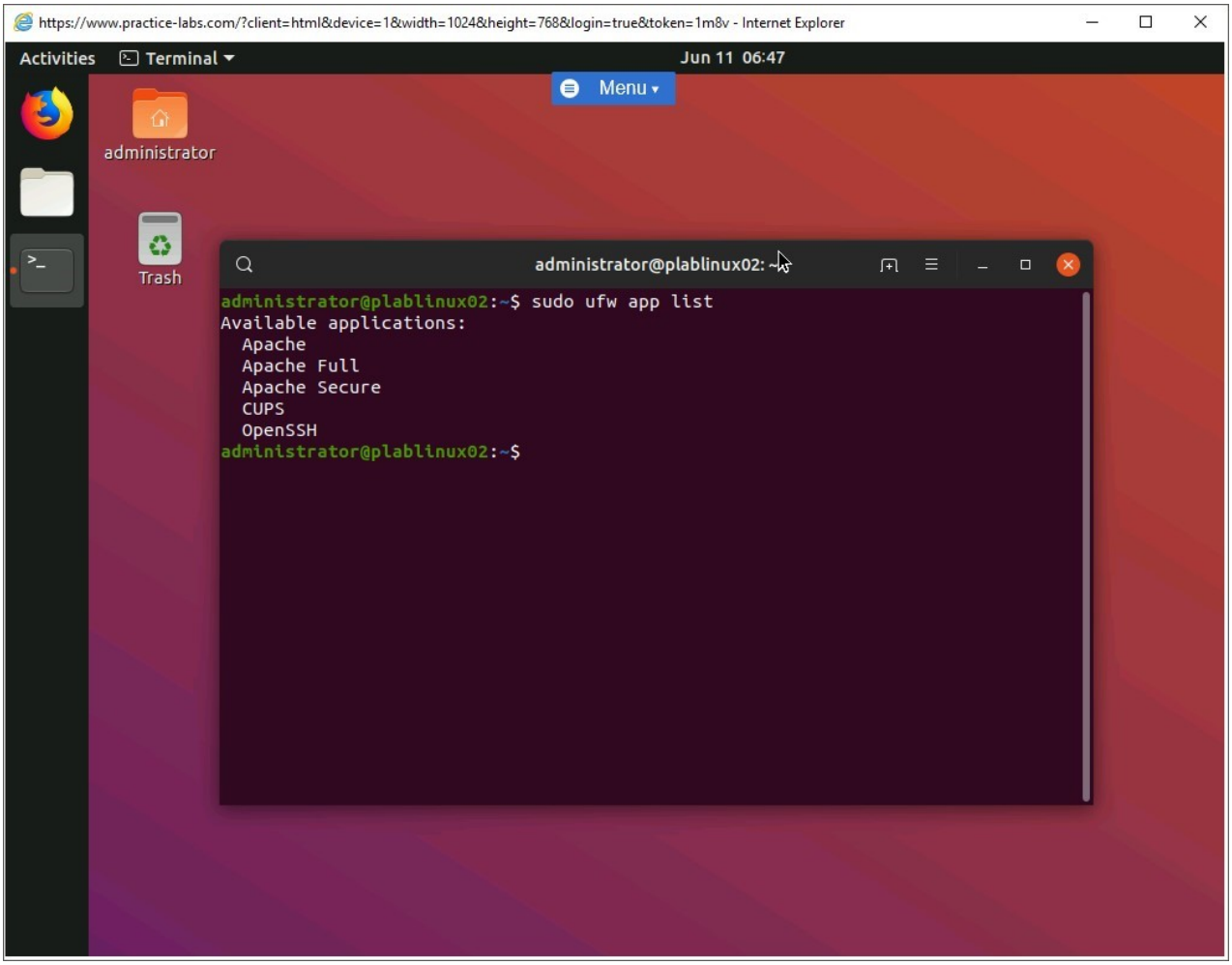


Figure 1.6 Screenshot of PLABLINUX02: Showing the list of profiles in UFW.

Step 7

Clear the screen by entering the following command:

```
clear
```

You can also remove a package. For example, you can remove the **apache2** package from the system.

To remove the **apache2** package, type the following command:

```
sudo apt-get remove apache2
```

Press **Enter**.

The remove parameter removes the **apache2** package.

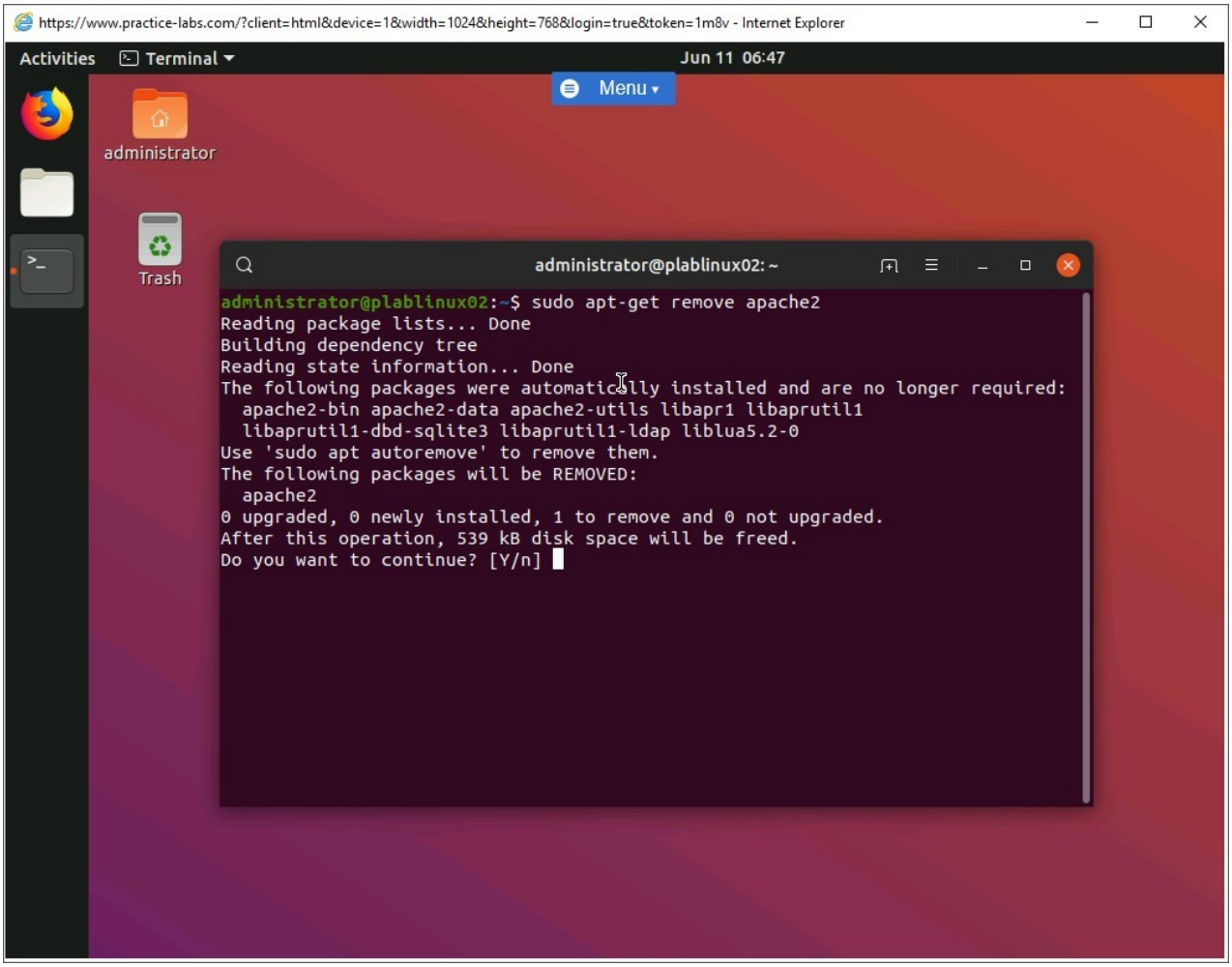


Figure 1.7 Screenshot of PLABLINUX02: Removing the apache2 package.

Step 8

When prompted for confirmation, type the following:

```
Y
```

Press **Enter**.

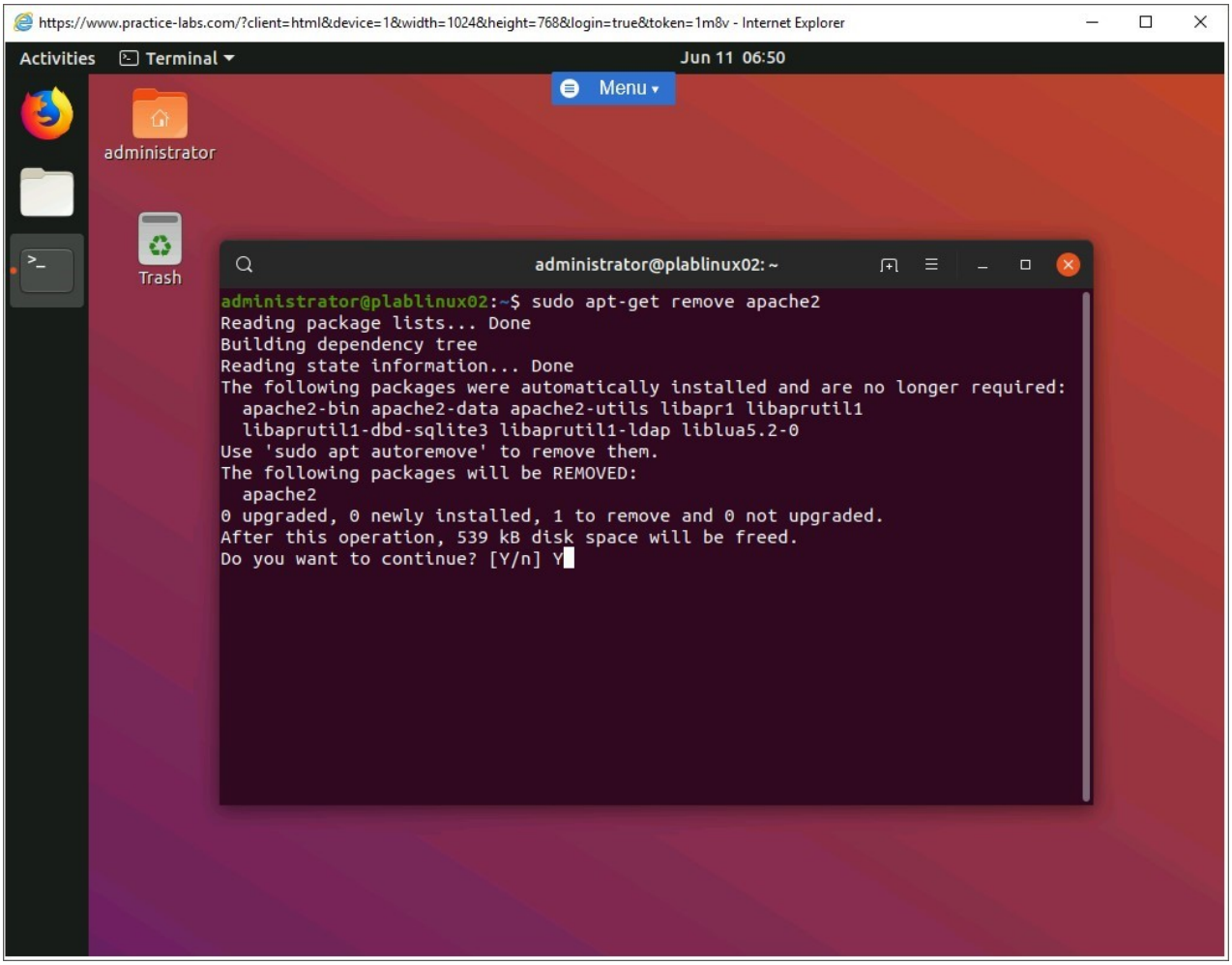


Figure 1.8 Screenshot of PLABLINUX02: Confirming the removal.

Step 9

The **apache2** package is now removed, and you are navigated back to the administrator command prompt.

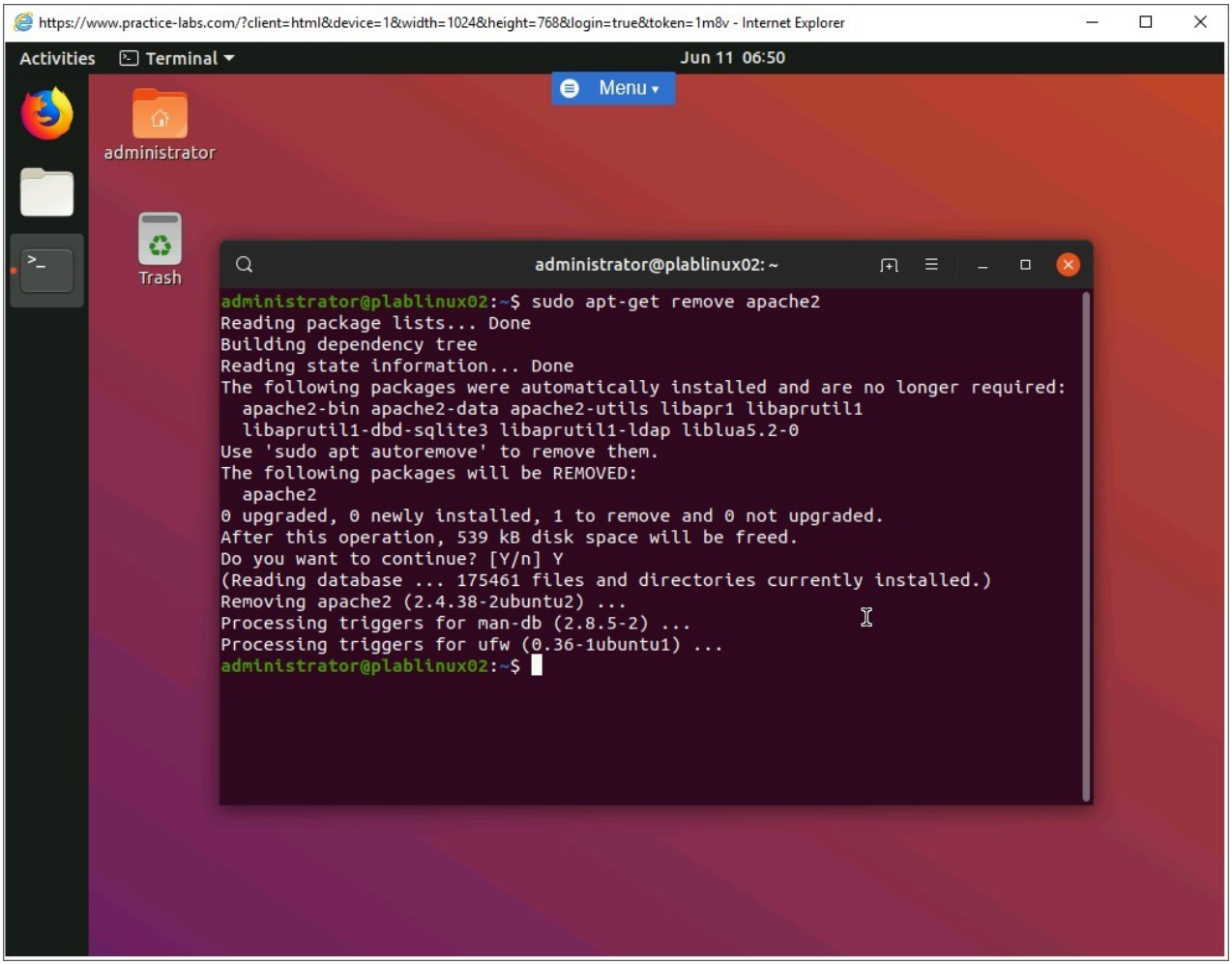


Figure 1.9 Screenshot of PLABLINUX02: Showing the completion of removal.

Step 10

Clear the screen by entering the following command:

```
clear
```

You can also remove a package and its dependencies.

To remove the **apache2** package dependencies, type the following command:

```
sudo apt-get autoremove apache2
```

Press **Enter**.

The autoremove command removes the **apache2** package dependencies if they still exist.

Note: If dependencies exist, you will be prompted to confirm the removal. When prompted for confirmation, enter **Y**.

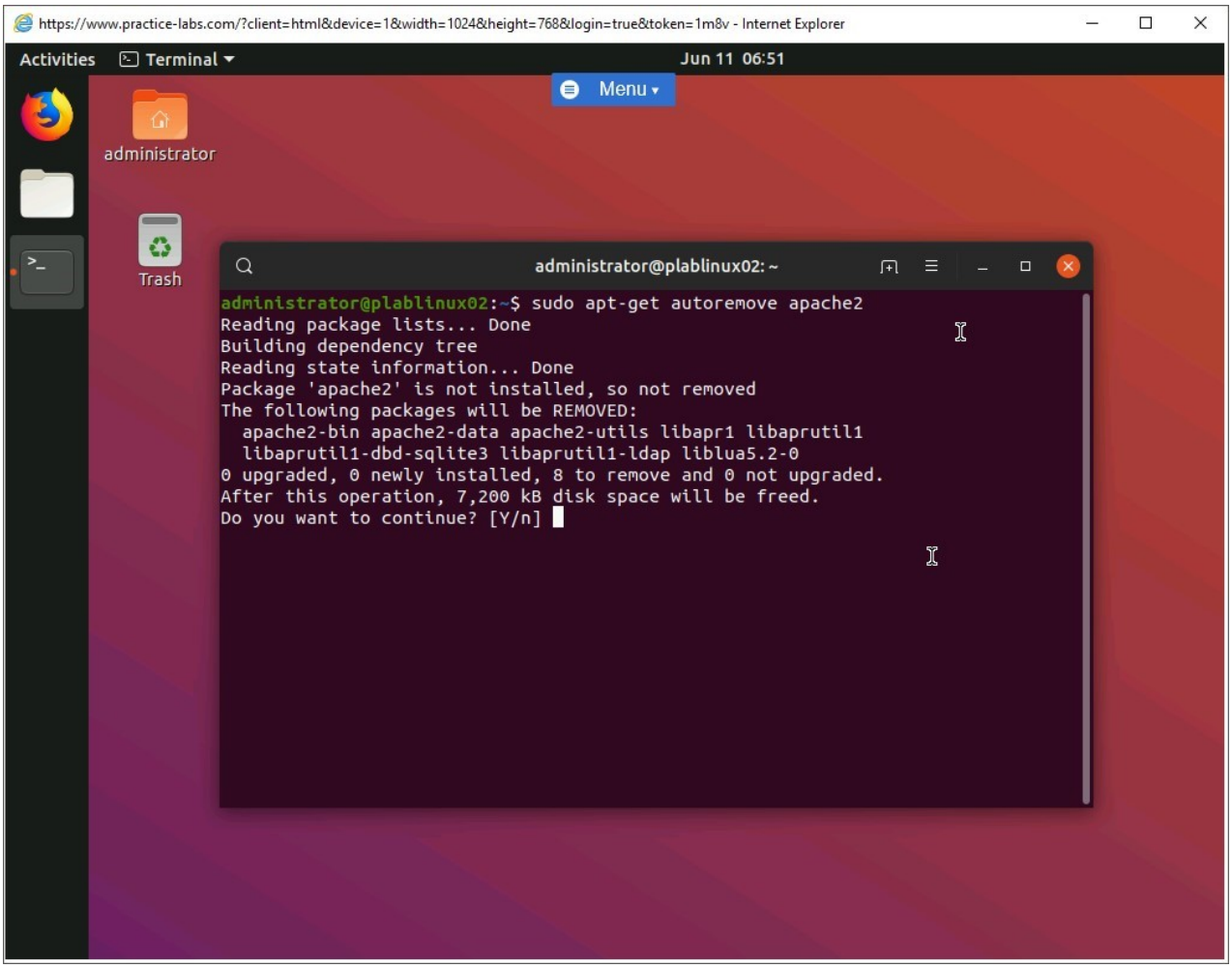


Figure 1.10 Screenshot of PLABLINUX02: Removing the package dependencies.

Step 11

When prompted for confirmation, type the following:

```
Y
```

Press **Enter**.

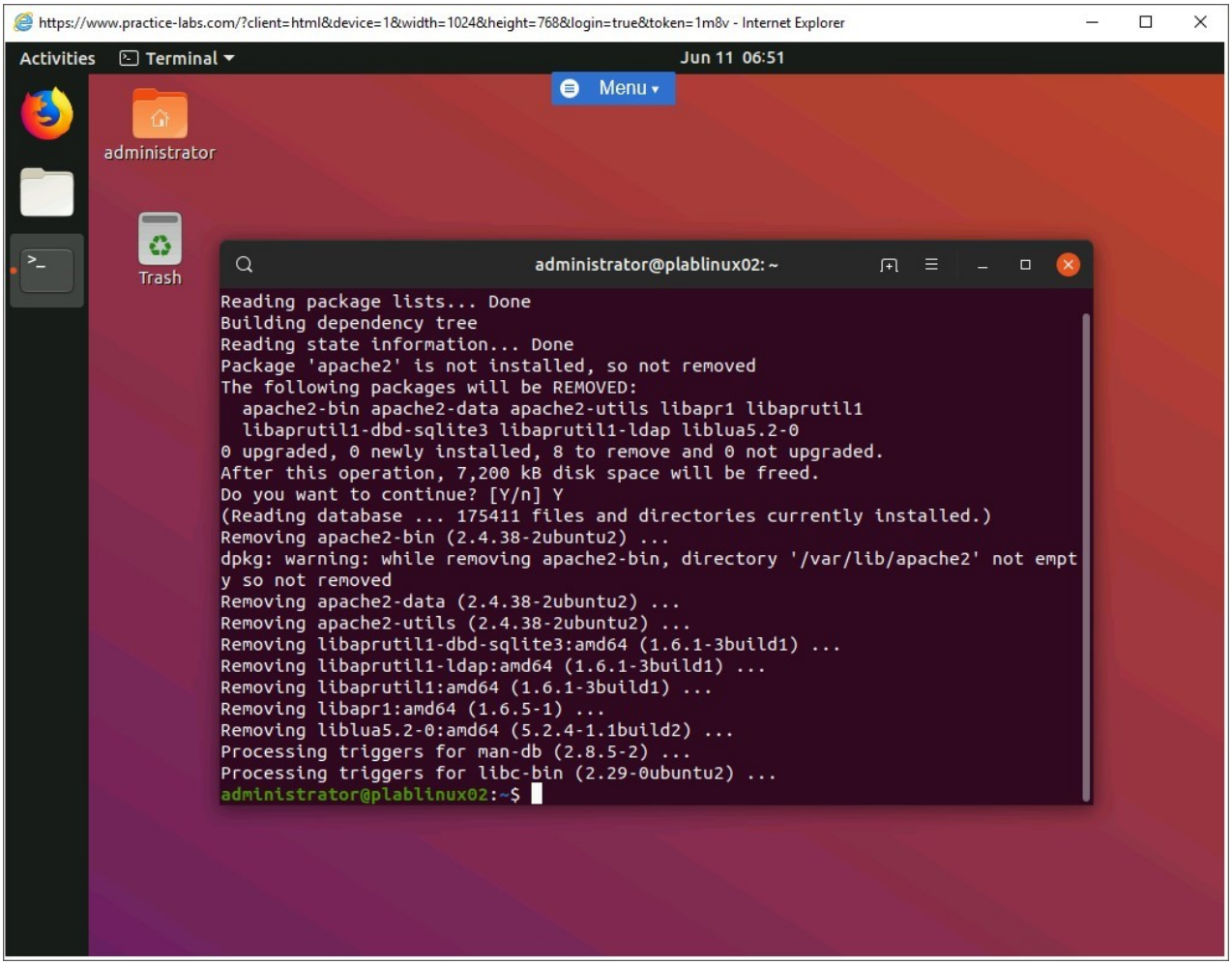


Figure 1.11 Screenshot of PLABLINUX02: Confirming the removal of package dependencies.

Task 2 - Find Packages Containing Specific Files or Libraries Which May or May Not Be Installed

In many cases, you may need to install a file for which you may not know the package name. In this situation, you find the package name from the system. Two key commands, namely the **dpkg** command and the **apt-file** command help you find the package name. In this task, you will use the **dpkg** command to find the package from the Ubuntu system on the lab environment. To find packages containing specific files or libraries, perform the following steps:

Step 1

Let's assume that you need to find the package details of the **apt-get** file. To find the package details, type the following command:

```
sudo dpkg -S apt-get
```

Press **Enter**. The -S parameter is used to search a specific file name.

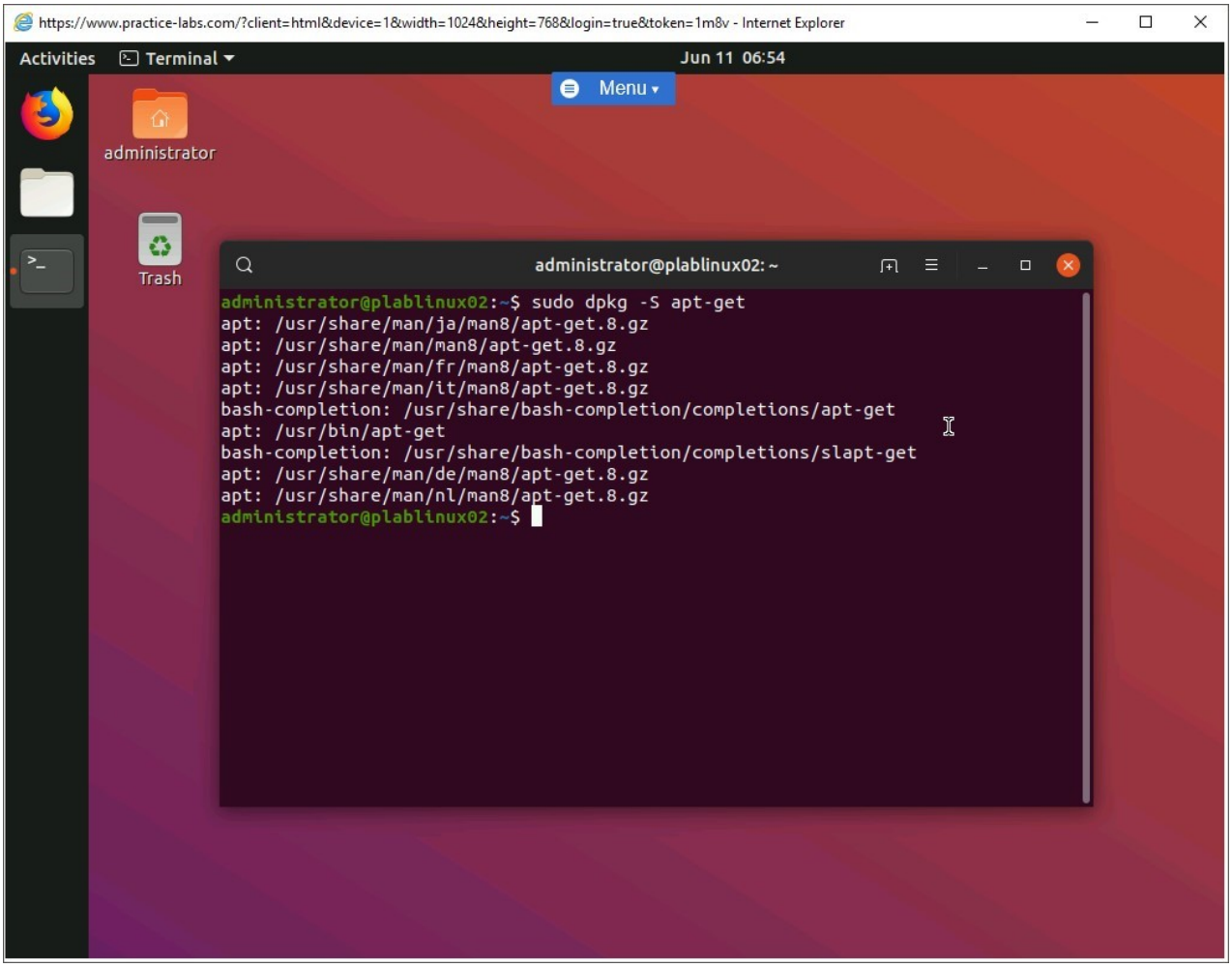


Figure 1.12 Screenshot of PLABLINUX02: Finding the package details.

Task 3 - Obtain package information

You may need to find the details of a package that exists on your system. These details include version, content, dependencies, package integrity, and installation status of the package. These details might be required if you want to see the package dependencies for another package installation. In this task, you will view the details about the **yum** package.

To obtain package information, perform the following steps:

Step 1

For this task, let us view the information about the apt-cache command.

To view the package information, type the following command:

```
apt-cache show yum
```

Press **Enter**.

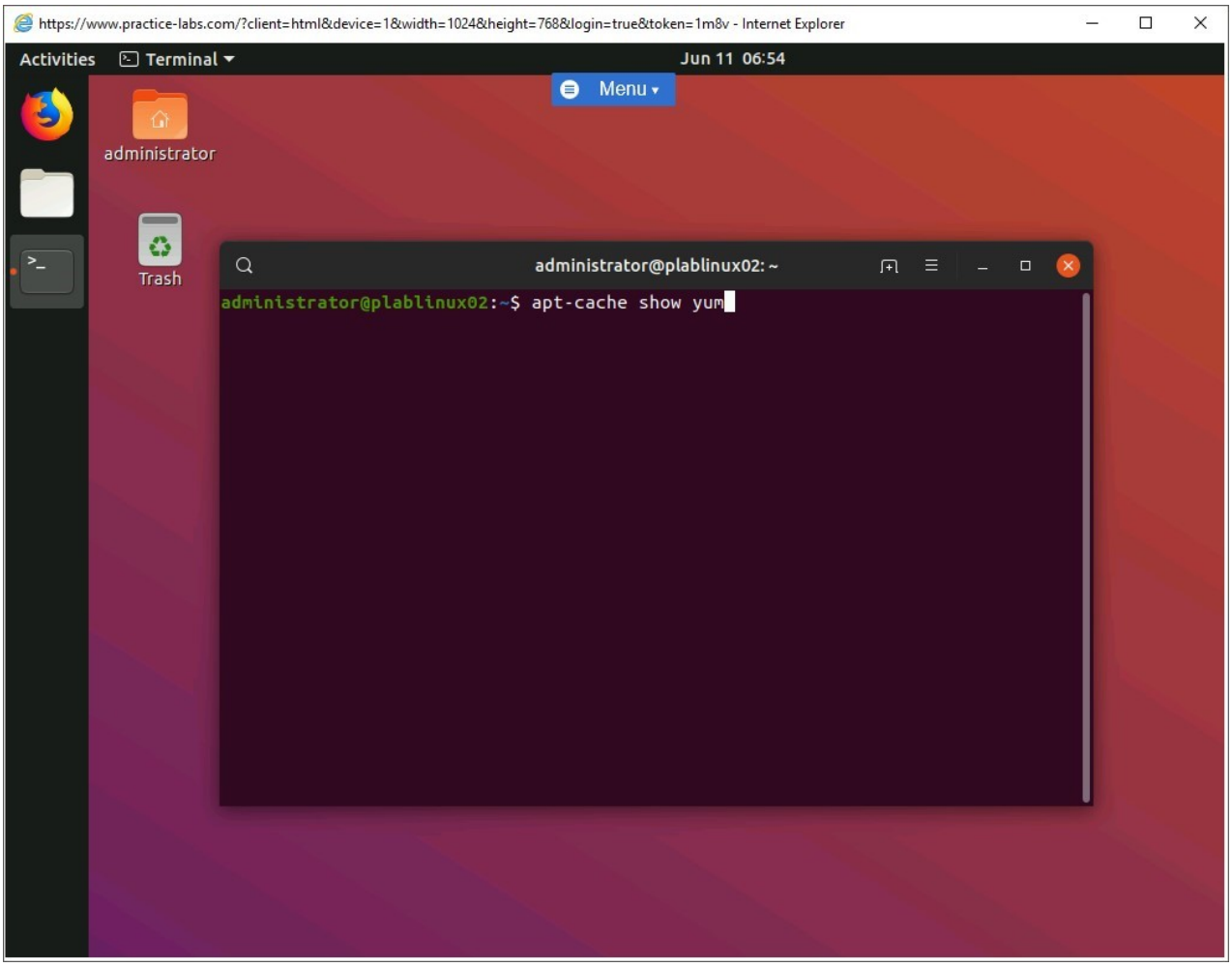


Figure 1.13 Screenshot of PLABLINUX02: Viewing the package information.

Step 2

The output is now displayed.

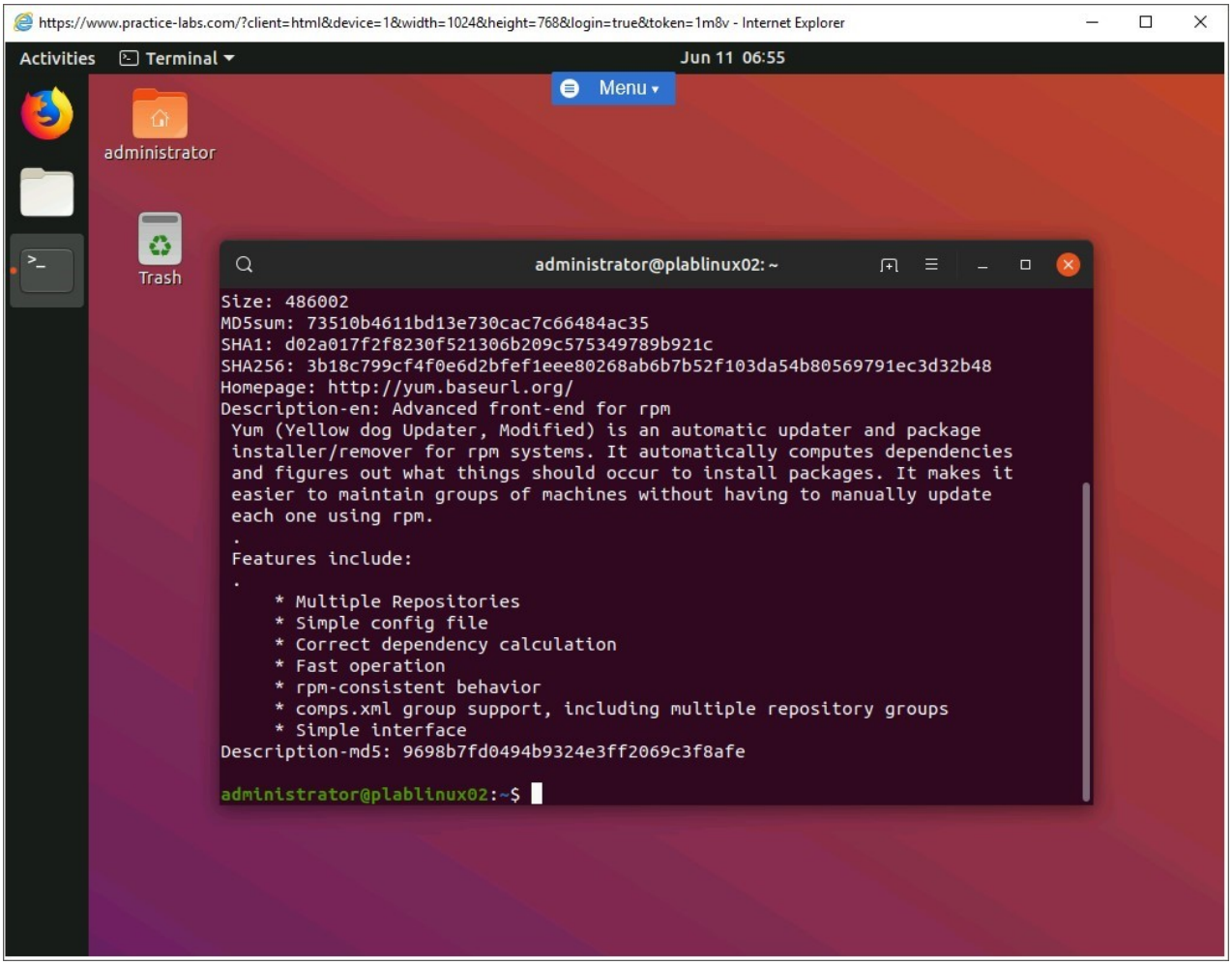


Figure 1.14 Screenshot of PLABLINUX02: Showing the output of the apt-cache command.

Keep all devices in their current state and proceed to the next exercise.

Review

Well done, you have completed the **Use Debian Package Management** Practice Lab.

Summary

You completed the following exercise:

- Exercise 1 - Use Debian Package Management

You should now be able to:

- Manage Debian binary packages
- Find packages containing specific files or libraries
- Obtain package information

Feedback

Shutdown all virtual machines used in this lab. Alternatively, you can log out of the lab platform.