CompTIA Linux+

Patch the System

Introduction

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

Patching the System
CentOS
Security Updates
Packaging

Learning Outcomes

In this module, you will complete the following exercise:

- Exercise 1 - Patch the System

After completing this lab, you will be able to:

- Configure Network on CentOS
- Install update manually
- Enable Automatic Security Updates
- Update a single package or package group

Exam Objectives

The following exam objectives are covered in this lab:

- **LPI:** 110.1 Perform security administration tasks

- **CompTIA:** 3.1 Given a scenario, apply or acquire the appropriate user and/or group permissions and ownership.
- **CompTIA:** 4.4 Given a scenario, analyze and troubleshoot application and hardware issues.

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.

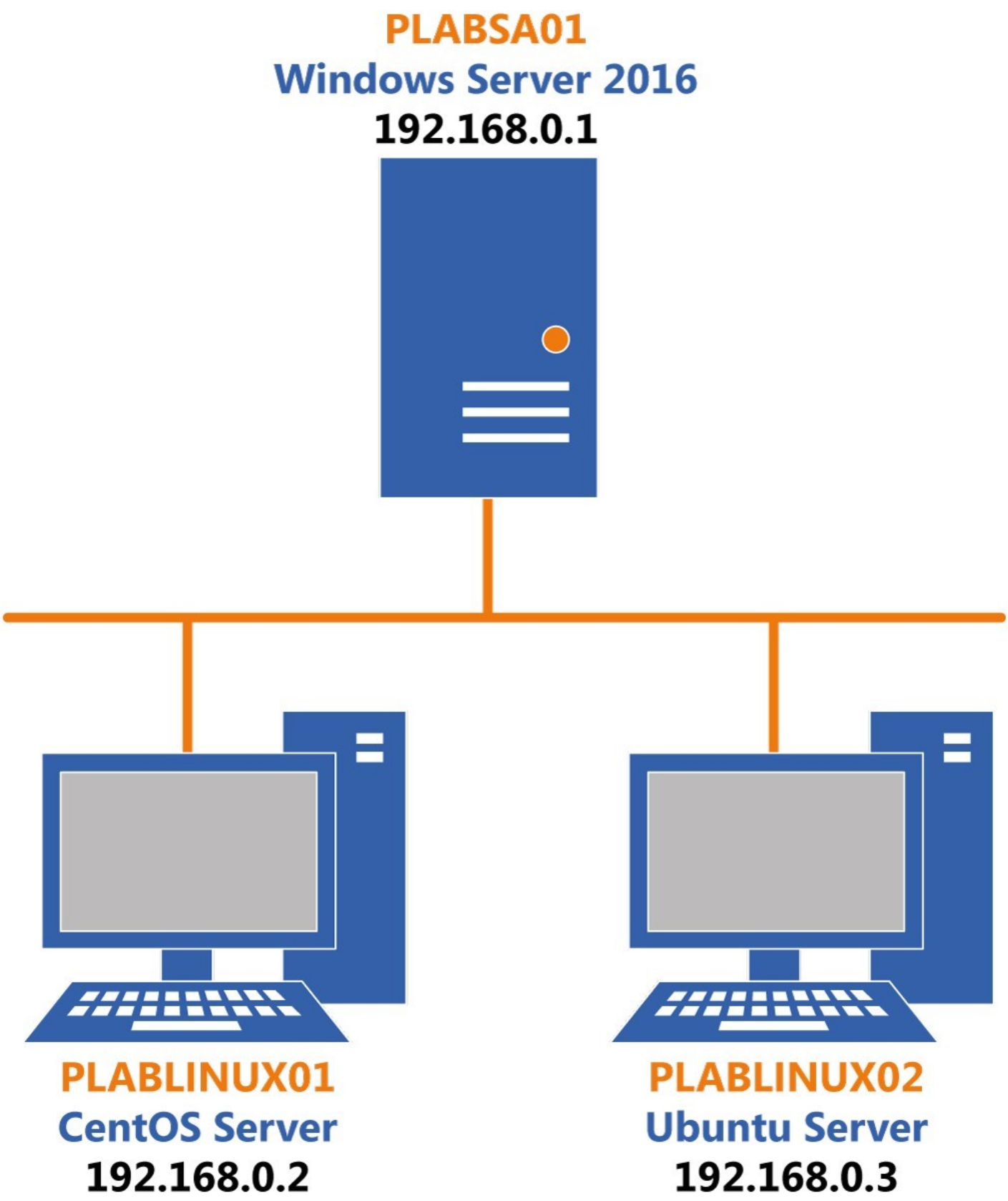
Help and Support

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 - Patch the System

Patching the system requires the system to be updated from time to time with the latest version of packages. Updates can be deployed in two different ways:

- Manually - The administrator must run the respective commands to deploy the updates.
- Automatically - The administrator configures the system to download the updates automatically.

In this exercise, you will learn to deploy updates manually and automatically.

Learning Outcomes

After completing this exercise, you will be able to:

- Log into a Linux System
- Configure Network on CentOS
- Install update manually
- Enable Automatic Security Updates
- Update a single package or package group

Your Devices

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

- **PLABLINUX01** (CentOS Server)

Task 1 - Configure Network on CentOS

For a client to communicate on the network, it needs to have an IP address. If the client exists on the IPv4 network, then the client must have an IPv4 address. On the IPv6 network, the client must have IPv6 address.

In this task, you will configure an IP address on the client. To do this, perform the following steps:

Step 1

Connect to **PLABLINUX01**.

Click **Applications**, select **System Tools**, and then select **Settings**.

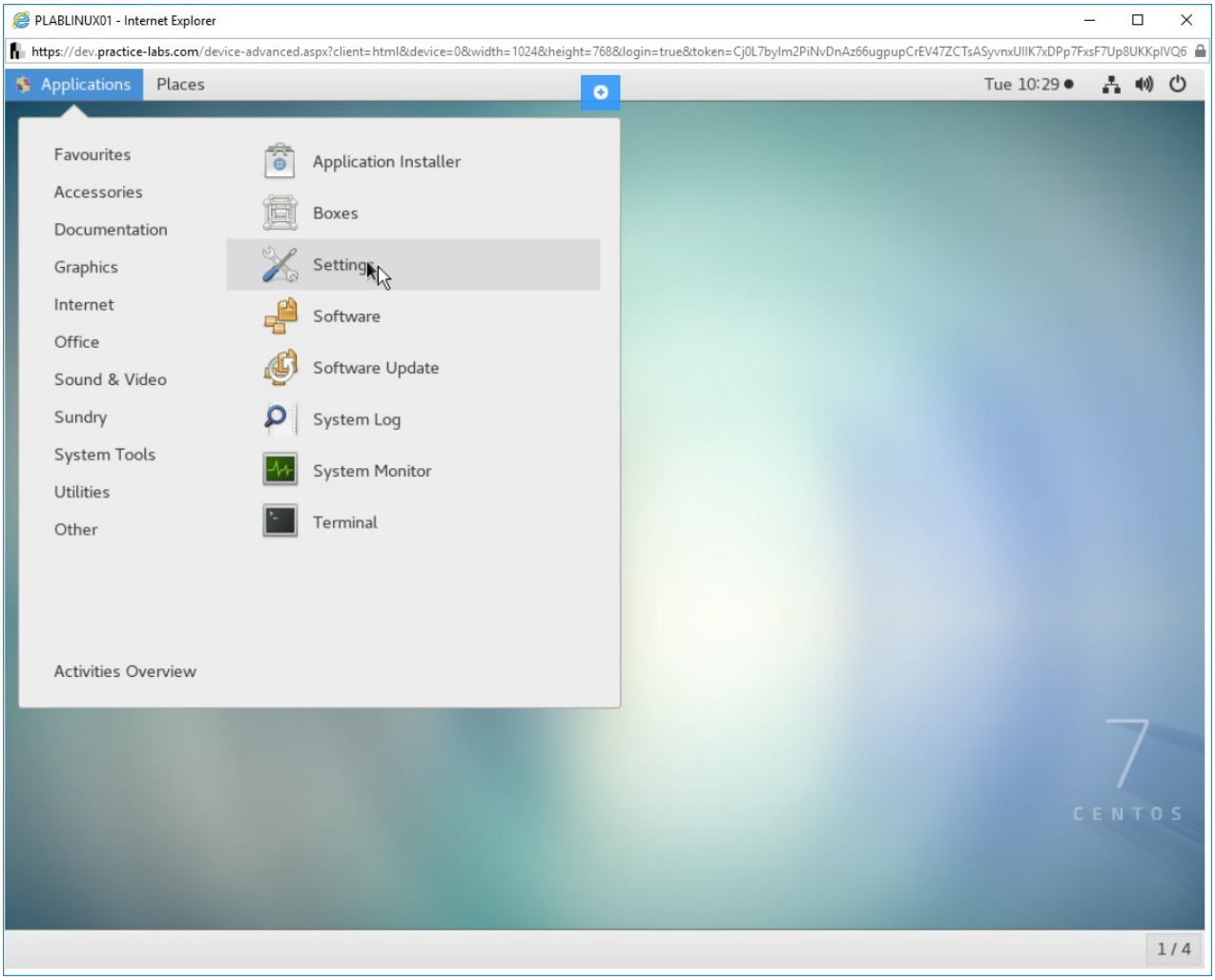


Figure 1.1 Screenshot of PLABLINUX01: Selecting the Settings option from the Applications > System Tools menu.

Step 2

From the **Settings** window, click **Network** in the left pane and then click the icon next to **ON** in the **Wired** section.

Note: *If your wired connection is being shown as* ***OFF*** *then click the switch on the left of* ***OFF*** *to switch it to* ***ON.***

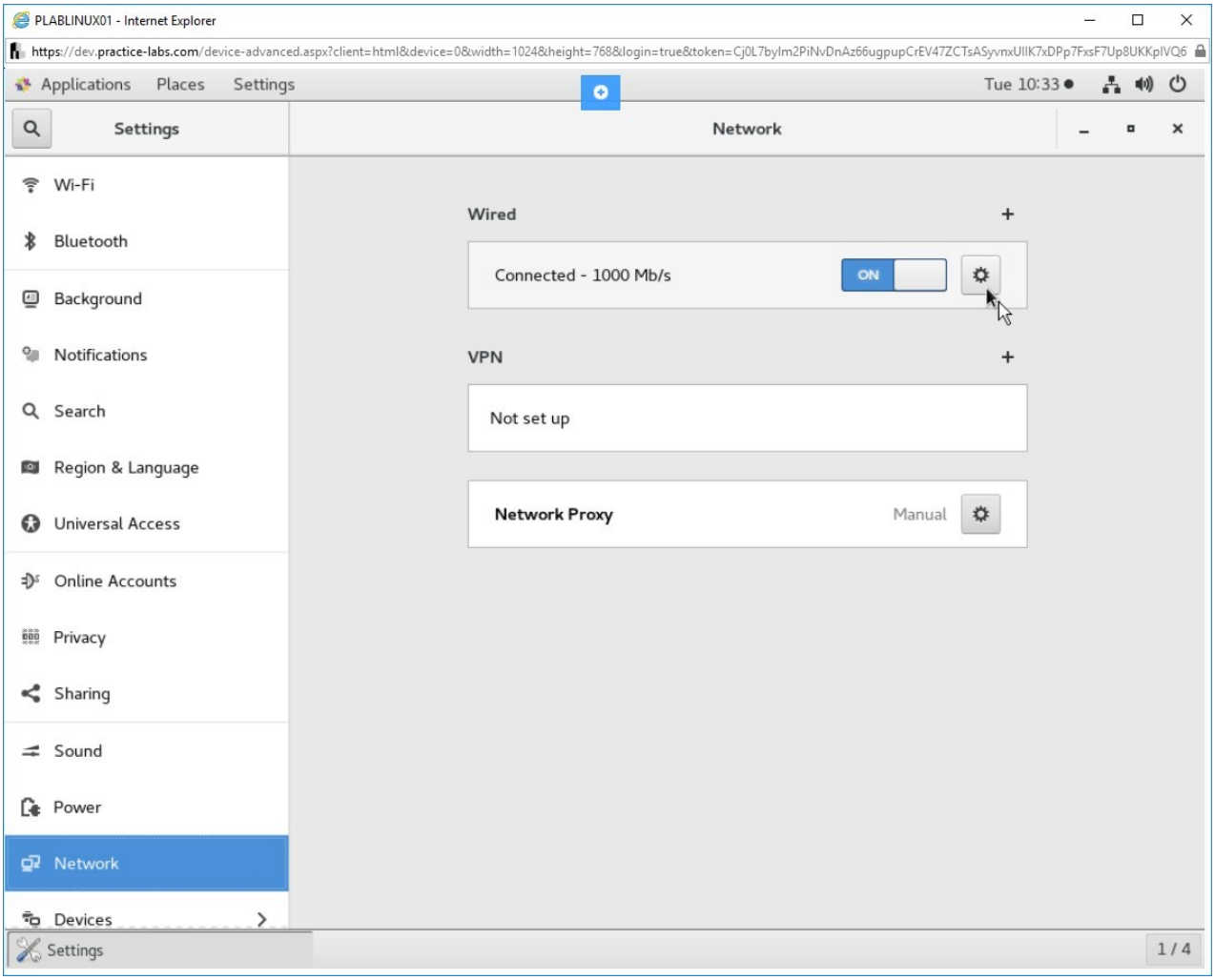


Figure 1.2 Screenshot of PLABLINUX01: Clicking the button to invoke the Wired dialog box.

Step 3

In the **Wired** dialog box, click the **IPv4** tab.

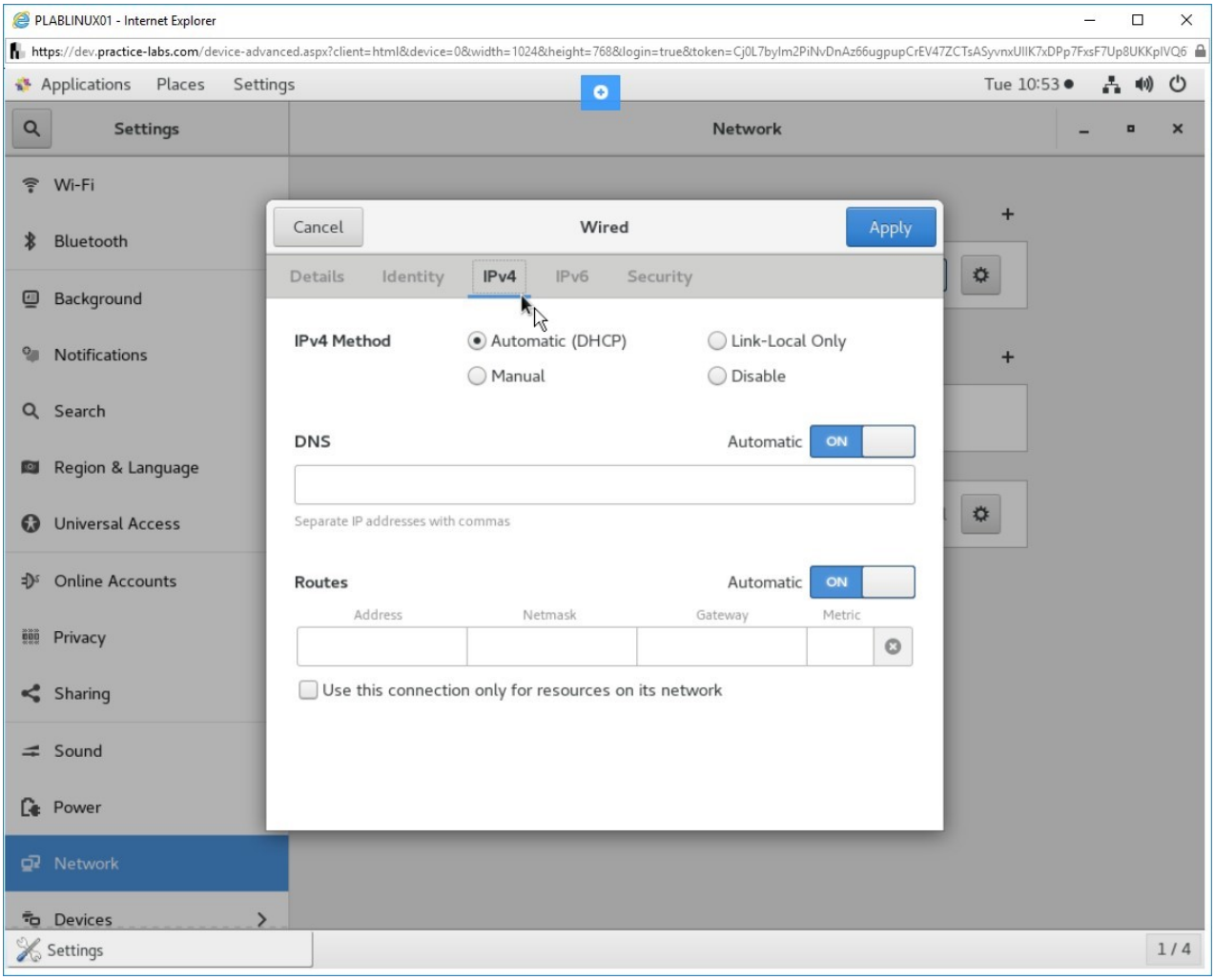


Figure 1.3 Screenshot of PLABLINUX01: Selecting the IPv4 tab in the Wired dialog box.

Step 4

Select **Manual** and provide the following details:

Address:

```
192.168.0.2
```

Netmask:

```
255.255.255.0
```

Gateway:

```
192.168.0.250
```

Click **Apply**.

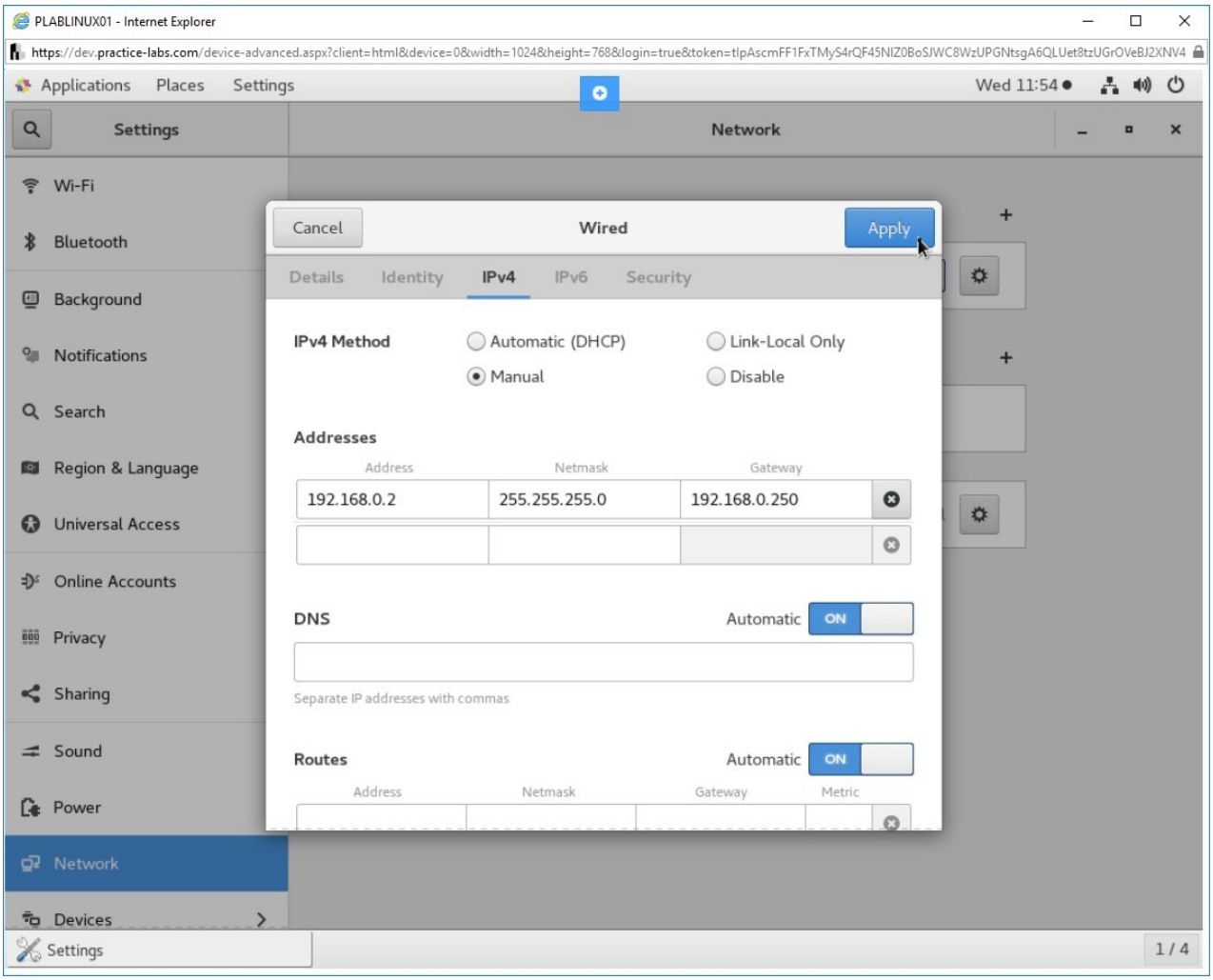


Figure 1.4 Screenshot of PLABLINUX01: Entering the network information and then clicking the Apply button.

Step 5

The **Wired** dialog box is closed automatically. Close the **Settings** window.

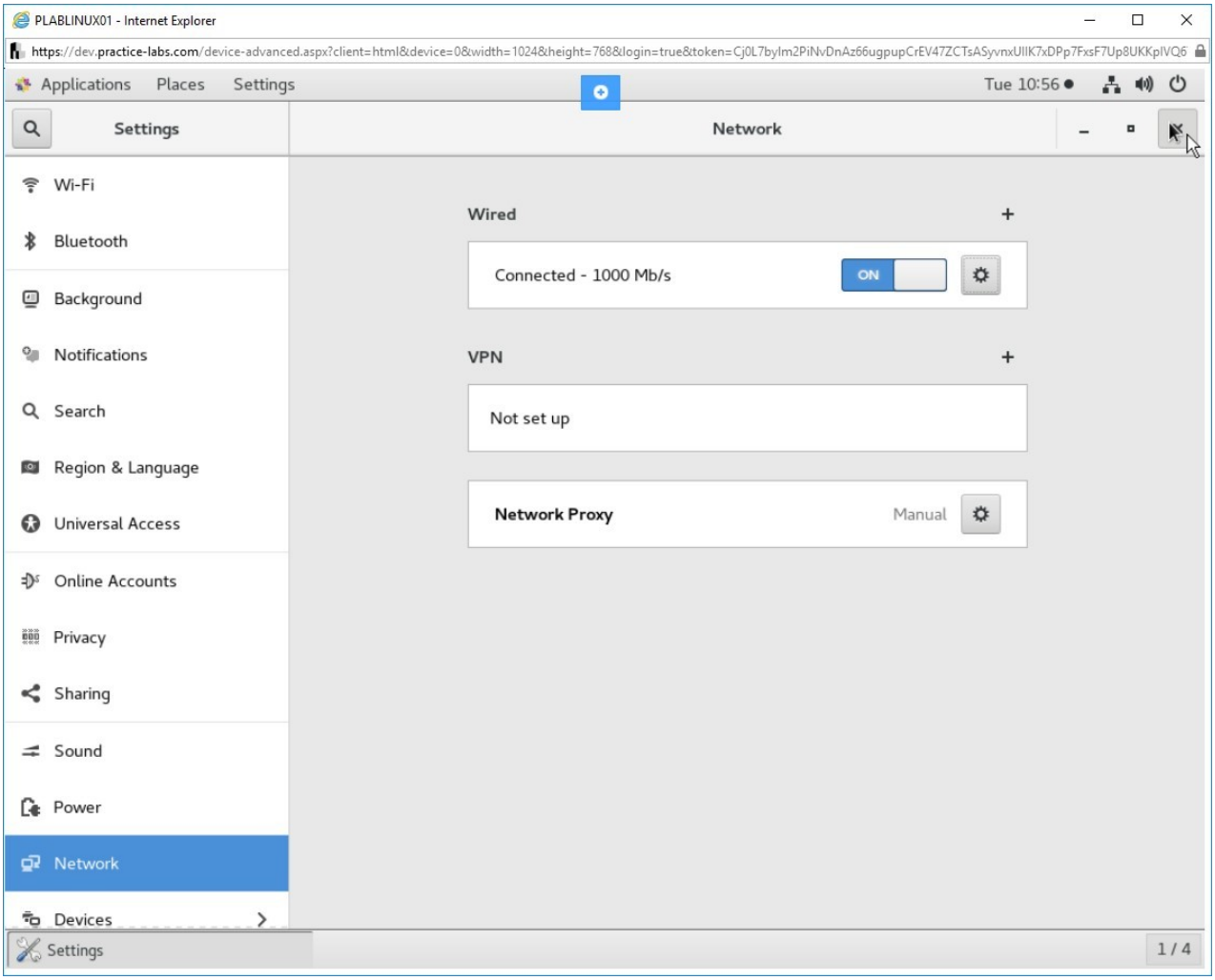


Figure 1.5 Screenshot of PLABLINUX01: Displaying the Settings window.

Task 2 - Install Update Manually

Packages may need to be upgraded from time to time when the new releases are available. Mostly, the packages are updated for new functionality or covering the existing vulnerabilities. In either of the cases, you should ensure that packages are updated with the latest releases.

In this task, you will learn to install updates manually. To install updates manually, perform the following steps:

Step 1

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

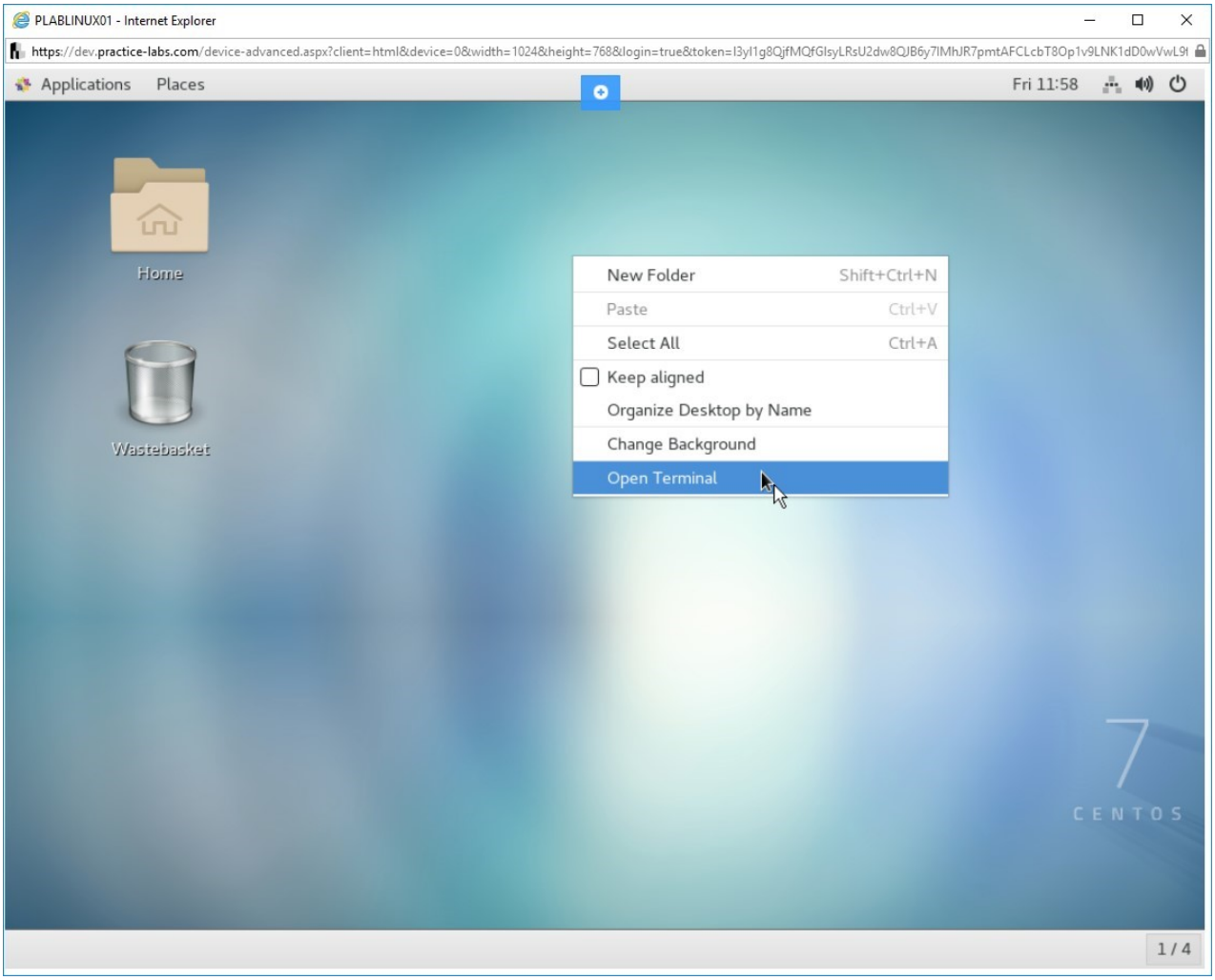


Figure 1.6 Screenshot of PLABLINUX01: Selecting the Open Terminal option from the context menu.

Step 2

The terminal prompt window is displayed. Type the following command:

```
su -
```

Press **Enter**.

At the **Password** prompt, type the following password:

`Passw0rd`

Press **Enter**.

Step 3

Clear the screen by entering the following command:

```
clear
```

To check if the updates are available for the installed packages, type the following command:

```
yum check-update
```

Press **Enter**.

Step 4

The output of this command is returned. Note that there are no updates available for the installed packages. Therefore, no updates are listed, but only the repository names are mentioned.

Step 5

Clear the screen by entering the following command:

```
clear
```

You can also update all packages in your system as well as their dependencies. Type the following command:

```
yum update
```

Press **Enter**.

Step 6

The output of this command is returned. Note that at present all packages and their dependencies are updated. Minimize the command prompt window.

Step 7

Another manual method for updating the packages is through the graphical tool named click **Applications**, select **System Tools**, and then select **Software Update**.

Step 8

Notice that you are prompted with a message that all packages are up to date. Click **OK** to close the dialog box and then close **Software Update**.

Task 3 - Enable Automatic Security Updates

Automatic security updates do not require your intervention. Once you configure automatic security updates, they are deployed automatically.

In this task, you will learn to enable automatic security updates. To enable automatic security updates, perform the following steps:

Step 1

Restore the terminal window. Clear the screen by entering the following command:

```
clear
```

To enable automatic security updates, you need to install the **yum-cron** package on the system. Type the following command:

```
yum update -y && yum install yum-cron -y
```

Press **Enter**.

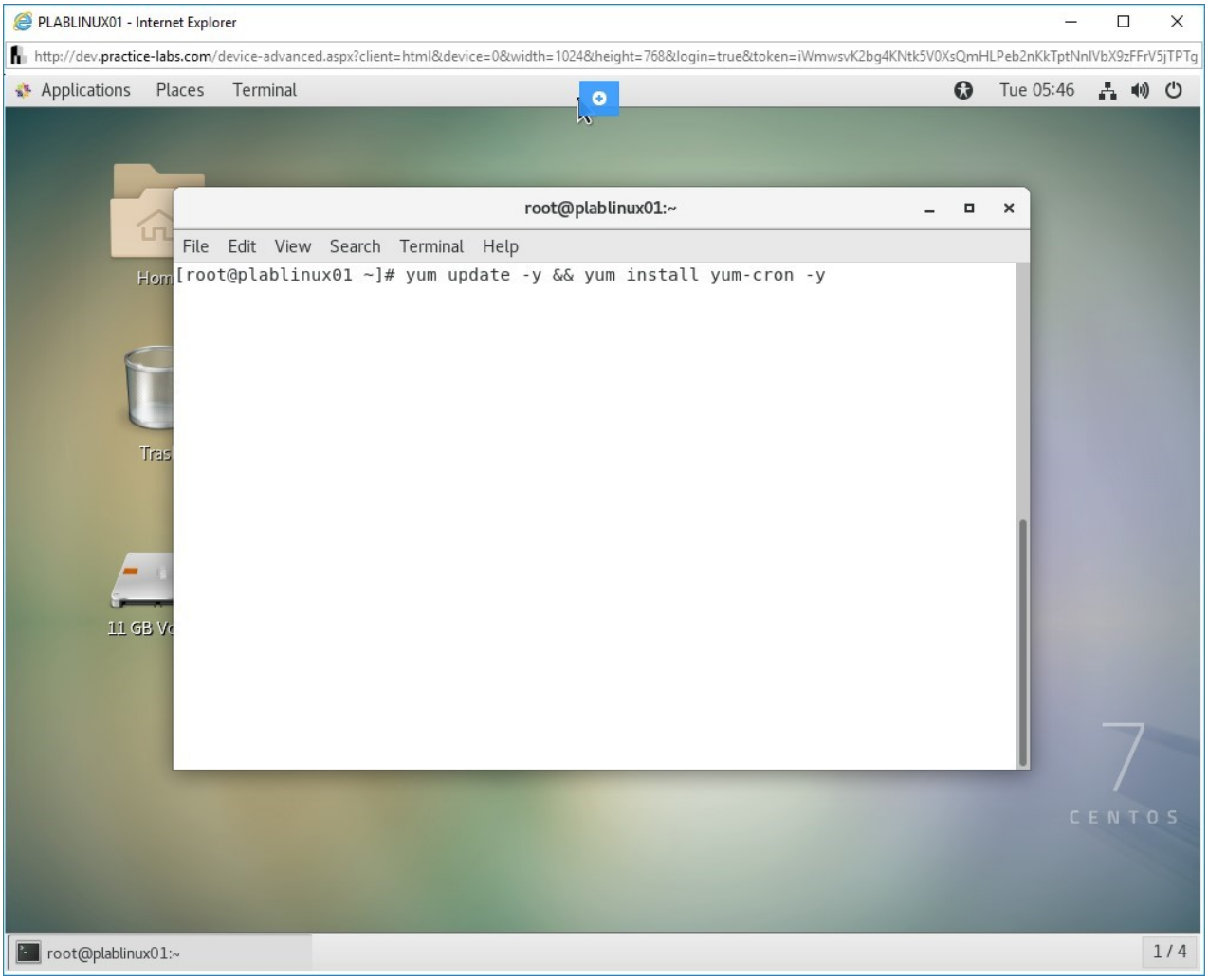


Figure 1.14 Screenshot of PLABLINUX01: Installing the yum-cron package.

Step 2

Notice that the download and installation begin. Since you are entering **-y** in the command itself, you will not be asked to confirm the installation. After the installation is complete, you are prompted with the **Complete!** message.

Step 3

Restore the terminal window. Clear the screen by entering the following command:

```
clear
```

Next, you need to edit the **/etc/yum/yum-cron.conf** file. Type the following command:

```
gedit /etc/yum/yum-cron.conf
```

Press **Enter**.

Step 4

The file is now open. You need to make the following changes to this file:

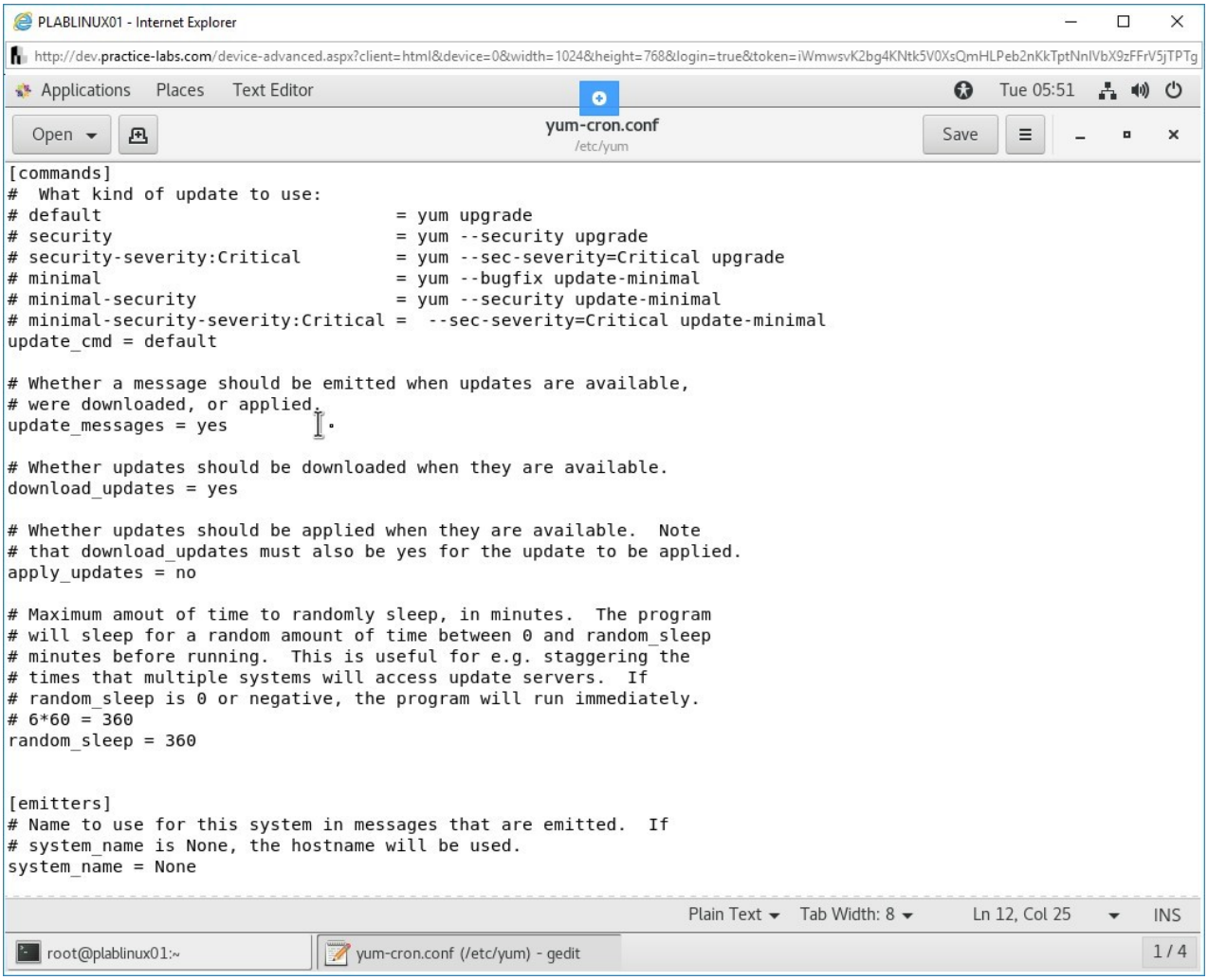


Figure 1.17 Screenshot of PLABLINUX01: Editing the yum-cron.conf file.

Step 5

You need to change the following value:

From:

```
update_cmd = default
```

To:

```
update_cmd = security
```

Press **Enter**.

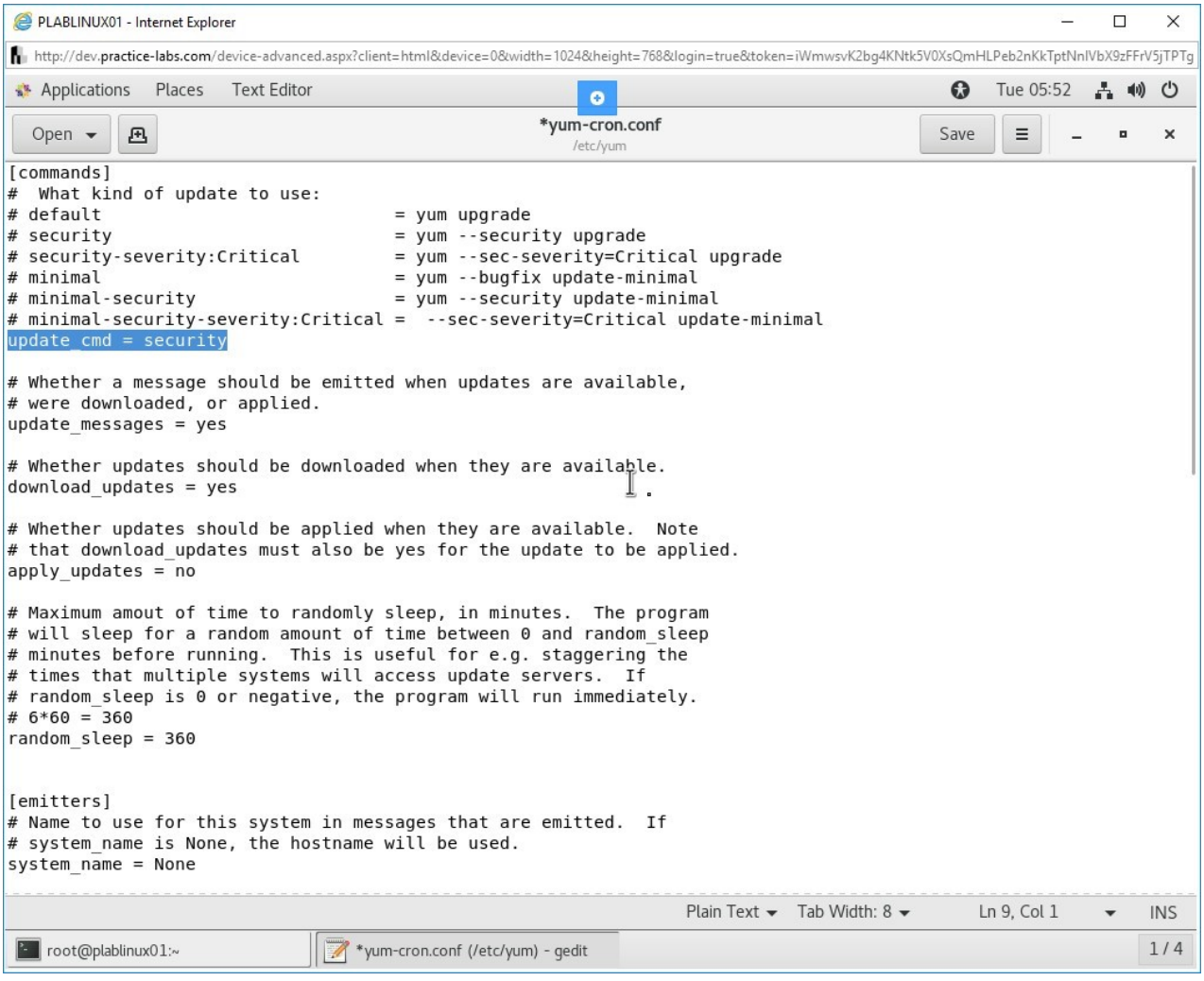


Figure 1.18 Screenshot of PLABLINUX01: Editing the yum-cron.conf file.

Step 6

You need to change the following value:

From:

```
apply_updates = no
```

To:

```
apply_updates = yes
```

Press **Enter**.

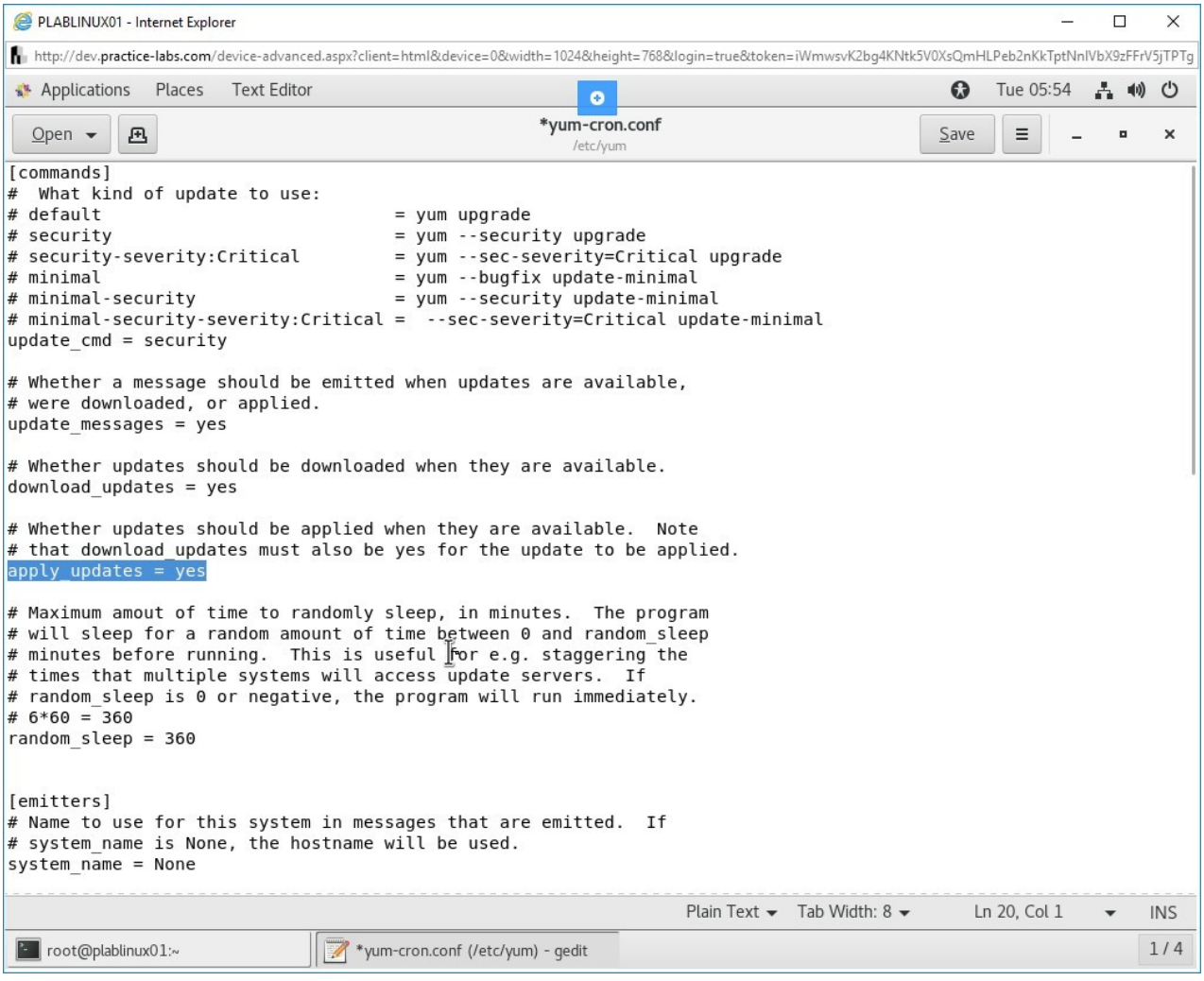


Figure 1.19 Screenshot of PLABLINUX01: Editing the yum-cron.conf file.

Step 7

You also need to enable E-mail notifications. If this statement is not added, then you need to add the following statement:

```
emit_via = email
```

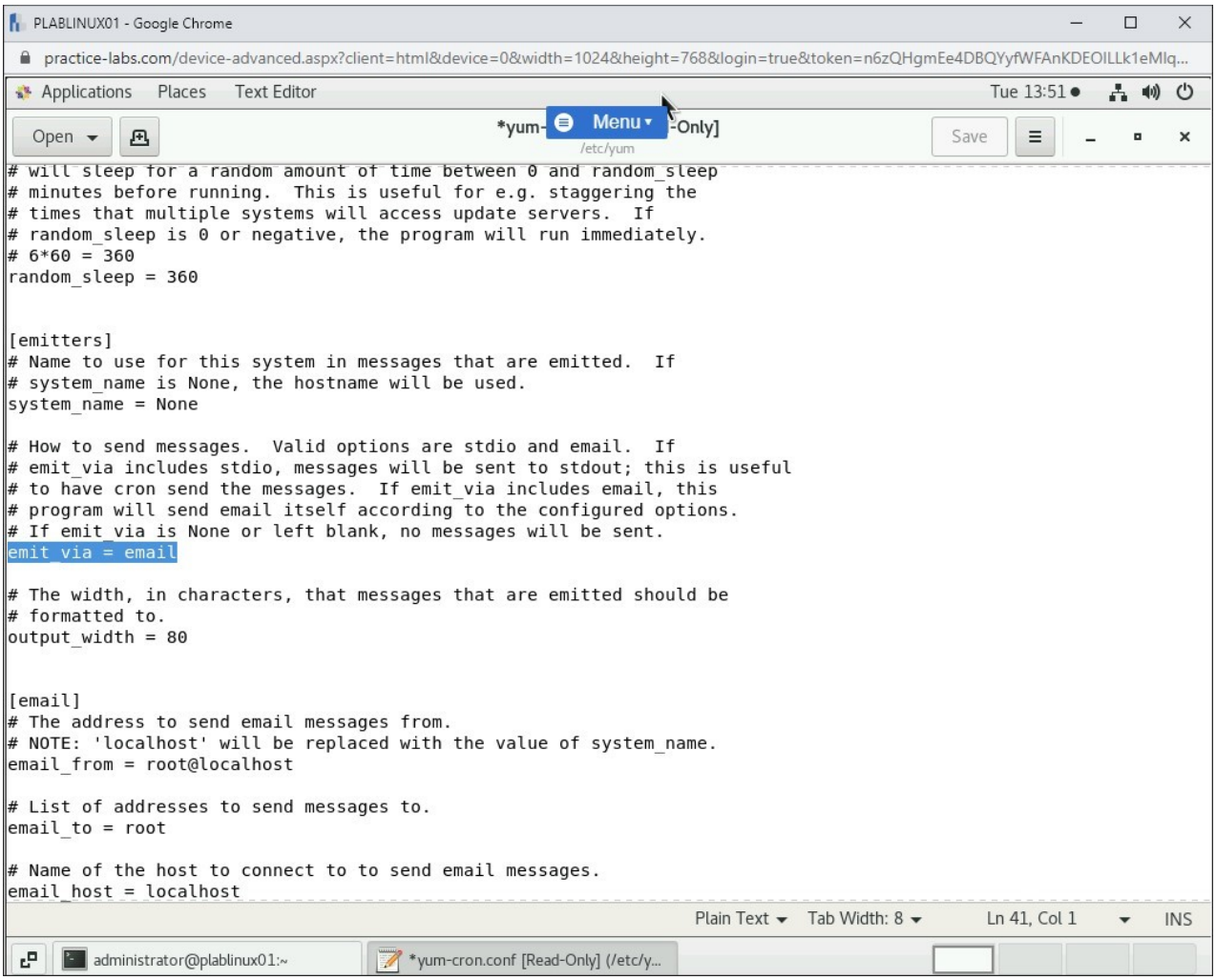


Figure 1.20 Screenshot of PLABLINUX01: Editing the yum-cron.conf file.

Step 8

Ensure that the following values are as mentioned:

```
email_from = root@localhost
email_to = root
```

By default, in CentOS 7, you will find these values as mentioned above. You need to cross verify so that the notifications work.

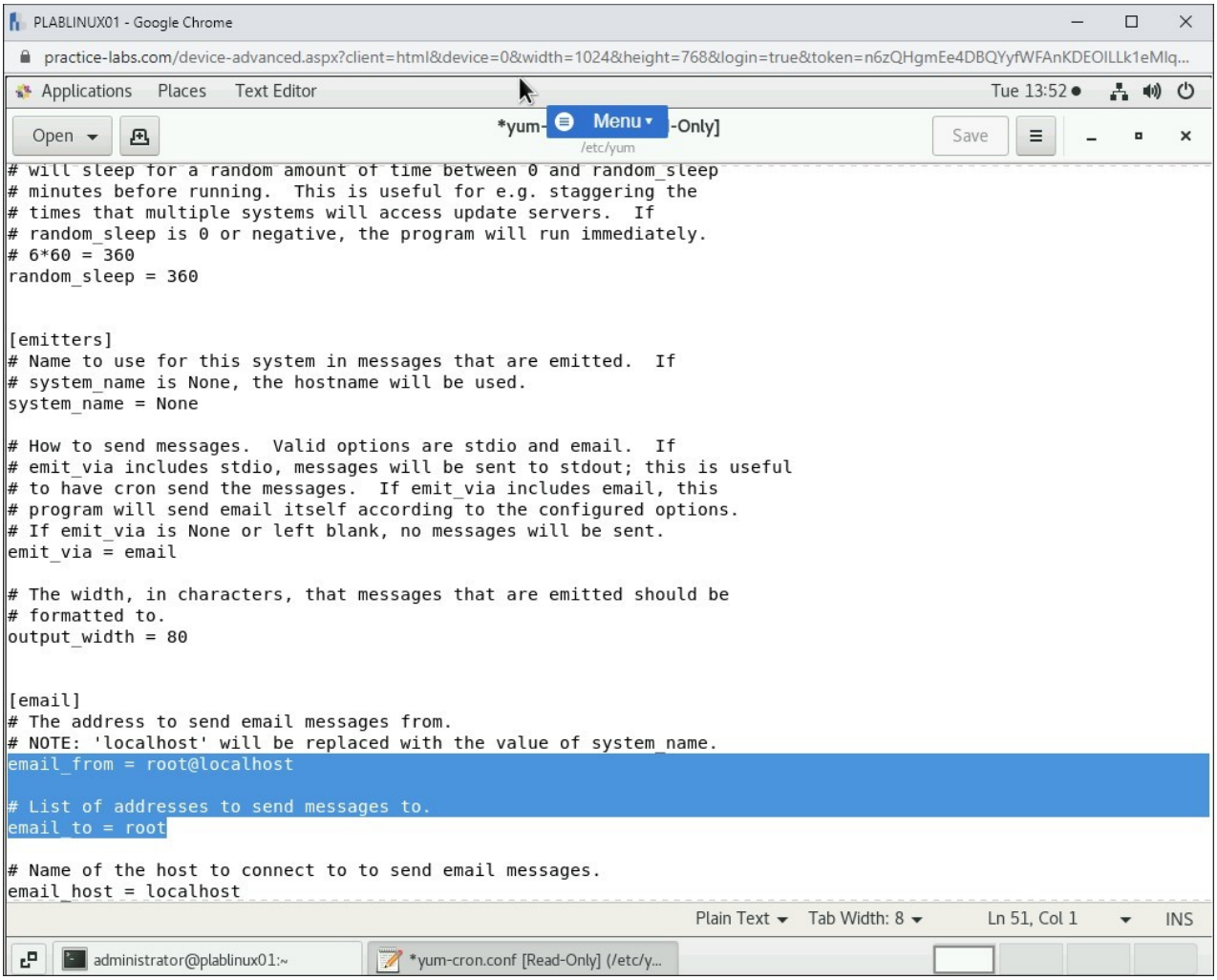


Figure 1.21 Screenshot of PLABLINUX01: Editing the yum-cron.conf file.

Step 9

Click **Save**.

Close the **/etc/yum/yum-cron.conf** file.

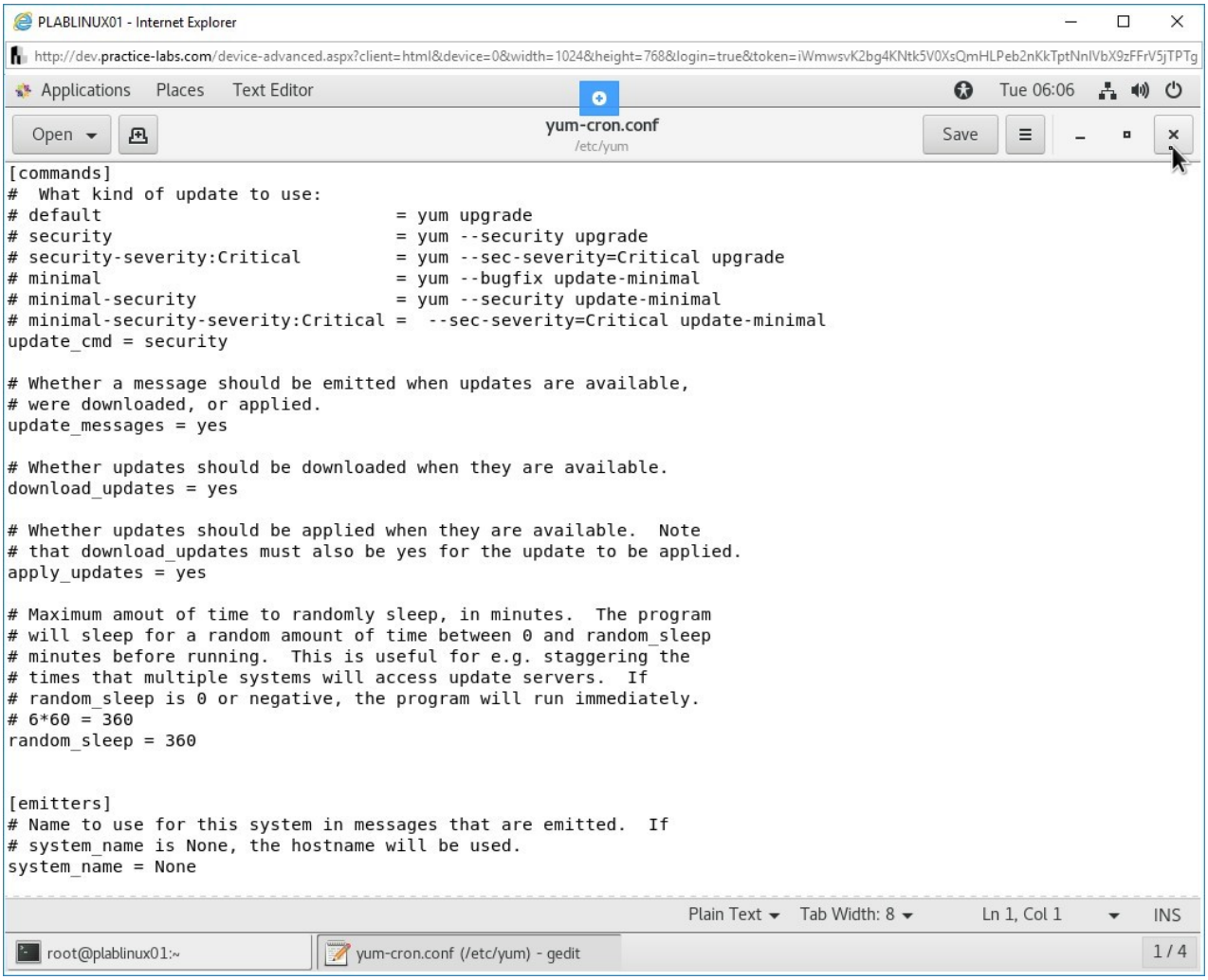


Figure 1.22 Screenshot of PLABLINUX01: Saving the yum-cron.conf file.

Task 4 - Update a Single Package or Package Group

There are ways in which a single package or a specific package group can be updated without impacting the remaining system. This is useful when you want to avoid updating the entire system. To update a single package or package group, perform the following steps:

Step 1

You are back in the terminal window. Clear the screen by entering the following command:

```
clear
```

In the previous task, you must have noted that the entire system is updated. You can attempt to update a specific package. Type the following command:

```
yum update nmap
```

Press **Enter**. Notice that it states that package nmap is available but not installed.

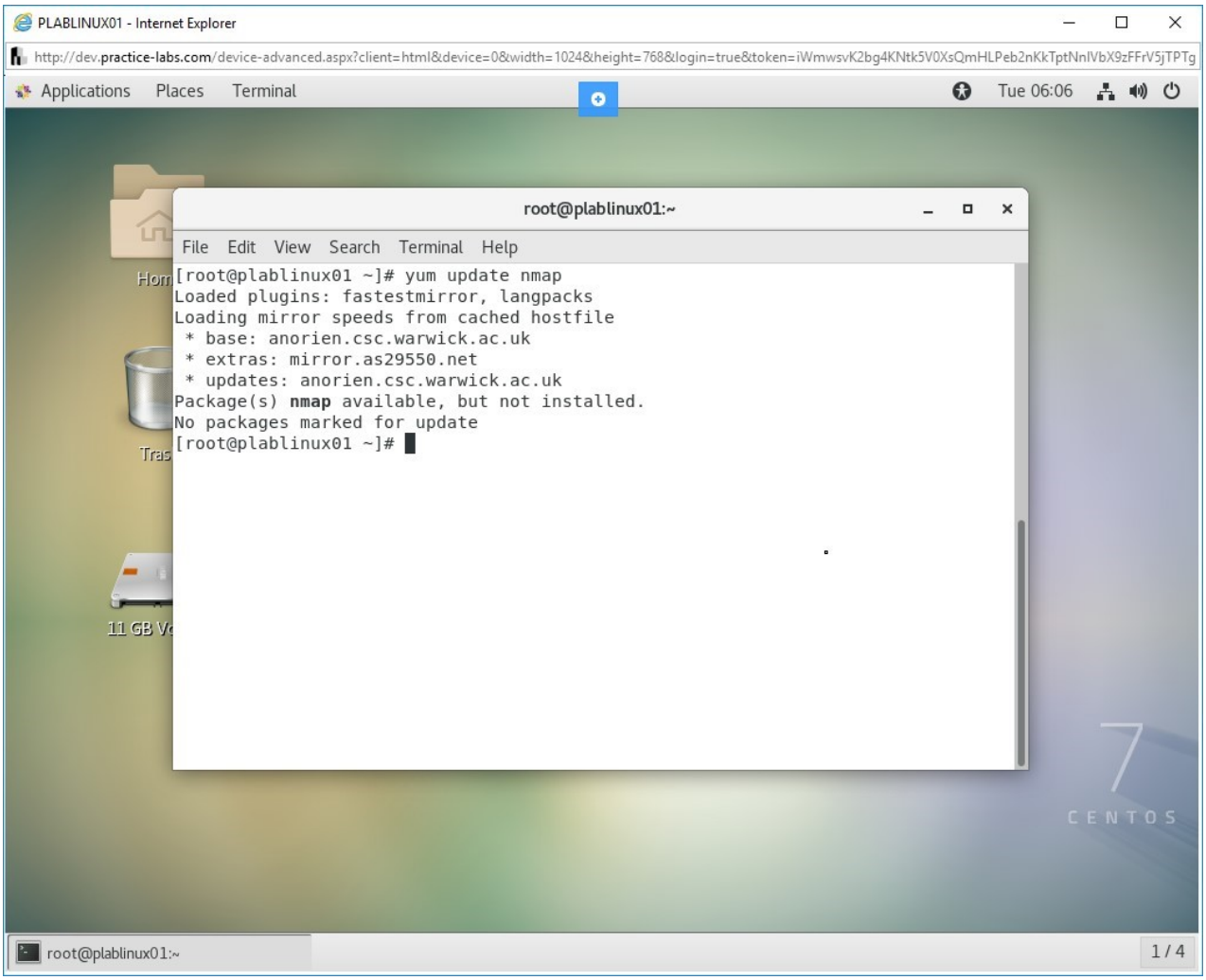


Figure 1.23 Screenshot of PLABLINUX01: Updating a single package.

Step 2

Clear the screen by entering the following command:

```
clear
```

You can also check if there are versions of a package available. Type the following command:

```
yum --showduplicates list firefox
```

Press **Enter**. Notice that there is only one package available for download and install.

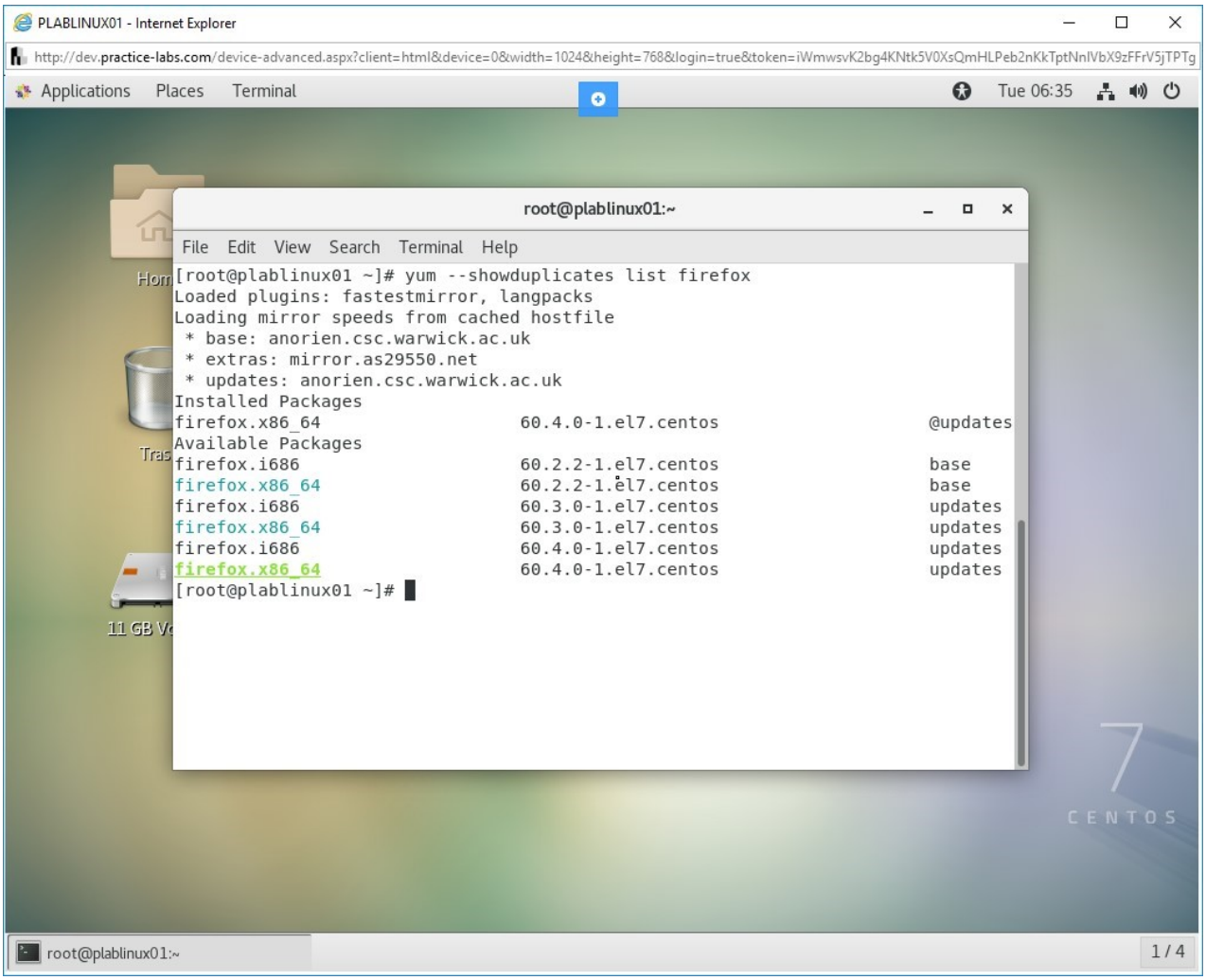


Figure 1.24 Screenshot of PLABLINUX01: Showing all versions of firefox available in the repositories.

Step 3

You can also find the list of package groups on your system. Type the following command:

```
yum group list
```

Press **Enter**.

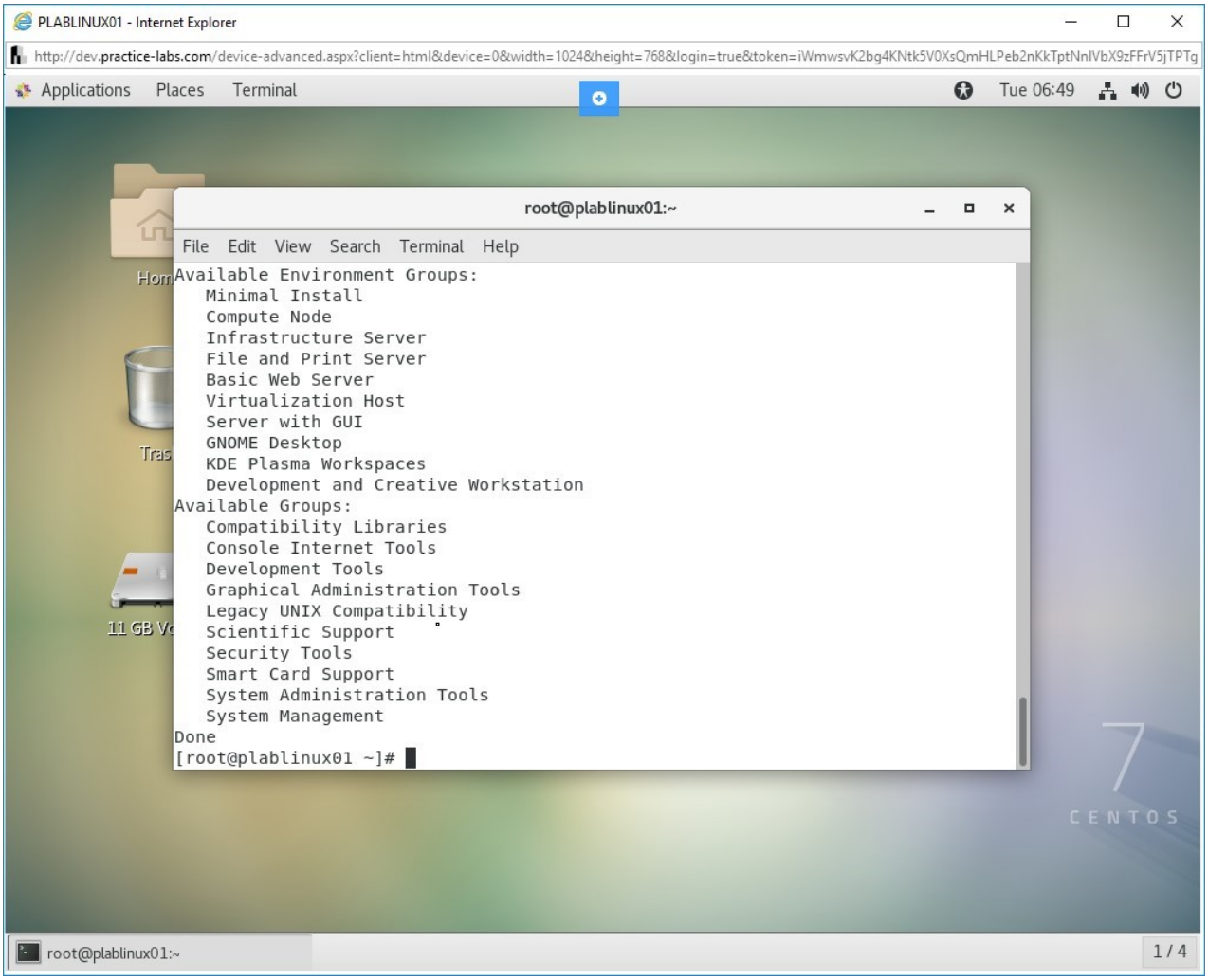


Figure 1.25 Screenshot of PLABLINUX01: Showing the list of package groups.

Step 4

Clear the screen by entering the following command:

```
clear
```

You can also find the information about a specific group. Type the following command:

```
yum group info “System Management”
```

Press **Enter**.

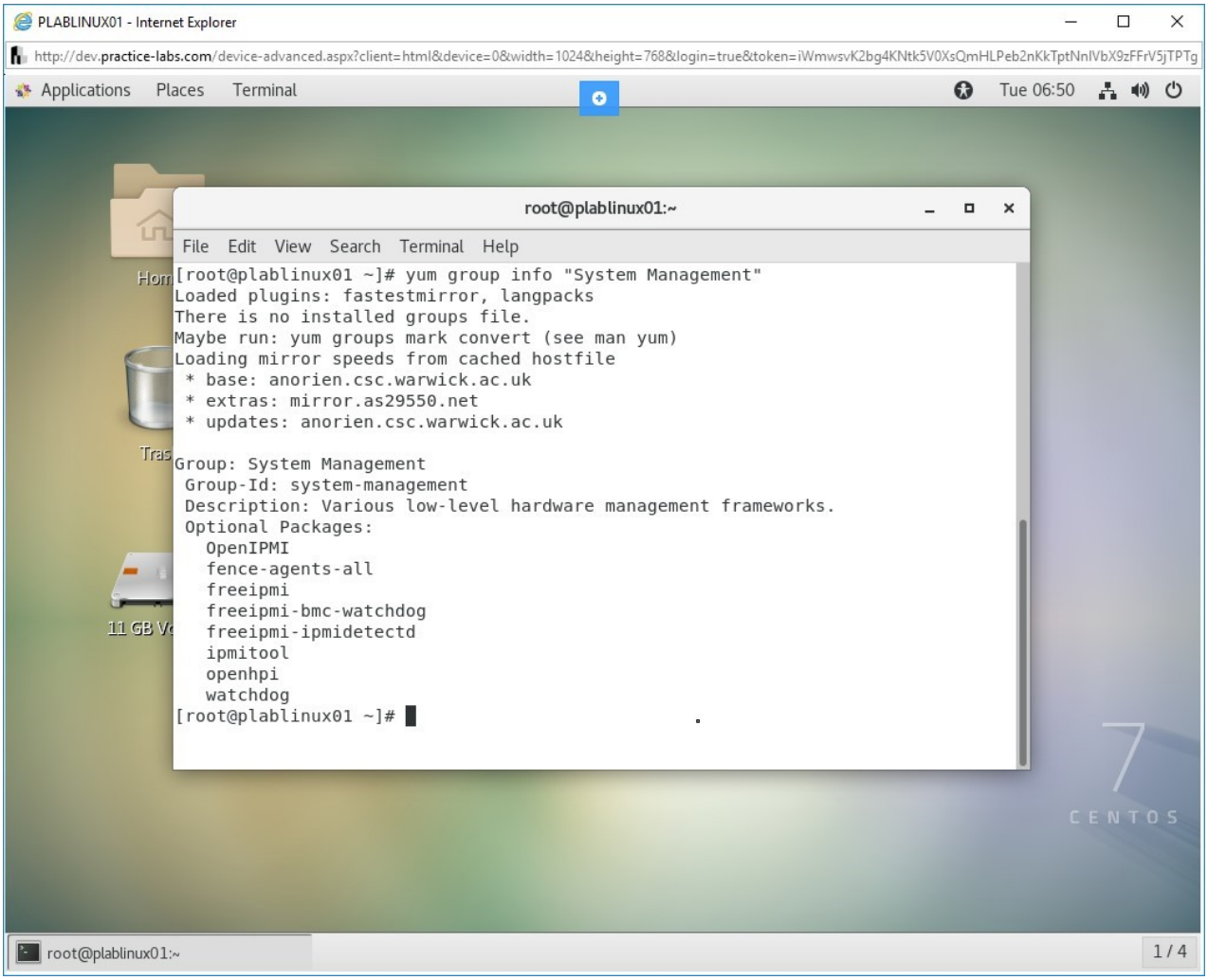


Figure 1.26 Screenshot of PLABLINUX01: Viewing the information about a specific package group.

Step 5

Let's first install a package group. Type the following command:

```
yum group install kde-desktop
```

Press **Enter**.

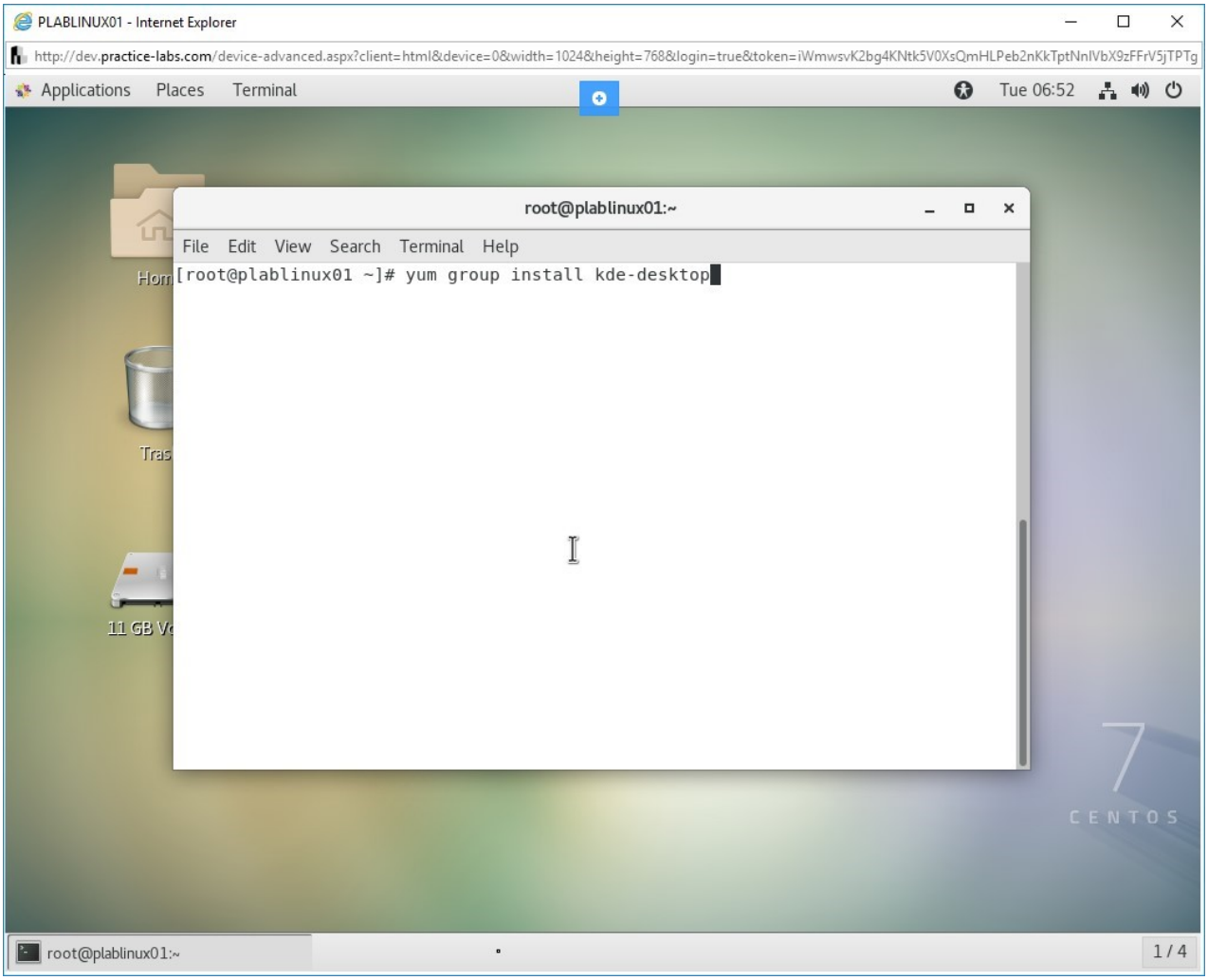


Figure 1.27 Screenshot of PLABLINUX01: Installing a package group.

Step 6

When prompted for confirmation, type the following:

```
y
```

Press **Enter**. Notice that there is a total of 198 packages to be installed in this package group.

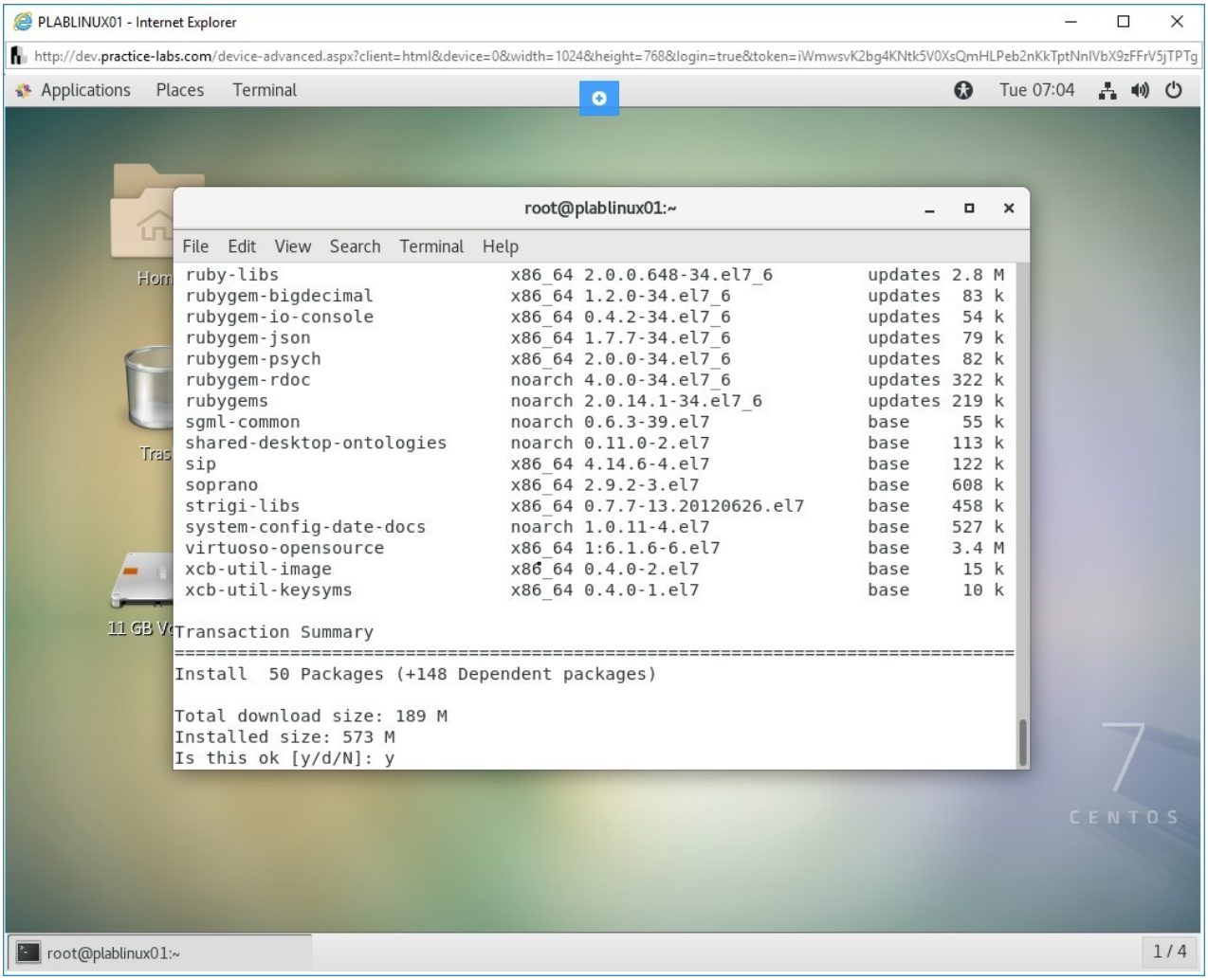


Figure 1.28 Screenshot of PLABLINUX01: Confirming the installation of a package group.

Step 7

The installation of the package group starts.

> ***Note:*** *The installation will take a while to complete.*

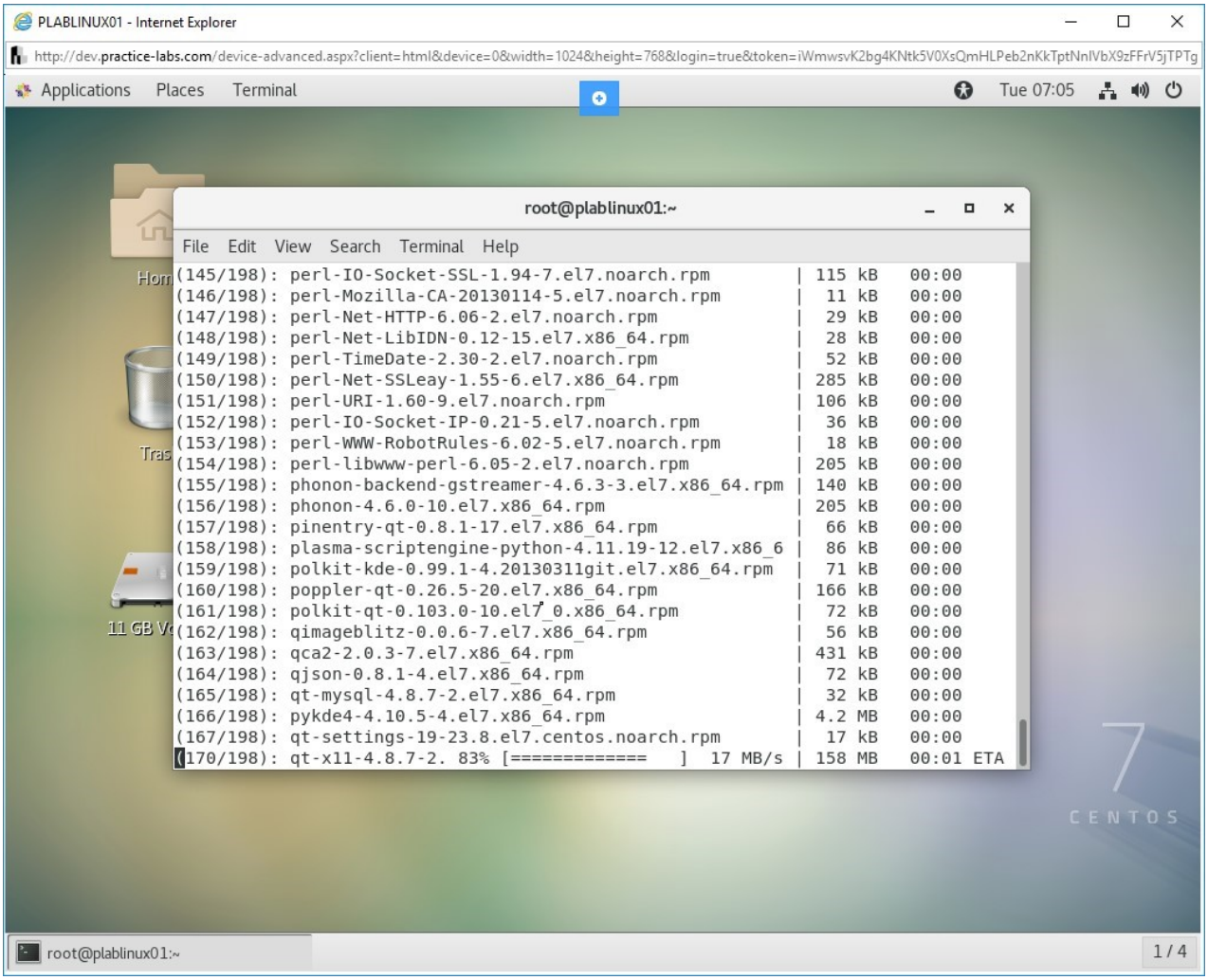


Figure 1.29 Screenshot of PLABLINUX01: Displaying the installation of a package group.

Step 8

After downloading and installing the package group, you will be prompted with the **Complete!** message.

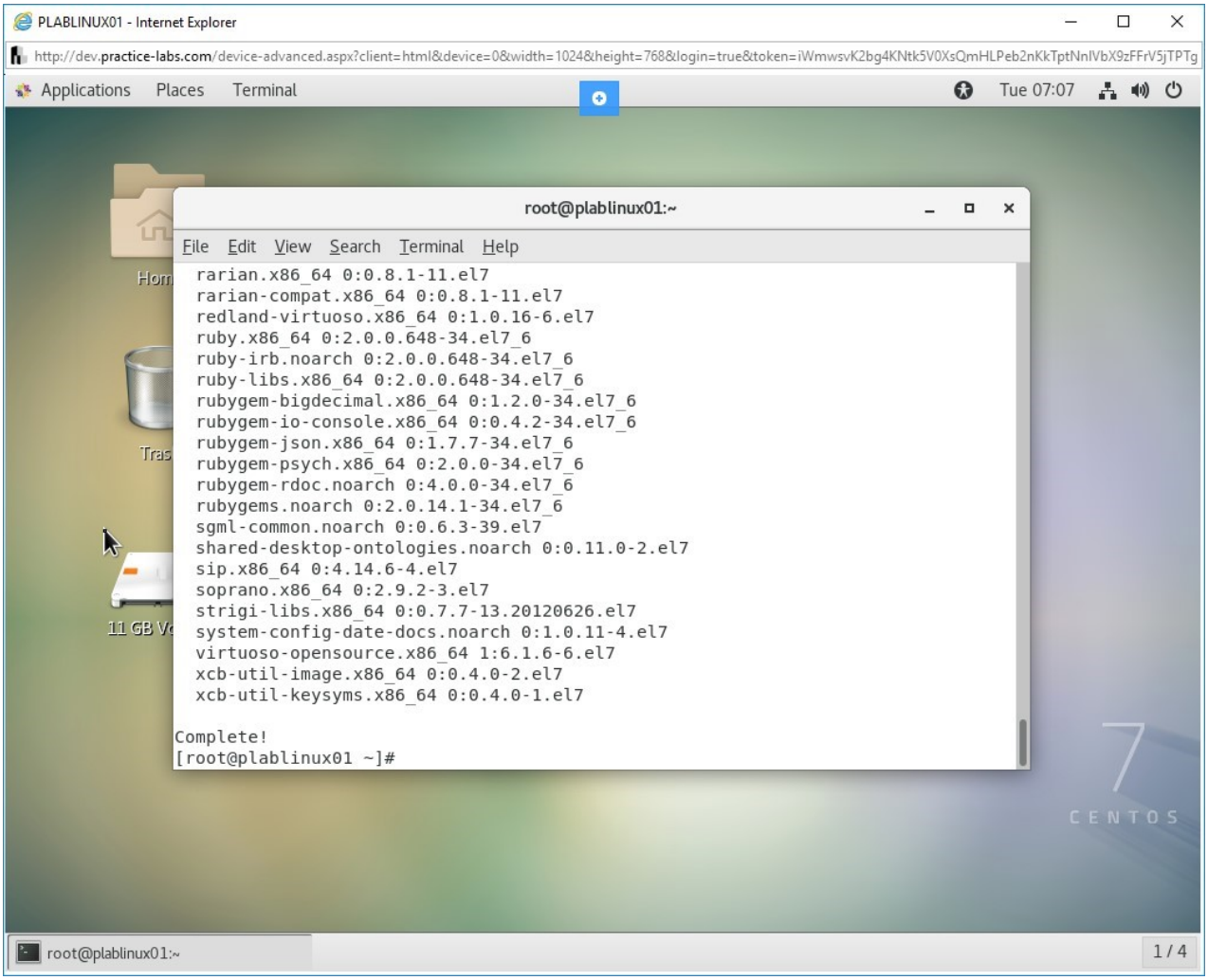


Figure 1.30 Screenshot of PLABLINUX01: Showing the completed installation of a package group.

Step 9

Clear the screen by entering the following command:

```
clear
```

You can attempt to update the kde-desktop package. If any package in this package group requires an update, you will be prompted to continue with the updated package installation. Type the following command:

```
yum group update kde-desktop
```

Press **Enter**. No packages are required to be updated.

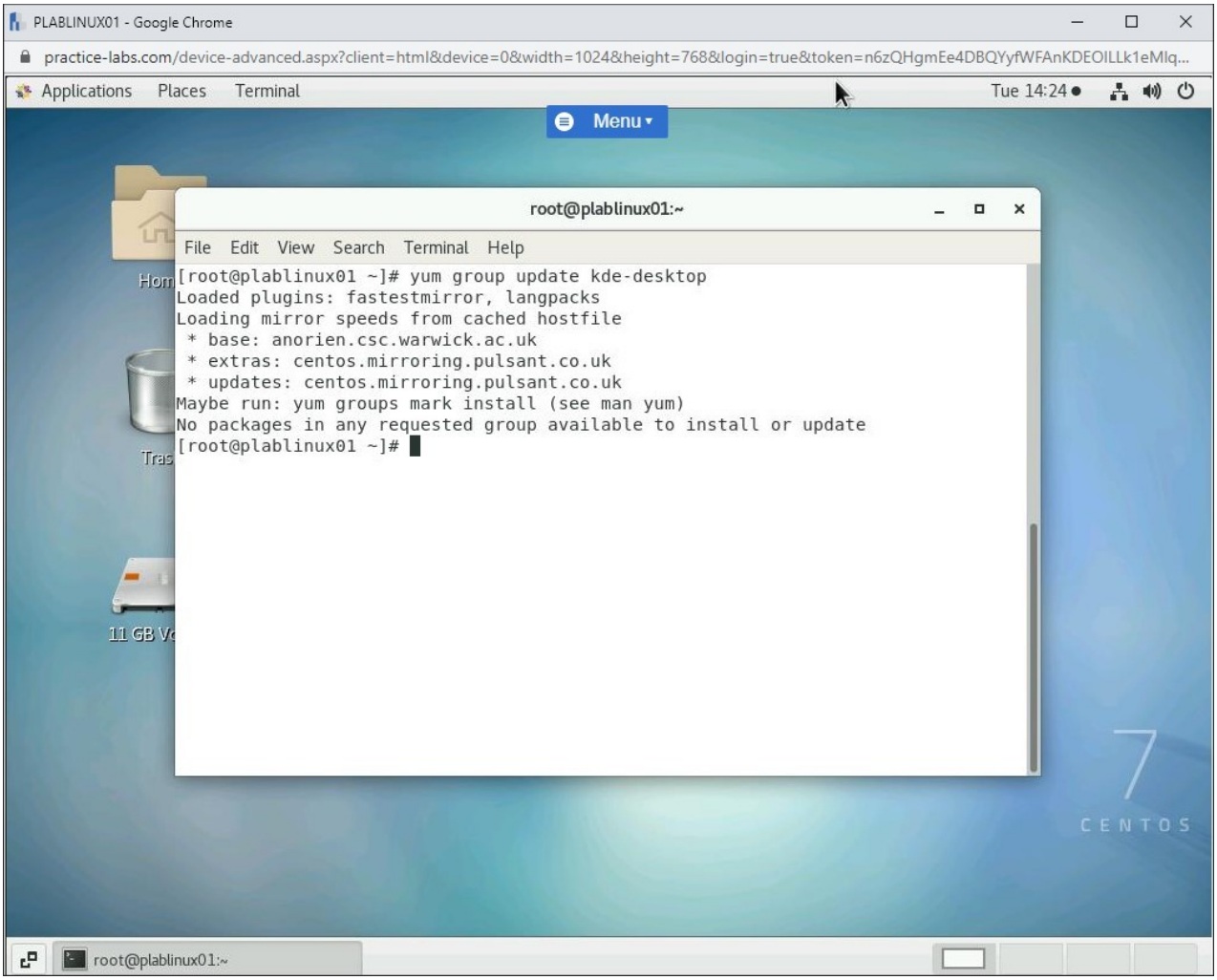


Figure 1.31 Screenshot of PLABLINUX01: Updating the package group.

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

Review

Well done, you have completed the **Patch the System** Practice Lab.

Summary

You completed the following exercise:

- Exercise 1 - Patch the System

You should now be able to:

- Configure Network on CentOS
- Install update manually
- Enable Automatic Security Updates
- Update a single package or package group

Feedback

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