

Mail Transfer Agent (MTA) Basics

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Introduction

Welcome to the **Mail Transfer Agent (MTA) Basics** Practice Lab. In this module you will be provided with the instructions and devices needed to develop your hands-on skills.

MTA
Mail
Transfer
Agent

Learning Outcomes

In this module, you will complete the following exercise:

- Exercise 1 - Mail Transfer Agent (MTA) Basics

After completing this lab, you will be able to:

- Configure Sendmail
- E-mail forwarding
- Access and create e-mails

Exam Objectives

The following exam objectives are covered in this lab:

- **LPI:** 108.3 Mail Transfer Agent (MTA) basics
- **CompTIA:** 2.5 Summarize and explain server roles.

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 - Mail Transfer Agent (MTA) Basics

Mail Transfer Agents (MTAs) are mainly used for sending and receiving E-mails. A Linux system can be configured with four different types of MTAs: Sendmail, Postfix, Qmail, and Exim. In this task, you will work with Sendmail. In this exercise, you will understand how to work with Sendmail.

Learning Outcomes

After completing this exercise, you will be able to:

- Log into a Linux System
- Configure Sendmail
- E-mail forwarding
- Access and create e-mails

Your Devices

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

- **PLABLINUX01** (CentOS Server)



Task 1 - Configure Sendmail

To do this, perform the following steps:

Step 1

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

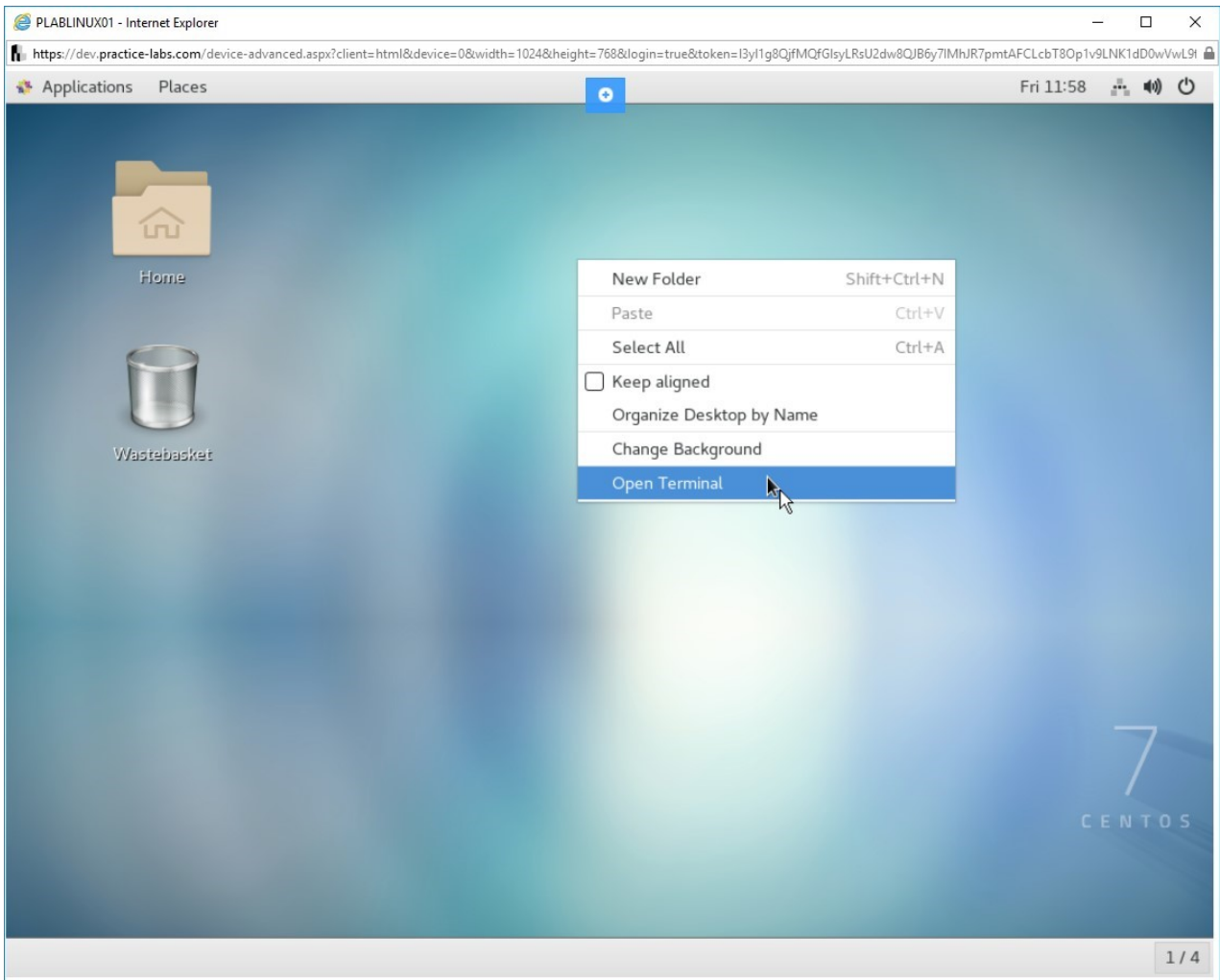


Figure 1.1 Screenshot of PLABLINUX01: Selecting the Open Terminal option from the context menu.

Step 2

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

```
SU -
```

Press **Enter**.

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

Passw0rd

Press **Enter**.

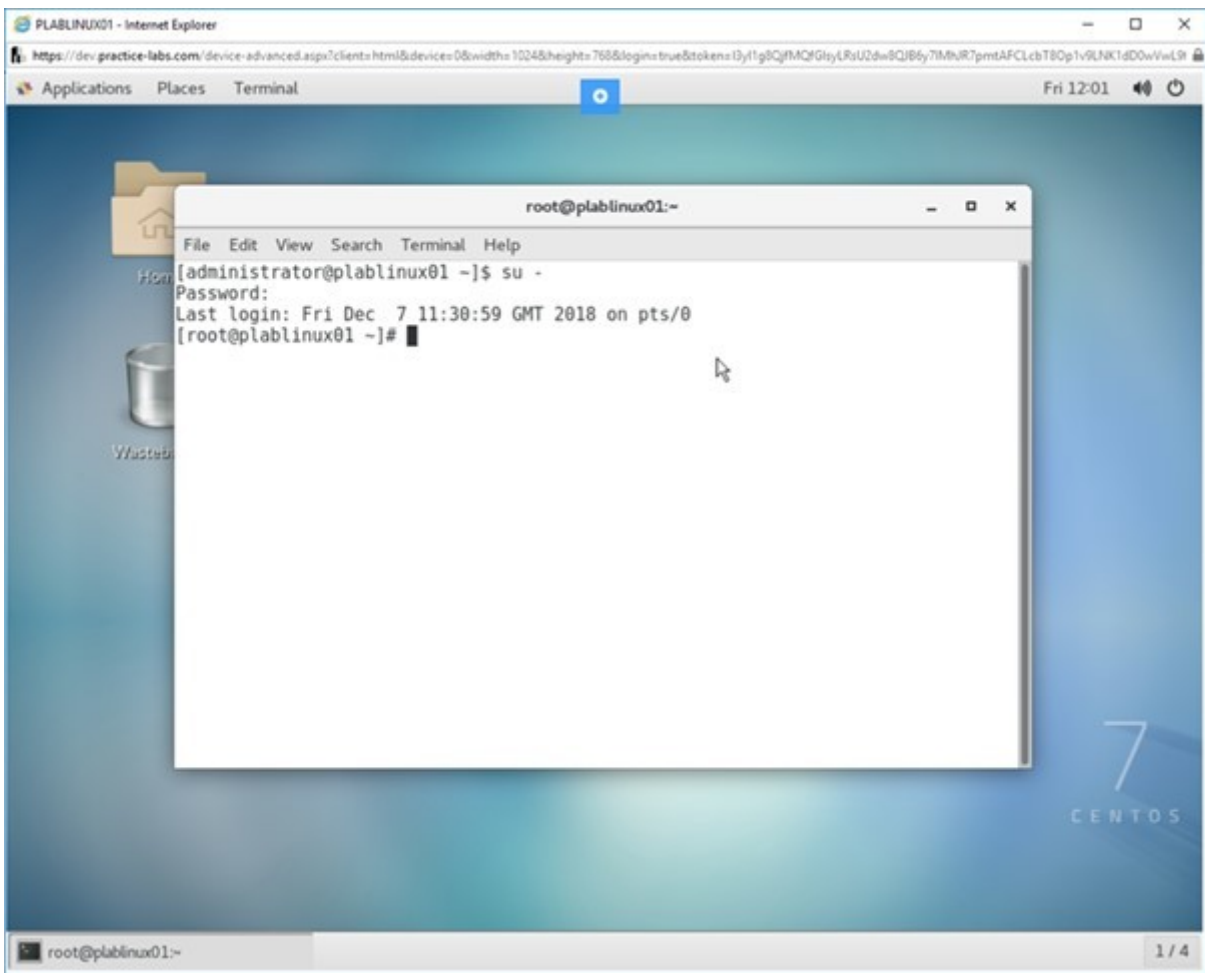


Figure 1.2 Screenshot of PLABLINUX01: Changing to the root account with the su command.

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.

In CentOS, **Sendmail** is not installed by default. You will first install **Sendmail** and then continue to configure it.

To install **Sendmail**, type the following command:

```
yum install sendmail
```

Press **Enter**.

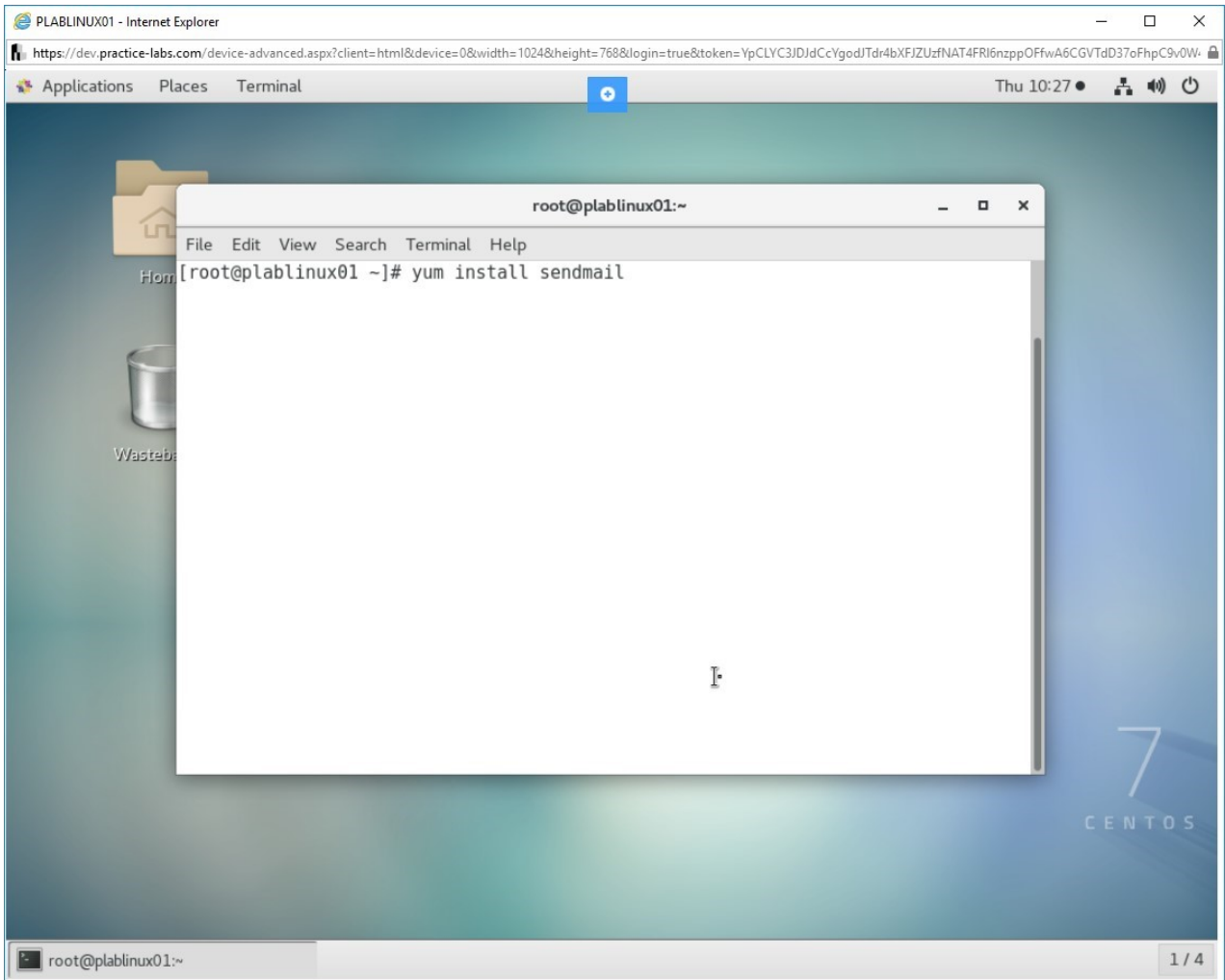


Figure 1.3 Screenshot of PLABLINUX01: Installing the sendmail package.

Step 4

The download process for **Sendmail** starts. After the download process is completed, it prompts for your confirmation. Type the following to install the package:

y

Press **Enter**.

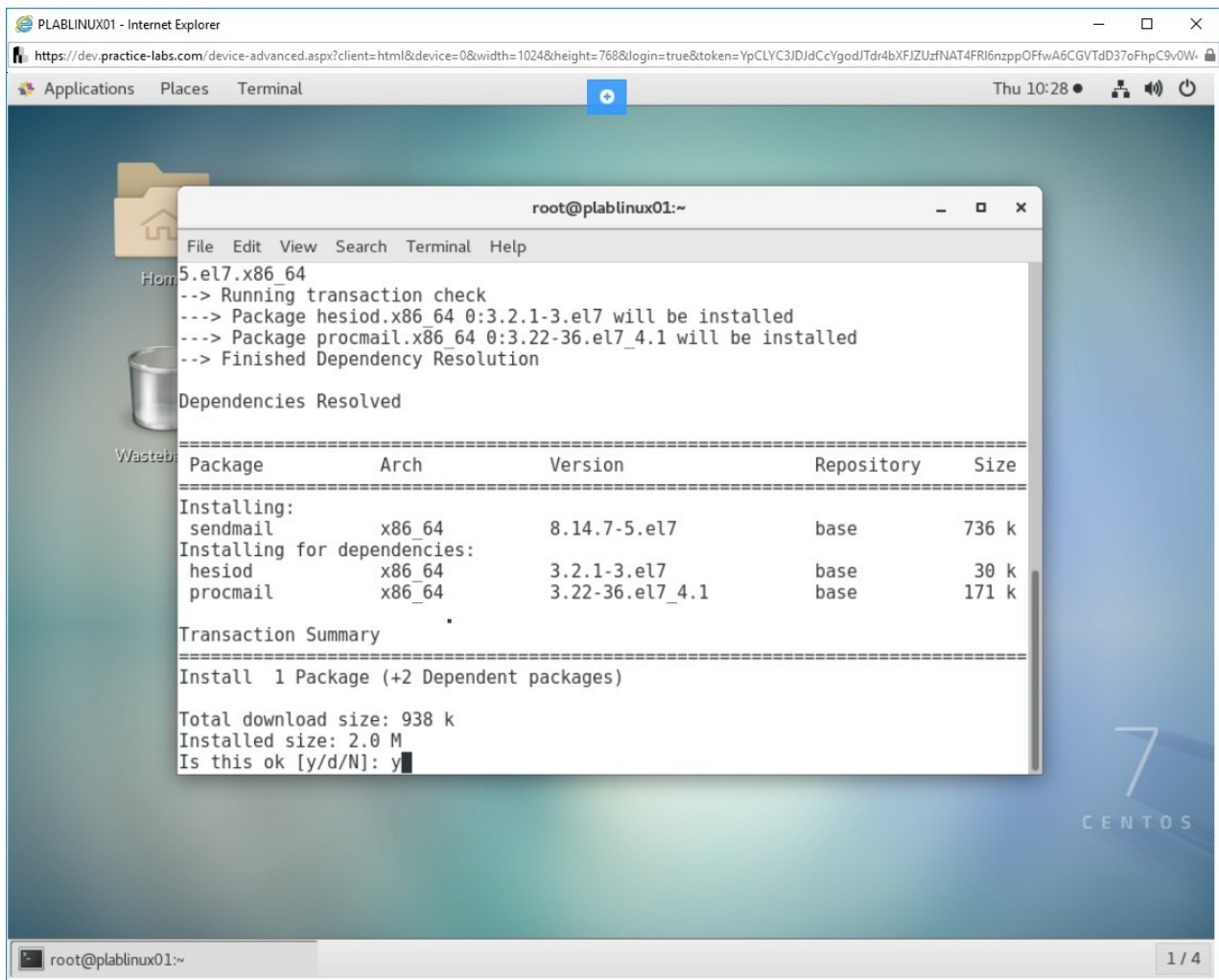


Figure 1.4 Screenshot of PLABLINUX01: Confirming the installation.

Step 5

The installation process begins. After successful installation, you will see the **Completed** message.

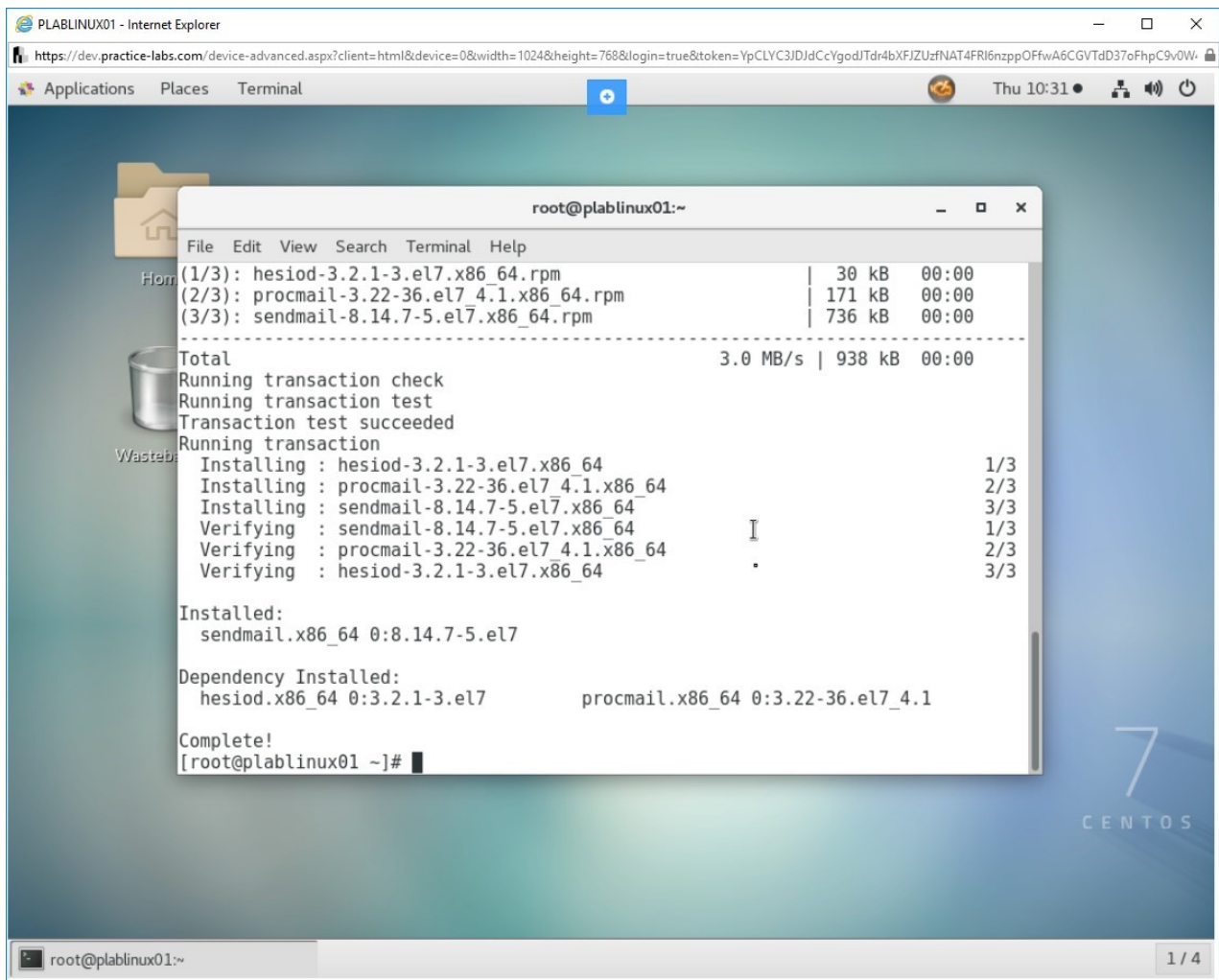


Figure 1.5 Screenshot of PLABLINUX01: Showing the package installation completion.

Step 6

Clear the screen by entering the following command:

```
clear
```

Now, you will need to install the **sendmail-cf** package.

To install the **sendmail-cf** package, type the following command:

```
yum install sendmail-cf
```

Press **Enter**.

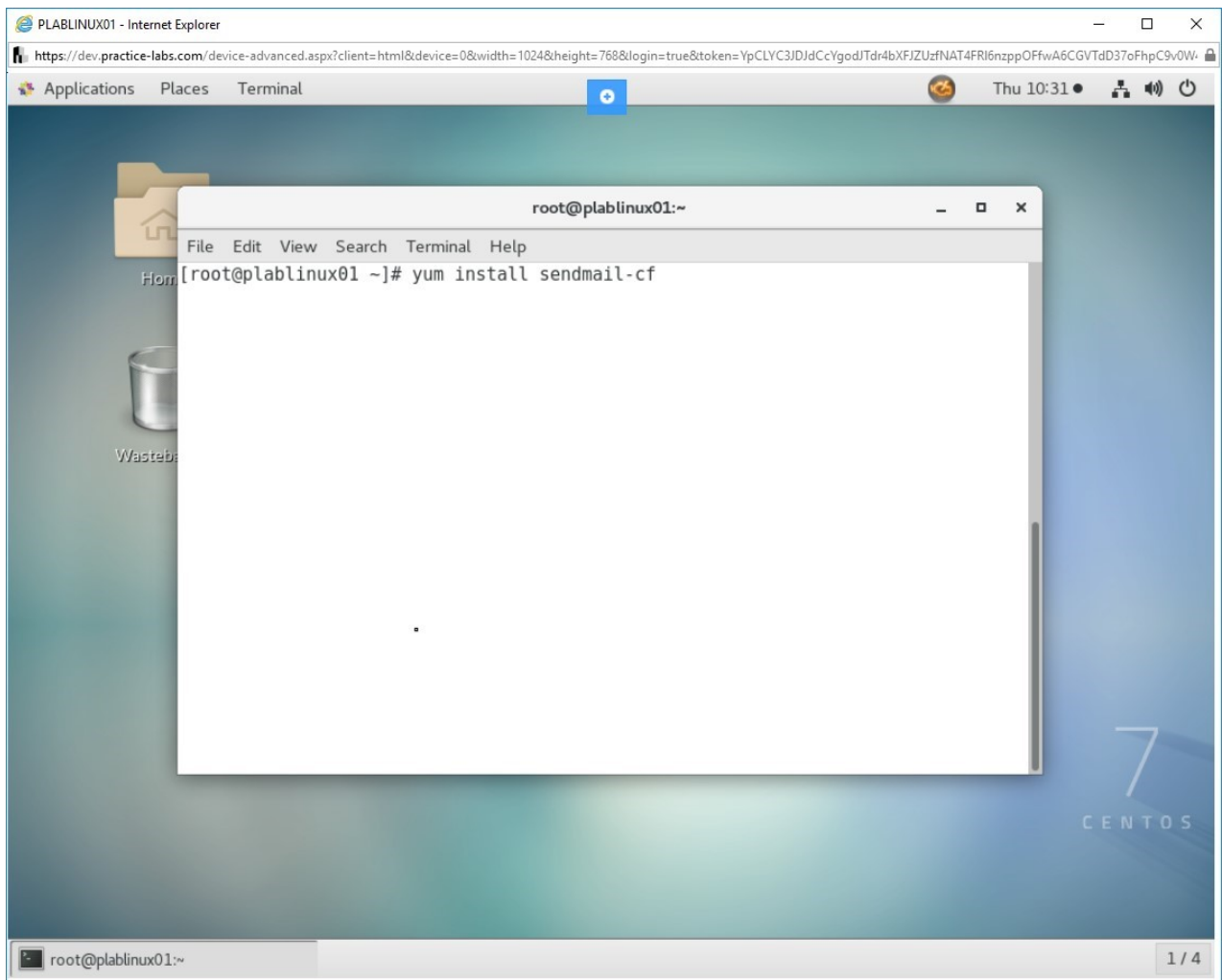


Figure 1.6 Screenshot of PLABLINUX01: Installing the sendmail-cf package.

Step 7

The download process for **sendmail-cf** starts. After the download process is completed, it prompts for your confirmation.

Type the following to install the package:

y

Press **Enter**.

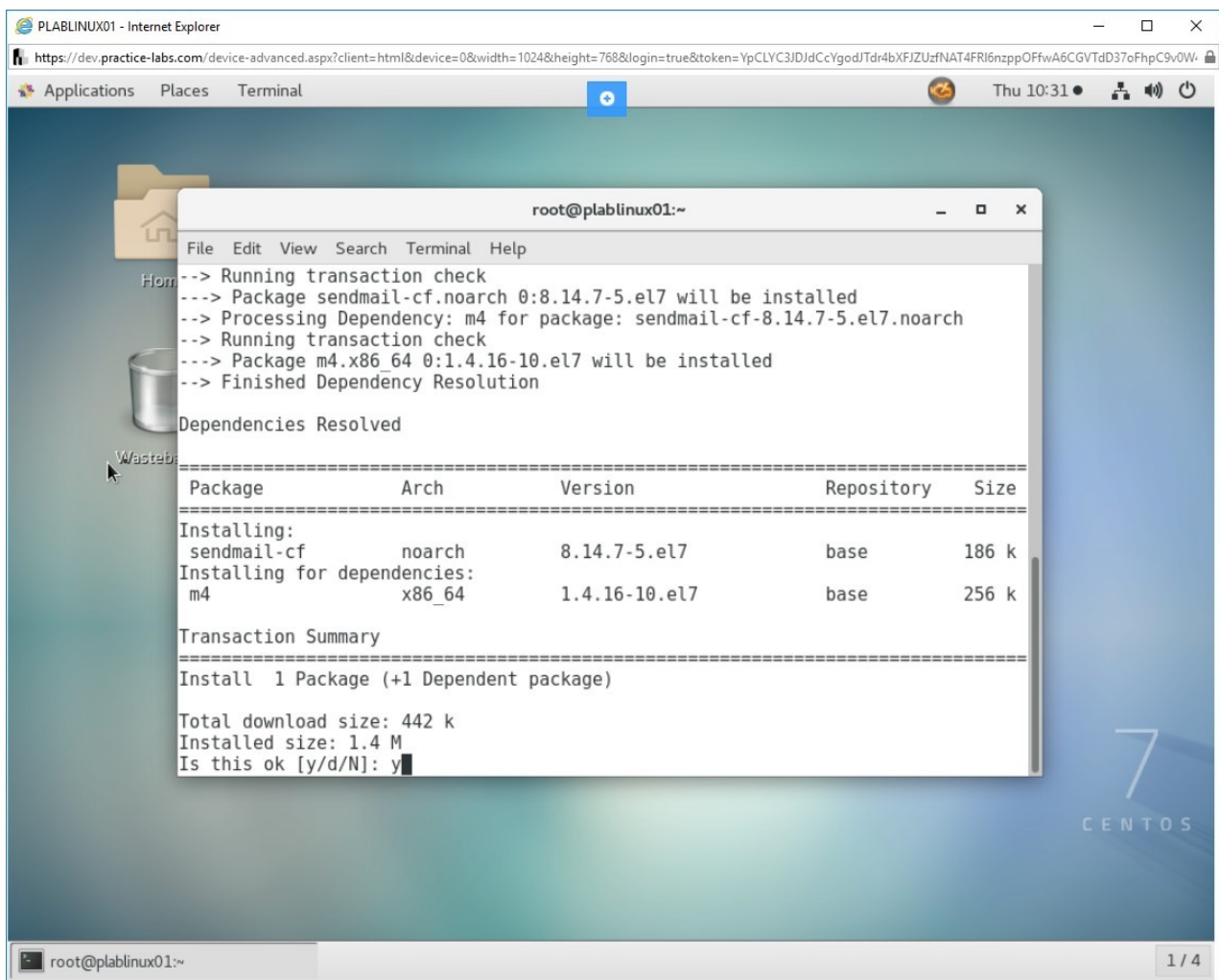


Figure 1.7 Screenshot of PLABLINUX01: Confirming the installation.

Step 8

The installation process runs. After successful installation, you will see the **Completed** message.

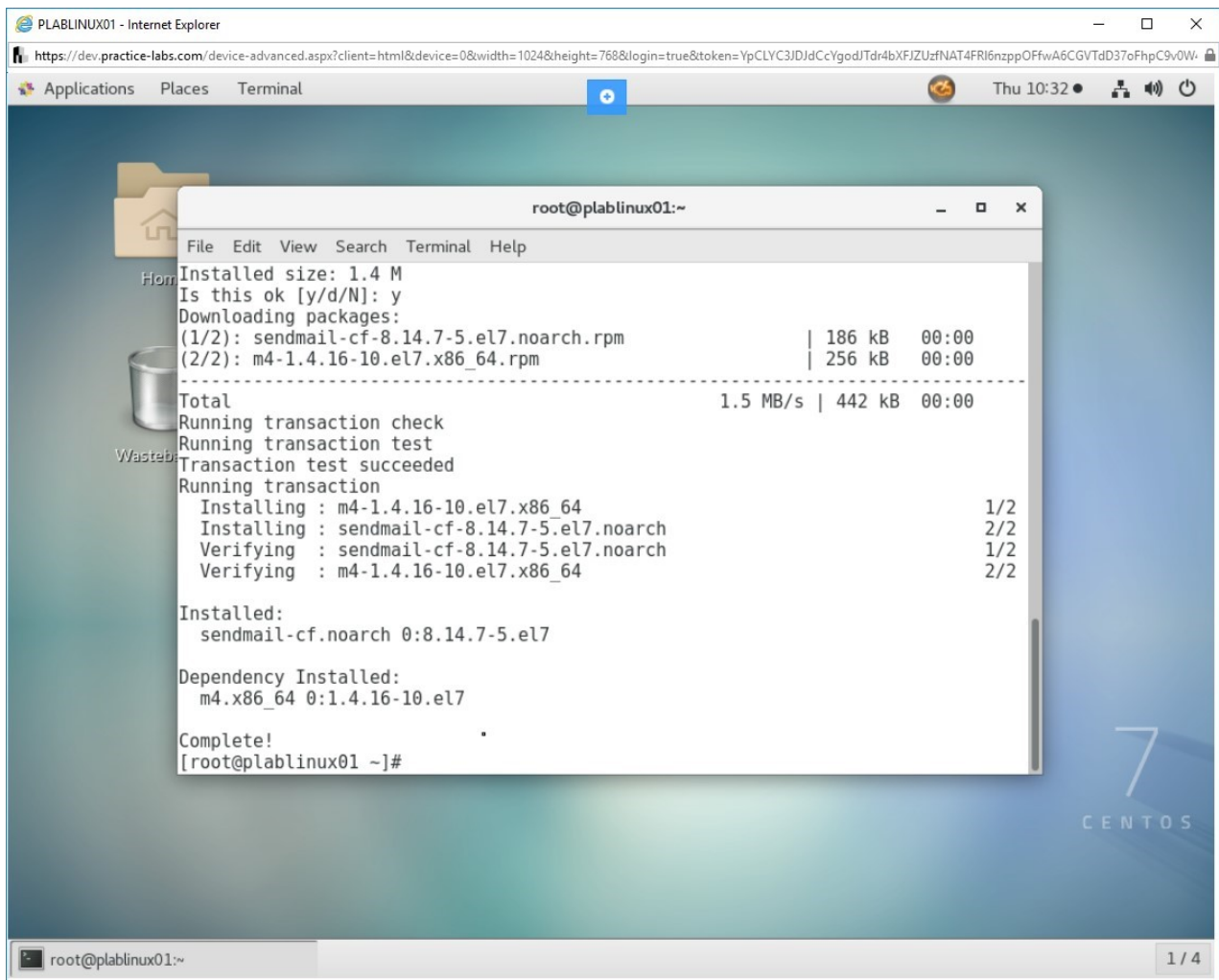


Figure 1.8 Screenshot of PLABLINUX01: Showing the package installation completion.

Step 9

Let's view the Sendmail configuration file. The actual configuration is stored in the **/etc/mail/sendmail.cf** file. However, you should not edit this file. Alternatively, you should edit the **/etc/mail/sendmail.mc** file, which is used to later build the configuration in the **/etc/mail/sendmail.cf** file.

To view the **/etc/mail/sendmail.mc** file, type the following command:

```
cat /etc/mail/sendmail.mc
```

Press **Enter**.

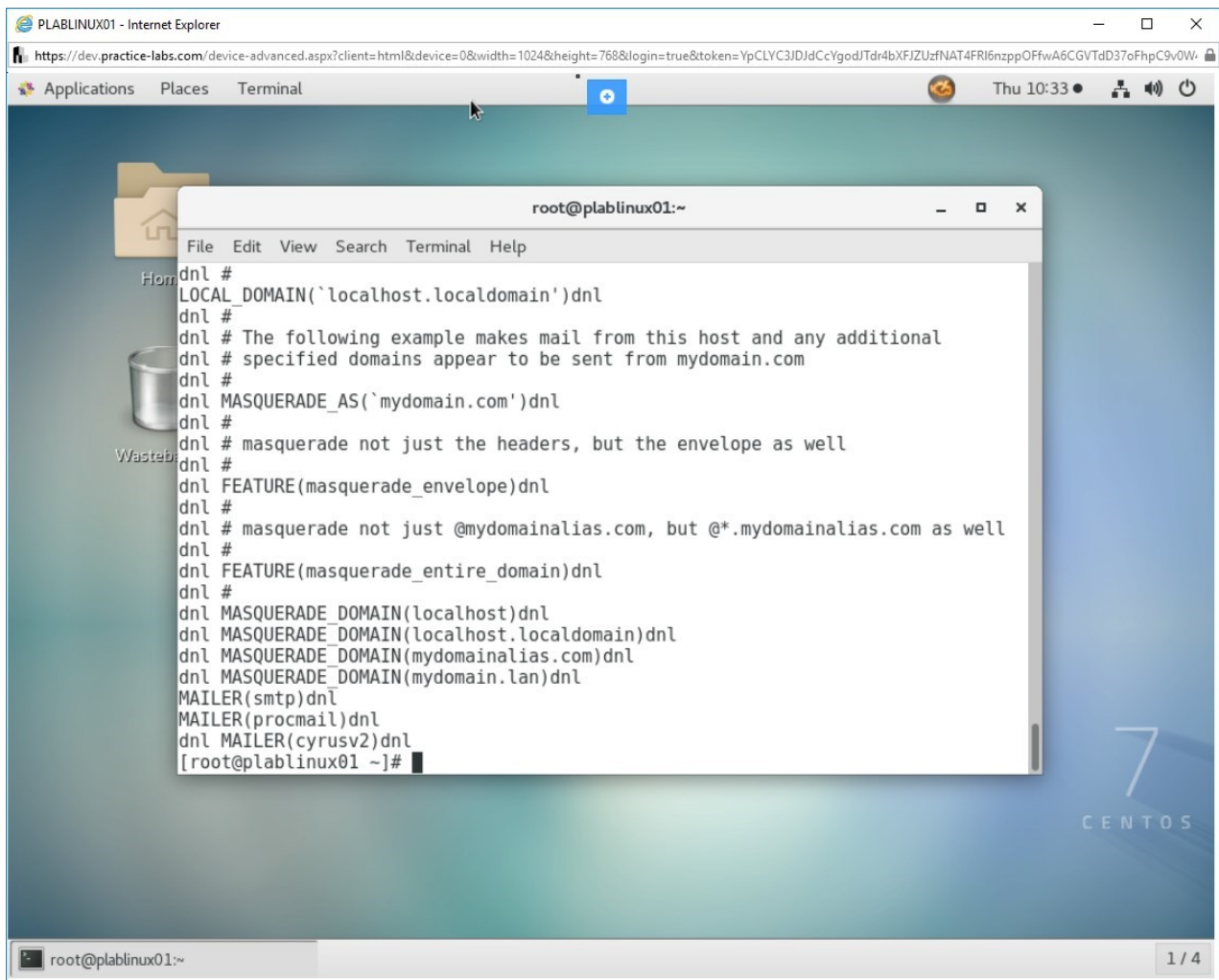


Figure 1.9 Screenshot of PLABINUX01: Viewing the /etc/mail/sendmail.mc file.

Step 10

Clear the screen by entering the following command:

```
clear
```

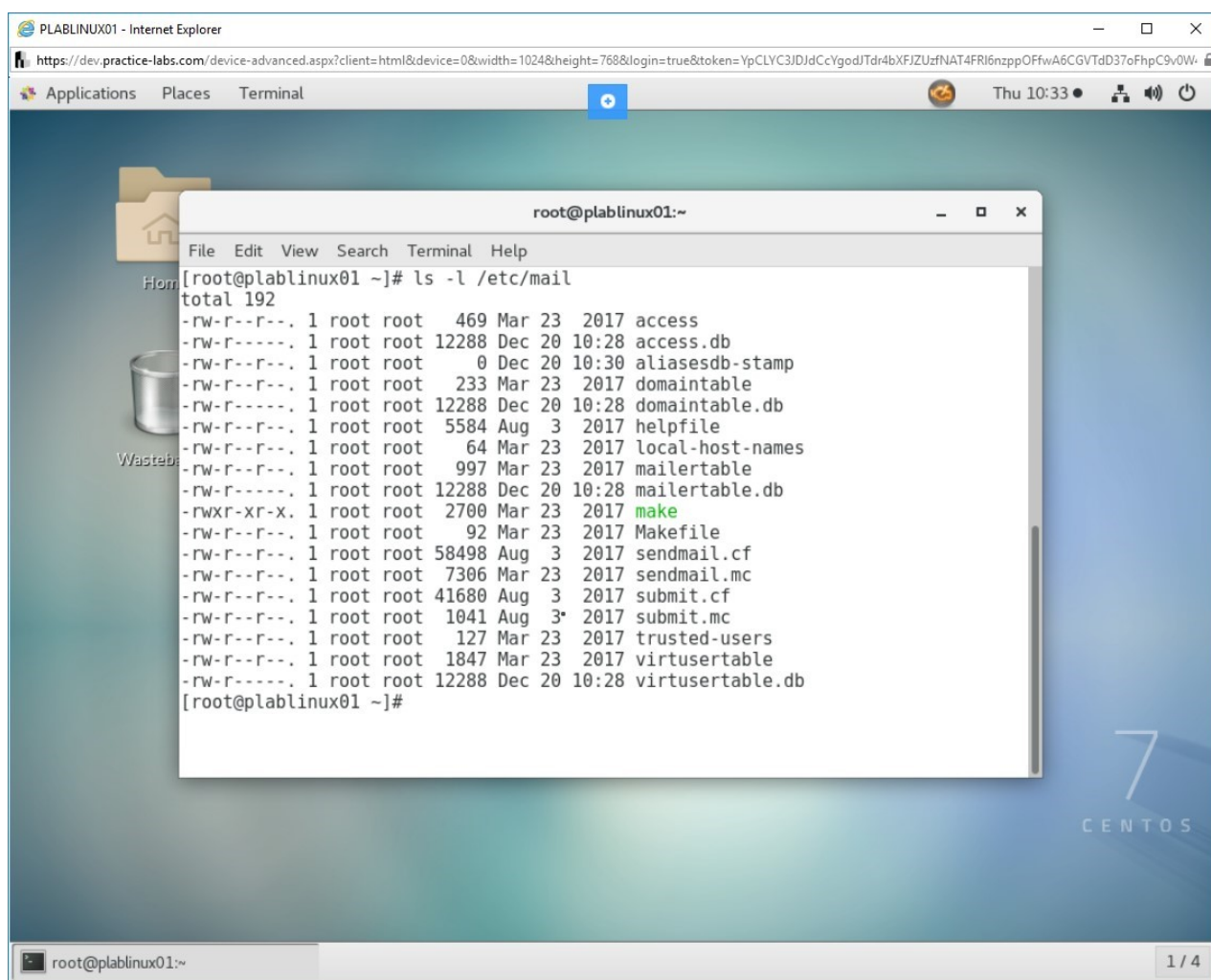
The make command also generates the required databases in the **/etc/mail** directory.

To view the list of databases, type the following command:

```
ls -l /etc/mail
```

Press **Enter**.

Note: If you note the date stamp, a few databases are created with the current date.



```
root@plablinux01:~# ls -l /etc/mail
total 192
-rw-r--r--. 1 root root 469 Mar 23 2017 access
-rw-r-----. 1 root root 12288 Dec 20 10:28 access.db
-rw-r--r--. 1 root root 0 Dec 20 10:30 aliasesdb-stamp
-rw-r--r--. 1 root root 233 Mar 23 2017 domaintable
-rw-r-----. 1 root root 12288 Dec 20 10:28 domaintable.db
-rw-r--r--. 1 root root 5584 Aug 3 2017 helpfile
-rw-r--r--. 1 root root 64 Mar 23 2017 local-host-names
-rw-r--r--. 1 root root 997 Mar 23 2017 mailertable
-rw-r-----. 1 root root 12288 Dec 20 10:28 mailertable.db
-rwxr-xr-x. 1 root root 2700 Mar 23 2017 make
-rw-r--r--. 1 root root 92 Mar 23 2017 Makefile
-rw-r--r--. 1 root root 58498 Aug 3 2017 sendmail.cf
-rw-r--r--. 1 root root 7306 Mar 23 2017 sendmail.mc
-rw-r--r--. 1 root root 41680 Aug 3 2017 submit.cf
-rw-r--r--. 1 root root 1041 Aug 3 2017 submit.mc
-rw-r--r--. 1 root root 127 Mar 23 2017 trusted-users
-rw-r--r--. 1 root root 1847 Mar 23 2017 virtusertable
-rw-r-----. 1 root root 12288 Dec 20 10:28 virtusertable.db
root@plablinux01:~#
```

Figure 1.10 Screenshot of PLABLINUX01: Listing the databases in the /etc/mail directory.

Step 11

Clear the screen by entering the following command:

```
clear
```

It is important to note that postfix is the default MTA for a Linux system. If you intend to use Sendmail, then you will need to switch to Sendmail MTA. To switch the MTA, type the following command:

```
alternatives --config mta
```

Press **Enter**.

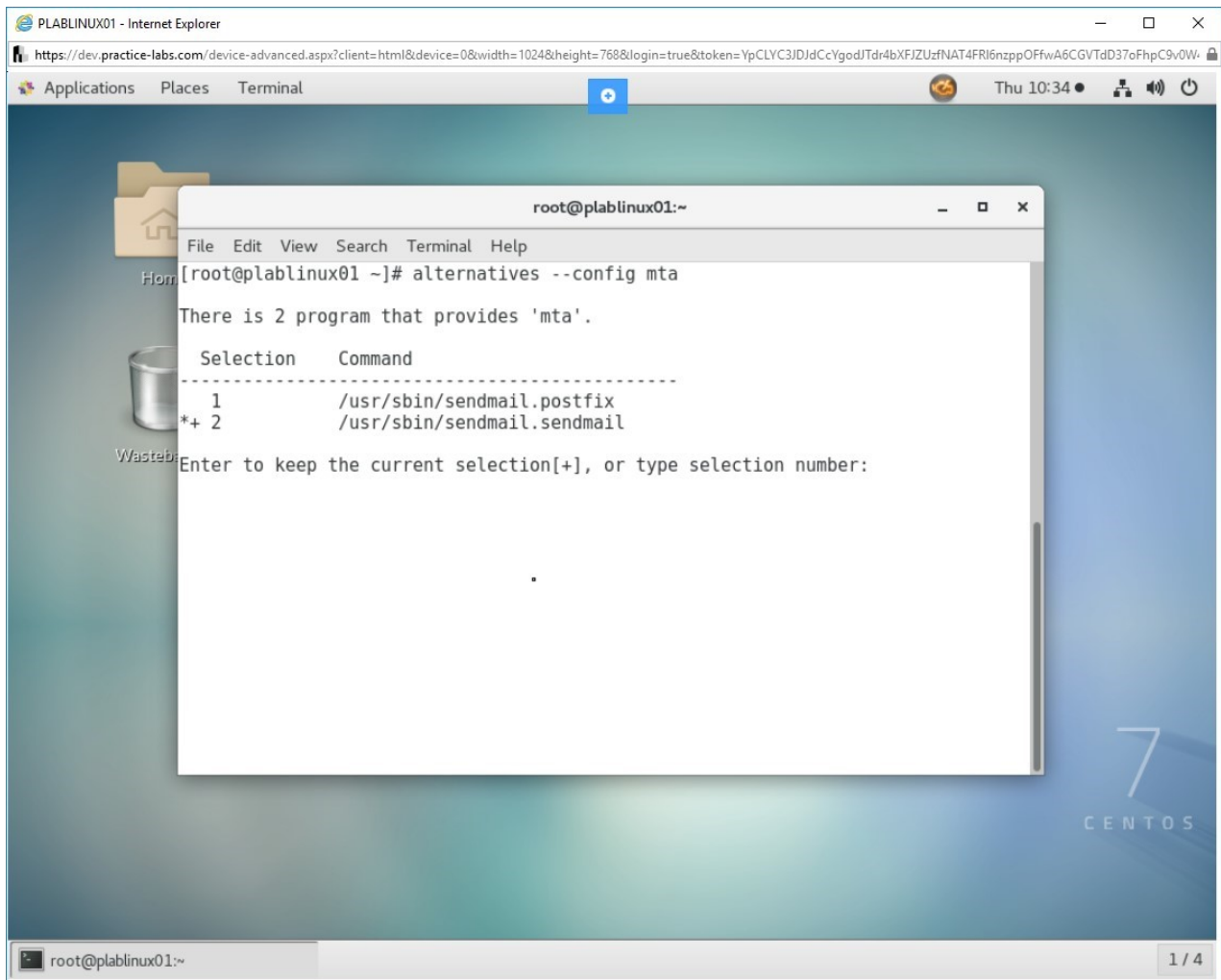


Figure 1.11 Screenshot of PLABLINUX01: Switching to the Sendmail MTA.

Step 12

Type the following number:

2

Press **Enter**.

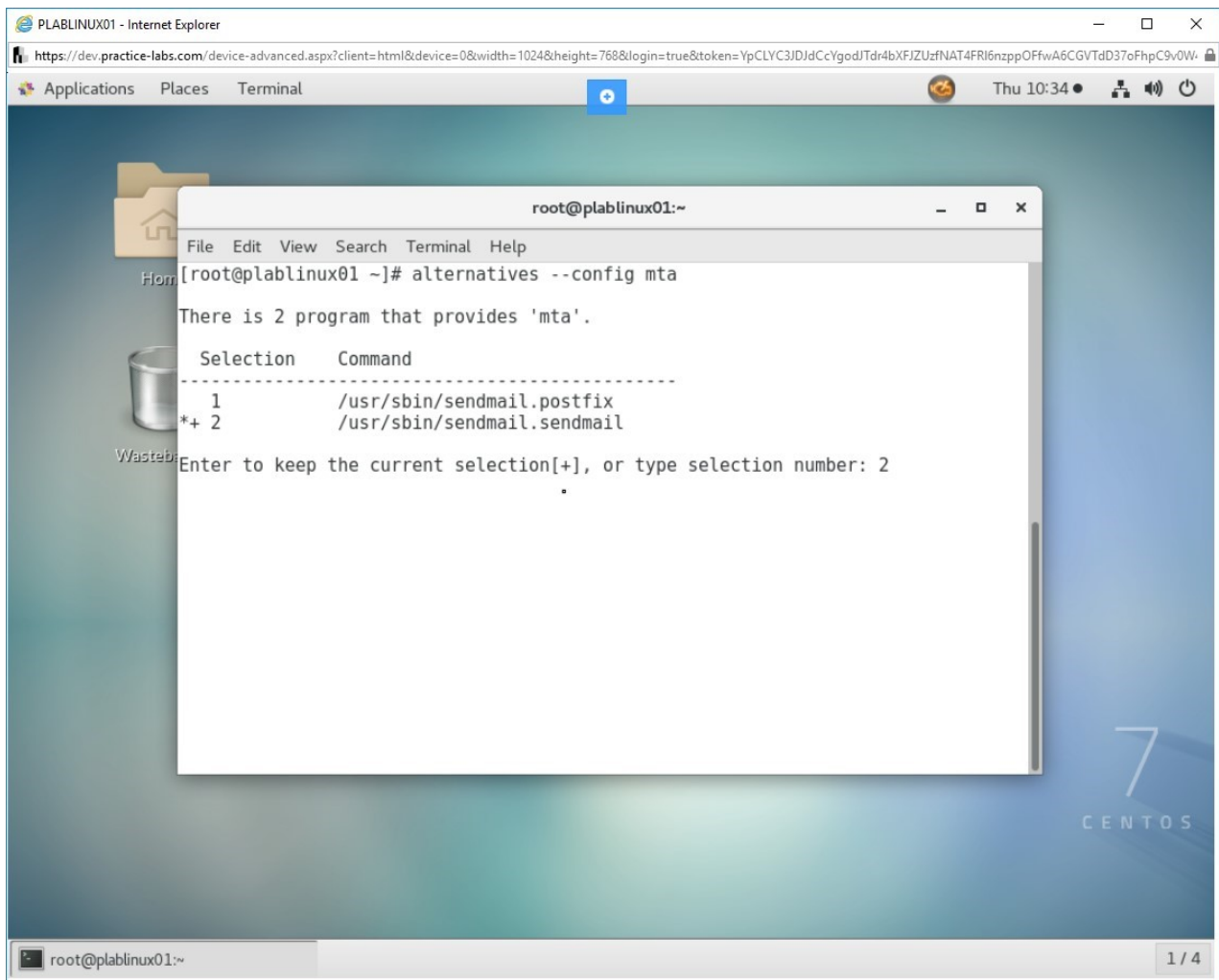


Figure 1.12 Screenshot of PLABLINUX01: Selecting the Sendmail MTA.

Step 13

You have switched to **Sendmail MTA**.

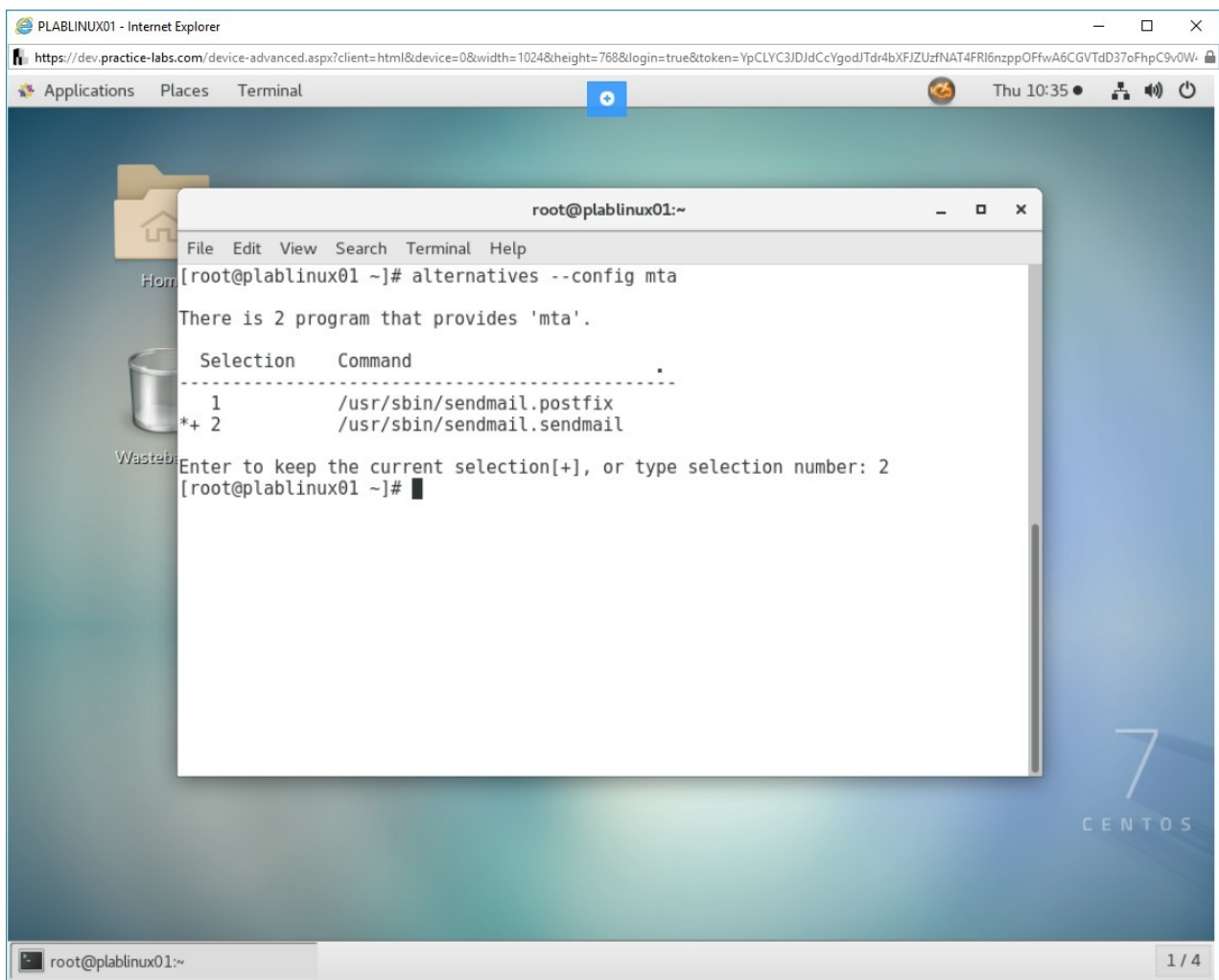


Figure 1.13 Screenshot of PLABLINUX01: Showing the switching to be successful to Sendmail MTA.

Step 14

Clear the screen by entering the following command:

```
clear
```

If you have made changes to the **cat /etc/mail/sendmail.mc** file, then you will need to type the following command:

```
make all -C /etc/mail/
```

Press **Enter**.

This command creates a new **/etc/mail/sendmail.cf** file.

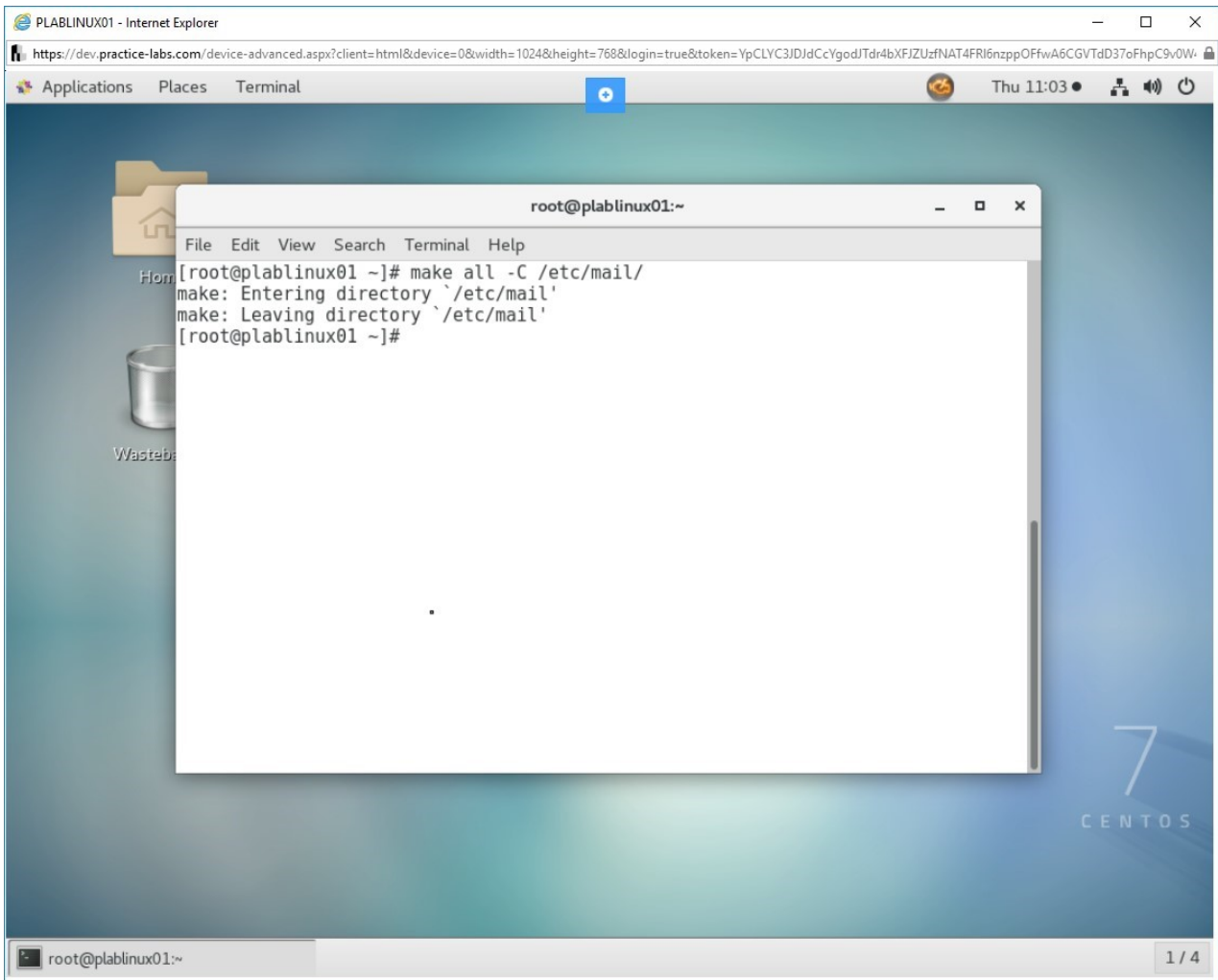


Figure 1.14 Screenshot of PLABLINUX01: Creating the **/etc/mail/sendmail.cf** file.

Step 15

You will now need to restart the **sendmail** daemon.

To restart the **sendmail** daemon, type the following command:

```
systemctl restart sendmail
```

Press **Enter**.

Starting the daemon will take some time.

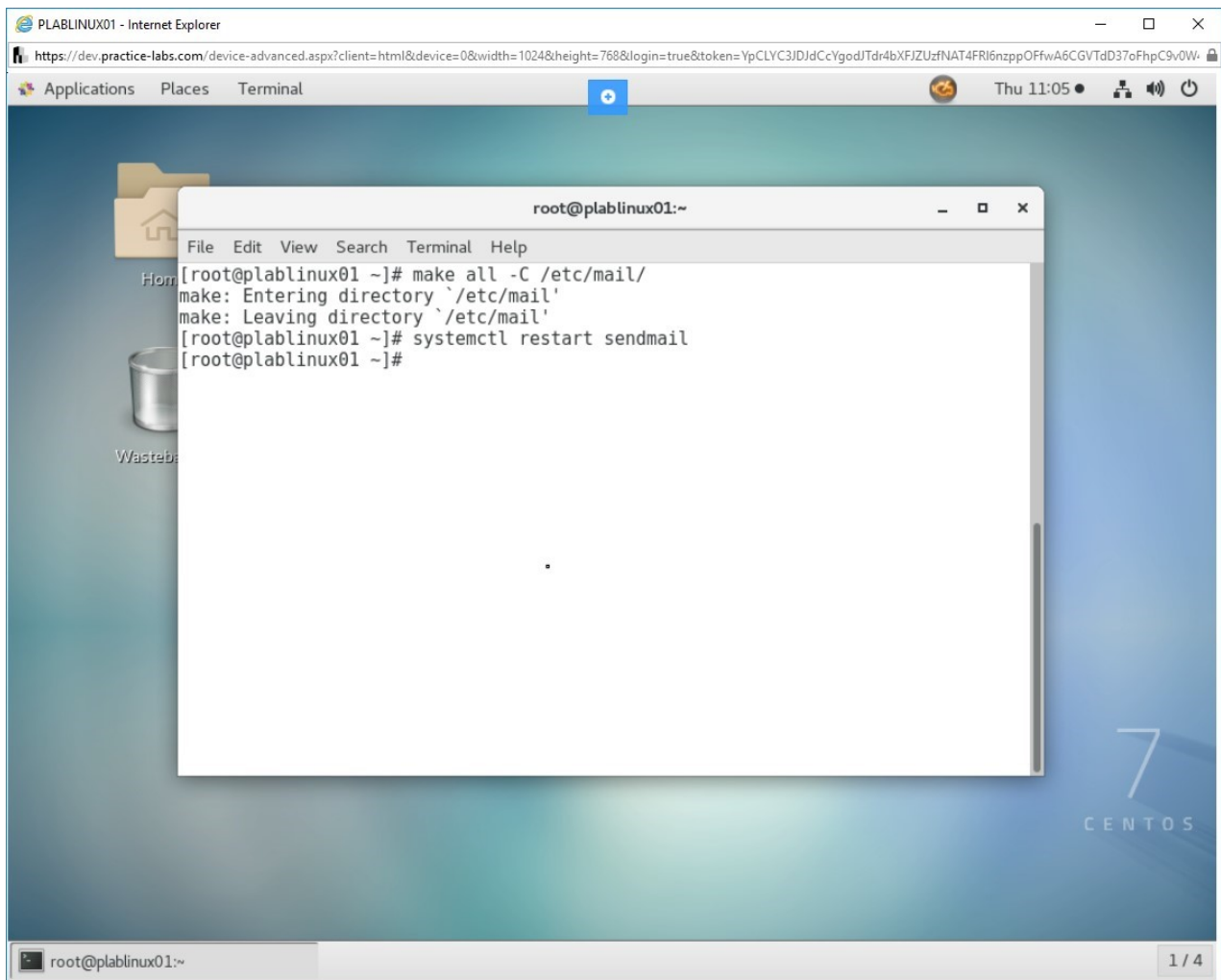


Figure 1.15 Screenshot of PLABLINUX01: Restarting the Sendmail daemon.

Step 16

Clear the screen by entering the following command:

```
clear
```

After you are done with the Sendmail configuration, you can now create e-mail aliases. For example, if you need all e-mails addressed to **root** to be sent to your account, then you can edit the **/etc/aliases** file.

To modify the **/etc/aliases** file, type the following command:

```
vi /etc/aliases
```

Press **Enter**.

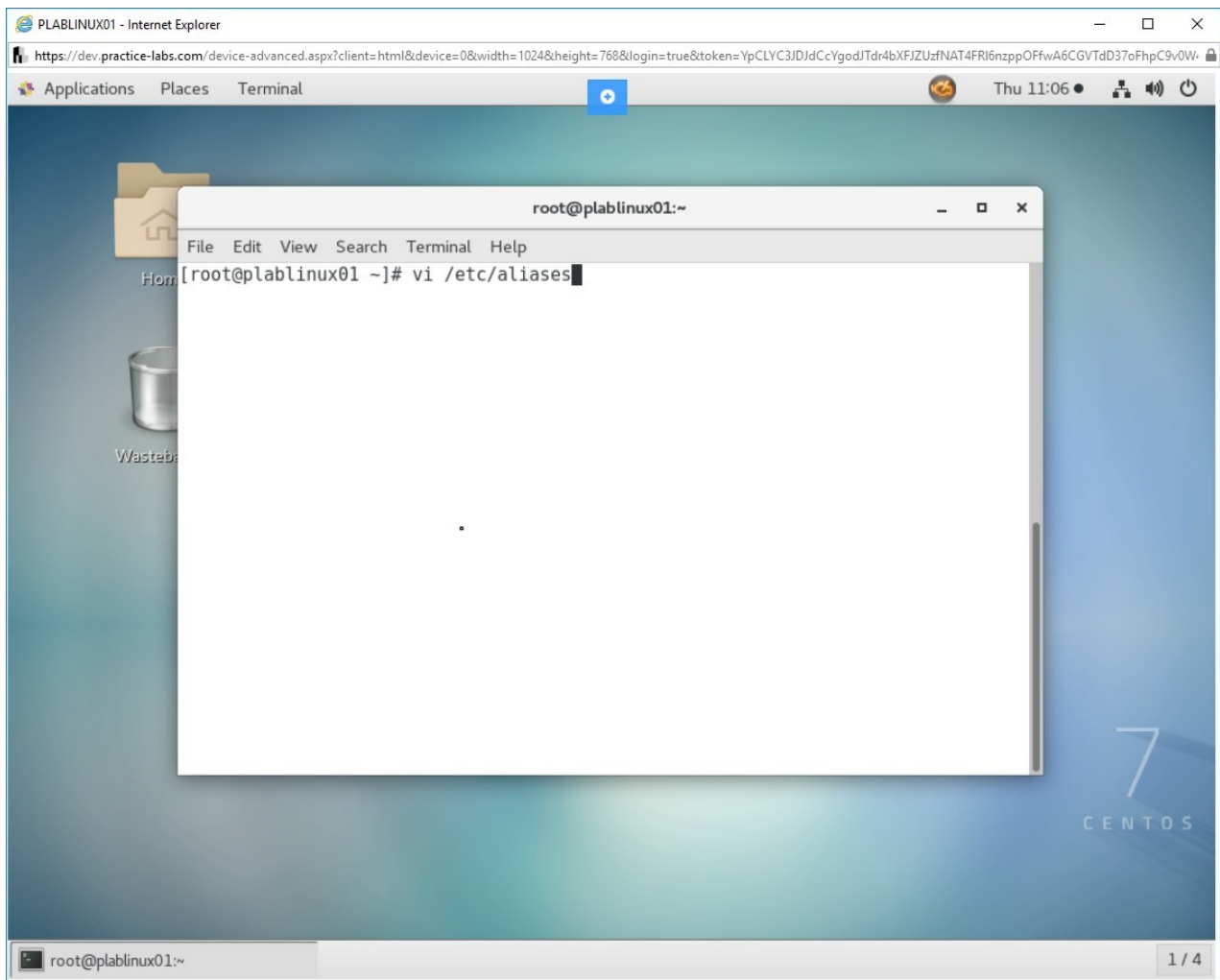


Figure 1.16 Screenshot of PLABLINUX01: Editing the `/etc/aliases` file.

Step 17

The **`/etc/aliases`** file is now opened.

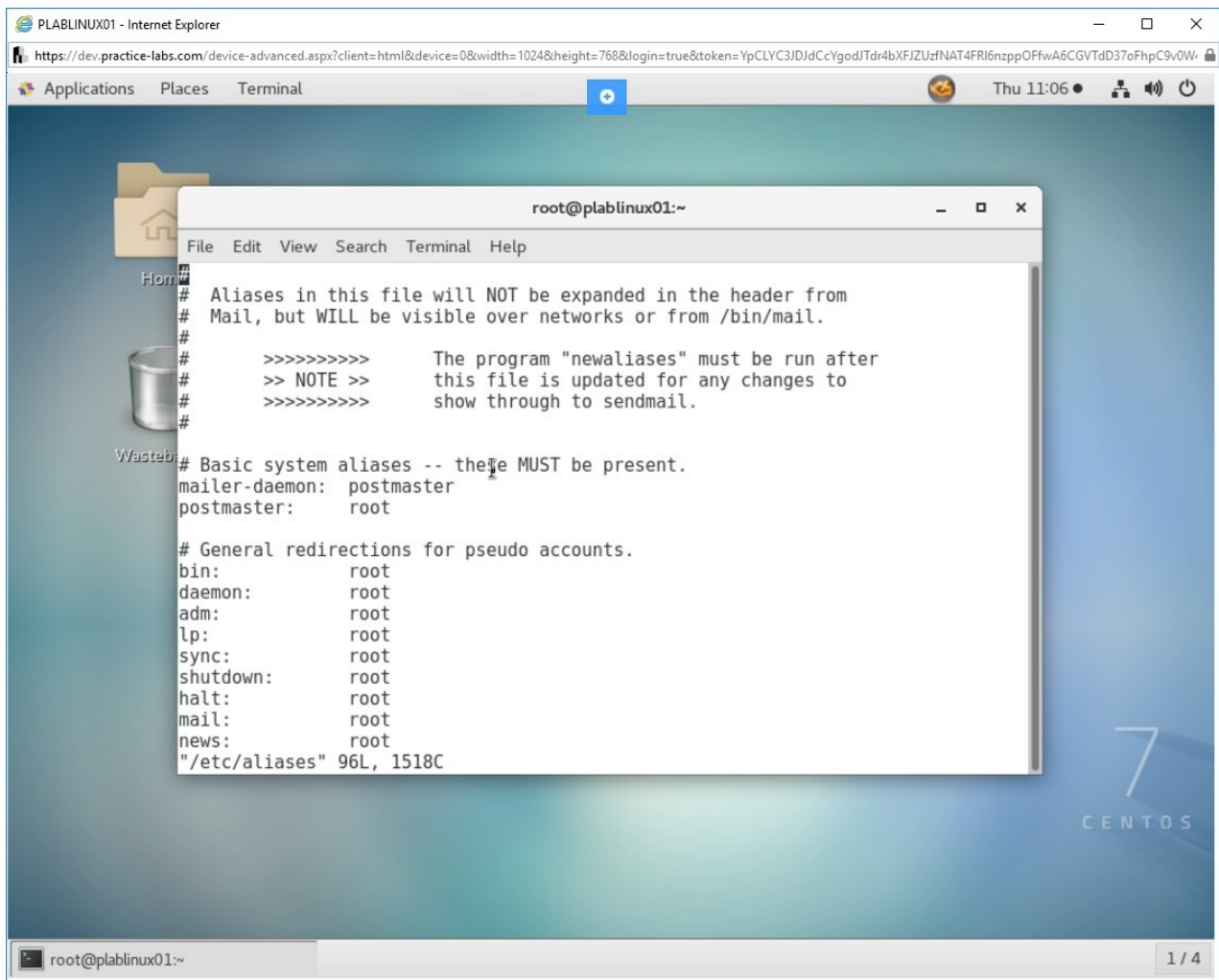


Figure 1.17 Screenshot of PLABLinux01: Showing the opened /etc/aliases file.

Step 18

Scroll to the bottom of the file and press i. You have entered in the edit mode.

Type the following:

```
root: admin
```

Note: to scroll the page, h moves left, l moves right, j moves down, and k moves up. If you enter any input, you will lose the ability to scroll. Please press ESC in this instance to return to normal 'mode'.

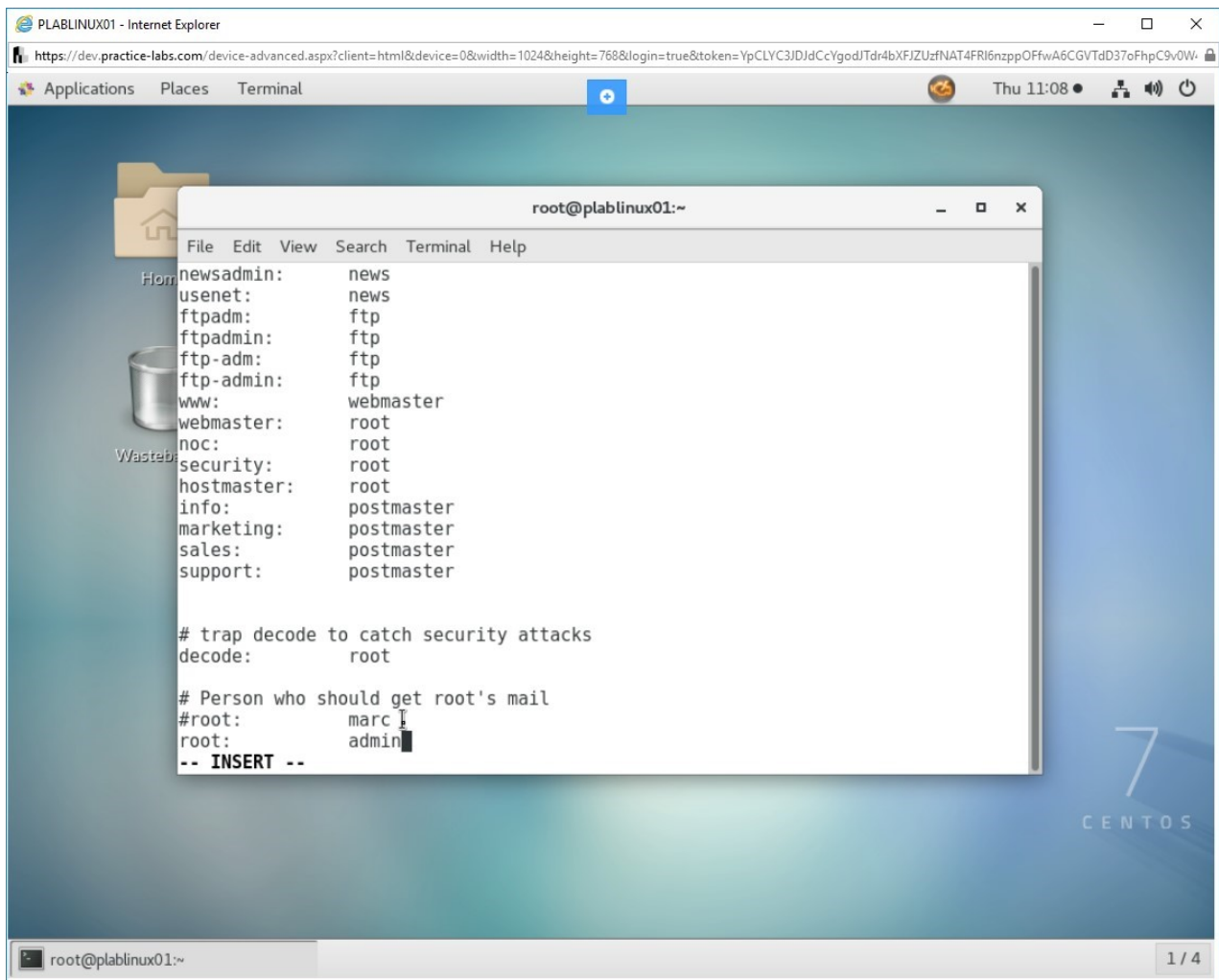


Figure 1.18 Screenshot of PLABLINUX01: Making an entry in the /etc/aliases file.

Step 19

Now, you will need to save the file. Press **ESC** and then type the following:

```
:wq
```

Press **Enter**.

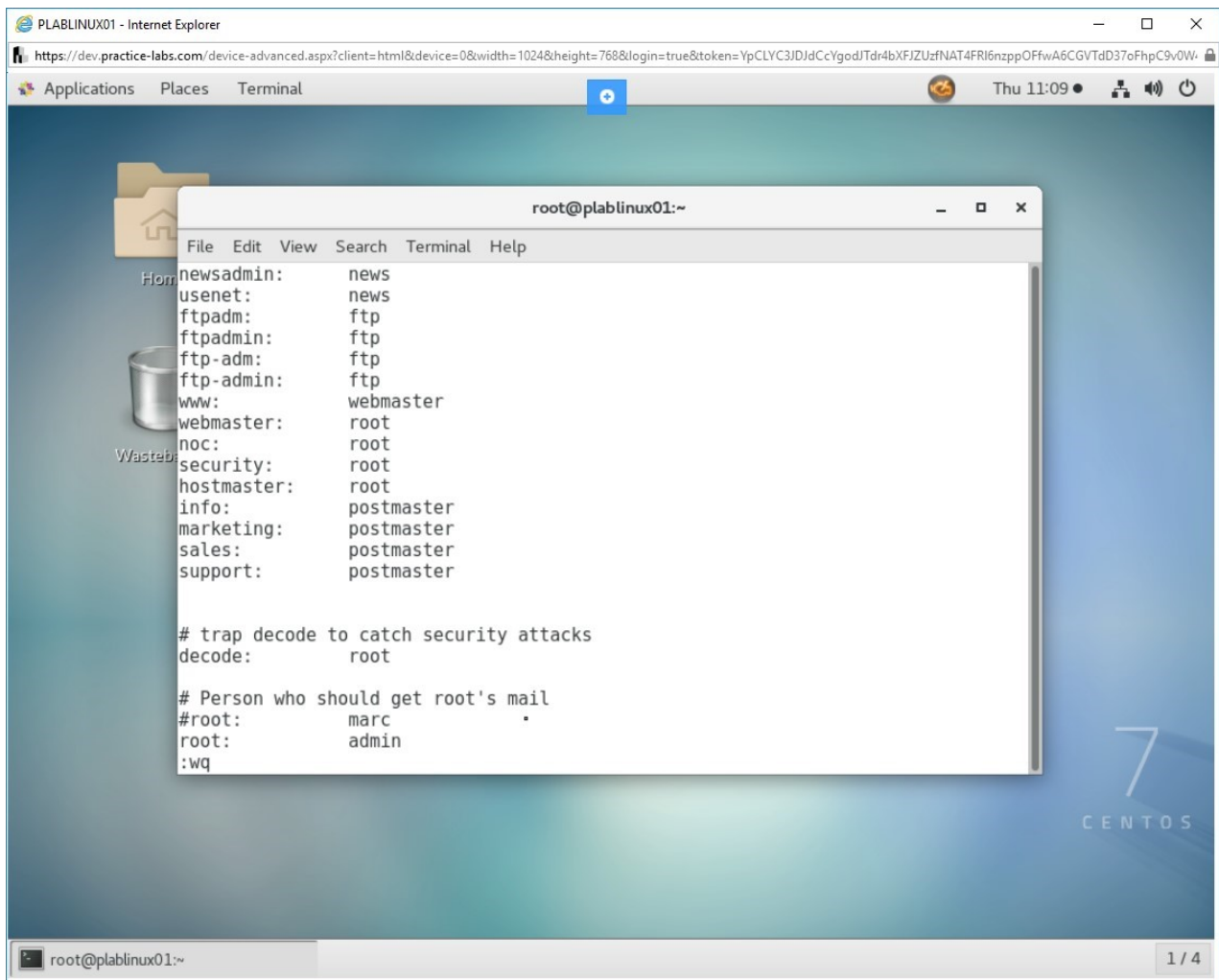


Figure 1.19 Screenshot of PLABLINUX01: Saving the /etc/aliases file.

Step 20

You are back on the command prompt.

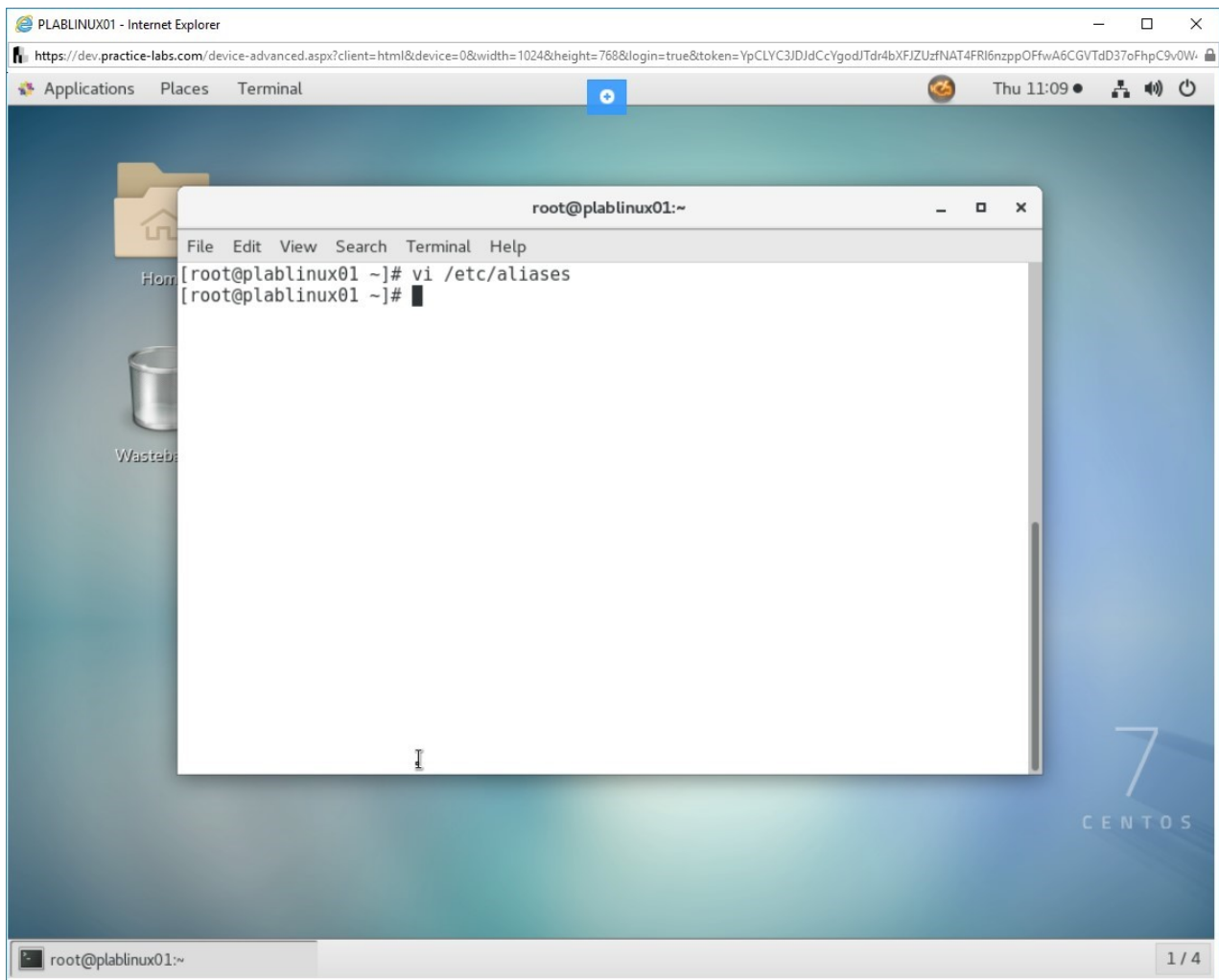


Figure 1.20 Screenshot of PLABLINUX01: Displaying the command prompt.

Step 21

After you have made changes to the **/etc/aliases** file, MTA should be made aware of the changes in this file. To update the changes with the MTA, type the following command:

```
newaliases
```

Press **Enter**.

Note: Updating the changes with the MTA will take a few minutes.

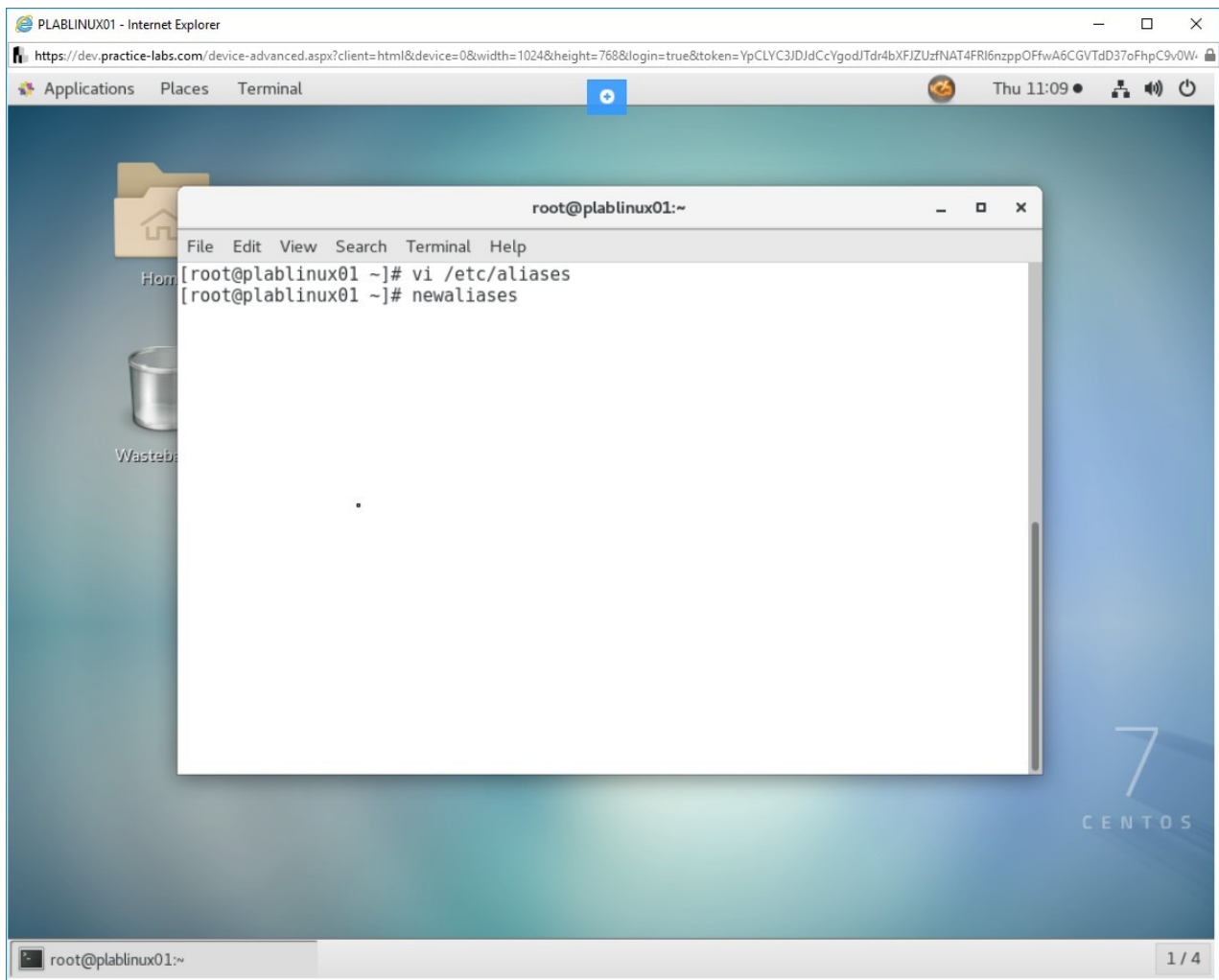


Figure 1.21 Screenshot of PLABLINUX01: Updating the changes with the MTA.

Step 22

Sendmail is now configured on the CentOS Linux machine.

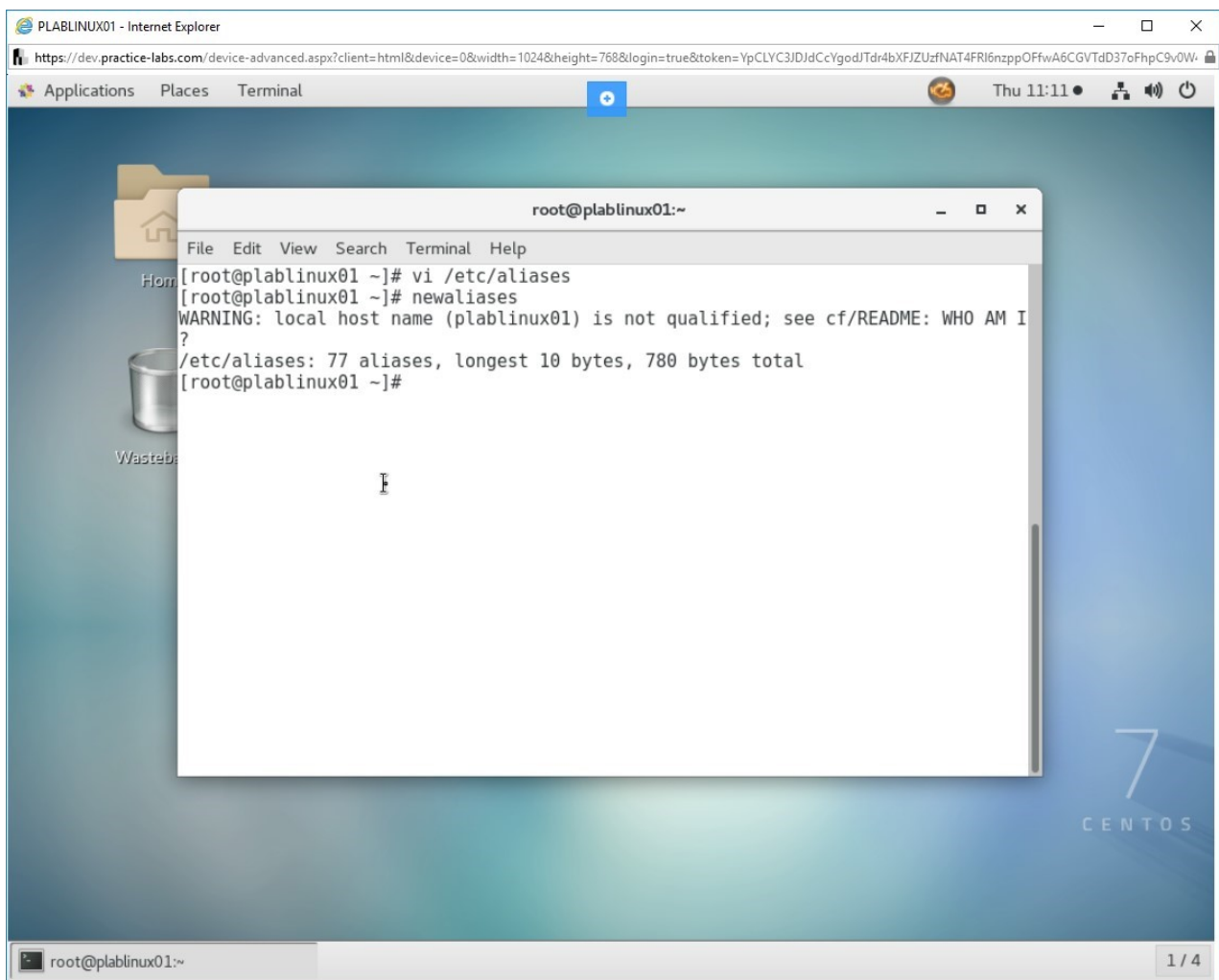


Figure 1.22 Screenshot of PLABLINUX01: Showing the result of the newaliases command.

Task 2 - E-mail Forwarding

There can be a situation when you want the e-mails received on one e-mail account to be forwarded to another e-mail account. You can configure e-mail forwarding using the **.forward** file that is located in the user's home directory. If this file does not exist, then the user can create this file.

When delivering e-mail to the user, sendmail checks for the **.forward** file, if this file exists in the user's home directory, then all e-mails are forwarded to the mentioned e-mail address. In this task, you will configure mail forwarding on sendmail.

To configure e-mail forwarding, perform the following steps:

Step 1

Clear the screen by entering the following command:

```
clear
```

Let's first verify whether the **.forward** file exists in the user's home directory. To verify, type the following command:

```
ls -l
```

Press **Enter**.

Note that the **.forward** file does not exist.

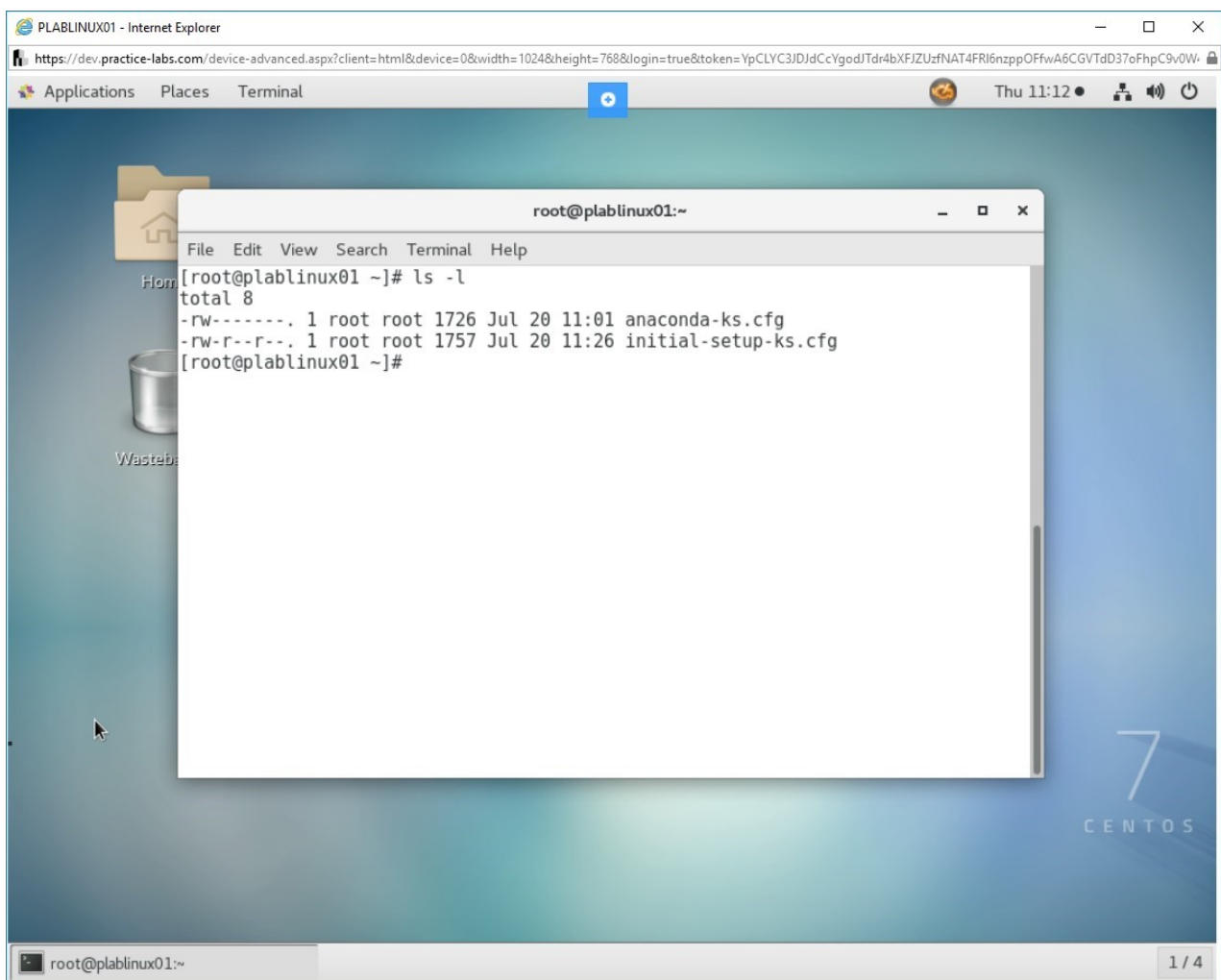


Figure 1.23 Screenshot of PLABLINUX01: Listing the contents of the directory.

Step 2

You now create the **.forward** file. To create this file, type the following command:

```
vi .forward
```

Press **Enter**.

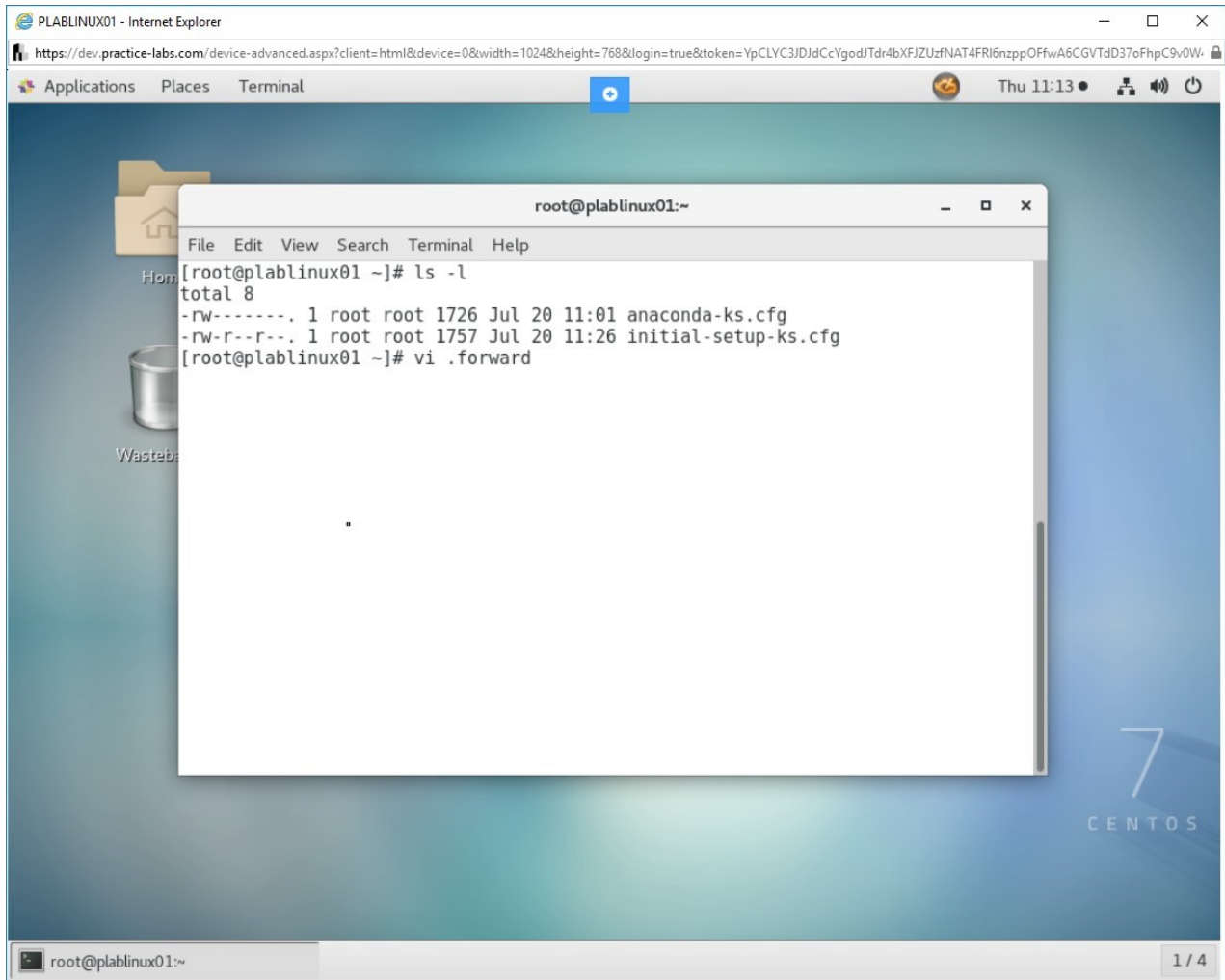


Figure 1.24 Screenshot of PLABLINUX01: Creating the .forward file.

Step 3

The **vi** editor creates the **.forward** file. To start the insert mode, press **i**.

The file is in the insert mode now.

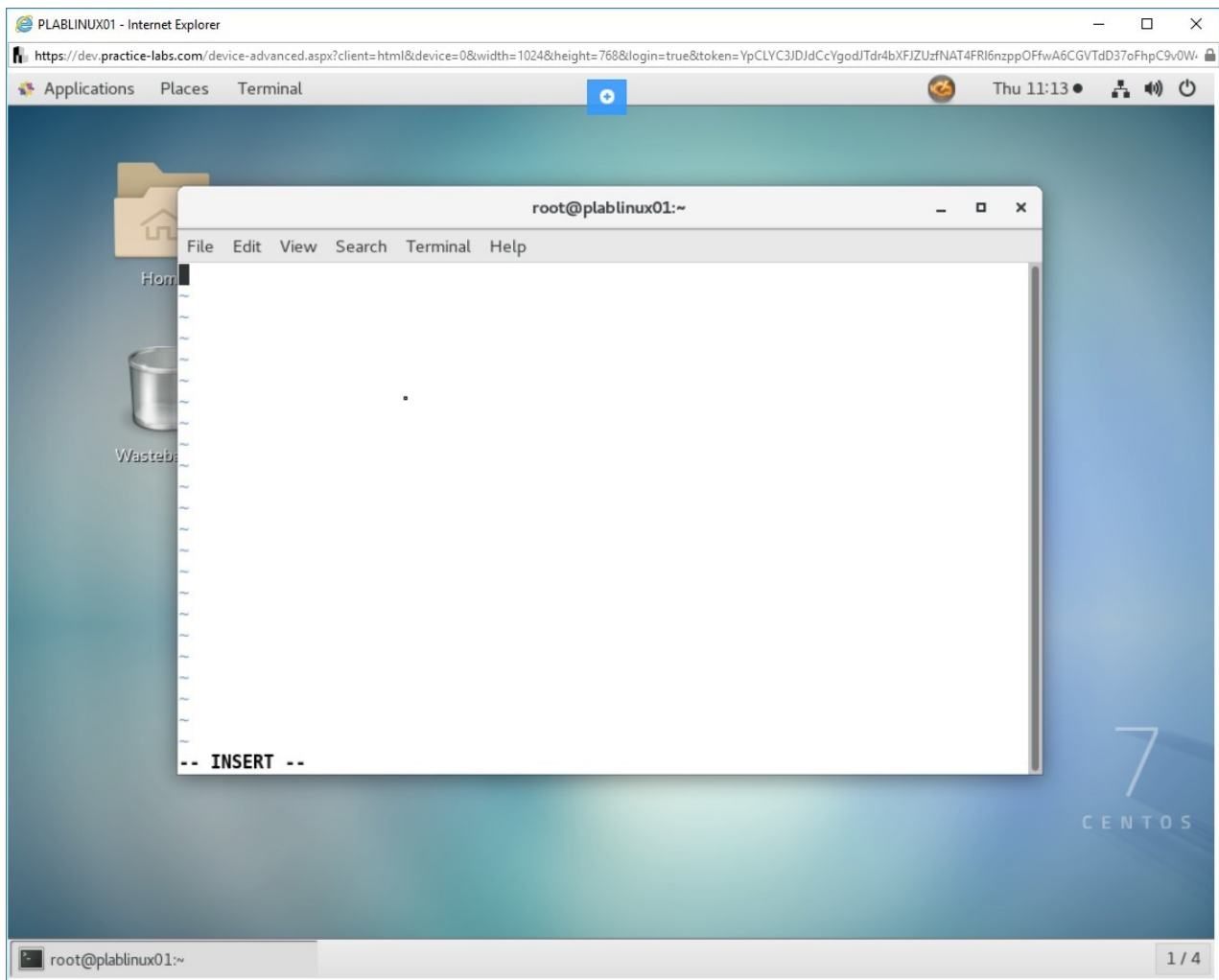


Figure 1.25 Screenshot of PLABLINUX01: Opening the .forward file in the edit mode.

Step 4

In this file, type the following:

```
admin@practicelabs.com
```

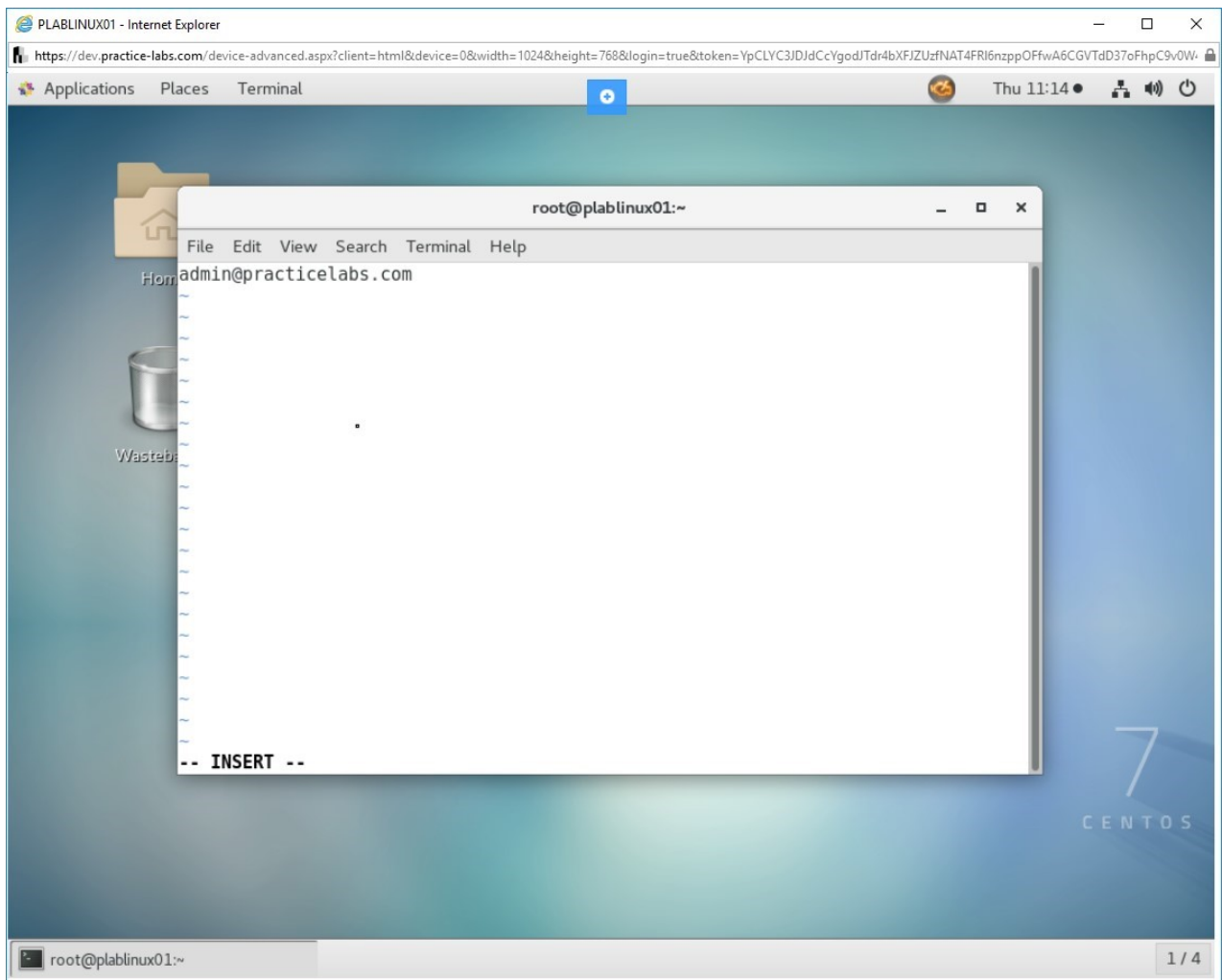


Figure 1.26 Screenshot of PLABLINUX01: Adding an E-mail address in the .forward file.

Step 5

Now, you will need to save the file. Press **ESC** and then type the following:

```
:wq
```

Press **Enter**.

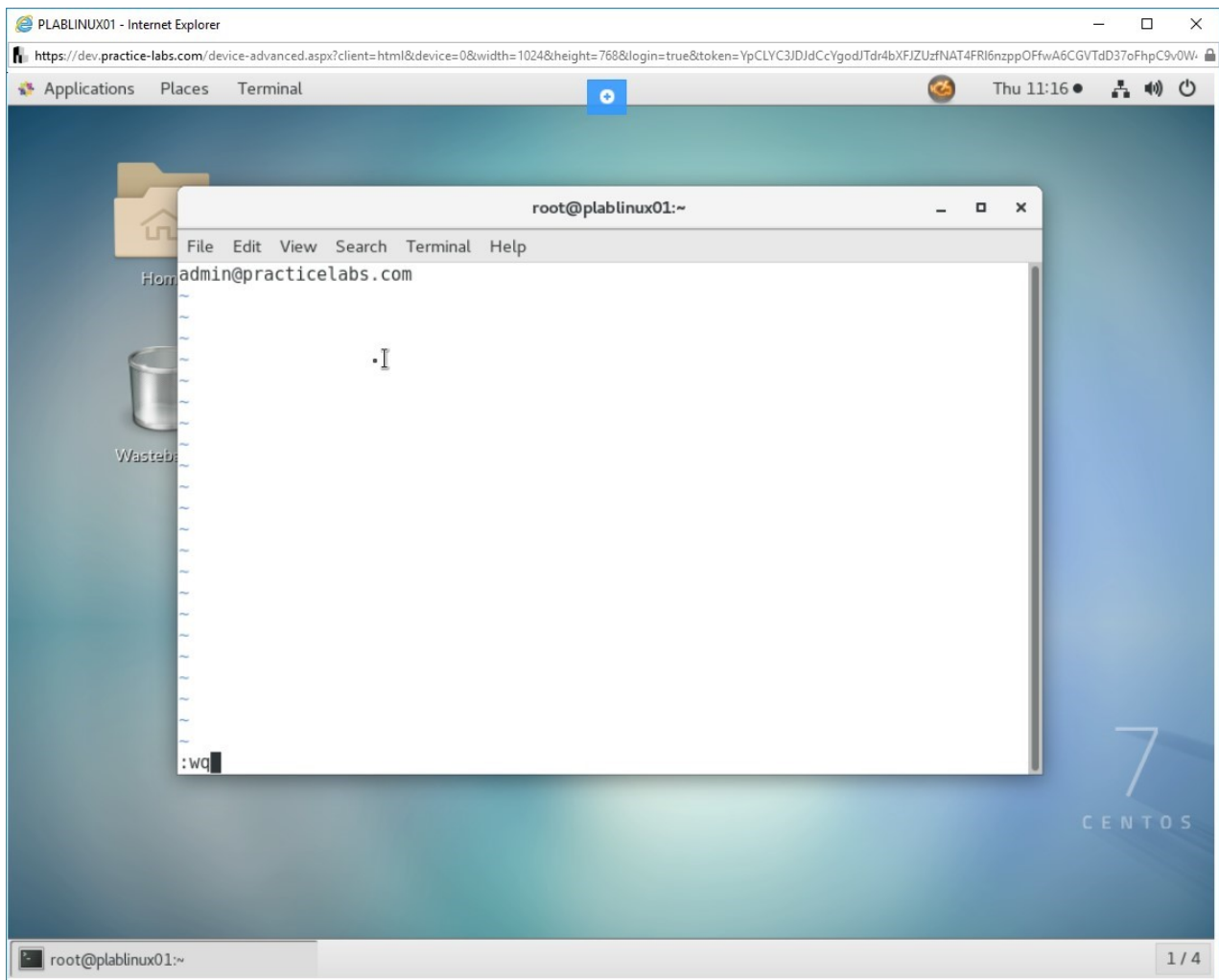


Figure 1.27 Screenshot of PLABLINUX01: Saving and closing the .forward file.

Step 6

You are back on the command prompt.

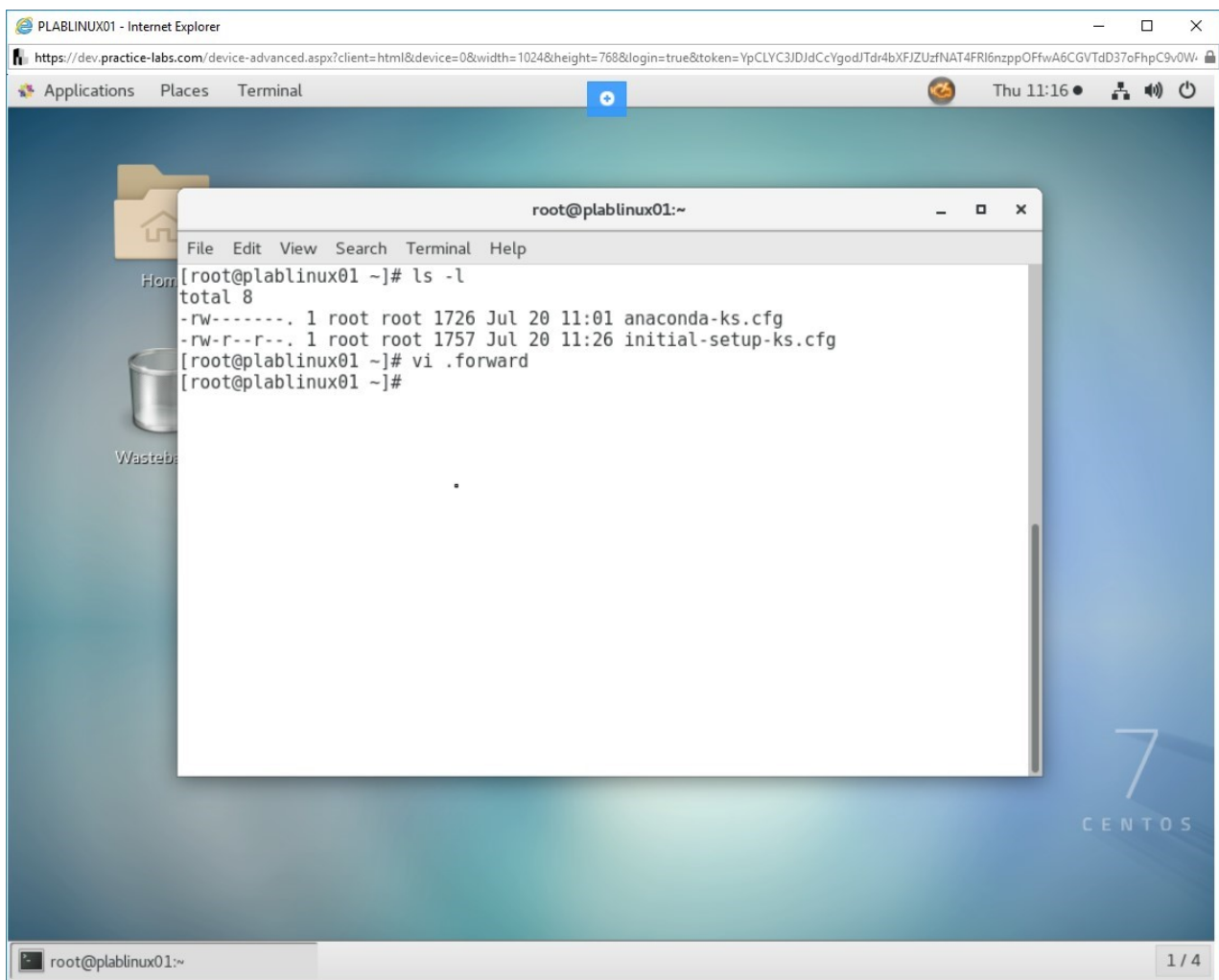


Figure 1.28 Screenshot of PLABLINUX01: Displaying the command prompt.

Step 7

You can also configure the **.forward** file to keep a copy on the local system and forward the e-mail to another e-mail account.

Open the **.forward** file using the **vi** editor and start the **insert** mode. Type the following entry:

```
\root, admin@practicelabs.com
```

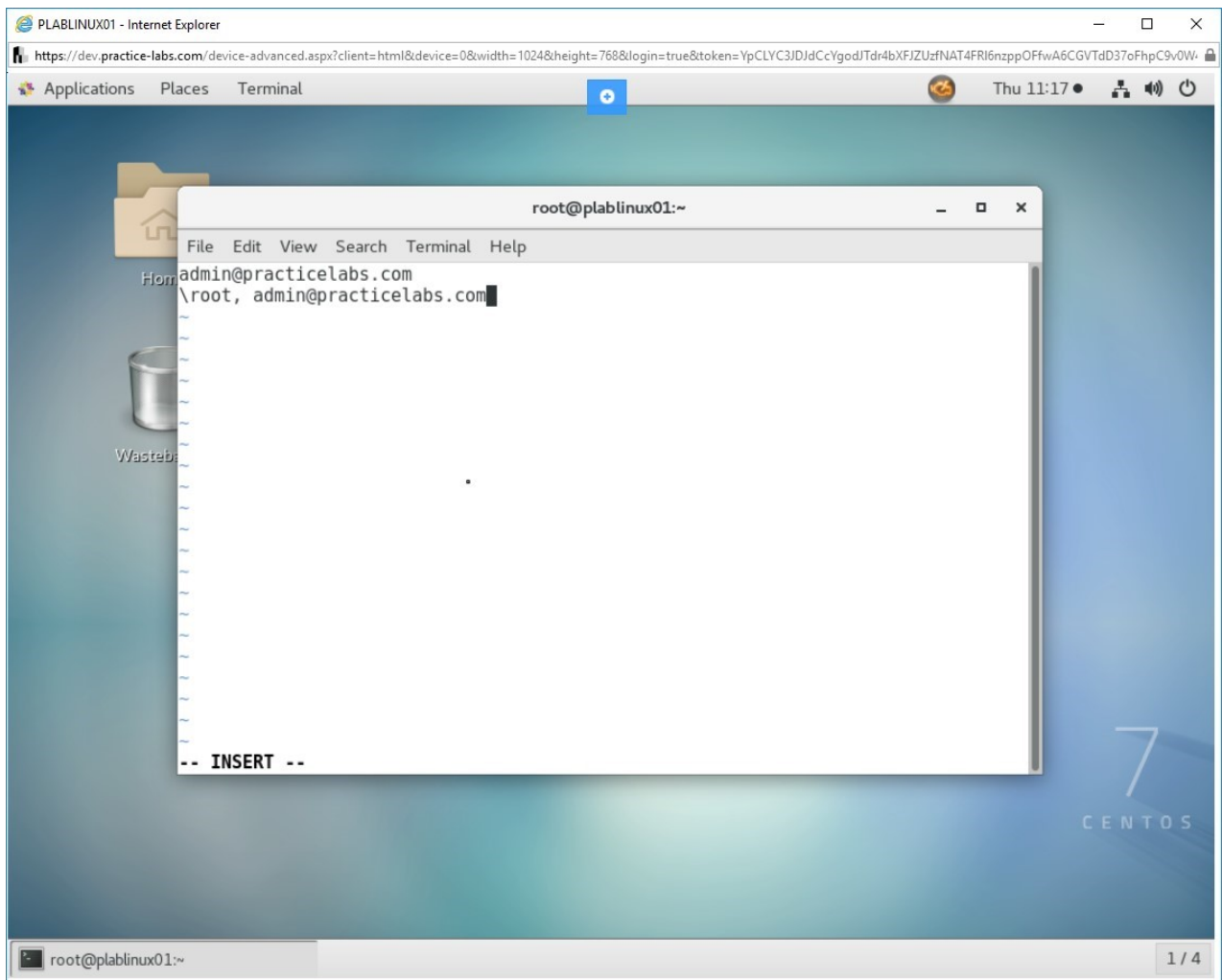



Figure 1.29 Screenshot of PLABLINUX01: Adding configuration in the .forward file.

Step 8

Save the file by pressing **ESC** and type the following command:

```
:wq
```

Press **Enter**.

You are now on the command prompt.

Sendmail is now configured for mail forwarding.

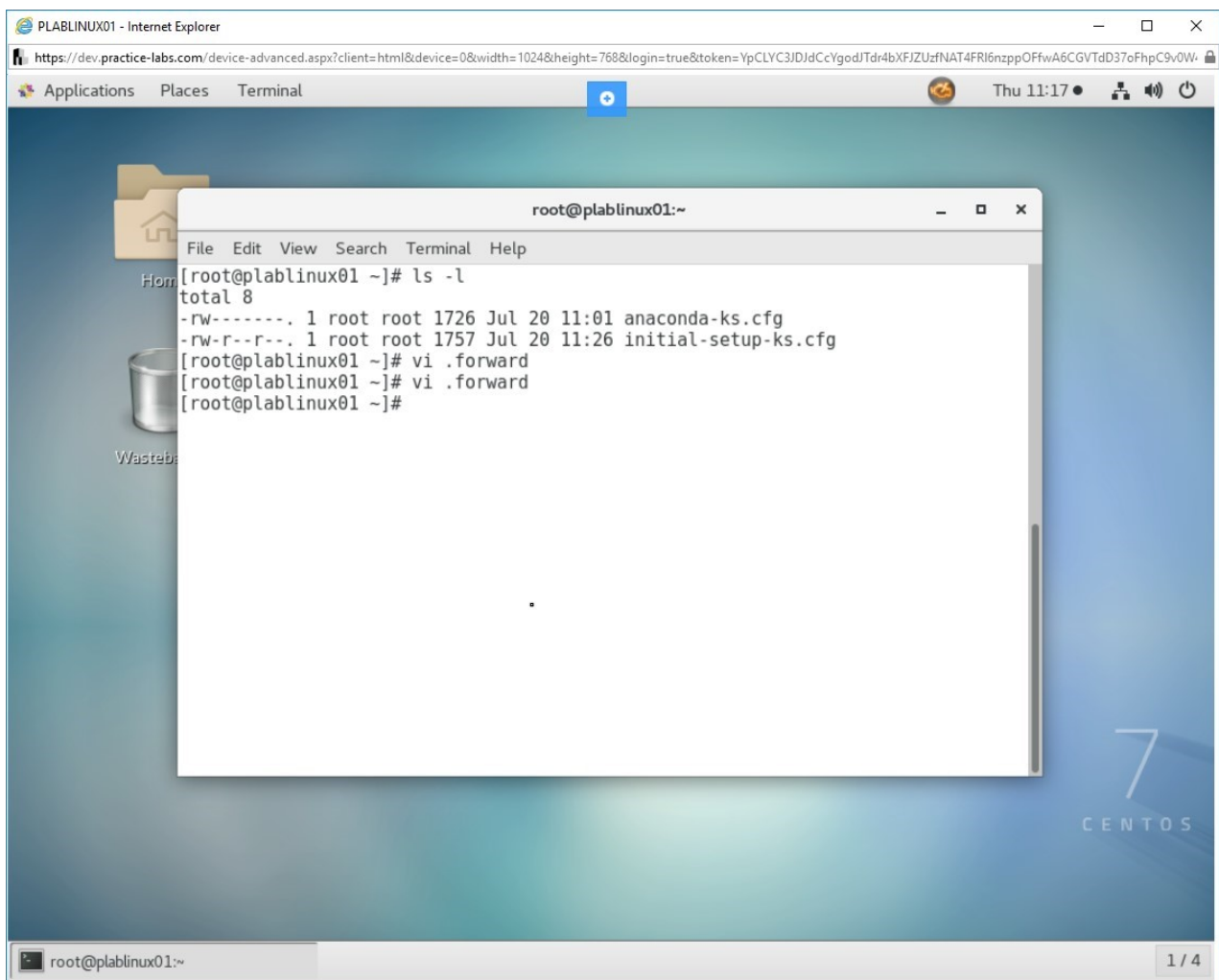


Figure 1.30 Screenshot of PLABLINUX01: Saving the .forward file.

Task 3 - Access and Create E-mails

On the command prompt, you can access your e-mails and also create new e-mails. You can also verify the mail queue from the command prompt. In this task, you will access and create e-mails on the command prompt. To access and create e-mails, perform the following steps:

Step 1

Clear the screen by entering the following command:

```
clear
```

To check if you, as the root user, have received any e-mails, type the following command:

```
mail
```

Press **Enter**.

Note that currently there is one e-mail.

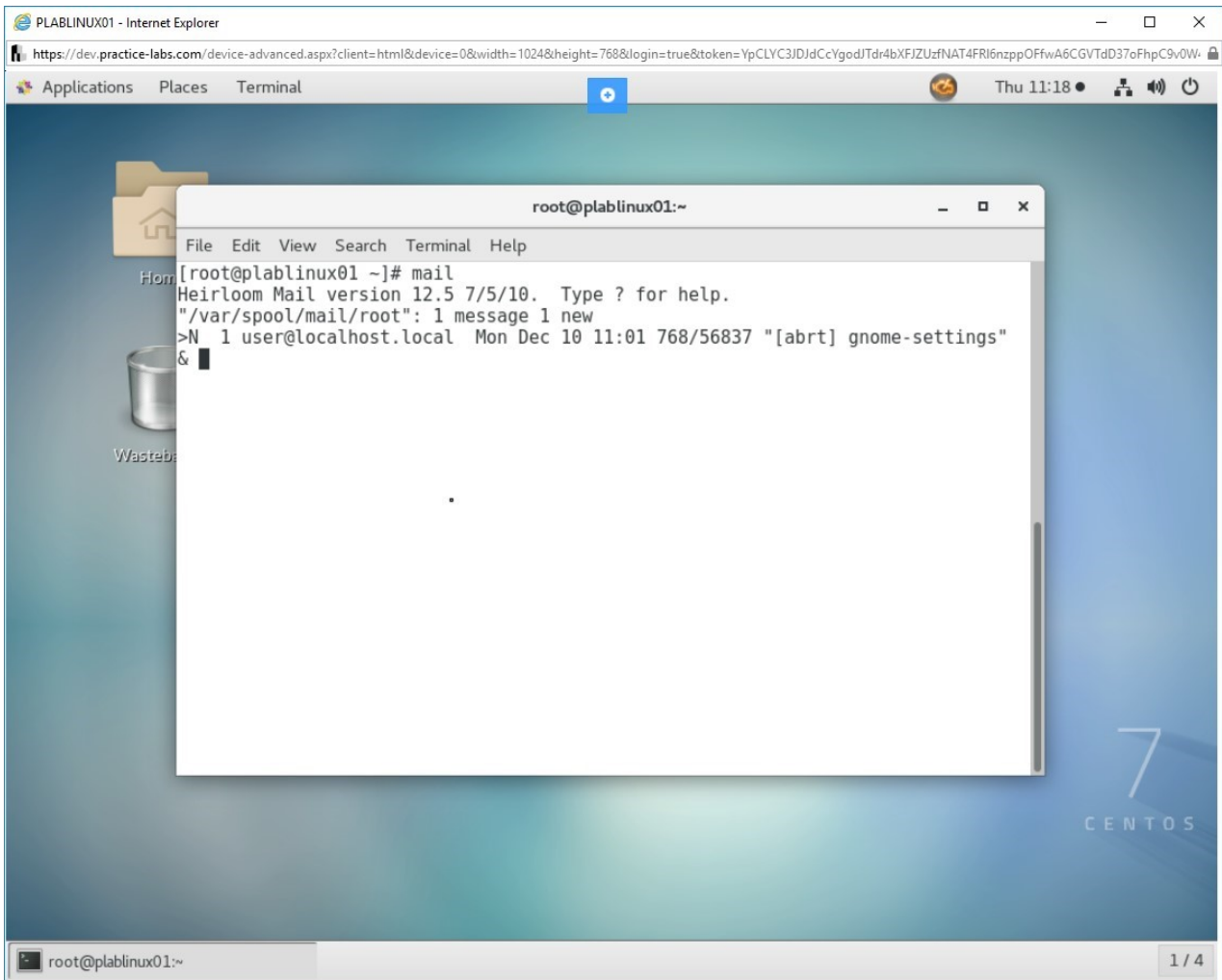


Figure 1.31 Screenshot of PLABLINUX01: Checking the mail for the root user.

Step 2

Press **Ctrl + z**.

To check the mail queue, type the following command:

```
mailq
```

Press **Enter**.

Note: Checking the queue might take some time.

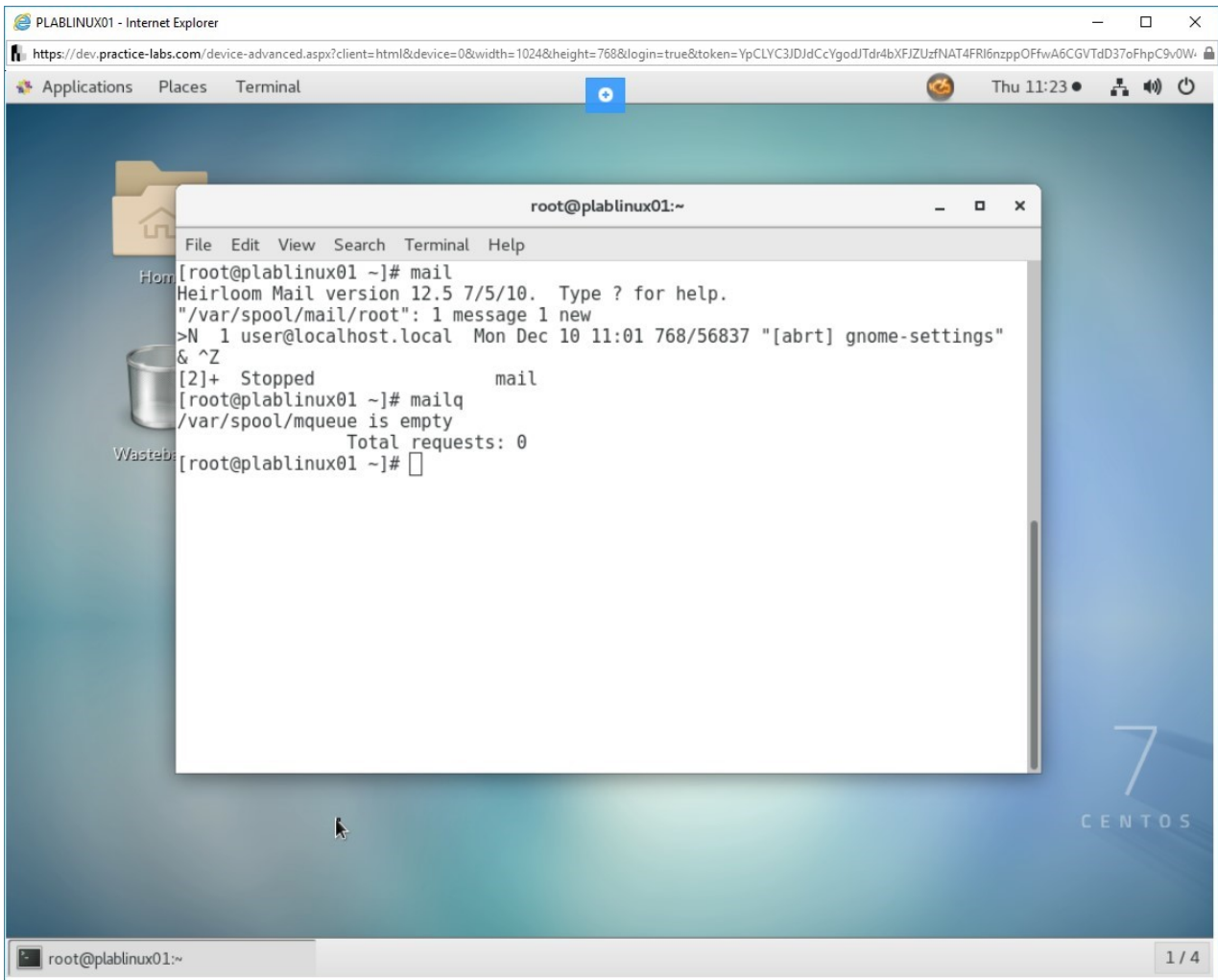


Figure 1.32 Screenshot of PLABLINUX01: Checking the mail queue.

Step 3

Clear the screen by entering the following command:

```
clear
```

You can also create an e-mail from the command prompt. To create an e-mail, type the following command:

```
mail -s "Test " admin@practicelabs.com
```

Note: The `-s` parameter is used for defining the subject line.

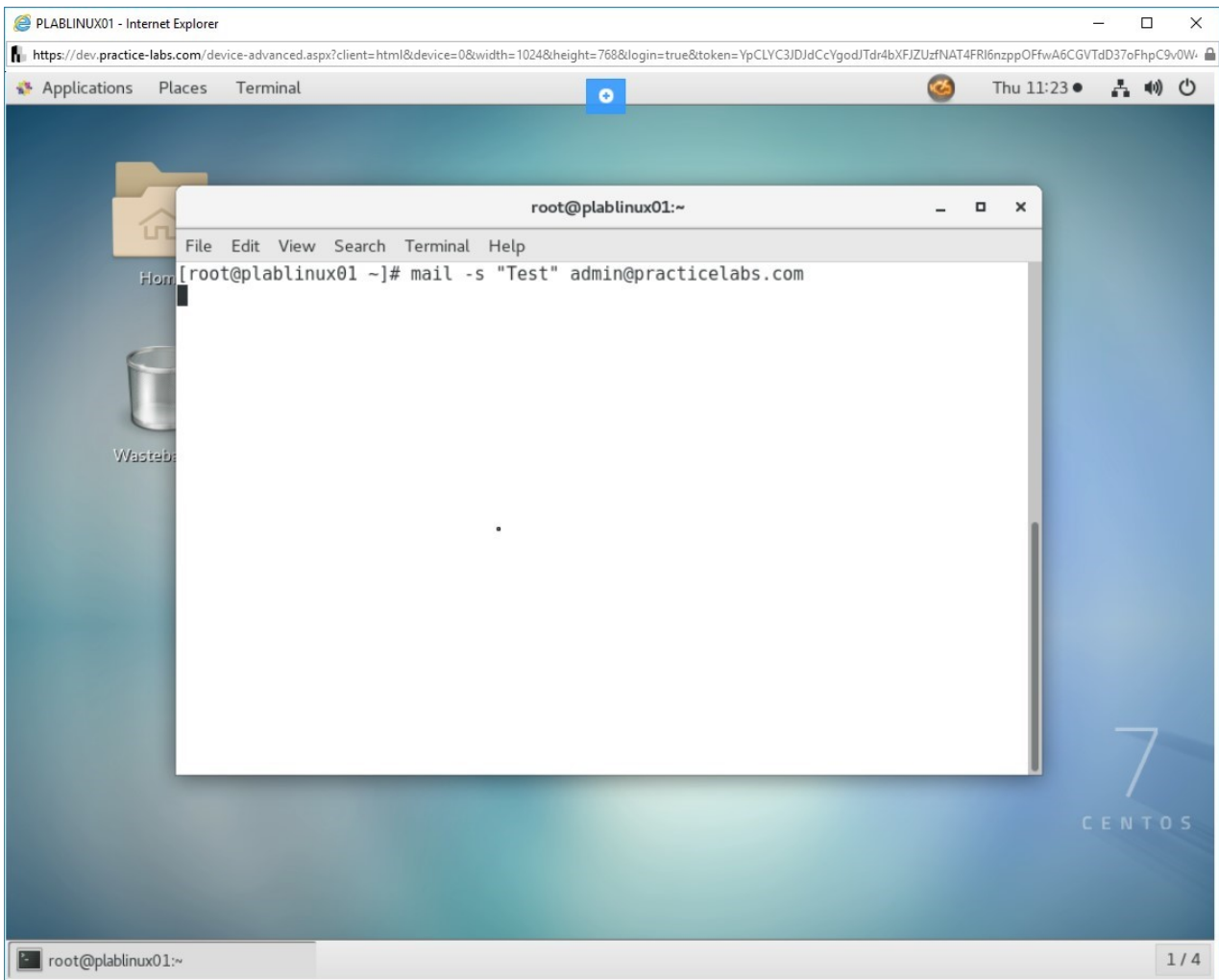


Figure 1.33 Screenshot of PLABLINUX01: Creating an E-mail at the command prompt.

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

Review

Well done, you have completed the **Mail Transfer Agent (MTA) Basics** Practice Lab.

Summary

You completed the following exercise:

- Exercise 1 - Mail Transfer Agent (MTA) Basics

You should now be able to:

- Configure Sendmail
- E-mail forwarding
- Access and create e-mails

Feedback

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