

# Evading Firewalls

- **Introduction**
  - **Lab Topology**
  - **Exercise 1 - Install and Configure ZoneAlarm Firewall**
  - **Exercise 2 - Using Anonymous Proxy Sites**
  - **Review**
- 

## Introduction

Ethical Hacking  
Anonymous Proxy  
Proxy  
Firewalls  
ZoneAlarm

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

## Learning Outcomes

In this module, you will complete the following exercises:

- Exercise 1 - Install and Configure ZoneAlarm Firewall
- Exercise 2 - Using Anonymous Proxy Sites

After completing this lab, you will be able to:

- Download and Install ZoneAlarm Free Firewall and Verify ZoneAlarm Installation
- Manage ZoneAlarm Settings

- Configure ZoneAlarm to use a Proxy Server
- Update the ZoneAlarm Definitions and Perform a Quick Scan
- Work with ZoneAlarm Logs
- Bypass Blocked Sites Using Anonymous Website Surfing Sites

## Exam Objectives

The following exam objectives are covered in this lab:

- **4.3** Information Security Tools

***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.

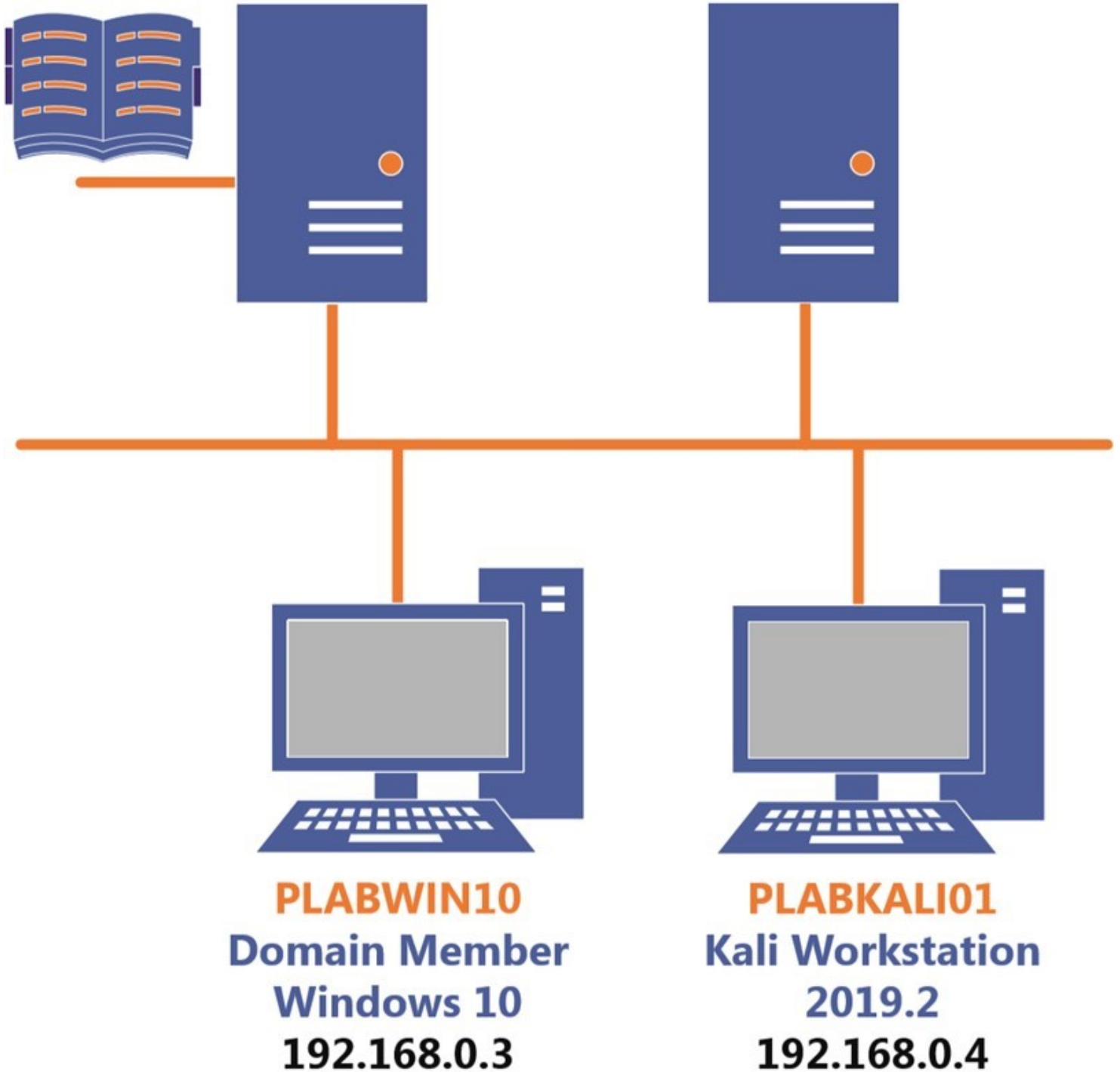
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## Lab Topology

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

**PLABDC01**  
Domain Server  
Windows Server 2019  
192.168.0.1

**PLABDM01**  
Domain Member  
Windows Server 2019  
192.168.0.2



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.

- **PLABDCo1** - (Windows Server 2019 - Domain Server)
- **PLABDMo1** - (Windows Server 2019 - Domain Member)
- **PLABWIN1o** - (Windows 10 - Workstation)
- **PLABKALIo1** - (Kali 2019.2 - Linux Kali Workstation)

Click **Next** to proceed to the first exercise.

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## Exercise 1 - Install and Configure ZoneAlarm Firewall

A firewall is a device that prevents unauthorized access to a host or a network either from within the corporate environment or coming from the public network like the Internet. Generally, there are two types of firewalls.

A **hardware firewall** takes the form of a closed proprietary appliance with its own operating system. This is considered faster, however, this can be an expensive method.

A **software firewall** is installed on a computer, and it utilizes the computer's operating system. Firewalls, either hardware or software, use rules to filter incoming and outgoing traffic to the network.

The software used in this exercise is a lightweight version of the ZoneAlarm PRO. The PRO version has additional features and capabilities not found in the free version. You can choose to evaluate both versions and find out if they meet your firewall requirements.

In this exercise, you will install the ZoneAlarm Free Firewall software.

After installing the software, we will take you through how to verify the installation and manage the settings. Next, you will be configuring ZoneAlarm to use the proxy server, then be shown how to update the definitions, perform a scan, and look at the logs.

# Learning Outcomes

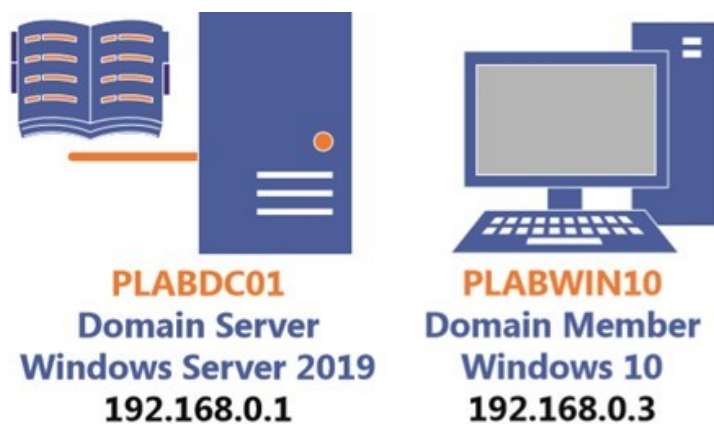
After completing this exercise, you will be able to:

- Download and Install ZoneAlarm Free Firewall and Verify ZoneAlarm Installation
- Manage ZoneAlarm Settings
- Configure ZoneAlarm to use a Proxy Server
- Update the ZoneAlarm Definitions and Perform a Quick Scan
- Work with ZoneAlarm Logs

## Your Devices

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

- **PLABDC01** - (Windows Server 2019 - Domain Server)
- **PLABWIN10** - (Windows 10 - Workstation)



## Task 1 - Download and install ZoneAlarm Free Firewall

ZoneAlarm Free Firewall is one of the most re-known desktop firewalls. It contains the following features:

- Two-way firewall
- Private browsing
- Identity protection
- Online backup

In this task, you will learn to use ZoneAlarm Free Firewall by downloading and installing the software.

## Step 1

Ensure you have powered on all the devices listed in the introduction and connect to **PLABWIN10**.

In the **Type here to search** text box, type the following:

Internet Explorer

From the search results, select **Internet Explorer**.

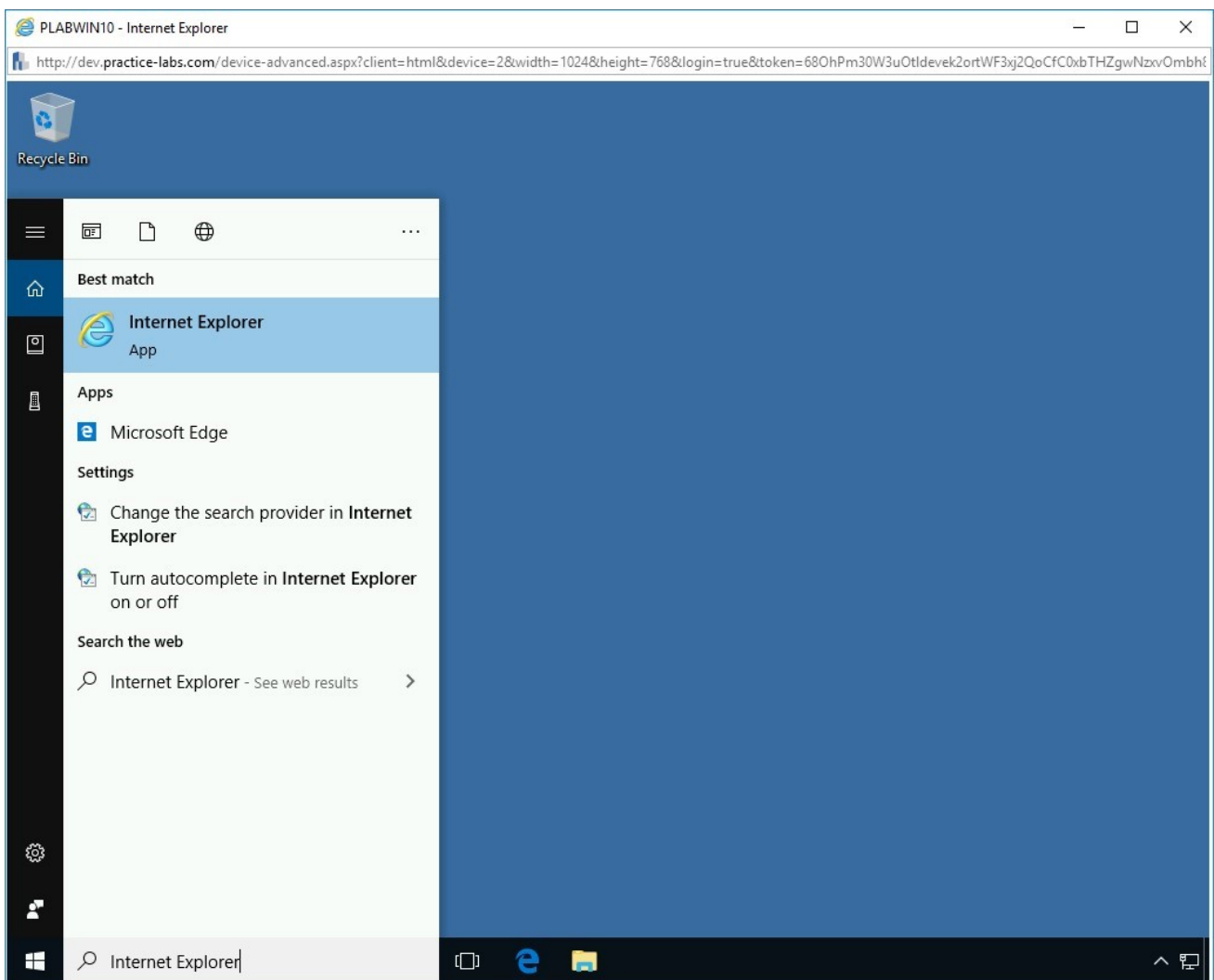


Figure 1.1 Screenshot of PLABWIN10: Selecting Internet Explorer from the search results.

## Step 2

Internet Explorer opens the **Tools and resources** Webpage.

Click **Installation\_Files**.

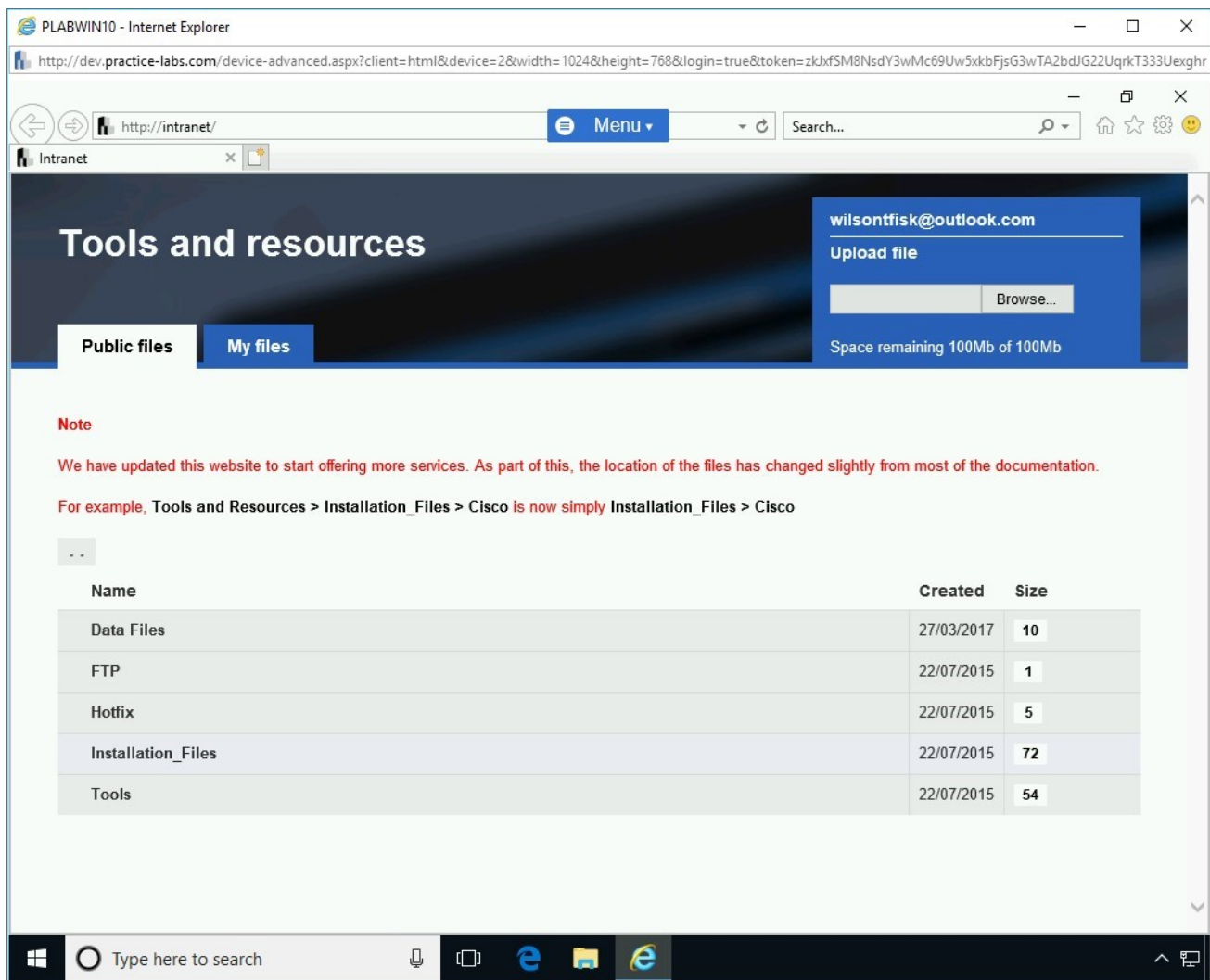


Figure 1.2 Screenshot of PLABWIN10: Clicking the Installation\_Files option on the Tools and resources page.

## Step 3

Scroll down and click **Zone Alarm**.

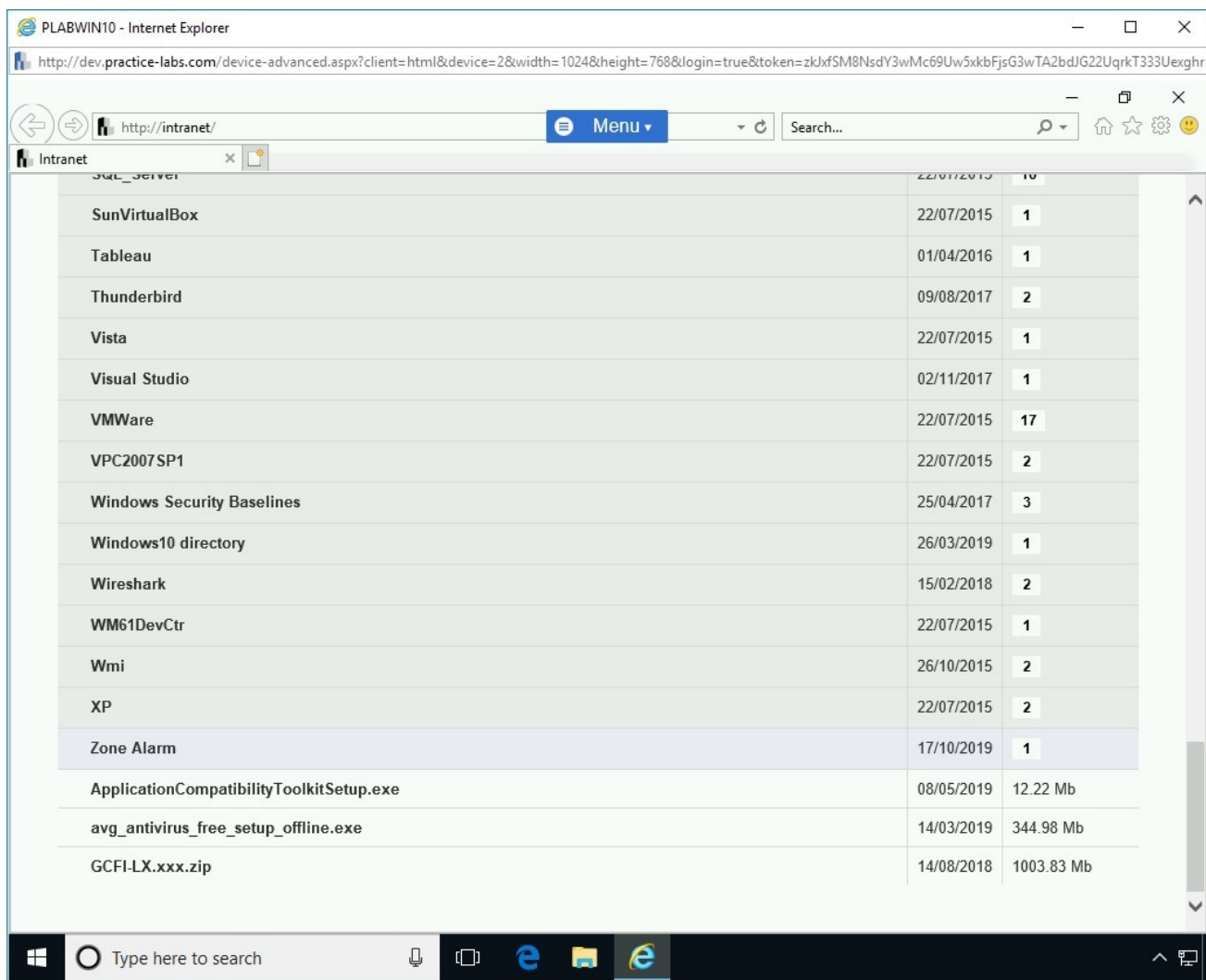


Figure 1.3 Screenshot of PLABWIN10: Clicking the Zone Alarm link.

## Step 4

In the **Zone Alarm** folder, click **zaSetup\_156\_121\_18102.exe**.



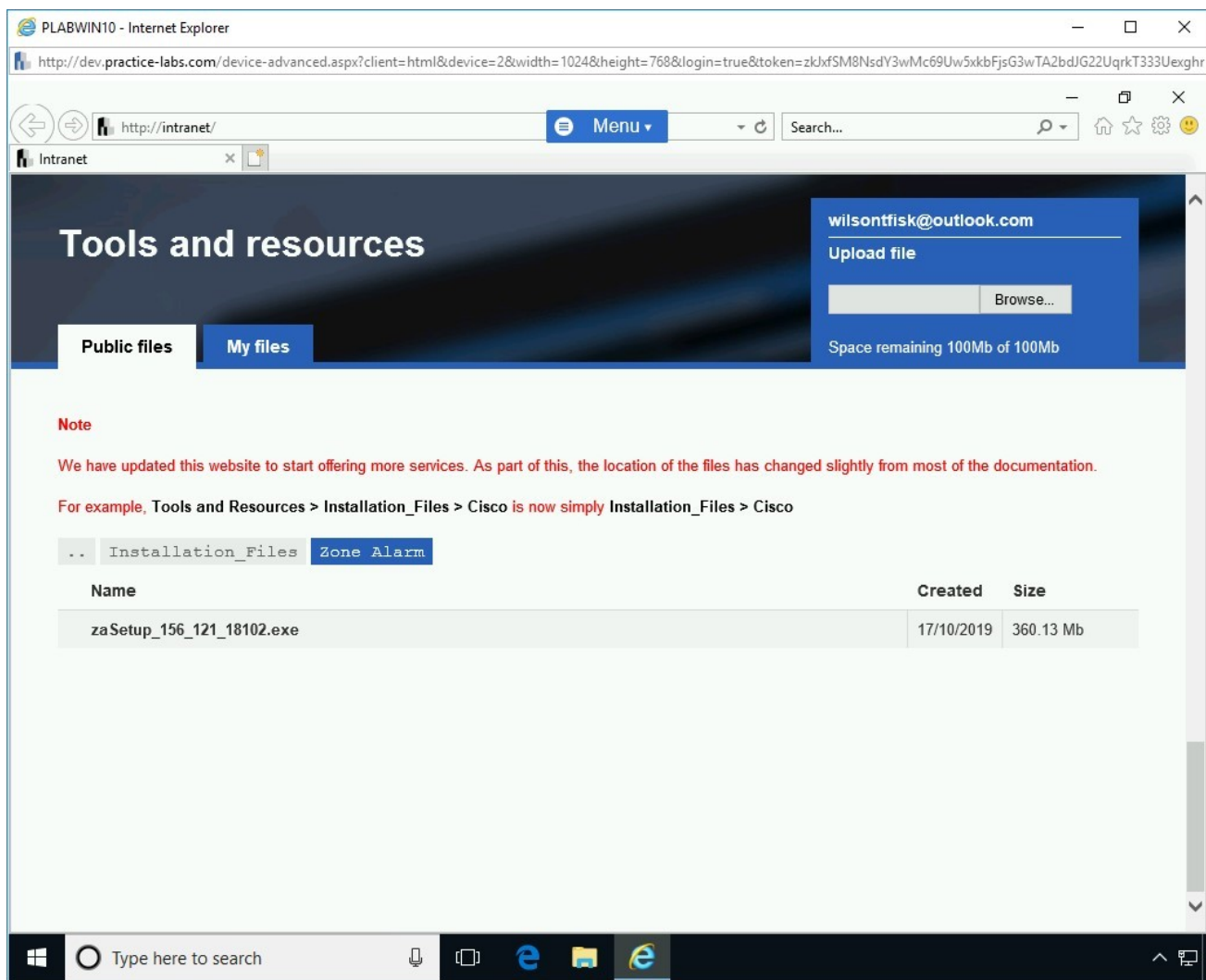


Figure 1.4 Screenshot of PLABWIN10: Clicking the zaSetup\_156\_121\_18102.exe file.

## Step 5

Click **zafwSetup\_156\_\_121\_18102.exe**, and on the notification toolbar, click **Save**.

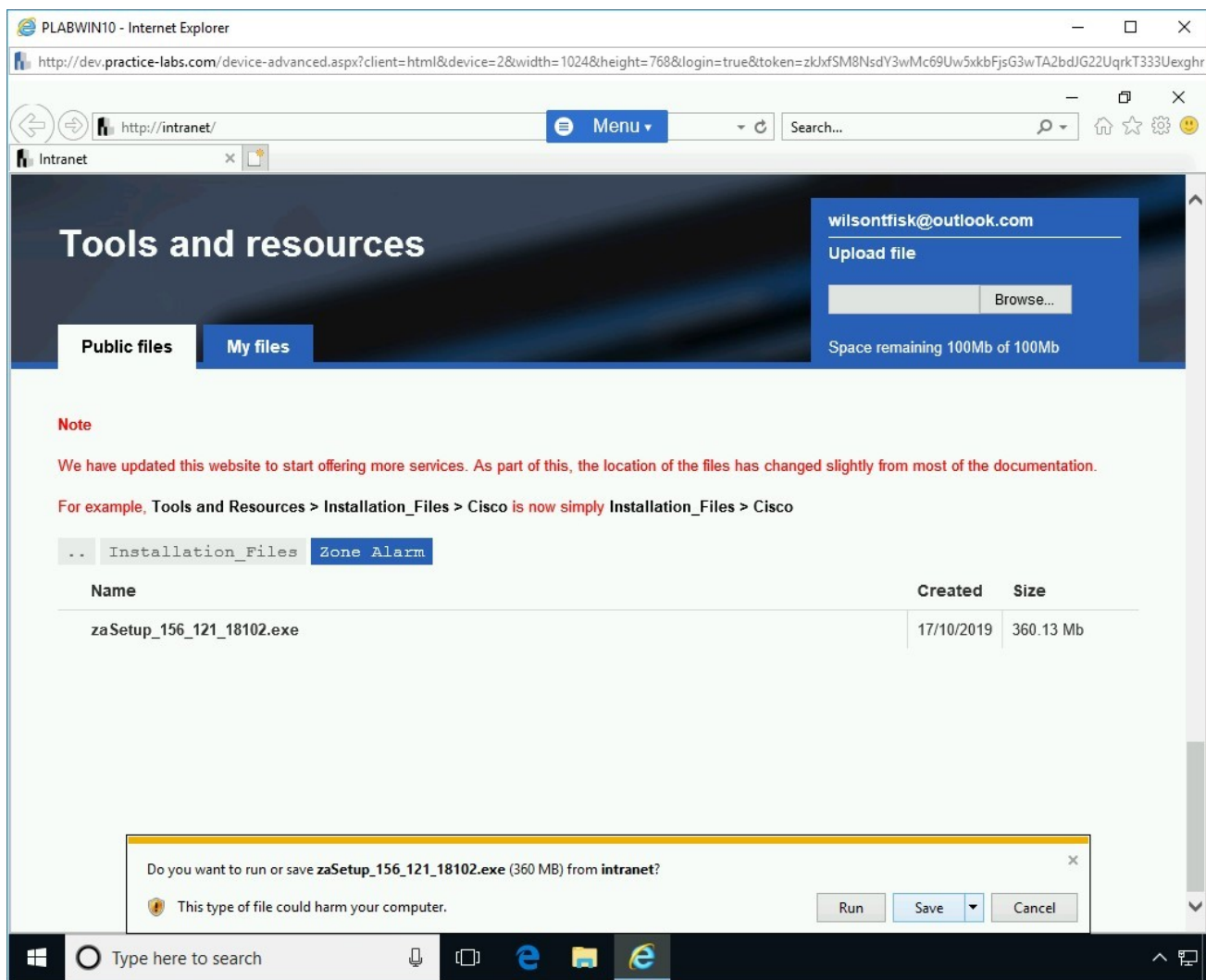


Figure 1.5 Screenshot of PLABWIN10: Clicking Save on the notification bar.

## Step 6

When the download is completed, click **Open folder**.

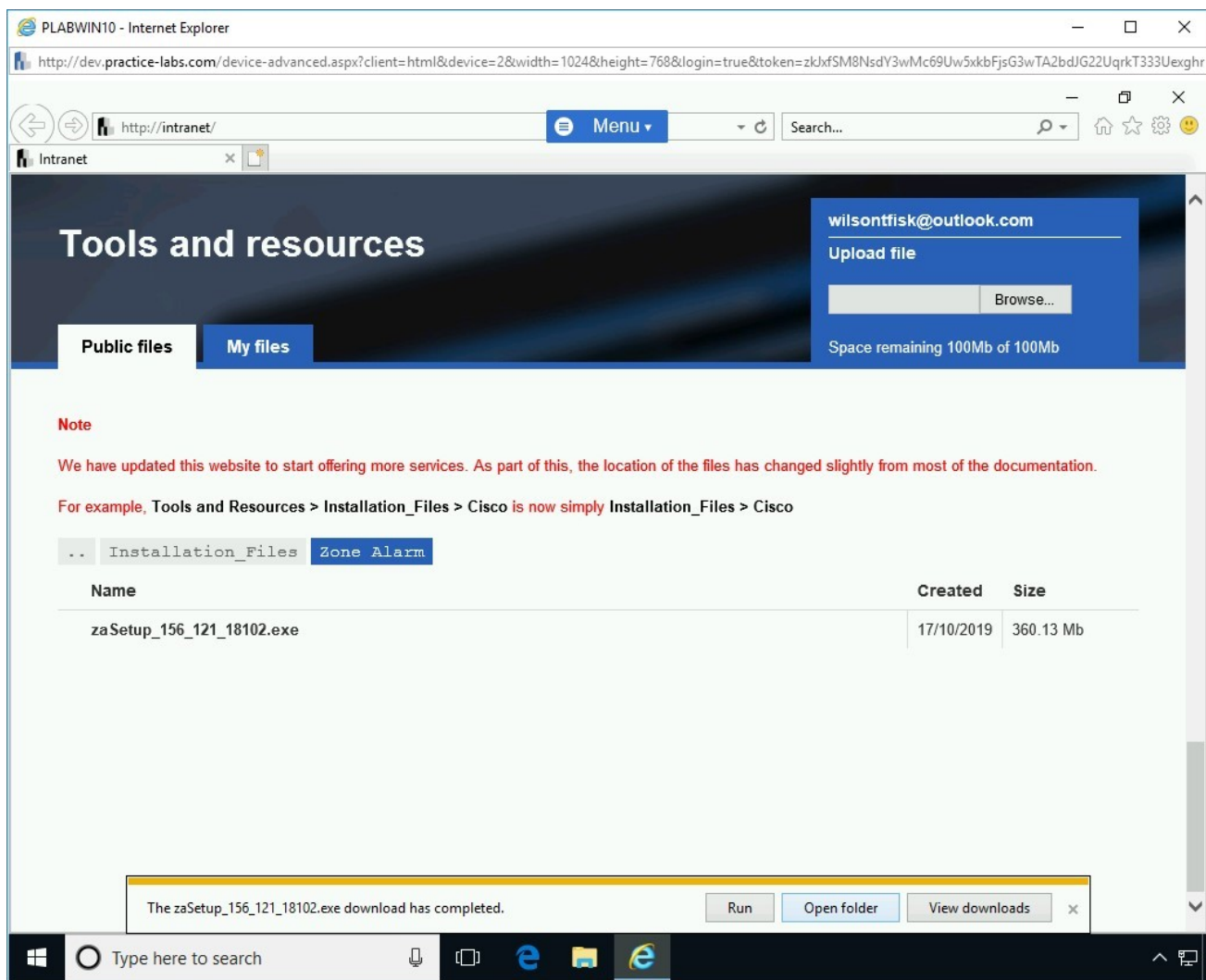


Figure 1.6 Screenshot of PLABWIN10: Clicking Open folder on the notification bar.

## Step 7

**File Explorer** opens and redirects you to the **Downloads** folder.

Right-click **zafwSetup\_156\_\_121\_18102.exe** and select **Run as administrator**.

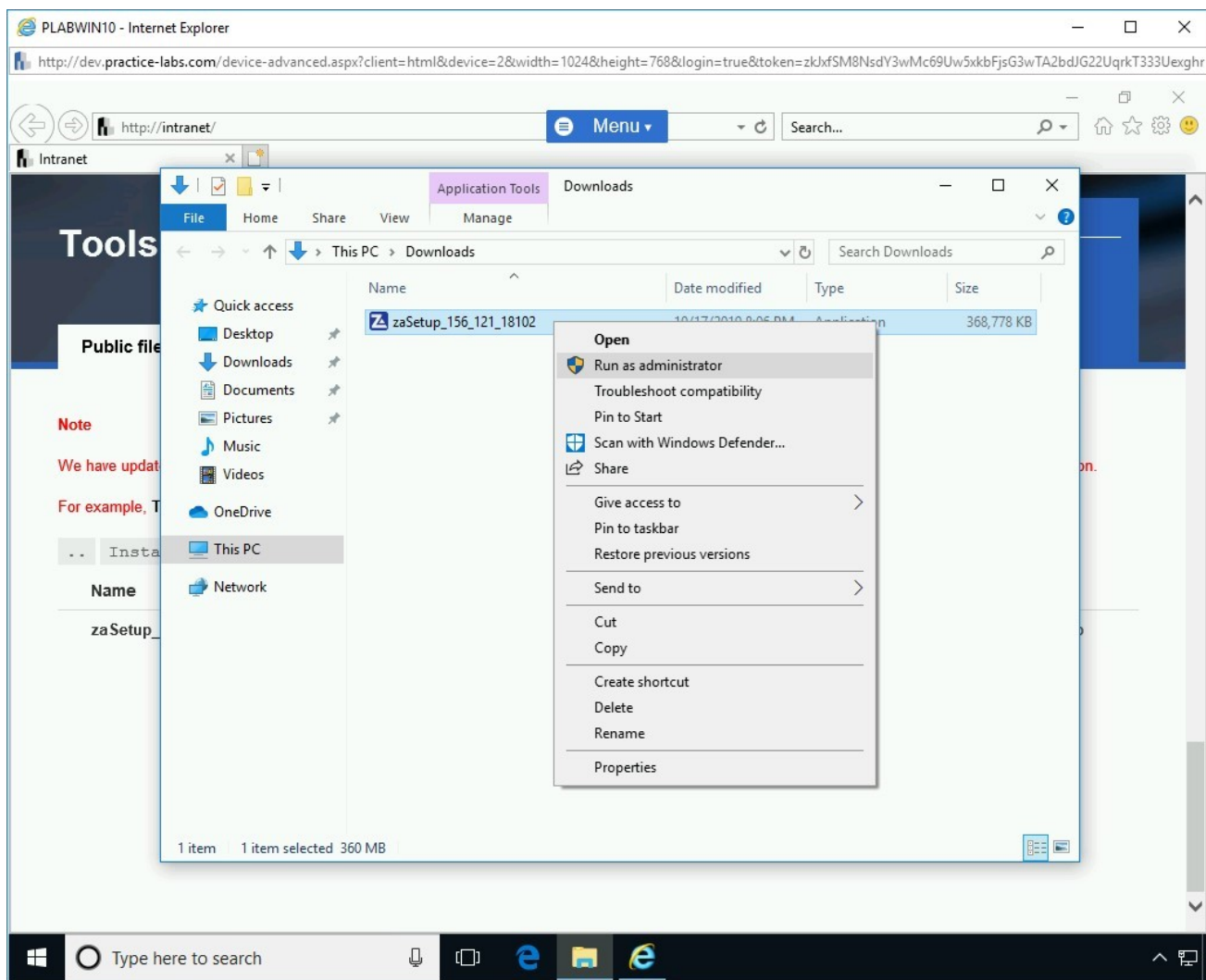


Figure 1.7 Screenshot of PLABWIN10: Selecting Run as administrator from the context menu to run the installer.

The unpacking of the installer starts.

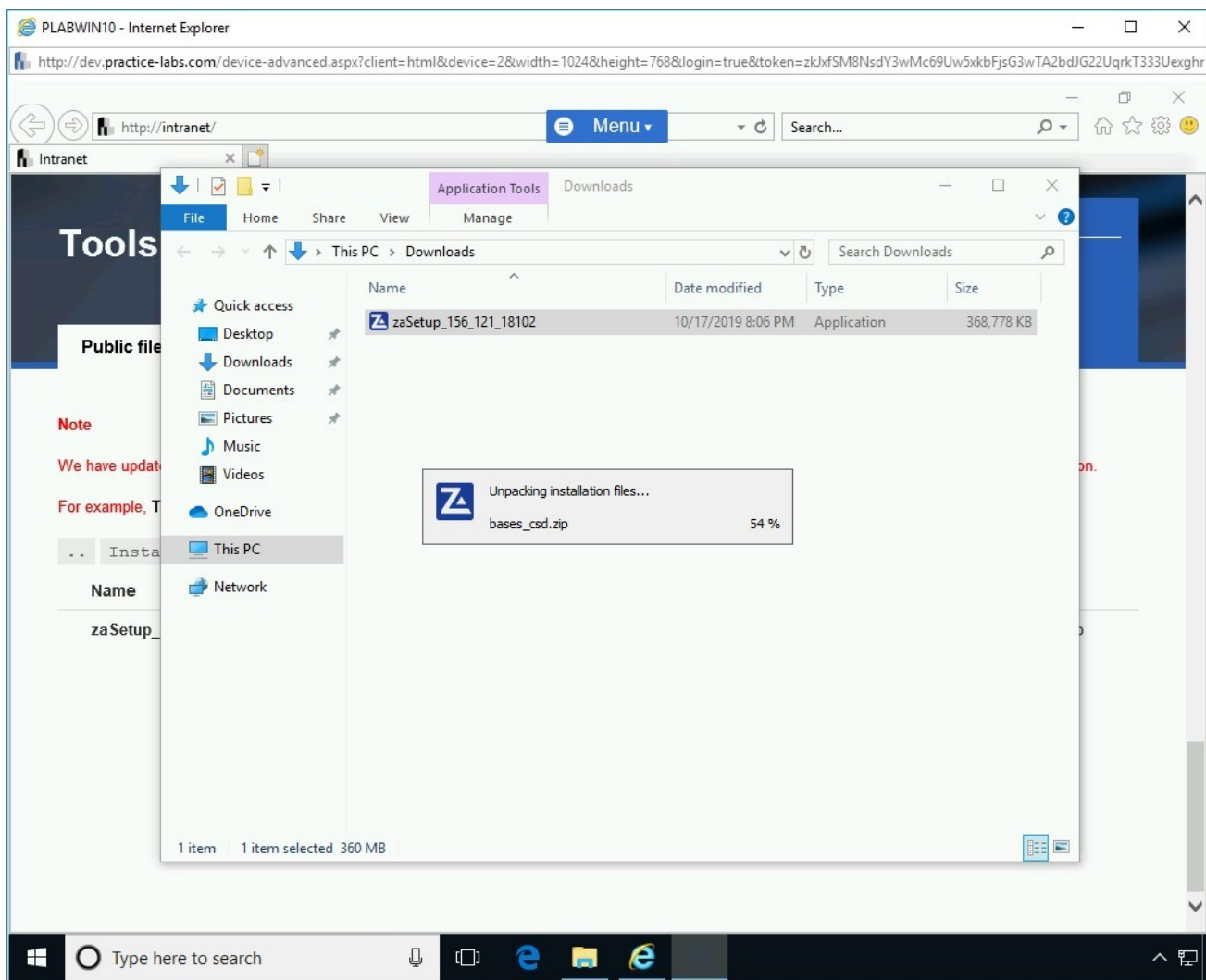


Figure 1.8 Screenshot of PLABWIN10: Showing the installation files unpacking process.

## Step 8

On the **ZoneAlarm Free Firewall Install** welcome screen, click **QUICK INSTALL**.

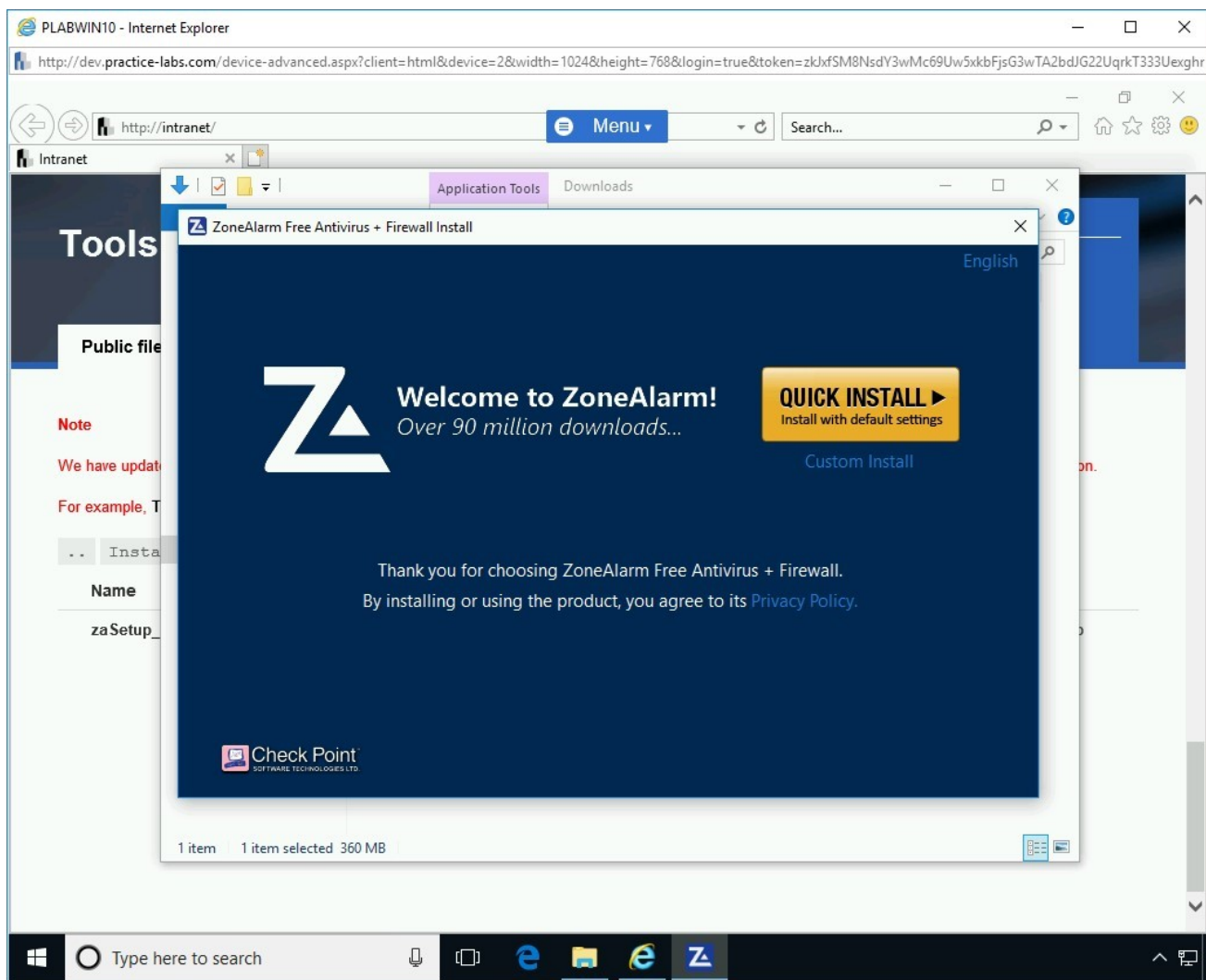


Figure 1.9 Screenshot of PLABWIN10: Clicking QUICK INSTALL on the Zone Alarm welcome screen.

## Step 9

On the **End User Licence Agreement** page, click **Agree**.



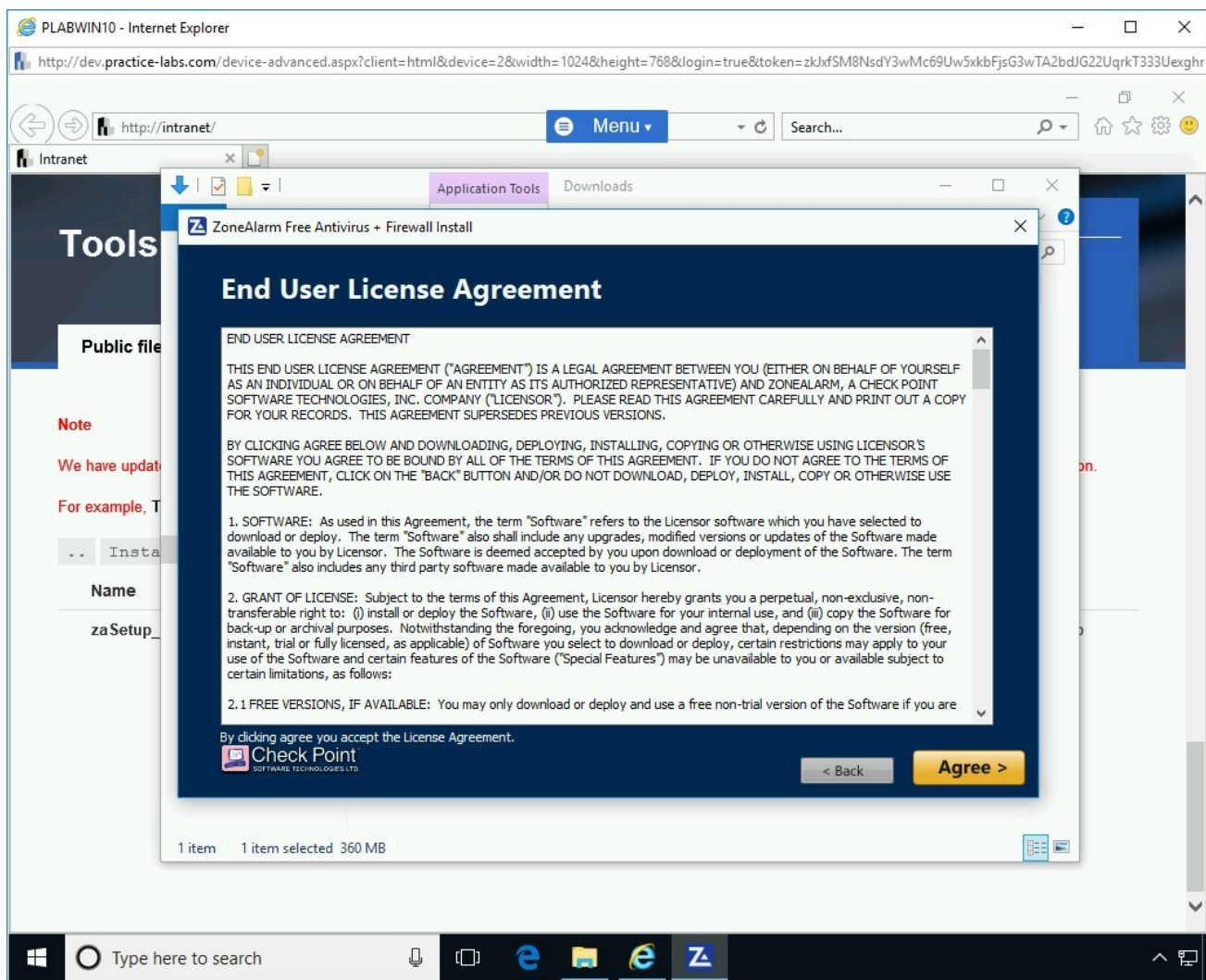


Figure 1.10 Screenshot of PLABWIN10: Accepting the license agreement by clicking Agree on the End User License Agreement page.

## Step 10

Please wait while the installation of **ZoneAlarm** components is in progress.

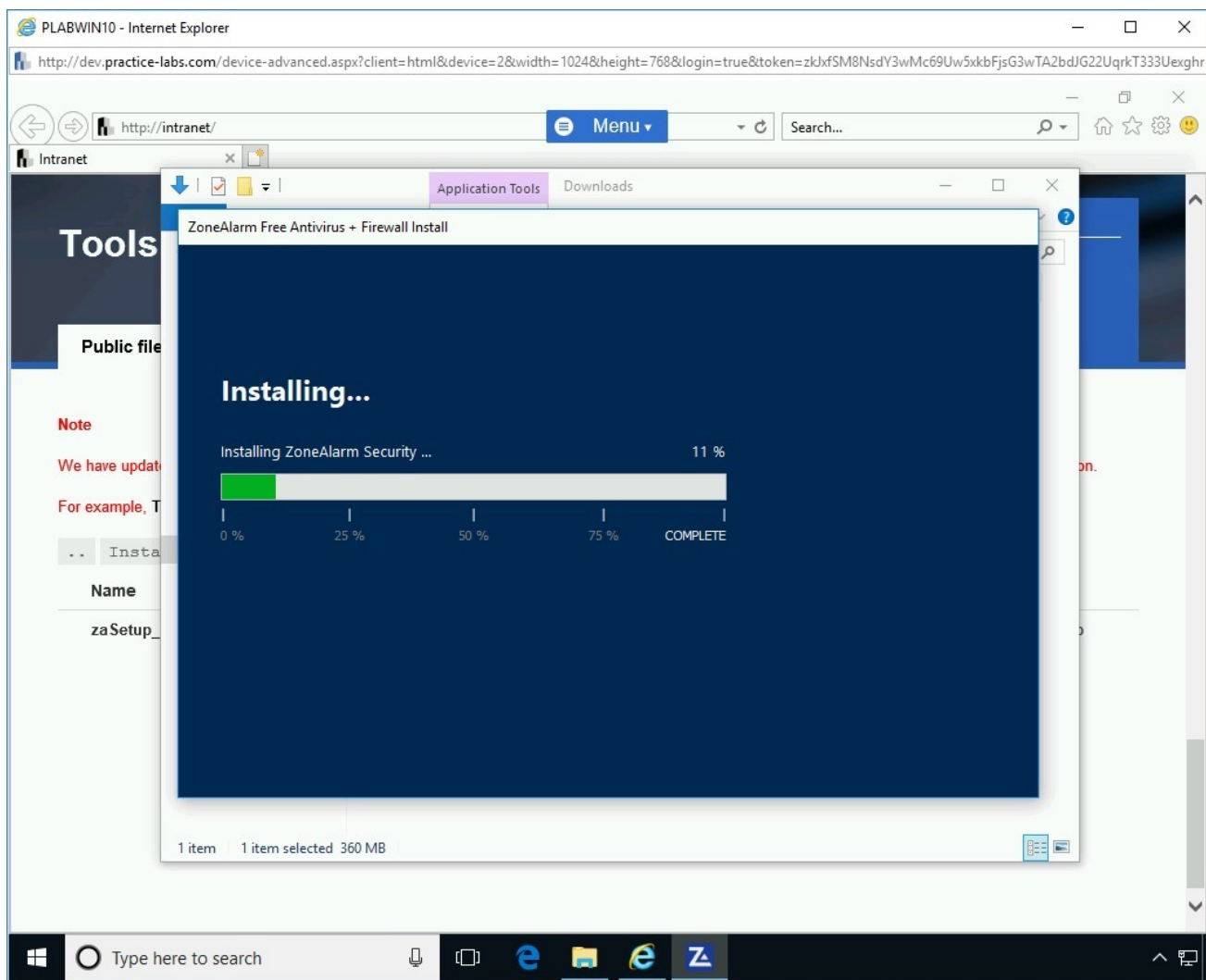


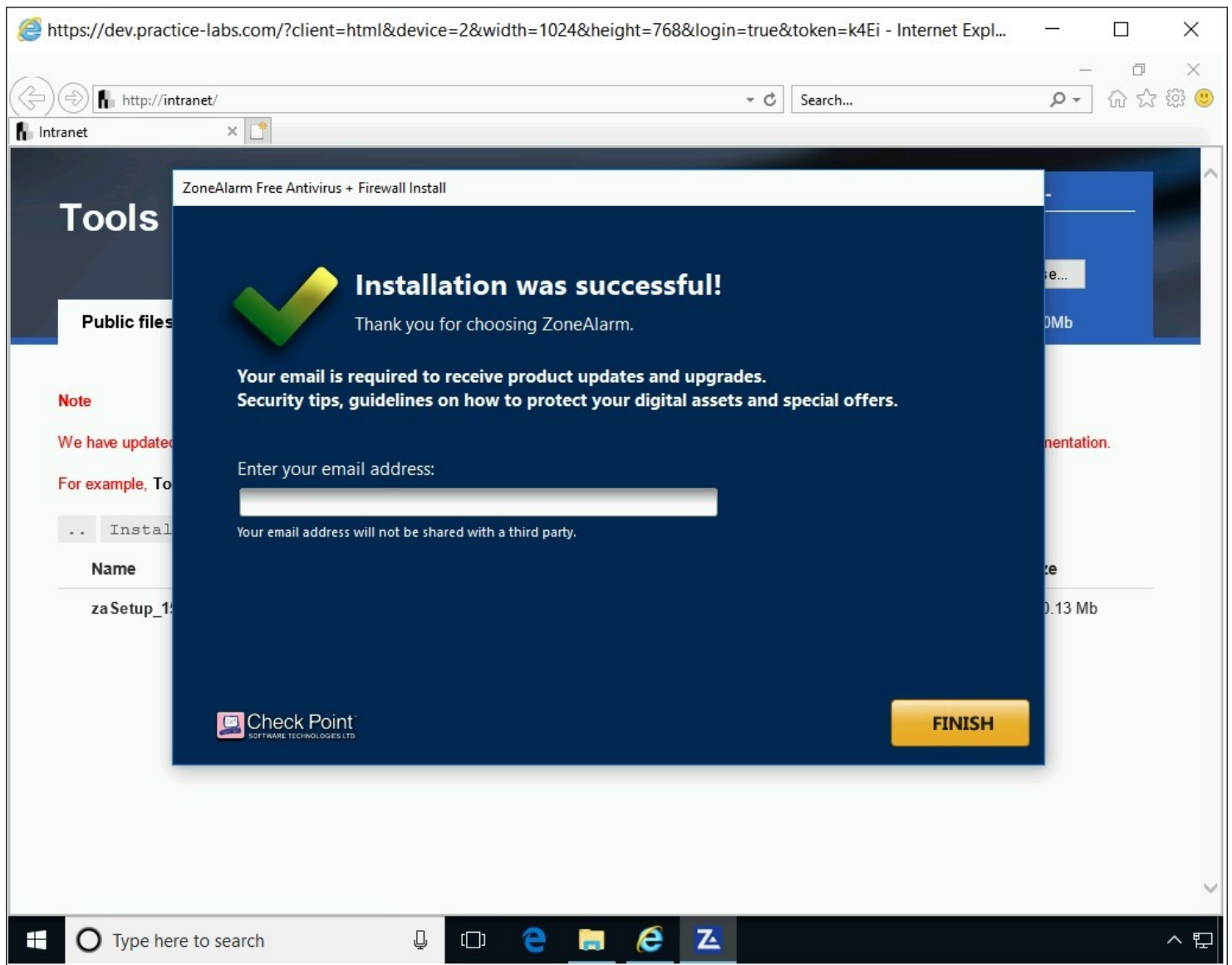
Figure 1.11 Screenshot of PLABWIN10: Showing the installation of ZoneAlarm.

**Alert:** Let the installation run for about five minutes, and it may appear to have stopped. This is expected because ZoneAlarm will disconnect you automatically from the **PLABWIN10** device due to firewall restrictions enforced on the computer. The **PLABWIN10** window will close automatically. You will connect to **PLABWIN10** through **PLABDC01** using Remote Desktop Services in the next task.

## Step 11

The **Installation was successful!** Will appear once complete.





Keep all devices powered on in their current state and proceed to the next task.

## Task 2 - Verify ZoneAlarm Installation

Once you have successfully installed ZoneAlarm, you should then verify the installation. The verification process allows you to test and check that the application is working as expected.

In this task, you will verify the ZoneAlarm installation on PLABWIN10.

### Step 1

Ensure all required devices are powered on. Connect to the **PLABDC01** device.

Close the **Server Manager** window.

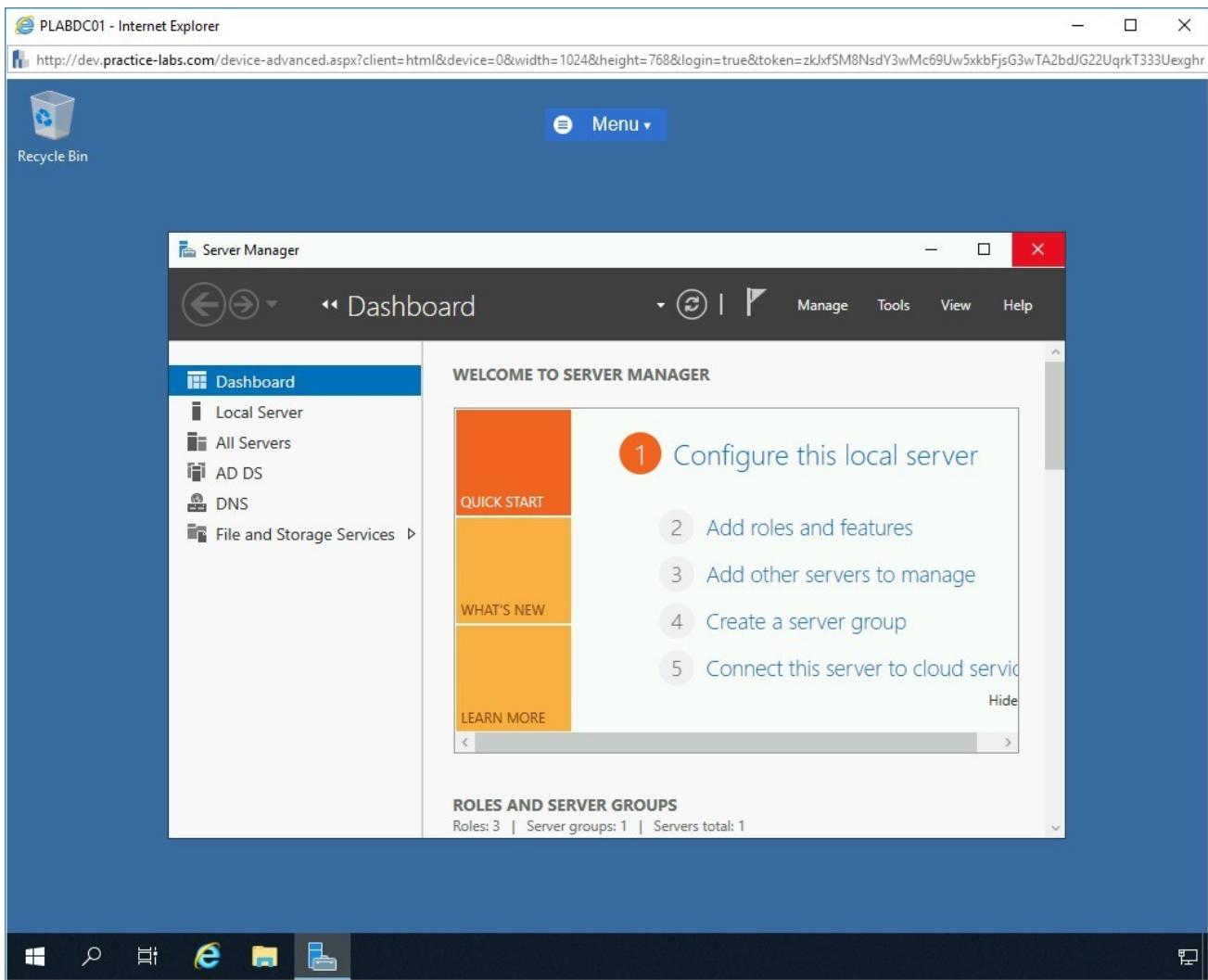


Figure 1.12 Screenshot of PLABDC01: Closing the Server Manager window.

## Step 2

Right-click the Windows charm and select **Run**.

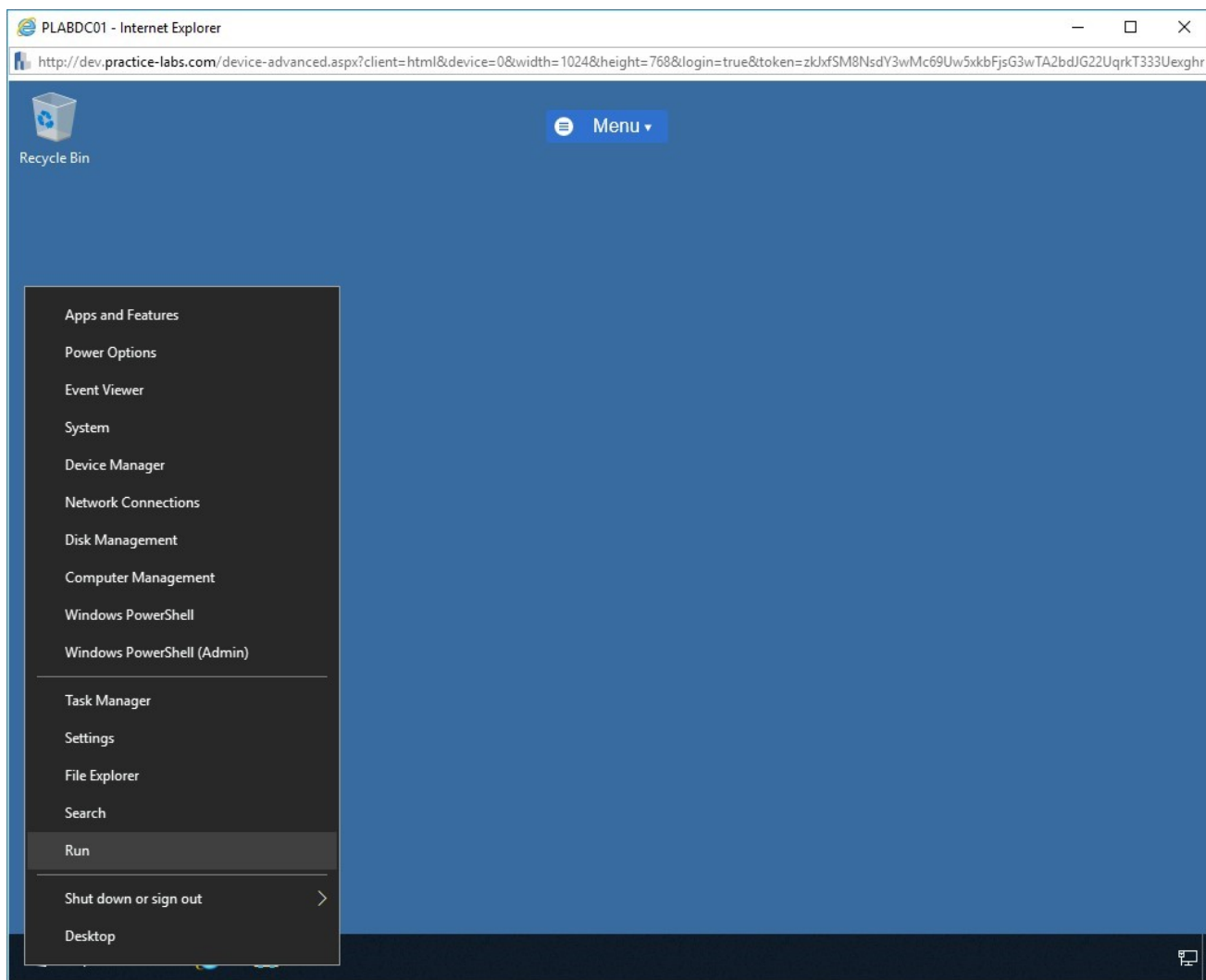


Figure 1.13 Screenshot of PLABDC01: Selecting Run from the context menu.

### *Step 3*

To create a connection to the Remote Desktop Session, you will be using the command **mstsc**.

In the **Run** dialog box, type the following in the **Open** textbox:

mstsc

Click **OK**.

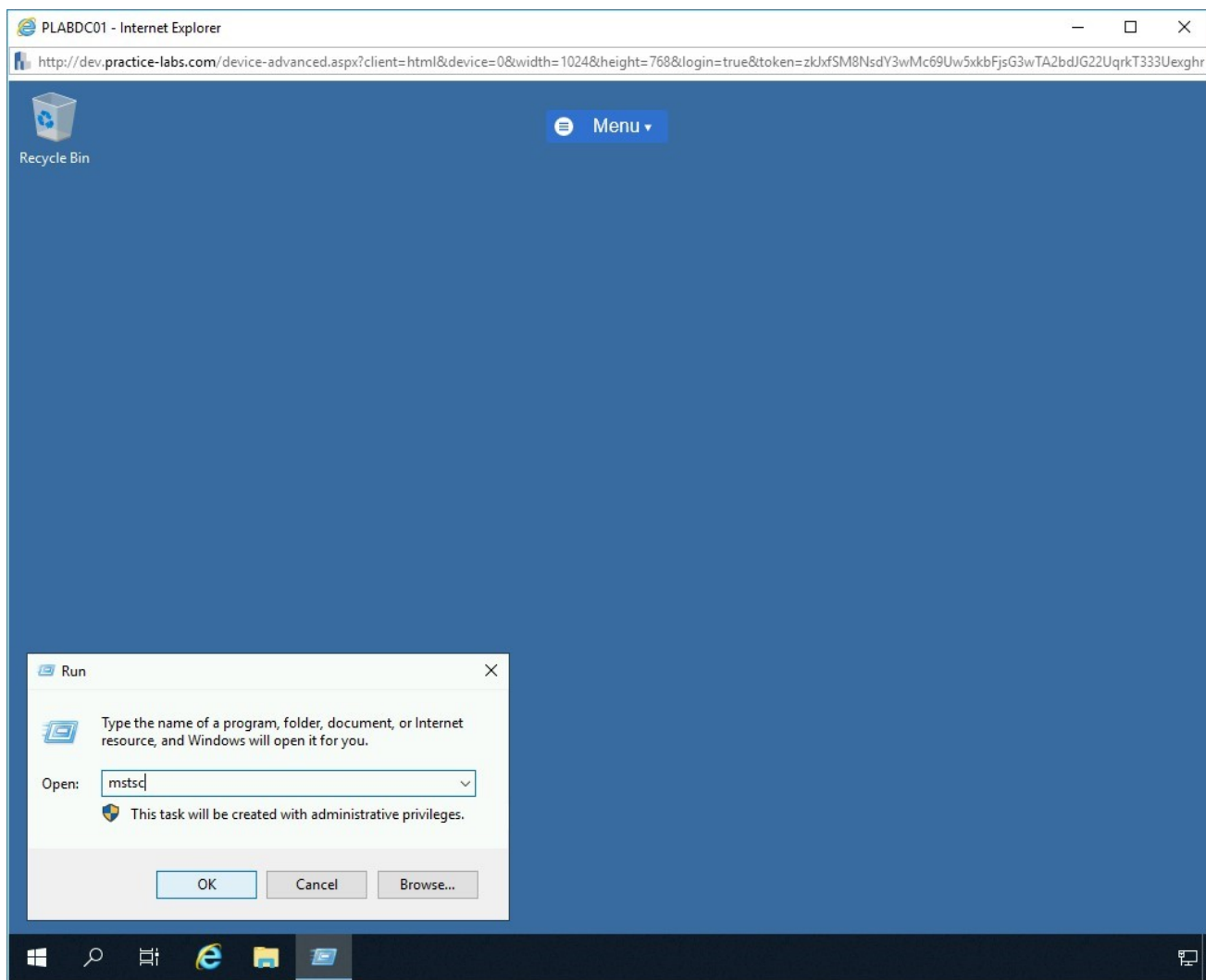


Figure 1.14 Screenshot of PLABDC01: Entering the mstsc command in the Open textbox of the Run dialog box.

## Step 4

On the **Remote Desktop Connection** dialog box, in the **Computer** text box, type:

192.168.0.3

Click **Connect**.

**Note:** *192.168.0.3 is the static IP address assigned to the **PLABWIN10** device.*

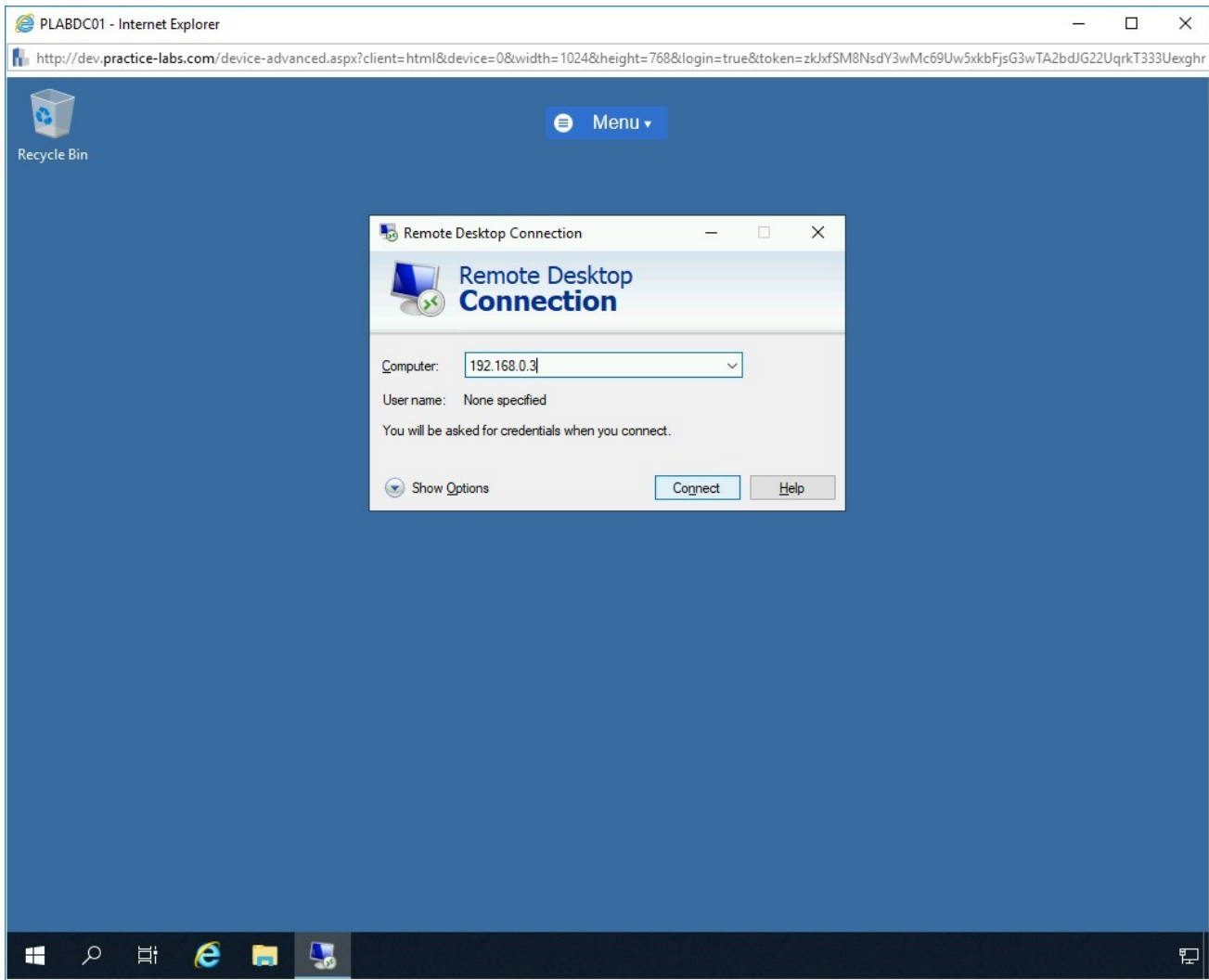


Figure 1.15 Screenshot of PLABDC01: Entering the IP address in the Remote Desktop Connection dialog box.

## Step 5

On the **Windows Security** dialog box, in the **Password** textbox, type:

**Passw0rd**

Click **OK**.

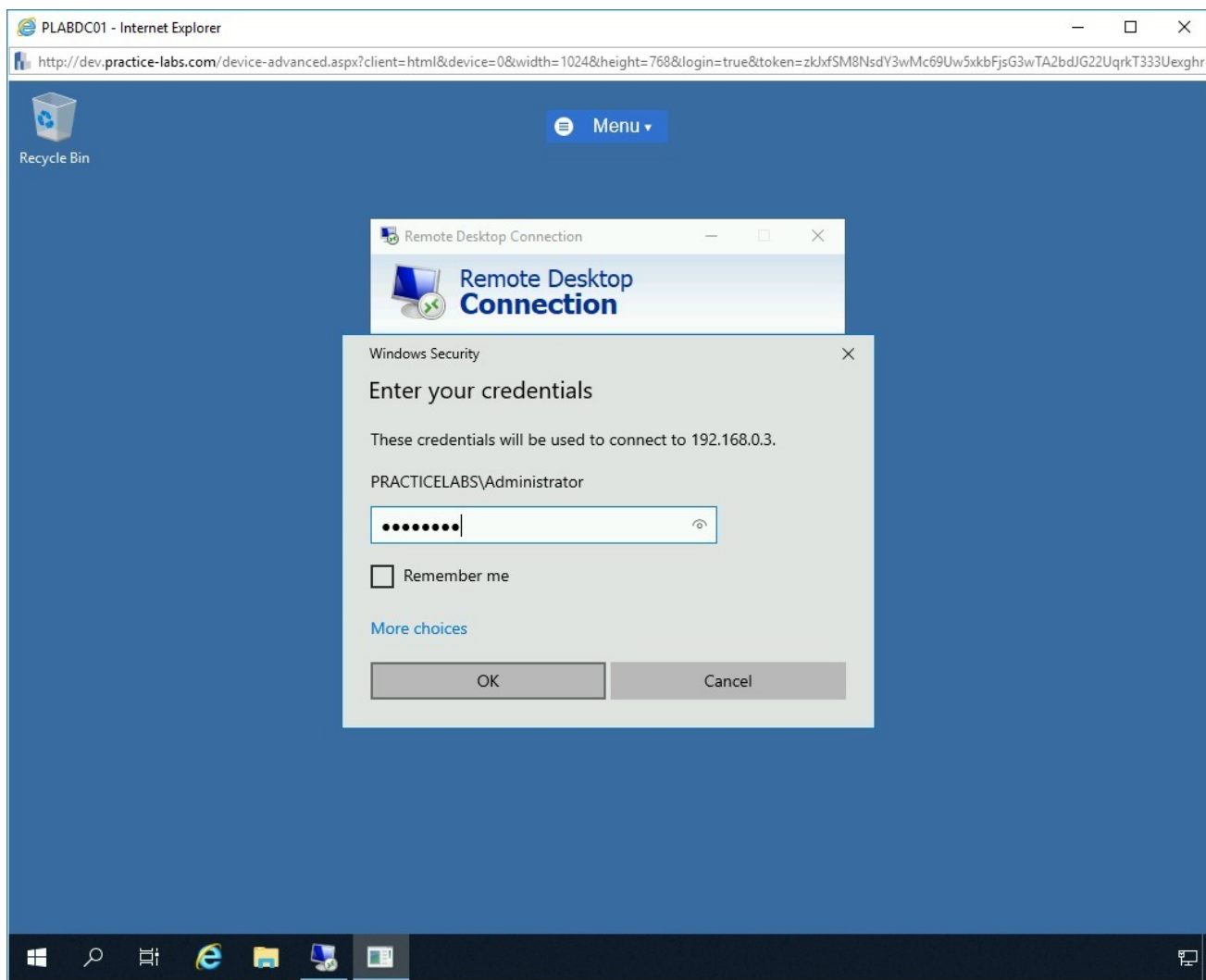


Figure 1.16 Screenshot of PLABDC01: Entering the password in the Enter your credentials dialog box and clicking OK.

## Step 6

On the **Remote Desktop Connection** dialog box, you are prompted with a message saying, “**The identity of the remote computer cannot be verified...**”

Click **Yes**.

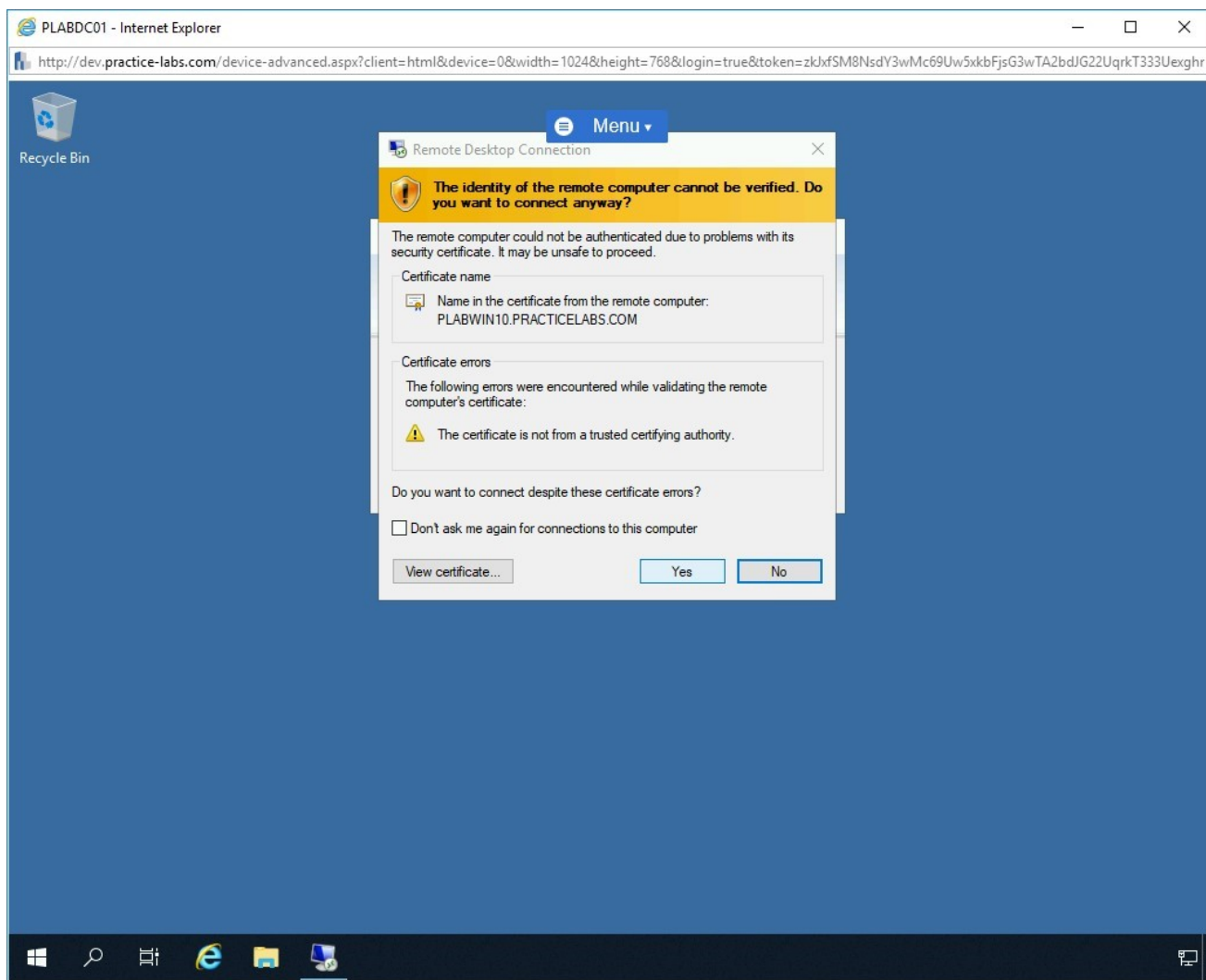


Figure 1.17 Screenshot of PLABDCo1: Clicking Yes to continue on the Remote Desktop Connection dialog box.

## Step 7

You will notice at the top of the screen the connection bar **192.168.0.3**. This indicates that you are connected to **PLABWIN10** via remote desktop.

On the **ZoneAlarm Free Antivirus + Firewall Install** window, the **Installation was successful!** message is displayed.

Click **Finish**.

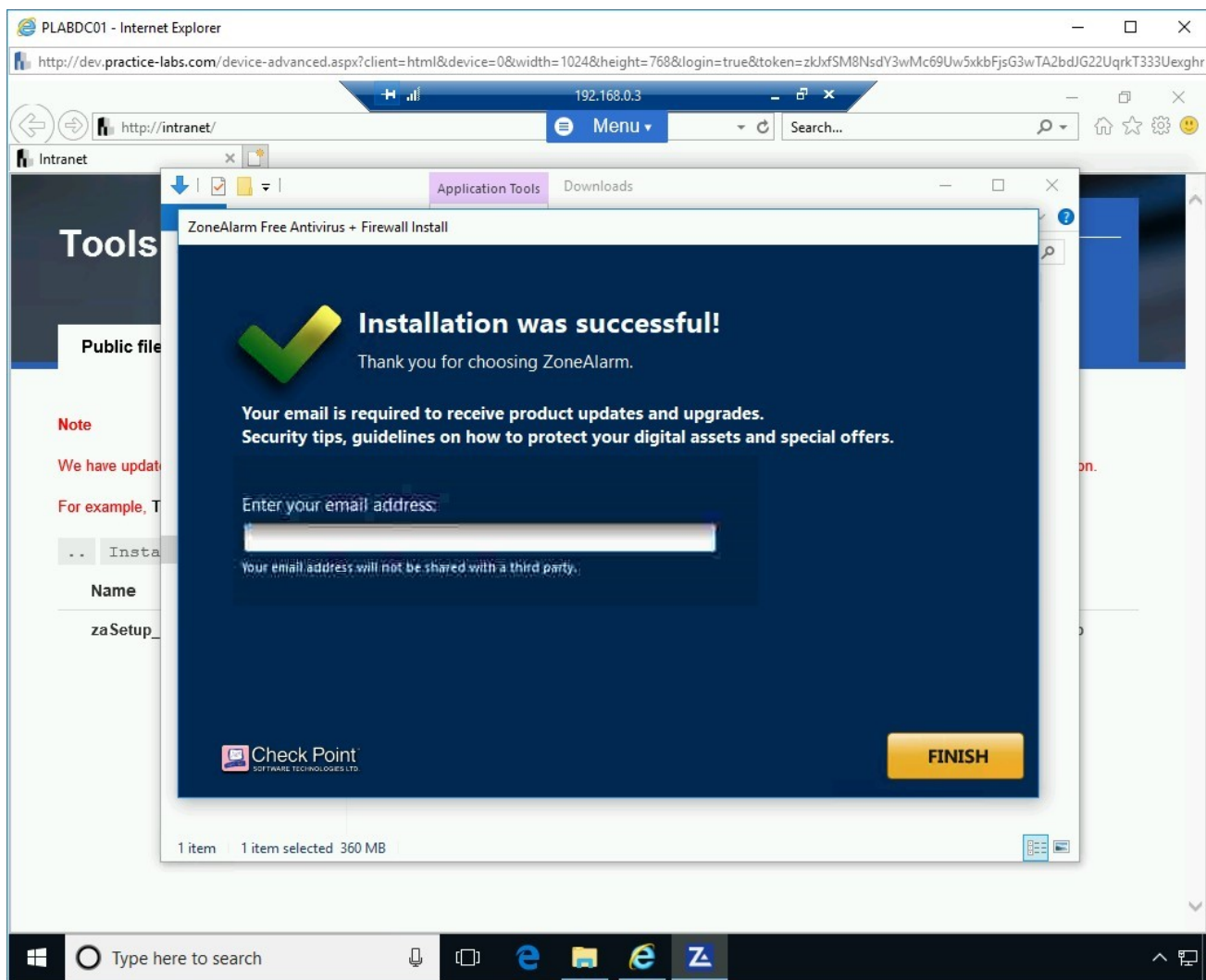


Figure 1.18 Screenshot of PLABWIN10: Clicking FINISH after installation completion.

## Step 8

The **ZoneAlarm** application is now displayed.

Minimize this window for now.

## Step 9

The Web browser displays the **Welcome to ZoneAlarm** Webpage.

If you see a **Thank you for installing ZoneAlarm** message on the Webpage, please click the **GOT IT, THANKS** button at the bottom right of the screen.



**Note:** The contents of the ZoneAlarm Webpage may differ from the screenshot below. There may be a slight delay before the Webpage appears.

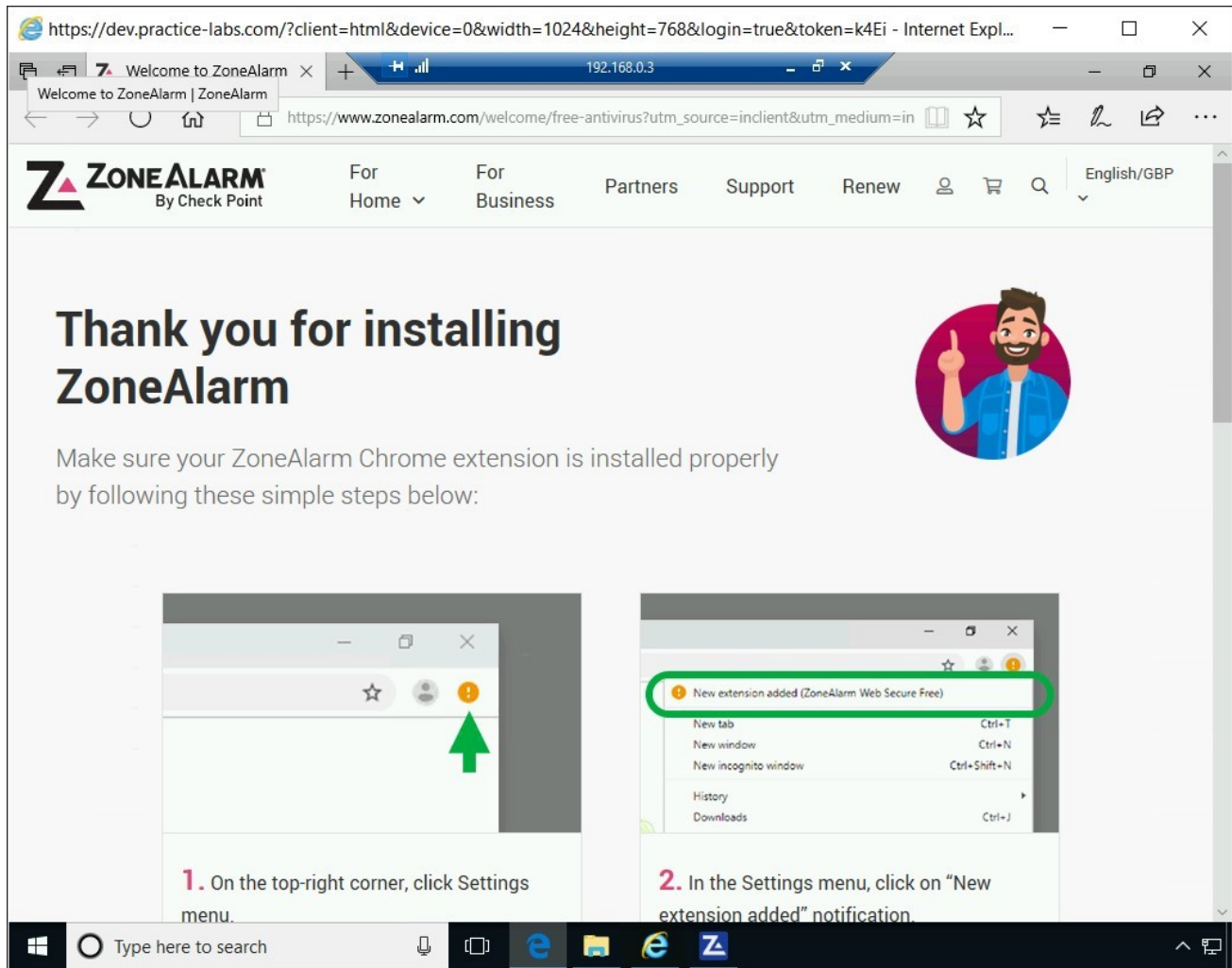


Figure 1.19 Screenshot of PLABWIN10: Showing the ZoneAlarm welcome page in the Web browser.

## Step 10

Close the Web browser.

## Step 11

Click back to the **ZoneAlarm Free Firewall** application.

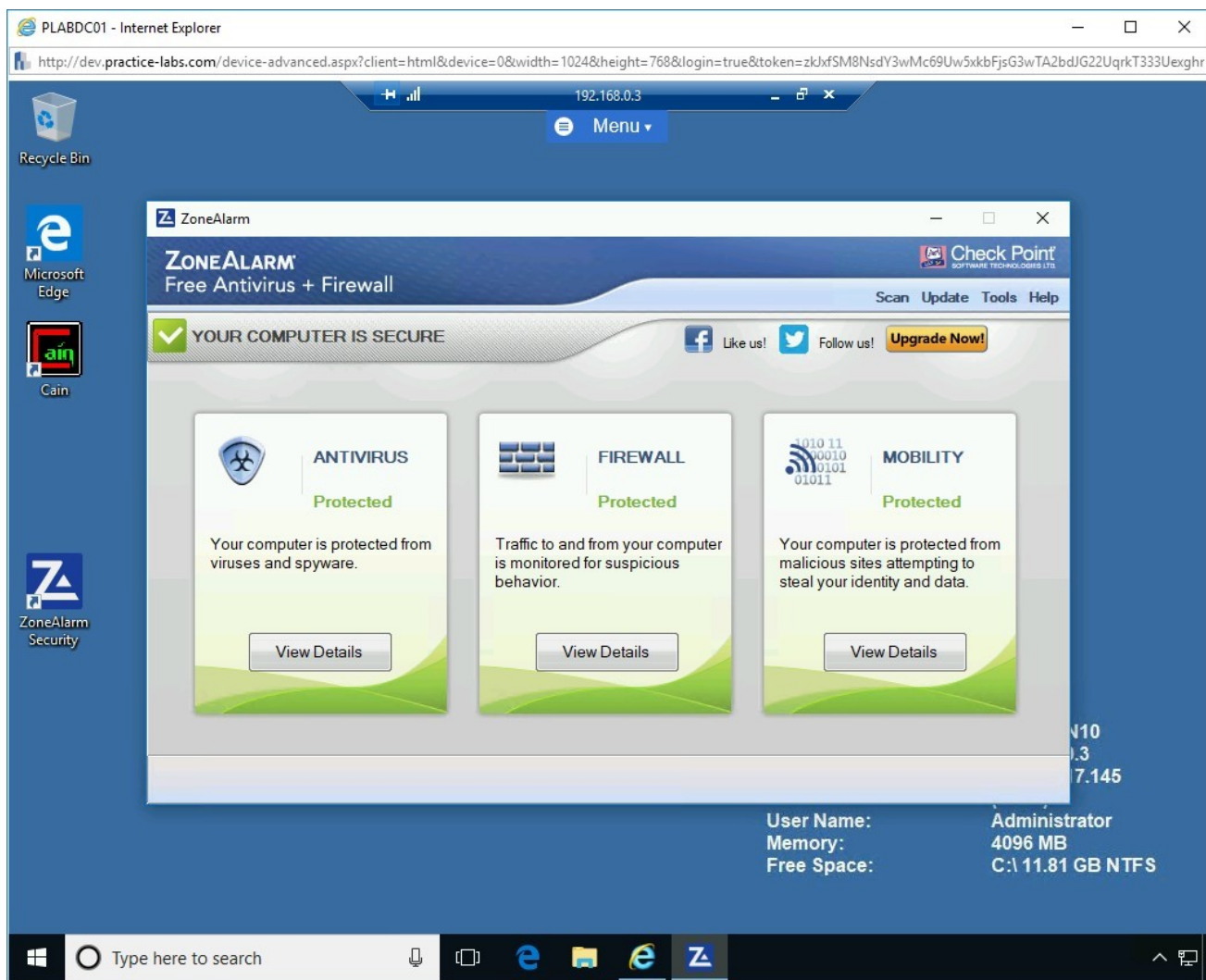


Figure 1.20 Screenshot of PLABWIN10: Showing the ZoneAlarm window.

Keep all devices powered on in their current state and proceed to the next task.

## Task 3 - Manage ZoneAlarm Settings

You have the option to change the settings within ZoneAlarm. There are three sections, Anti-virus. Firewall and Mobility.

In this task, you will practice managing the ZoneAlarm settings.

### *Step 1*

When the installation of the antivirus program is completed, the **ZoneAlarm** main window will be displayed.

Click **View Details** in the **ANTIVIRUS** section.

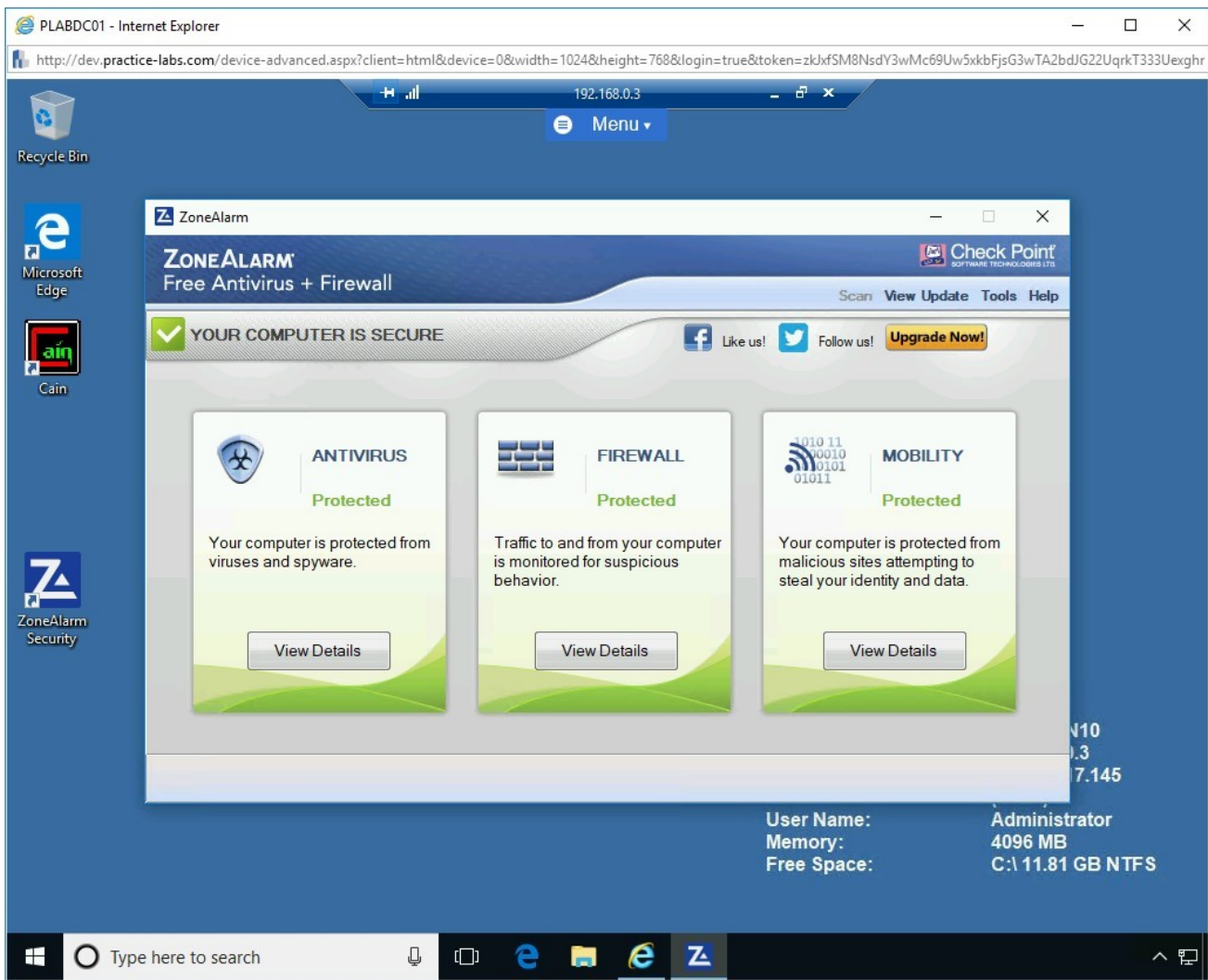


Figure 1.21 Screenshot of PLABWIN10: Clicking View Details in the ANTIVIRUS section.

## Step 2

Notice that the **Real-time Protection** is enabled.

On this tab, you can also schedule a scan and configure settings.

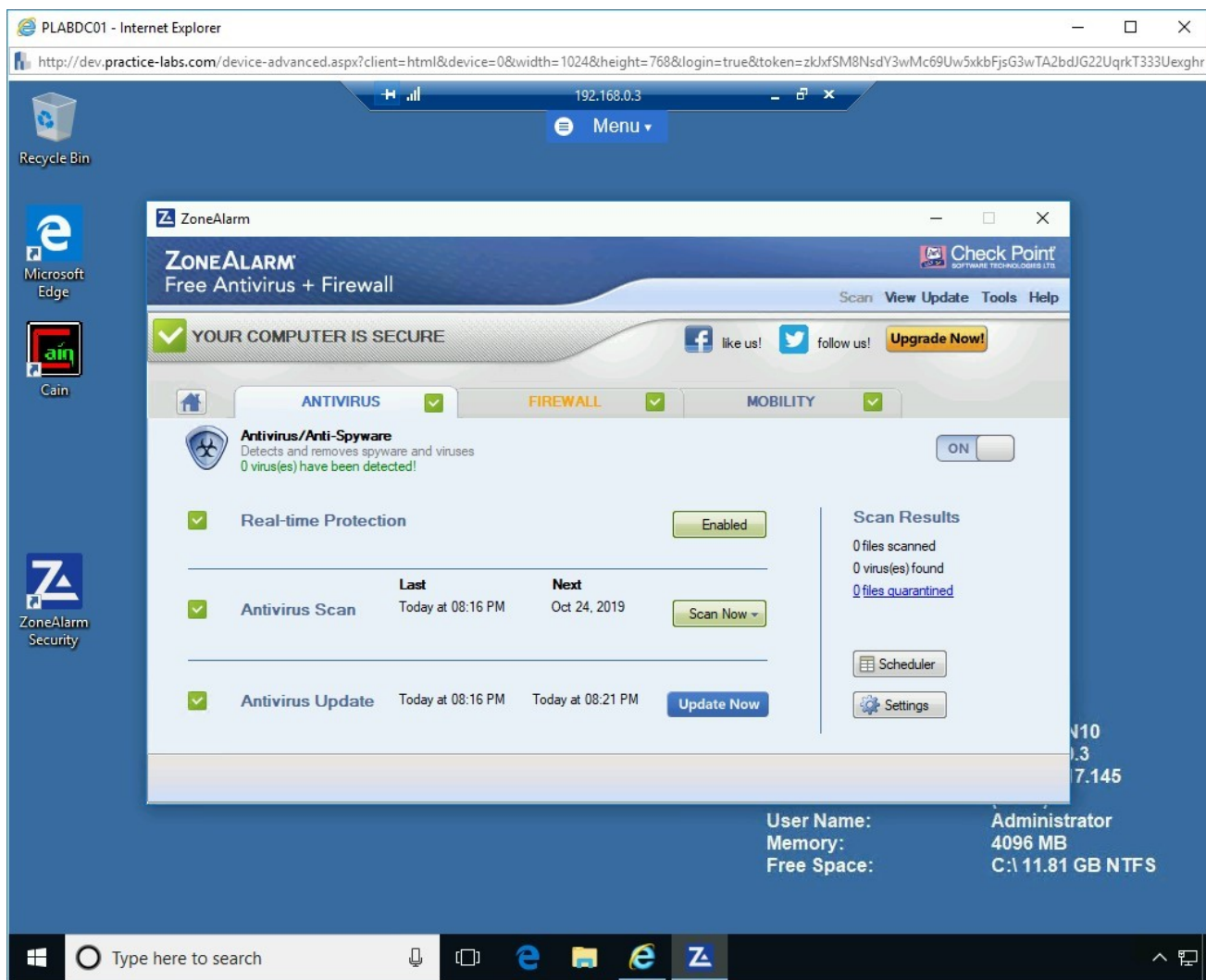


Figure 1.22 Screenshot of PLABWIN10: On the ANTIVIRUS tab, the Real-time Protection button is showing as enabled.

## Step 3

Click the **FIREWALL** tab.

On the **FIREWALL** tab, you will notice that the **Basic Firewall** and **Application Control** are enabled.

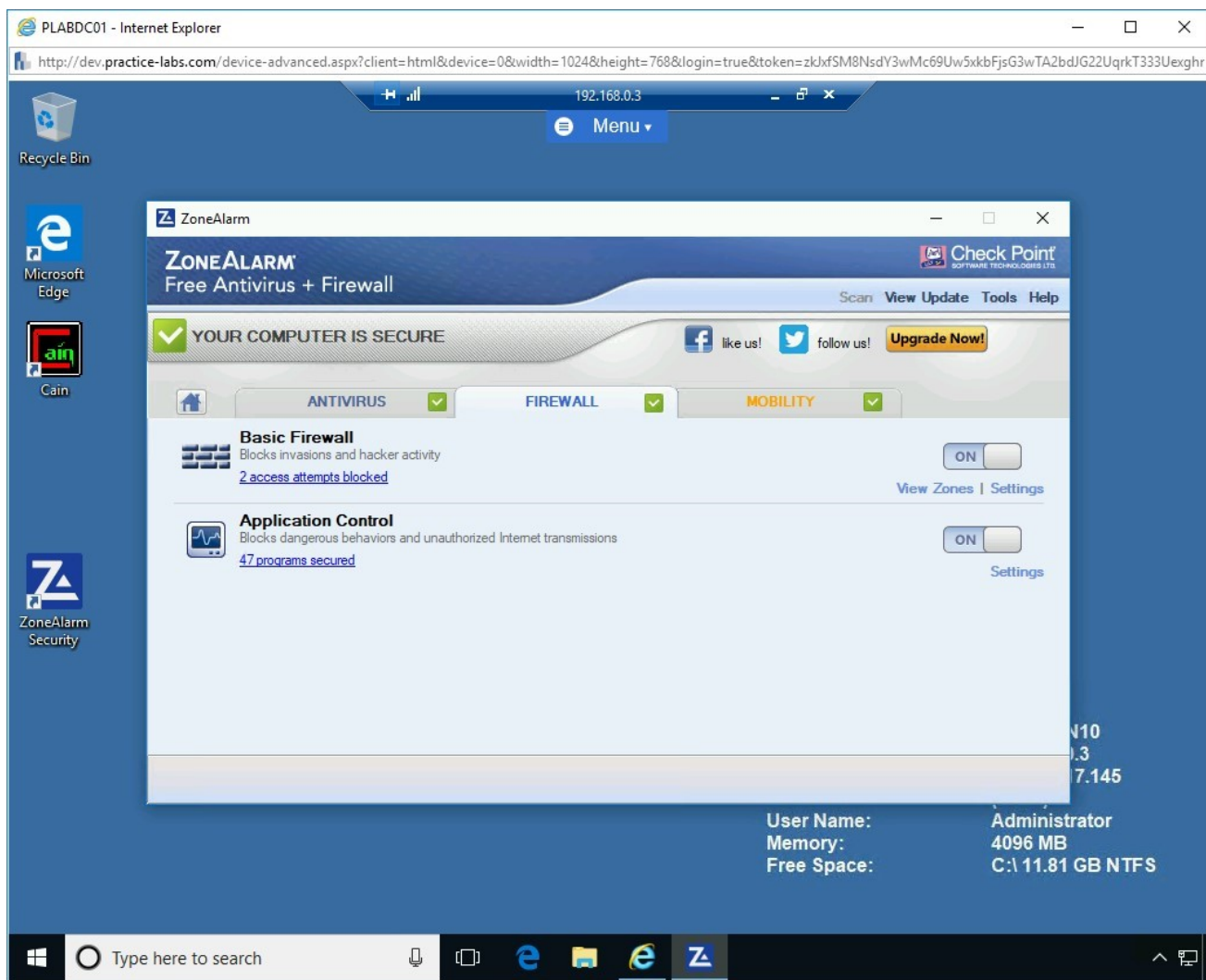


Figure 1.23 Screenshot of PLABWIN10: On the FIREWALL tab, Basic Firewall and Application Controls are both switched to on.

## Step 4

Click the **MOBILITY** tab.

Under the **MOBILITY** tab, against **Identity Protection**, click **Set up**.



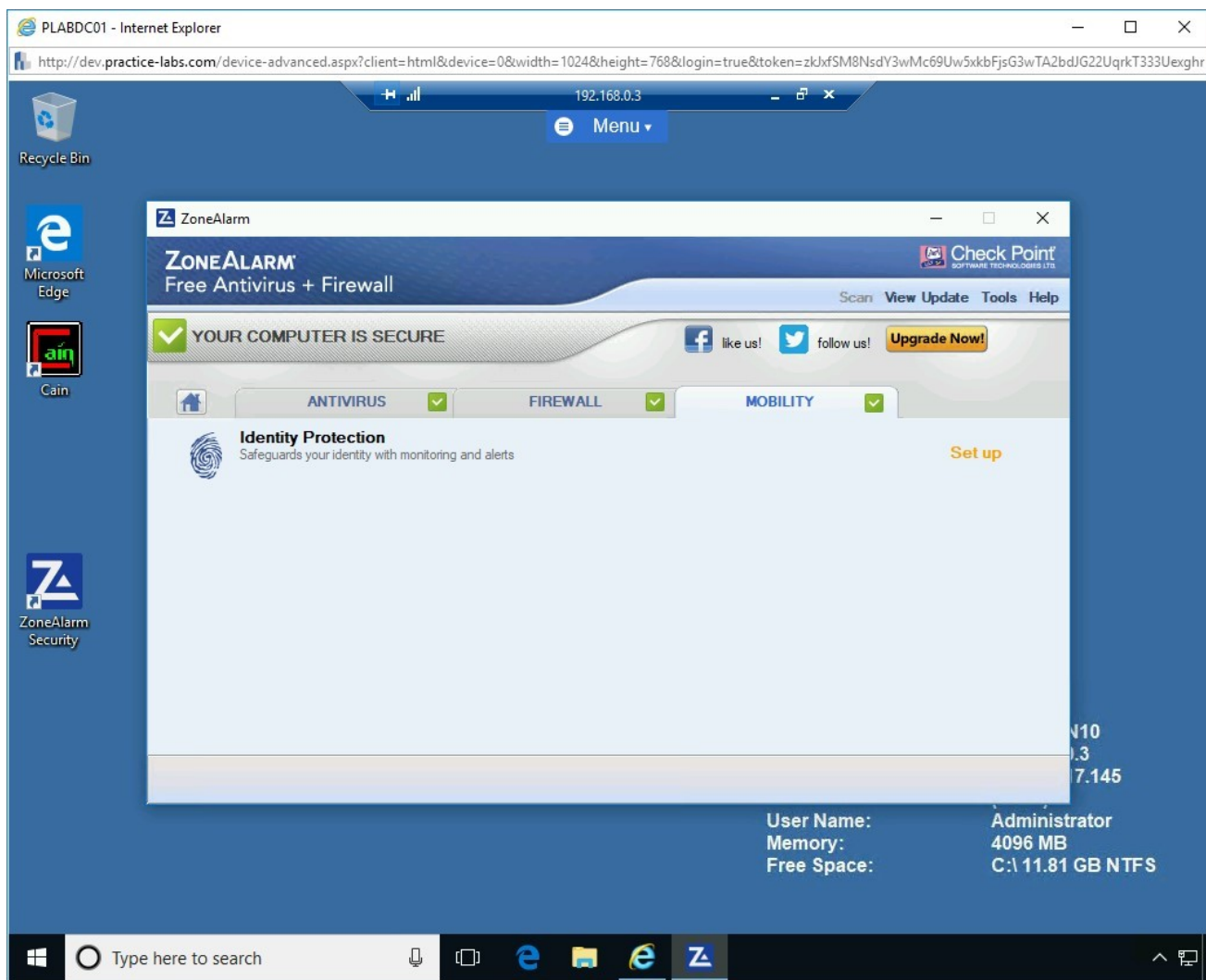


Figure 1.24 Screenshot of PLABWIN10: On the MOBILITY tab. Clicking Set up link for Identity Protection.

## Step 5

Click **Identity Protection Service**.

On the **Identity Protection Service** section, click **Activate/Manage**.

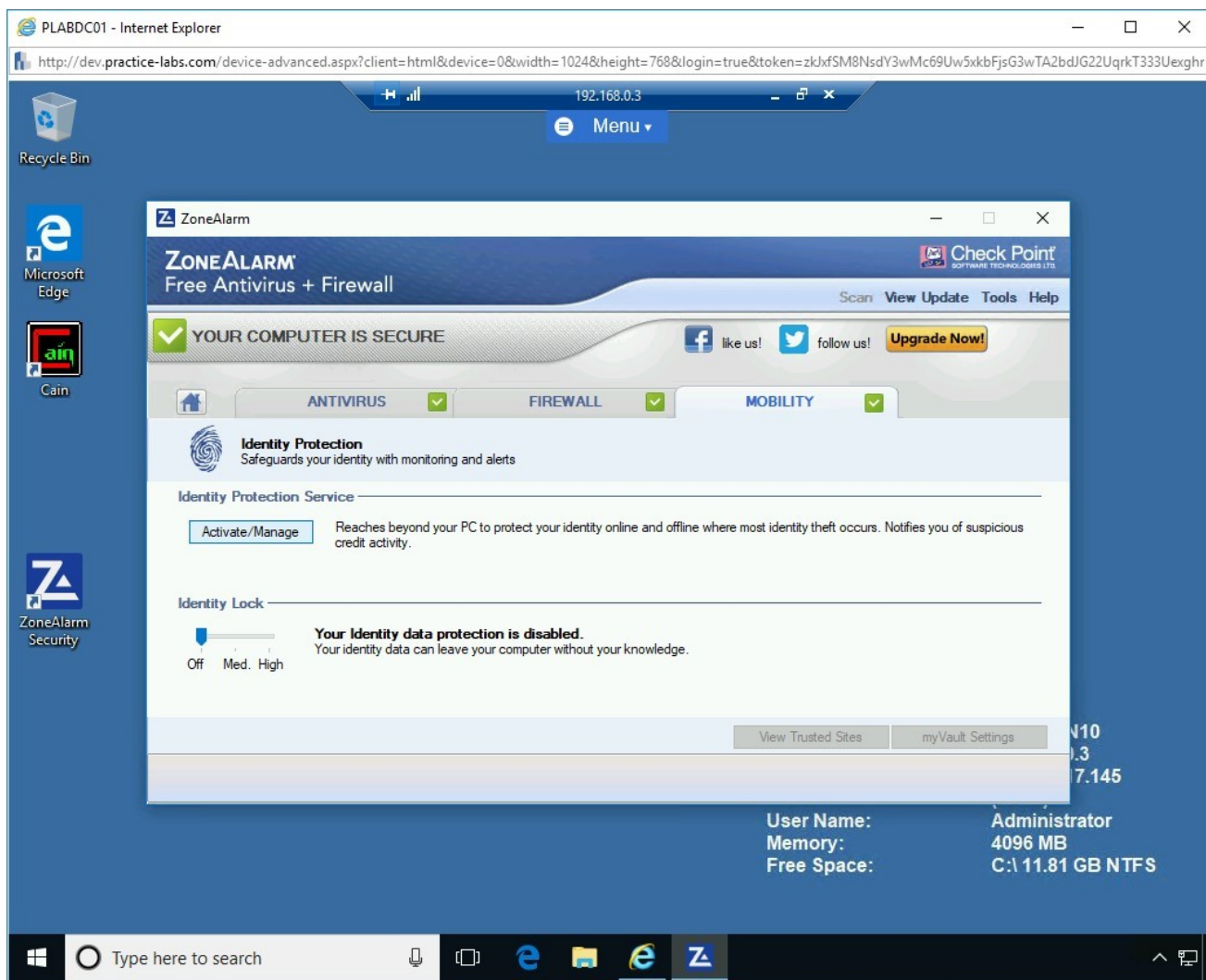


Figure 1.25 Screenshot of PLABWIN10: Clicking Activate/Manage in the Identity Protection Service section of the MOBILITY tab.

## Step 6

A new Webpage opens in the Web browser.

**Alert:** The ZoneAlarm **REPEAT PROGRAM** pop-up message may appear at the lower right corner of the screen. Click **Allow**. If it reappears, click **Allow** again.

Scroll down the page and read additional information on **ZoneAlarm Identity Protection Services** about activating **Identity Guard**.

Please note that this lab will not show the actual use of the **Identity Guard**. If you are a resident in the US, you can proceed with the activation of this feature and follow the instructions that will be given to you to use this service.

Close the Web browser after going over the **Identity Guard** information webpage.

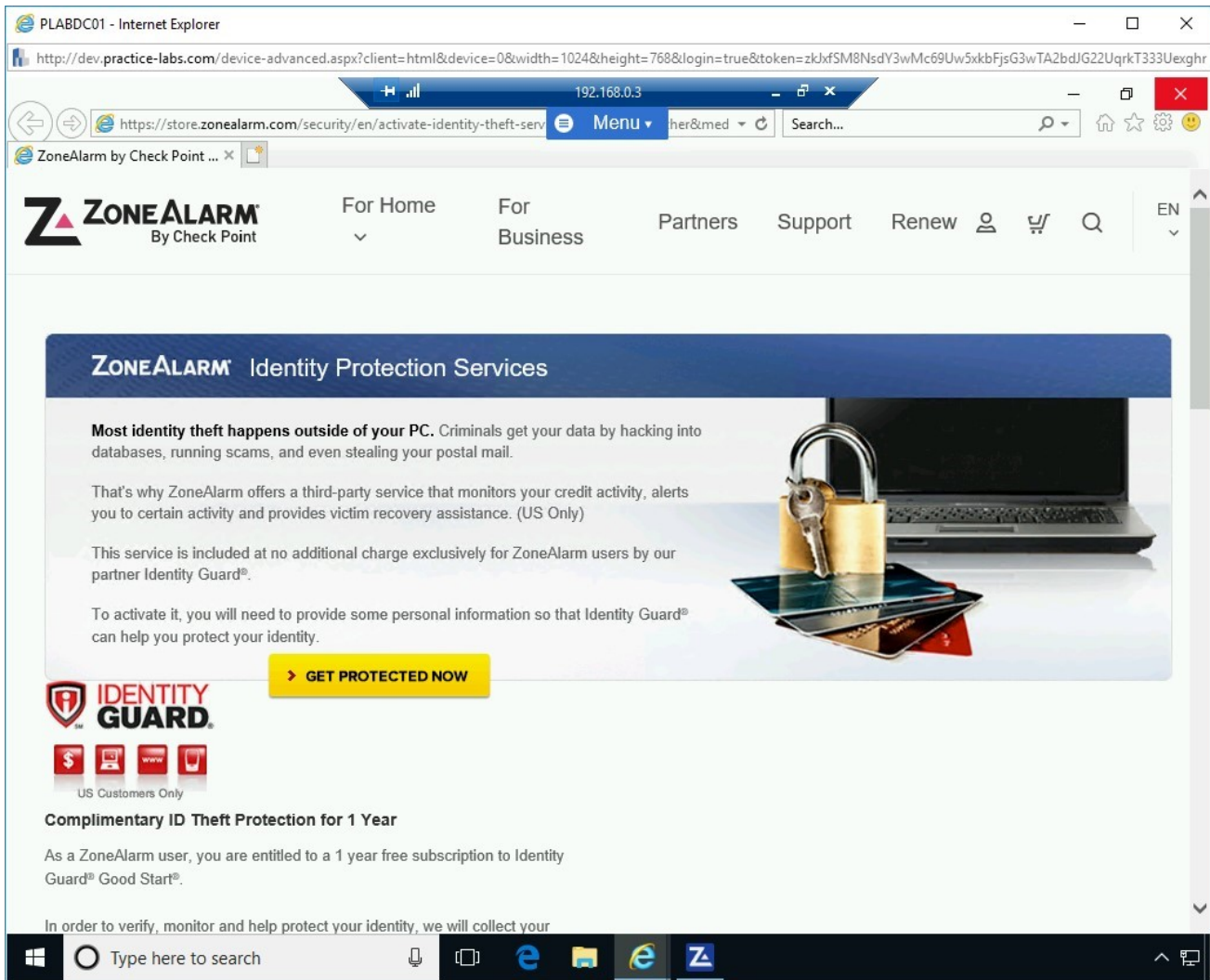


Figure 1.26 Screenshot of PLABWIN10: Showing the details of the Identity Protection and then closing the Web browser.

Keep all devices powered on in their current state and proceed to the next task.

## Task 4 - Configure ZoneAlarm to use a Proxy Server

Before downloading the updates of antivirus definitions, you need to set up ZoneAlarm to use the proxy server in this lab.



In this task, you will configure ZoneAlarm to use the proxy server.

## Step 1

Ensure you are back on the **ZoneAlarm** window from the previous task.

On the **ZoneAlarm** window, click the **Tools** menu near the top-right corner of the window and select **Preferences**.

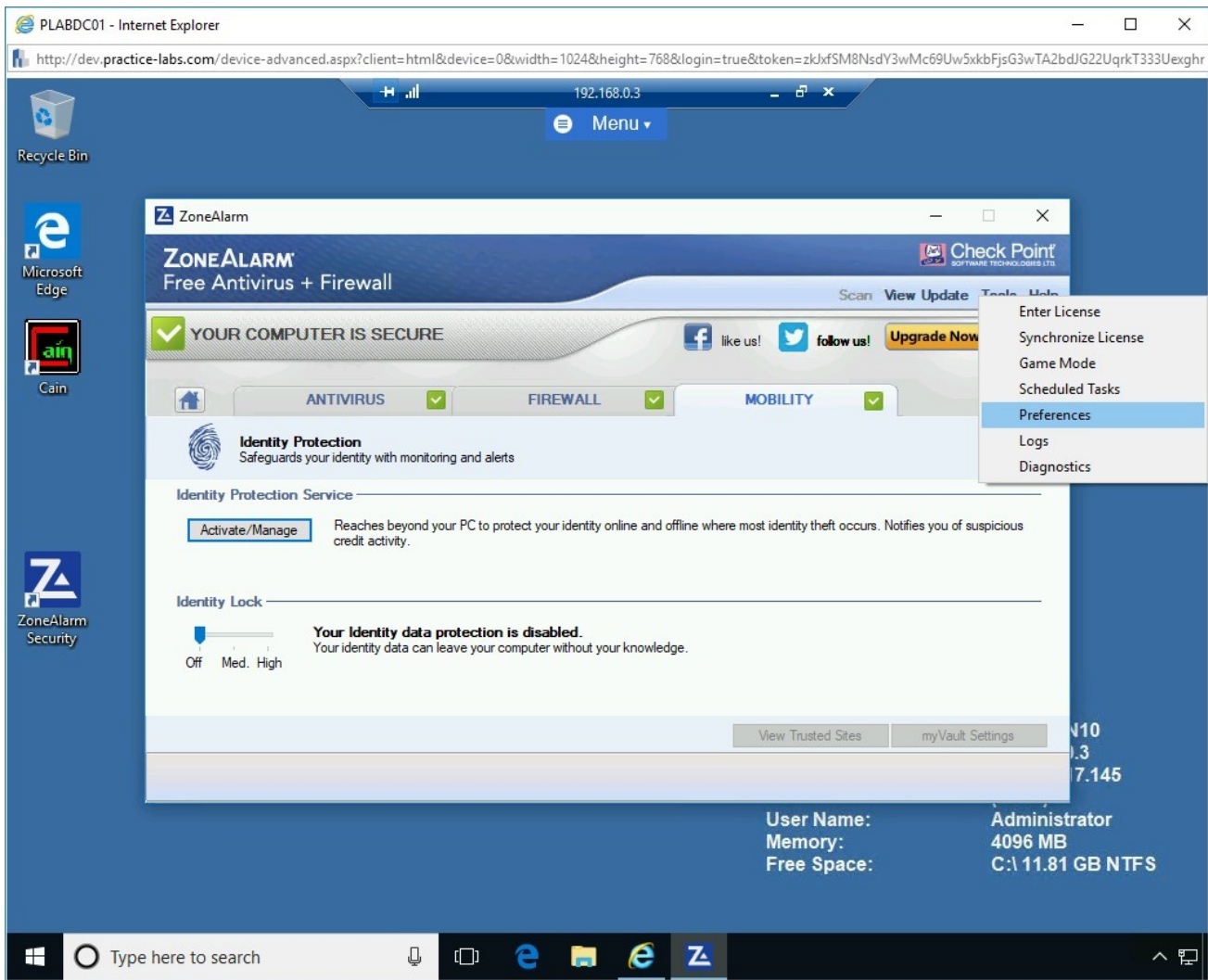


Figure 1.27 Screenshot of PLABWIN10: Selecting Preferences from the Tools menu within ZoneAlarm.

## Step 2

On the **Preferences** dialog box, under the **Proxy Configuration** section, enter the following settings:

Select the **Enable Proxy Server** checkbox. In the **Proxy Server** text box, type:

proxy

In the **Port** text box, type:

8080

Click **OK**.

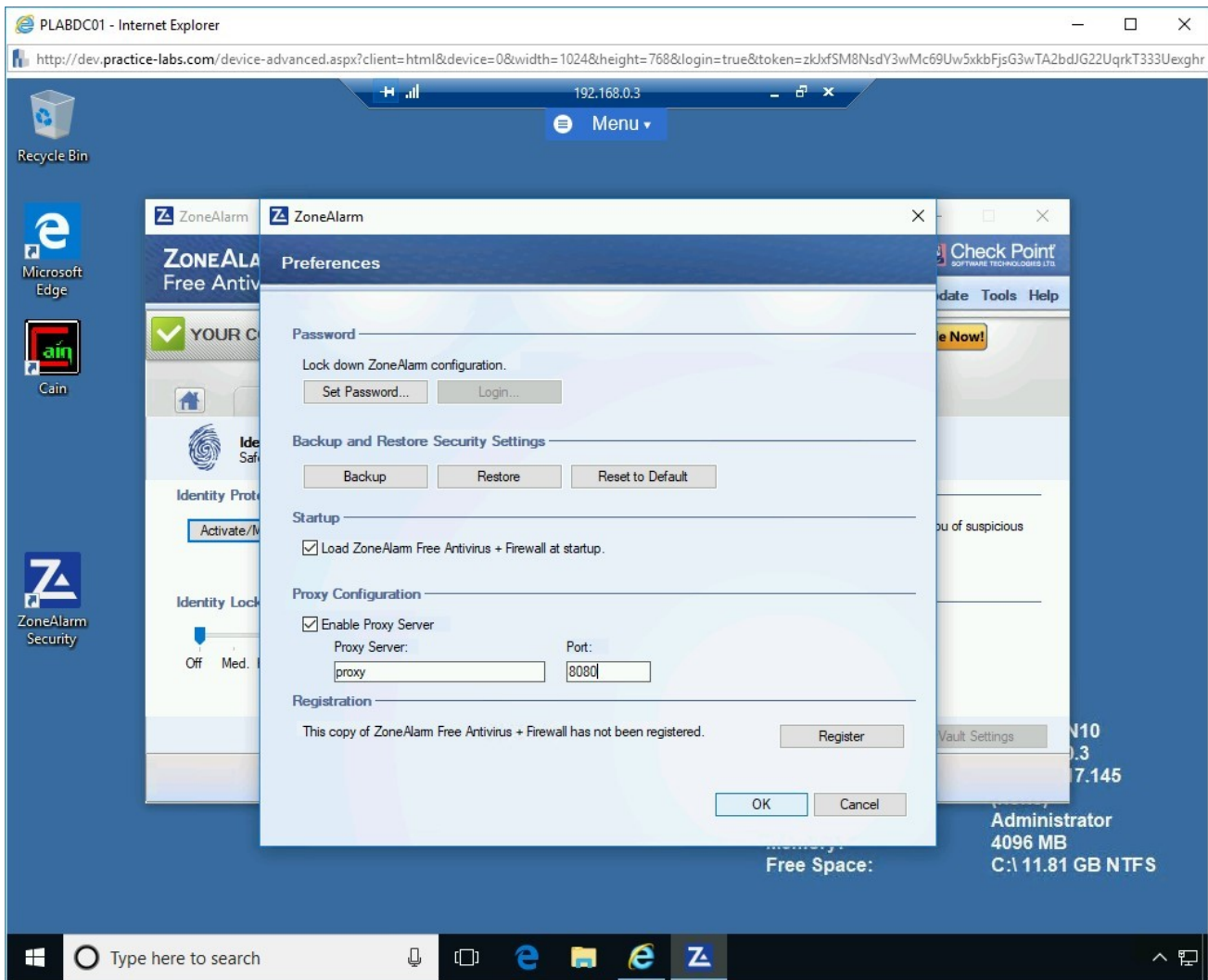


Figure 1.28 Screenshot of PLABWIN10: Entering the proxy server details in the Preferences dialog box.

## Step 3

Keep the **ZoneAlarm** window open for the next activity.

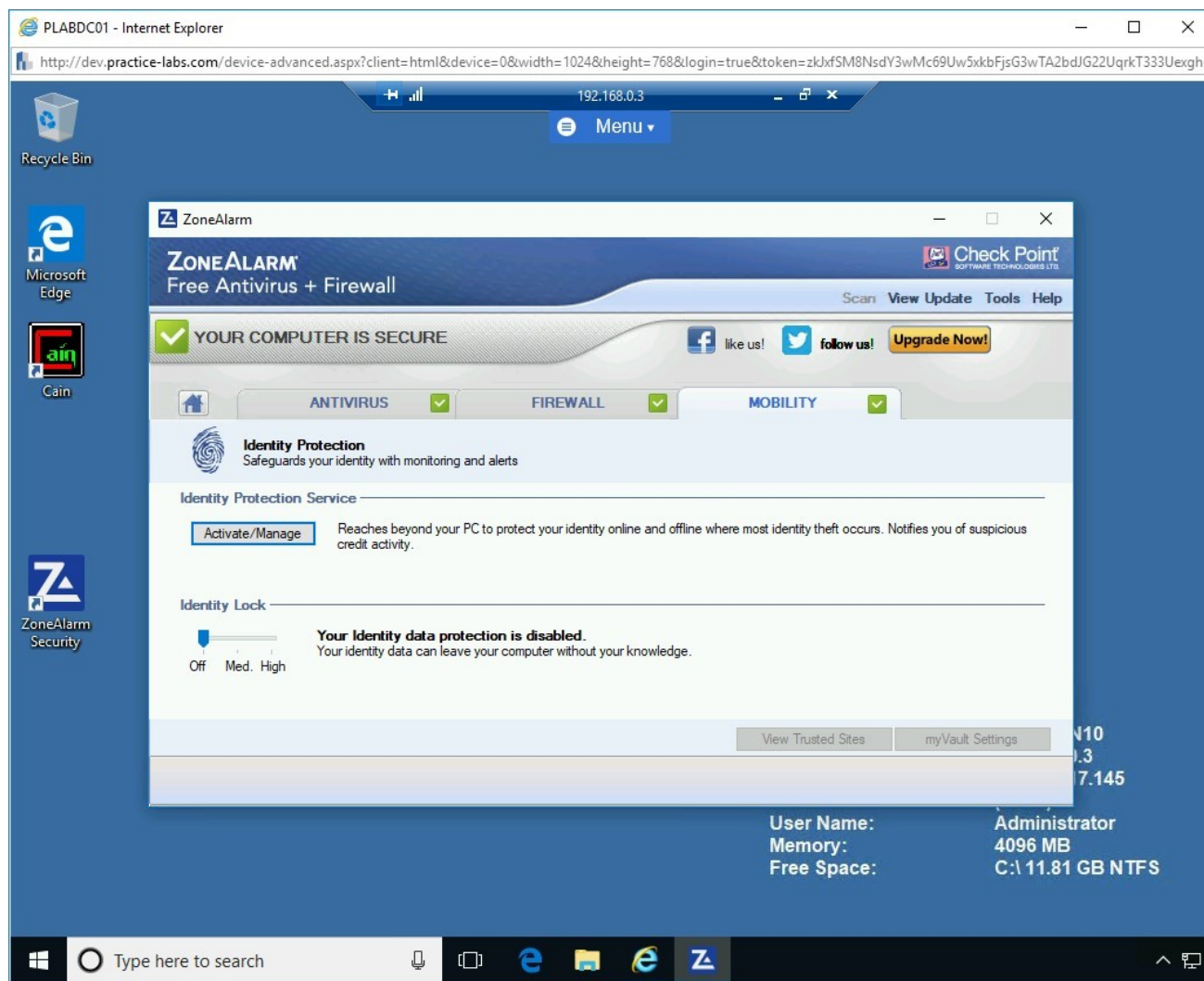


Figure 1.29 Screenshot of PLABWIN10: Showing the ZoneAlarm dialog box.

Keep all devices powered on in their current state and proceed to the next task.

## Task 5 - Update the ZoneAlarm Definitions and Perform a Quick Scan

Like other anti-malware applications, you need to update the signatures of the program to make it effective in fending off unwanted malware from infecting your system.

In this task, you will update the antivirus definitions.

## Step 1

On the **ZoneAlarm** application, click **View Update** on the near the top-right corner of the window.

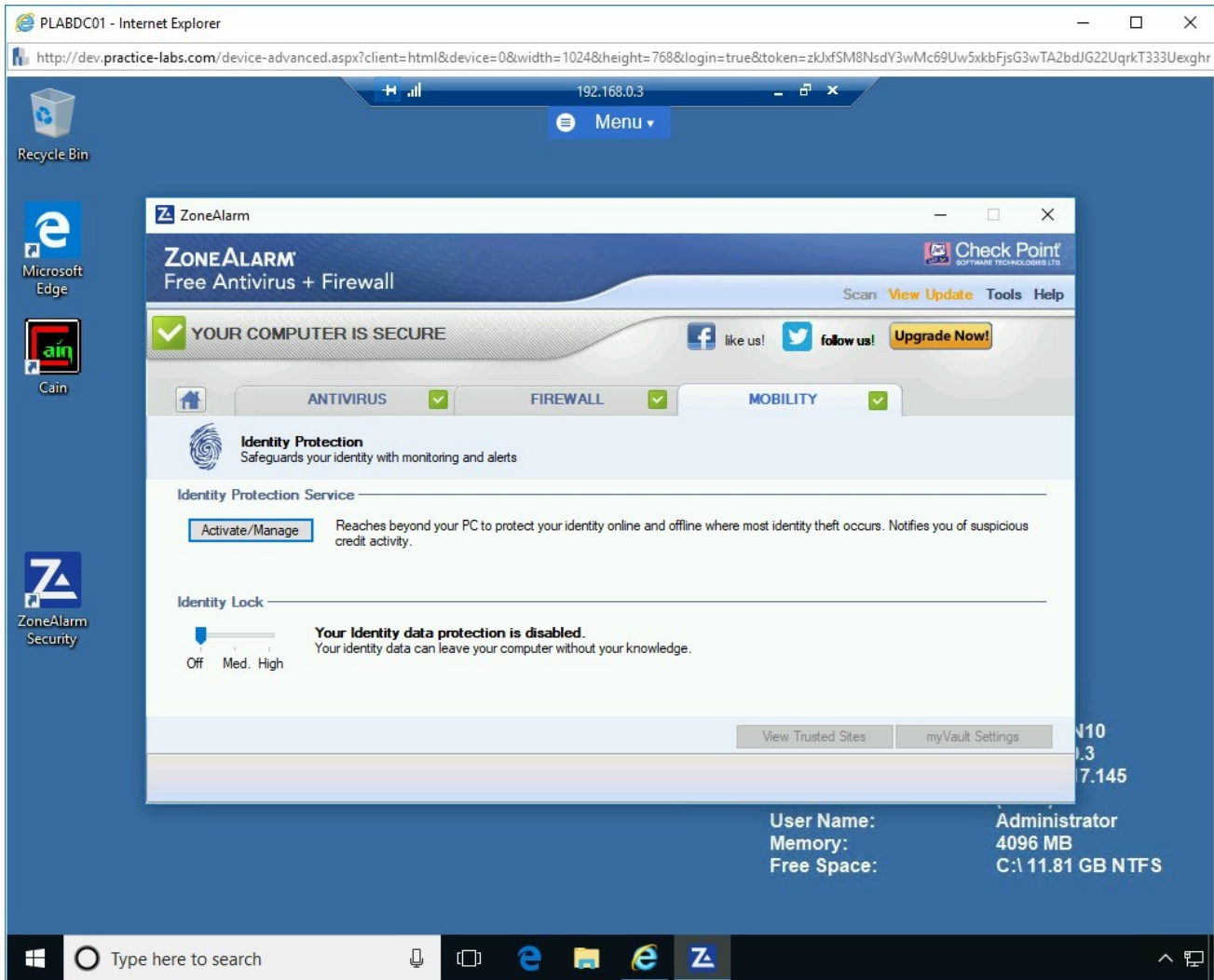


Figure 1.30 Screenshot of PLABWIN10: Clicking View Update in the ZoneAlarm dialog box.

## Step 2

The **ZoneAlarm** dialog box is displayed. It displays the update signature download progress.

**Note:** The update process may take 10-15 minutes, depending on Internet connectivity.

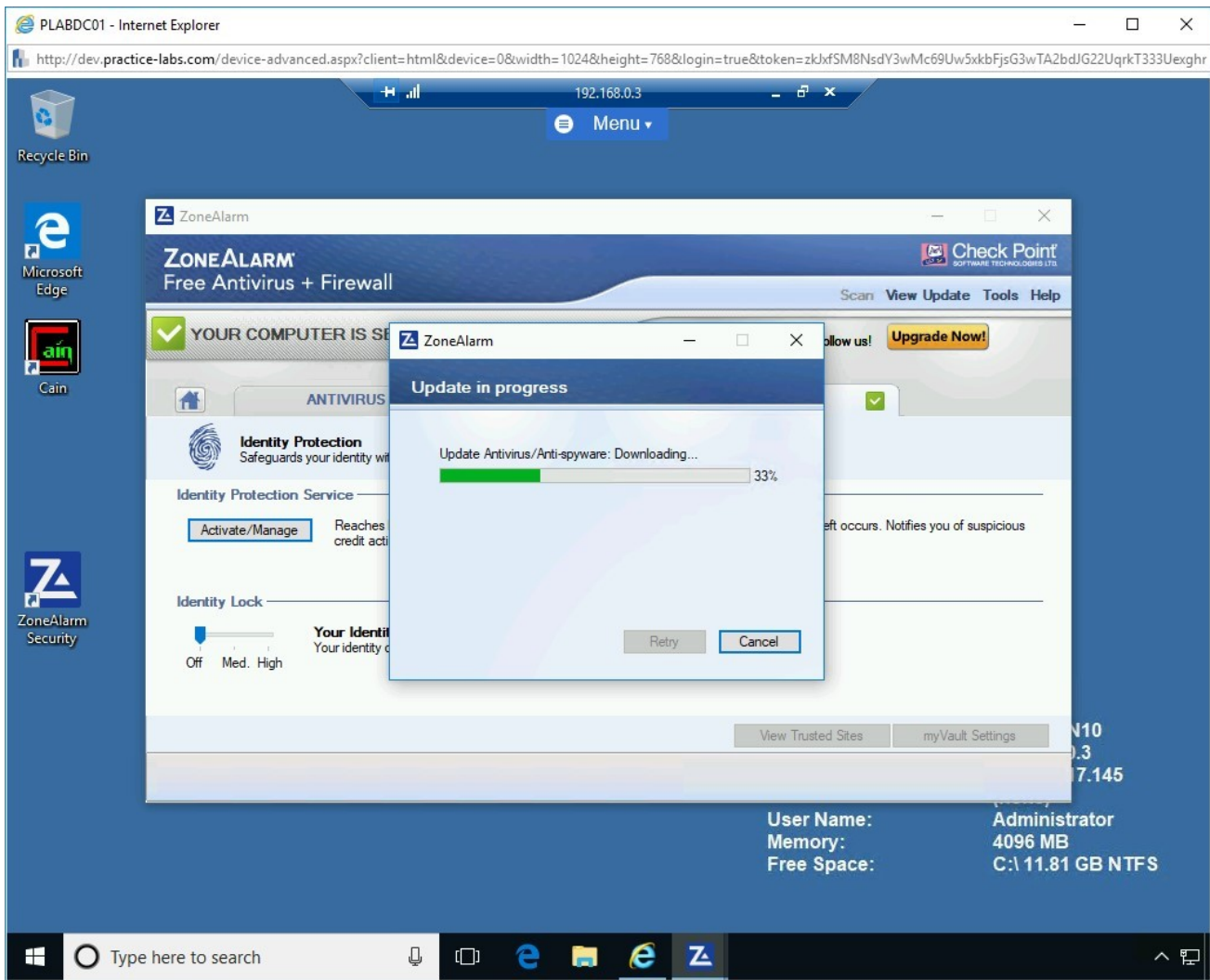


Figure 1.31 Screenshot of PLABWIN10: Showing the ZoneAlarm dialog box downloading the updates.

### Step 3

**Alert:** During the product update, if you get a “**Product Update error**” on either component, click **Retry**. If you get an error again, close the **ZoneAlarm** window. Then, reopen **ZoneAlarm** and perform the same steps indicated in this task. This error is caused by delays in connecting to the proxy server by the ZoneAlarm application.



When the **Antivirus/anti-spyware update** and **Product Update** indicate **Complete** status, click **Close**.

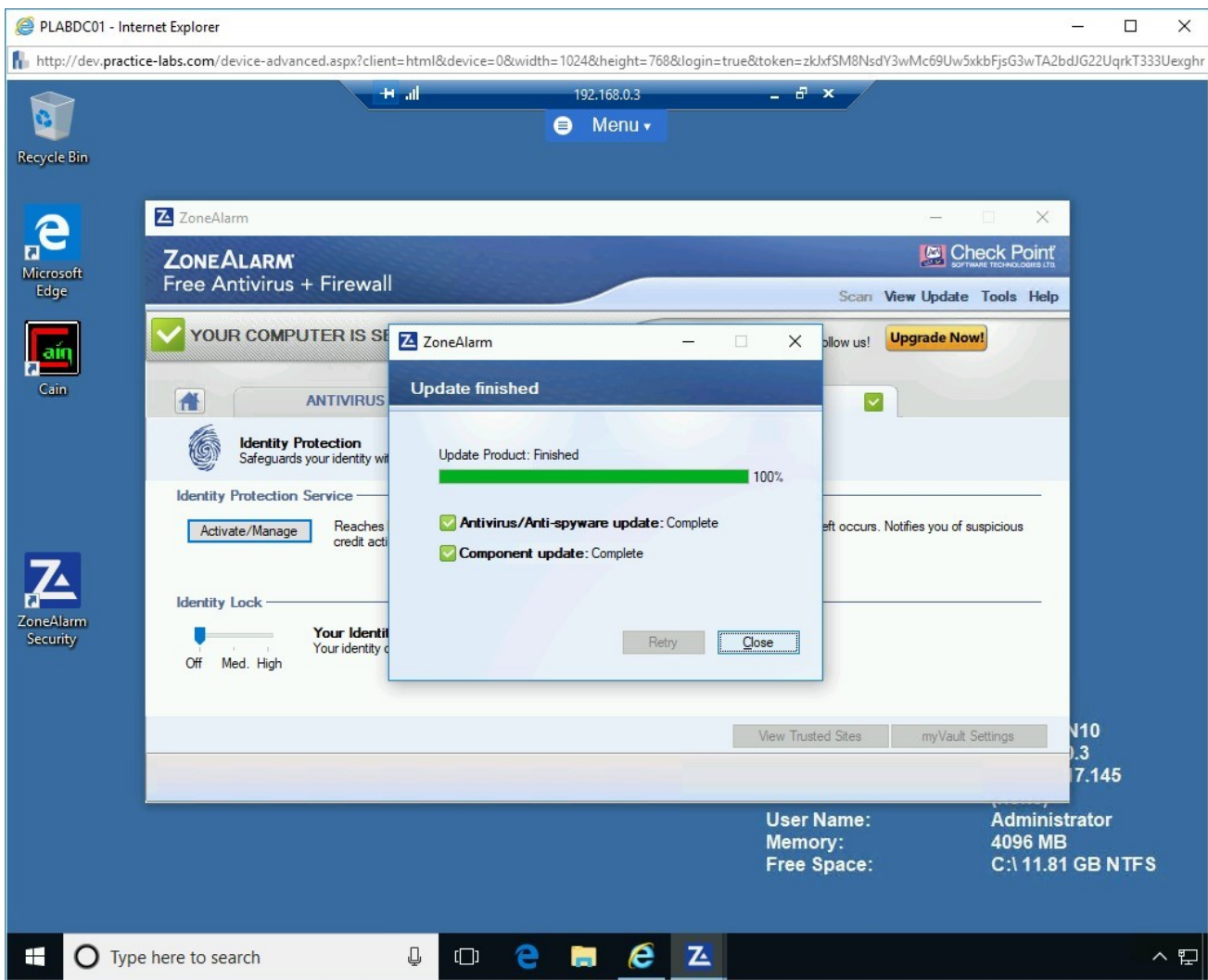


Figure 1.32 Screenshot of PLABWIN10: Clicking Close on the ZoneAlarm dialog box after updates are downloaded.

## Step 4

Click **Scan** on the top-right menu and then select **Quick Scan**.

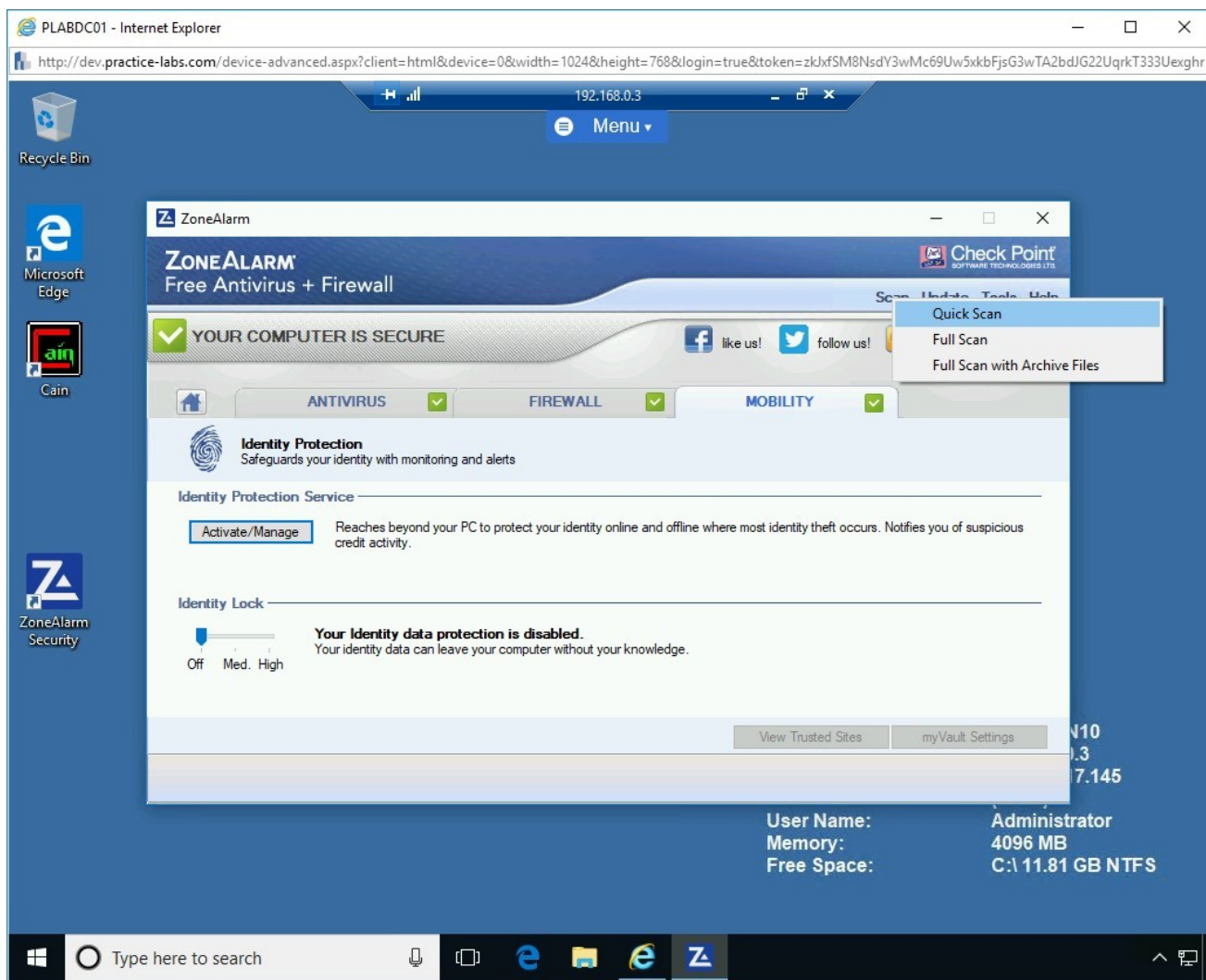


Figure 1.33 Screenshot of PLABWIN10: Selecting Quick Scan from the Scan menu.

The **Quick Scan** process starts.

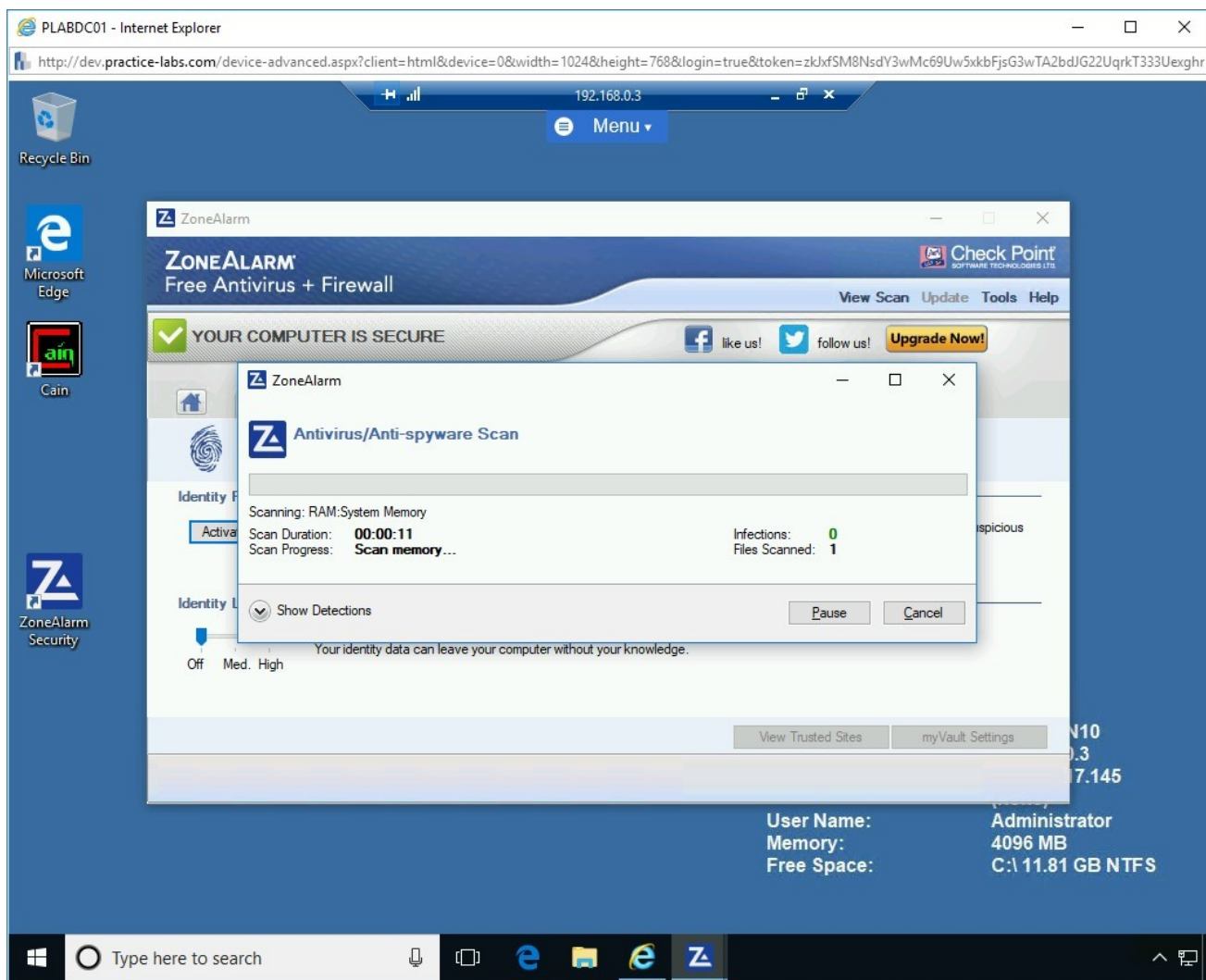


Figure 1.34 Screenshot of PLABWIN10: Showing the ZoneAlarm dialog box with the Quick Scan progress.

## Step 5

The quick scan completed successfully.

Click **Show Detections** down arrow.



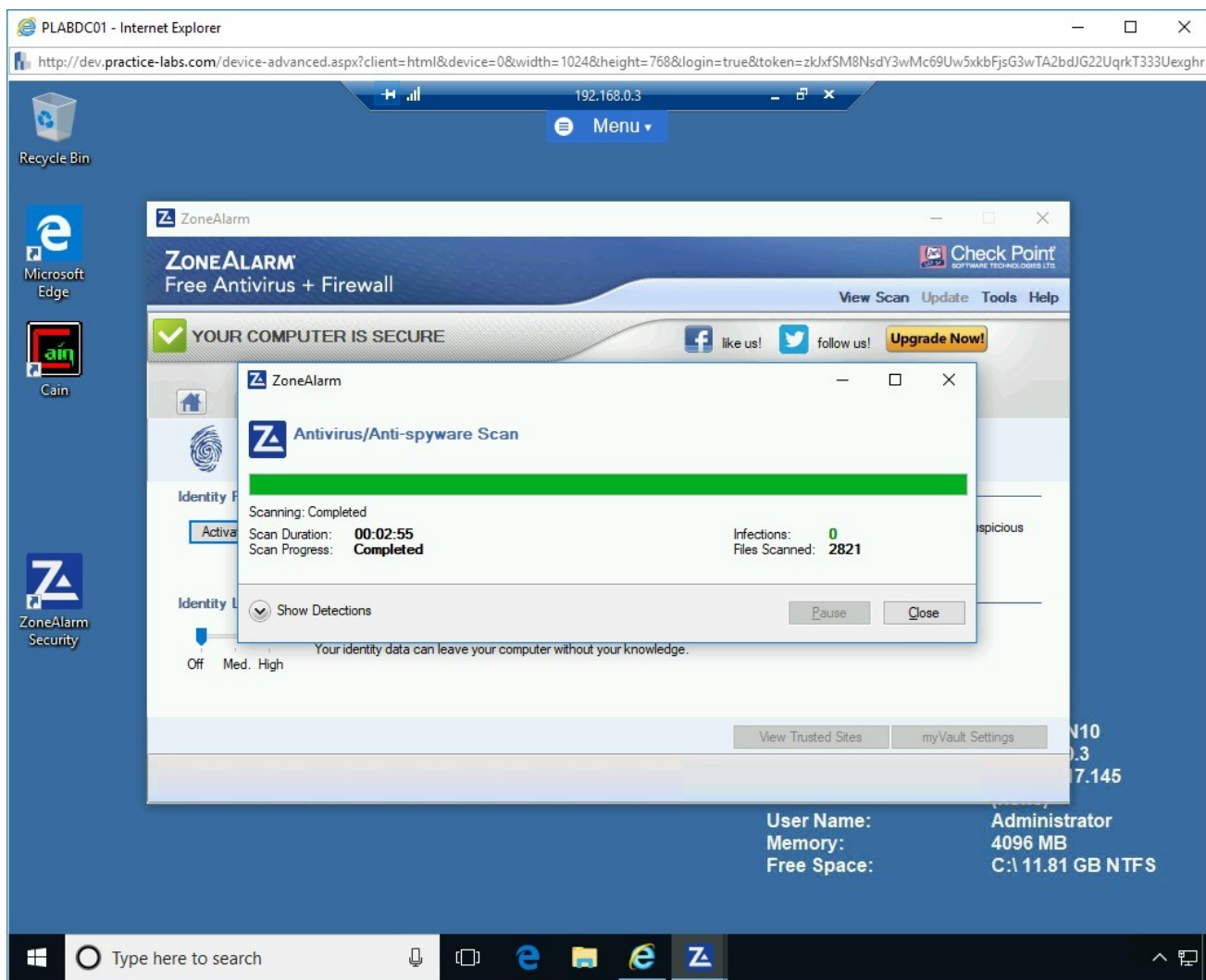


Figure 1.35 Screenshot of PLABWIN10: Clicking the Show Detections down arrow.

## Step 6

There are no viruses detected in this scan.

Click **Close**.

**Alert:** You may get an application termination error. Click **Close**. This error message may appear multiple times.

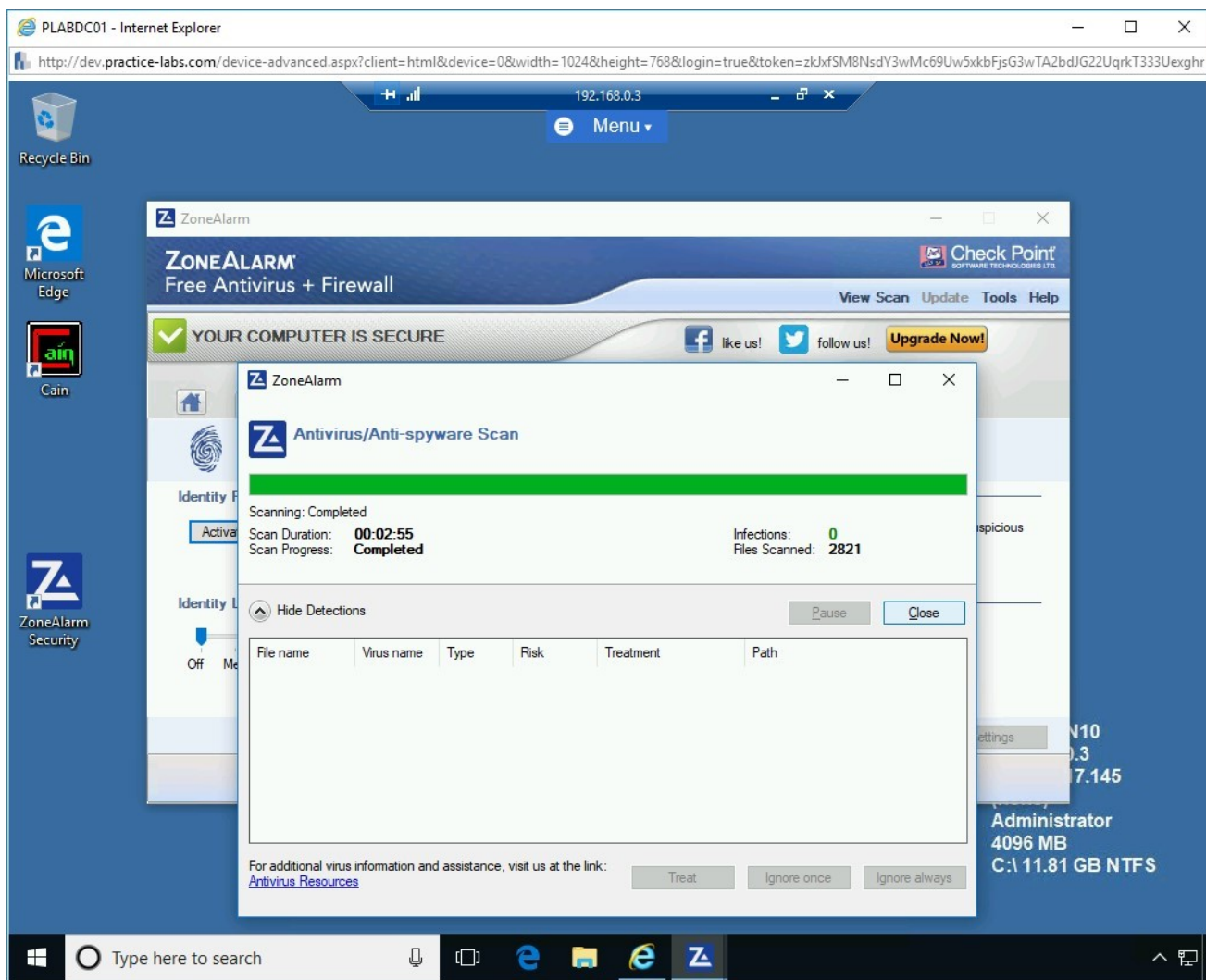


Figure 1.36 Screenshot of PLABWIN10: Clicking Close on the ZoneAlarm dialog box.

Keep all devices powered on in their current state and proceed to the next task.

## Task 6 - Work with ZoneAlarm Logs

ZoneAlarm also creates the logs and maintains them. You can view them using the Tools > Logs menu.

In this task, you will view the logs in ZoneAlarm.

### Step 1

Ensure you have powered on all the devices listed in the introduction and connect to PLABDC01.

Click **Tools** on the top-right menu and select **Logs**.

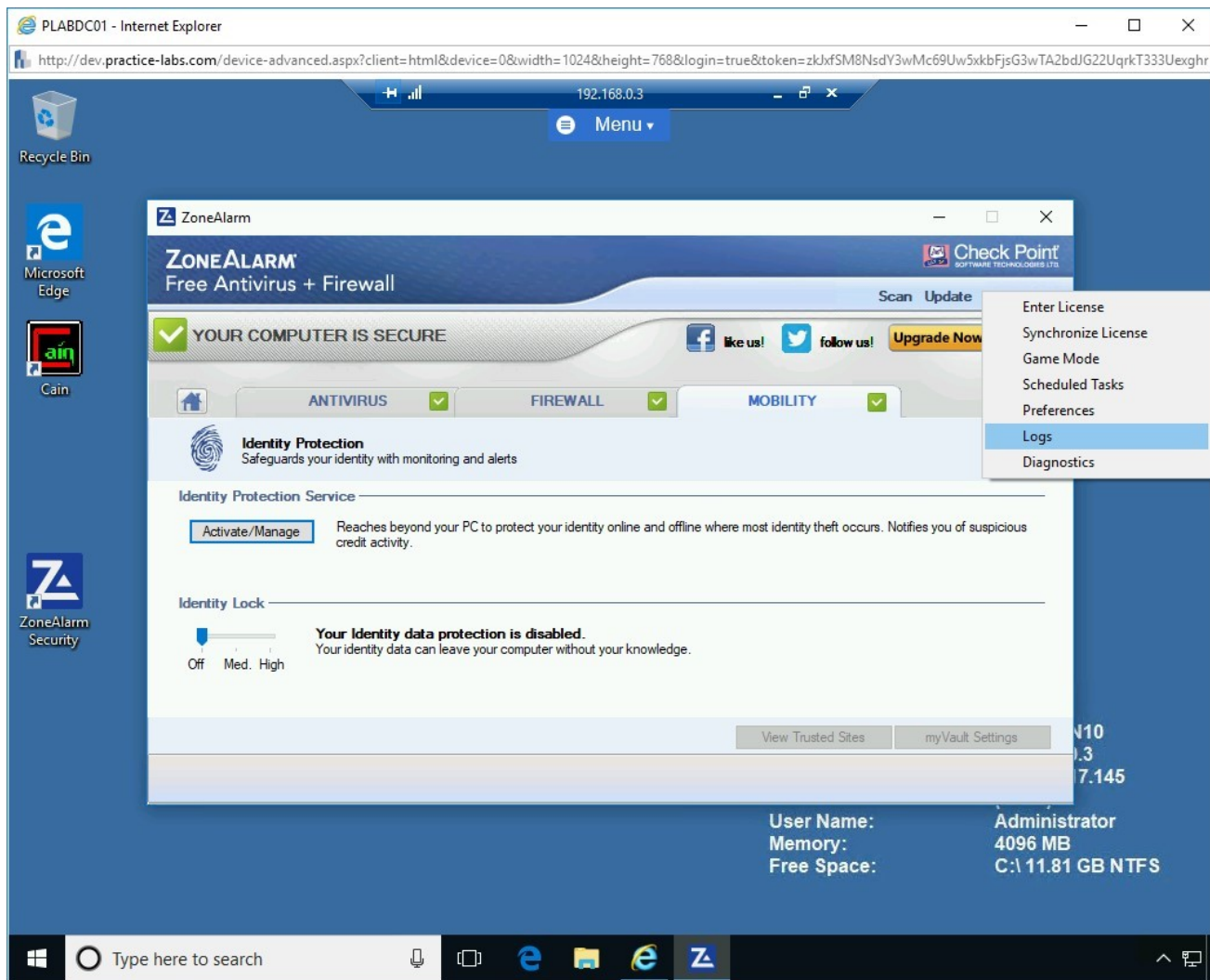


Figure 1.37 Screenshot of PLABDC01: Selecting Logs from the Tools menu.

## Step 2

The Alerts and Logs dialog box appears.

Ensure the **Log Viewer** tab is selected. This section shows the Firewall log and outgoing connections that were blocked along with other details.

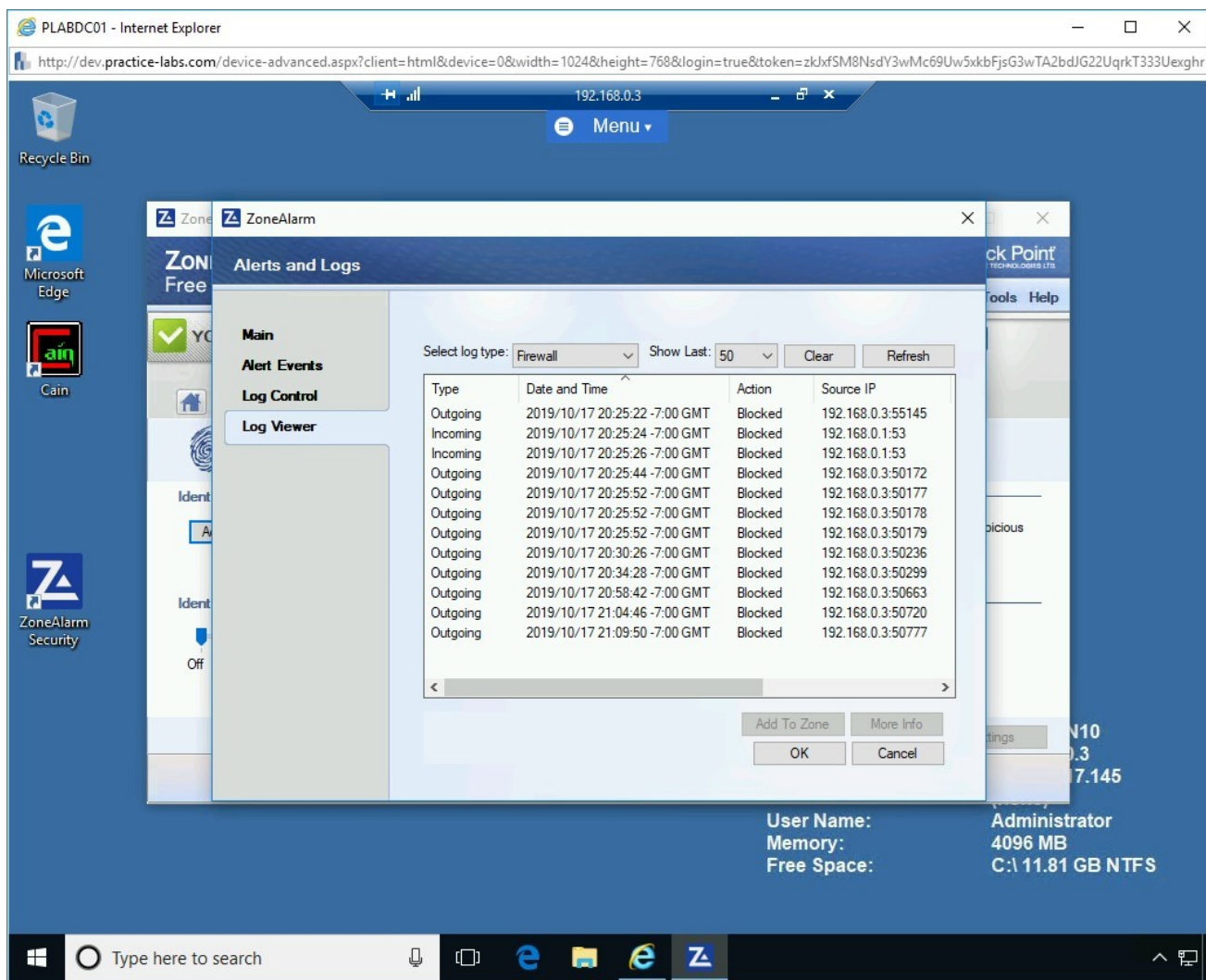


Figure 1.38 Screenshot of PLABDC01: Showing the logs on the Log Viewer tab.

## Step 3

Click the **Log Control** tab.

In the Log Control section, the log archive frequency and log archive locations have been automatically set.

Keep the default selections.

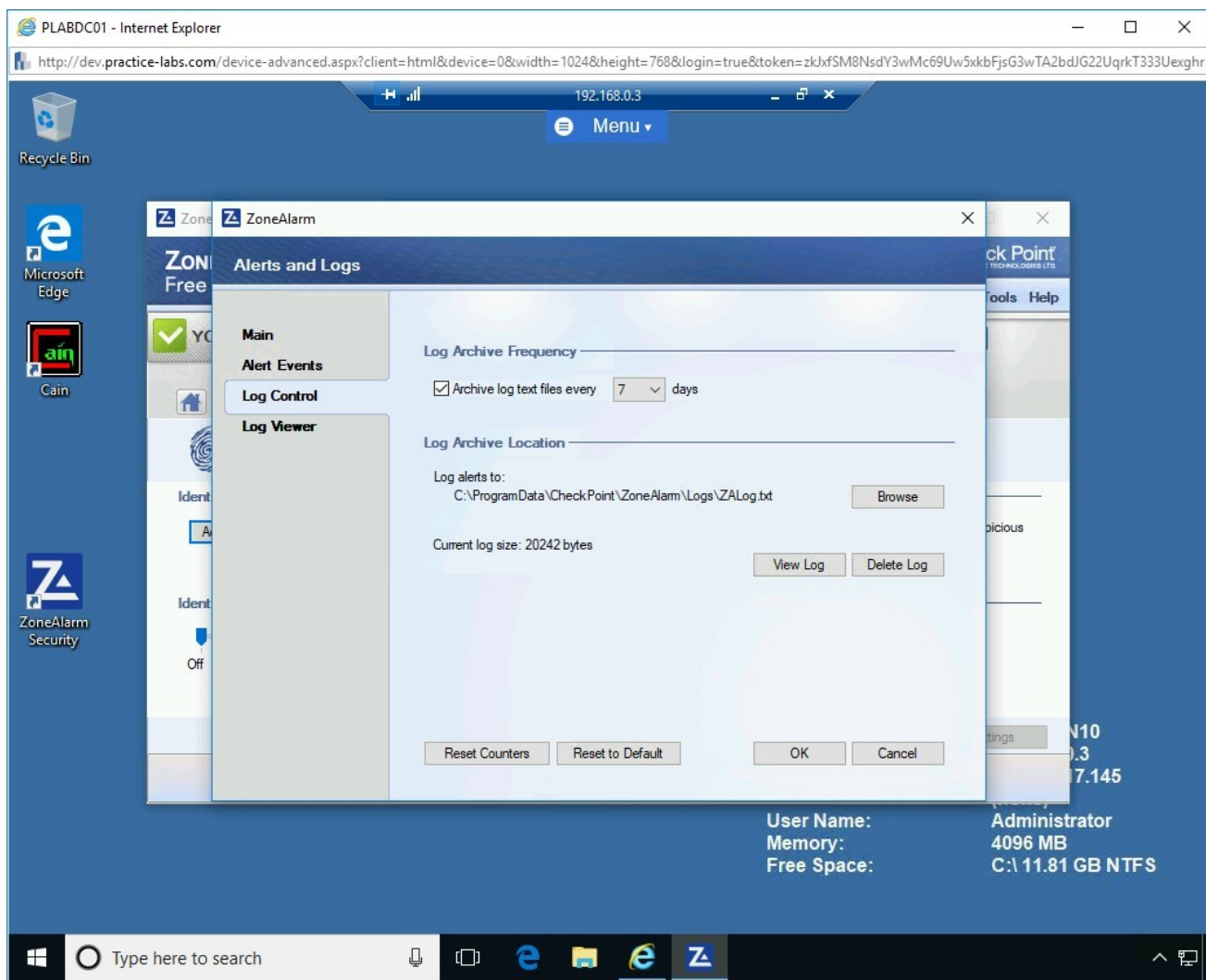


Figure 1.39 Screenshot of PLABDC01: Showing the settings under Log Control on the Log Control tab.

## Step 4

Click the **Alert Events** tab.

On the Alert Events section, you have the settings for different system events.

Keep the default selections.





Non-work-related Websites, such as Facebook, are generally blocked. However, you can use anonymous proxies or Websites to bypass the firewall. Anonymous proxies are just simple Websites that allow you to feed in the URL that you intend to visit.

These Websites also keep your information anonymous when you visit other Websites. This means that your computer information, such as IP address, etc. is not revealed.

You can obtain a large list of anonymous Websites:

```
http://www.hongkiat.com/blog/how-to-access-blocked-web-sites/
```

**Important:** The above URL may not display the complete web page. You will need to use your computer to see the list of proxy sites. Most of the websites listed on the above-mentioned URL are blocked in the Practice Labs environment due to firewall restrictions.

In this exercise, you will bypass blocked sites using an anonymous Website surfing site.

## Learning Outcomes

After completing this exercise, you will be able to:

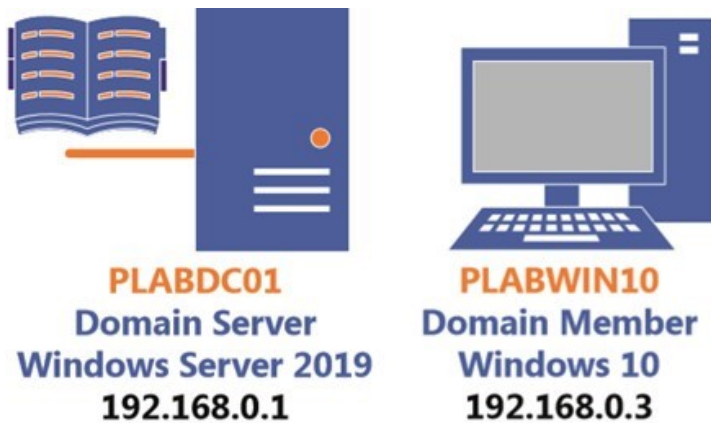
- Bypass Blocked Sites Using Anonymous Website Surfing Sites

## Your Devices

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

- **PLABDC01** - (Windows Server 2019 - Domain Server)
- **PLABWIN10** - (Windows 10 - Workstation)





## Task 1 - Bypass Blocked Sites Using Anonymous Website Surfing Sites

There is one proxy site that has been specifically allowed on the Practice Labs devices for the purpose of carrying out this task. The website is as follows:

<https://www.proxfree.com>

In this task, you will find out what anonymous Website resources are available and access a Website anonymously using ProxFree.

### *Step 1*

Ensure you have powered on all the devices listed in the introduction and connect to **PLABWIN10**.

Launch **Internet Explorer**. In the address bar, type the following URL:

<http://www.hongkiat.com/blog/how-to-access-blocked-web-sites/>

Press **Enter**.

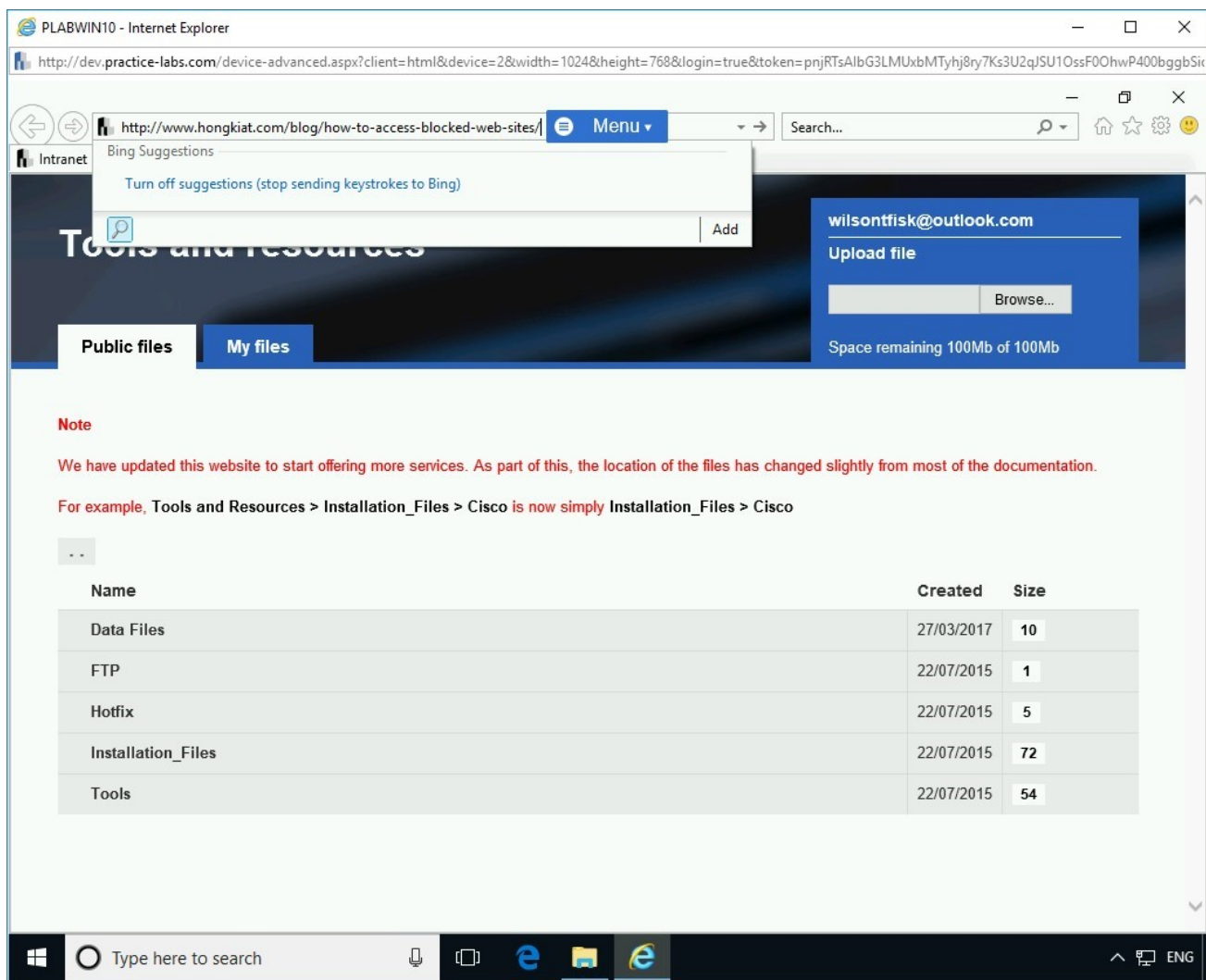


Figure 2.1 Screenshot of PLABWIN10: Entering the URL in the address bar of Internet Explorer.

The Website launches.

**Note:** The Website may not be displayed in the proper format.

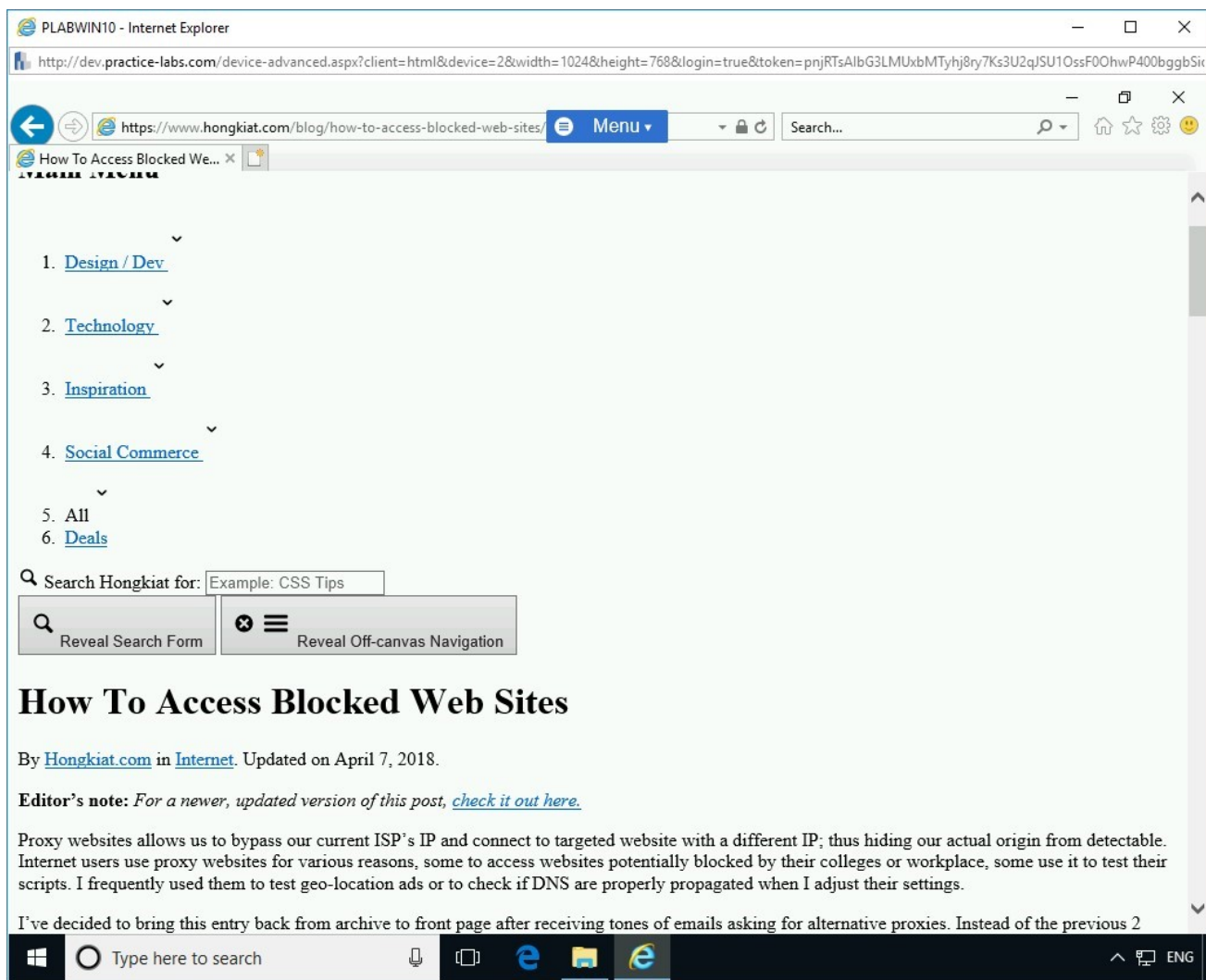


Figure 2.2 Screenshot of PLABWIN10: Showing the loaded Website in Internet Explorer.

## Step 2

Scroll down the list to find an extensive list of proxy websites that you can access.

Please note that most of these will **NOT** work in the Practice Labs devices because of firewall policies that are currently enforced in the lab network.

The next step will illustrate a proxy site allowed in this lab.

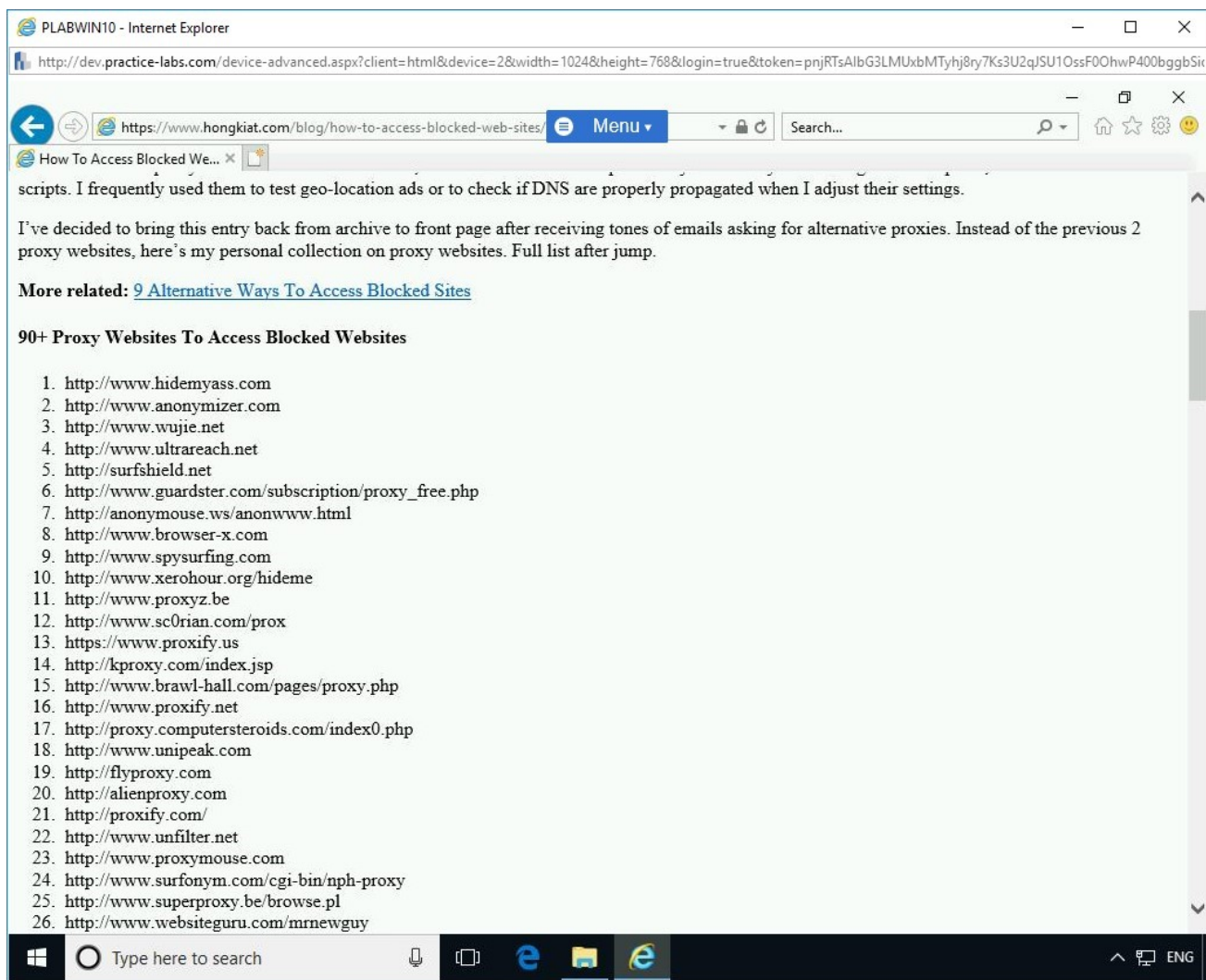


Figure 2.3 Screenshot of PLABWIN10: Showing a list of anonymous proxies.

## Step 3

On **Internet Explorer**'s address bar, enter the following URL:

`https://www.proxfree.com`

Press **Enter**.

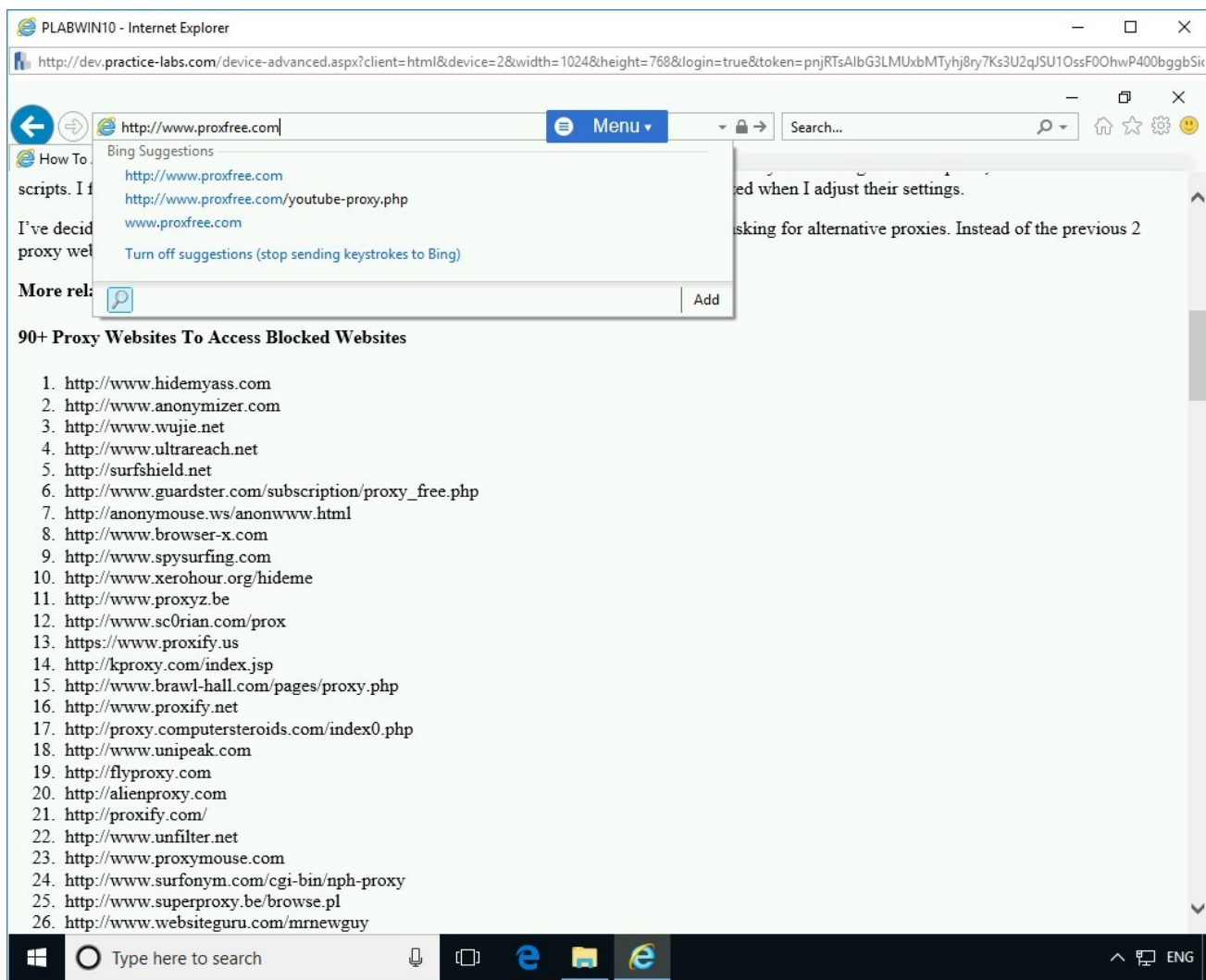


Figure 2.4 Screenshot of PLABWIN10: Entering the URL in the address bar of Internet Explorer.

## Step 4

The proxfree.com Website is now displayed.



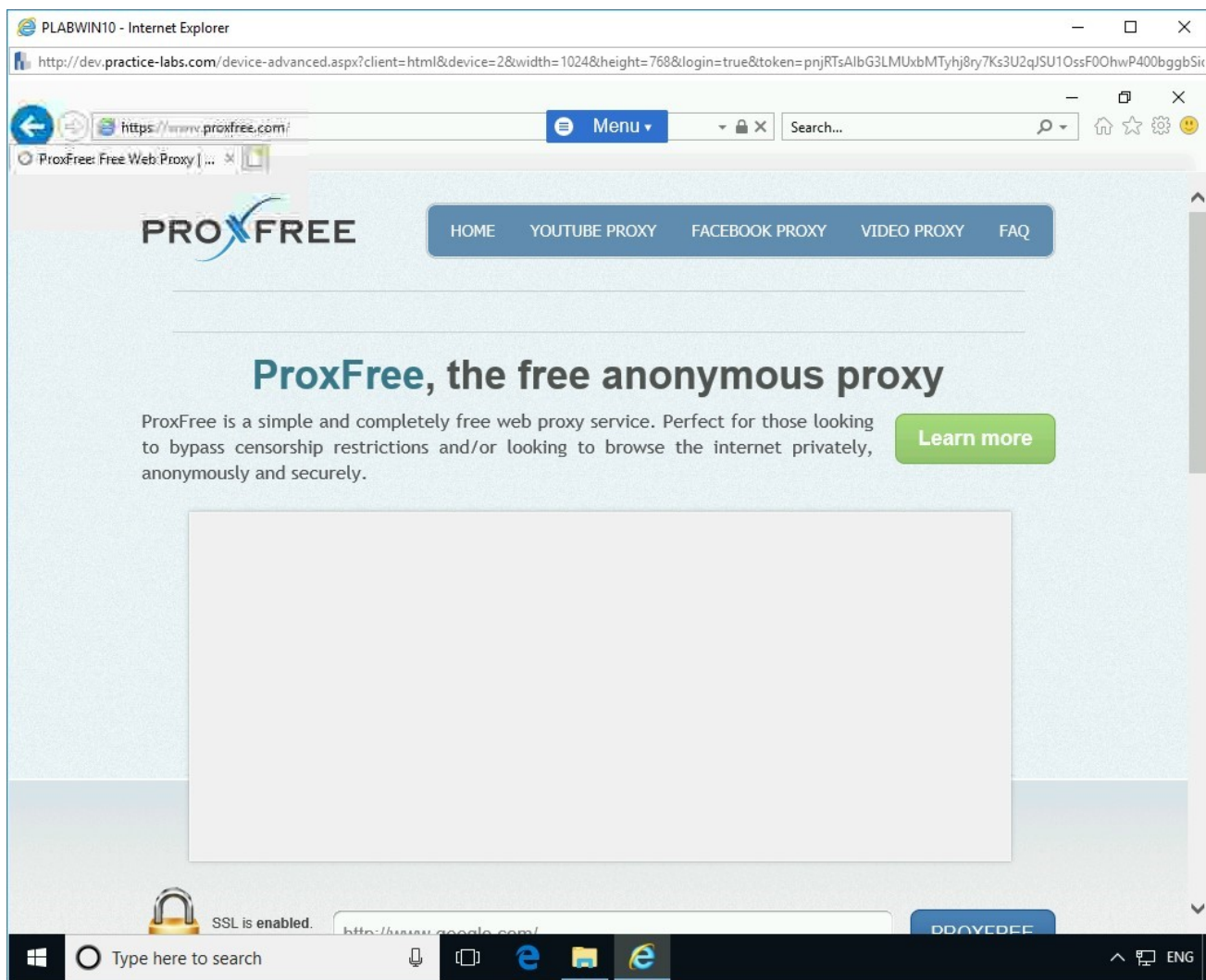


Figure 2.5 Screenshot of PLABWIN10: Showing the ProxFree Website.

## Step 5

Scroll down the web page and locate a text box where you can enter the **URL** that you want to visit.

In the URL textbox, enter:

`www.google.co.uk`

Click **PROXFREE**.

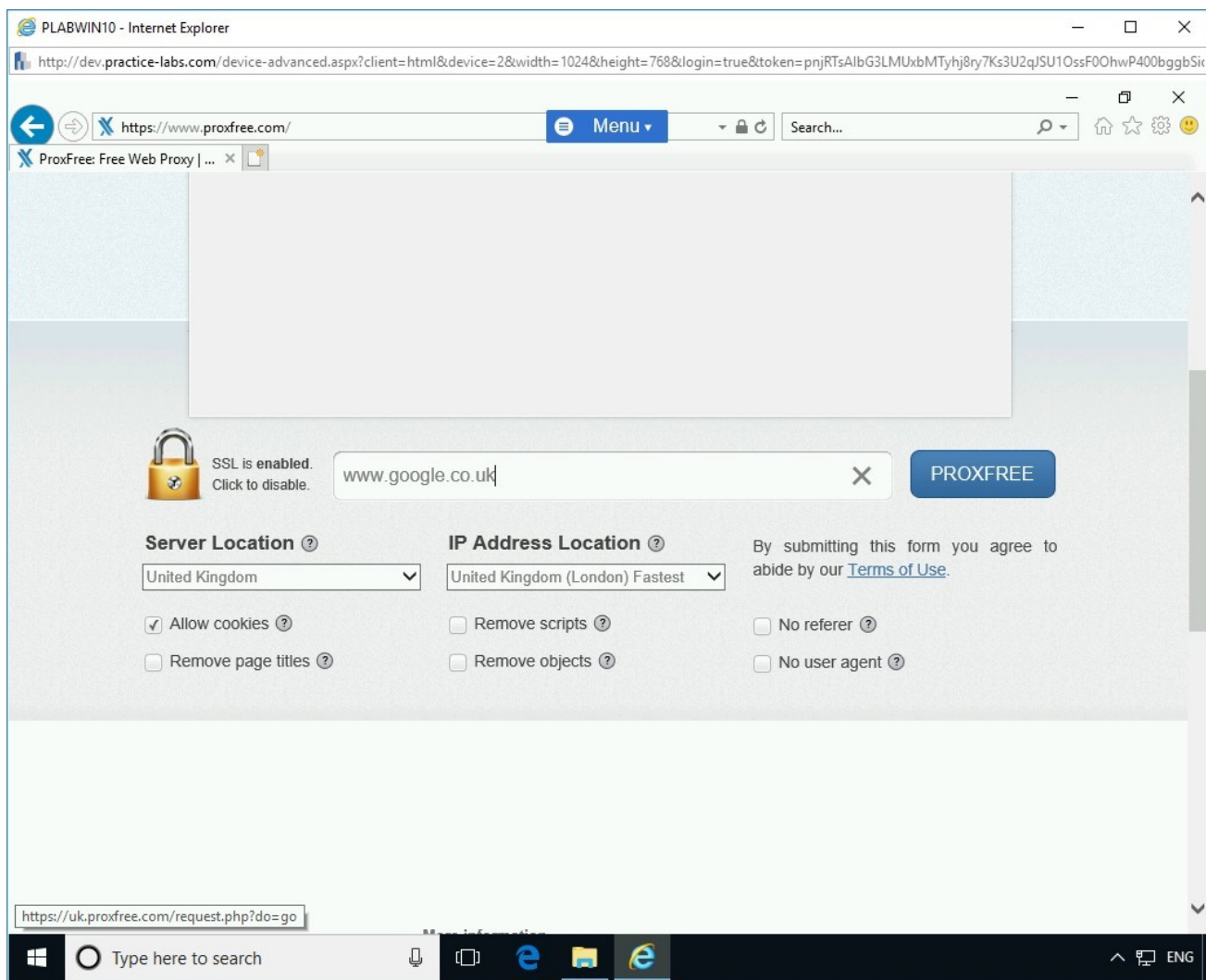


Figure 2.6 Screenshot of PLABWIN10: Entering the URL in the textbox and clicking PROXFREE.

## Step 6

The **google.co.uk** Webpage is displayed.

Notice the address bar of Internet Explorer indicates that you are using **proxfree** to visit this search engine website.

Note that address in the Internet Explorer address bar.

The **proxfree** Website has converted the real URL of **www.google.co.uk**.



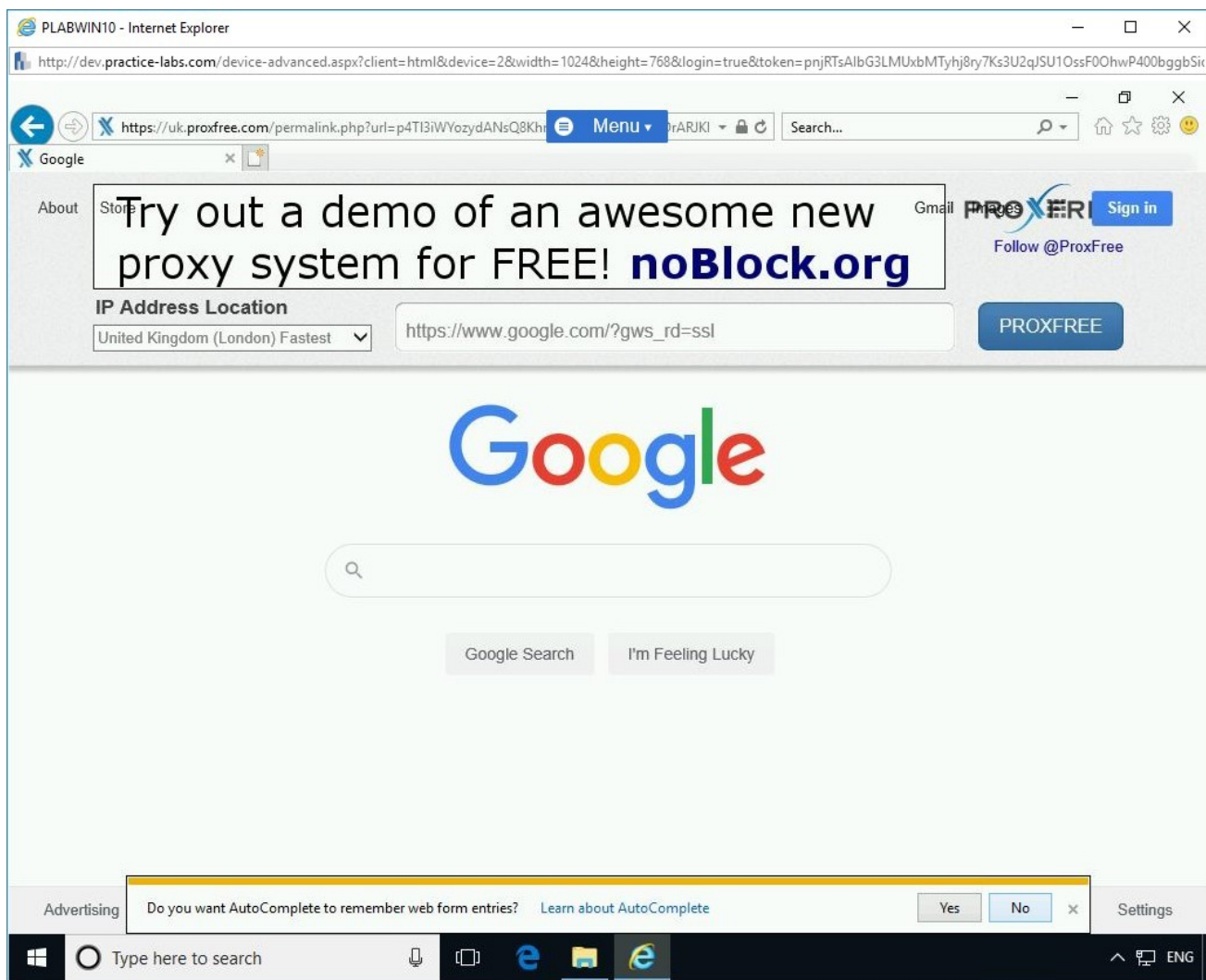


Figure 2.7 Screenshot of PLABWIN10: Showing the loaded Website within the Proxfree Website and clicking No on the notification bar.

Click **No** on the notification bar.

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## Review

Well done, you have completed the **Evading Firewalls** Practice Lab.

## Summary

You completed the following exercises:

- Exercise 1 - Install and Configure ZoneAlarm Firewall

- Exercise 2 - Using Anonymous Proxy Sites

You should now be able to:

- Download and install ZoneAlarm Free Firewall
- Verify ZoneAlarm Installation
- Manage ZoneAlarm Settings
- Configure ZoneAlarm to use a Proxy Server
- Update the ZoneAlarm Definitions and Perform a Quick Scan
- Work with ZoneAlarm Logs
- Bypass Blocked Sites Using Anonymous Website Surfing Sites

## Feedback

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