Introduction

The **Implement an Advanced DHCP Solution** module provides you with the instruction and server hardware to develop your hands on skills in the defined topics. This module includes the following exercises:

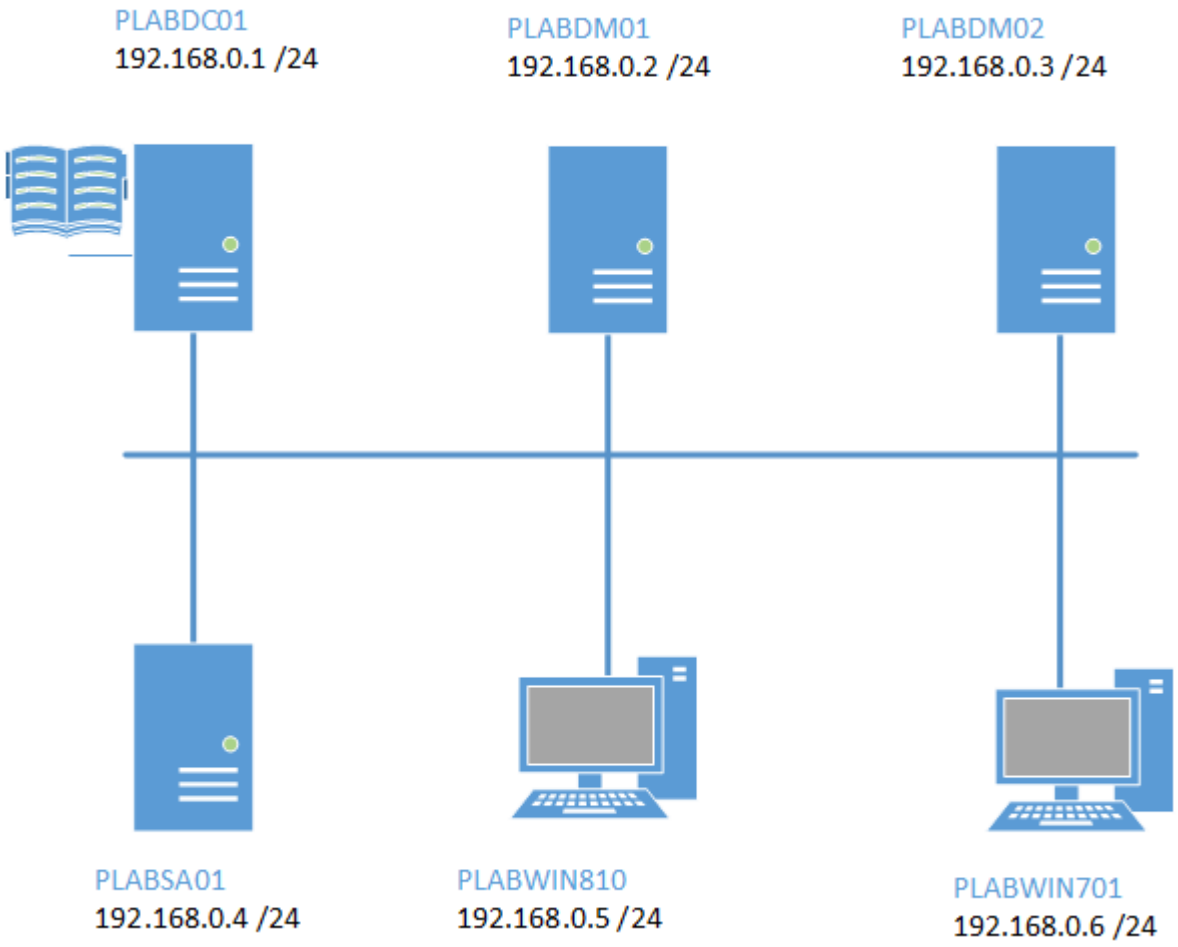
1) Create and Configure Superscopes and Multicast Scopes

2) Configure DHCP Name Protection

3) Verify DHCP Client Functionality

Lab Diagram

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



Connecting to your lab

In this module you will be working on the following equipment to carry out the steps defined in each exercise.

- **PLABDC01** (Domain Controller)
- **PLABDM01** (Domain Member Server)
- **PLABDM02** (Standalone Server)
- **PLABSA01** (Standalone Server)
- **PLABWIN810** (Windows 8.1 Workstation)
- **PLABWIN701** (Windows 7 Workstation)

Each exercise will detail which console you are required to work on to carry out the steps.

To start simply click on the named Server from the device list (located on the left hand side of the screen) and click the **Power on** from the in tools bar. In some cases the devices may power on automatically.

During the boot up process an activity indicator will be displayed in the name tab:

- Black - Powered Off
- Orange - Working on your request
- Green - Ready to access

If the remote console is not displayed automatically in the main window (or popup) click the **Connect** icon located in the tools bar to start your session.

If the remote console does not appear please try the following option:

- Switch between the HTML 5 and Java client versions in the tools bar.

In the event this does not resolve your connectivity problems please visit our Help / Support pages for additional resolution options.

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Exercise 1 - Create and Configure Superscopes and Multicast Scopes

A large computing environment normally spans more than one network subnet and located in different locations. A superscope in DHCP is an administrative tool that allows an administrator to manage multiple IP address pool and group them into a single entity.

Please refer to your course material or use your preferred search engine to research this topic in more detail.

Task 1: Configure Ethernet 2 with Static IP Address

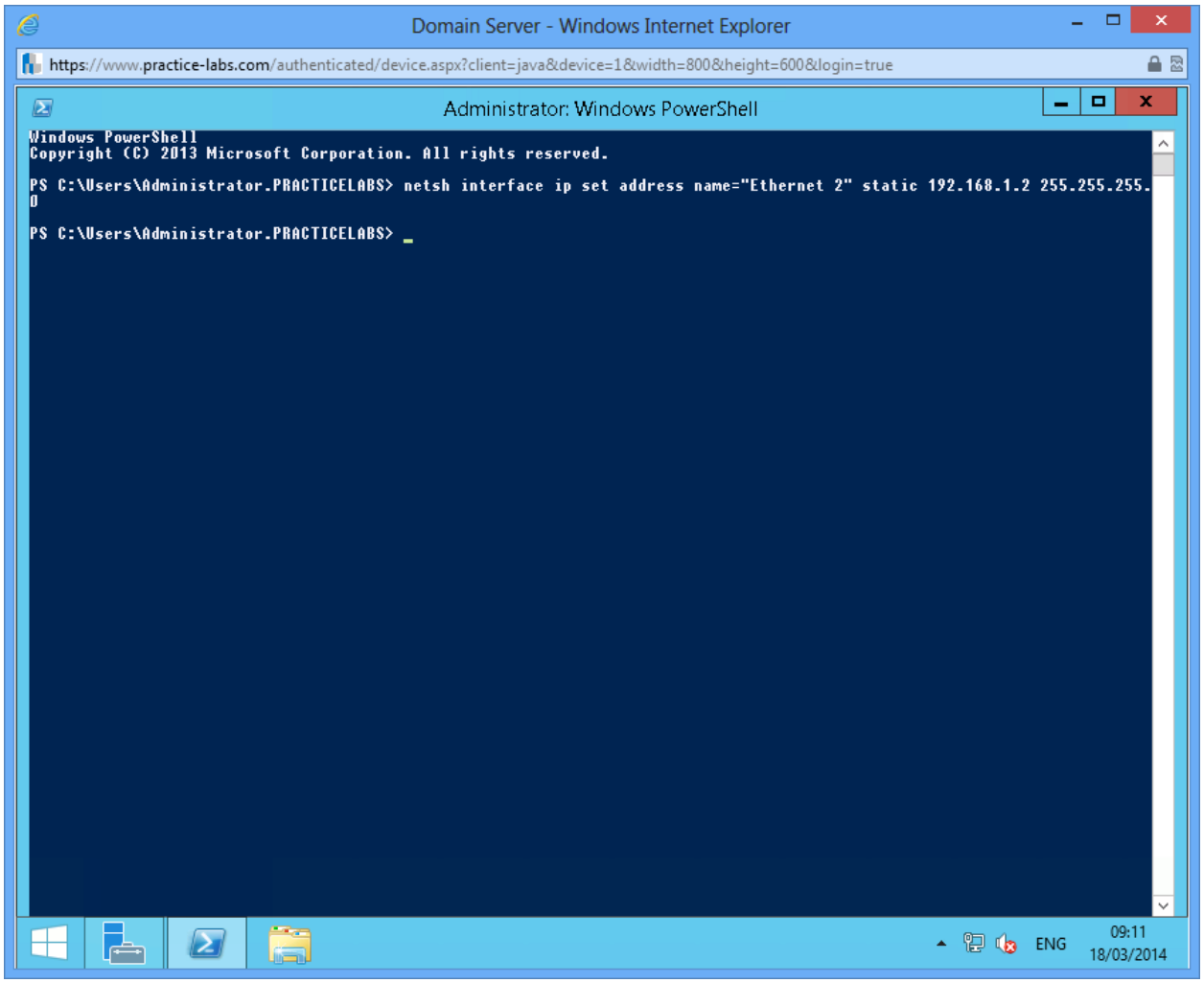
In this step, you will configure **PLABDM01** with a fixed IP address.

Step 1

Ensure you have powered on the required devices and connect to **PLABDM01**.

Click PowerShell on task bar and type the following and press **Enter**.

```
netsh interface ip set address name="Ethernet 2" static 192.168.1.2 255.255.255.0
```

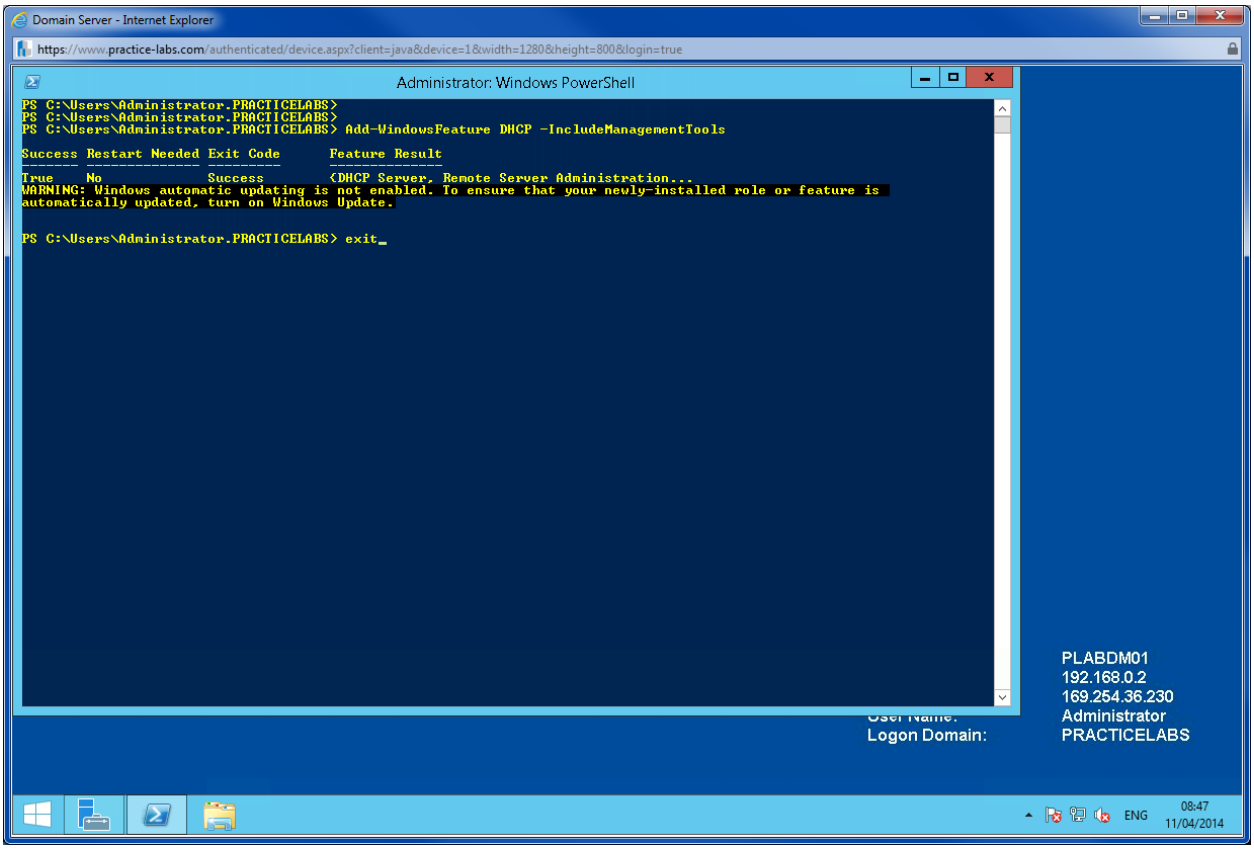


Task 2: Install and Configure DHCP Server Role

Step 1

Type the following:

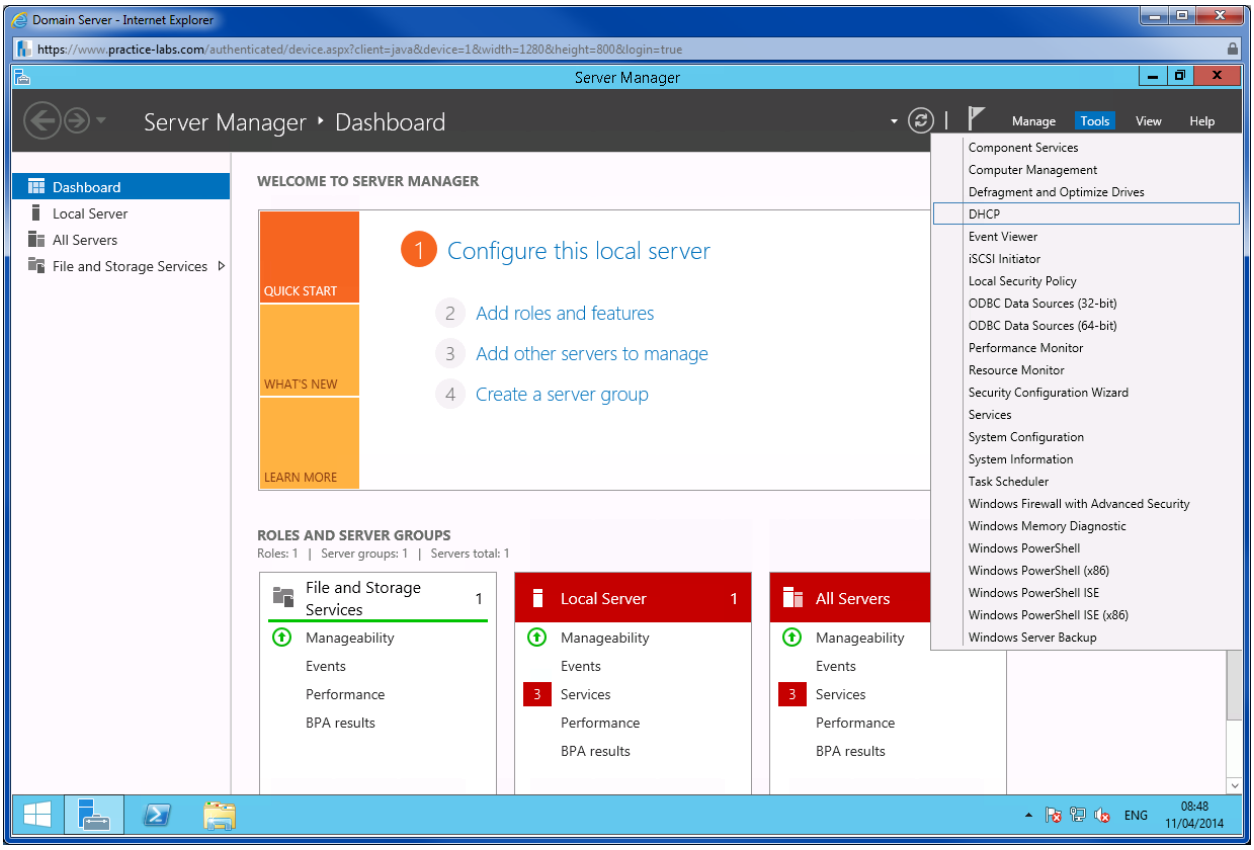
```
Add-WindowsFeature dhcp -IncludeManagementTools

exit
```



Task 3: Authorise DHCP Server

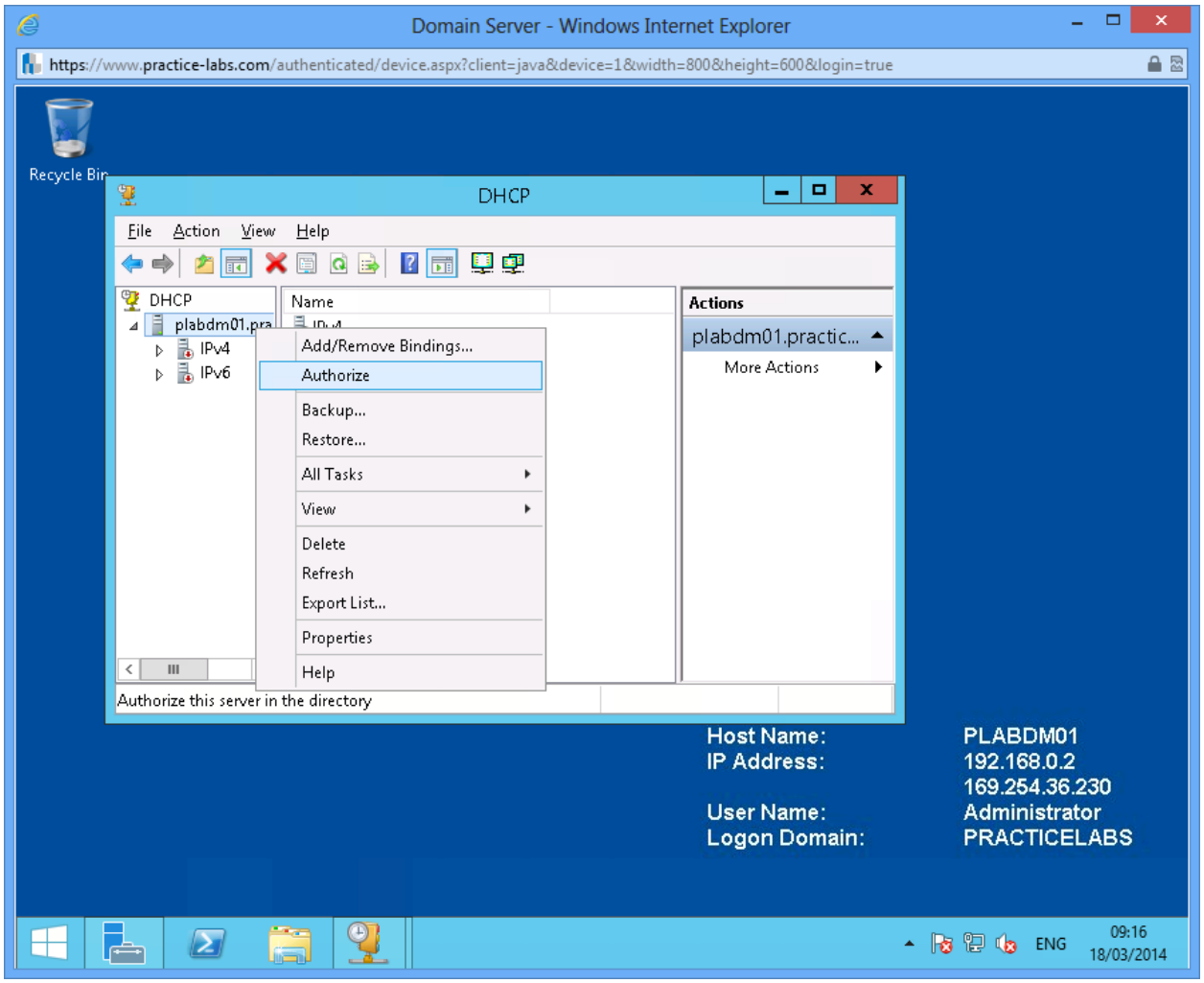
Step 1

Launch Server Manager and go to **Tools**, then select **DHCP**.



Step 2

Right-click on **PLABDM01** and choose **Authorize.**

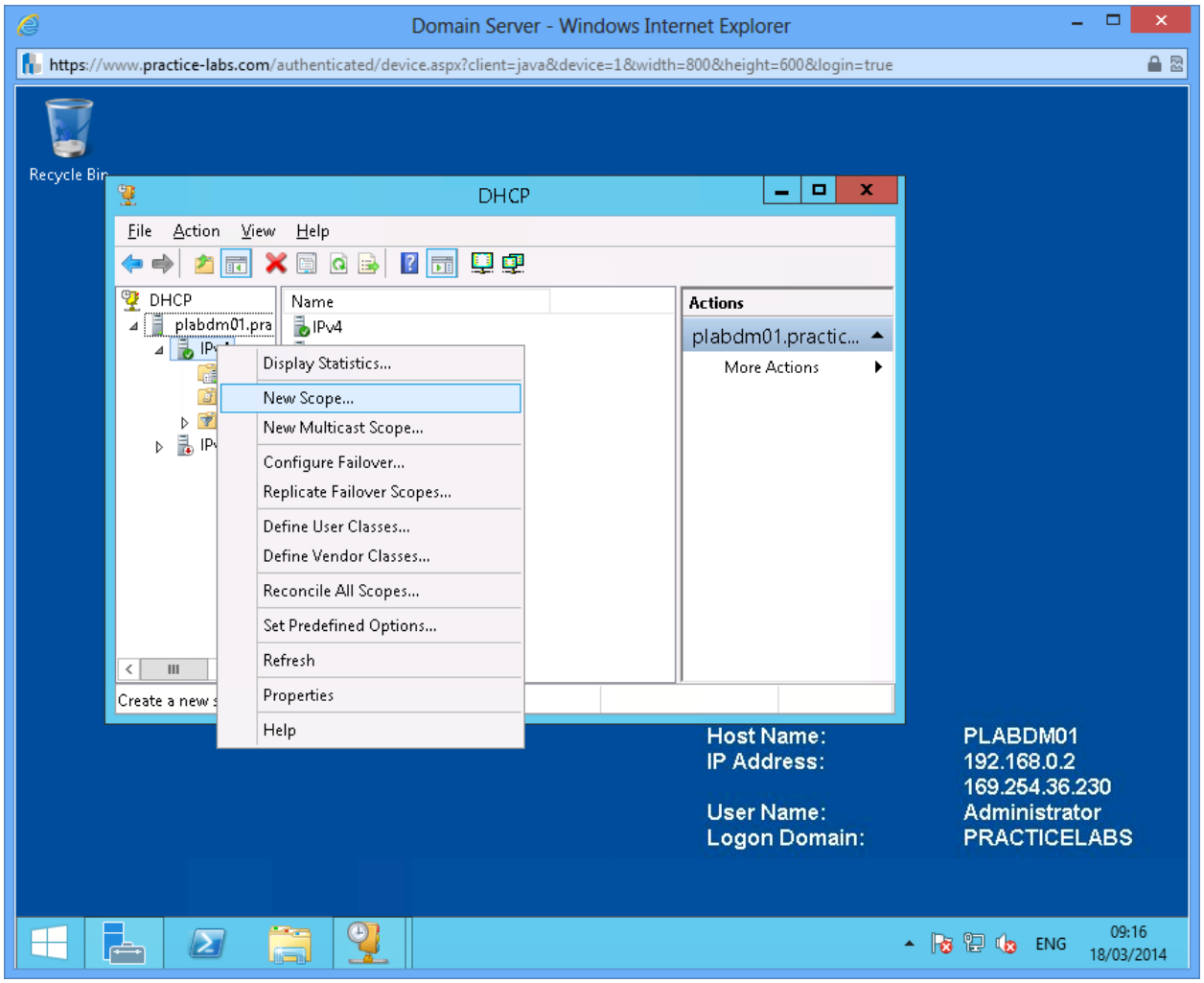


Task 4: Configure DHCP Scopes

Since there are two network ID's in **PLABDM01** you will create two scopes: Scope1 covering 192.168.0.0 network and Scope2 covering 192.168.1.0 network.

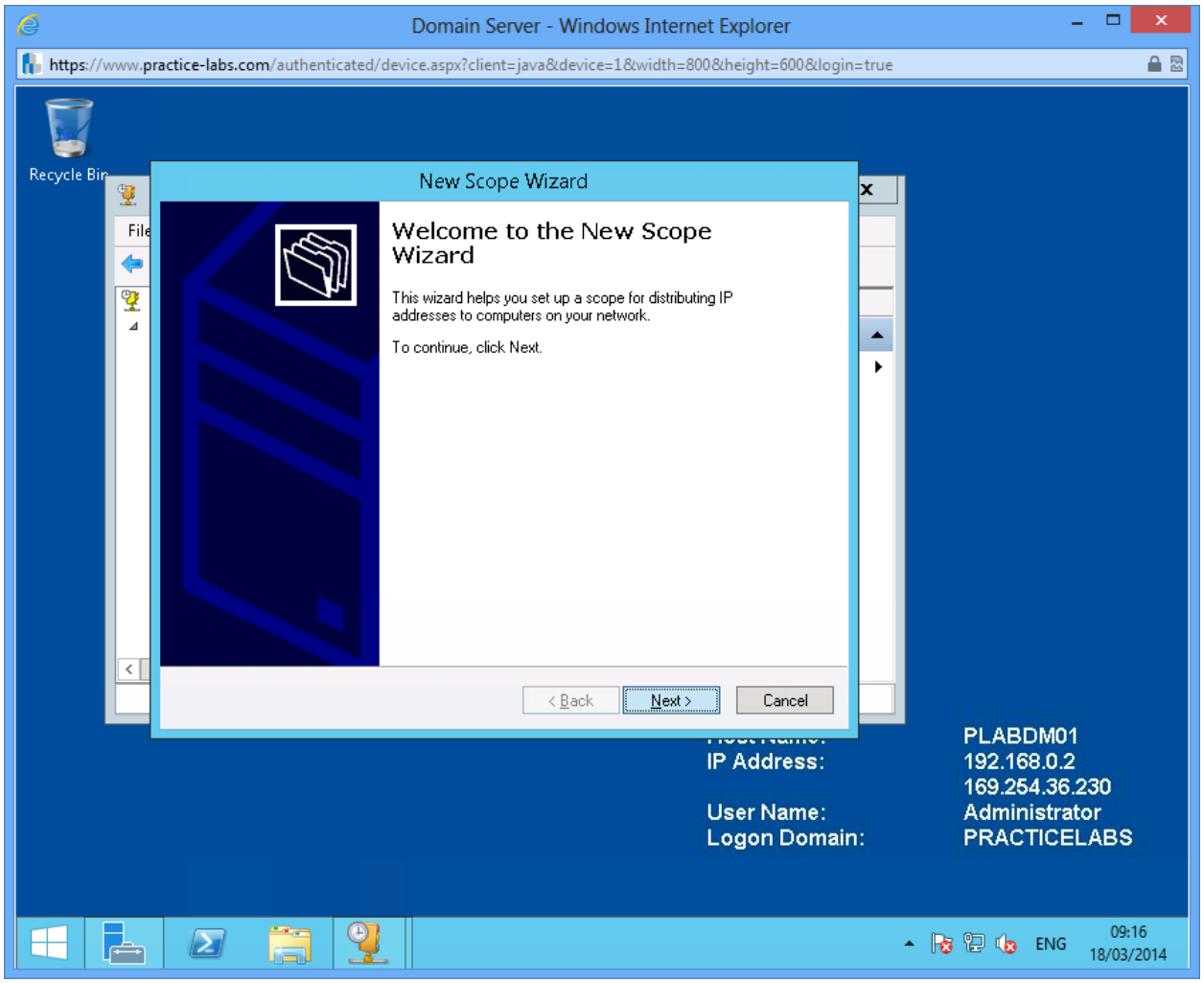
Step 1

On DHCP snap-in, right-click on **IPv4** and choose **New Scope**...



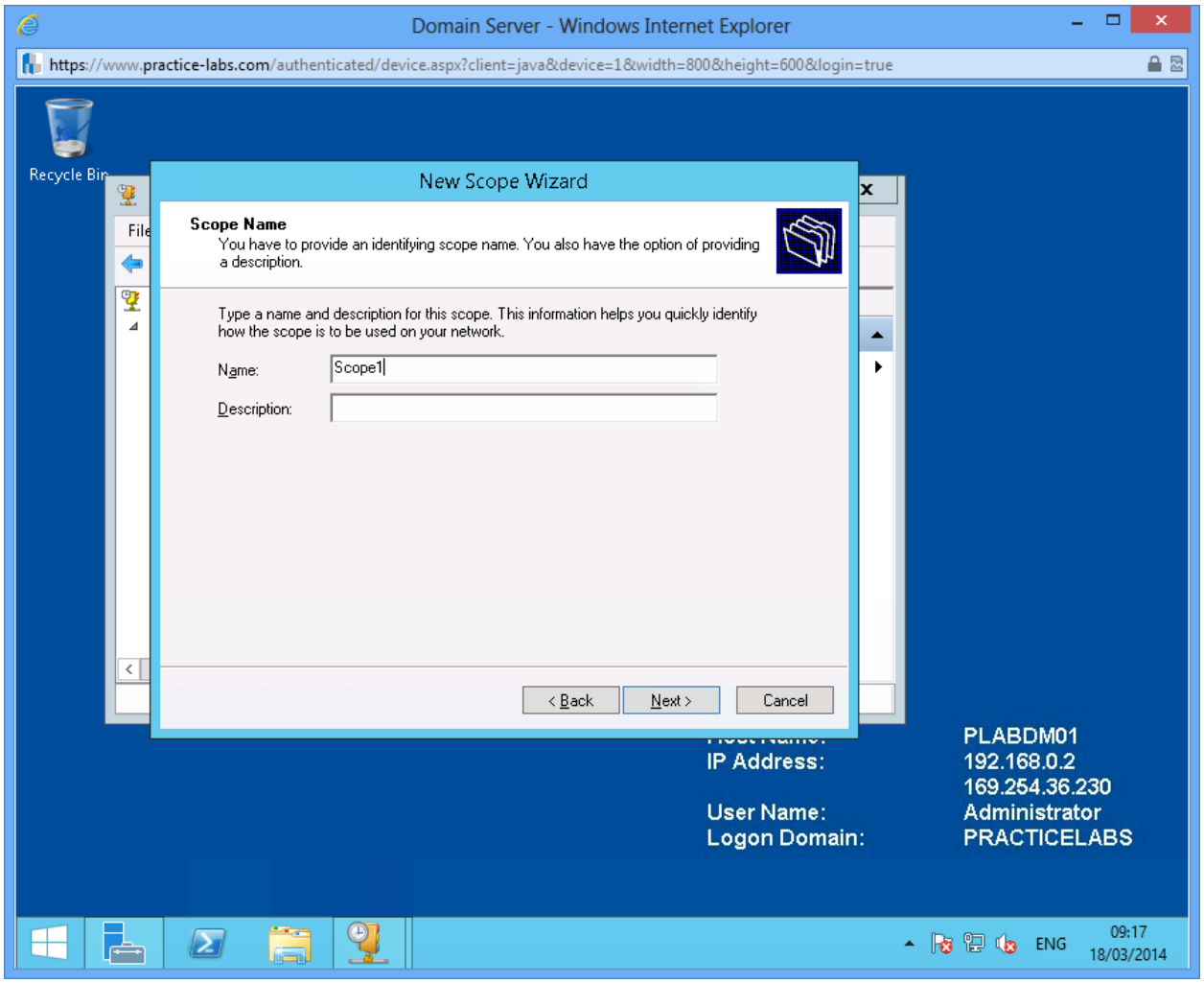
Step 2

On **Welcome to the New Scope Wizard**, click **Next**.



Step 3

On Scope Name, type **Scope1** and choose **Next**.

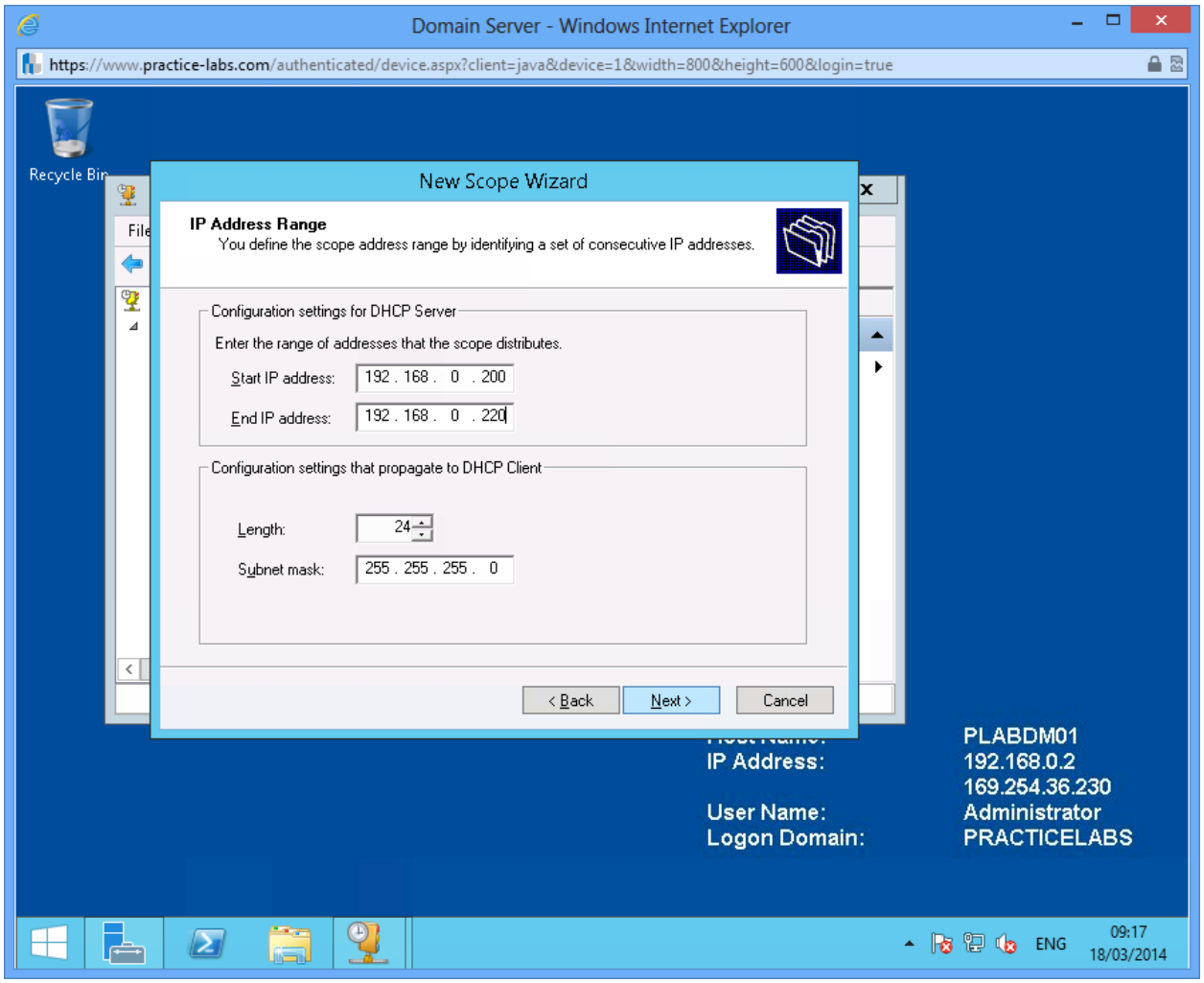


Step 4

On IP Address Range, use the following information:

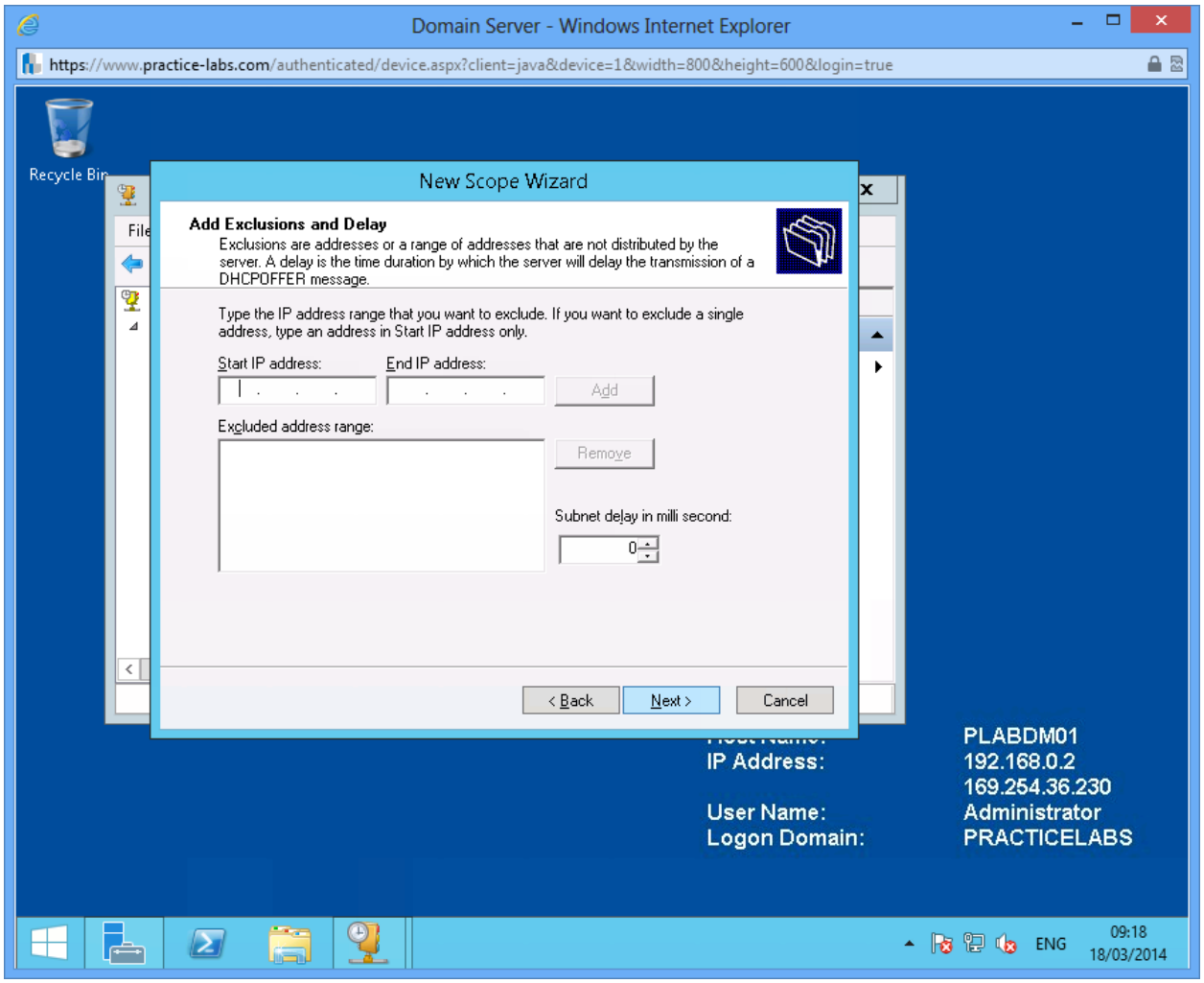
```
Start IP address: 192.168.0.200

End IP address: 192.168.0.220
```

Click **Next**.



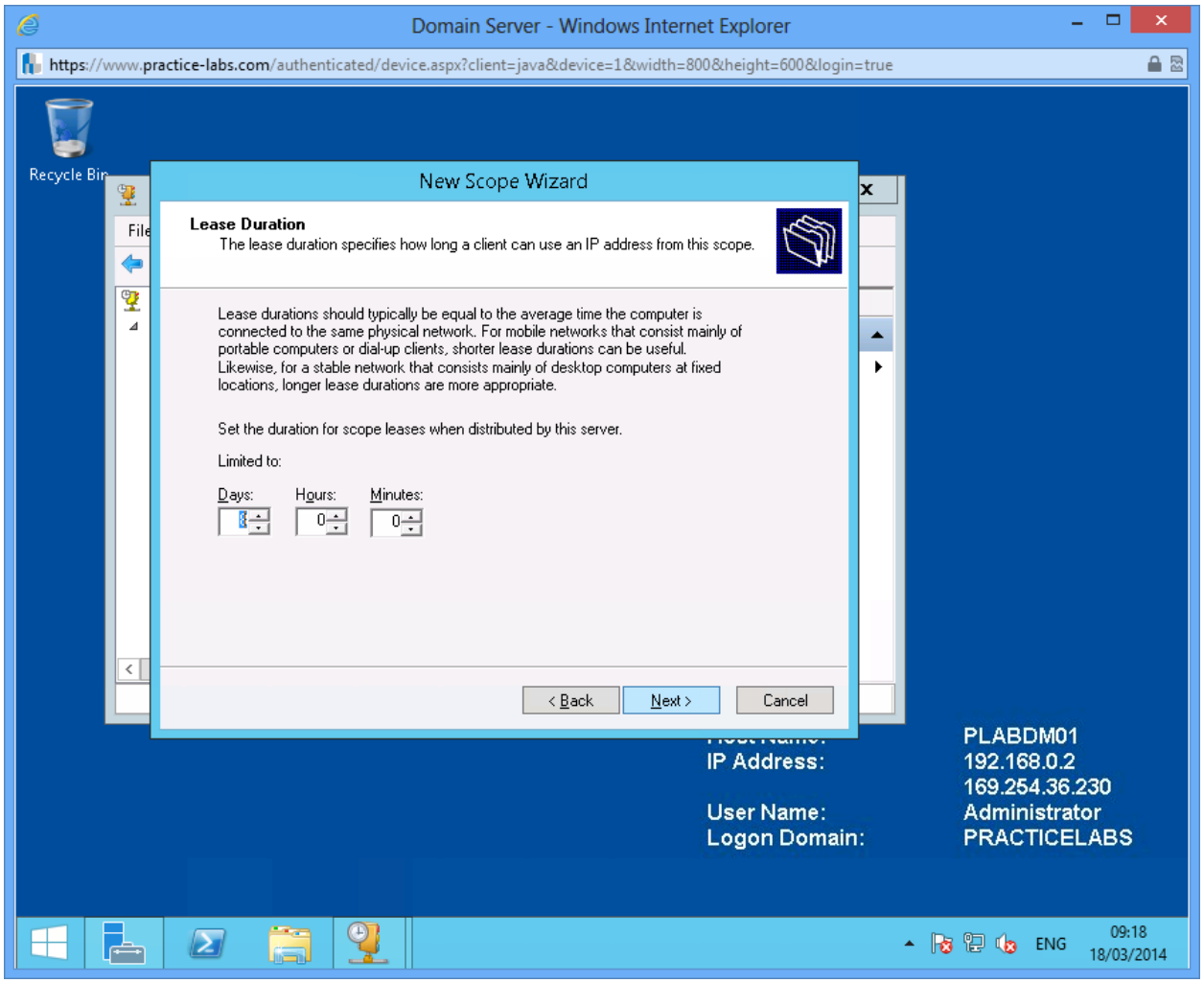
Step 5

On Add Exclusions and Delay, choose **Next**.



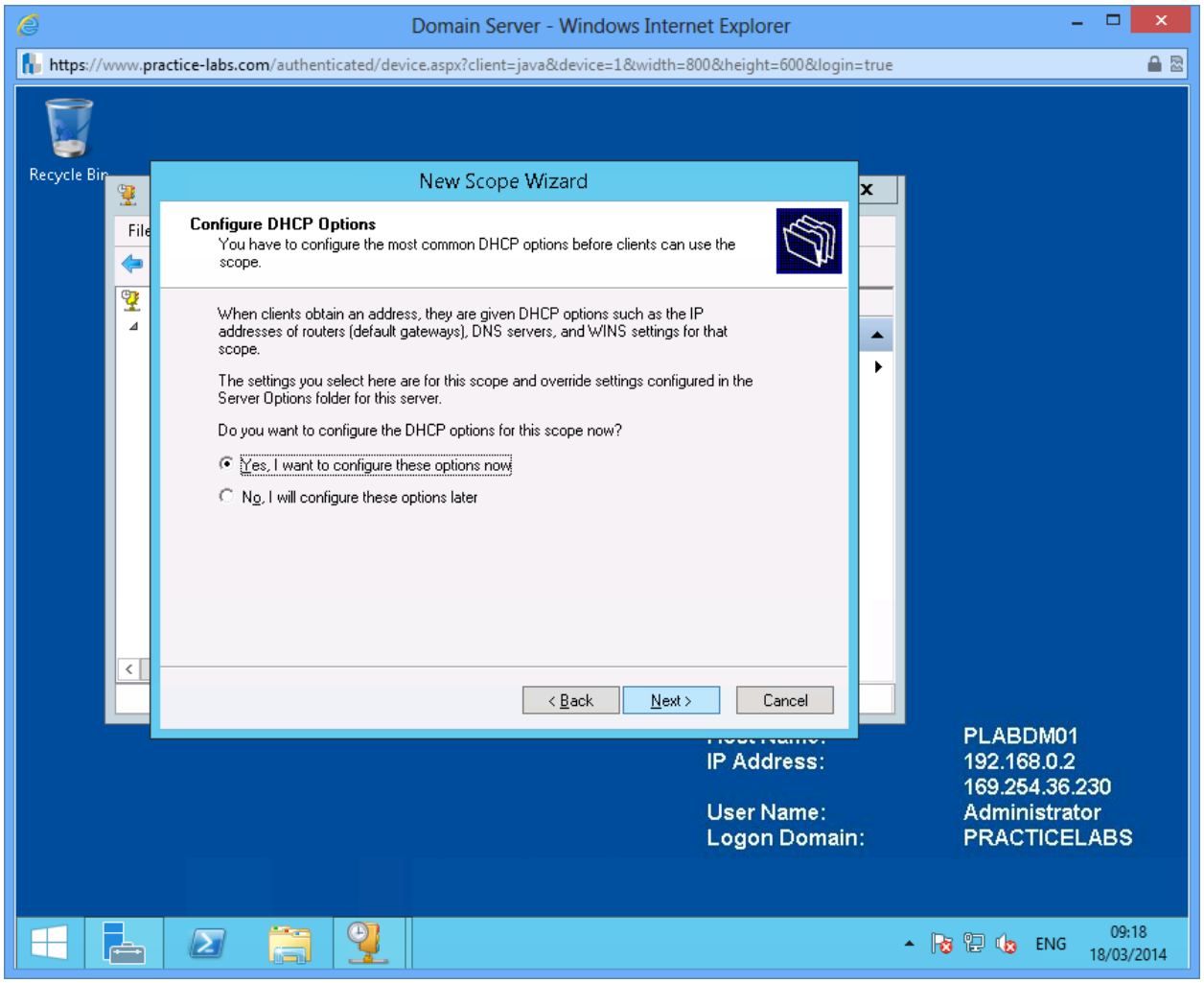
Step 6

On Lease Duration, choose **Next**.



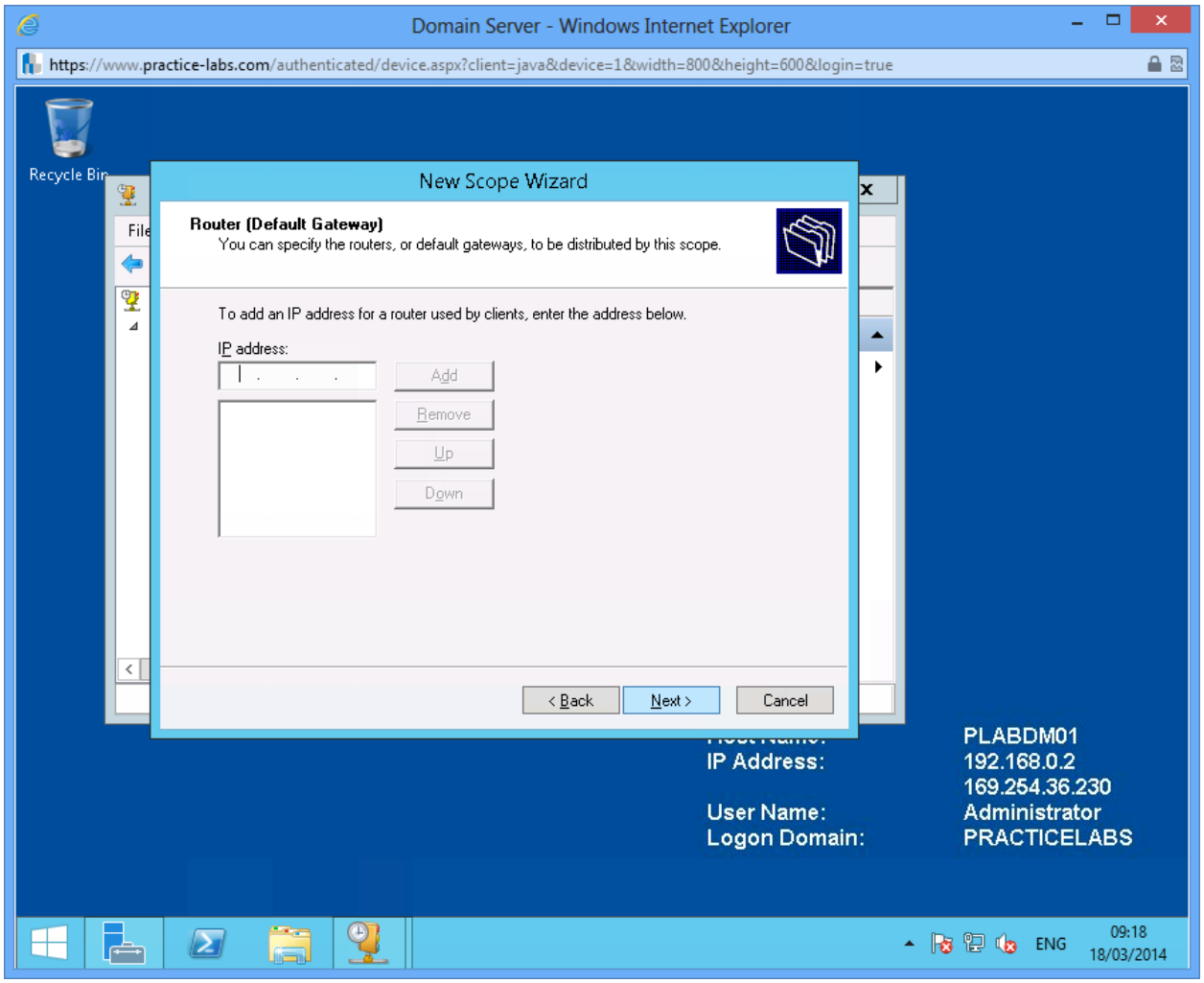
Step 7

On Configure DHCP Options, verify that **Yes, I want to configure these options now** is selected and click **Next**.



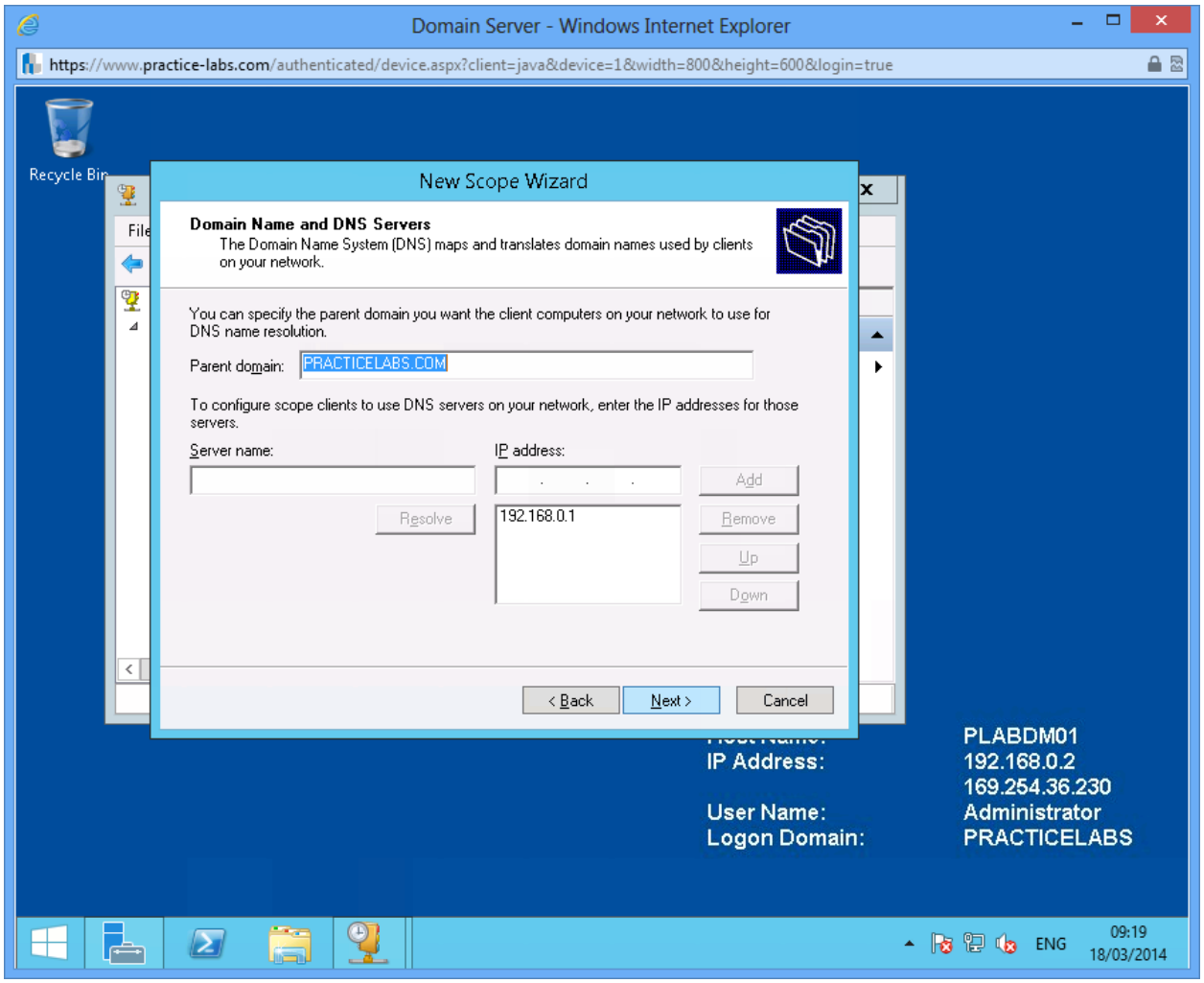
Step 8

Do not add anything on Router (Default Gateway) choose **Next**.



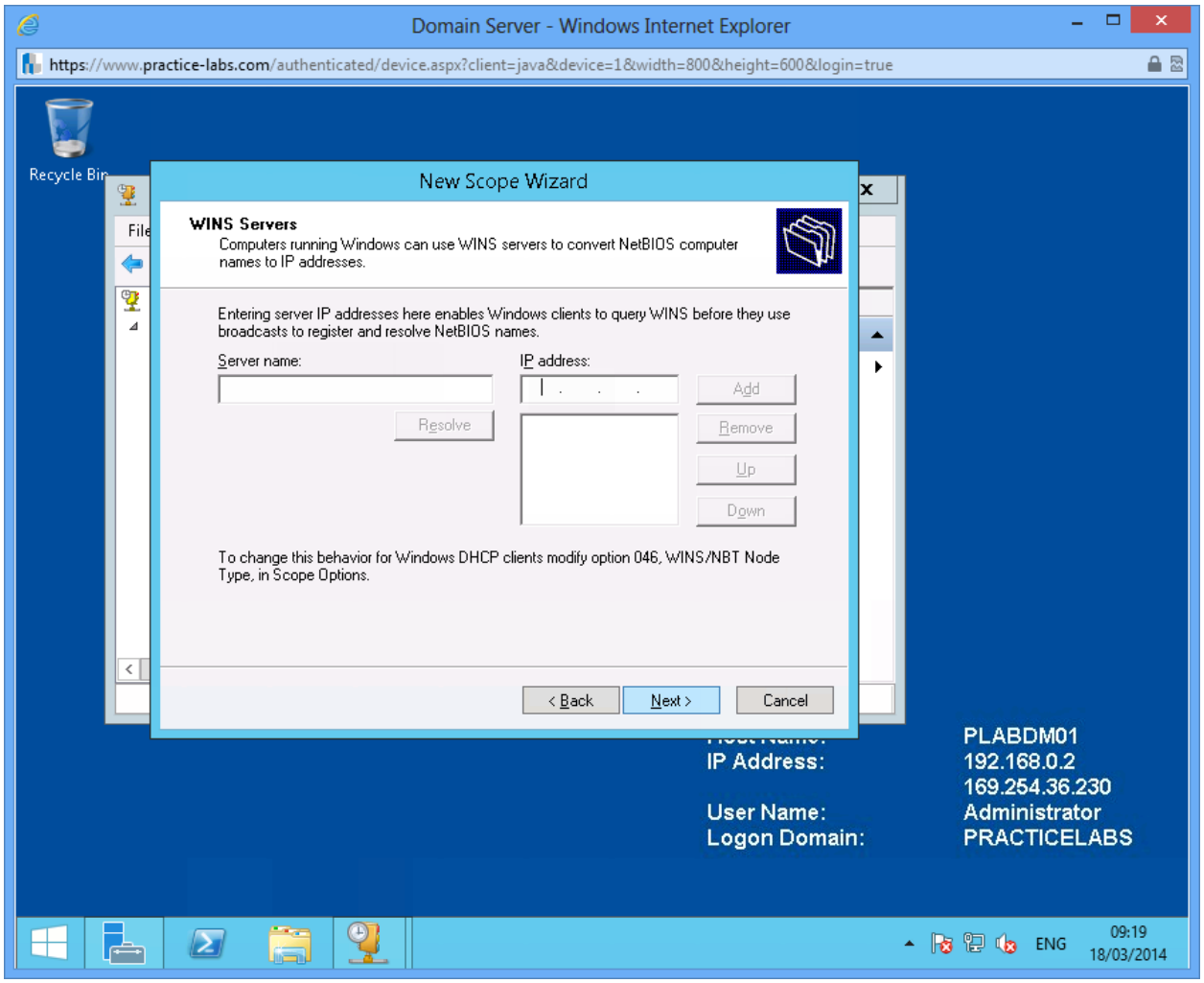
Step 9

On Domain Name and DNS Servers, click **Next**.



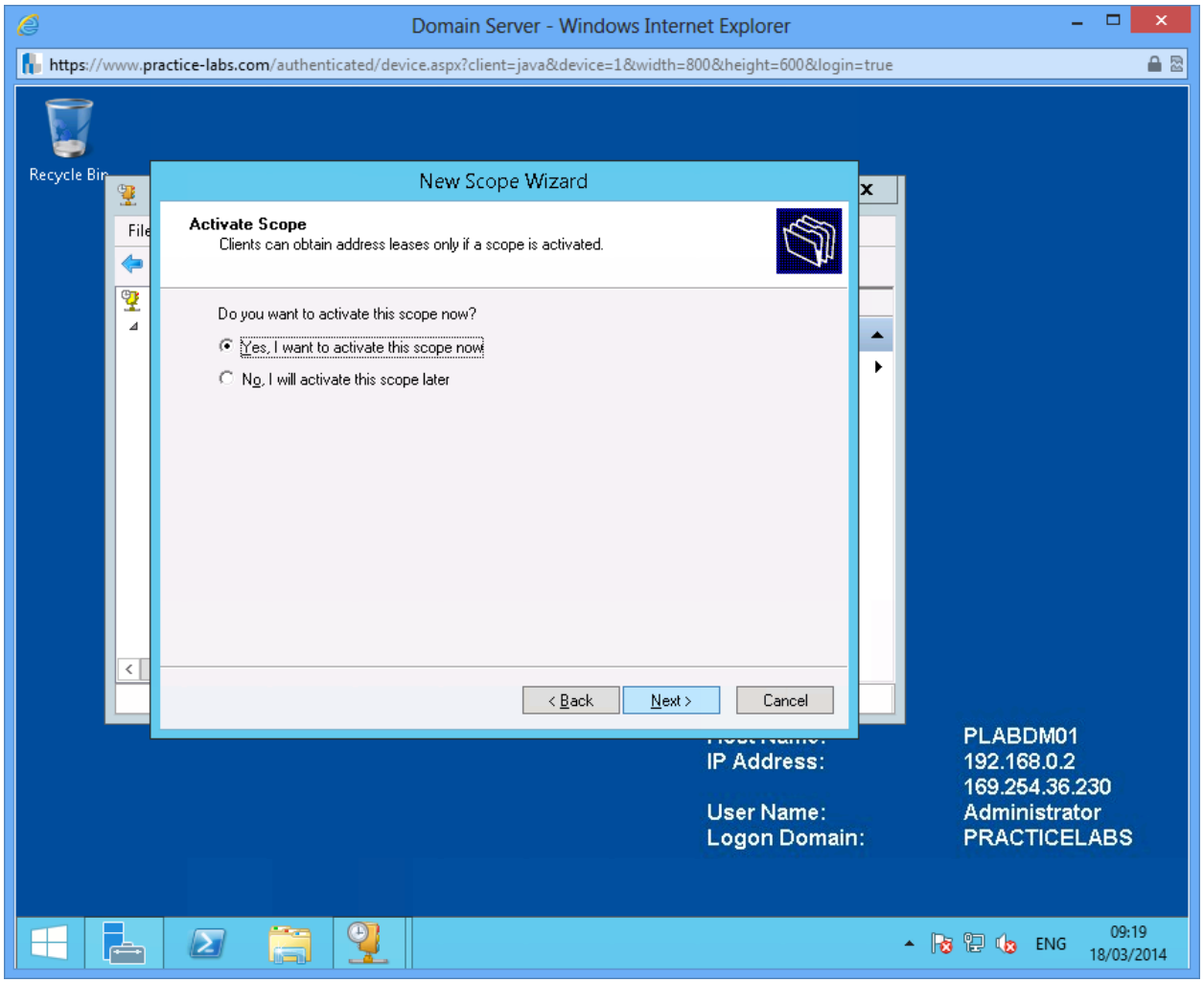
Step 10

Click **Next** on WINS Servers.



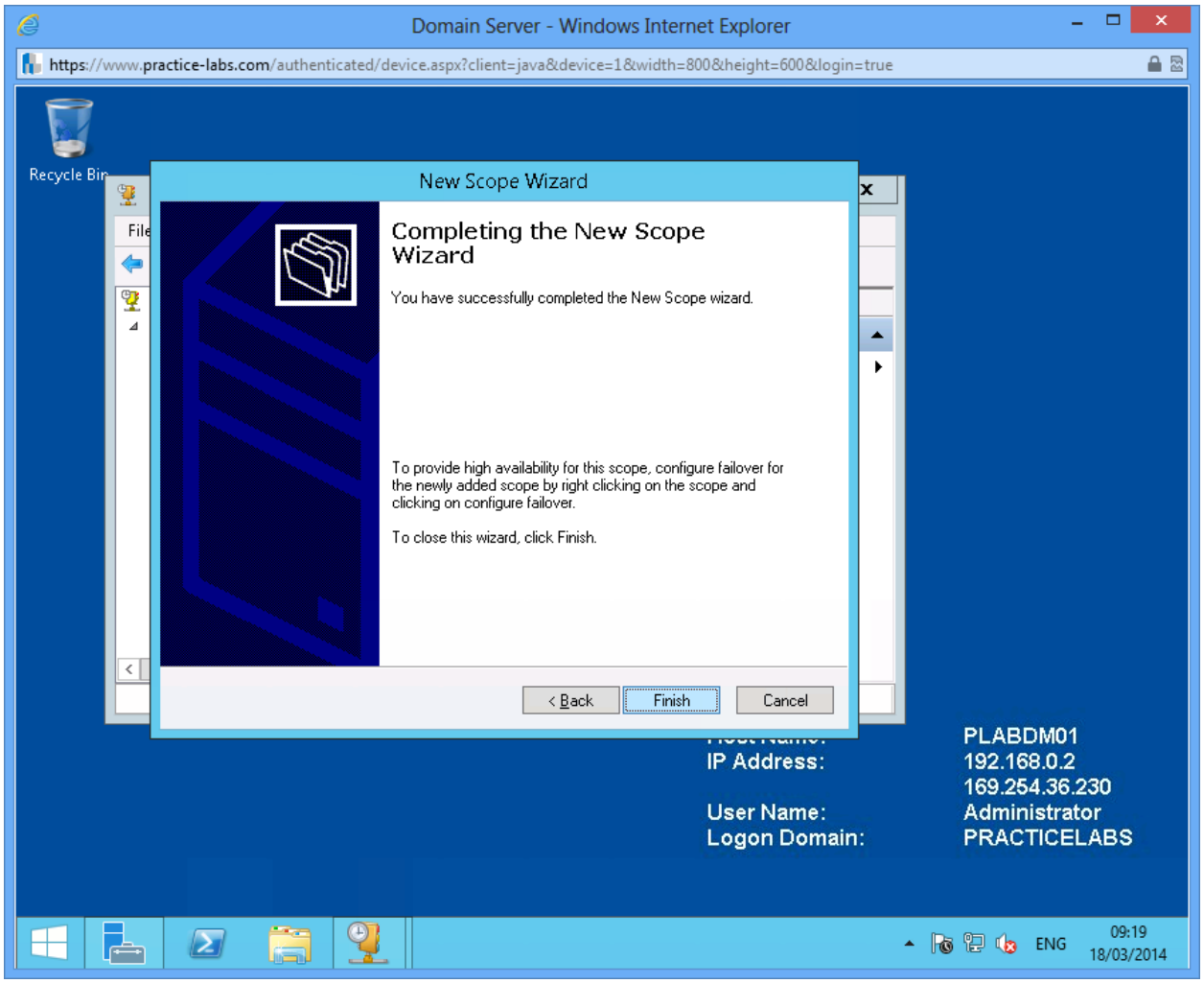
Step 11

On Activate Scope, click **Next**



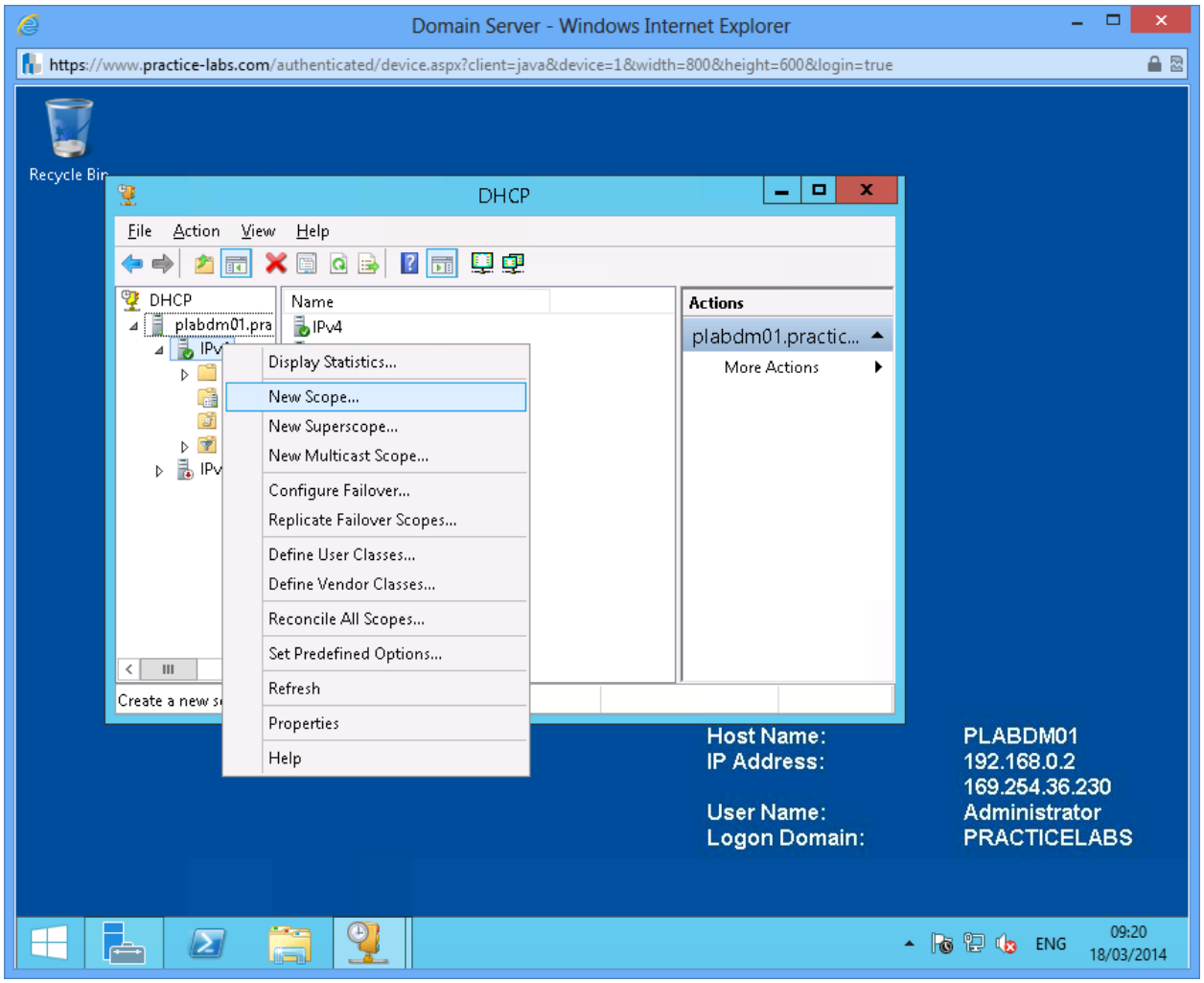
Step 12

Choose **Finish** to close Completing the New Scope Wizard dialogue box.



Step 13

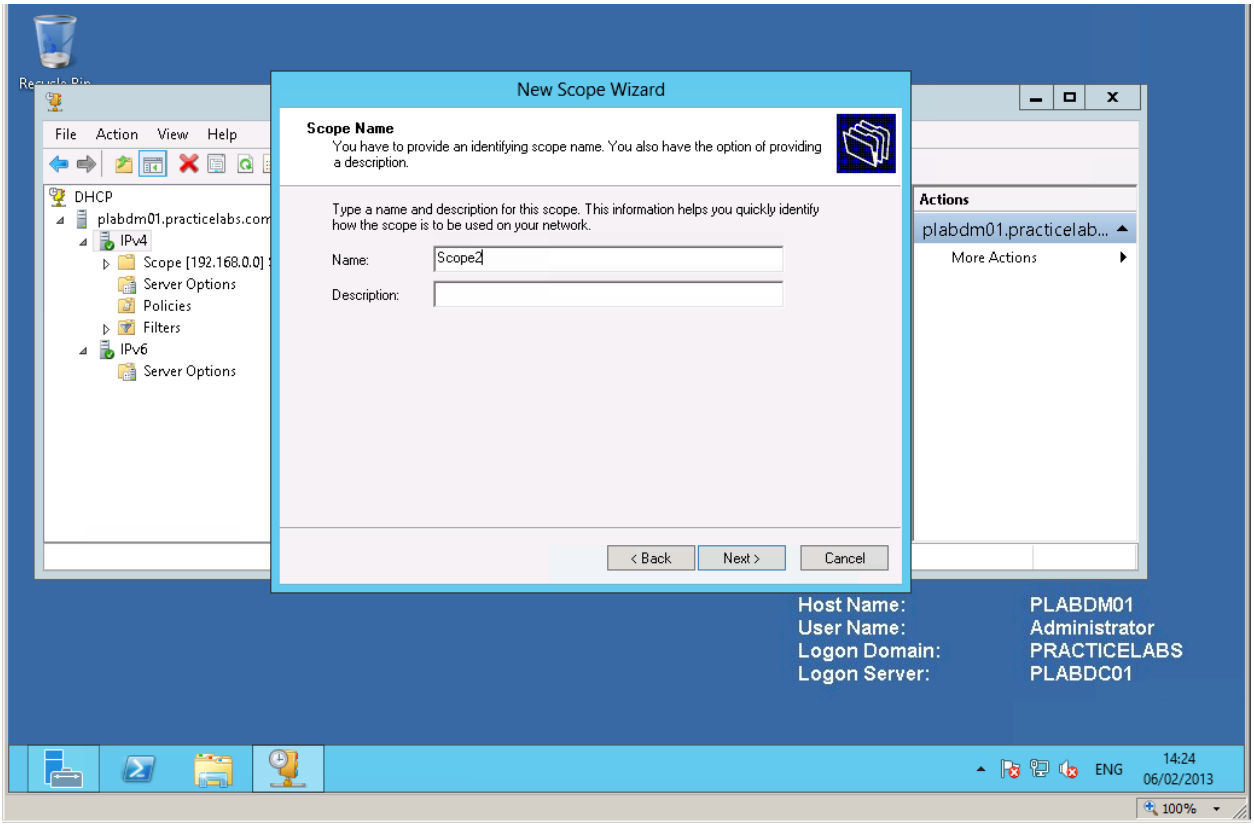
Right-click again on **IPv4** and choose **New Scope**



Step 14

Click **Next** on the Welcome to the New Scope Wizard box.

On Scope Name, type **Scope2** and choose **Next**.

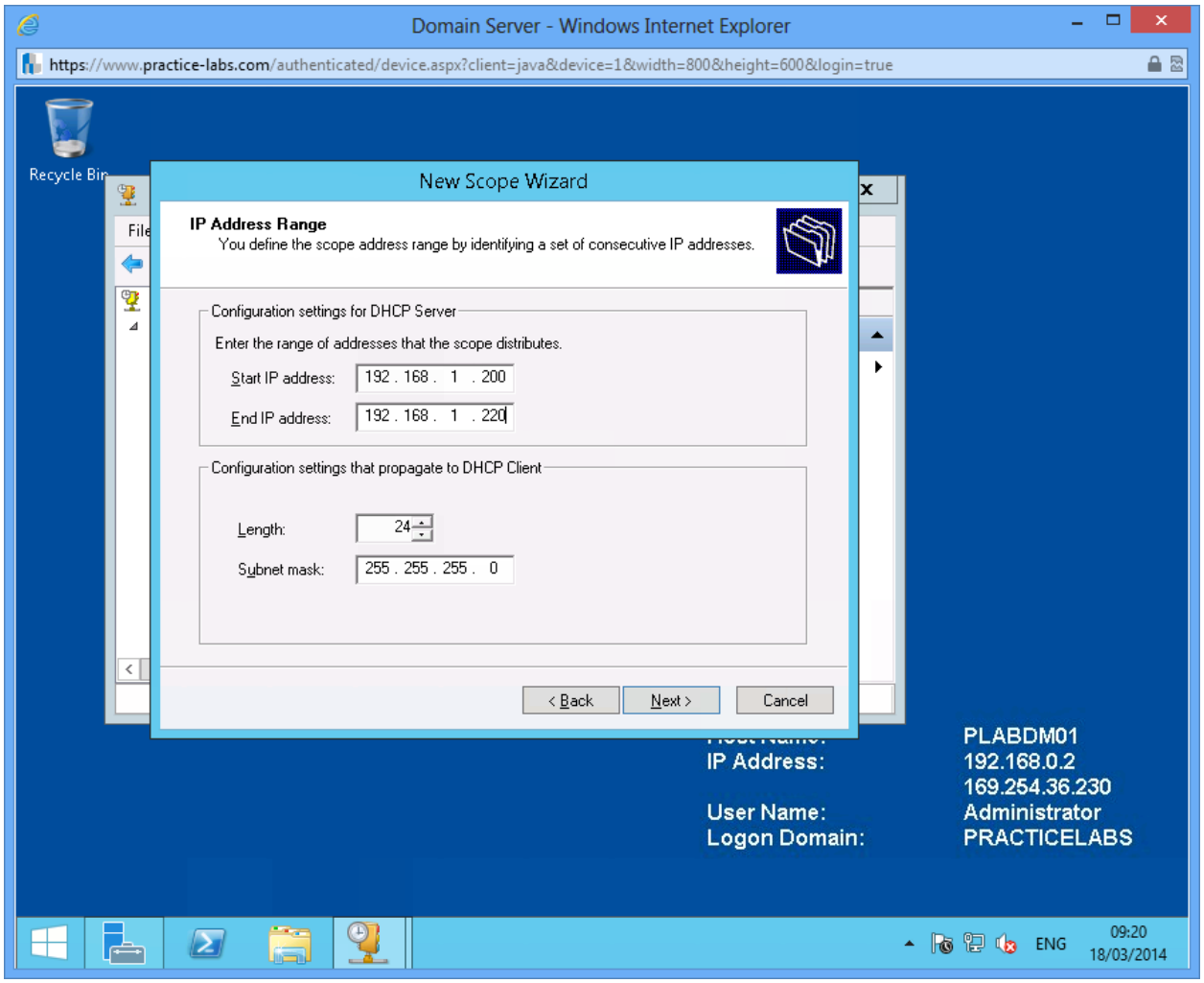


Step 15

On IP Address Range, use the following information:

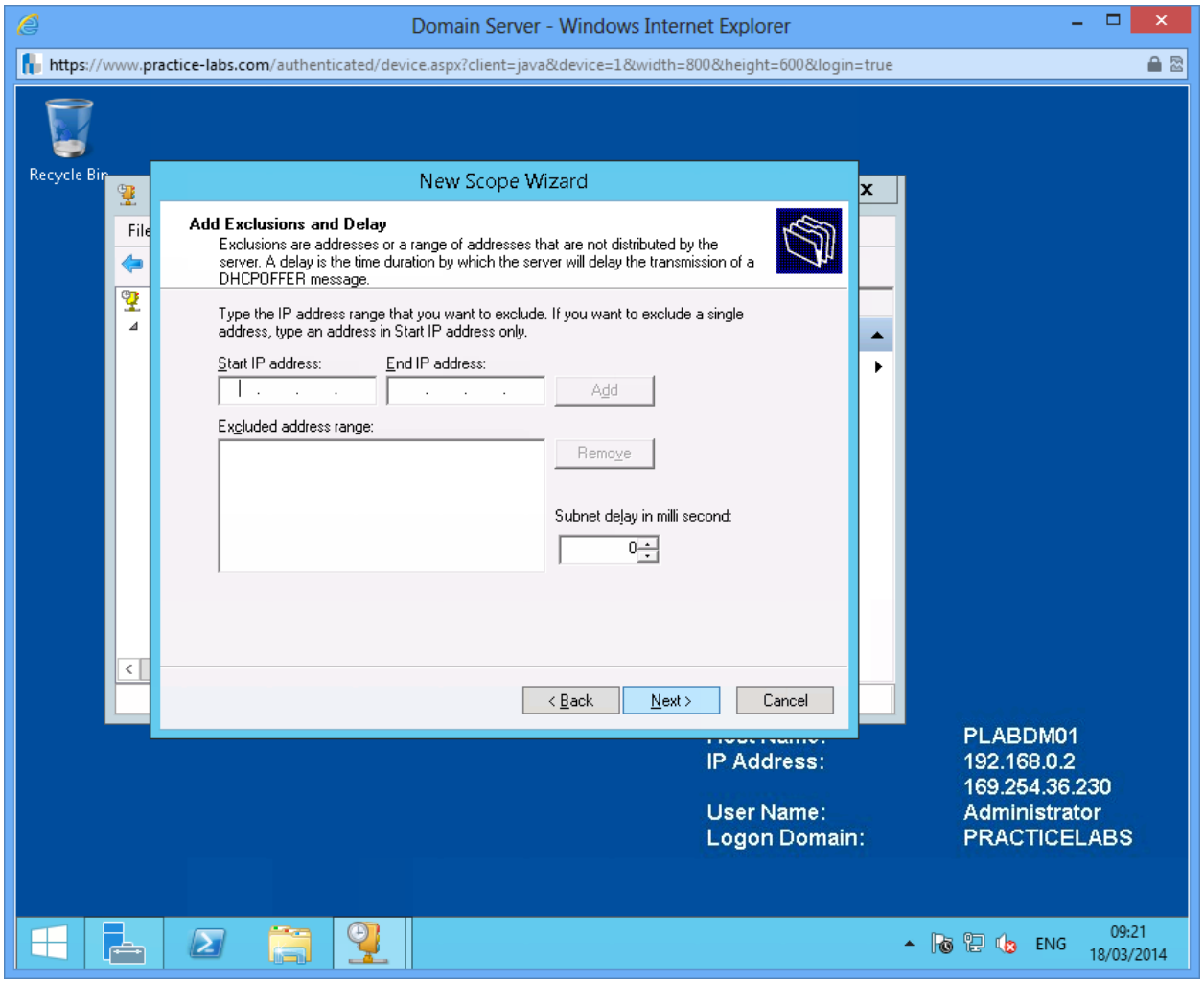
```
Start IP address: 192.168.1.200

End IP address: 192.168.1.220
```

Click **Next**.



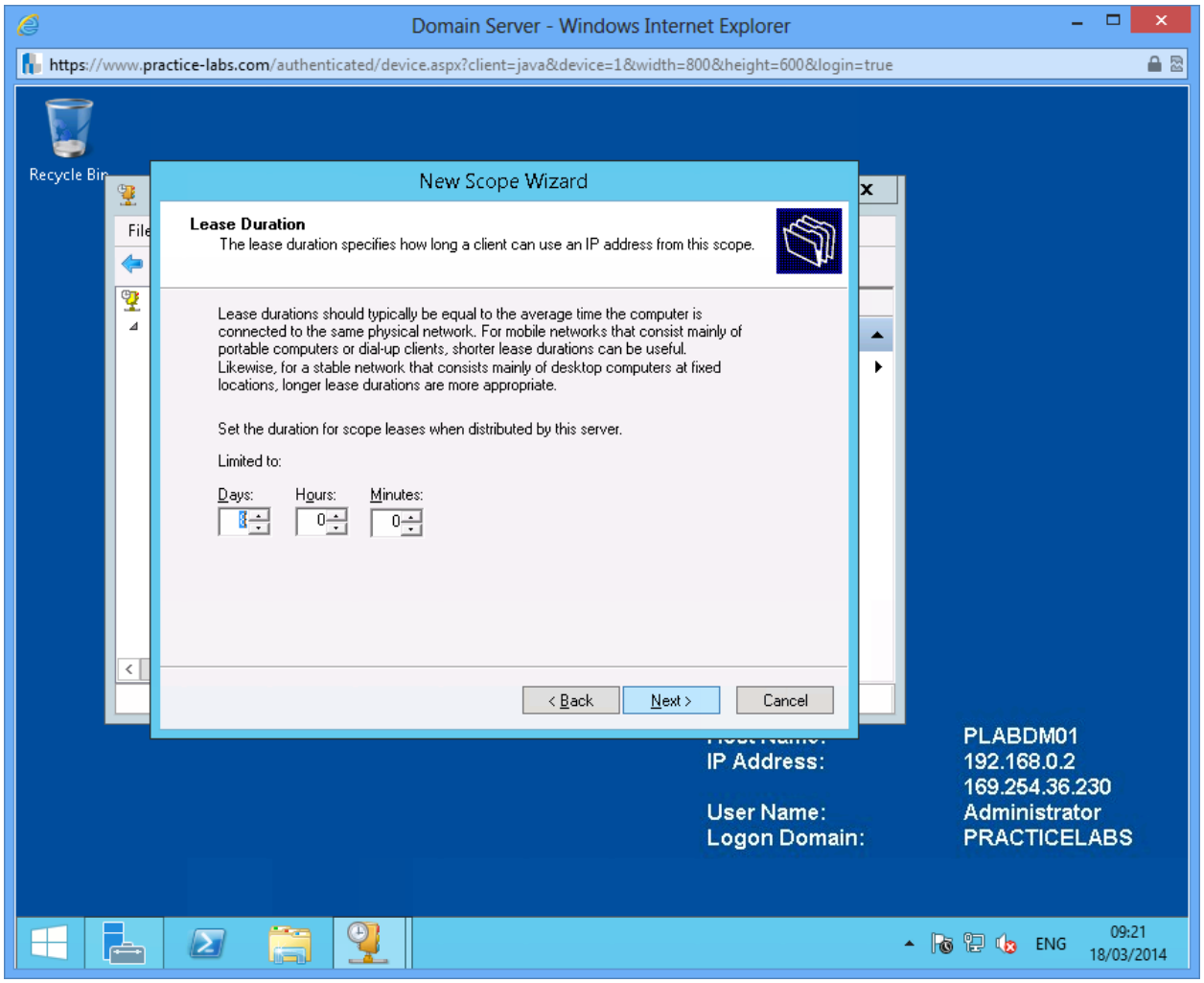
Step 16

On Add Exclusions and Delay, click **Next**.



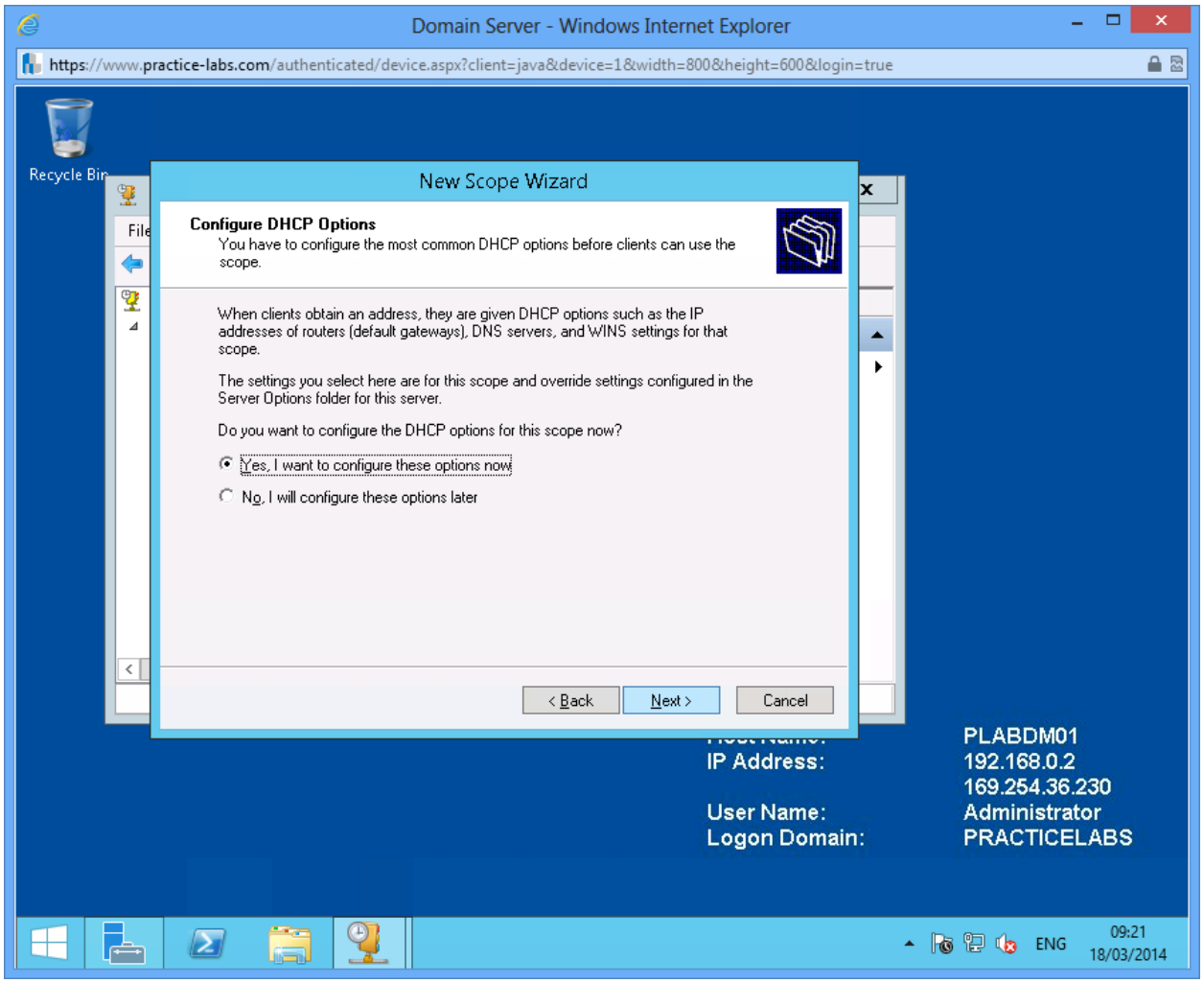
Step 17

On Lease Duration, click **Next**.



Step 18

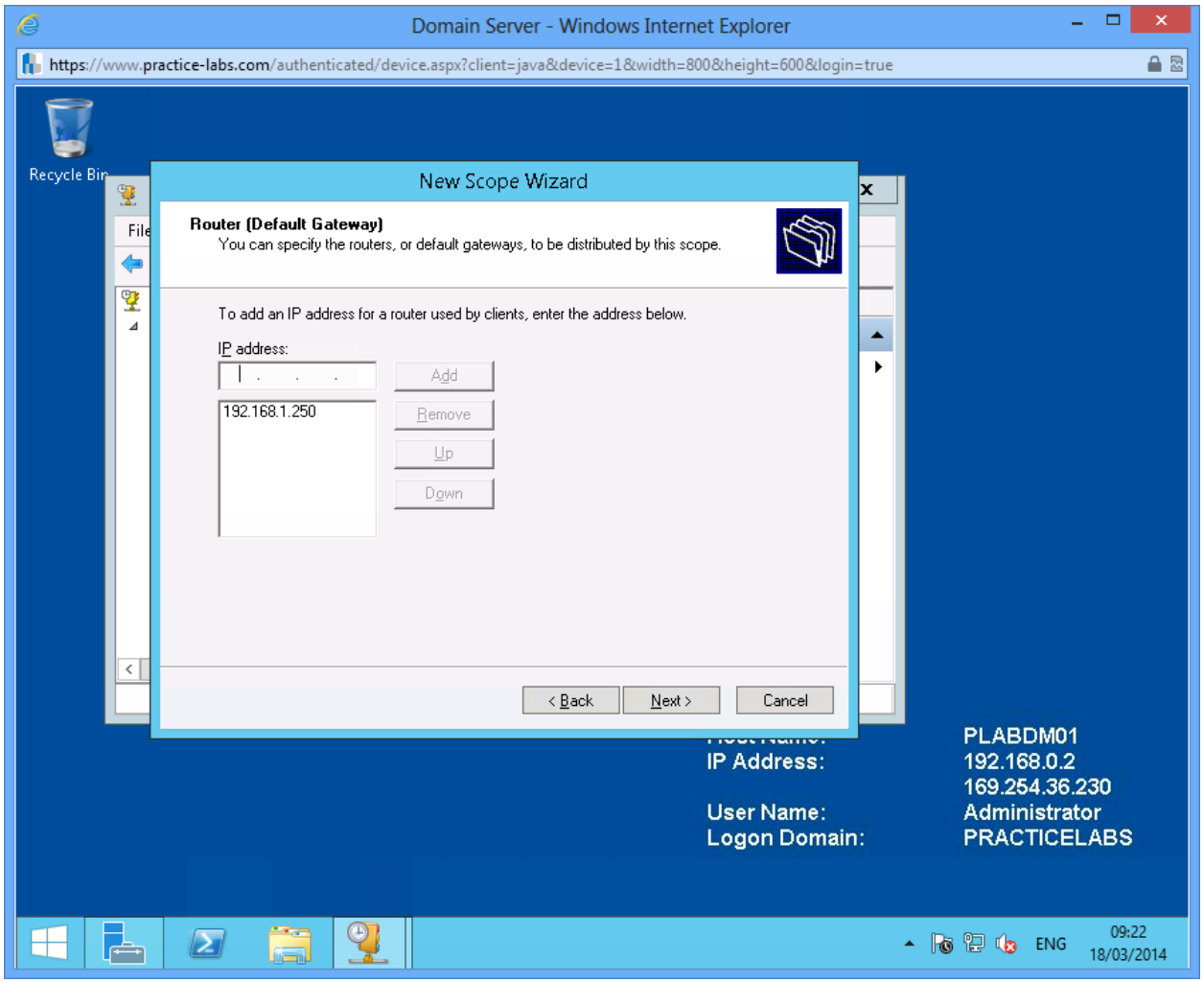
On Configure DHCP Options, click **Next**.



Step 19

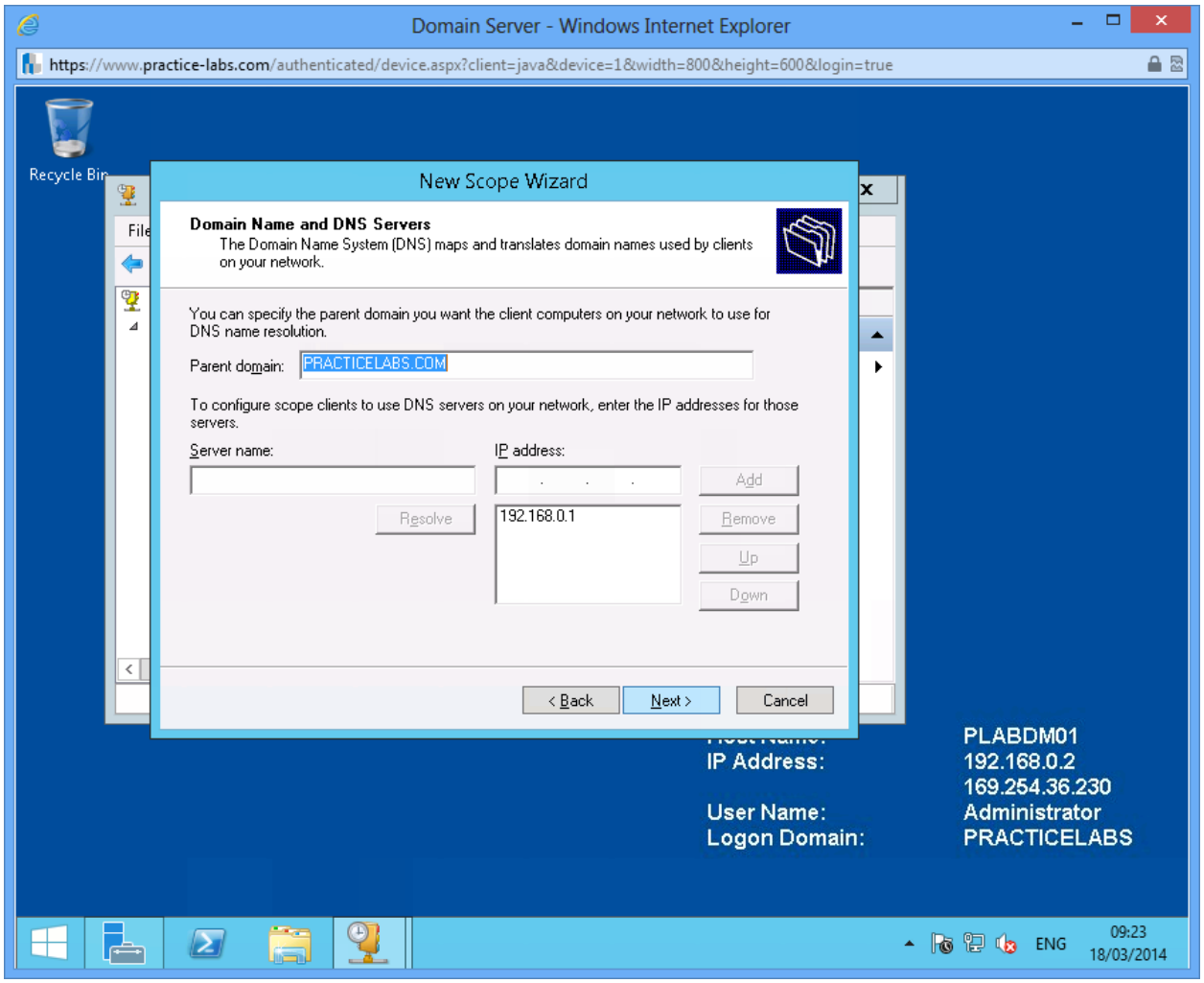
On Router (Default Gateway) type **192.168.1.250** and then click **Add**.

Click **Next**.



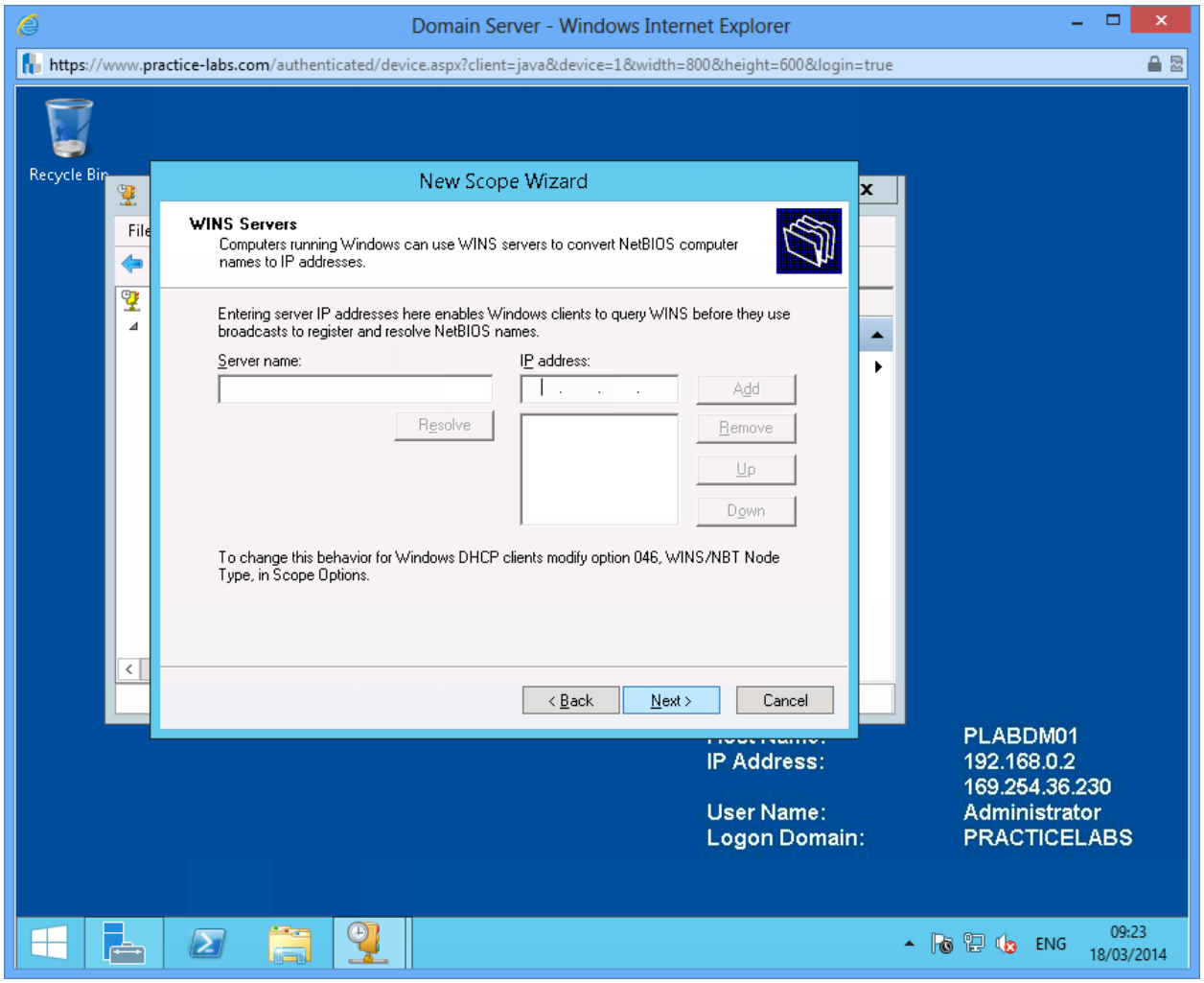
Step 20

On Domain Name and DNS Servers, choose **Next**.



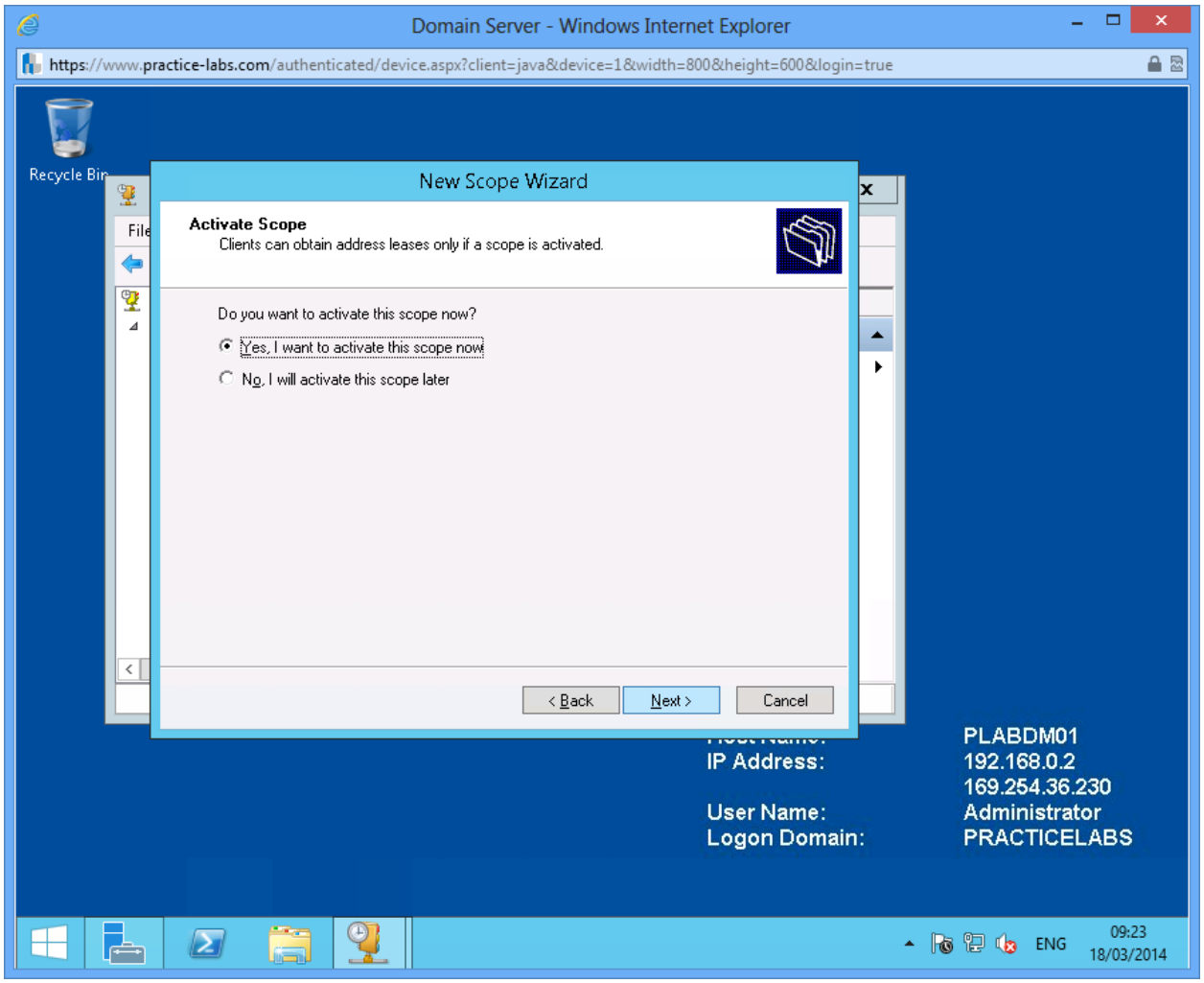
Step 21

On WINS Servers, click **Next** to continue.



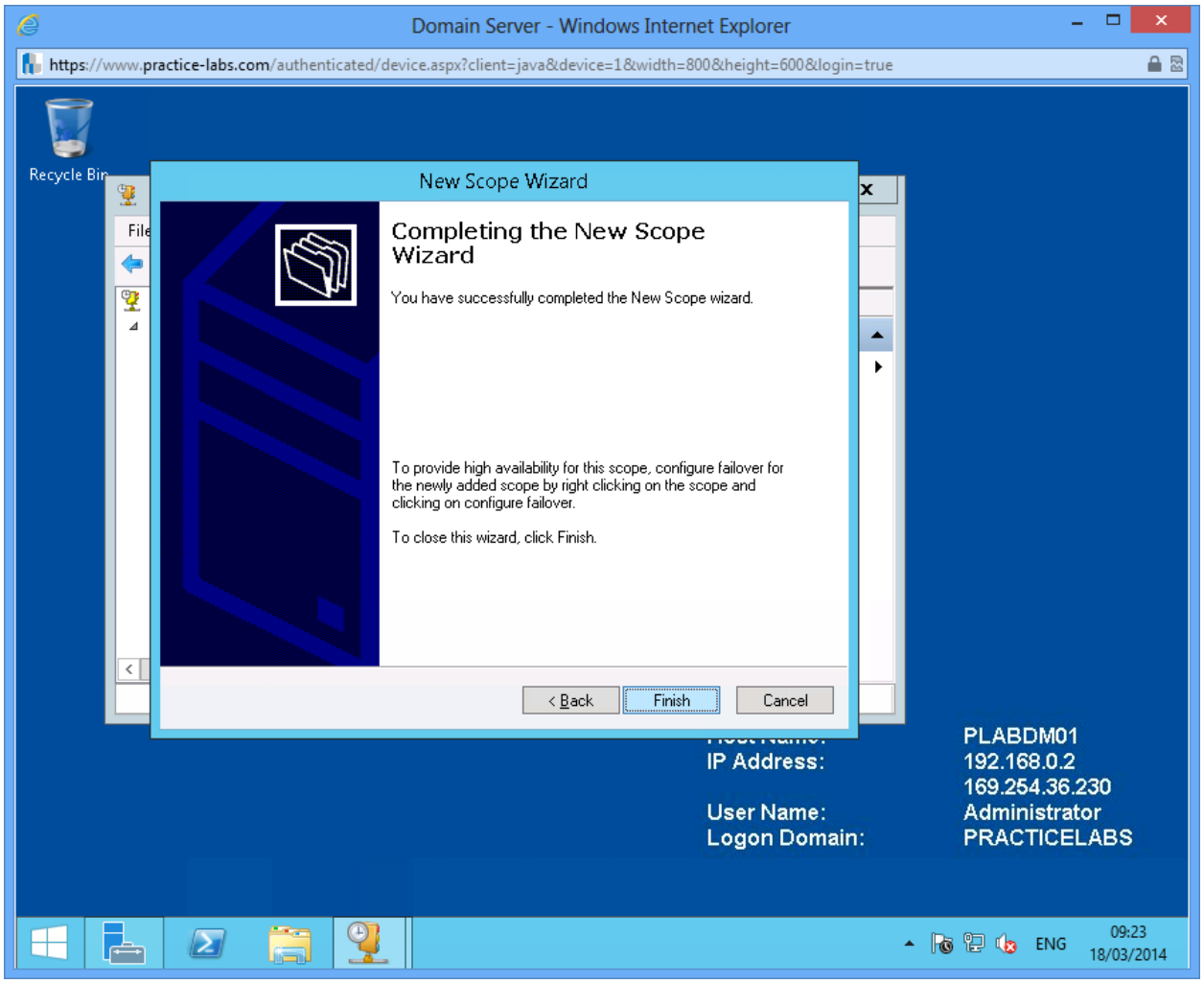
Step 22

On Activate Scope, click **Next**.



Step 23

On Completing the New Scope Wizard, click **Finish**.

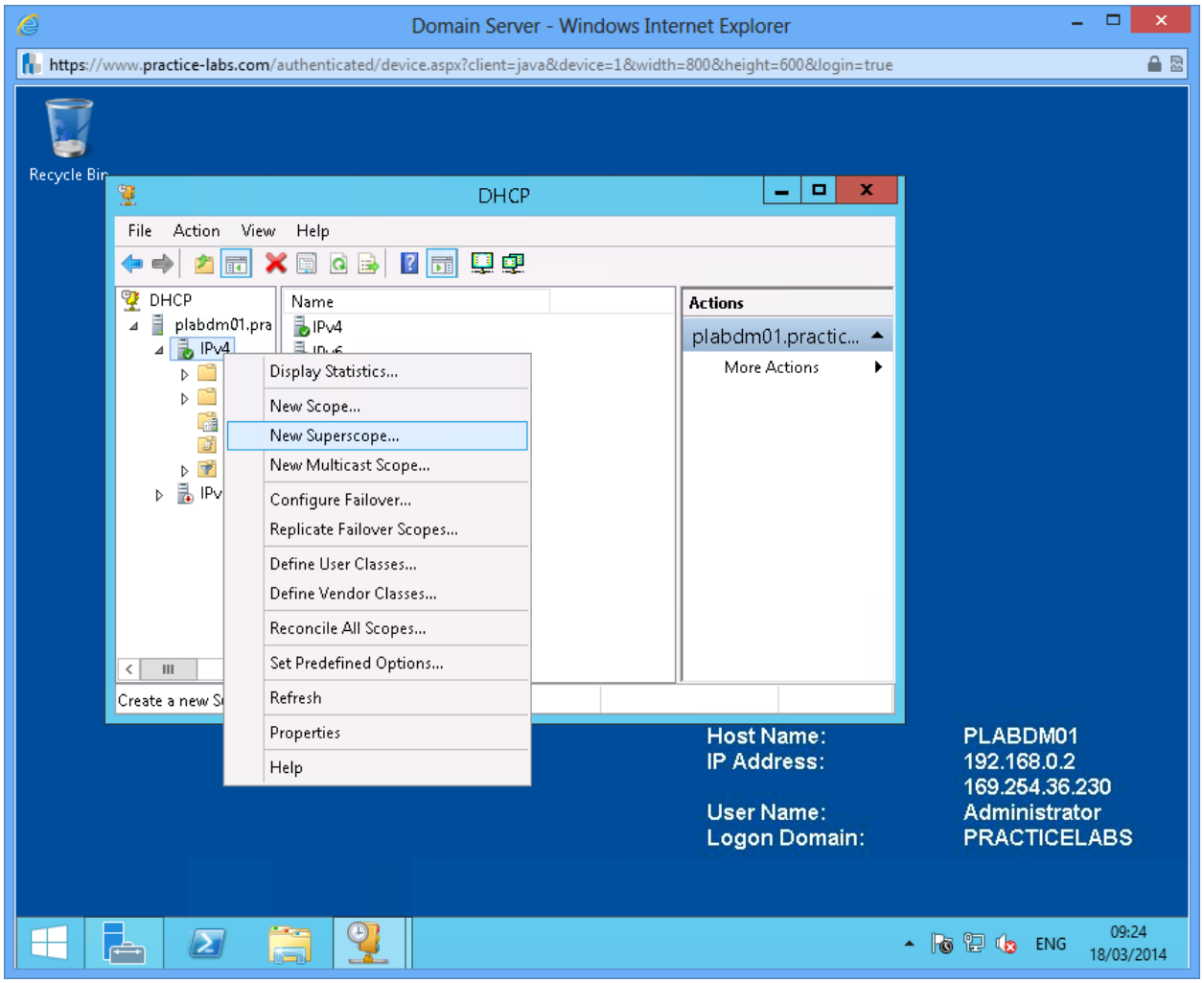


Task 5: Create the Superscope

You have created two scopes and to simplify administration they can be grouped into a DHCP superscope.

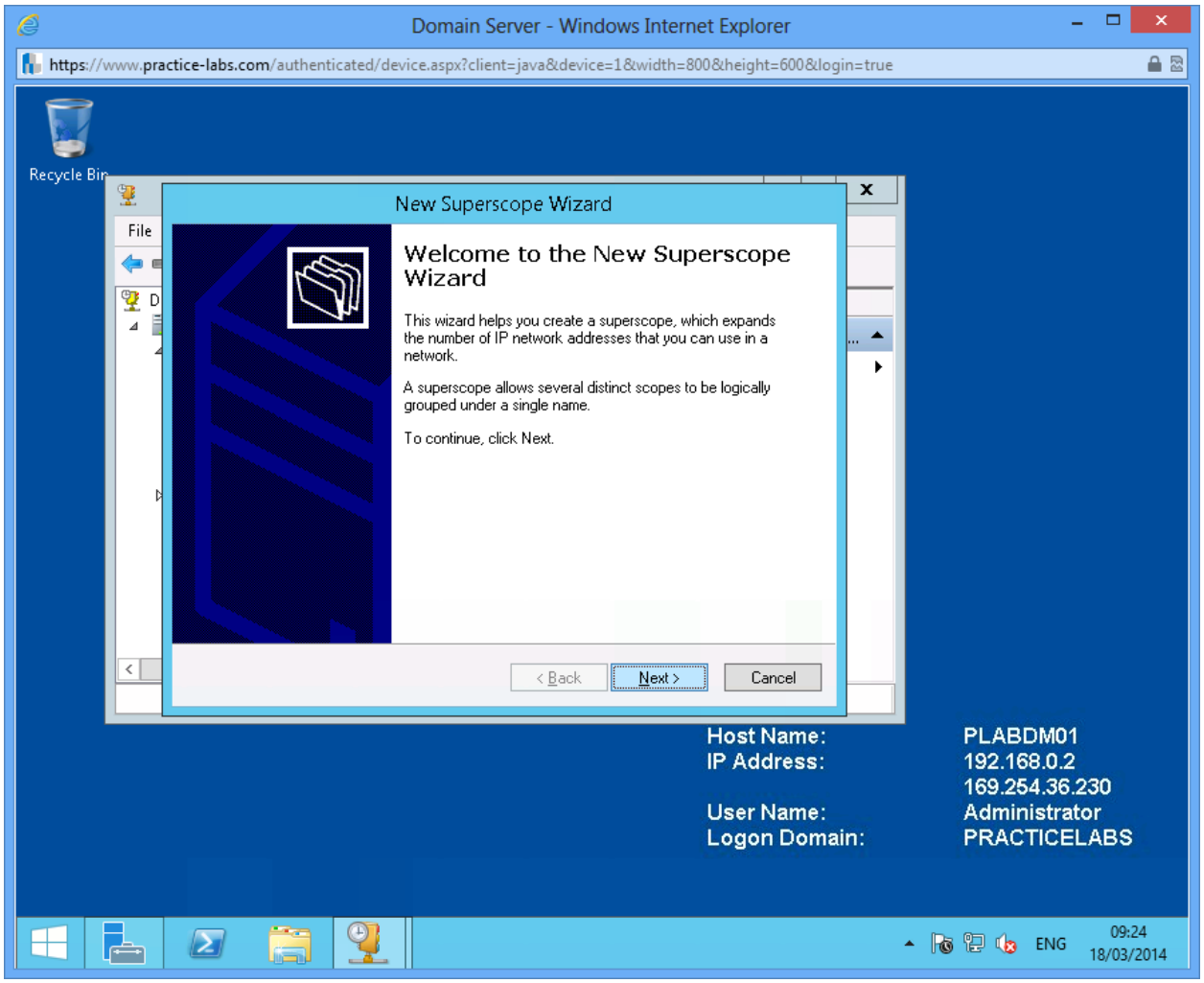
Step 1

On **PLABDM01**, still on DHCP snap-in, right-click on **IPv4** and choose **New Superscope**...



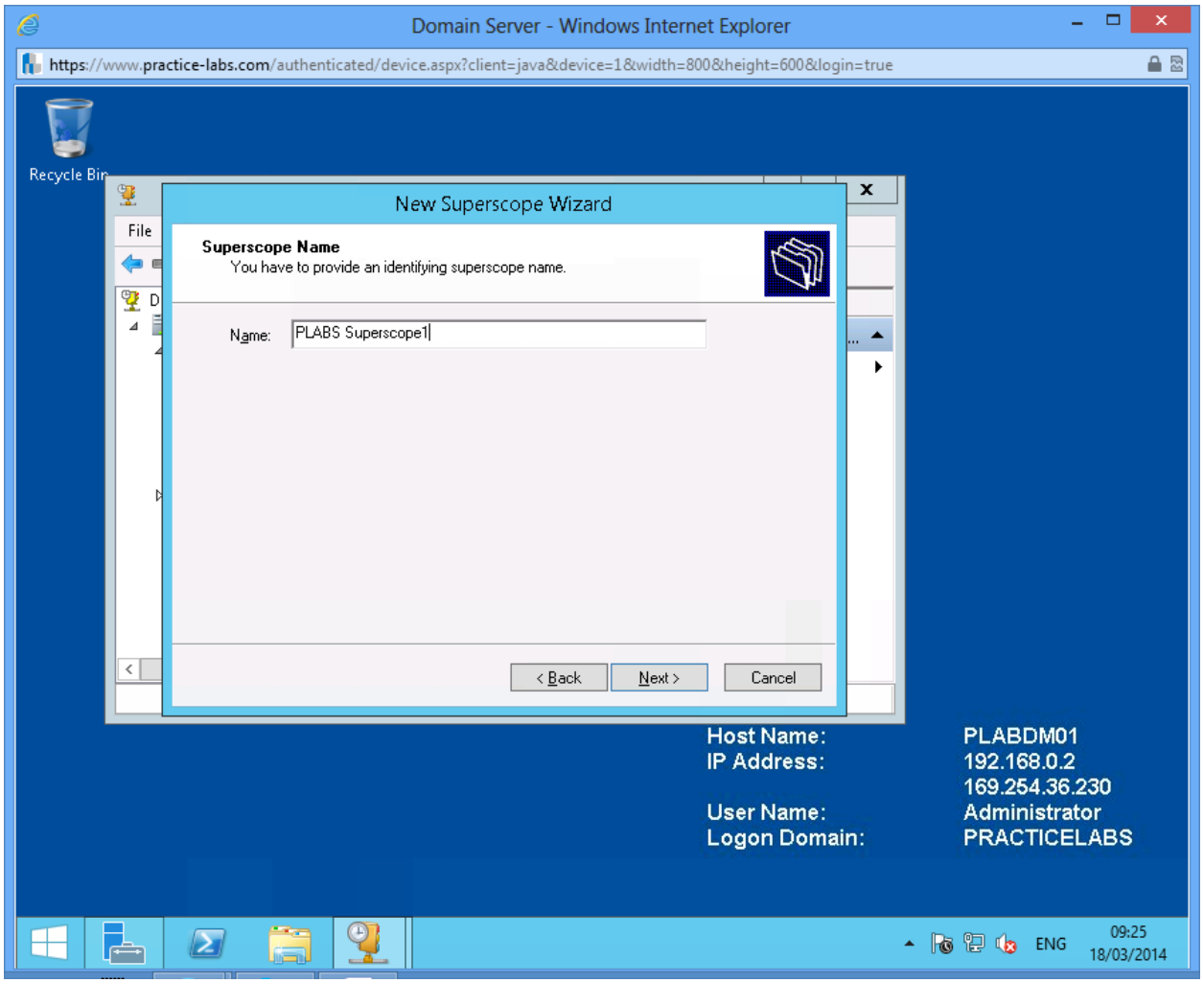
Step 2

On Welcome to the New Superscope Wizard, click **Next**.



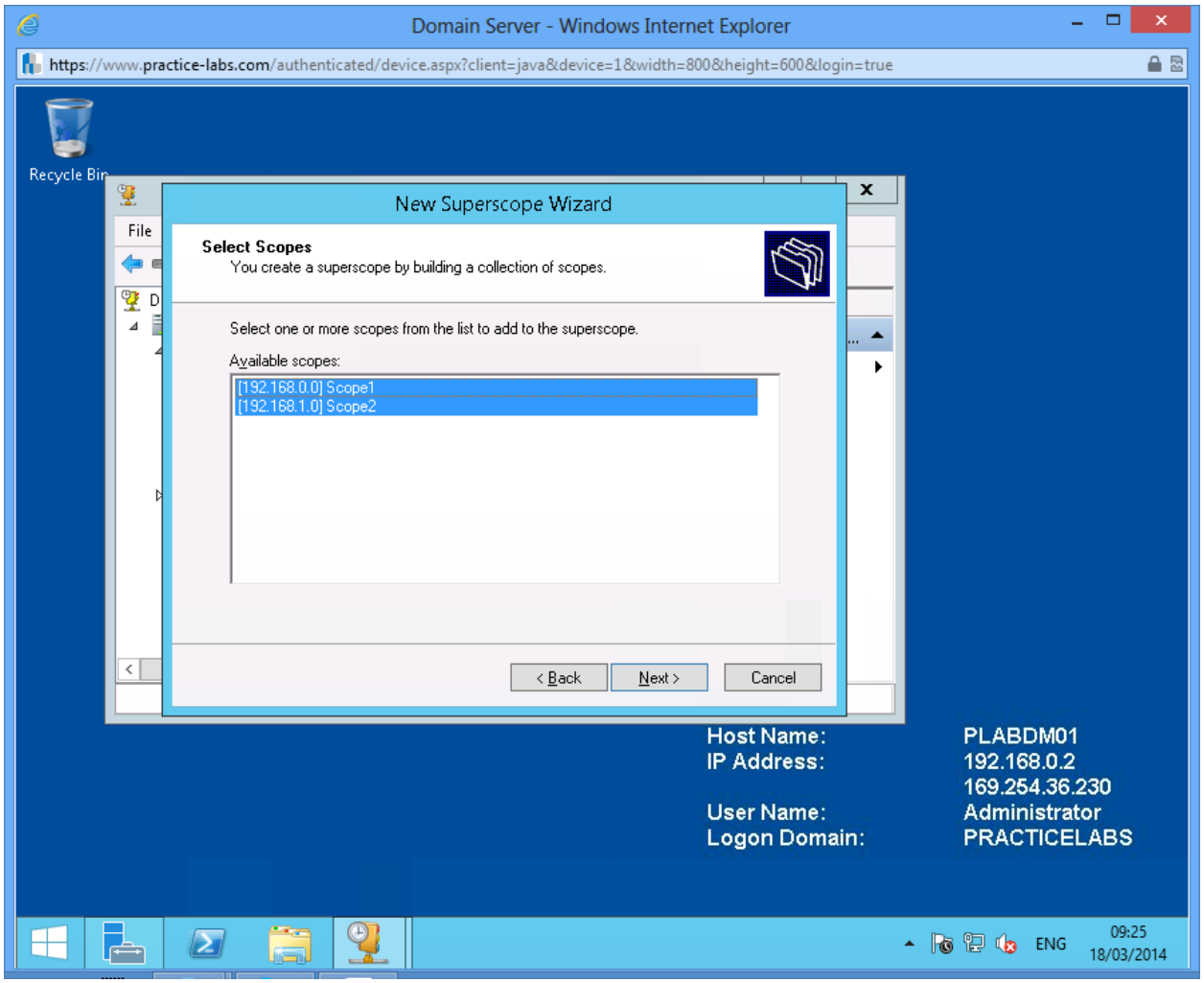
Step 3

On Superscope Name, type **PLABS Superscope1** and click **Next**.



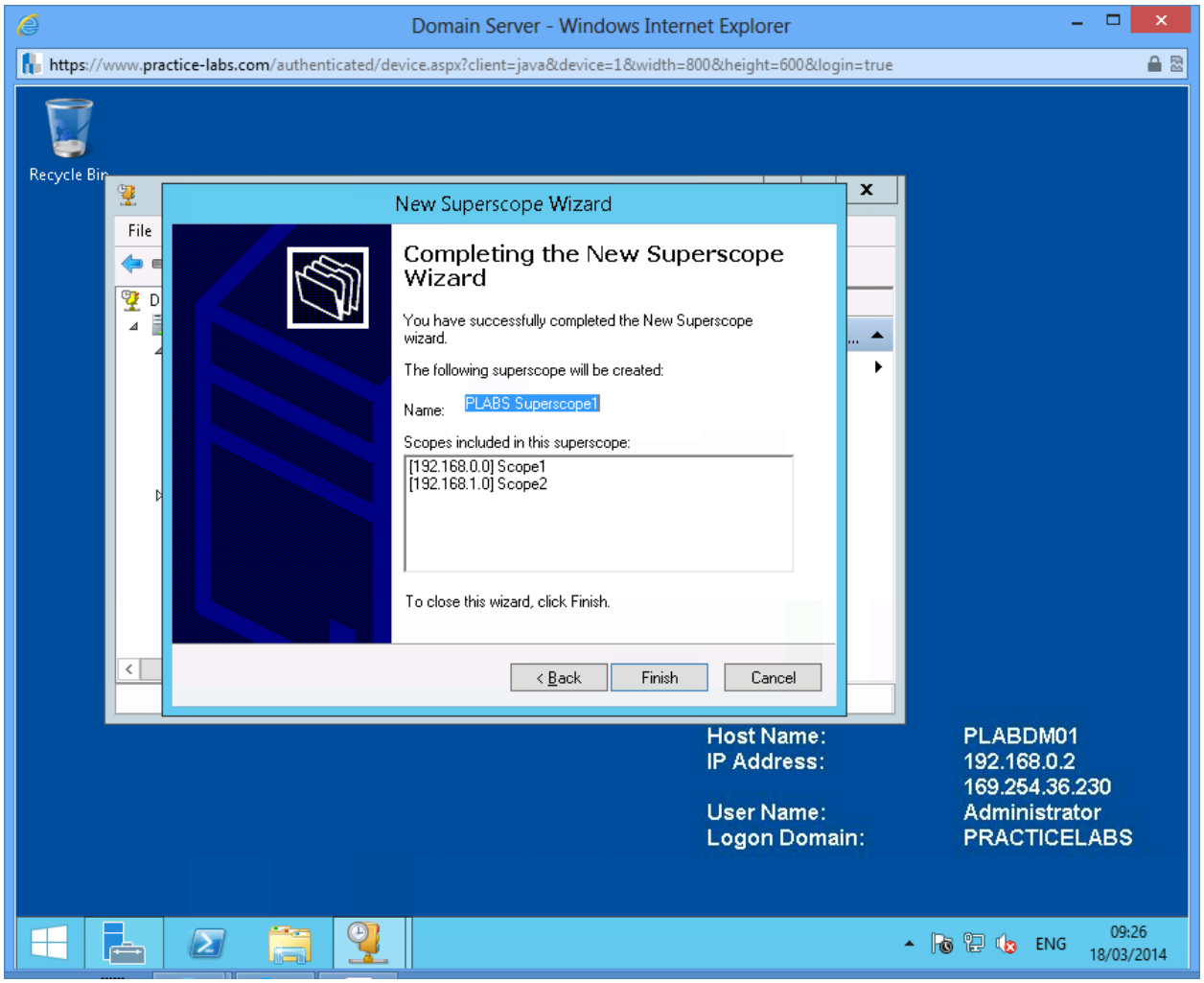
Step 4

On Select Scopes, choose **Scope1** and **Scope2** and then click **Next**.



Step 5

On Completing the New Superscope Wizard, click **Finish**.

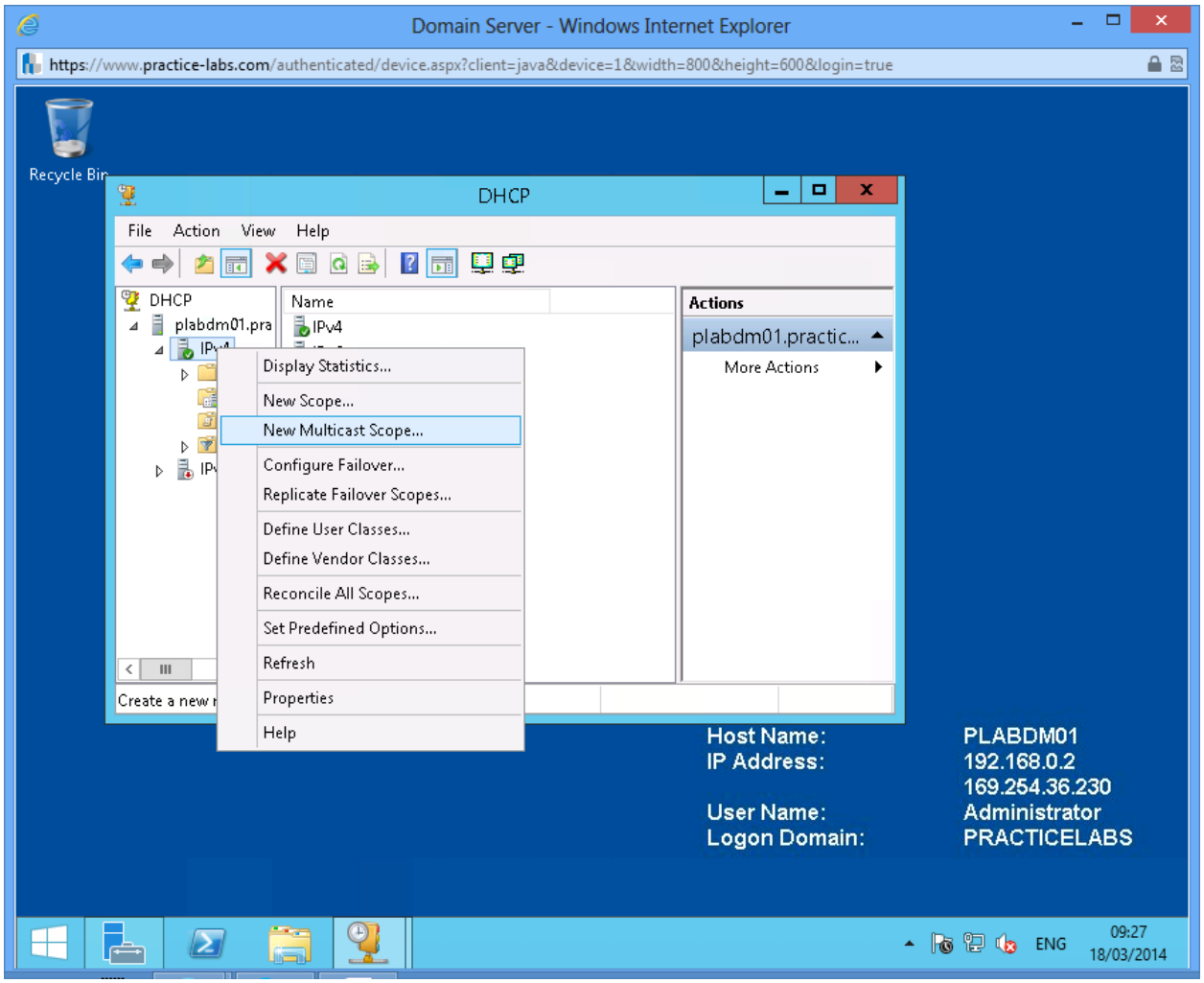


Task 6: Configuring a Multicast Scope

Multicast IP addresses are used by media streaming applications to send data like audio and video to selected clients. In this procedure, you will configure a multicast scope.

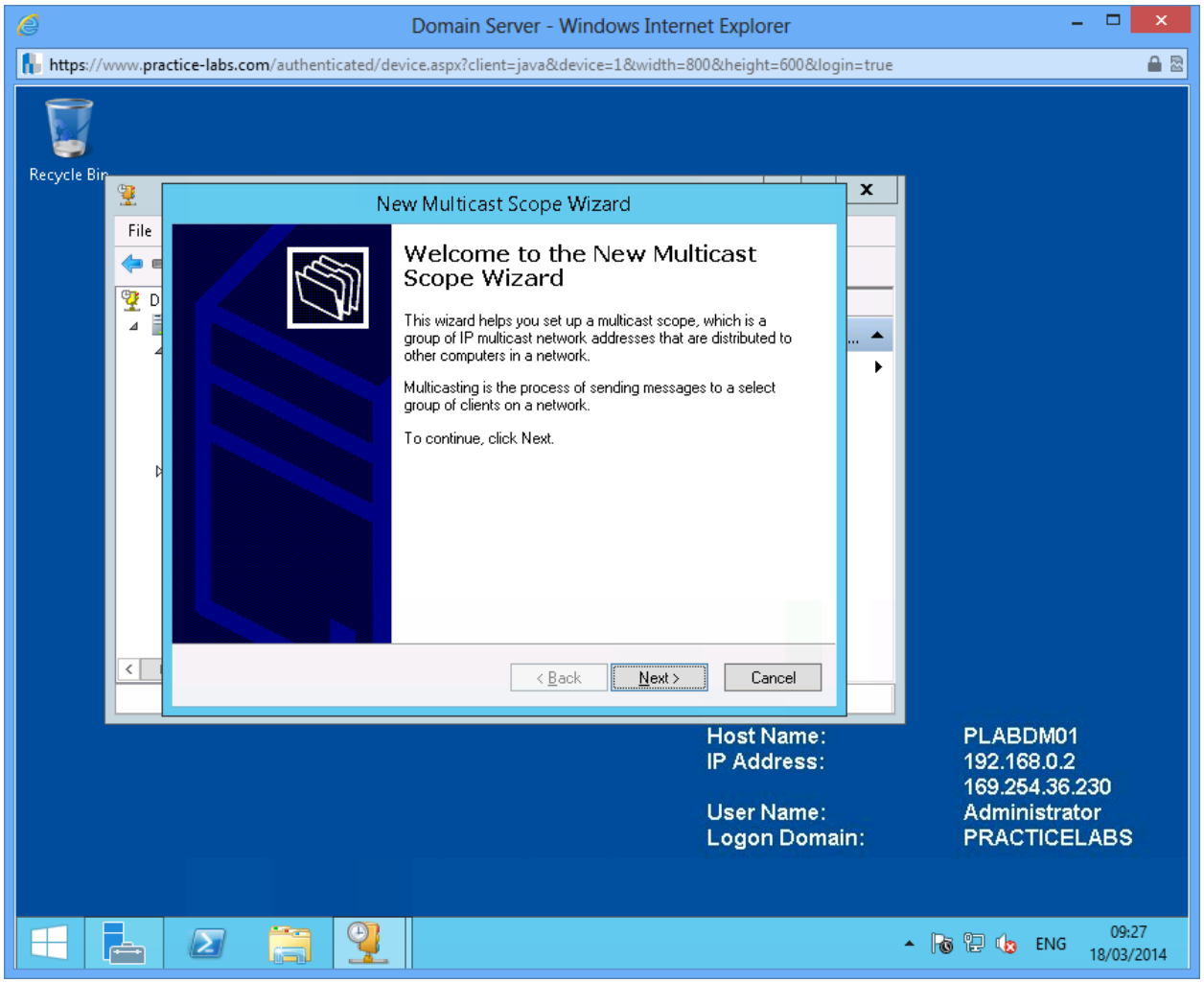
Step 1

On DHCP console, right-click on IPv4 and choose **New Multicast Scope.**



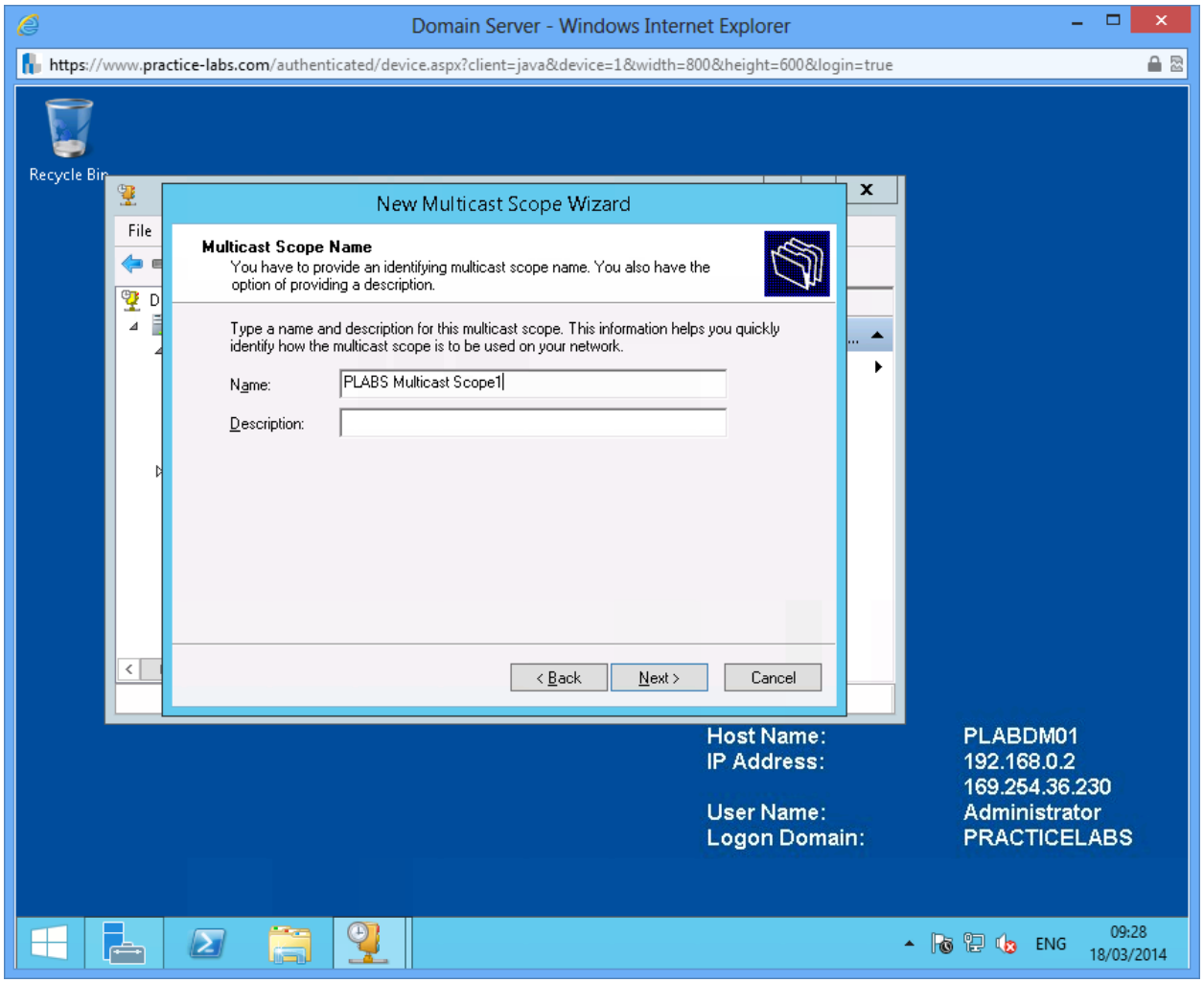
Step 2

On Welcome to the New Multicast Scope Wizard, click **Next**.



Step 3

On Multicast Scope Name, type **PLABS Multicast Scope1** and click **Next**.

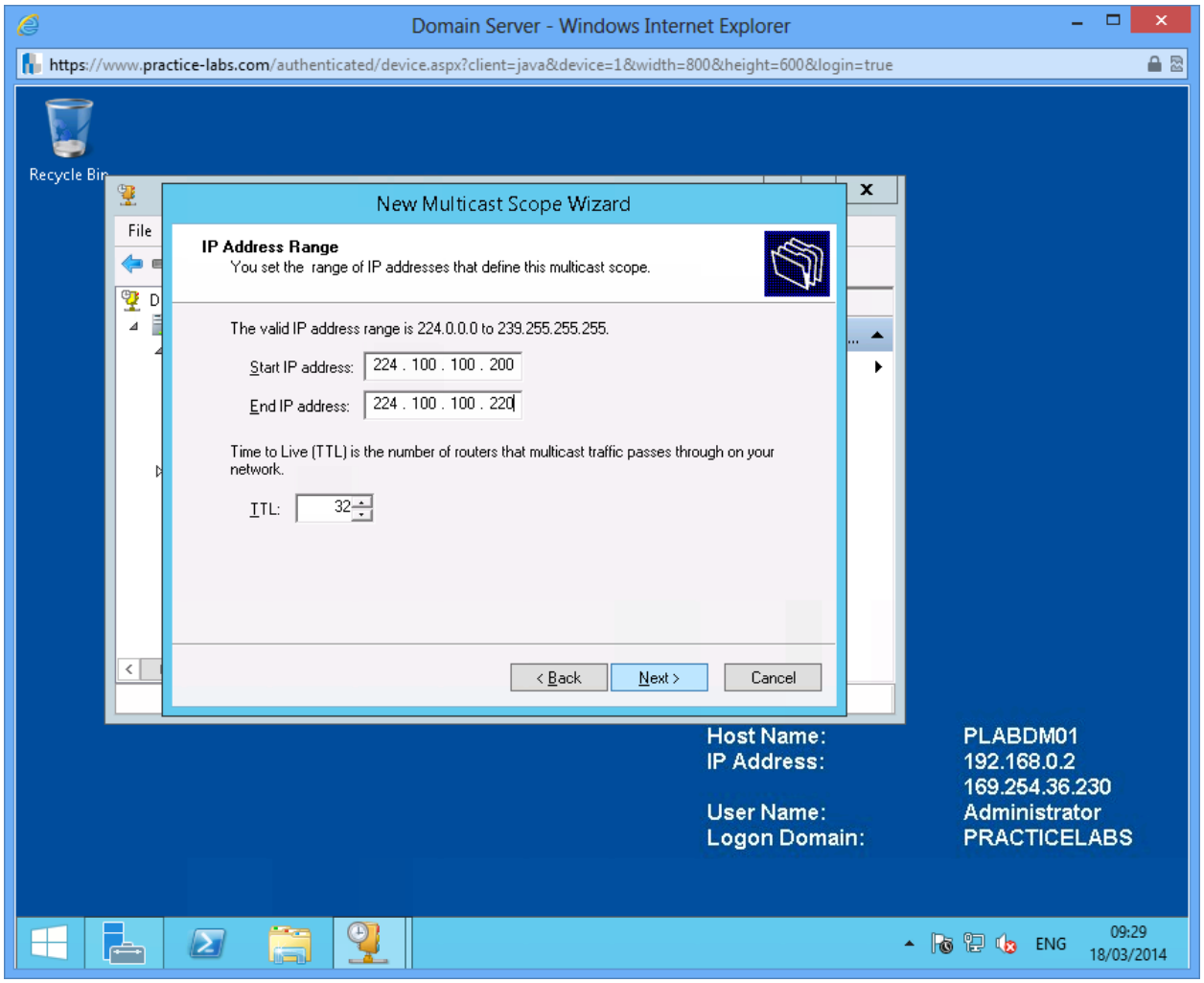


Step 4

On New Multicast Scope Wizard, type the following information:

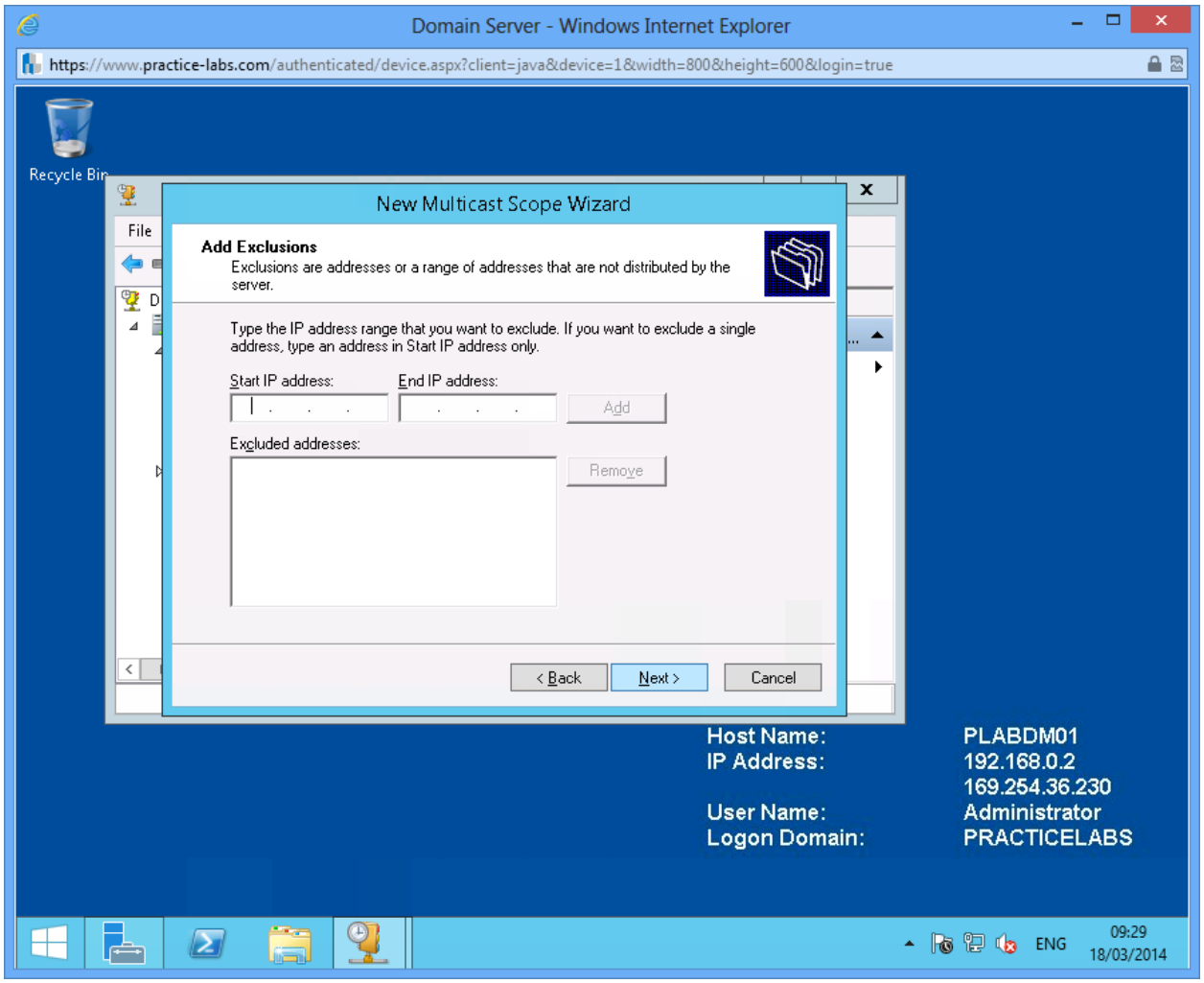
```
Start IP address: 224.100.100.200

End IP address: 224.100.100.220
```

Click **Next**.



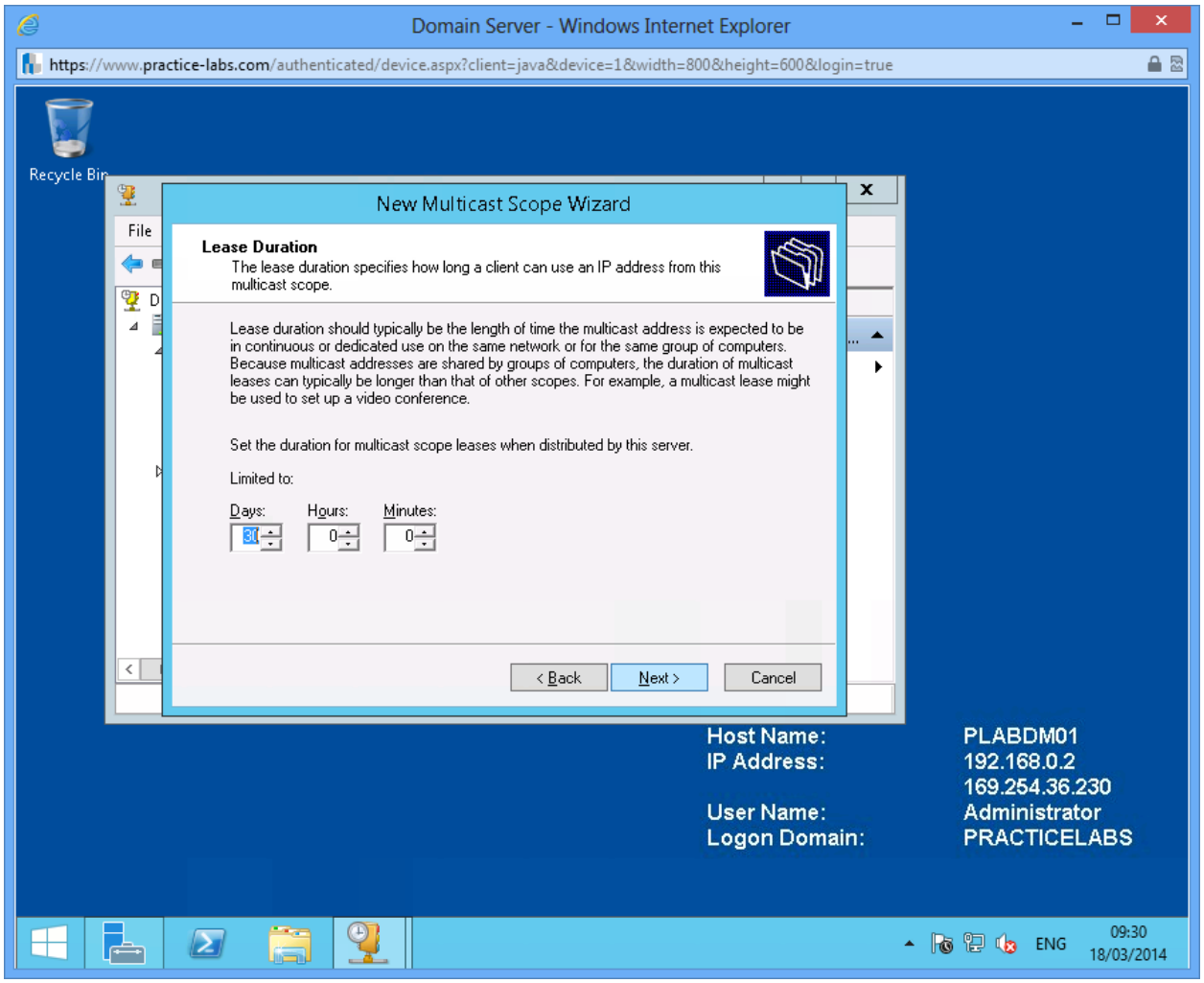
Step 5

On New Multicast Scope Wizard, click **Next**.



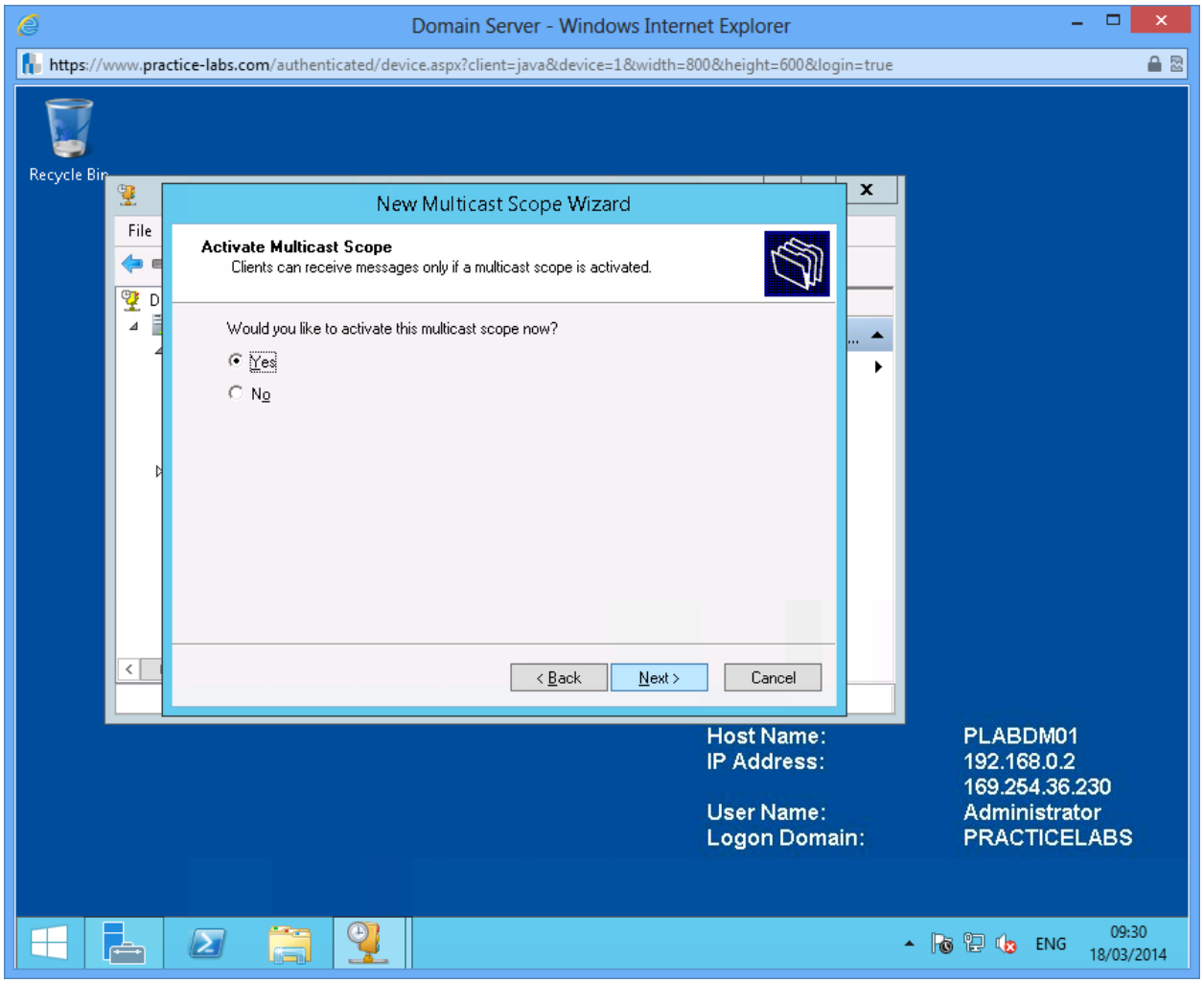
Step 6

On Lease Duration, click **Next**.



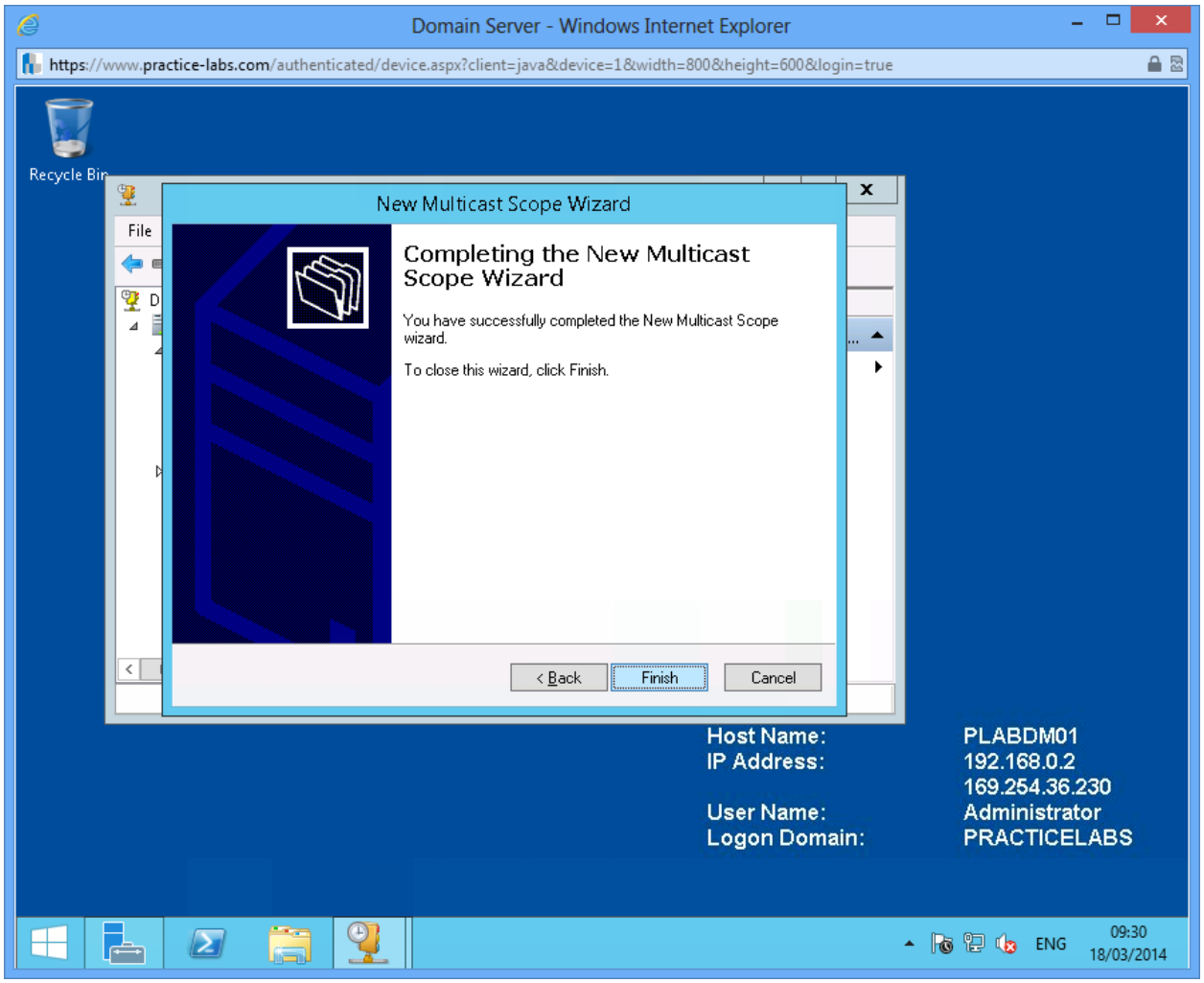
Step 7

On New Multicast Scope Wizard, click **Next**.



Step 8

On Completing the New Multicast Scope Wizard, click **Finish**.



Leave the devices you have powered on in their current state and proceed to the next exercise.

Exercise 2 - Configure DHCP Name Protection

You can get information on configuring name protection from your course book or use your favourite search engine to research this topic in more detail.

Please refer to your course material or use your favourite search engine to research for more information about this topic.

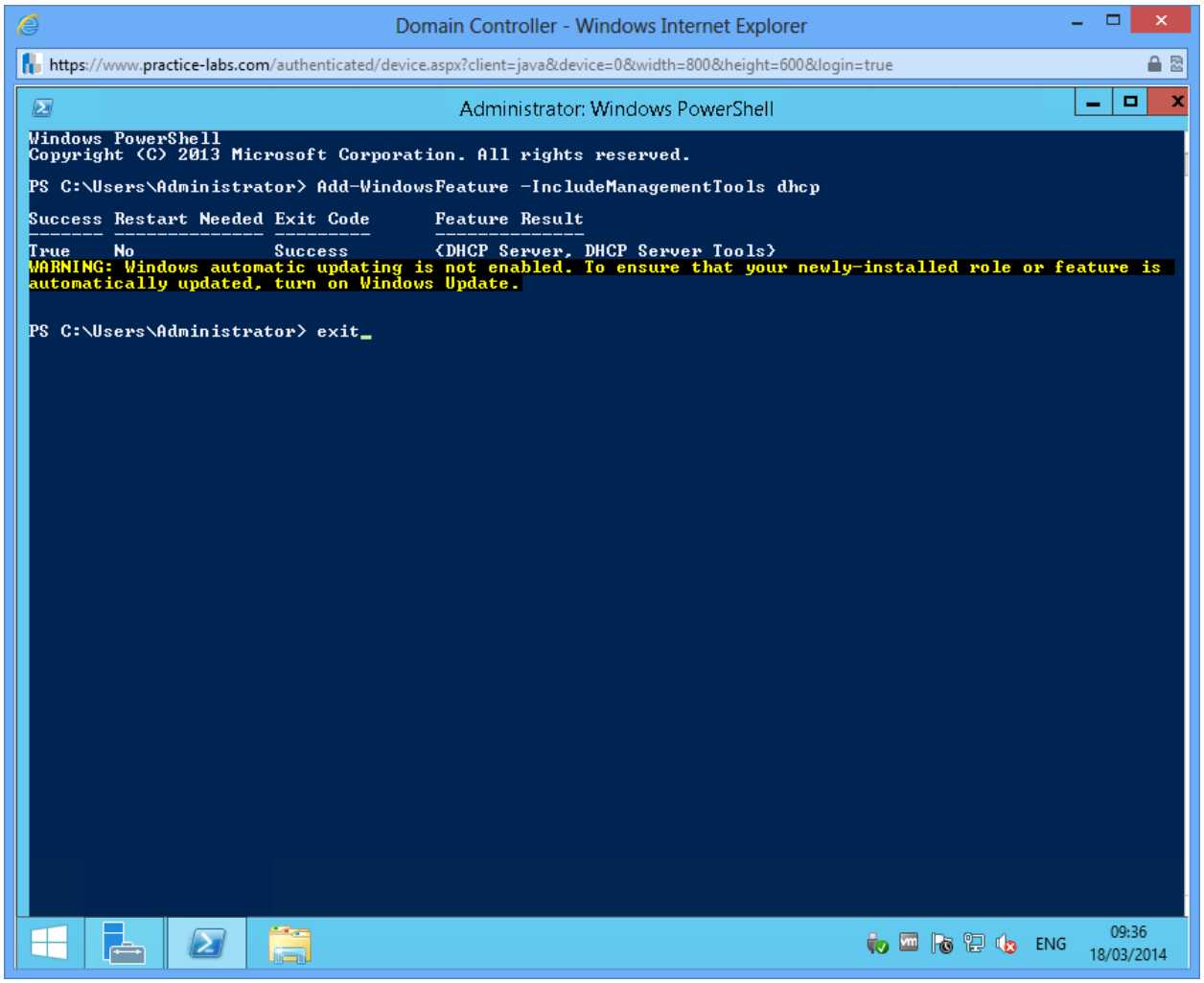
Task 1: DHCP Name Protection

For this step, you will install another DHCP server on **PLABDC01**.

Step 1

Connect to **PLABDC01** and click PowerShell icon on taskbar. Type the following:

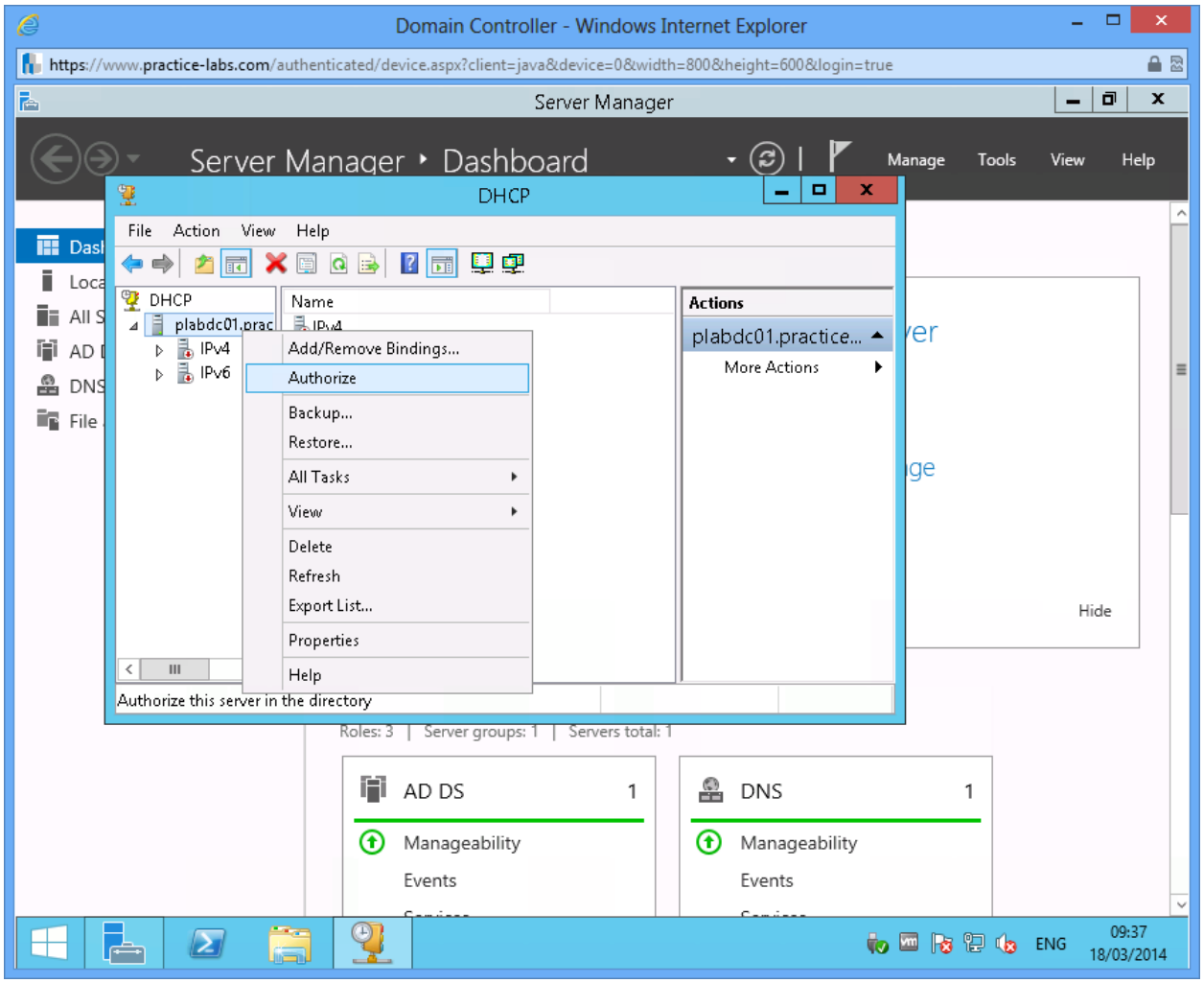
```
Add-WindowsFeature -IncludeManagementTools dhcp

exit
```



Step 2

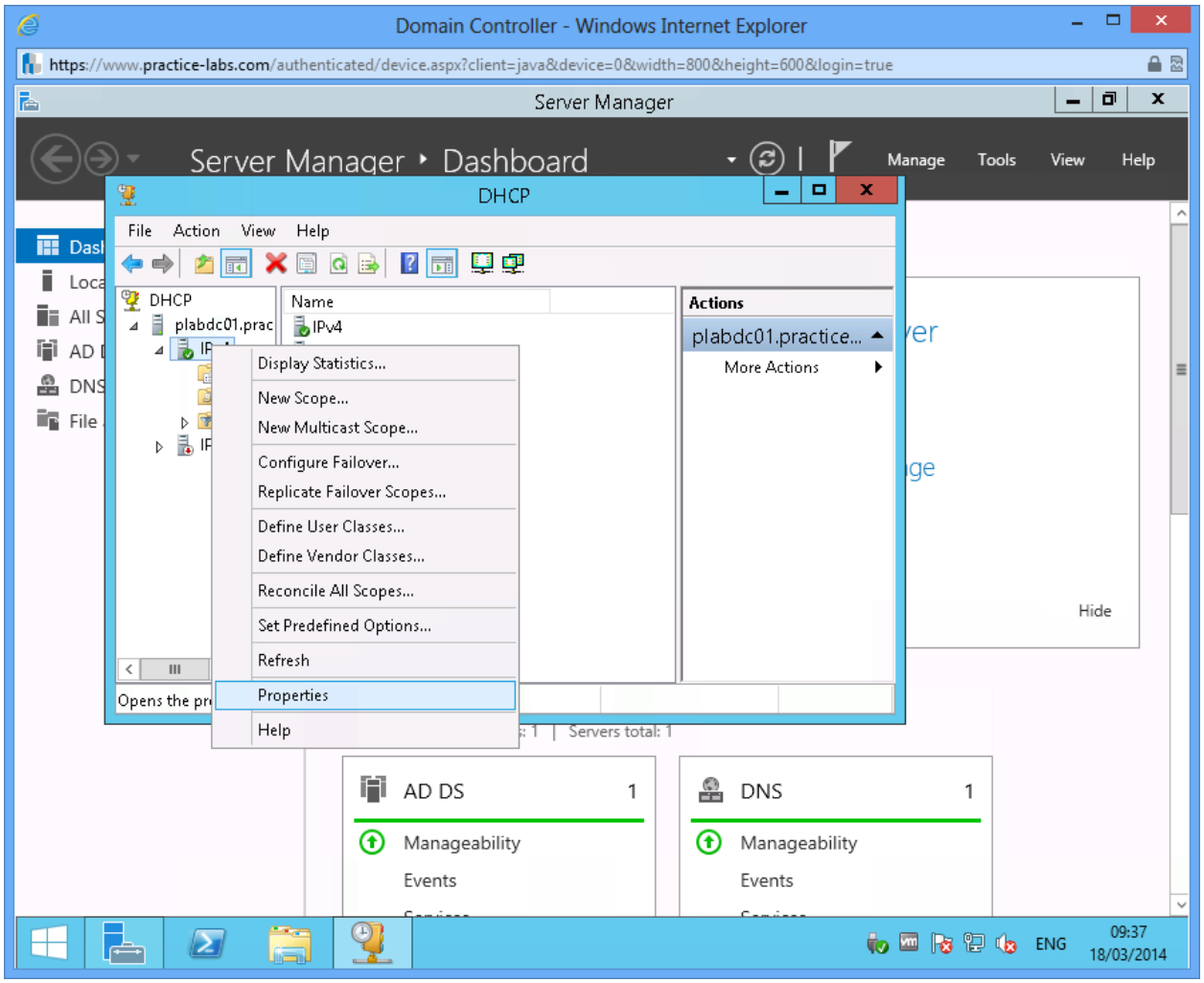
Go to **Server Manager > Tools > DHCP**.

Expand **PLABDC01** and then right-click choose **Authorize.**



Step 3

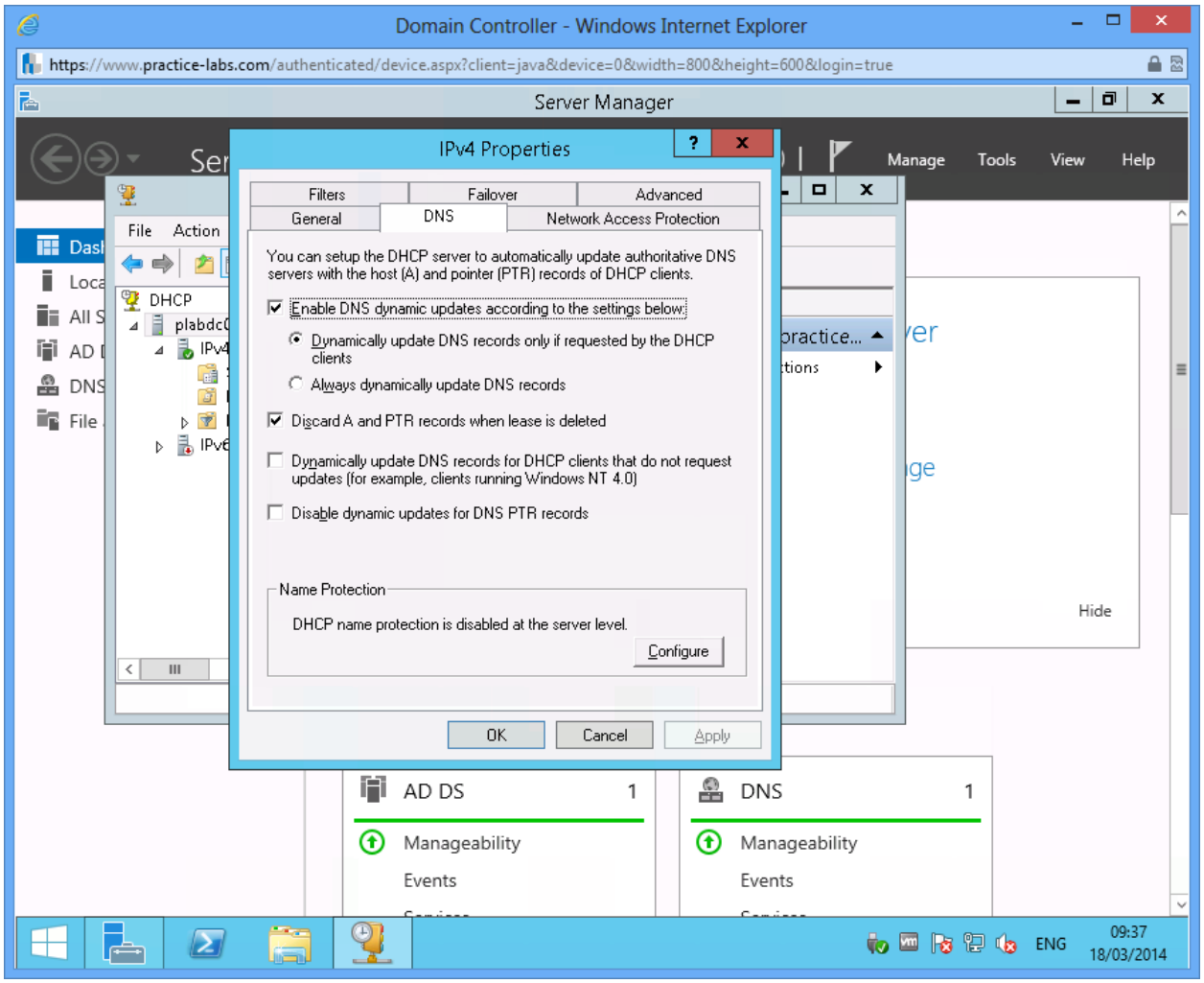
Right-click on **IPv4** and choose **Properties**.



Step 4

On IPv4 Properties, go to **DNS** tab.

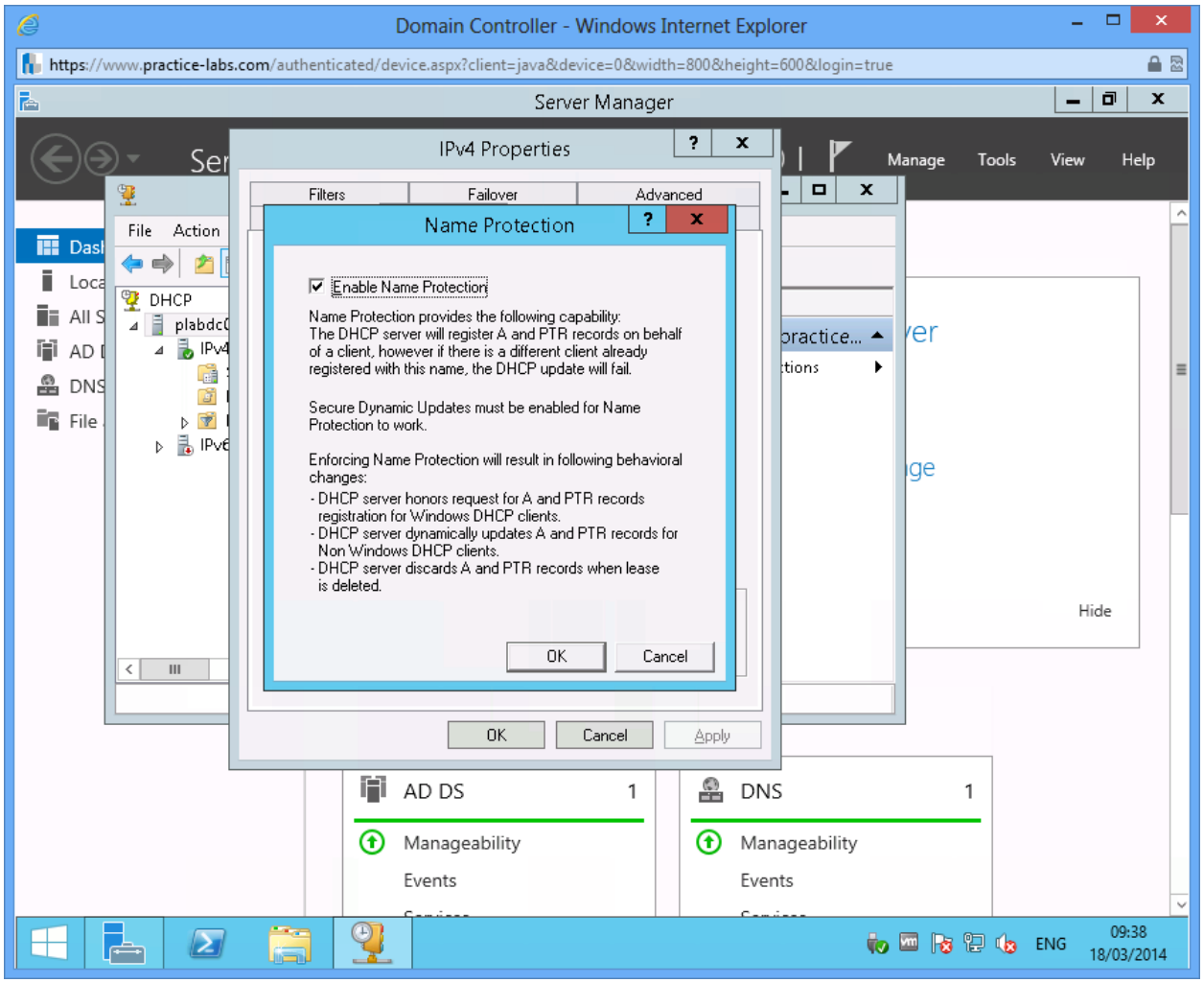
On DNS tab, go to Name Protection section and click **Configure**.



Step 5

On Name Protection dialogue, click on **Enable Name Protection** check box.

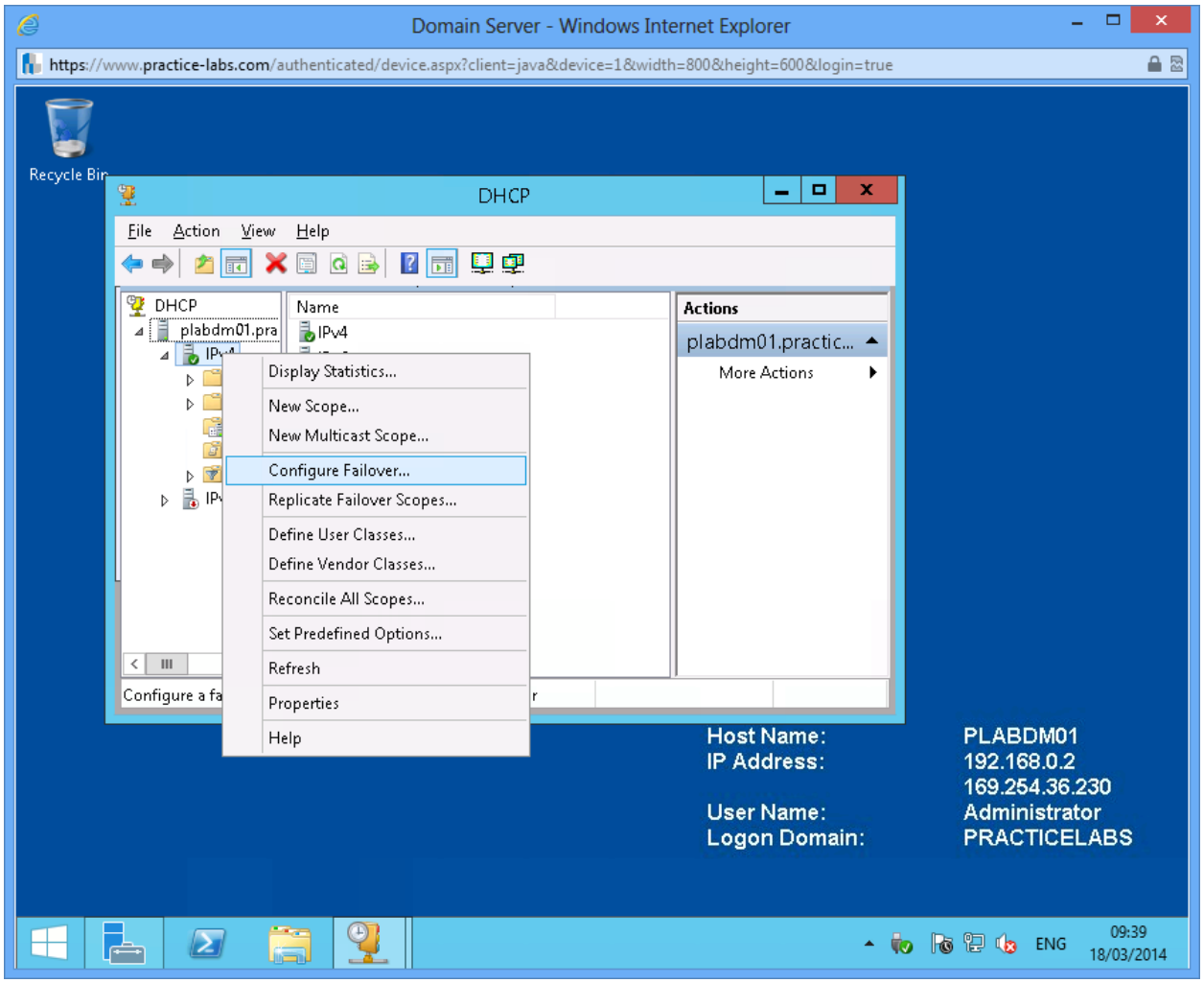
Click **OK** twice to exit from all open dialogue boxes.



Task 2: Configure DHCP Failover

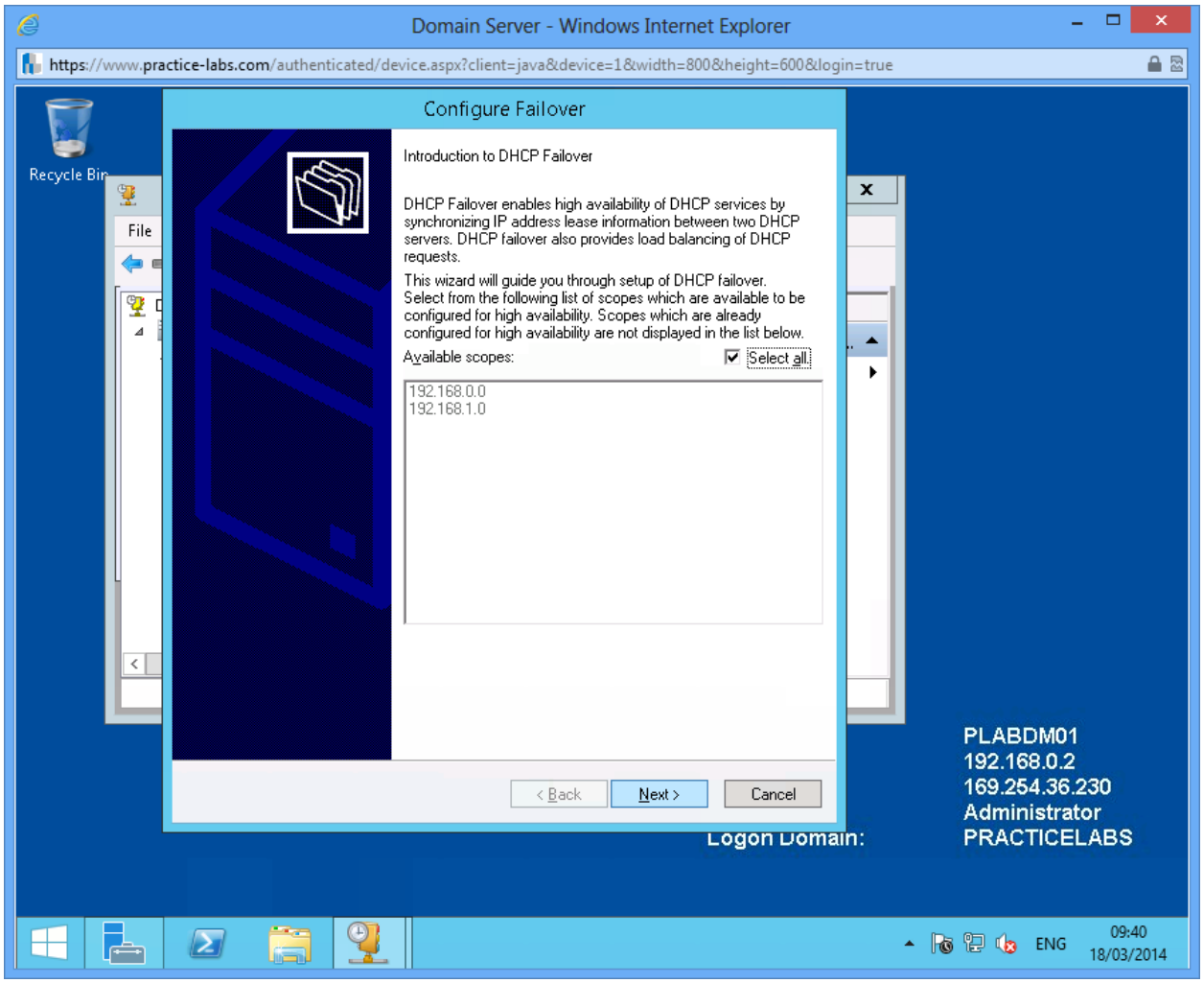
Step 1

Switch to **PLABDM01** and reopen DHCP snap-in. Right-click on IPv4 and then choose **Configure Failover**.



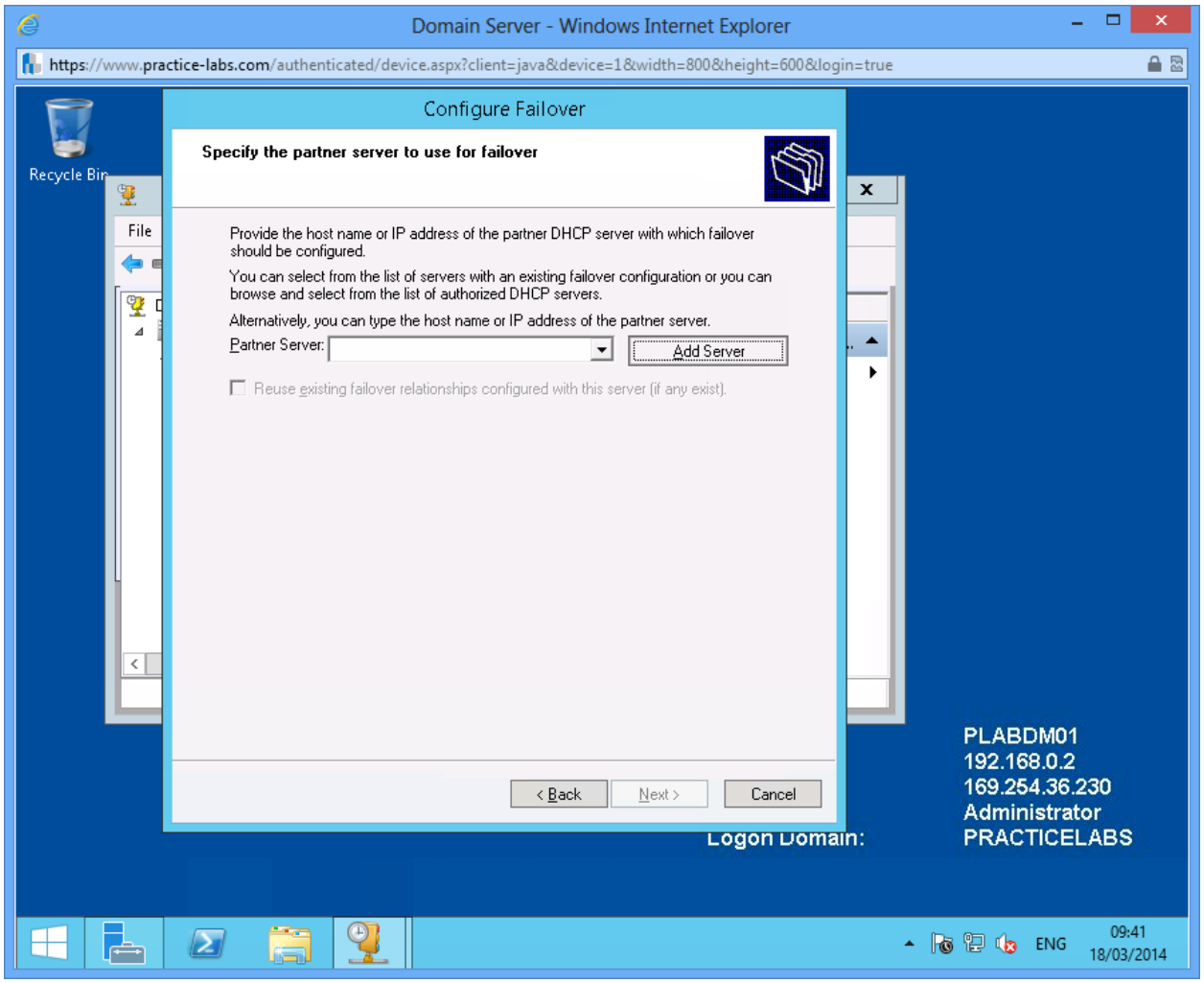
Step 2

On Introduction to DHCP Failover, click **Next**.



Step 3

On Specify the partner server to use for failover, click **Add Server**.

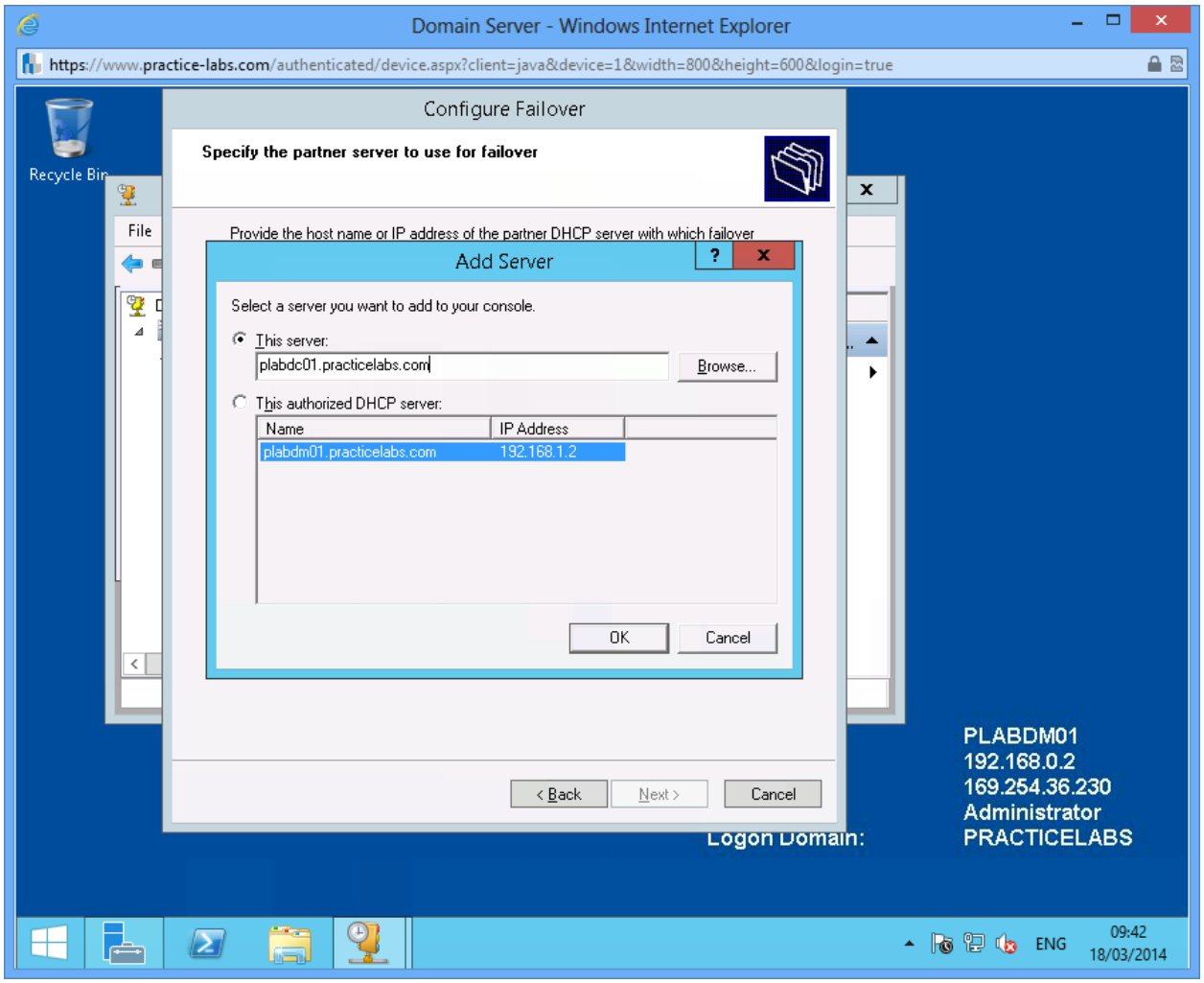


Step 4

On Add Server, choose **This server** option and type

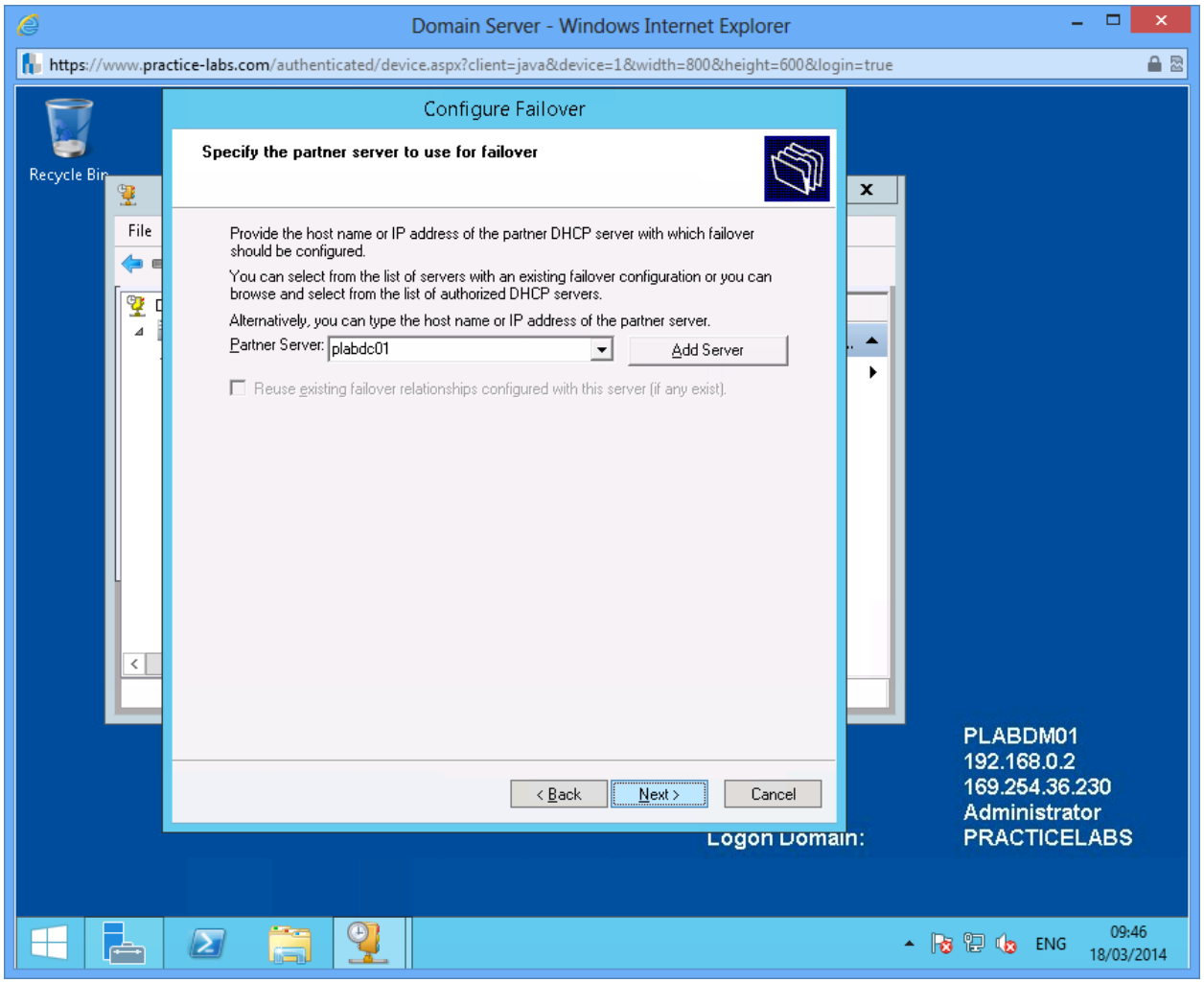
```
plabdc01.practicelabs.com
```

Click **OK**.



Step 5

On Specify the partner server to use for failover, click **Next.**

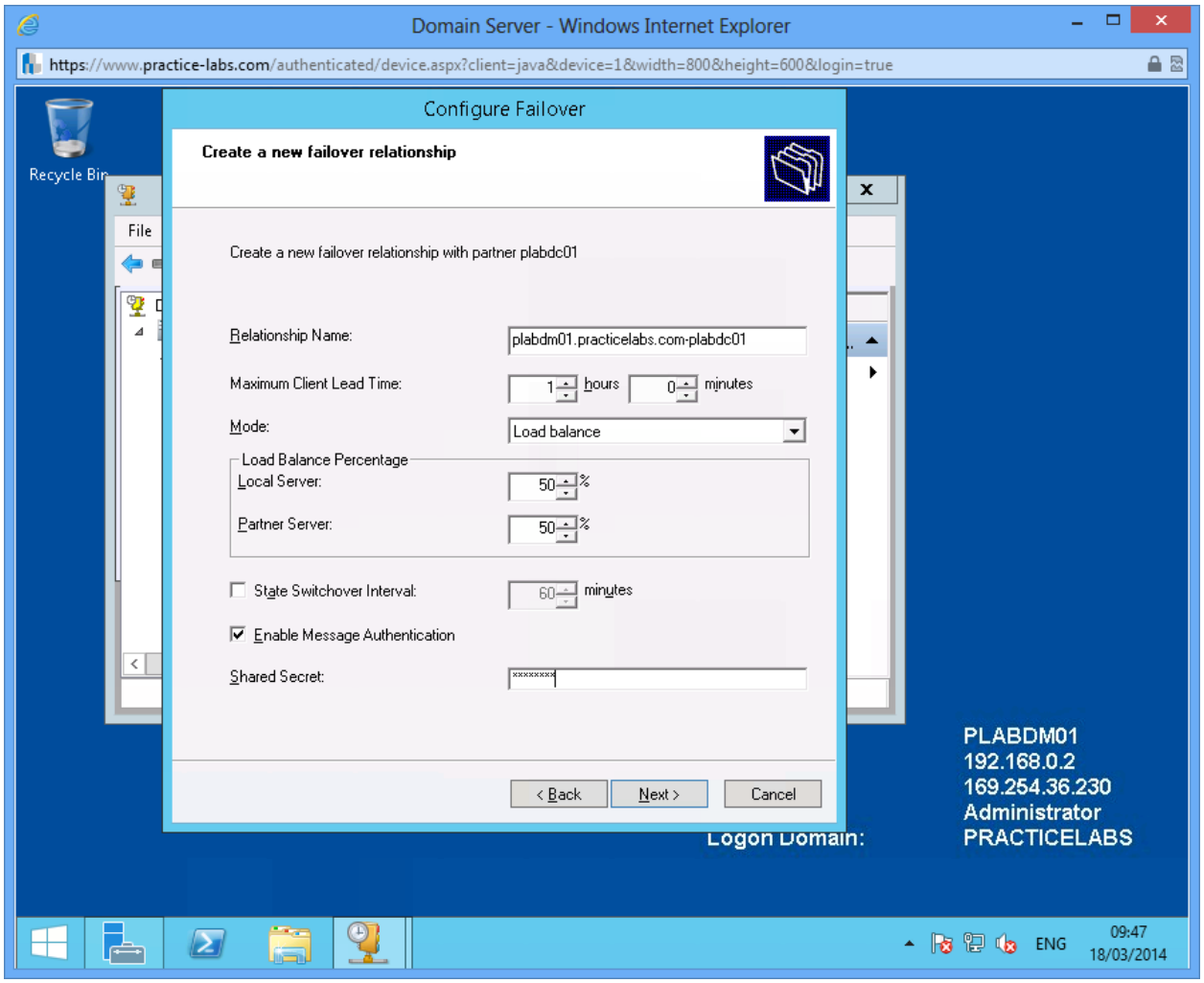


Step 6

On Create a new failover relationship, go to **Shared Secret** text box and type

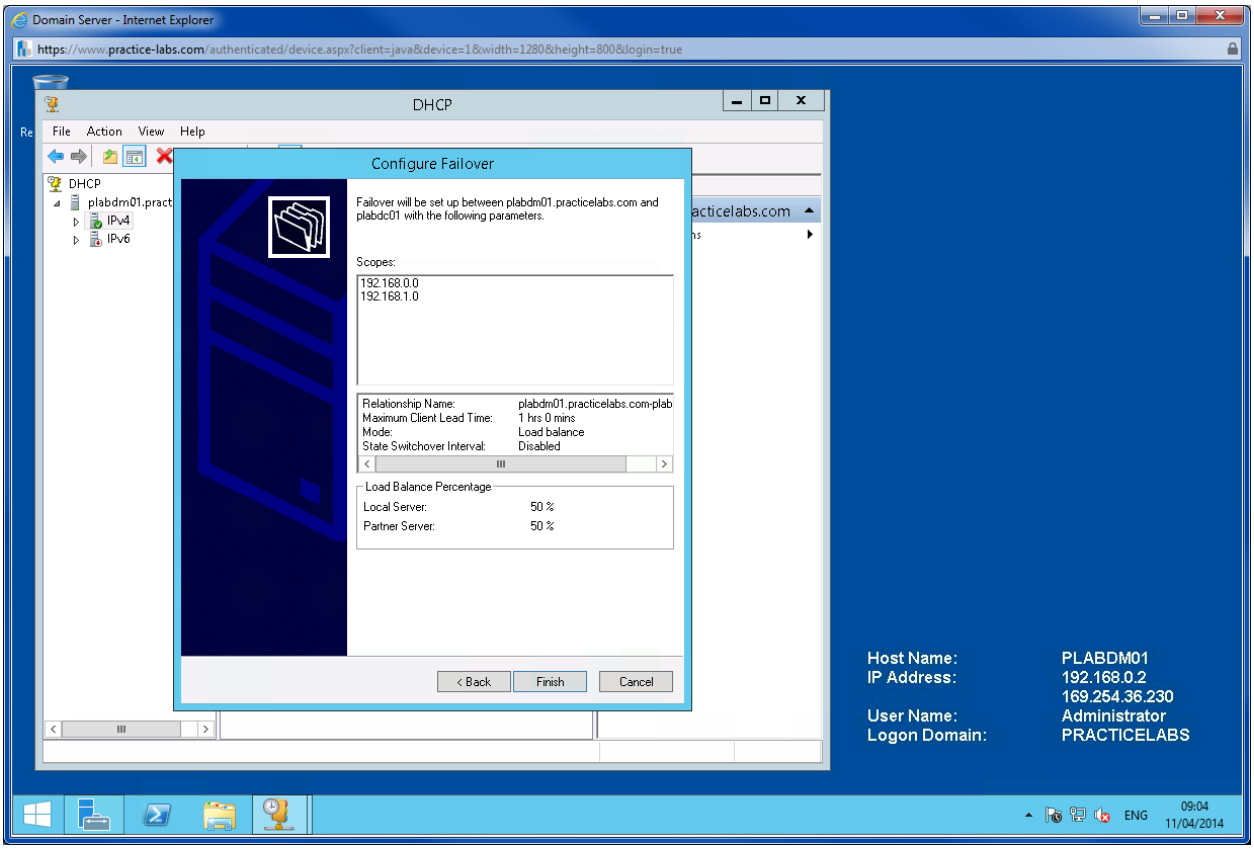
```
Passw0rd
```

Click **Next**.



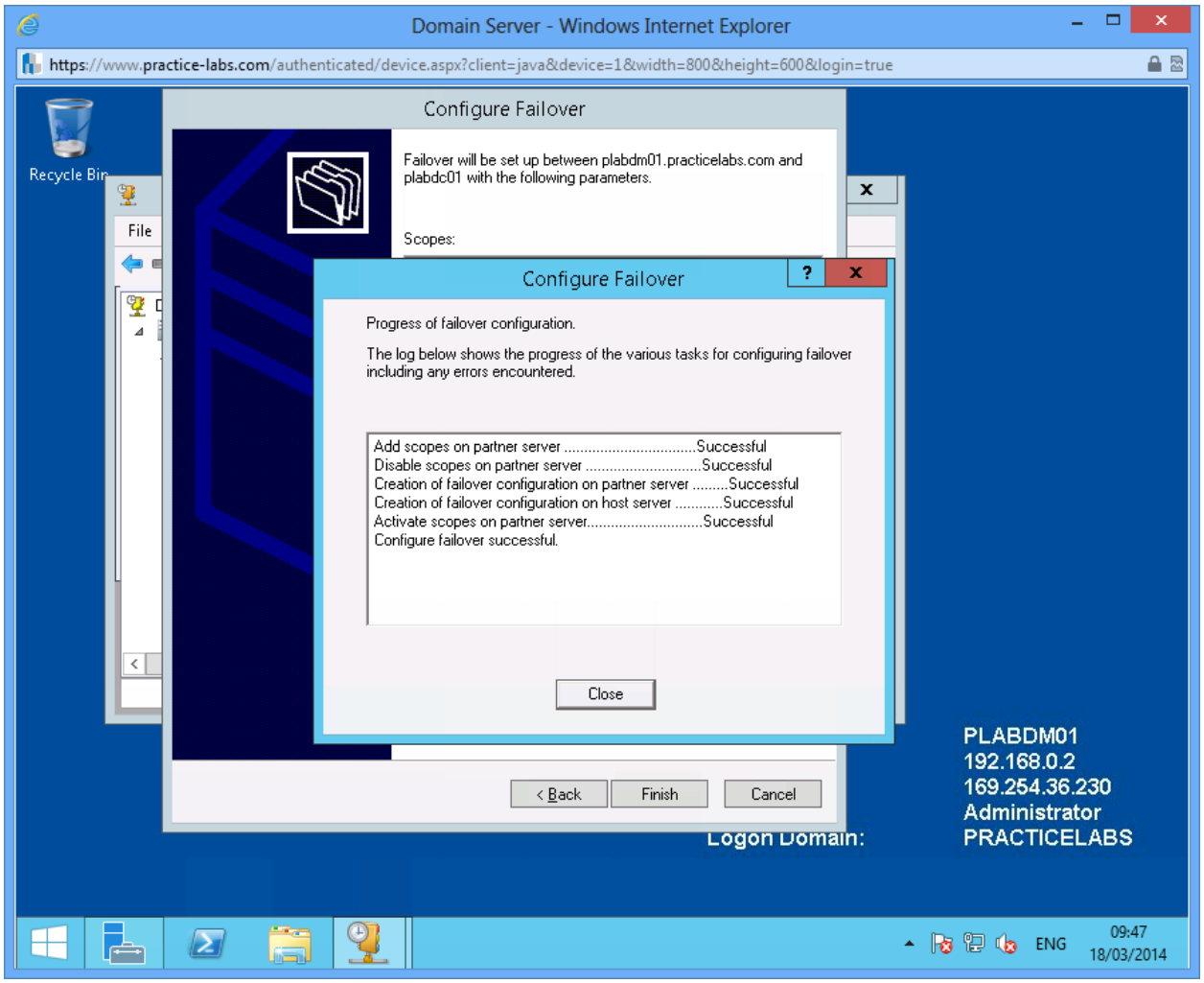
Step 7

On Configure Failover, click **Finish**.



Step 8

On Configure Failover dialogue box, click **Close**.



Leave all the devices powered on in their current state and proceed to the next exercise.

Exercise 3 - Verify DHCP Client Functionality

In this exercise, you will verify that Windows 8 client can lease the IP address from a DHCP server.

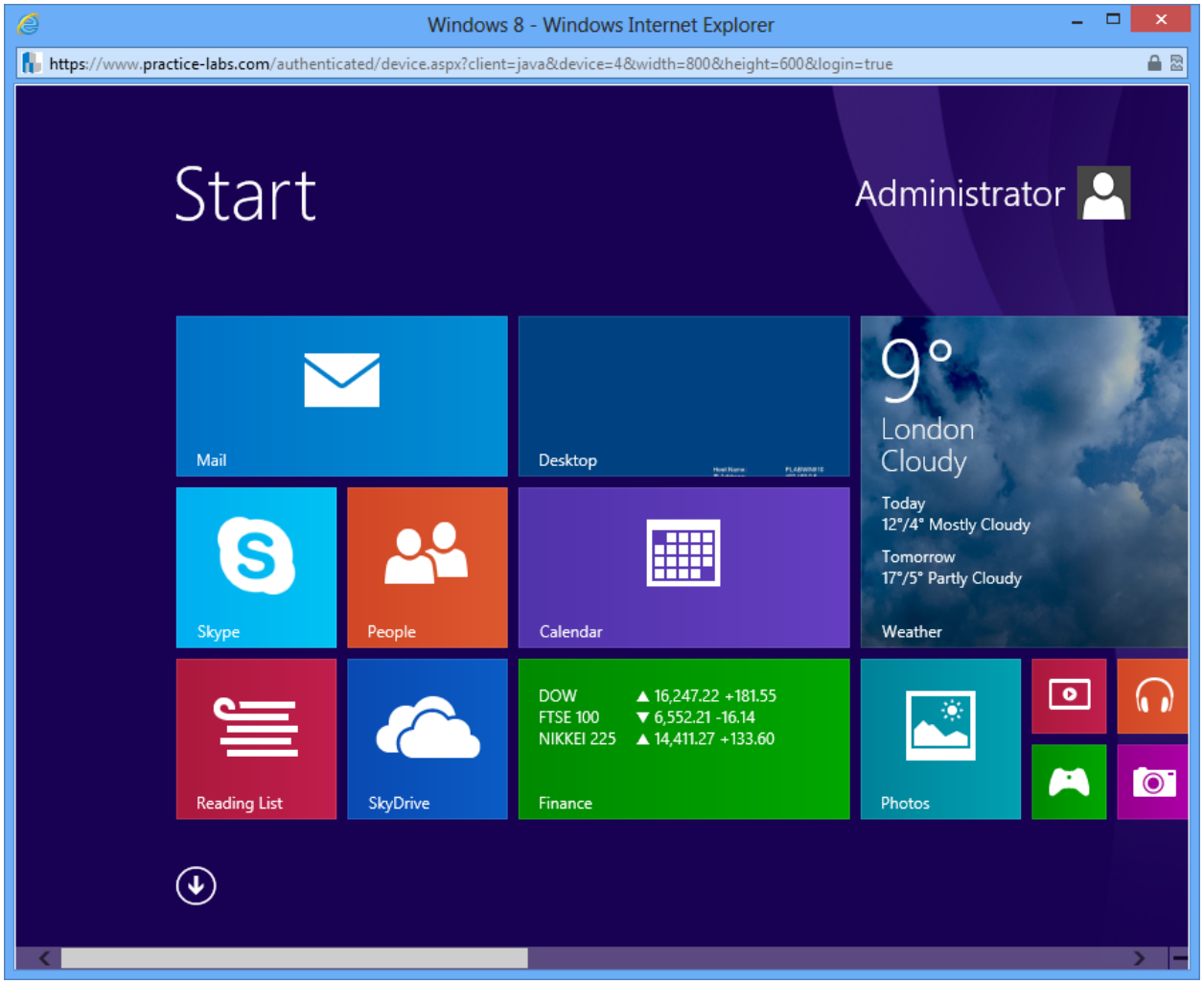
Please refer to your course material or use your favourite search engine to research for more information about this topic.

Task 1: Configuring the Client

Step 1

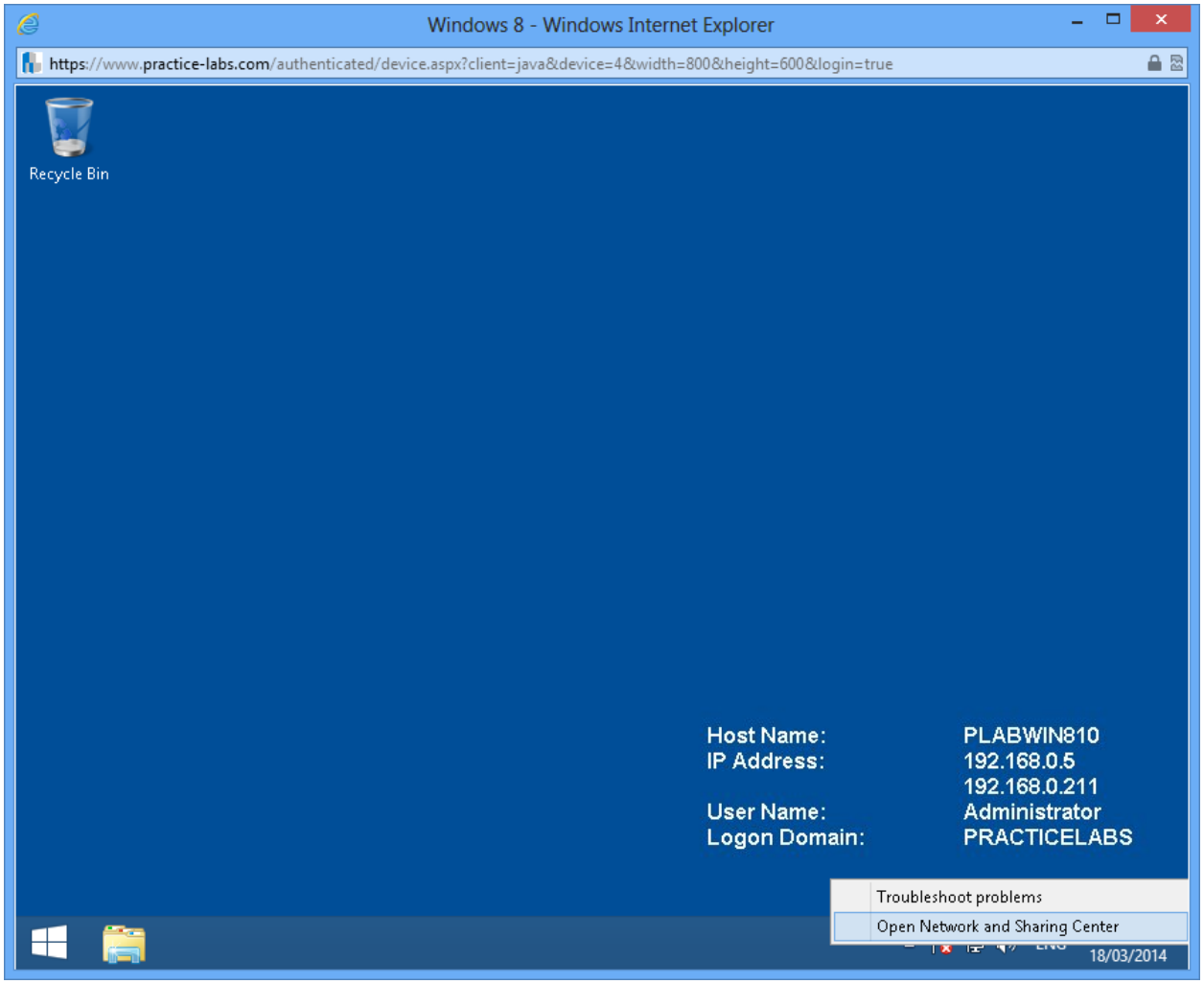
Ensure you have powered on the required devices and connect to **PLABWIN810**.

On Windows Start Screen, click on **Desktop** tile.



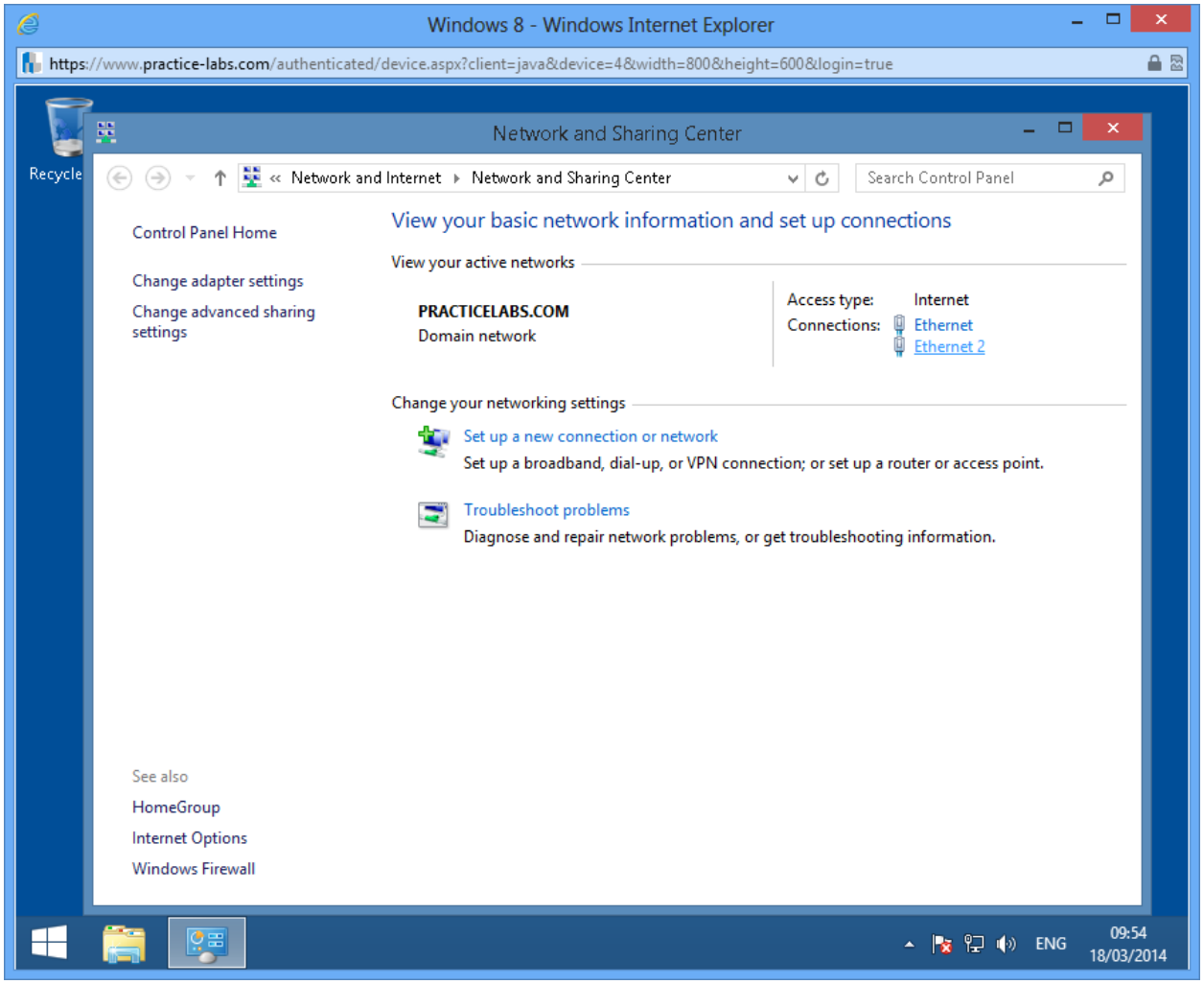
Step 2

Go to system tray and right-click on network icon, and then choose **Open Network and Sharing Centre**.



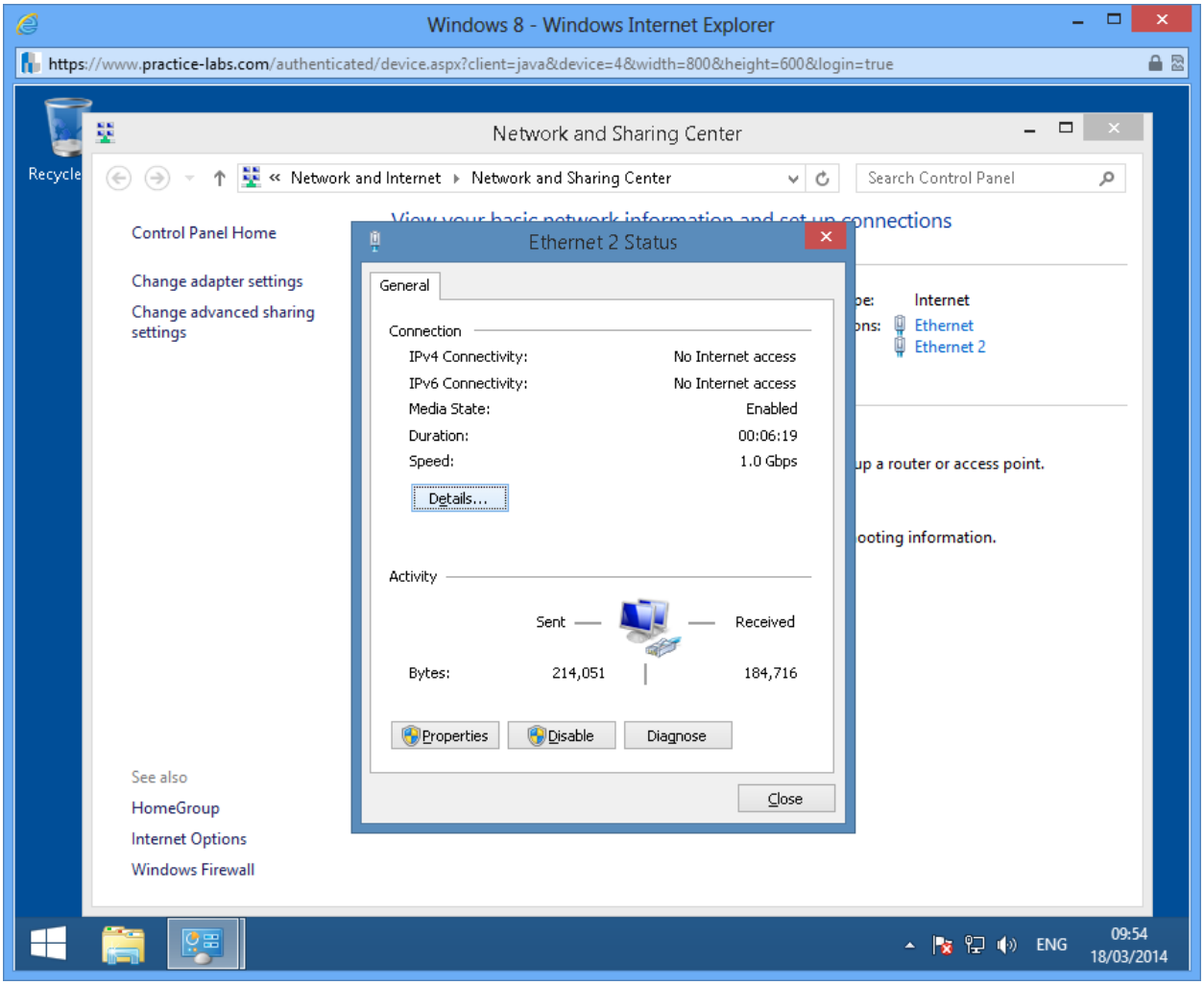
Step 3

Click on **Ethernet 2** link.



Step 4

On Ethernet 2 Status, click **Details…**

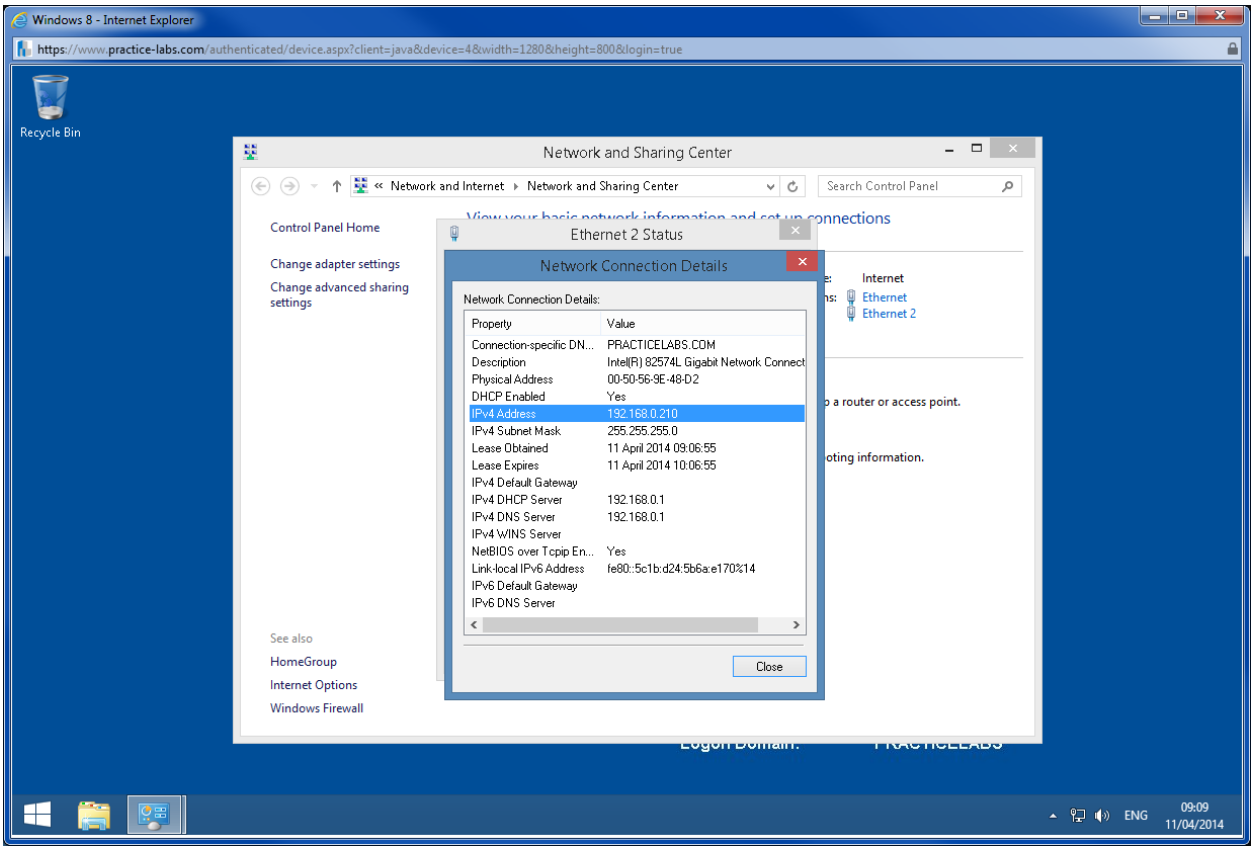


Step 5

The Network Connection Details dialogue now displays the IP configuration of **PLABWIN810**.

Click **Close**.

Keep Network and Sharing Centre window open.

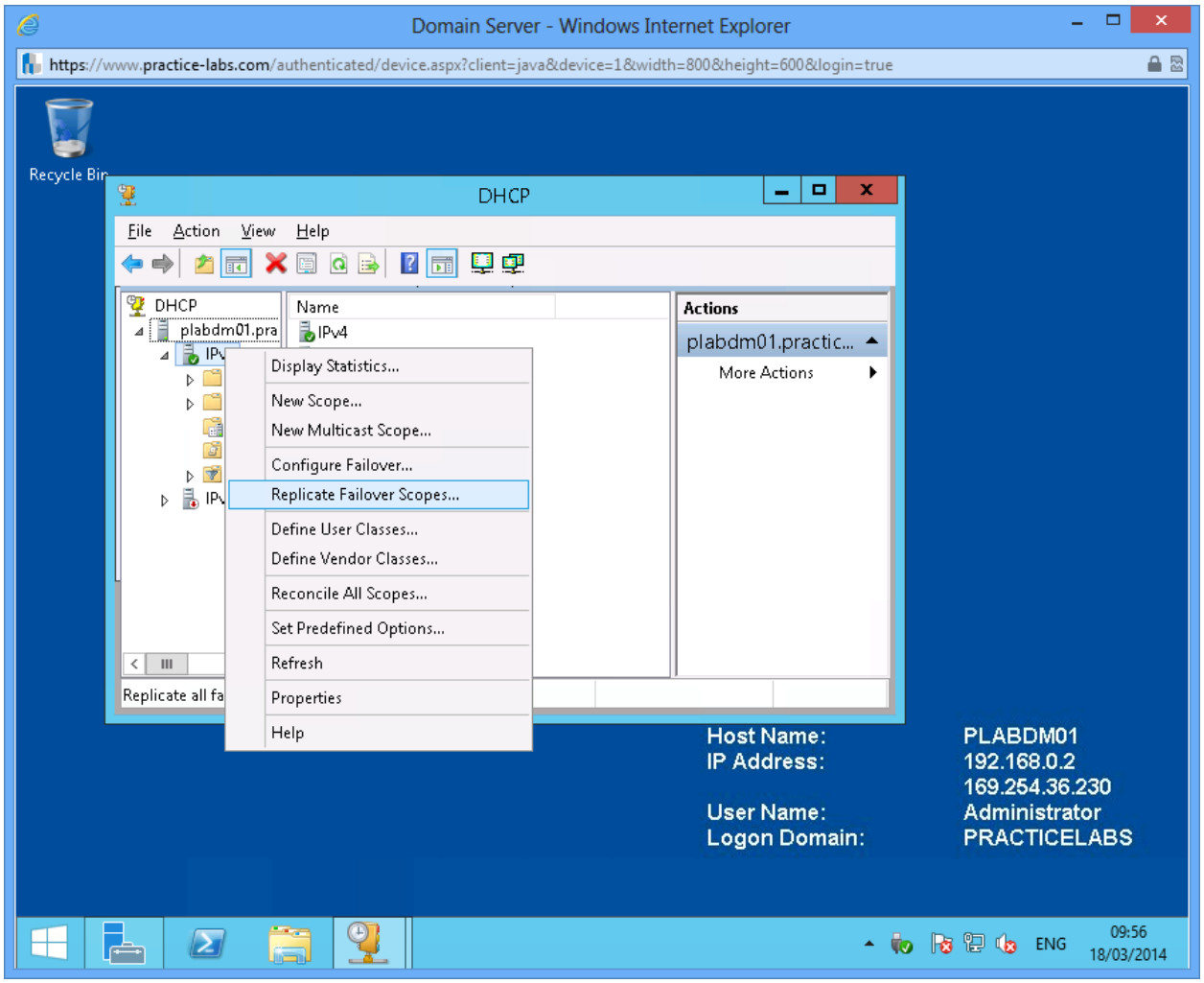


Task 2: Replicate Failover Scopes

Step 1

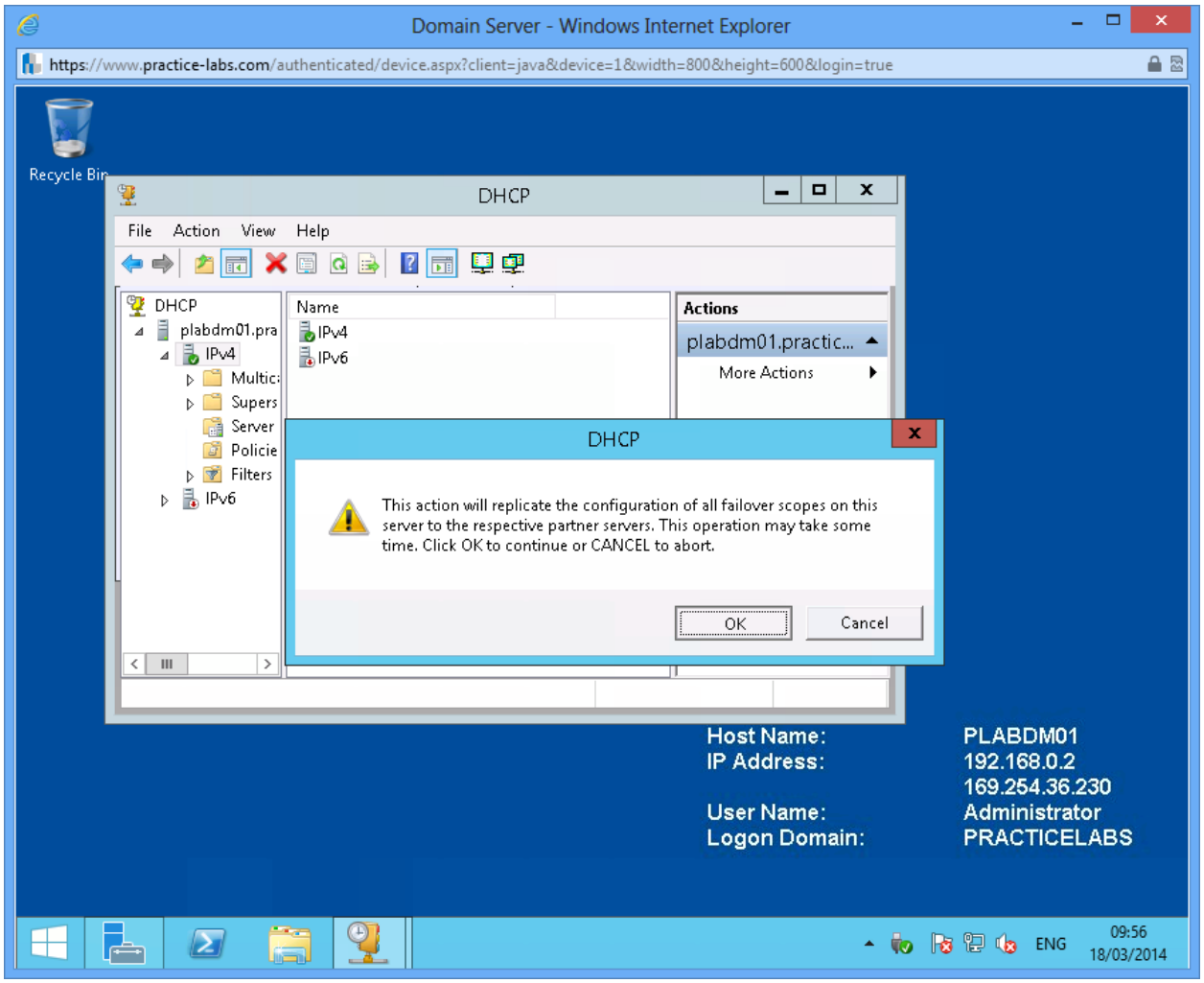
Switch to **PLABDM01**.

Go back to DHCP console and then right-click on **IPv4**, choose **Replicate Failover Scopes**



Step 2

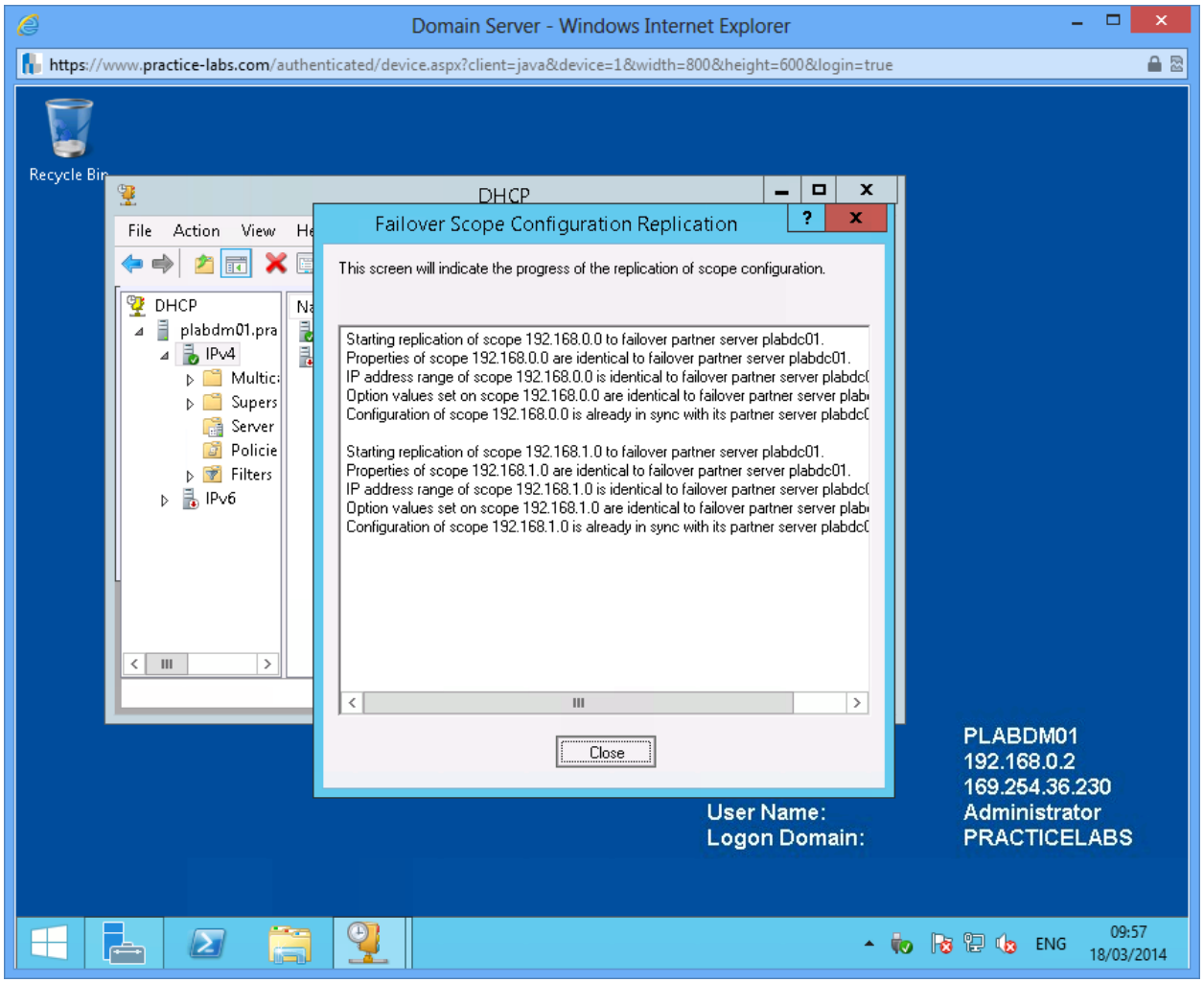
Click **OK** to proceed with the replication of failover scopes.



Step 3

The Failover Scope Configuration Replication dialogue box displays the status of replication.

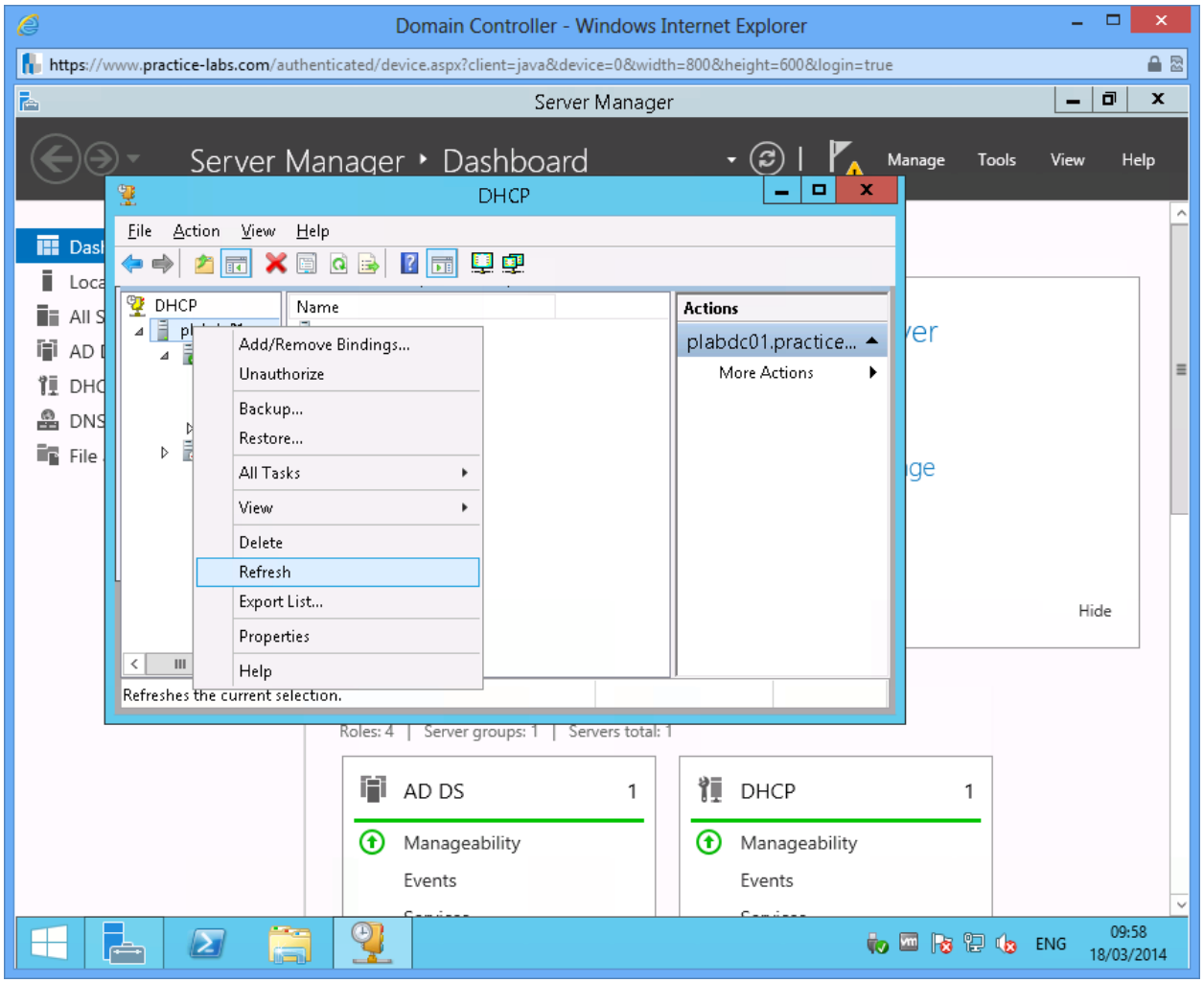
Click **Close**.



Step 4

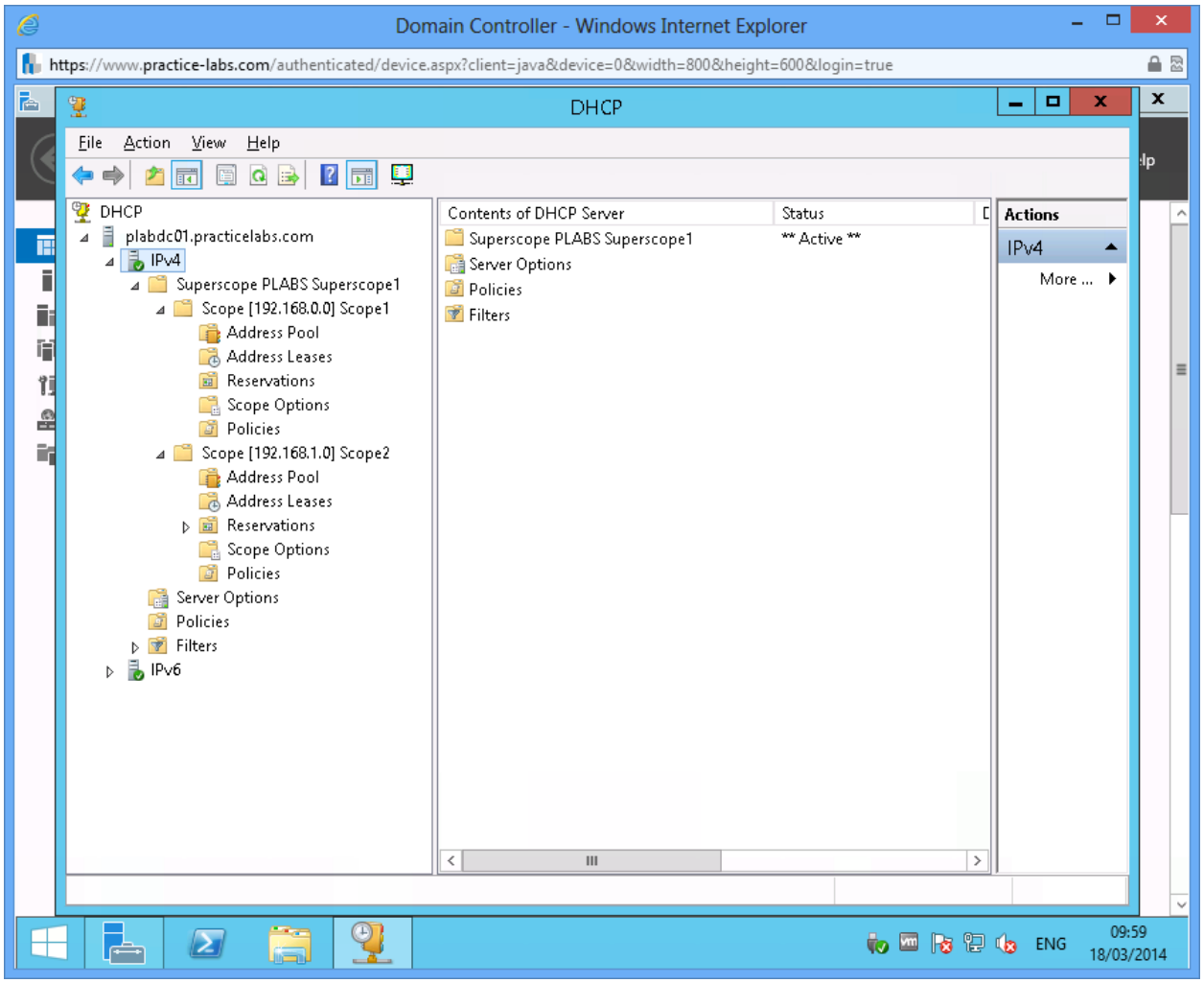
Switch to **PLABDC01** and reopen DHCP console.

Press **F5** or right-click on **plabdc01.practicelabs.com** and choose **Refresh**.



Step 5

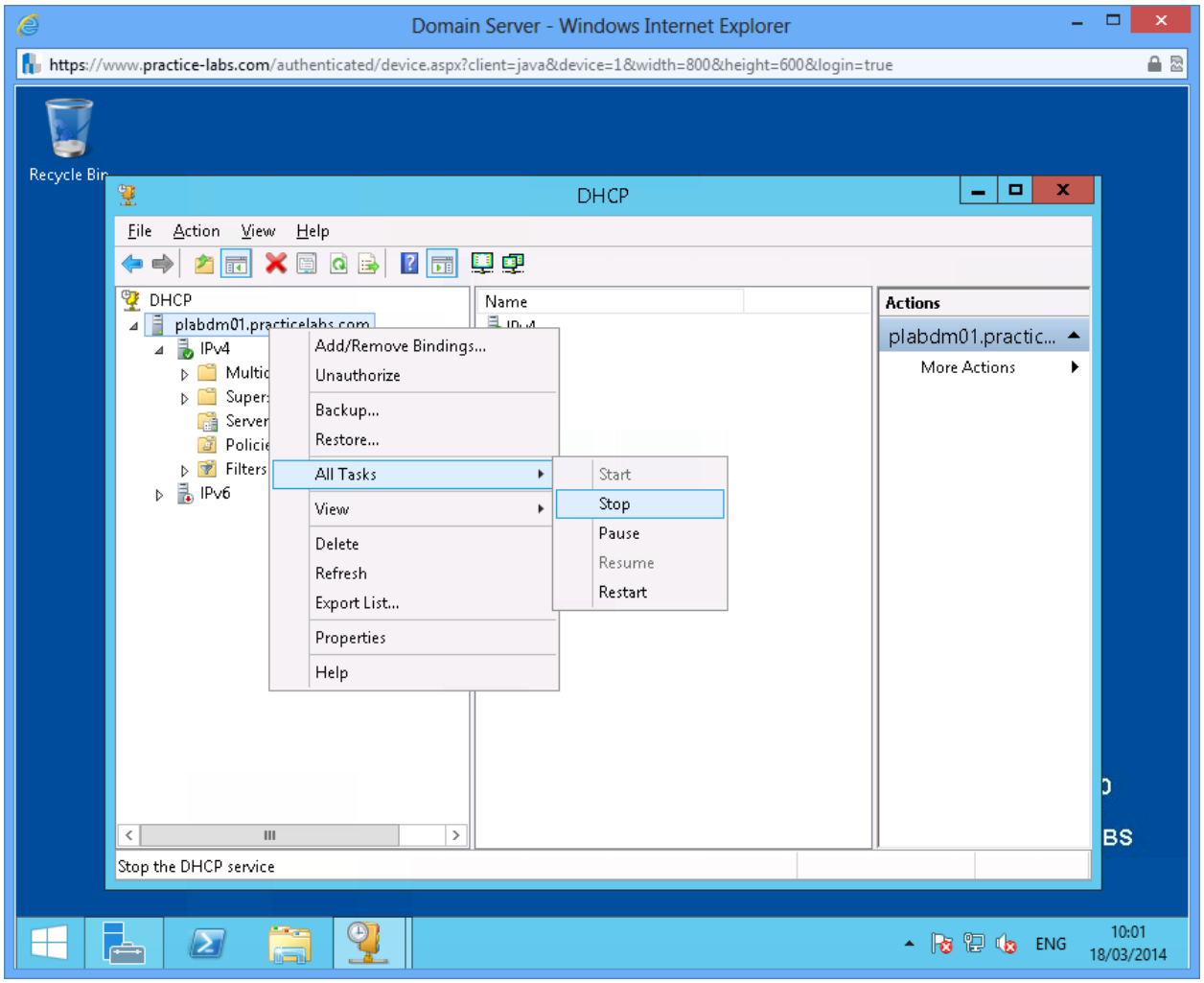
DHCP server on **PLABDC01** now displays the replicated scopes from **PLABDM01** computer.



Step 6

Switch to **PLABDM01.**

On DHCP console, right-click on **plabdm01.practicelabs.com > All Tasks > Stop**.

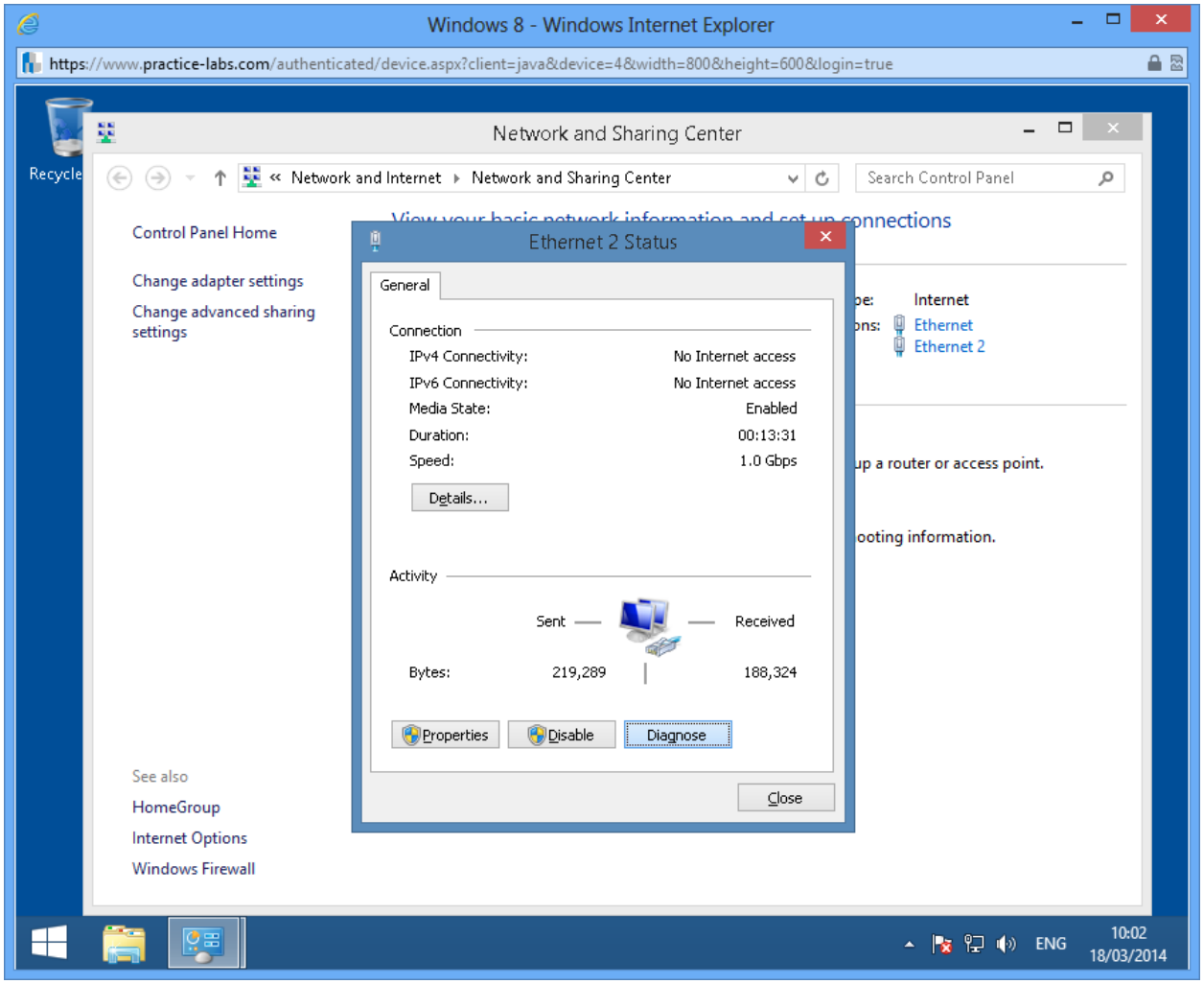


Step 7

Switch to **PLABWIN810**.

In Network and Sharing Centre, click on **Ethernet 2** link.

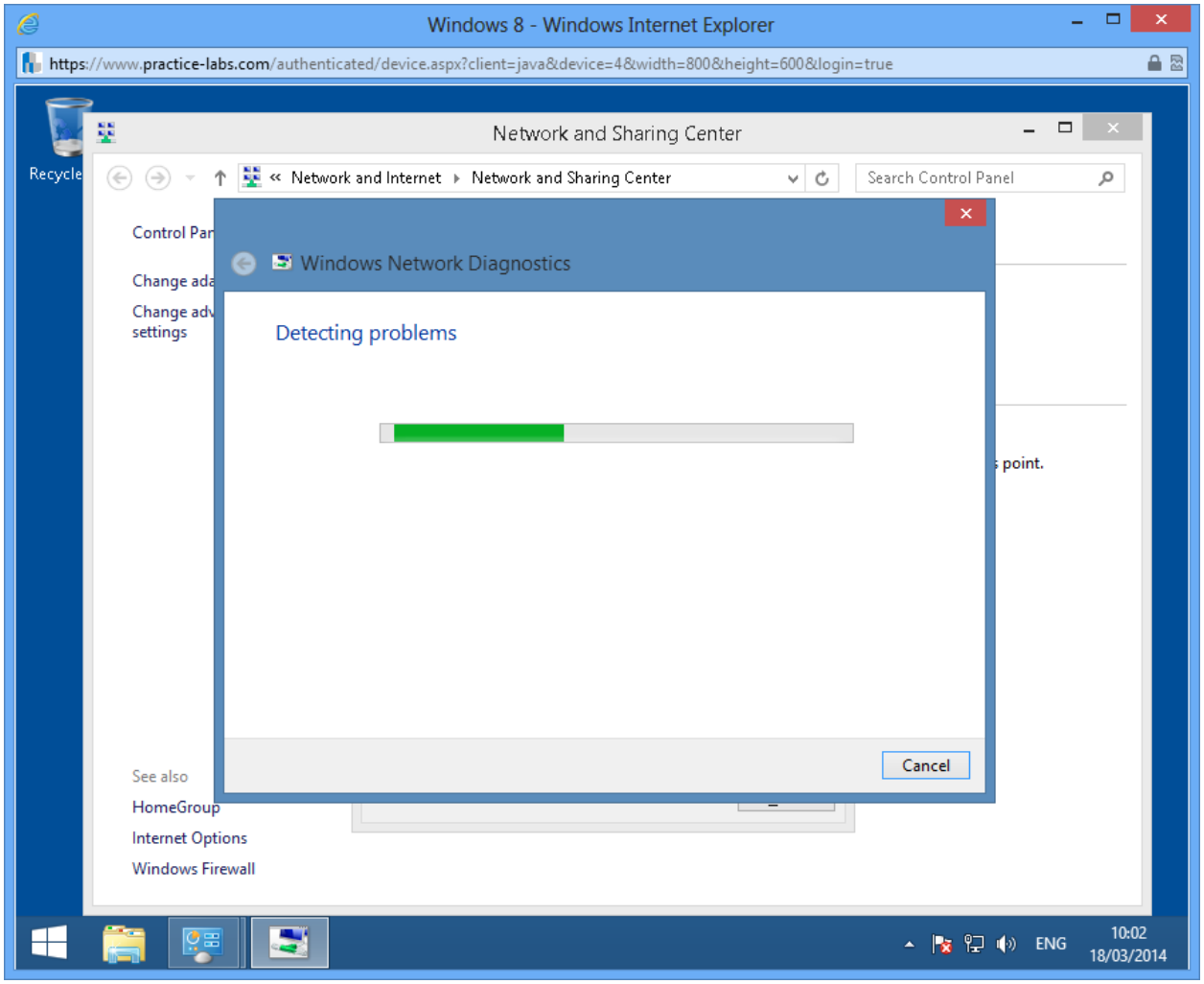
Click **Diagnose**. Wait for the program to complete the diagnosis and close the Network Diagnostics tool.



Step 8

Wait for Windows Network Diagnostics to complete the diagnosis.

Then click **Close**.

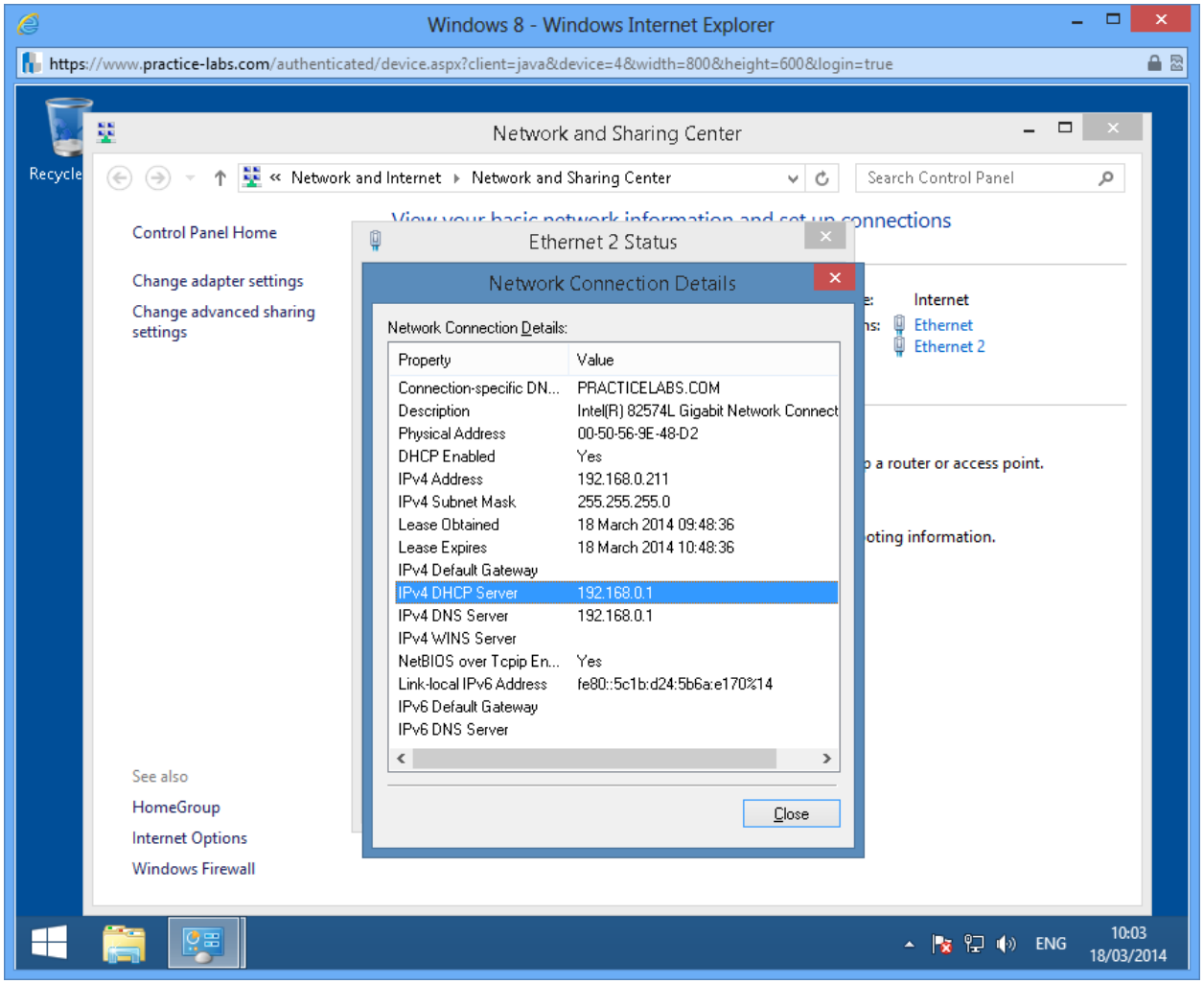


Step 9

Go back and view the IP address configuration of **PLABWIN810** computer.

You will notice that IPv4 DHCP Server **192.168.0.1** refers to **PLABDC01**. Therefore, the failover of DHCP scopes is working.

Close all dialogue boxes.



Shutdown all virtual machines used in this lab, by using the power functions located in the Tools bar before proceeding to the next module. Alternatively you can log out of the lab platform.

Summary

In this module you covered the following topics:

- How to configure advanced options in DHCP server such as super scopes and scope failover.