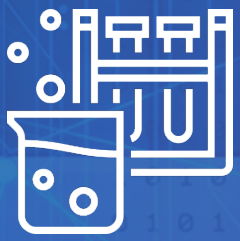
Lab Assignment
& Solution



Cybersecurity Professional Program

Microsoft Security

Microsoft Endpoint Security

MS-09-LS1
BitLocker

Note: Solutions for the instructor are shown inside the green box.

Lab Objective

Understand what drive encryption is and how to implement it on a Windows Server.

Lab Mission

Practice the installation and activation of BitLocker on a Windows Server 2016 machine.

Lab Duration

20–35 minutes

Requirements

- Basic working knowledge of Windows Server 2016
- Basic working knowledge of the Windows client
- Basic knowledge of BitLocker

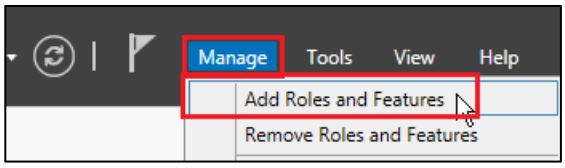
Resources

- Environment & Tools
  - VirtualBox
    - Windows Server 2016
    - Windows 10

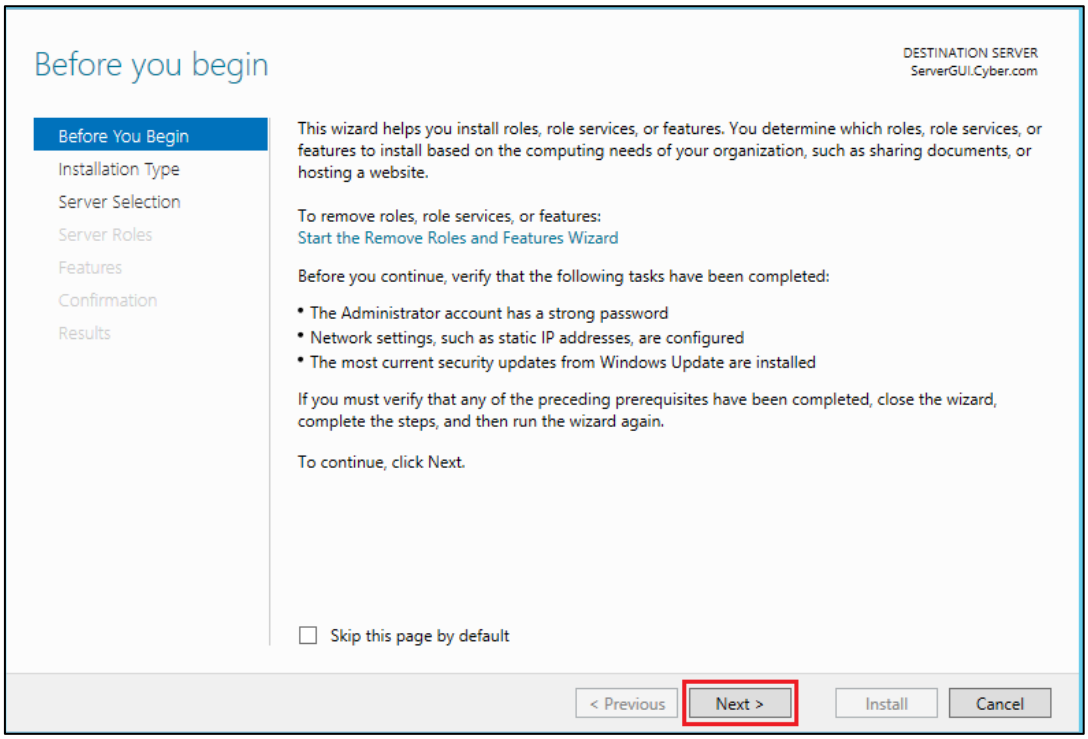
Lab Task 1: BitLocker Role Installation

In this task, you will install the BitLocker role on Server 1.

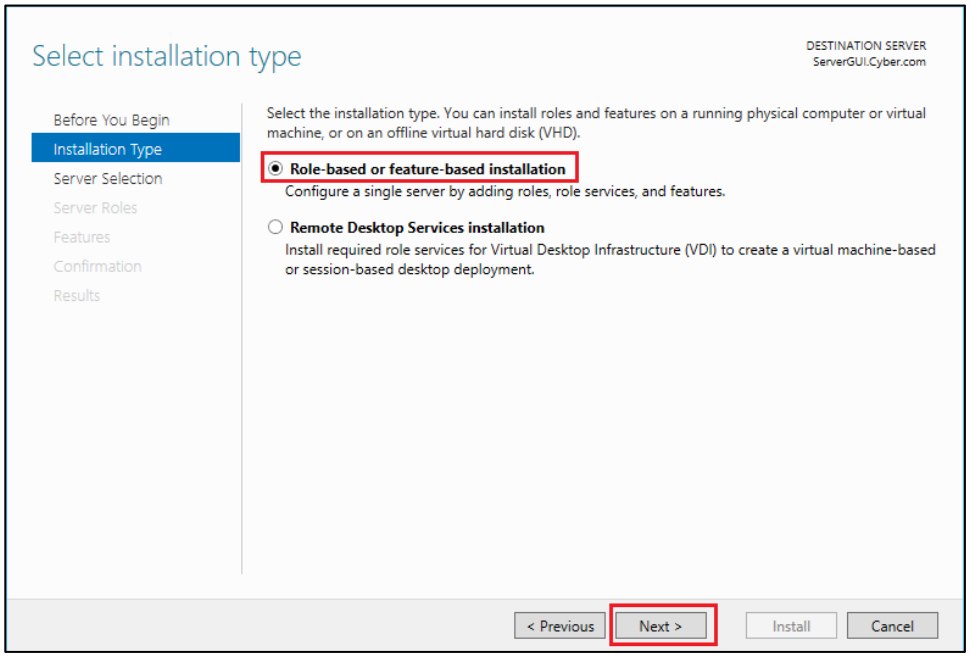
1. On the Server Manager dashboard, click the **Manage** drop-down menu and select ***Add Roles and Features***.



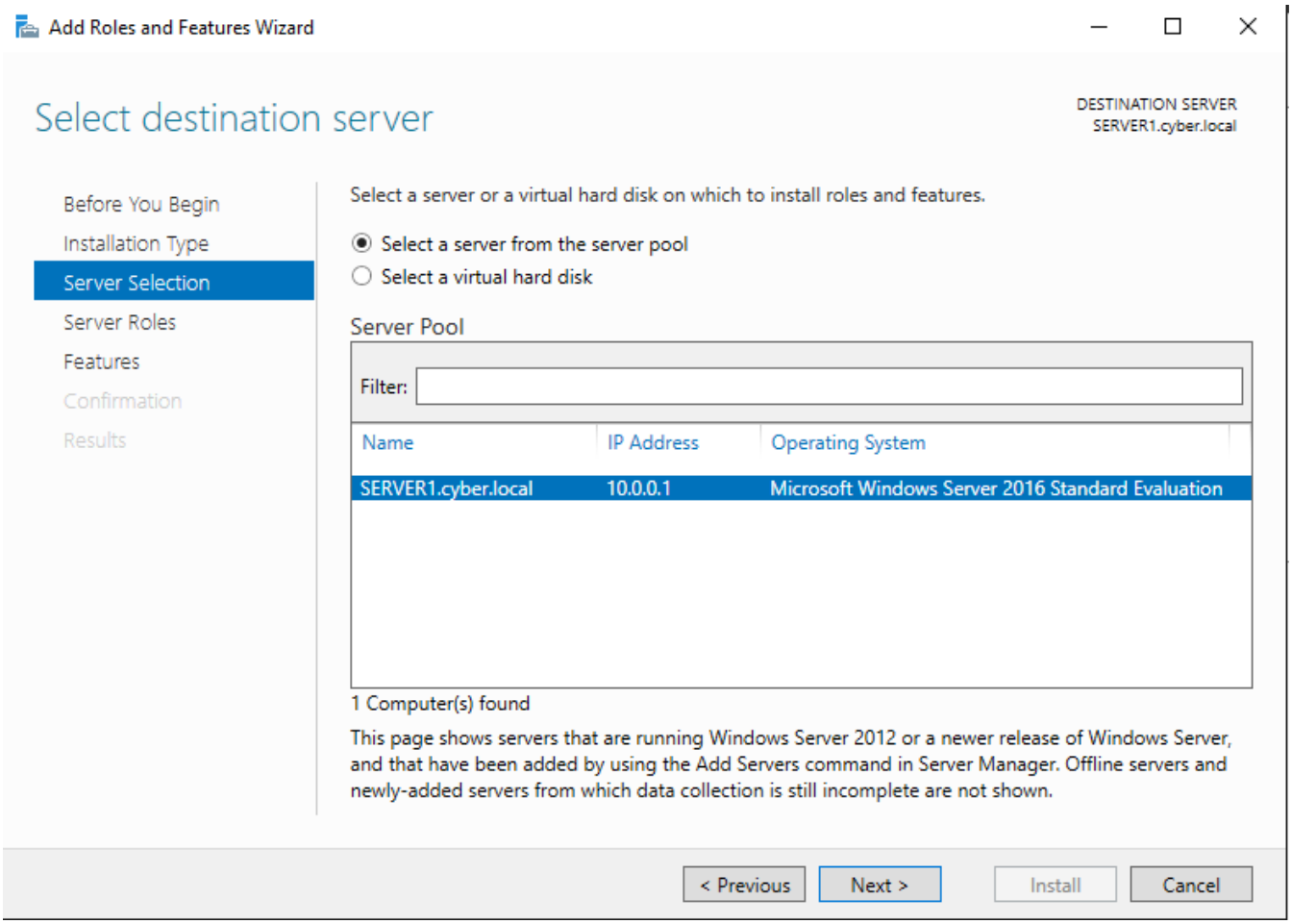
2. On the first window, click **Next** to continue.



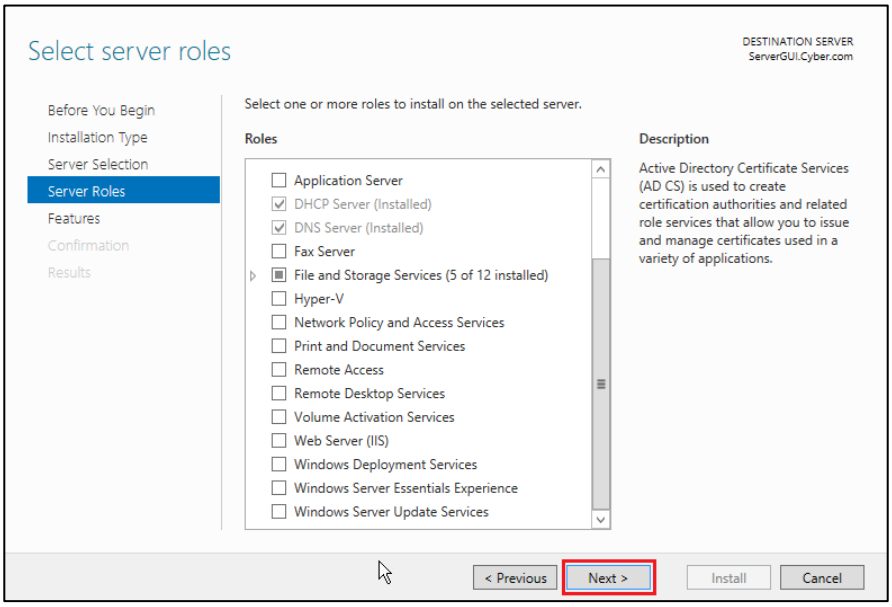
3 Select ***Role-based*** for the installation type.



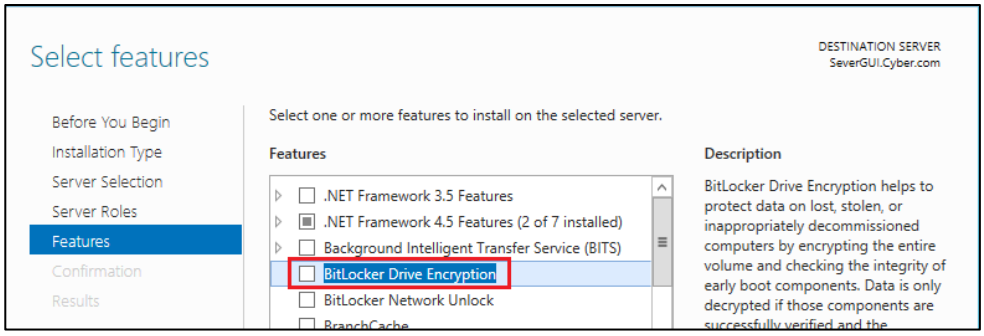
4 Select ***server1.cyber.local*** from the server pool to set the location where the feature will be installed.

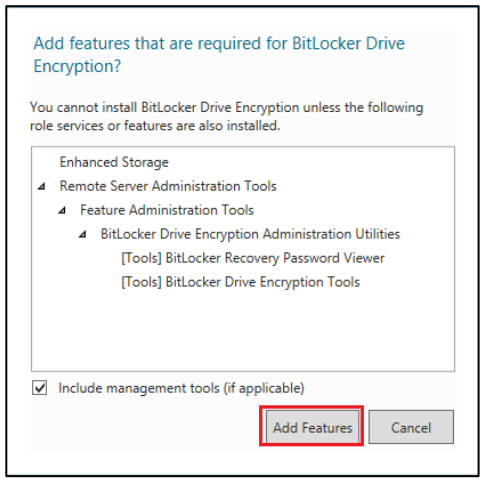


5 Skip the Server Roles step by clicking **Next**.

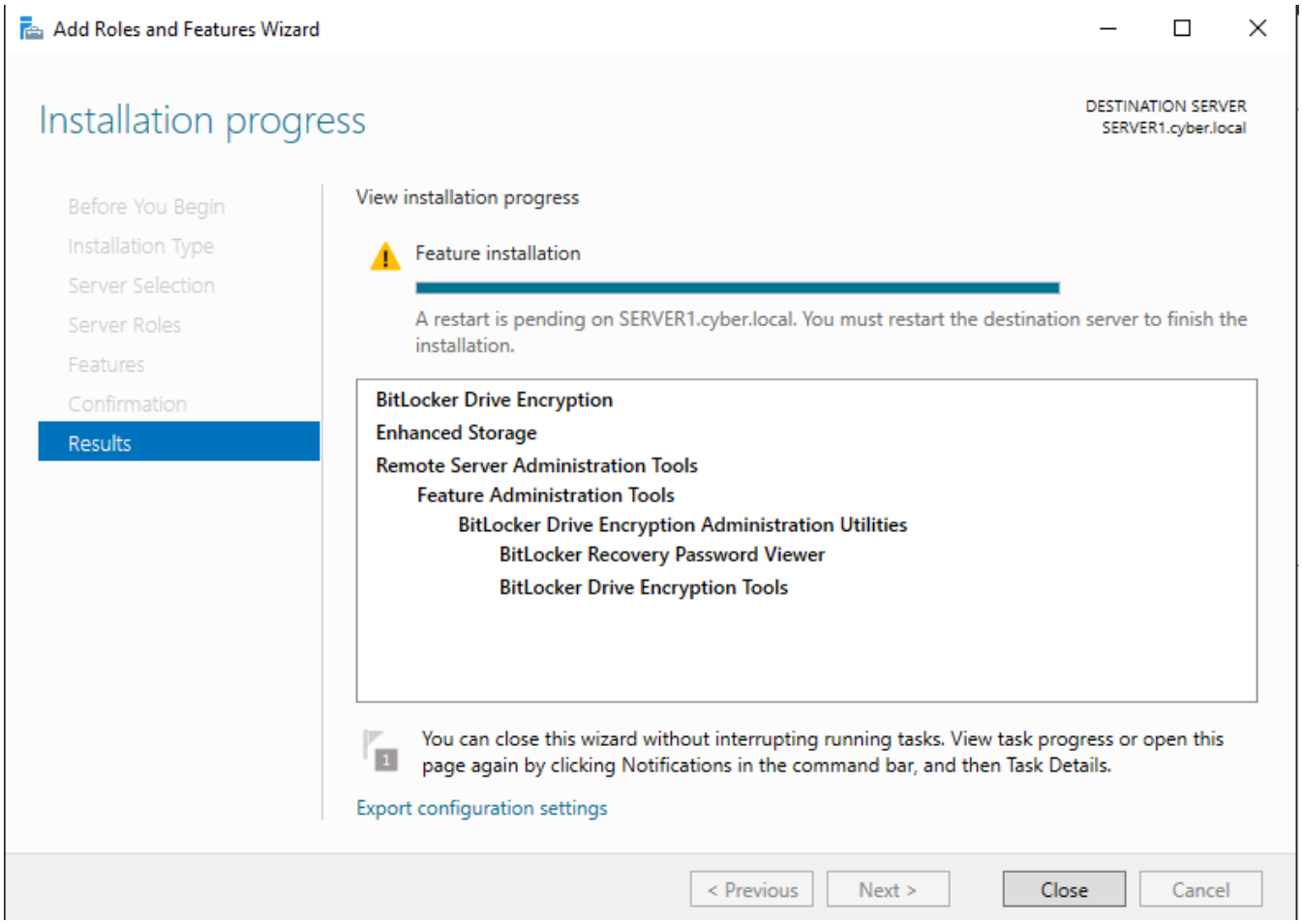


6 In the Features step, select ***BitLocker Drive Encryption*** and accept the configuration in the pop-up window. Then, click **Next**.





7 Click **Install** to begin the installation process.

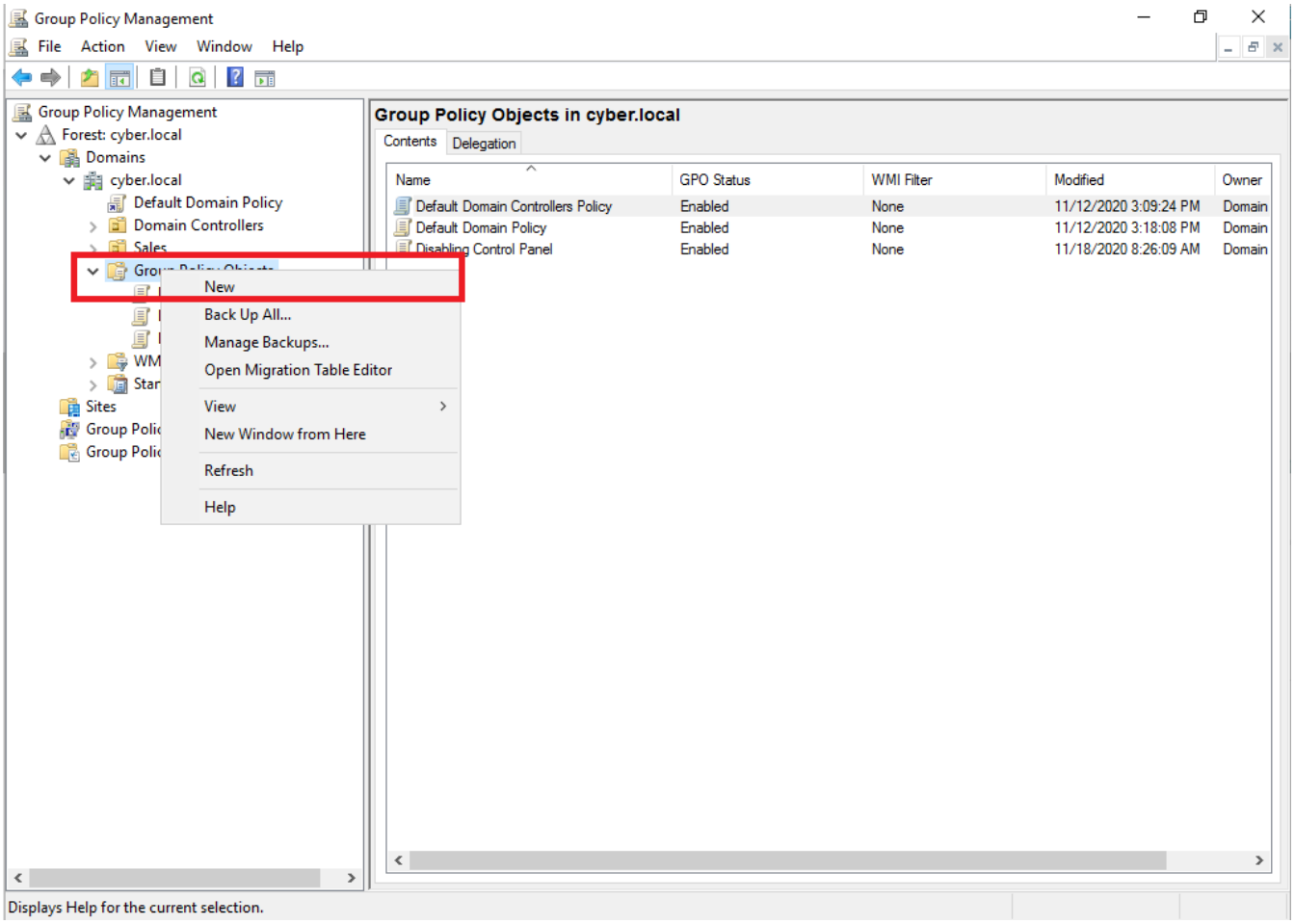


8 Finally, click **Start** on the bottom-left, and then click ***Restart*** in the top right corner.

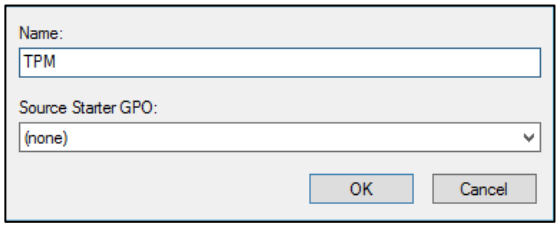
Lab Task 2: Authentication Without TPM

In this task, you will configure a policy for **BitLocker** to authenticate without a TPM chip, because the chip does not exist on the VM. Instead, it will request credentials on startup without using the TPM chip.

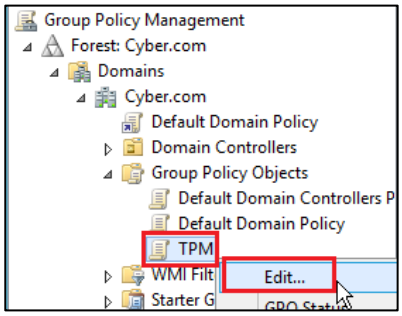
1 Open the **Group Policy Management** tool. Right-click **Group Policy Objects** and click ***New*** to create a new GPO.



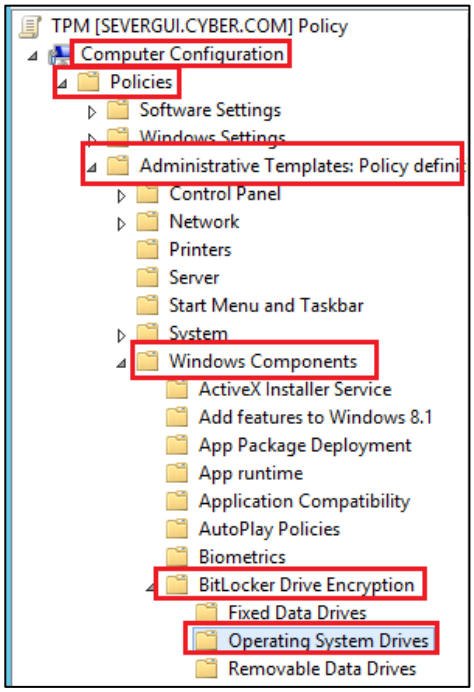
2 Name the GPO **TPM** and click **OK**.



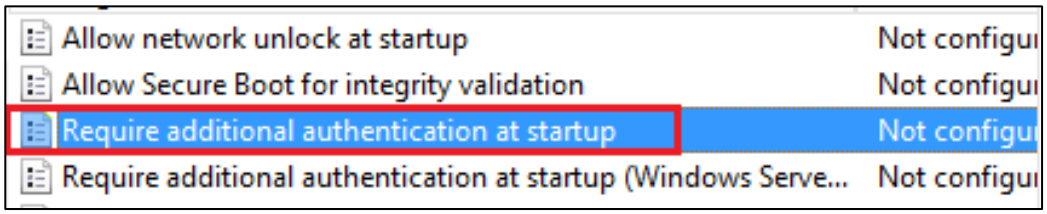
3 In ***Group Policy Management***, right-click the ***TPM*** GPO and click ***Edit...***.



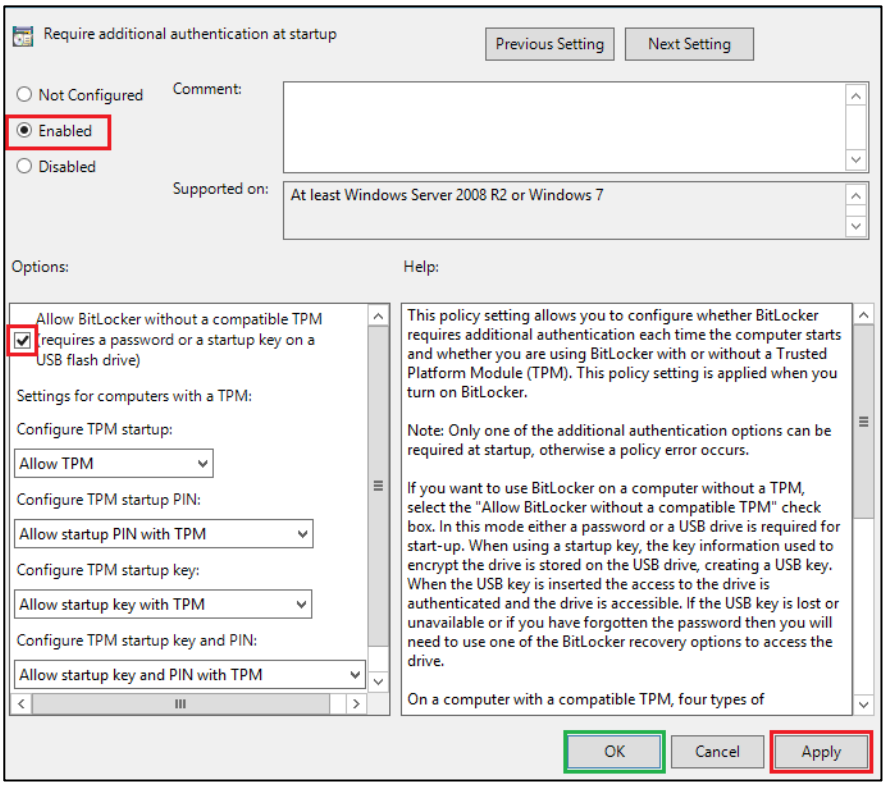
4 Navigate to ***Operating System Drives*** policies.



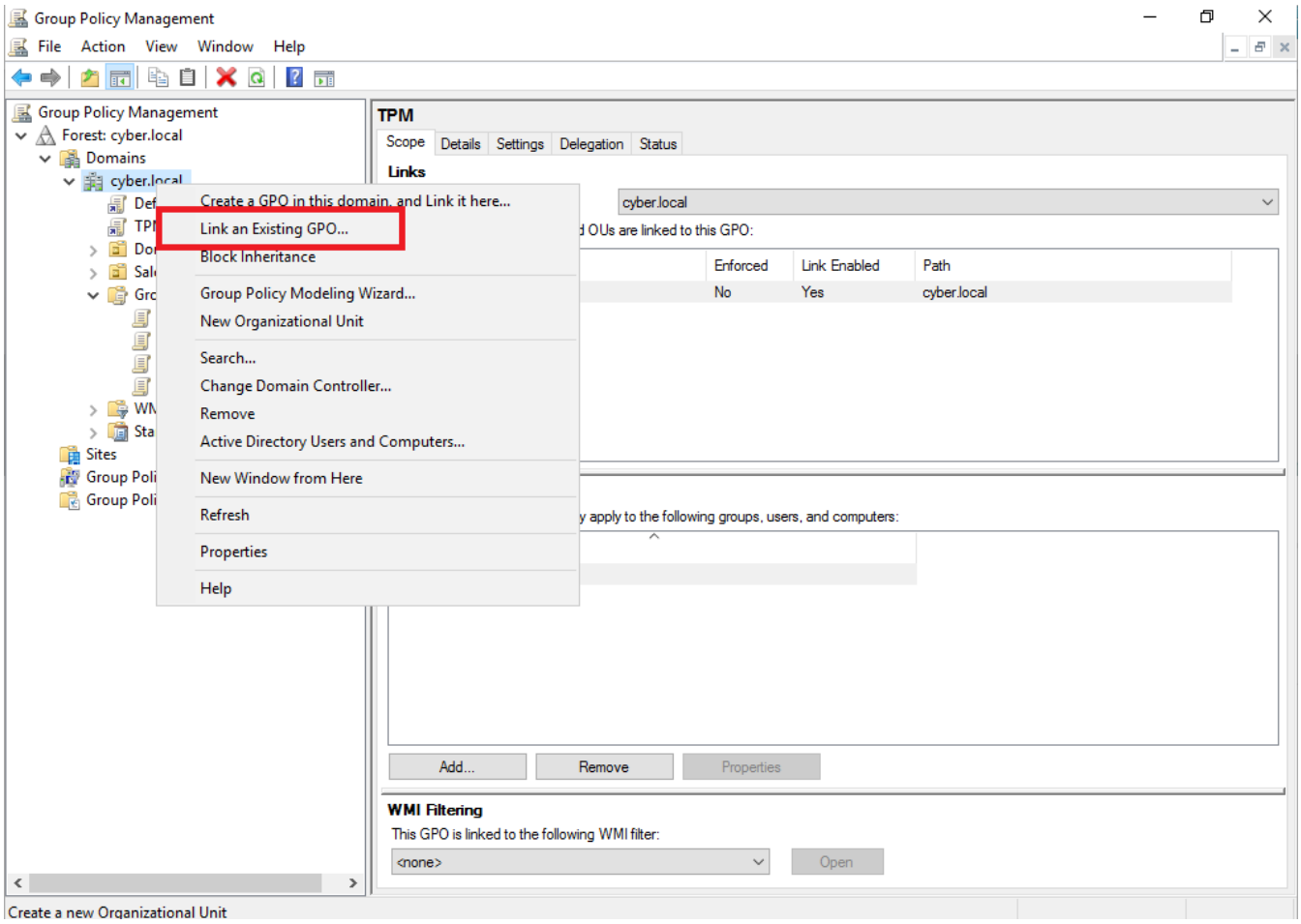
5 Open the setting called ***Require additional authentication at startup***, set it to ***Enabled***, and select ***Allow BitLocker without…*** Apply the settings for the policy and double-click ***Require additional authentication at startup***.



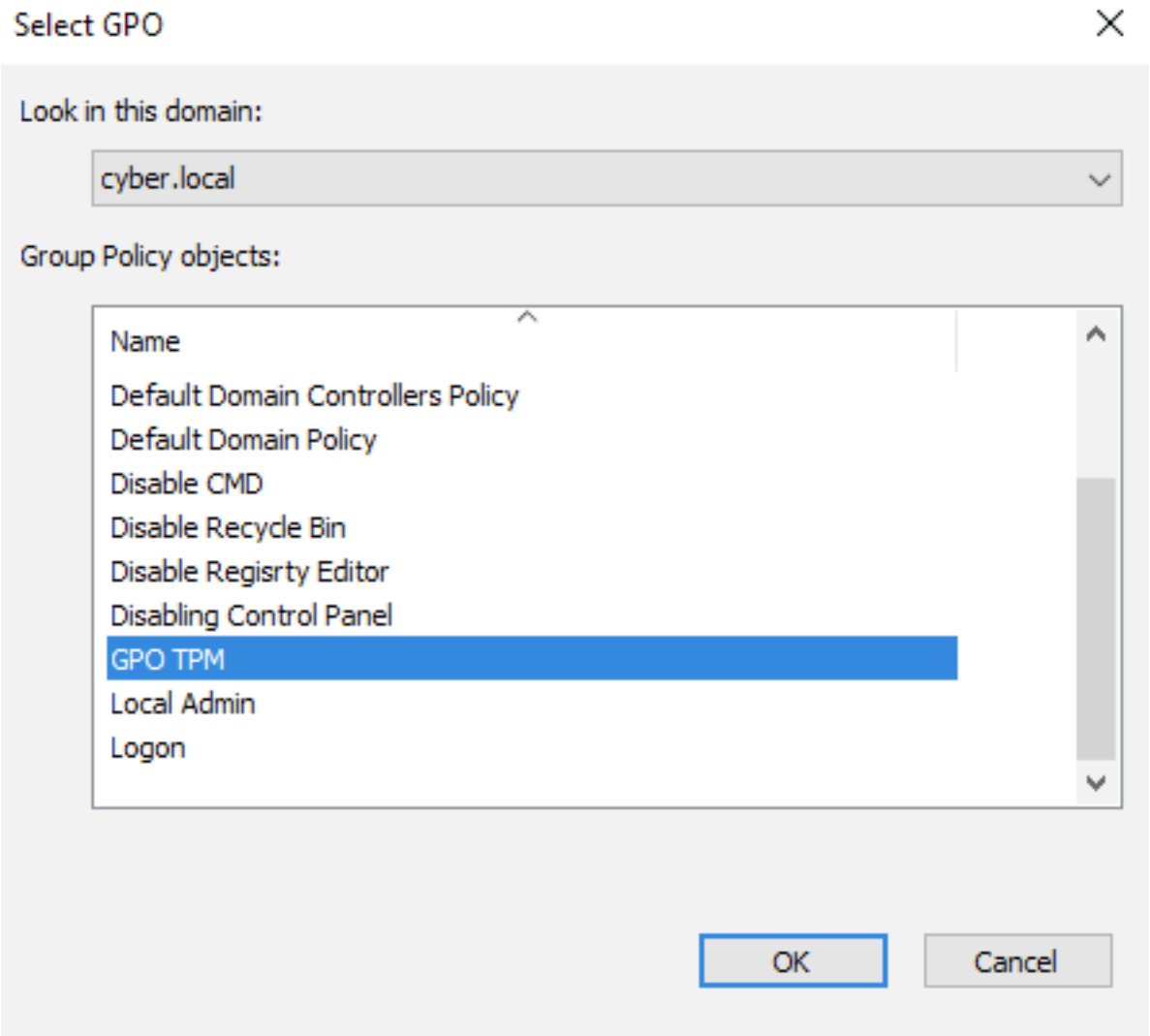
6 On the next window, click ***Enabled*** and select the option to require TPM to use a password. Then, click **Apply** and **OK**.



7 Link the GPO to the entire domain environment. Right-click the ***cyber.local*** domain and click ***Link an Existing GPO...***.



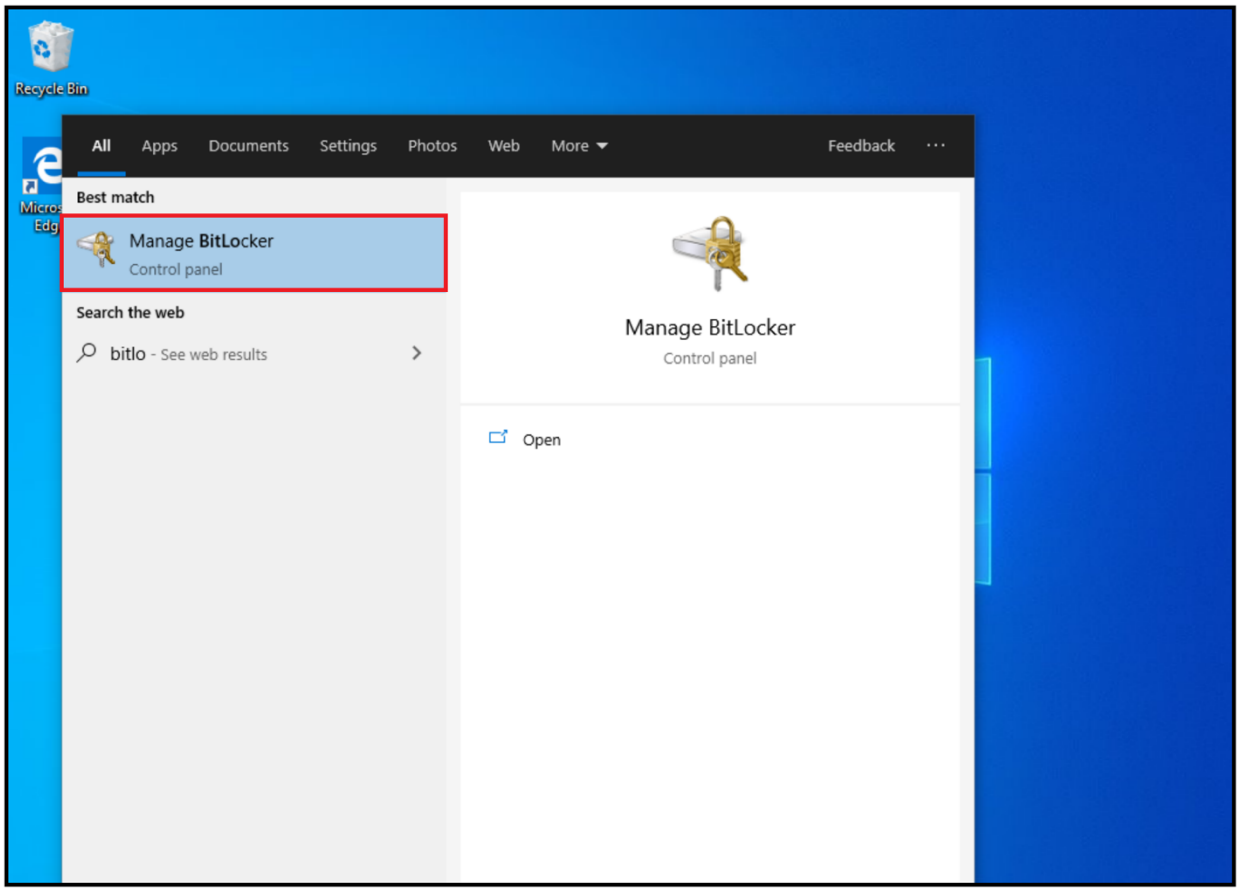
8 Click ***GPO TPM*** and **OK**.



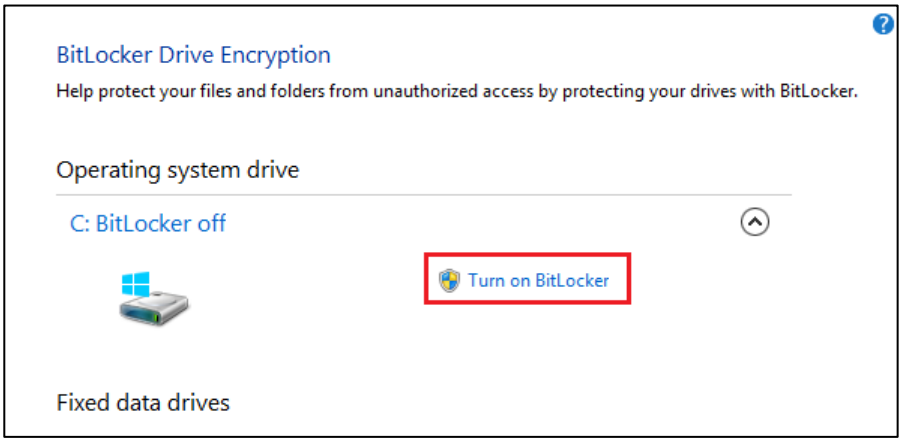
Lab Task 3: BitLocker Activation

In this task, you will activate **BitLocker** and use it to encrypt the C drive.

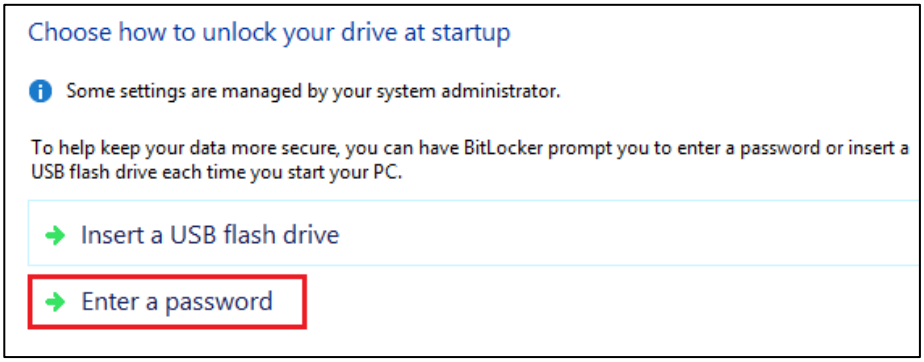
1 After the server restarts, go to your client-10 VM and click **Start** at the bottom right. Search for **BitLocker** and open **Manage BitLocker**.



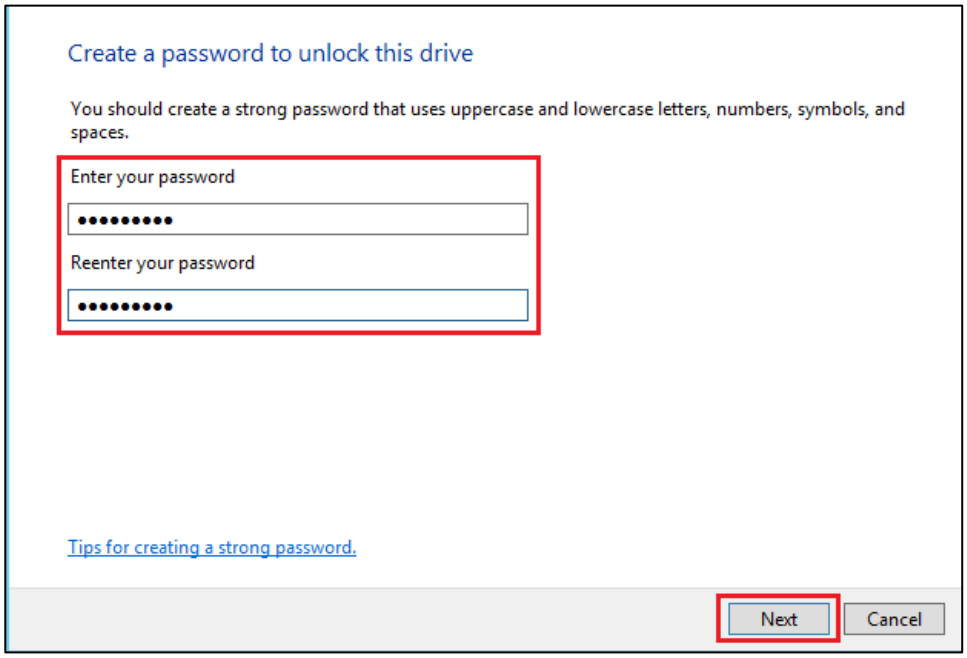
2 In the window that appears, click **Turn on BitLocker**.



3 Select ***Enter a password***.

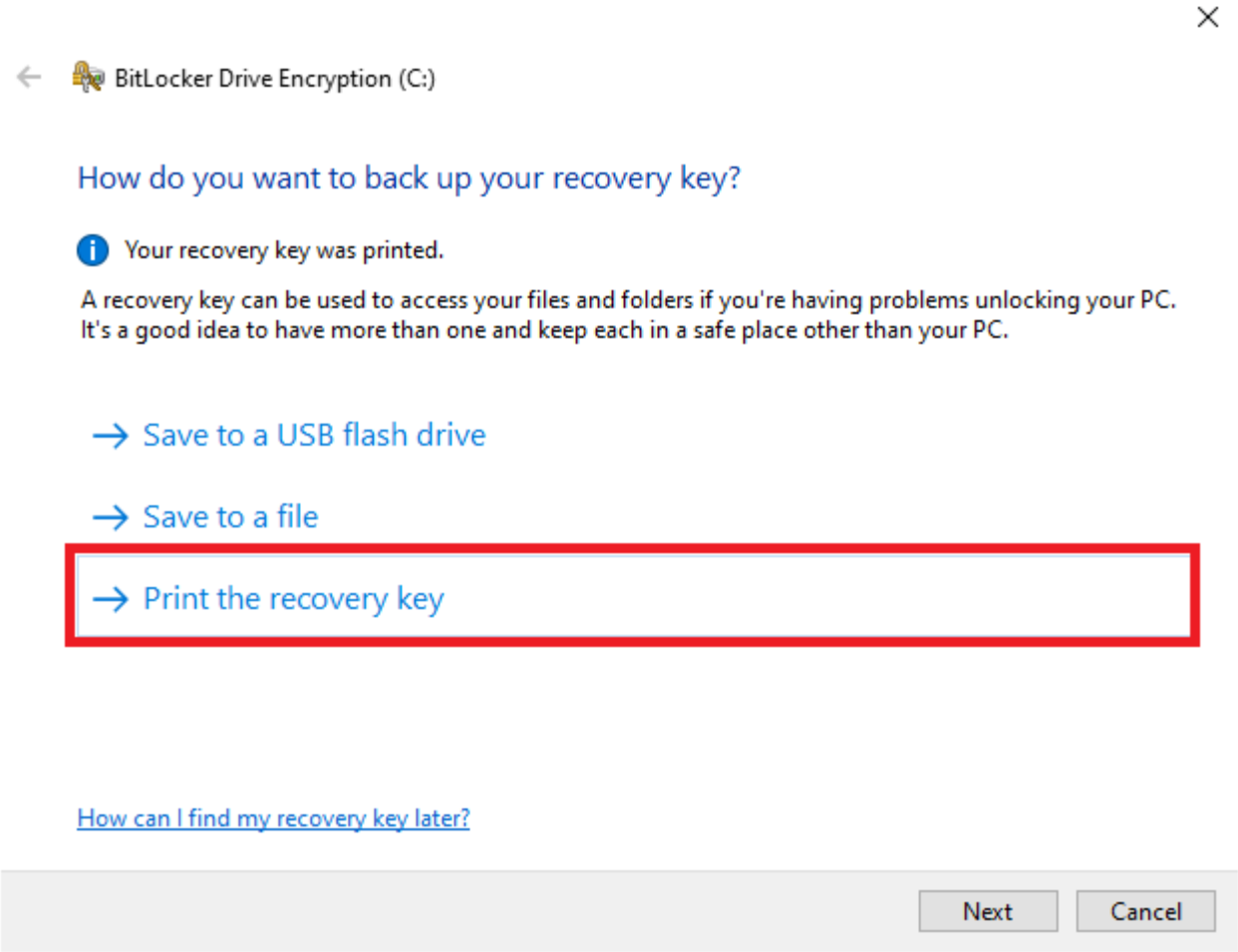


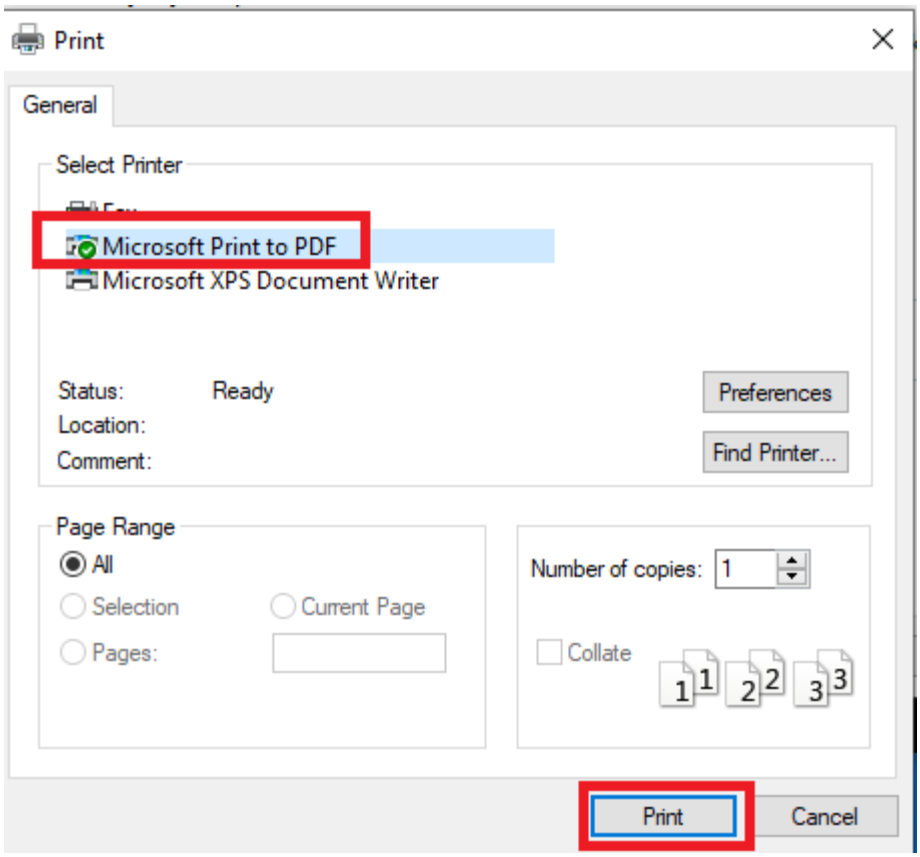
4 Enter **Pa$$w0rd** as the password. This will be used to unlock the drive. Then, click **Next**.



5 Since the recovery key cannot be saved on the encrypted drive and because we have not attached a USB drive, we will work around the issue by printing our recovery key to PDF and saving it locally, as shown below.

Note: Although not required for this lab, it is good practice to copy/paste the key to a secure location using the Share Clipboard feature and securely delete the ***Keys*** folder. However, it is not required for the functionality of the lab.

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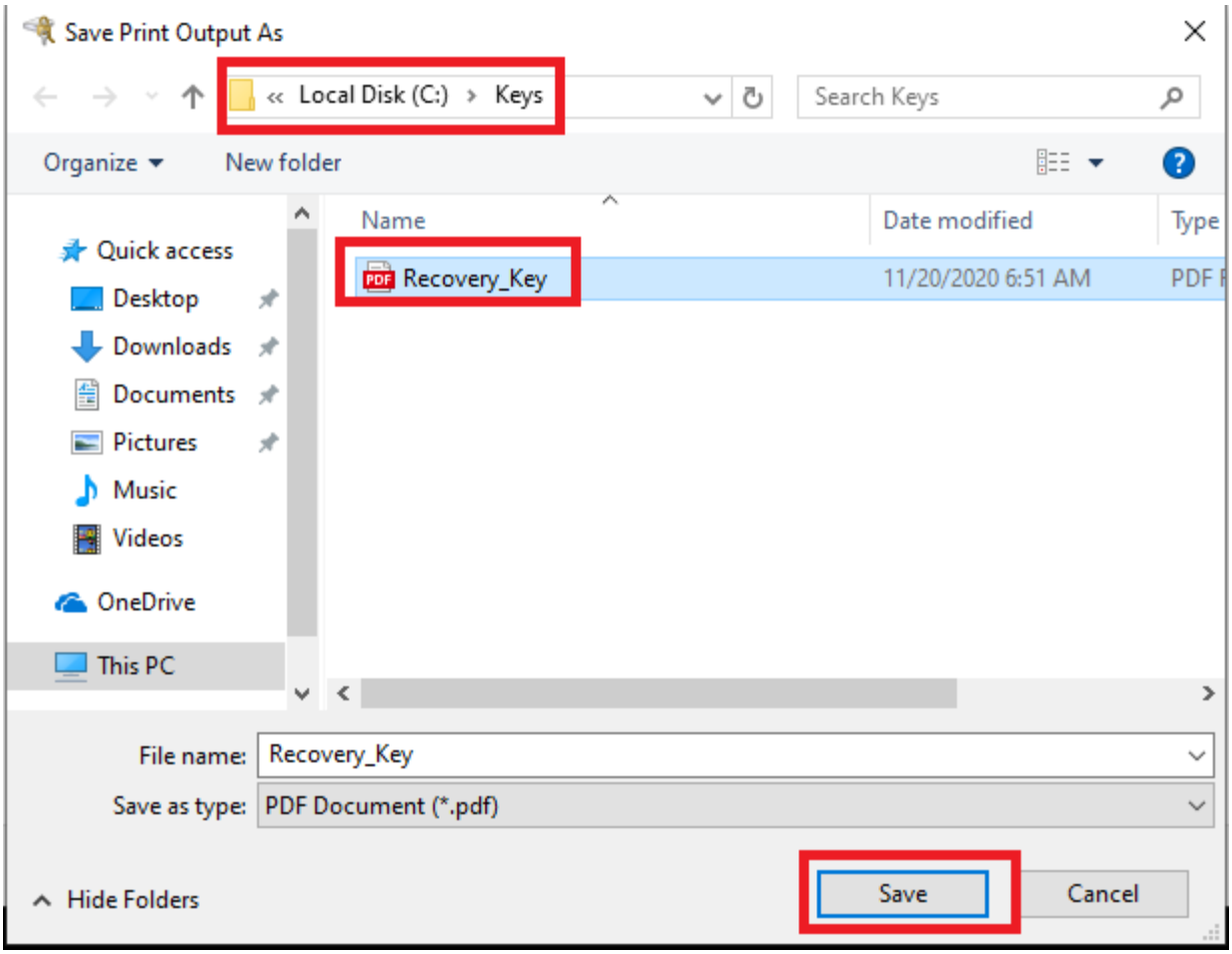
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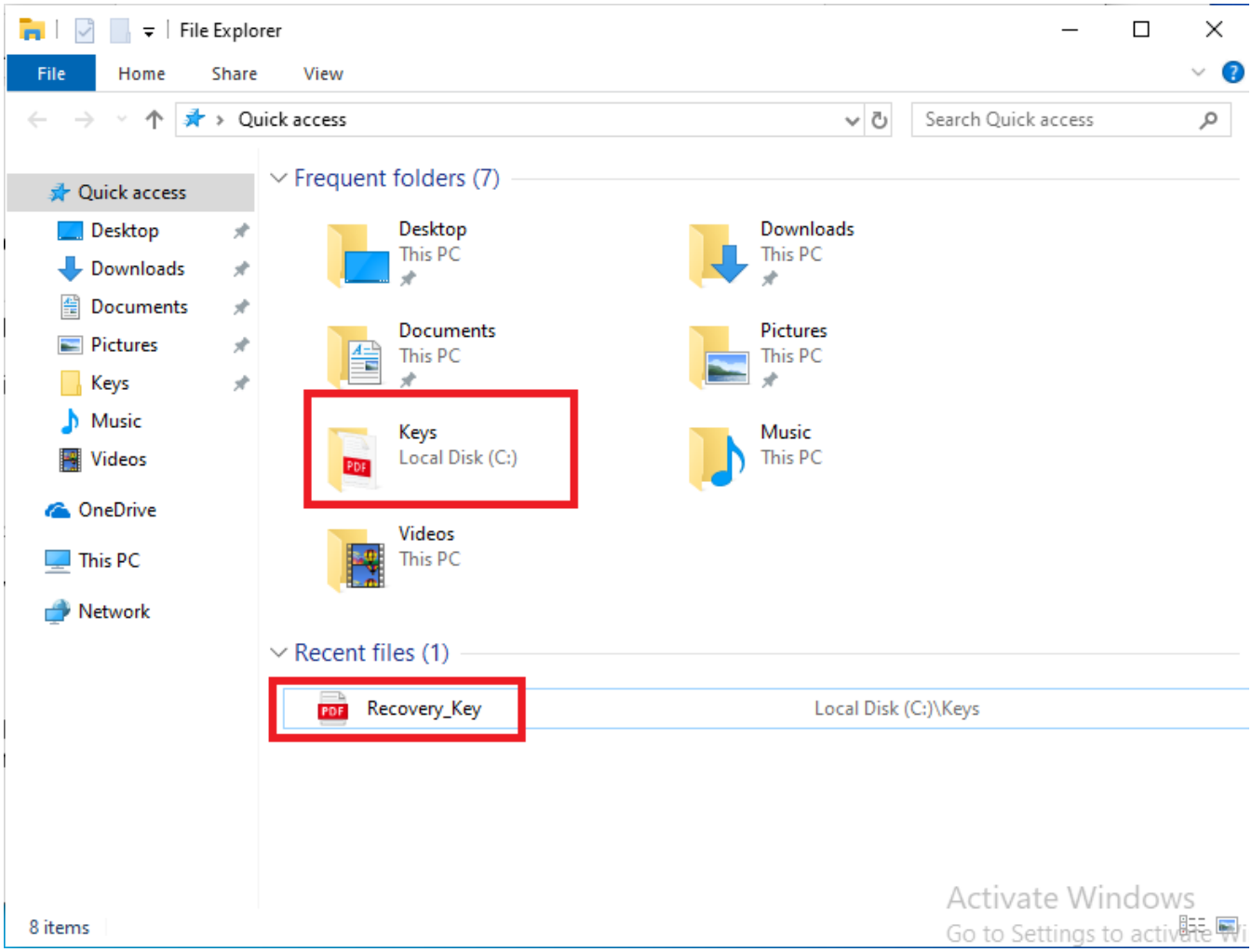
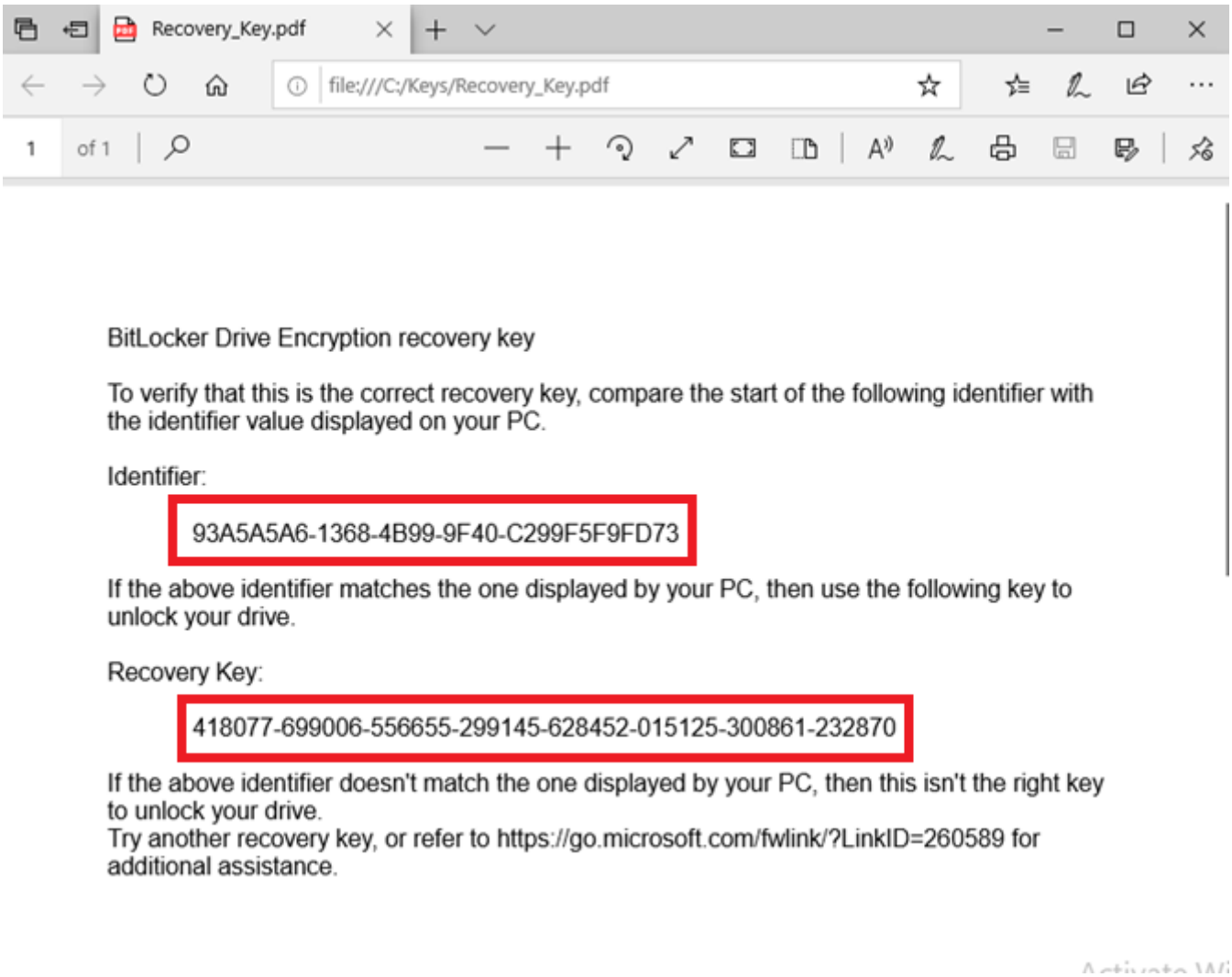
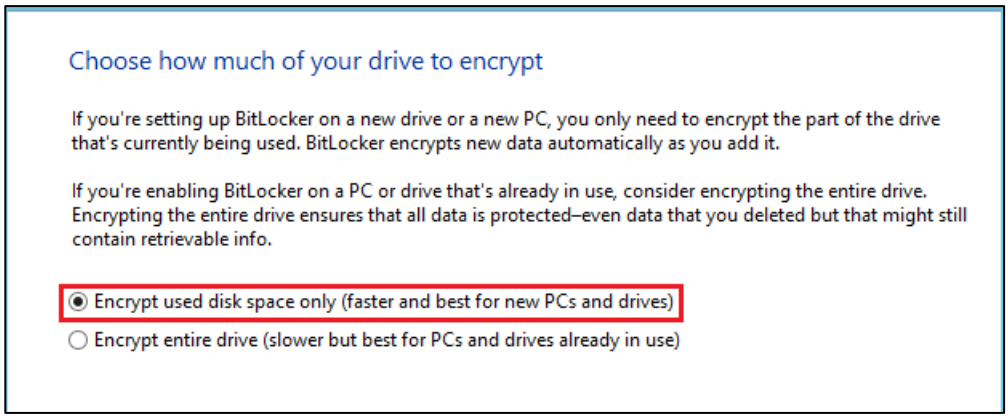
6 Open the recovery key located in ***C:\Keys*** by double-clicking the PDF file you just printed. As noted previously, you can copy this information to a more secure location if you wish, but it is not required for the functionality of this lab.

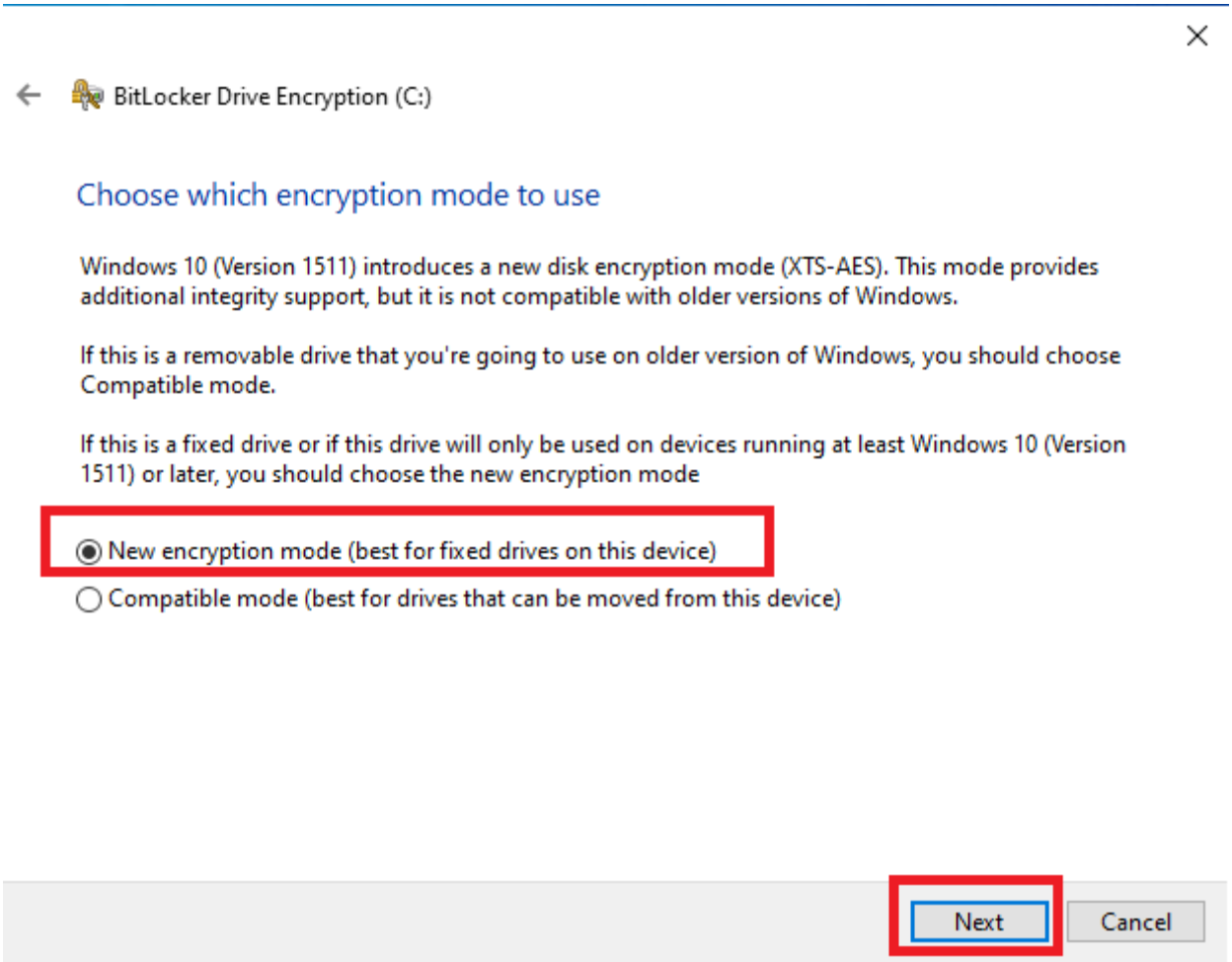




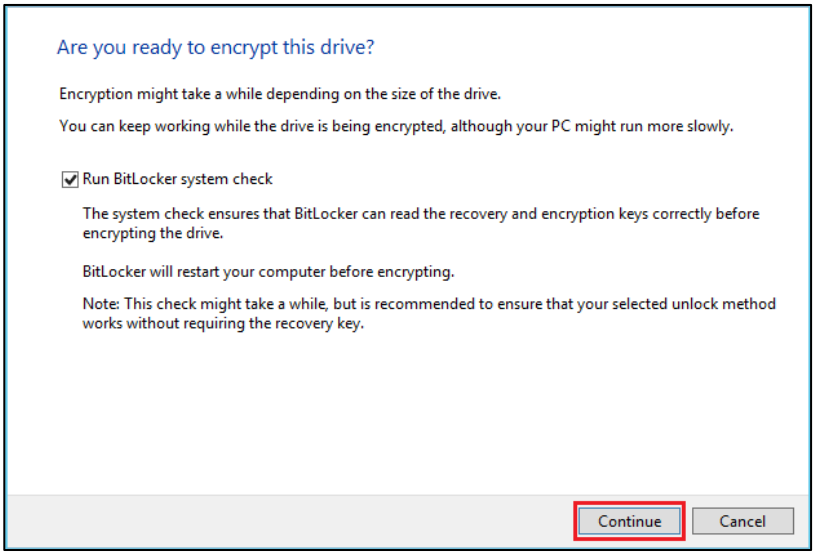
7 Click **Next** on the BitLocker Drive Encryption window, select ***Encrypt used disk space only***, and click **Next**.



8 When prompted, choose ***New encryption mode*** (as shown below) and click **Next**.

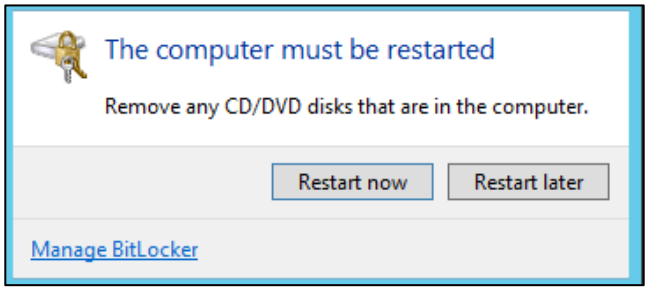


9 On the next window, make sure ***Run BitLocker system check*** is selected and click **Continue**.



10 You will be notified that the computer will require restart. Restart the system to begin the encryption.

Note: The following window will appear if you have anything on your virtual disk drive. Eject the disk from the virtual drive and click **Restart now**.



11 Upon reboot and due to the enabled policy, your system is now encrypted. You will be prompted for a password, as shown below. Enter your password.

Note: You will not be using this configuration in the following labs and can turn off BitLocker when you are done with the lab if you wish.