

1 REPORT BUILDER BUILD GUIDE

MANUAL STEP-BY-STEP BUILD

- OS: Windows 8.1 or Higher



- SQL Server 2014 Express Advanced
- SQL Server Management Studio
- Report Builder 3.0
- .NET Framework 3.5

PHASE 01 HYPER-V SETUP AND FILE STRUCTURE BUILD

Phase Objective

In this phase, you will enable enhanced mode in Hyper-V Manager, create two virtual switches, and build the file structure.

Phase Topics

In this phase, we will:

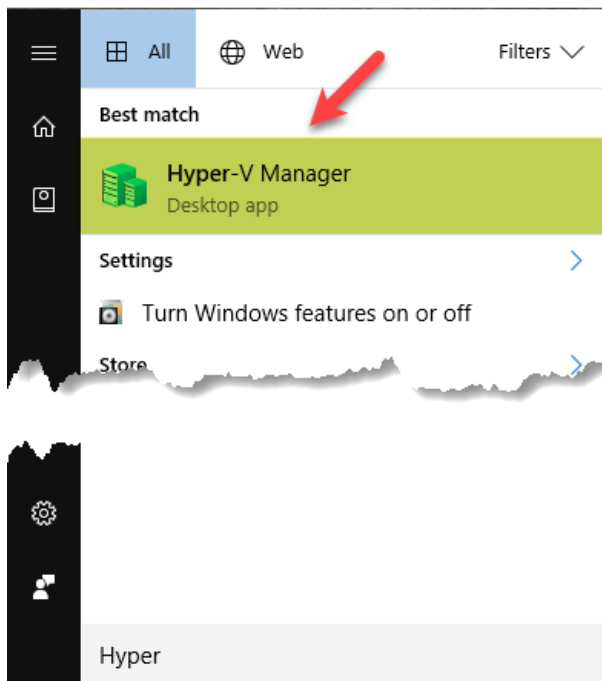
- Enable Enhanced Mode in Hyper-V
- Creating Virtual Switches
- Building the File Structure
- Download the ISOs of Windows 8.1 and SQL Server 2014 Express Advanced to the Created Directories

We use the same file structure for the licensed and evaluation software build, so some folders may be used in one and not the other.

Enabling Enhanced Mode in Hyper-V

Task: Pin Hyper-V Manager to the Task Bar on Your Host PC

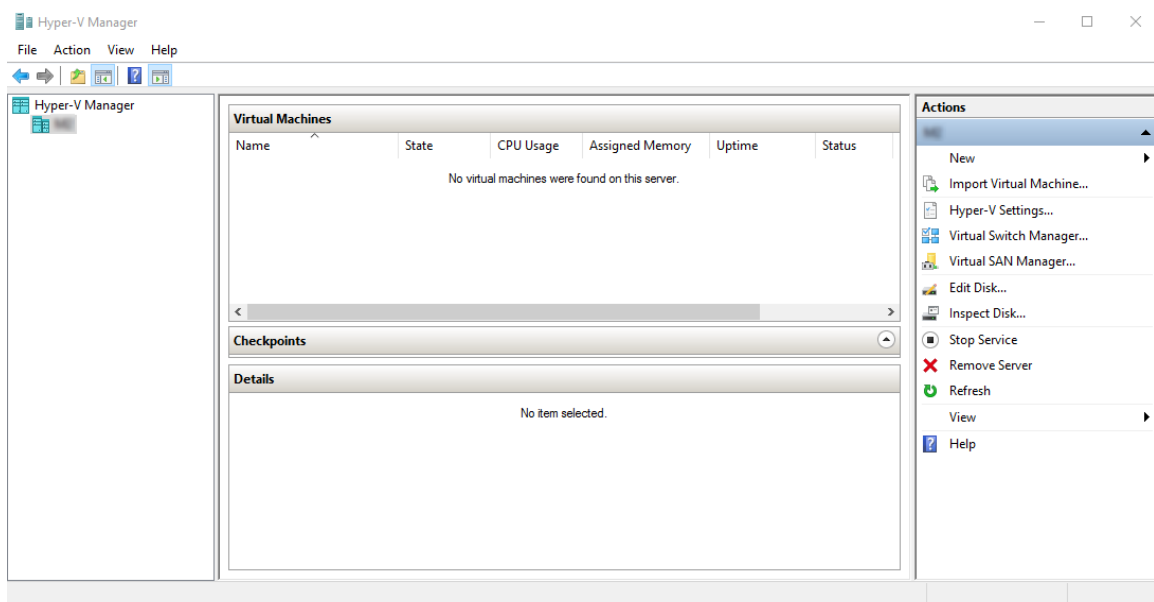
1. Press **Windows** key and enter **Hyper**.
2. Right-click the **Hyper-V Manager** icon, then click **Pin to taskbar**.



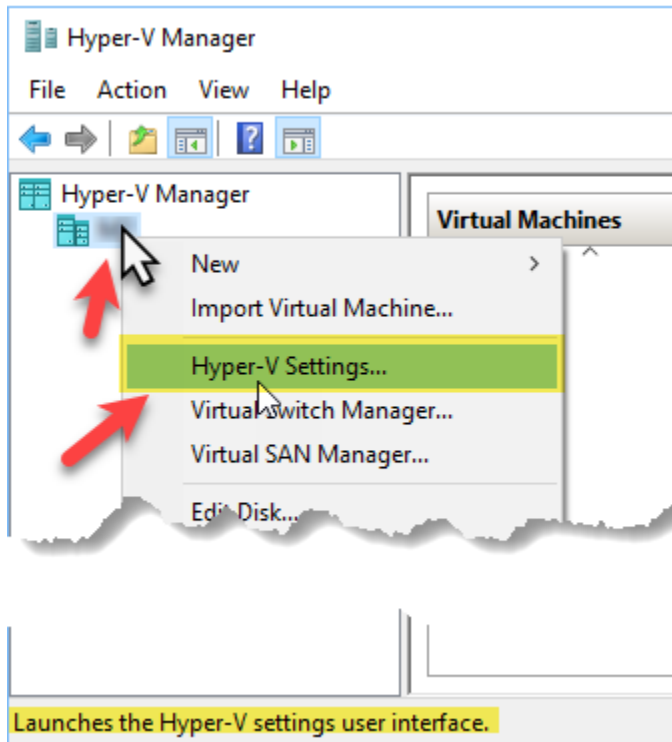
3. Press **Esc** to return to the desktop.

Task: Enable Enhanced Mode in Hyper-V

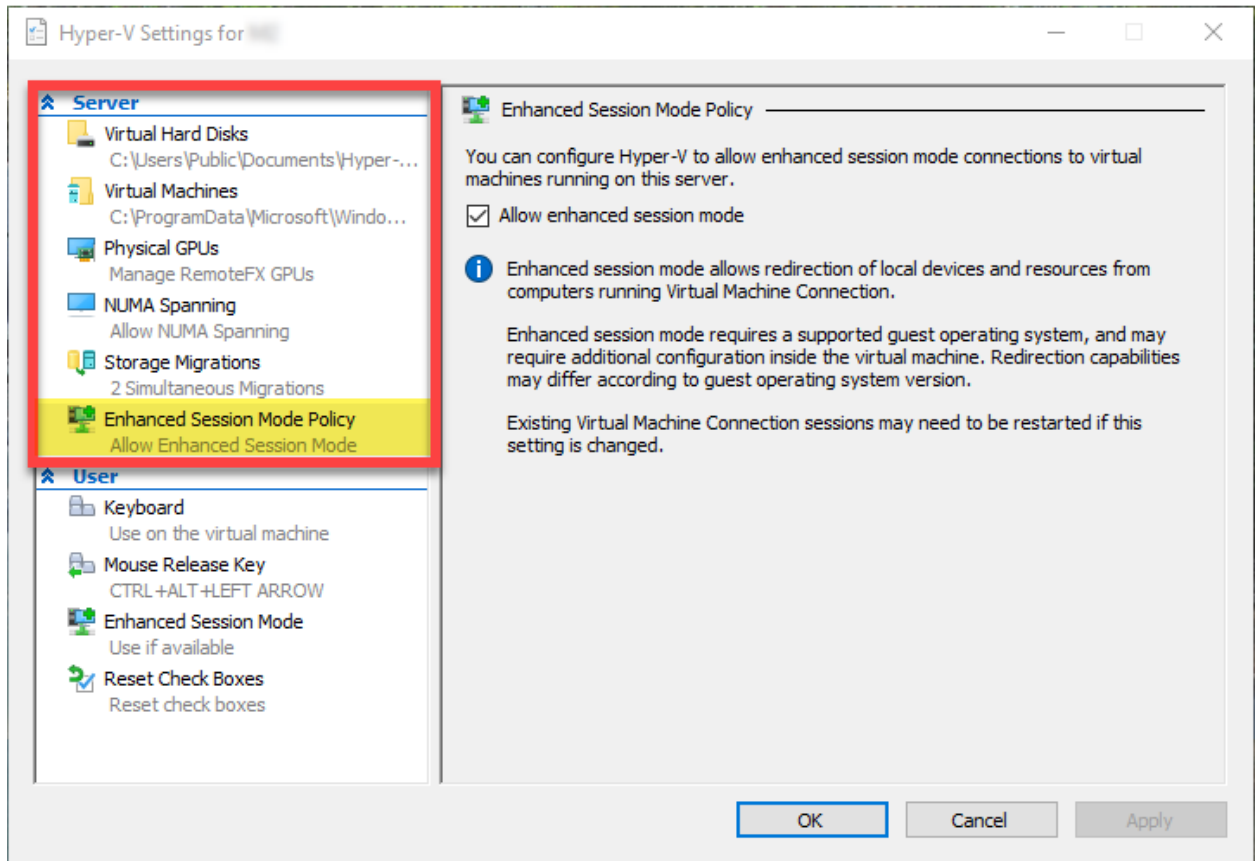
1. Move down to the taskbar, and click **Hyper V Manager**.
2. When **Hyper-V Manager** opens, review the options available.



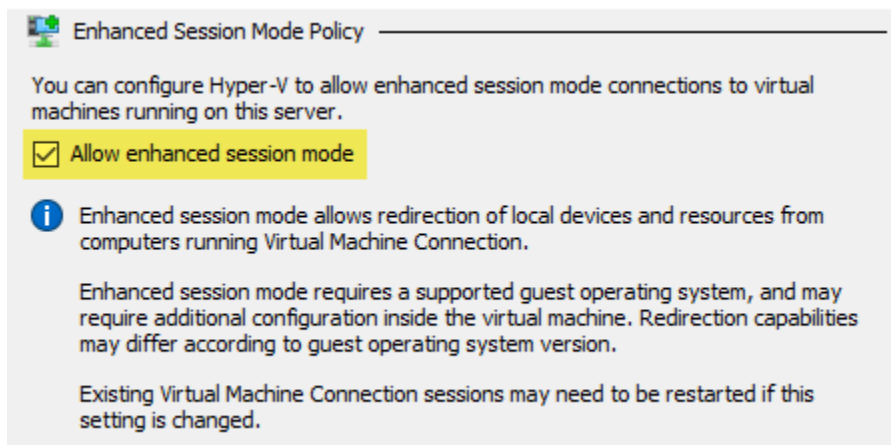
3. Navigate to the pane on the left, right-click the name of the local computer, and click **Hyper-V Settings**.



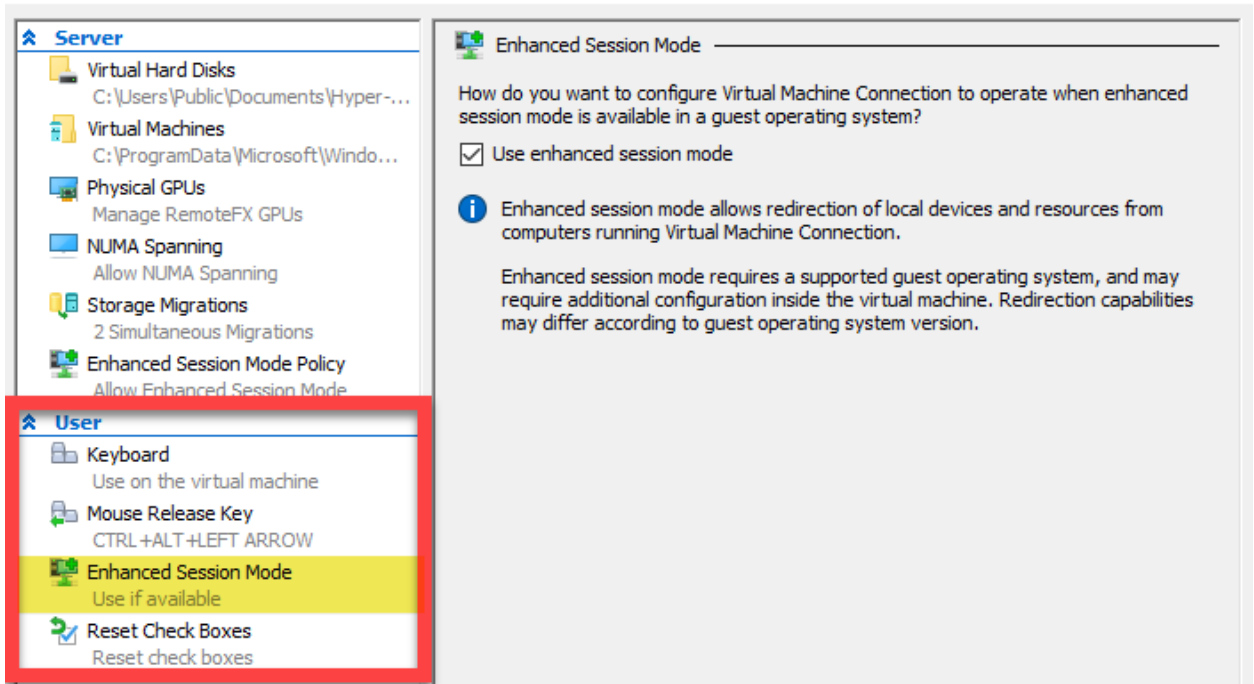
- When **Hyper-V Settings** opens, move to the pane on the left, locate the **Server** section and click to select **Enhanced Session Mode Policy**.



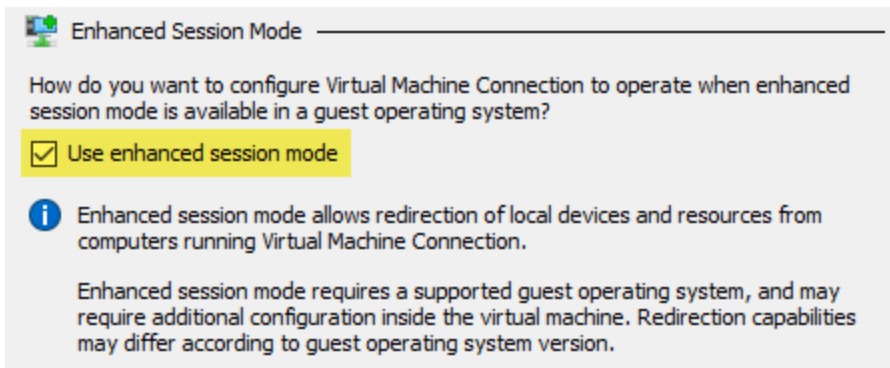
- Verify there is a check in the **Allow enhanced session mode** check box.



6. If changes were made, click **Apply**.
7. Move to the pane on the left, locate the **User** section and click to select **Enhanced Session Mode**.



8. Verify there is a check in the **Use enhanced session mode** check box.



9. If changes were made, click **Apply**.
10. Click **OK**.

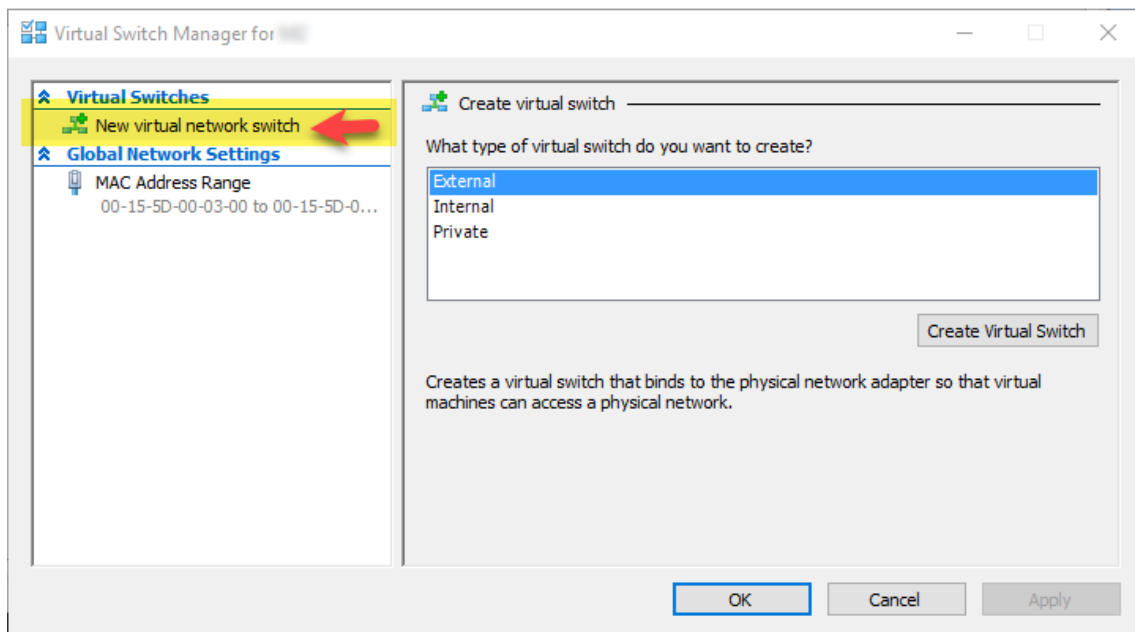
Creating Virtual Switches

Virtual switches provide a way for a virtual machine to connect to a physical network. There are three types:

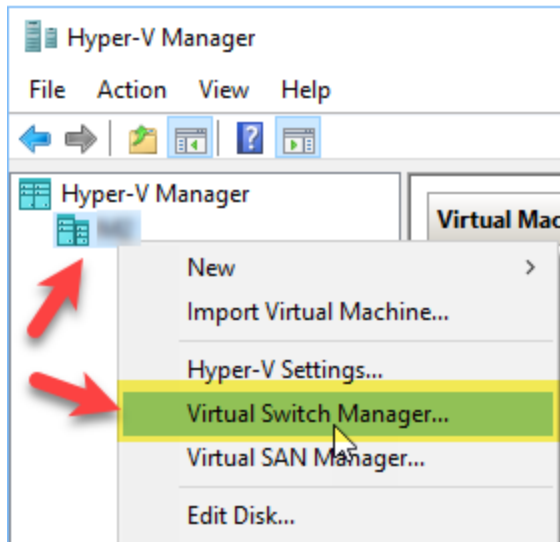
- External Network
- Internal Network
- Private Network

Task: Create Virtual Switches

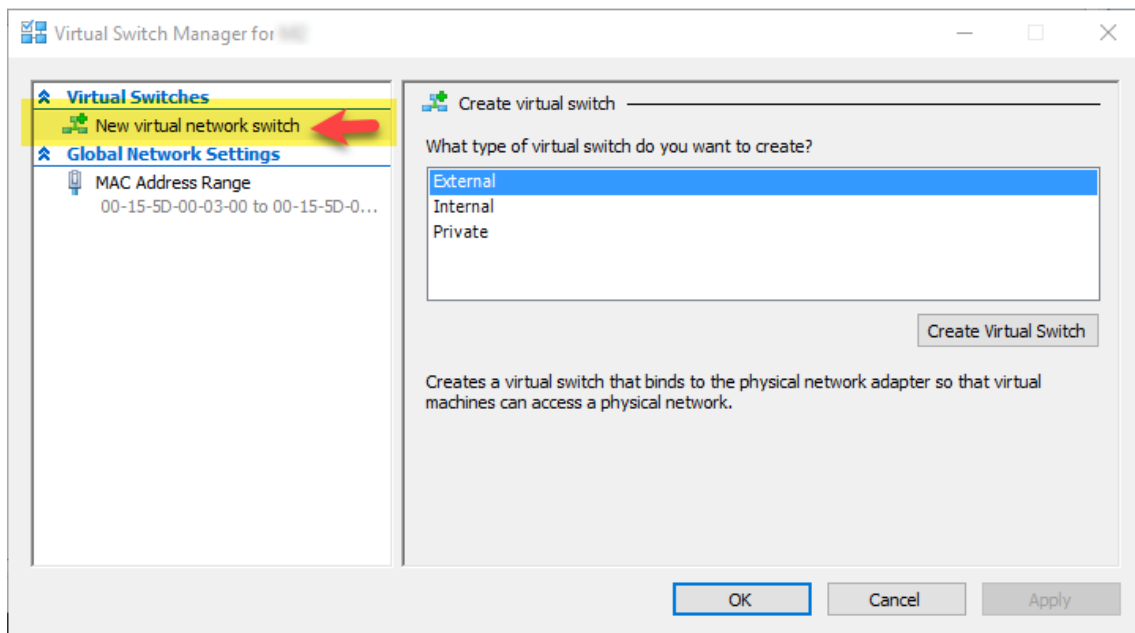
1. Navigate to the pane on the left, right-click the name of the local computer, and click **Virtual Switch Manager**.
2. When **Virtual Switch Manager** opens, select **New virtual network switch**.



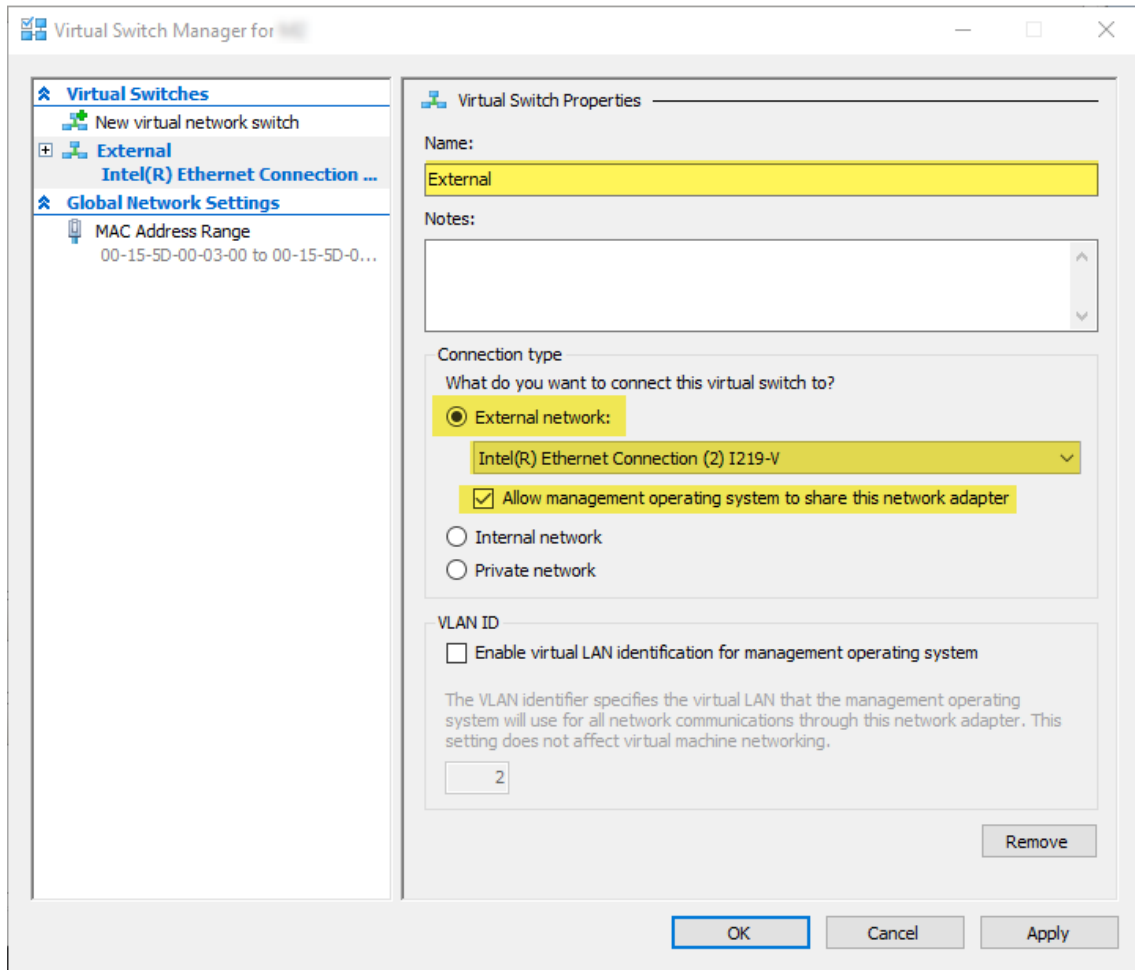
3. Move to the **What type of virtual switch do you want to create** setting and click to select **Private**.
4. Click **Create Virtual Switch**.
5. Move to the **Name** text box and name the switch **VMPrivate** (or whatever you prefer).
6. Make sure it is connected to the **Private** network.
7. Click **Apply**.
8. Click **OK**.
9. Navigate to the pane on the left, right-click the name of the local computer, and click **Virtual Switch Manager**.



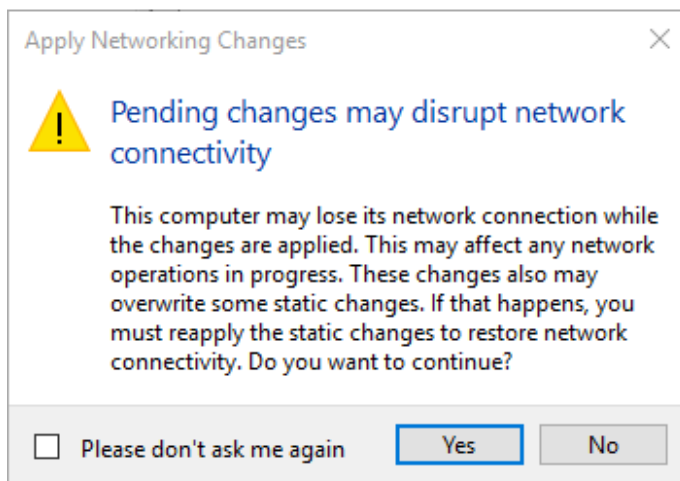
10. When **Virtual Switch Manager** opens, select **New virtual network switch**.



11. Move to the **What type of virtual switch do you want to create** setting and click to select **External**.
12. Click **Create Virtual Switch**.
13. Move to the **Name** text box and name the switch **VMExternal1** (or whatever you prefer).
14. Make sure it is connected to the **External** network, and that your physical Network Interface Card shows in the corresponding setting.
15. Place a check in the **Allow management operating system to share this network adapter**.



16. Click **Apply**.
17. In the **Apply Networking Changes** dialog box advising **This computer may lose its network connection while the changes are applied**, click **Yes**.



18. Click **OK**.

Building the File Structure

Task: Build the File Structure

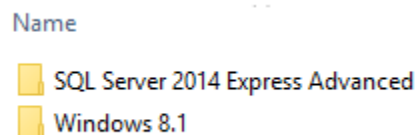
1. Start **File Explorer**.
2. Navigate to **C:/**.
3. Create a new folder and name the folder **RonsNotes**.
4. Double-click to open **RonsNotes** folder, and create two more folders:
 - **ISOs**
 - **Labs**
5. Double-click to open **ISOs** folder, and create two more folders:
 - **windows 8.1**
 - **SQL Server 2014 Express Advanced**
6. Back out of the **ISOs** folder, and leave **File Explorer** open.

Download the ISOs of Windows 8.1 and SQL Server 2014 Express Advanced to the Created Directories

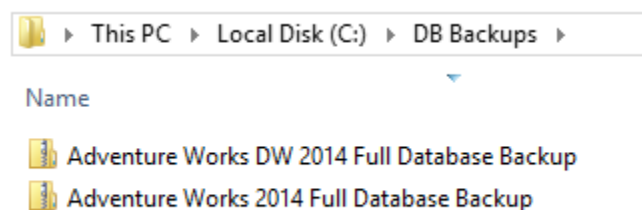
Task: Download the ISOs of Windows 8.1 and SQL Server 2014 Express Advanced to the Created Directories, and the Needed Database Files

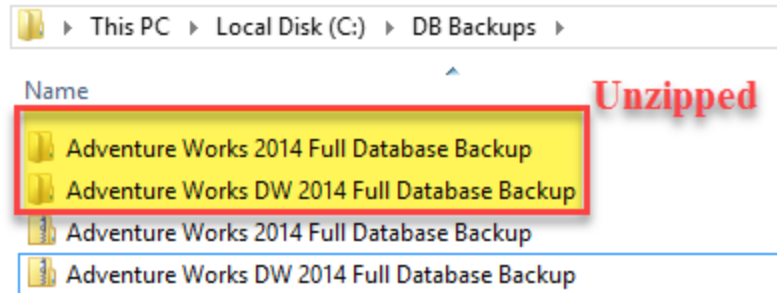
In this task, we will download ISOs for the software we intend to install.

1. Switch back to **File Explorer** and verify you are still viewing **C:\RonsNotes**.
2. Double-click to open the **ISOs** folder, and notice you have two folders listed.



3. Start **Internet Explorer** or the browser of your choice.
4. Using the links provided below:
 - Download the installation files to the appropriate folder (shown above).
 - Download the database files and place them into a folder named **DB Backups**.
 - The files will download as .zip files, which will need to be unzipped within the **DB Backups** folder.





You will need to register in order to download the required ISO files.

- **Windows 8.1** – <https://www.microsoft.com/en-us/software-download/windows8>
- **SQL Server 2014 Express Advanced** - https://download.microsoft.com/download/E/A/E/EAE6F7FC-767A-4038-A954-49B8B05D04EB/ExpressAdv%2064BIT/SQLEXPRADV_x64_ENU.exe
- **.NET Framework 3.5** - <https://www.microsoft.com/en-us/download/details.aspx?id=25150>
- **Report Builder 3.0** - <http://www.microsoft.com/en-us/download/details.aspx?id=42301>
- **Adventure Works 2014** - <https://msftdbprodsamples.codeplex.com/releases/view/125550>
 - Adventure Works 2014 Full Database Backup.zip
 - Adventure Works DW 2014 Full Database Backup.zip

Upon completion, you will have the file structure built, and the downloaded ISOs placed into the proper locations, and the database files downloaded into the new **DB Backups** folder.

PHASE 02 CREATE VIRTUAL MACHINES AND INSTALL WINDOWS 8.1

Phase Objective

This phase creates the virtual machine. First, we will create the Virtual Hard Drive (VHDX format), then we will install Windows 8.1. We are assuming you are using evaluation licenses. If not, proceed as is, then at the end, you can just convert to MSDN by changing your keys.

After creating the virtual machine, we will enable Guest Services, then install Windows 8.1.

Phase Topics

- Verifying the Correct Files Are in the Proper Location
- Creating the Virtual Machine
- Installing Windows 8.1

Verifying the Correct Files Are in the Proper Location

Task: Verifying the Correct Files Are in the Proper Location

1. Switch to **File Explorer**.
2. Navigate to **C:\RonsNotes\ISOs**.
3. Notice you have two folders listed.

Name

- SQL Server 2014 Express Advanced
- Windows 8.1

4. Verify you have the following file(s) in the corresponding folder.

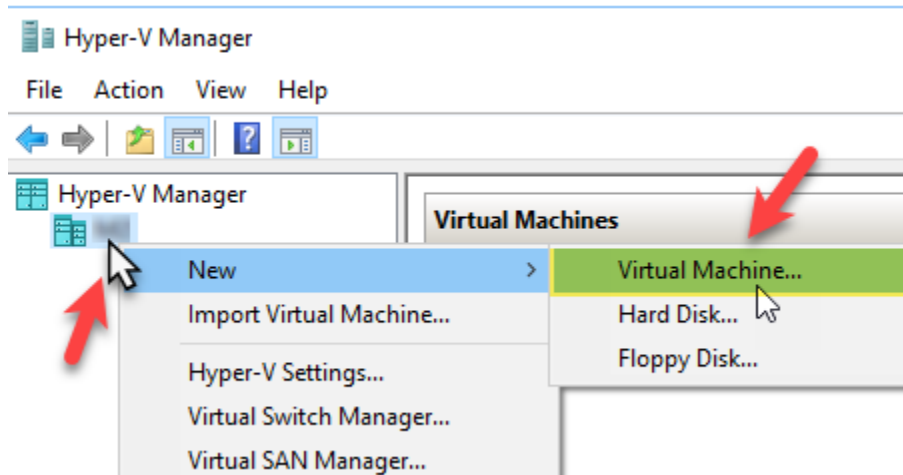
<i>Folder</i>	<i>File Name</i>
SQL Server 2014 Express Advanced	SQLEXPADV_x64_ENU.exe
SQL Server 2014 Express Advanced	dotnetfx35.exe
Windows 8.1	9600.17050.WINBLUE_REFRESH.140317-1640_X64FRE_ENTERPRISE_EVAL_EN-US-IR3_CENA_X64FREE_EN-US_DV9.ISO

Creating the Virtual Machine

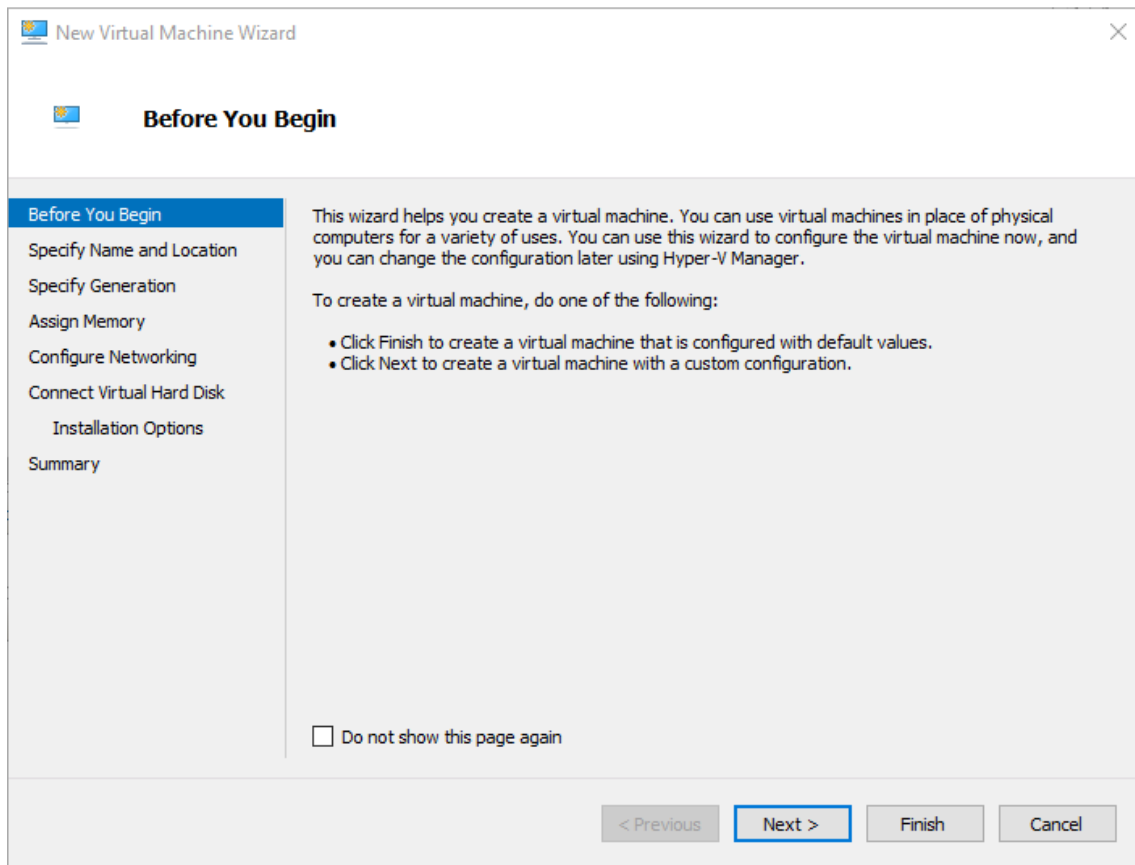
We will walk through configuring the virtual machine.

Task: Create StudentServer Virtual Machine

1. In **Hyper-V Manager**, right-click on the name of your server, and select **New | Virtual Machine....**



2. When the **New Virtual Machine Wizard** opens, view the message in the **Before You Begin** section, then click **Next**.



3. Navigate to the **Name** text box and enter **StudentServer**.
4. Place a check in the **Store the virtual machine in a different location** check box.

5. Click the corresponding **Browse....**

The screenshot shows the 'New Virtual Machine Wizard' window, specifically the 'Specify Name and Location' step. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location' (which is highlighted), 'Specify Generation', 'Assign Memory', 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area of the wizard has a title bar 'New Virtual Machine Wizard' and a close button. Below the title bar, the step 'Specify Name and Location' is indicated. The main content area says 'Choose a name and location for this virtual machine.' and provides instructions: 'The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.' There is a text box for 'Name:' containing 'StudentServer'. Below this, it says 'You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.' There is a checkbox labeled 'Store the virtual machine in a different location' which is checked. Below the checkbox is a text box for 'Location:' containing 'C:\ProgramData\Microsoft\Windows\Hyper-V\' and a 'Browse...' button. At the bottom of the main area, there is a warning icon and text: 'If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.' At the bottom of the wizard, there are four buttons: '< Previous', 'Next >' (which is highlighted), 'Finish', and 'Cancel'.

6. In the **Select Folder** dialog box, navigate to **C:\RonsNotes**.
7. Within the **RonsNotes** folder, create a new folder named **VM_Drives**.
8. Double-click to open **VM_Drives** folder.
9. Within the **VM_Drives** folder, create a new folder named **StudentServer**.
10. Double-click to open **StudentServer** folder.
11. Click **Select Folder**, then review your settings.

New Virtual Machine Wizard

Specify Name and Location

Before You Begin

- Specify Name and Location
- Specify Generation
- Assign Memory
- Configure Networking
- Connect Virtual Hard Disk
- Installation Options
- Summary

Choose a name and location for this virtual machine.


The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.

Name:

You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.

☒ Store the virtual machine in a different location

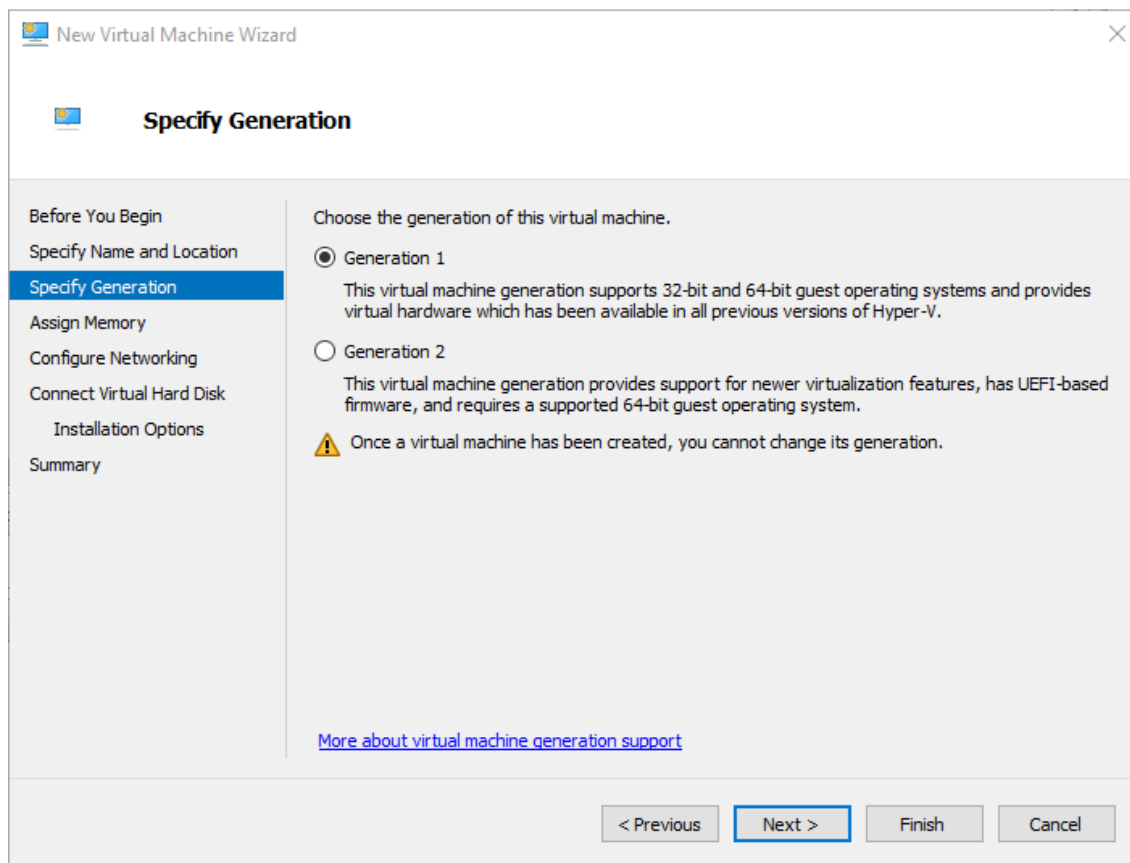
Location:

 If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.

< Previous **Next >** Finish Cancel

12. Click **Next**.

13. In the **Specify Generation** dialog box, review the settings, then click **Next**.

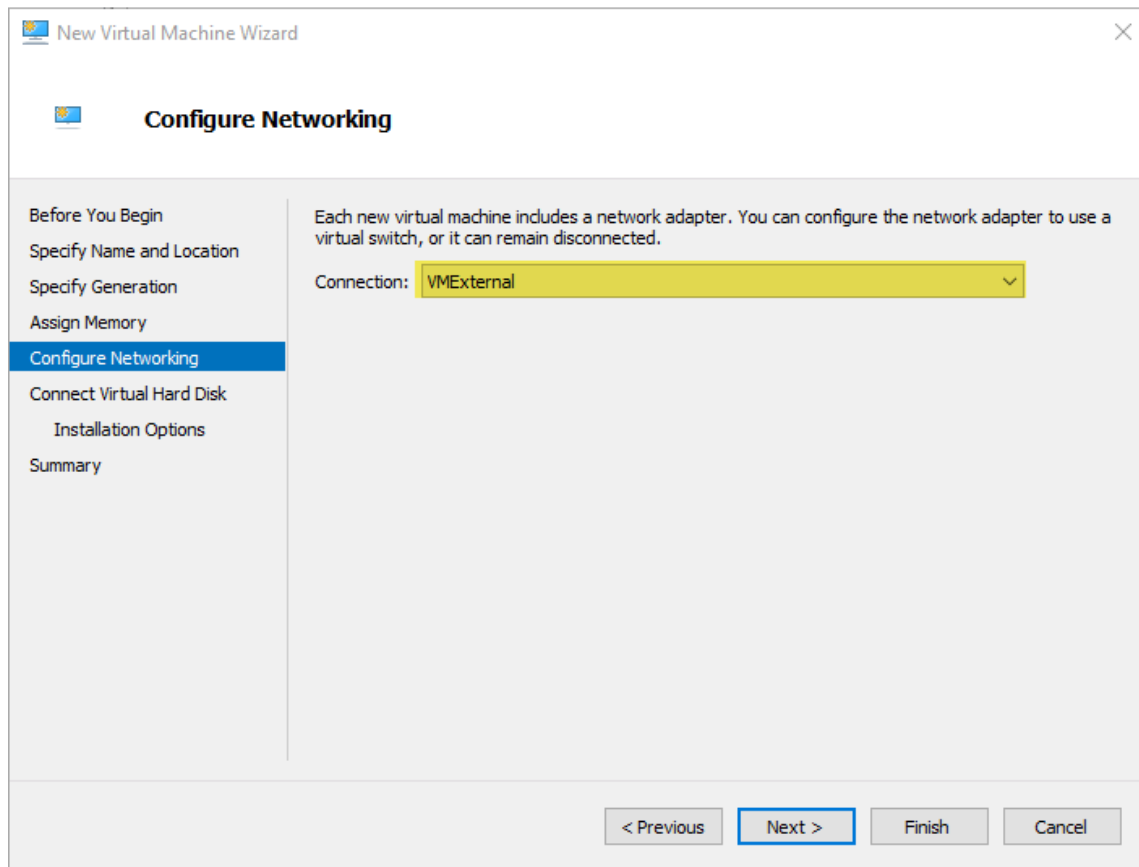


14. In the **Assign Memory** dialog box, set the **Startup memory** to 4000MB.

15. Verify there is a check in the **Dynamic Memory** check box.

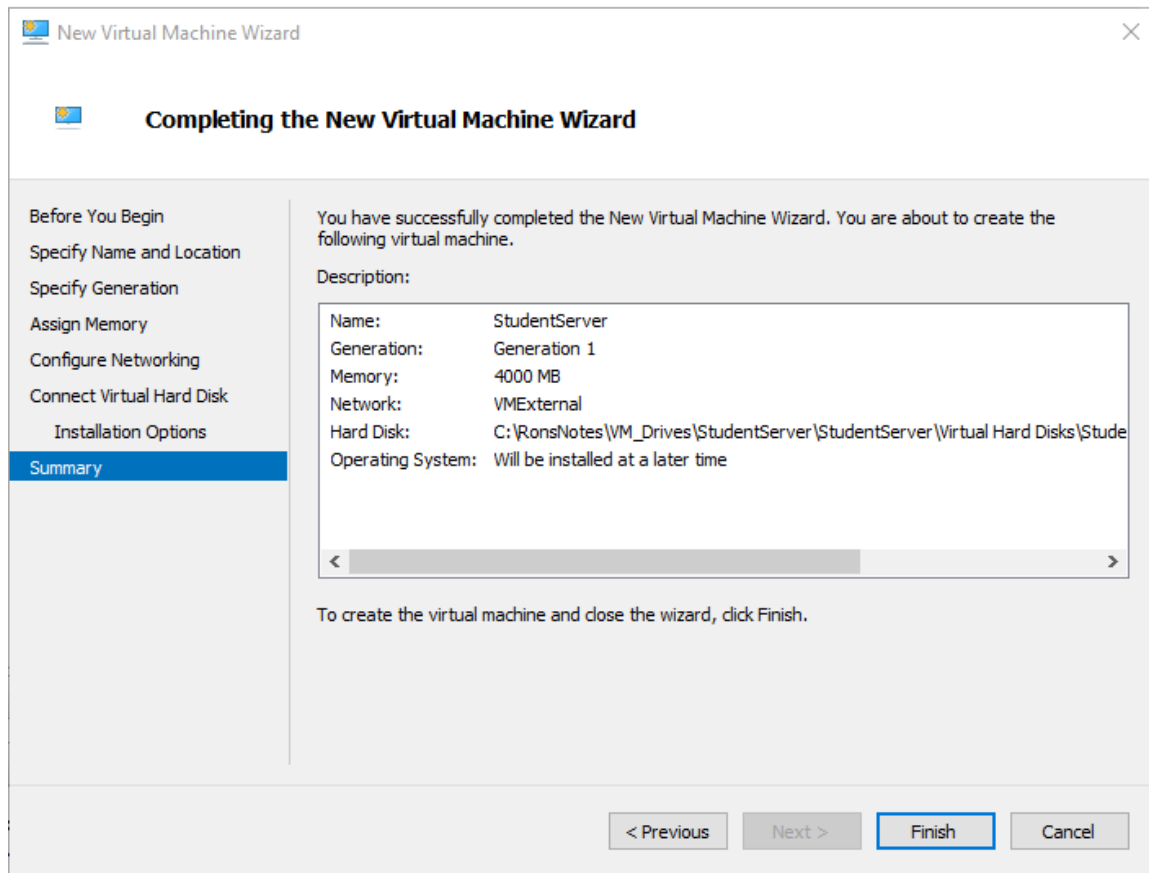
16. Click **Next**.

17. In the **Configure Networking** dialog box, move to the **Connection** setting, use the corresponding drop-down arrow and click to connect to the **VMExternal** adapter.



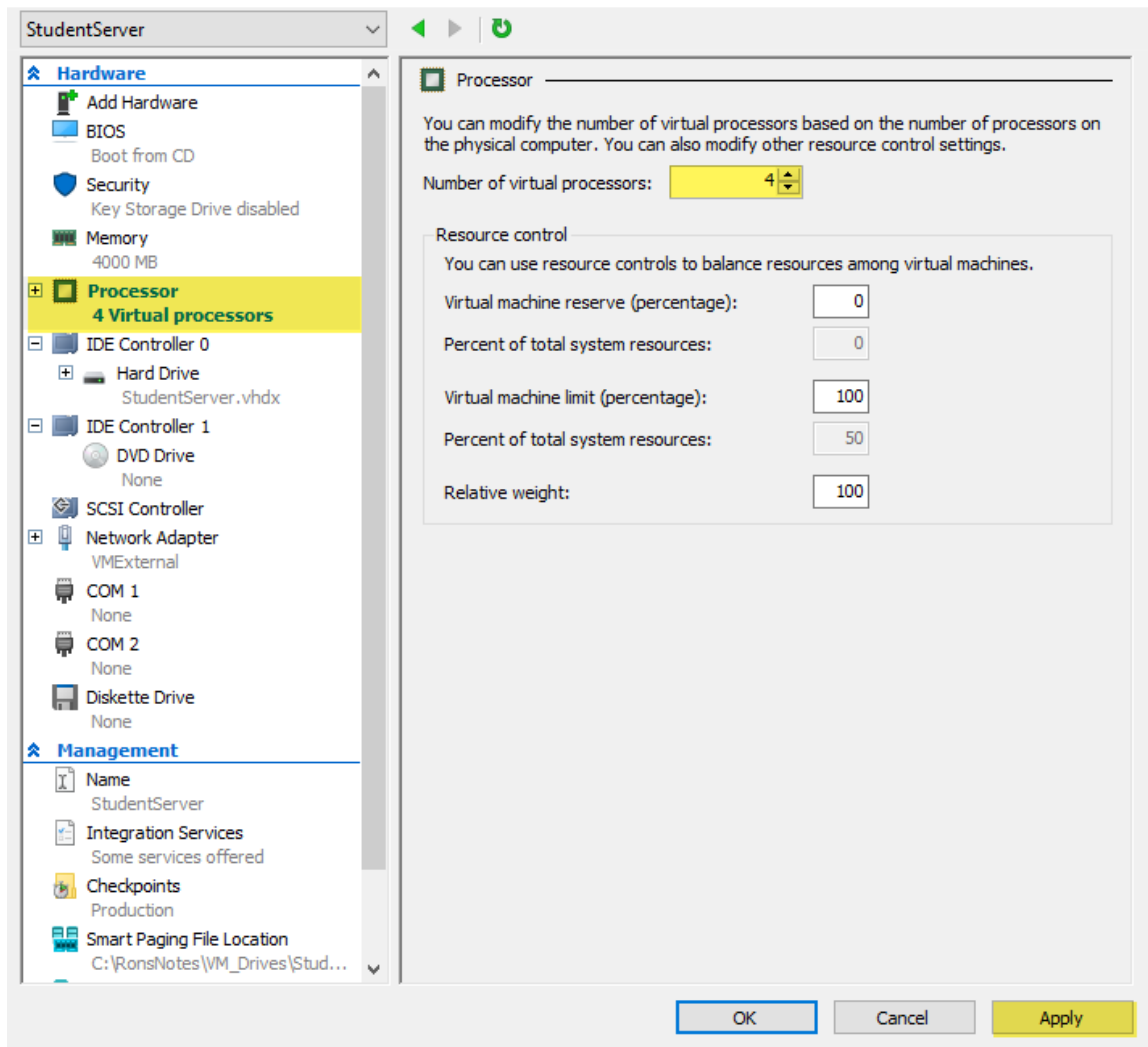
18. Click **Next**.
19. In the **Connect Virtual Hard Disk** dialog box, change the **Size** of the virtual hard disk to **80GB**.
20. Click **Next**.
21. In the **Installation Options** dialog box, review the settings and leave the radio button to **Install an operating system later** selected.
22. Click **Next**.

23. In the **Completing the New Virtual Machine Wizard** dialog box, review the settings, then click **Finish**.

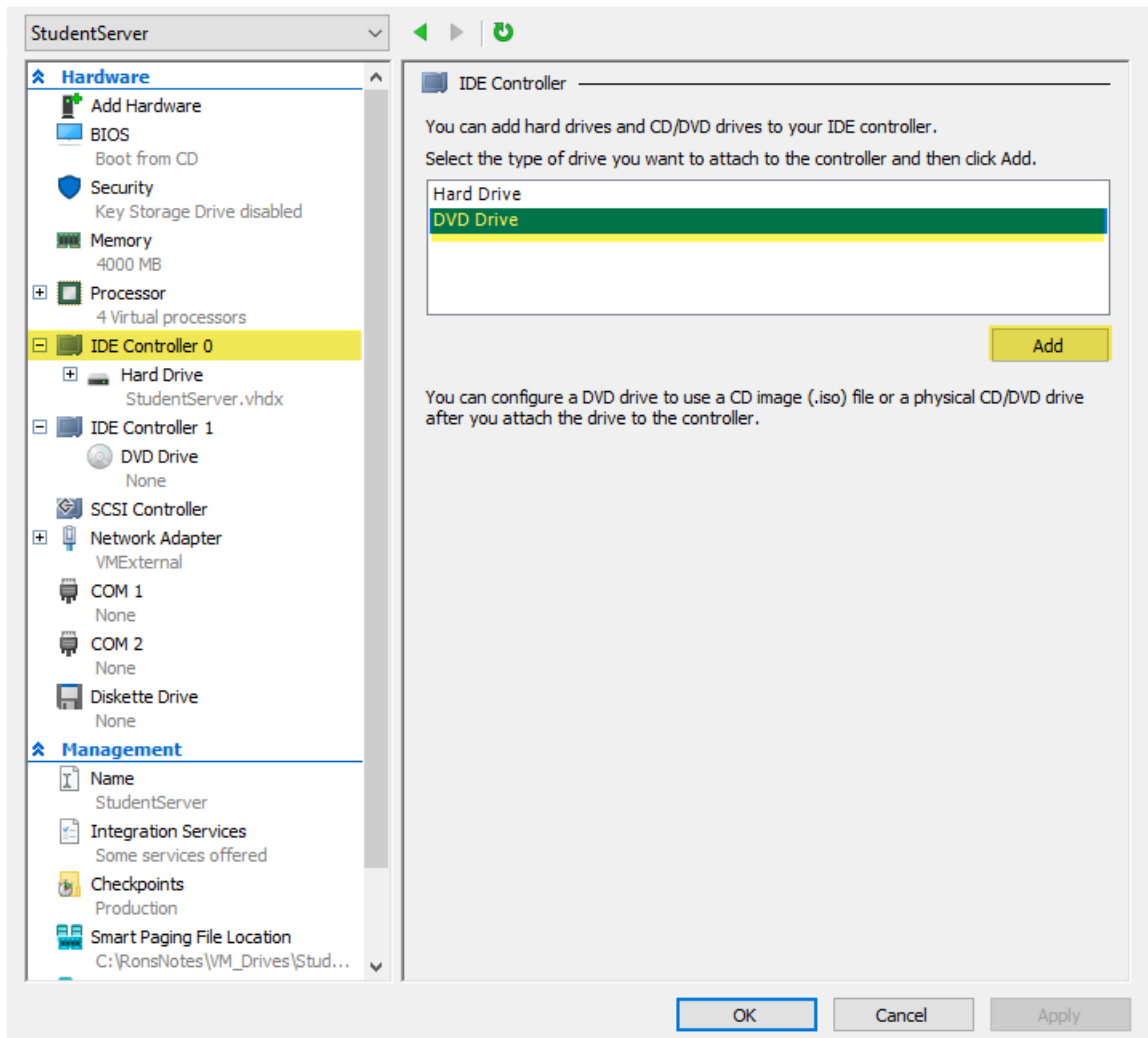


24. In **Hyper-V Manager**, click to select **StudentServer** virtual machine, then right-click the machine and select **Settings....**
25. When **Settings for StudentServer ...** dialog box opens, review the options available.
26. Navigate to the pane on the left, then locate and click to select **Processor** tab.
27. Verify the **Number of virtual processors** is set to **4**.

28. If changes were made, click **Apply**.

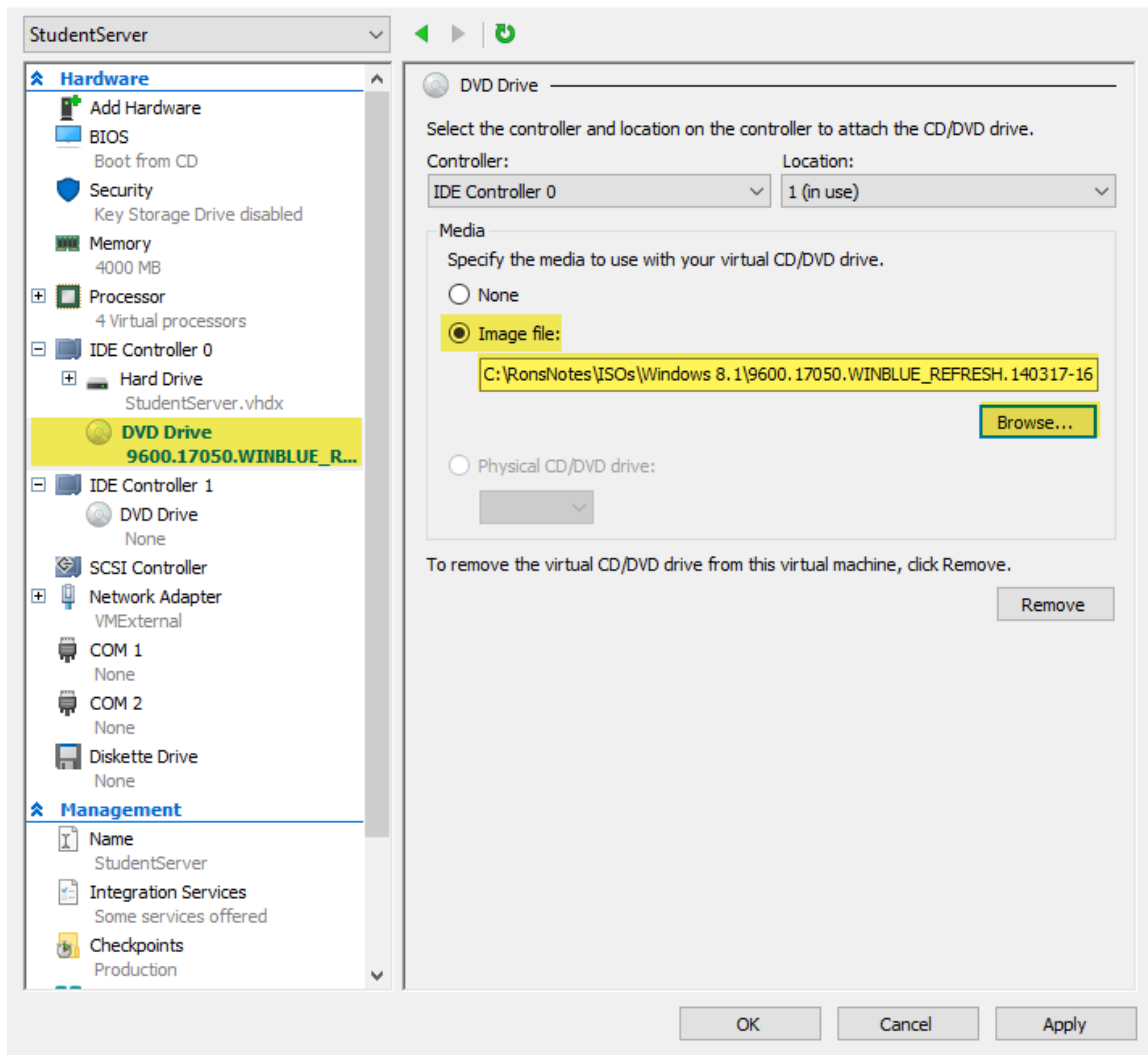


29. Move back to the pane on the left and click to select **IDE Controller 0**.
30. Locate the **Select the type of drive you want to attach to the controller...** setting, click to select **DVD Drive**, then click **Add**.



31. Click the radio button to select an **Image file**, then click the corresponding **Browse...**
32. In the **Open** dialog box, navigate to **C:\RonsNotes\ISOs\Windows 8.1** and double-click the installation ISO.

33. Back in **Settings for StudentServer...** dialog box, review the settings.



34. Click **Apply**.

35. Back in **Settings for StudentServer...** dialog box, review the settings.

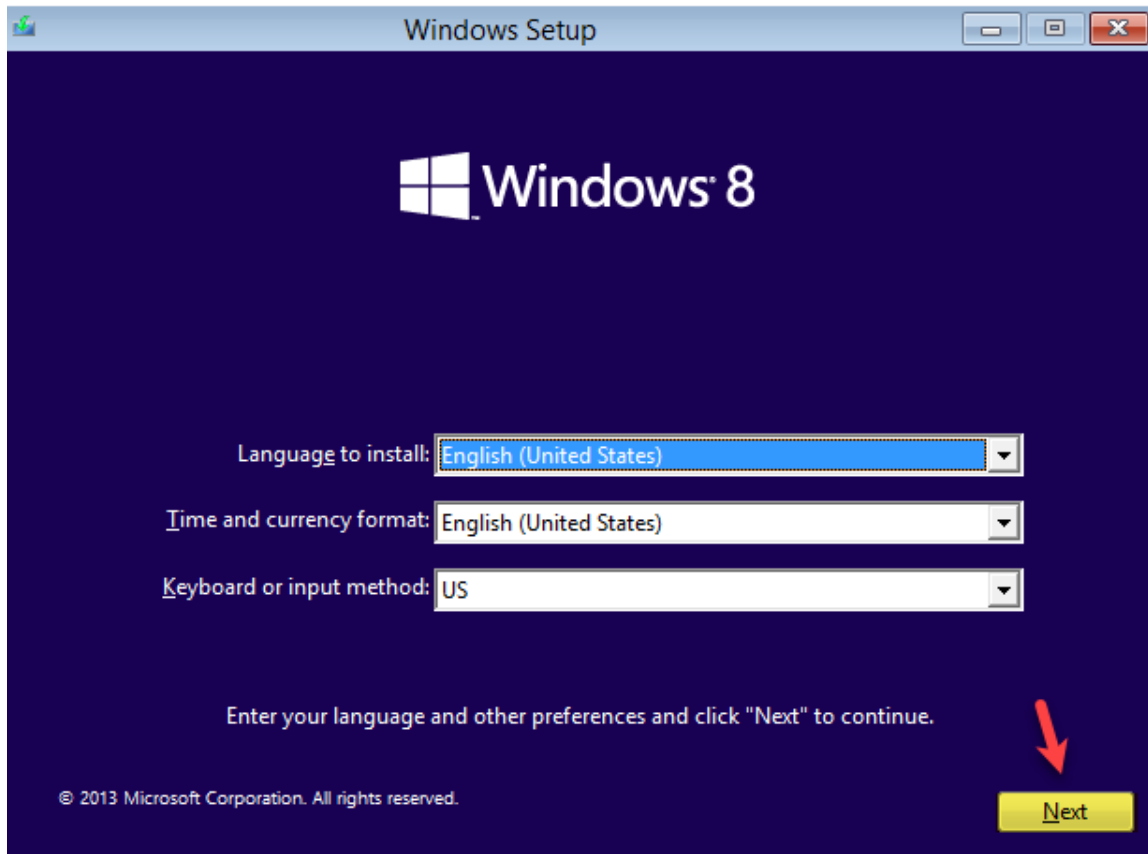
36. Click **OK**.

Installing Windows 8.1

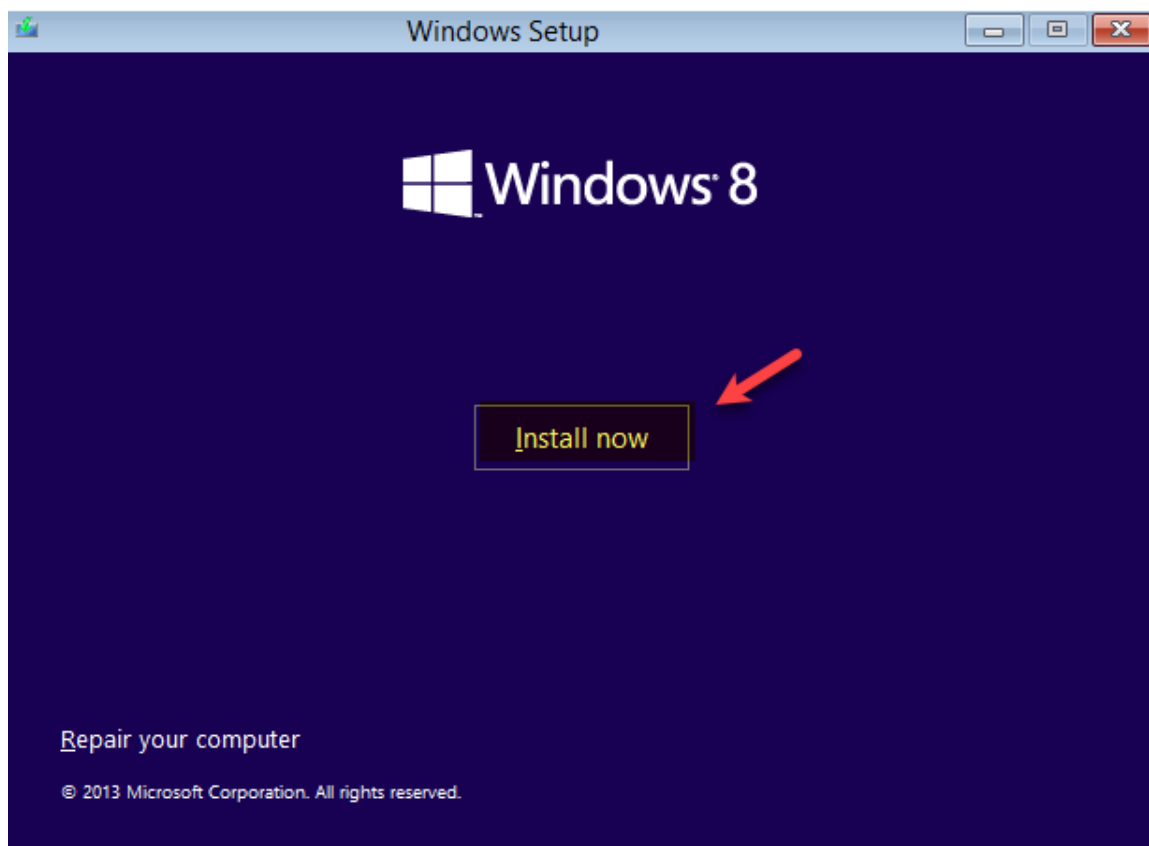
Task: Install Windows 8.1

1. Right-click the virtual machine (**StudentServer**), then click **Start**.
2. Again, right-click the virtual machine (**StudentServer**), then click **Connect**.

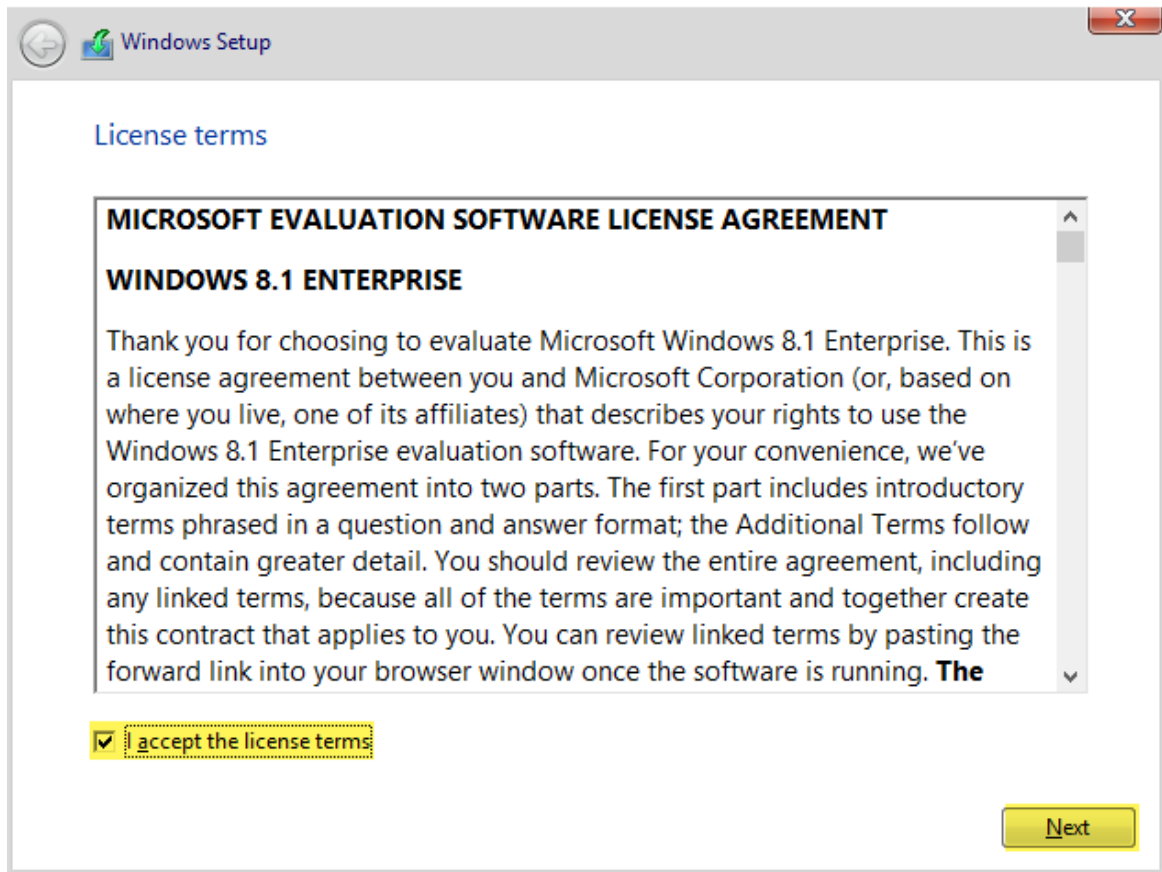
3. In the **Windows Setup** dialog box, review the settings, then click **Next**.



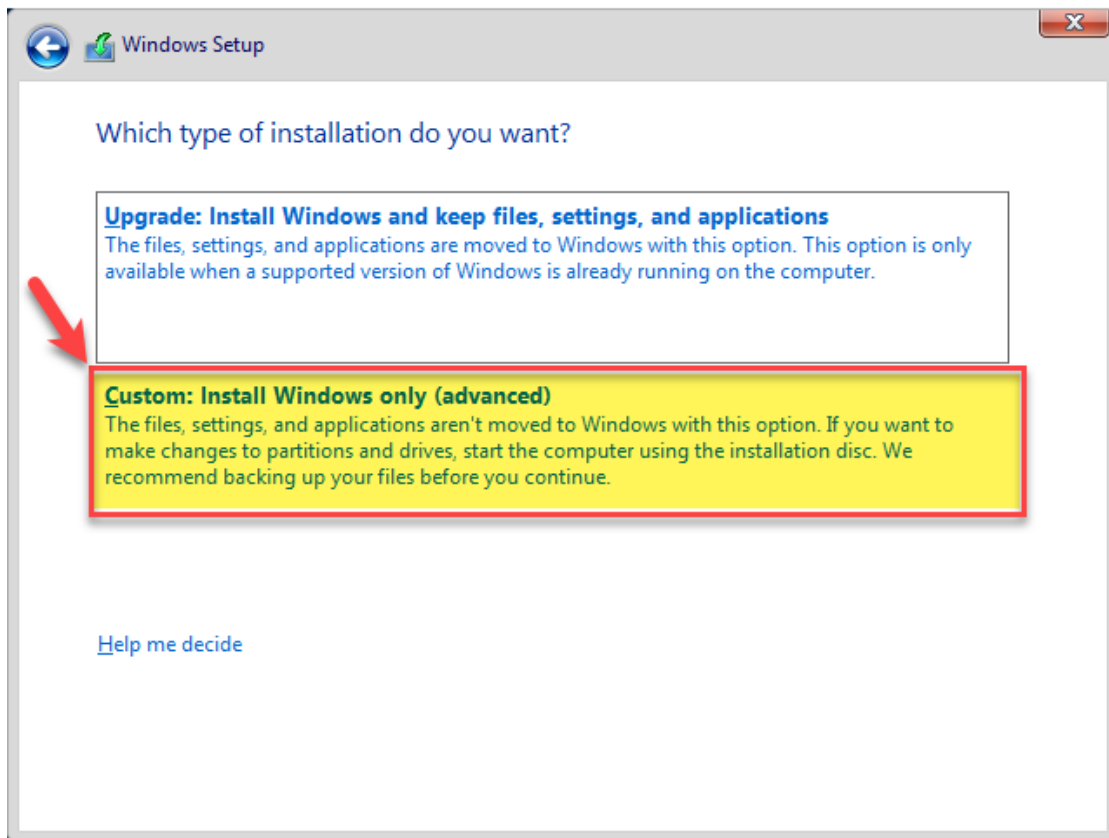
4. Click **Install now**.



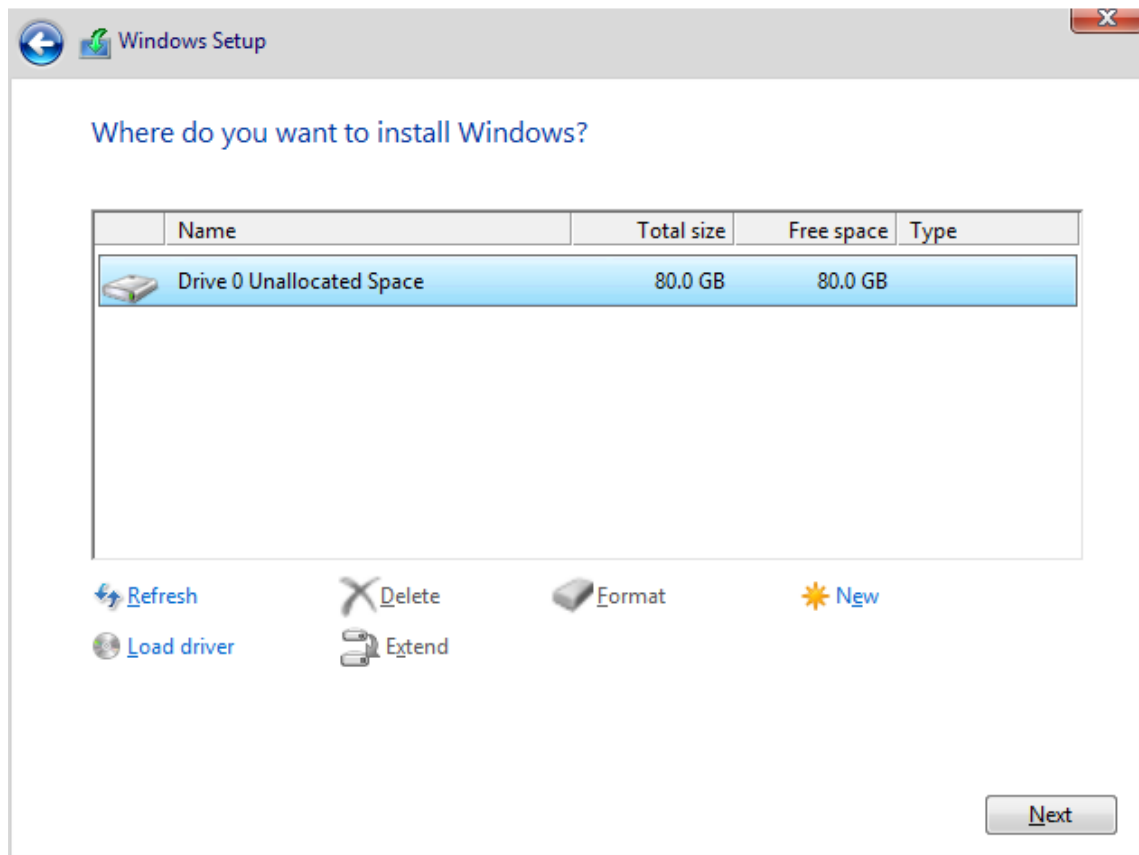
5. Accept the license, then click **Next**.



6. In the **Which type of installation do you want** dialog box, click to select **Custom: Install Windows only (advanced)**.



7. When the **Where do you want to install Windows** dialog box opens, review the settings, then click **Next**.



8. Wait for installation to complete.
9. In the **Personalize** window, move to the **PC name** text box and enter **StudentServer**.
10. Click **Next**.
11. In the **Settings** dialog box, click **Use express settings**.
12. In the **Sign in to your Microsoft account** dialog box, click **Create a new account**.
13. In the **Create a Microsoft account** dialog box, click **Sign in without a Microsoft account**.
14. In the **Your account** dialog box, navigate to the **User name** text box and enter **Student**.
15. In the **Password** text box, enter **Passw0rd**. (the 0 is numeric).
16. In the **Reenter password** text box, enter **Passw0rd**. (the 0 is numeric).
17. In the **Password hint** text box, enter **Password**. (the o is not numeric).
18. Click **Finish**.



If the virtual machine remains black, then use Hyper-V Manager to shut it down, then restart it.

Optional step:

- a. *You can run update on the virtual machine server. This will take a long time as you need to do it on all of them. We have tested this build with Windows 8.1 as-is, without any updates, and it all worked, but this is strictly your call.*

Note. Until we connect this VM to the internet they will not authenticate meaning you have ten days to get past that phase of the setup.

19. Once Windows 8.1 is installed successfully, switch to **Hyper-V Manager**, right-click the virtual machine (**StudentServer**), then click **Shut Down...**

20. In the dialog box asking, **Are you sure you want to shut down the operating system in the selected virtual machines(s)**, click **Shut Down**.

PHASE 03 XXX

Phase Objective

In this phase, we will copy files to the virtual machine, enable Integration Services, and turn off the firewall.

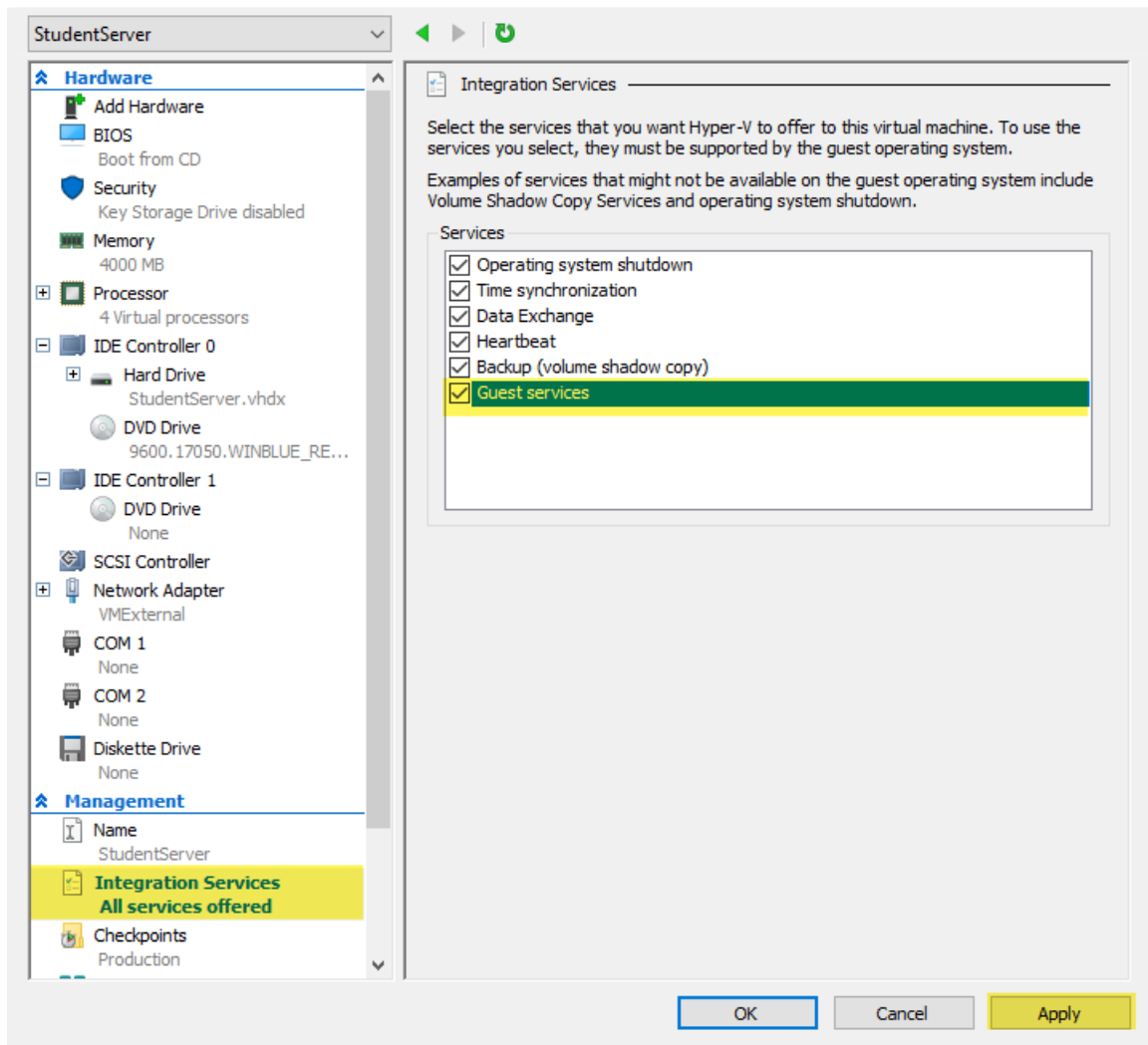
Phase Topics

- Enabling Integration Services
- Copying Files to the Individual Virtual Machine

Enabling Guest Services on the Virtual Machine

Task: Enabling Guest Services on the Virtual Machine

1. In **Hyper-V Manager**, click to select **StudentServer**, then right-click the virtual machine and select **Settings....**
2. Move to the pane on the left, then locate and click to select **Integration Services** tab.
3. Verify there is a check in the **Guest services** check box.

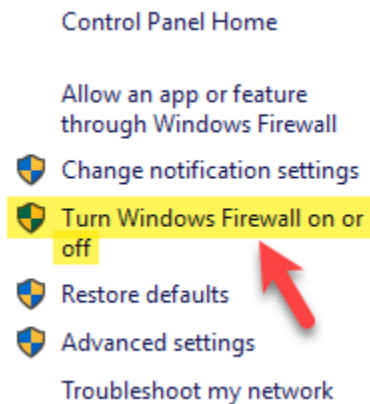


4. If changes were made, click **Apply**.

5. Click **OK**.

Task: Turn Off the Firewall

1. Using **Hyper-V Manager**, start and connect to **StudentServer** virtual machine.
2. In the **Display configuration** dialog box, drag the slider all the way to the right (**Large**) and click **Connect**.
3. Log in as **Student** using **Passw0rd** (the 0 is numeric).
4. Press the **Windows** key and enter **Firewall**.
5. Click to select **Windows Firewall**.
6. In the Windows Firewall dialog box, navigate to the pane on the left and click **Turn Windows Firewall on or off**.



7. When **Customize settings for each type of network** opens, review the current settings.

Customize settings for each type of network

You can modify the firewall settings for each type of network that you use.

Private network settings

- ☒ Turn on Windows Firewall
- ☐ Block all incoming connections, including those in the list of allowed apps
 - ☒ Notify me when Windows Firewall blocks a new app
- ☐ Turn off Windows Firewall (not recommended)

Public network settings

- ☒ Turn on Windows Firewall
- ☐ Block all incoming connections, including those in the list of allowed apps
 - ☒ Notify me when Windows Firewall blocks a new app
- ☐ Turn off Windows Firewall (not recommended)

8. Click the radio button to **Turn off Windows Firewall** for both network settings:
 - Private
 - Public

Customize settings for each type of network

You can modify the firewall settings for each type of network that you use.

Private network settings



☐ Turn on Windows Firewall

☐ Block all incoming connections, including those in the list of allowed apps

☒ Notify me when Windows Firewall blocks a new app



☒ Turn off Windows Firewall (not recommended)

Public network settings



☐ Turn on Windows Firewall

☐ Block all incoming connections, including those in the list of allowed apps

☒ Notify me when Windows Firewall blocks a new app



☒ Turn off Windows Firewall (not recommended)

9. Click **OK**.
10. Close the **Windows Firewall** dialog box.

PHASE 04 SETUP SQL SERVER 2014 EXPRESS ADVANCED

Phase Objective

- In this phase, we will set up SQL Server on the virtual machine, install .NET Framework 3.5 SP1, and install Report Builder 3.0.

Phase Topics

- Install .NET Framework 3.5 SP1
- Install SQL Server 2014 Express Advanced
- Install Report Builder 3.0

Task Copy Installation Files to the Virtual Machine

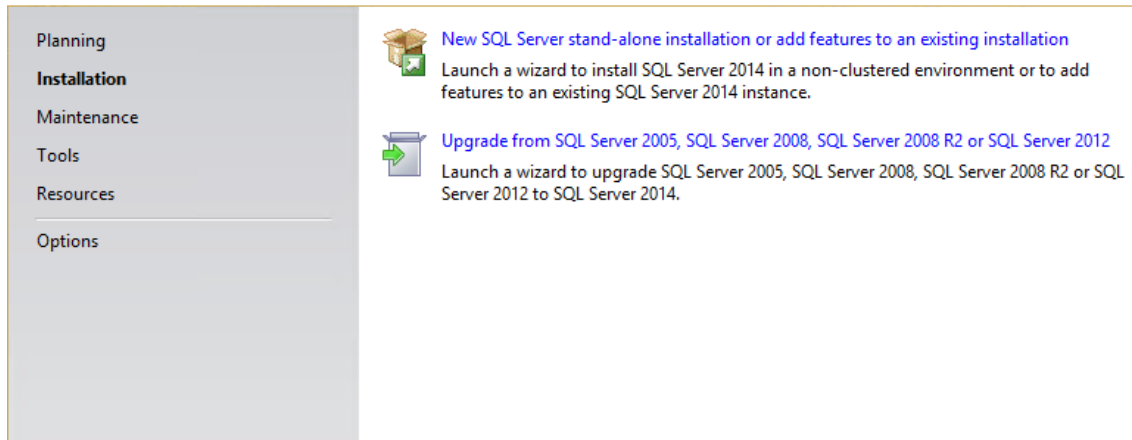
1. Switch to your local machine and navigate to **C:\RonsNotes\ISOs\SQL Server 2014 Express Advanced**.
2. Select and copy all three files.
3. Paste the copied files onto the desktop of the virtual machine.

Task Install .NET Framework 3.5 SP1

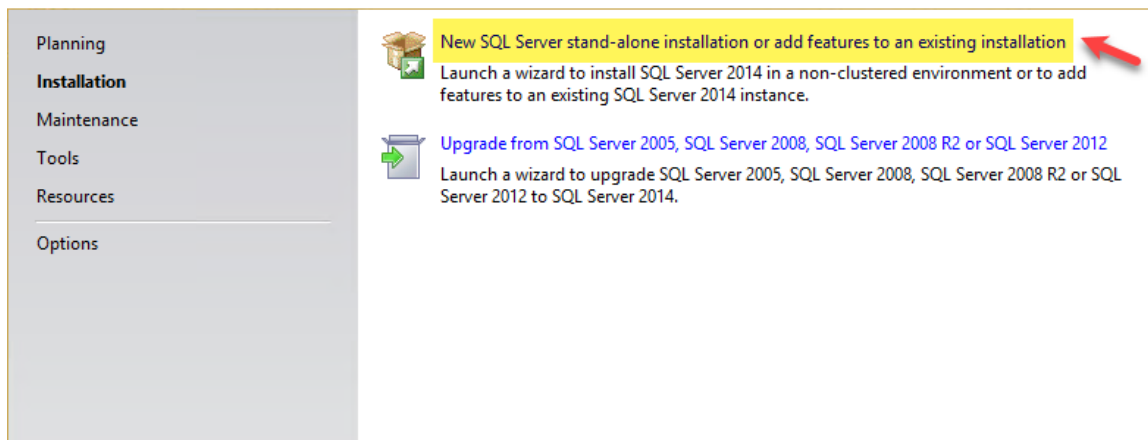
1. Click to select **dotnetfx35** icon.
2. Double-click to start **dotnetfx35**.
3. In the **User Account Control** dialog box, click **Yes**.
4. In the **Windows Features** dialog box, click **Download and install this feature**.
5. In the **The following feature was successfully installed** dialog box, click **Close**.

Task Install SQL Server 2014 Express Advanced

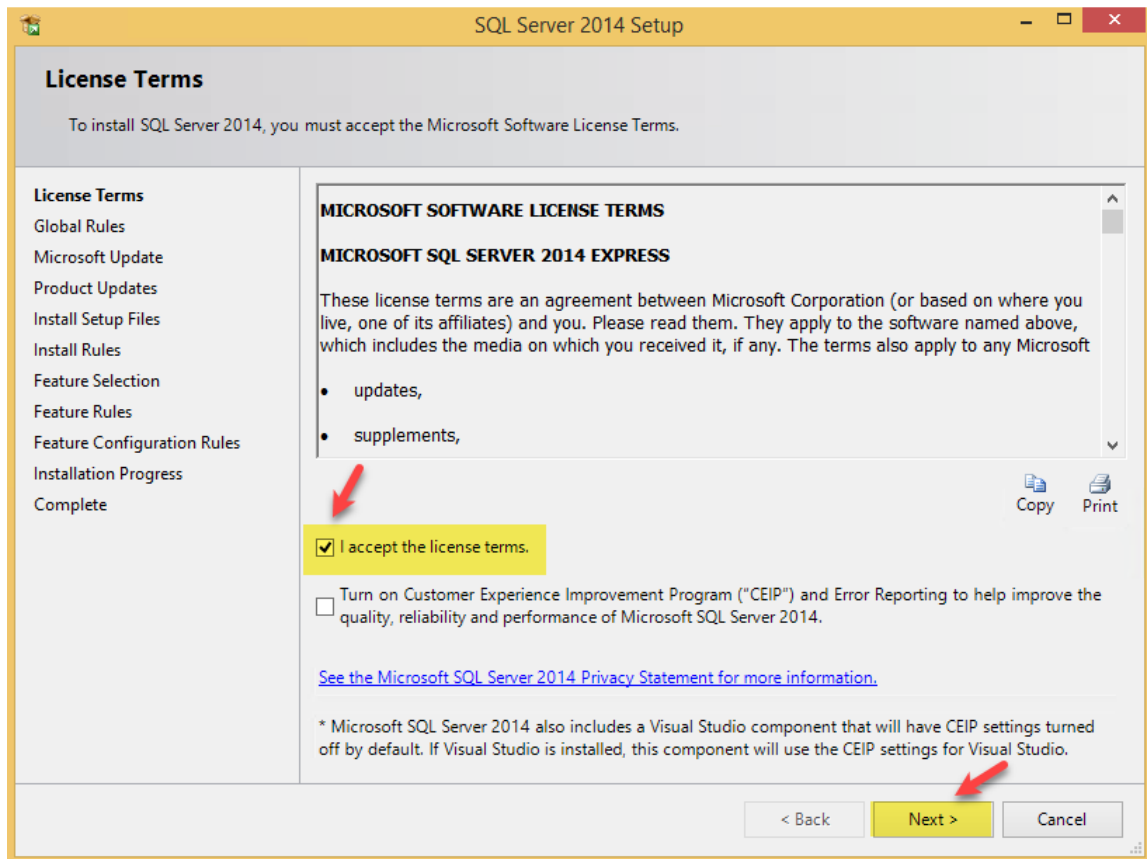
1. Back on the virtual machine desktop, double-click **SQLEXPADV_x64_ENU**.
2. In the **User Account Control** dialog box, click **Yes**.
3. In the **Choose Directory For Extracted Files** dialog box, click **Ok**.
4. In the **SQL Server Installation Center** dialog box, review the options available.



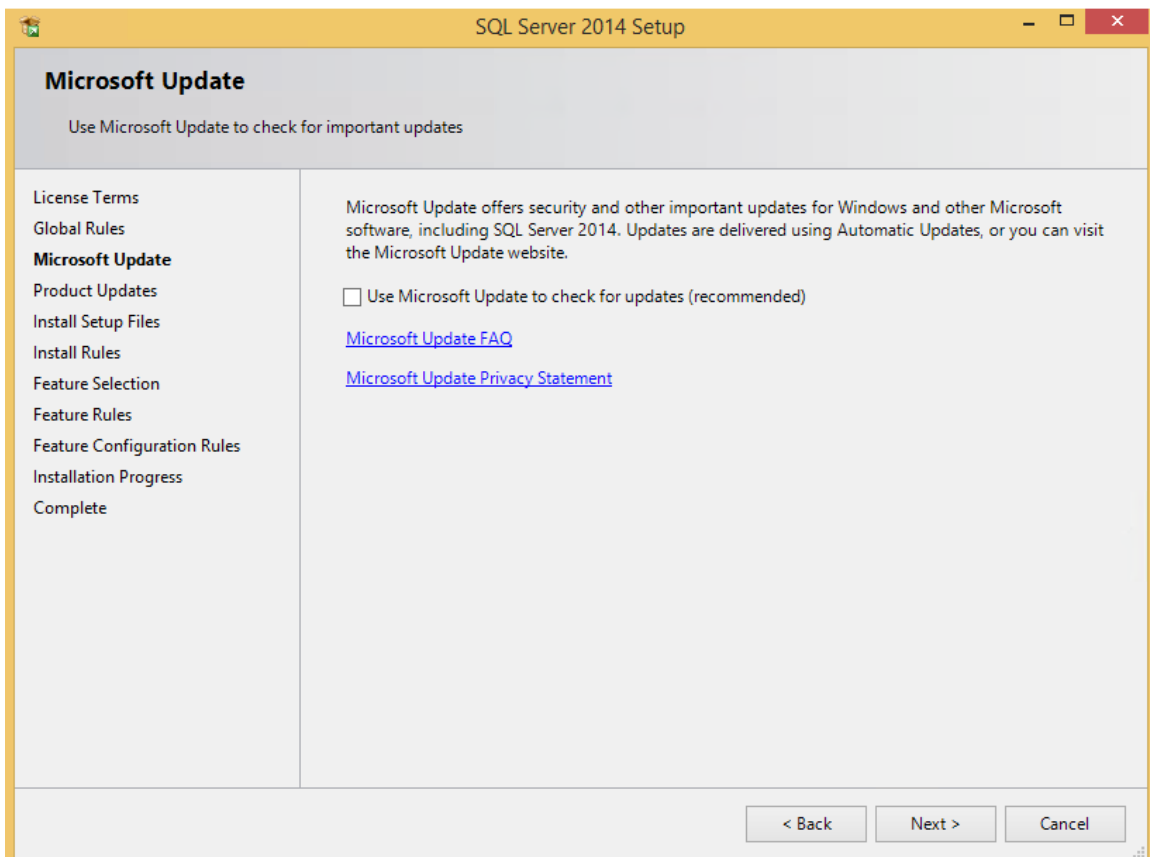
5. Click the link for a **New SQL Server stand-alone installation or add features to an existing installation**.



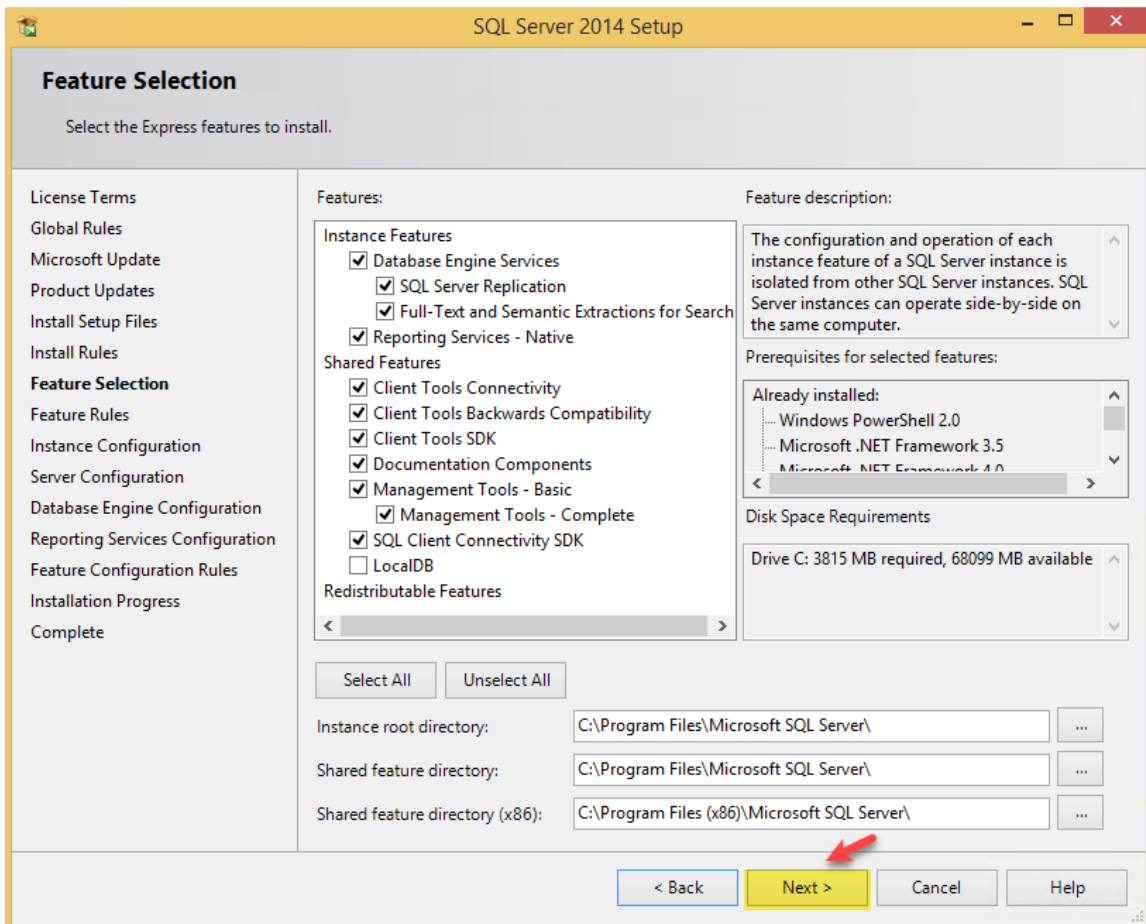
6. In the **License Terms** dialog box, place a check in the **I accept the license terms** check box and click **Next**.



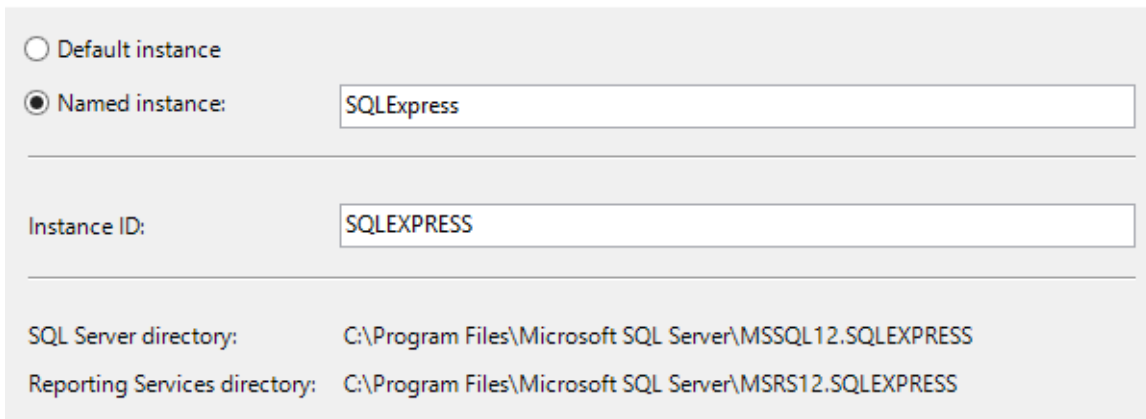
7. In the **Microsoft Update** dialog box, click **Next**.



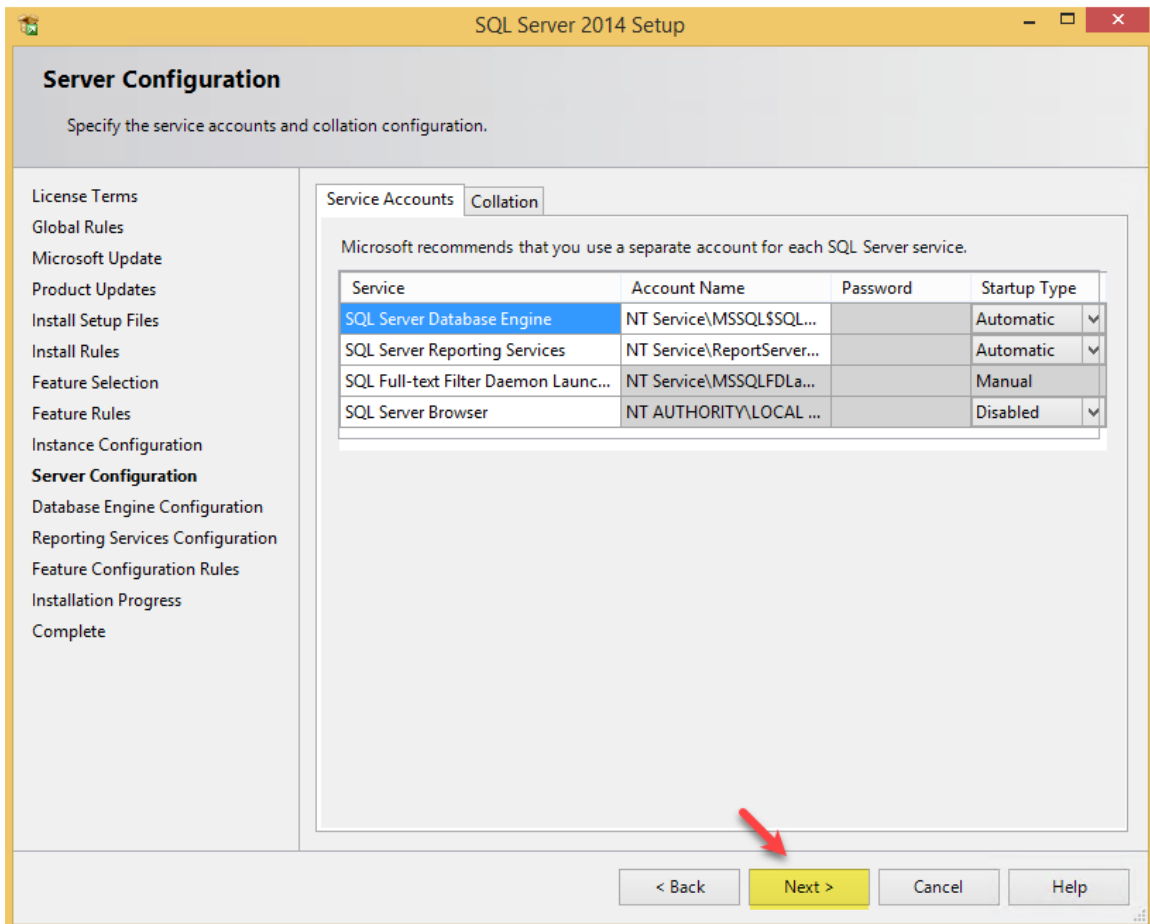
8. In the **Feature Selection** dialog box, click **Next**.



9. In the **Instance Configuration** dialog box, leave the **Default instance** settings as they are, and click **Next**.



10. In the **Server Configuration** dialog box, click **Next**.



11. In the **Database Engine Configuration** dialog box, review the current settings.

SQL Server 2014 Setup

Database Engine Configuration

Specify Database Engine authentication security mode, administrators and data directories.

License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Reporting Services Configuration
Feature Configuration Rules
Installation Progress
Complete

Server Configuration | Data Directories | User Instances | FILESTREAM

Specify the authentication mode and administrators for the Database Engine.

Authentication Mode

☒ Windows authentication mode
☐ Mixed Mode (SQL Server authentication and Windows authentication)

Specify the password for the SQL Server system administrator (sa) account.

Enter password:
Confirm password:

Specify SQL Server administrators

StudentServer\Student (Student)

SQL Server administrators have unrestricted access to the Database Engine.

Add Current User Add... Remove

< Back Next > Cancel Help

12. In the **Reporting Services Configuration** dialog box, review the settings and then click **Next**.

Reporting Services Native Mode

☒ Install and configure.
Installs and configures the report server in native mode. The report server is operational after setup completes.

☐ Install only.
Installs the report server files. After installation, use Reporting Services Configuration Manager to configure the report server for native mode.

Reporting Services SharePoint Integrated Mode

☐ Install only.
Installs the report server files. After installation use SharePoint Central Administration to complete the configuration. Verify the SQL Server Reporting Services service is started and create at least one SQL Server Reporting Services service application. For more information, click Help.

13. Allow **SQL Server 2014 Express Advanced** to install.
14. Upon **Success**, click **Close**.

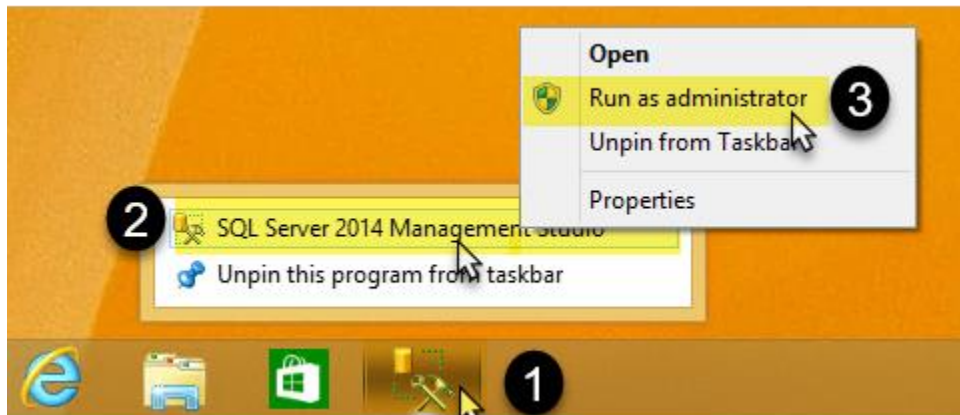
15. Close **SQL Server Installation Center** dialog box.

Task: Install Report Builder 3.0

1. Back on your virtual machine desktop, double-click to launch **ReportBuilder3**.
2. In the **Welcome to the Installation Wizard** dialog box, click **Next**.
3. In the **License Terms** dialog box, click the **I accept the terms in the license agreement** radio button and click **Next**.
4. In the **Feature Selection** dialog box, click **Next**.
5. In the **Default Target Server** dialog box, click **Next**.
6. In the **Ready to Install the Program** dialog box, click **Install**.
7. In the **User Account Control** dialog box, click **Yes**.
8. In the **Completing the SQL Server Report Builder 3 for SQL Server 2014 installation** dialog box, click **Finish**.

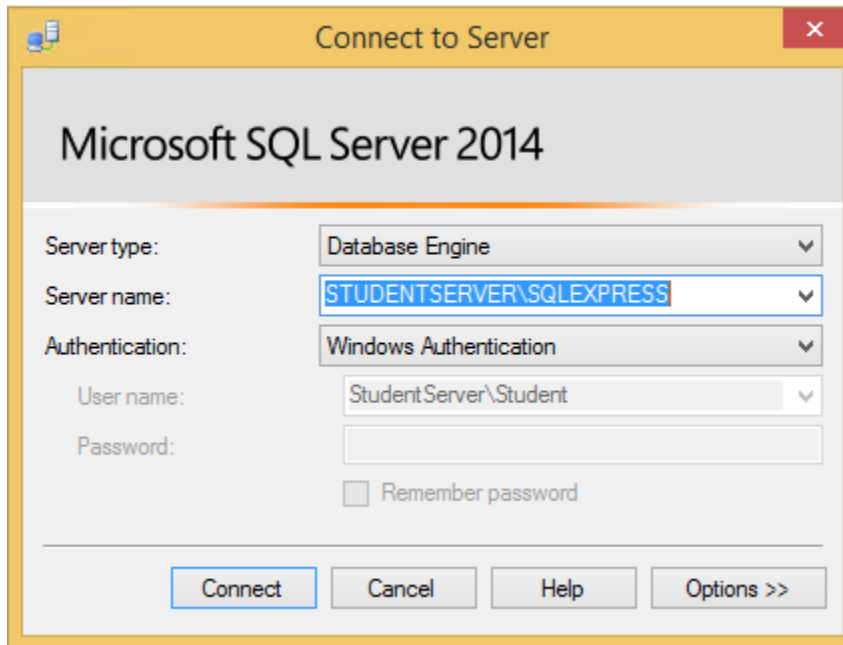
Task: Attach Databases

1. Press the **Windows** key, then enter **SQL Server Management Studio**.
2. Right-click **Microsoft SQL Server Management Studio**, then click **Pin to Taskbar**.
3. Press **Esc** to return to desktop view.
4. Right-click the **Microsoft SQL Server Management Studio** icon in the taskbar, right-click the new **SQL Server Management Studio** icon showing, and click **Run as administrator**.



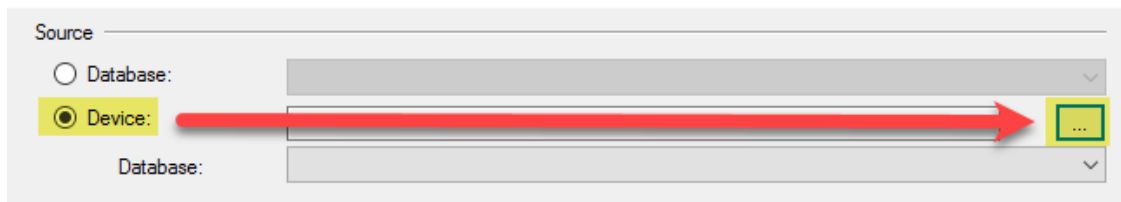
5. In the **User Account Control** dialog box, click **Yes**.

6. In the **Connect to Server** dialog box, review the current settings, then click **Connect**.

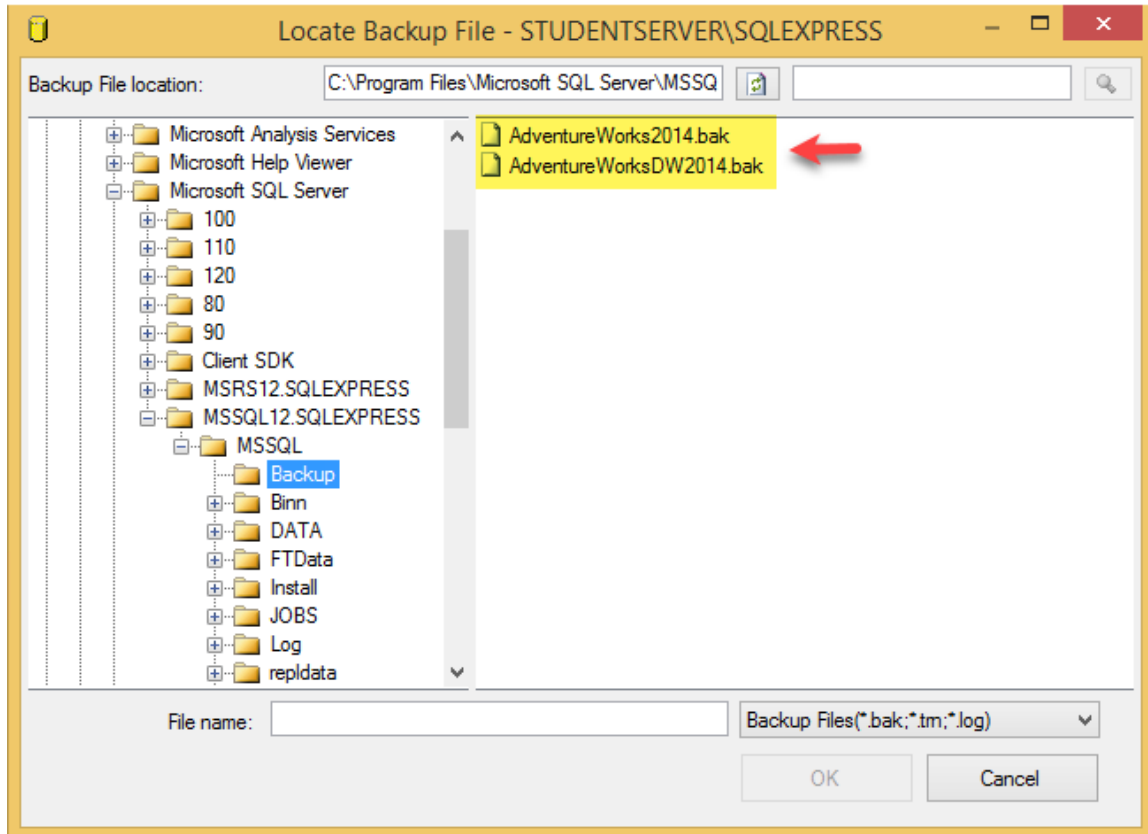


7. Minimize **Microsoft SQL Server Management Studio**.
8. Switch to your host machine and navigate to the downloaded database backup files (**DB Backups** folder).
9. Right-click the **DB Backups** folder, then click **Copy**.
10. Switch to **StudentServer** virtual machine.
11. Open **File Explorer** and navigate to **C:**.
12. Paste in the **DB Backups** folder.
13. Double-click to open **DB Backups** folder.
14. Open a new instance of **File Explorer**, navigate to **C:\Program Files\Microsoft SQL Server\MSSQL12.SQLEXPRESS\MSSQL\Backup**.
15. In the **you don't currently have permission to access this folder** dialog box, click **Continue**.
16. Back in **DB Backups** folder, double-click to open the **Adventure Works 2014 Full Database Backup** folder.
17. Click to select **AdventureWorks2014.bak**, then right-click the file and click **Copy**.
18. Paste the files in **C:\Program Files\Microsoft SQL Server\MSSQL12.SQLEXPRESS\MSSQL\Backup**.
19. Switch back to **DB Backups** folder, double-click to open the **Adventure Works DW 2014 Full Database Backup** folder.
20. Click to select **AdventureworksDW2014.bak**, then right-click the file and click **Copy**.
21. Paste the files in **C:\Program Files\Microsoft SQL Server\MSSQL12.SQLEXPRESS\MSSQL\Backup**.
22. Switch back to **Microsoft SQL Server Management Studio**, navigate to the **Object Explorer** pane, right-click **Databases** and click **Restore Database ...**.

23. In the **Restore Database** dialog box, click the **Device** radio button and the corresponding ellipses.

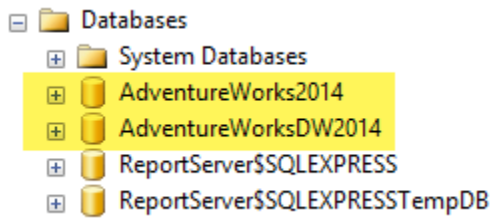


24. In the **Select backup devices** dialog box, click **Add**.
25. In the **Locate Backup File - STUDENTSERVER\SQLEXPRESS** dialog box, notice both files are listed.



26. Double-click **Adventure Works2014.bak** and in the **Select backup devices** dialog box, click **OK**.
27. In the **Restore Database-AdventureWorks2014** dialog box, click **OK**.
28. In the dialog box stating **Database 'Adventure Works2014' restored successfully**, click **OK**.
29. Move back to **Microsoft SQL Server Management Studio**, navigate to the **Object Explorer** pane, right-click **Databases** and click **Restore Database**
30. In the **Restore Database** dialog box, click the **Device** radio button and the corresponding ellipses.
31. In the **Select backup devices** dialog box, click **Add**.
32. In the **Locate Backup File - STUDENTSERVER\SQLEXPRESS** dialog box, double-click **Adventure WorksDW2014**.
33. In the **Select backup devices** dialog box, click **OK**.
34. In the **Restore Database-AdventureWorksDW2014** dialog box, click **OK**.
35. In the dialog box stating **Database 'Adventure WorksDW2014' restored successfully**, click **OK**.

36. In the **Object Explorer** pane, expand **Databases** folder and notice you now see both databases listed.



37. Close **SQL Server Management Studio** and all other opens windows.

Lab Files

Switch to your host machine, navigate to the downloaded/cloned repository files, then copy the **Lab Files** folder and paste it into **C:** drive on the **StudentServer** virtual machine.