DAT219x

Provisioning Databases

Lab 02 | Installing SQL Server

Estimated time to complete this lab is 120 minutes

Overview

In this lab, you are preparing to install SQL Server 2017 for the IT department in Adventure Works Cycles. You need to perform installations on Linux and Azure SQL Database.

The labs in this course are accumulative. You cannot complete the following labs if this lab has not been successfully completed.

What You'll Need

To complete this lab, you will need the following:

- High-speed and reliable internet connectivity (for remote connections to the VM)
- A local Linux machine or virtual machine
- A second monitor is recommended (for the Remote Desktop connection)
- A Microsoft account (such as one used for outlook.com, Hotmail, or other Microsoft services)
- A Microsoft Azure subscription
- To have completed the previous labs in this course.

Exercise 1: Install SQL Server on Linux

In this exercise, you will install SQL Server for Linux.

The Azure VM should be stopped when you have completed a lab so that your subscription is not charged (for free trial subscriptions, this will ensure you will have sufficient credits left to complete the labs over the duration of the course).

Install SQL Server for Linux

In this task, you will install SQL Server on your Linux virtual machine. If you have stooped the virtual machine, repeat the Connecting to the VM exercise from Lab 00.

1. In Cloud Shell, type the following command and press Enter to download the SQL Server repository file:
   `sudo curl -o /etc/yum.repos.d/mssql-server.repo https://packages.microsoft.com/config/rhel/7/mssql-server-2017.repo`

2. Type your password and press Enter if requested.

3. Type the following command and press Enter to install SQL Server:
   `sudo yum install -y mssql-server`

Configure SQL Server

In this task, you will configure SQL Server on your Linux virtual machine.

1. In Cloud Shell, type the following command and press Enter to configure SQL Server:
   `sudo /opt/mssql/bin/mssql-conf setup`

2. If requested, type your password and press Enter.

3. To choose Evaluation Edition, type **1** and press Enter.

4. Type **yes** and press Enter.

5. Type a memorable password and press Enter. For this lab you can use the same password as your Linux administrator account, but in a real world example, you would typically use another password.

6. Confirm your password and press Enter.

7. Type the following command to verify that SQL Server is running:
   `systemctl status mssql-server`

Lab Check – *You will need these answers for the module quiz – write them down!*

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What is listed as **Lab Check – *You will need these answers for the module quiz – write them down!***

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What is listed as **Active:** in the response _____

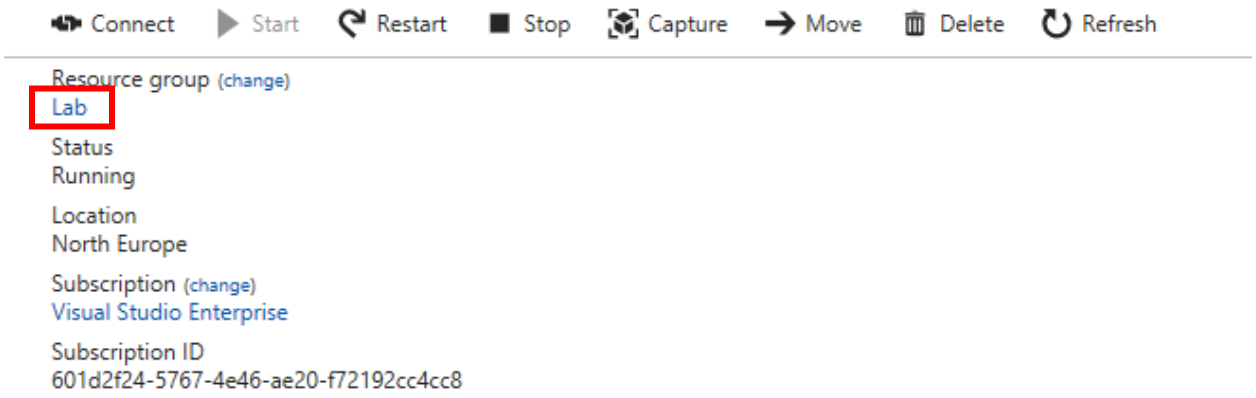
8. Type the following commands to accept incoming traffic on port 1433 (enter your password if requested):
```
sudo firewall-cmd --zone=public --add-port=1433/tcp --permanent
sudo firewall-cmd --reload
```

9. On the left **FAVORITES** list in Azure, click **Dashboard**.

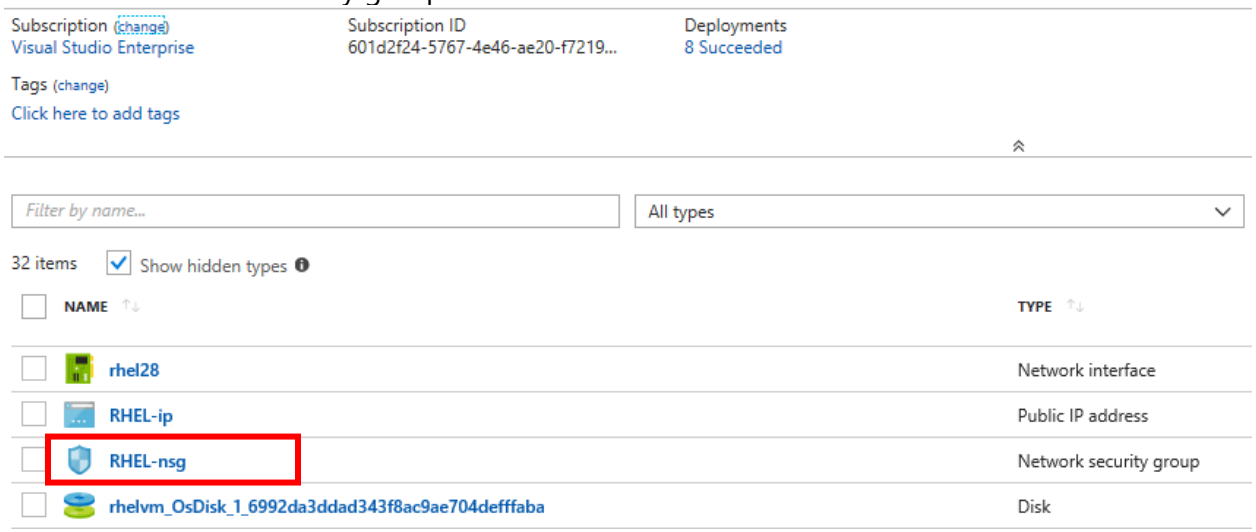
10. Click your Linux VM.

11. Note down the **Public IP address** for use later.

12. At the top left of the page click the name of the **Resource group**.



13. Select the Network security group.



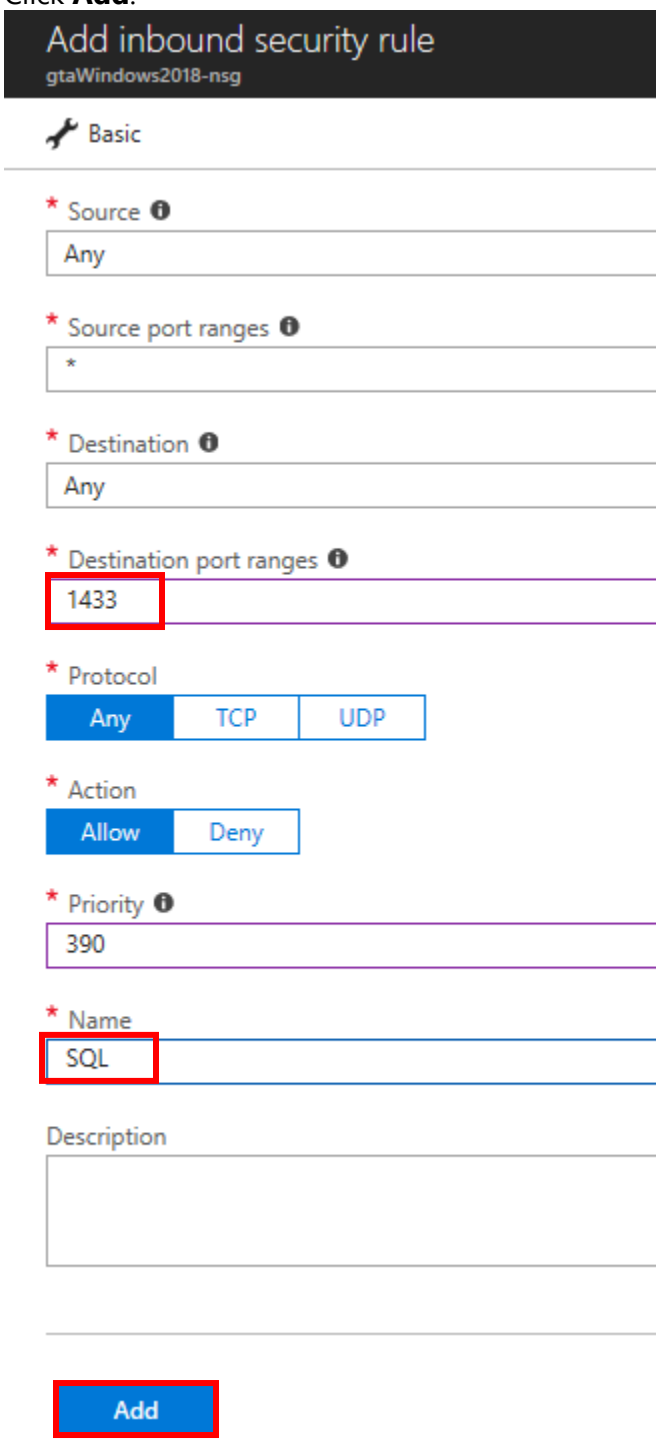
14. Under **Settings**, click **Inbound security rules**.

15. At the top of the page, click **Add**.

16. In **Destination port ranges**, type **1433**.

17. In **Name**, type **SQL**.

18. Click **Add**.



Connect to SQL Server for Linux

In this task, you will connect to SQL Server on your Linux virtual machine from your local client machine.

1. From your local client, navigate to https://aka.ms/edx-dat219x-sql1.

2. Follow the instructions to download and install SQL Operations Studio to your client operating system.

3. Start SQL Operations Studio.

4. Click **New Connection**.

5. If the **Connection** blade does not automatically open, click **New connection**:

6. In **Server name**, type the Public IP address of the server that you noted down previously.

7. In **Authentication type**, select **SQL Login**.

8. In **User name**, type **sa**.

9. In **Password**, type your database administrator password.

10. Select **Remember password**. Note that this is for convenience in the lab and in reality, you might not want to remember the password on the client.

11. Click **Connect**.

12. Right-click the server and click **New Query**.

13. Type SELECT @@VERSION and click **Run**.

14. Note down the first line of the response.

Lab Check – *You will need these answers for the module quiz – write them down!*

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Note down the first four words of the response _____

Exercise 2: Provisioning an Azure SQL Database

In this exercise, you will create an Azure SQL Database on your Linux virtual machine.

Azure SQL databases cannot be stopped, but use minimal credit when not in use because there is only the cost of the storage.

Provision an Azure SQL Database

In this task, you will sign in to the Azure Portal, and then provision an Azure SQL Database.

1. From your local client machine, open an Internet browser, navigate to https://portal.azure.com, and sign in to the **Azure Portal** by using your subscription.
2. In the left pane, select **SQL Databases**.
3. Click **Add**.

4. In the **Database name** box, type **LabAdventureWorks**.
5. In the **Resource Group** box, select **Create new** and type **SQLLab**.
6. In **Select source**, select **Sample (AdventureWorksLT)**.
7. Click **Server** and click **Create a new server**.
8. In **Server name** enter a globally unique name (e.g. your initials and todays date). Note down your server name.
9. In **Server admin login**, type **Student**.
10. In **Password** and **Confirm password** type **Pa55w.rd**.
11. In **Location** select a location that is close to you and click **Select**.
12. Ensure that your new server is selected.
13. Click **Pricing tier**, select **Basic** and click **Apply**.

Lab Check – *You will need these answers for the module quiz – write them down!*

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What steps in the Progress page mention extracting the schema? _____

14. Select **Pin to Dashboard** and click **Create**.

You have now completed the lab.

If you are not immediately continuing with the next lab, you should complete the ***Finishing Up*** *exercise to shut down and stop the VM.*

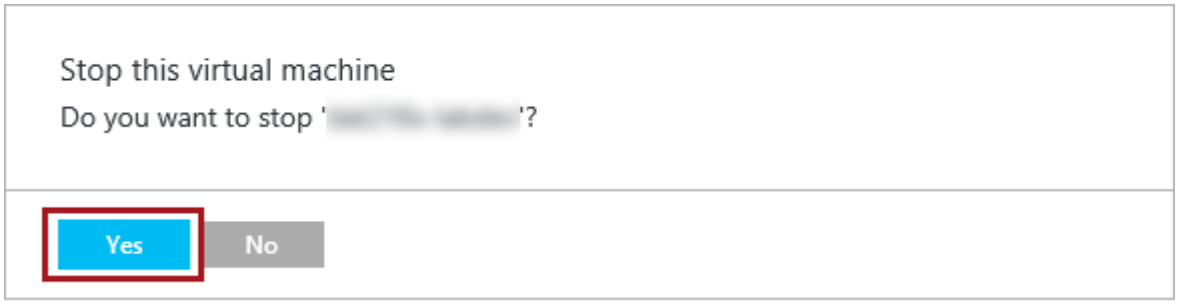
Finishing Up

In this exercise, you will shut down and stop the VMs.

1. Deallocate the Linux VM by clicking **Stop**.

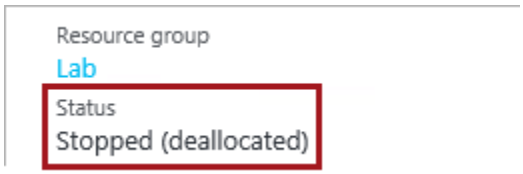
   Deallocation will take some minutes to complete, and also extends the time required to restart the VM. Consider deallocating the VM if you want to reduce costs, or if you choose to complete the next lab after an extended period.

2. When prompted to stop the VM, click **Yes**.



   The deallocation can take several minutes to complete.

3. Verify that the VM status updates to **Stopped (Deallocated)**.



   In this state, the VM is now not billable—except for a relatively smaller storage cost.

   Note that a deallocated VM will likely acquire a different IP address the next time it is started.

4. Sign out of the **Azure Portal**.