

Padification SDD

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Version: 0.4.1

McKenzie College SWTS2102

1. Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Author | Ver. | Revision Notes |
| 2017-06-19 | William Gale | 0.1 | Heading layout for document. Integration of SQL TCP/IP configuration and a quick development tool outline prototype. |
| 2017-06-21 | Elie Godbout | 0.2 | Updated contents of Appendices; Added Visual aid & enhanced the process information. Added a List of Images to SDD. |
| 2017-06-23 | Elie Godbout | 0.3 | Added Steps for creation of the PADification database and prerequisites for the process in Appendices. |
| 2017-06-26 | Zachary Blue | 0.4 | Added images for downloading of OBDC and SQLCMD |
| 2017-06-26 | Elie Godbout | 0.4.1 | Updated the Steps for installations of ODBC and SQLCMD in Appendices. |

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# Development Tool Outline

|  |  |
| --- | --- |
| Development Language | Python 3.5.2 |
| Development Environment | Visual Studio 2015 |
| Documentation | Word 2016 |
| UML Design Tool | UMLet |
| Relational Database Environment | MSSQL 2014 |
| RDMS | Microsoft SQL server 2014 Management Studio |
| ERD Design Tool | ERD Concepts |
| Python Modules | Tkinter  Pypyodbc  Pygubu |
| Testing tools |  |

# Design Viewpoints

## Introduction

## Context Viewpoint

### User Use Case Diagrams

## Composition Viewpoint

### Deployment Diagram

## Logical Viewpoint

## Dependency Viewpoint

## Information Viewpoint

### Information gathering

## Patterns Viewpoint

## Interface Viewpoint

## Structure Viewpoint

## Interactions Viewpoint

## State Dynamics Viewpoint

## Algorithm Viewpoint

## Resources

# Appendices

## Tool Configuration

### Configure MSSQL DB for Remote Connections.

#### Purpose

Allowing MSSQL 2014 servers to Accept TCP/IP connections and SQL authentication.

#### Prerequisites

* MSSQL 2014 Installed
* Microsoft SQL Server Management Tool

#### Enable TCP/IP Connection

To enable the TCP/IP protocol in SQL Server 2014, follow these steps:

1. Open **SQL Server Configuration Manager** from:

for 64 bits: "**C:\Windows\SysWOW64\SQLServerManager12.msc**"

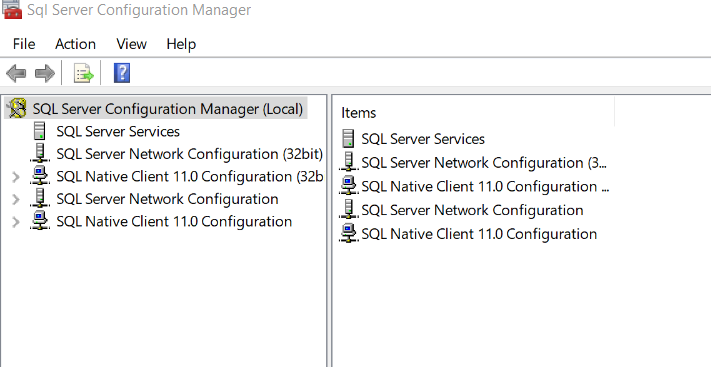
for 32 bits: "**C:\Windows\system32\SQLServerManager12.msc**"

Figure 1: Open SQL server Configuration

1. Expand **SQL Server Network Configuration** and click on **Protocols for MSSQLSERVER**

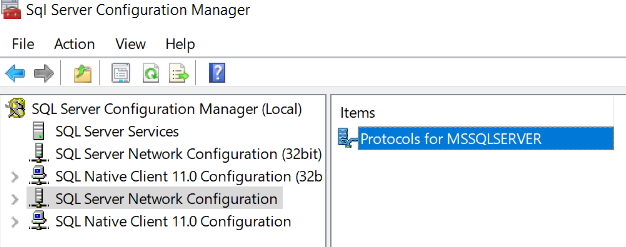


Figure 2: SQL server configuration; Protocols for MSSQLSERVER

1. Right click on **TCP/IP** and choose **Enable**

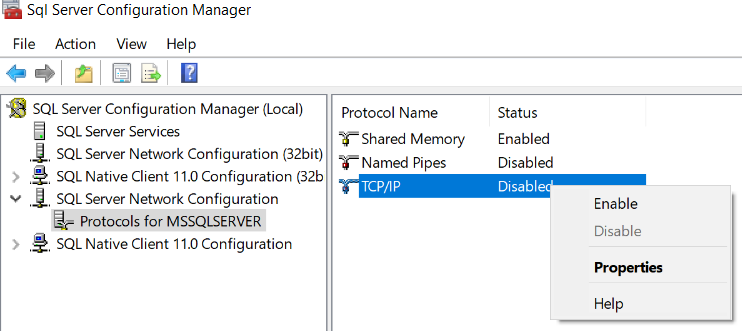


Figure 3: SQL server Configuration Enable TCP/TP

1. Click **OK** on the Warning that the service will have to be restarted
2. Click on **SQL Server Services**

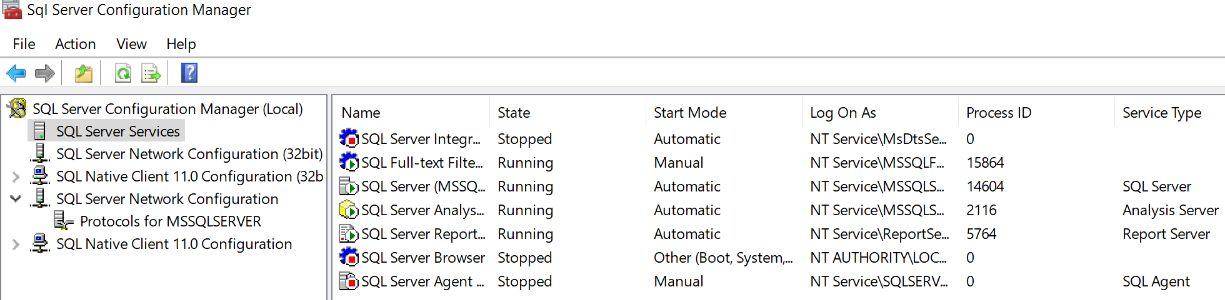


Figure 4: SQL server Configuration Server services

1. Right click on **SQL Server (MSSQLSERVER)** and choose **Restart**

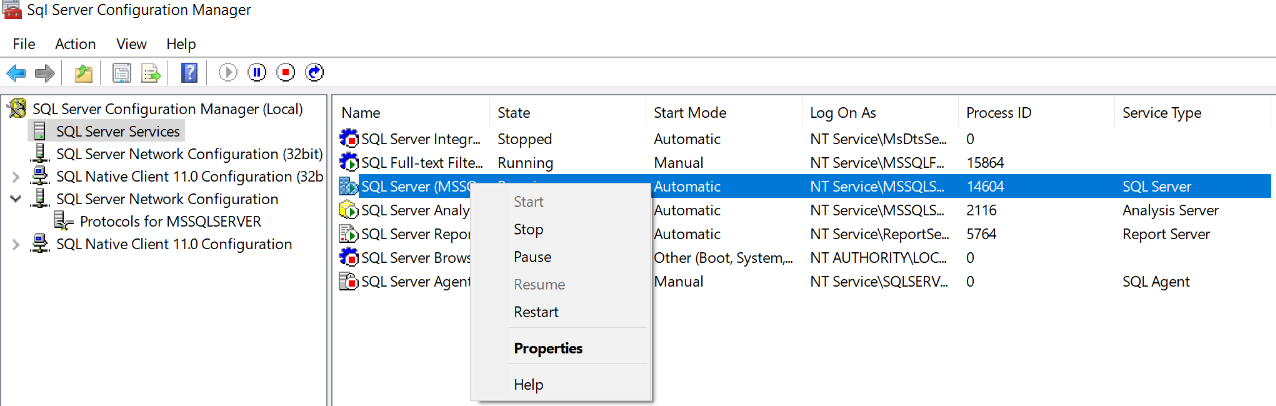


Figure 5: SQL server Configuration restart MSSQLSERVER

#### Setup User for SQL TCP/IP Connection

To create a username to access the SQL Server Via TCP/IP:

1. Open **SQL Server Management Studio** and **Login**.
2. Expand **Security** in the **Object Explorer**.
3. Right Click **Logins** and Select **New Login**.

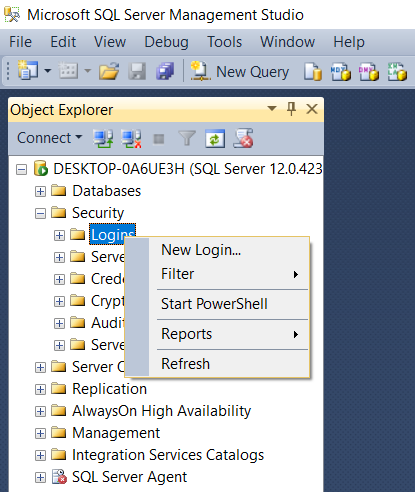


Figure 6: MSSQL SMS New log in

1. In the Login Creation Screen first select **SQL Server Authentication**.

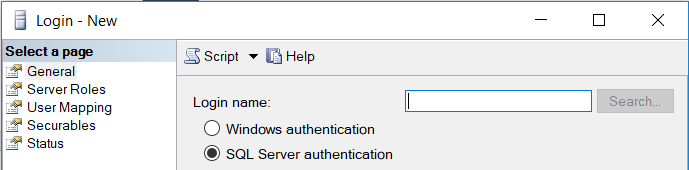


Figure 7: MSSQL SMS New log in SQL Server Authentication

1. Enter the New **Login Name** and **Password / Confirm Password**.
2. Uncheck **Enforce Password Policy**.

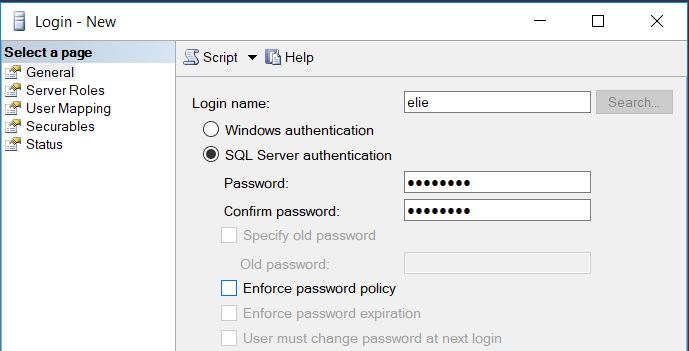


Figure 8: MSSQL SMS New log in name/password/Enforce Password Policy

1. Select **Server Roles** at the top left.

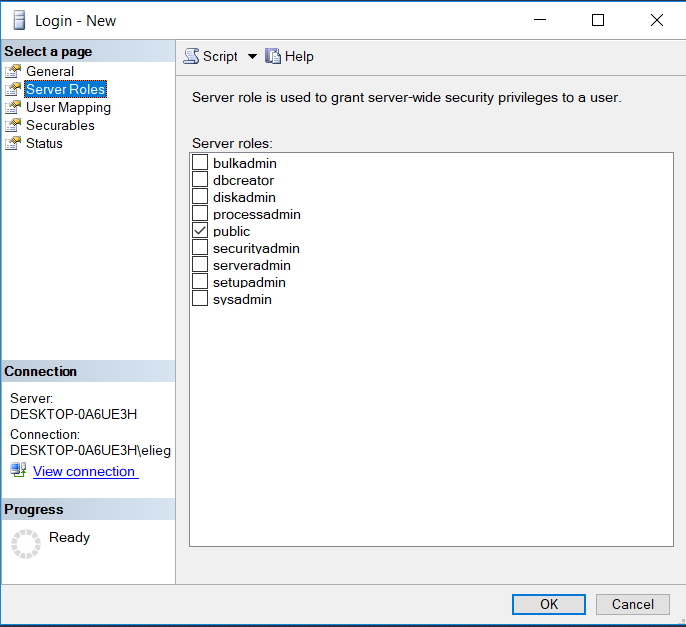


Figure 9: MSSQL SMS New log in Server Roles

1. Select the role **SysAdmin**. "If more constraints are needed, creating custom Roles is possible."
2. Click **OK**

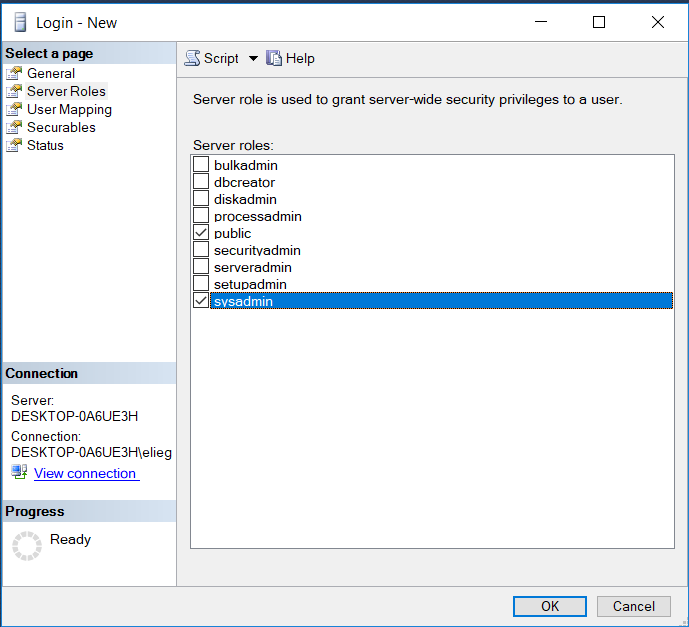


Figure 10: MSSQL SMS New log in Server Roles SysAdmin

1. Right Click on **server** in **Object** **Explorer** \*first item\* and Select **Properties**

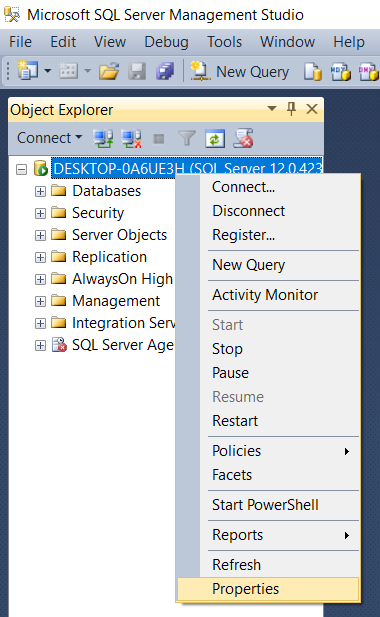


Figure 11: MSSQL SMS Server Properties

1. Select **Security** on the left

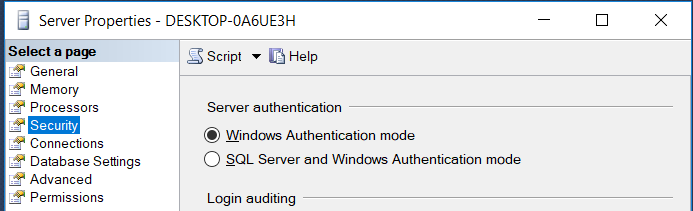


Figure 12: MSSQL SMS Server properties Security

1. Select **SQL and Windows Authentication Mode** and Press **ok**

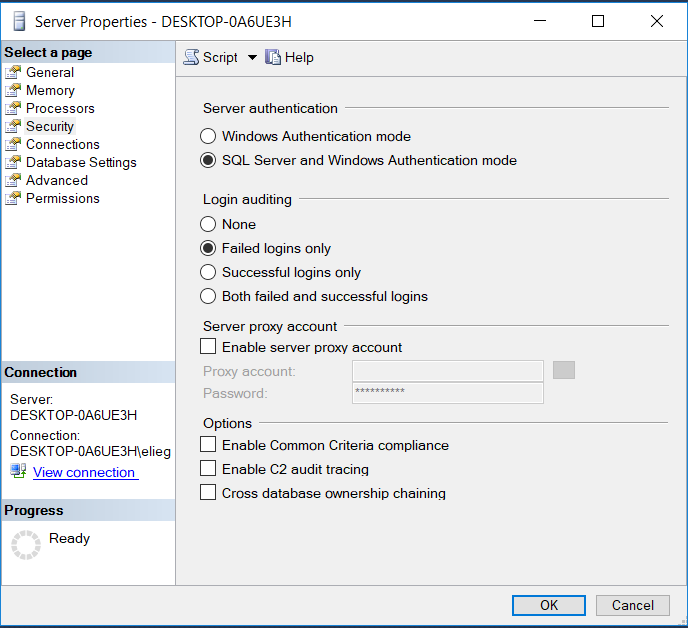


Figure 13: MSSQL SMS Server Properties SQL Server and Windows Authentication mode

1. Restart the SQL server.

#### Setup Firewall Exceptions:

To allow connection through the Windows Firewall

1. Open **Windows Firewall**

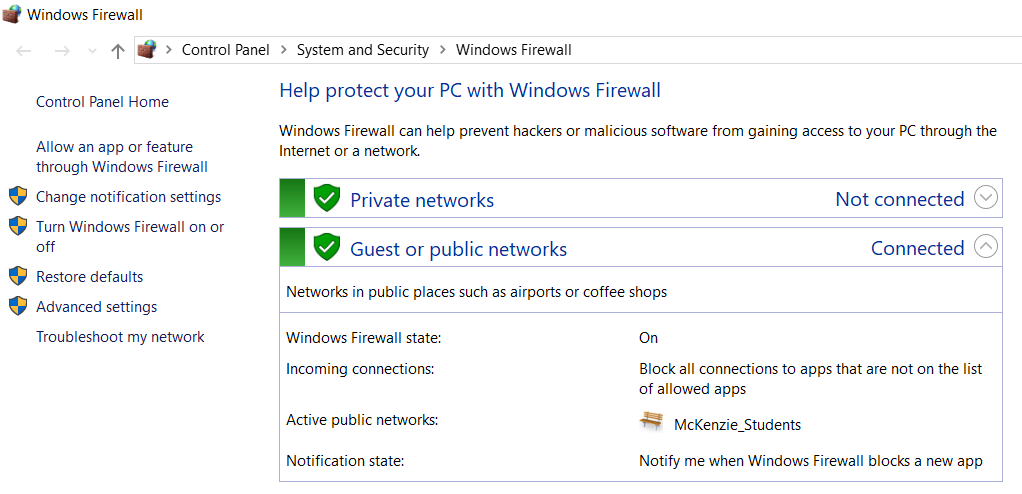


Figure 14: Windows Firewall

1. Select **Advanced settings** on the left.

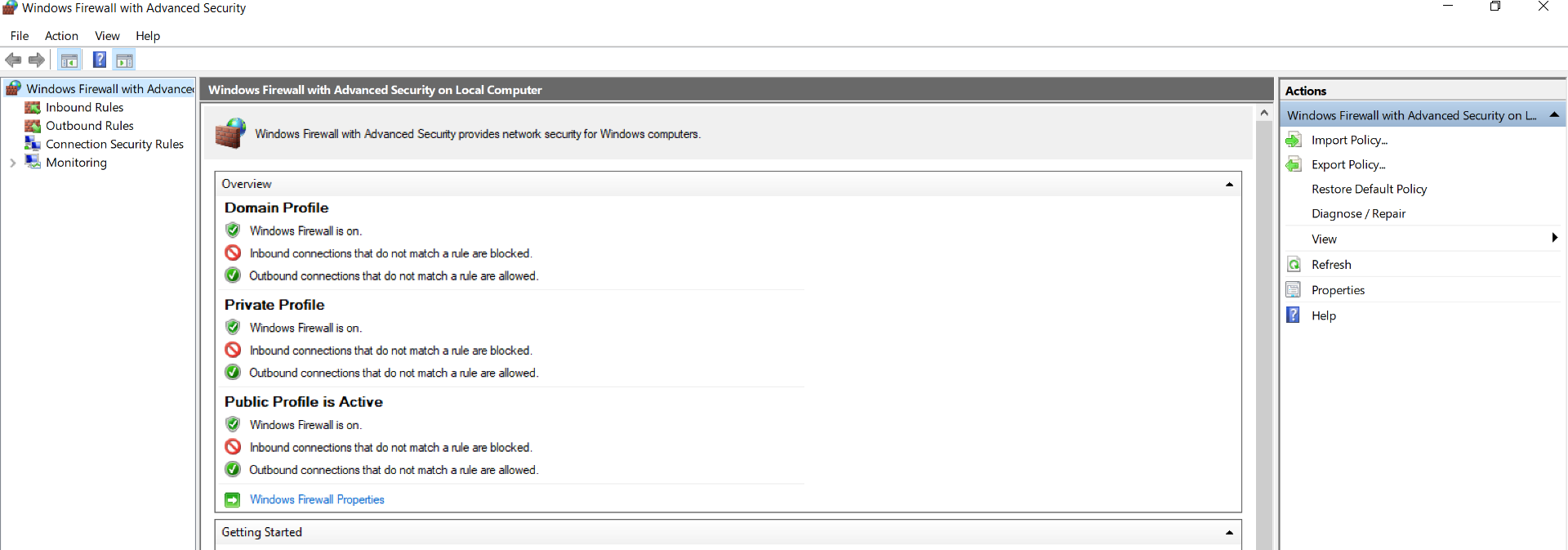


Figure 15: Windows Firewall Advanced settings

1. Select **Inbound Rules** on the Left.

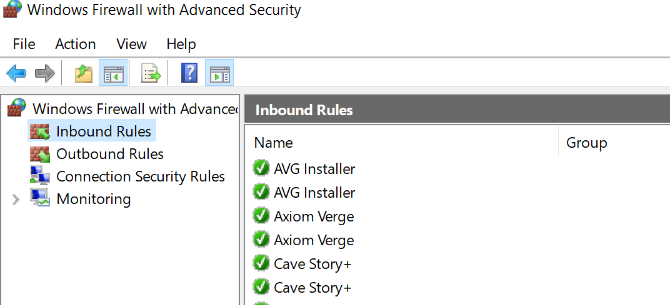


Figure 16: Windows Firewall Inbound Rules

1. Select **New Rule** on the Right.

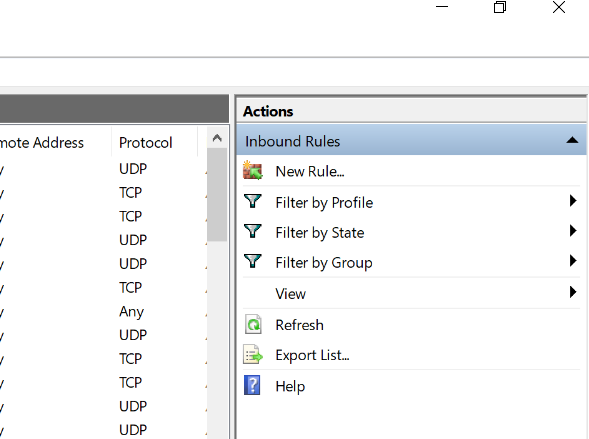


Figure 17: Windows Firewall Inbound Rules/New Rules

1. Select **Port** and hit **Next >**

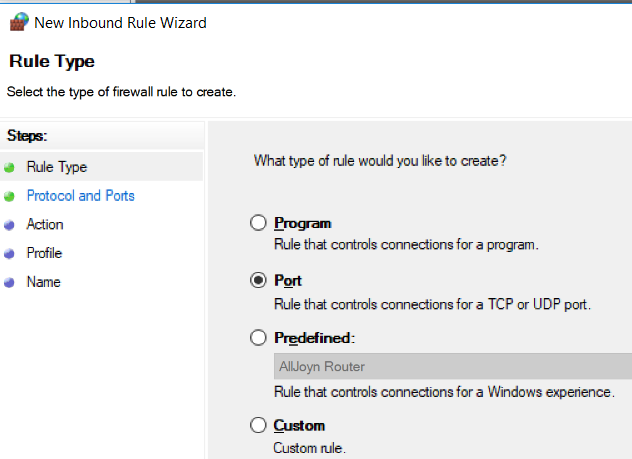


Figure 18: Windows Firewall Inbound Rules/New Rules/Port

1. Set **Specific Local Ports** to **1433** and hit Select **Next >**

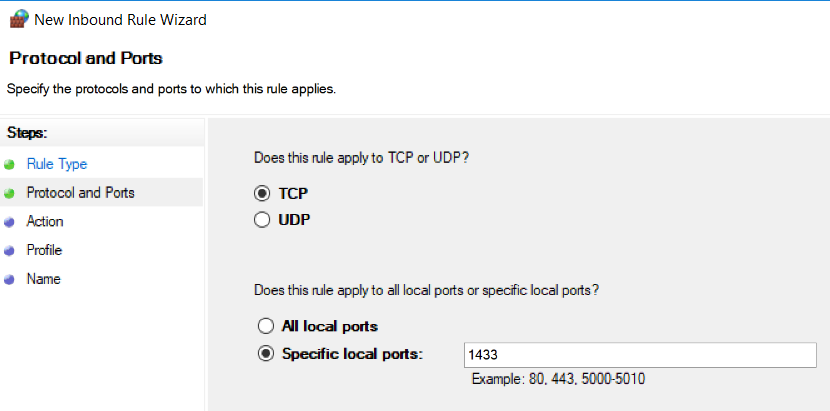


Figure 19: Windows Firewall Inbound Rules/New Rules/Specified local port

1. Select **Allow the connection** and hit **Next >**

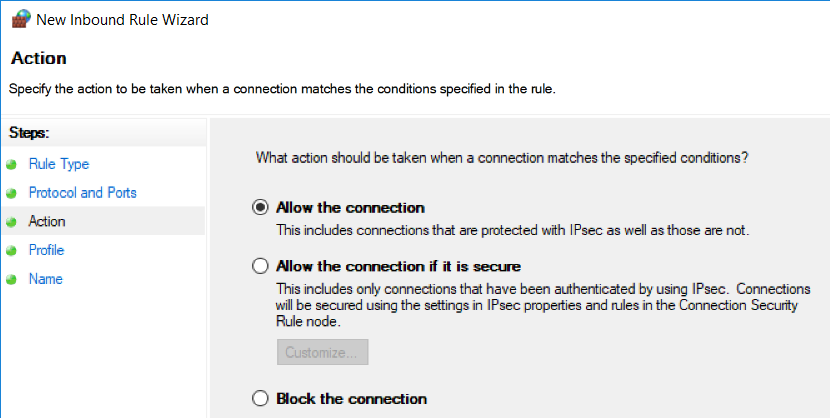


Figure 20: Windows Firewall Inbound Rules/New Rules/Allow connection

1. Select all check boxes and hit **Next >**

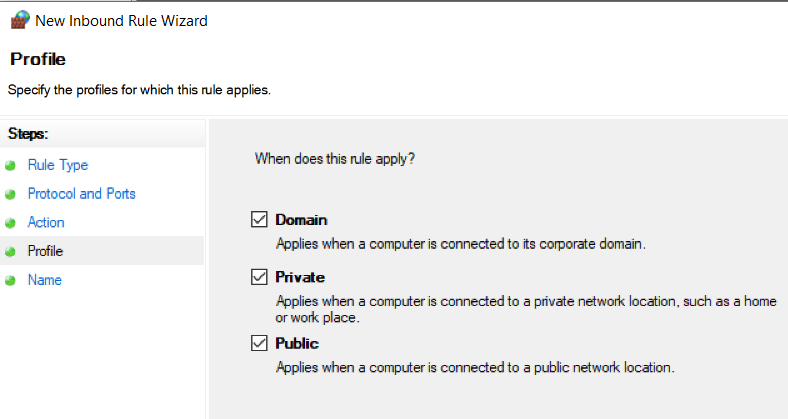


Figure 21: Windows Firewall Inbound Rules/New Rules/Profile

1. Name **SQL IN** and hit **Finish**

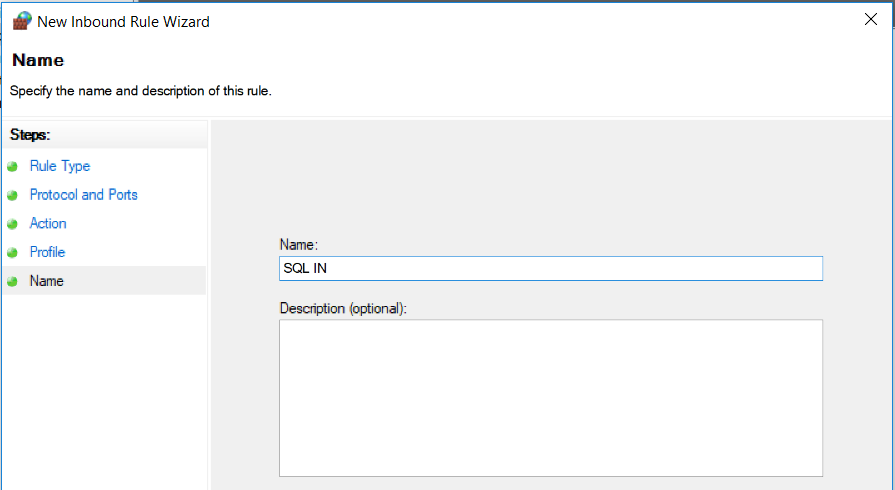


Figure 22: Windows Firewall Inbound Rules/New Rules/Name

1. Select **Outbound Rules** on the Left.

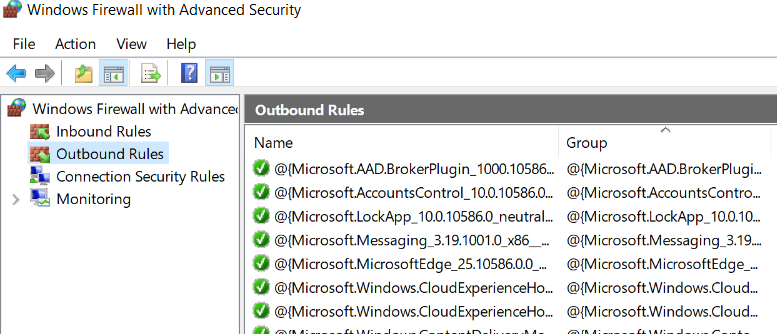


Figure 23: Windows Firewall Outbound Rules

1. Select **New Rule** on the Right.

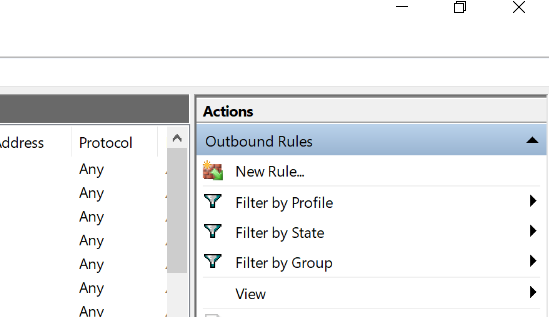


Figure 24: Windows Firewall Outbound Rules/New Rules

1. Select **Port** and hit **Next >**

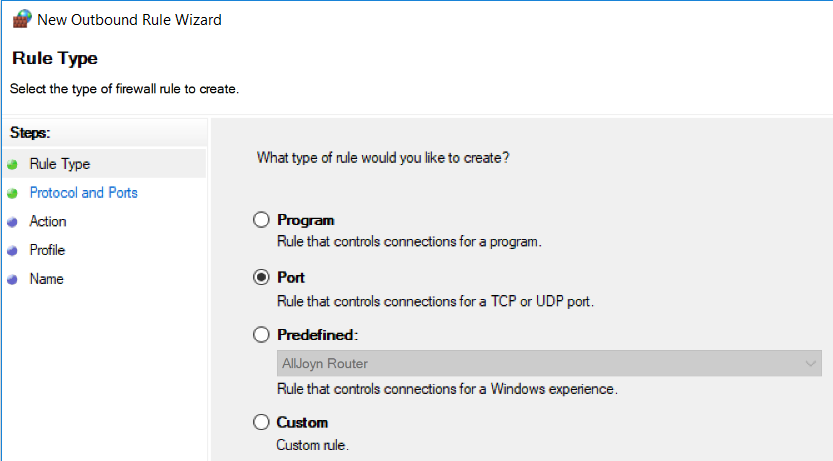


Figure 25: Windows Firewall Outbound Rules/New Rules/Port

1. Set **Specific Remote Ports** to **1433** and hit Select **Next >**

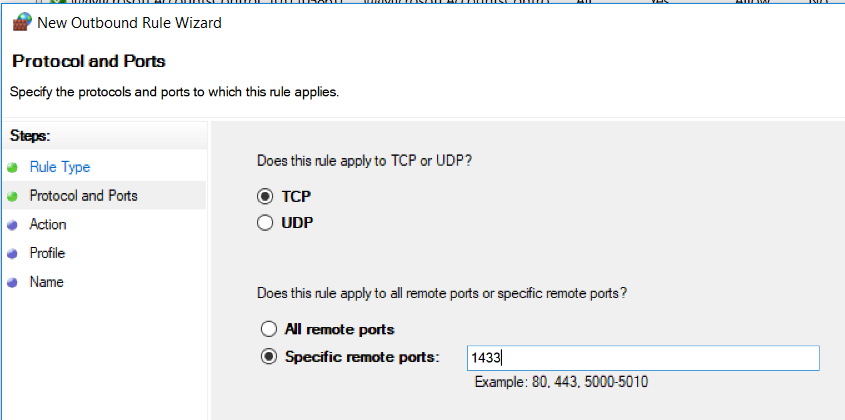


Figure 26: Windows Firewall Outbound Rules/New Rules/Specific remote ports

1. Select **Allow the connection** and hit **Next >**

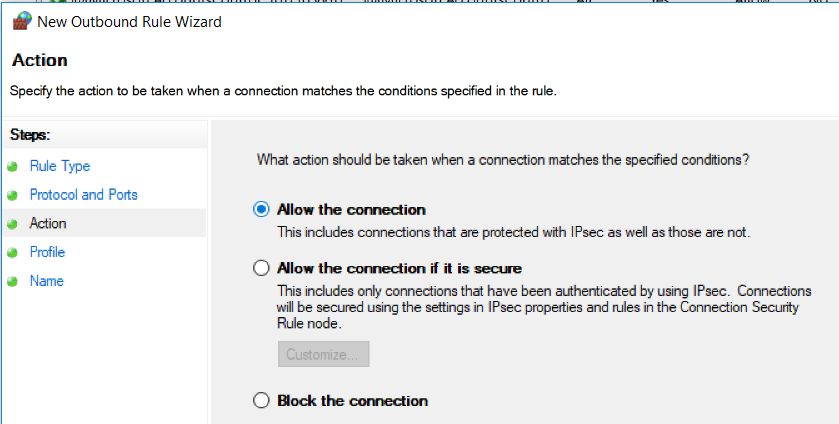


Figure 27: Windows Firewall Outbound Rules/New Rules/Allow connection

1. Select all check boxes and hit **Next >**

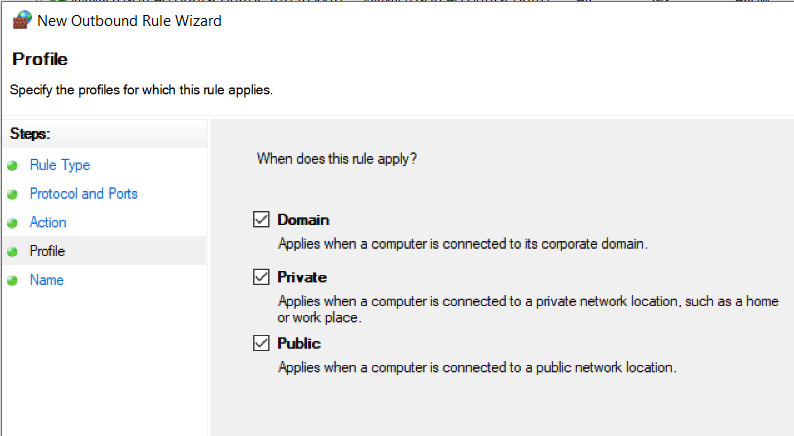


Figure 28: Windows Firewall Outbound Rules/New Rules/Profile

1. Name **SQL OUT** and hit **Finish**

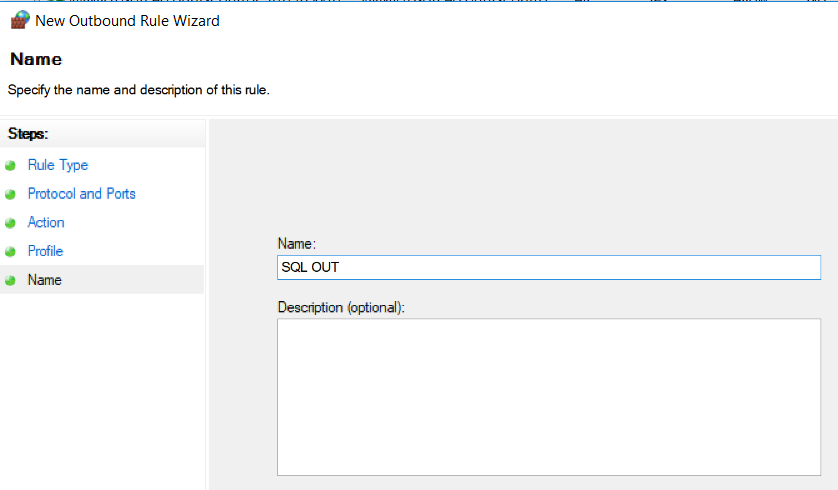


Figure 29: Windows Firewall Outbound Rules/New Rules/Name

### Create the Database from .bat files

#### Prerequisites:

* Microsoft SQL server management studios
* Notepad++
* Install Microsoft ODBC 13.1
* Install SQLCMD utilities

#### Install Microsoft ODBC 13.1

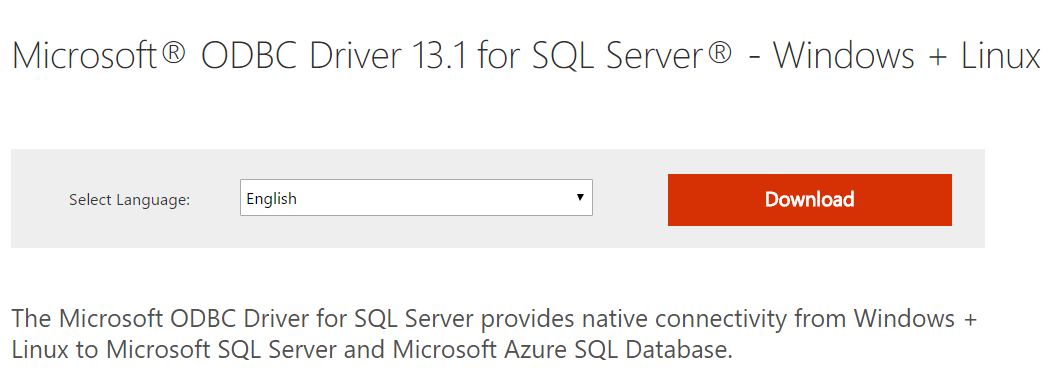
1. Search for SQLCMD Utilities 13.1 or use the link below to reach the website and hit **Download.** <https://www.microsoft.com/en-us/download/details.aspx?id=53339> 

Figure 30: Download Screen

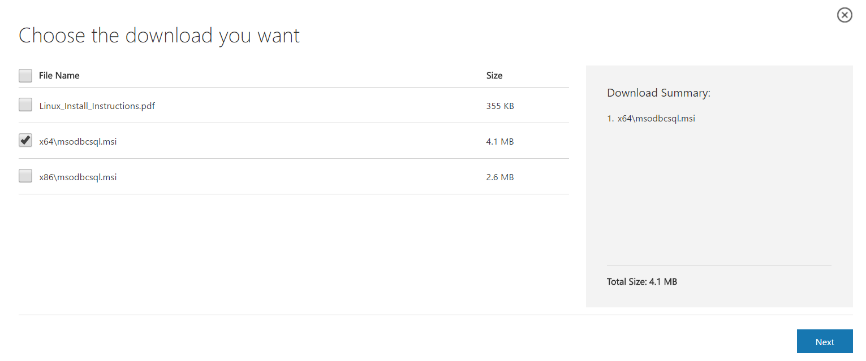
1. Check the 2nd box titled: **x64\msodbcsql.msi** and hit Next. 

Figure 31: ODBC Select Download

1. Proceed to install the application.
   * **Warning:** your PC will have to restart after the changes have been made.



Figure 32: ODBC 1st Screen of Install



Figure 33: OBDC License Agreement

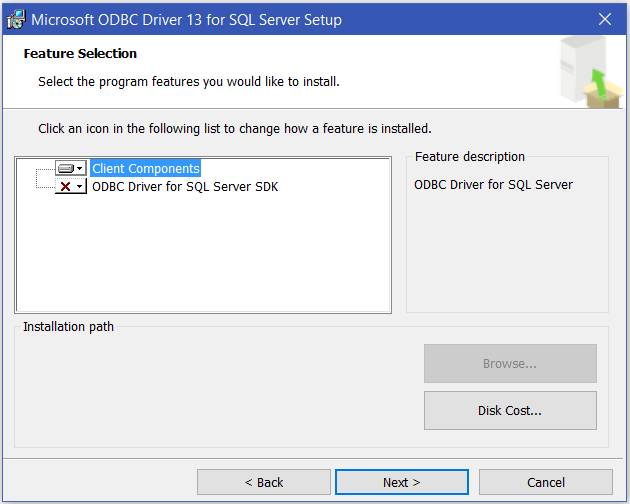


Figure 34: ODBC Feature Selection

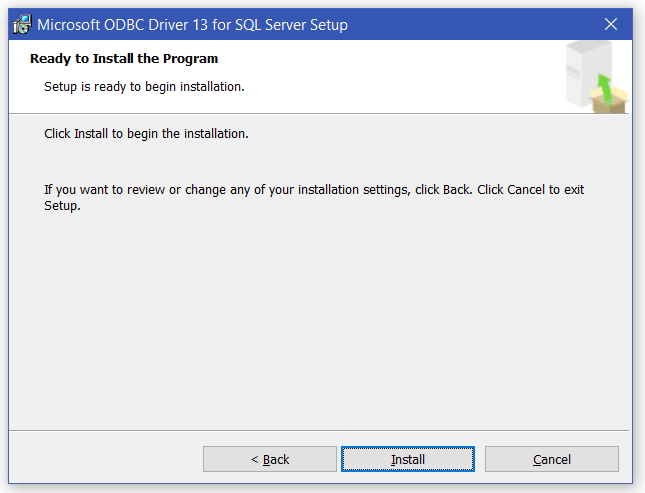


Figure 35: ODBC Begin Installation

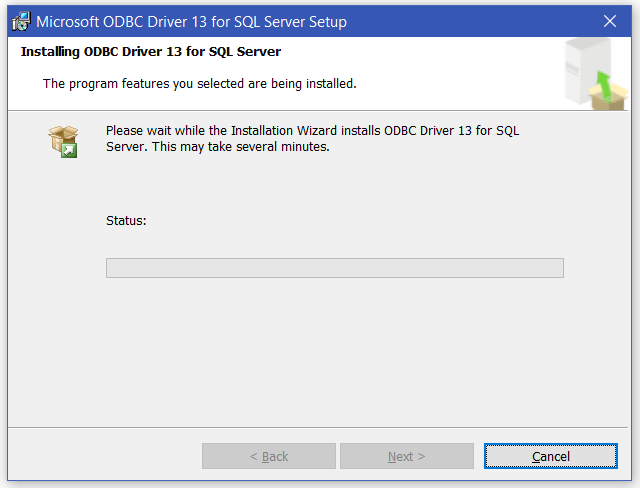


Figure 36: ODBC Install Screen

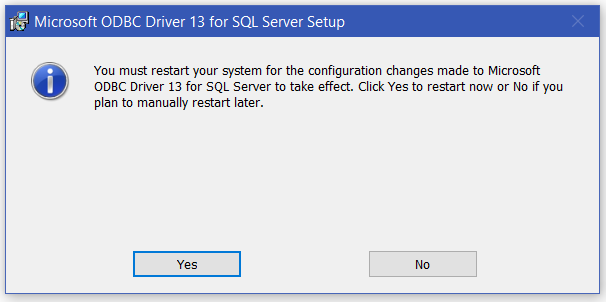


Figure 37: Notification of Restart

#### Install SQLCMD utilities

1. Search for SQLCMD Utilities 13.1 or use the link below to reach the website and hit **Download.** <https://www.microsoft.com/en-us/download/details.aspx?id=53591>

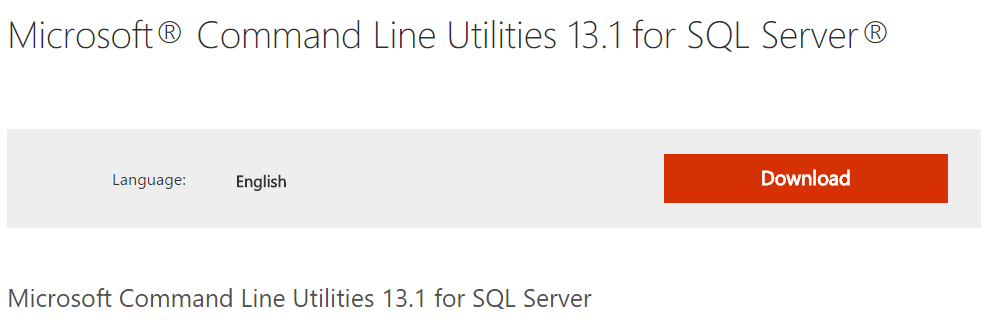


Figure 38: SQLCMD Download Page

1. Check the 2nd box titled: **Command Line Utilities MSI files\x86\MsSqlCmdLnUtils.msi** and hit Next.

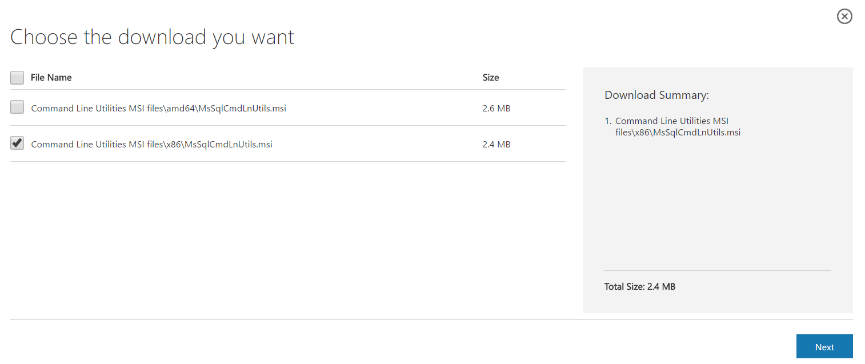


Figure 39: SQLCMD Choose Download

1. Proceed to install the application.

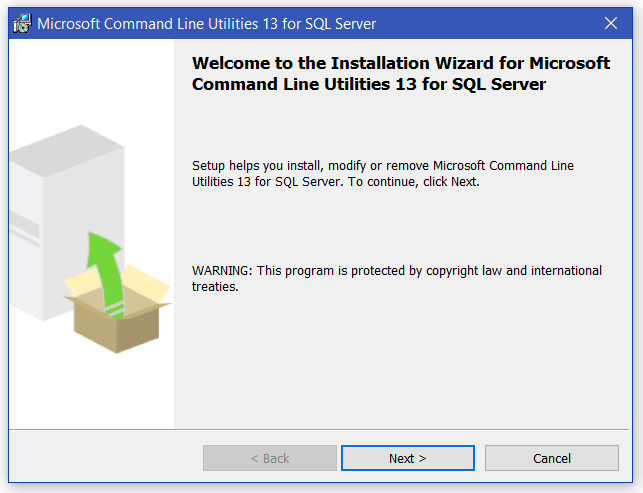


Figure 40: SQLCMD First Page of Installation



Figure 41: SQLCMD Accept License Terms

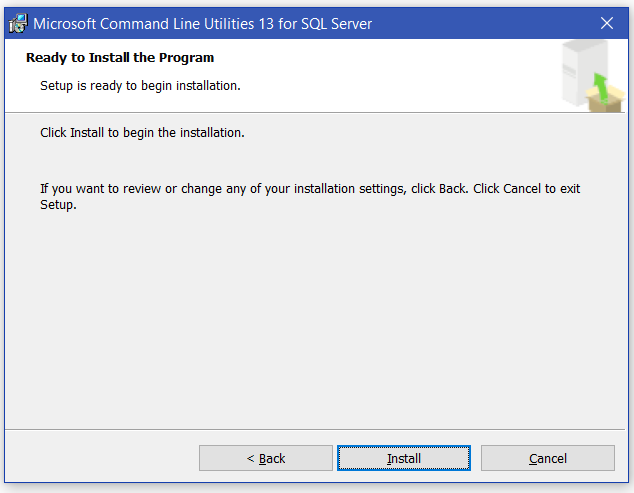


Figure 42: SQLCMD Confirm Installation

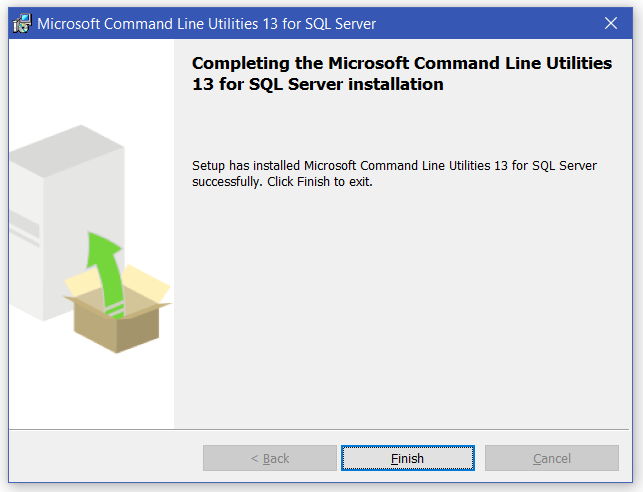


Figure 43: SQLCMD Finish Installation

#### Create The database

1. Find the **Create\_DB.bat** file on your PC
2. **Double click** the file and the process will begin automatically.
3. **Press the Return key** when prompted to continue the process.