Cortex Integrity SQL Server 2016 Express Installation Guide

Cortex Limited
Kings Park House,
22 Kings Park Road,
Southampton,
SO15 2AT

T +44 23 8254 8990
E **info@cortex-ia.com**

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Contents

Preface

About this Manual

Cortex Evolution is comprised of two engines: Cortex Integrity and Cortex Innovation. This document is intended for Cortex Integrity only. Please see **https://v2022.docs.cortex-ia.com/docs/** for Cortex Innovation.

This document provides detailed information regarding the installation of SQL Server 2016 Express for Cortex Integrity solutions.

This manual is organised into the following main sections:

- **Pre-requisites** – This section details necessary system configuration and third-party components for this software installation.

- Attended Installation – This section provides information on the installation of SQL Server via the user interface.

Audience

The intended audience is anyone required to install a SQL Server 2016 Express instance for use with Cortex Integrity solutions.

Related Material

Other documents related to this installation guide are as follows:

- Cortex Integrity - Installation Guide
- Cortex Integrity - Database Installation Guide

For further information, please also consult the following document:

- **Install SQL Server 2016 Express from the Installation Wizard (Setup)**

Abbreviations used in this Document

SQL   - Structured Query Language

Revisions to this Document

The following revisions have been made to this document

Date	Author	Revision	Notes
01/12/2017	L. Preaux	1.0.0	Final
18/01/2018	D. Smith	1.0.1	Removed requirement for ADOMD Client to be installed
06/07/2018	L. Preaux	1.0.2	Updated to release version
18/01/2019	D. Smith	1.0.3	Removed references to invalid SQL Server Services and updated to release version
12/09/2019	J. Briers	1.0.4	Updated release date
11/10/2019	P. Grattage	1.0.5	Update release date and telephone number
23/10/2020	L. Preaux	1.0.6	Updated to release version and removed reference to non-existing section.
09/12/2020	D. Smith	1.0.7	Updated to reflect removed support for Windows Server 2012.
08/03/2022	D. Smith	1.0.8	Modified title to reflect the document relates to Integrity systems and added a disclaimer that the document is for Integrity only
15/03/2022	D. Smith	1.0.9	Modified document references to reflect name changes

1 Pre-requisites

1.1 System requirements

Component	Supported versions
Operating System	Windows Server 2016 (x64) Standard
	Windows Server 2016 (x64) Datacentre

1.2 Required service user account (within Database server setup)

The service user account that will run the SQL Server services should have been created and configured as per the Database server setup in the "Cortex Integrity - Installation Guide". For deployment of the Cortex system it is required that all the SQL Server services use the same account with the exception of the SQL Server Browser Service which runs as Local System. An example username is shown below:

- SQL Server Service   (Example: Cortex_SqlAdmin)
- SQL Server Reporting Services Service   (Example: Cortex_SqlAdmin)

   ⌦ SQL Server 2016 Express cannot be installed using the built in Administrator account. A different user must be used.

1.3 Download the media

1. Download the SQL Server 2016 with SP1 Express Edition installer from the following link: **https://go.microsoft.com/fwlink/?LinkID=799012**
2. Open the installer, then select **Download Media**
3. Select the Language from the dropdown, then select the **Express Advanced** option
4. Click on the **Download** button

1.4 Additional pre-requisites

   ⌦ The downloaded media must be extracted and installed from the machine that the software will be installed on.
   ⌦ The user that executes the install must have local admin rights on the machine and must be a domain user if the machine is on a domain.
   ⌦ The SQL Server install media must be available and visible to the local machine.

2   Attended Installation

2.1 Installation of SQL Server

1. Run the SQL Server installer. When the installer loads you will be presented with the SQL Server Installation Center as shown in in Figure 1 - SQL Server Installation Center - Installation Menu.
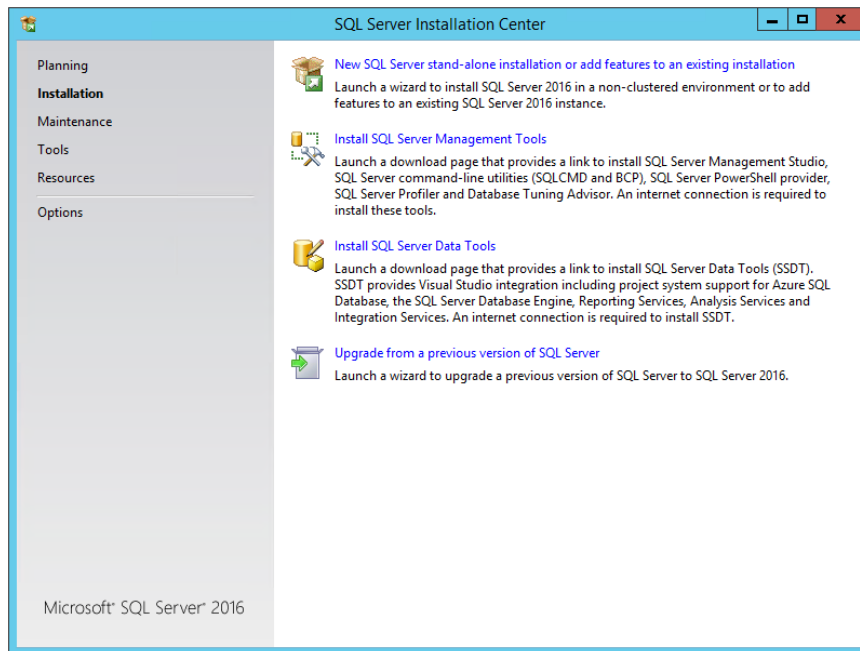2. Click New SQL Server stand-alone installation or add features to an existing installation.

Figure 1 - SQL Server Installation Center - Installation Menu

3. The installer will then show a License Terms screen as shown in Figure 2 - License Terms. Click to agree to the terms and conditions and click Next to continue.
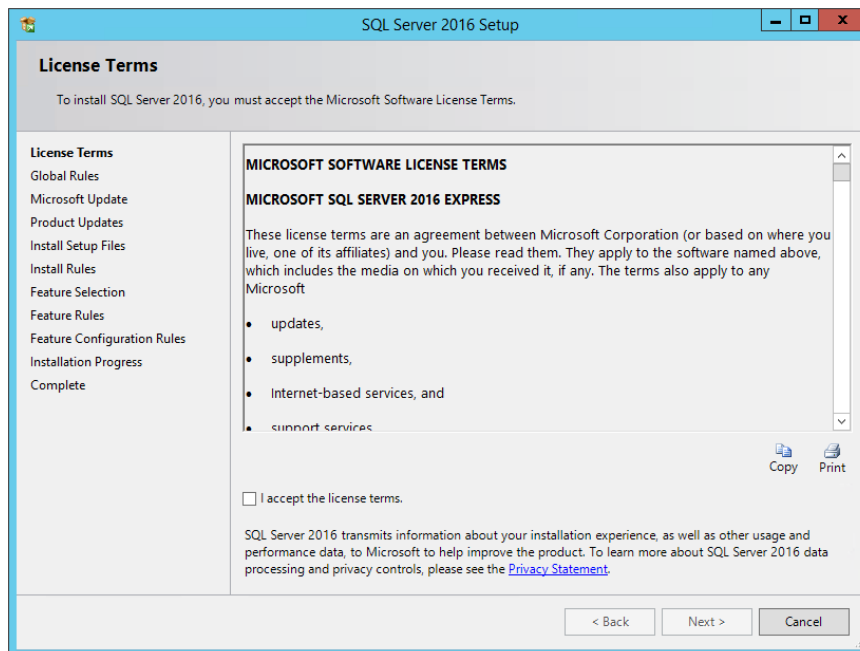
Figure 2 - License Terms

4. The installer will then check for any potential issues when installing the setup support files as shown in Figure 3 - Global Rules. Any issues highlighted should be addressed appropriately. This screen will only show if any problems arise. Once issues are resolved click Re-run and then click Next.
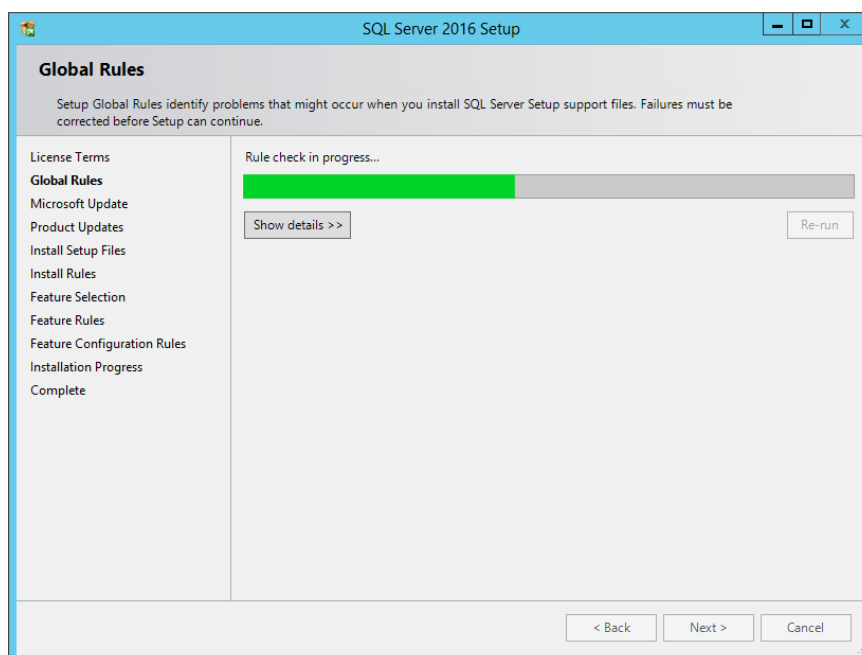

Figure 3 - Global Rules

5. The Installer will then ask whether you want to use Microsoft Update to check for updates as shown in Figure 4 - Microsoft Update. Confirm and click Next to continue.
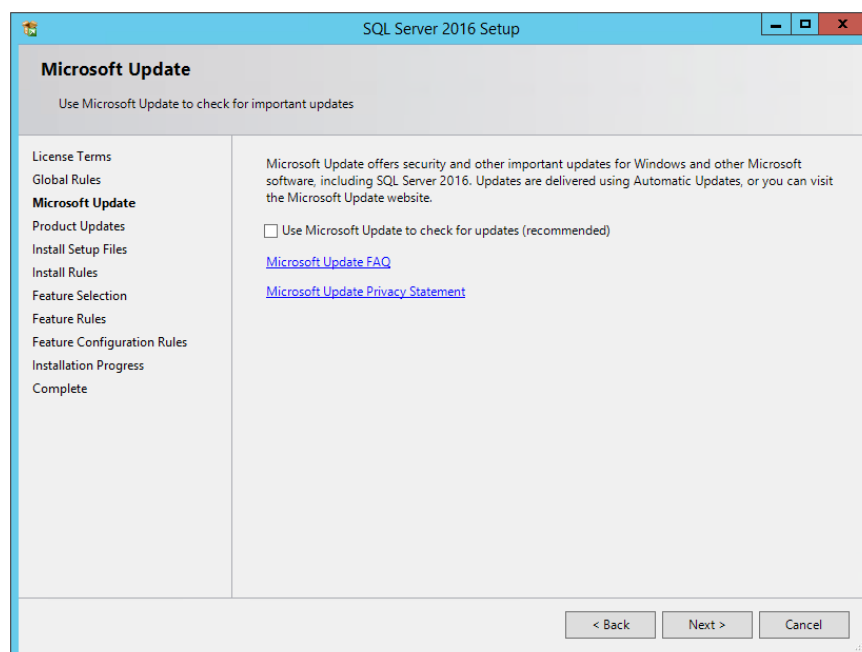

Figure 4 - Microsoft Update

6. At this stage you may be shown a Product Updates screen if there are updates available. If any updates are listed, they will be installed when you click Next.

   ◈ This screen is usually only displayed if there are any updates

7. The next step is installing setup files as shown in Figure 5 - Install Setup Files. Once complete, click Install.

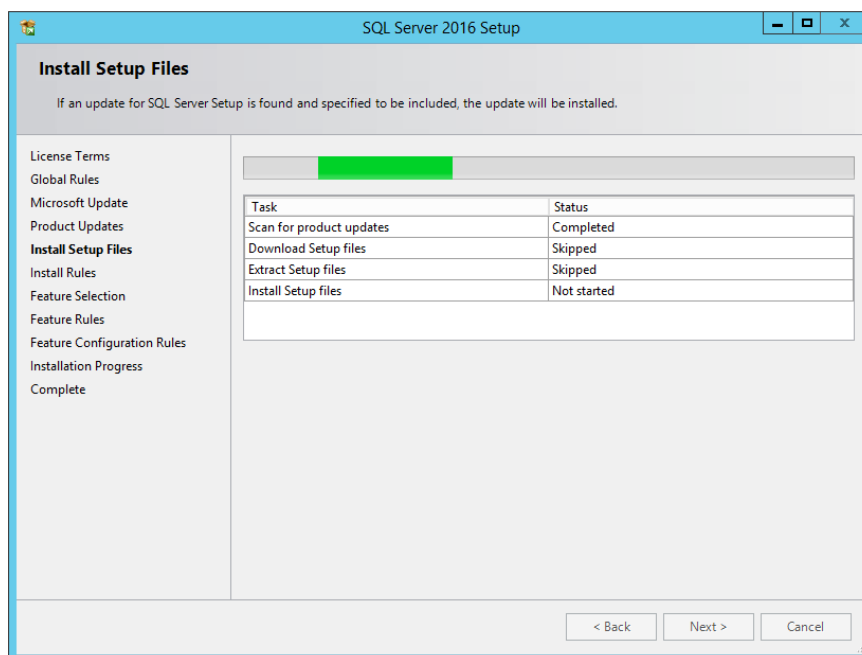   ◈ This screen is usually only displayed if there are any warnings or failures

Figure 5 - Install Setup Files

8. Some install rules will then be verified as shown in Figure 6 - Install Rules. Click Next.

   ◈ This screen is usually only displayed if there are any warnings or failures
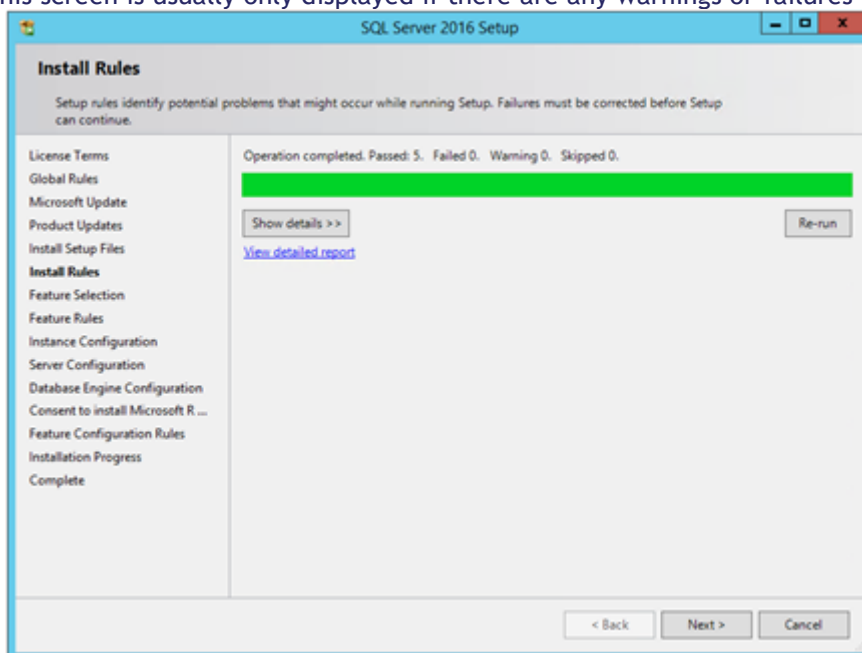

Figure 6 - Install Rules

9. If you currently have SQL Server components installed, you will then be presented with the Installation Type screen. For a new installation of SQL Server 2016 Express select the **Perform a new installation of SQL Server 2016** Express option. Click Next.

    If you don't have any SQL Server components installed, you won't see this screen and can go straight to step 10.

10. On the Feature Selection screen, as shown in Figure 7 - Feature Selection you will need to select options based on whether you are installing a standard Cortex system or you are including Cortex LiveView and its associated components. Table 1 - Feature Selection Matrix shows which options should be selected based on the solution being deployed. Any components not specified in Table 1 should not be installed.

    ▷ Depending upon the solution specification you may need to deploy some components on a separate server (which implies additional license costs). If you are unsure of what to install or where, speak to a member of the database team.

Component	Cortex Standard	Cortex with LiveView
Database Engine Services	Yes	Yes
Client Tools Connectivity	Yes	Yes

Table 1 - Feature Selection Matrix

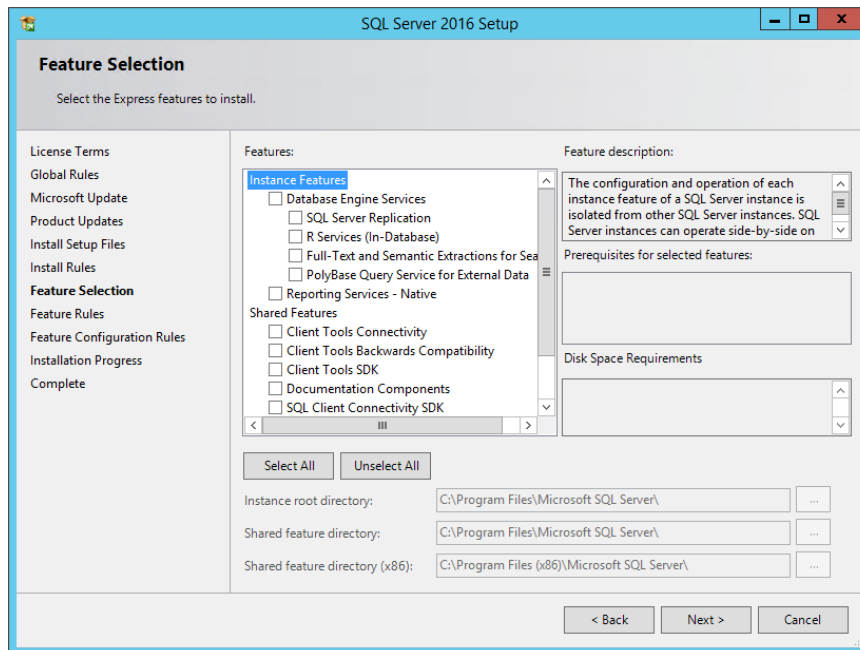11. Once the options required have been selected, click Next.

Figure 7 - Feature Selection

12. Some feature rules will then be verified as shown in Figure 8 - Feature Rules. Click Next.

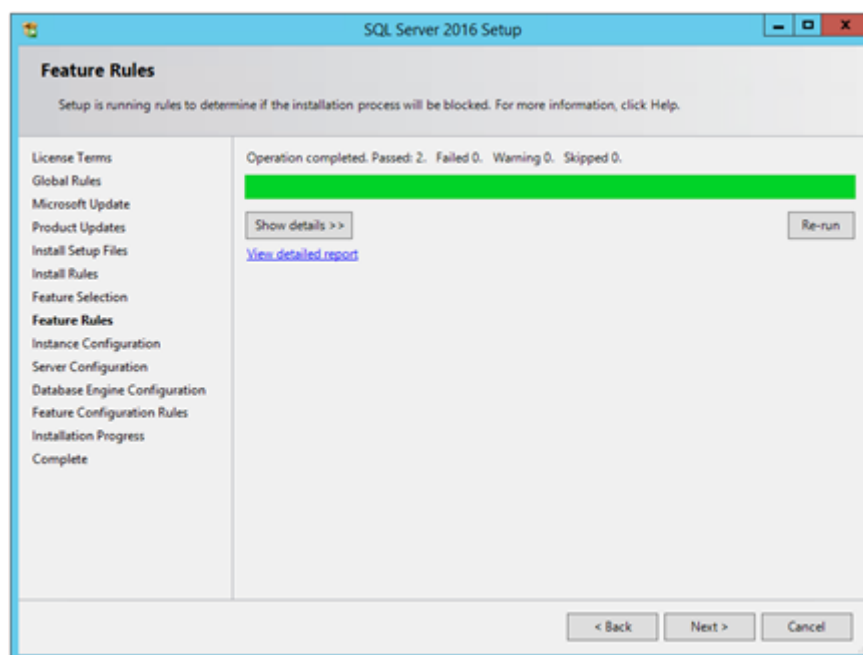   ◇ This screen is usually only displayed if there are any warnings or failures

Figure 8 - Feature Rules

13. The Instance Configuration screen, as shown in Figure 9 - Instance Configuration allows you to install either the default instance or a named instance. You can install either, albeit that you can only have one default instance on any given machine. Typically, you should install the default instance unless told otherwise. You don't need to change any other default values, and once options have been selected, click Next.
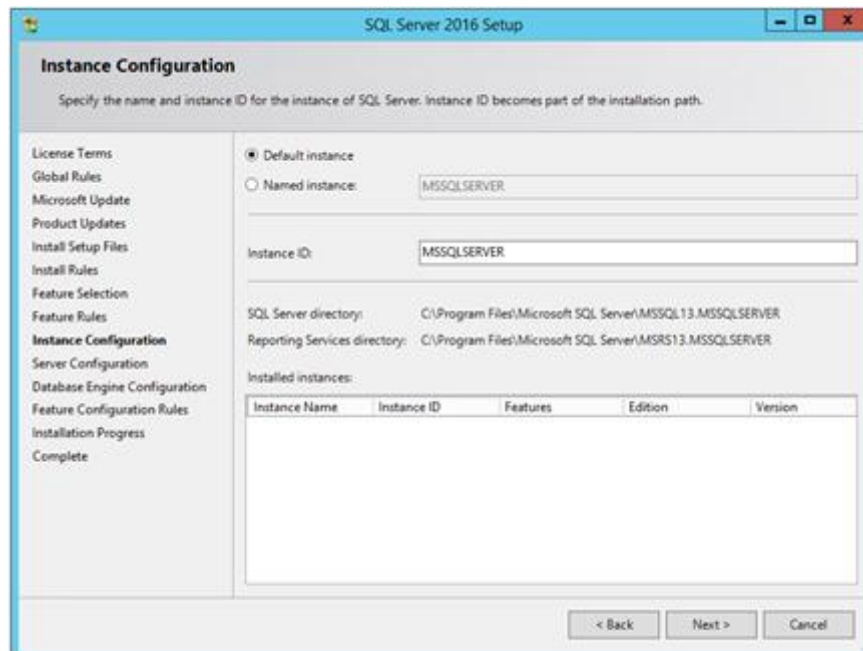

Figure 9 - Instance Configuration

14. The Server Configuration screen as shown in Figure 10 - Server Configuration - Service Accounts allows you to specify which account the SQL Server Services will run as. This would normally be a dedicated user account e.g. Domain\Cortex_SQL_Admin. Once you've configured service accounts and their associated passwords navigate to the Collation tab.

> If you have selected to install a named instance in step 13, the SQL Server Browser service should be set to automatic start up too though the service account cannot be changed.
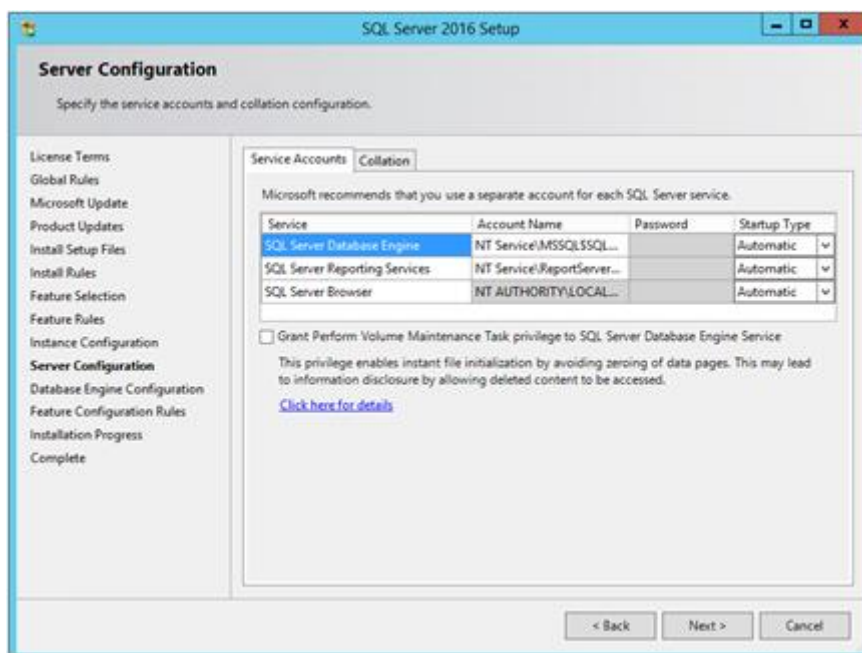

Figure 10 - Server Configuration - Service Accounts

15. On the Collation tab as shown in Figure 11 - Server Configuration - Collation you need to ensure that the collation for any items in the list is set to **Latin1_General_CI_AS**. If this is not the case click the Customize… button, and go to step 16. If the collation is set to **Latin1_General_CI_AS** click Next and go to step 17.
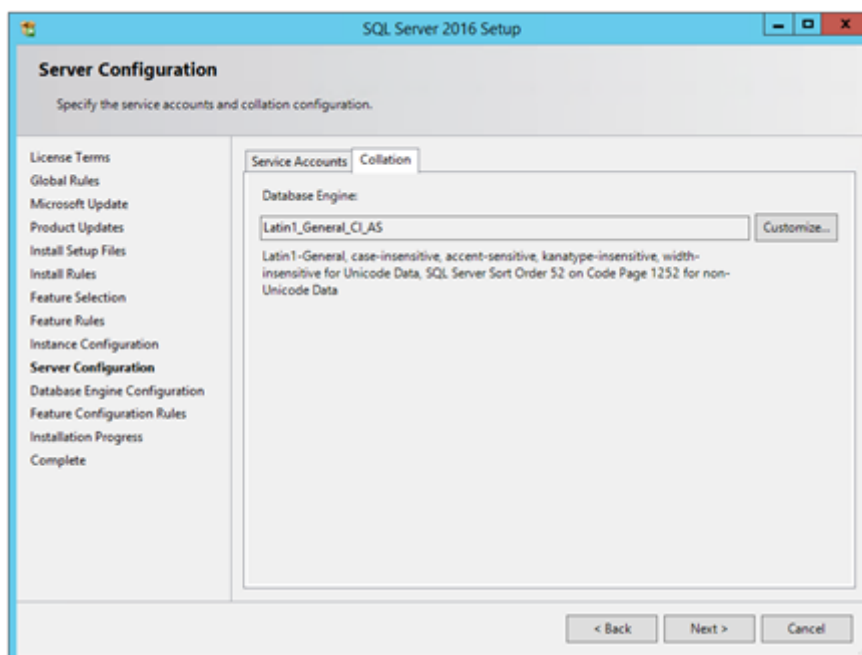

Figure 11 - Server Configuration - Collation

16. On the customization screen ensure that the values are specified as shown in Figure 12 - Server Configuration - Collation Customization and click OK.
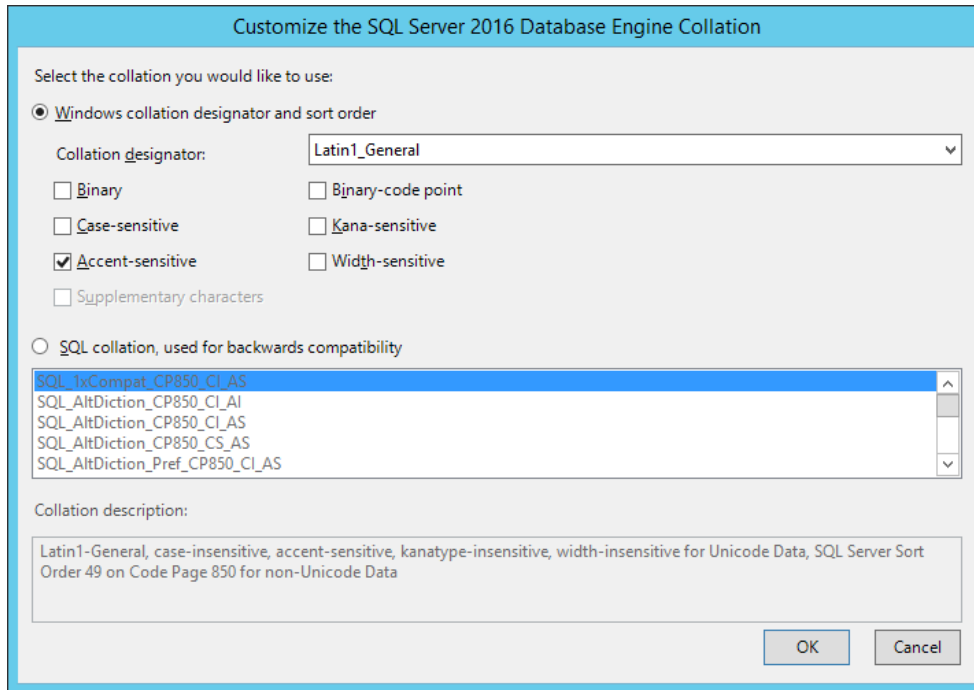

Figure 12 - Server Configuration - Collation Customization

Back on the collation tab, ensure that the collation for any items in the list is now set to **Latin1_General_CI_AS** and click Next.

17. On the Database Engine Configuration screen as shown in Figure 13 - Database Engine Configuration you can specify whether to install in Windows authentication mode or Mixed mode. Mixed mode allows you to access the system using SQL Server authentication which may or may not be a requirement.

If you are installing in mixed mode, you will need to supply a password for the sa account.

You also need to specify SQL Server administrators for the system. You have to specify at least one, and you have the option to select the current user and any other available Windows users and groups.

🏳 The MSSQLSERVER service user(s) should be configured as a system administrator.

Once authentication mode and administrators have been specified click Next.

◈ There is no need to change any configuration in the Data Directories, TempDB or FILESTREAM tabs.
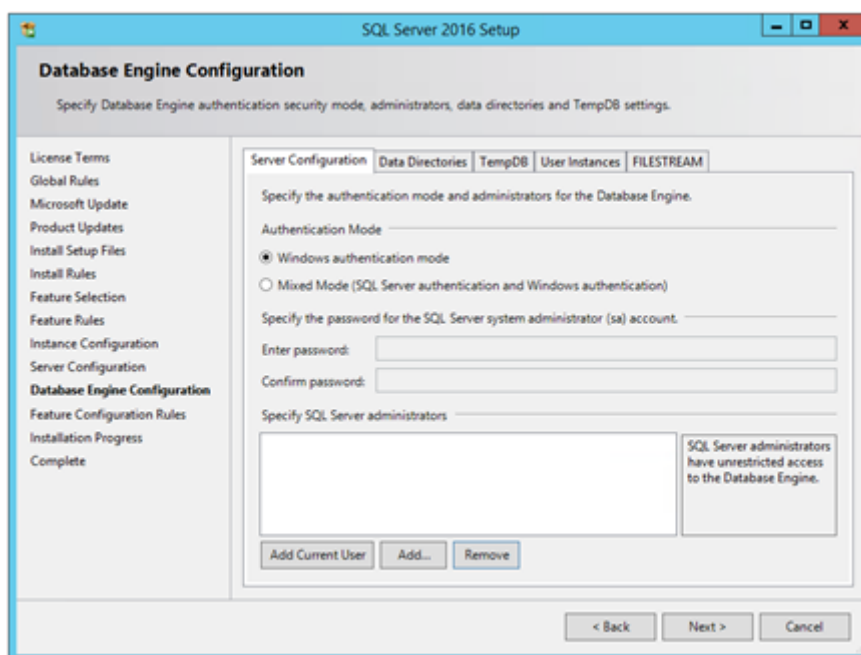
Figure 13 - Database Engine Configuration

18. The Installation Progress screen as shown in Figure 14 - Installation Progress will then be displayed.
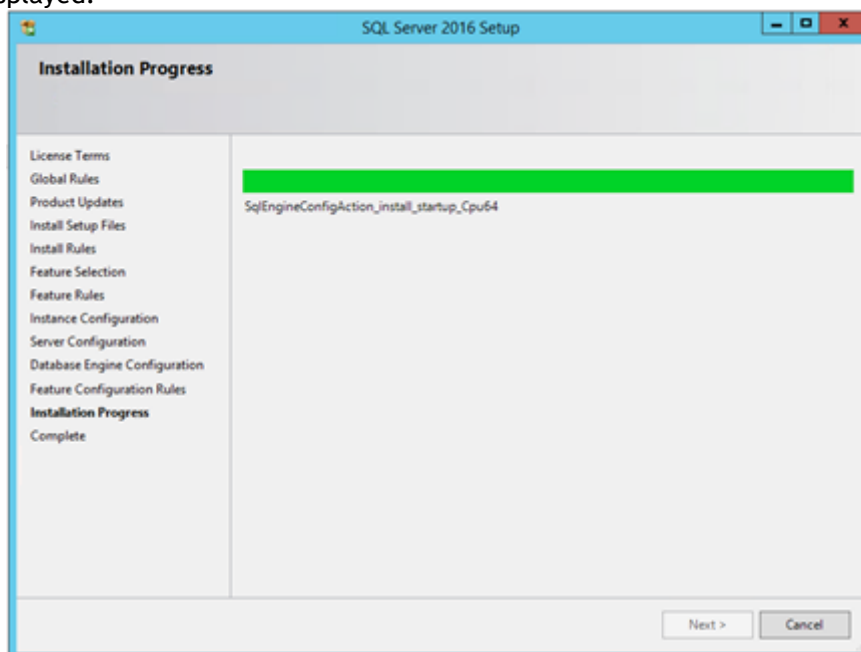

Figure 14 - Installation Progress

19. You may be advised that a computer restart is required in order to complete the setup process as shown in Figure 15 - Computer restart required. Click OK.
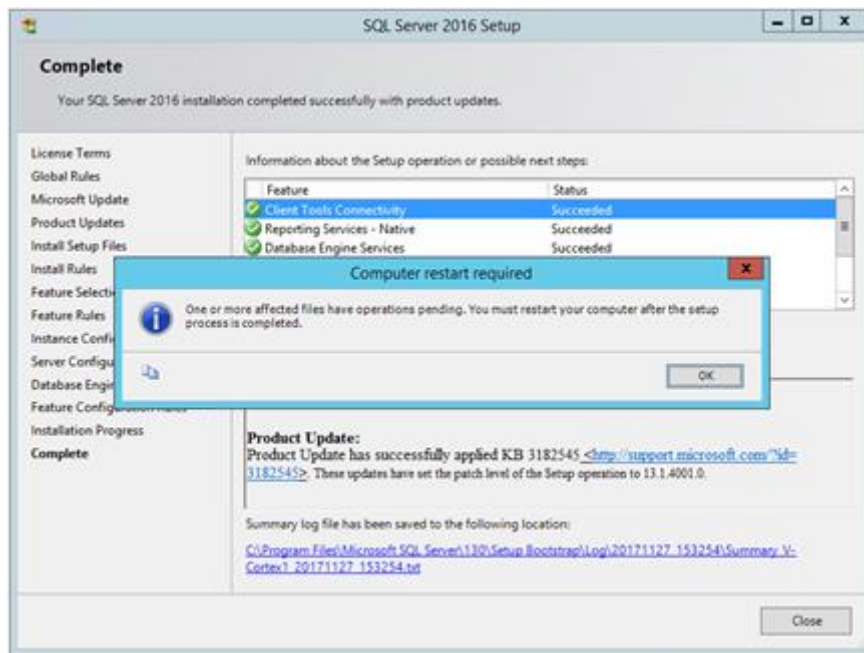
Figure 15 - Computer restart required

20. The Installation Complete screen as shown in Figure 16 - Installation Complete confirms that the installation is complete. Click Close, and your SQL Server installation is complete.
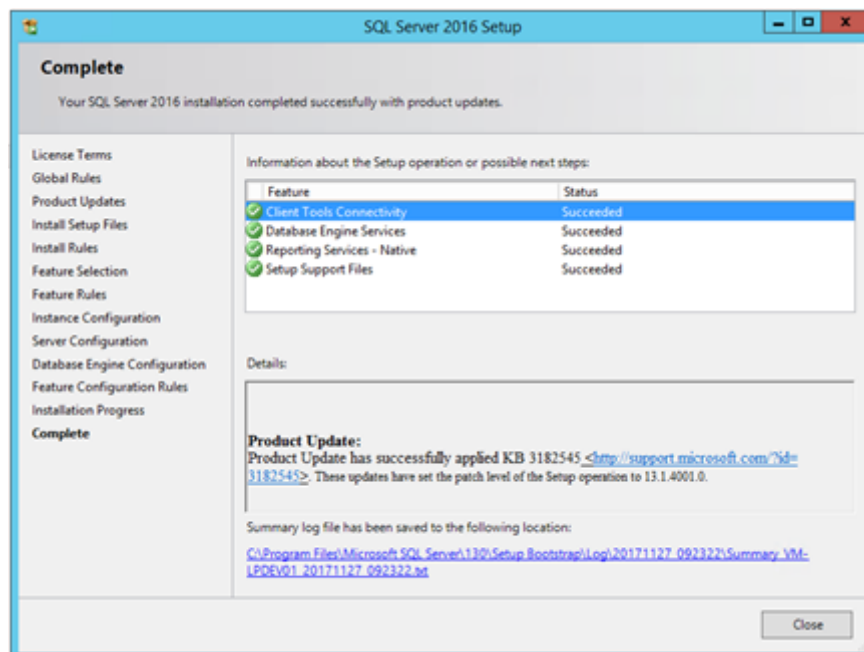

Figure 16 - Installation Complete

21. If you were prompted to restart your computer at step 19 you should restart it now.

2.2 Installation of SQL Server Management Tools

1. In the SQL Server Installation Center, ensure that you are on the Installation section on the list of options on the left of the screen.
2. Click Install SQL Server Management Tools as shown in Figure 17 - SQL Server Installation Center - Installation Menu.
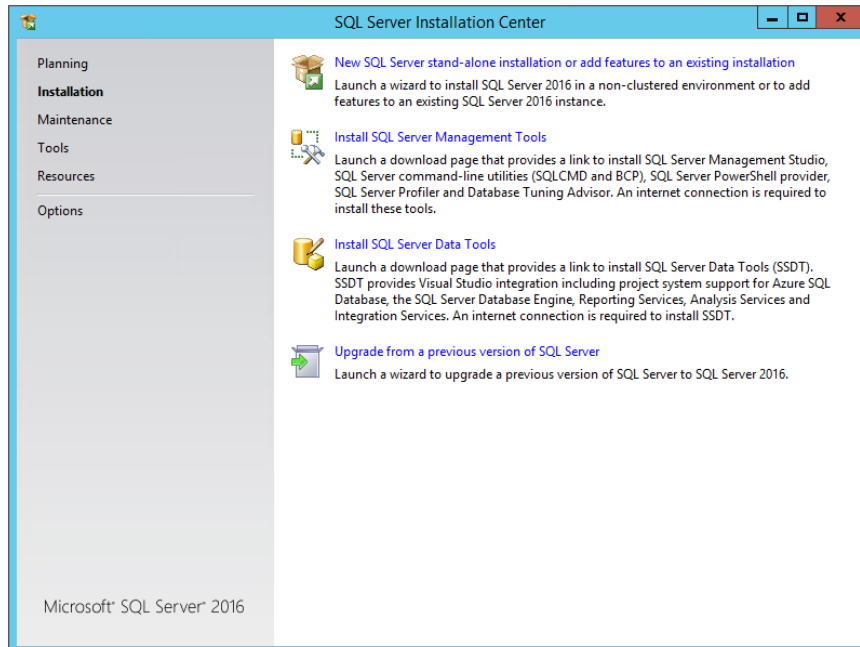

Figure 17 - SQL Server Installation Center - Installation Menu

3. You will be redirected to Microsoft's download website to download the file needed to install the SQL Server Management Tools as shown in Figure 18 - Microsoft Download Page.
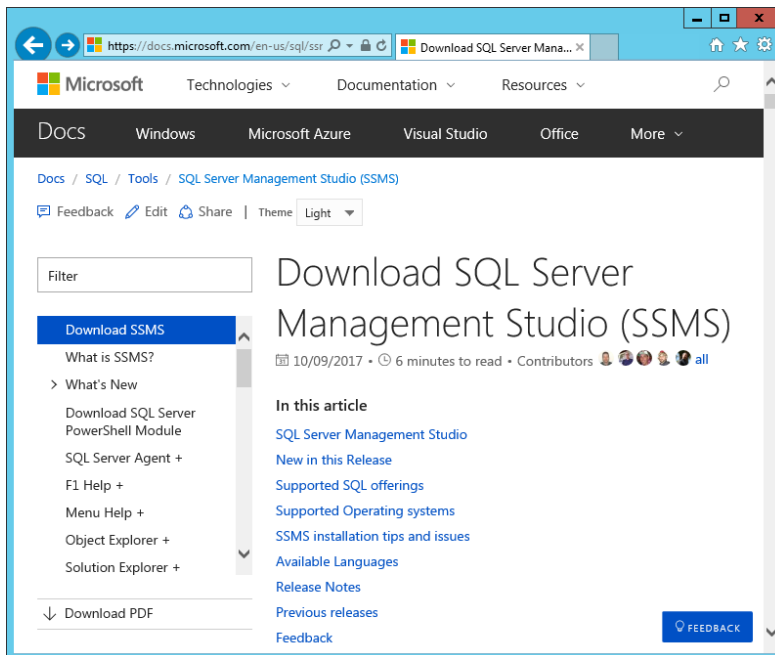

Figure 18 - Microsoft Download Page

4. Scroll down to the "Previous Releases" section and click on the "Previous SQL Server Management Studio Releases" link

5.   Locate and download the 16.5.3 version (release for production use) of the Management Tools by clicking on the link and select Save As when prompted and save it to a known location. Wait for the download to complete.

ꔛ   The Microsoft SQL Server Management Tools must be version 16 as Cortex software is not compatible with version 17.

6.   Open the location that the installer was saved to in step 4 and start the installation by double clicking on the SSMS-Setup-ENU.exe file.
You may be prompted with a Restart Required screen. Close any open applications and click Restart. If a restart is not required go to step 7.

7.   When the Microsoft SQL Server Management Studio welcome screen is displayed as shown in Figure 19 - SQL Server Management Studio Welcome Screen click Install.
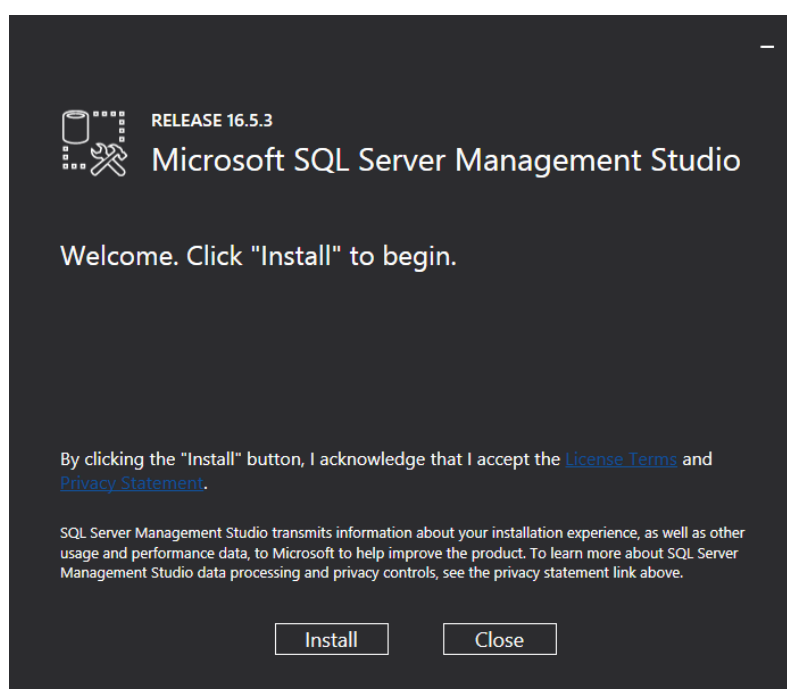

Figure 19 - SQL Server Management Studio Welcome Screen

8.   You will then see a progress screen as shown in Figure 20 - Loading Packages Progress while the installation packages are loaded
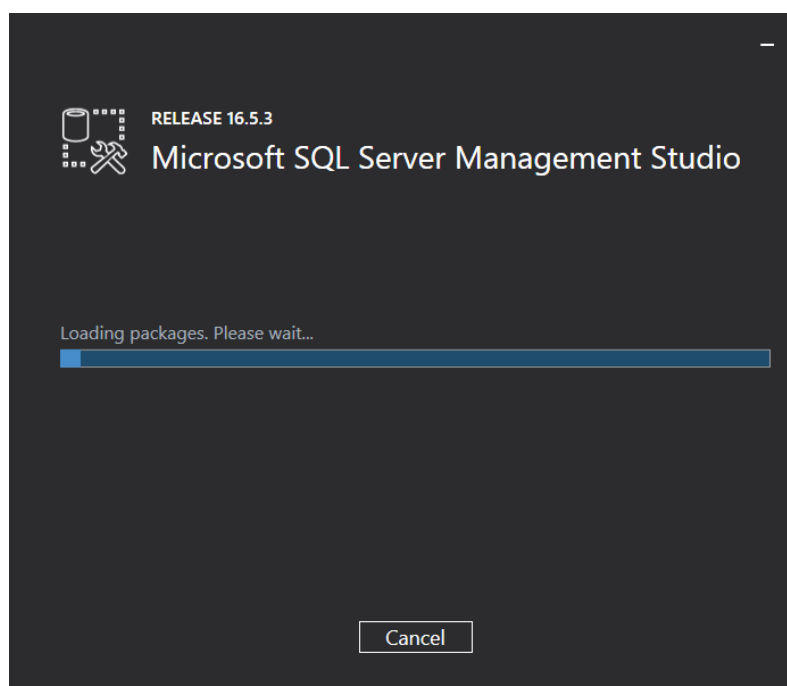
Figure 20 - Loading Packages Progress

9. A progress screen will then display the progress of the installation as shown in Figure 21 - Installation Progress.
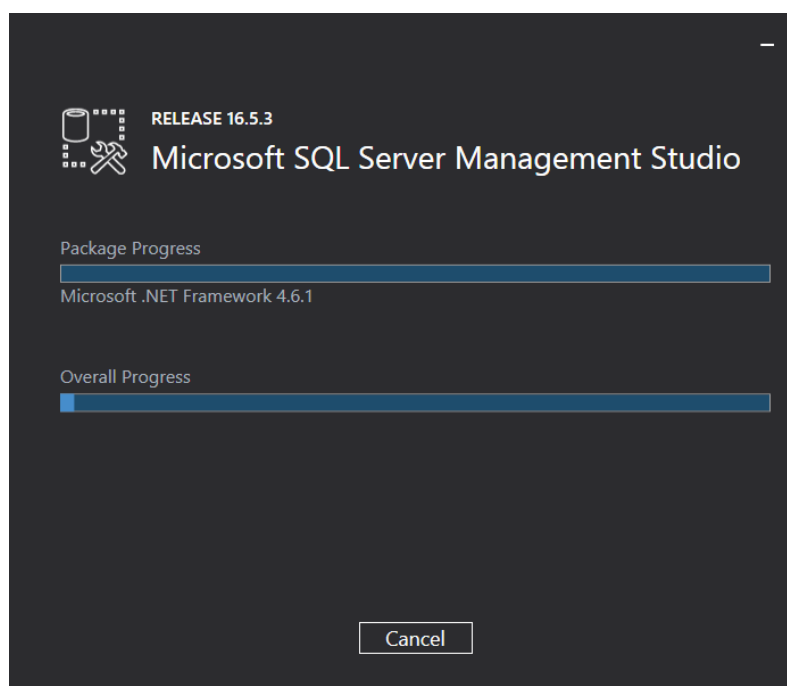

Figure 21 - Installation Progress

10. Once installation has completed a confirmation screen will be displayed and may request a machine restart as shown in Figure 22 - Installation Complete. Click Restart if prompted, else click Close.
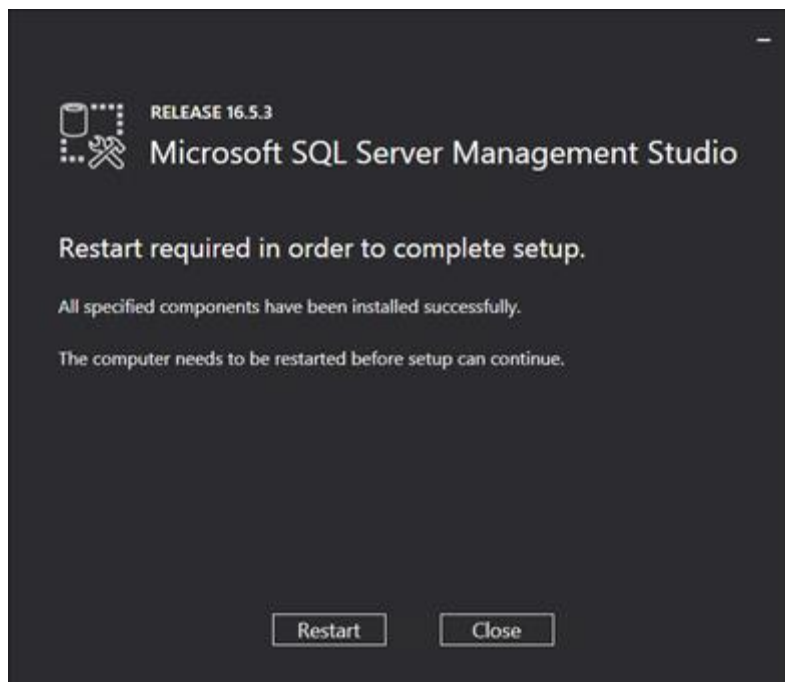
Figure 22 - Installation Complete

2.3 Enable Named Pipes

Once SQL Server has been installed we need to configure the instance so that it can be connected to via name rather than just IP Address.

1. Open the **SQL Server 2016 Configuration Manager**

   a. Click the **Start** button

   b. Search for **SQLServerManager13.msc**

   c. Click the search result

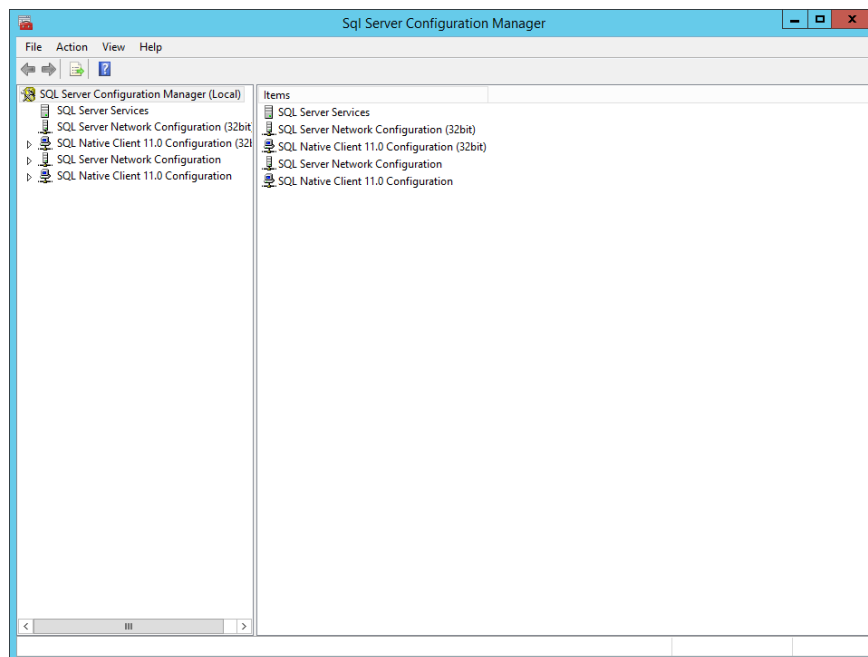   The dialog should be similar to the one shown in Figure 23 - SQL Server 2016 Configuration Manager.

Figure 23 - SQL Server 2016 Configuration Manager

2. In the Left hand side of the Window, expand the "SQL Server Network Configuration" tree and select "Protocols for <instance name>" where instance name is the instance that you have installed in 2.1 step 13 as shown in Figure 24 - SQL Server Network Configuration.
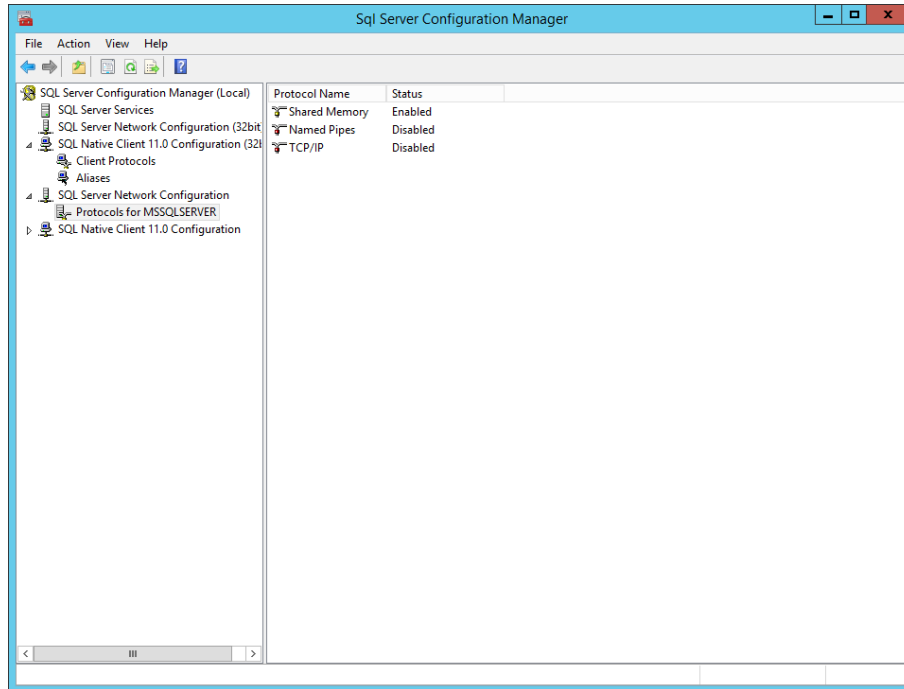

Figure 24 - SQL Server Network Configuration

3. In the Right hand side of the Window, locate the protocol "Named Pipes" and check whether it is enabled, if it is not right click on the protocol name and select enable.
4. You will be displayed a message as shown in Figure 25 - Confirmation Message that confirms that the SQL Server Service needs to be restarted for the changes to take effect.

Figure 25 - Confirmation Message

5. Click OK
6. Now check the protocol "TCP\IP" and ensure that this is enabled, if not right click on the protocol name and select enable.
7. You will be displayed a message as shown in Figure 25 - Confirmation Message that confirms that the SQL Server Service needs to be restarted for the changes to take effect.
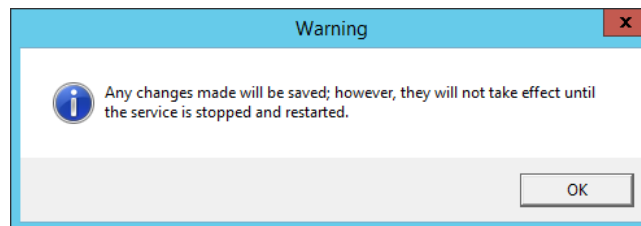8. Click OK
9. Repeat steps 3 to 8 for the following options in the left hand side of the screen:
    a. SQL Native Client 11.0 Configuration
    b. SQL Native Client 11.0 Configuration (32bit)
10. In the left hand side of the window select "SQL Server Services".

11. In the right hand side of the window as shown in Figure 26 - SQL Server Services, locate the "SQL Server (<instance name>)" Service where instance name is the instance that you have installed in 2.1 step 13.
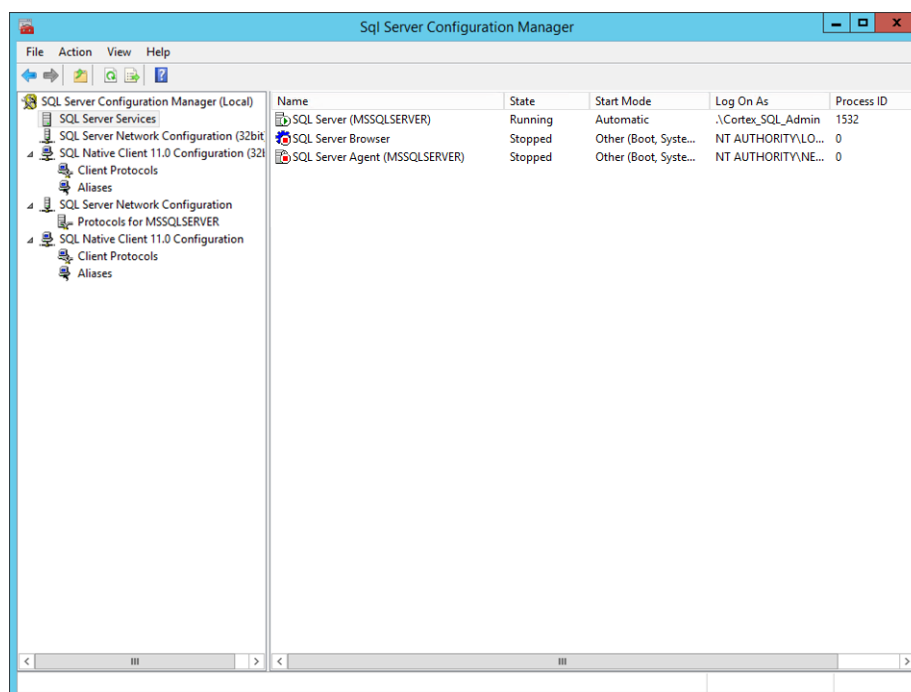

Figure 26 - SQL Server Services

12. Right click on the Name and select restart.
13. Once the necessary services have restarted and the restart dialogs have disappeared close the SQL Server Configuration Manager.