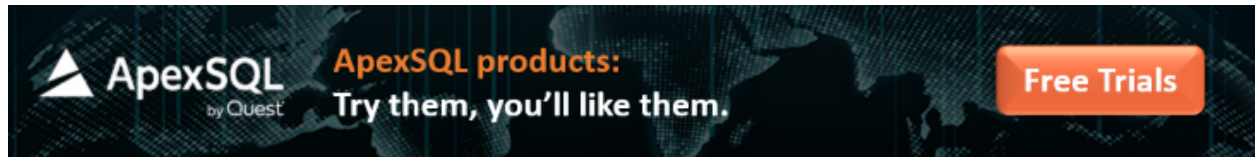


B) SETUP SQL SERVER

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How to download and install SQL Server 2016 express edition

December 2, 2021 by [Nisarg Upadhyay](#)



In this article, you are going to learn about SQL Server 2016 express download and installation process. The SQL Server 2016 express edition is a free version of SQL Server that offers limited features. The express edition of SQL Server can be used in any of the following scenarios:

1. Design and test the database schema by an organization.
2. To store a small amount of data. For example, we have developed inventory software for a shop/coffee shop, and we are designing a module to keep track of customers, appointments, and inventory. We can use the SQL Server express edition as a backend. The SQL Server Express edition is free, so customers don't have to pay for a database license
3. The backend of embedded software. At the beginning of my career, I worked with a firm that developed embedded software and sold it to their customer. They used to ship the software with express edition
4. Before SQL Server 2017, Microsoft did not provide a developer edition, so students used it for their project works
5. You can use the express edition as a witness server to enable the automatic failover process in the mirroring setup. You can read [Configuring SQL Server Express edition as SQL witness server in Database Mirroring](#) article to learn how we can use SQL Server express edition instance as a witness of a database mirroring

Following is the list of imported features and scalability limitations of the SQL server express edition.

Feature	Allowed Limit
Maximum compute capacity for SQL Server database engine.	One socket or four cores.
Maximum memory for buffer pool per instance.	1024 MB
Maximum allowed database size	10GB
Database mirroring support	Yes, as a witness server
Database snapshot	Yes
Column store index Support	Yes
In-memory OLTP	Yes
Table and index partitioning	Yes
Data compression	Yes
Partition parallelism	Yes

SQL Server profiler	No
SQL Server Agent	No
Standard performance dashboard	NO
Peer to peer transaction replication	No
SQL Server replication (Oracle publication)	No
Backup encryption	No
Transaction and merge replication	Yes, but the instance can be used as a subscriber
Snapshot replication	Yes, but the instance can be used as a subscriber
Replication to Azure	No
R integration	No
Python integration	No

Machine learning server

No

- **Note:** You can read the entire list of features and scalability limitations of the SQL Server Express edition [here](#)

You can read the following articles to learn the download and installation process of SQL Server 2019, SQL Server 2017, and SQL Server 2012 express editions:

1. [How to install SQL Server 2019 Express edition.](#)
2. [How to install SQL Server 2017 express edition.](#)
3. [How to install SQL Server 2012 express edition.](#)

Let us understand how we can download and install SQL Server 2016 express edition.

Download SQL Server 2016 express

The SQL Server 2016 express edition comes with Service pack 2 (SP2.) It can be downloaded from the Official page of the Microsoft download center.

<https://www.microsoft.com/en-us/download/details.aspx?id=56840>

On the web page, select the installation language and click on **Download**.

Microsoft® SQL Server® 2016 Service Pack 2 Express

Important! Selecting a language below will dynamically change the complete page content to that language.

Select Language:

English

Download

Microsoft® SQL Server® 2016 SP2 Express is a powerful and reliable free data management system that delivers a rich and reliable data store for lightweight Web Sites and desktop applications.

(+) Details

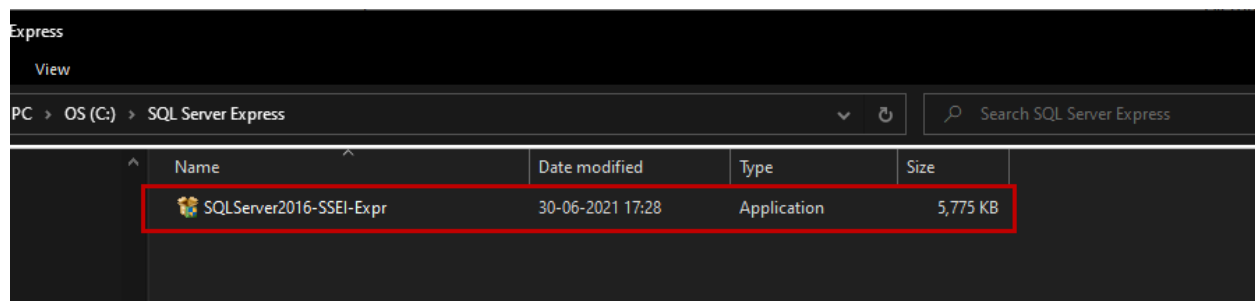
(+) System Requirements

(+) Install Instructions

(+) Additional Information

- **Note:** Alternatively, you can directly download the installation file from [here](#)

The download process begins. Once it completes, double-click the installation file to begin the installation.

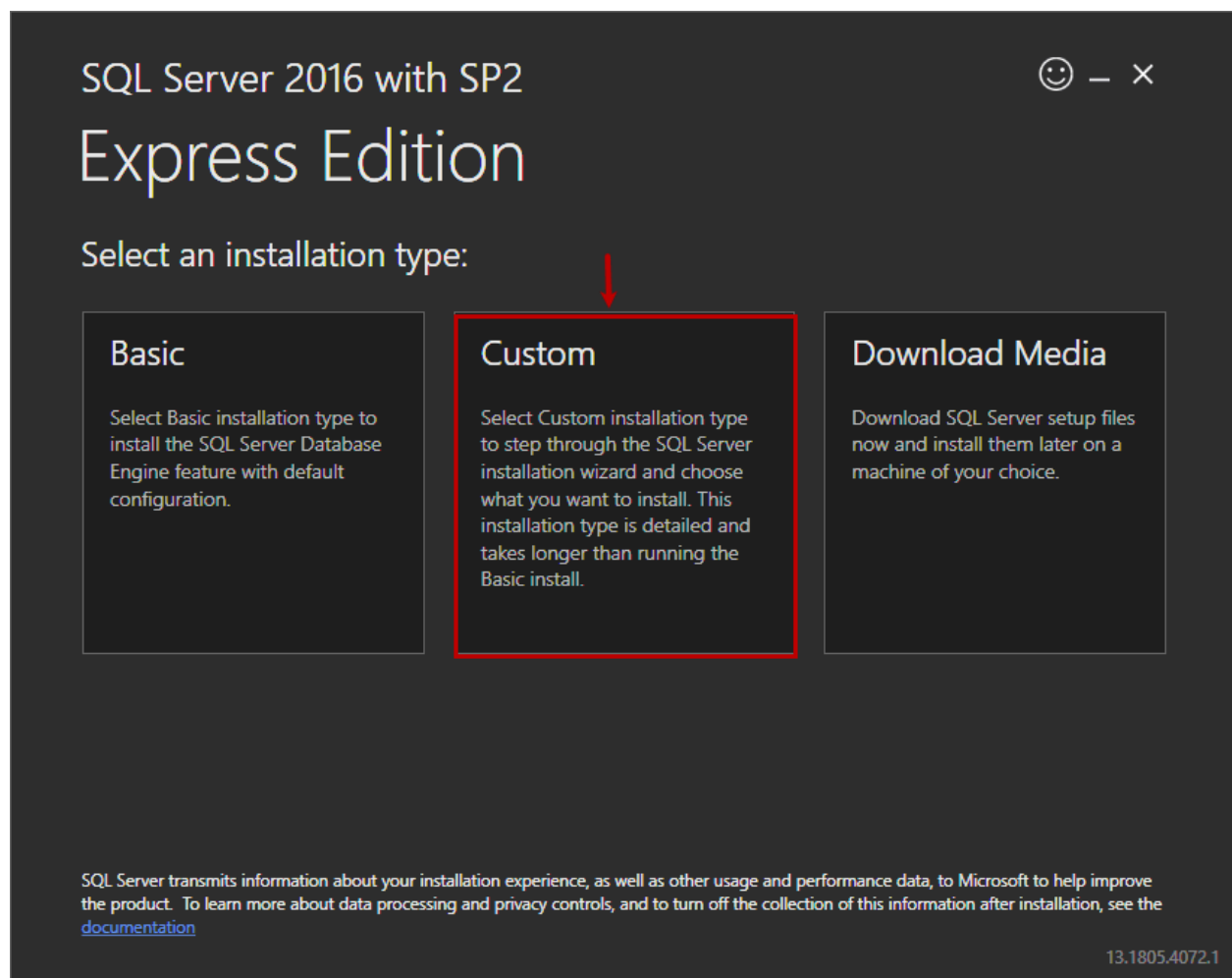


Now, let us understand the installation process. The installation process of SQL Server 2016 SP2.

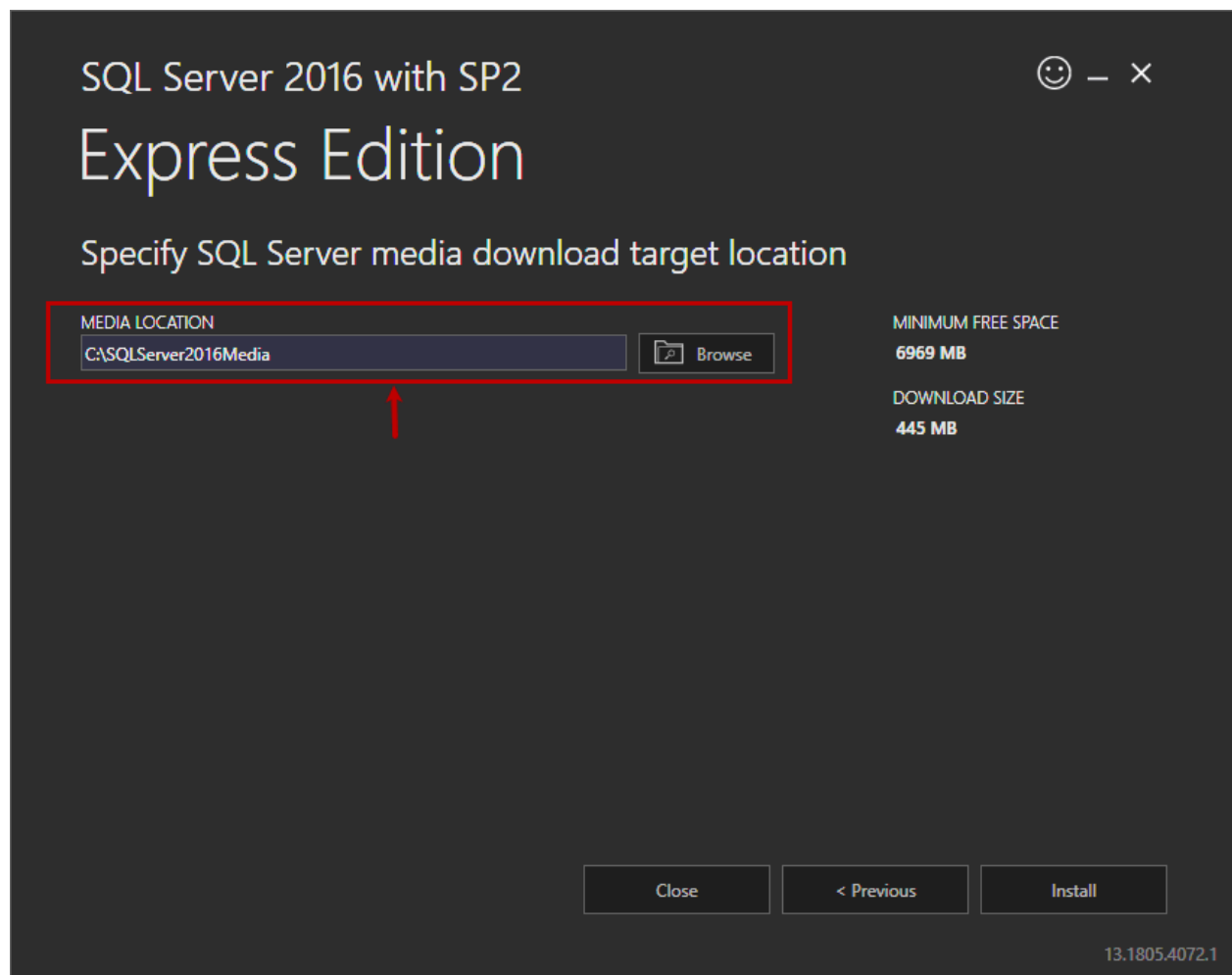
To begin the installation, double-click on the **SQLServer2016-SSEI-Expr** file. On the first screen, you have three installation types:

1. **Basic:** When we select the Basic installation type, the installer will download and install the database engine and features with the default settings
2. **Custom:** When we select Custom installation type, you can run the step-through installation wizard, and you can choose components according to the business requirement
3. **Download media:** When we select the Download media option, you can download the iso file of the SQL Server express edition

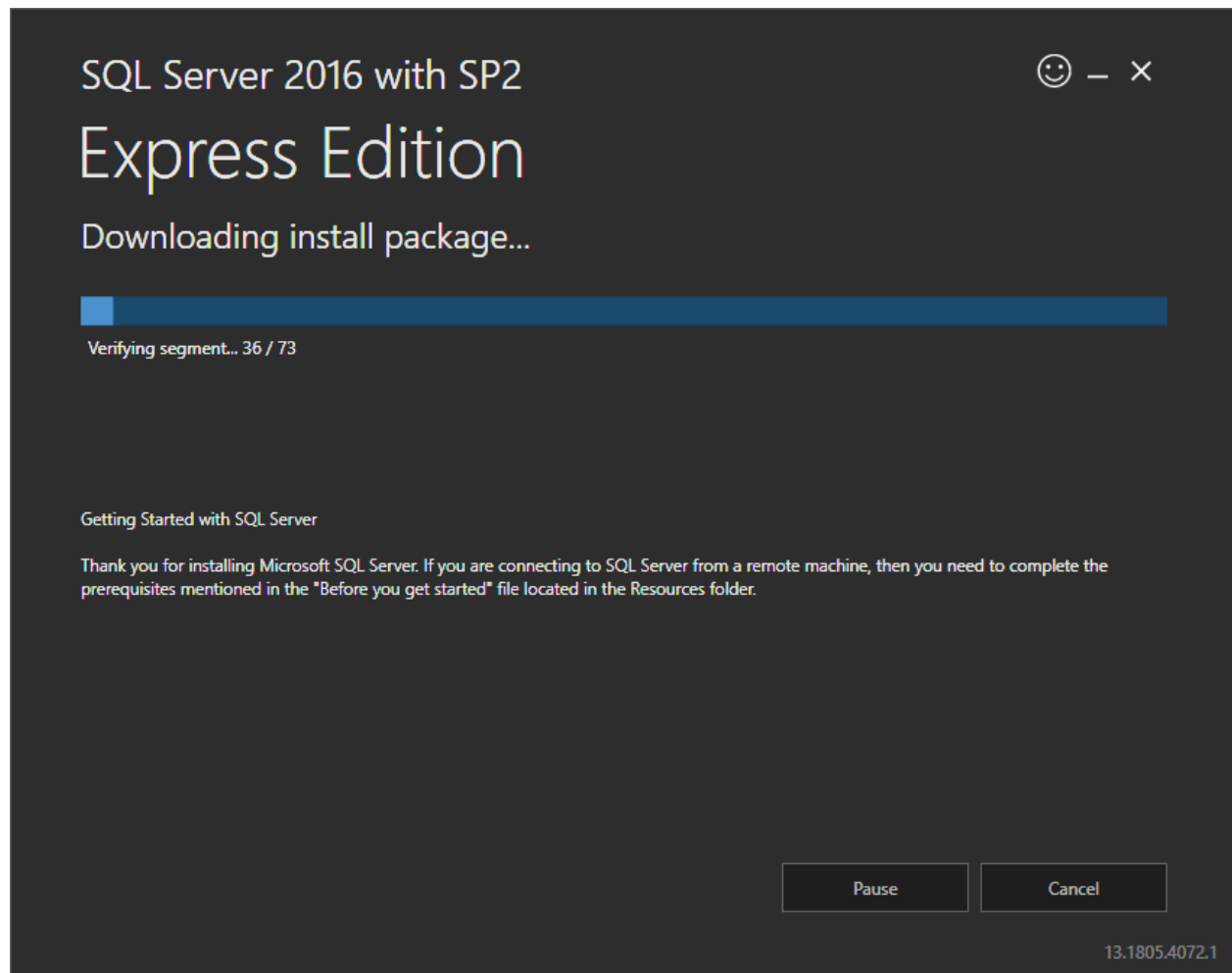
We are going to learn the process of custom installation, so click on the **Custom** installation type.



On the next screen, you must specify the media location. The SQL Server will download the installation files on the location specified in the media location textbox. The download size of the media files is 445MB.



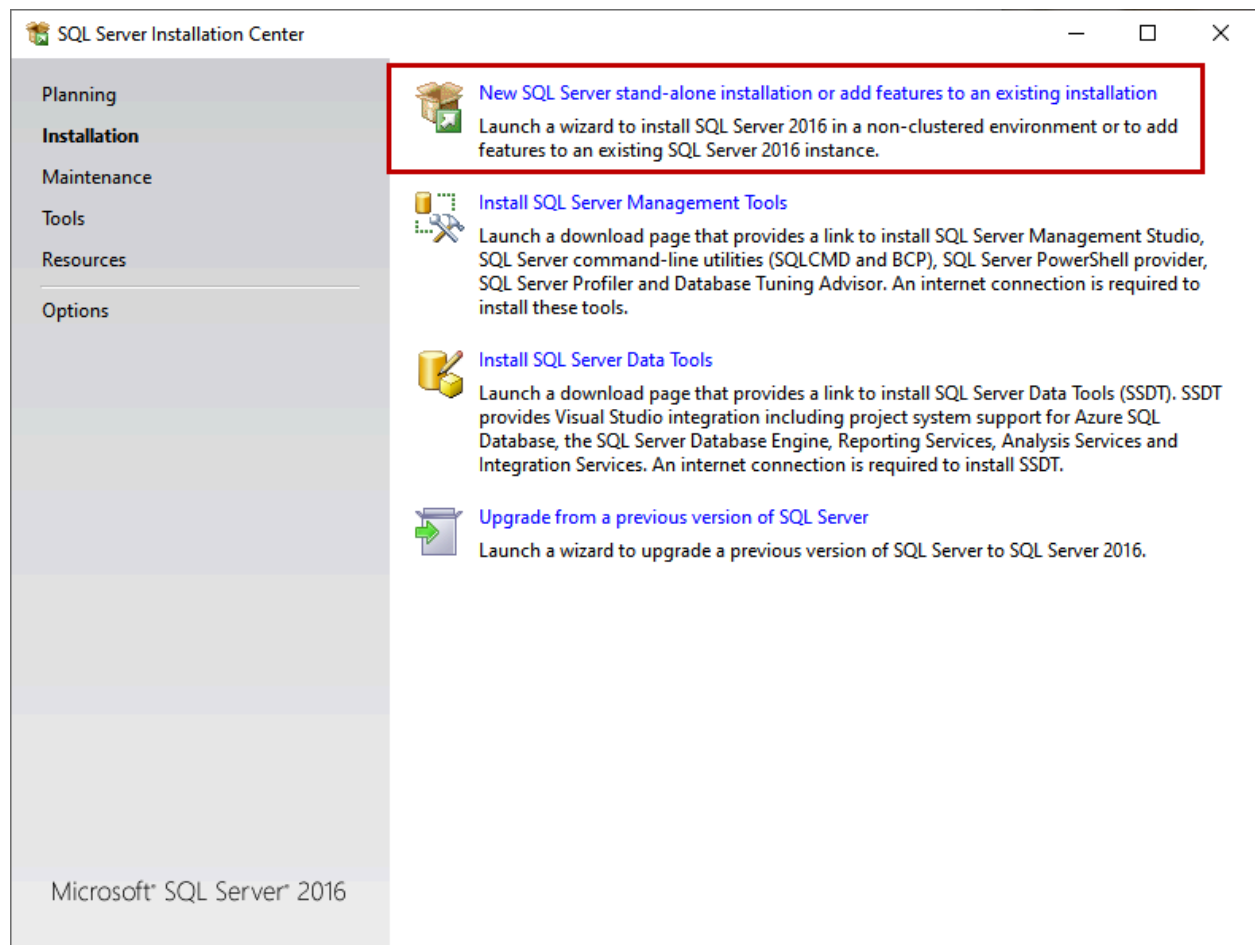
The download process begins. The time taken to download the files depends on the internet speed.



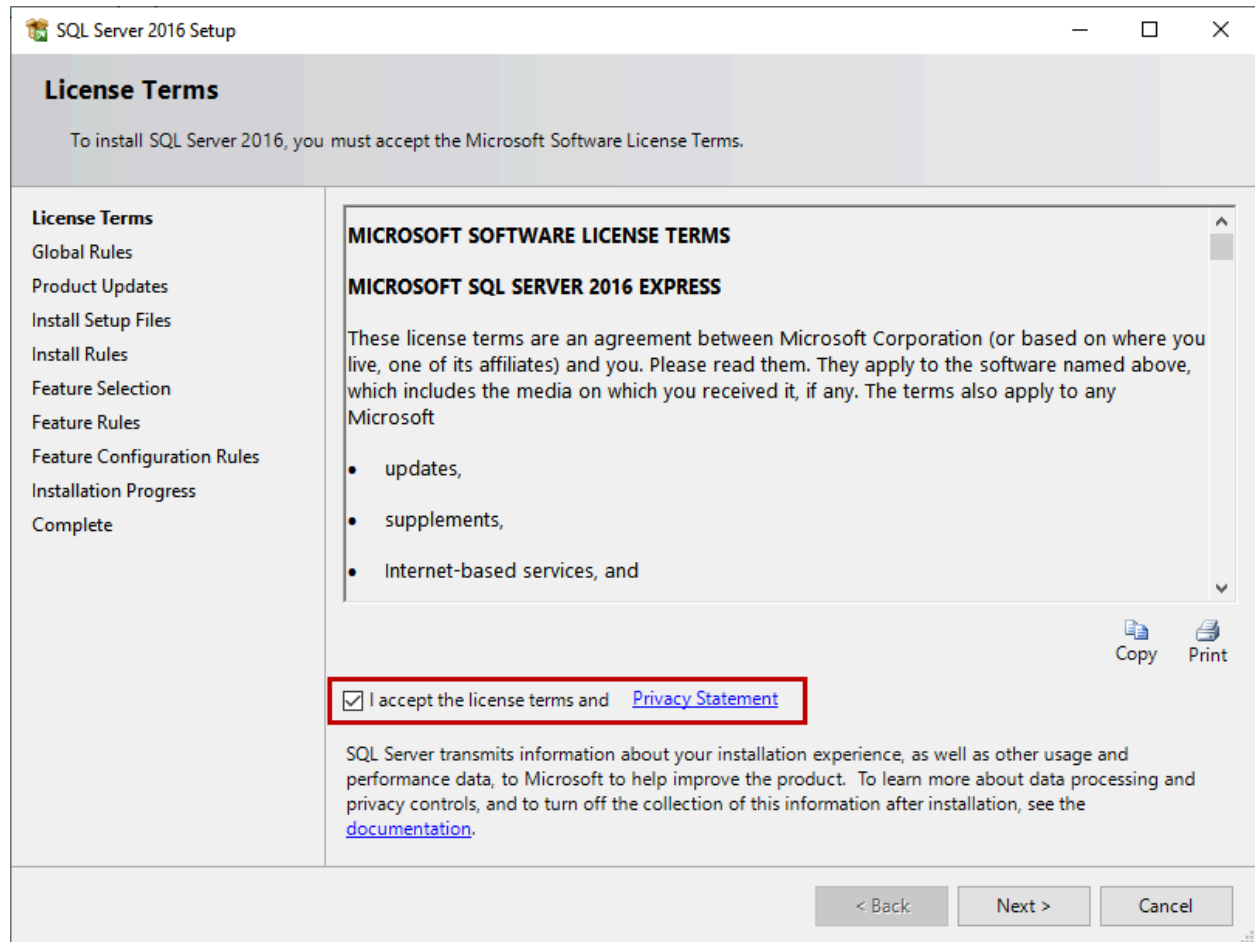
Once files are downloaded, the SQL Server installation center starts. On the installation screen, you can

1. Perform new SQL Server stand-alone installation or add new features in the existing instance
2. Install SQL Server management studio
3. Install SQL Server Data Tools
4. Upgrade the SQL Server version

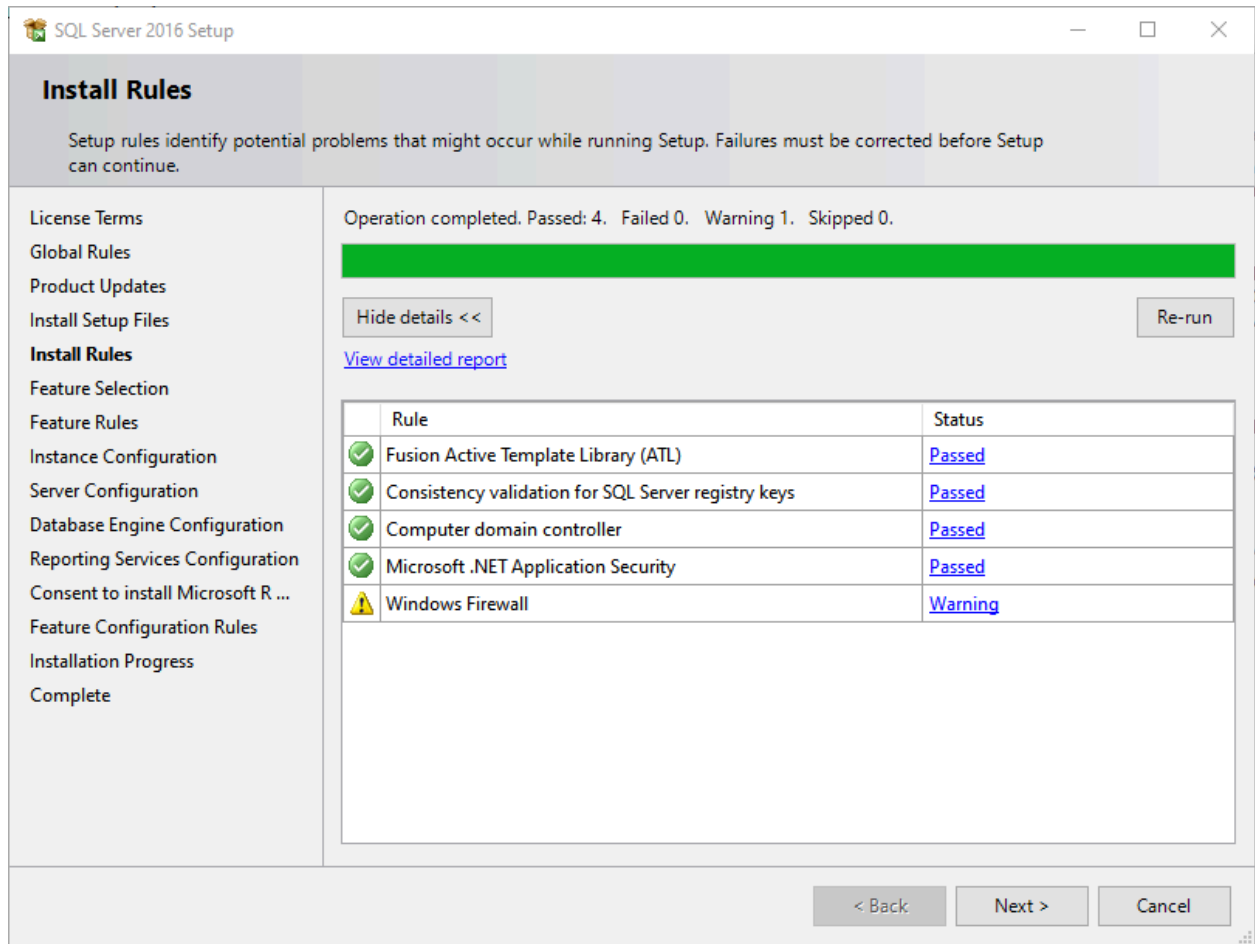
We are installing a new instance so, click on **New SQL Server stand-alone installation or add features to an existing installation.**



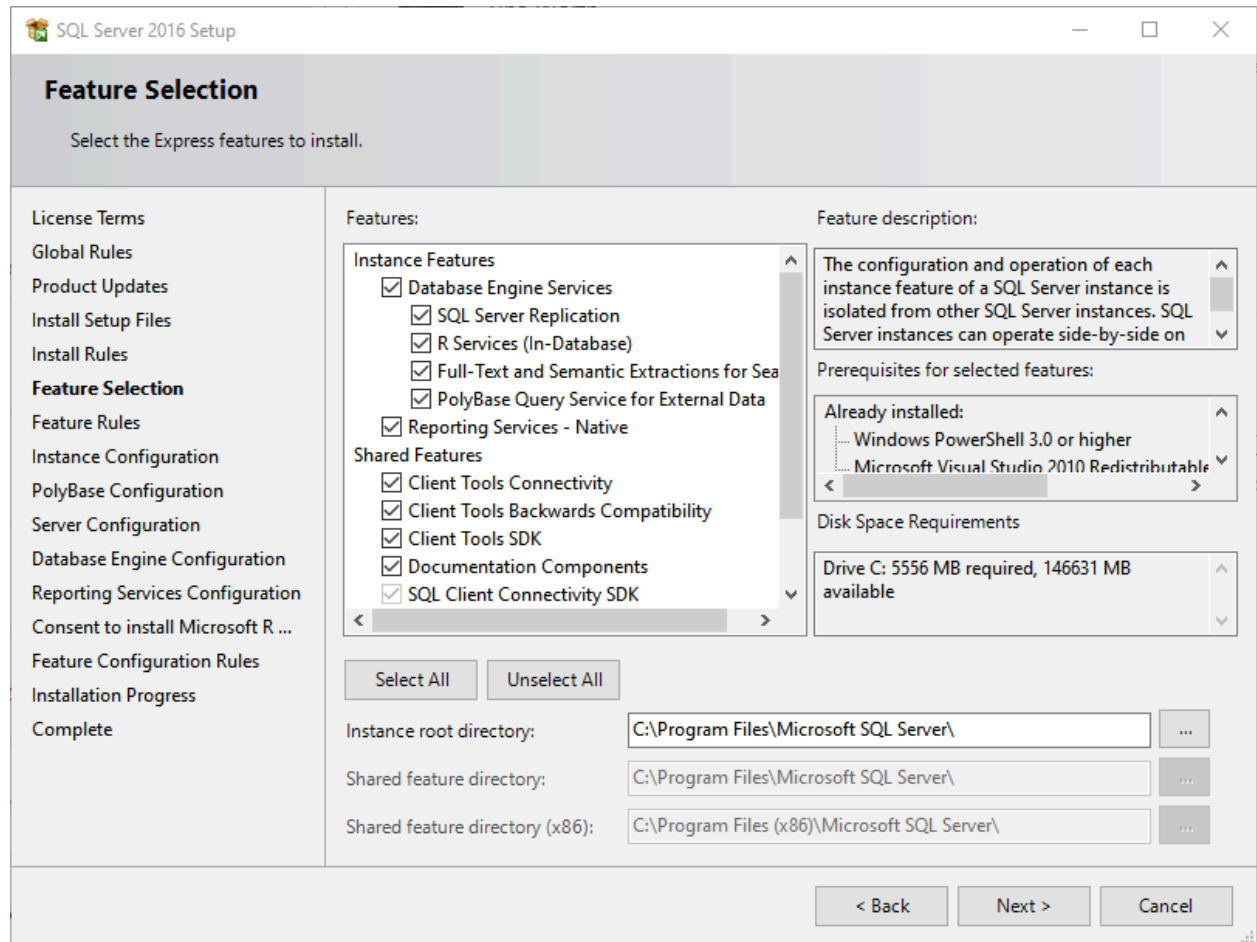
You can view the Microsoft Software License terms and Microsoft SQL Server 2016 express edition license terms on the License Term screen. Click on Accept license terms.



The installer will check the installation rules on the Install Rules screen to ensure that the setup does not encounter any errors. If any installation rule fails, the setup will not continue until the error has been rectified.



On the feature selection screen, you can select the feature that you want to install. Select all the instance features and click Next.



On the instance configuration screen, provide the instance details. If you select Default instance, then the installer will create an instance named MSSQLSERVER. If you want to create a named instance, then provide the instance name in Named Instance. We are creating a named instance, so provide SQLEXPRESSINST as an instance name.

SQL Server 2016 Setup

Instance Configuration

Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.

License Terms

Global Rules

Product Updates

Install Setup Files

Install Rules

Feature Selection

Feature Rules

Instance Configuration

Server Configuration

Database Engine Configuration

Reporting Services Configuration

Consent to install Microsoft R ...

Feature Configuration Rules

Installation Progress

Complete

☐ Default instance

☒ Named instance:

Instance ID:

SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESSINST

Reporting Services directory: C:\Program Files\Microsoft SQL Server\MSRS13.SQLEXPRESSINST

Installed instances:

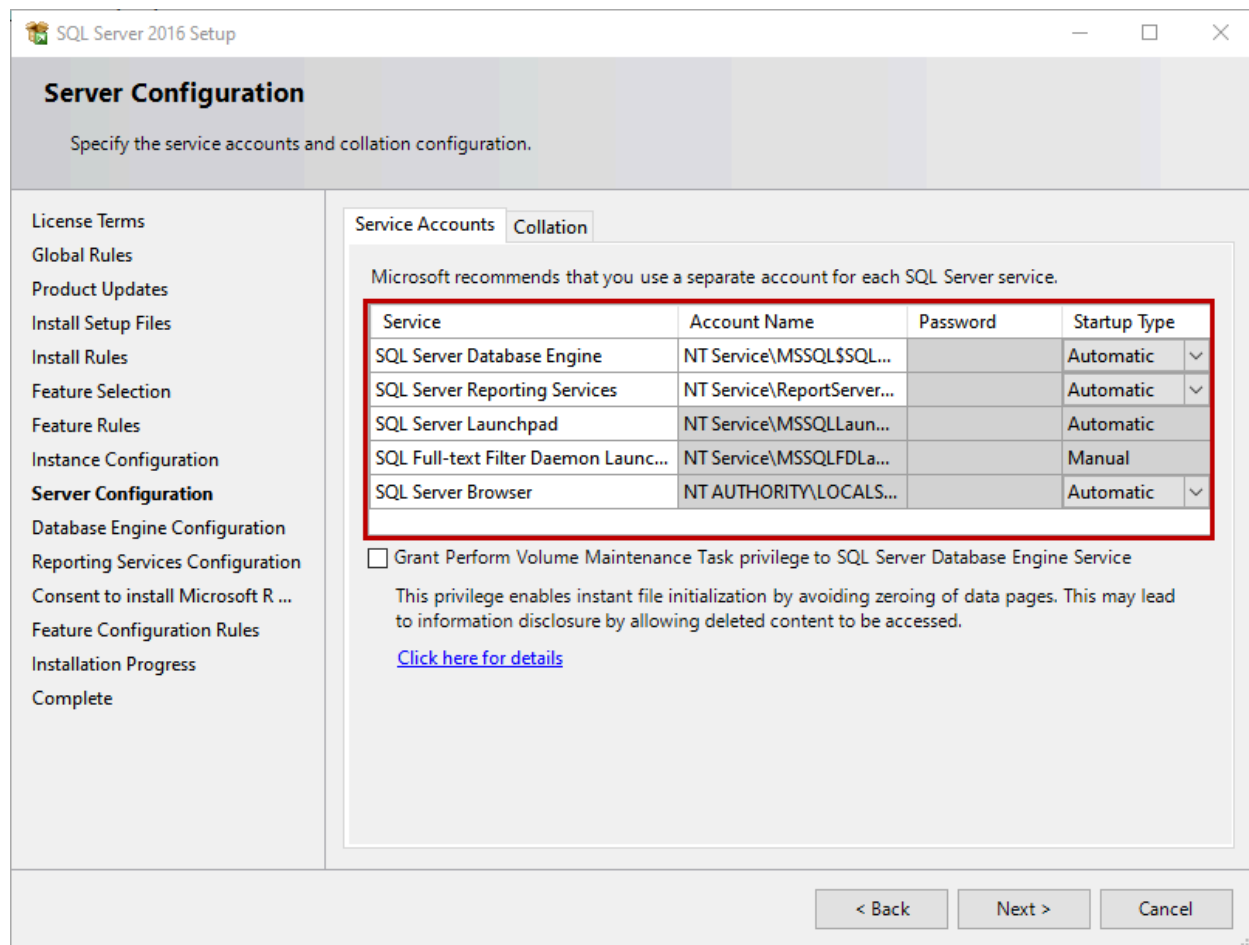
Instance Name	Instance ID	Features	Edition	Version
SQLEXPRESS	MSSQL11.SQLEXPRESS	SQLEngine,SQLEn...	Express	11.3.6251.0
SQLSERVER2017	MSSQL14.SQLEXPRESS	SQLEngine_VNext,...	Developer	14.0.2037.2
MSSQLSERVER	MSSQL15.MSSQLSERVER	SQLEngine_VNext	Developer	15.0.2080.9
<Shared Compone...		SSMS, Adv_SSMS, ...		11.3.6251.0

< Back

Next >

Cancel

On the Server configuration screen, provide the credentials of the SQL Server service accounts and database collation. I have used the default settings.



On the Database engine configuration screen, you can configure the following:

1. **Authentication Mode** and the SQL Server administrator
2. **Data directories:** Specify the location of the data files and log files
3. **TempDB:** Specify the following TempDB settings
 1. Number of TempDB files
 2. Initial and maximum size of TempDB data files
 3. Autogrowth size
 4. Location of the TempDB data files and log files
 5. Initial and maximum size of the TempDB log files
 6. Autogrowth of the TempDB log files
4. **FILESTREAM:** Enable the FILESTREAM feature

In our setup, use the default settings of all parameters. Screenshot of all parameters are as the following:

Server Configuration:

The screenshot shows the 'Server Configuration' tab of the SQL Server Enterprise Setup wizard. The interface includes several sections for configuring the database engine. At the top, there are tabs for 'Server Configuration', 'Data Directories', 'TempDB', 'User Instances', and 'FILESTREAM'. The 'Server Configuration' section is active, displaying instructions to 'Specify the authentication mode and administrators for the Database Engine.' Below this, the 'Authentication Mode' is set to 'Windows authentication mode' (selected with a radio button). The 'Mixed Mode (SQL Server authentication and Windows authentication)' option is also available. A section for 'Specify the password for the SQL Server system administrator (sa) account.' includes fields for 'Enter password:' and 'Confirm password:'. The 'Specify SQL Server administrators' section contains a list box with the entry 'NISARG-PC\Nisarg (Nisarg)' selected. To the right of the list box, a note states: 'SQL Server administrators have unrestricted access to the Database Engine.' At the bottom, there are three buttons: 'Add Current User', 'Add...', and 'Remove'.

Server Configuration | Data Directories | TempDB | 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 _____

NISARG-PC\Nisarg (Nisarg)

SQL Server administrators have unrestricted access to the Database Engine.

Add Current User | Add... | Remove

Data directories:

Server Configuration	Data Directories	TempDB	User Instances	FILESTREAM
Data root directory:	<input type="text" value="C:\Program Files\Microsoft SQL Server\"/>		<input type="button" value="..."/>	
System database directory:	C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\INST\MSSQL\Data			
User database directory:	<input type="text" value="C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\INST"/>		<input type="button" value="..."/>	
User database log directory:	<input type="text" value="C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\INST"/>		<input type="button" value="..."/>	
Backup directory:	<input type="text" value="C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\INST"/>		<input type="button" value="..."/>	

TempDB:

Server Configuration	Data Directories	TempDB	User Instances	FILESTREAM
TempDB data files: tempdb.mdf				
Number of files:		1		
Initial size (MB):		8	Total initial size (MB):	8
Autogrowth (MB):		64	Total autogrowth (MB):	64
Data directories:		C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESSIN		Add...
				Remove
TempDB log file: templog.ldf				
Initial size (MB):		8	Setup could take longer with large initial size.	
Autogrowth (MB):		64		
Log directory:		C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESSIN		...

FILESTREAM:

Server Configuration Data Directories TempDB User Instances **FILESTREAM**

☐ Enable FILESTREAM for Transact-SQL access

☐ Enable FILESTREAM for file I/O access

Windows share name:

☐ Allow remote clients access to FILESTREAM data

On Reporting Services configuration screen, you can install and configure the SQL Server reporting services. You can choose any of the following options

1. Install and configure: This option will install the reporting service, and when the SQL Server installation completes, it configures the reporting services
2. Install only: This option will install the reporting services

We want to install the reporting services; therefore, select the **Install Only** option.

SQL Server 2016 Setup

Reporting Services Configuration

Specify the Reporting Services configuration mode.

- License Terms
- Global Rules
- Product Updates
- Install Setup Files
- Install Rules
- Feature Selection
- Feature Rules
- Instance Configuration
- Server Configuration
- Database Engine Configuration
- Reporting Services Configura...**
- Consent to install Microsoft R ...
- Feature Configuration Rules
- Installation Progress
- Complete

Reporting Services Native Mode

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

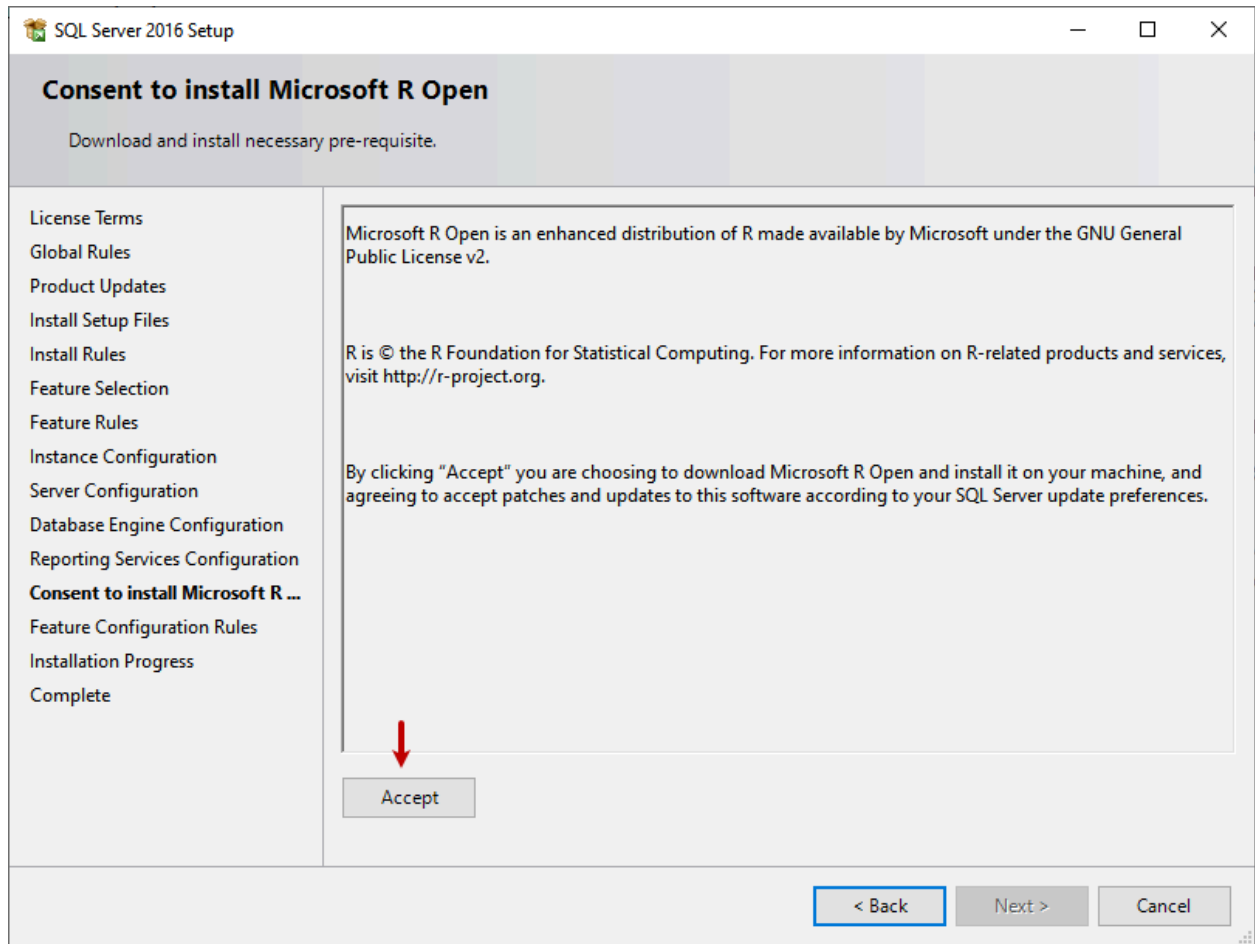
☒ **Install only.**
Installs the report server files. After installation, use Reporting Services Configuration Manager to configure the report server for native mode.

Reporting Services SharePoint Integrated Mode

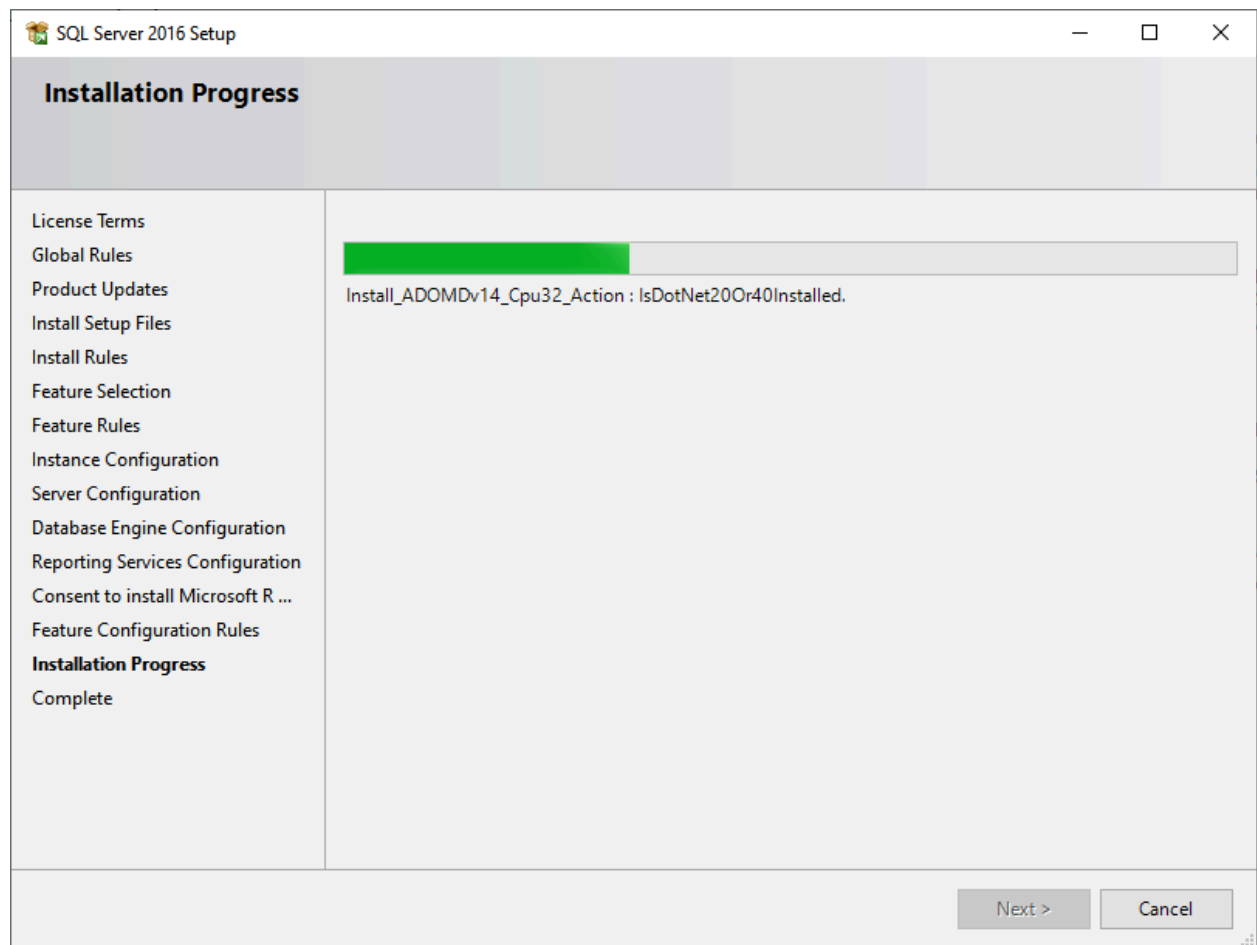
☐ Install only.
Installs the report server files. After installation use SharePoint Central Administration to complete the configuration. Verify the SQL Server Reporting Services service is started and create at least one SQL Server Reporting Services service application. For more information, click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

< Back Next > Cancel

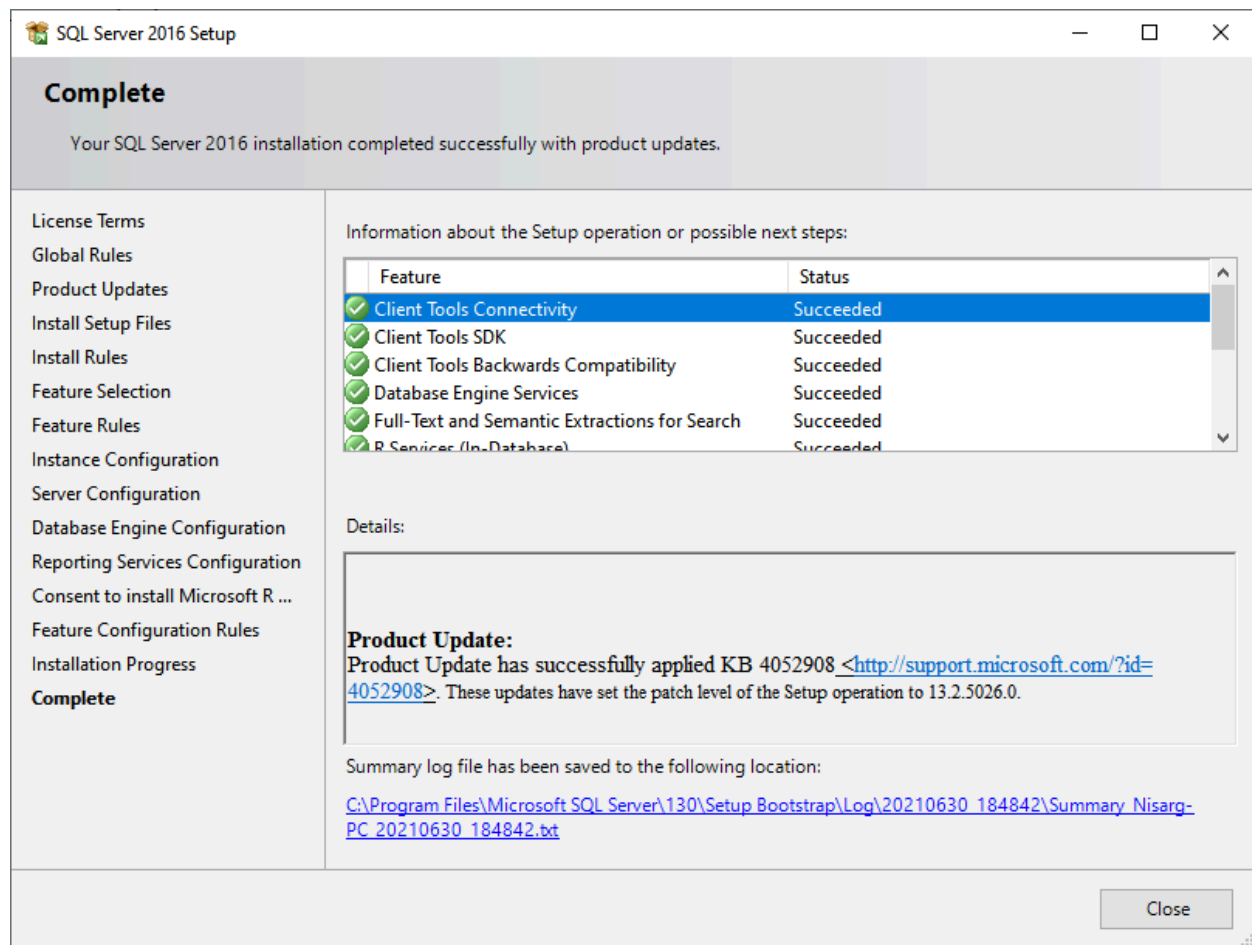
On the consent to install Microsoft R Open screen, click on **Accept**.



The installation process begins.



The SQL Server 2016 express download and installed on the workstation.



Now, let us test the connectivity by executing some queries.

Connect to the SQL Server 2016 express edition

As the SQL Server 2016 express download and installed, we are going to use SQL Server management studio to verify the connectivity. Open the SQL Server management studio and in the connect to the server screen, select Database Engine as Server type,

NISARG-PC\SQLEXPRESSINST as server name, Select Windows Authentication as the authentication method and click on **Connect**.

Connect to Server

SQL Server

Server type: Database Engine

Server name: NISARG-PC\SQLEXPRESSINST

Authentication: Windows Authentication

User name: NISARG-PC\Nisarg

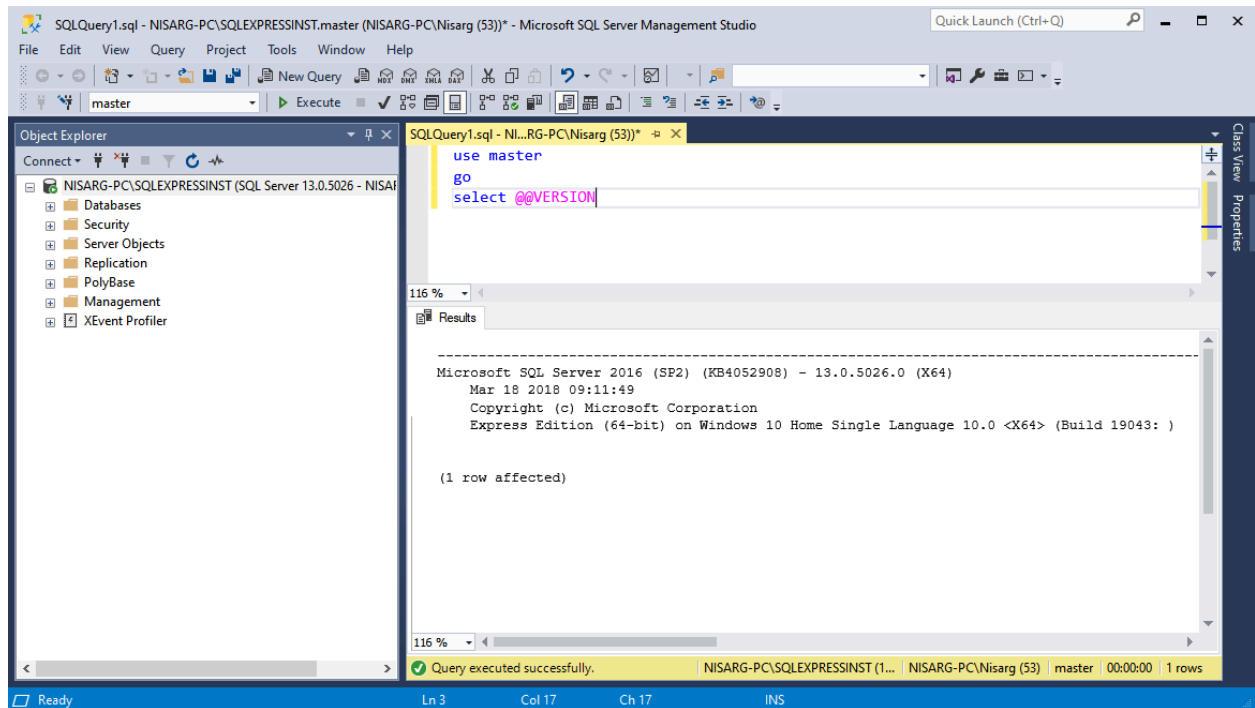
Password:

☐ Remember password

Connect Cancel Help Options >>

Once connected to SQL Server instance, run the following query to view the version of the SQL Server.

```
1 use master
2
3 select @@VERSION
```



As you can see, the SQL Server 2016 express edition was downloaded and installed correctly.

Summary

In this article, we learned about the SQL Server 2016 express edition download and installation process.

Download and Install SQL SERVER EXPRESS from ARCHIVE

https://archive.org/download/sql-server/enu_sql_server_2016_express_edition_with_service_pack_3_x64_4ead5e35.exe

How to Create an Excel Connection to a SQL database

October 15, 2021 — By ArcherPoint

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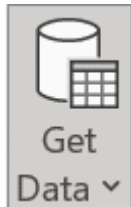


Microsoft Excel can be a powerful tool to evaluate SQL data. In Excel, a connection can be created to directly link to a particular database filtered according to your requirements. This allows you to report SQL data, attach a table of data into Excel, create a pivot table and have better manipulation of your SQL data.

This connection must be validated by a SQL login to ensure the contents of your databases remain secure. The connection can be refreshed to update the content from the SQL database.

How to Create an Excel Connection

- Open Microsoft Excel
- Select the Data tab

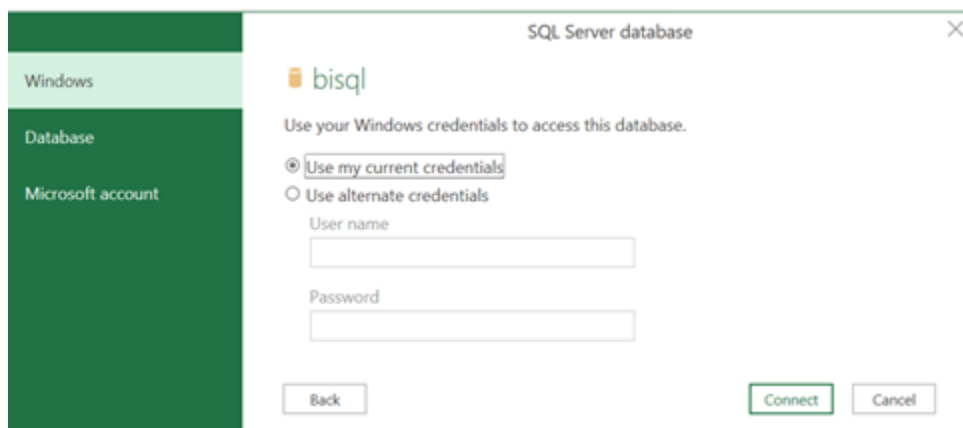


- Click on Get Data
 - Select "From Database"
- Select From SQL Server database
- Enter the SQL Server Name
 - Optionally, you can enter the database name here if you know it.
 - Otherwise, you will be able to select the database in a future step

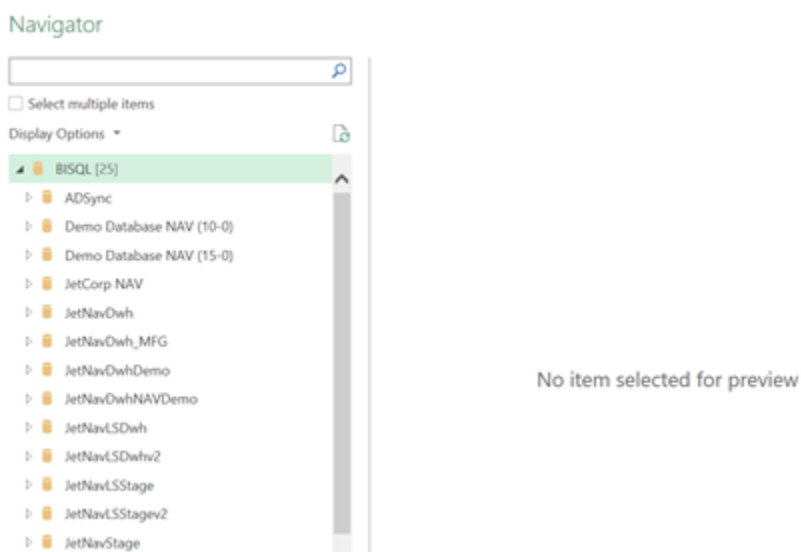
The image is a screenshot of the 'SQL Server database' dialog box in Excel. The title bar at the top says 'SQL Server database' with a close button (X) on the right. Inside the dialog, there is a label 'Server' with a help icon (i) to its left, followed by a text input field. Below that is a label 'Database (optional)' followed by another text input field. At the bottom left, there is a link that says 'Advanced options' with a right-pointing arrow. At the bottom right, there are two buttons: 'OK' and 'Cancel'.

- Determine the credential you are going to use.
 - "Use my current credentials" is the default. This will use your windows login that you used to connect to windows.
 - "Use Alternate Credentials" is using a different windows login than the current.
 - Select Database on the left-hand side to use SQL Database Credentials.

- Select Microsoft Account on the left-hand side to use your Microsoft365 login

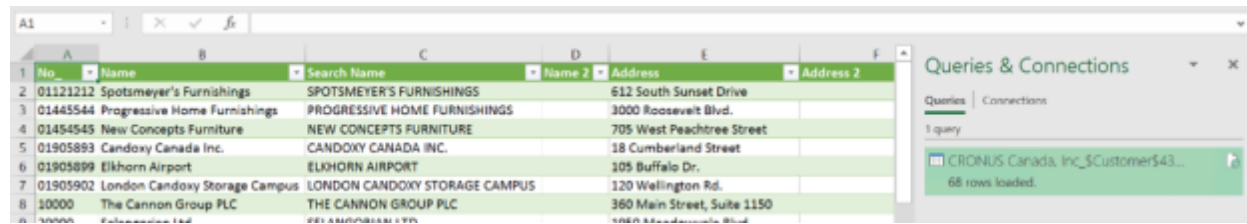


- Click Connect
- Select the database and the table that you want to use for the query
 - You can use the search bar to search for a table
 - You can check the box for “Select Multiple Items” to pull in more than one table.



- Now you can choose 1) How you want to load the data; either Load which puts the data into an Excel table or “Load To” which allows you to load the data as a query instead of a table. “Load To” is for more complex reporting. 2) You can “Transform Data”; this opens Microsoft Power Query Editor and allows you to add fields, remove fields, change data types, Etc.

- After click on “Load” this loads the data into an Excel Table.



No.	Name	Search Name	Name 2	Address	Address 2
01121212	Spotsmeyer's Furnishings	SPOTSMAYER'S FURNISHINGS		612 South Sunset Drive	
01445544	Progressive Home Furnishings	PROGRESSIVE HOME FURNISHINGS		3000 Roosevelt Blvd.	
01454545	New Concepts Furniture	NEW CONCEPTS FURNITURE		705 West Peachtree Street	
01905893	Candoxy Canada Inc.	CANDODY CANADA INC.		18 Cumberland Street	
01905899	Elkhorn Airport	ELKHORN AIRPORT		105 Buffalo Dr.	
01905902	London Candoxy Storage Campus	LONDON CANDODY STORAGE CAMPUS		120 Wellington Rd.	
10000	The Cannon Group PLC	THE CANNON GROUP PLC		360 Main Street, Suite 1150	

How to Refresh an Excel Connection to a SQL Database

To refresh the Excel Connection:

- Select the Data tab
- Select Refresh
 - Refresh: Will refresh the current query that you are on.
 - Refresh All: Will refresh all queries in the Workbook.

