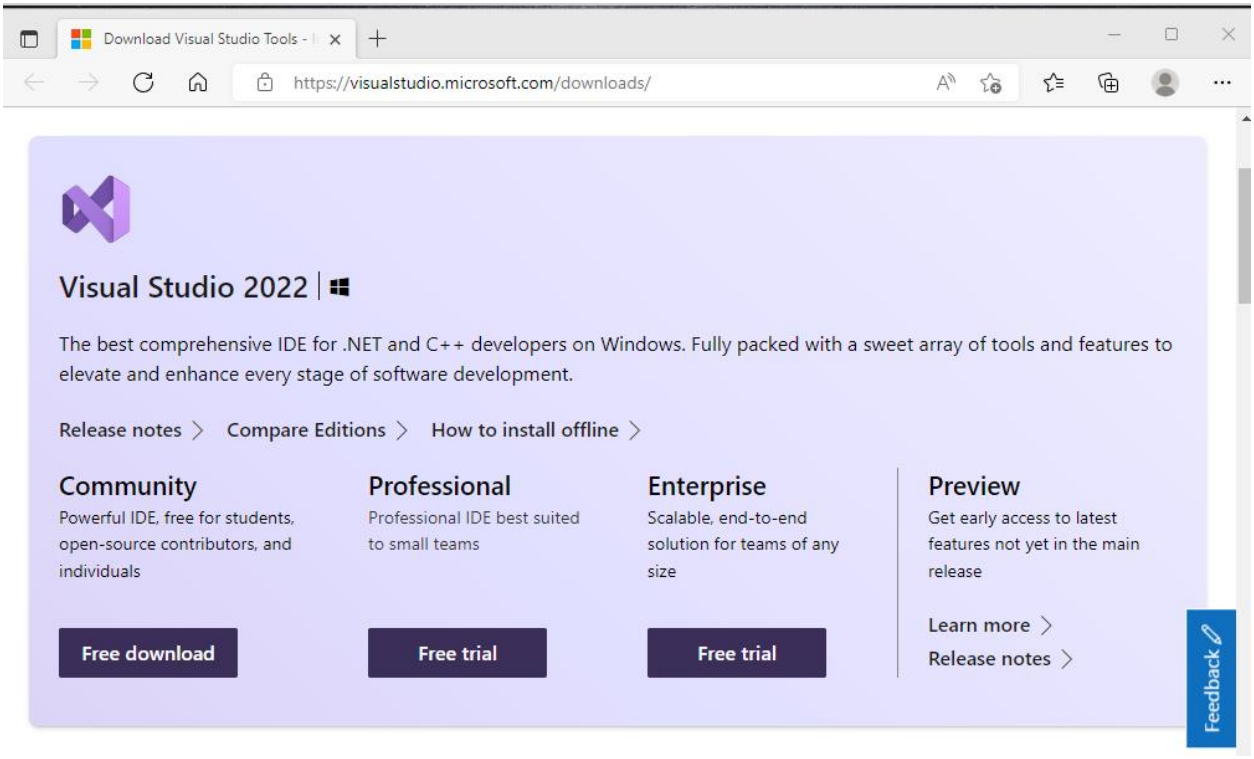
Course Number: 420-DW4-AS
Course Title: Web Server Applications Development II
Teacher: Quang Hoang Cao

Softwares required for the Course

1. Visual Studio 2022 Community
2. SQL Server 2019 Express
3. SQL Server Management Studio 18

I. Download Visual Studio 2022 Community

https://visualstudio.microsoft.com/downloads/

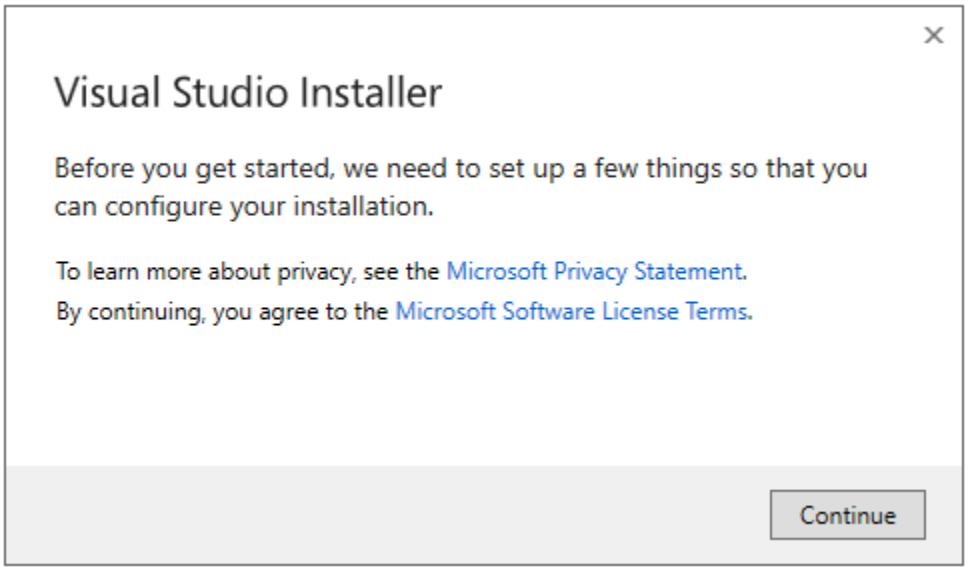


Select Community

Free download

II. Install Visual Studio 2022 Community

Right-Click the file and select **Run as Administrator**



Click Continue

Follow the steps to install Visual Studio 2022 Community

III. Visual Studio 2022 Community: workloads and component IDs

Reference Source:

https://docs.microsoft.com/en-us/visualstudio/install/workload-and-component-ids?view=vs-2019

Edition: Visual Studio Community 2022

ID: Microsoft.VisualStudio.Product.Community

Description: **Free, fully featured IDE for students, open-source, and individual developers**

Important Note: For this course, you need to select the workloads highlighted in yellow.

1. **Visual Studio core editor (included with Visual Studio Community 2019)**

   ID: Microsoft.VisualStudio.Workload.CoreEditor
   Description: The Visual Studio core shell experience, including syntax-aware code editing, source code control and work item management.

2. **Azure development**

   ID: Microsoft.VisualStudio.Workload.Azure
   Description: Azure SDKs, tools, and projects for developing cloud apps and creating resources using .NET Core and .NET Framework. Also includes tools for containerizing your application, including Docker support.

3. **Data storage and processing**

   ID: Microsoft.VisualStudio.Workload.Data
   Description: Connect, develop, and test data solutions with SQL Server, Azure Data Lake, or Hadoop.

4. **Data science and analytical applications**

ID: Microsoft.VisualStudio.Workload.DataScience
Description: Languages and tooling for creating data science applications, including Python and F#.

5. **.NET desktop development**

ID: Microsoft.VisualStudio.Workload.ManagedDesktop
Description: Build WPF, Windows Forms, and console applications using C#, Visual Basic, and F# with .NET Core and .NET Framework.

6. **Game development with Unity**

ID: Microsoft.VisualStudio.Workload.ManagedGame
Description: Create 2D and 3D games with Unity, a powerful cross-platform development environment.

7. Linux development with C++

ID: Microsoft.VisualStudio.Workload.NativeCrossPlat
Description: Create and debug applications running in a Linux environment.

8. Desktop development with C++

ID: Microsoft.VisualStudio.Workload.NativeDesktop
Description: Build modern C++ apps for Windows using tools of your choice, including MSVC, Clang, CMake, or MSBuild.

9. Game development with C++

ID: Microsoft.VisualStudio.Workload.NativeGame
Description: Use the full power of C++ to build professional games powered by DirectX, Unreal, or Cocos2d.

10. Mobile development with C++

ID: Microsoft.VisualStudio.Workload.NativeMobile
Description: Build cross-platform applications for iOS, Android or Windows using C++.

11. .NET Core cross-platform development

ID: Microsoft.VisualStudio.Workload.NetCoreTools
Description: Build cross-platform applications using .NET Core, ASP.NET Core, HTML/JavaScript, and Containers including Docker support.

12. Mobile development with .NET

ID: Microsoft.VisualStudio.Workload.NetCrossPlat
Description: Build cross-platform applications for iOS, Android or Windows using Xamarin.

13. ASP.NET and web development

ID: Microsoft.VisualStudio.Workload.NetWeb
Description: Build web applications using ASP.NET Core, ASP.NET, HTML/JavaScript, and Containers including Docker support.

14. Node.js development

ID: Microsoft.VisualStudio.Workload.Node
Description: Build scalable network applications using Node.js, an asynchronous event-driven JavaScript runtime.

15. Office/SharePoint development

ID: Microsoft.VisualStudio.Workload.Office
Description: Create Office and SharePoint add-ins, SharePoint solutions, and VSTO add-ins using C#, VB, and JavaScript.

16. Python development

ID: Microsoft.VisualStudio.Workload.Python
Description: Editing, debugging, interactive development and source control for Python.

17. Universal Windows Platform development

ID: Microsoft.VisualStudio.Workload.Universal
Description: Create applications for the Universal Windows Platform with C#, VB, or optionally C++.

18. Visual Studio extension development

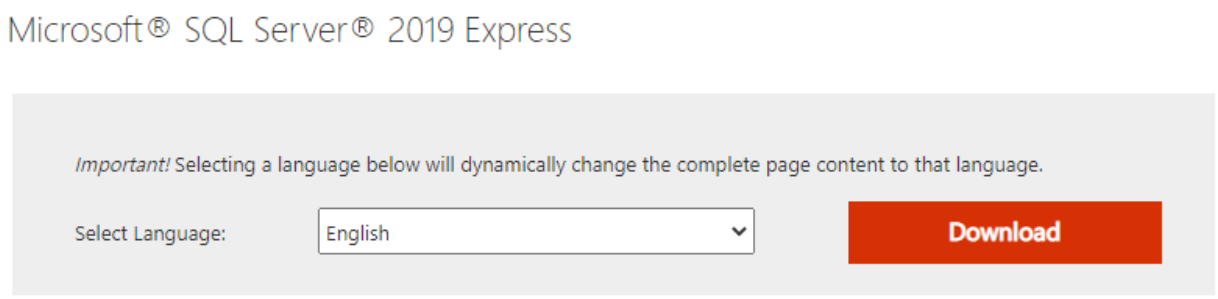
ID: Microsoft.VisualStudio.Workload.VisualStudioExtension
Description: Create add-ons and extensions for Visual Studio, including new commands, code analyzers and tool windows.

19. Unaffiliated components

These are components that are not included with any workload, but may be selected as an individual component.

IV. SQL Server 2019 Express

https://www.microsoft.com/en-us/Download/confirmation.aspx?id=101064



Microsoft® SQL Server® 2019 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.

System Requirements

Supported Operating System

Windows 10, Windows Server 2016, Windows Server 2019

- **Processor**
  - Intel - compatible processor with a minimum speed of 1 GHz or a faster processor
- **RAM**
  - Minimum 512MB
- **Hard Disk Space**
  - 4.2 GB of Disk Space

Limitations : Microsoft SQL Server Express supports 1 physical processor, 1 GB memory, and 10 GB storage

System Requirements

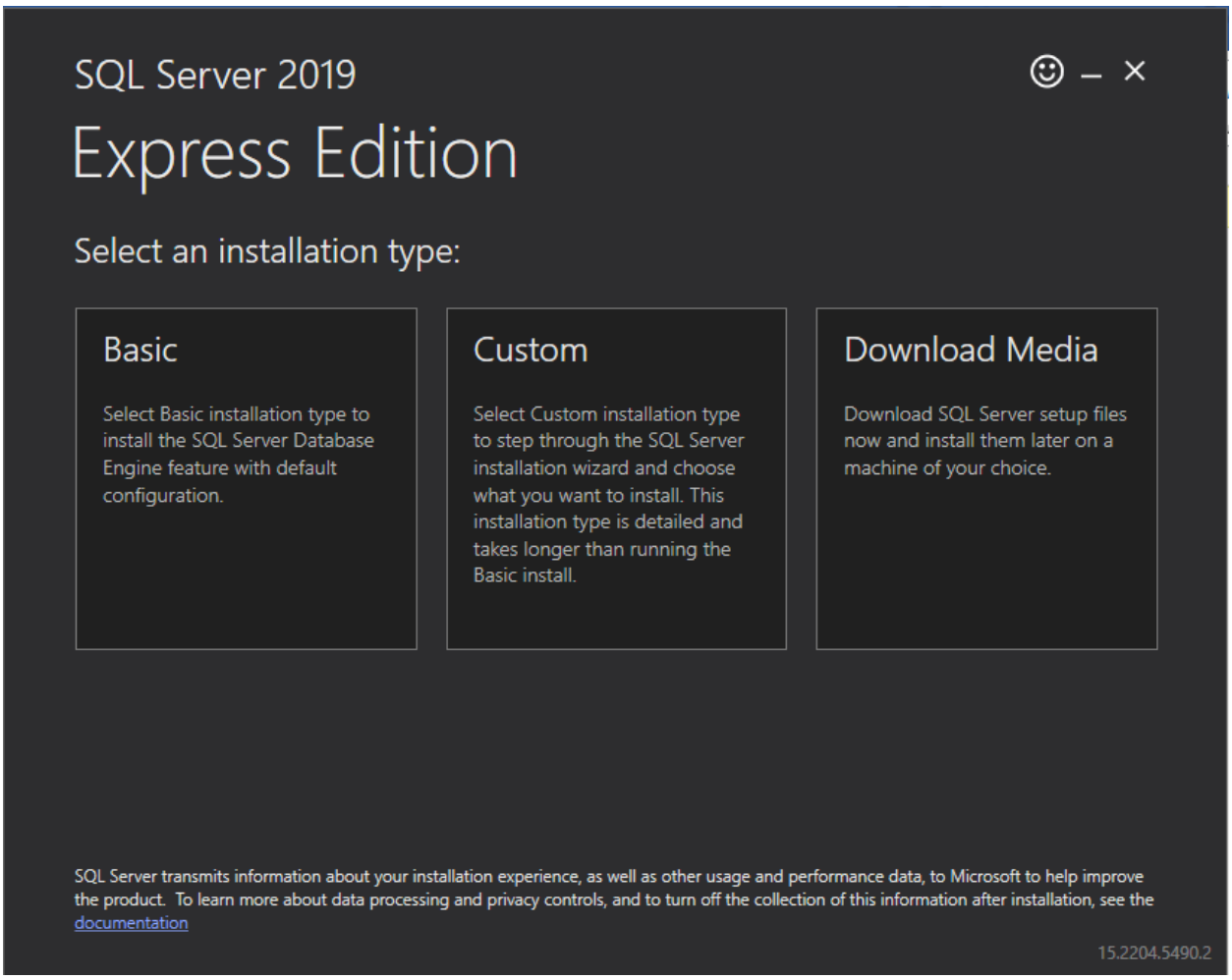
Supported Operating System

Windows 10, Windows 8, Windows 8.1, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016

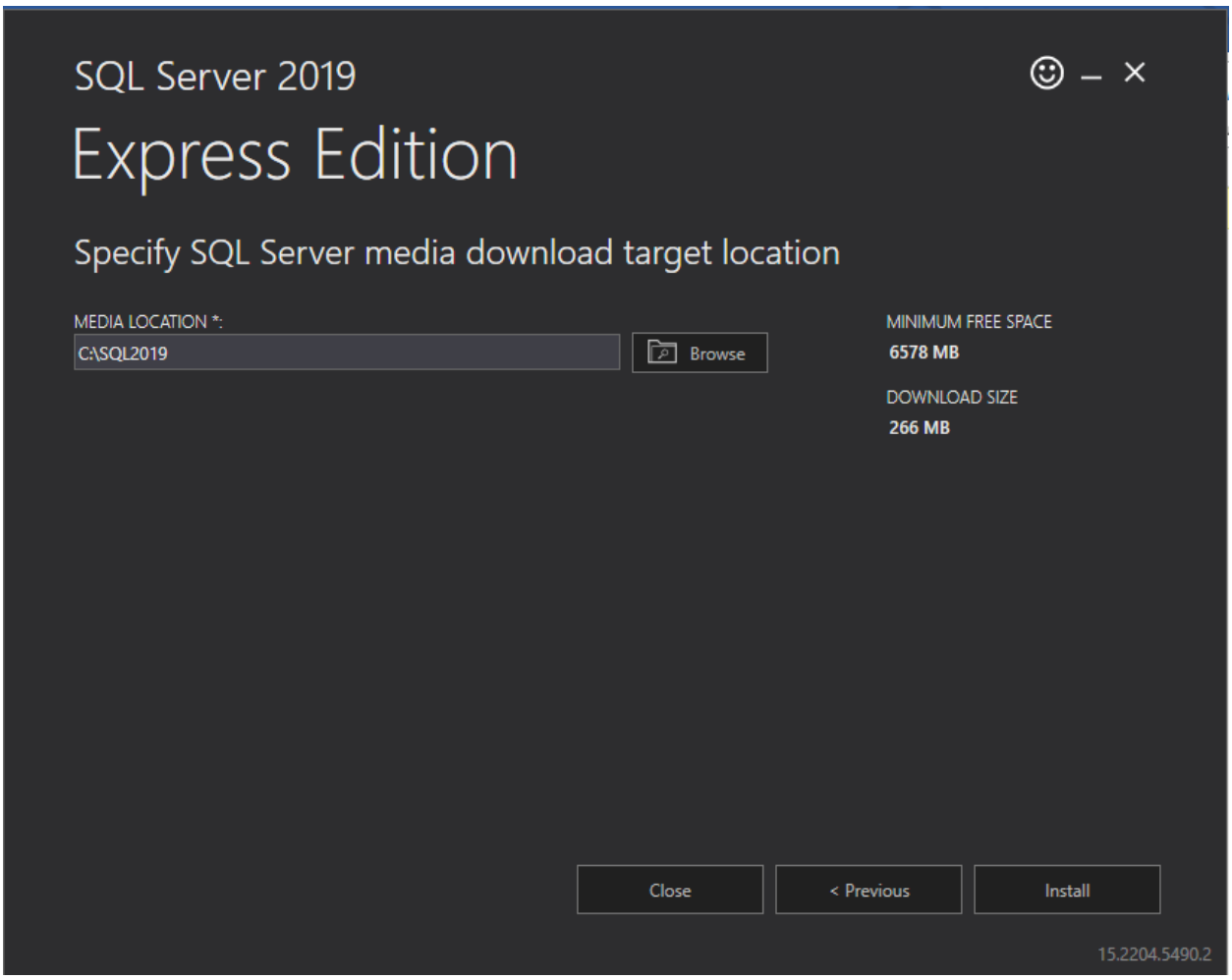
- **Processor**
  - Intel - compatible processor with a minimum speed of 1 GHz or a faster processor
- **RAM**
  - Minimum 512MB
- **Hard Disk Space**
  - 4.2 GB of Disk Space

Limitations : Microsoft SQL Server Express supports 1 physical processor, 1 GB memory, and 10 GB storage

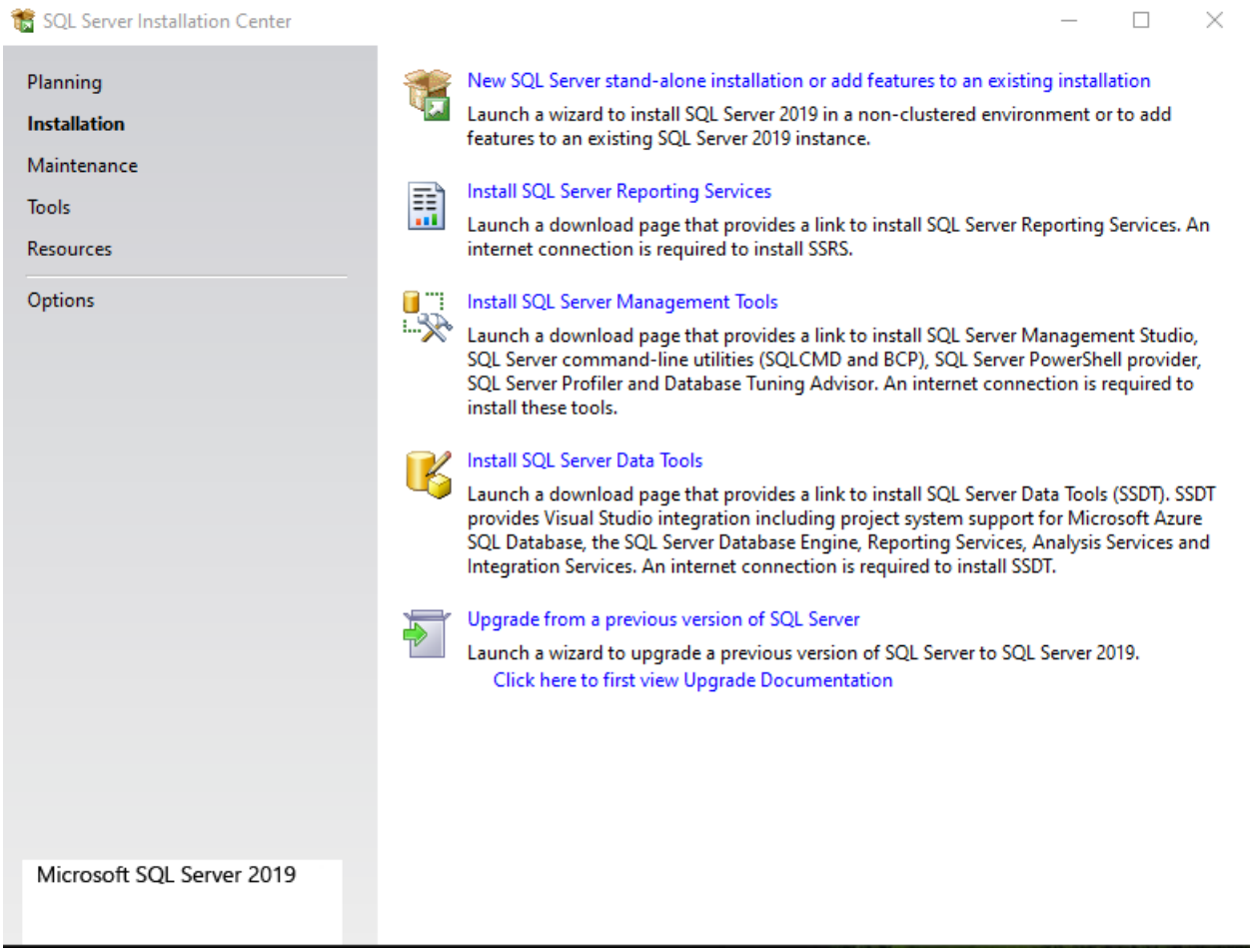
Right-click the executable file, select **Run as Administrator**



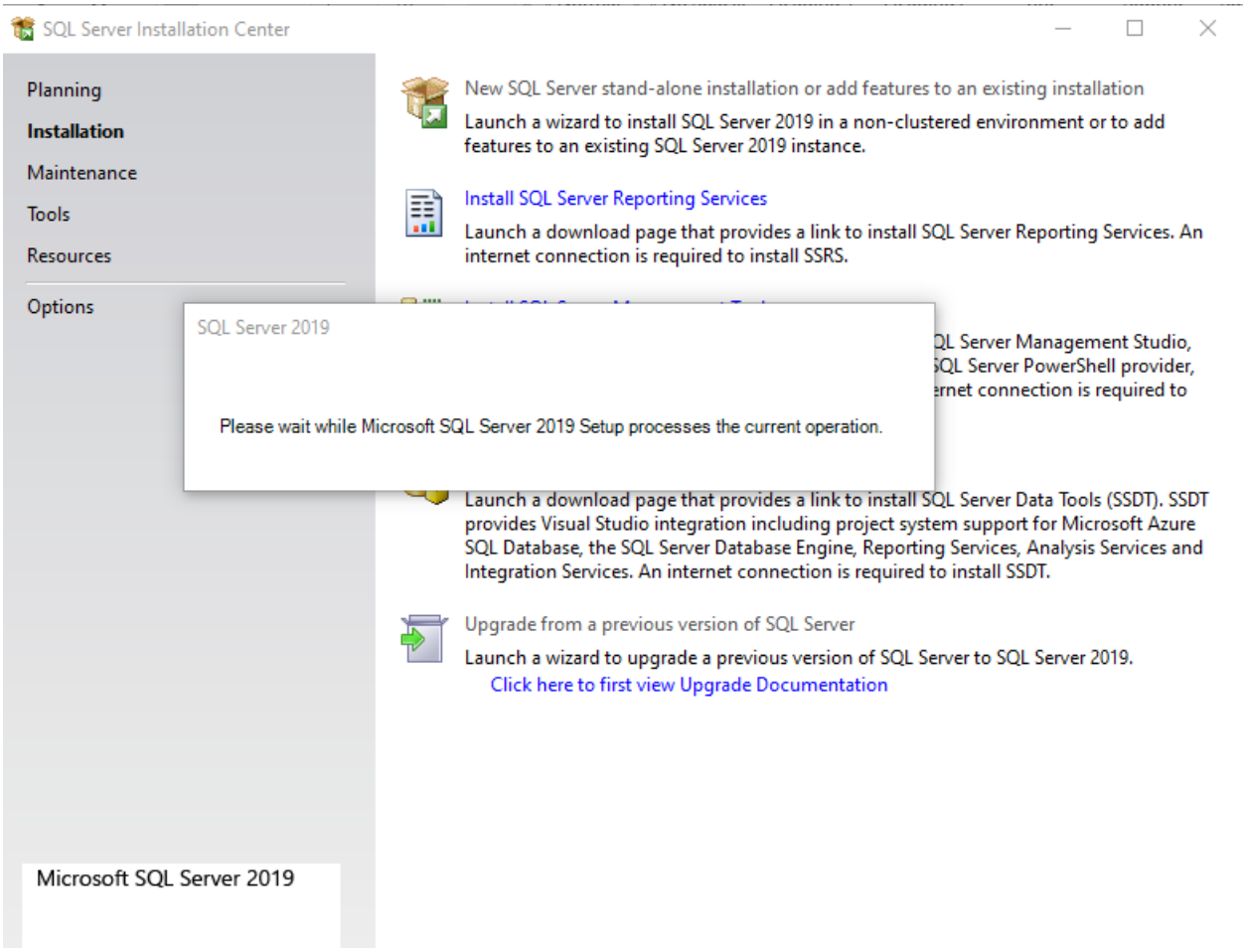
Select Custom

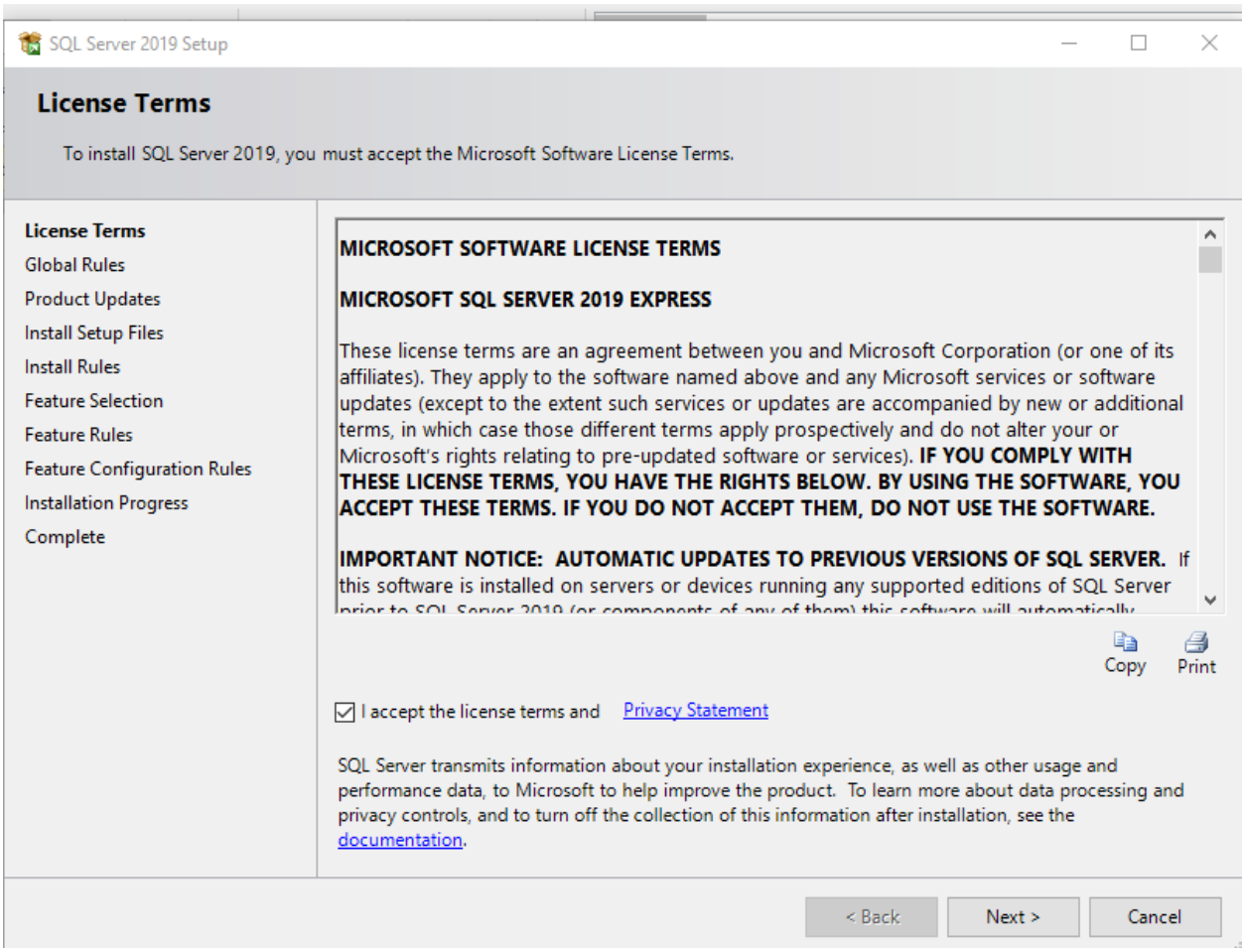


Click Install

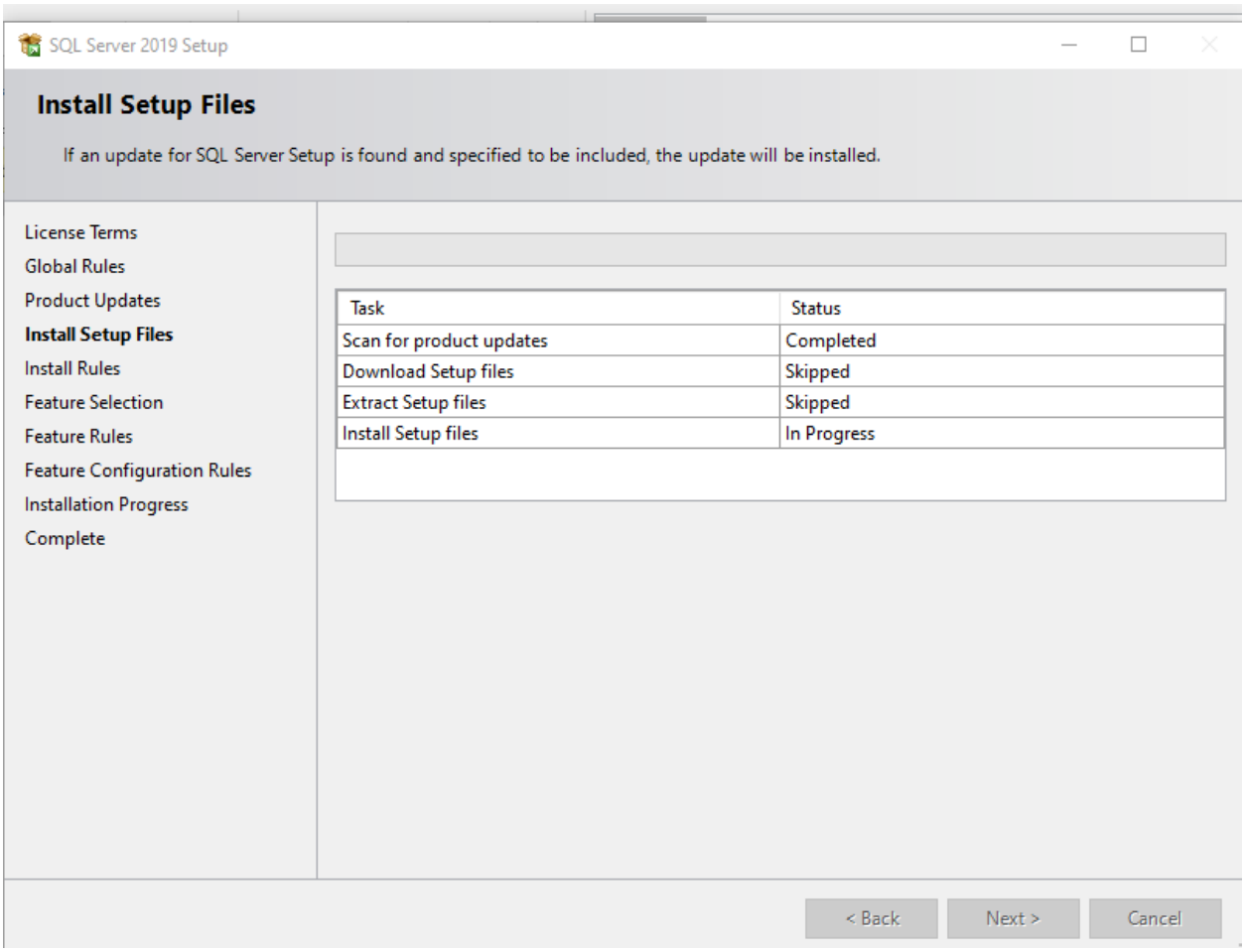


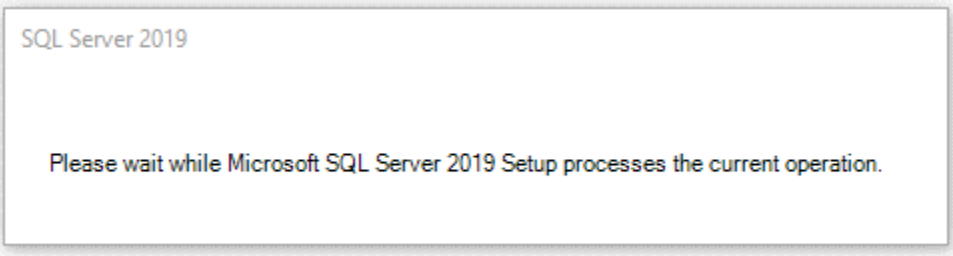
Select New SQL Server

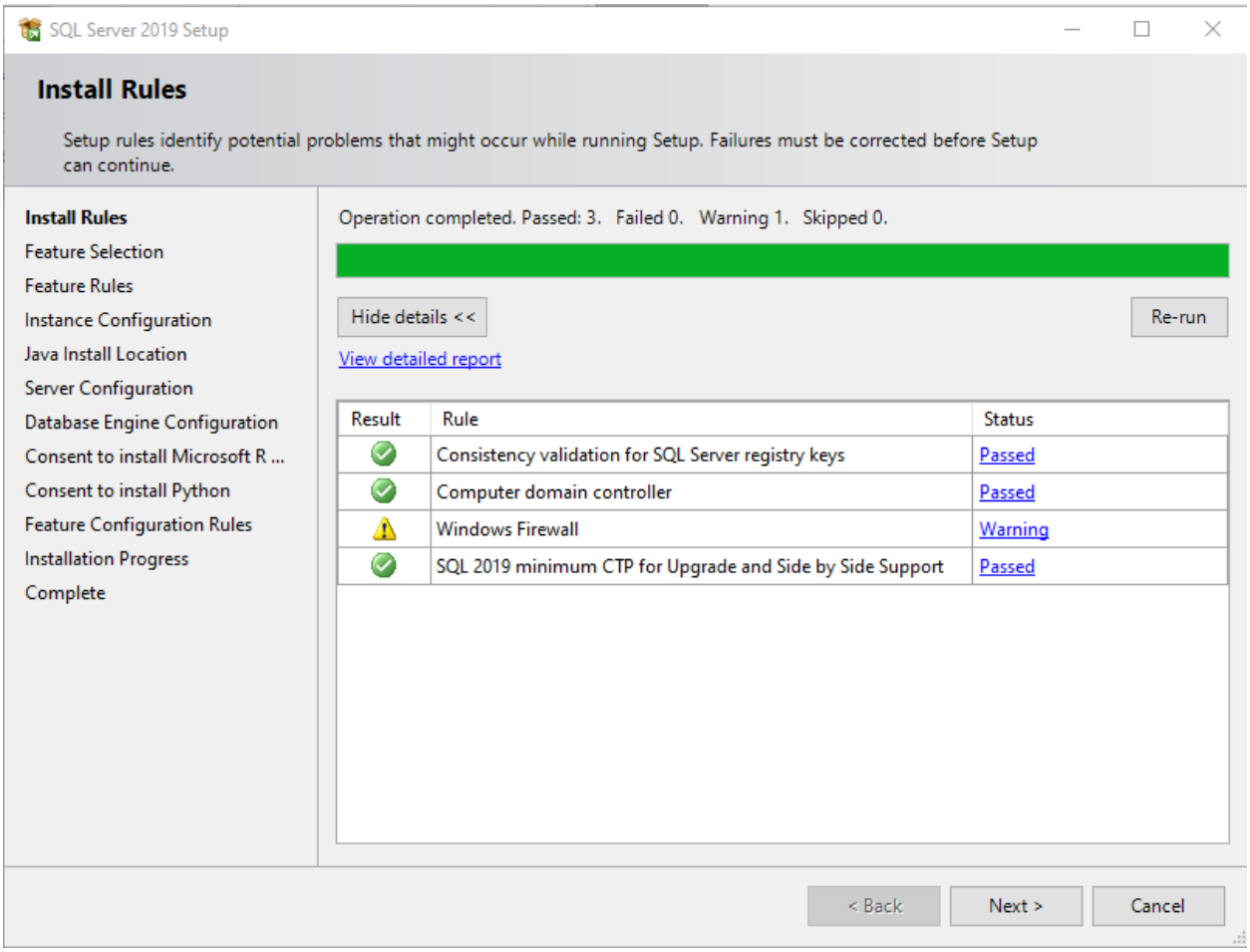

SQL Server Installation Center
Planning
Installation
Maintenance
Tools
Resources
Options
New SQL Server stand-alone installation or add features to an existing installation
Launch a wizard to install SQL Server 2019 in a non-clustered environment or to add features to an existing SQL Server 2019 instance.
Install SQL Server Reporting Services
Launch a download page that provides a link to install SQL Server Reporting Services. An internet connection is required to install SSRS.
SQL Server 2019
Please wait while Microsoft SQL Server 2019 Setup processes the current operation.
Launch a download page that provides a link to install SQL Server Data Tools (SSDT). SSDT provides Visual Studio integration including project system support for Microsoft Azure SQL Database, the SQL Server Database Engine, Reporting Services, Analysis Services and Integration Services. An internet connection is required to install SSDT.
Upgrade from a previous version of SQL Server
Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2019.
Click here to first view Upgrade Documentation
Microsoft SQL Server 2019


SQL Server 2019 Setup
License Terms
To install SQL Server 2019, you must accept the Microsoft Software License Terms.
License Terms
Global Rules
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Feature Configuration Rules
Installation Progress
Complete
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT SQL SERVER 2019 EXPRESS
These license terms are an agreement between you and Microsoft Corporation (or one of its affiliates). They apply to the software named above and any Microsoft services or software updates (except to the extent such services or updates are accompanied by new or additional terms, in which case those different terms apply prospectively and do not alter your or Microsoft's rights relating to pre-updated software or services). IF YOU COMPLY WITH THESE LICENSE TERMS, YOU HAVE THE RIGHTS BELOW. BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS. IF YOU DO NOT ACCEPT THEM, DO NOT USE THE SOFTWARE.
IMPORTANT NOTICE: AUTOMATIC UPDATES TO PREVIOUS VERSIONS OF SQL SERVER. If this software is installed on servers or devices running any supported editions of SQL Server
Copy
Print
I accept the license terms and
Privacy Statement
SQL Server transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about data processing and privacy controls, and to turn off the collection of this information after installation, see the documentation.
< Back
Next >
Cancel

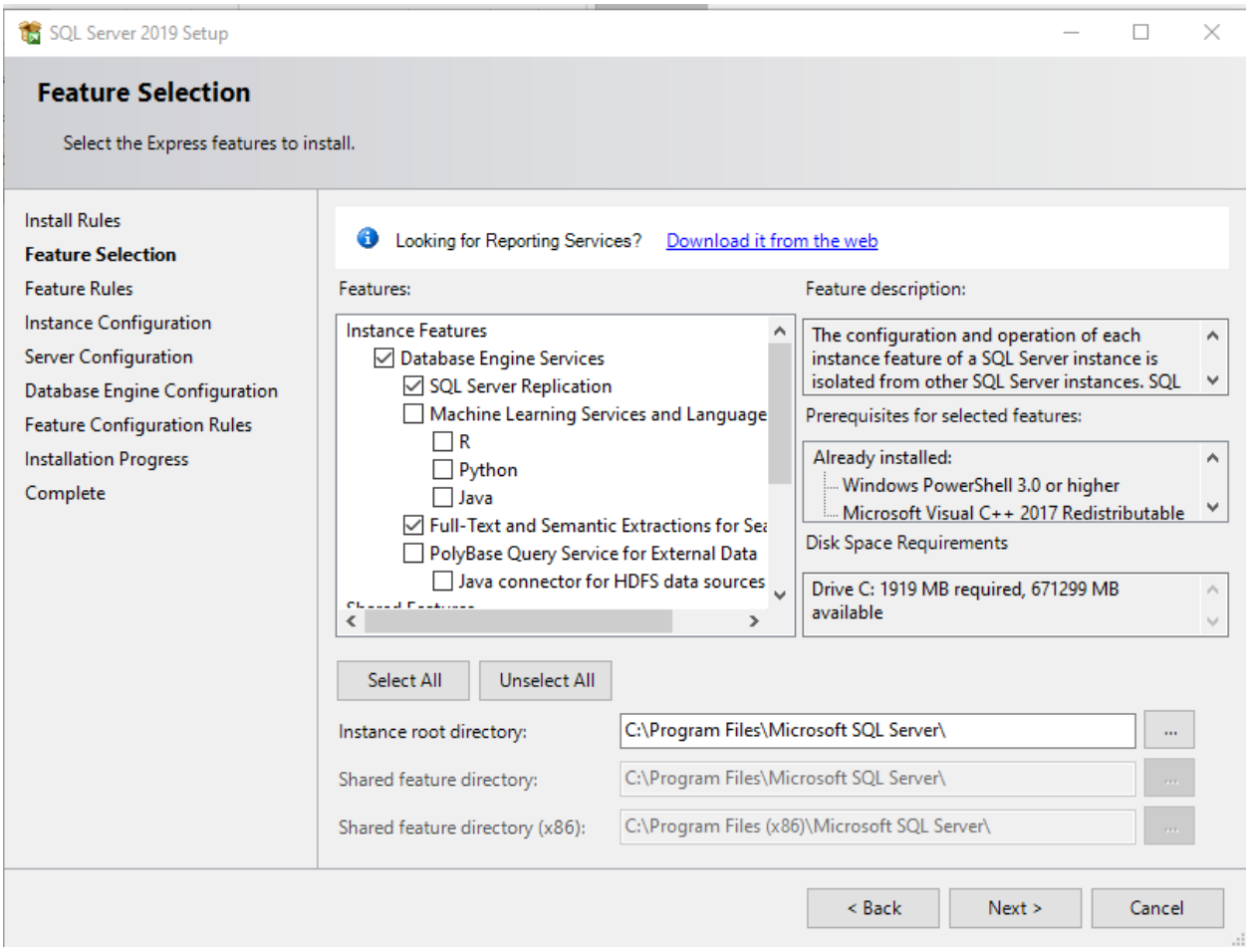
Click Next


SQL Server 2019 Setup
Install Setup Files
If an update for SQL Server Setup is found and specified to be included, the update will be installed.
License Terms
Global Rules
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Feature Configuration Rules
Installation Progress
Complete
Task
Status
Scan for product updates
Completed
Download Setup files
Skipped
Extract Setup files
Skipped
Install Setup files
In Progress
< Back
Next >
Cancel


SQL Server 2019
Please wait while Microsoft SQL Server 2019 Setup processes the current operation.


SQL Server 2019 Setup
Install Rules
Setup rules identify potential problems that might occur while running Setup. Failures must be corrected before Setup can continue.
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Java Install Location
Server Configuration
Database Engine Configuration
Consent to install Microsoft R ...
Consent to install Python
Feature Configuration Rules
Installation Progress
Complete
Operation completed. Passed: 3. Failed 0. Warning 1. Skipped 0.
Hide details <<
Re-run
View detailed report
Result
Rule
Status
Consistency validation for SQL Server registry keys
Passed
Computer domain controller
Passed
Windows Firewall
Warning
SQL 2019 minimum CTP for Upgrade and Side by Side Support
Passed
< Back
Next >
Cancel

Click Next

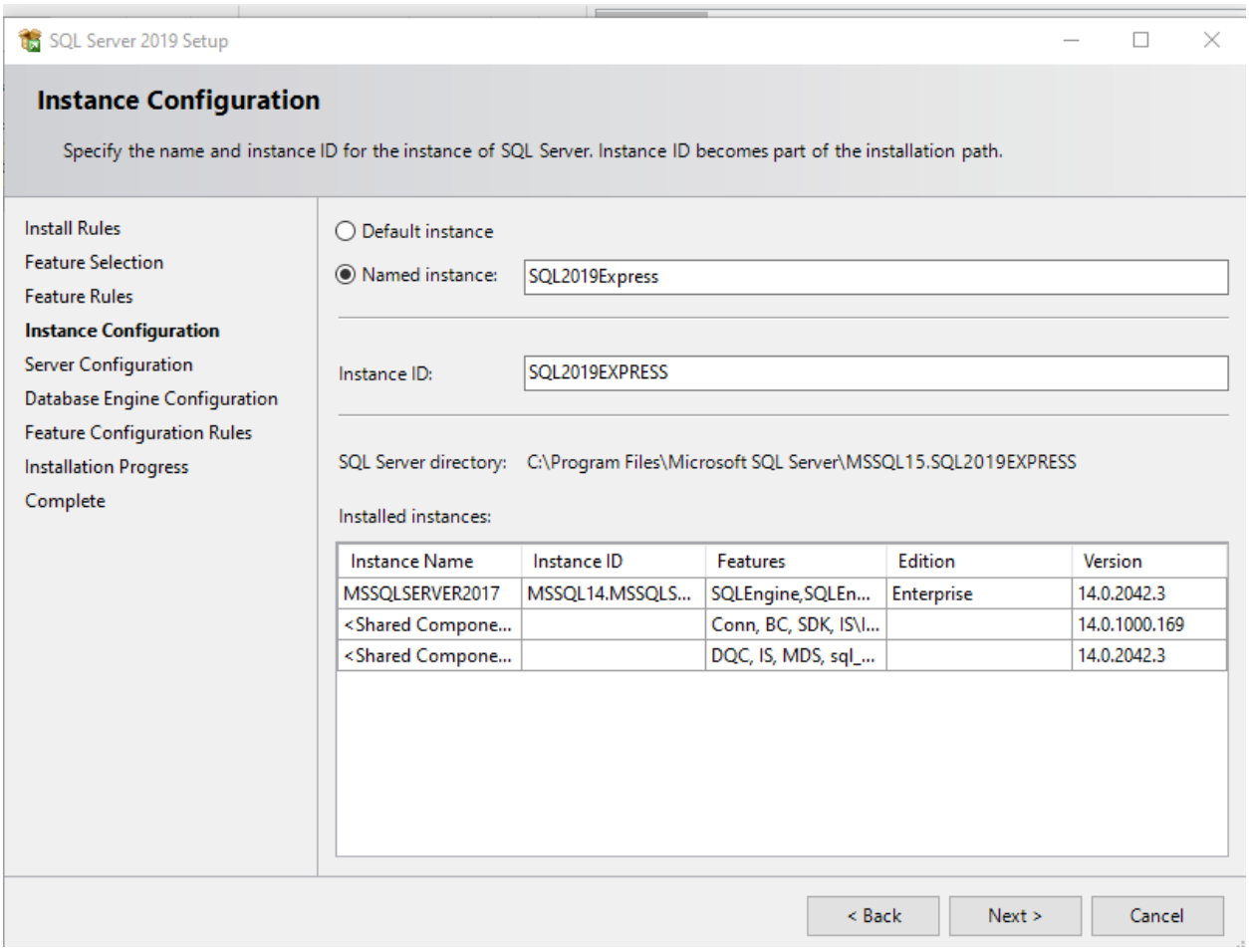


Select All

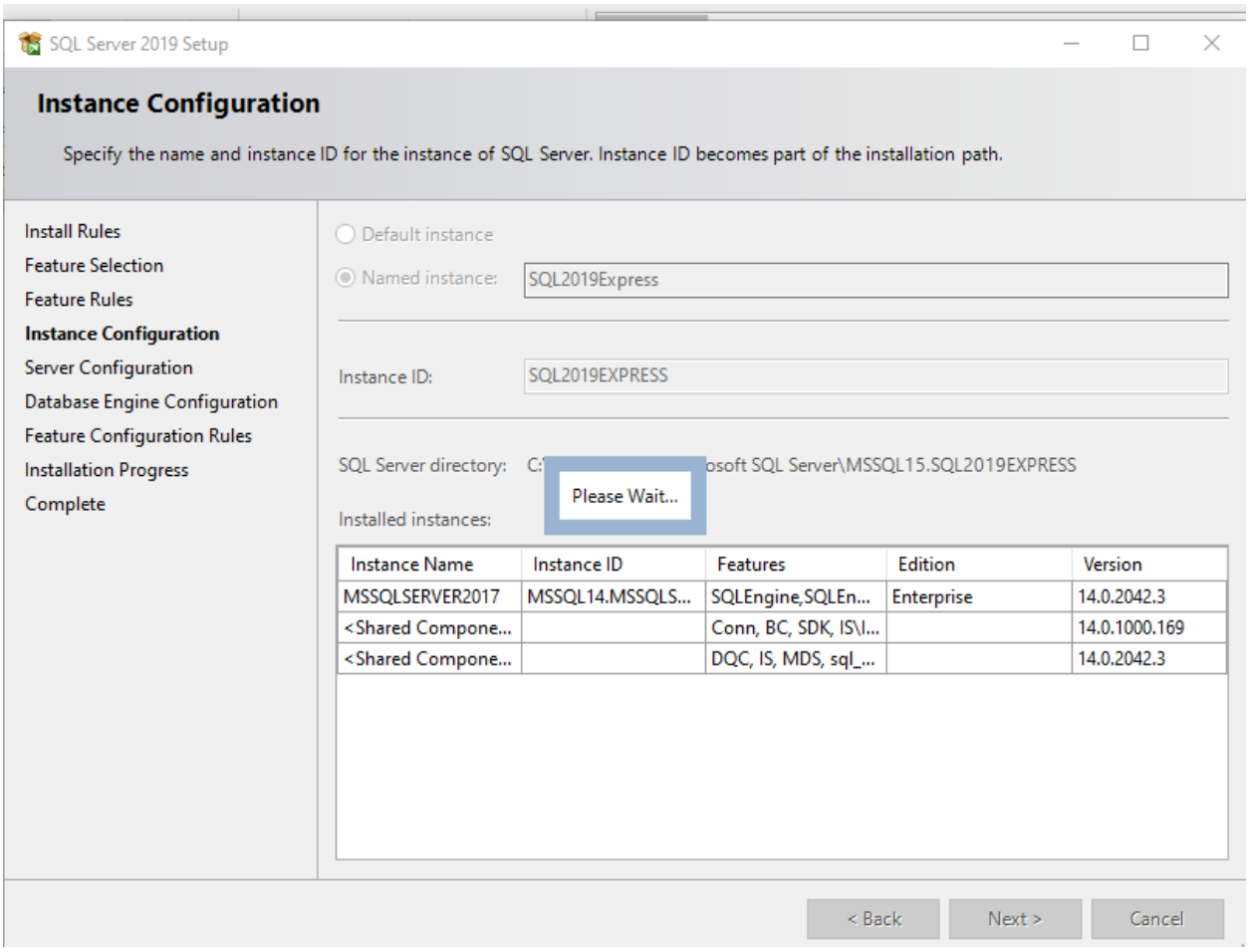
Uncheck

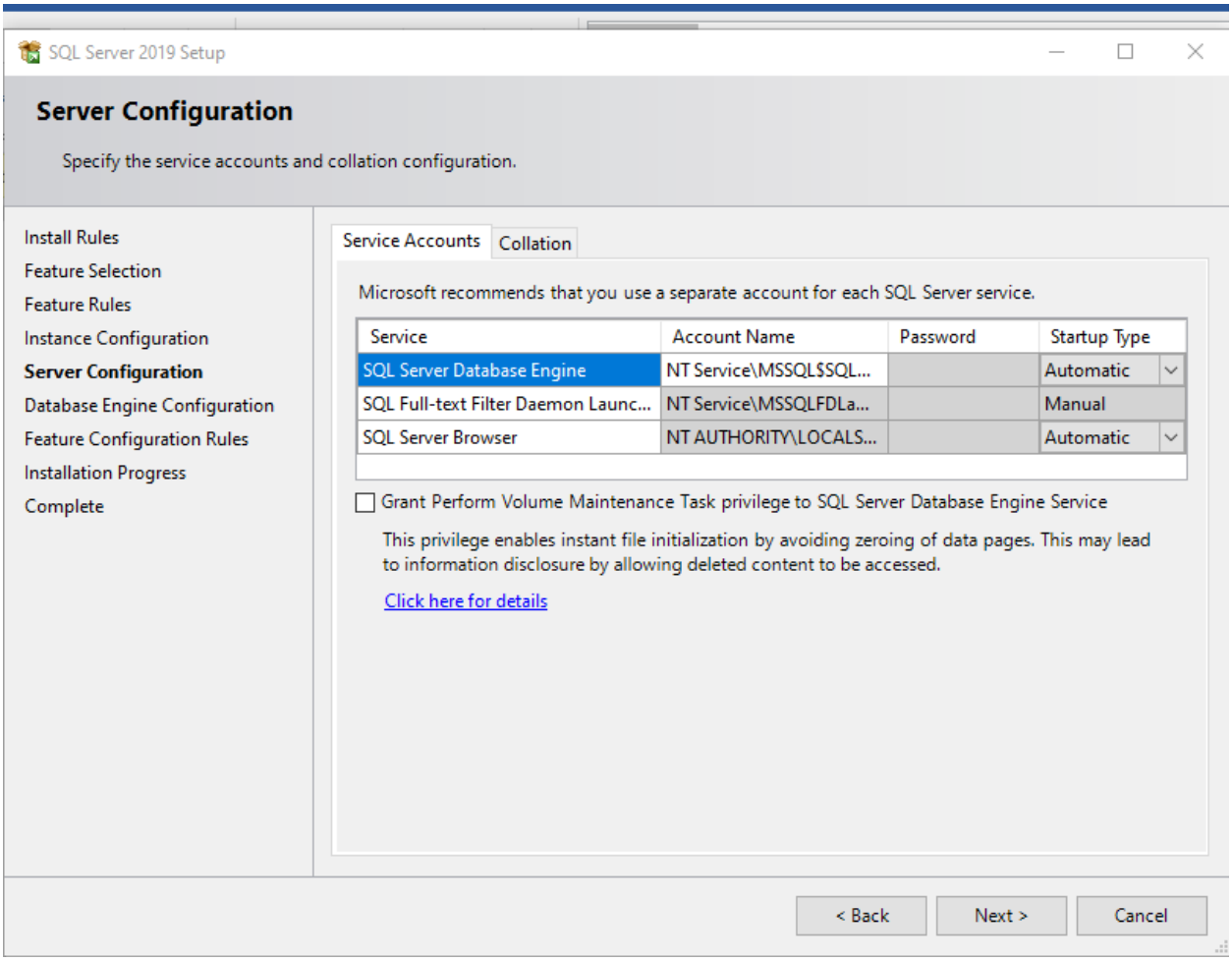
- Machine Learning….
- Polybase ….

Click Next

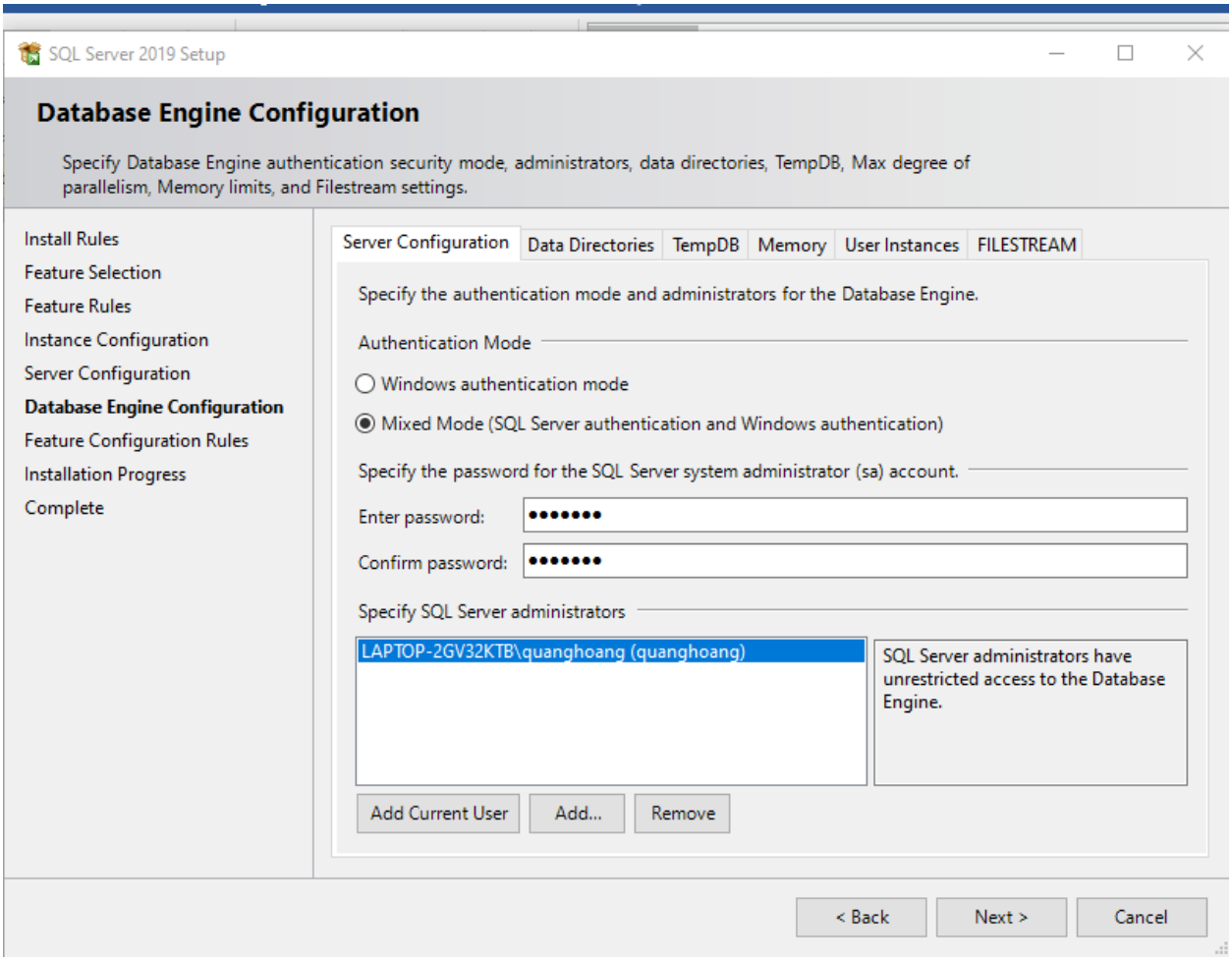

SQL Server 2019 Setup
Instance Configuration
Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Installation Progress
Complete
Default instance
Named instance:
SQL2019Express
Instance ID:
SQL2019EXPRESS
SQL Server directory:
C:\Program Files\Microsoft SQL Server\MSSQL15.SQL2019EXPRESS
Installed instances:
Instance Name
Instance ID
Features
Edition
Version
MSSQLSERVER2017
MSSQL14.MSSQLS...
SQLEngine,SQLEn...
Enterprise
14.0.2042.3
<Shared Compone...
Conn, BC, SDK, IS\I...
14.0.1000.169
<Shared Compone...
DQC, IS, MDS, sql_...
14.0.2042.3
< Back
Next >
Cancel

Click Next


SQL Server 2019 Setup
Instance Configuration
Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Installation Progress
Complete
Default instance
Named instance:
SQL2019Express
Instance ID:
SQL2019EXPRESS
SQL Server directory:
C:
osoft SQL Server\MSSQL15.SQL2019EXPRESS
Please Wait...
Installed instances:
Instance Name
Instance ID
Features
Edition
Version
MSSQLSERVER2017
MSSQL14.MSSQLS...
SQLEngine,SQLEn...
Enterprise
14.0.2042.3
<Shared Compone...
Conn, BC, SDK, IS\I...
14.0.1000.169
<Shared Compone...
DQC, IS, MDS, sql_...
14.0.2042.3
< Back
Next >
Cancel


SQL Server 2019 Setup
Server Configuration
Specify the service accounts and collation configuration.
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Installation Progress
Complete
Service Accounts
Collation
Microsoft recommends that you use a separate account for each SQL Server service.
Service
Account Name
Password
Startup Type
SQL Server Database Engine
NT Service\MSSQL$SQL...
Automatic
SQL Full-text Filter Daemon Launc...
NT Service\MSSQLFDLa...
Manual
SQL Server Browser
NT AUTHORITY\LOCALS...
Automatic
Grant Perform Volume Maintenance Task privilege to SQL Server Database Engine Service
This privilege enables instant file initialization by avoiding zeroing of data pages. This may lead to information disclosure by allowing deleted content to be accessed.
Click here for details
< Back
Next >
Cancel

Click Next

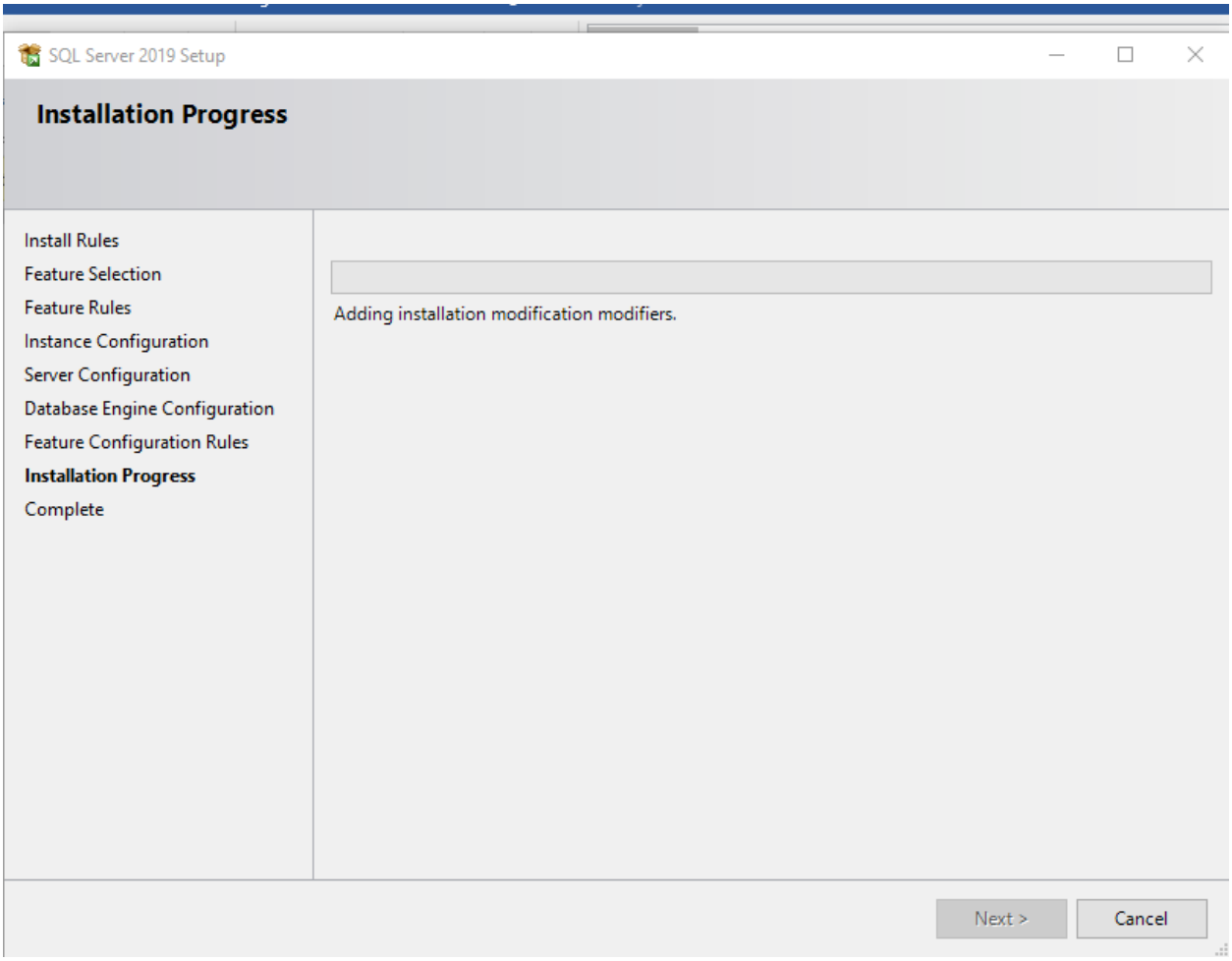


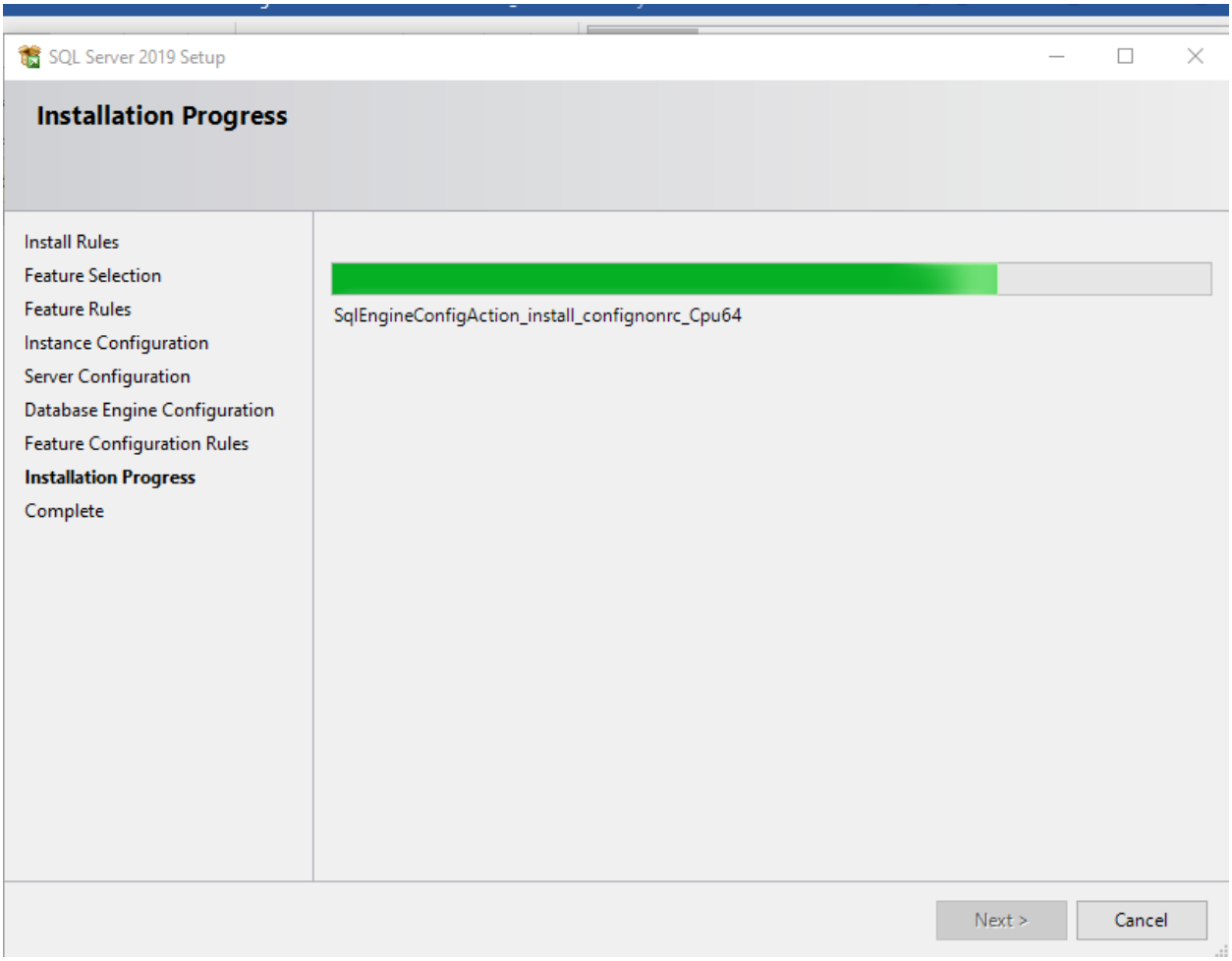
Select Mixed Mode

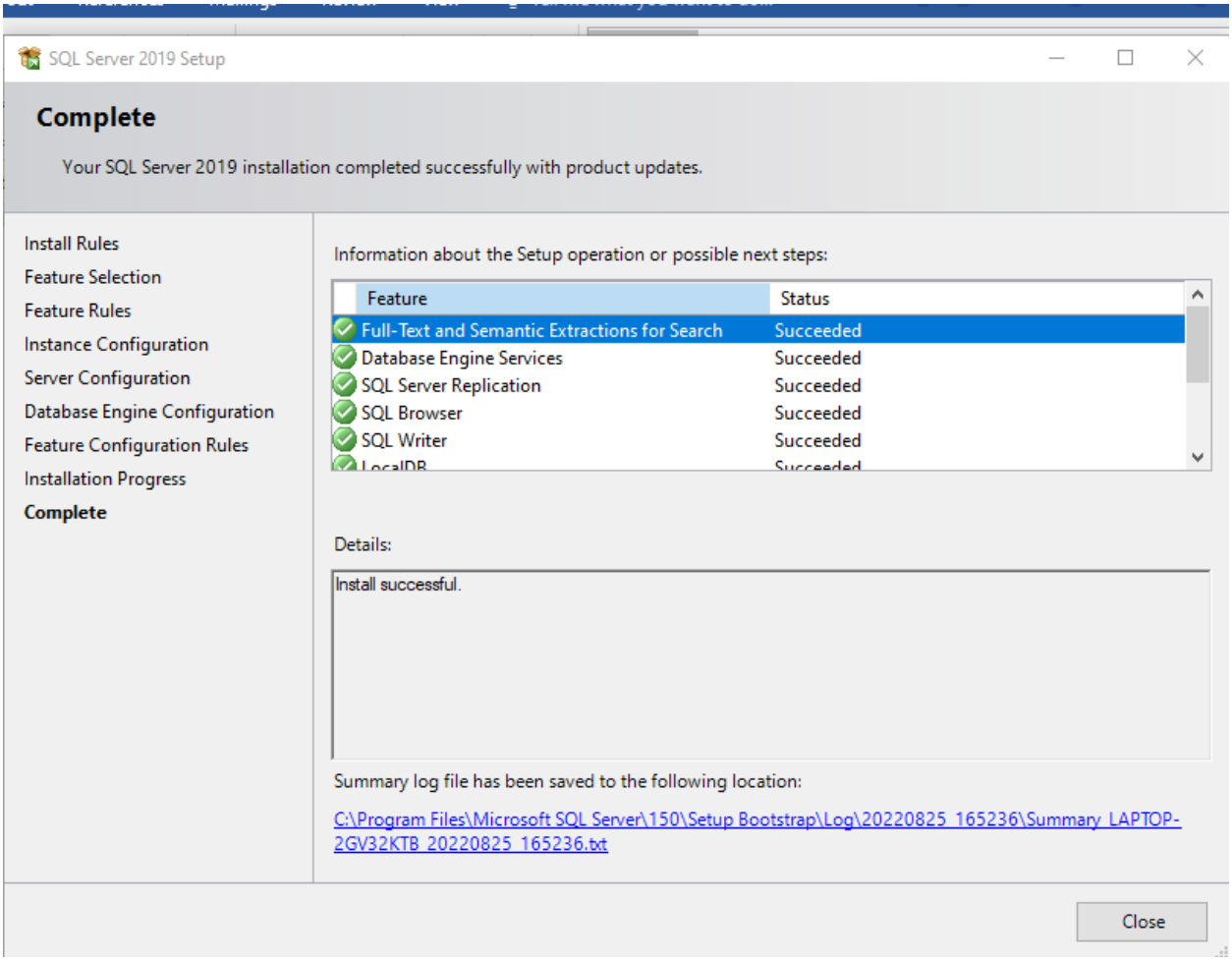
Enter password

Confirm password

Click Next


SQL Server 2019 Setup
Installation Progress
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Installation Progress
Complete
Adding installation modification modifiers.
Next >
Cancel


SQL Server 2019 Setup
Installation Progress
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Installation Progress
Complete
SqlEngineConfigAction_install_confignonrc_Cpu64
Next >
Cancel



V. SQL Server Management Studio 18

The link to download

[Download SQL Server Management Studio (SSMS) - SQL Server Management Studio (SSMS) | Microsoft Docs]

Download SSMS

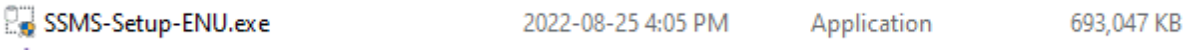
To download SSMS 19 Preview 3, visit Download SSMS 19.

Free Download for SQL Server Management Studio (SSMS) 18.12.1

SSMS 18.12.1 is the latest general availability (GA) version. If you have a previous GA version of SSMS 18 installed, installing SSMS 18.12.1 upgrades it to 18.12.1.

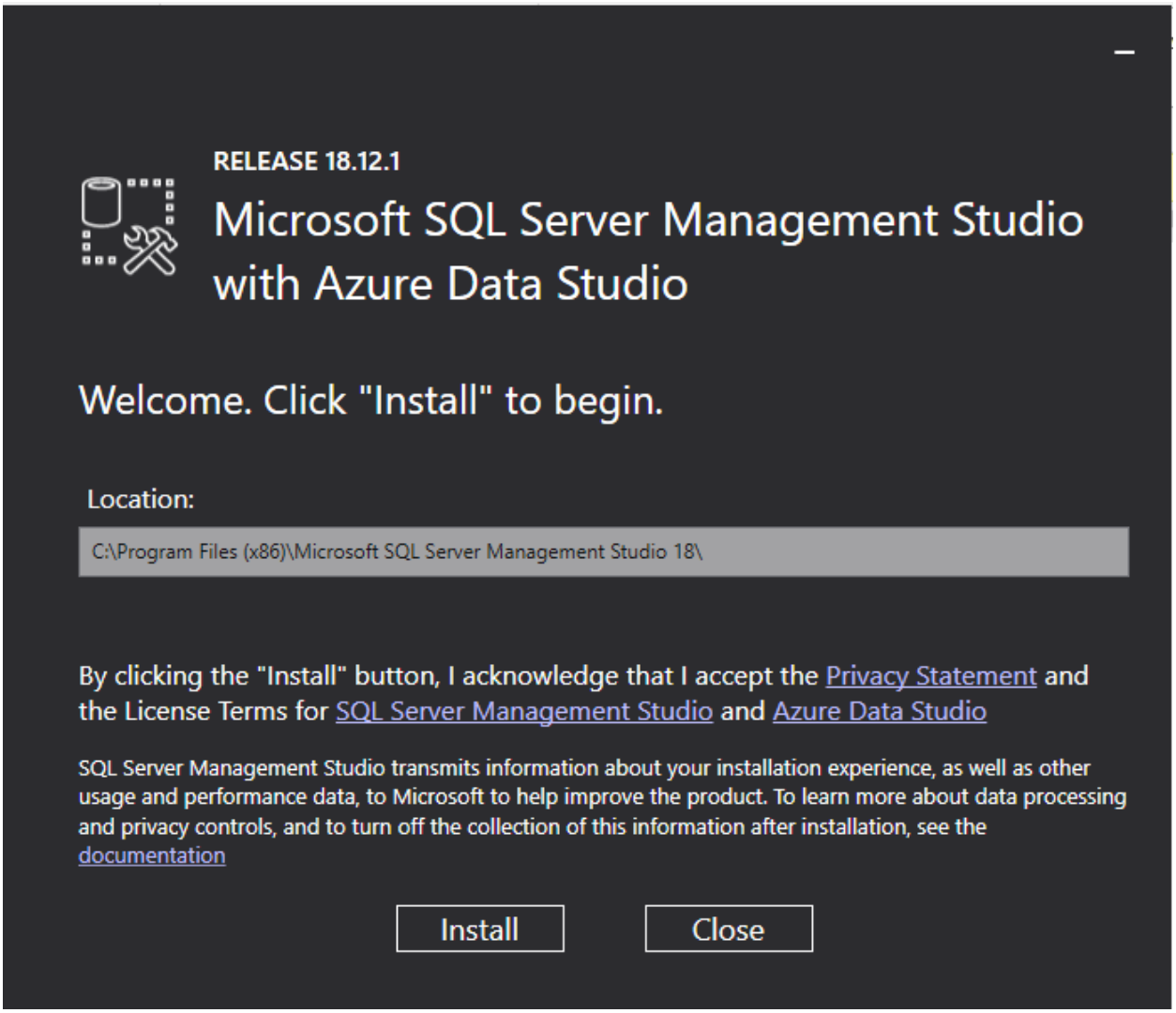
- Release number: 18.12.1
- Build number: 15.0.18424.0
- Release date: June 21, 2022

Click **Free Download for SQL Server Management Studio….**

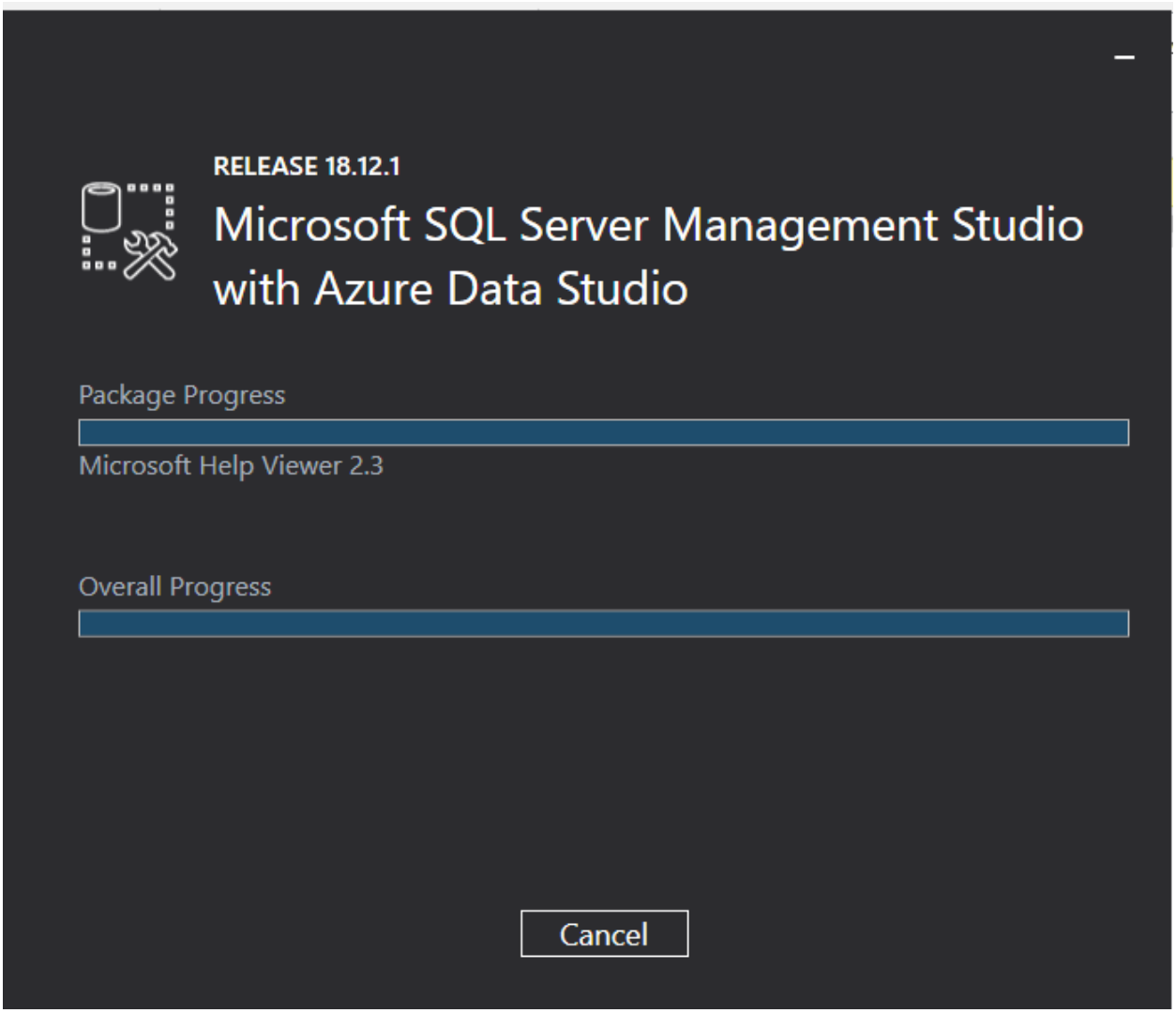


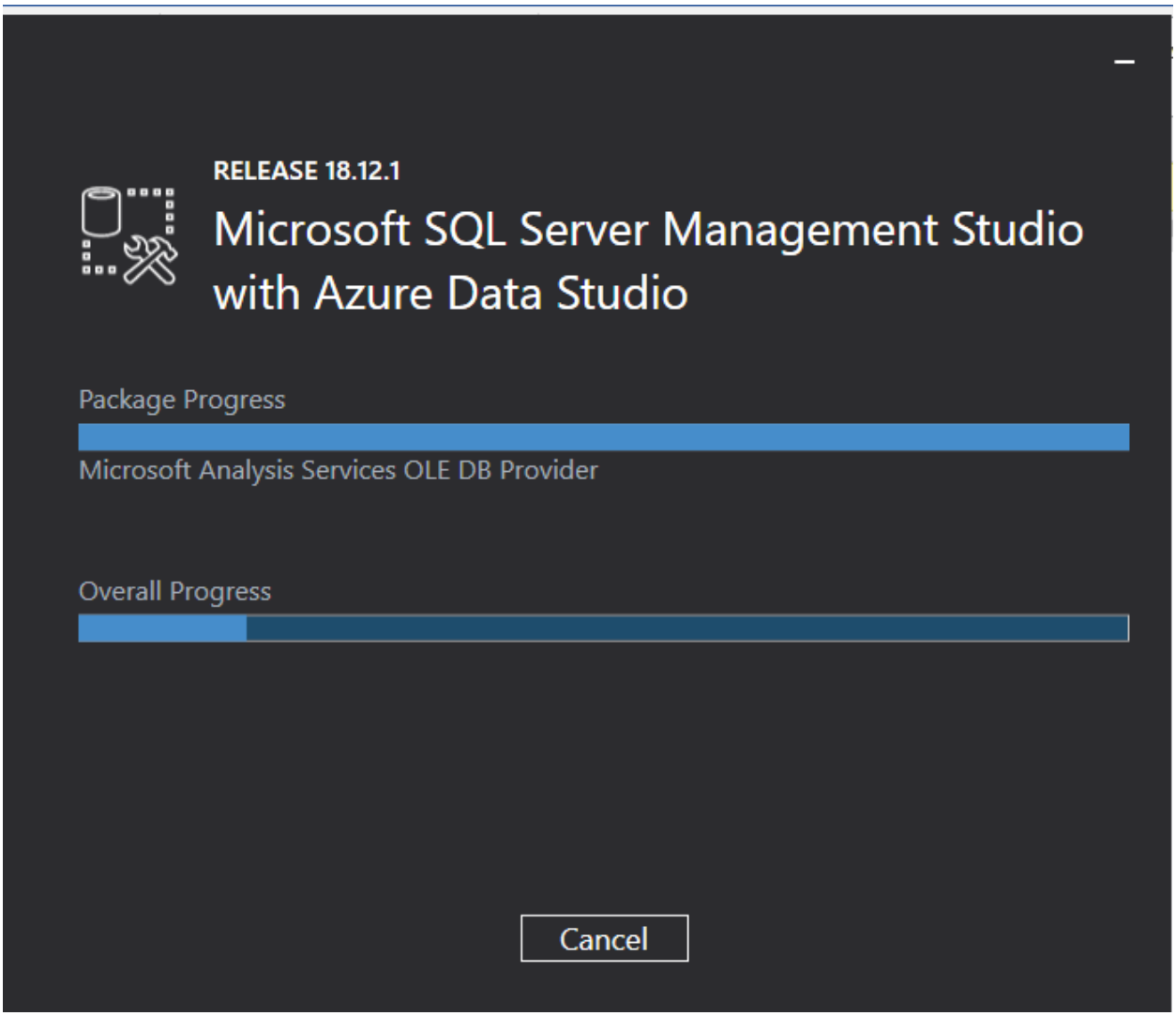
Right-click the file

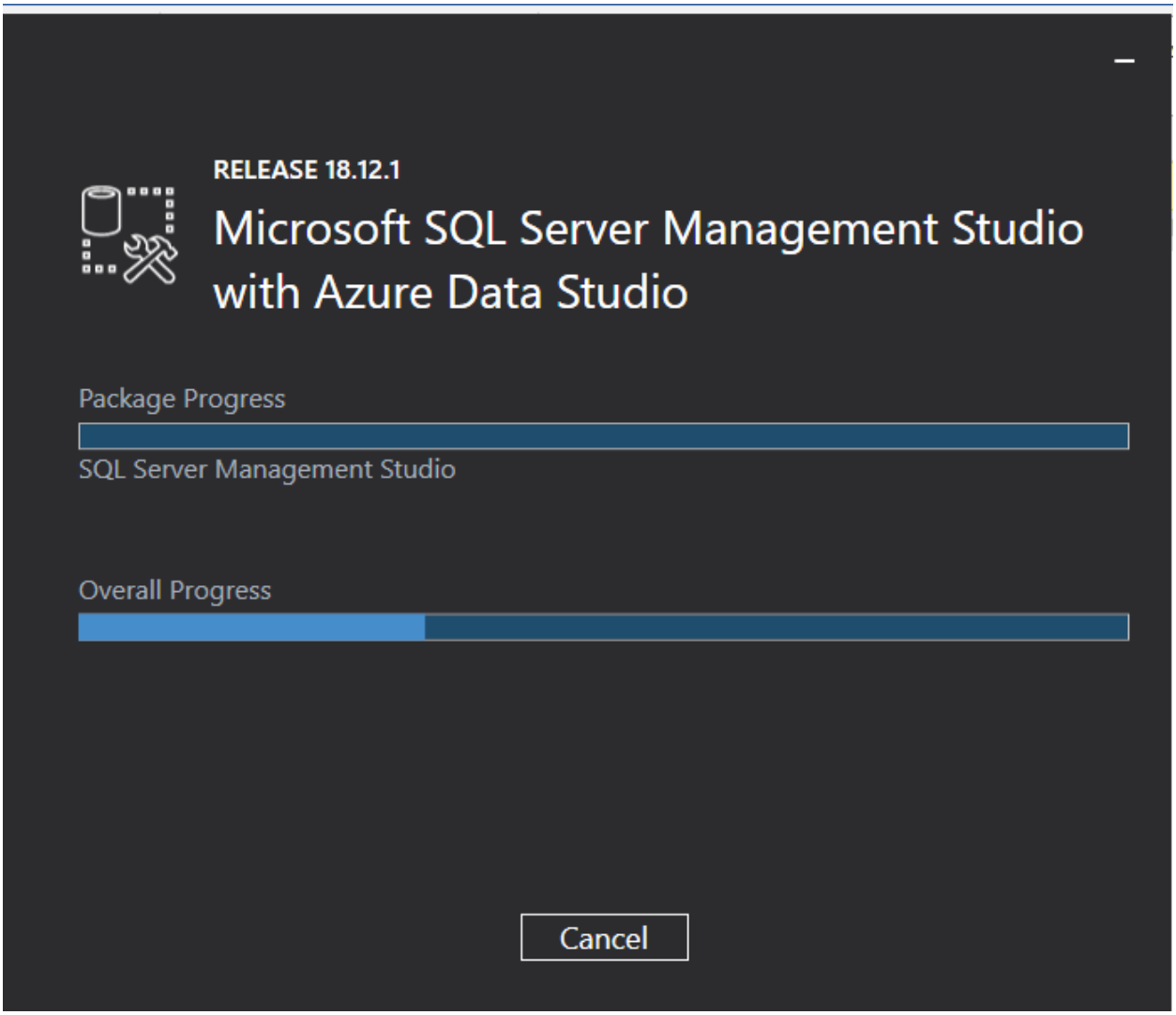
Select Run as Administrator

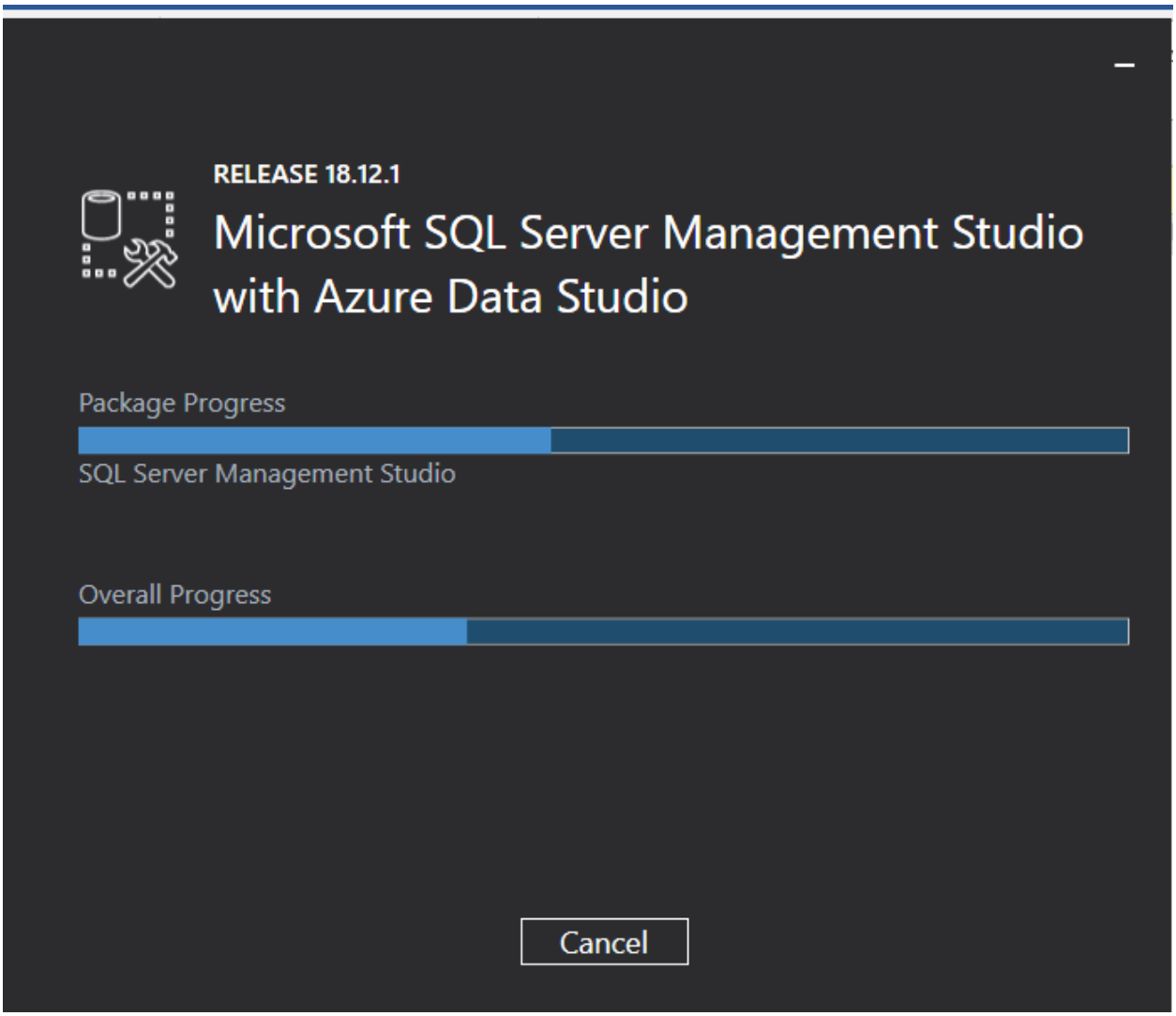


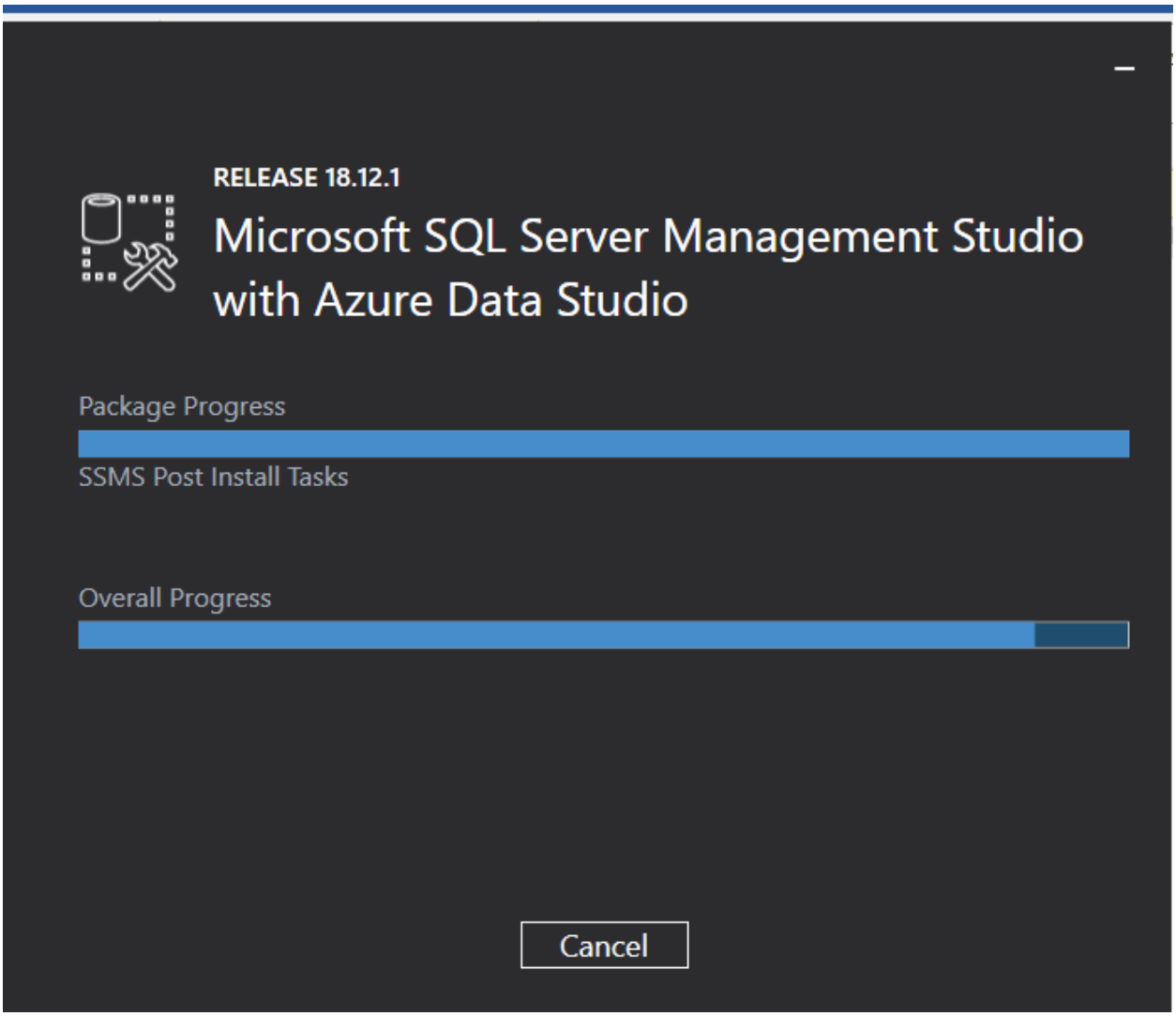
Click Install

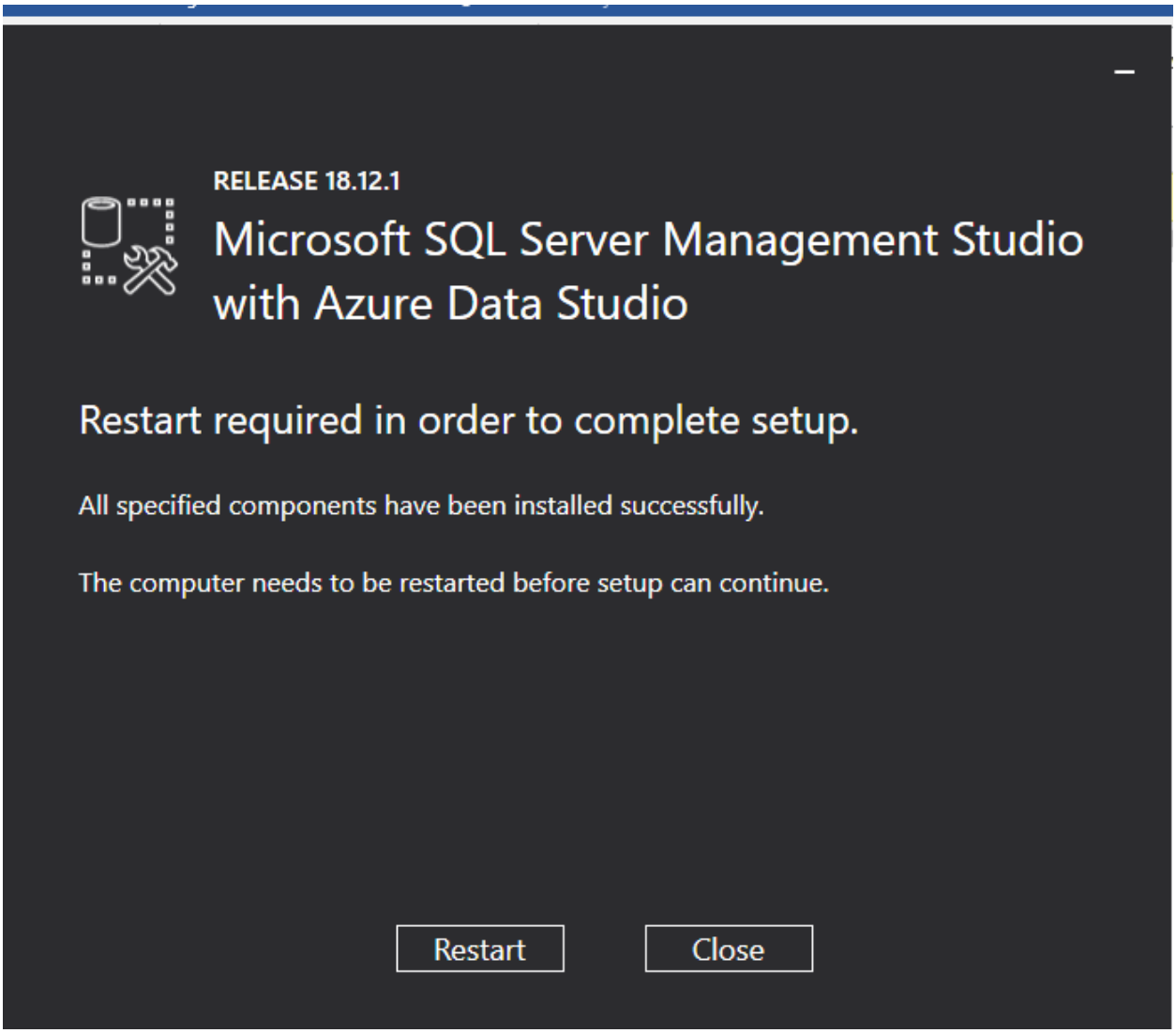

RELEASE 18.12.1
Microsoft SQL Server Management Studio with Azure Data Studio
Package Progress
Microsoft Help Viewer 2.3
Overall Progress
Cancel


RELEASE 18.12.1
Microsoft SQL Server Management Studio with Azure Data Studio
Package Progress
Microsoft Analysis Services OLE DB Provider
Overall Progress
Cancel


RELEASE 18.12.1
Microsoft SQL Server Management Studio with Azure Data Studio
Package Progress
SQL Server Management Studio
Overall Progress
Cancel

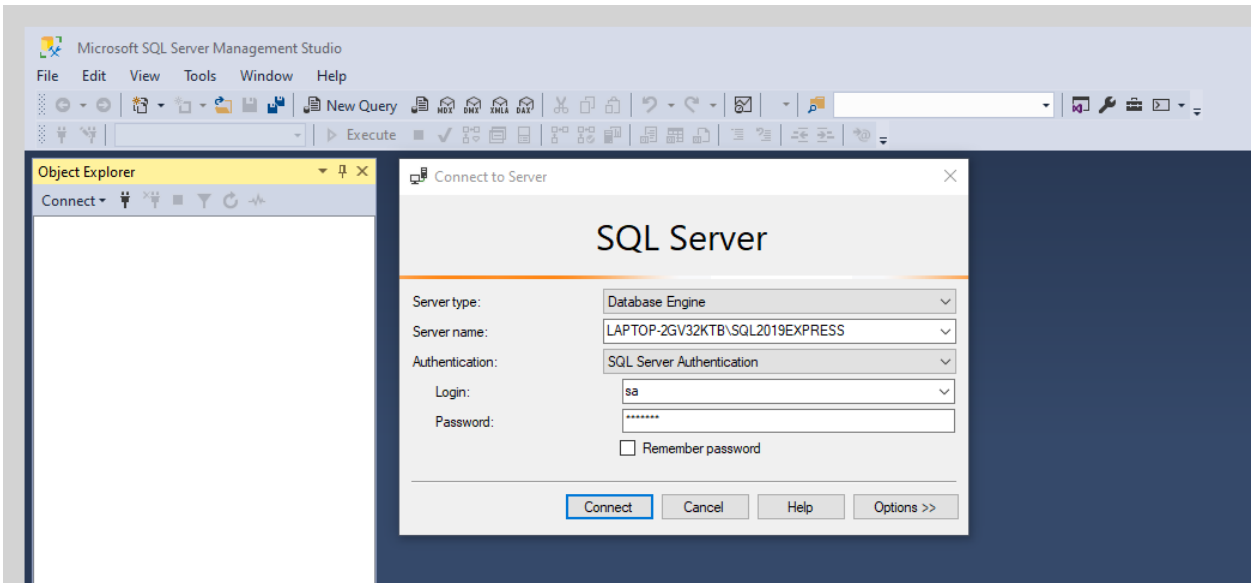

RELEASE 18.12.1
Microsoft SQL Server Management Studio with Azure Data Studio
Package Progress
SQL Server Management Studio
Overall Progress
Cancel

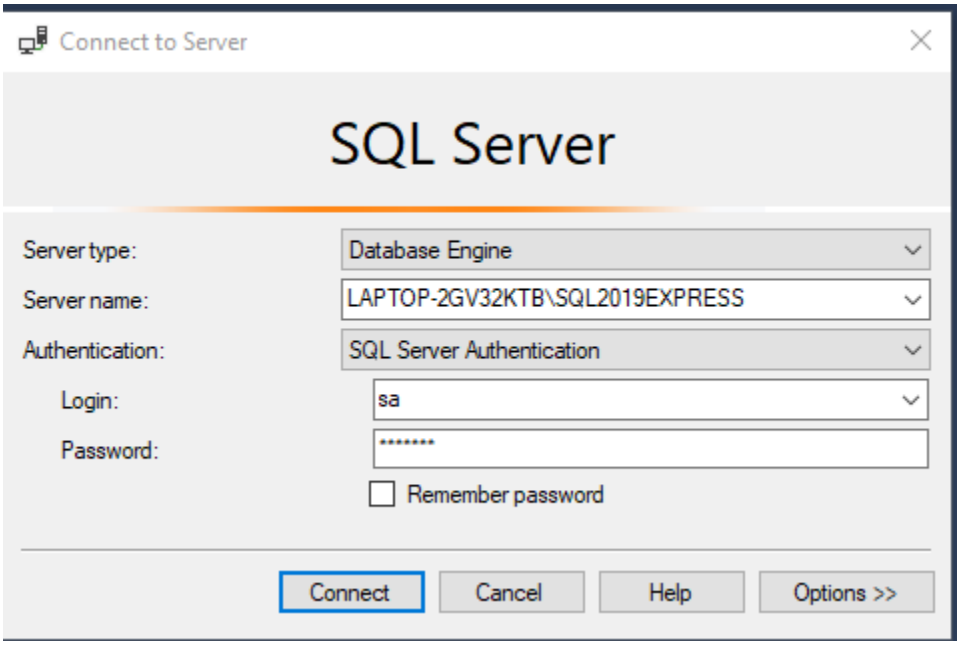

RELEASE 18.12.1
Microsoft SQL Server Management Studio with Azure Data Studio
Package Progress
SSMS Post Install Tasks
Overall Progress
Cancel

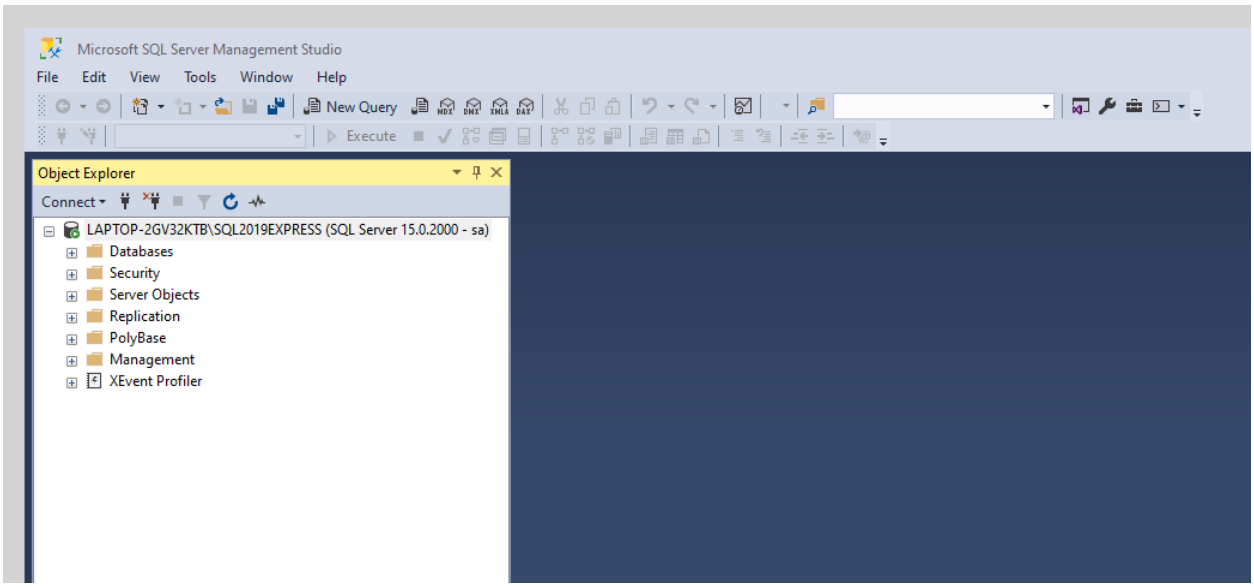


VI. Testing the Connection to SQL Server 2019 Express

Start SQL Server Management Studio 18


Microsoft SQL Server Management Studio
File Edit View Tools Window Help
New Query
Execute
Object Explorer
Connect
Connect to Server
SQL Server
Server type: Database Engine
Server name: LAPTOP-2GV32KTB\SQL2019EXPRESS
Authentication: SQL Server Authentication
Login: sa
Password:
Remember password
Connect
Cancel
Help
Options >>


Connect to Server
SQL Server
Server type: Database Engine
Server name: LAPTOP-2GV32KTB\SQL2019EXPRESS
Authentication: SQL Server Authentication
Login: sa
Password:
Remember password
Connect
Cancel
Help
Options >>


Microsoft SQL Server Management Studio
File
Edit
View
Tools
Window
Help
New Query
Execute
Object Explorer
Connect
LAPTOP-2GV32KTB\SQL2019EXPRESS (SQL Server 15.0.2000 - sa)
Databases
Security
Server Objects
Replication
PolyBase
Management
XEvent Profiler