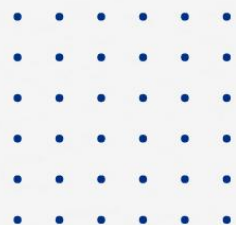
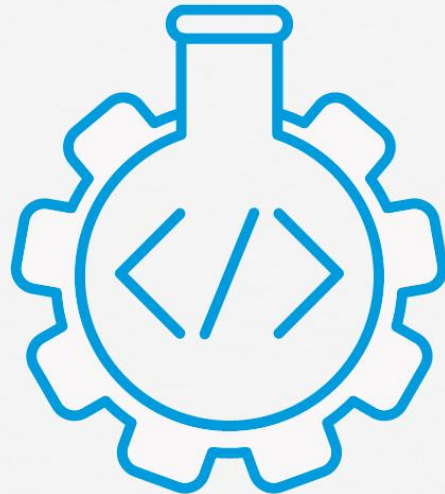


# Azure Fundamentals Certification Training Lab Guide



# Azure Fundamentals Training: Lab Guide

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Our learn-by-doing method enables you to build practical/coding experience that sticks. 95% of our learners say they remember more when they learn by doing hands-on.

The recommended hardware and software requirements for our training are given below:

## Hardware Requirements

- 1.8 GHz or faster 64-bit processor; Intel i5 or better recommended.
- 4 GB or higher RAM; 8GB recommended.
- 40 GB of available hard disk space.
- DirectX 9-capable video card that runs at 1024 x 768 or higher display resolution.

## Software Requirements

- Windows 10 or Windows 11 OS or Windows Server 2016 or Higher
- SQL Server 2019 or higher and SQL Server Management Studio
- Microsoft Azure Storage Explorer

## Software Download Links

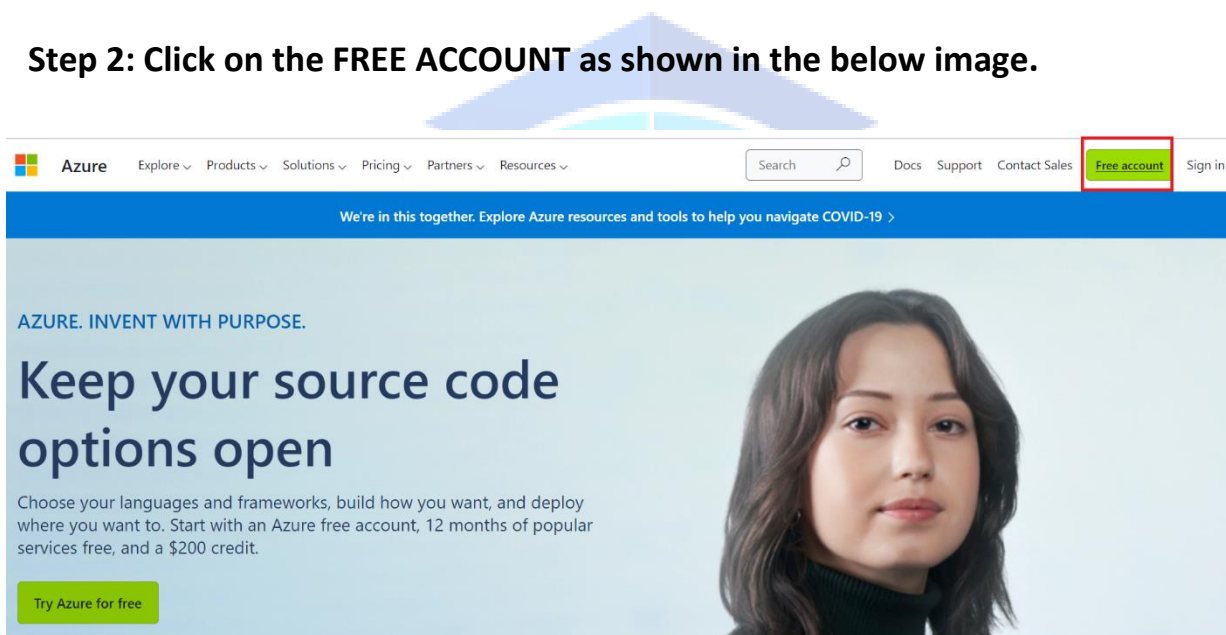
- SQL Server 2019 Express: <https://go.microsoft.com/fwlink/?linkid=866658>
- SQL Server Management Studio: <https://aka.ms/ssmsfullsetup>
- Microsoft Azure Storage Explorer: <https://azure.microsoft.com/en-us/features/storage>

# 1. Microsoft Azure Account Setup

You can create a free Azure account. Azure allows you to create a free trial account for 30 days and also gives you some credit of 14,500 INR or 200 USD to use azure services. After completing your trial of 30 days and using your credits, you can upgrade your subscription and keep using the paid services.

You can use your personal email address or Microsoft outlook account to create an account on the Azure platform. But you cannot sign up here with your work or school account. Now, we will see how to create a free account on Azure.

- **Step 1: Visit the Azure Home Page - <https://azure.microsoft.com/en-us/>**
- **Step 2: Click on the FREE ACCOUNT as shown in the below image.**



- **Step 3: Click on START FREE.**

## Build in the cloud with an Azure free account

Create, deploy, and manage applications across multiple clouds, on-premises, and at the edge

Start free

Pay as you go >

- **Step 4: Sign in using an email address or create a new one.**



### Sign in

Email, phone, or Skype

No account? [Create one!](#)

[Can't access your account?](#)

[Sign in with a security key](#) ⓘ

Back

Next

- **Step 5: Now enter the following details.**

- Country/Region
- Your Name
- Email Address
- Mobile Number
- And verify the mobile number

**Your profile**

Country/Region ⓘ  
India ▼

Choose the location that matches your billing address. You cannot change this selection later. If your country is not listed, the offer is not available in your region. [Learn More](#)

First name  
[ ]

Middle name (Optional)  
[ ]

Last name  
[ ]

Email address ⓘ  
[ ]

Phone ⓘ  
Example: 81234-56789

☐ Use a different phone number to verify your identity.

**Text me** **Call me**

**Create your Azure free account**

- Popular services free for 12 months
- 25+ services always free
- ₹13,300 credit to use in your first 30 days

**No automatic charges**  
After your credit is over, we'll ask you if you want to continue with pay-as-you-go. If you do, you'll only pay if you use more than the free amounts of services.

- **Step 6: Then it will ask you to provide the Phone number details, make sure to provide a valid phone number. Because you need to confirm by a text message or by a call.**

**Once verification is done, click on Next.**

#### Identity verification by phone

A text or phone call helps us make sure this is you.

Country code

India (+91) ▼

Phone number

[ ]

**Text me**

**Call me**

Verification code

[ ]




**Verify code**

- **Step 7: Now you need to provide the credit card details. Provide everything correctly here. Because it is going to deduct a little amount of money from your account.**

signup.azure.com/signup?offer=ms-azr-0044p&appId=102&ref=azureplat-generic&redirectURL=https%3F%2Fazure.microsoft.com%2Fen-us%2Fget-started%2Fwelcome-to-azure%2F

**You won't be charged unless you upgrade.**

We accept the following cards:

Cardholder Name

Card number

Expires

CVV  
 What is a CVV?

Address line 1

Address line 2 (Optional)

City

County (Optional)

Postal Code

Country/Region

30 days—beyond the free product amounts.

- ✓ **25+ always-free products**  
Take advantage of more than 25 products, including *serverless*, *containers*, and *artificial intelligence*, that are always free. Get these in your first 30 days, and always—once you choose to upgrade.
- ✓ **No automatic charges**  
You won't be charged unless you choose to upgrade. Before the end of your first 30 days, you'll be notified and have the chance to upgrade and start paying only for the resources you use beyond the free amounts.

- **Step 8: Check the Terms and Conditions and click Sign-Up.**

Follow these steps to get started. We ask for these details to protect your account and information. There are no upfront charges or fees.

- About you
- Identity verification by phone
- Identity verification by card
- Agreement**

☒ I agree to the [subscription agreement](#), [offer details](#), and [privacy statement](#).

☒ I would like information, tips, and offers from Microsoft or selected partners about Azure, including Azure Newsletter, Pricing updates, and other Microsoft products and services.

[Sign up](#)

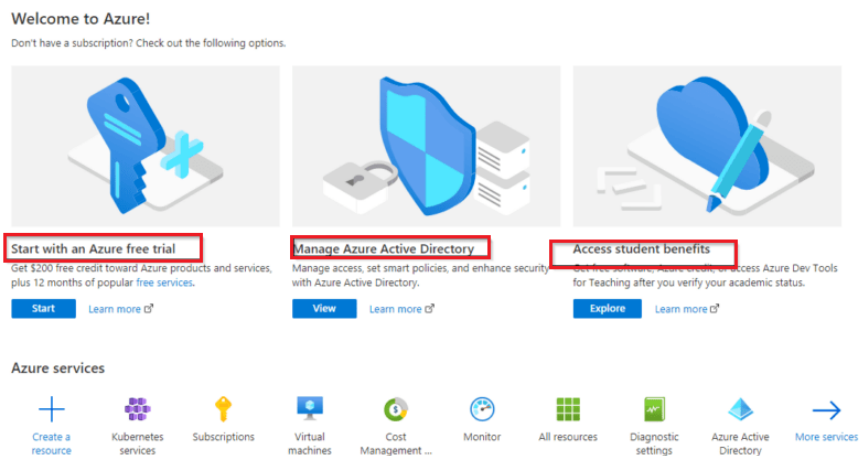
**What's included**

- ✓ **12 months of free products**  
Get free access to popular products like *virtual machines*, *storage*, and *databases* in your first 30 days, and for 12 months after you upgrade your account to pay-as-you-go pricing.
- ✓ **£150 credit**  
Use your £150 credit to experiment with any Azure service in your first 30 days—beyond the free product amounts.
- ✓ **25+ always-free products**  
Take advantage of more than 25 products, including *serverless*, *containers*, and *artificial intelligence*, that are always free. Get these in your first 30 days, and always—once you choose to upgrade.

- **Step 9: You have successfully created a Microsoft Azure free account.**

- **Step 10:** Click on Portal on the top right corner of the screen. You'll be redirected to the Azure Portal.
- **Step 11:** If you have exhausted your free credit then you have to move to the Pay as you go subscription policy.

if you have crossed the limit or time limit then you will get “your subscription is disabled and cannot perform operations until its re-enabled”



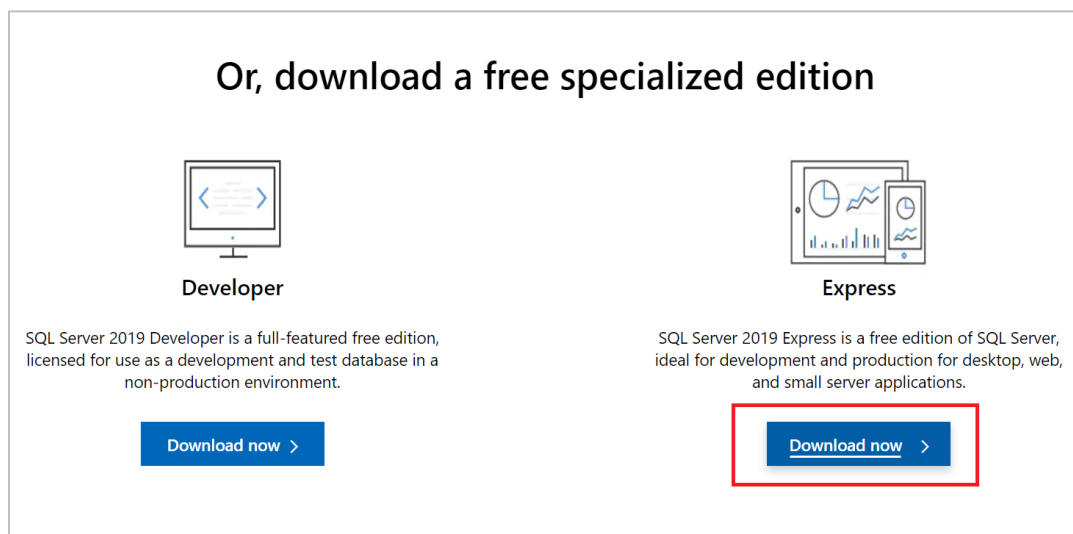
**You cannot create multiple Microsoft azure free accounts or after one account expires to another account for free credit of 200\$ using a single Credit card.**

**Note:** *If you are a student and don't have a credit card, then you can also register using your student ID.*

## 2. SQL Server 2019 Express Installation

MS SQL Server Express 2019 is a free version of Microsoft's SQL Server relational database management system used to develop databases and SQL queries, manipulate data, and perform database-related tasks that do not require large volumes of database storage. We are going to install SQL Server 2019 Express Edition on Windows Server 2019.

- **Step 1: Before we begin, head over to the <https://www.microsoft.com/en-us/sql-server/sql-server-downloads> and download SQL Server 2019 Express Edition.**



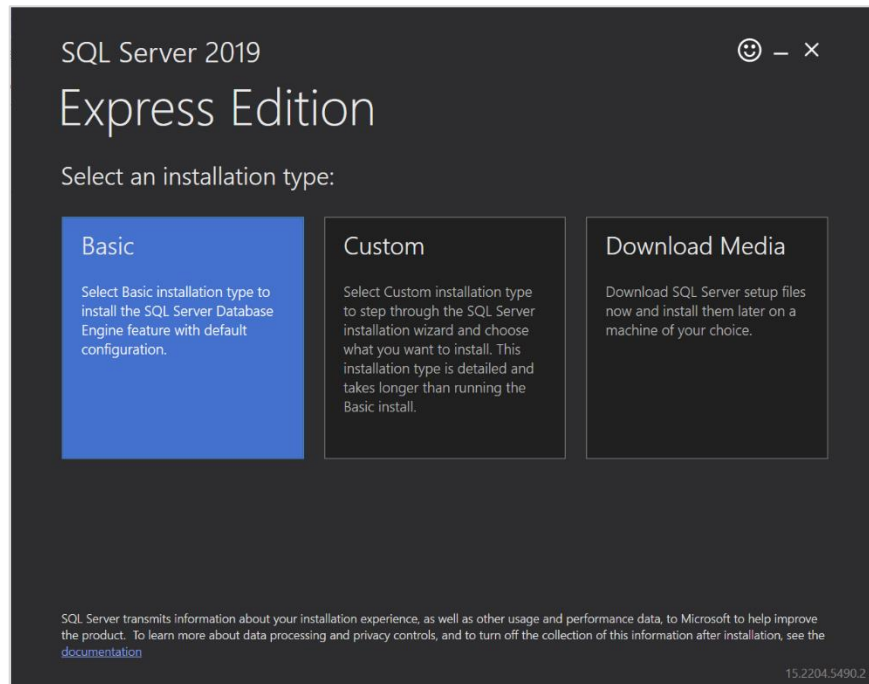
- **Step 2: An .exe file will be downloaded to your system. Double Click that file for further installation.**

	Name	Date modified	Type	Size
PythonWorkspace				
Sakshi-Dhameja-Reference				
Selenium Beginner Series				
Selenium Cucumber BDD Framework				
	SQL2019-SSEI-Expr	21-04-2022 23:32	Application	6,231 KB

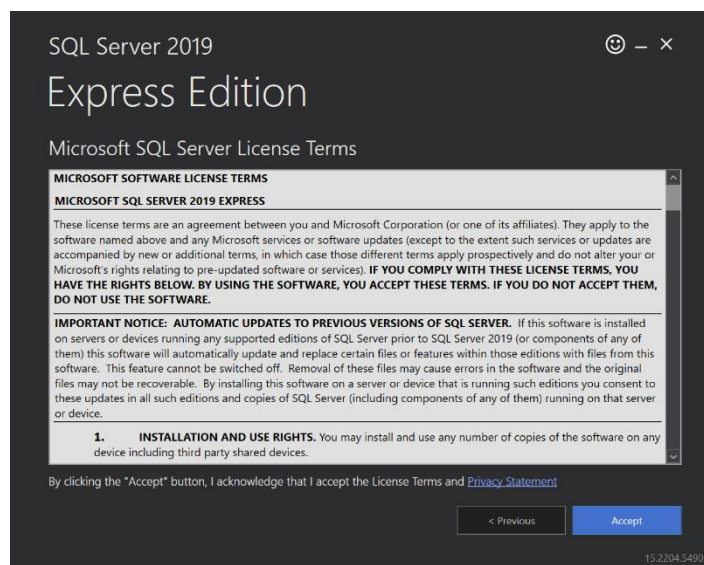


- **Step 3: After Double Clicking that .exe file, we have to choose our installation type.**

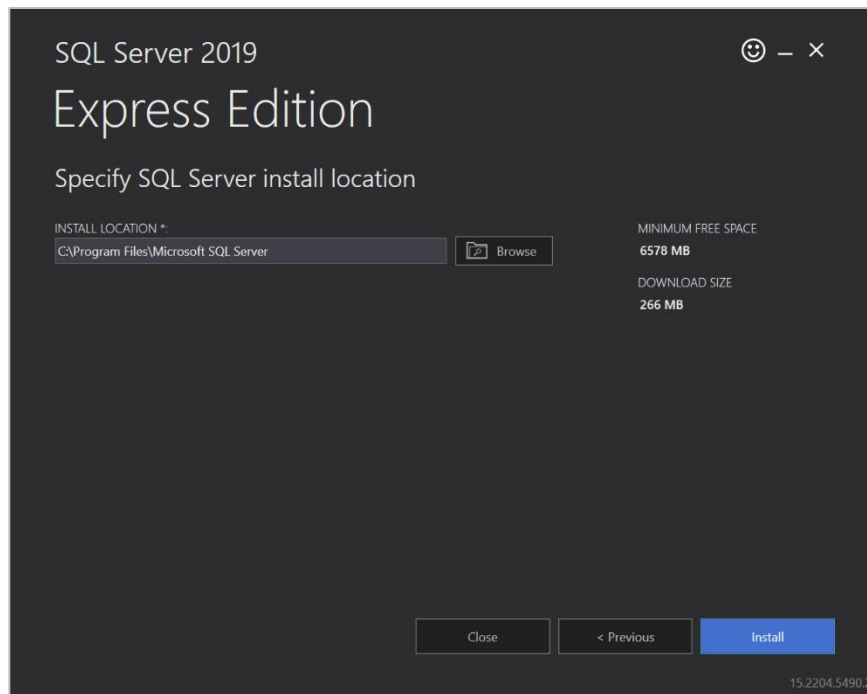
Let's start with Basic type as it will install default packages by downloading them from the internet whereas Custom Type provides customized features of SQL Server.



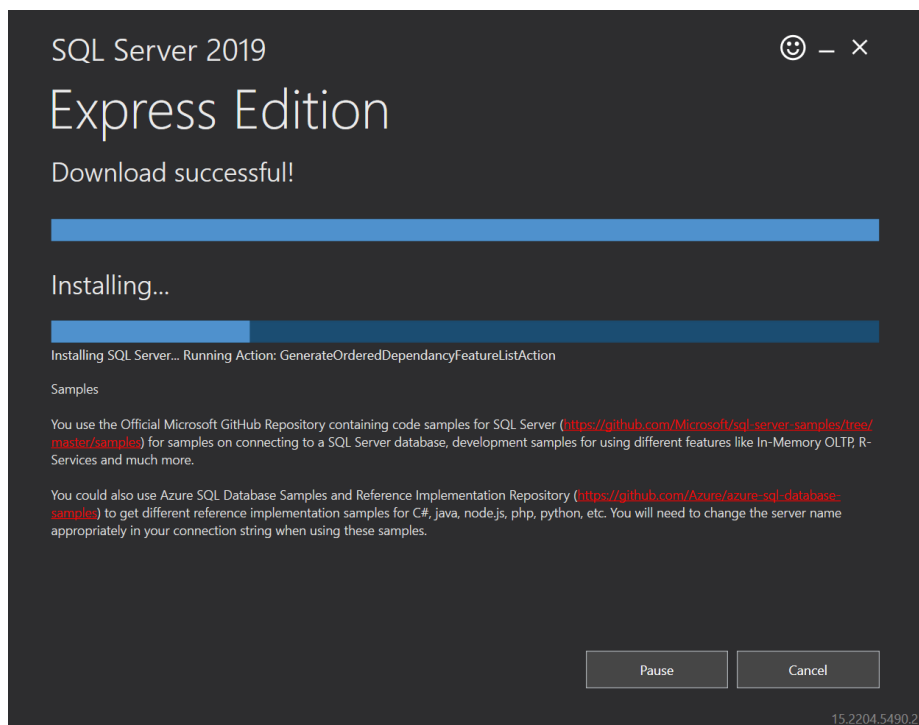
#### Step 4: Accept the License Agreement.



- **Step 5: After that, Specify the location for the install package and click install.**

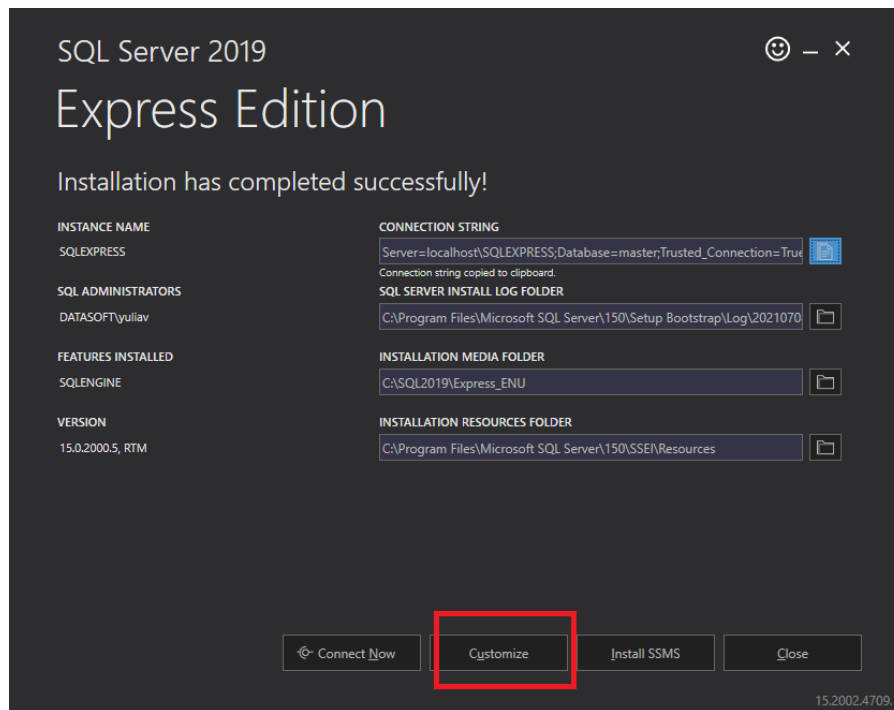


**Step 6: After launching the installation process, you will see a progress bar informing that the install package is being downloaded and that SQL Server Express is being installed.**



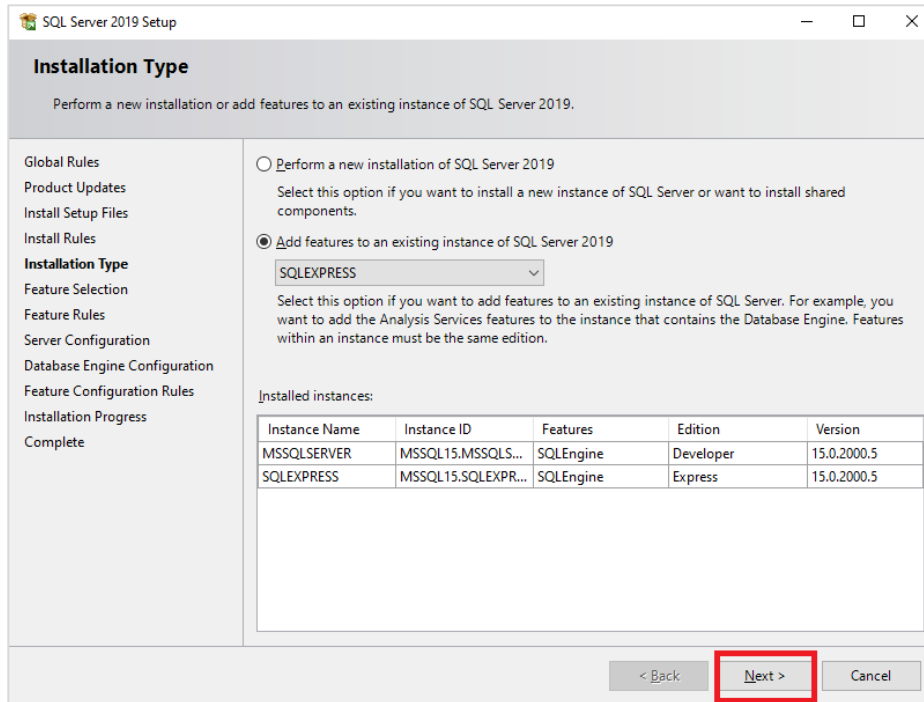
- **Step 7: After the installation has been completed, we can do the following:**
  - Connect to the SQL Server we have just installed via the sqlcmd utility.
  - Launch the SQL Server setup to customize the default configuration for the installation.
  - Install SQL Server Management Studio.
  - Close the installer.

**Let's customize or modify the configuration of the SQL Server 2019 Express Edition we have just installed.**



- **Step 8: The SQL Server 2019 Setup wizard open on the Installation Type tab where you choose either to install a new instance or modify the existing one.**

Here, we are adding features to an existing instance of SQL Server 2019. Click 'Next'.



The screenshot shows the 'Installation Type' window of the SQL Server 2019 Setup. The left sidebar lists various setup options, with 'Installation Type' selected. The main area has two radio buttons: 'Perform a new installation of SQL Server 2019' (unselected) and 'Add features to an existing instance of SQL Server 2019' (selected). Below the selected option is a dropdown menu showing 'SQLEXPRESS'. A table titled 'Installed instances:' lists existing instances. At the bottom, the 'Next >' button is highlighted with a red rectangle.

SQL Server 2019 Setup

**Installation Type**

Perform a new installation or add features to an existing instance of SQL Server 2019.

Global Rules  
Product Updates  
Install Setup Files  
Install Rules  
**Installation Type**  
Feature Selection  
Feature Rules  
Server Configuration  
Database Engine Configuration  
Feature Configuration Rules  
Installation Progress  
Complete

☐ Perform a new installation of SQL Server 2019  
Select this option if you want to install a new instance of SQL Server or want to install shared components.

☒ Add features to an existing instance of SQL Server 2019  
Select this option if you want to add features to an existing instance of SQL Server. For example, you want to add the Analysis Services features to the instance that contains the Database Engine. Features within an instance must be the same edition.

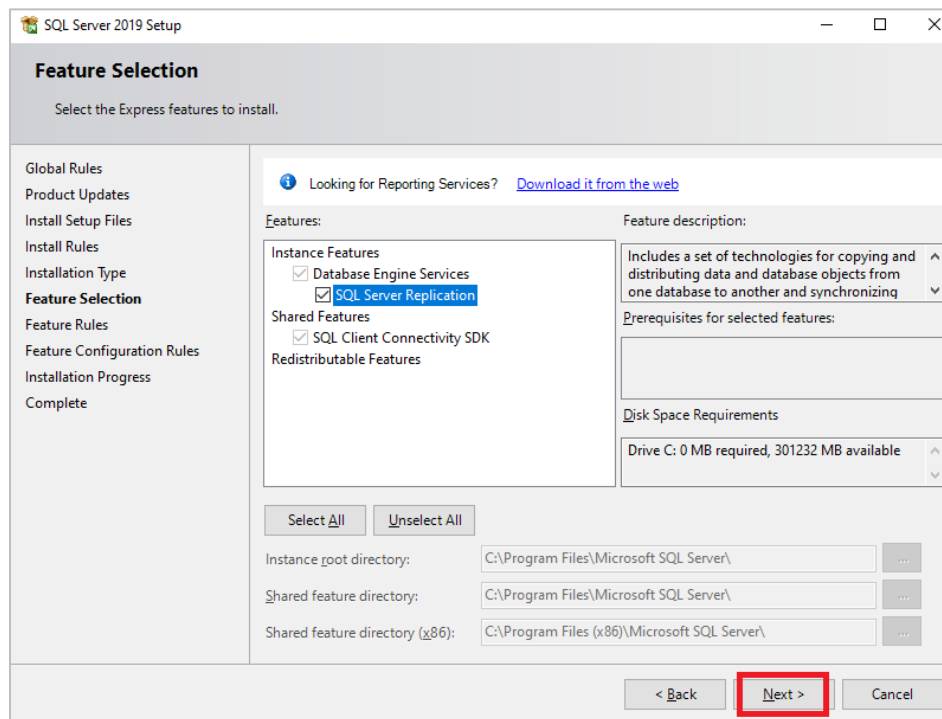
SQLEXPRESS

Installed instances:

Instance Name	Instance ID	Features	Edition	Version
MSSQLSERVER	MSSQL15.MSSQLS...	SQLEngine	Developer	15.0.2000.5
SQLEXPRESS	MSSQL15.SQLEXP...	SQLEngine	Express	15.0.2000.5

< Back   **Next >**   Cancel

- **Step 9: On the Feature Selection tab, select the instance features to be installed. Click Next.**



The screenshot shows the 'Feature Selection' window of the SQL Server 2019 Setup. The left sidebar has 'Feature Selection' selected. The main area shows a list of features with checkboxes. 'Database Engine Services' and 'SQL Server Replication' are checked. Below the list are buttons for 'Select All' and 'Unselect All'. At the bottom, the 'Next >' button is highlighted with a red rectangle.

SQL Server 2019 Setup

**Feature Selection**

Select the Express features to install.

Looking for Reporting Services? [Download it from the web](#)

Features:

Instance Features  
☒ Database Engine Services  
☒ SQL Server Replication

Shared Features  
☒ SQL Client Connectivity SDK

Redistributable Features

Feature description:  
Includes a set of technologies for copying and distributing data and database objects from one database to another and synchronizing

Prerequisites for selected features:

Disk Space Requirements  
Drive C: 0 MB required, 301232 MB available

Select All   Unselect All

Instance root directory: C:\Program Files\Microsoft SQL Server\

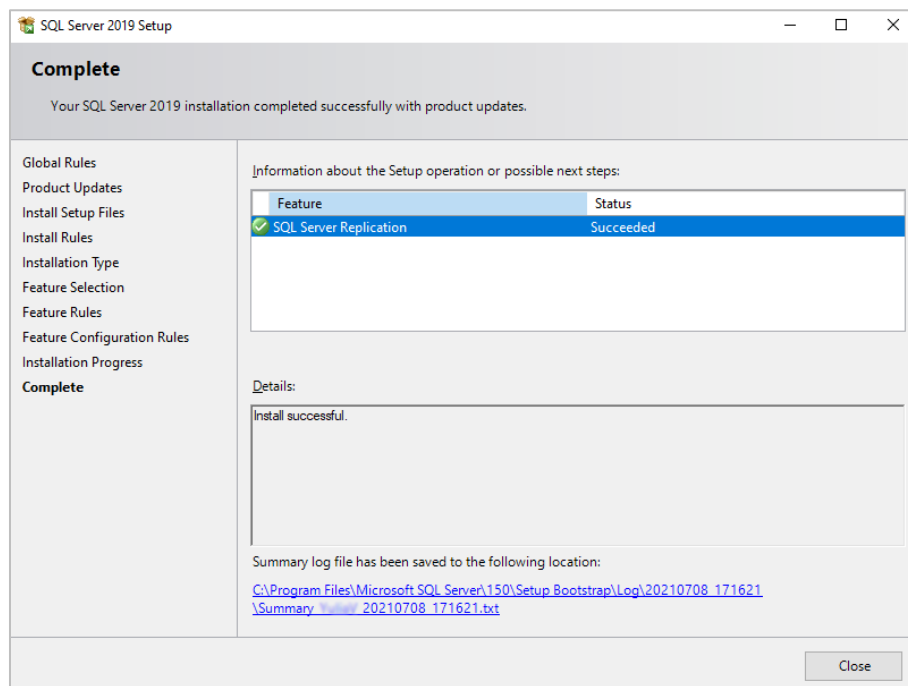
Shared feature directory: C:\Program Files\Microsoft SQL Server\

Shared feature directory (x86): C:\Program Files (x86)\Microsoft SQL Server\

< Back   **Next >**   Cancel

- **Step 10: Following that, the installation starts.**

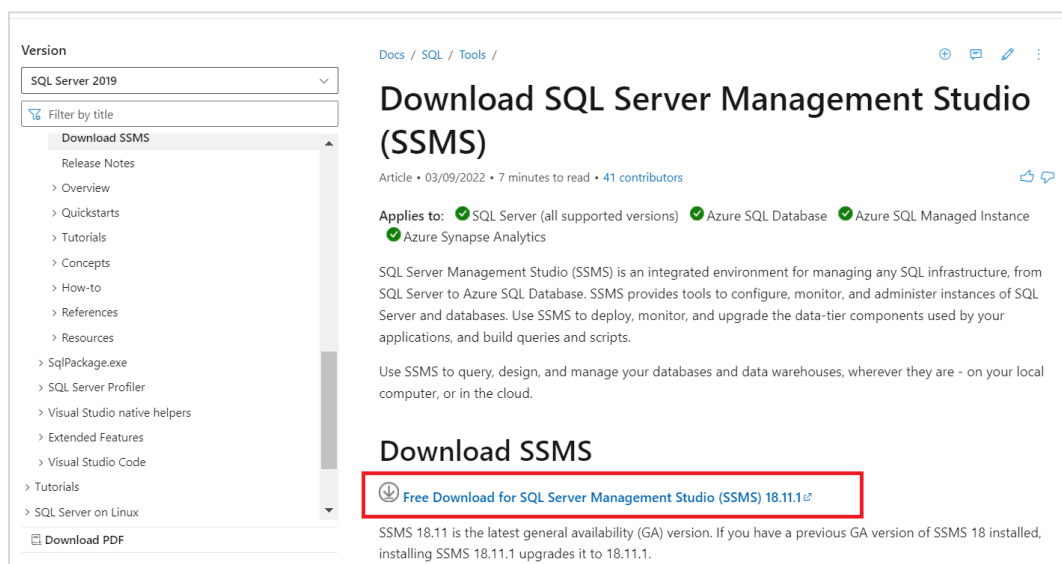
**After the installation is complete, the Complete tab opens displaying the features installed or failed. In addition, you can view the log file for the feature.**



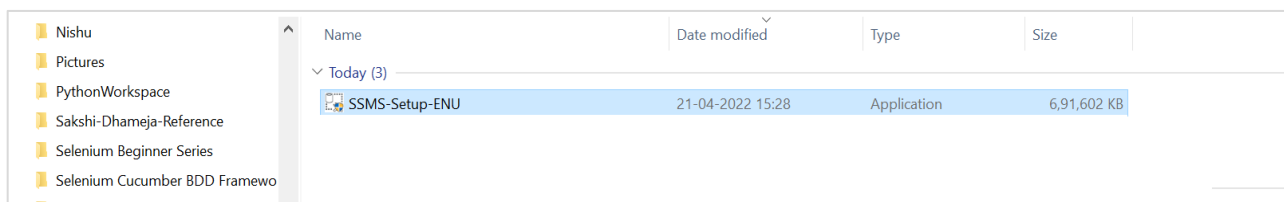
## 2.1 SQL Server Management Studio (SSMS) Installation

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. SSMS provides a single comprehensive utility that combines a broad group of graphical tools with many rich script editors to provide access to SQL Server for developers and database administrators of all skill levels.

- **Step 1: Download the SQL Server Management Studio** - <https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver15>

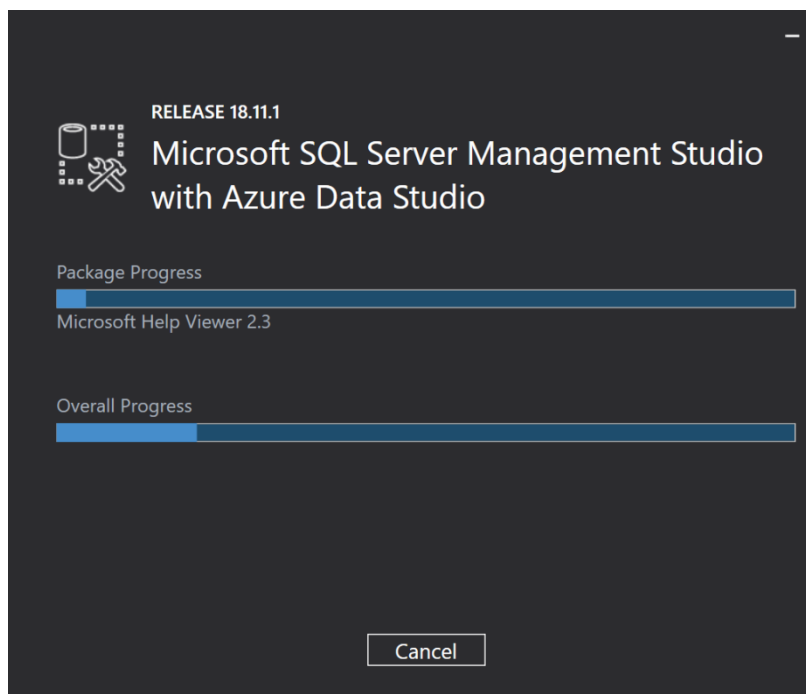
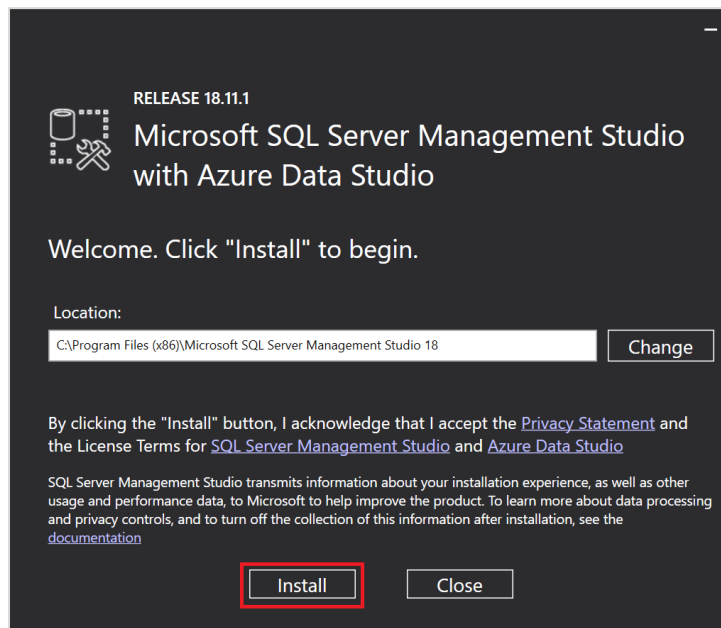


- **Step 2: Once the download is complete, go to the downloads folder in your system.** Find the **SSMS-Setup-ENU.exe** and double click to install SSMS.

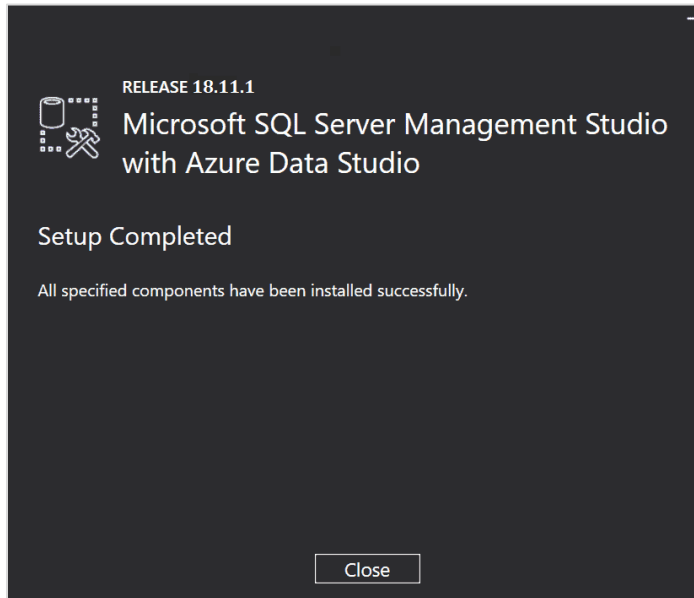


- **Step 3: An SSMS (SQL Server Management Studio) installation wizard appear.**

Click on the **Install** button to start installing SSMS. This will take a few minutes to complete installation.



- **Step 4: After the completion of Installation, Restart the server. Finally, SQL Server Management Studio (SSMS) is installed on your Server.**



## 2.2 Change SQL Server to Mixed Role Authentication:

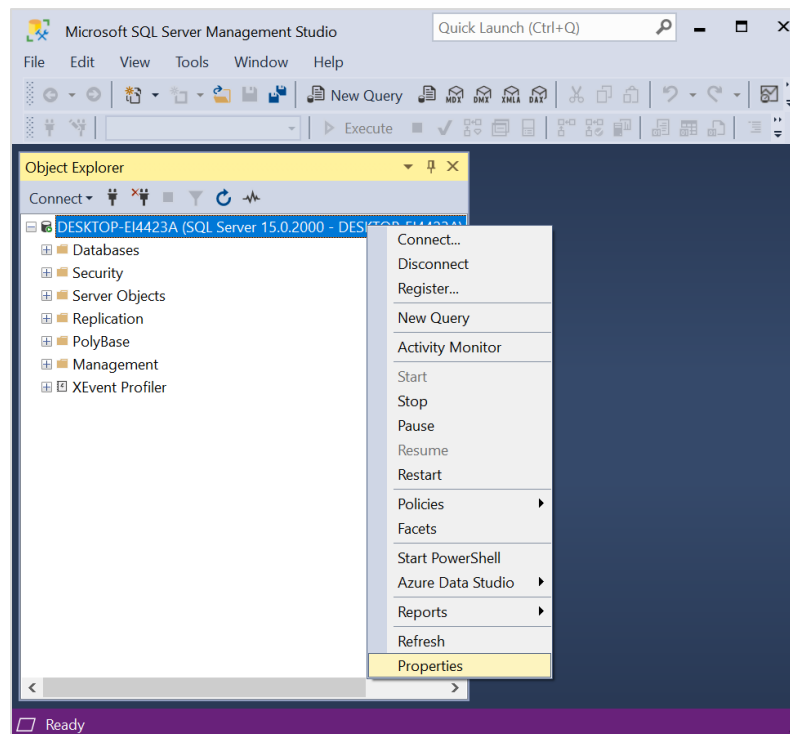
It is considered best practice to configure SQL Server instances to allow only Windows authentication. However, some situations require that SQL Server authentication be used. There are two methods to change SQL Server to mixed mode authentication after installation.

### Step 1: Enable Mixed Mode Authentication in Management Studio.

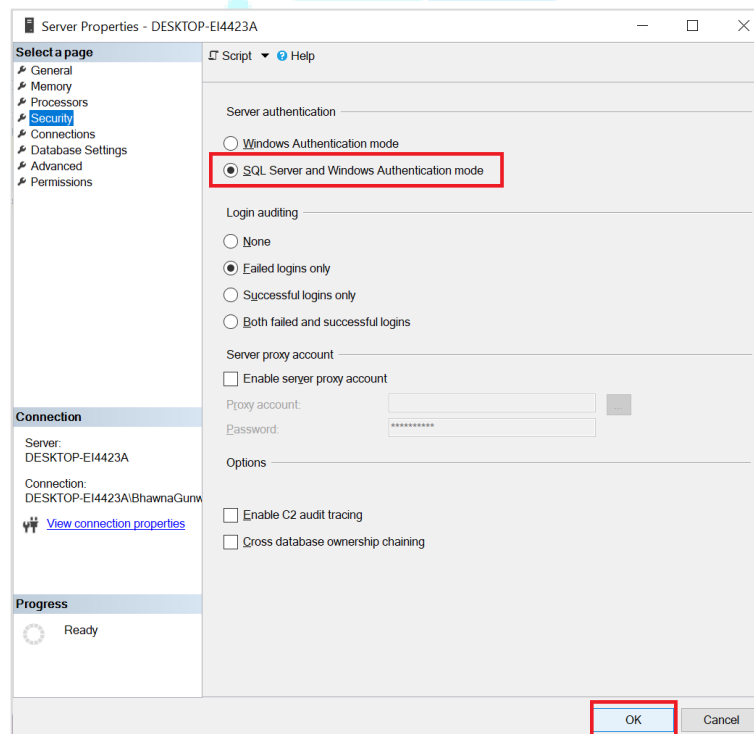
As long as you can connect to SQL Server with Windows authentication, you can enable mixed-mode authentication easily using SQL Server Management Studio.

1. Login into SQL Server with SQL Server Management Studio.
2. In Object Explorer, right-click the name of the server that you wish to reconfigure and select Properties from the menu that appears.





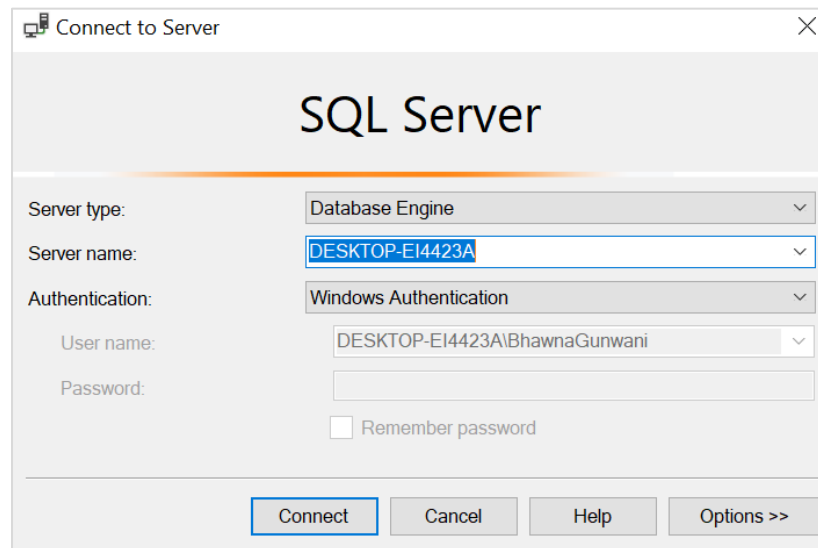
3. This displays the Server Properties dialog box. Select the Security tab and you can then choose SQL Server and Windows Authentication mode (also known as mixed mode authentication).



4. Click OK to save the changes and restart the SQL Server service.

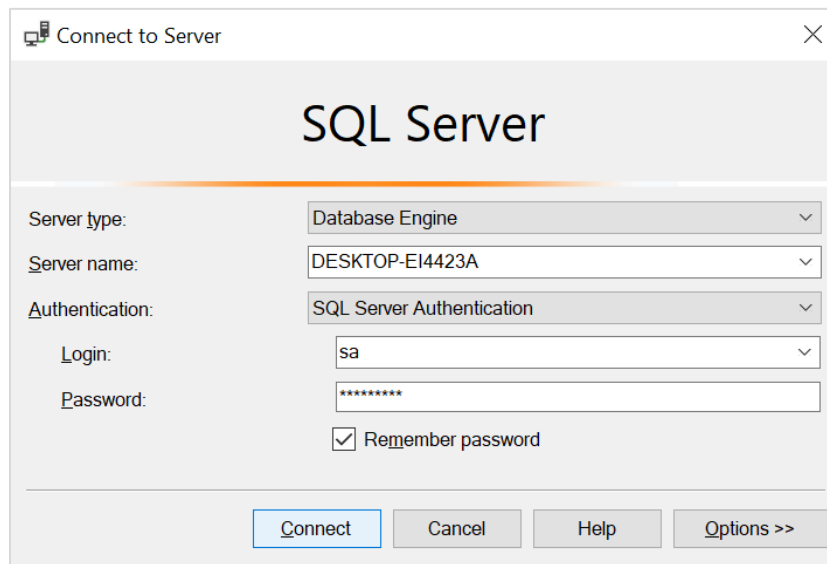
### Step 2: To Connect with Windows Authentication Mode:

1. Go to the File.
2. Click on “Connect Object Explorer”.
3. Server name will be your System Name. If you don’t get it, you can browse for more.
4. By default, Windows Authentication is selected. Then, just Click on **Connect**.



### Step 3: To Connect with SQL Server Authentication Mode:

1. Go to the File.
2. Click on ‘Connect Object Explorer’.
3. From the Authentication drop-down menu, Select SQL Server Authentication.
4. By default, Login name will be **sa** (System Admin).
5. Password will remain same that you’ve entered while installing SQL Server.
6. Click on **Connect**.

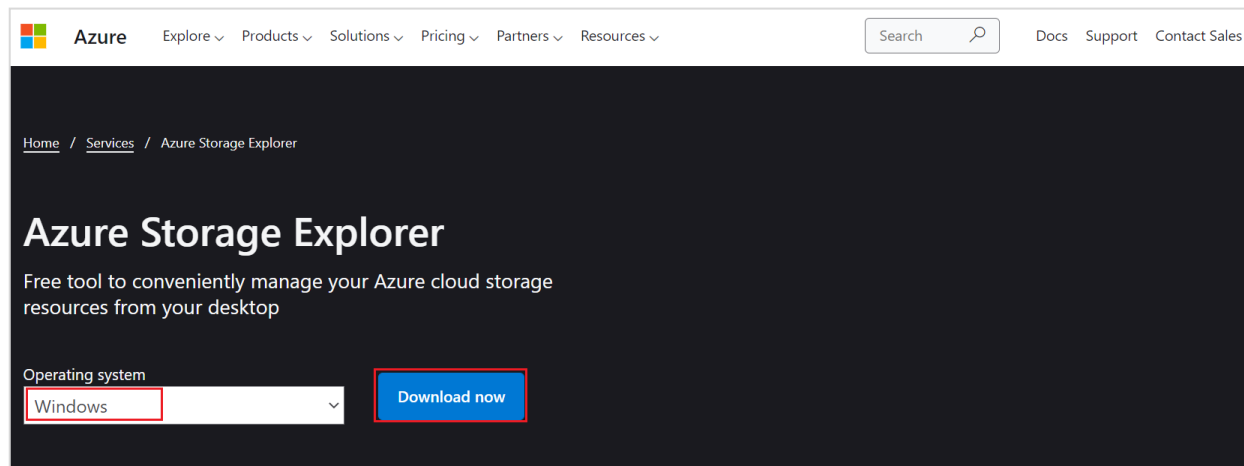


### 3. Azure Storage Explorer Installation

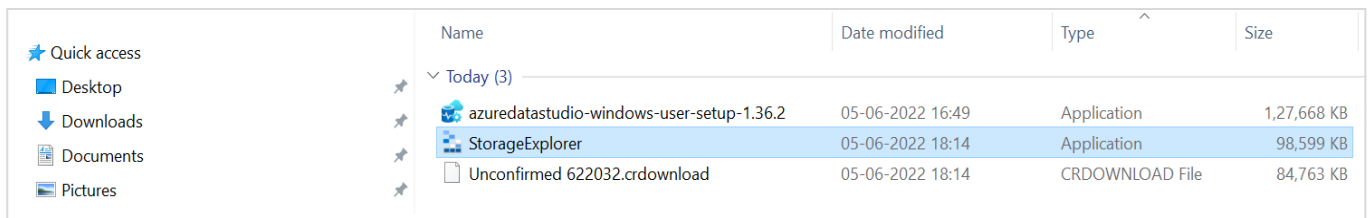
Azure Storage Explorer is a GUI-based tool IT teams can use to oversee storage operations related to the Azure public cloud. The Azure Storage Explorer interface should be familiar to anyone who has used FTP GUI-style tools.

It allows you to view storage resources such as blobs, tables, queues, and files in different Azure storage.

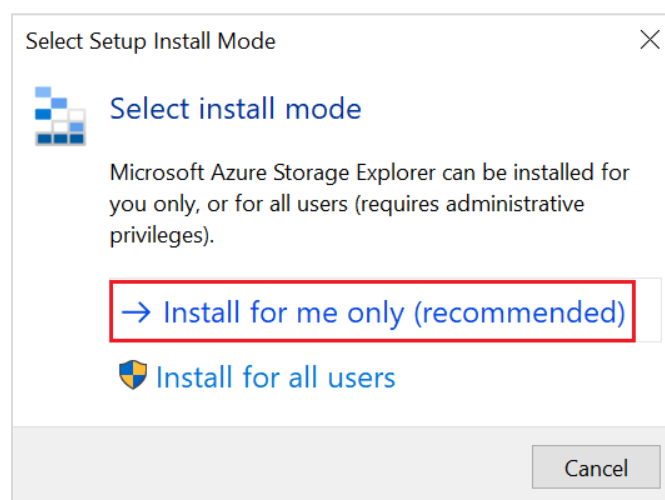
- **Step 1: To download the Azure Storage Explorer, visit the official Azure website - <https://azure.microsoft.com/en-us/features/storage-explorer/>**



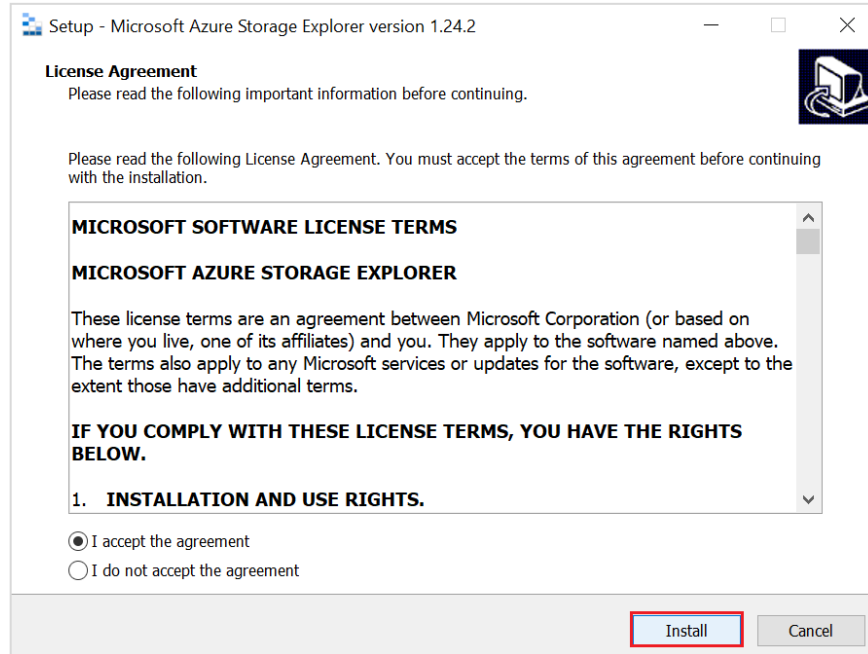
- **Step 2: Double click on the downloaded file “StorageExplorer.exe” to initiate its installation.**



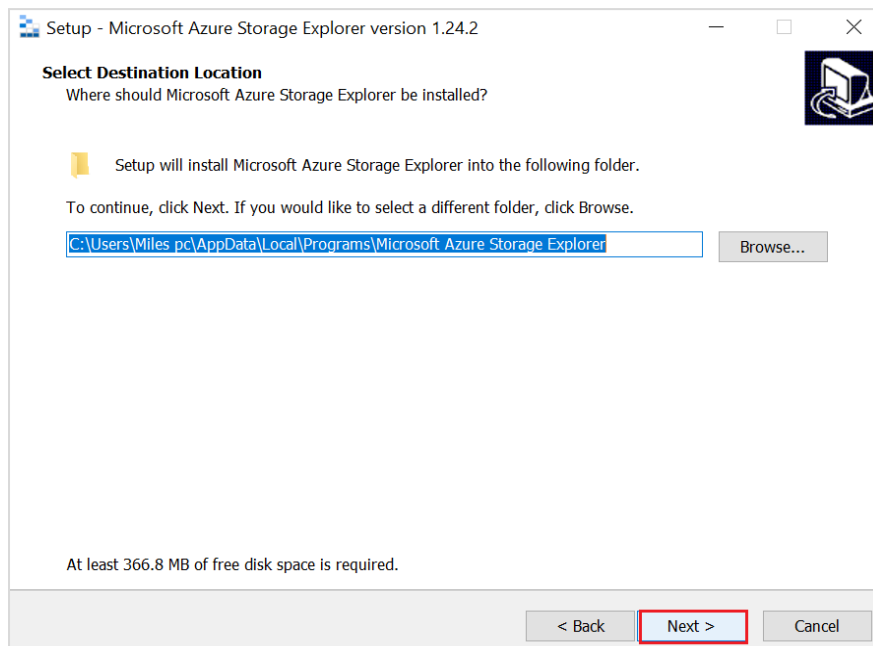
- **Step 3: The below screen will appear to select whether you want to install this application for yourself or for all users. So, select the recommended approach i.e. Install for me only.**



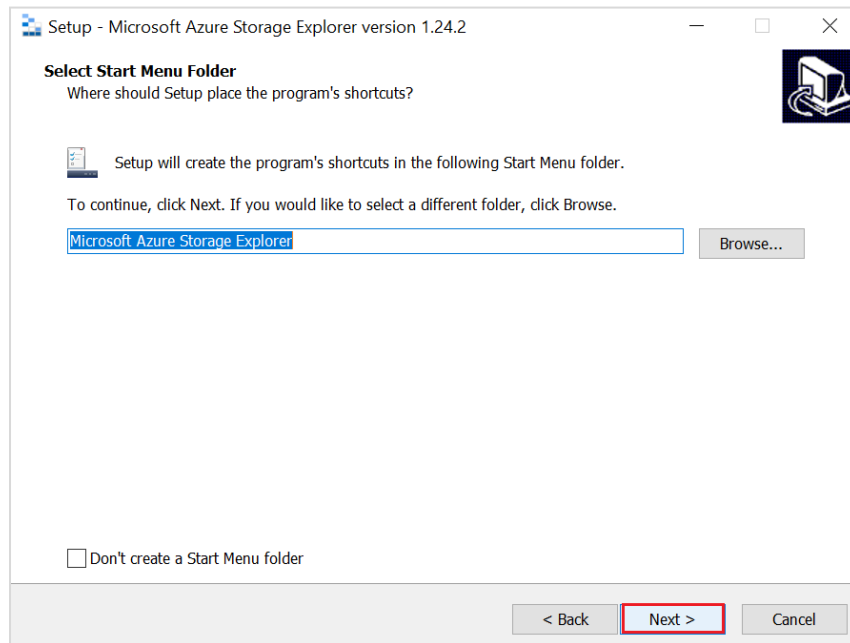
- **Step 4: Accept the terms and conditions and hit the “Install” button to process the installation.**



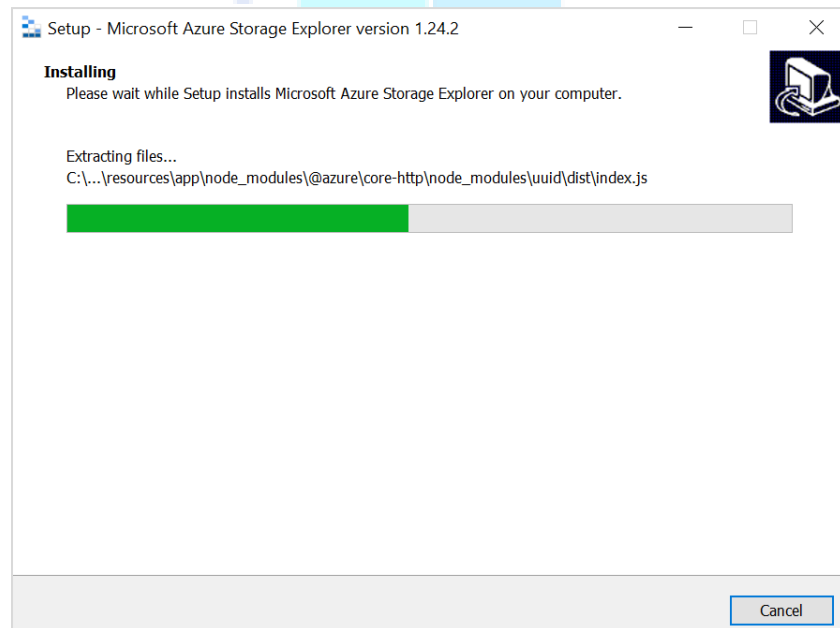
- **Step 5: Here, you can browse the location where you want to install Azure Storage Explorer. Click on “Next” button once you are done with it.**



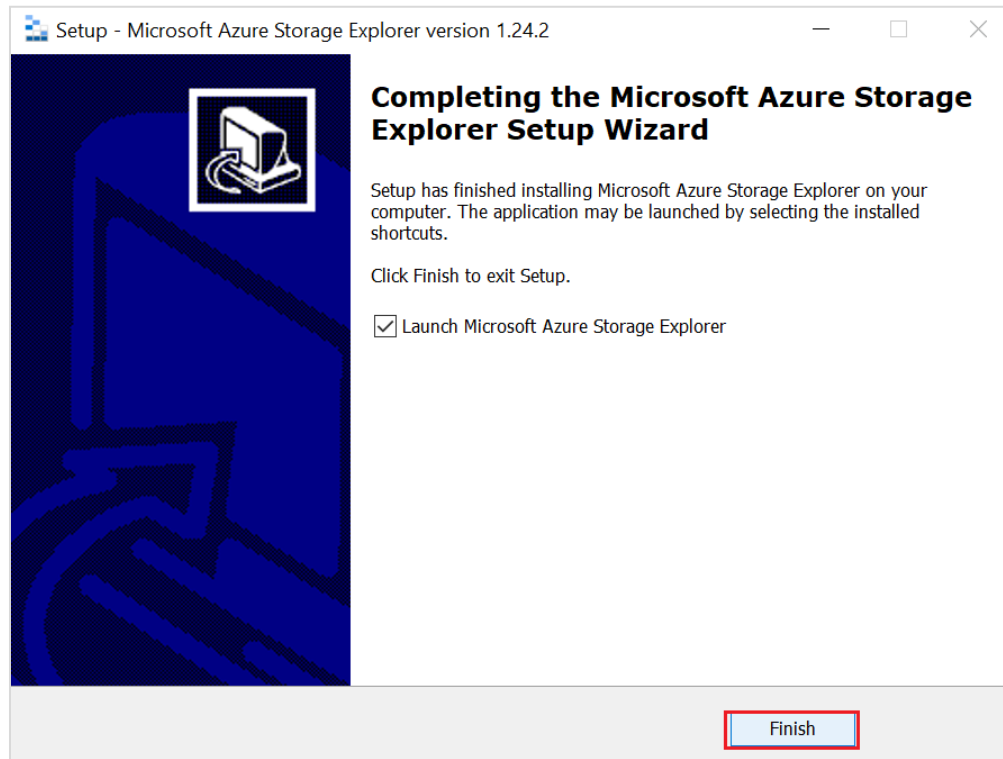
- **Step 6: Change your shortcut in the below screen if needed otherwise, you can keep it as default. Click on “Next” button to process further.**



- **Step 7: The Installation of Azure Storage Explorer has started.**



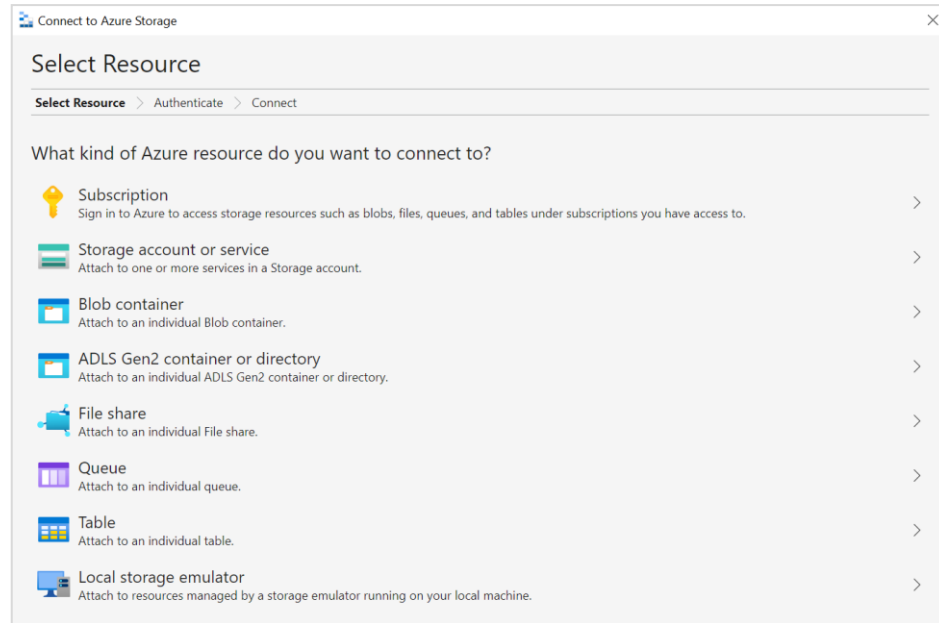
- **Step 8: Once the installation will be completed, Click on “Finish”.**



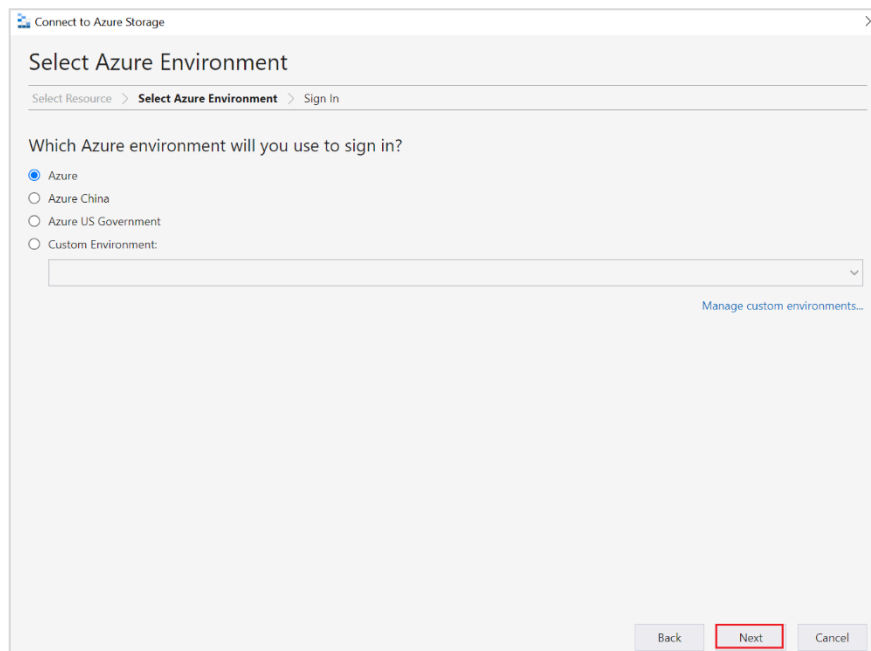
- **Step 9: Azure Storage Explorer Application will be launched as shown in the below image.**



- **Step 10:** Here is the final image of this application, where you have got the Connect to Azure Storage pop-up window to select the type of Azure storage and connection you want to make.



- **Step 11:** Click on “Subscription” option shown in the above popup window. The below screen will appear to choose the Azure environment. Click on “Next” button.

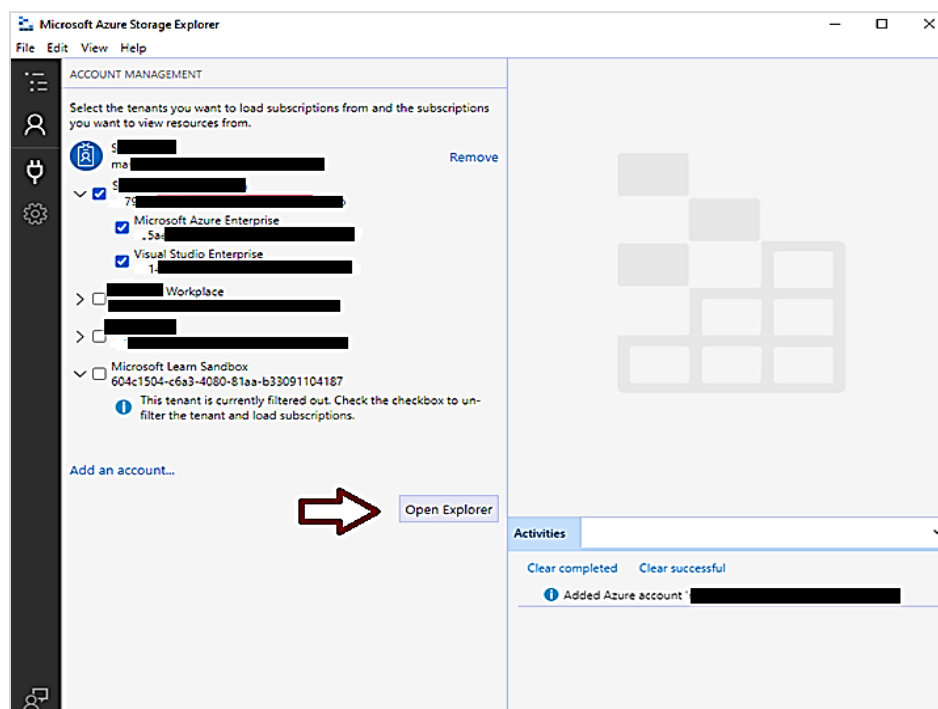




- **Step 12:** Once you click on the “Next” button, it will redirect you to the Azure portal URL to enter your login and password to establish a connection to your Azure account. Once your Azure account will be successfully authenticated, you will get the message in your web browser.

*Authenticated. You can return to Storage Explorer. You might need to authenticate again if you close this browser tab.*

Now, close the webpage and go back to Azure Storage Explorer. Here, you will see all subscriptions are reflected in storage explorer as shown in the below image. You can click on each respective checkbox given beside each tenant to load its resources.



## Contact Us

If you are still facing any issues while installing the software and configuring the system, please free to reach out to us at **+91 9999 123 502/503** or email us at [hello@scholarhat.com](mailto:hello@scholarhat.com)