

Bài tập về nhà Hệ quản trị CSDL

**Ngày 19/03/2025 by Lương Hoàng Việt
K58KTP**

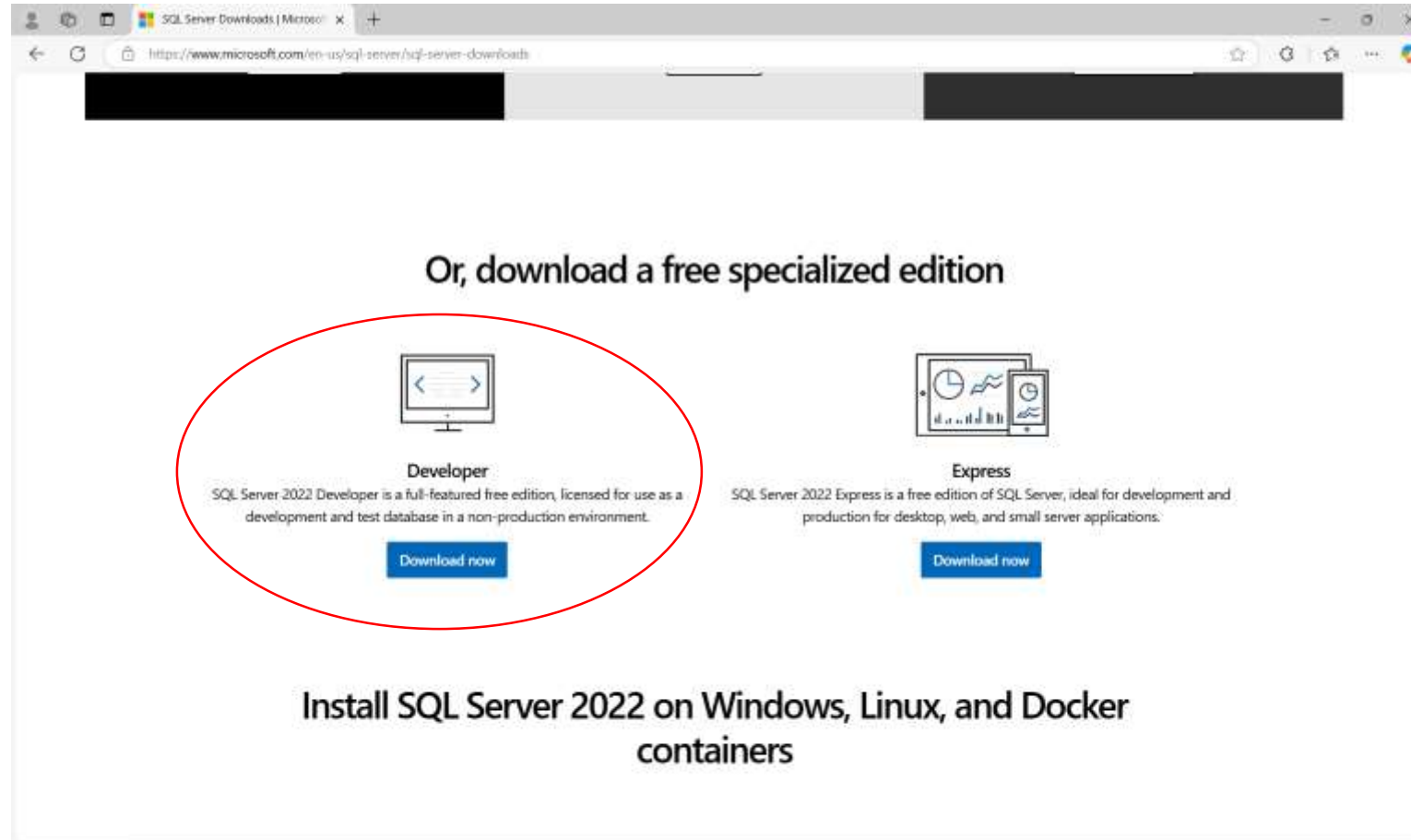
Đề bài

Bài tập về nhà 01 - môn Hệ quản trị csdl:

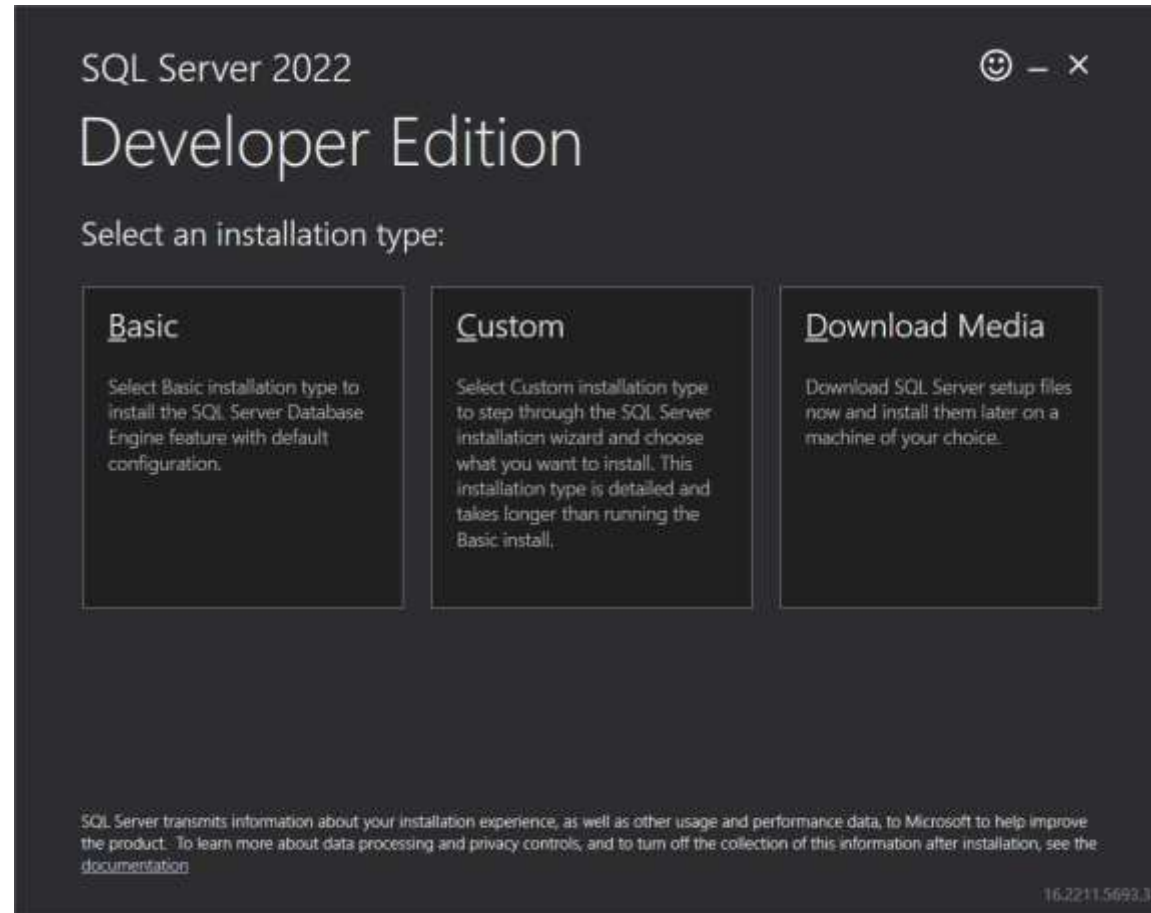
1. Sinh viên mô tả các bước trong quá trình cài đặt: (download link nào, đc file gì, khi chạy thì chọn vào chỗ nào để download file iso bản dev, có iso rồi thì làm gì để chạy đc setup.exe trong nó, trong giao diện của setup thì chọn vào đâu, ý nghĩa mỗi tùy chọn này, => kết quả được sql server đang chạy dạng service: kiểm tra service này đang running ở đâu?
2. Các bước download và cài đặt phần mềm sql management studio (bản mới nhất)
3. Các bước để đăng nhập từ sql management studio vào Sql server đã cài (thử cả 2 cách: Windows auth và Sql server Auth)
4. (option, nhưng muốn đạt 10 điểm thì làm thêm bước này)
 - Cấu hình dynamic port và mở port trên firewall: để cho phép truy cập trong mạng LAN từ máy tính khác vào sql server (dễ, ko cần gợi ý)
 - Cấu hình mở port trên router để có thể truy cập qua internet từ 1 máy tính ở bất kỳ đâu tới Sql server đang cài trên máy tính cá nhân (gợi ý: NAT Port, Port Forward)
 - Trường hợp ko có quyền thao tác nat port với router (như trong ktx) thì cần làm gì để có thể truy cập vào sql server từ xa (gợi ý keyword: VPN tunnel)

1. Download **SQL Server Dev Edition** and **Setup** by Lương Hoàng Hoàng

Link Download: <https://www.microsoft.com/en-us/sql-server/sql-server-downloads>



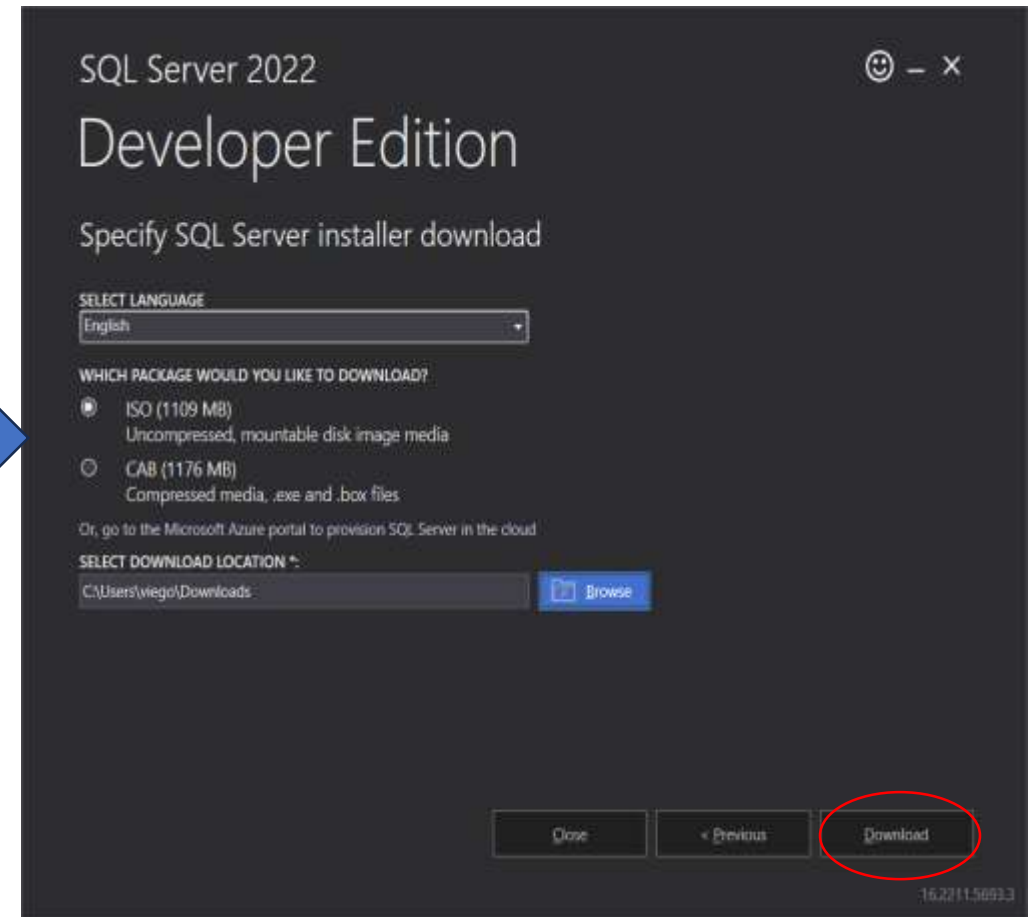
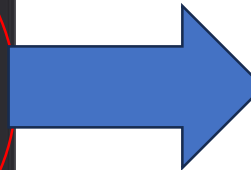
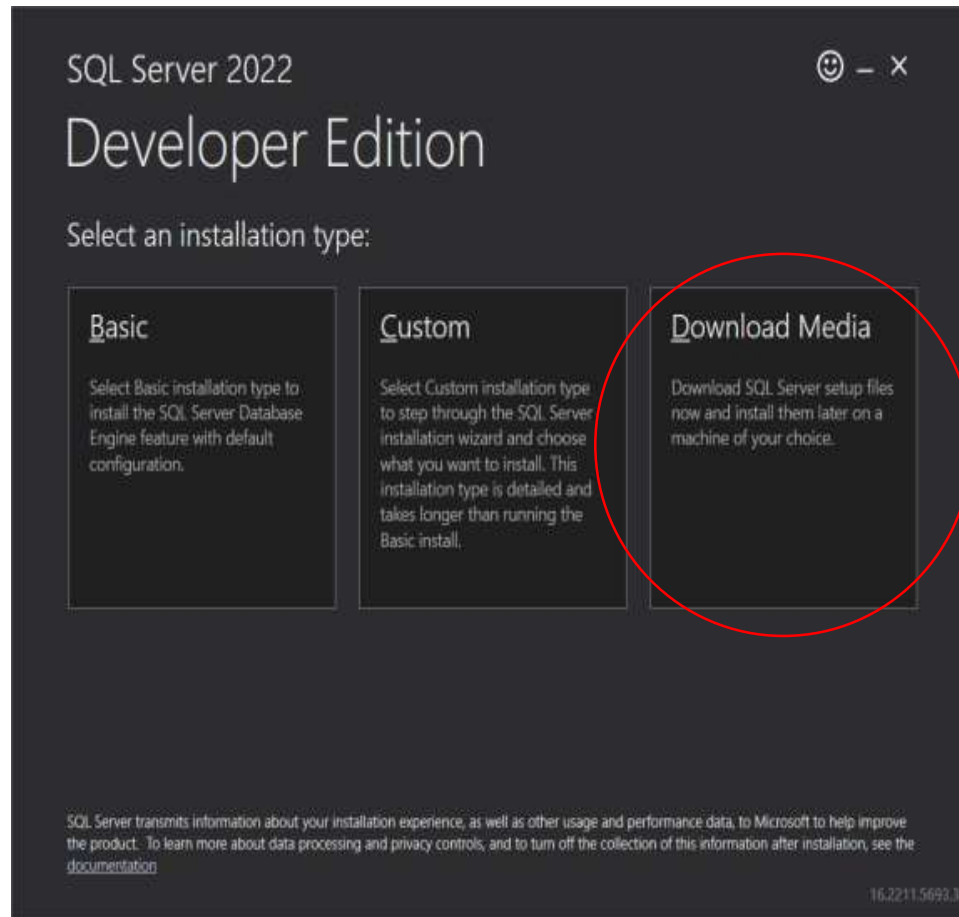
Mở File **SQL2022-SSEI-Dev.exe** vừa download và được giao diện sau:



Tải file ISO

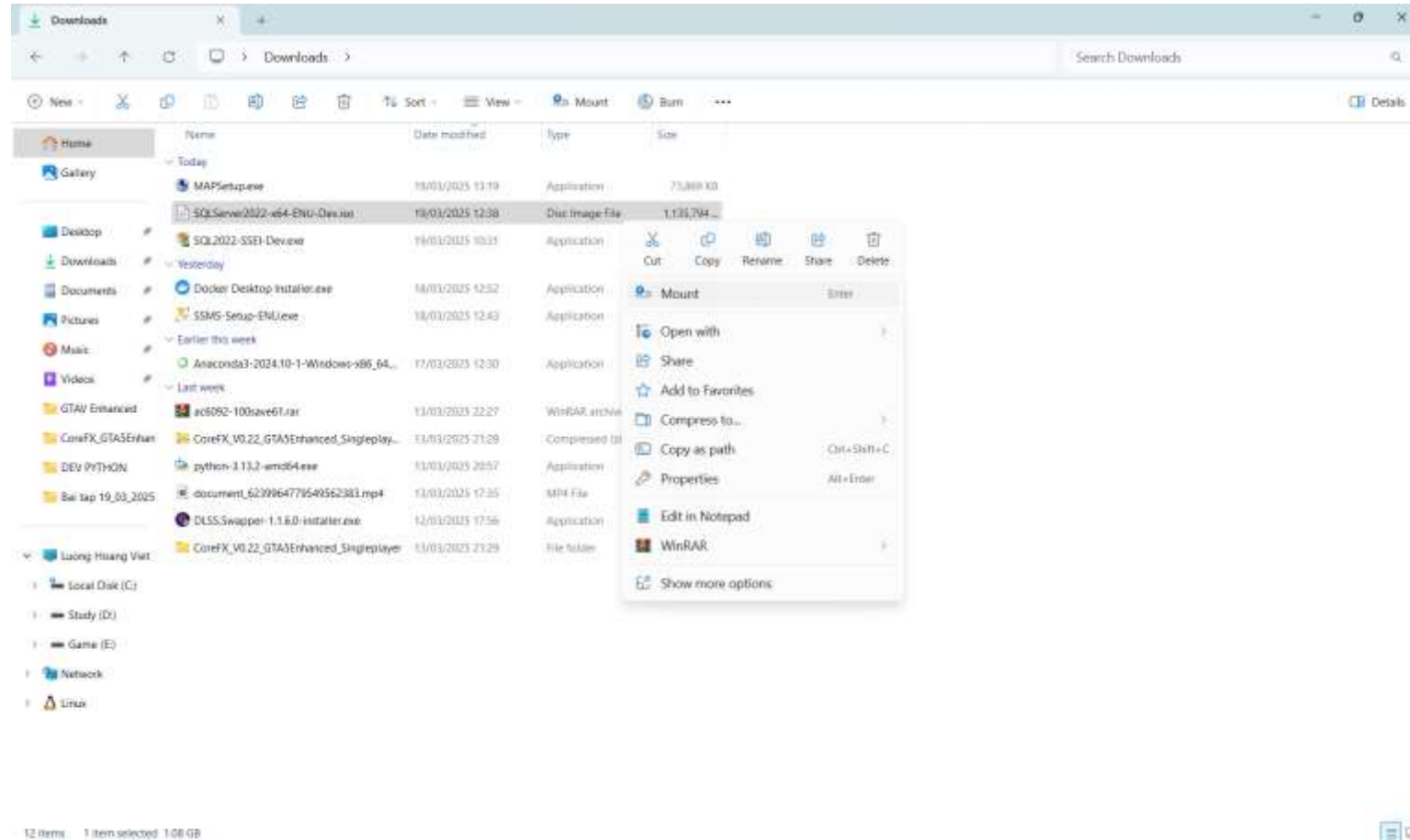
B1: Chọn Download Media

B2: Chọn ISO và Download

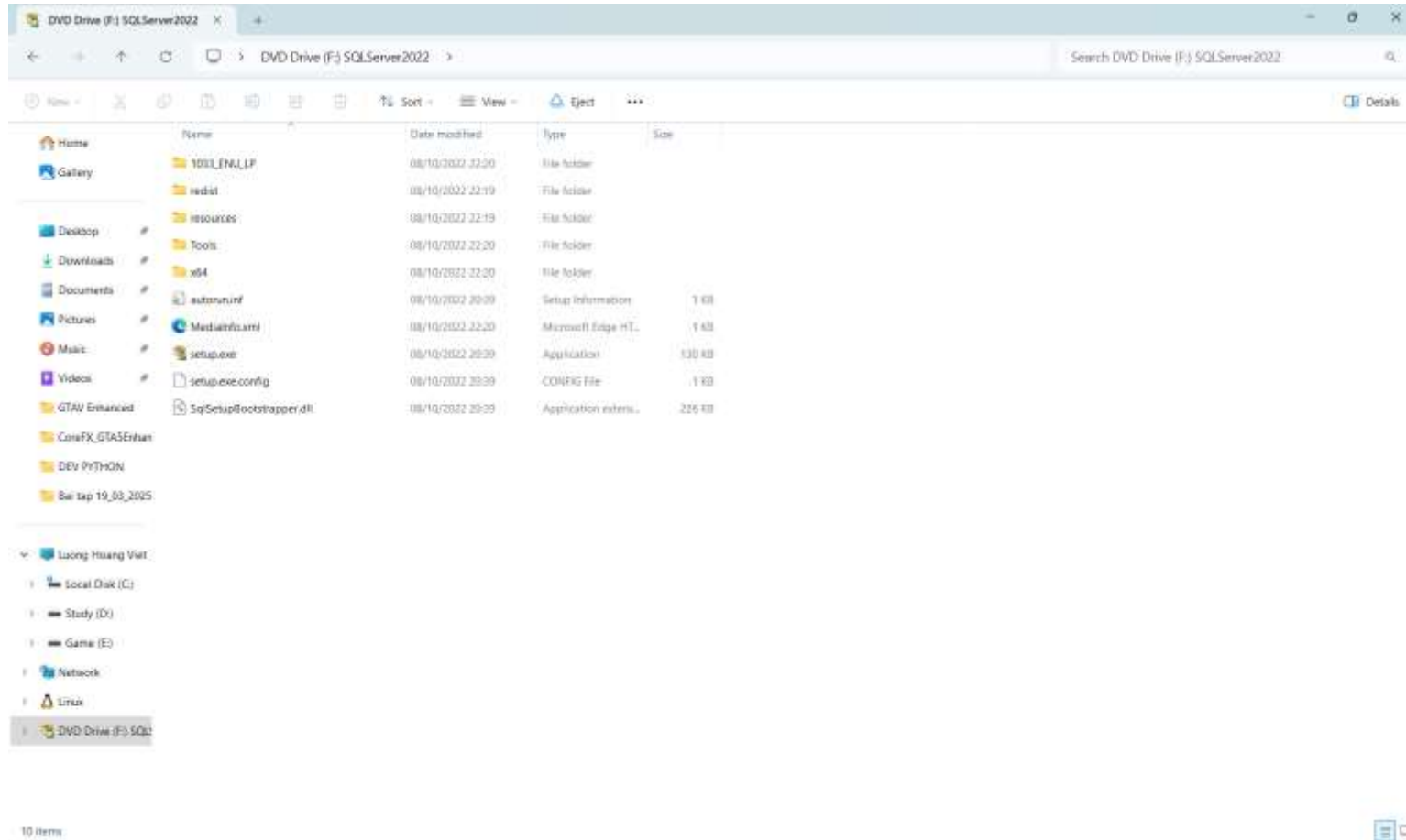


Tương tác với file ISO

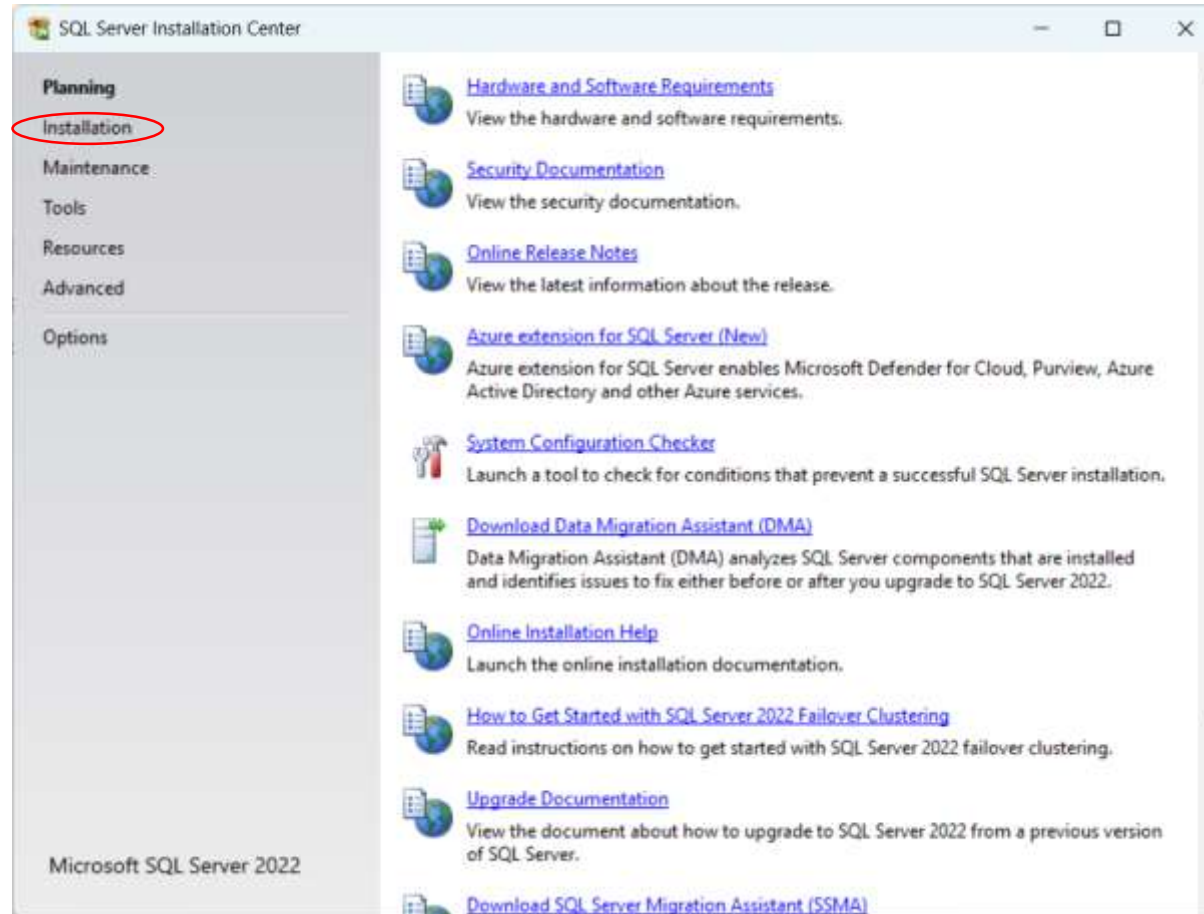
Sau khi download được file **SQLServer2022-x64-ENU-Dev.ISO**, click chuột phải và chọn **Mount** để mở ổ đĩa ảo.



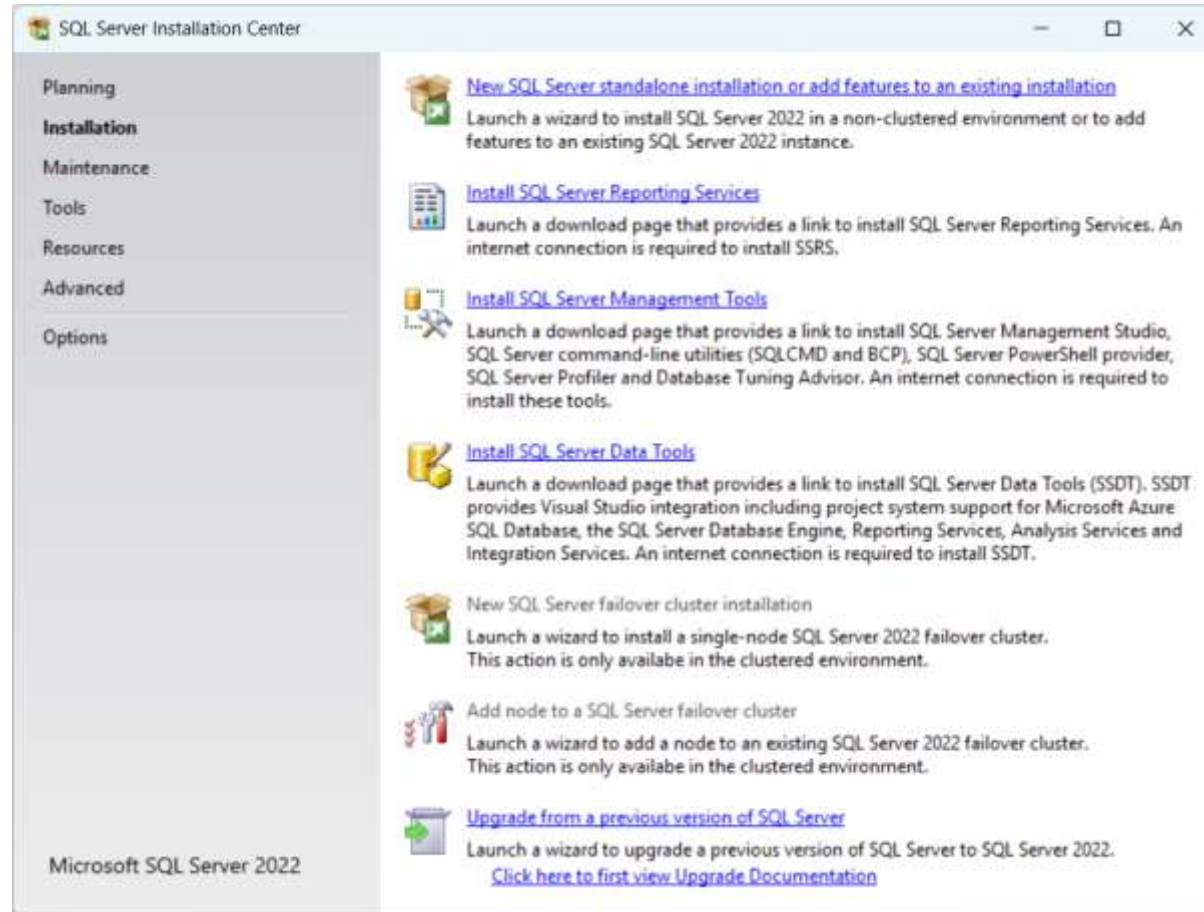
Sau khi **Mount** ổ đĩa ảo ta được giao diện sau:



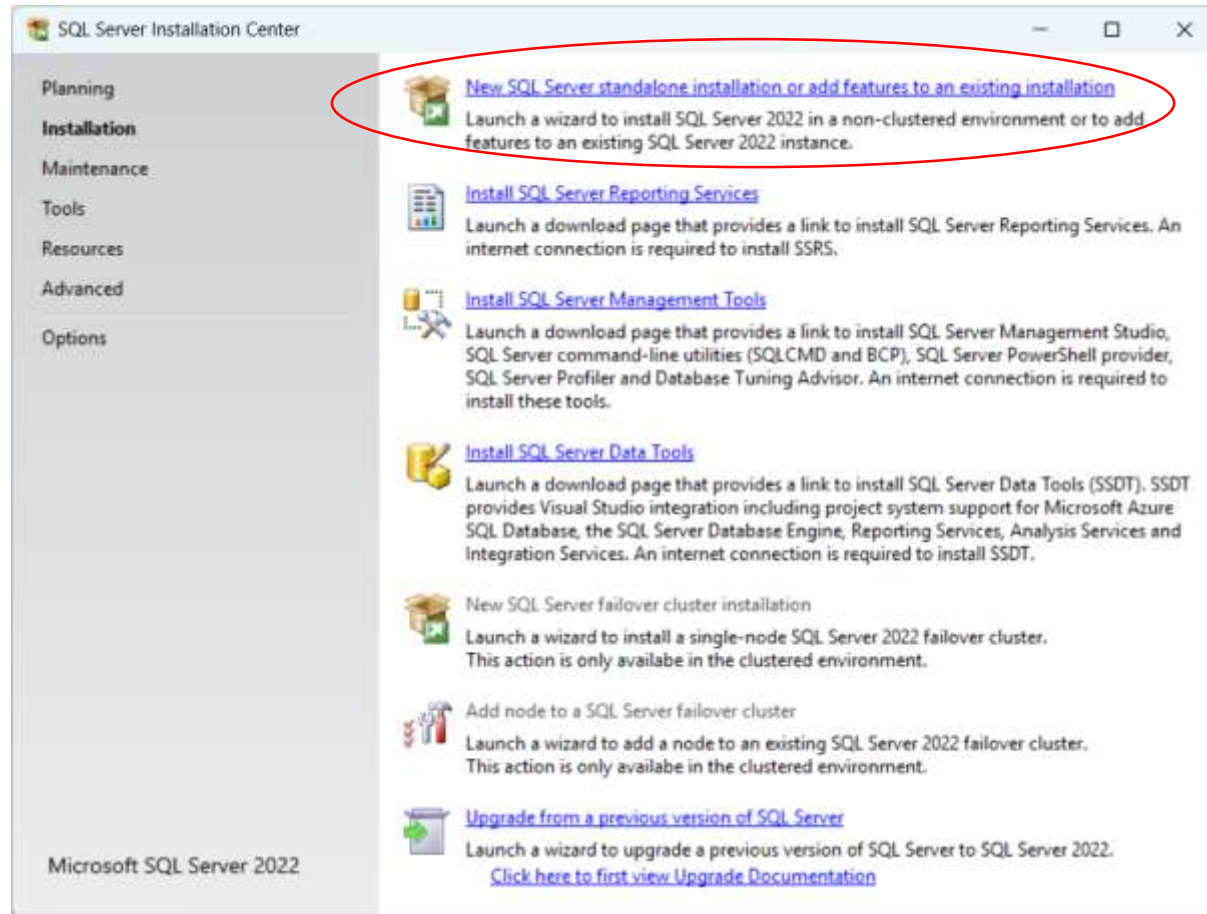
Tiến hành mở file **Setup.exe** và được giao diện dưới, click vào **Installation** (phần khoanh đỏ) để tiến hành cài đặt Server



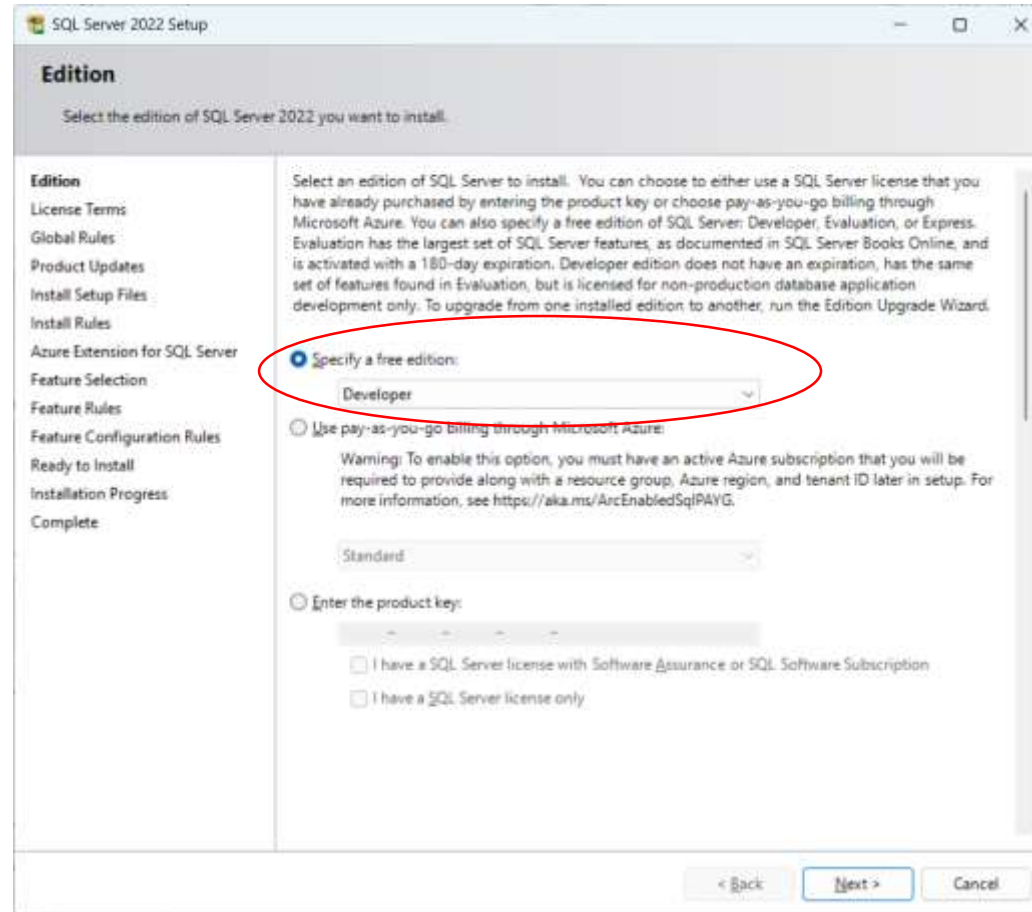
Giao diện khi vào **Installation:**



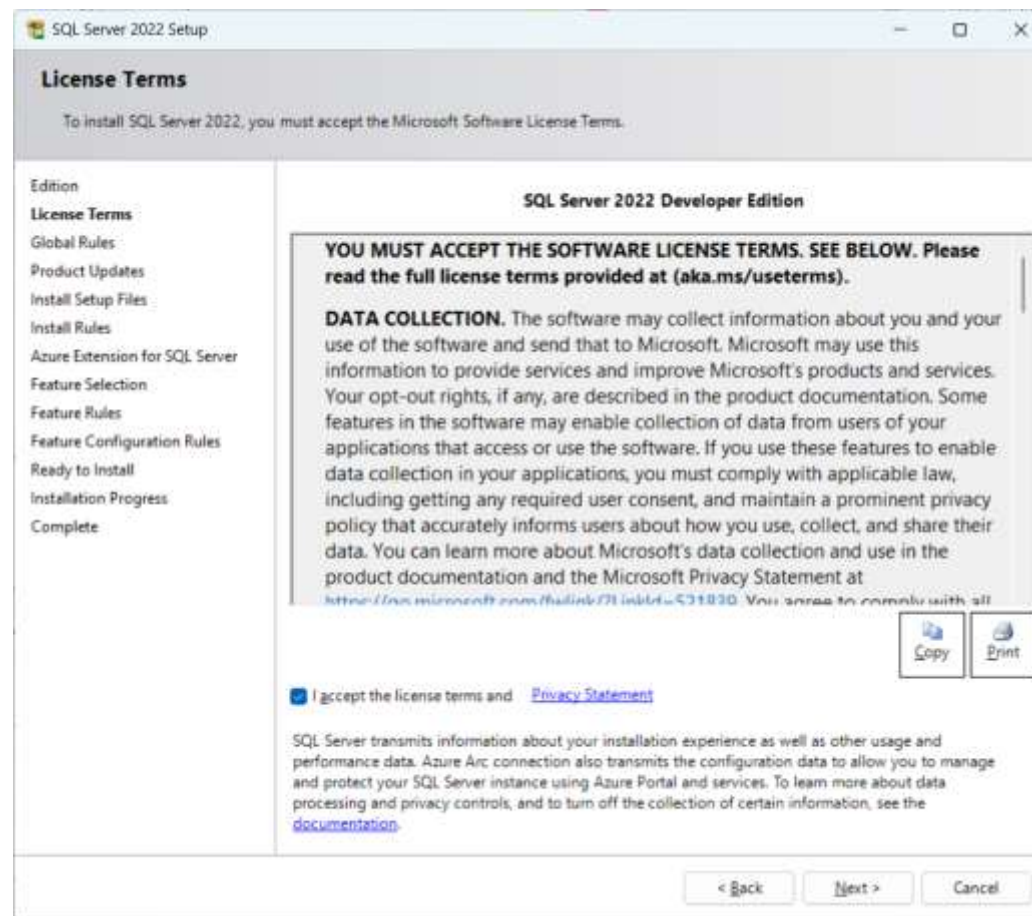
Truy cập **New SQL Server standalone installation add features to an existing installation** để bắt đầu cài đặt server



Chọn phiên bản **Developer** để cài đặt rồi nhấn **Next**:



Đồng ý với các điều khoản dịch vụ của phần mềm (**aka.ms/useterms**):



Uncheck **Azure Extension for SQL Server** rồi tiếp tục cài đặt

The screenshot shows the 'Azure Extension for SQL Server' step in the SQL Server 2022 Setup wizard. The window title is 'SQL Server 2022 Setup'. The main heading is 'Azure Extension for SQL Server'. Below the heading, a note states: 'Azure Extension for SQL Server is required to enable Microsoft Defender for Cloud, Purview, and Azure Active Directory.' On the left, a navigation pane lists the setup steps: Edition, License Terms, Global Rules, Product Updates, Install Setup Files, Install Rules, **Azure Extension for SQL Serv...**, Feature Selection, Feature Rules, Feature Configuration Rules, Ready to Install, Installation Progress, and Complete. The main area contains a checkbox labeled 'Azure Extension for SQL Server' which is currently unchecked. To the right of this checkbox is a text box explaining that to install the extension, an Azure account or service principal is needed, and lists the required parameters: Subscription ID, Resource Group, Region, and Tenant ID, with a link to <https://aka.ms/arc-sql-server>. Below this, there are two radio buttons: 'Use Azure Login' (unchecked) and 'Use Service Principal' (checked). Under 'Use Service Principal', there are input fields for 'Azure Service Principal ID*' and 'Azure Service Principal Secret*'. At the bottom of the main area, there are input fields for 'Azure Subscription ID*', 'Azure Resource Group*', 'Azure Region*', 'Azure Tenant ID*', and 'Proxy Server URL (optional)'. At the bottom right of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'.

SQL Server 2022 Setup

Azure Extension for SQL Server

Azure Extension for SQL Server is required to enable Microsoft Defender for Cloud, Purview, and Azure Active Directory.

☐ Azure Extension for SQL Server

To install Azure extension for SQL Server, provide your Azure account or a service principal to authenticate the SQL Server instance to Azure. You also need to provide the Subscription ID, Resource Group, Region, and Tenant ID where this instance will be registered. For more information for each parameter, visit <https://aka.ms/arc-sql-server>.

☐ Use Azure Login

☒ Use Service Principal

Azure Service Principal ID*

Azure Service Principal Secret*

Azure Subscription ID*

Azure Resource Group*

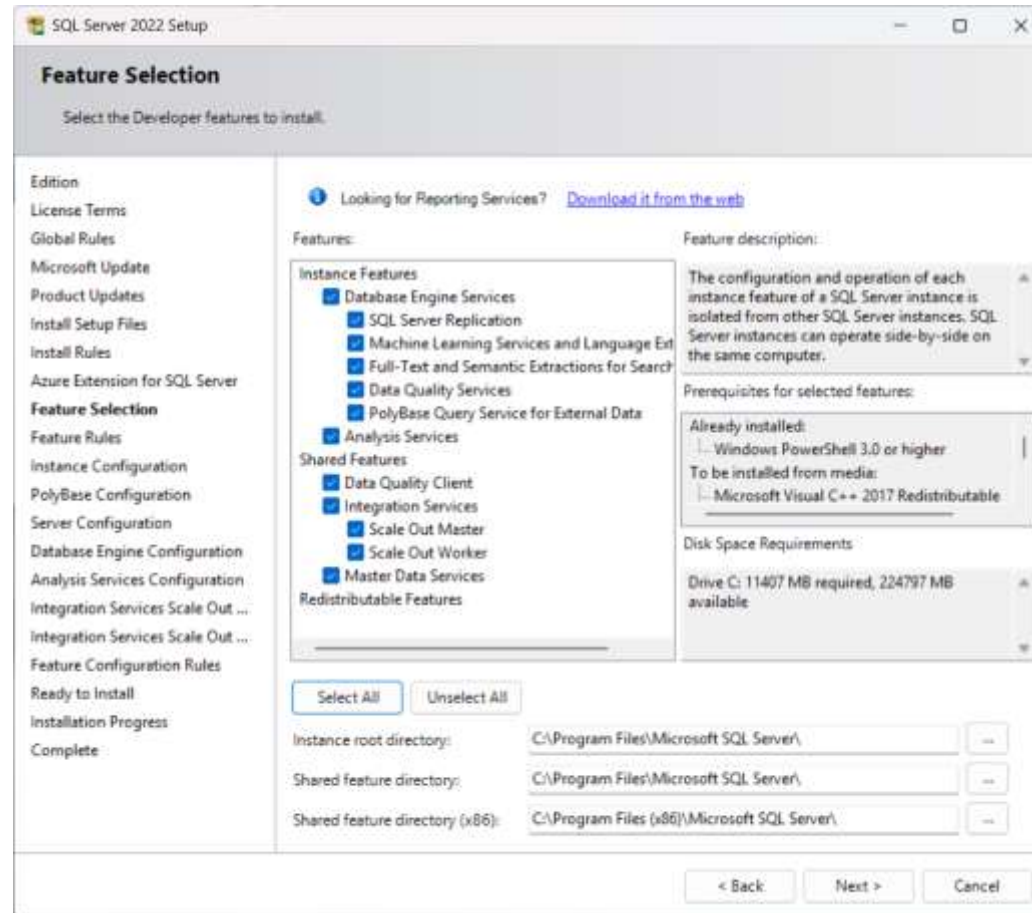
Azure Region*

Azure Tenant ID*

Proxy Server URL (optional)

< Back Next > Cancel

Feature Selection: Chọn các tính năng cho Server và nơi cài đặt chúng



Instance Configuration: Đặt tên và ID cho SQL Server, tại đây tên được đặt là **LuongHoangViet** với ID **LUONGHOANGVIET**

SQL Server 2022 Setup

Instance Configuration

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

☐ Default instance

☒ Named instance: *

Instance ID:

SQL Server directory:

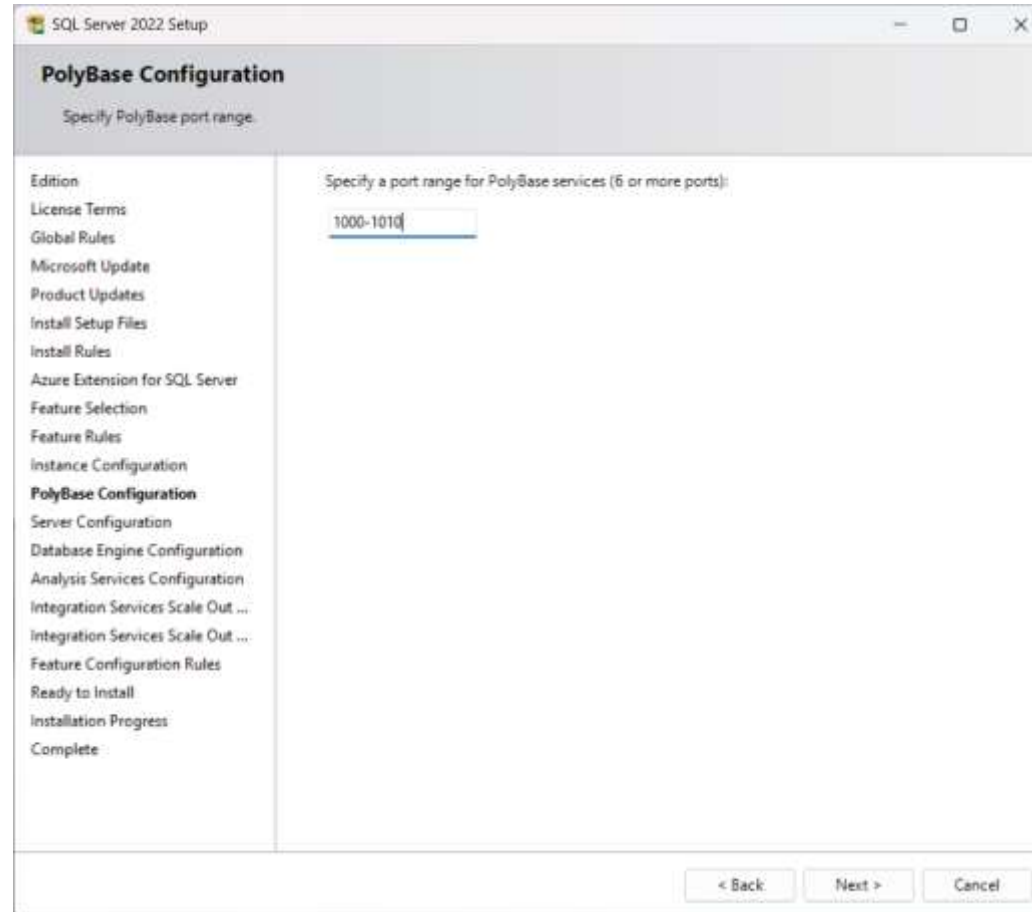
Analysis Services directory:

Installed instances:

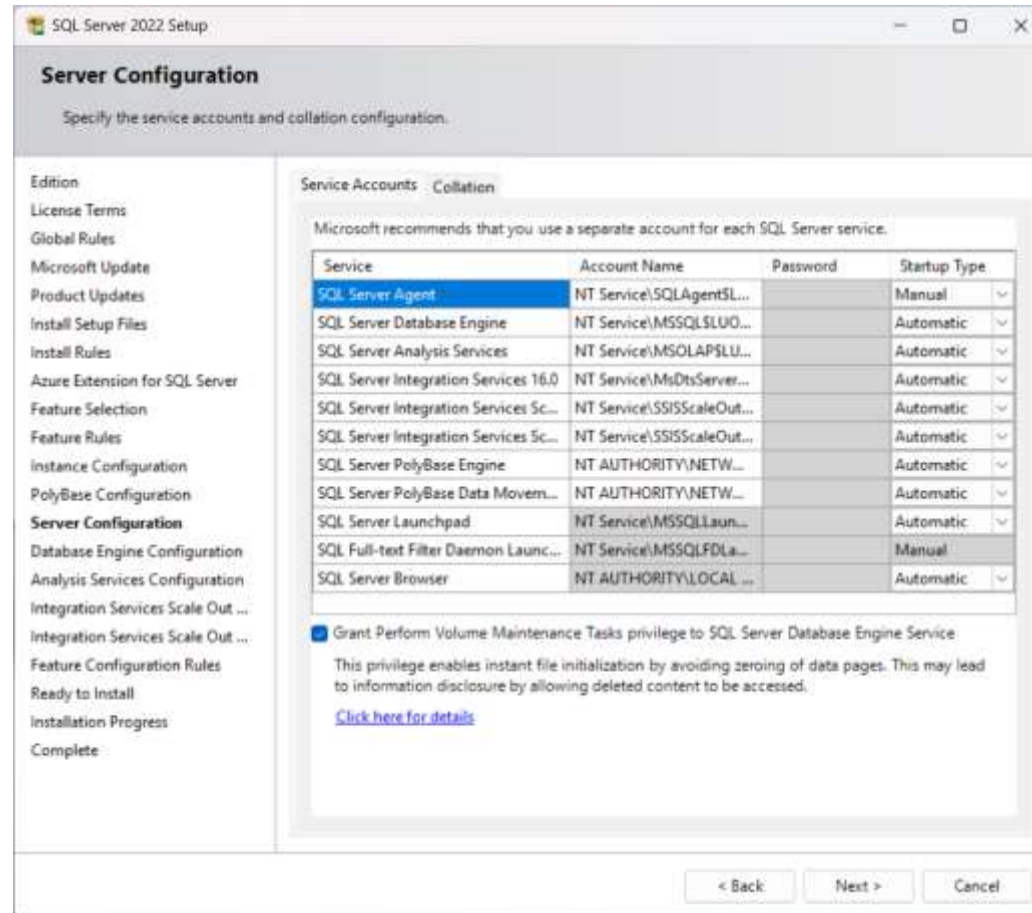
Instance Name	Instance ID	Features	Edition	Version
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< Back Next > Cancel

Polybase Configuration: Cho phép truy vấn các nguồn dữ liệu khác



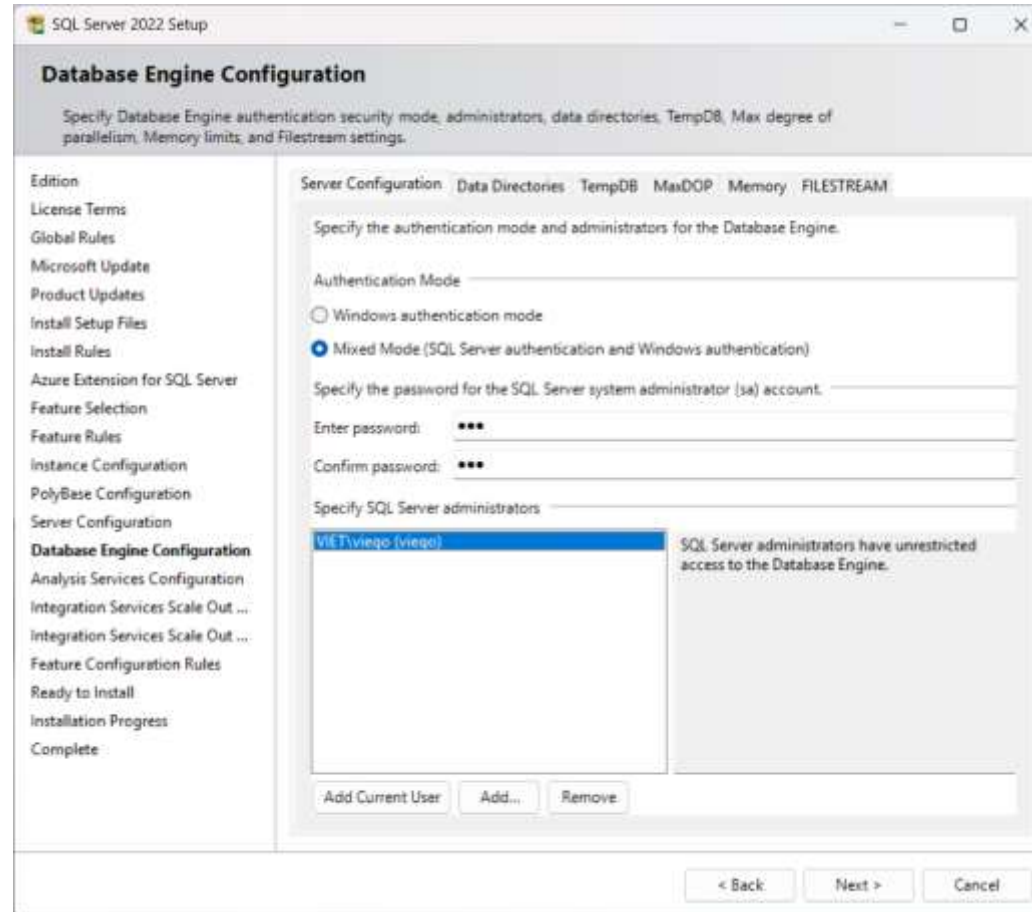
Server Configuration: Cấu hình cho Server



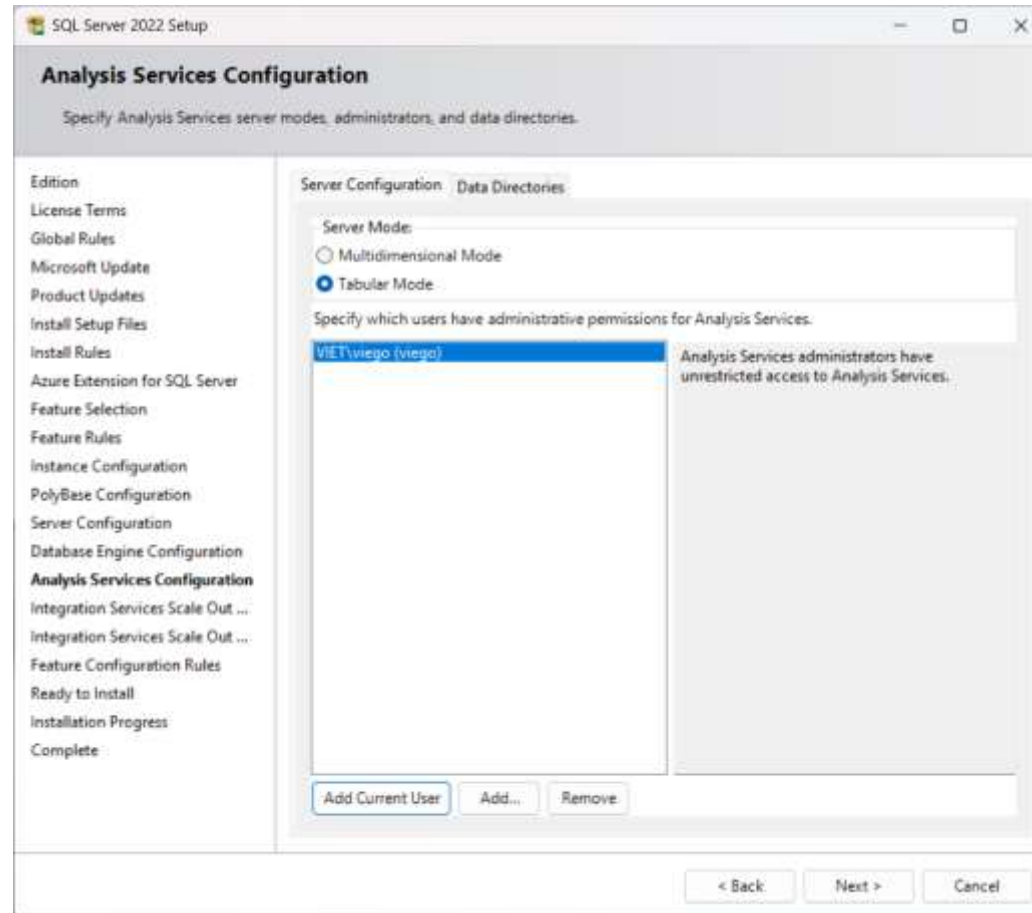
Database Engine Configuration: Thiết lập loại xác thực và xác định quyền admin cho người dùng hoặc nhóm người dùng

Account:sa

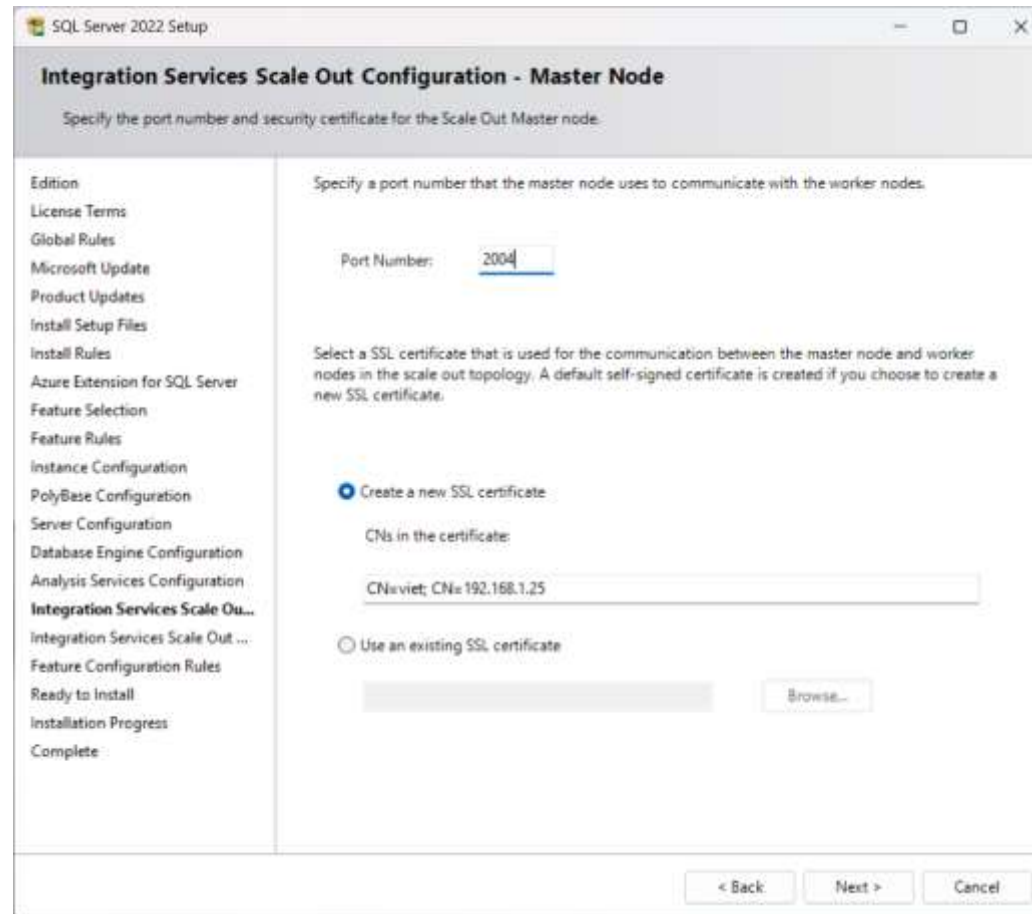
Password:123



Analynis Services Configuration: Chọn chế độ hoạt động và tài khoản quản trị trên dịch vụ của nó



Master Node: Đặt số cổng Master node giao tiếp với Worker node



The screenshot shows the 'SQL Server 2022 Setup' window, specifically the 'Integration Services Scale Out Configuration - Master Node' step. The window title is 'SQL Server 2022 Setup'. The main heading is 'Integration Services Scale Out Configuration - Master Node'. Below the heading, it says 'Specify the port number and security certificate for the Scale Out Master node.'.

On the left side, there is a list of installation steps:

- Edition
- License Terms
- Global Rules
- Microsoft Update
- Product Updates
- Install Setup Files
- Install Rules
- Azure Extension for SQL Server
- Feature Selection
- Feature Rules
- Instance Configuration
- PolyBase Configuration
- Server Configuration
- Database Engine Configuration
- Analysis Services Configuration
- Integration Services Scale Ou...**
- Integration Services Scale Out ...
- Feature Configuration Rules
- Ready to Install
- Installation Progress
- Complete

The main content area has the following sections:

Specify a port number that the master node uses to communicate with the worker nodes.

Port Number:

Select a SSL certificate that is used for the communication between the master node and worker nodes in the scale out topology. A default self-signed certificate is created if you choose to create a new SSL certificate.

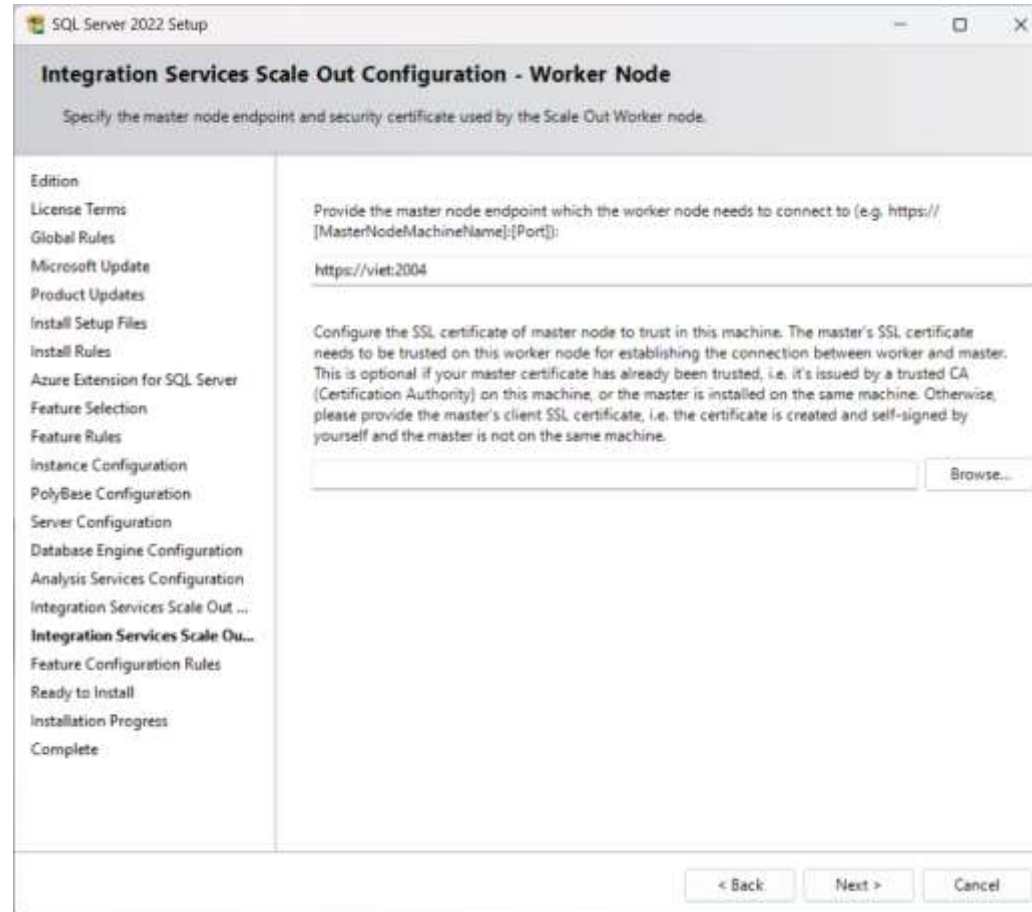
☒ Create a new SSL certificate

CNs in the certificate:

☐ Use an existing SSL certificate

At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Worker Node: Cung cấp Master node mà Worker node cần để kết nối



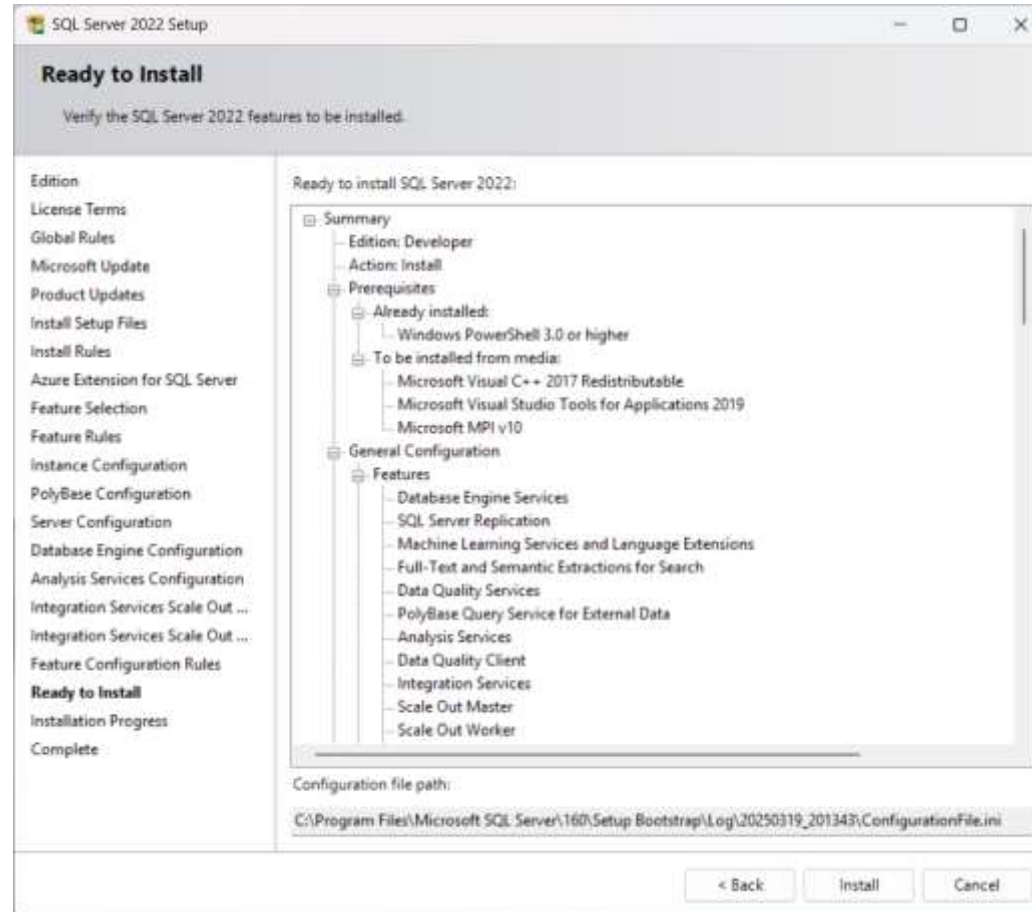
The screenshot shows the 'SQL Server 2022 Setup' window. The title bar reads 'SQL Server 2022 Setup'. The main window title is 'Integration Services Scale Out Configuration - Worker Node'. Below the title, a subtitle says 'Specify the master node endpoint and security certificate used by the Scale Out Worker node.'.

On the left is a navigation pane with the following items: Edition, License Terms, Global Rules, Microsoft Update, Product Updates, Install Setup Files, Install Rules, Azure Extension for SQL Server, Feature Selection, Feature Rules, Instance Configuration, PolyBase Configuration, Server Configuration, Database Engine Configuration, Analysis Services Configuration, Integration Services Scale Out ..., **Integration Services Scale Ou...**, Feature Configuration Rules, Ready to Install, Installation Progress, and Complete.

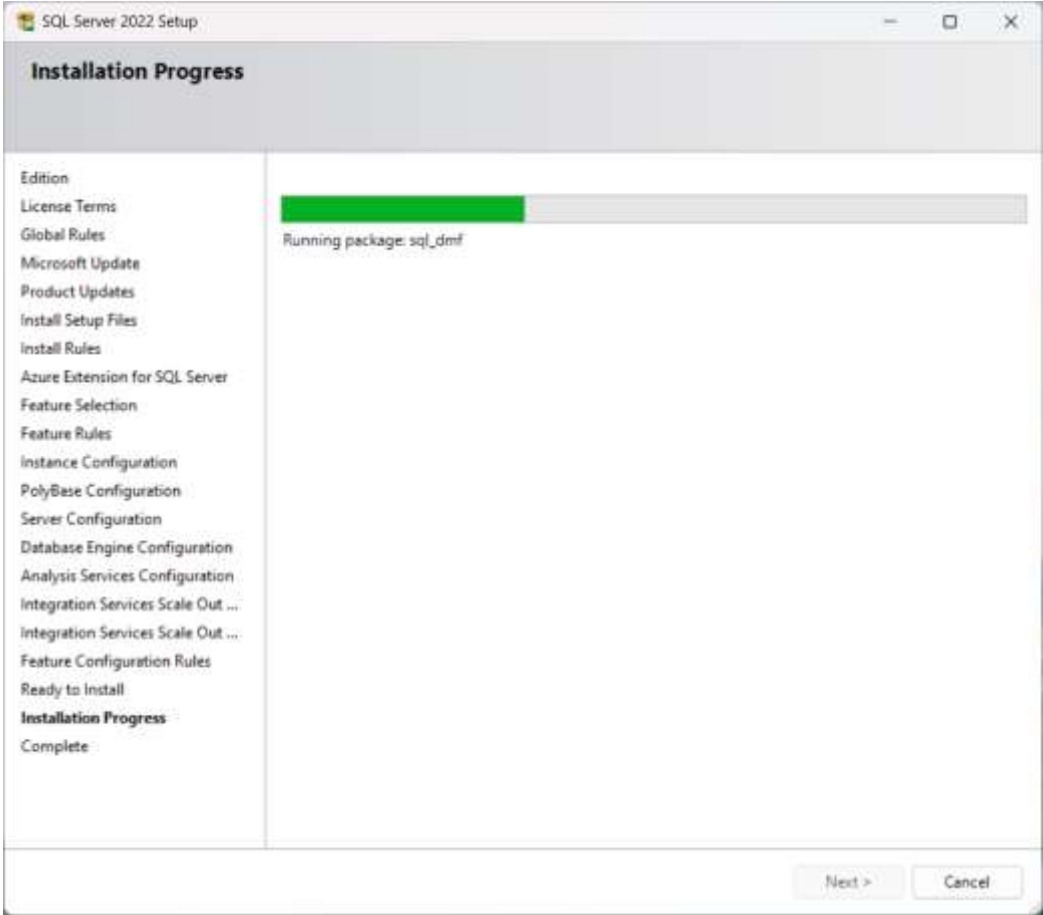
The main content area contains the following text: 'Provide the master node endpoint which the worker node needs to connect to (e.g. https://[MasterNodeMachineName]:[Port]):'. Below this is a text input field containing 'https://viet:2004'. Further down, there is explanatory text about SSL certificates: 'Configure the SSL certificate of master node to trust in this machine. The master's SSL certificate needs to be trusted on this worker node for establishing the connection between worker and master. This is optional if your master certificate has already been trusted, i.e. it's issued by a trusted CA (Certification Authority) on this machine, or the master is installed on the same machine. Otherwise, please provide the master's client SSL certificate, i.e. the certificate is created and self-signed by yourself and the master is not on the same machine.' Below this text is another text input field and a 'Browse...' button.

At the bottom of the window are three buttons: '< Back', 'Next >', and 'Cancel'.

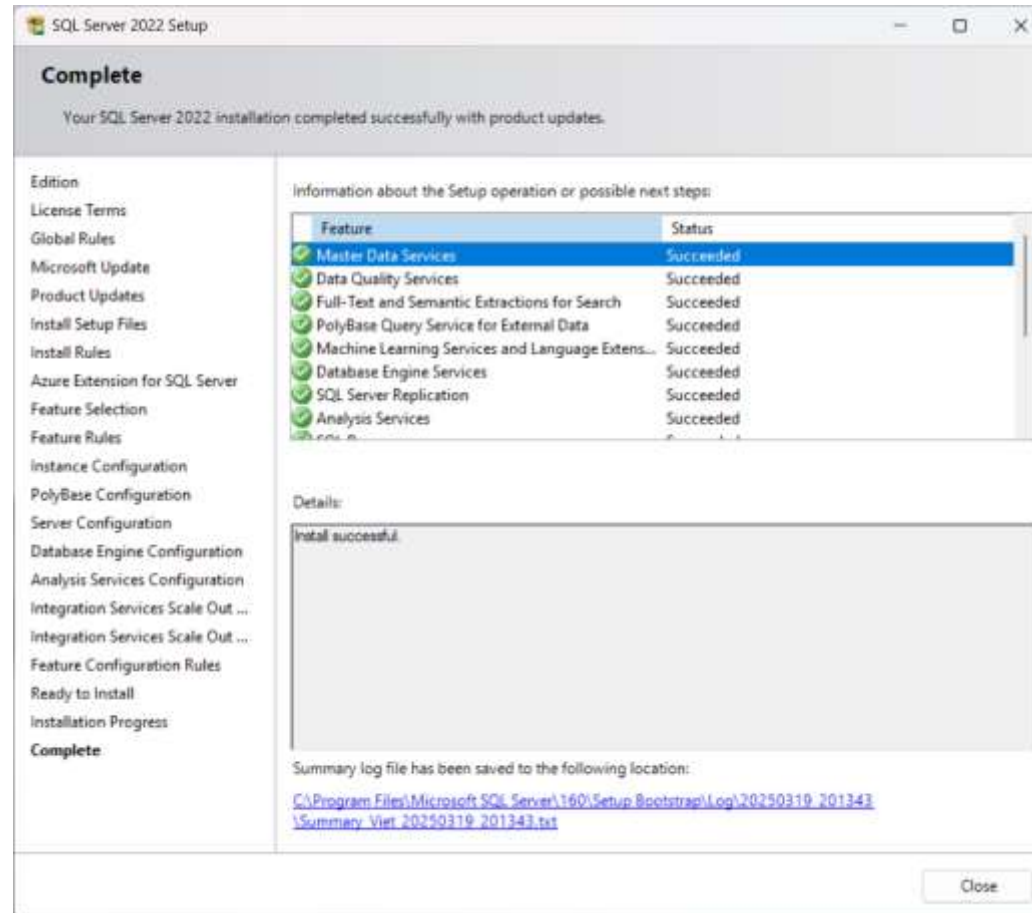
Sẵn sàng cài đặt:



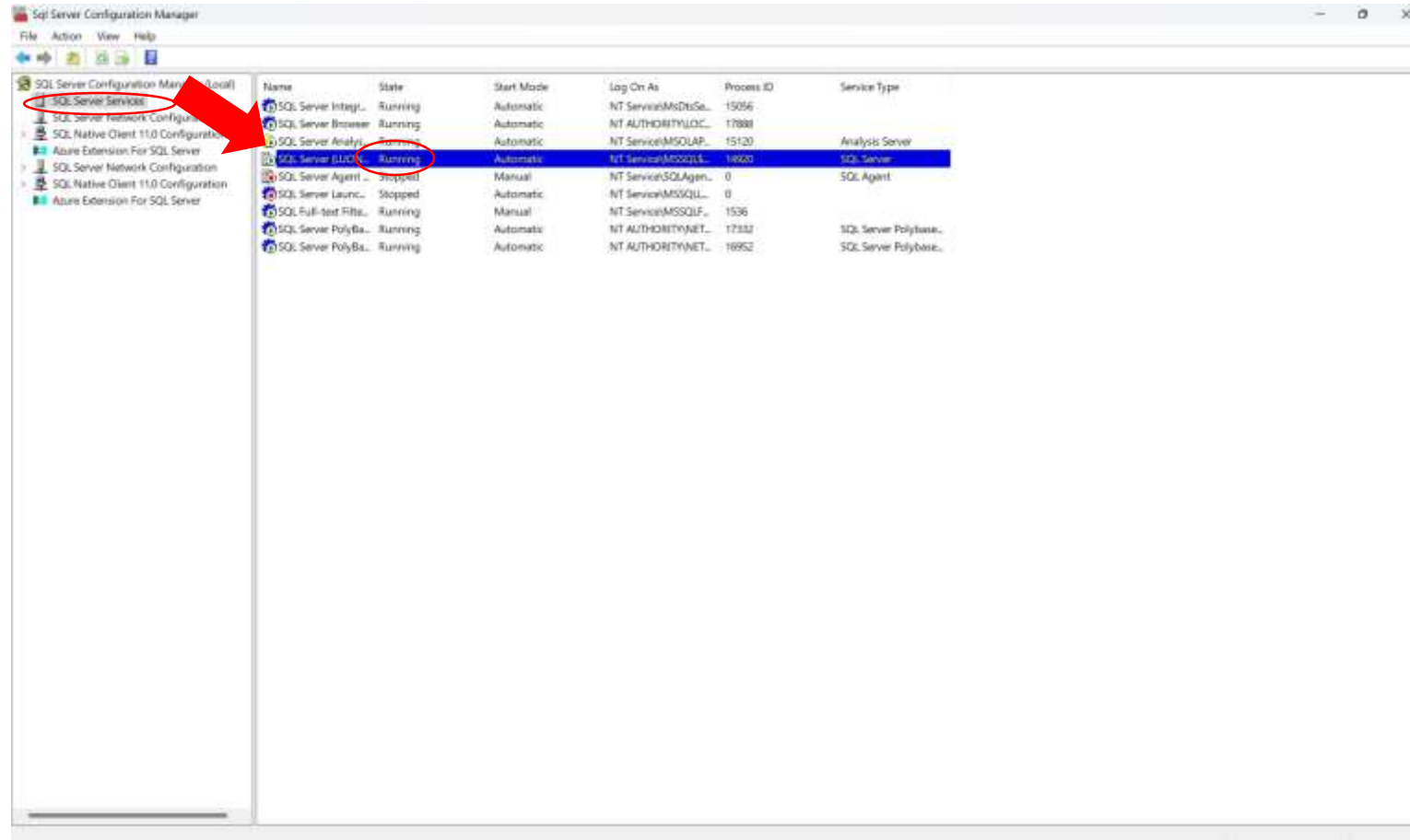
Đang cài đặt



Cài đặt thành công!

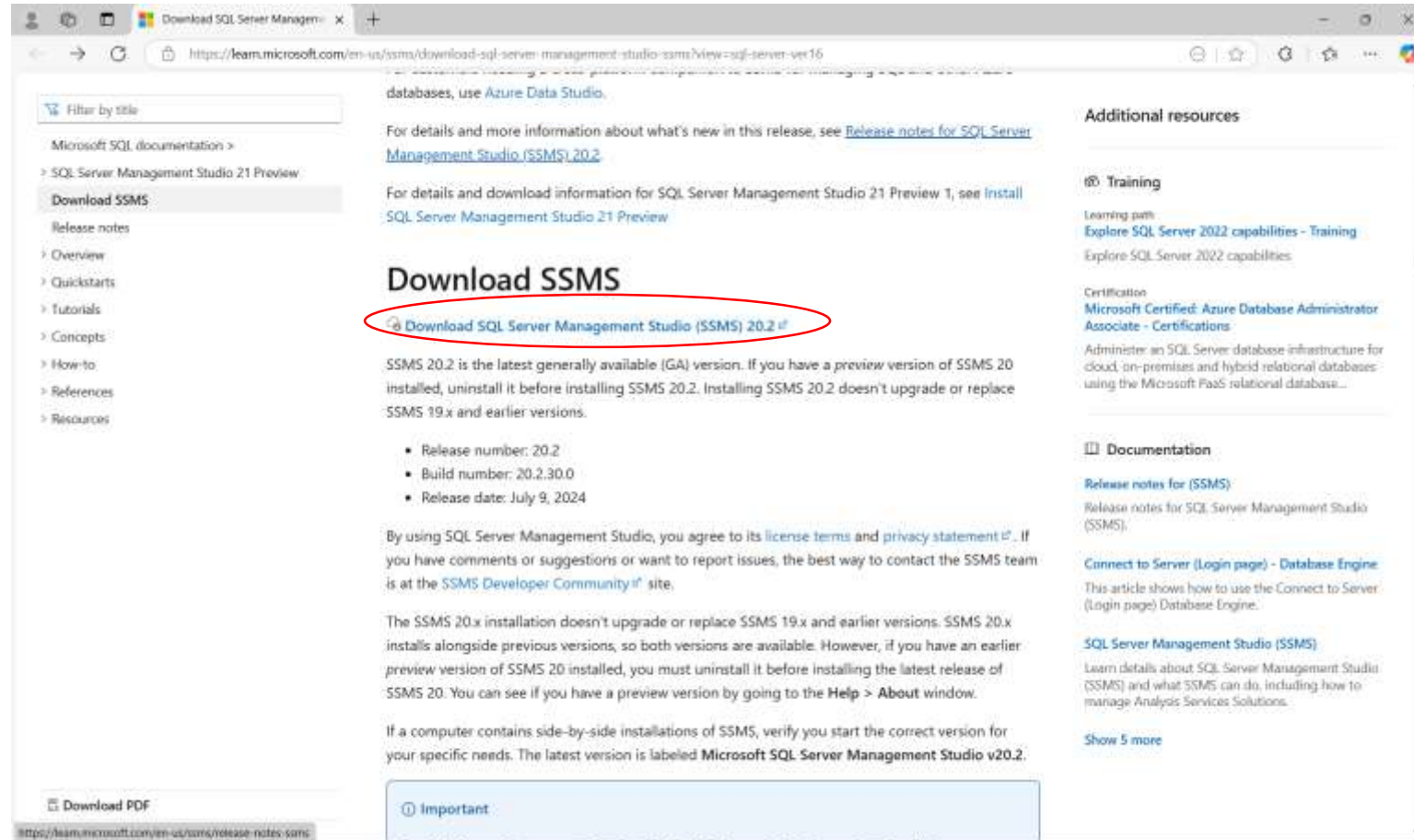


Test Server đang chạy hay chưa, sử dụng **SQL Server Configuration Manager** (Tìm ở Menu Start), truy cập vào **SQL Server Services** và kiểm tra xem Server vừa tạo có ở trạng thái **Running** hay không.

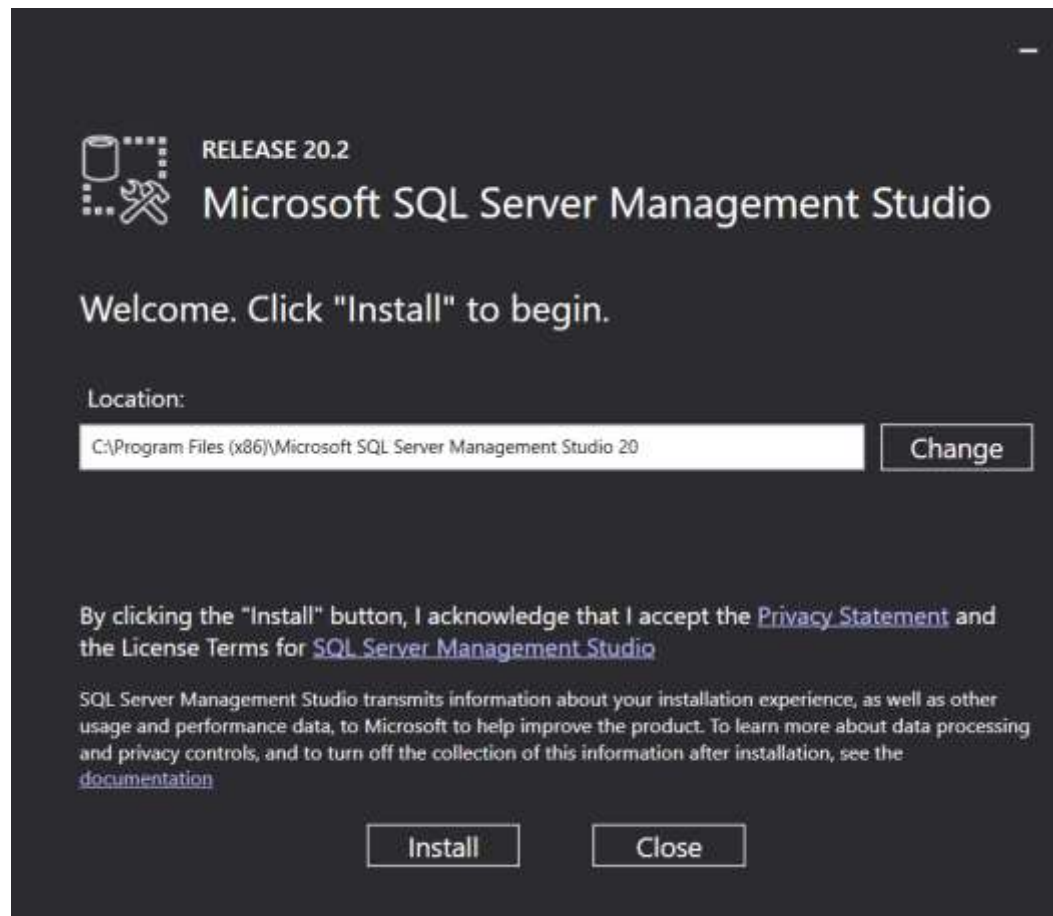


2. Download SQL Server Management Studio (SSMS) and Setup

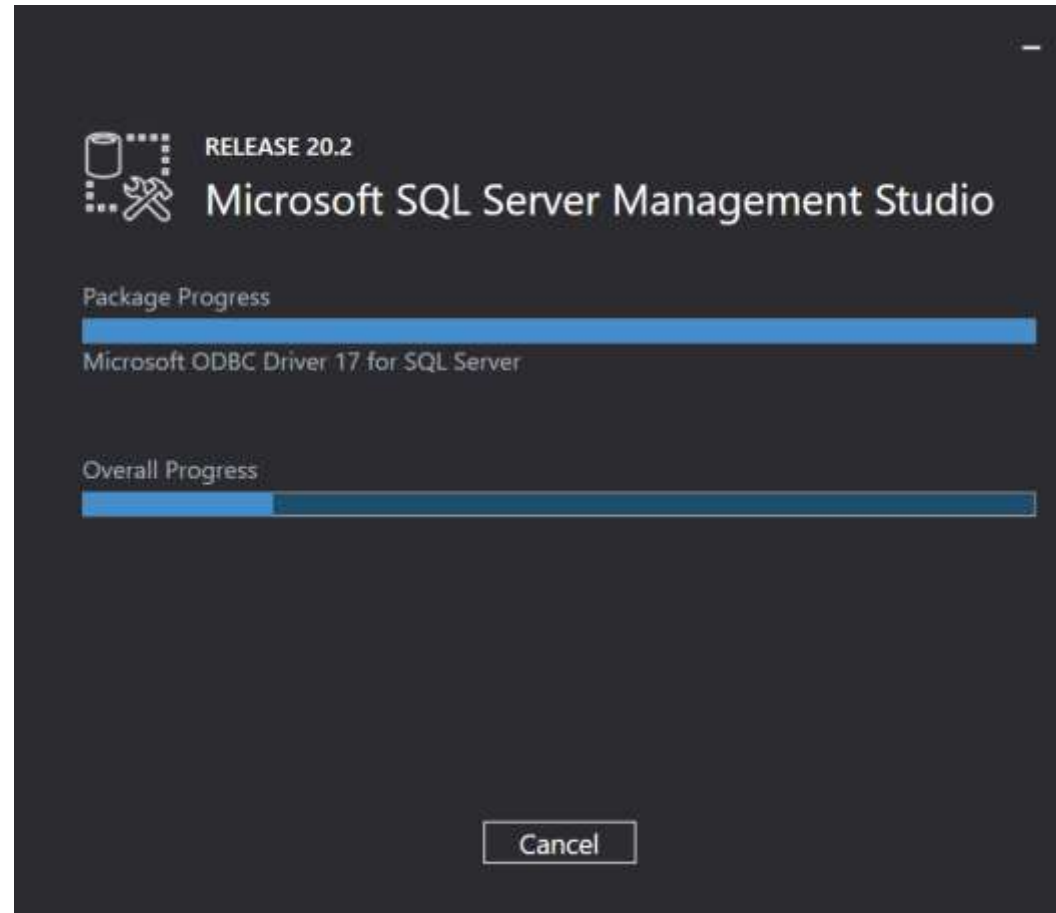
Link Download: <https://learn.microsoft.com/en-us/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver16>



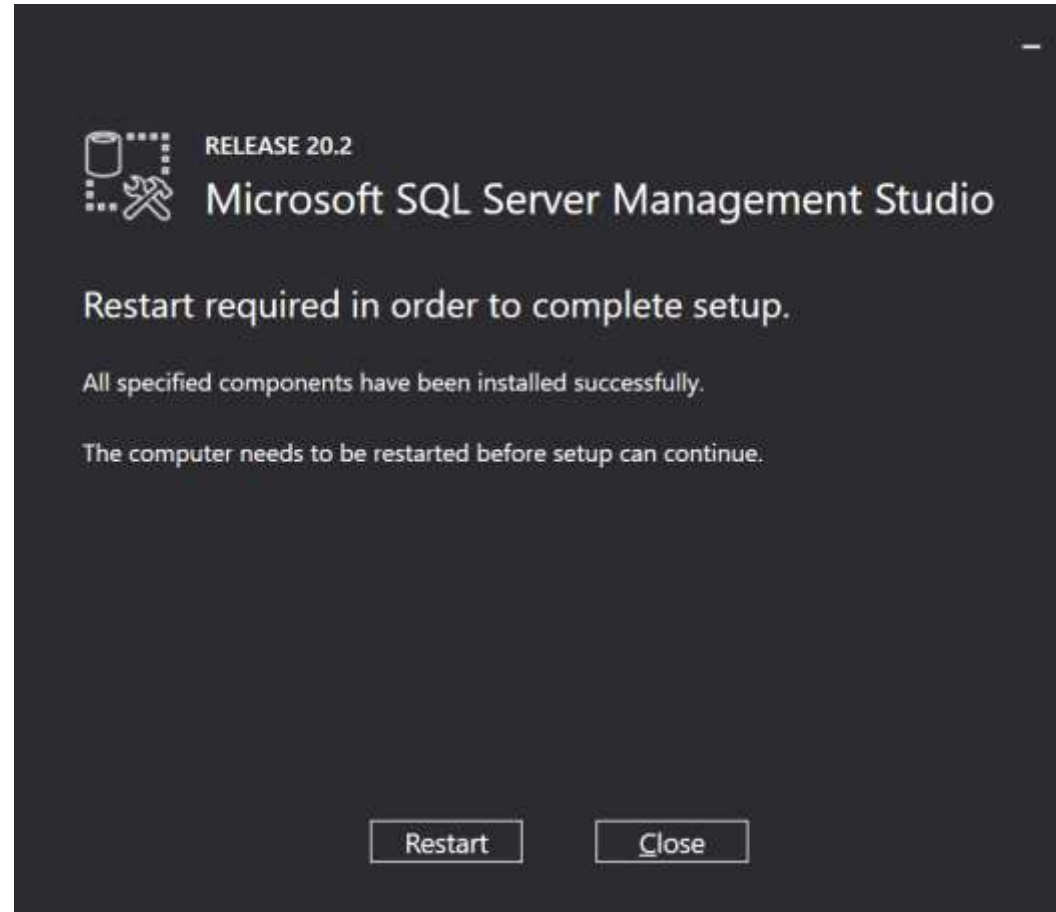
Mở file **SSMS-Setup-ENU.exe** vừa tải xuống được giao diện dưới, sau khi chọn điểm cài đặt, nhấn Install để cài đặt phần mềm



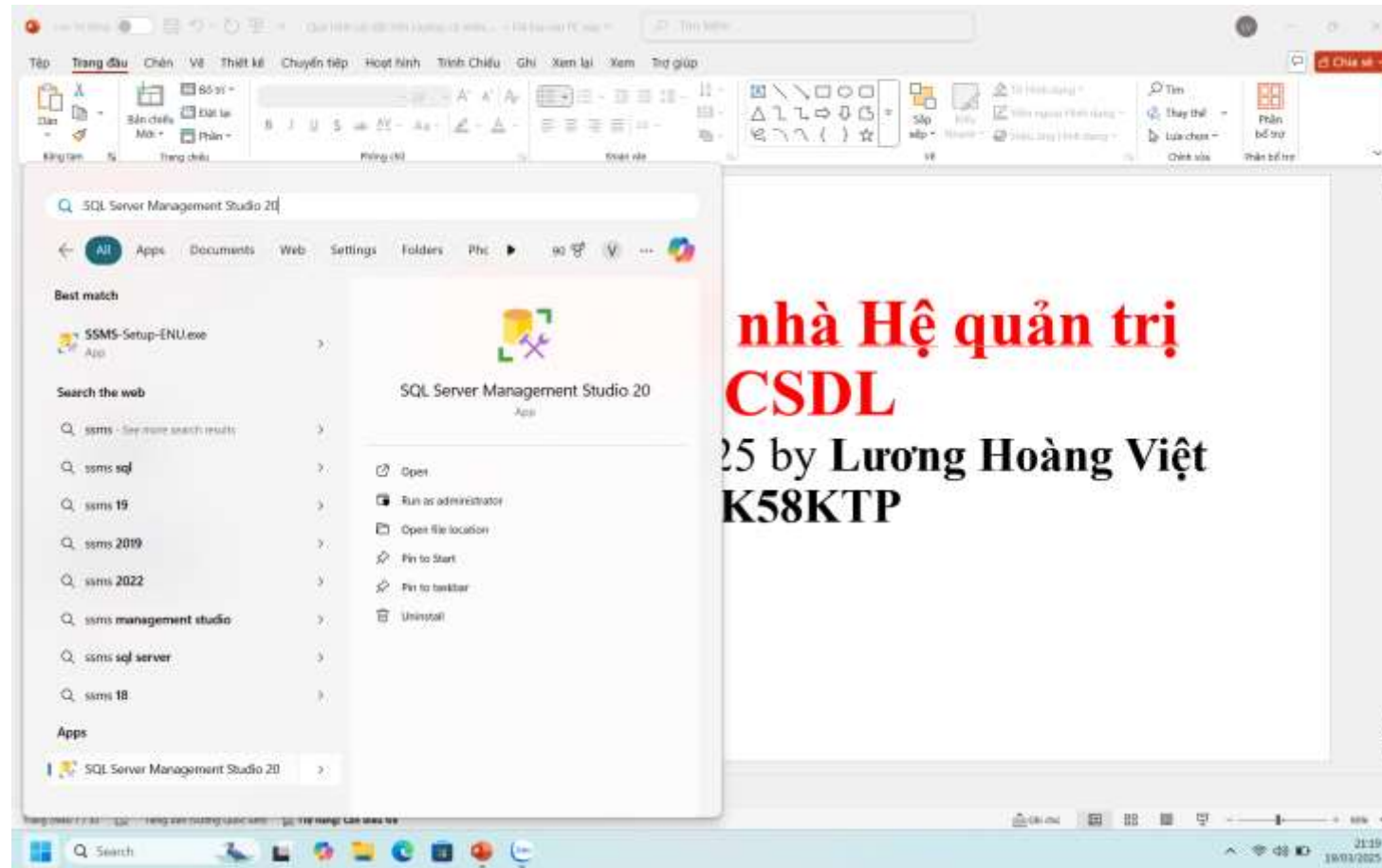
Đang cài đặt **SSMS**



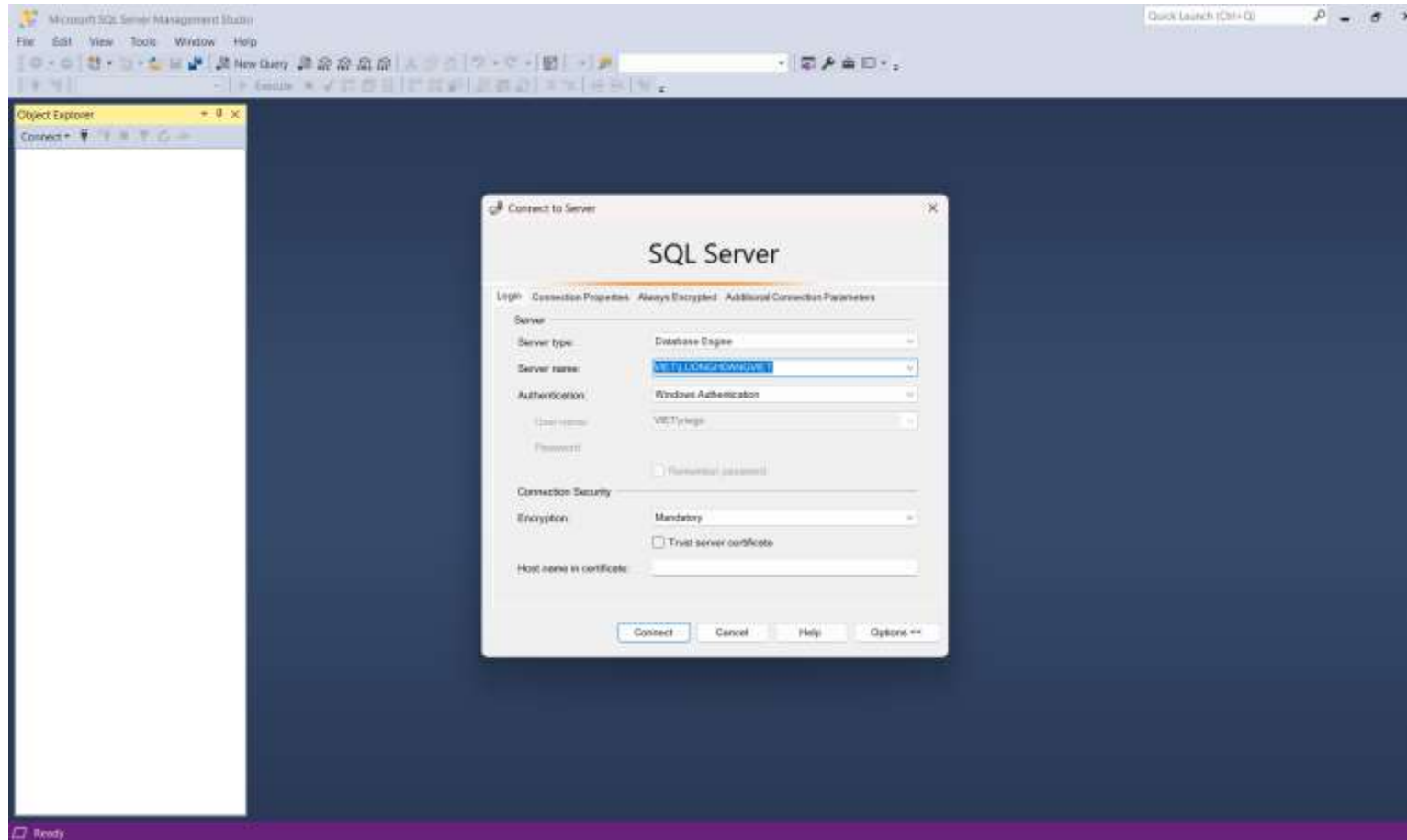
Sau khi đã tải xong, **Restart** máy để ứng dụng hoàn tất quá trình cài đặt



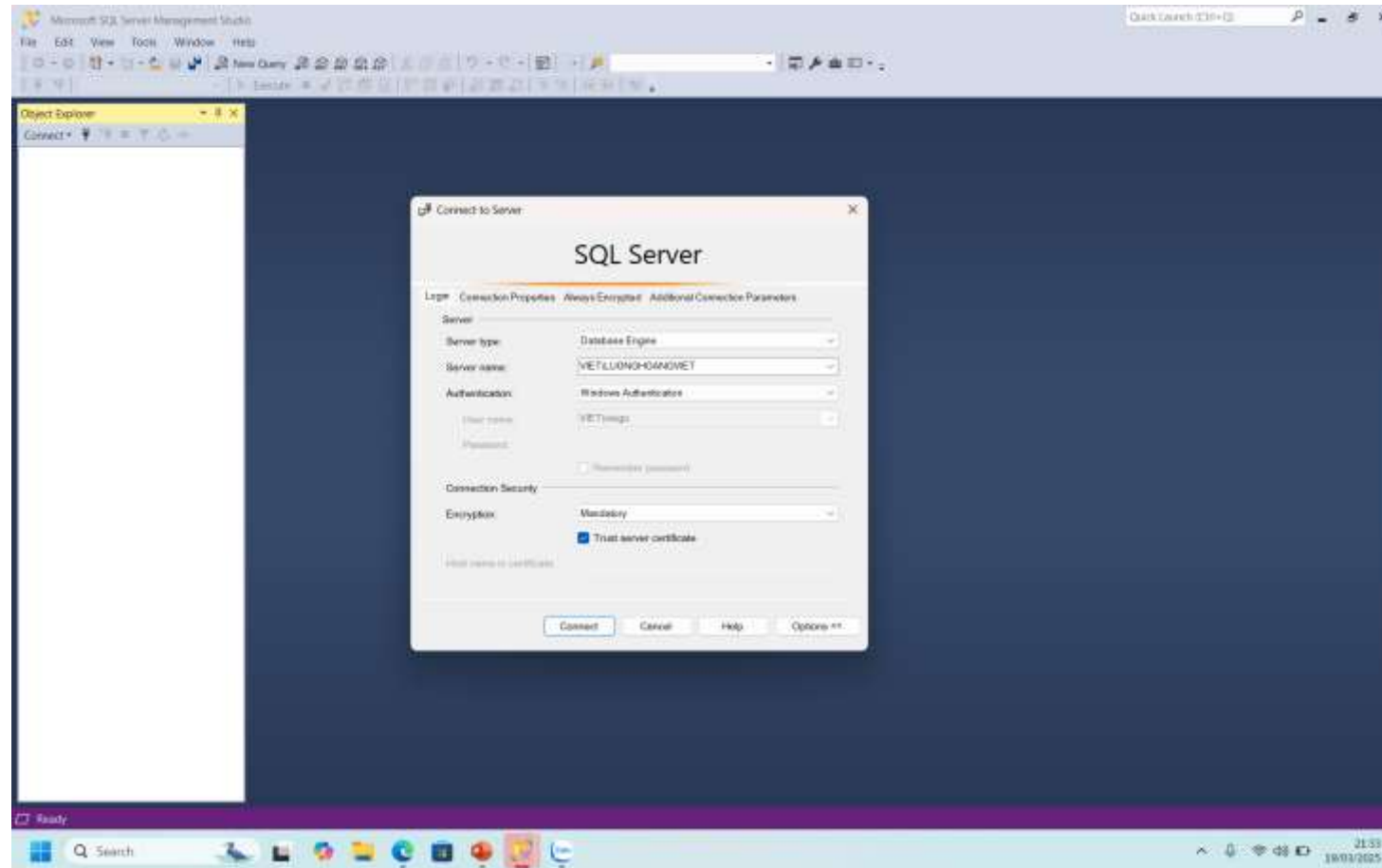
Sau khi khởi động lại máy, mở Menu Start và gõ SSMS để xem app đã cài hay chưa.



Giao diện sau khi cài đặt và mở **SSMS**:



3. Đăng nhập SSMS



Đăng nhập với Windows Authencation, chọn Trust server certificate sau đó
Connect

Connect to Server

SQL Server

Login | Connection Properties | Always Encrypted | Additional Connection Parameters

Server

Server type: Database Engine

Server name: VIET\LUONGHOANGVIET

Authentication: Windows Authentication

User name: VIET\viego

Password:

☐ Remember password

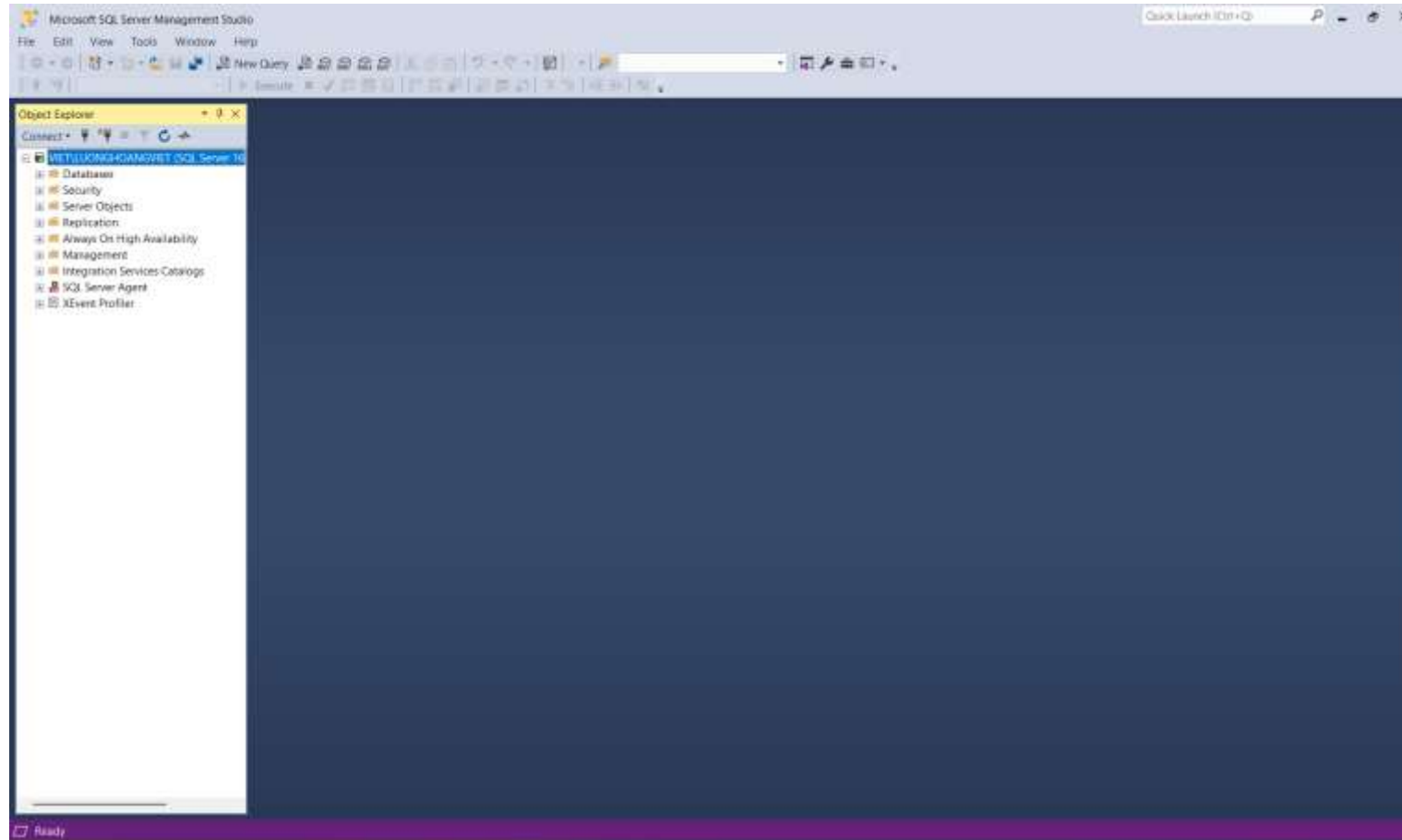
Connection Security

Encryption: Mandatory

☒ Trust server certificate

Host name in certificate:

Đã kết nối với Server (Windows Authentication)



Đăng nhập với SQL Server Authentication:

Tại Authentication chọn SQL Server Authentication rồi nhập tài khoản, mật khẩu đã cấu hình trước đó (tại P1), chọn Trust server certificate sau đó Connect

Connect to Server

SQL Server

Login | Connection Properties | Always Encrypted | Additional Connection Parameters

Server

Server type: Database Engine

Server name: VIET\LUONGHOANGVIET

Authentication: SQL Server Authentication

Login: sa

Password: ***

☒ Remember password

Connection Security

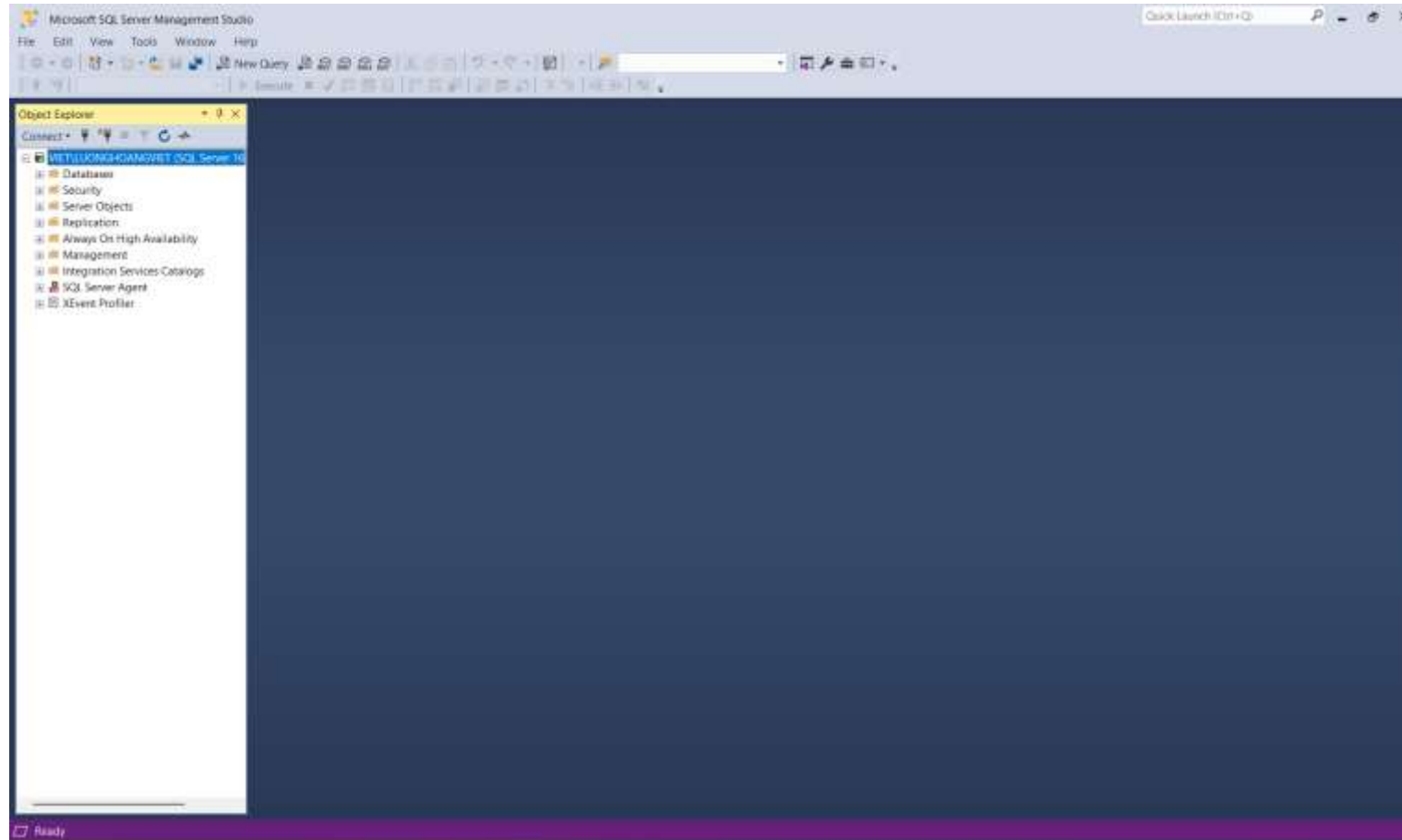
Encryption: Mandatory

☒ Trust server certificate

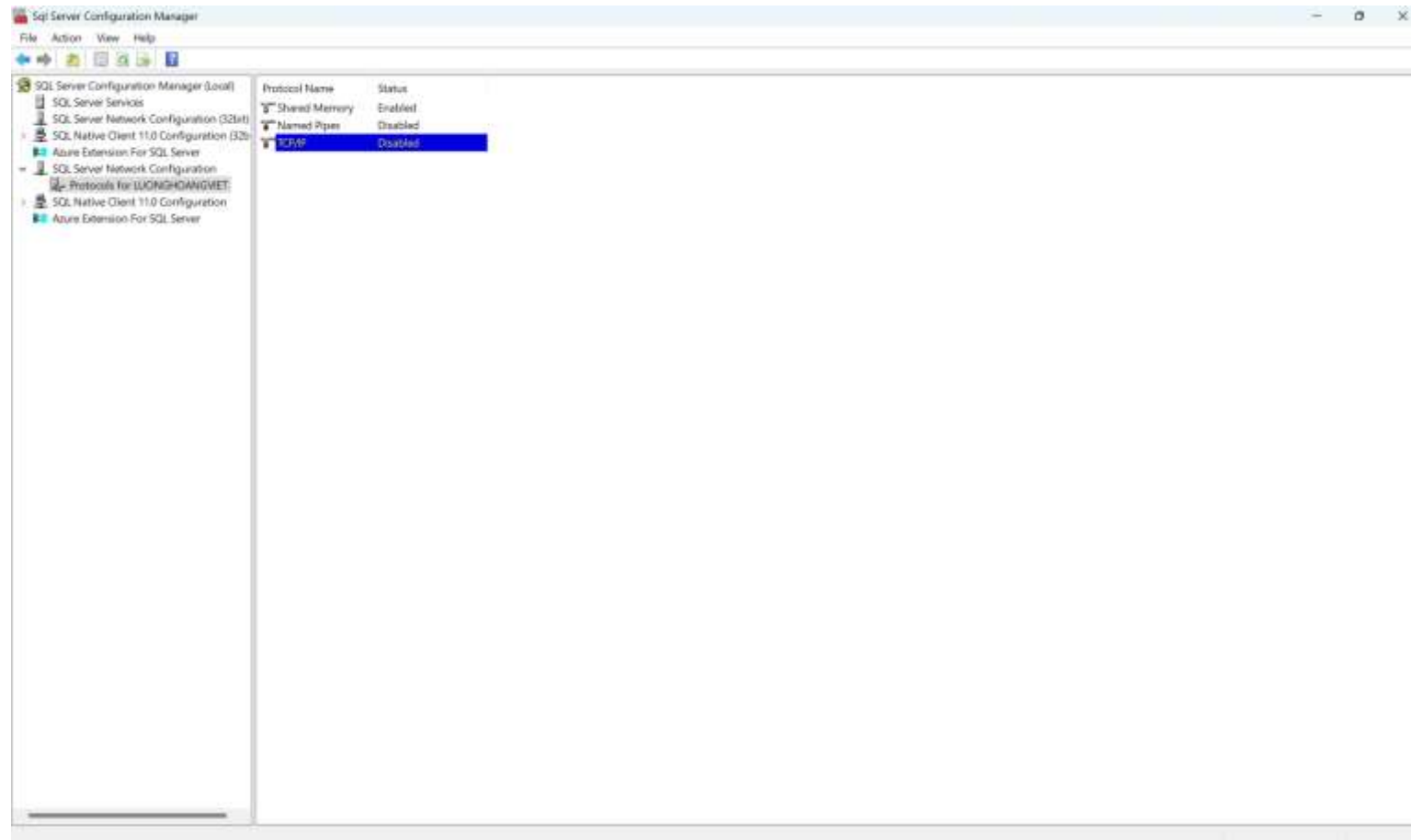
Host name in certificate:

Connect Cancel Help Options <<

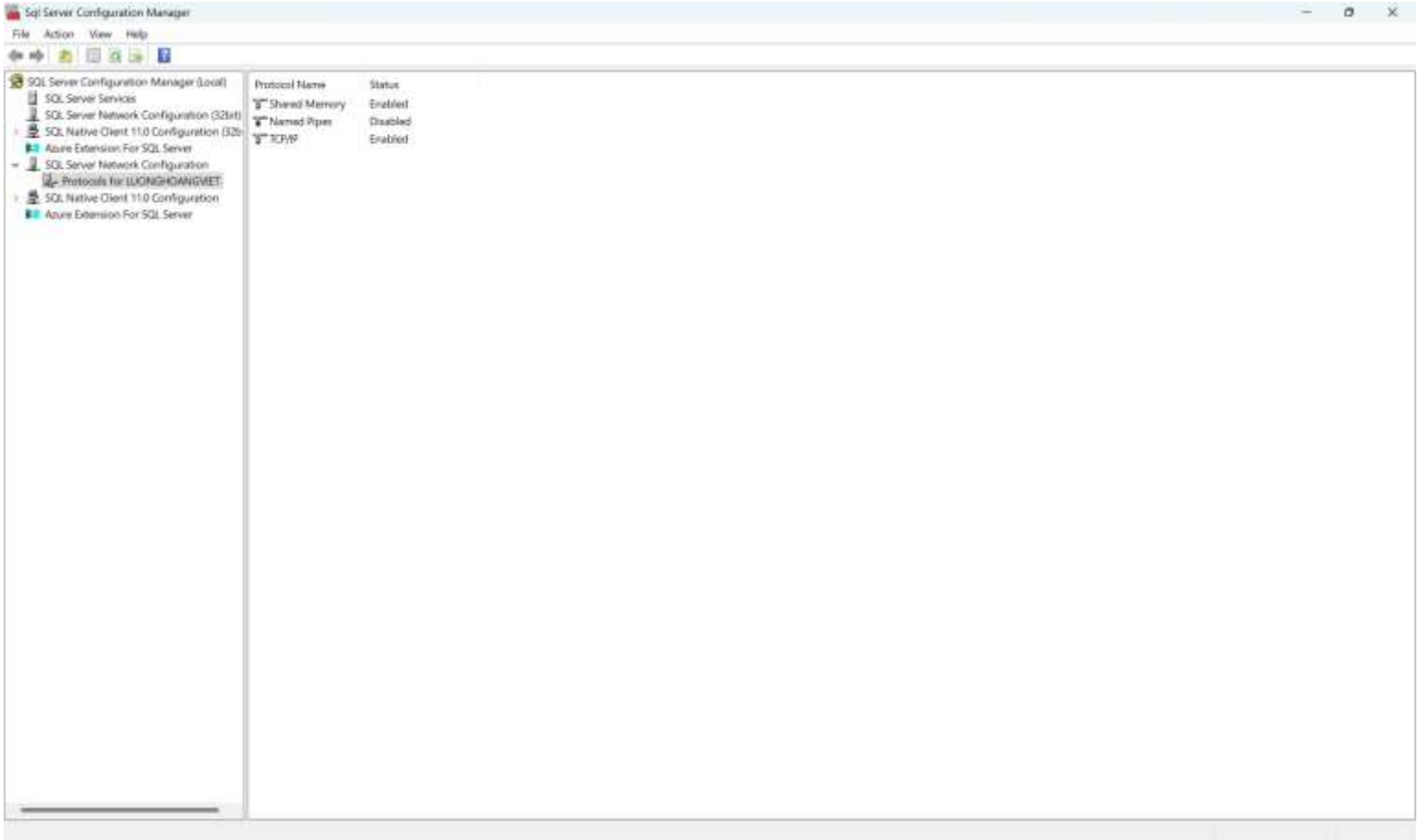
Đã kết nối với Server (SQL Server Authentication)



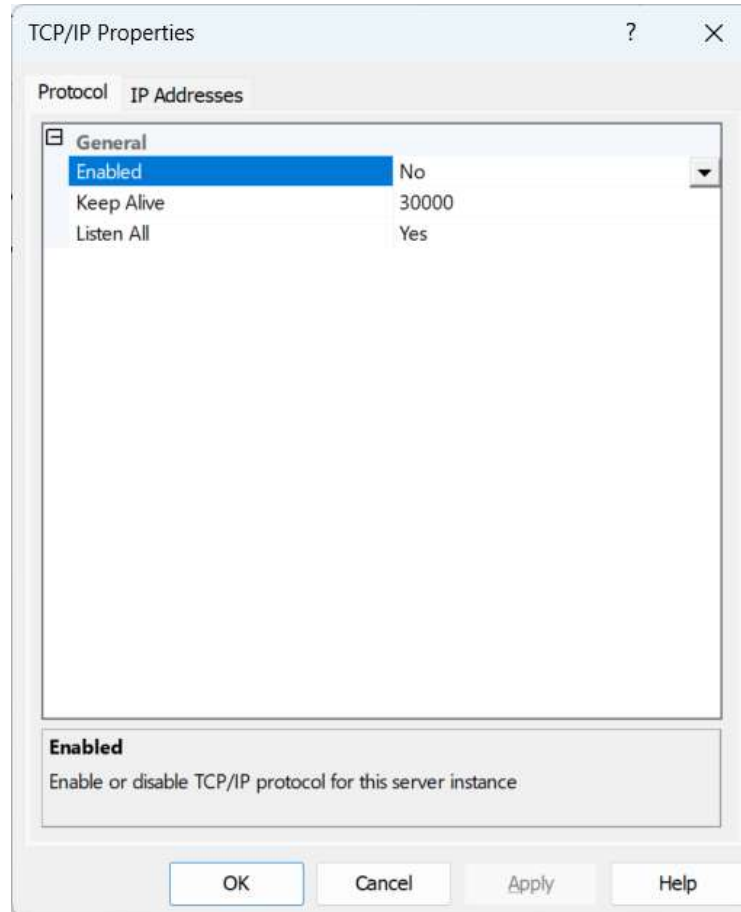
4.1 Cấu hình **dynamic port**



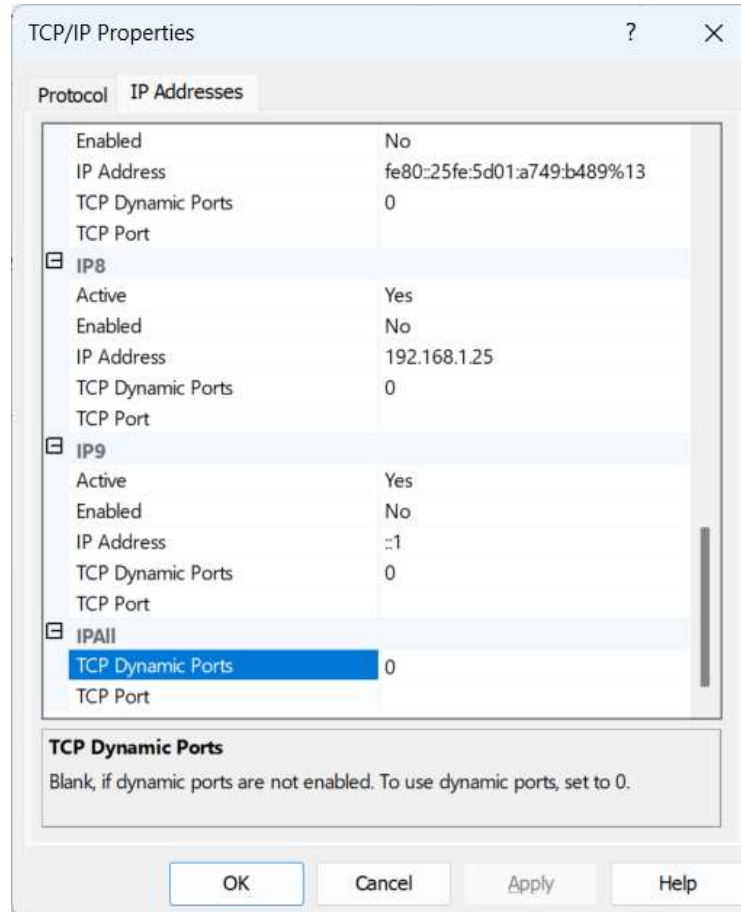
Bật TCP/IP để truy cập



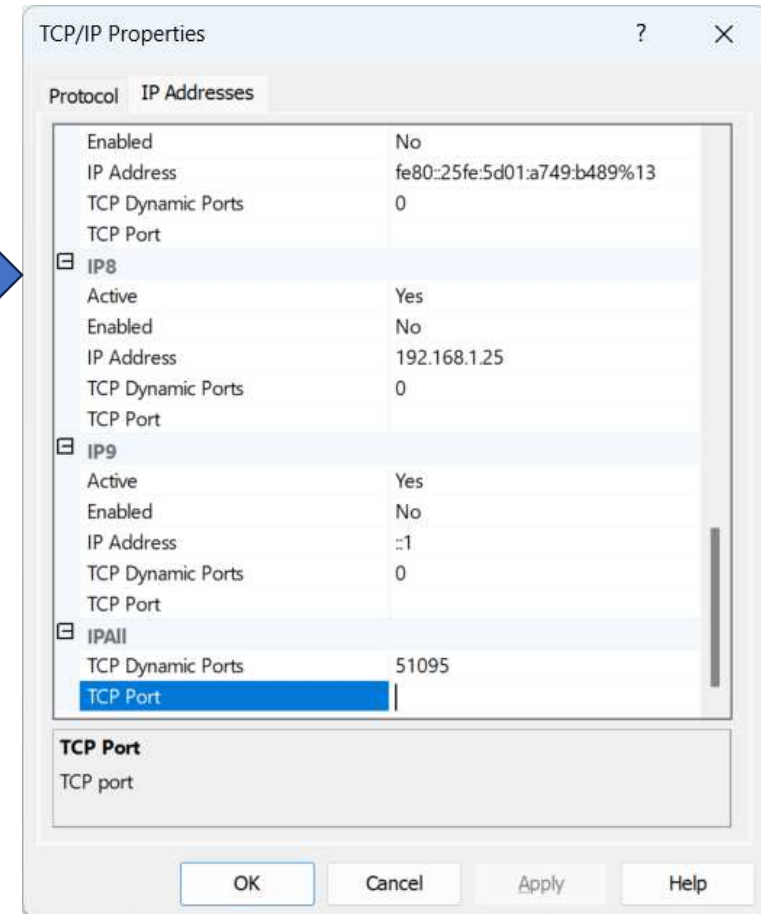
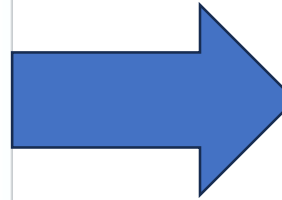
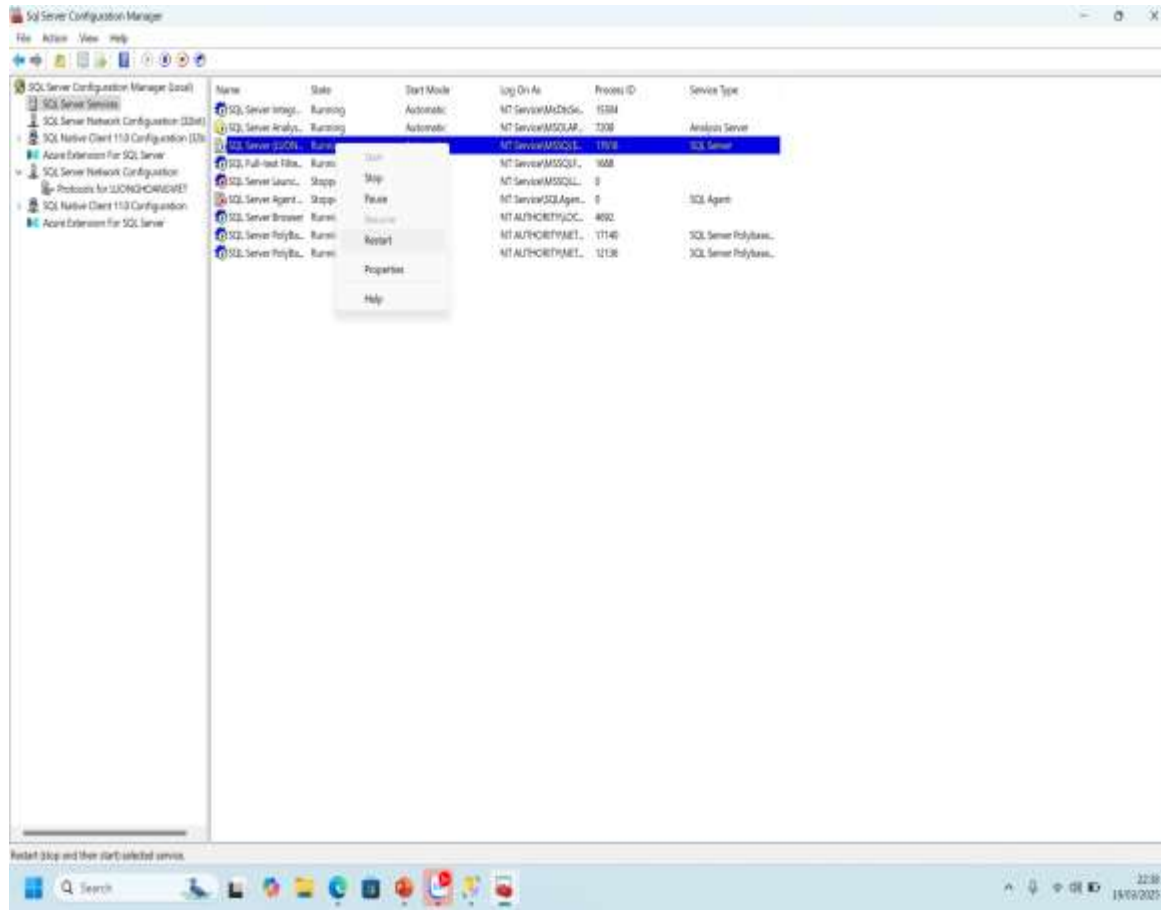
Chọn protocols for LUONGHOANGVIET, chọn TCP/IP rồi mở Properties



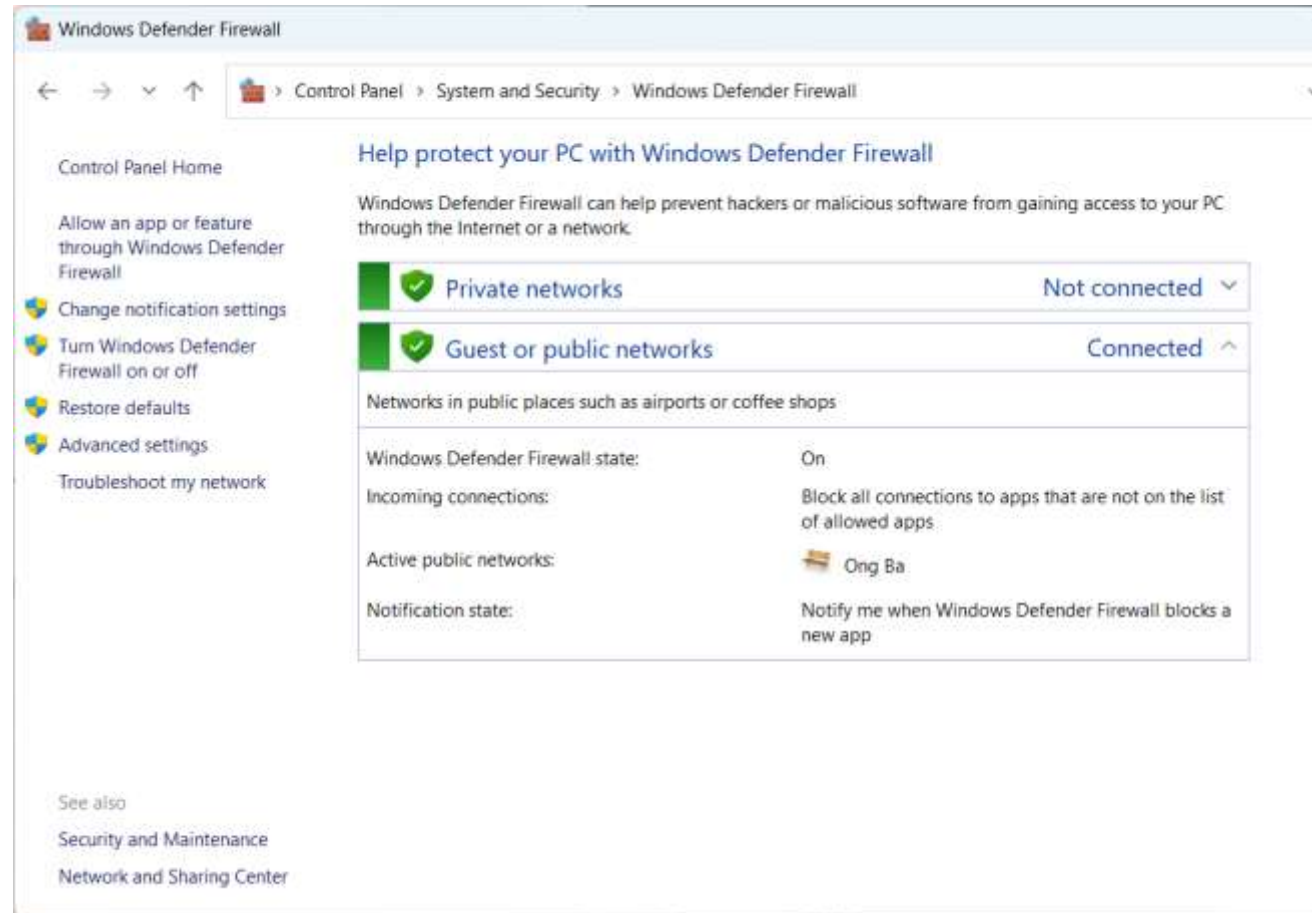
Trong tab **IP Addresses**, cuộn xuống phần **IP All** và kiểm tra mục **TCP Dynamic Ports**.



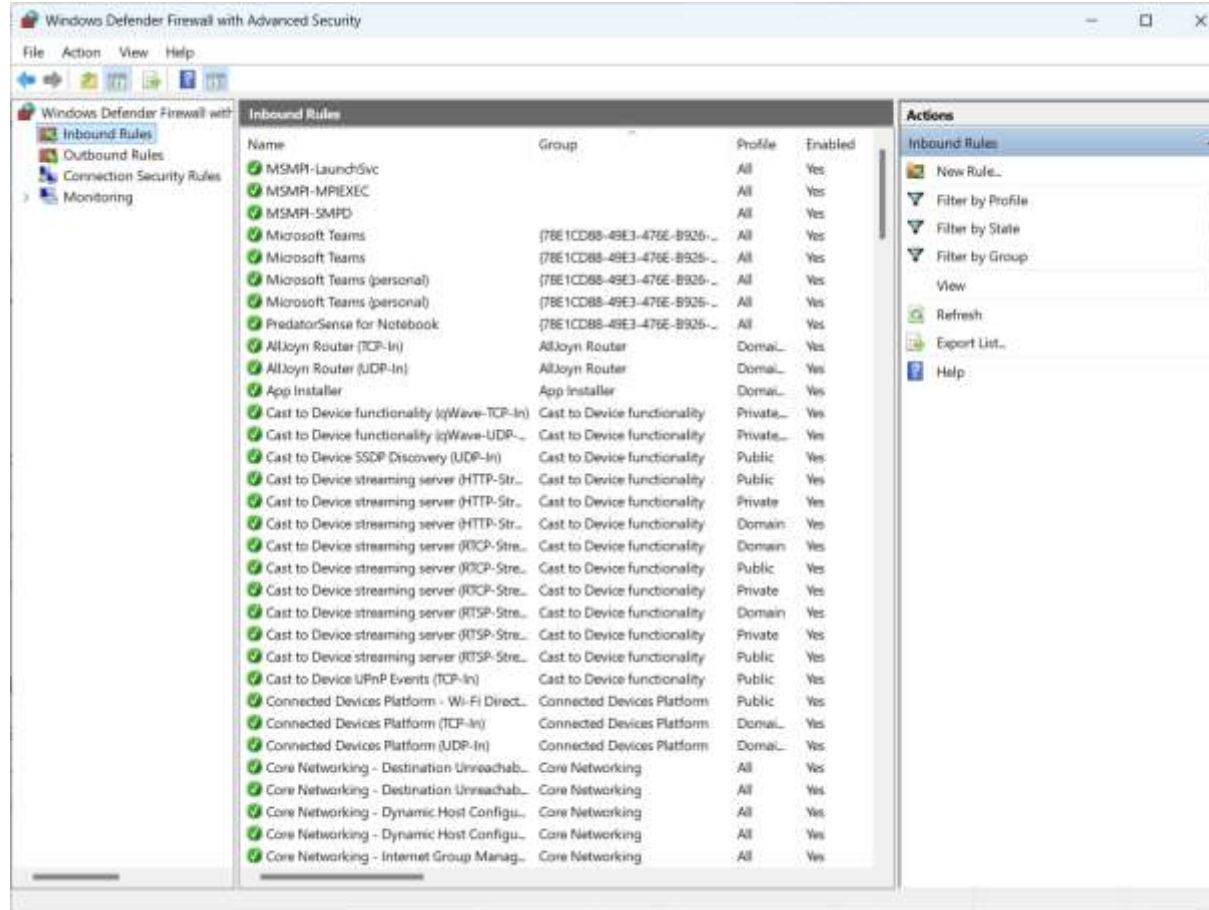
Reset Server để hiện TCP Dynamic port



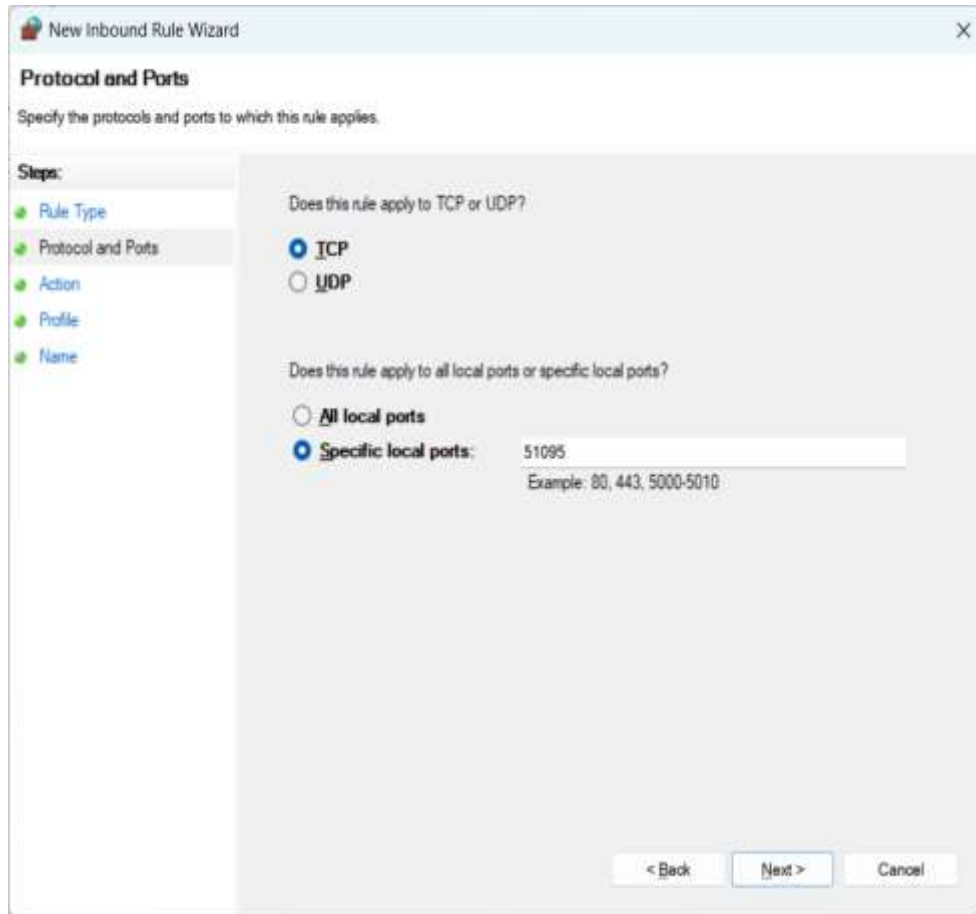
4.2 Cấu hình port Windows Defender Fire Wall



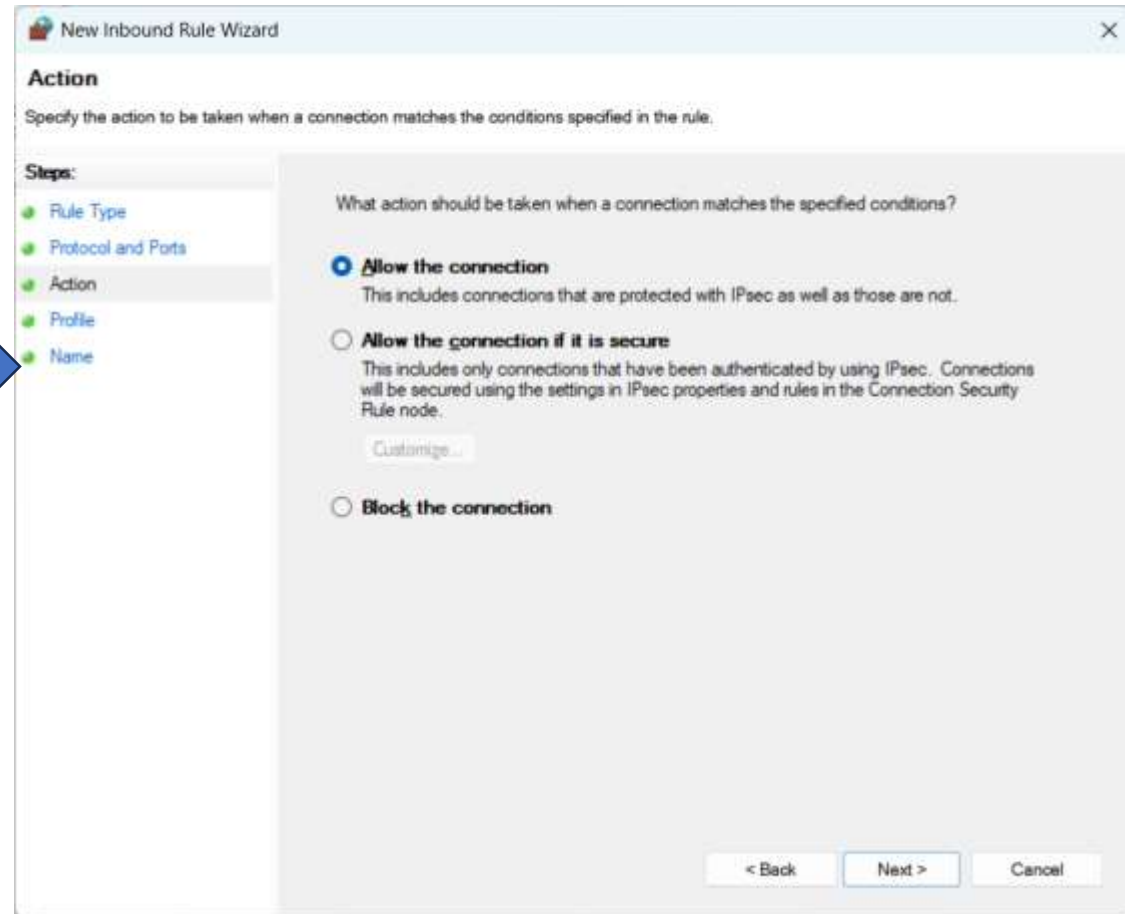
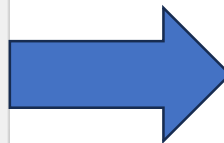
Mở Inbond Rules



Chọn New rules => chọn port => TCP và nhập port rồi nhập Port:51095 => Allow the connection => Next đến khi tắt tab

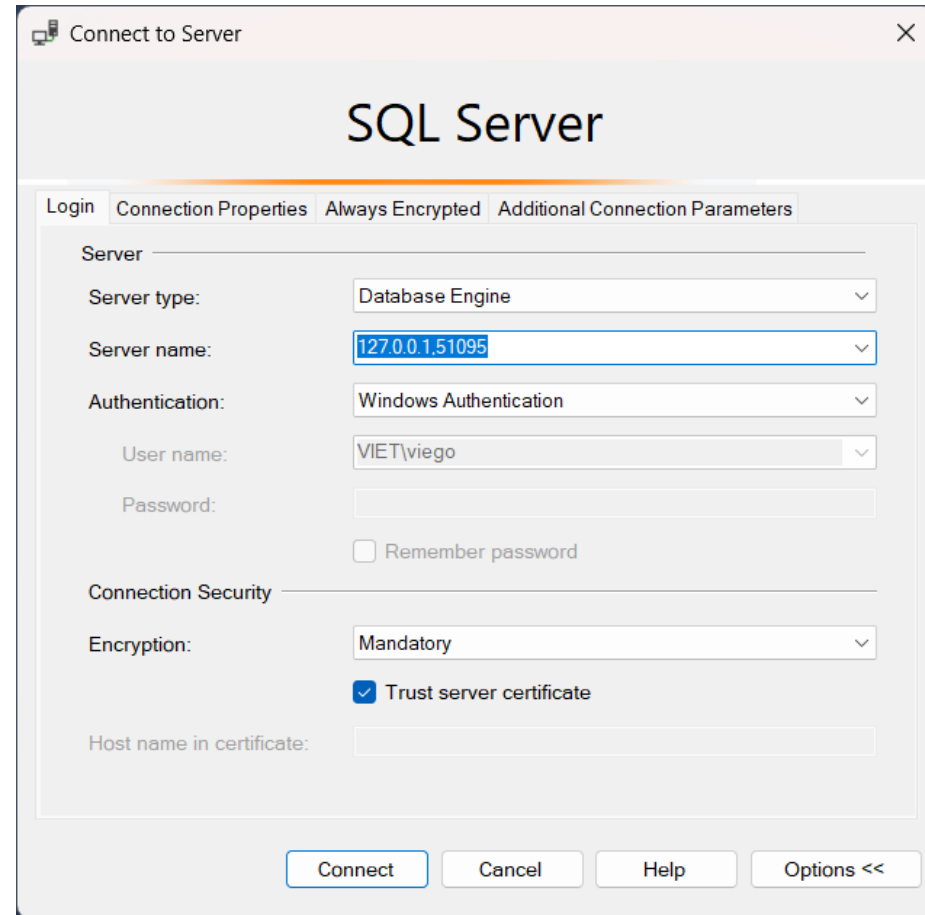


The screenshot shows the 'New Inbound Rule Wizard' window at the 'Protocol and Ports' step. The title bar reads 'New Inbound Rule Wizard'. The left sidebar lists the steps: Rule Type, Protocol and Ports (selected), Action, Profile, and Name. The main area contains two questions. The first question is 'Does this rule apply to TCP or UDP?' with radio buttons for 'TCP' (selected) and 'UDP'. The second question is 'Does this rule apply to all local ports or specific local ports?' with radio buttons for 'All local ports' and 'Specific local ports' (selected). Below the second question is a text input field containing '51095' and an example text 'Example: 80, 443, 5000-5010'. At the bottom are buttons for '< Back', 'Next >', and 'Cancel'.



The screenshot shows the 'New Inbound Rule Wizard' window at the 'Action' step. The title bar reads 'New Inbound Rule Wizard'. The left sidebar lists the steps: Rule Type, Protocol and Ports, Action (selected), Profile, and Name. The main area contains the question 'What action should be taken when a connection matches the specified conditions?' with three radio button options: 'Allow the connection' (selected), 'Allow the connection if it is secure', and 'Block the connection'. The 'Allow the connection' option has a description: 'This includes connections that are protected with IPsec as well as those are not.' Below the 'Allow the connection if it is secure' option is a 'Customize...' button. At the bottom are buttons for '< Back', 'Next >', and 'Cancel'.

Connect lại SQL Server với



The screenshot shows the 'Connect to Server' dialog box with the following configuration:

- Title Bar:** Connect to Server
- Section Header:** SQL Server
- Tabs:** Login (selected), Connection Properties, Always Encrypted, Additional Connection Parameters
- Server Section:**
 - Server type: Database Engine
 - Server name: 127.0.0.1,51095
 - Authentication: Windows Authentication
 - User name: VIET\viego
 - Password: (empty)
 - ☐ Remember password
- Connection Security Section:**
 - Encryption: Mandatory
 - ☒ Trust server certificate
 - Host name in certificate: (empty)
- Buttons:** Connect, Cancel, Help, Options <<

4.3 Router NAT

Do không có Password nên em chưa thực hiện được phần này!

The screenshot displays the web interface of an FPT F6201B router. At the top, there is a navigation bar with the FPT logo on the left and language options (中文 | English) on the right. The navigation bar includes links for Home, Topology, Internet, Local Network, and Management & Diagnosis. The main content area is a login window with a padlock icon and the text "Welcome to F6201B. Please login." Below this, there are two input fields labeled "Username" and "Password". A blue "Login" button is positioned at the bottom right of the login form. The footer of the page states "©2008-2024 ZTE Corporation. All rights reserved | F6201B".