

# **Building a Small-Business Lab with Active Directory and Central File Access**

For this project, I designed and deployed an Active Directory environment for a hypothetical retail company called **Ocean Supplies**. The organization operates as a mid-sized superstore with about 10 to 25 employees, spread across departments such as Sales, Inventory, Finance, and Store Leadership.

To give the environment a realistic feel, I structured the domain in a way that reflects how a small business would centralize user management, organize devices, and control access to shared resources.

The goal of this setup was to create a clear and manageable directory structure that supports the daily operations of the store. By organizing users, computers, and administrative roles into dedicated Organizational Units (OUs), I prepared the foundation for centralized authentication, tighter security governance, and simpler access control across the rest of the virtual lab.

## **Requirements**

- Virtualization software
- Three or more virtual machines
- Installation file for Windows Server 2019, Windows 10 and Windows 11

## **Why Active Directory and Central File Access?**

A small business environment (aka SOHO, small-office home-office) usually has up to 10 or more computers or devices. Managing all these devices in isolation may

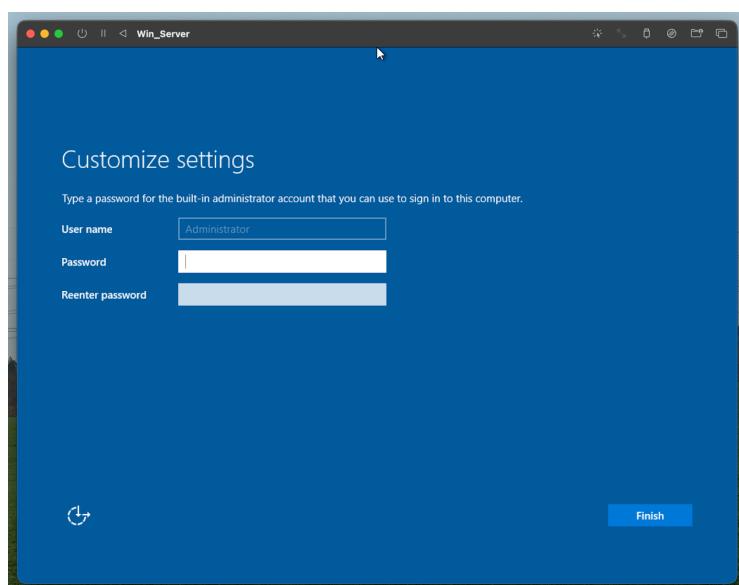
seem easy and convenient when initially setting up the business, say with three computers.

As the business grows and the number of employees increases, the number of computers will also increase. Management of 10 or more devices becomes complex. Having a standard in place for central management at the early stage helps to prevent the tedious work of setting up in the future.

## Steps for Setting Up

I've covered how to install Linux, Windows Server, and Windows 10 or 11 in my previous project so we'll proceed to configuring Active Directory on the Windows Server.

**Reminder:** at the end of setting up Windows Server (whether 2016, 2019, or 2022), you'll be asked to create a password. The password requirement for a Windows Server follows a security-best practice of having special characters and numbers in the password, unlike a normal Windows 10 or 11, where you can type just letters or as few as four numbers only.



### *Setting up a password for Windows Server*

Choosing a password is the last stage of installing Windows Server. Once the server installation is complete, you'll be greeted with the login screen below.

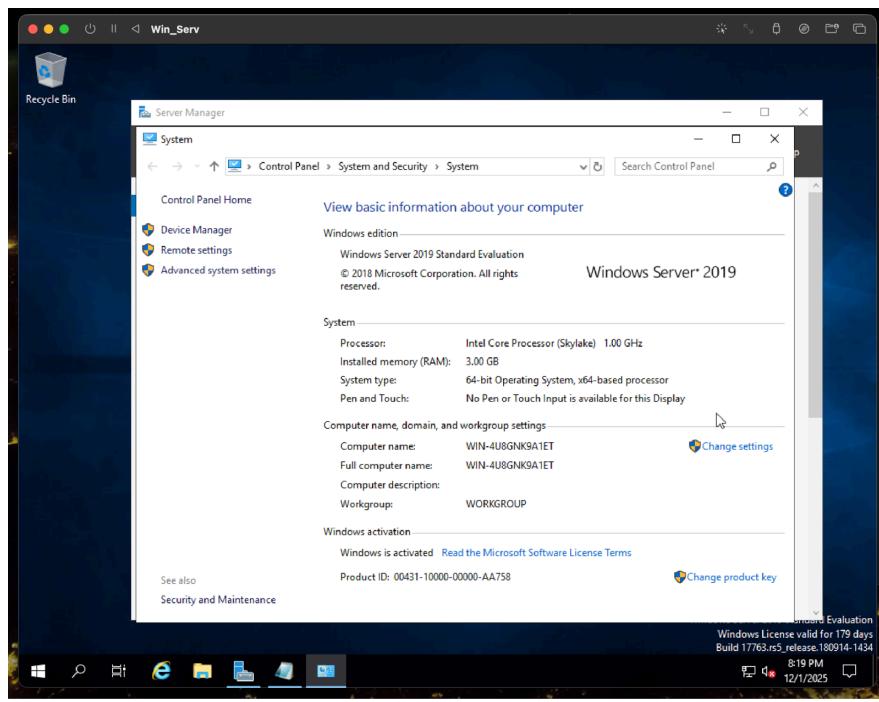


*Login screen on Windows Server*

When you install Windows Server on a machine, the server doesn't come preinstalled with any features by default. You'll have to add **Roles and Features** based on your needs.

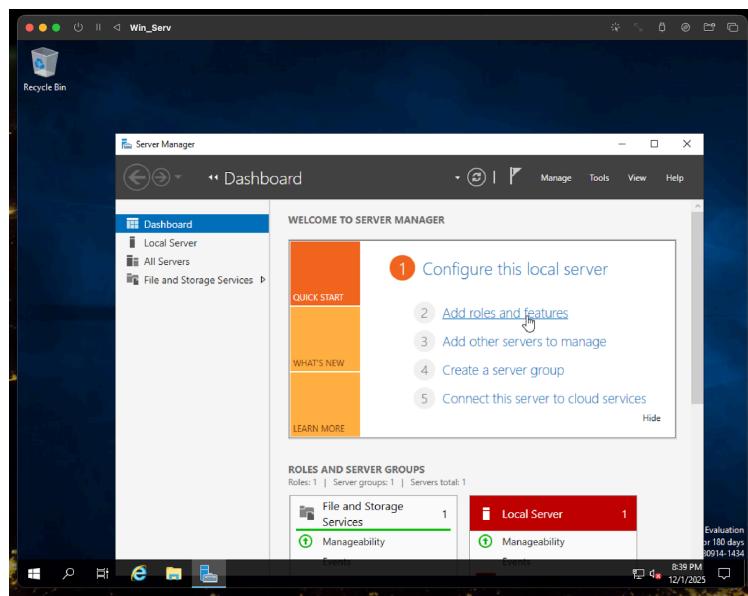
However, before setting up any Role or Feature, it is recommended to rename the computer. Whenever a Windows OS is installed on a machine, the process generates a random name like **WIN-4U7FT2B1ET**. We'll first change this name.

To change the name, click on **Change settings** in the above screenshot and follow the on-screen prompt.



### *Changing the default name of the computer*

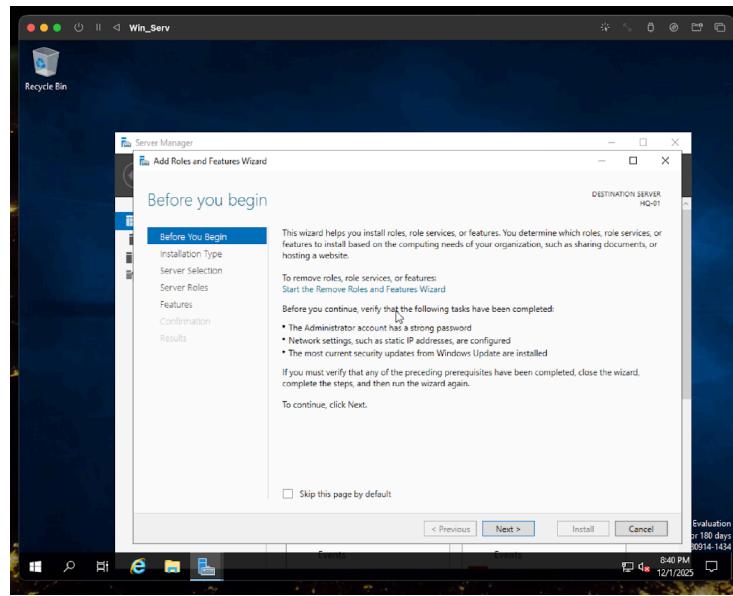
Changing the name prompts the computer to restart. After the computer restarts successfully and I log in, **Server Manager** launches automatically.



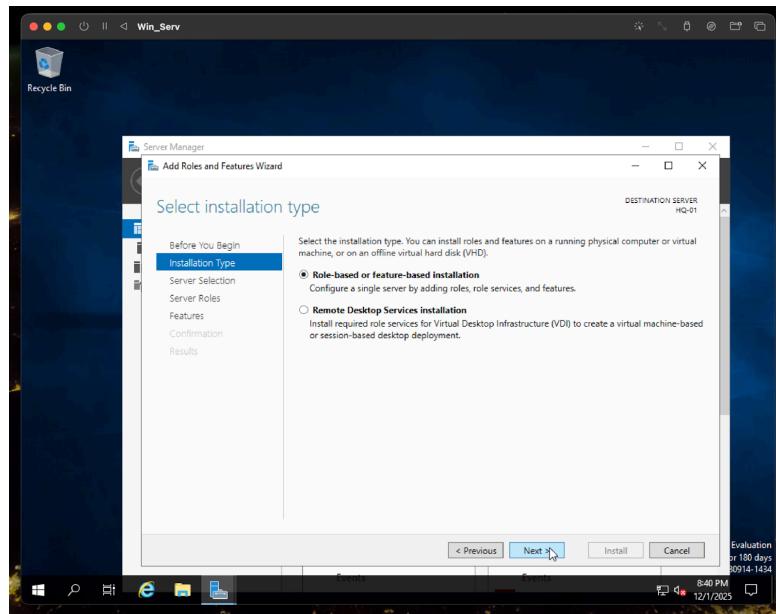
*Server Manager on Windows Server 2019*

After clicking on **Add roles and features**, I'll configure Active Directory using the steps below.

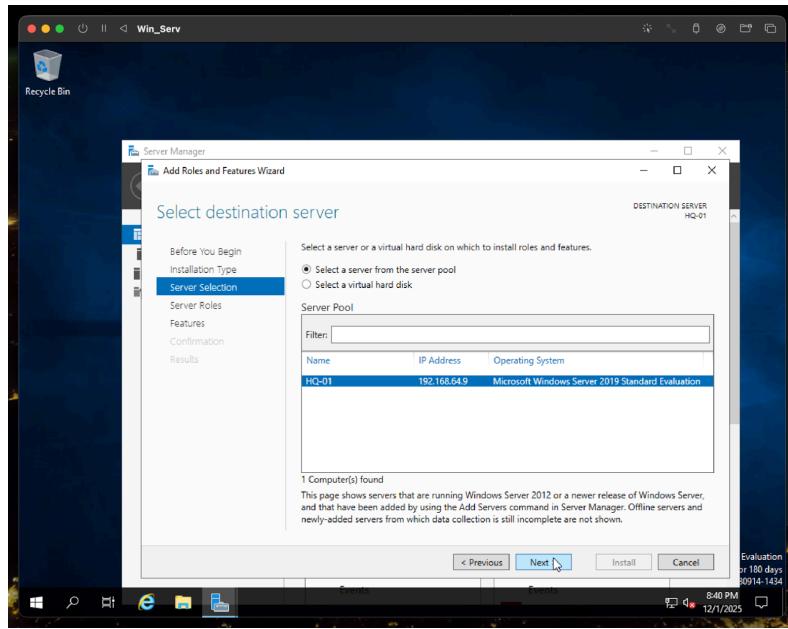
1. The first screen welcomes you and introduces the Active Directory. Here, I'll click on Next



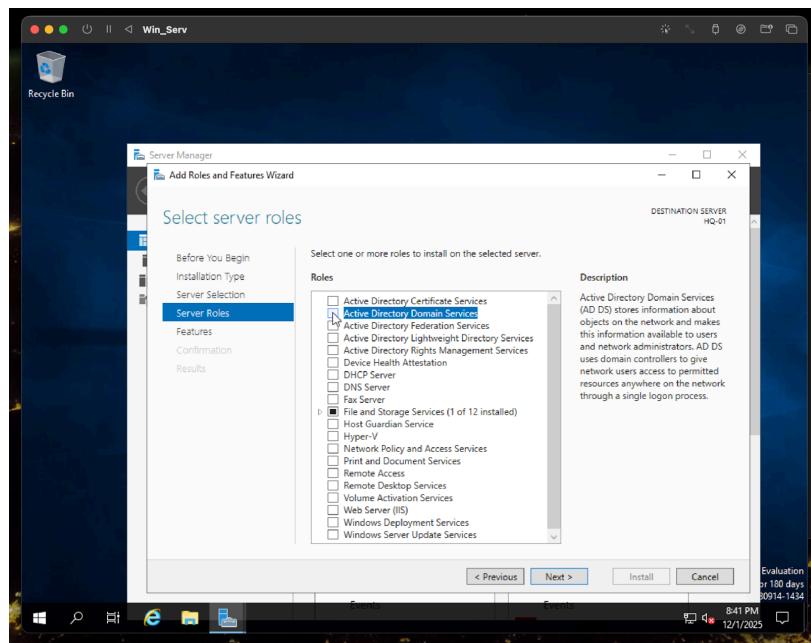
2. The next screen requires you to choose the type of features you want.



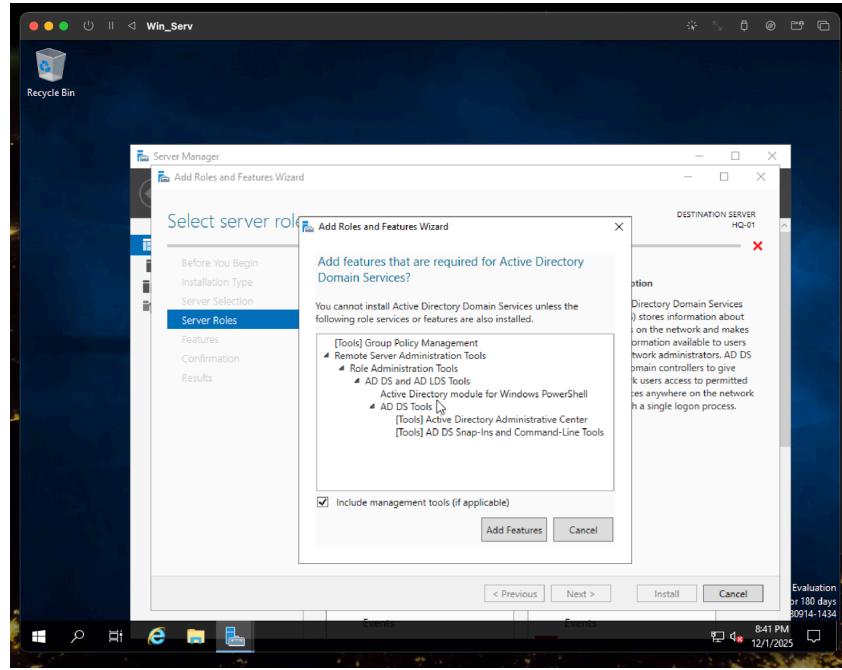
3. The next screen prompts for the destination server i.e. on which server will I be installing the features I want to install.



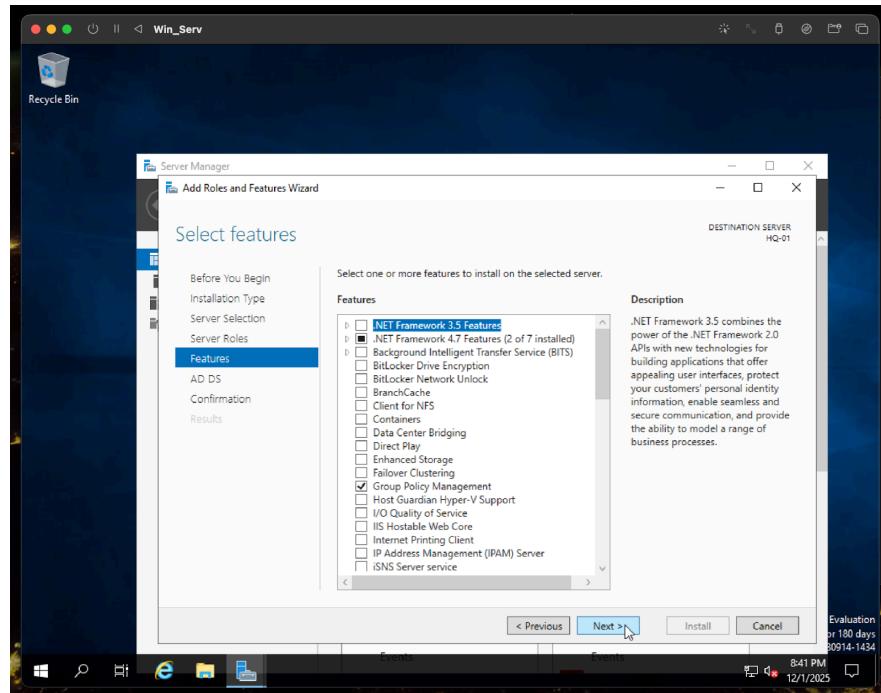
4. On the next screen, I'll select **Active Directory Domain Services** as the Role I want. In this stage, I can also select any other **Roles** that I want to install. For example, if I will be using this server for managing printing in the SOHO, I can also select **Print and Document Services** at this stage.



5. The next displays the complementary services that get installed with the chosen **Role**.

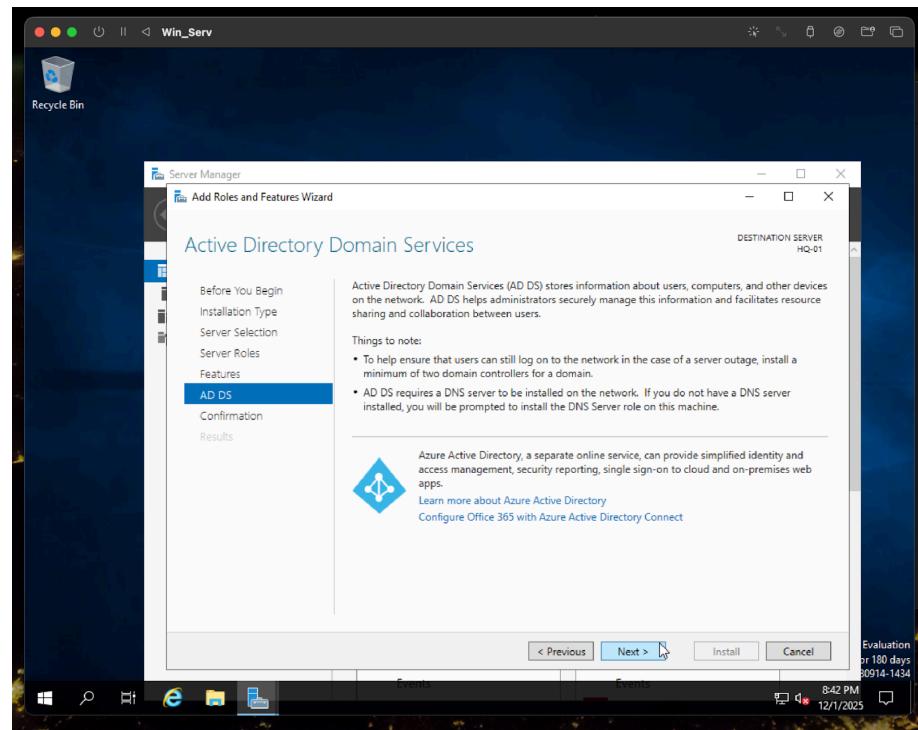


6. On the next screen, I will choose the supporting **Features** for the Roles if needed.

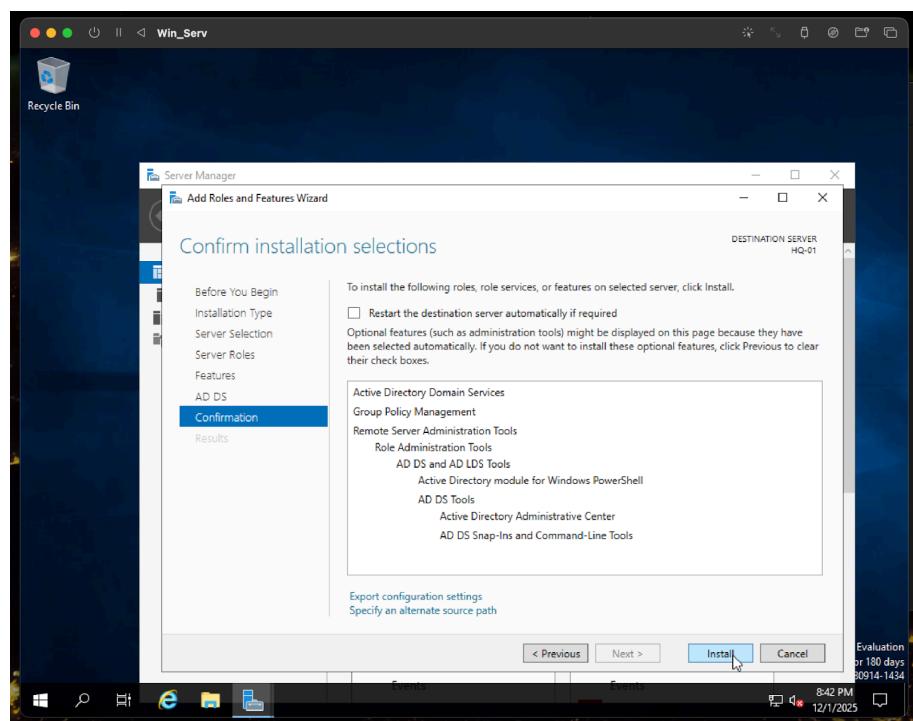


7. The next screen shows additional information about Active Directory Domain Services. On this screen, the option to configure the Active Directory on the

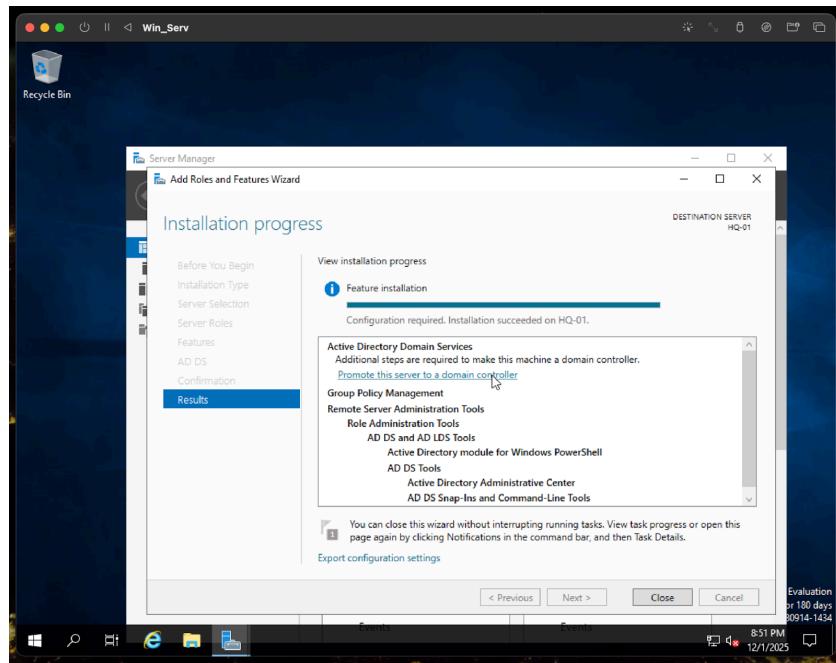
cloud using Azure is also presented. We do not need that for now, so we'll skip the option.



8. The next is a confirmation screen. Once I click on Install, the installation process will begin.

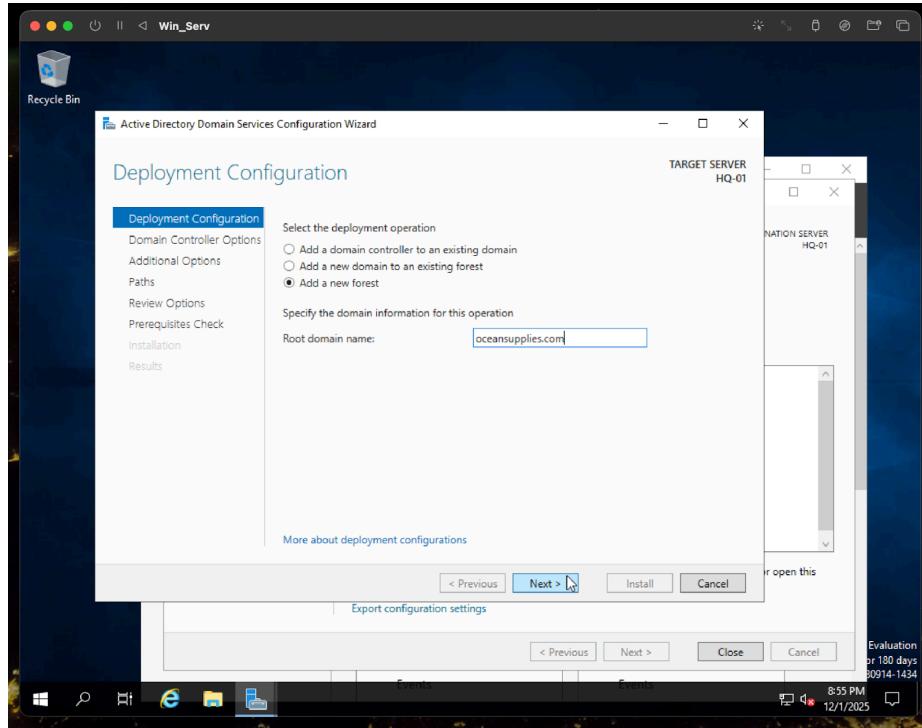


Once the installation is done, we'll get the option to give domain controller privileges to this server as shown in the screenshot below. Making a server a domain controller is important for centralizing authentication, managing users and computers from one place, and enforcing consistent security policies across every VM in the lab.

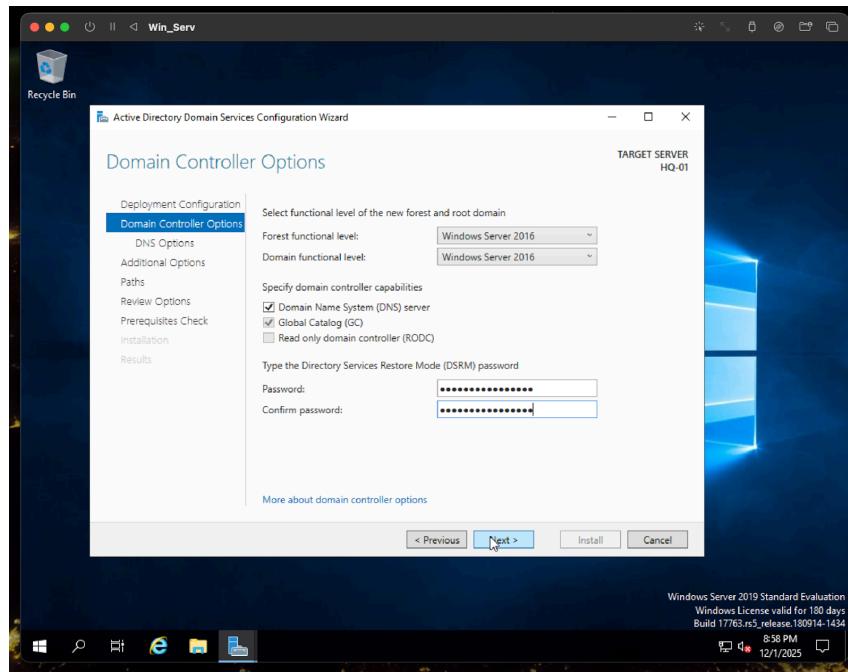


9. On the next screen, I'll choose the option to **Add a new forest**. Adding a new forest is what I need when I'm creating a completely fresh Active Directory environment from scratch. I'll select this option and type the domain name in the input field provided for **Root domain name**.

The other options are **Add a domain controller to an existing domain**, for situations where an organization already has a domain and I'm simply adding another DC to improve redundancy or load distribution, and **Add a new domain to an existing forest** which enables me to create a separate domain under the same forest when there's a need for isolation, different policies, or distinct administrative boundaries.

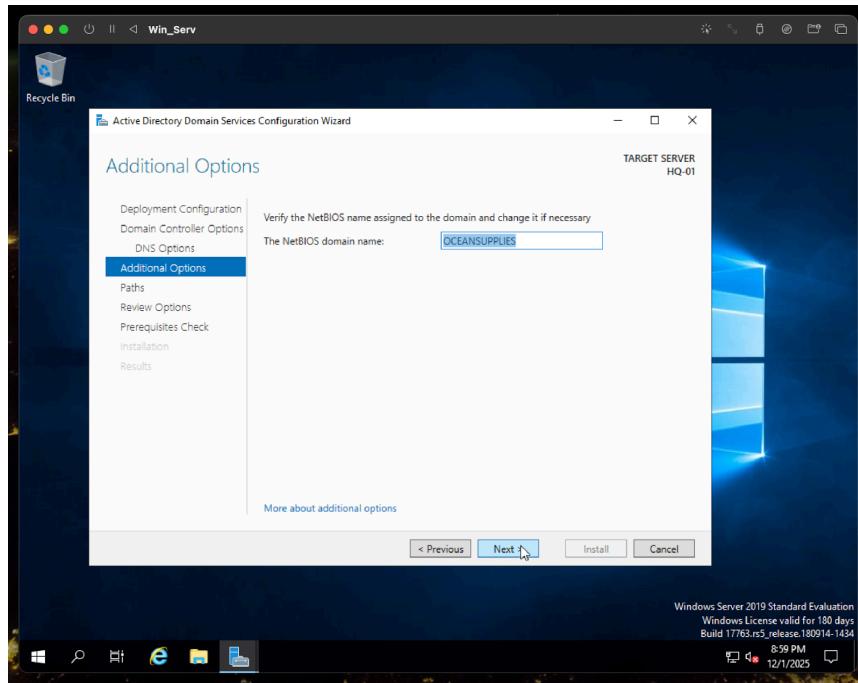


10. After clicking Next, I'm prompted to create a password for the Domain Controller.

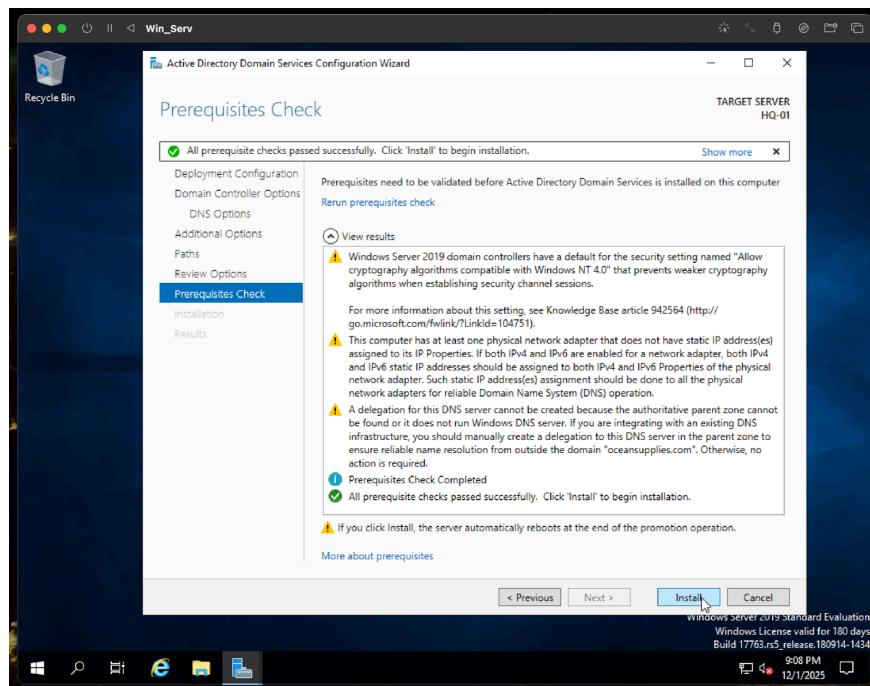


11. On the next screen, I'll set the name of the NetBIOS domain. The NetBIOS domain name is for older systems and legacy applications that still rely on short, single-label names to identify the domain. It also helps with backward

compatibility in environments where certain tools or services can't use the full DNS-domain format.

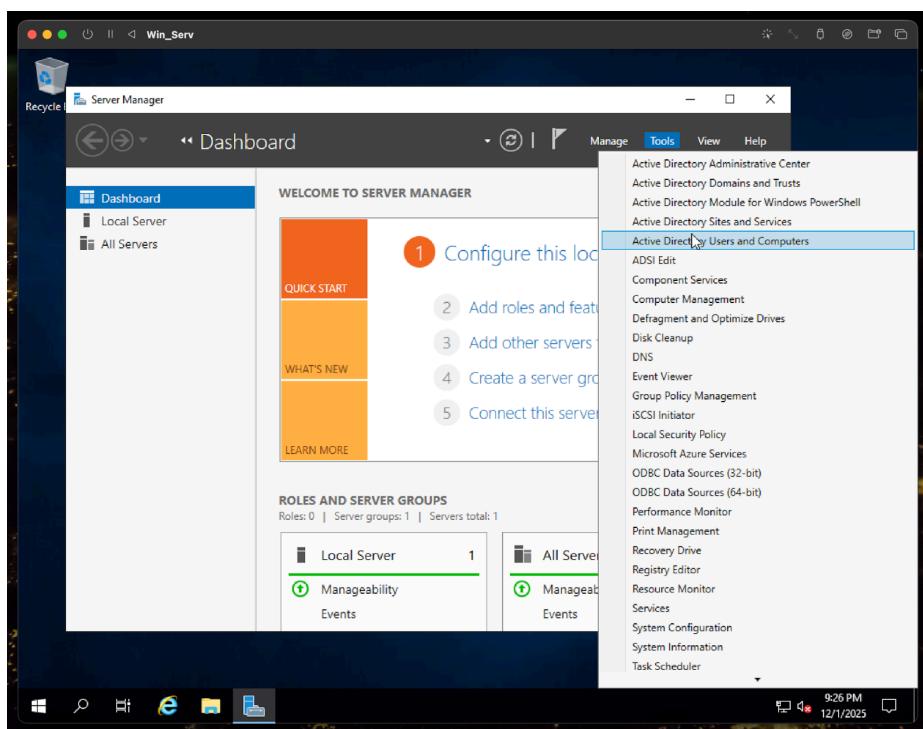


12. For the remaining steps, I'll click on **Next** until I get to the stage below where I'll click on **Install** to install the Domain Controller.

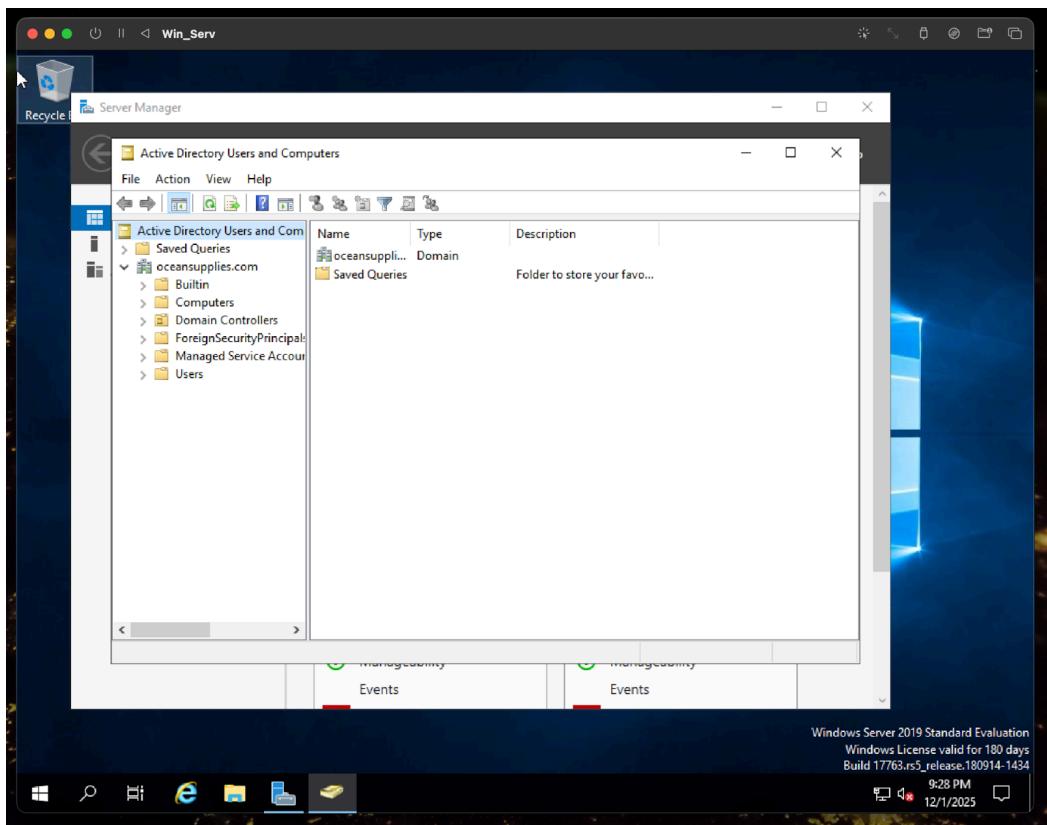


- Once the installation is done, the process finishes by applying the just configured settings and the computer restarts.

After a successful login, the Server Manager starts up. We can launch Active Manager by clicking on **Tools** in the top-right corner the **Server Manager** window and clicking on **Active Directory Users and Computers**. The AD takes a little longer to load on the first time so be cautious to not click it on it multiple times.



Now that we have Active Directory installed, we can begin to configure accounts, users, departments and organizational units (OUs).



I'll stop this report here so it doesn't get too long and boring. I'll showcase how I created users, departments and configured computers for different departments in another report.