

# Week 2: Windows Server 2025 Essential



# Key points

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- **Installation and Administration:** Learn how to install and administer Windows Server 2025, including choosing server roles, different server environments, and storage options.
- **Management Tools:** Understand how to use tools like the Windows Admin Center, Microsoft Management Console, and PowerShell cmdlets for efficient server management.
- **Active Directory:** Gain skills in creating and managing Active Directory, including domain and forest creation, user and group management, and DNS management.
- **Monitoring and Maintenance:** Discover how to back up Windows Server 2025, use Event Logs for troubleshooting, and monitor performance using tools like Task Manager and Resource Monitor.
- **Virtualization and Cloud Integration:** Explore virtualization with Hyper-V, container creation, and integrating Windows Server 2025 with Azure Cloud services.

# Windows Server 2025 Overview

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- Enterprise management
- Data storage
- Applications
- Communication

# Windows Server 2025

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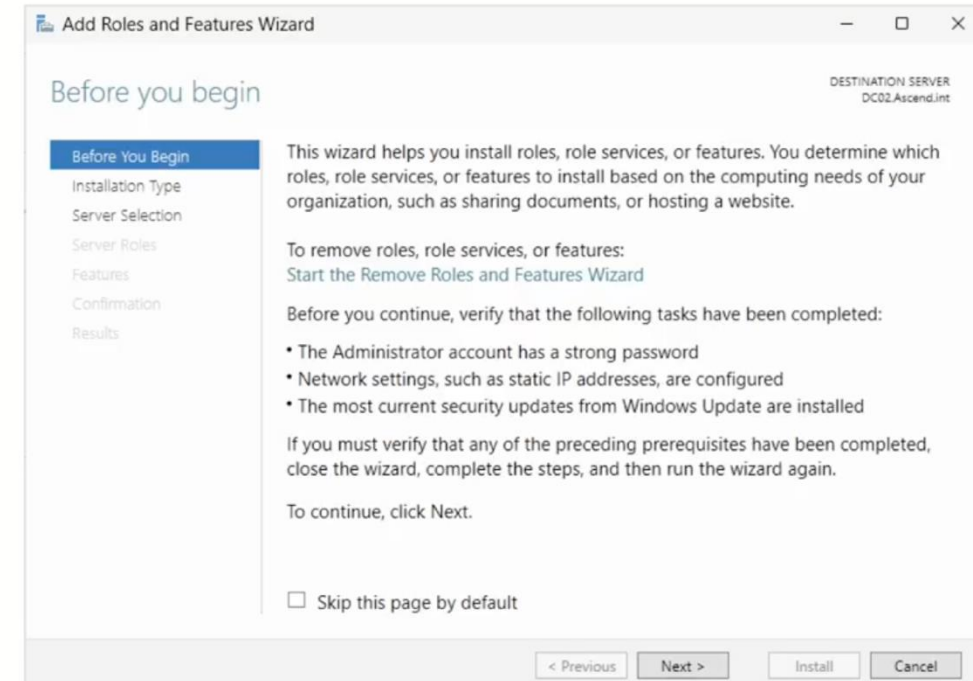
- **Enterprise Management:** Windows Server 2025 supports enterprise-level management through Active Directory, allowing administrators to control users, computers, and groups for enhanced security and productivity.
- **Data Storage and Security:** The server uses access control lists, Dynamic Access Control, and SmartScreen to ensure secure file sharing and authorization.
- **Application and Communication:** Windows Server 2025 supports various applications and communication tools like email, SQL databases, and SharePoint, which can be hosted either in-house or in the cloud.
- **Server Roles and Features:** Server roles and features can be installed using Server Manager, which includes applications for users (like DNS and DHCP) and features to enhance the server itself (like server backup and Telnet clients).
- **Hardware Compatibility:** It's important to install Windows Server 2025 on compatible server hardware to ensure optimal performance and support from Microsoft.

# Installing Roles and Features

- We install built-in applications using Server Manager and this opens when we log in into the server.
- We can then install server roles which are applications that serve users with products like DNS or Domain Name Service, Dynamic Host Control Protocol, also known as DHCP for automatic addressing, domain controllers to install Active Directory, and many more.

## Installing Roles and Features

- Server Manager
- Server roles
- Features

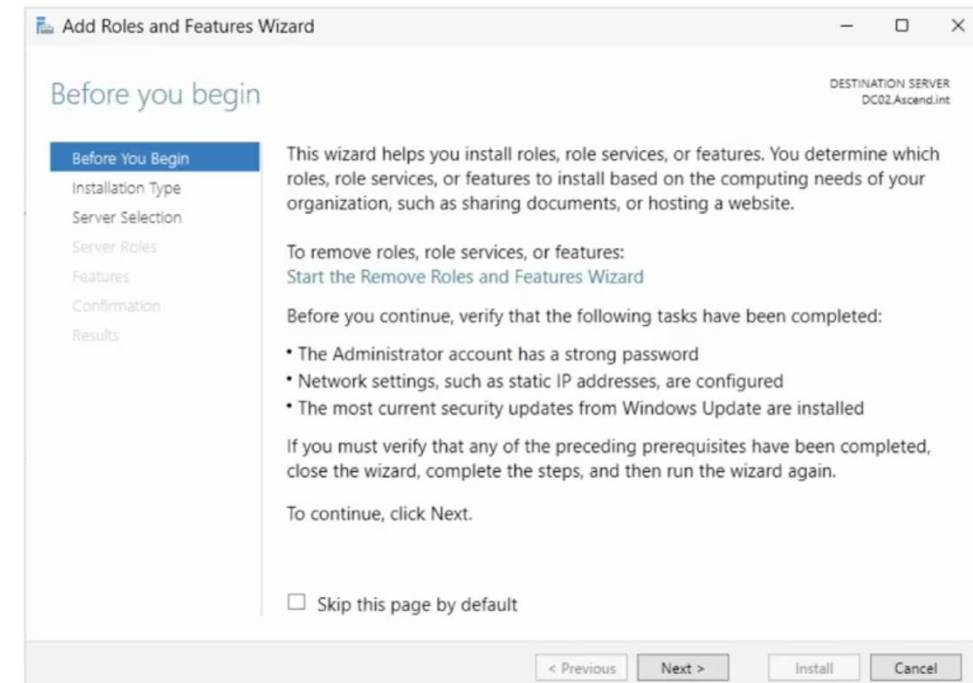


# Installing Roles and Features

- We also use this way of installation for installing features.
- Features are applications that are used to enhance the server itself rather than the users.
- Features include server backup, Telnet clients, TFTP servers, and more.

## Installing Roles and Features

- Server Manager
- Server roles
- Features



# Where to Insall Windows Server

## Where to Install Windows Server

- Hardware requirements
- Not on a PC
- Matched servers

### ① Device specifications

Device name	DC02
Processor	Intel(R) Xeon(R) CPU E5-4607 0 @ 2.20GHz 2.20 GHz
Installed RAM	15.6 GB
Device ID	
Product ID	
System type	64-bit operating system, x64-based processor
Pen and touch	No pen or touch input is available for this display

Related links [Domain or workgroup](#) [System protection](#) [Advanced system settings](#)

### Windows specifications

Edition	Windows Server 2025 Standard
Version	24H2
Installed on	6/29/2024
OS build	26100.1
Experience	Windows Feature Experience Pack 1000.26100.1.0

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[Microsoft Software License Terms](#)

- Windows Server should be installed on special server hardware made for windows server.
- The server operating system has specific drivers to work with the hardware for which its designed.
- If we installed Windows Server 2025 on a client like then the drivers might not all be there to run the hardware on the PC.
- Something if we try to install Windows Server 2025 on a server designed for Windows Server 2012 the hardware might not match up with operating system.



# Minimum Requirements

1.4 GHz 64-bit processor	Compatible with x64 instruction set	Supports NX and DEP	Supports CMPXCHG16b, LAHF/SAHF and PrefetchW
Supports second-level address translation (EPT or NPT)	512 MB (2 GB for Server with Desktop Experience installation option)	ECC (Error Correcting Code) type or similar technology, for physical host deployments	An Ethernet adapter capable of at least 1 gigabit per second throughput
Compliant with the PCI Express architecture specification	UEFI 2.3.1c-based system and firmware that supports secure boot	Trusted Platform Module 2.0	Keyboard, video, and mouse on physical servers



# Editions of Windows Server 2025

**Standard**

**Datacenter**

**Datacenter:  
Azure Edition**

**Essentials**

**Editions of Windows Server 2025:** There are multiple editions including Standard, Datacenter, Datacenter: Azure Edition, and Essentials, each with different features and licensing options.

- **Standard Edition:** Most used version. Includes two virtual machine licenses and most features needed for most organizations. It has removed IIS6, WordPad, and SMTP Server but added features like tabs and spellcheck in Notepad.
- **Datacenter Edition:** Offers unlimited virtual machines and containers, hotpatching, and Software Defined Networking (SDN) for replacing hardware devices with software. It has unlimited storage capability, and unlimited amount of containers which are applications that can be moved to different servers as needed and don't rely on the host computer for all different operations.
- **Datacenter Azure Edition:** Upgrades through Windows updates, includes all features of the Datacenter edition, and offers faster updates.
- **Essentials Edition:** Designed for small offices with up to 25 users, comes pre-installed on special hardware, and has a simple interface for non-administrators.

# Microsoft Server 2025 Installation options

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- **Clean Installation(manual option):** Used for new servers or virtual machines with blank hard drives, formats the drives, and removes existing data.
- **In-Place Upgrade:** Keeps existing data, server roles, and features intact while upgrading to Windows Server 2025.
- **Automated Installation:** Can be done using **an answer file from Microsoft** to automate responses during installation.
- **System Center Virtual Machine Manager (SCVMM):** Designed for deploying multiple virtual machines from a single server..

# Installing Windows Server on a Client with Windows 11

## Option 1: Virtualization

### •Pros:

- No risk to the main Windows 11 system
- Easy to manage and run multiple OSES
- No driver conflicts or hardware compatibility issues
- Ideal for testing and learning without affecting your hardware

### •Cons:

- Limited access to hardware resources (depends on the VM allocation)
- May not be as fast as running directly on hardware
- Requires sufficient system resources (CPU, RAM)

•**Tools:** Hyper-V (Windows 11 Pro/Enterprise) or VMware Workstation or Virtual Box

•**Best for:** Safe, isolated testing of Windows Server

## • Option 2: Dual Boot

### • Pros:

- Runs directly on hardware, giving full access to system resources

### • Cons:

- Potential driver conflicts with Windows Server
- More complex setup with disk partitioning and boot management
- Risk of data loss or configuration errors if not done carefully

• **Best for:** Advanced users who need full system performance



# Installing Windows Server 2025

← → ↺ 🏠 [microsoft.com/en-us/evalcenter/evaluate-windows-server-2025](https://microsoft.com/en-us/evalcenter/evaluate-windows-server-2025)

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**Overview** Get started for free Description Prerequisites Resources Su

[Download this ISO.](#)

This ISO is only available on Windows Server 2025 and combines the previously sepa  
[repository](#). To learn about [Features on Demand](#), see Features on Demand. To learn a

## Get started for free

Please select your product experience:

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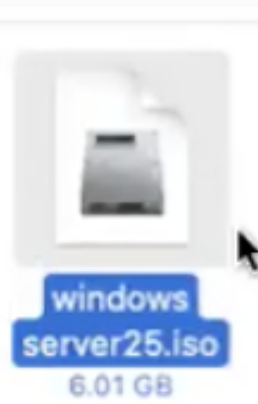
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### VirtualBox Platform Packages

VirtualBox 7.1.6 platform packages

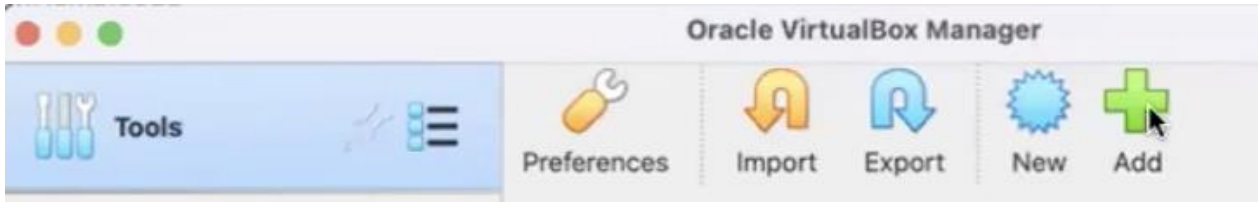
-  **Windows hosts**
-  **macOS / Intel hosts**
-  **macOS / Apple Silicon hosts**
-  **Linux distributions**
-  **Solaris hosts**
-  **Solaris 11 IPS hosts**

Platform packages are released under the terms of the [GPL version 3](#)

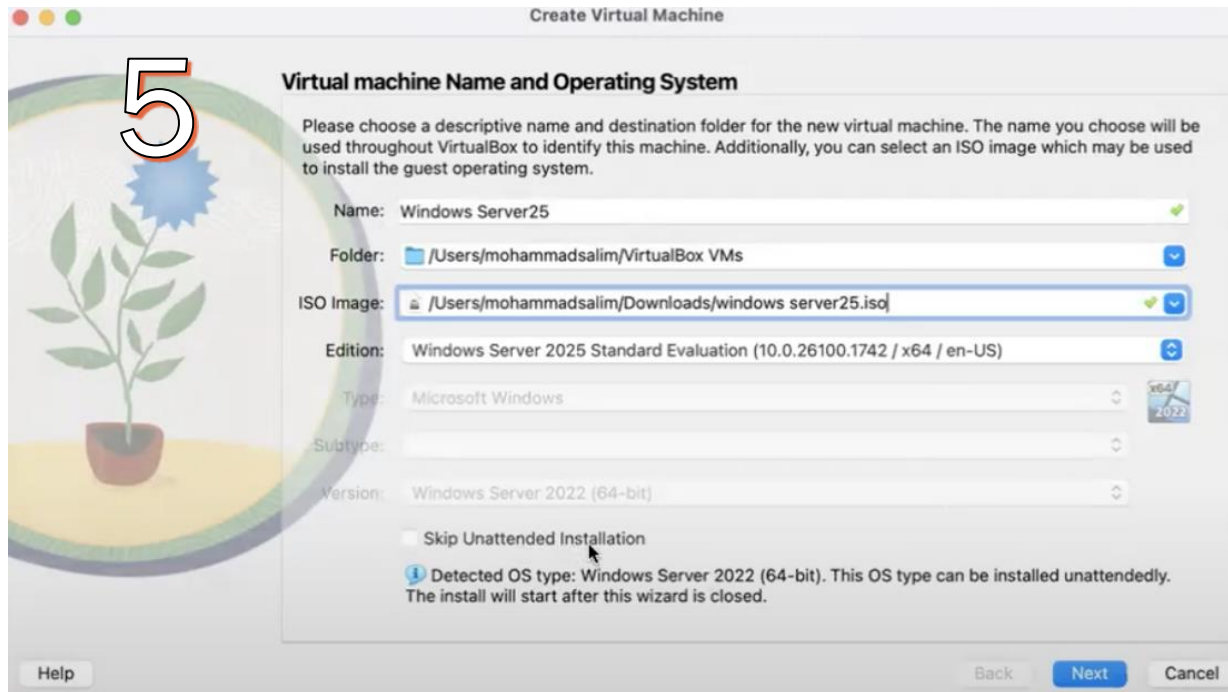


# Installing Windows Server

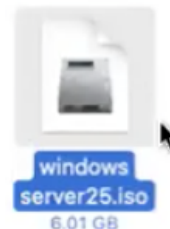
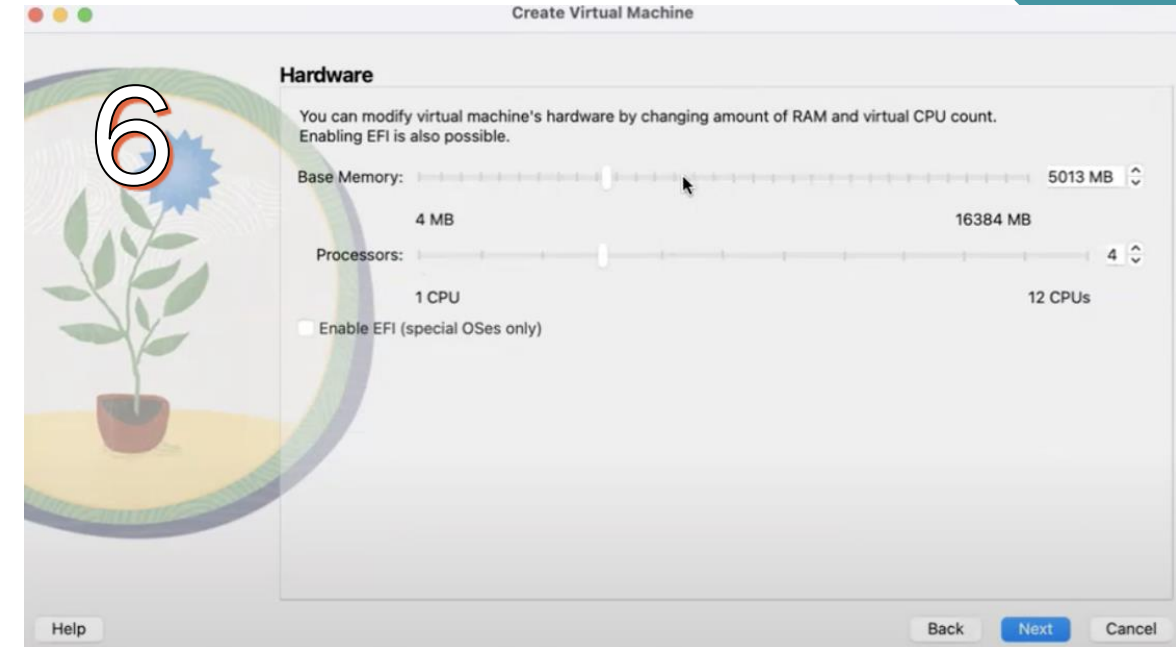
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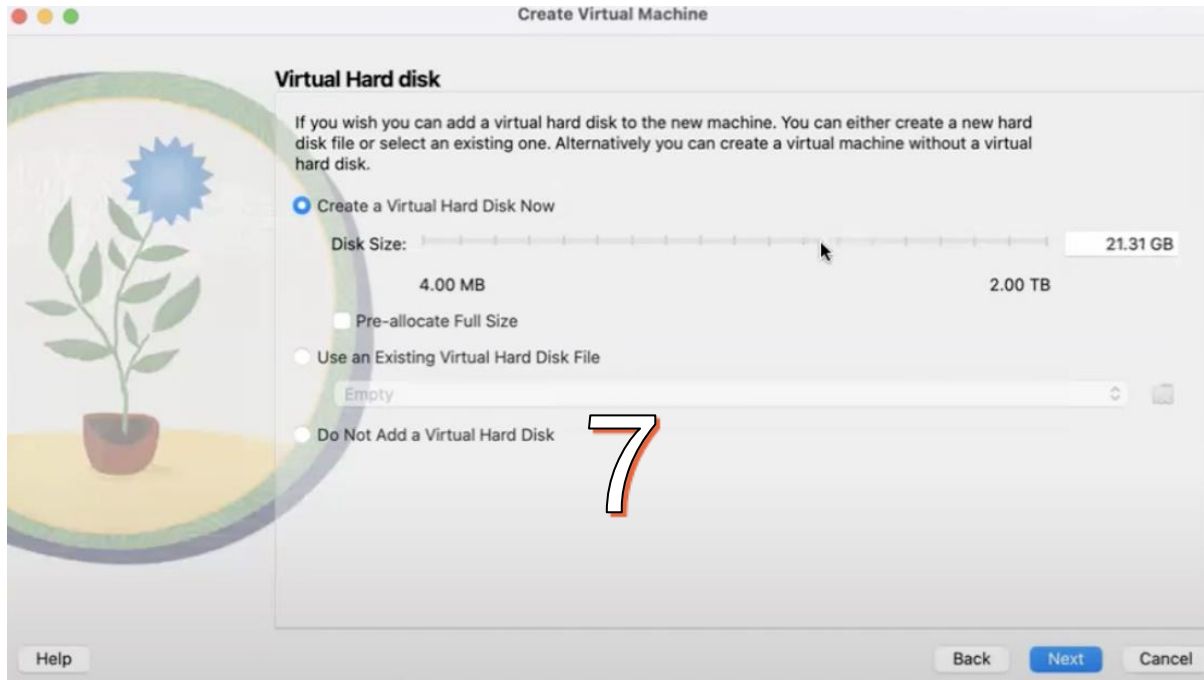


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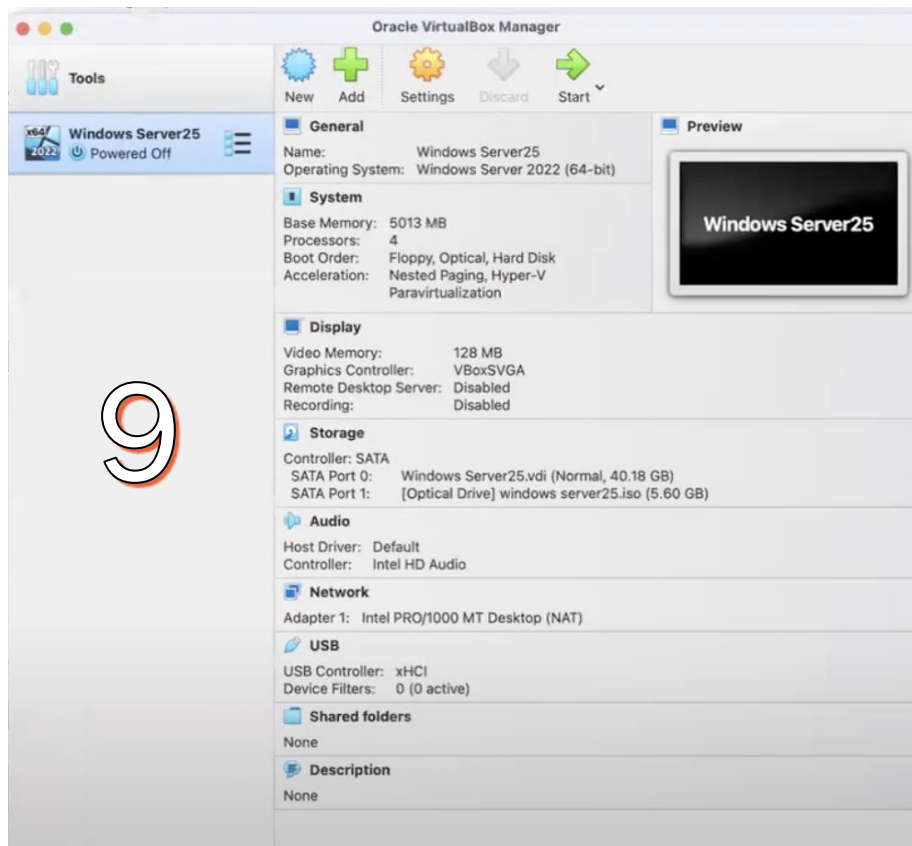


# Installing Windows Server

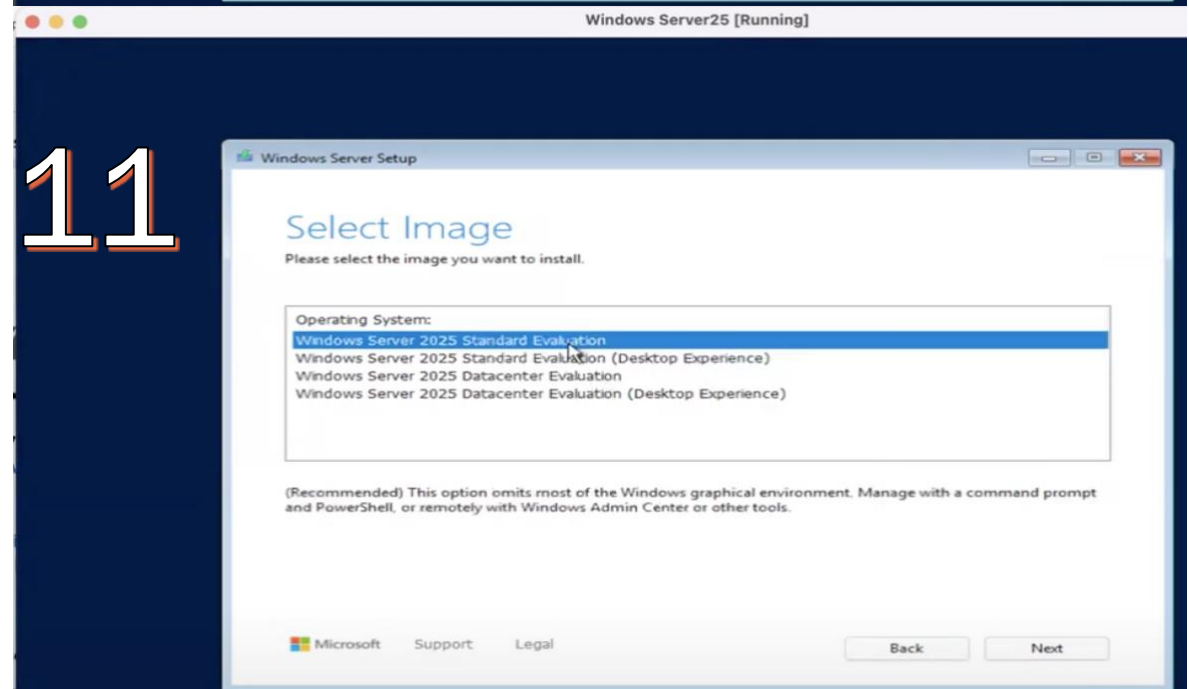
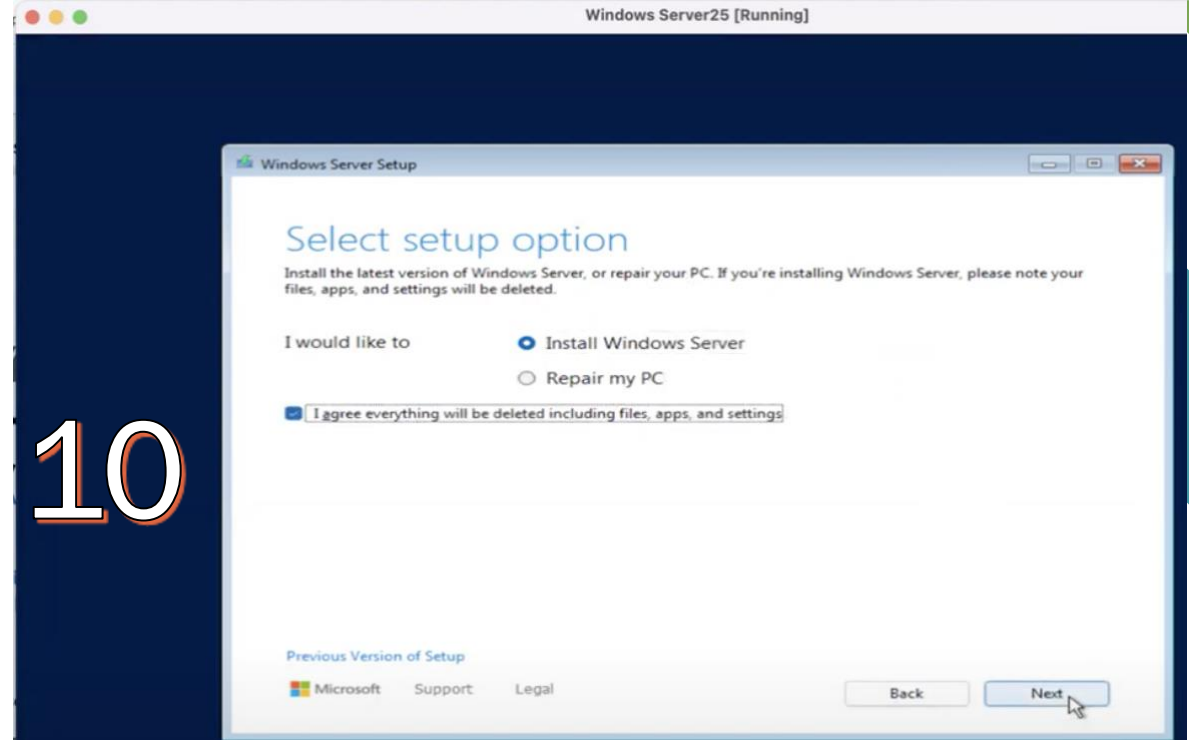




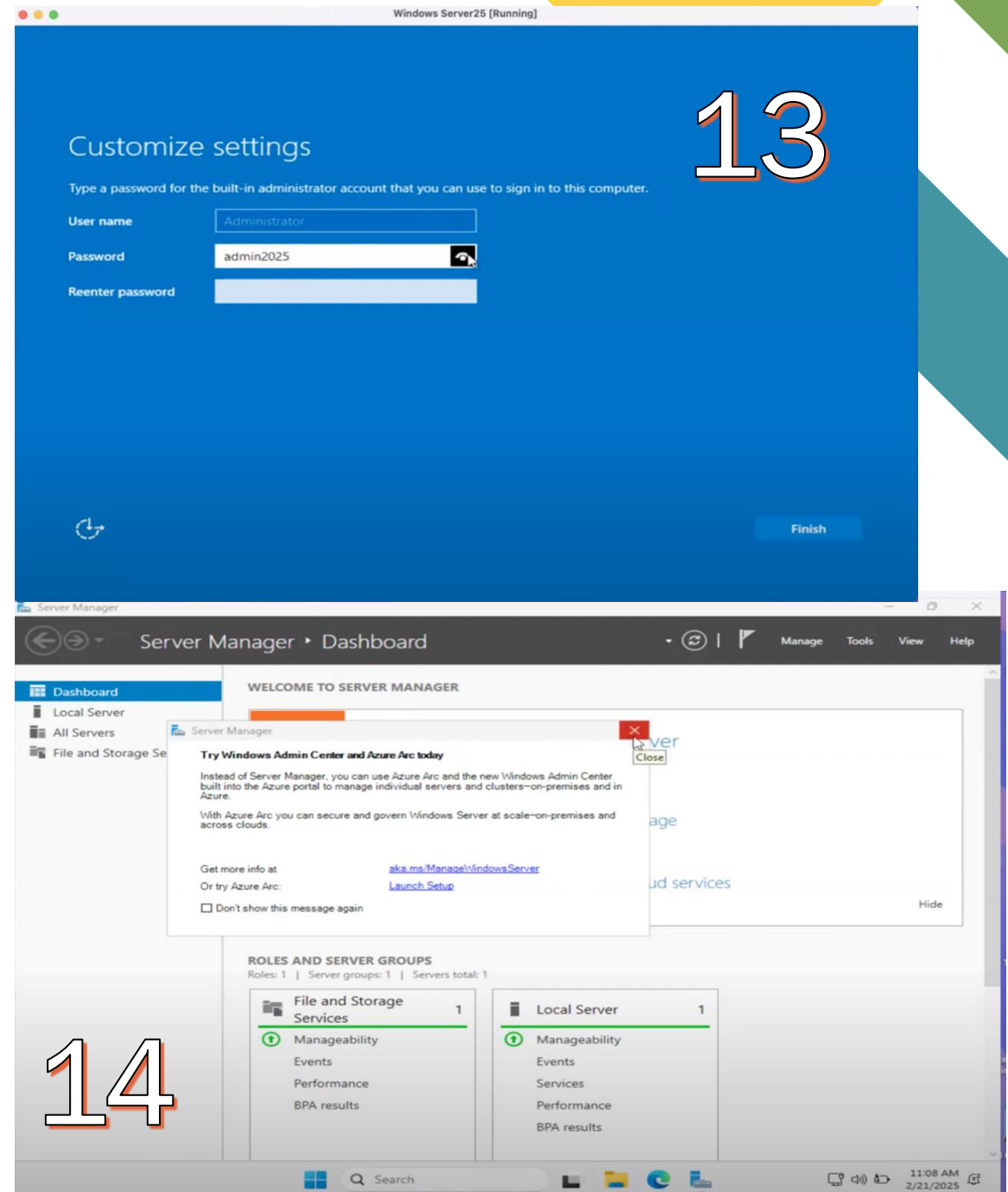
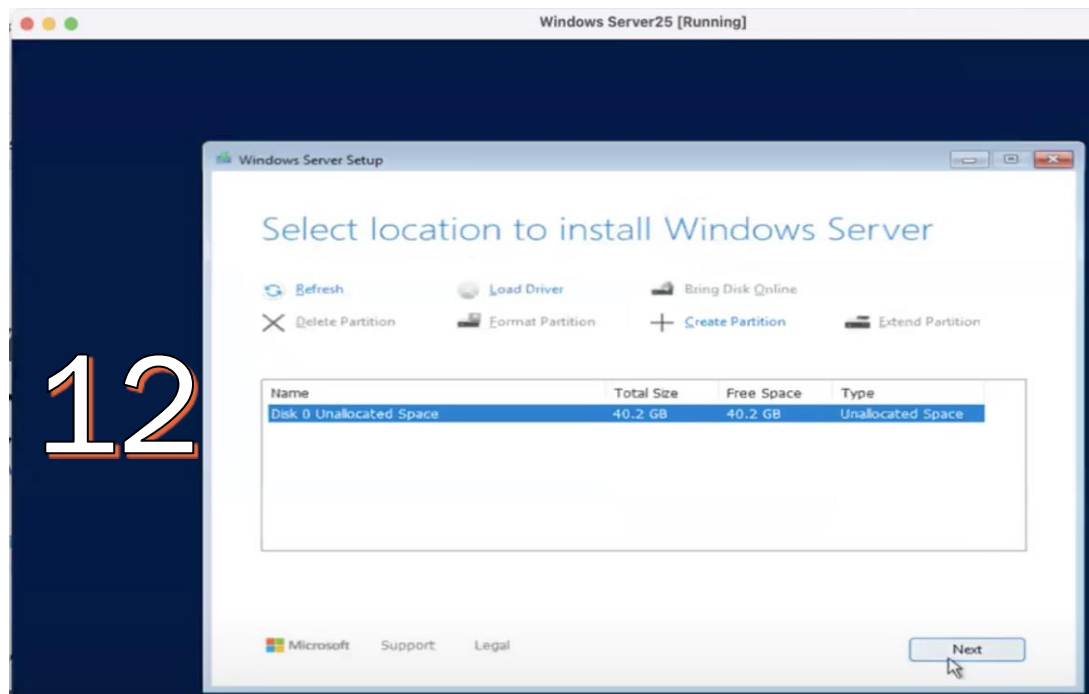
# Installing Windows Server



15



# Installing Windows Server



## FOUNDATIONAL

Knowledge-based certification for foundational understanding of AWS Cloud.

**No prior experience needed.**



## ASSOCIATE

Role-based certifications that showcase your knowledge and skills on AWS and build your credibility as an AWS Cloud professional. **Prior cloud and/or strong on-premises IT experience recommended.**



## PROFESSIONAL

Role-based certifications that validate advanced skills and knowledge required to design secure, optimized, and modernized applications and to automate processes on AWS.

**2 years of prior AWS Cloud experience recommended.**



## SPECIALTY

Dive deeper and position yourself as a trusted advisor to your stakeholders and/or customers in these strategic areas. **Refer to the exam guides on the exam pages for recommended experience.**



### Foundational certification

Validates broad knowledge of cloud concepts and the products, services, tools, features, benefits, and use cases of Google Cloud.

#### RECOMMENDED CANDIDATE:

- ✓ Has fundamental understanding of Google Cloud products, concepts and services
- ✓ Collaborative role with technical professionals
- ✓ No technical prerequisites

#### ROLE

Cloud Digital Leader

### Associate certification

Validates fundamental skills to deploy and maintain cloud projects.

#### RECOMMENDED CANDIDATE:

- ✓ Has experience deploying cloud applications and monitoring operations
- ✓ Has experience managing cloud enterprise solutions

#### ROLE

Cloud Engineer

Google Workspace Administrator

Data Practitioner

### Professional certification

Validates key technical job functions and advanced skills in design, implementation and management of Google Cloud products. This includes specialized certifications.

#### RECOMMENDED CANDIDATE:

- ✓ Has in-depth experience setting up cloud environments for an organization
- ✓ Has in-depth experience deploying services and solutions based on business requirements

#### ROLE

Cloud Architect

Cloud Database Engineer

Cloud Developer

Data Engineer

Cloud DevOps Engineer

Cloud Security Engineer

Cloud Network Engineer

Machine Learning Engineer

# Google Cloud certification



# Microsoft Azure certifications

Help advance your career, earn recognition, and validate your technical knowledge and abilities in current and future industry job roles with Microsoft Azure certifications. Visit the [certifications page](#) to get started.

## Microsoft Azure certifications



- Azure Administrator Associate
- Azure Security Engineer Associate
- Azure Network Engineer Associate
- Windows Server Hybrid Administrator Associate
- Azure Virtual Desktop Specialty
- Azure for SAP Workloads Specialty

- Azure Data Scientist Associate
- Azure Data Engineer Associate
- Azure Database Administrator Associate
- Azure Enterprise Data Analyst Associate

Manage hybrid cloud infrastructure

Support with data and analytics

Innovate with best-in-class apps

Secure from the ground up

Azure Solutions Architect Expert

DevOps Engineer Expert

Azure Developer Associate

Azure Fundamentals

Azure Data Fundamentals

Azure AI Fundamentals

Azure AI Engineer Associate

Azure Cosmos DB Developer Specialty



Azure. Invent with purpose.

# Recap Questions

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- Which installation type is installed on a blank hard drive?
- If you installed Server 2025, and all you see is just a command line, you forgot to check what option?
- Which version of Server 2025 can only be installed on special vendor hardware?



# Recap

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- **Windows Server 2025 Editions**

1. Standard Edition: Most common, includes 2 VM licenses
2. Datacenter Edition: Unlimited VMs, containers, advanced networking
3. Datacenter Azure Edition: Cloud-optimized version
4. Essentials Edition: For small businesses (up to 25 users)

- **Installation Methods**

1. Clean Installation: For new servers/blank drives
2. In-Place Upgrade: Preserves existing data and settings
3. Automated Installation: Uses answer files
4. Virtual Machine Installation: Using Hyper-V or other virtualization

- **Essential Components**

1. Server Manager for role/feature installation
2. Active Directory for enterprise management
3. Security features (access control, SmartScreen)
4. Support for SQL, SharePoint, email services

- **Important Considerations**

1. Hardware compatibility is crucial
2. Minimum system requirements must be met
3. Choose between GUI or Core installation
4. Proper server roles and features selection

# Thank you

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Class code



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 Microsoft

**Windows  
Server 2025**

Standard

