



Week 1: Intro Server Management



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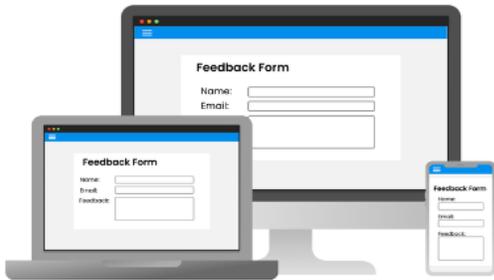
Learning Outcomes

By the end of this course, students will be able to:

1. Understand the fundamental concepts of server management
2. Deploy and configure Windows Server environments
3. Manage server roles and features
4. Implement server security best practices
5. Perform basic server administration tasks

Client vs Server

Client



Use:

- ✓ Obtain various services from any given server.
- ✓ Less Secure, Robust hardware & requires more processing power.
- ✓ Target: Individual Users

Server



Use:

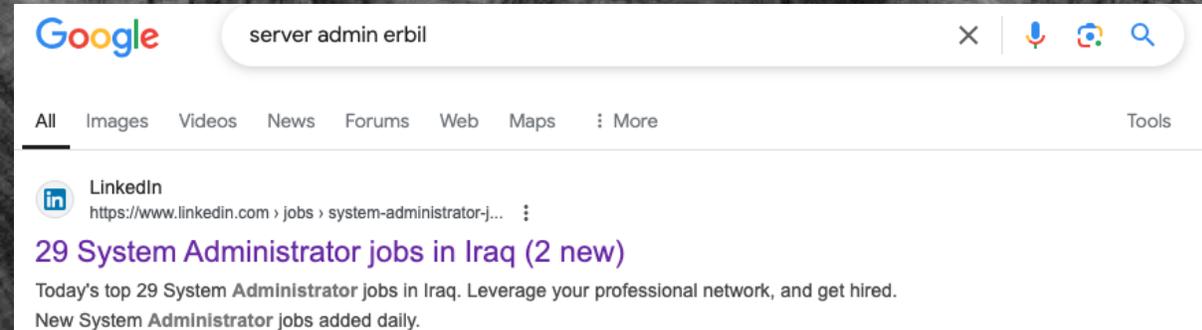
- ✓ Provide services to multiple numbers of clients.
- ✓ Secure, Robust hardware & requires more processing power.
- ✓ Target: Enterprises



Why Study Server Management?

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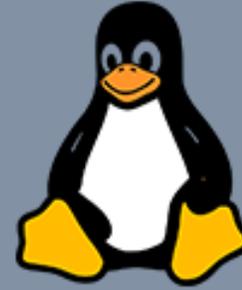
- Essential skill for IT professionals
- Critical for modern business infrastructure
- Foundation for cloud computing
- Career opportunities in system administration



Windows Server vs Linux Server Comparison

| Aspect | Windows Server | Linux Server |
|----------------|--|---|
| Cost | Commercial licensing required | Free (most distributions) or subscription-based |
| Interface | GUI-focused with optional Core version | Command-line focused with optional GUI |
| Market Focus | Enterprise business environment | Versatile (web hosting to enterprise) |
| Learning Curve | Easier for Windows users | Steeper for those new to Linux |

- more security threats due to widespread use
- several standard versions
 - easy to use
- requires a paid license
 - closed source
- flat file system

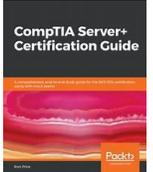


- better security with great community support
- large number of distributions
- requires extensive knowledge
- free to use
- open source
- hierarchical file system

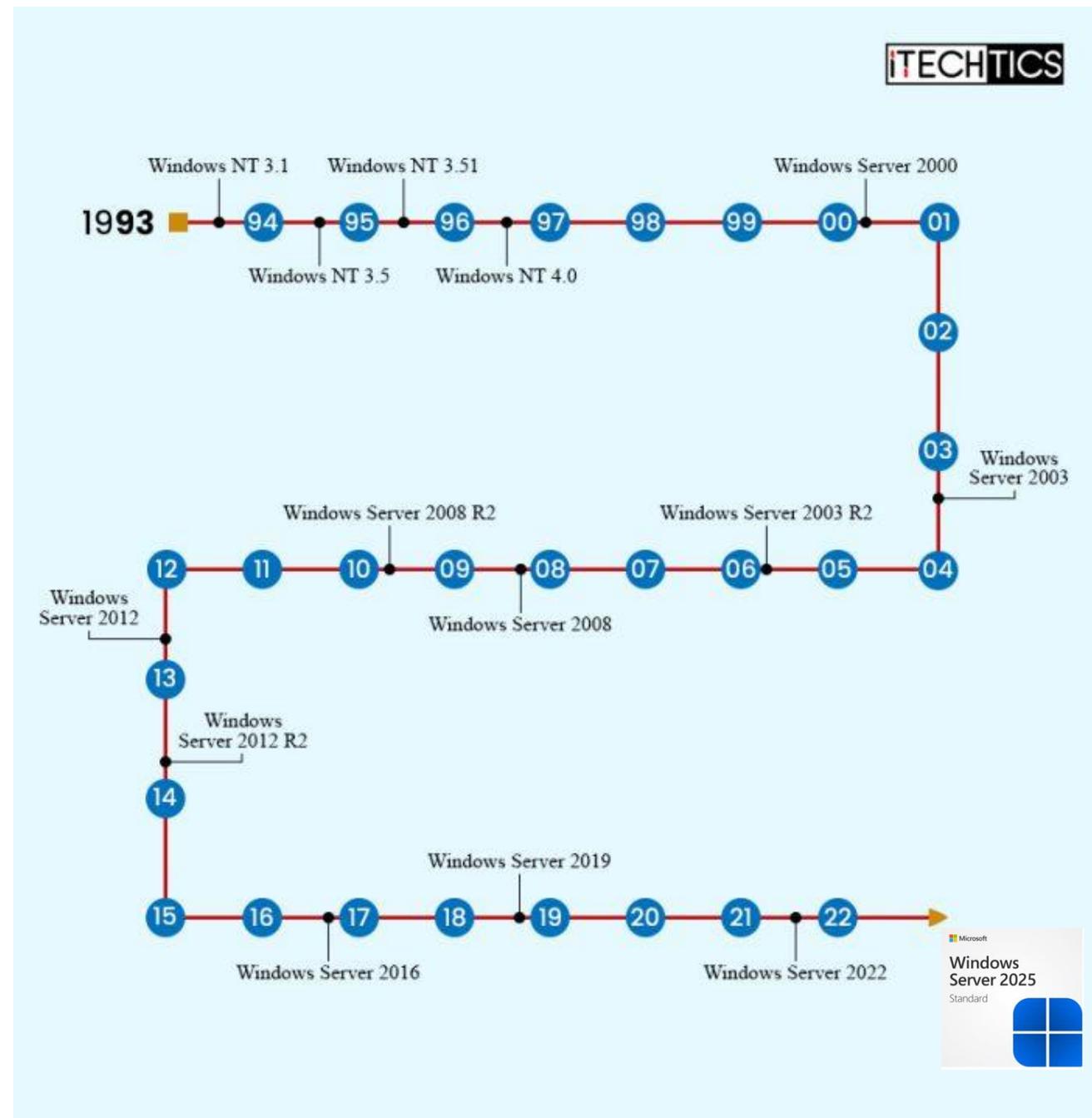
Focusing on Windows Server

- Industry-standard enterprise solution
- Widespread adoption in corporate environments
- Rich feature set for business applications
- Strong security framework
- Seamless integration with other Microsoft products

Selecting Certifications

| Certification | Description | Exams Required | Ideal For | Link |
|--|--|--|---|---------------------------------|
| Windows Server Hybrid Administrator Associate | Validates skills in managing Windows Server in hybrid and on-premises environments. | <ul style="list-style-type: none"> - AZ-800: Administering Windows Server Hybrid Core Infrastructure - AZ-801: Configuring Windows Server Hybrid Advanced Services | IT professionals managing Windows Server and integrating with Azure. | Microsoft Learn |
|  CompTIA Server+ | Vendor-neutral certification covering server hardware, software, storage, and troubleshooting. | SK0-005 | Entry-level server administrators, IT support specialists. | CompTIA |
| Microsoft Certified: Azure Administrator Associate | Focuses on managing cloud-based Windows Server environments in Azure. | AZ-104  | IT administrators managing Windows Server in Azure environments. | Microsoft Learn |
| VMware Certified Professional – Data Center Virtualization (VCP-DCV) | Covers managing and troubleshooting virtualized Windows Server environments using VMware. | VCP-DCV 2023  | IT professionals handling Windows Server in virtualized environments. | VMware |
| Cisco Certified Network Associate (CCNA) | While primarily networking-focused, it covers Windows Server networking fundamentals and infrastructure. | 200-301  | Network and system administrators managing Windows Server networking. | Cisco |

MS Server History 😊



1. Hybrid Capabilities

- **Integration with cloud services:** Allows servers to work seamlessly between on-premises and cloud environments
- **Azure Arc compatibility:** Lets you manage Windows Server through Azure, even for on-premises servers
- **On-premises and cloud management:** Unified management for both local and cloud-based servers through a single interface

2. Enhanced Security Features

- **Hardware and software-level protection:** Multi-layered security approach
- **Next-generation Active Directory:** Improved identity and access management system
- **Advanced threat protection:** Built-in tools to detect and prevent security threats
- **Customizable security baseline:** Ability to set and maintain security standards specific to your needs

3. Modern Platform Features

- **Improved upgrade processes:** Easier updates and transitions between versions
- **Better application compatibility:** Wider support for both modern and legacy applications
- **Consistent UI experience:** Similar interface between Windows 11 and Server 2025
- **Modern peripherals support:** Including WiFi and Bluetooth capabilities

4. Performance Features

- **Enhanced networking:** Improved network stack and capabilities
- **Optimized storage:** Better storage performance, especially for SQL Server
- **Live hotpatching:** Update servers without rebooting
- **GPU partitioning:** Share GPU resources among multiple workloads



Windows Server 2025 Key Features

Windows Server 2025 and Installation Options

1. Datacenter Edition

•**Best for:** Highly virtualized environments and cloud infrastructure

•**Installation Options:**

- Server Core (recommended for production)
- Server with Desktop Experience

•**Key Features:**

- Unlimited virtual machines
- All features available
- Software-defined networking
- Storage Spaces Direct

2. Standard Edition

•**Best for:** Physical or minimally virtualized environments

•**Installation Options:**

- Server Core (recommended for production)
- Server with Desktop Experience

•**Key Features:**

- Limited to 2 virtual machines
- 12 • Basic virtualization rights
- Standard networking features



Installation Types Explained

1. Server Core Installation

- **What it is:** Minimal, command-line interface installation
 - **Best for:**
 - Production environments
 - Web servers
 - DNS servers
 - DHCP servers
 - Domain controllers
 - **Advantages:**
 - Smaller attack surface
 - Lower resource usage
 - Fewer updates needed
 - Better security
 - **Management via:**
 - PowerShell
 - Windows Admin Center
 - Remote management tools

2. Server with Desktop Experience

- **What it is:** Full graphical user interface (GUI)
 - **Best for:**
 - Learning environments
 - Small businesses
 - Situations requiring local GUI management
 - Application servers requiring GUI
 - **Advantages:**
 - Familiar Windows interface
 - Easier for beginners
 - Direct GUI management
 - Local administration capability
 - **Management via:**
 - Local GUI tools
 - Server Manager
 - All administrative tools

Installing Windows Server 2025 on VirtualBox- Part 1

Prerequisites

1.Required Software:

1. Oracle VirtualBox (latest version)
2. Windows Server 2025 ISO file (evaluation version)
3. Minimum 4GB RAM available for VM
4. At least 40GB free disk space

Part 1: VirtualBox Configuration

1.Create New Virtual Machine

1. Open VirtualBox
2. Click "New" button
3. Name: Windows_Server_2025
4. Type: Microsoft Windows
5. Version: Windows 2022 (64-bit)
6. Click "Next"

2.Memory (RAM) Configuration

1. Allocate minimum 4GB (4096 MB)
- 14 2. Recommended: 8GB (8192 MB) if available
3. Click "Next"

3. Hard Disk Setup

1. Select "Create a virtual hard disk now"
2. Click "Create"
3. Choose "VDI (VirtualBox Disk Image)"
4. Select "Dynamically allocated"
5. Size: 50GB minimum
6. Click "Create"

4. Configure System Settings

1. Select your new VM
2. Click "Settings"

5. a) System Tab:

1. Processor: Assign 2 CPUs minimum
2. Enable PAE/NX
3. Enable VT-x/AMD-V

6. b) Display Tab:

1. Video Memory: 128 MB
2. Enable 3D Acceleration

7. c) Network Tab:

1. Adapter 1: NAT
2. Enable Network Adapter

Installing Windows Server 2025 on VirtualBox- Part 2

Part 2: Windows Server Installation

1. Start Installation

1. Select your VM
2. Click "Start"
3. Choose Windows Server 2025 ISO file
4. Click "Mount and Power Up"

2. Initial Setup Screens

1. Language: Choose your preferred language
2. Time/Currency: Select appropriate format
3. Keyboard: Choose input method
4. Click "Next"
5. Click "Install Now"

3. Operating System Selection

Choose an operating system:

- Windows Server 2025 Standard (Core)
 - Command-line interface only
 - Minimal installation
 - Reduced attack surface
 - Ideal for production servers

- Windows Server 2025 Standard (Desktop Experience)
 - Full graphical interface
 - Complete management tools
 - Familiar Windows interface
 - Recommended for learning

- Windows Server 2025 Datacenter (Core)
 - Same as Standard Core
 - Additional virtualization rights
 - Enterprise features

- Windows Server 2025 Datacenter (Desktop Experience)
 - Same as Standard Desktop Experience
 - Additional virtualization rights
 - Enterprise features

Installing Windows Server 2025 on VirtualBox- Part 2

For Learning Environment:

- Choose "Windows Server 2025 Standard (Desktop Experience)"
- This provides full GUI for easier learning
- All management tools available locally

For Production Environment:

- Consider "Windows Server 2025 Standard (Core)"
- More secure and efficient
- Requires PowerShell knowledge
- Click "Next" after selection

4. License Terms

Accept the license terms

- Click "Next"

5. Installation Type

- Choose "Custom: Install Windows only (advanced)"
- Click "Next"

6. Disk Partition

- Select the unallocated space (50GB)
- Click "Next"
- Windows will begin installing

Choose an operating system:

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Installing Windows Server Part 3: Post-Installation Configuration

1. Administrator Setup

1. Set Administrator password
2. Must meet complexity requirements
3. Document this password safely

2. VirtualBox Guest Additions

1. From VirtualBox menu: Devices → Insert Guest Additions CD
2. Run VBoxWindowsAdditions.exe
3. Follow installation wizard
4. Restart when prompted

3. Initial Server Configuration

1. Server Manager will start automatically
2. Configure Windows Update
3. Set time zone
4. Configure network settings

4. Network Configuration

1. Open Network and Sharing Center
2. Configure IPv4 settings if needed
3. Test network connectivity

Installing Windows Server Part 4: Optimization Steps

1. Performance Optimization

1. Disable unnecessary services
2. Adjust visual effects
3. Configure page file

2. Install Windows Updates

1. Open Settings
2. Windows Update
3. Check for updates
4. Install all available updates

Common Issues and Solutions

1. VirtualBox Performance Issues

1. Solution: Adjust RAM and CPU allocation
2. Enable virtualization in BIOS/UEFI

2. Network Connectivity

1. Solution: Check VirtualBox network adapter settings
2. Verify NAT configuration

3. Display Issues

1. Solution: Install/reinstall Guest Additions
2. Adjust video memory

Windows Server Installation Documentation Assignment 1

Assignment Overview

Create a detailed video documentation of installing Windows Server 2025 on VirtualBox, explaining each step of the process.

Video Requirements

Duration: 30 minutes total

Break down your recording into these sections:

1. Introduction & Prerequisites (5 minutes)

1. Introduce yourself and the project
2. Show VirtualBox installation
3. Demonstrate checking system requirements
4. Show downloading Windows Server 2025 evaluation
5. Explain the two installation options (Core vs Desktop Experience)

2. VirtualBox Configuration (7 minutes)

1. Creating new virtual machine step by step
2. Setting memory and CPU allocation with explanations
3. Configuring virtual hard disk
4. Explaining each setting's purpose and importance
5. Network configuration options

3. Windows Server Installation (10 minutes)

1. Booting from ISO
2. Language and keyboard selection
3. **Important:** Detailed explanation while choosing between:
 1. Server Core (Command-line interface)
 2. Desktop Experience (GUI interface)
4. Partition setup and explanation
5. Installation progress (can be time-lapsed with voice-over)

4. Post-Installation Setup (5 minutes)

1. Administrator password setup
2. Initial login
3. Installing VirtualBox Guest Additions
4. Network verification

5. Final Configuration & Demonstration (3 minutes)

1. Show Server Manager
2. Basic navigation
3. Verify installation success

Required Explanations

For each step, you must explain:

- What you are doing
- Why you are doing it
- Potential issues to watch out for
- Best practices to follow



 Microsoft
Azure

Thank you

Mohammad Salim- IT Dept. @ TIU University

Class code



gxgxvq4 

 Microsoft

**Windows
Server 2025**

Standard

