Module Code & Module Title

Level 5 – CT5052, Network Operating Systems

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Logbook 3.

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Student Name: Asim Sapkota

London Met ID: 23048768

College ID: NP04CP4A230225

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Submitted to: Mr Prasant Adhikari

I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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Introduction

Server Manager is a management console in Windows Server that helps IT professionals provision and manage both local and remote Windows-based servers from their desktops, without requiring either physical access to servers, or the need to enable Remote Desktop protocol (RDP) connections to each server. Although Server Manager is available in Windows Server 2008 R2 and Windows Server 2008, Server Manager was updated in Windows Server 2012 to support remote, multi-server management, and help increase the number of servers an administrator can manage.

The Windows Server 2008 brought with it the introduction of the Server Manager which was aimed to assist in the highly complicated tasks of handling server configuration and roles in an Enterprise environment. In the absence of its introduction, administrators had only an assortment of command line interfaces and tools at their disposal which was not very effective in overseeing several servers. These tasks were incorporated into the interface of Server Manager which was graphical in nature and hence made server management tasks easier and more pertinent to various IT practitioners. With the passage of time, many changes have been made to Server Manager; efficiency in remotely managed servers for enhanced user experience, integration with PowerShell, and even allowing multi-server management features for Windows Server 2016, 2019 and 2022 versions.

Today, Server Manager is still very much used in Windows Server to configure server roles, check the health of servers, and in adding and removing servers either remotely or locally. They continue to be relevant not only in this era but in environments where the major dependency is on the on premises infrastructure where everything is simple and can be managed directly. Even though newer solutions like Windows Admin Center, which is browser-agnostic and hybrid but Server Manager has existed and continues to exist as an efficient solution for small scale IT environments or those that were primarily based on local networks.

We still require Server Manager as it is a lightweight, GUI-based tool that is perfect for simple server management tasks. It provides a familiar and integrated way to manage roles and features without needing any external installations or subscriptions, making it a good fit for small to medium-sized businesses and legacy environments. However, its capabilities are somewhat restricted in hybrid and cloud-focused setups, which are more effectively handled by modern tools like Windows Admin Center.

Alternatives of Server Manager

- Virtualmin: An open-source control panel with free and paid versions
- Windows Admin Center: A modern management tool that complements System Center
- Remote Server Administration Tools: Can be used to manage a Server Core server
- Windows PowerShell: Can be used locally and remotely to manage a Server Core server
- MMC snap-in: Can be used remotely to manage a Server Core server
- Remote Desktop Services: Can be used remotely to manage a Server Core server
- Vesta Control Panel: A simple alternative to cPanel

Pros of Server Manager

- A central console to manage all servers and all server roles.
- Eases the tasks of server installation, server configurations, and monitoring.
- Makes it possible to control eight servers at once.
- Provides access over a network to the servers that are installed on another machine.
- Tightly integrated with PowerShell for more complex automation and scripting.
- Small in size and comes with Windows Server Operating System for free.
- Perfect for users who prefer GUI tools more than command lines.

Cons of Server Manager

- Not ideal for companies looking to manage a hybrid or multi-cloud infrastructure.
- Missing some deeper integrations or features while other solutions like Windows Admin Center have a lot.
- The features associated with controlling the machines are not easy and straightforward to set up compared to others.
- Not agnostic, which means it has exclusive partnership with Windows operating system.
- Not well done in instance when large amounts of machines needs to be controlled, or when automation is in focus.
- A straightforward solution is not available which permits to use browser interface to log in to Server Manager.

Objective

The purpose of this lab is to deal with how Server Manager is implemented during server management in a Windows Server environment. The lab concentrates on detailing the practical aspects of Server Manager, such as the performance of the server, the role and feature usage on the server, and the settings configured on the server. After completing this lab, the users will be able to practice installing and managing roles and features on local and remote servers and event logs for troubleshooting as well as using Server Manager in the management and administration of servers.

Required Tools and Concepts

Hardware/ Software Requirements

a) Hardware
   - A system that can operate a Windows Server (example, a CPU clocked at 2 GHz, 4 GB of RAM, 64-bit architecture).

b) Software
   - Any version of Windows Server Operating System, for example, Windows Server 2019 or later.
   - Virtualization programs (optional, for example, VirtualBox, VMware Workstation).

Conceptual Requirements

1. Basic Windows Server Usage
   - Capable of performing operations in Windows Server.
   - Knowledge of roles and features (for example, Active Directory, DHCP, DNS).
2. The Use of Server Manager
   - Familiarity with Server Manager and its usage in server management and administration.
   - Basic information and ideas relative to networking such as how to add remote servers and manage them.
3. Network Configuration
   - It is not compulsory to include the server in a domain but it is advisable for advanced scenarios.
4. Administrative Privileges
   - Administrator privileges on a user account created within the server.

Steps of Replicate

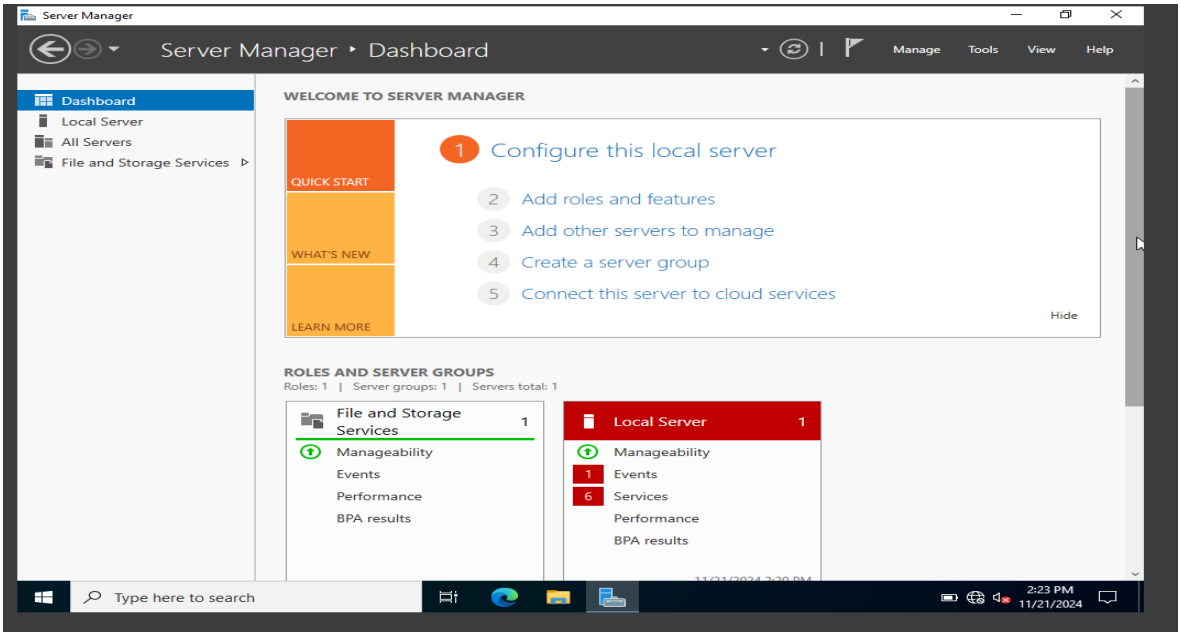


Figure 1: Dashboard of Server Manager

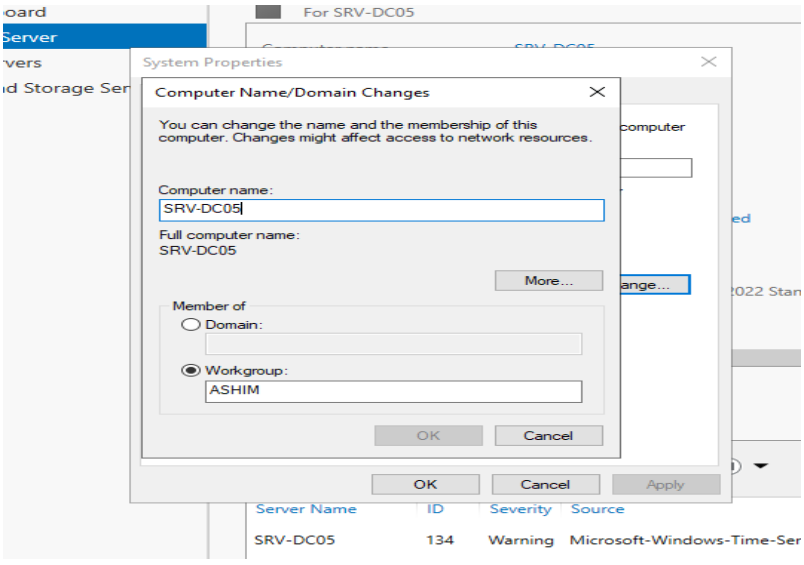


Figure 2: Changing the Server's name and workgroup

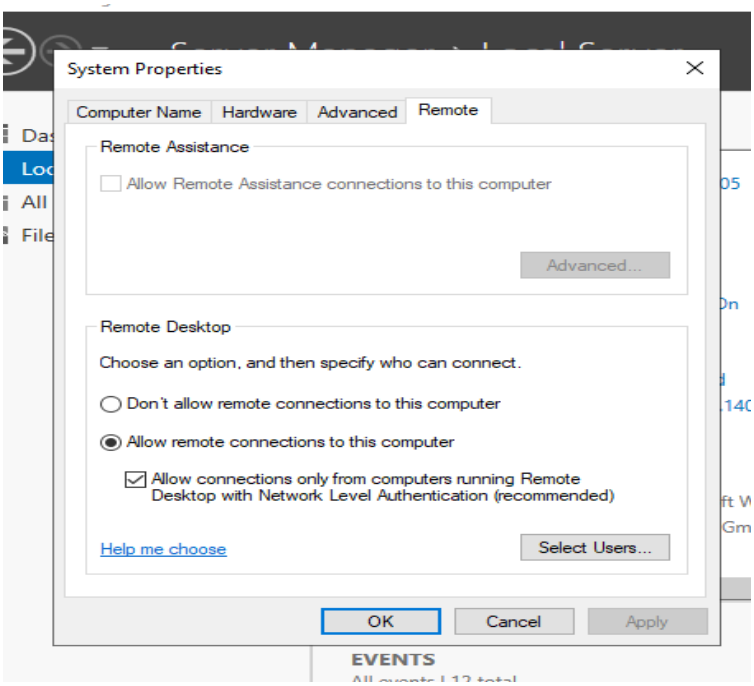


Figure 3: Enabling Remote Desktop

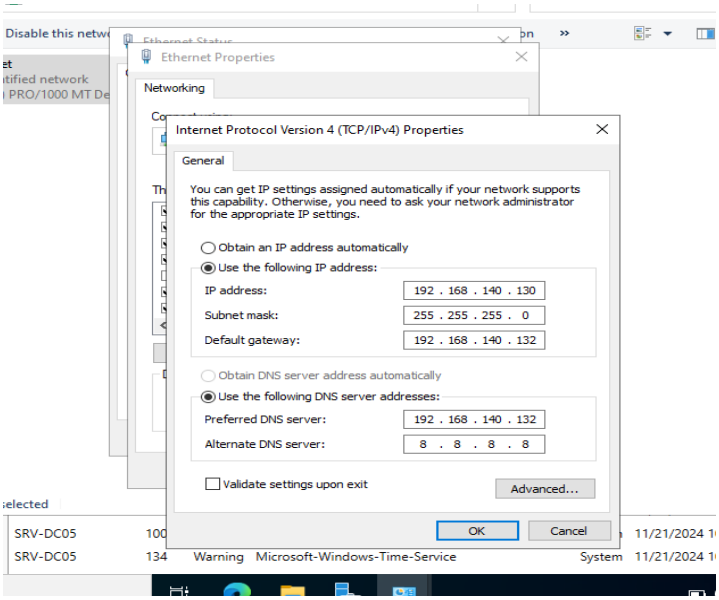


Figure 4: Setting up Static IP address

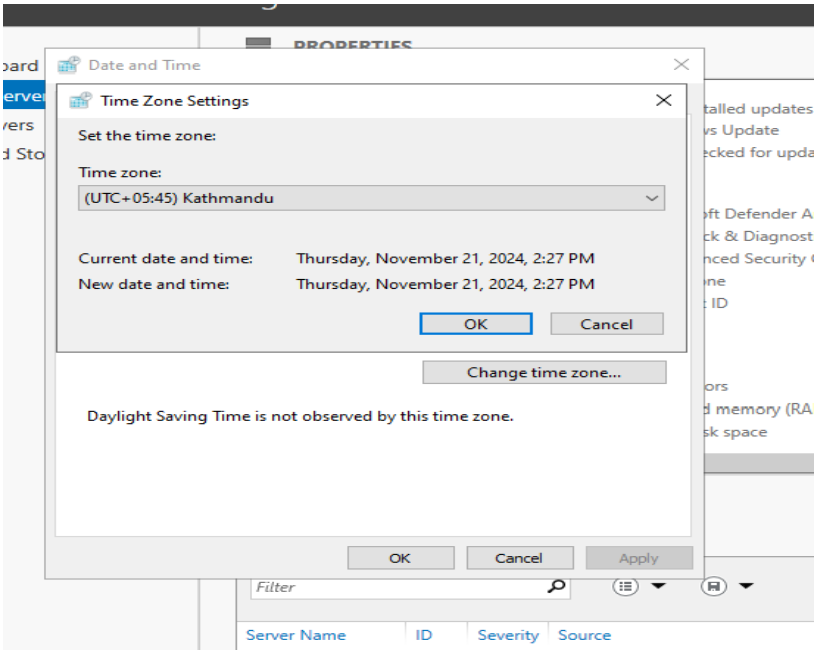


Figure 5: Changing the time zone

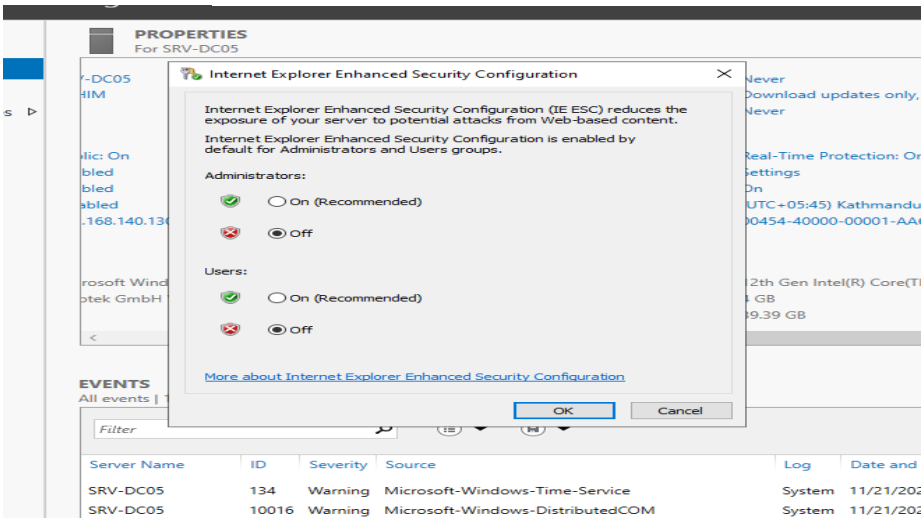


Figure 6: Turning off IE enhanced security

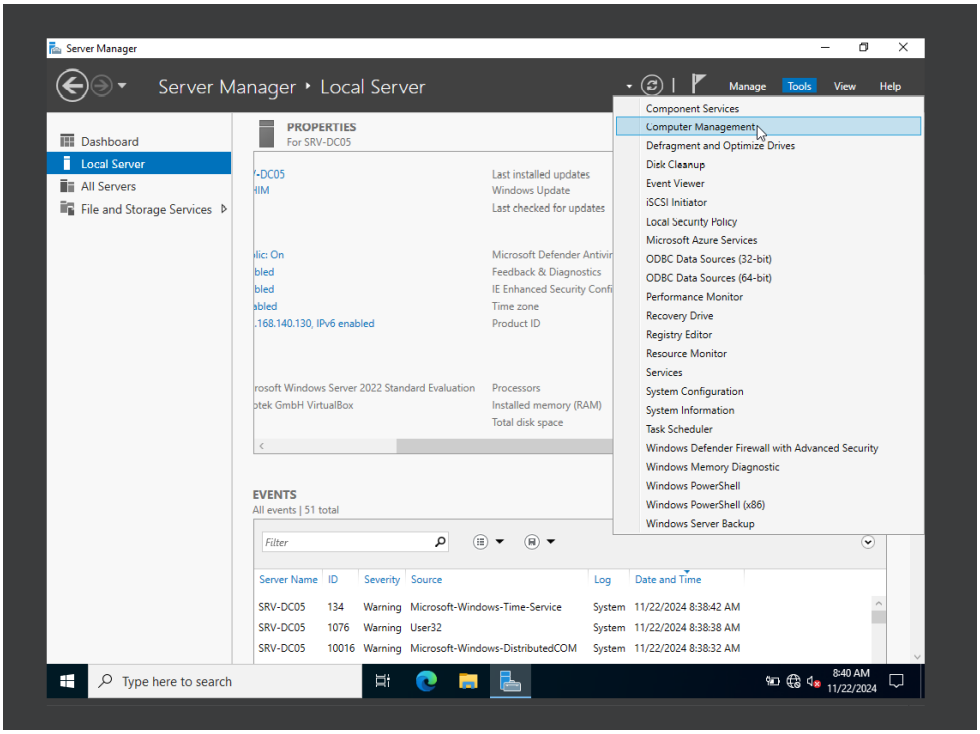
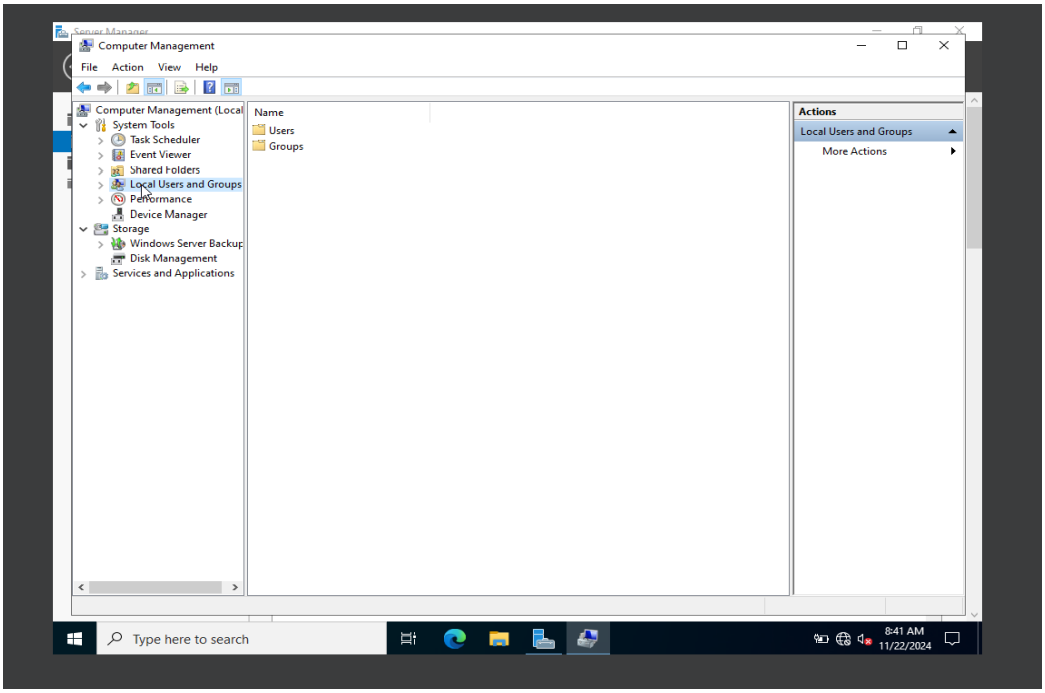


Figure 7: Adding user using GUI



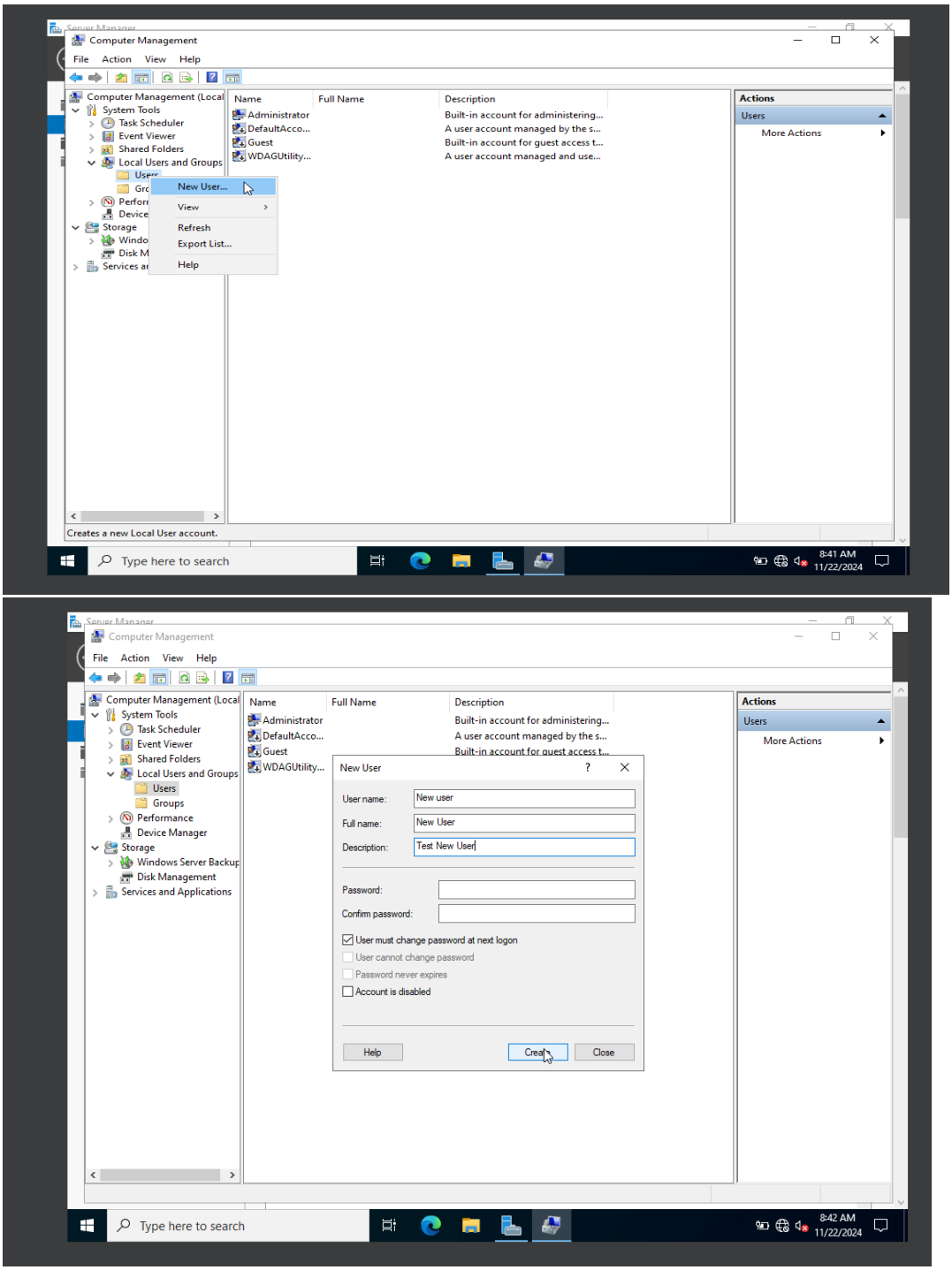


Figure 8: Adding user name, full name and description

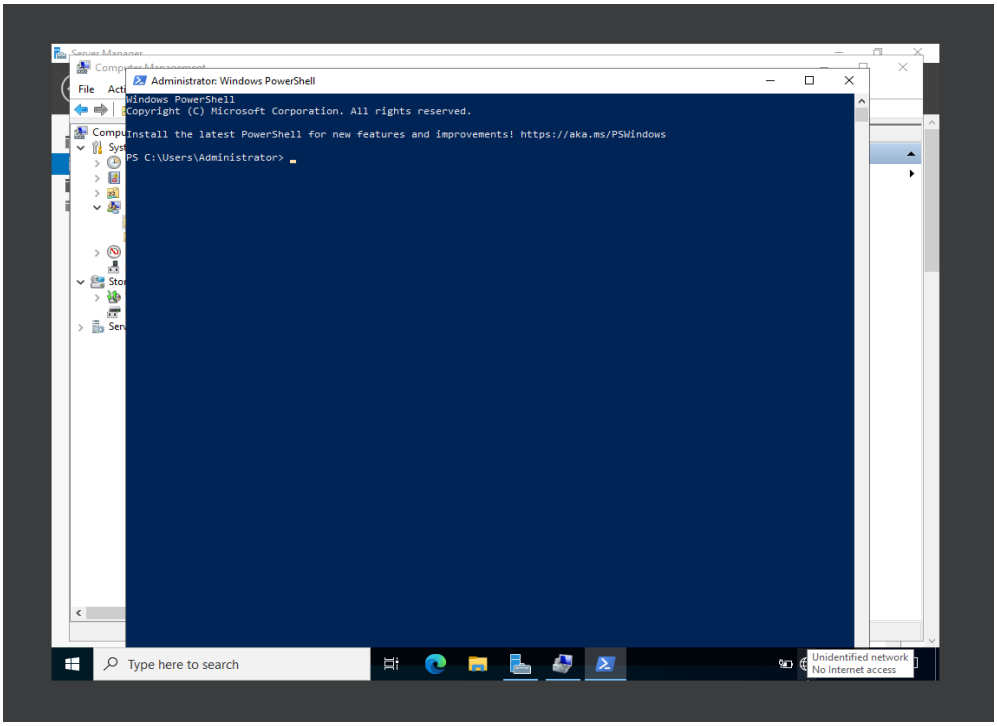


Figure 9: Windows Powershell as an administrator

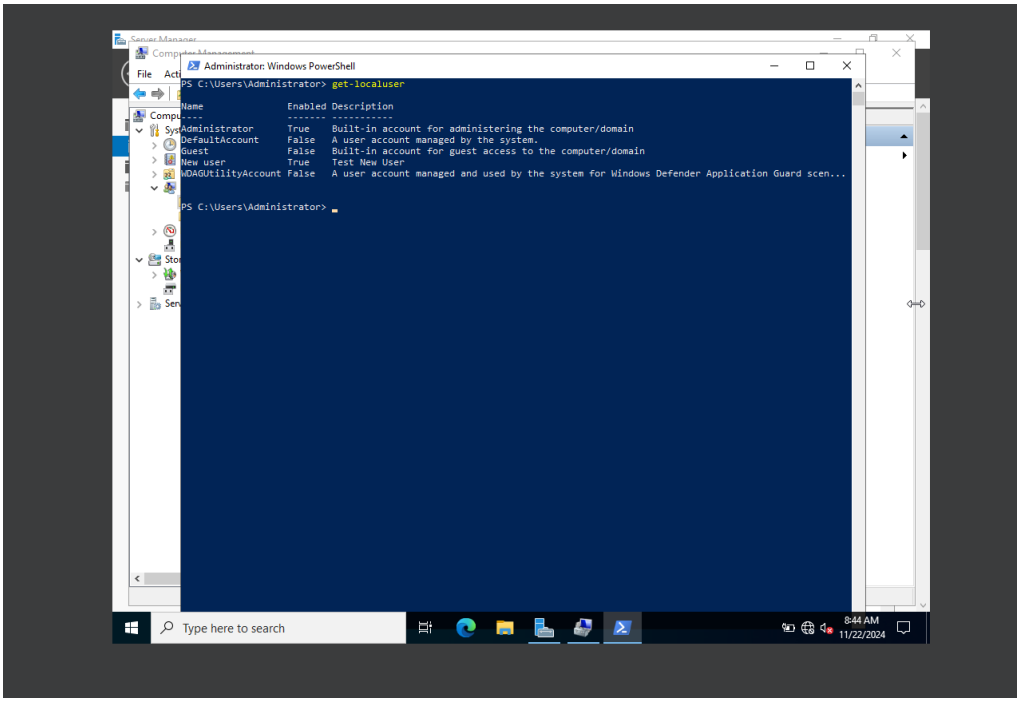


Figure 10 : Checking localuser

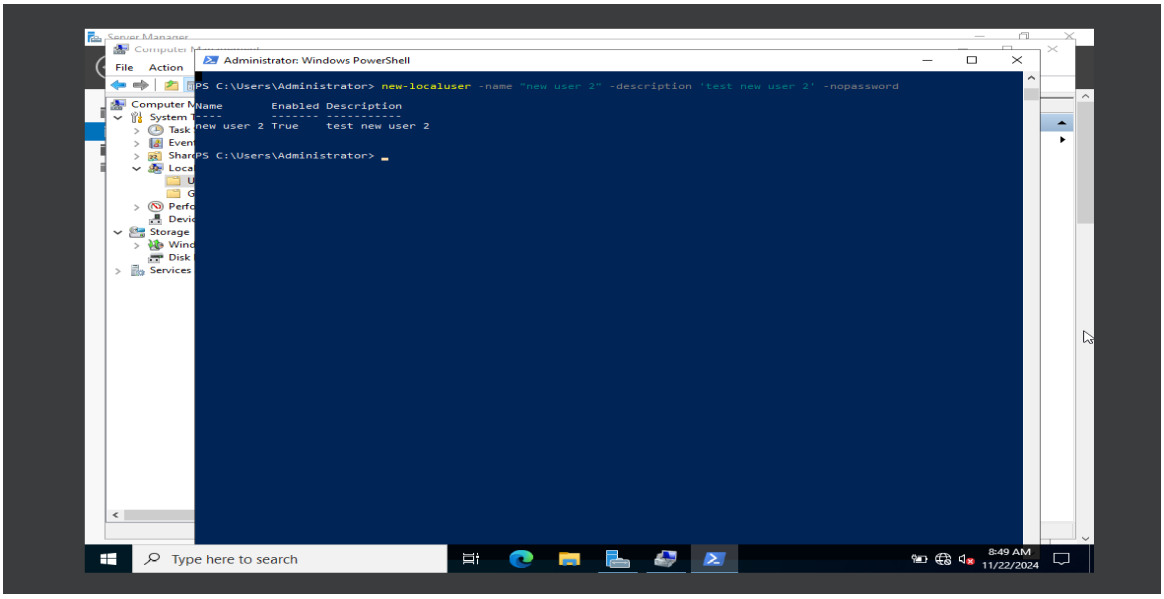


Figure 11 : Adding new user 2

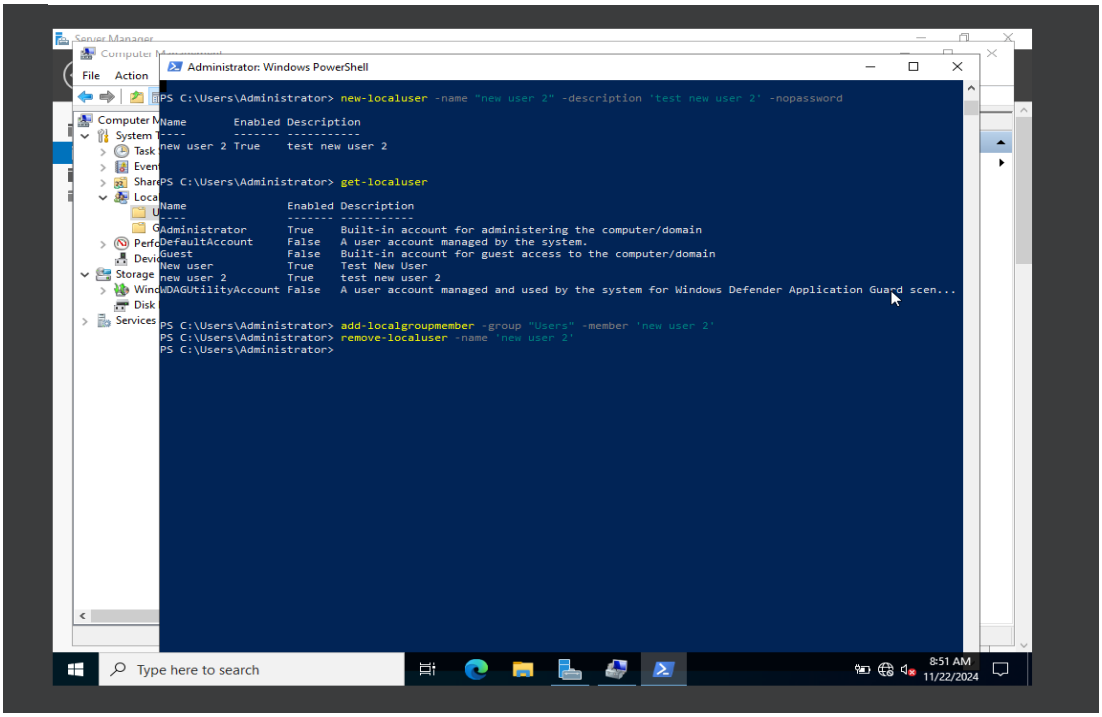


Figure 12 : Removing a new user 2

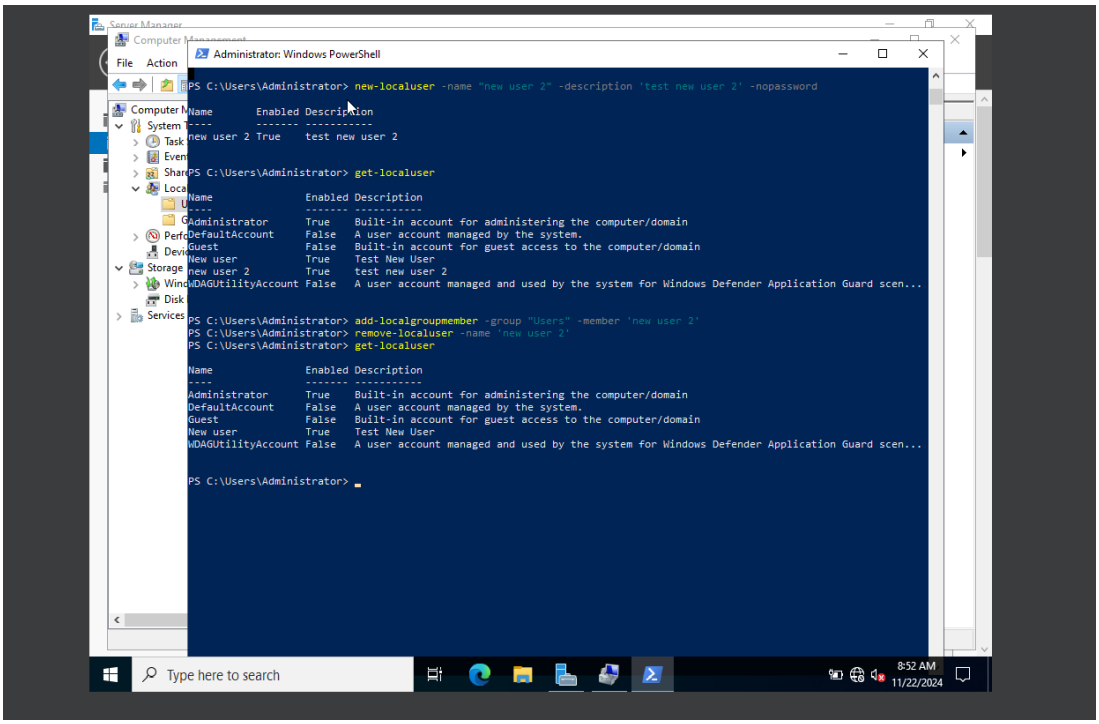


Figure 13 : Confirming that the new user 2 is removed

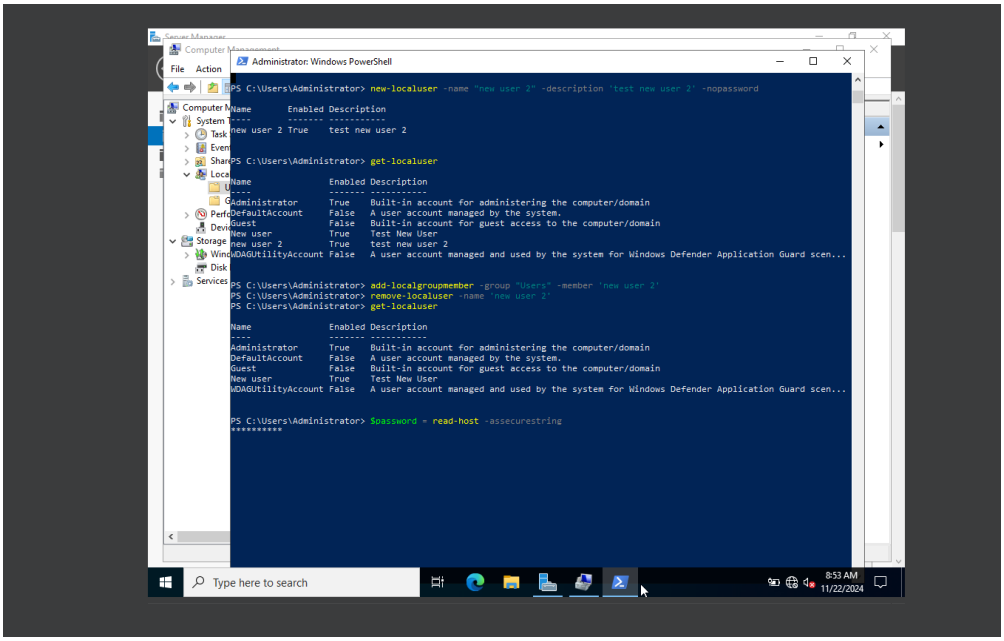


Figure 14 : Storing passwords using variables assecurestrings

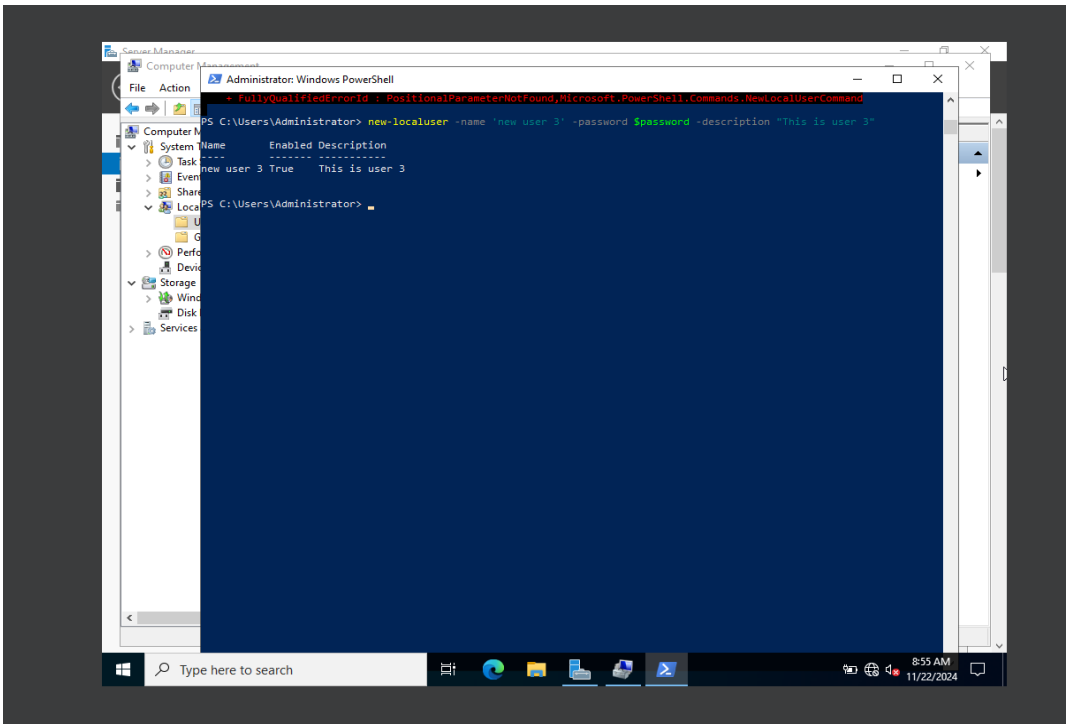


Figure 15 : A new user is created by giving the variable as password

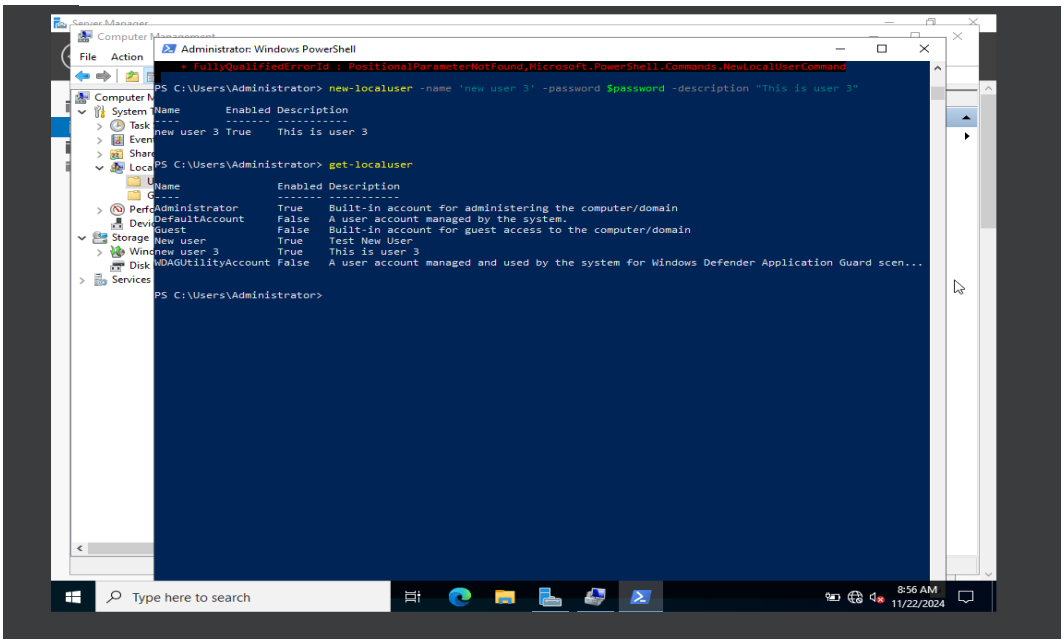


Figure 16 : Checking the localuser after adding new user 3

Conclusion

In particular, this lab allowed me build some experience dealing with Windows Server 2022, not only regarding installation and configuration, but also discovering one of the most important utilities named Server Manager in terms of managing server systems. Roles and Features are deployed by Server Manager that act as a single console to manage different aspects of the server. It allowed me to track server status and utilization and also rouse and configure server roles from one console.

Here through Server Manager I learnt how to consolidate complex, time-consuming administration processes like adding or removal of features, monitoring the performance of the server as well as handling remote servers. The option to make the tool work within PowerShell improved the value of the tool by providing systemic and scriptable solutions to what may be otherwise repetitive jobs or processes. This lab highlighted the role of Server Manager as a transition between the world of interfacing and GUI along with the need for command-line techniques for server management.

The significance of Server Manager was then realized as I discovered that it eased business in managing physical and virtual networks. When creating a new role; allocating resources; or handling partitions, the roles a functions of Server Manager made the procedures seem very easy and efficient. On the same note, it was a tool responsible for managing “Server Core” installation of Windows Server 2022 which made it best suited for an environment where resources are limited and essential software must run in environments with no GUI which means that management must be accurate and efficient.

This experience proved that Server Manager is not a luxury but a requirement in the contemporary IT organization. It helps organizations to address their challenges with server management and enjoy stability to host numerous applications and services. Therefore, Server Manager is the great asset of Windows Server 2022 and provides the functionality, flexibility, and efficiency required for effective server management in today’s complex environments.

References

Microsoft. (2022, June 08). *Configure remote Management in Server Manager*. Retrieved from Microsoft Learn: https://learn.microsoft.com/en-us/windows-server/administration/server-manager/configure-remote-management-in-server-manager

Microsoft. (2022, August 06). *Server Manager*. Retrieved from Microsoft Learn: https://learn.microsoft.com/en-us/windows-server/administration/server-manager/server-manager

Microsoft. (2023, September 10). *Alternative Windows Server*. Retrieved from Microsoft Learn: https://learn.microsoft.com/en-us/answers/questions/1499484/alternative-windows-server-administration-method-t

Microsoft. (2023, September 21). *Latest version Windows "Server Manager"*. Retrieved from Microsoft Learn: https://learn.microsoft.com/en-us/answers/questions/1374217/latest-version-windows-server-manager-when-using-w?page=1