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Assessment Type

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Student Name: Arij Lamichhane

London Met ID: 22085885

College ID: NP04CP4S230014

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Submitted To: Mr. Prashant Adhikari

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1. Introduction

Server Manager: Server Manager is a tool that comes inbuilt with the Windows Server. This helps to manage the server easily using the GUI of the Manager. Windows Server Manager is a management console in Windows Server that provides a centralized interface for managing server roles, features, and resources. When installed on a virtual machine (VM) using Oracle VirtualBox, it allows administrators to configure and monitor various aspects of the server environment efficiently. This setup is particularly useful for testing, development, and learning purpose.

Window server helps in centralized management as server Manager provides a single interface to manage multiple servers, making it easier to oversee different roles and features across your network.

Server Manager allows for remote management of other servers within the network, enabling administrators to perform tasks without needing to log into each server physically.

2.Objective of Windows Server Manager

1. Learning and Development: Provides a platform for students and IT professionals to learn about server management without needing physical hardware.
2. Testing Environment: Allows users to test configurations, applications, and updates in a controlled environment before starting the production.
3. Resource Management: Helps manage system resources efficiently within a virtualized environment, ensuring optimal performance of applications running on the server.
4. Performance Monitoring: it provides real-time monitoring of server performance metrics such as CPU usage, memory utilization, and disk I/O. This functionality helps administrators quickly identify performance and take corrective actions.
5. User Access Control: Server Manager enables differentiation between user roles, allowing standard users to perform certain tasks while restricting more sensitive operations to administrators. This control enhances security by minimizing the risk of unauthorized changes.
6. Experimentation with Roles and Features: Administrators can easily install, configure, and manage server roles and features through Server Manager. Users can experiment with different server roles (like Active Directory, DNS, DHCP) and features without impacting live systems.

3.Requirements for Using Windows Server Manager

1.Hardware Requirements:

- 1.4 GHz 64-bit processor
- 2 GB RAM minimum (more recommended)
- 32 GB disk space minimum
- Network adapter
- Administrator privileges

2. **Operating system:** Runs on supported Windows Server editions (e.g., Windows Server 2016, 2019, 2022).

- Requires proper network configuration for managing remote servers.
- Use of secure communication protocols like HTTPS.

4. Steps for Turning on server manager from Virtual box
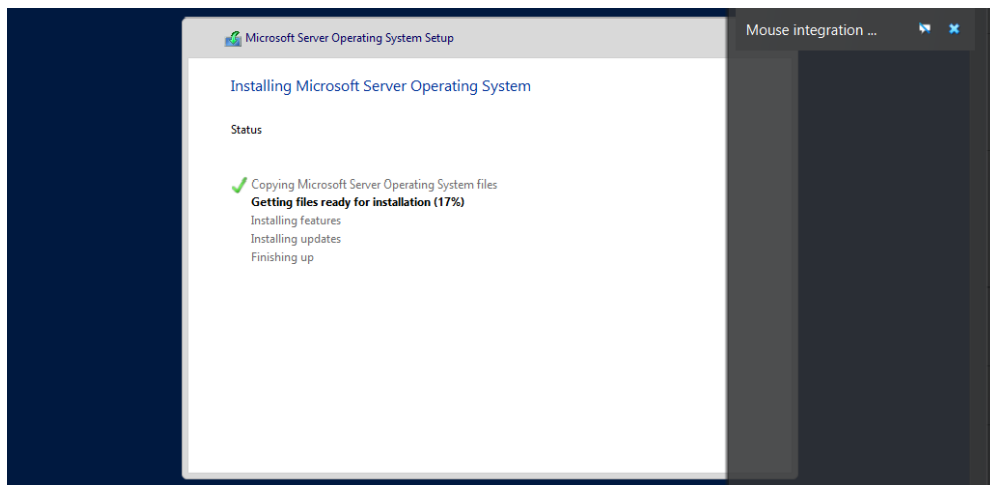
I. Installing windows server manager

Figure 1: Installing windows server manager

ii. Loading windows on virtual box

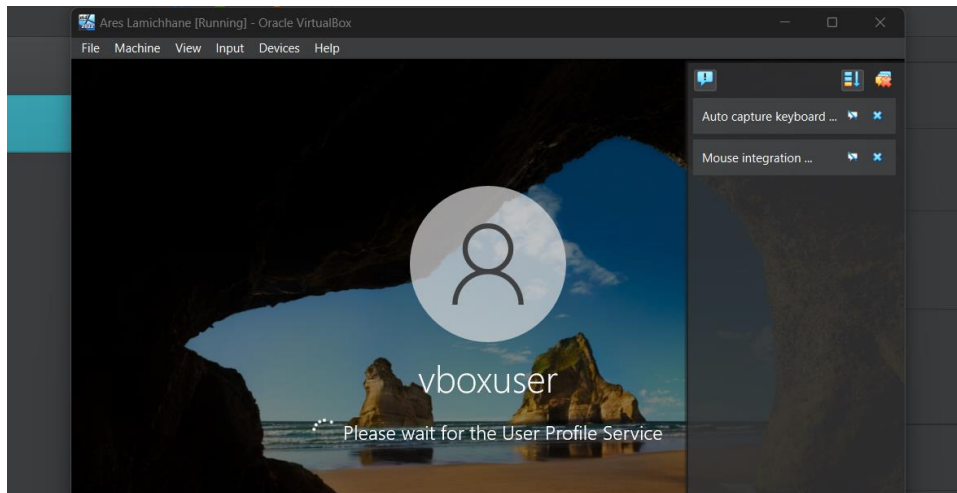**It will take some time according to your pc/laptop to load**

Figure 2: Loading windows on virtual box

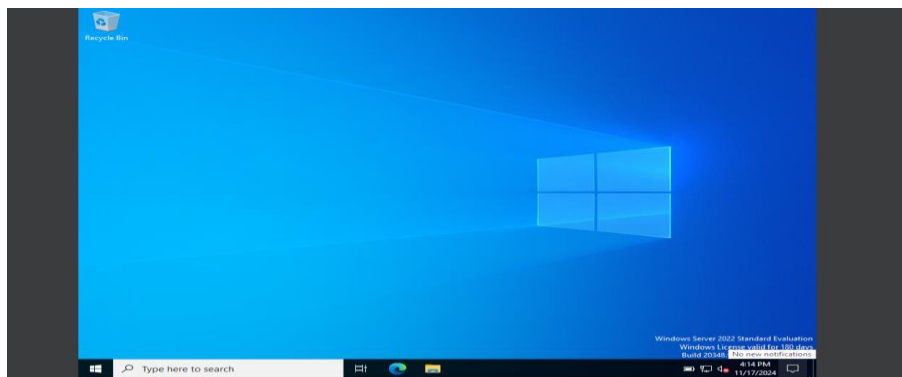## iii. Window fully loaded on virtual box

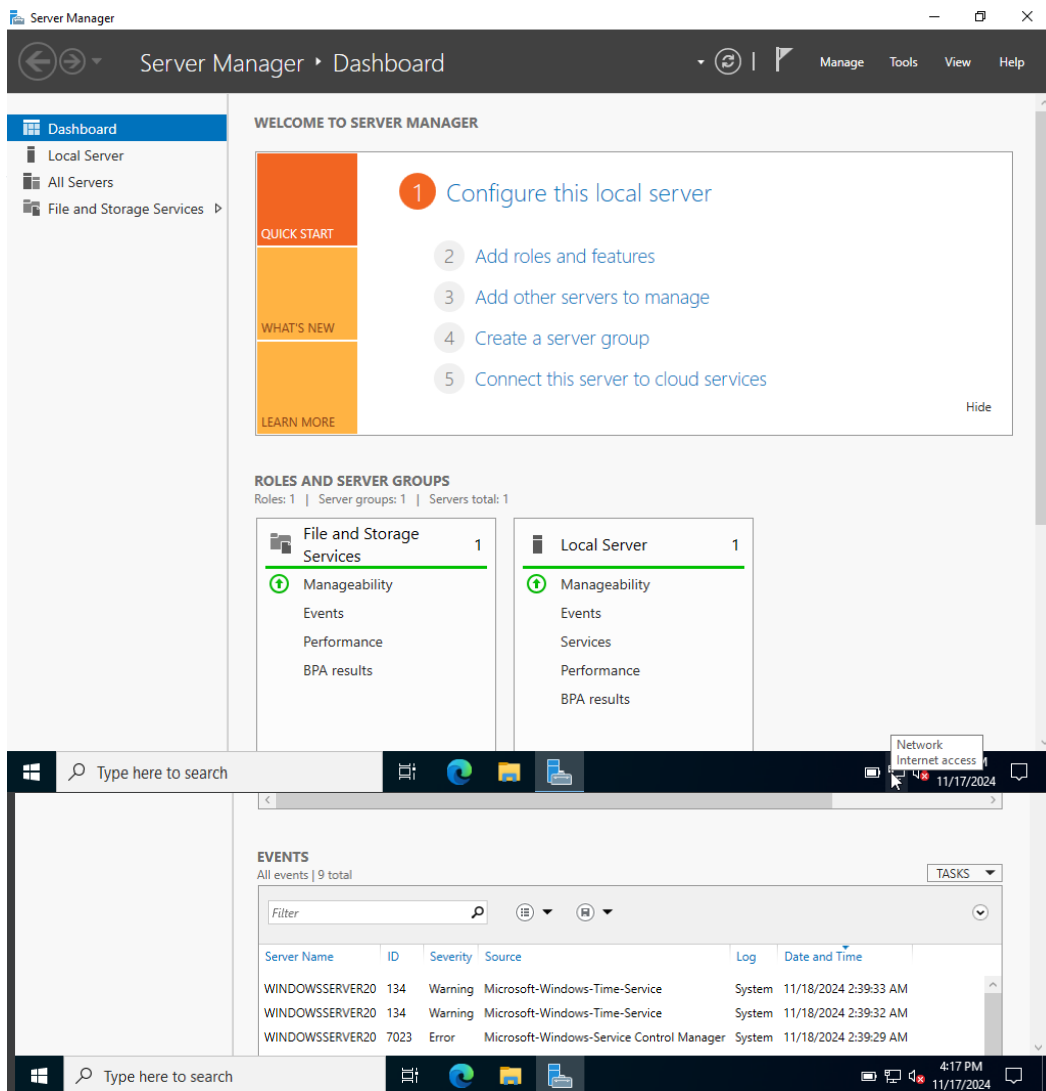Figure 3: Window fully loaded.

Iv. Opening Windows Server Manager

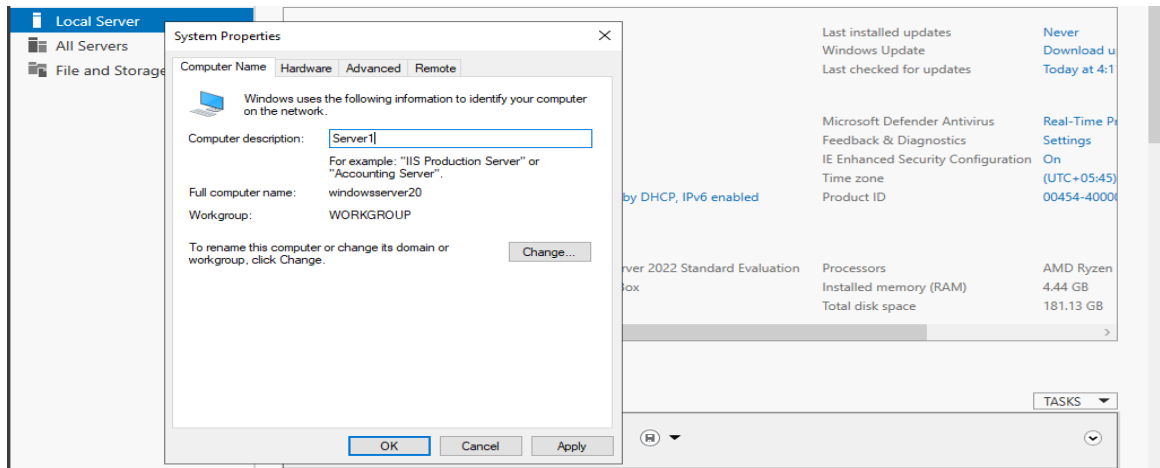

Figure 5: Default server name

VI. Changing server name

Figure 6: Server name changed
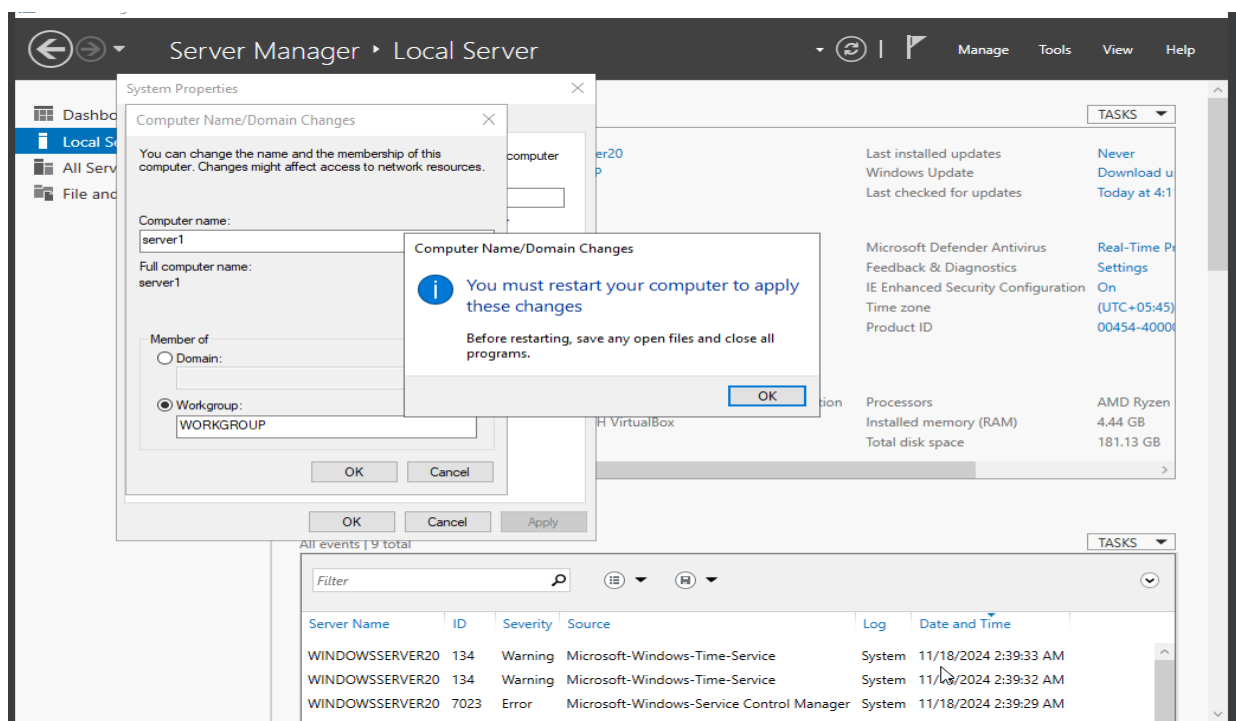
Vii.Restarting after changing server name

Figure7: Restarting after changing server name
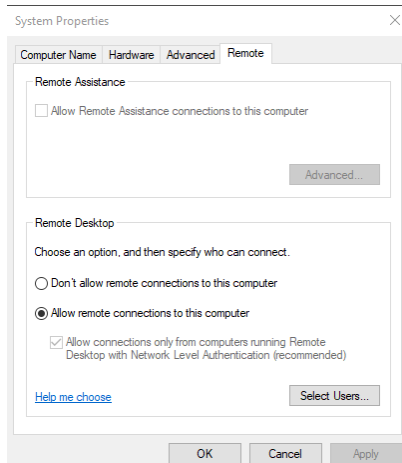
viii. Enabling Remote Desktop

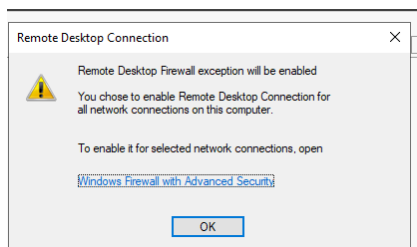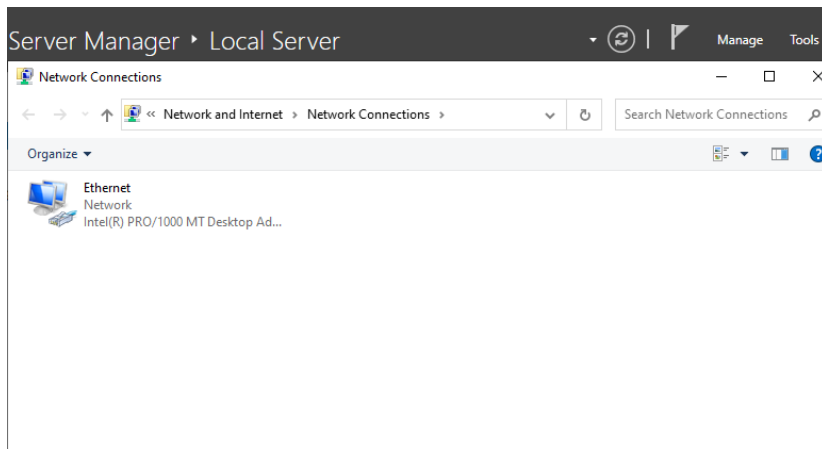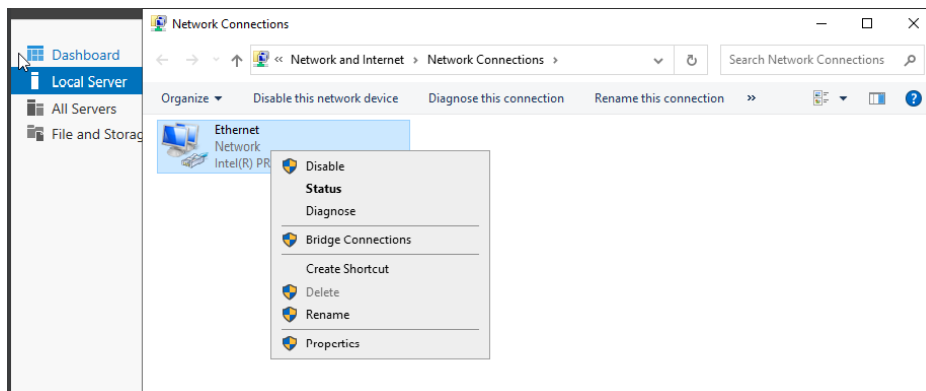Figure8: Enabling remote desktop

Ix. Shows warning about firewall

Figure9: warning about firewall
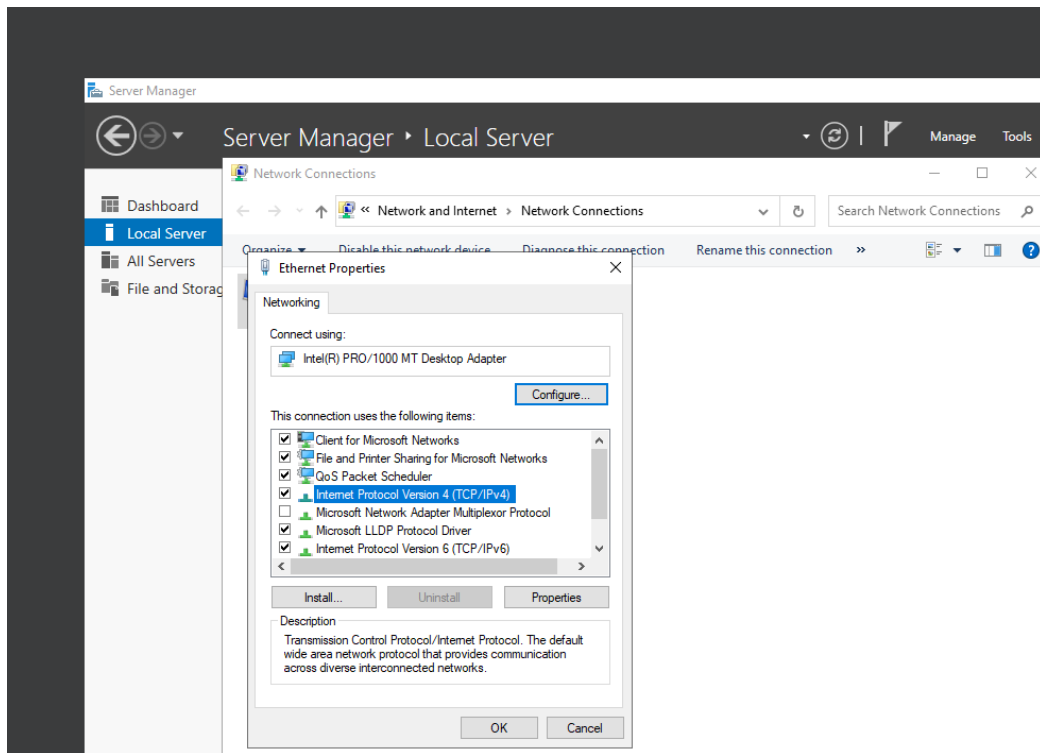
x. setting up Static Ip address.

To set an Ip address, press the Ethernet button. This shows a list of network adapters connected to the server.
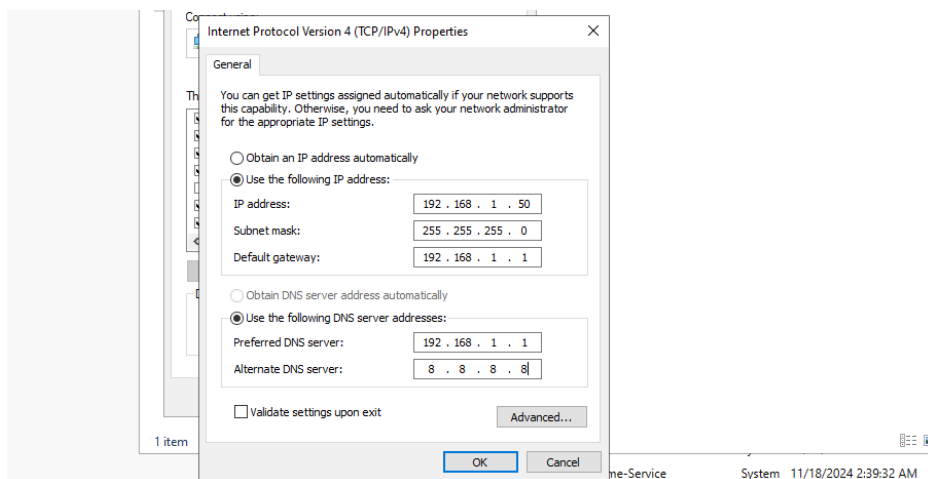
The properties of the adapter is opened by right click on the adapter

From the properties, double click on IPV4 from the list. This will open a new window to enter the Ip.

In the new window, enter the IP for the device and also Subnet mask, Gateway and primary and Secondary DNS server address. Static IP is configured successfully.

xi. Changing the time zone

To change the time zone, press on the time zone from the menu on server manager. Selecting the correct time zone is important for the server.
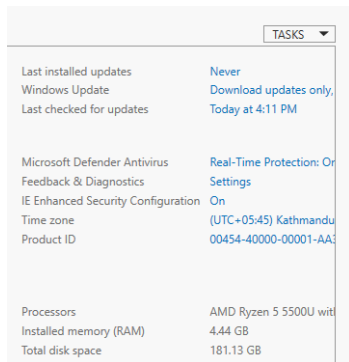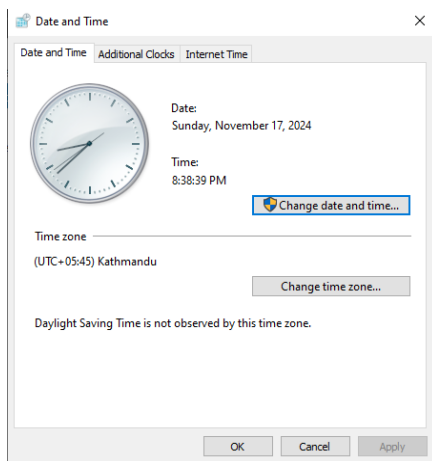

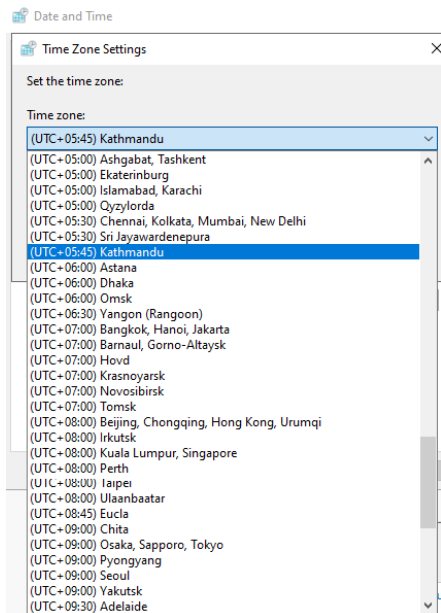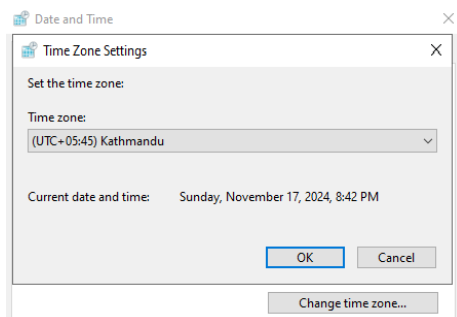Figure10: changing the time zone

On the new window, press the change time zone button.

From the drop –down list, select the correct time zone for server, here Kathmandu is selected.

Finally, press the "OK" button.

Xii.Turning off IE enhanced security and checking for updates

To turn off IE enhanced security from the menu, the IE Enhanced security button is pressed. A new window opens.
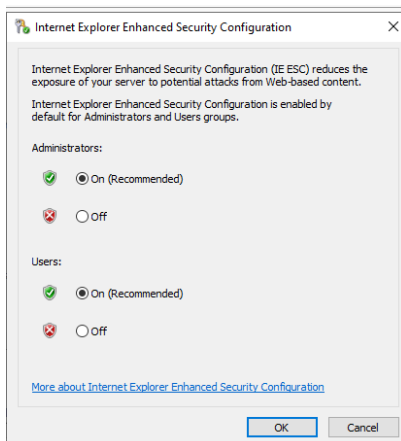
Figure:11 Turning off IE enhanced security and checking update

By default, the security Configuration is turned on.

The IE security is turned off for both Admin and users and "OK" is pressed.
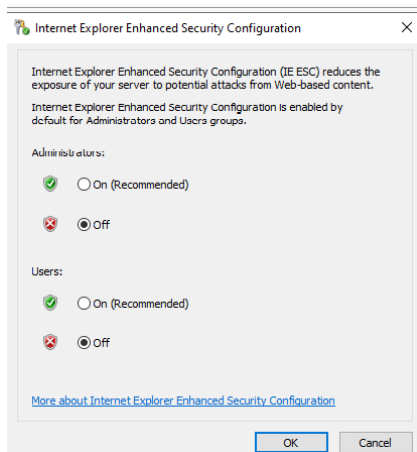
For Windows Update, press the Update button and press Check for Updates, new updates will be downloaded and installed automatically.
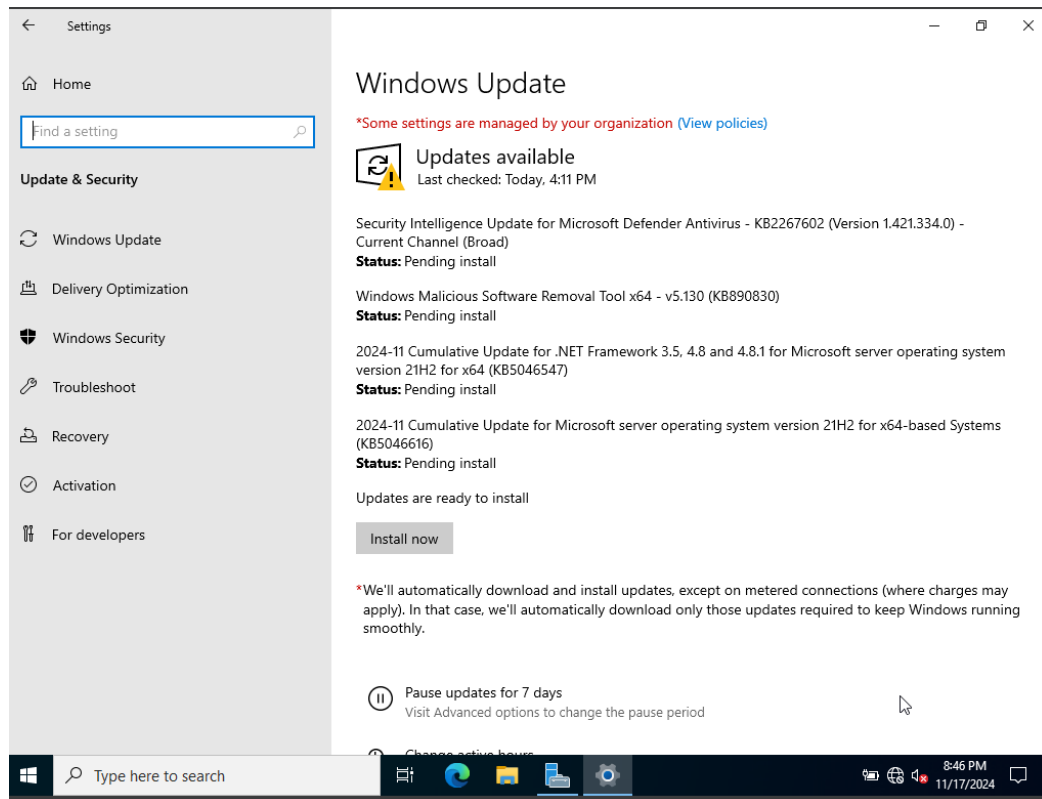
xiii. Adding user using GUI

From the toolbar at the top right of Server Manager, press Tools and from the list select Computer Management.
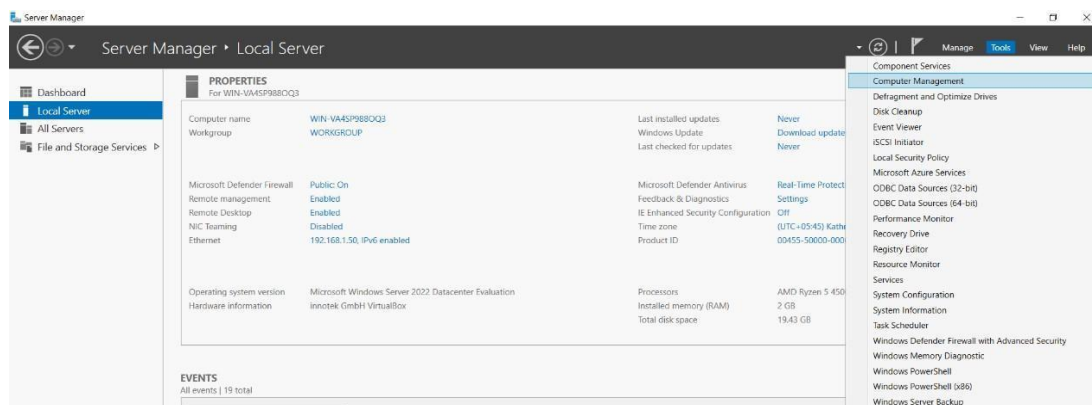
Figure12: Adding user using GUI

Select Local Users and Groups from the list at the left.
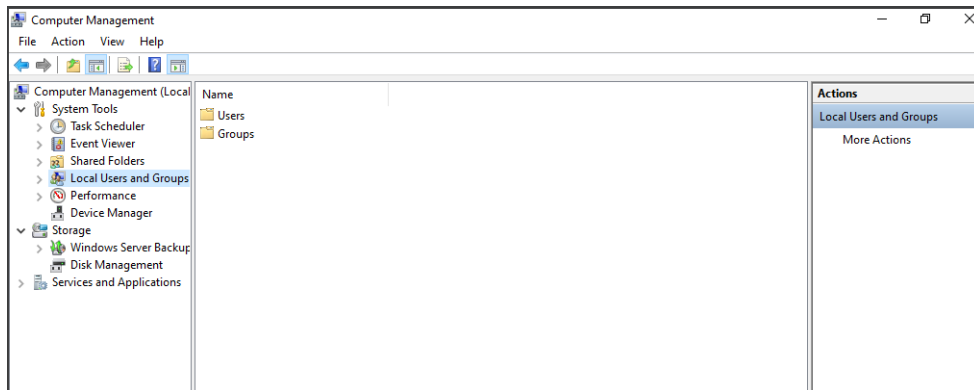
Right click on Users and press New User.
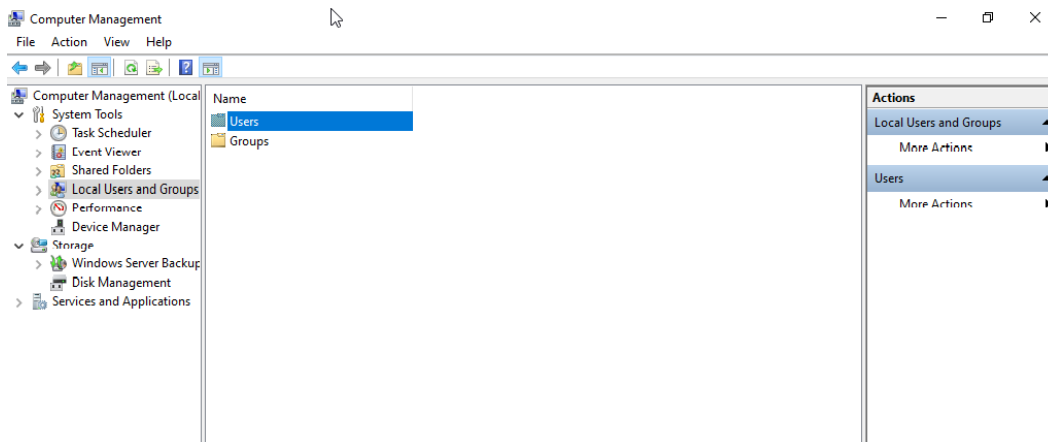
On the new window, enter details on the new user and press Create.
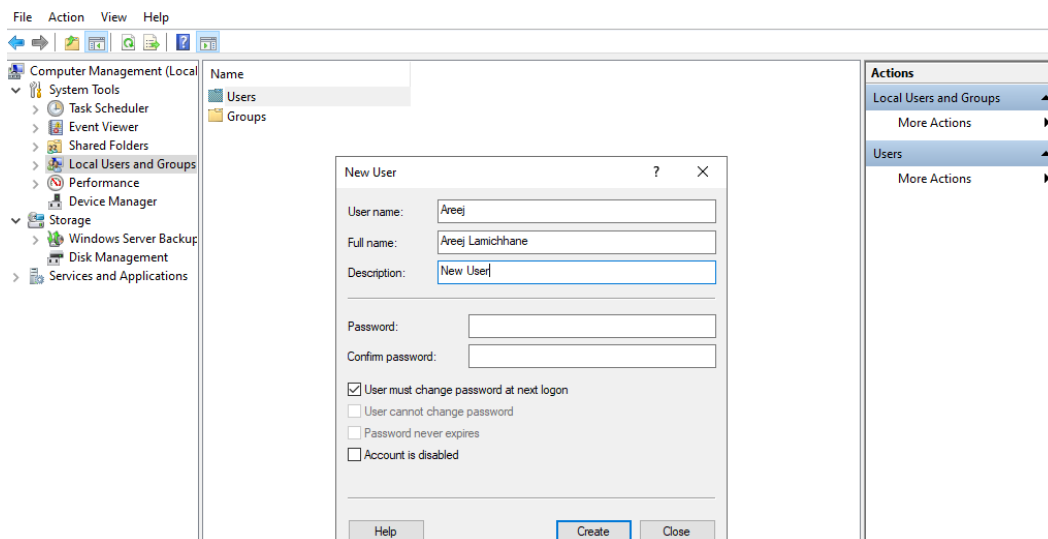
The new user will be added.
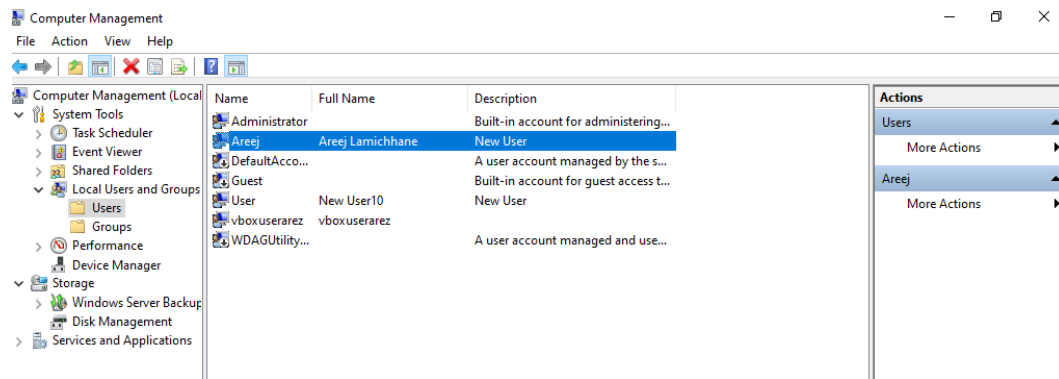
5.Adding new user using Shell

Open windows PowerShell as an administrator
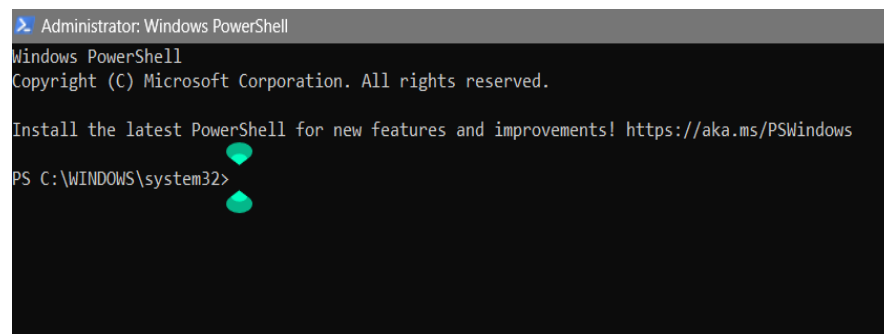
Enter the command "get-localuser" to view all the users.
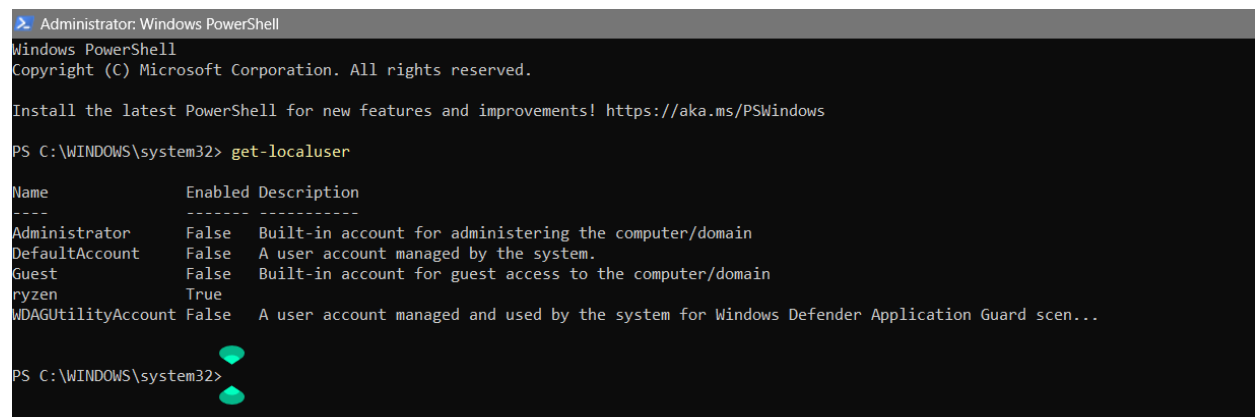
Enter the command "new-localuser –name 'username' -description ' description' - password 'password' " to create new user. In the case,nopassword is given to skip the password.

The new user is added successfully.

Unlike GUI, users are not added automatically to the group and require them to be manually added from the shell. The command is "add-loclagroupmember-group" ''groupname-member'username' ".

```
Administrator: Windows PowerShell
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\WINDOWS\system32> get-localuser

Name              Enabled Description
----              ------- -----------
-Areej            True    This is a test user 2
-Areej10          True    This is a test user 3
-Areej2           True    This is a test user 2
-AreejLC          True    This is a test user 2
Administrator     False   Built-in account for administering the computer/domain
Areej2            True    This is a test user
DefaultAccount    False   A user account managed by the system.
Guest             False   Built-in account for guest access to the computer/domain
ryzen             True
WDAGUtilityAccount False   A user account managed and used by the system for Windows Defender Application Guard scen...
```

Xv.Removing a user

Removing users is very simple. The command to remove a user using Shell is" remove-local-name 'username' "

```
PS C:\WINDOWS\system32> remove-localuser -name "User1"
PS C:\WINDOWS\system32>
```

Confirming the user is removed.

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\WINDOWS\system32> get-localuser

Name              Enabled Description
----              ------- -----------
-Areej            True    This is a test user 2
-Areej10          True    This is a test user 3
-Areej2           True    This is a test user 2
-AreejLC          True    This is a test user 2
Administrator     False   Built-in account for administering the computer/domain
Areej2            True    This is a test user
DefaultAccount    False   A user account managed by the system.
Guest             False   Built-in account for guest access to the computer/domain
ryzen             True
WDAGUtilityAccount False   A user account managed and used by the system for Windows Defender Application Guard scen...
```

Xvi.Strong password using variables as secure strings

 To store strings as secure string a new variable is created using the command $variable – read-host-assecurestring

```
PS C:\WINDOWS\system32> new-localuser -name "user3" -description "This is a test user" -nopassword

Name  Enabled Description
----  ------- -----------
user3 True    This is a test user


PS C:\WINDOWS\system32> $password =read-host -assecurestring
```

Password string is given and is stored by the variable. Password must be alpha numeric and symbolic.

```
PS C:\WINDOWS\system32>
PS C:\WINDOWS\system32> $password =read-host -assecurestring
*****
```

A new user is created by giving the variables as password.

```
PS C:\WINDOWS\system32> new-localuser -name "user3" -description "This is a test user" -nopassword

Name  Enabled Description
----  ------- -----------
user3 True    This is a test user


PS C:\WINDOWS\system32> $password =read-host -assecurestring

PS C:\WINDOWS\system32>
PS C:\WINDOWS\system32> $password =read-host -assecurestring
*****
```

New user created by using variable as password.

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\WINDOWS\system32> get-localuser

Name                Enabled Description
----                ------- -----------
-Areej              True    This is a test user 2
-Areej10            True    This is a test user 3
-Areej2             True    This is a test user 2
-AreejLC            True    This is a test user 2
Administrator       False   Built-in account for administering the computer/domain
Areej2              True    This is a test user
DefaultAccount      False   A user account managed by the system.
Guest               False   Built-in account for guest access to the computer/domain
ryzen               True
WDAGUtilityAccount  False   A user account managed and used by the system for Windows Defender Application Guard scen...
```

6.Conclusion

In conclusion, Windows Server Manager is a robust and versatile tool that simplifies the management of Windows Server environments. By offering centralized control, remote administration, and seamless integration with on-premises and cloud infrastructures, it enables IT professionals to improve efficiency, enhance security, and optimize

performance. With features like real-time monitoring, role configuration, and scalability, Windows Server Manager is indispensable for modern server administration. Its ability to streamline tasks and support enterprise-level scalability makes it a cornerstone for businesses relying on Windows Server ecosystems.

7. References

Tanenbaum, A. S., & Bos, H. (2014). *Modern Operating Systems* (4th ed.). Pearson Education.

Microsoft Documentation. (n.d.). *Windows Server Manager Overview*. Retrieved from https://docs.microsoft.com/