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Student Name: Dipen Khatri

London Met ID: 23056968

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Submitted to: Mr. Prashant Adhikari

I confirm that I understand my coursework needs to be submitted online via My Second Teacher 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

Microsoft created Server Manager to make it easier for system administrators to manage servers, whether they are local or remote. It is a tool in Windows that helps manage everything in one place, making server maintenance simple and convenient.

Features of server manager:

1. Remote Management

- i. Using Server Manager, it does the remote management of servers. Hence reduce the need to physically connect to each server.
- ii. GUI-based and command-line tools are provided to remotely manage servers.

2. Simplified Deployment

Automates server deployment tasks such as cloning the configuration of a server or deploying roles/features onto numerous servers.

3. Monitoring and Diagnostics

- i. **Monitoring in real-time:** System health, performance metrics, and alerts via pooled servers.
- ii. **Event logs and Alerts:** These show in detail the logs of notifications about impending problems to control those as early as possible.

How It Works

When we open Server Manager, it immediately searches for servers on network and then displays each server's status. We are able to:

1. Add new servers to manage by specifying either their names or IP addresses.
2. From one console, view server health, performance, and roles.
3. Drill into advanced role settings and troubleshooting tools.

Server Manager Benefits

- i. Productivity:** Manage all servers from one interface instead of having to remotely connect to each.
- ii. Proactive Maintenance:** Real-time monitoring and notifications decrease downtime and speed resolution.
- iii. Scalability:** It manages hundreds of servers in enterprise environments with ease.
- iv. Flexibility:** Works on-premises with servers and virtual machines, and hybrid.

Real-World Applications.

Keep track of important servers in real-time, like web servers, IIS, or file servers, to make sure they are running smoothly. You can also manage roles on multiple servers, such as turning DNS, DHCP, and Hyper-V on or off as needed. It also allows you to maintain servers located in different places without having to be there in person.

Overview

Server Manager is a powerful tool that helps make server management much easier. It allows administrators to centrally manage servers for smoother and more efficient operations, monitor server performance, and simplify the setup of different roles. This makes it an essential tool for IT teams.

1. Server Manager

Server Manager is a tool in Windows operating systems that helps IT administrators manage servers. This helps to manage the server easily using the GUI of the Manager.

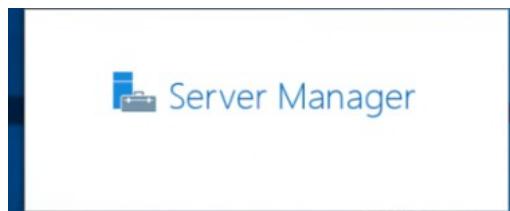


Figure 1: Server manager

2. Changing the Server's name:

From the dashboard of Server Manager, we must navigate to Local Server to connect or maintain those.

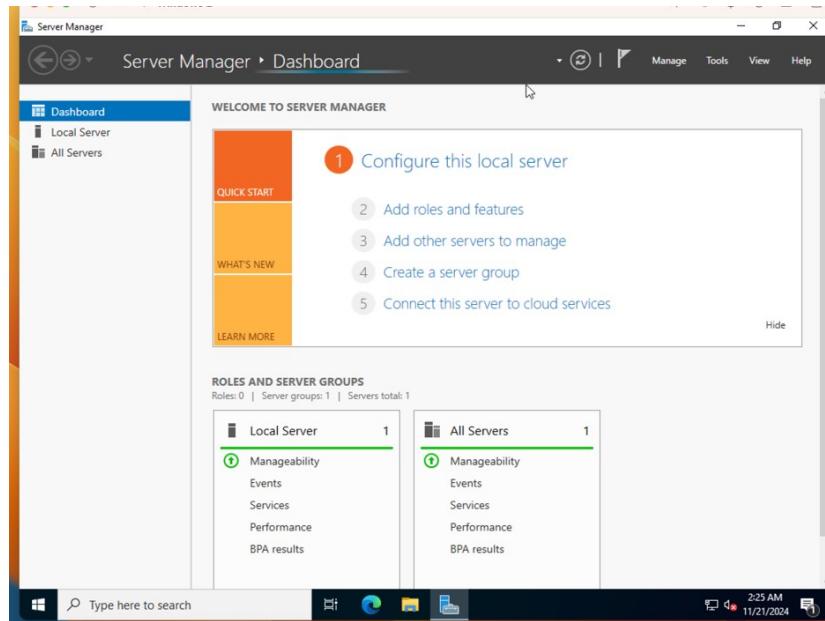


Figure 2: Server Management Dashboard

Then click on the computer name, this will open a new window to configure the Server name.

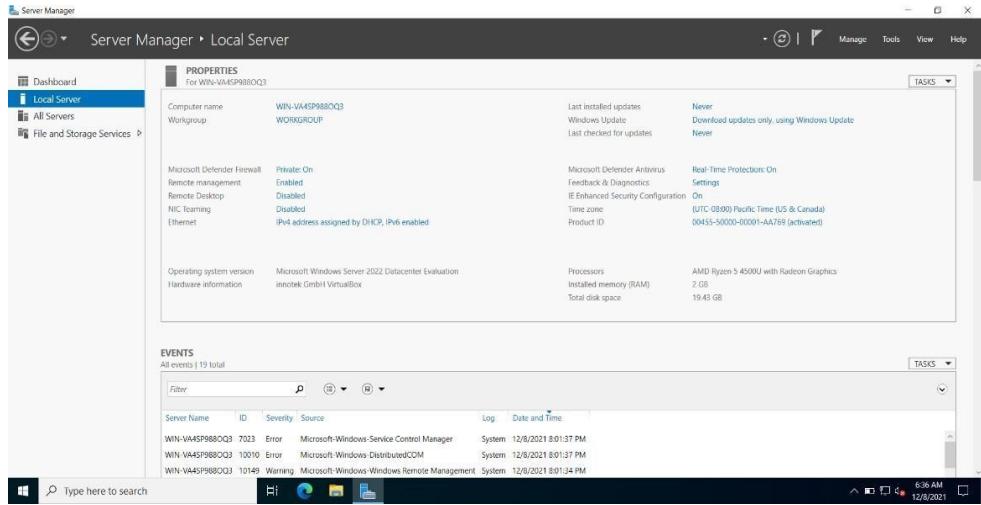


Figure 3: Local Server Manager

In the new window, press the “Change button”.

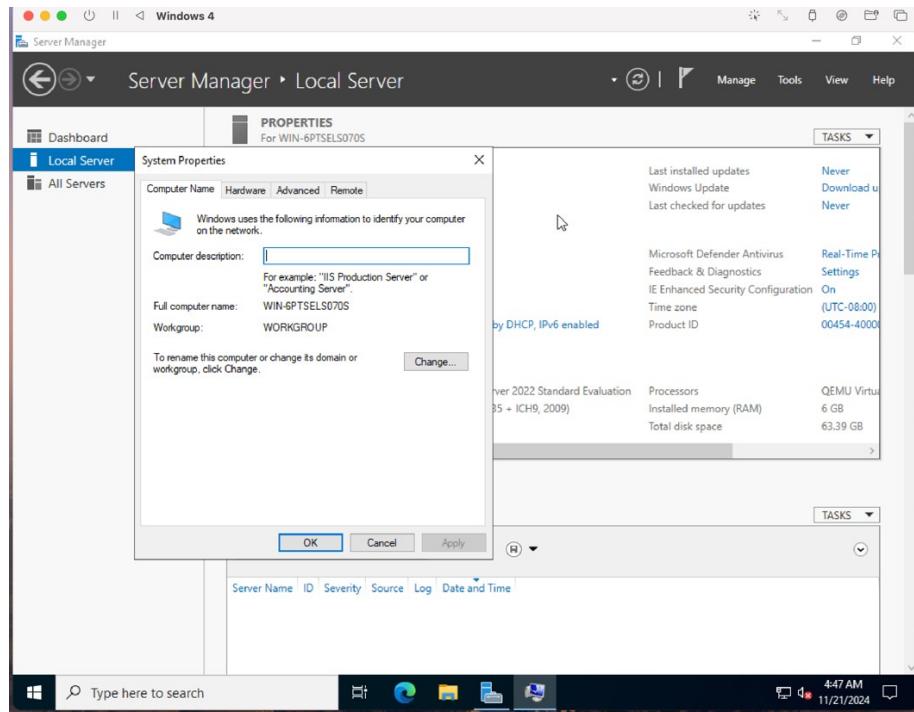


Figure 4: Changing the name of server

Enter the new name of the server and press “OK” button.

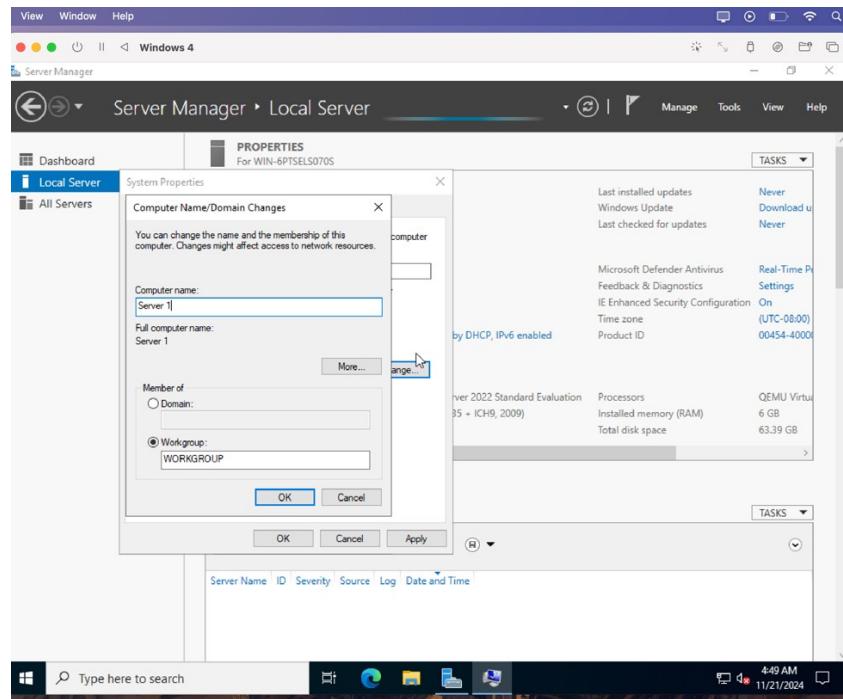


Figure 5: Inserting Server name as Server 1

After pressing “OK” button, a new window appears requesting a restart in order to change the name.

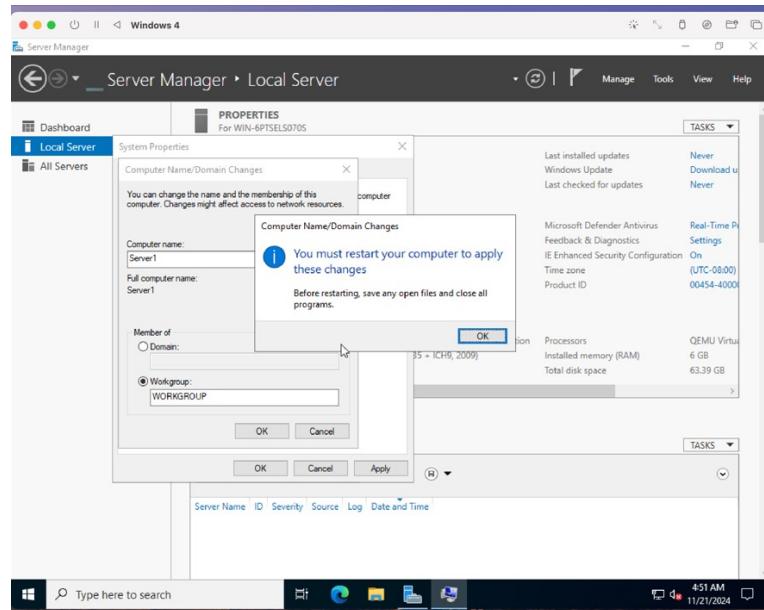


Figure 6: Alert Button to restart

3. Enabling Remote Desktop

Remote Desktop Service allows a remote connection to the server to access its GUI and features.

Pressing the Remote Desktop Button opens a window.

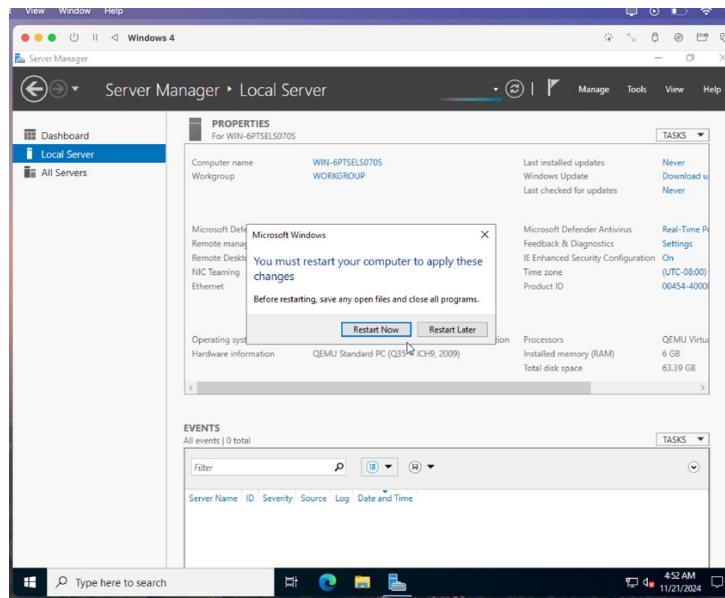


Figure 7: Restarting the windows Server

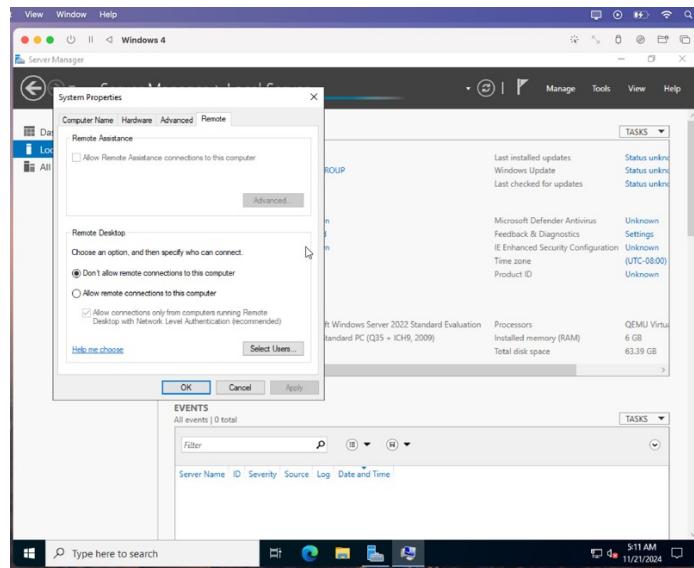


Figure 8: Showing remote desktop panel

From there, the Allow button is pressed, this shows a warning about the firewall. On pressing the “OK” button, the remote desktop service gets enabled.

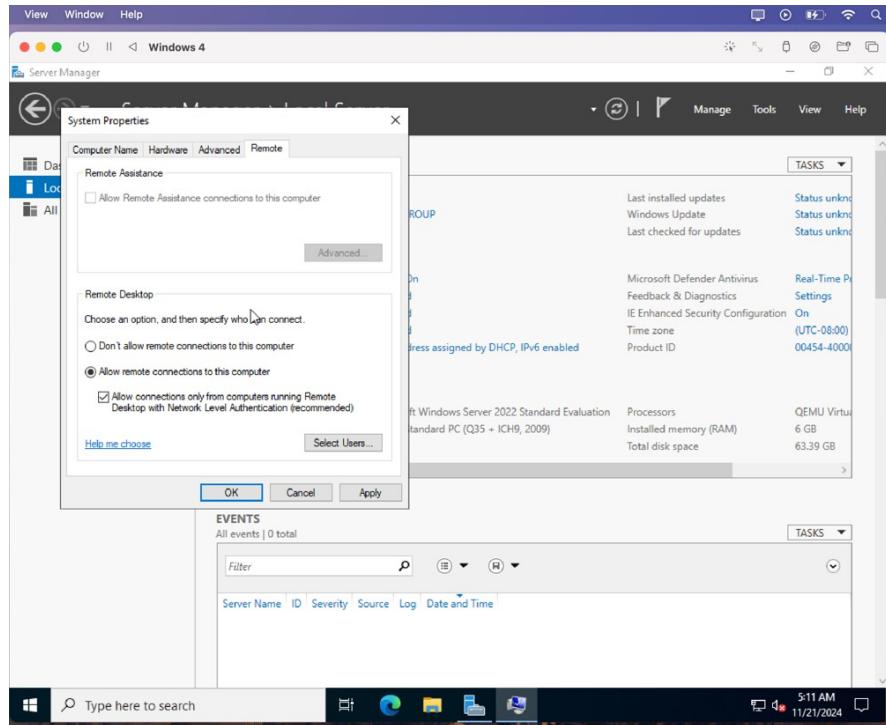


Figure 9: Allowing the remote connections

4. 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.

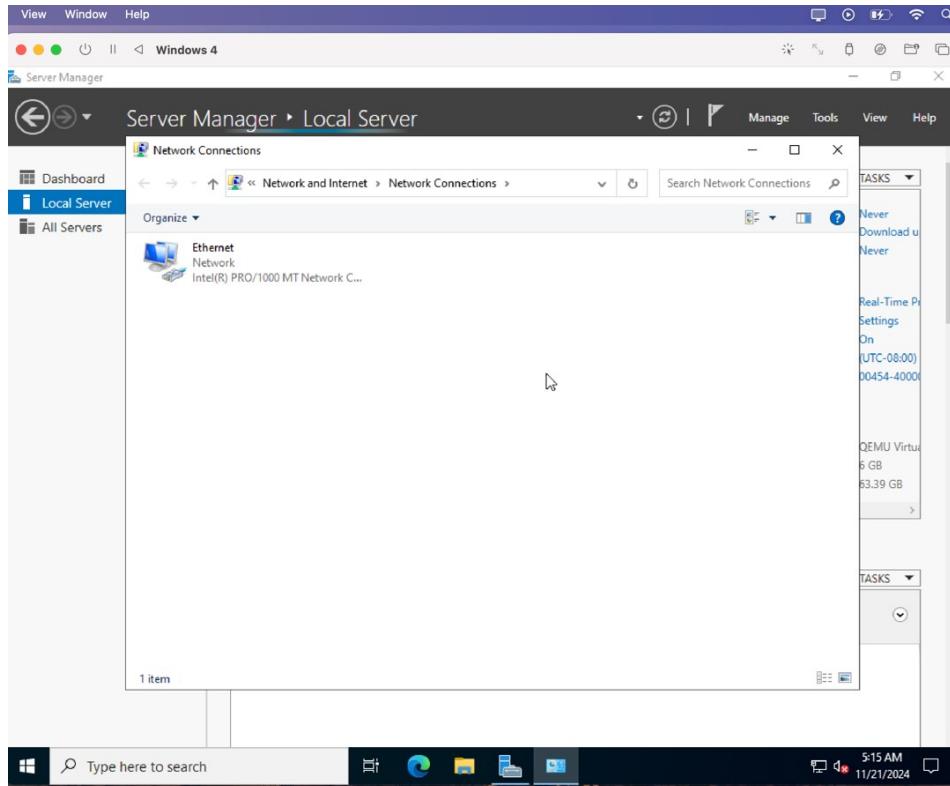


Figure 10 : Ethernet Panel

The properties of the adapter is opened by right click on the adapter.

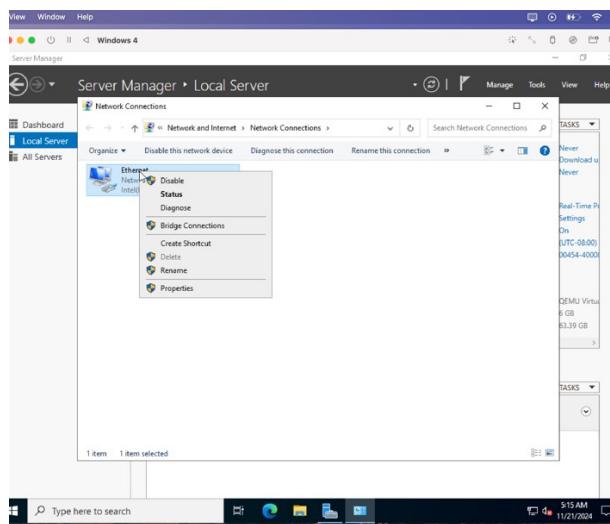


Figure 11: Properties of ethernet

From the properties, double click on IPv4 from the list. This will open a new window to enter the IP.

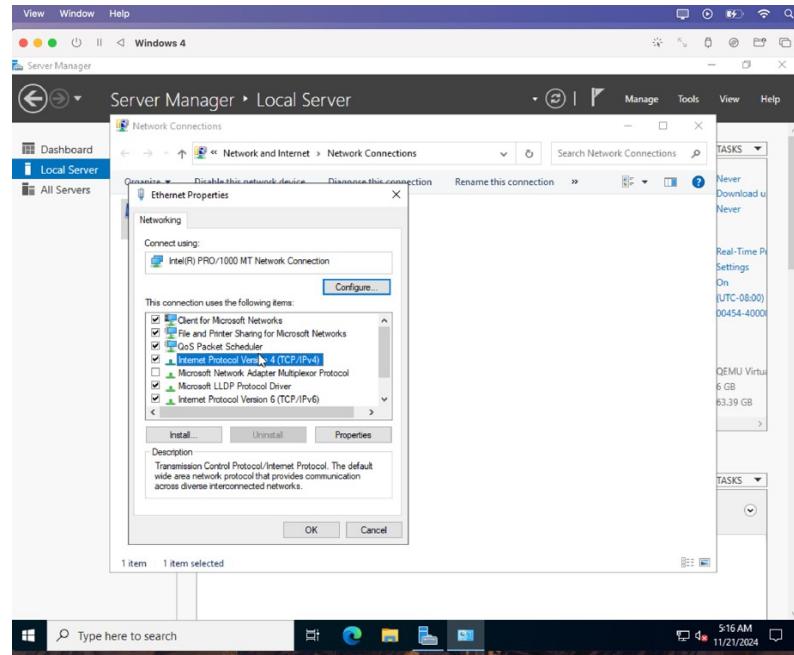


Figure 12: Selecting IPv4

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.

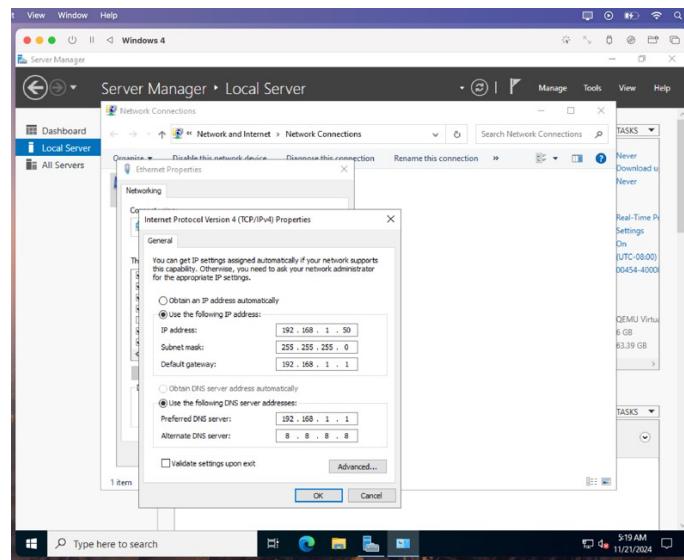


Figure 13: Putting IP

5. 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.

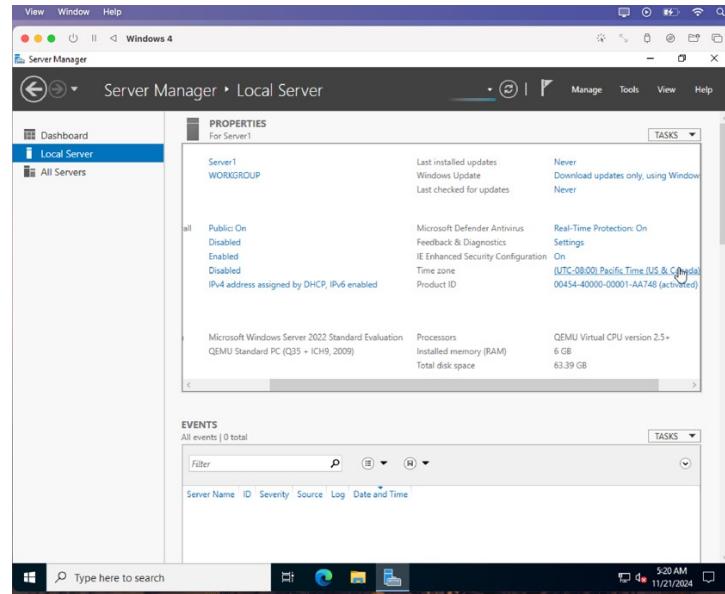


Figure 14: Searching for a time zone

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

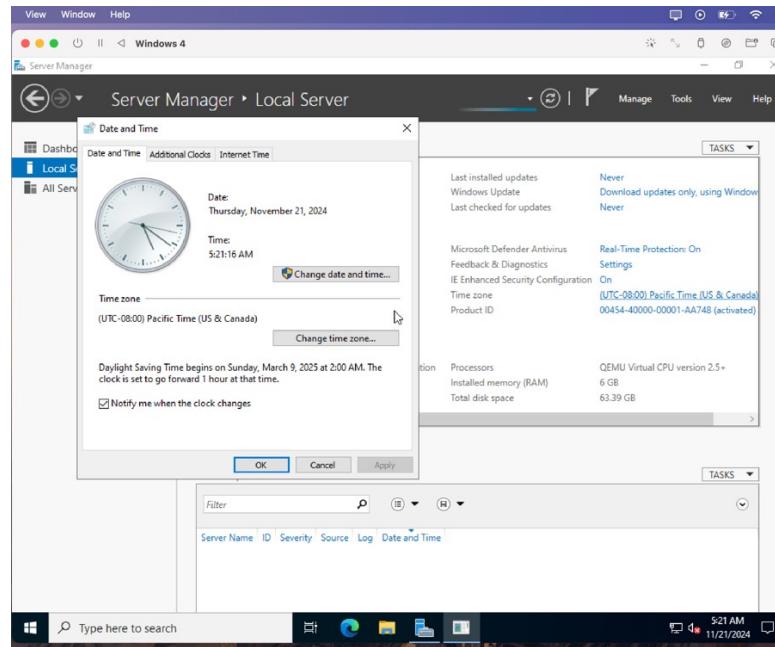


Figure 15: Changing the time zone

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

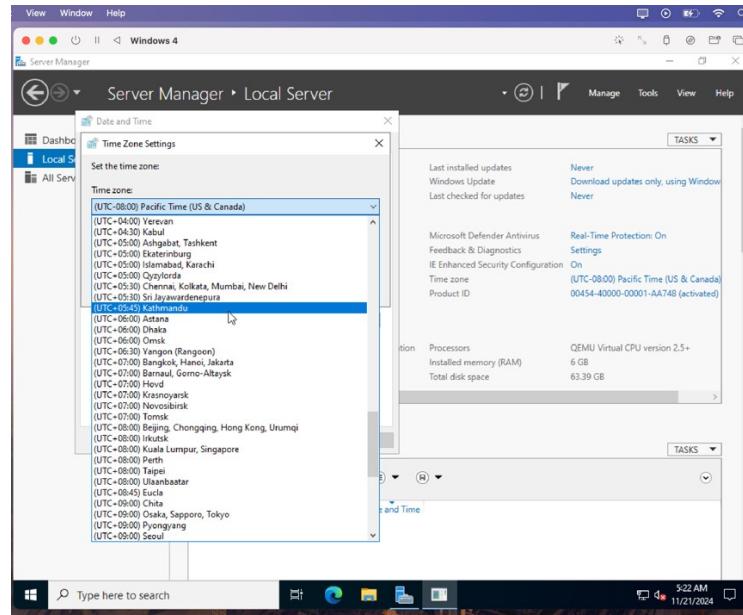


Figure 16: Placing Kathmandu time

Finally, press the “OK” button.

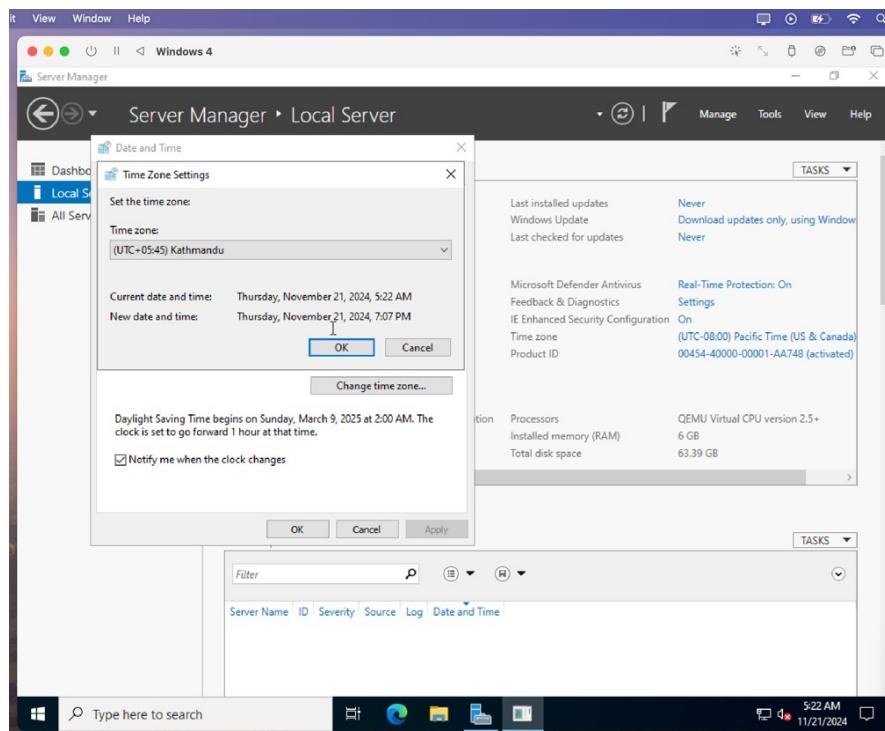


Figure 17: Setting the time zone

6.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.

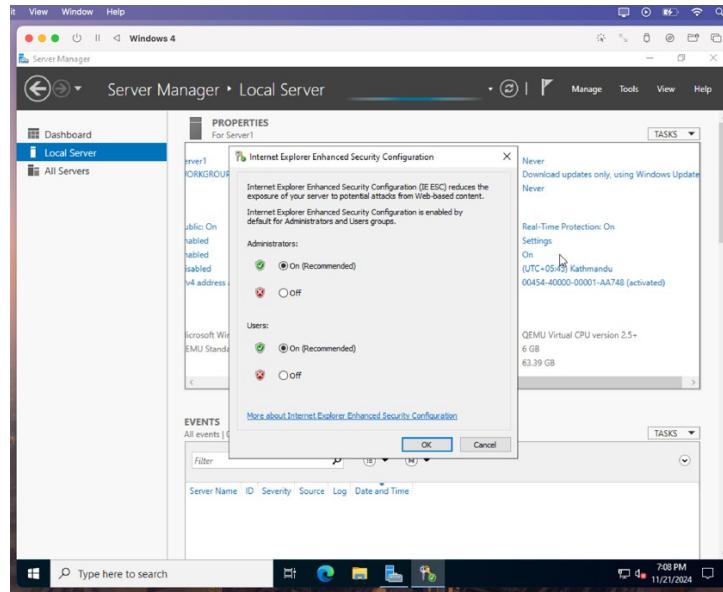


Figure 18: Internet explorer enhanced security on

By default, the Security Configuration is turned on.

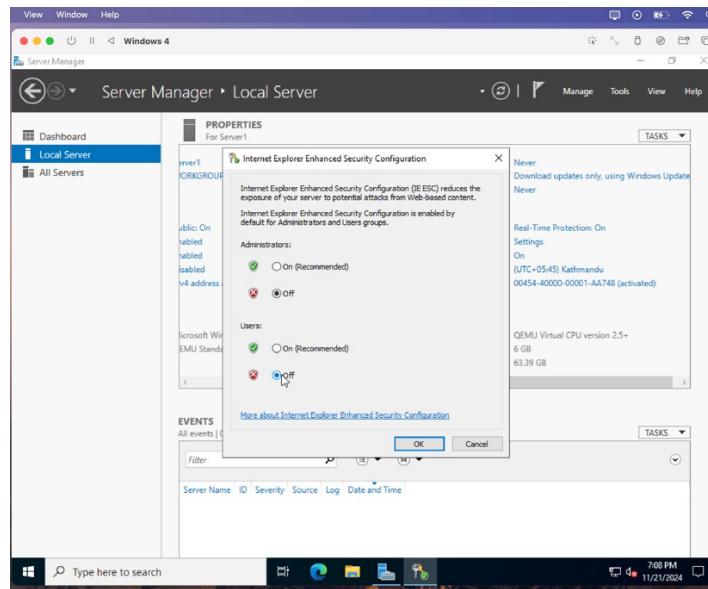


Figure 19: the Security Configuration is turned off.

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.

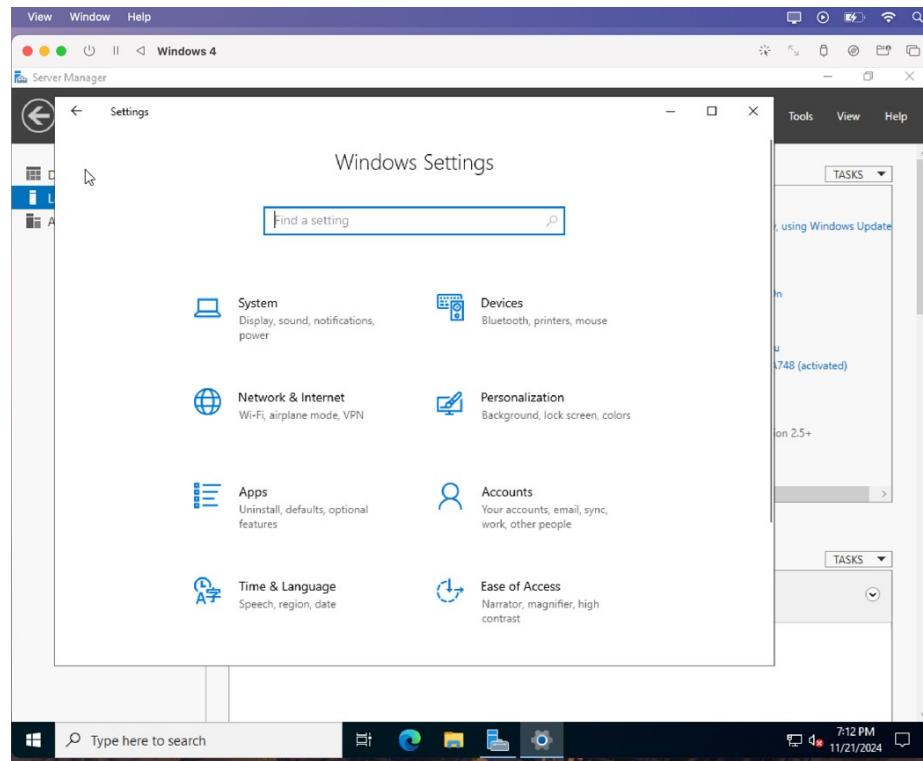


Figure 20: Looking for a updates

7. Adding user using GUI

From the toolbar at the top right of Server Manager, press Tools and from the list select Computer Management.

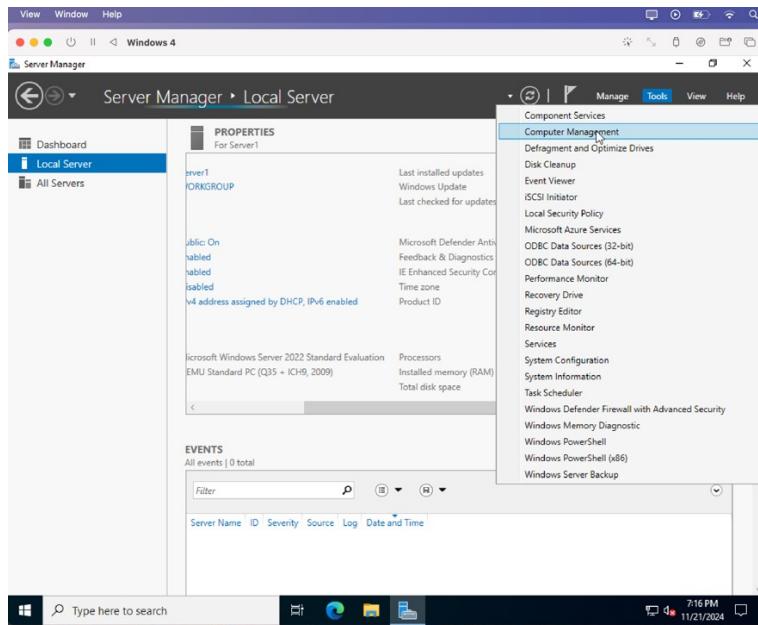


Figure 21: Selecting the computer management

Select Local Users and Groups form the list at the left.

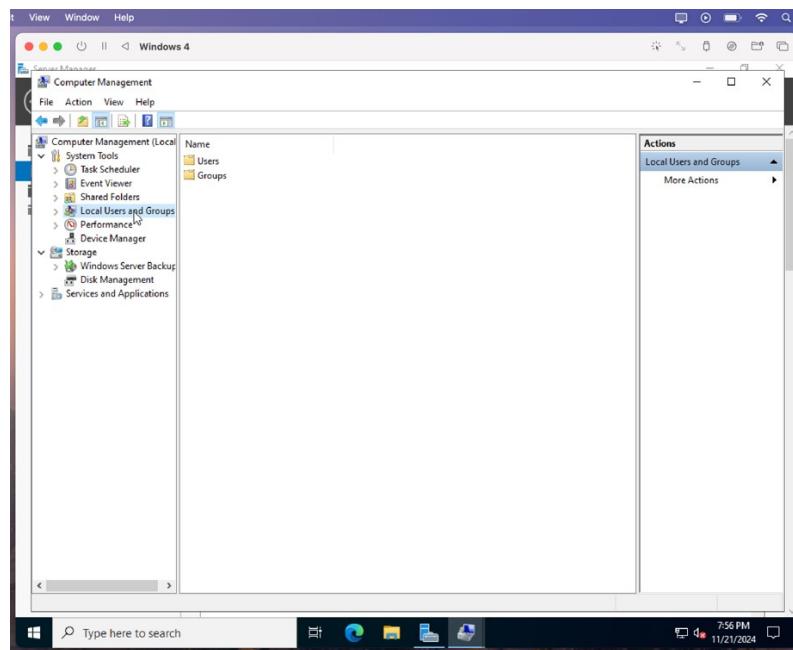


Figure 22: Searching for a local user

Right click on Users and press New User.

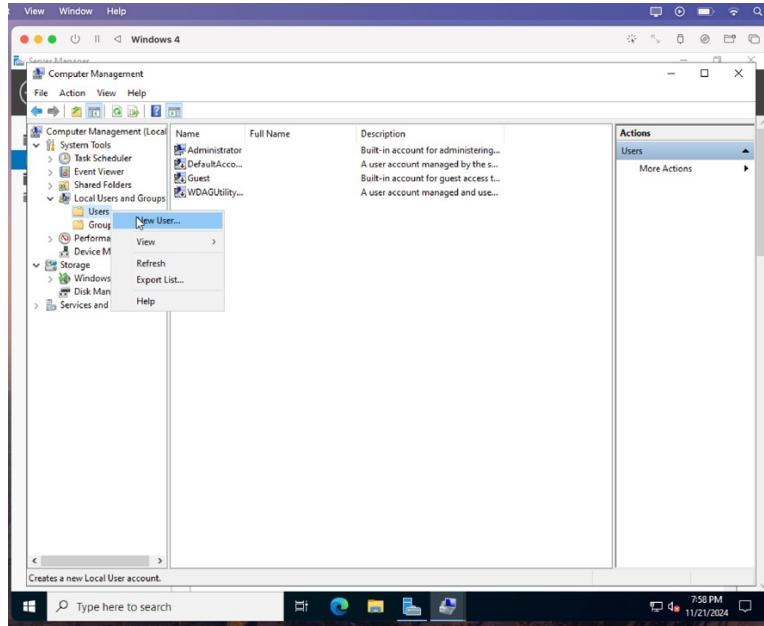


Figure 23: Right click on the user to create new user

On the new window, enter details on the new user and press Create.

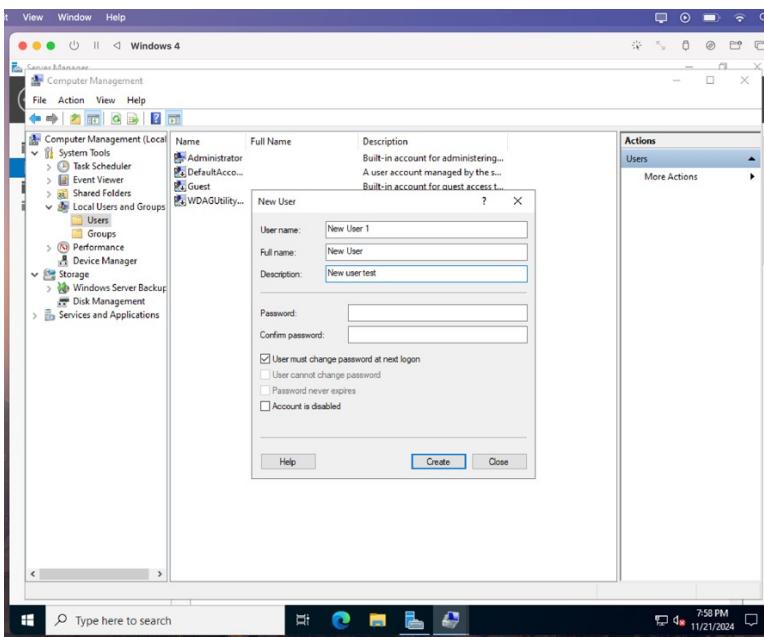


Figure 24: Placing the value in new user

The new user will be added.

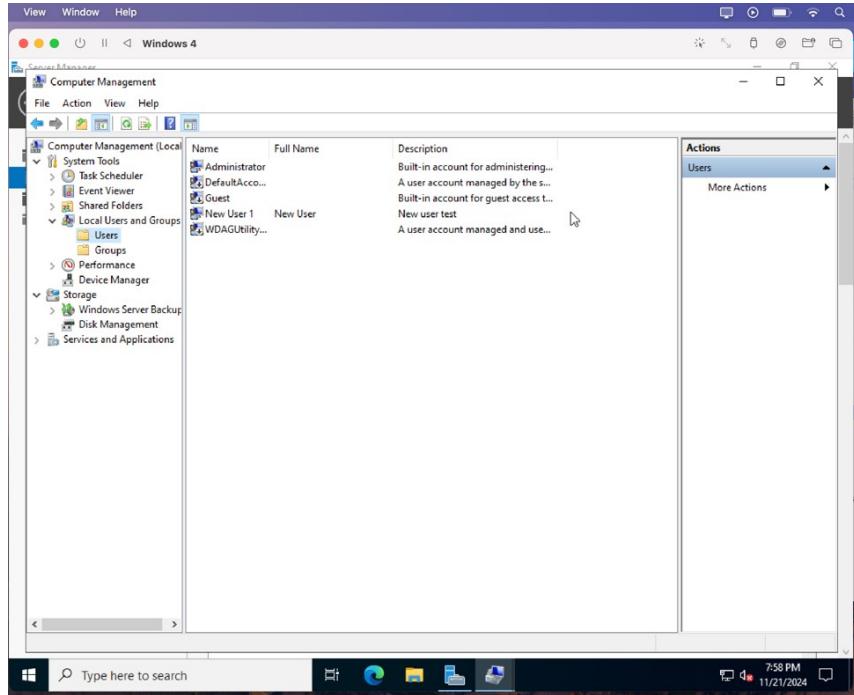


Figure 25: Looking after setting the value

8. Adding new user using Shell

Open Windows PowerShell as an administrator

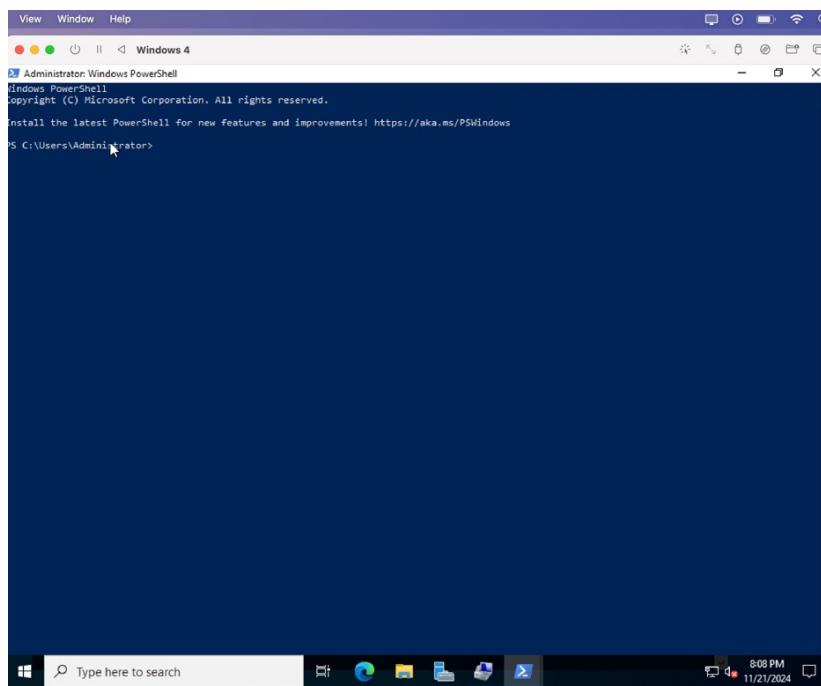
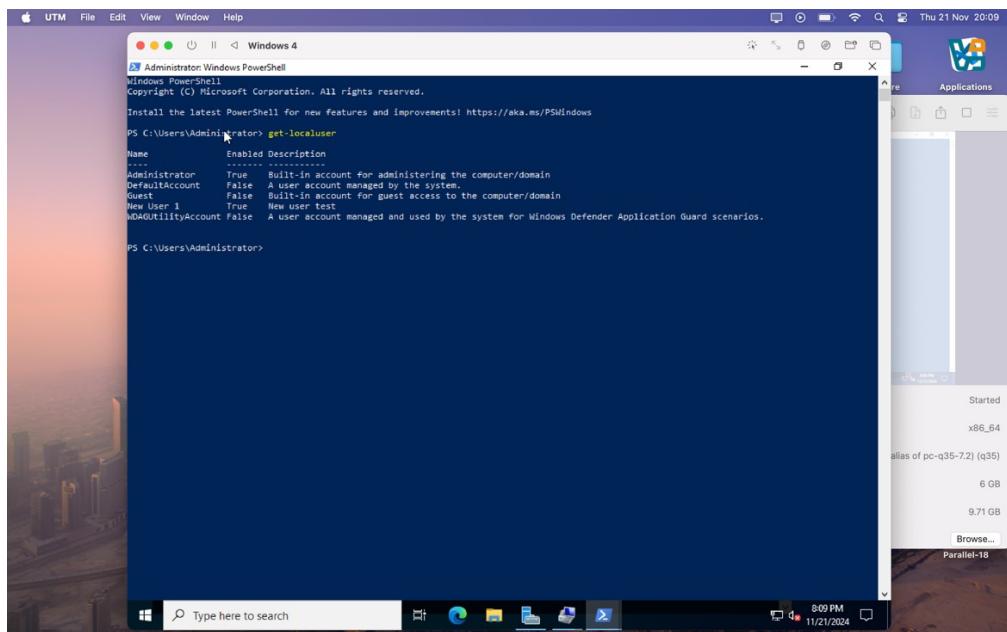


Figure 26: Running PowerShell

Enter the command “get-localuser” to view all the users.



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

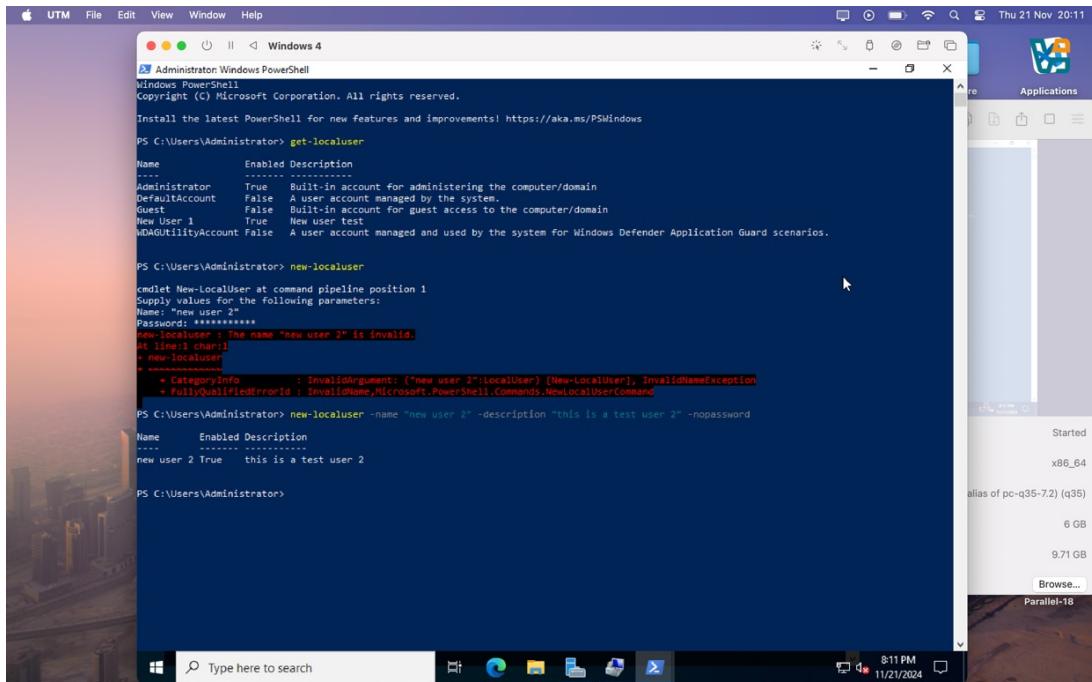
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\Administrator> get-localuser
Name          Enabled Description
----          --     -----
Administrator True   Built-in account for administering the computer/domain
DefaultAccount False  A user account managed by the system.
Guest         False  Built-in account for guest access to the computer/domain
New User 1    True   New user test
WDAGUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator>
```

Figure 27: Enter command get-localuser

Enter the command “new-localuser -name ‘username’ -description ‘description’ -password ‘password’ ” to create new user. In this case, nopassword is given to skip the password.



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

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

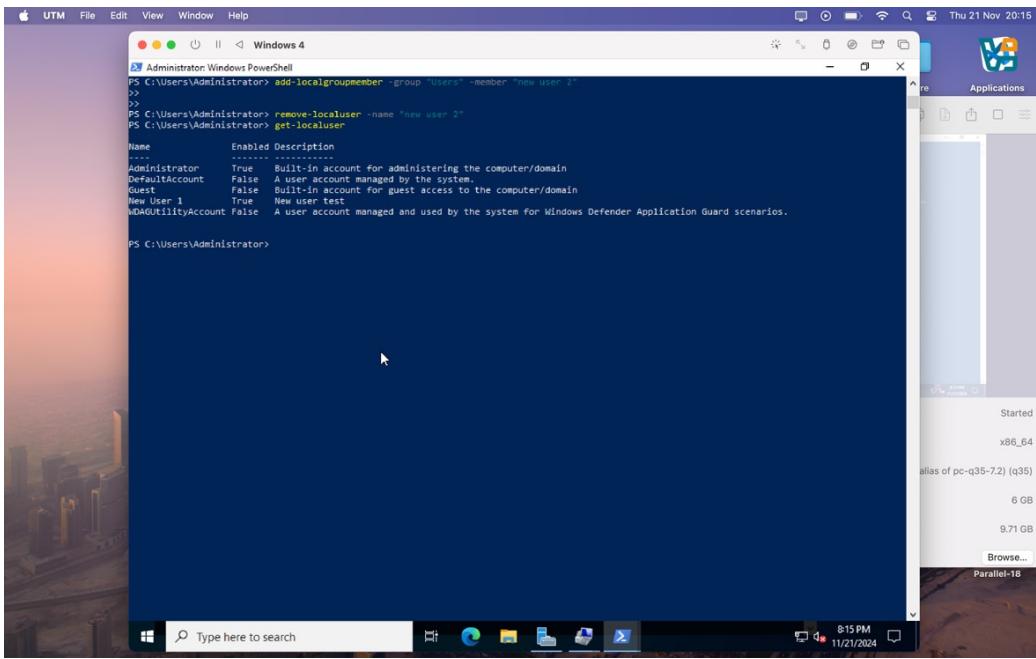
PS C:\Users\Administrator> get-localuser
Name          Enabled Description
----          --     -----
Administrator True   Built-in account for administering the computer/domain
DefaultAccount False  A user account managed by the system.
Guest         False  Built-in account for guest access to the computer/domain
New User 1    True   New user test
WDAGUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator> new-localuser
cmdlet New-LocalUser at command pipeline position 1
Supply values for the following parameters:
Name: "new user 2"
Password: *****
new-localuser : The name "new user 2" is invalid.
At line:3 char:1
+ new-localuser
+ ~~~~~
+ CategoryInfo          : InvalidArgument: ("new user 2":IlocalUser) [New-LocalUser], InvalidNameException
+ FullyQualifiedErrorId : InvalidName,Microsoft.PowerShell.Commands.NewLocalUserCommand
PS C:\Users\Administrator> new-localuser -name "new user 2" -description "this is a test user 2" -nopassword
Name          Enabled Description
----          --     -----
new user 2  True   this is a test user 2

PS C:\Users\Administrator>
```

Figure 28: Entering the command “new-localuser -name ‘username’ -description ‘description’ -password”

The new user is added successfully.



A screenshot of a Windows PowerShell window titled "Windows 4". The command entered is:

```
Administrator: PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "new user 2"
>>
PS C:\Users\Administrator> remove-localuser -name "new user 2"
PS C:\Users\Administrator> get-localuser
```

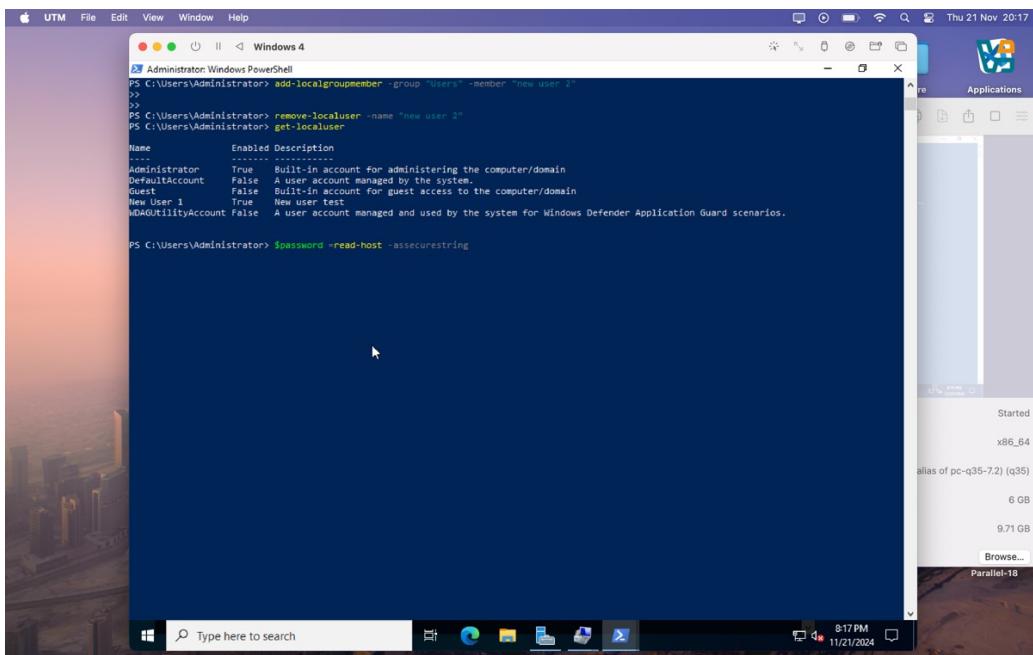
The output shows the following user information:

Name	Enabled	Description
Administrator	True	Built-in account for administering the computer/domain
DefaultAccount	False	A user account managed by the system.
Guest	False	Built-in account for guest access to the computer/domain
New User 1	True	New user test
WDAGUtilityAccount	False	A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator>

Figure 29: new user is added

Unlike GUI, users are not added automatically to the group and require them to be manually added from the Shell. The command is “add-localgroupmember -group ‘groupname’ -member ‘username’ ”



A screenshot of a Windows PowerShell window titled "Windows 4". The command entered is:

```
Administrator: PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "new user 2"
>>
PS C:\Users\Administrator> remove-localuser -name "new user 2"
PS C:\Users\Administrator> get-localuser
```

The output shows the following user information:

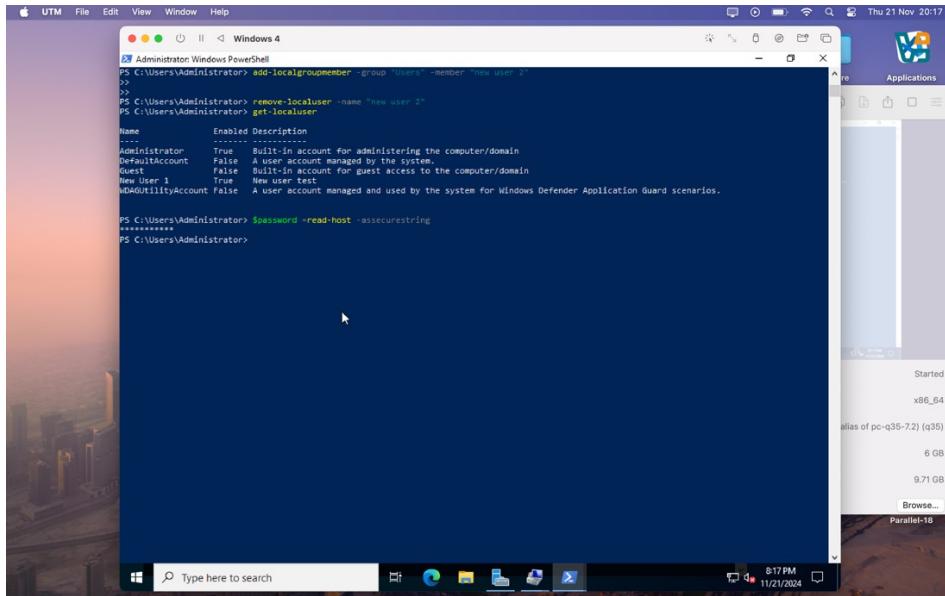
Name	Enabled	Description
Administrator	True	Built-in account for administering the computer/domain
DefaultAccount	False	A user account managed by the system.
Guest	False	Built-in account for guest access to the computer/domain
New User 1	True	New user test
WDAGUtilityAccount	False	A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator> \$password = read-host -assecurestring

Figure 30: command to add local-group member

9. Removing a user

Removing users is very simple. The command to remove a user using Shell is “remove-localuser -name ‘username’ ”



A screenshot of a Windows PowerShell window titled "Administrator: Windows PowerShell". The window shows the following command sequence:

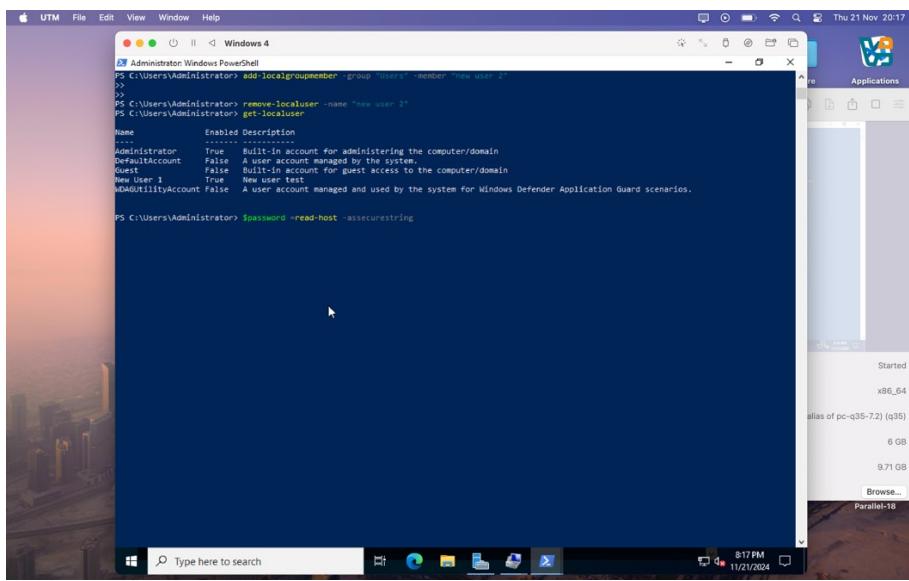
```
PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "New User 2"
>>
>>
PS C:\Users\Administrator> remove-localuser -name "New User 2"
PS C:\Users\Administrator> get-localuser
Name          Enabled Description
Administrator True   Built-in account for administering the computer/domain
DefaultAccount False  This is a user account managed by the system.
Guest         False  Built-in account for guest access to the computer/domain
New User 1    True   New user test
NewUserUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator> $password =read-host -assecurestring
*****
PS C:\Users\Administrator>
```

The PowerShell window is running on a Windows 10 desktop with a cityscape background. To the right of the window, a taskbar shows icons for File Explorer, Edge, and File Manager. A system tray icon indicates the date and time as "Thu 21 Nov 20:17" and "8:17 PM 11/21/2024".

Figure 31: Remove the user

Confirming that the user is removed.



A screenshot of a Windows PowerShell window titled "Administrator: Windows PowerShell". The window shows the same command sequence as Figure 31, but the output for "get-localuser" now shows that the user has been removed:

```
PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "New User 2"
>>
>>
PS C:\Users\Administrator> remove-localuser -name "New User 2"
PS C:\Users\Administrator> get-localuser
Name          Enabled Description
Administrator True   Built-in account for administering the computer/domain
DefaultAccount False  This is a user account managed by the system.
Guest         False  Built-in account for guest access to the computer/domain
New User 1    True   New user test
NewUserUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

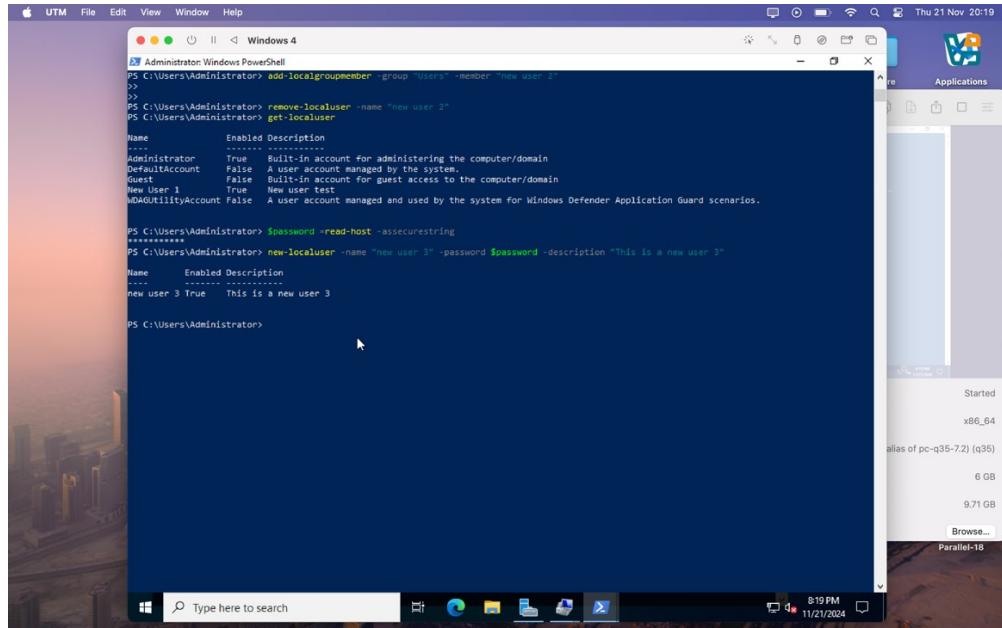
PS C:\Users\Administrator> $password =read-host -assecurestring
*****
PS C:\Users\Administrator>
```

The PowerShell window is running on the same Windows 10 desktop as Figure 31. The taskbar and system tray are identical.

Figure 32: Confirming that the user is removed.

10. Storing passwords using variables as secure strings

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



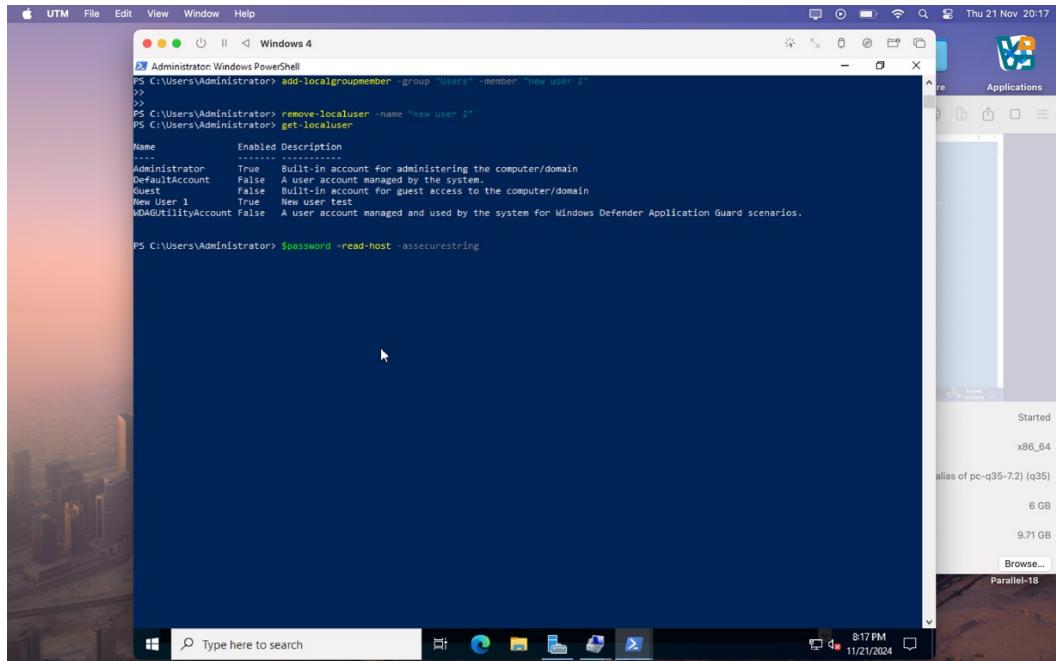
```
Windows PowerShell
PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "new user 3"
>>
PS C:\Users\Administrator> remove-localuser -name "new user 2"
PS C:\Users\Administrator> get-localuser
Name          Enabled Description
----          --   -----
Administrator  True   Built-in account for administering the computer/domain
DefaultAccount False  A user account managed by the system.
Guest         False  Built-in account for guest access to the computer/domain
New User 1    True   New user test
WDAGUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator> $password =read-host -assecurestring
*****
PS C:\Users\Administrator> new-localuser -name "new user 3" -password $password -description "This is a new user 3"
Name          Enabled Description
----          --   -----
new user 3   True   This is a new user 3

PS C:\Users\Administrator>
```

Figure 33: created using command

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



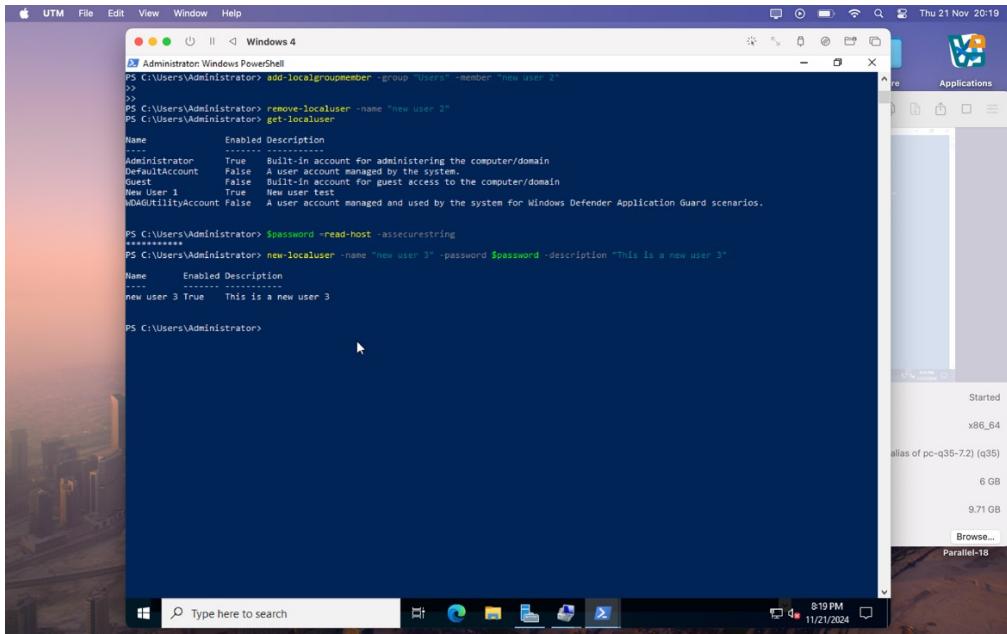
```
Windows PowerShell
PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "new user 3"
>>
PS C:\Users\Administrator> remove-localuser -name "new user 2"
PS C:\Users\Administrator> get-localuser
Name          Enabled Description
----          --   -----
Administrator  True   Built-in account for administering the computer/domain
DefaultAccount False  A user account managed by the system.
Guest         False  Built-in account for guest access to the computer/domain
New User 1    True   New user test
WDAGUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator> $password =read-host -assecurestring
*****
PS C:\Users\Administrator> new-localuser -name "new user 3" -password $password -description "This is a new user 3"
Name          Enabled Description
----          --   -----
new user 3   True   This is a new user 3

PS C:\Users\Administrator>
```

Figure 34: Password string is given

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



The screenshot shows a Windows PowerShell window titled "Windows 4" running as Administrator. The command entered is:

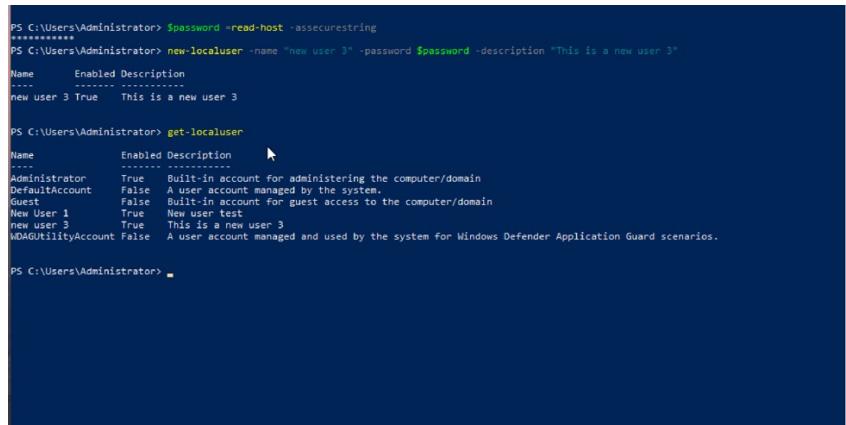
```
PS C:\Users\Administrator> add-localgroupmember -group "Users" -member "new user 3"
>>
>>
PS C:\Users\Administrator> remove-localuser -name "new user 3"
PS C:\Users\Administrator> get-localuser
Name      Enabled Description
----      --     -----
Administrator  True   Built-in account for administering the computer/domain
DefaultAccount False  A user account managed by the system.
Guest     False  Built-in account for guest access to the computer/domain
New User 1  True   New user test
New User 3  True   This is a new user 3
MDAGUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator> $password =read-host -assecurestring
*****
PS C:\Users\Administrator> new-localuser -name "new user 3" -password $password -description "This is a new user 3"
Name      Enabled Description
----      --     -----
new user 3 True   This is a new user 3

PS C:\Users\Administrator>
```

Figure 35: Creating by giving the variable as password.

New user created by using variable as password.



The screenshot shows a Windows PowerShell window running as Administrator. The command entered is:

```
PS C:\Users\Administrator> $password =read-host -assecurestring
*****
PS C:\Users\Administrator> new-localuser -name "new user 3" -password $password -description "This is a new user 3"
Name      Enabled Description
----      --     -----
new user 3 True   This is a new user 3

PS C:\Users\Administrator> get-localuser
Name      Enabled Description
----      --     -----
Administrator  True   Built-in account for administering the computer/domain
DefaultAccount False  A user account managed by the system.
Guest     False  Built-in account for guest access to the computer/domain
New User 1  True   New user test
new user 3  True   This is a new user 3
MDAGUtilityAccount False  A user account managed and used by the system for Windows Defender Application Guard scenarios.

PS C:\Users\Administrator>
```

Figure 36: User created

Conclusion

Server Manager simplifies server management by providing a centralized tool for administrators, making it more efficient to maintain and monitor both local and remote servers.