WINDOWS POWERSHELL

PowerShell Tutorial provides basic and advanced concepts of PowerShell. Our PowerShell Tutorial is designed for beginners and professionals both.

Windows **PowerShell** is a command-line shell and associated scripting language created by Microsoft. It is built on the .NET framework. The commands in the Windows PowerShell are called **cmdlets**, which allow you to manage the computer from the command line.

Our PowerShell tutorial includes all the PowerShell topics such as PowerShell scripting, variables, array, loops, commands, including object and classes.

What is PowerShell

Windows PowerShell is an automated task-based command-line shell and associated scripting language created by Microsoft. It is the new shell of **Microsoft** which combines the old command prompt (CMD) functionality with a new scripting instruction set with built-in system administration functionality.

It is designed especially for the system administrators.

Its analogue in Linux OS is called as a Bash scripting. Unlike other shells, which accepts and return text, it is built on the top of the .NET framework, **CLR (Common Language Runtime)** and **DLR (Dynamic Language Runtime)**. So, it can accept and returns .NET Framework objects.

It helps IT professionals to control and automate the administrations of the Windows operating system and other applications which run on the Windows server environment. PowerShell enables administrators to perform tasks on remote

and local Windows system through full access to COM and WMI.

The commands in the Windows PowerShell are referred to as **cmdlets** pronounced as "command-lets", where each cmdlet represents a specific function or task-based scripts.

Like many other shells, it gives us access to the file system on the computer system. Also, providers of Windows PowerShell enable us to access another data stores, such as the registry and the digital signature certificate stores.
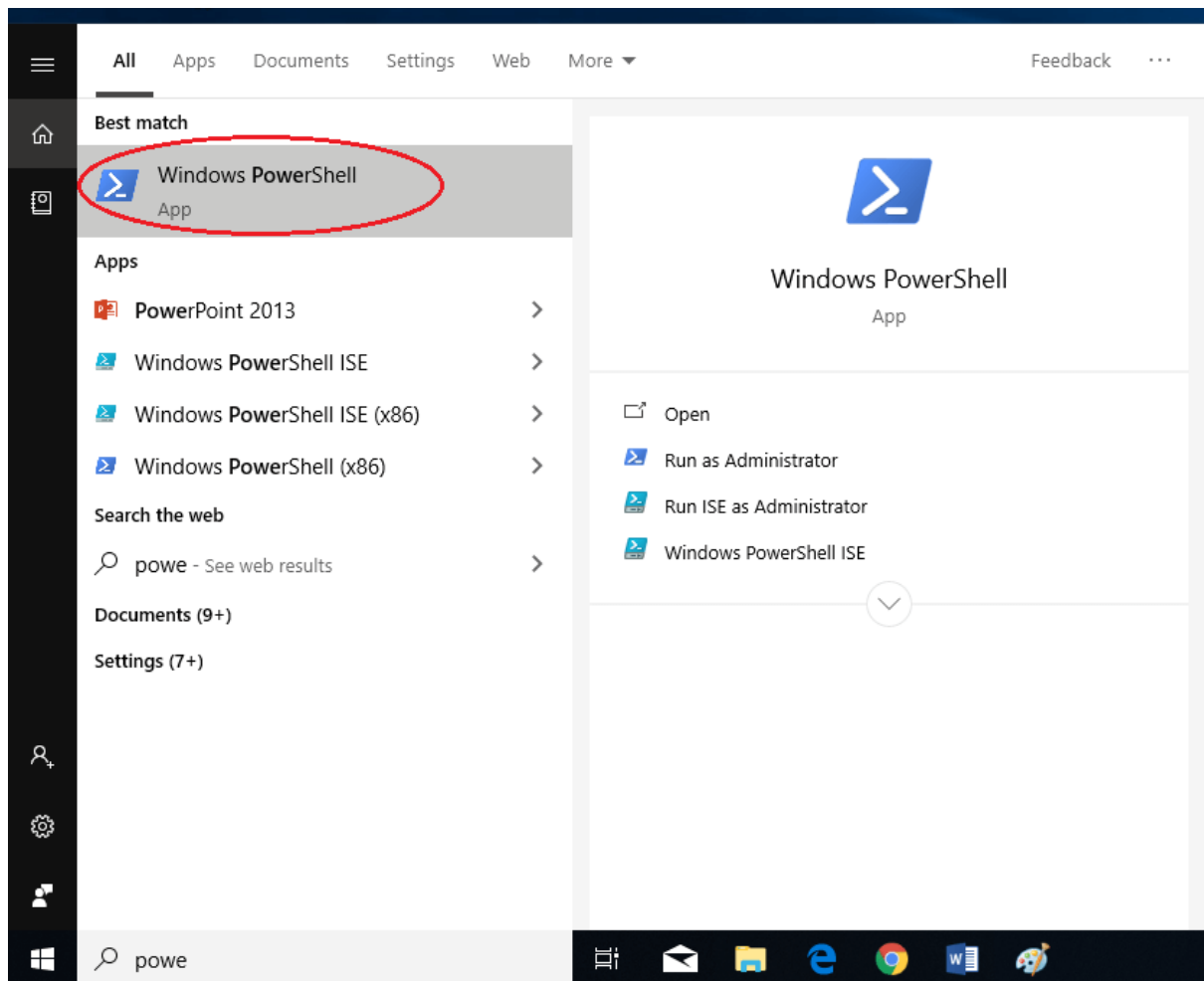
Why use PowerShell?

- It is both a scripting language and a command-line Shell.

- It can interact with a different number of technologies.

- Windows PowerShell allows complete access to all the types in the .NET framework.

- PowerShell is object-based.

- Many interfaces of GUI that Microsoft designed for its various products are front end interfaces to PowerShell.

- It is more secure than running VBScript or other scripting languages.

- It allows performing repetitive tasks more efficiently by combining multiple commands and by writing scripts. Suppose, a system administrator wants to create hundreds of active directory users, he can achieve this with the help of only some PowerShell cmdlets placed in a script.

- Many complex and time-consuming configurations and tasks can be done in a second with simple cmdlets of PowerShell.
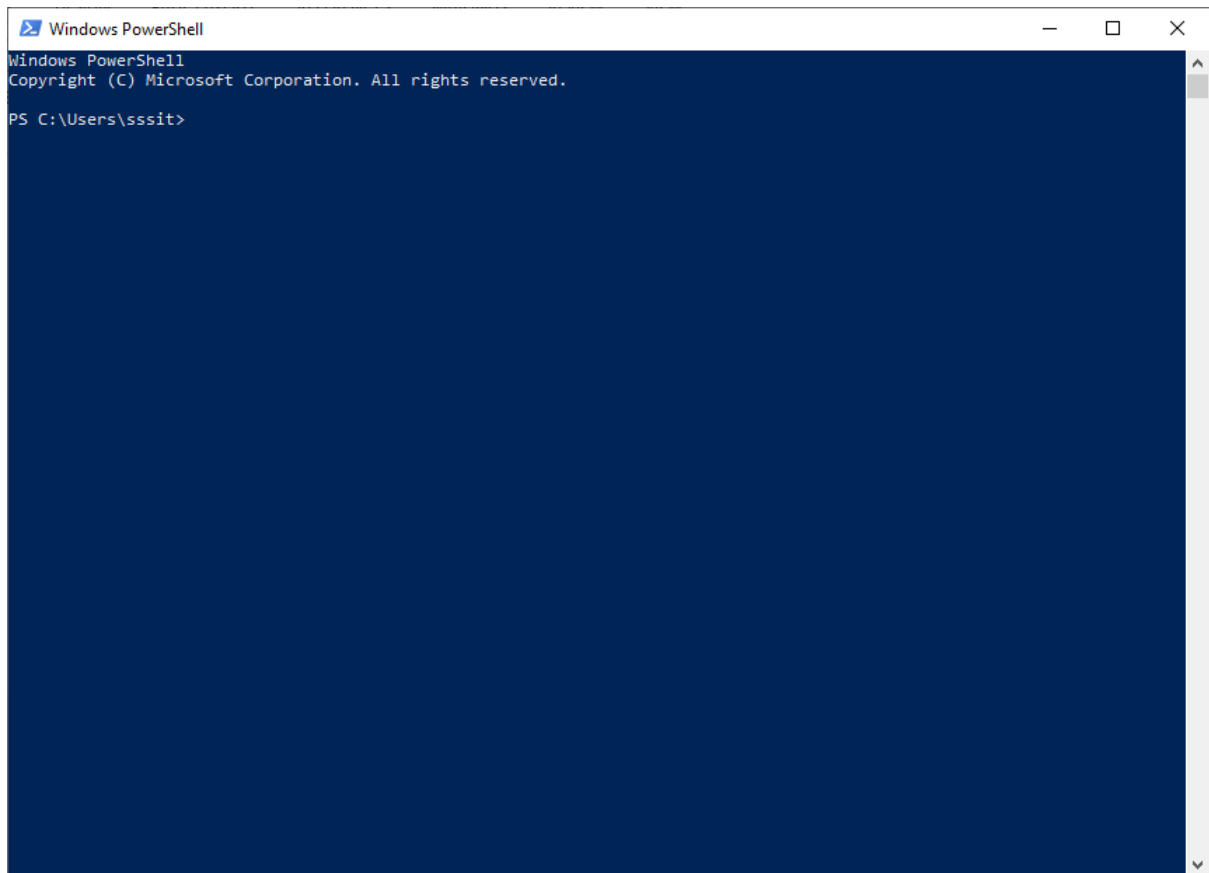
To start the Windows PowerShell

PowerShell is available in all the latest version of Windows. We need to start PowerShell by following the given steps:

1. Search for the Windows PowerShell. Select and Click.

2. PowerShell Window will be opened.

```
Windows PowerShell
Windows PowerShell
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PS C:\Users\sssit>
```

Advantages of PowerShell

Following are the few benefits of a PowerShell:

- o It is easy to learn and implement.

- o It is an object-based scripting language.

- o It provides more functions as compared to VBScript and cmd.exe

- o PowerShell supports automation platform, which is also an important factor.

- o We can also execute a .NET code in PowerShell.

- o In PowerShell, there is no need to specify the "type" of a variable.

- o It is also interactive. It allows programmers to try first at a console and then work with more complicated scripts.

- There is a concept of background jobs in PowerShell scripting.

- It provides the feature of Reusability. The scripts which are written once to perform a particular task can be saved for later use. And can be merged with other scripts to perform various tasks. So, repetitive tasks can be performed to execute the tasks. It saves time and money of administrator in configuring the machines.

Disadvantages of PowerShell

Following are the few disadvantages of PowerShell:

- **Framework:** It requires .NET framework.

- **Object-based:** With most shells, the text-based commands are used to get the work done while writing scripts. If a user switches to Windows PowerShell from some other type of shells, he will have to get used to a different way of thinking. Due to this, some users need more time to understand the PowerShell.

- **Security risks:** Another drawback of using PowerShell is that it can create some potential security risks. Many professionals of IT use it as a way to connect remotely to other servers and computers. During this process, PowerShell can leave some holes open for security breaches. It is the major disadvantages of using PowerShell script.

- **Web Server:** Another drawback of PowerShell is that it requires a user to run a web server on his server when utilizing remote functionality.