The PowerShell pipeline is a sequence of commands connected by the pipeline operator |. This operator allows the output of one command (a cmdlet, function, or script) to be passed as input to the next command in the pipeline. Unlike traditional command-line pipelines that handle text, PowerShell pipelines primarily work with objects.

Functionality

- **Object-based flow**: PowerShell passes objects, not just text, between commands. This allows for more structured data manipulation.
- **Real-time processing**: Data is processed and passed through the pipeline in a streaming fashion, which enhances efficiency and reduces resource usage.
- **Chaining commands**: It enables the chaining of multiple commands to perform complex operations in a single line of code.
- **Pipeline chain operators**: && and || can be used to conditionally execute commands in the pipeline based on the success or failure of the preceding command.

Syntax

The basic syntax of a pipeline is:

```
Command1 | Command2 | Command3
```

Example

```
Get-Process | Where-Object {$_.CPU -gt 1} | Sort-Object CPU
-Descending | Select-Object Name, CPU
```

This pipeline:

- Get-Process: Retrieves all running processes.
- Where-Object {$_.CPU -gt 1}: Filters processes, keeping only those with CPU usage greater than 1 second.
- Sort-Object CPU -Descending: Sorts the filtered processes by CPU usage in descending order.
- Select-Object Name, CPU: Selects and displays only the Name and CPU properties of the sorted processes.