

Understanding PowerShell Background Jobs



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Overview



What are PowerShell Jobs?

Understanding the PowerShell Job Flow

The PowerShell Job Object Model

- Start-Job
- Stop-Job
- Receive-Job
- Get-Job
- Remove-Job
- Wait-Job



What are PowerShell Jobs?



PowerShell Job

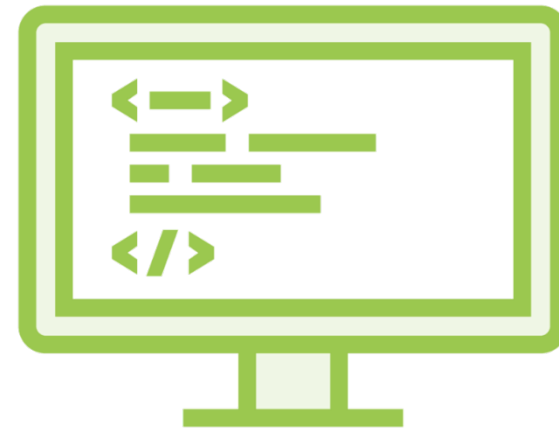
A PowerShell background job runs a command without interacting with the current session. You can continue to work in the session without interruption while the job runs



PowerShell Jobs



PowerShell 7
(Default)



PowerShell 5.1
(Backwards Compatibility)

PowerShell Jobs

Retrieve the PowerShell Version Table

```
$PSVersionTable.PSVersion
```

Start PowerShell Job using PowerShell Version 5.1

```
Start-Job -ScriptBlock { $PSVersionTable.PSVersion } -PSVersion 5.1
```

Start PowerShell Job using PowerShell Version 7.0

```
Start-Job -ScriptBlock { $PSVersionTable.PSVersion }
```



PowerShell Job Types



Background Jobs

Only available within the current PowerShell session



Scheduled Jobs

Independent of the current PowerShell session



PowerShell Job Types



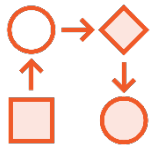
Background Job

Use the Start-Job cmdlet



Remote Job

Use -AsJob Parameter of the Invoke-Command cmdlet



PSWorkflowJob

Started by using the -AsJob Parameter of a Workflow



CIMJob / WMIJob

Started by using the -AsJob Parameter of a CDXML or WMI Module



PSEventJob

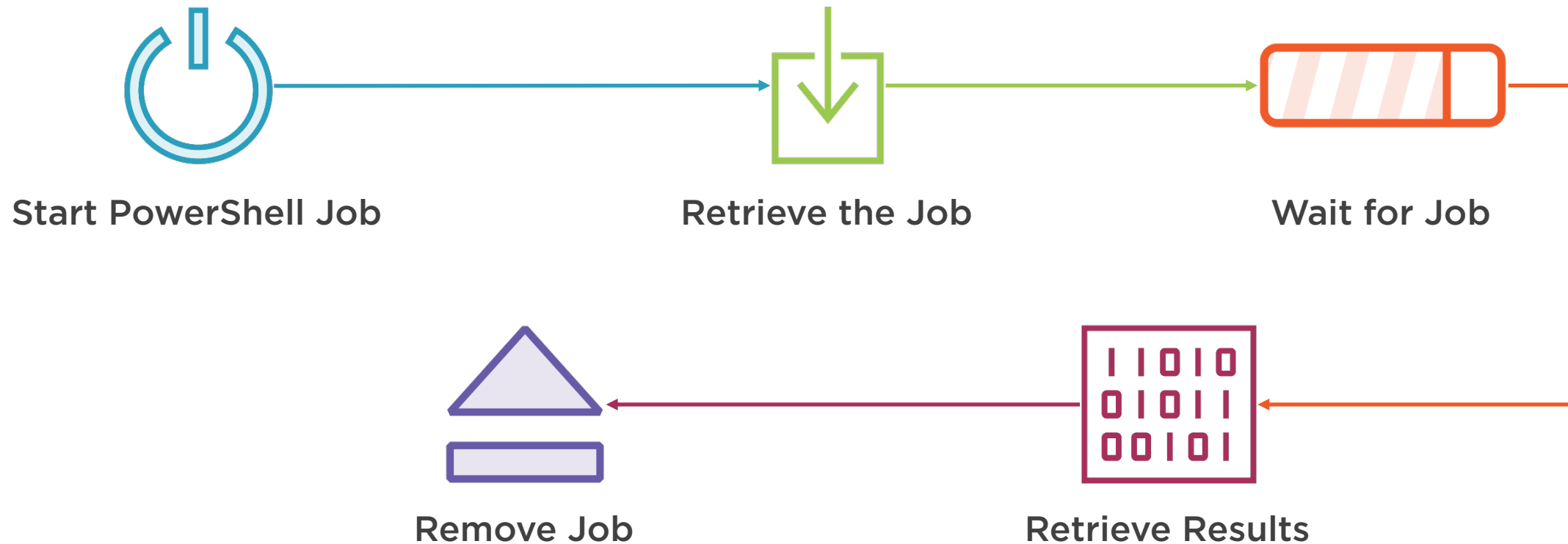
Use Register-ObjectEvent and adding an action parameter



Understanding the PowerShell Job Flow



PowerShell Jobs Process Flow



PowerShell Jobs Process Flow

Start-Job

Receive-Job

Wait-Job

Remove-Job

Receive-Job



The PowerShell Job Object Model



PowerShell Job Syntax



Command



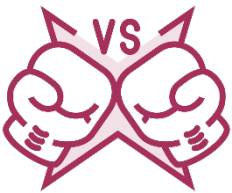
Name



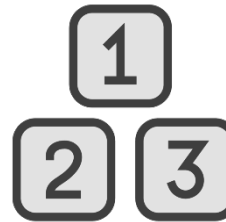
Script Block



Credential /
Authentication



Argument List



PowerShell Version



Start-Job Syntax

Start-Job

```
[ -Name <String> ]  
[ -ScriptBlock ] <ScriptBlock>  
[ -Credential <PSCredential> ]  
[ -Authentication <AuthenticationMechanism> ]  
[ [ -InitializationScript ] <ScriptBlock> ]  
[ -WorkingDirectory <String> ]  
[ -RunAs32 ]  
[ -PSVersion <Version> ]  
[ -InputObject <PSObject> ]  
[ -ArgumentList <Object[]> ]
```



Start-Job Syntax

Start a Background Job

```
Start-Job -ScriptBlock { Get-Process -Name pwsh }
```

Run Existing PowerShell Script within a Job

```
Start-Job -FilePath "C:\Scripts\Script.ps1"
```

Use and Argument List with Job

```
Start-Job -ScriptBlock { Get-Process -Name $args } `
    -ArgumentList powershell, pwsh, notepad
```

Set the Working Directory for Job

```
Start-Job -WorkingDirectory "C:\Scripts" -FilePath "Script.ps1"
```



Demo



Review PowerShell Background Job Commands



Summary



Understood PowerShell Jobs

Reviewed the PowerShell Job Flow

Reviewed the PowerShell Job Object Model



Up Next:

Creating and Managing PowerShell Background Jobs

