

# Use of simultaneous processing using PowerShell threads

If a long script has to perform many tasks, this can take a lot of time in PowerShell. As PowerShell is not multithreaded by nature and processes are always executed sequentially, so-called threads can be used to minimise the script length.

## Example Code

This code serves as a template for the parallel execution of processes. The tricky part with threads is the handling of input parameters and output values.

The script part is defined in the `$Scriptblock` variable. There you can work with arguments that are passed to the thread. They can be used with the `$args` variable and the element number. Values can be returned using the keyword `"return"`.

```
$Scriptblock = {  
    Start-Sleep 5  
    return $args[0]  
}  
  
$MaxThreads = 10  
$RunspacePool = [runspacefactory]::CreateRunspacePool(1, $MaxThreads)  
$RunspacePool.Open()  
  
$Jobs = @()  
$InputObjects = @(  
    "<yourinputobject1>",  
    "<yourinputobject2>",  
    "<yourinputobject3>",  
    "<yourinputobject4>",  
    "<yourinputobject5>"
```

```
)  
$OutputObjects = @()  
  
foreach ($Object in $InputObjects) {  
    $Instance = [powershell]::Create()  
    $Instance.RunspacePool = $RunspacePool  
    $Instance.AddScript($ScriptBlock).AddArgument($Object) | Out-Null  
    $Jobs += New-Object PSObject -Property @{  
        Instance = $Instance  
        State = $Instance.BeginInvoke()  
    }  
  
}  
  
while ($Jobs.State.IsCompleted -contains $false) {  
    Start-Sleep 1  
}  
  
foreach ($job in $jobs) {  
    $OutputObjects += $job.Instance.EndInvoke($job.State)  
}  
  
$Instance.Dispose()
```

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