ASYNC

This example shows how to use async commands in **PowerShell** that supports **SpreadCommander** environment, particularly **SpreadCommander** *cmdlets*.

Sample code

Passing command parameters to async tasks:

**X** \* **Y** = 10

**X** \* **Y** = 30

**X** \* **Y** = 60

Thread ID: 50

Thread ID: 20

Thread ID: 53

Demonstrating tasks with different computation time:

Task 10 completed.

Task 9 completed.

Task 8 completed.

Task 7 completed.

Task 6 completed.

Task 5 completed.

Task 4 completed.

Task 3 completed.

Task 2 completed.

Task 1 completed.

Script completed.

*Source code* of the script see in *ReadMe.ps1* .

Cmdlets for async commands.

* **Invoke-AsyncCommands**

Invokes multiple commands in parallel runspaces. Commands are executing in separate runspaces and local variables cannot be used. Commands take parameters from pipeline, only simple types (strings, numbers, dates) are allowed. Property *CommonParameters* allows to pass common parameters for each command, objects of any type are allowed. By default cmdlet uses *RunspacePool* with count of *Runspaces* equal to number of CPU cores but no more than 16, manually *ThrottleLimit* (count of runspaces in runpool) can be set in range between 1 and 256.

* **New-SCRunspace**

Creates and initializes for **SpreadCommander** PowerShell *Runspace*.

* **New-SCRunspacePool**

Creates and initializes for **SpreadCommander** PowerShell *RunspacePool.*

Book cmdlets

Cmdlet *Invoke-AsyncCommands*

**NAME**  
    Invoke-AsyncCommands  
      
**SYNTAX**  
    Invoke-AsyncCommands [[-ScriptBlock] <scriptblock>] [-DataRecord <psobject>] [-DataSource <Object>] [-SelectColumns <string[]>] [-SkipColumns <string[]>] [-IgnoreErrors] [-ThrottleLimit <int>] [-TimeoutSeconds <int>] [-CommonScriptParameters <hashtable>] [-RunspacePool <RunspacePool>] [<CommonParameters>]  
      
      
**PARAMETERS**  
**-CommonScriptParameters <hashtable>**  
        Common parameters for script block.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-DataRecord <psobject>**  
        Data source for data tables. Data source shall implement interface IList or IListSource and final IList shall implement ITypedList.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       true (ByValue)  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-DataSource <Object>**  
        Data source.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-IgnoreErrors**  
        Ignore errors thrown when getting property values.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      NoErrors  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-RunspacePool <RunspacePool>**  
        Custom runspace pool created with cmdlet New-SCRunspacePool. If not set - cmdlet will create own runspace pool.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-ScriptBlock <scriptblock>**  
        Script block to be used for parallel processing of input objects.  
          
        Required?                    false  
        Position?                    0  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-SelectColumns <string[]>**  
        List of data source columns to export. If not provided - all columns will be exported.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-SkipColumns <string[]>**  
        Skip listed columns from data source.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-ThrottleLimit <int>**  
        Number of script blocks that in parallel. Default is number of processor cores, up to 16.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-TimeoutSeconds <int>**  
        Number of seconds to wait for all input to be processed in parallel. After the specified timeout time, all running scripts are stopped. And any remaining input objects to be processed are ignored.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**<CommonParameters>**  
        This cmdlet supports the common parameters: Verbose, Debug,  
        ErrorAction, ErrorVariable, WarningAction, WarningVariable,  
        OutBuffer, PipelineVariable, and OutVariable. For more information, see  
        about\_CommonParameters (https://go.microsoft.com/fwlink/?LinkID=113216).   
      
      
**INPUTS**  
    System.Management.Automation.PSObject  
      
      
**OUTPUTS**  
    SpreadCommander.Common.PowerShell.CmdLets.Async.AsyncCommandData  
      
      
**ALIASES**  
    None  
      
  
**REMARKS**  
    None

Cmdlet *New-SCRunspace*

**NAME**  
    New-SCRunspace  
      
**SYNTAX**  
    New-SCRunspace [-Closed] [<CommonParameters>]  
      
      
**PARAMETERS**  
**-Closed**  
        Return closed runspace. By default returned runspace is open.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**<CommonParameters>**  
        This cmdlet supports the common parameters: Verbose, Debug,  
        ErrorAction, ErrorVariable, WarningAction, WarningVariable,  
        OutBuffer, PipelineVariable, and OutVariable. For more information, see  
        about\_CommonParameters (https://go.microsoft.com/fwlink/?LinkID=113216).   
      
      
**INPUTS**  
    None  
      
      
**OUTPUTS**  
    System.Management.Automation.Runspaces.Runspace  
      
      
**ALIASES**  
    None  
      
  
**REMARKS**  
    None

Cmdlet *New-SCRunspacePool*

**NAME**  
    New-SCRunspacePool  
      
**SYNTAX**  
    New-SCRunspacePool [-ThrottleLimit <int>] [-Closed] [<CommonParameters>]  
      
      
**PARAMETERS**  
**-Closed**  
        Return closed runspace pool. By default returned runspace pool is open.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**-ThrottleLimit <int>**  
        Number of script blocks that in parallel. Default is number of processor cores, up to 16.  
          
        Required?                    false  
        Position?                    Named  
        Accept pipeline input?       false  
        Parameter set name           (All)  
        Aliases                      None  
        Dynamic?                     false  
        Accept wildcard characters?  false  
          
**<CommonParameters>**  
        This cmdlet supports the common parameters: Verbose, Debug,  
        ErrorAction, ErrorVariable, WarningAction, WarningVariable,  
        OutBuffer, PipelineVariable, and OutVariable. For more information, see  
        about\_CommonParameters (https://go.microsoft.com/fwlink/?LinkID=113216).   
      
      
**INPUTS**  
    None  
      
      
**OUTPUTS**  
    System.Management.Automation.Runspaces.RunspacePool  
      
      
**ALIASES**  
    None  
      
  
**REMARKS**  
    None

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