

TEC US 2011: PowerShell Deep Dive: Kirk Munro – Defining domain-specific vocabularies using Windows PowerShell

These are the scripts Kirk was using. You can also find his:

- Slides and video here: <http://dmitrysotnikov.wordpress.com/2011/09/06/video-kirk-munro-defining-domain-specific-vocabularies-using-Windows-PowerShell/>

Visio DSL Examples.ps1

```
# Simple Visio DSV example
Visio {
    DefaultPageBackground 'World'
    DefaultPageTheme -Colors 'Foundry - Dark' -Effects 'Mesh'
    Document {
        $global:myPage = Page 1 {
            Background 'Currency'
            Theme -Colors 'Office - Dark' -Effects 'Outline'
            DiagramStyle 'Flowchart' -Direction 'Bottom to Top' -PlacementDepth 'Shallow'
            ConnectorStyle 'Simple' -Spacing '30mm' -Curvature 'Straight'
            AutoEnlarge
            $root = Get-Item -LiteralPath 'C:\Program Files'
            $global:rootShape = Shape 'Rounded Rectangle' -Label $root.Name
            foreach ($item in ($root | Get-ChildItem | Select -First 4)) {
                $childShape = Shape 'Circle' -Label $item.Name {
                    Connect -ToShape $global:rootShape
                }
            }
            Layout -ArrangeShapes -CenterDrawing
        }
    } | Out-Null

# Mix and match example

Set-VisioDefaultPageBackground 'World'
Set-VisioDefaultPageTheme -Colors 'Foundry - Dark' -Effects 'Mesh'
$visio = Visio
$document = $visio | Select-VisioDocument
$page = $document | Select-VisioPage -PageId 1 -ScriptBlock {
    Background 'Currency'
    Theme -Colors 'Office - Light' -Effects 'Outline'
    DiagramStyle 'Flowchart' -Direction 'Bottom to Top' -PlacementDepth 'Shallow'
    ConnectorStyle 'Simple' -Spacing '30mm' -Curvature 'Straight'
    AutoEnlarge
    $root = Get-Item -LiteralPath 'C:\Program Files'
    $global:rootShape = Shape 'Rounded Rectangle' -Label $root.Name
    foreach ($item in ($root | Get-ChildItem | Select -First 4)) {
        $childShape = Shape 'Circle' -Label $item.Name {
            Connect -ToShape $global:rootShape
        }
    }
    Layout -ArrangeShapes -CenterDrawing
}

# Real-world DSV example

$defaultVIServer = Connect-VIServer -Server vmguru.com -Credential (Get-Credential vmguru\kmunro)
$visio = Visio {
    Document {
```

```

Stencil 'C:\users\kmunro\Documents\My Shapes\Virtualization Visio Stencil.vss'
Page 1 {
  Background 'World'
  DiagramStyle 'Flowchart' -Direction 'Left to Right' -PlacementDepth 'Shallow'
  ConnectorStyle 'Simple' -Spacing '20mm' -Curvature 'Straight'
  $global:vcServerShape = Shape 'Virtual Center Management Console' -Label
$defaultVIServer.Name
  foreach ($cluster in Get-Cluster) {
    $global:clusterShape = Shape 'Cluster' -Label $cluster.Name {
      Connect -ToShape $global:vcServerShape -Right
    }
    $vms = $cluster | Get-VM | Sort-Object -Property Name
    $vmHosts = $cluster | Get-VMHost | Sort-Object -Property Name -Descending
    if (-not $vmHosts) {
      continue
    }
    foreach ($vmHost in $vmHosts) {
      $vmHostShape = Shape 'ESX Host' -Label $vmHost.Name {
        Connect -ToShape $global:clusterShape -Right
      }
      $global:lastShape = $vmHostShape
      $hostVMs = $vms | Where-Object { $_.HostId -eq $vmHost.Id}
      if (-not $hostVMs) {
        continue
      }
      foreach ($vm in $hostVMs) {
        $vmShapeName = 'Other Server'
        switch -regex ($vm.Guest.OSFullName) {
          'Microsoft' {$vmShapeName = 'Microsoft Server'; break}
          'Linux'      {$vmShapeName = 'Linux Server';      break}
        }
        $vmShape = Shape $vmShapeName -Label $vm.Name {
          Connect -ToShape $global:lastShape -Right
        }
        $global:lastShape = $vmShape
      }
    }
  }
  Layout -ArrangeShapes -CenterDrawing
}
}
Disconnect-VIServer $defaultVIServer

```

Import-VisioAssembly.ps1

```

#####
#####
# File:          Import-VisioAssembly.ps1
#
# Author:        Poshoholic
#
# Publisher:     Poshoholic Studios
#
# Copyright:     © 2011 Poshoholic Studios. All rights reserved.
#
# Usage:         This script file is invoked automatically when you load the Visio module.
#
#               Please provide feedback on the PowerGUI Forums.
#
#####
#####

```

```
Set-StrictMode -Version 2
```

```
#region Import the VisioAssembly module.
```

```
Import-Module -Name Visio\VisioAssembly
```



```
# zxg42KM7zv/KZli/4PGsYT6iOx68AltBrERr9Sbz7V6oZfbKZaY/yvV366WGKlgp
# Vvi+FhBA6dL8VyxjYtdmJTKgLgcDoDYDJZS9fOt+06PCxXYWdTCsuf92QTUhaNEO
# XlyOwNg5oBA/MBdolRubpJnp4Esh6KjK9u3Tf/k1cflBebV8a78zWYYIfM+R8nl
# lUJhLJ0mgLIPqD00yad43250jCxG9nLpPGRrKFXES2Qzy3hUEzjw1XEG1D4NCjUO
# 4LMxggQtMIEKQIBATByMGMxCzAJBgNVBAYTAkFMRkwFwYDQVQKEwBhG9iYWxT
# aWduIG52LXNhMRYwFAYDQQLEw1PYmplY3RTaWduIENBMSEwHwYDQVQDEwHbG9i
# YWxTaWduIE9iamVjdFNpZ24gQ0ECCwEAAAAAAR5GQJ02MAkGBSsOAwIaBQCgeDAY
# BgorBgEEAYI3AgEMMQowCKACgAChAoAAMBkGCSqGSIb3DQEJAzEMBgorBgEEAYI3
# AgEEMBwGCisGAQQBgjcCAQsxDjAMBgorBgEEAYI3AgEVMCMGCSqGSIb3DQEBDEW
# BBTlyk7Ws3VgOsa5ugEHazn2HNOZyTANBgkqhkiG9w0BAQEFAASBgDhG6RzeINcI
# cxUKJfpt8PwTA6Gh+1fp+E/HkQG+m+L+dEFKQ+wW9+jNKGaEWR6jPTpoSjlIKojx
# YH6nQj9fWTQ1J+dRU3WMgHKK5/SFoD05j19yKthaiCelYCDZzrt8X539yislAg2
# LoeslfNnd7xs/c4M6iyXZas4C0SuNwFtoYIClZCCApMGCSqGSIb3DQEBJbGCAoQw
# ggKAAGEBMGMwVDEYMBYGA1UECXPVGltdXN0YW1waW5nIENBMRMwEQYDQVQKEwPH
# bG9iYWxTaWduMSMwIQYDQVQDEwHbG9iYWxTaWduIFRpbWVzdGFtcGluZyBDQQIL
# AQAAAAABJbC0zAEwCQYFKw4DAhoFAKCB9zAYBgkqhkiG9w0BCQMxCwYJKoZIhvcN
# AQCcBMBwGCSqGSIb3DQEBJTEPFw0xMTA0MTcyMjU4NTlaMCMGCSqGSIb3DQEBDEW
# BBTQhkrx3YG9QoYc5xsiFU0cPG4ezCBlwYLKoZIHvcNAQkQAgwXgYcwgYQwgYEw
# fwQURt9992u6JBDWfbrxj1uhW0F+SWwwZzBYpFYwVDEYMBYGA1UECXPVGltdXN0
# YW1waW5nIENBMRMwEQYDQVQKEwPHbG9iYWxTaWduMSMwIQYDQVQDEwHbG9iYWxT
# aWduIFRpbWVzdGFtcGluZyBDQQILAQAAAAABJbC0zAEwDQYJKoZIhvcNAQEBBQAE
# ggEAe5iEivhQdQJOFwoLqHC3Hk5yP7sVCvQB/MmW6xelV/VvDAKMISv3IIQobmgr
# 4suN/9RidV/FR6enBkczkSlo4fVlCRn+ponoBA6C0Aymi1W5FbayAXvJ6rv3JQTe
# ZlhPOoxzPo46IskTPKDb5Po+pbQRYGuAmWm6Mn+A+5MiWi0sbZM+Ksh0hbKNA4ks
# Jkb+fwqCyUKGBFiXKYcsJU5Wkd/sprU4HtMSAd6dsY72xegrDHVaZQ8H77sWCtY6
# FHTEqr91Ec9wUNBR5xwXo0WSjCe6nmdEv5nZ5UQle2/ooq+pFtj0m3i8rG24lb+s
# lhjLwtItNAUROEy15Mvk3DAPnw==
# SIG # End signature block
```

Visio.psd1

```
#####
#####
# File:                Visio.psd1
#
# Author:              Poshoholic
#
# Publisher:          Poshoholic Studios
#
# Copyright:          © 2011 Poshoholic Studios. All rights reserved.
#
# Usage:              To load this module in your Script Editor:
#
#                    1. Open the Script Editor.
#
#                    2. Select "PowerShell Libraries" from the File menu.
#
#                    3. Check the Visio module.
#
#                    4. Click on OK to close the "PowerShell Libraries" dialog.
#
#                    Alternatively you can load the module from the embedded console by invoking
this:                #
                    Import-Module -Name Visio
#
#                    Please provide feedback on the PowerGUI Forums.
#
#####
#####

@{

# Script module or binary module file associated with this manifest
ModuleToProcess = 'Visio.psm1'

# Version number of this module.
ModuleVersion = '2.0.0.0'
```

```
# ID used to uniquely identify this module
GUID = '{6d05b20c-37c2-4bd2-8d23-6e61ca461d8e}'

# Author of this module
Author = 'Poshoholic'

# Company or vendor of this module
CompanyName = 'Poshoholic Studios'

# Copyright statement for this module
Copyright = '© 2011 Poshoholic Studios. All rights reserved.'

# Description of the functionality provided by this module
Description = 'Commands for Visio document automation using traditional PowerShell commands or a
domain-specific vocabulary (DSV) for Visio'

# Minimum version of the Windows PowerShell engine required by this module
PowerShellVersion = '2.0'

# Minimum version of the .NET Framework required by this module
DotNetFrameworkVersion = '2.0'

# Minimum version of the common language runtime (CLR) required by this module
CLRVersion = '2.0.50727'

# Processor architecture (None, X86, Amd64, IA64) required by this module
ProcessorArchitecture = 'None'

# Modules that must be imported into the global environment prior to importing
# this module
RequiredModules = @()

# Assemblies that must be loaded prior to importing this module
RequiredAssemblies = @()

# Script files (.ps1) that are run in the caller's environment prior to
# importing this module
ScriptsToProcess = @(
    '.\Import-VisioAssembly.ps1'
)

# Type files (.ps1xml) to be loaded when importing this module
TypesToProcess = @()

# Format files (.ps1xml) to be loaded when importing this module
FormatsToProcess = @()

# Modules to import as nested modules of the module specified in
# ModuleToProcess
NestedModules = @()

# Functions to export from this module
FunctionsToExport = '*'

# Cmdlets to export from this module
CmdletsToExport = '*'

# Variables to export from this module
VariablesToExport = '*'

# Aliases to export from this module
AliasesToExport = '*'

# List of all modules packaged with this module
ModuleList = @()

# List of all files packaged with this module
FileList = @(
    '.\Visio.psml'
    '.\Visio.psd1'
```



```
'.\Import-VisioAssembly.ps1'  
'.\VisioAssembly\VisioAssembly.psm1'  
'.\VisioAssembly\VisioAssembly.psd1'  
)  
  
# Private data to pass to the module specified in ModuleToProcess  
PrivateData = @{}  
  
}  
  
# SIG # Begin signature block  
# MIIdfwYJKoZlIhvcNAQCoIIdcDCCHWwCAQExCzAJBgUrDgMCGGUAMGkGcisGAQQB  
# gjcCAQSGwZBZMDQGCisGAQQBgjcCAR4wJgIDAQAABBAfzDtgWUsITrck0sYpfvNR  
# AgEAAgEAAgEAAgEAAgEAMCEwCQYFKw4DAhoFAAQUR9x+2UvTe5npe78DvQ5FXCFI  
# klygghi8MIIdTCCA12gAwIBAgILBAAAAAABFUtaw5QwDQYJKoZlIhvcNAQEFBQAw  
# VzELMAkGA1UEBhMCQkUxGTAxBgNVBAoTEEdsb2JhbFNpZ24gbnYtc2ExEDA0BgNV  
# BAsTB1Jvb3QgQ0ExGzAZBgNVBAMTEkdsb2JhbFNpZ24gUm9vdCBDQTAeFw05ODA5  
# MDExMjAwMDBAFw0yODAxMjg3LmR5EiUWMMwEa6xrKEmCMGZK9FGqkYWCzT/LCrBb1D  
# ExBhG9iYWxTaWduIG52LXNhMRawDgYDVQQLewdSb290IENBMRSwGQYDVQQDEXJH  
# bG9iYWxTaWduIFJvb3QgQ0EwggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIB  
# AQDaDuaZjc6j40+Kfvvxi4M1a+pIH/EqsLmVEQS98GPR4mdmzxdzxtIK+6NiY6a  
# rymAZavpxy0Sy6scTHAHOtOKMM0VjU/43dSMUBUc71DuxC73/01S8pF94G3VNTCO  
# XkNz8kHplWrjsok6Vjk4bwY8iG1bKk3Fp1S4bInMm/k8yuX9iFUSPJJ41tbcDG6T  
# RGRHjcdGsnUOhugZitVtbnV4FpWi6cgKOOvyJBNPc1STE4U6G7weNLWLBly5d4ux  
# 2x8gkasJU26Qzns3dLlwr5EiUWMMwEa6xrKEmCMGZK9FGqkYWCzT/LCrBb1D  
# SgeF59N89iFo7+ryUp9/k5DPAGMBAAGjQjBAMA4GA1UdDwEB/wQEAwIBBjAPBgNV  
# HRMBAf8EBTADAQH/MB0GA1UdDgQWBRRge2YaRQ2XyolQL30EzTSO//z9SszANBgkq  
# hkiG9w0BAQUFAAOCAQEAlnPfe920I2/7LqivjTFKDK1fPxsncwrvQmeU79rXqoR  
# SLb1CKOzyj1hTdNGCbM+w6DjY1Ub8rrvrTnhQ7k4o+YviiY776BQVvnGcV04zcQL  
# cFGU15gE38f1NUVYRRBnMRddWQVDF9VMOyGj/8N7yy5Y0b2qvzfvGn9LhJIZJrg  
# lfCm7ymPAbEVtQwdpf5pLgkKeB6zpxxxYu7KyJesFl2KwvhHhm4qxFYxldBniYur  
# +WymXUadMKqC5J1R3XC21Y9YerQ4VzW9v493kHMB65jUr9TU/Qr6cf9tveCX4XS  
# QRjbgbMEHMUfpIBvFSDJ3gyICh3WZ1xi/EjJKSZp4DCCBAcwgGLvoAMCAQICcWEA  
# AAAAAA5GQJ02MA0GCSqGSIb3DQEBBQUAMGMxCzAJBgNVBAYTAkJFMRkwFwYDVQQK  
# ExBhG9iYWxTaWduIG52LXNhMRwYFAAYDVQQLEw1PYmplY3RTaWduIENBMSEwHwYD  
# VQDEExHbG9iYWxTaWduIE9iamVjdFNpZ24gQ0EwHhcNMDg0MDEyMDEyMDEyMDEy  
# MTEwMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEy  
# dHdhcmUxZmFzAVBGNVBAMTD1F1ZXN0IFNvZnR3YXJlMSAwHGMGZK9FGqkYWCzT/LCrBb1D  
# dXBwb3J0QHF1ZXN0LmNvbTCBnzANBjKkqhkiG9w0BAQEFAAOBjQAwYkCgYEAImza  
# 2hKiiqZnaF1sHhuFRS7MEGq9tYhF7AFbJRvTvhCZk9sxK92thKBFyDSOzJauB7Zt  
# j+1HwQzpqbbU94EsR09JOf8vB+xQKLCxaBP5YjwhjJzVy+1d6frVWYN1oVxPXRBM  
# G7BnFgfrkOdtsg/Qn1Uqn1ENSozjyTuh5iduUy0CAwEAAaOCAUAWggE8MB8GA1Ud  
# IwQYMBaAFNJB80smS6Ww5139Vn/28S44TlOgME4GCCsGAQUFBwEBBEIwQDA+Bgggr  
# BgEFBQcwoAyaHR0cDovL3N1Y3VlZS5nbG9iYWxzaWduLm5ldc9jYWN1cnQvT2Jz  
# ZWN0U21nb15jcnQwQYDVROfBDIwMDAuoCygKoyoaHR0cDovL2Nybc5nbG9iYWxz  
# aWduLm5ldc9PYmplY3RTaWduLmNybDAJBGNVHRMEAjAAMA4GA1UdDwEB/wQEAwIH  
# gDATBgNVHSUEDDAKBggrBgEFBQcDAzBLBgNVHSAERDBCEAGCSsGAQQBoDIBMjAz  
# MDEGCCsGAQUFBwIBFiVodHRwOi8vd3d3Lmdsb2JhbHNPZ24ubmV0L3JlCG9zaXRv  
# cnkvMBEGCWCsGAGG+EIBAQQEAwIEEDANBgkqhkiG9w0BAQUFAAOCAQEAG9hUuQek  
# ddDJ/pzf09p4hzKBkeKcVsunEeTUMNg90XzgdOYRFJPCD7T+gXXrTs6Y2xFmLJN  
# G/2lQsjQ/32cBBN9zZdbX+ExhFfEV9/w0gbw3H/PfykCRvp9VZ1TafIt4MJct/Zp  
# guPQgggpWdScg7jQNYeHEG6h6c3WHO8PMiKcKJp9LuM1PKX9Bjy6F2k8rbdEAYJ  
# u0mIiAcnEAc/KwoKBZVT1gnT3rkwgTgN1Xw2hqT/Zcf8Jy4IDzbKzL+gYmDCNaju  
# wAzhaaA05oZTLwhFV1sdc5MSJVJnMJVLPn01jrhi5g6Oo6EmezM/kE8nzoXbmT1P  
# JjQApuAtvUdFlzCCBA0wggLl0AMCAQICcwQAAAAAASOeD6yzMA0GCSqGSIb3DQEB  
# BQUAMFcxzAJBgNVBAYTAkJFMRkwFwYDVQQKEExBhG9iYWxTaWduIG52LXNhMRaw  
# DgYDVQQLewdSb290IENBMRSwGQYDVQQDEXJHbG9iYWxTaWduIFJvb3QgQ0EwHhcN  
# OTkwMTI4MTEwMDAwMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEyMDEy  
# BgNVBAoTEEdsb2JhbFNpZ24gbnYtc2ExJTAjBgNVBAsTHFBYw1hcnkgT2JqZWNO  
# IFB1Ymxpc2hpbmMgQ0ExMDAuoCygKoyoaHR0cDovL3N1Y3VlZS5nbG9iYWxz  
# Y3QgUHVibGlzaGlzZyBDQCCASiWdQYJKoZlIhvcNAQEFBQAGgEPADCCAQoCggEB  
# AKKbdSqnE7oJcSQY36EGYikSntyedXPo31ZXaZyTVk/yyLwBWO0mhnILYPUZxVUD  
# V5u5EMmh1HRA/2wA6OZTN/632nk+uFI46YEsnw4zUqbnCm5KXWL00WdevJdKB8q8  
# 3Y1Hsc3xZVuFABBLA97nj171UoijnJ0mmGs2Y0EDcETwX+ildXlQfv+hBqJGDFWV  
# RxTtKuaGaJnnJ/SU7JpBUfeW1HqM4USXaHED2FhvvbQQQu4NznVgi0SW0jAAEGdj  
# 90SbAXDKVm+cWJcQjXeLLnFsbUarpysPfxZIZMhS+gYXAA010WzDPV41XPoCu7E  
# 4HKMHhGqHrtezm0AO5zvc0CAwEAAAOBrjCBqzAOBgNVHQ8BAf8EBAMCAQYwDwYD  
# VR0TAAQH/BAUwAwEB/zAdBgNVHQ4EFgQUFVF5GnwMWFfnazdjE0hOayXgtf00wMwYD  
# VR0fBcwwKjAooCagJIYiaHR0cDovL2Nybc5nbG9iYWxzaWduLm5ldc9Sb290LmNy  
# bDATBgNVHSUEDDAKBggrBgEFBQcDAzAfBgNVHSMEGDAwBRge2YaRQ2XyolQL30E
```



```
# WfnazdjE0hOayXgtf00wDQYJKoZIhvcNAQEFBQADggEBAB5q8230jqki/nAIZS6h
# XaszMN1sePpL6q3FjwemrFWJc5a5LzkeIMpygc0V12josHfBNvrcQ2Q7PBvDFZ
# zxcg42KM7zv/KZli/4PGsYT6iOx68AltBrErR9Sbz7V6oZfbKZaY/yvV366WGKlgp
# Vvi+FHBA6dL8VyxjYtdmJTKgLGcDoDYDZS9fOt+06PCxXYWdTCsuf92QTUhaNEO
# XlyOwwNg5oBA/MBdolRubpJnp4ESh6KjK9u3Tf/k1cflBebV8a78zWYYIfm+R8n1
# lUJhLJ0mgLIPqD00yad43250jCxCg9nLpPGRrKFXES2Qzy3hUEzjw1XEG1D4NCjUO
# 4LMxggQtMIIEKQIBATByMGmxCzAJBgNVBAYTAkJFMRkwFwYDVQQKExBHbG9iYWwT
# aWduIG52LXNhMRYwFAYDVQQLEw1PYmplY3RTaWduIENBMSEwHwYDVQQDEXhHbG9i
# YWwTaWduIE9iamVjdFNpZ24gQ0ECCwEAAAAAAAAAR5GQJ02MAkGBSsOAwIaBQCgeDAY
# BgorBgEEAYI3AgEMMQowCKACgAChAoAAMBkGCSqGSIb3DQEJAzEMBgorBgEEAYI3
# AgEEMBoGCisGAQQBgjcCAQsxDjAMBgorBgEEAYI3AgEVMCMGCSqGSIb3DQEBDEW
# BBTmefoHdsRwr+XoVY801j2iFs2rODANBgkqhkiG9w0BAQEFAASBgFaKZNgv2//o
# CPPrBmys0a91gQvrb31yJlhMypxaewesGdjESkyEn3iIGlfxsVrR9JGTxfhDlWdc
# ImqHcvj05Yiaxnle0QRWB4x5+jlUcF6npZthnLvM8gAvSw9Y9KjNiuOvftnQ2S+G
# vSt3kEKvQzhzqbItvV37IIsPnYDO9kKPoYIClZCCApMGCSqGSIb3DQEBJjGCAoQw
# ggKAAgEBMGmWDEYMBYGA1UECXPVGltdXN0YV1waW5nIENBMRMwEQYDVQQKEWpH
# bG9iYWwTaWduMSMwIQYDVQQDEXpHbG9iYWwTaWduIFRpbWVzdGFtcGluZyBDQQIL
# AQAAAAABJbC0zAEwCQYFKw4DAhoFAKCB9zAYBgkqhkiG9w0BCQMxCwYJKoZIhvcN
# AQcBMBwGCSqGSIb3DQEBJTBEPFw0xMTA0MTkwNjA4NDIaMCMGCSqGSIb3DQEBDEW
# BBTGih/4DN1woiffuwjtQCR2grqY+DCBlwYlKoZIhvcNAQkQAkwYcwgYQwgYew
# fwQurt9992u6JBDWfbrxjluhW0F+SWwwZzBYpFYwVDEYMBYGA1UECXPVGltdXN0
# YV1waW5nIENBMRMwEQYDVQQKEWpHbG9iYWwTaWduMSMwIQYDVQQDEXpHbG9iYWwT
# aWduIFRpbWVzdGFtcGluZyBDQQILAQAAAAABJbC0zAEwDQYJKoZIhvcNAQEBBQAE
# ggEAtuR5xnugWWboaI1185ourP1DzDgV6ep+uI1+4W1UQMvkV4YdVvwpYfq/s8H+
# mVkw9Hdatbjz+l/HtNxxEuu8rjDjD9g+05CG34bexg+far181N81ixoaNUxOd279
# 5XC8yfa98ndDt0zrTJ6ND7ZCdZ0JzQs7xcdB3Qpd9kEVtxS4QymG0ReiRY57n1FF
# i7sYdIJ7howMj3xVAG0irHV8GQooYpzu4p+v2NgmpU06Tx/mKBRgrJKHppqNSdsil
# V8ha5LvjeadRowMzHYhWiYBdr3dcf61UAqgAu0702SRFz5kahfU35CLRGLbcXeOh
# DCbtTqKlhaqA+MlpbVvt2OQ/Vg==
# SIG # End signature block
```

Visio.psm1

```
#####
#####
# File:                Visio.psm1
#
# Author:              Poshoholic
#
# Publisher:          Poshoholic Studios
#
# Copyright:          © 2011 Poshoholic Studios. All rights reserved.
#
# Usage:              To load this module in your Script Editor:
#
#                    1. Open the Script Editor.
#
#                    2. Select "PowerShell Libraries" from the File menu.
#
#                    3. Check the Visio module.
#
#                    4. Click on OK to close the "PowerShell Libraries" dialog.
#
#                    Alternatively you can load the module from the embedded console by invoking
this:                #
#                    Import-Module -Name Visio
#
#                    Please provide feedback on the PowerGUI Forums.
#
#####
#####

#Set-StrictMode -Version 2

#region Set the module export mode to explicit.

Export-ModuleMember
```

```
#endregion
```

```
#region Visio DSV command definitions.
```

```
$script:visioCommandVocabulary = @(  
  #region Define the Visio Application DSV.  
  Application = @(  
    #region Define aliases in the DSV.  
    Alias = @(  
      DefaultPageBackground = @(  
        Scope = 'Script'  
        Value = 'Set-VisioDefaultPageBackground'  
        Description = 'Set the default Visio page background. This background will be applied to  
any new Visio pages that are created.'  
      )  
      DefaultPageTheme = @(  
        Scope = 'Script'  
        Value = 'Set-VisioDefaultPageTheme'  
        Description = 'Set the default Visio page theme. This theme will be applied to any new  
Visio pages that are created.'  
      )  
      DefaultPageAutoEnlarge = @(  
        Scope = 'Script'  
        Value = 'Set-VisioDefaultPageAutoEnlarge'  
        Description = 'Set the default Visio page auto enlarge property. This setting will be  
applied to any new Visio pages that are created.'  
      )  
      DefaultPageDiagramStyle = @(  
        Scope = 'Script'  
        Value = 'Set-VisioDefaultPageDiagramStyle'  
        Description = 'Set the default Visio page diagram style. This diagram style will be applied  
to any new Visio pages that are created.'  
      )  
      DefaultPageConnectorStyle = @(  
        Scope = 'Script'  
        Value = 'Set-VisioDefaultPageConnectorStyle'  
        Description = 'Set the default Visio page connector style. This connector style will be  
applied to any new Visio pages that are created.'  
      )  
    )  
  )  
#endregion
```

```
#region Define functions in the DSV.  
Function = @(  
  SmartLayout = @(  
    Scope = 'Script'  
    Value = {  
      [CmdletBinding()]  
      [OutputType([System.Void])]  
      param(  
        [Parameter(Position=0)]  
        [ValidateNotNull()]  
        [System.Boolean]  
        $Enabled  
      )  
      try {  
        if ((-not $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Enabled')) -or $Enabled)
```

```
{  
          Enable-VisioSmartLayout  
        } else {  
          Disable-VisioSmartLayout  
        }  
      } catch {  
        throw  
      }  
    }  
  )  
}
```

```
Show = @(  
  Scope = 'Script'  
  Value = {  
    [CmdletBinding()]
```

```

[OutputType([Microsoft.Office.Interop.Visio.IVApplication])]
param(
    [Parameter()]
    [System.Management.Automation.SwitchParameter]
    $PassThru
)
try {
    $showVisioParameters = $PSCmdlet.MyInvocation.BoundParameters
    Show-Visio -Application $visioApplication @showVisioParameters
} catch {
    throw
}
}
}
}
Hide = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVApplication])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $hideVisioParameters = $PSCmdlet.MyInvocation.BoundParameters
            Hide-Visio -Application $visioApplication @hideVisioParameters
        } catch {
            throw
        }
    }
}
Close = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([System.Void])]
        param()
        try {
            $stopVisioParameters = $PSCmdlet.MyInvocation.BoundParameters
            Stop-Visio -Application $visioApplication @stopVisioParameters
        } catch {
            throw
        }
    }
}
Document = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding(DefaultParameterSetName='UnnamedDocument')]
        [OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
        param(
            [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
ParameterSetName='NamedDocument')]
            [ValidateNotNullOrEmpty()]
            [Alias('Name')]
            [System.String[]]
            $DocumentId,

            [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
ParameterSetName='DocumentObject')]
            [ValidateNotNullOrEmpty()]
            [Alias('InputObject')]
            [Microsoft.Office.Interop.Visio.IVDocument[]]
            $Document,

            [Parameter(Position=0, ParameterSetName='UnnamedDocument')]
            [Parameter(Position=1, ParameterSetName='NamedDocument')]
            [Parameter(Position=1, ParameterSetName='DocumentObject')]
            [ValidateNotNullOrEmpty()]

```



```

}
Close = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([System.Void])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $Force
        )
        try {
            $closeVisioDocumentParameters = $PSCmdlet.MyInvocation.BoundParameters
            Close-VisioDocument -Document $visioDocument @closeVisioDocumentParameters
        } catch {
            throw
        }
    }
}
Stencil = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([System.Void])]
        param(
            [Parameter(Position=0, Mandatory=$true)]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $StencilId
        )
        try {
            $selectVisioStencilParameters = $PSCmdlet.MyInvocation.BoundParameters
            Select-VisioStencil -Document $visioDocument @selectVisioStencilParameters
        } catch {
            throw
        }
    }
}
Page = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding(DefaultParameterSetName='NamedPage')]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
ParameterSetName='NamedPage')]
            [ValidateNotNullOrEmpty()]
            [System.String[]]
            $PageId,

            [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
ParameterSetName='PageObject')]
            [ValidateNotNullOrEmpty()]
            [Alias('InputObject')]
            [Microsoft.Office.Interop.Visio.IVPage[]]
            $Page,

            [Parameter(Position=1)]
            [ValidateNotNullOrEmpty()]
            [System.Management.Automation.ScriptBlock]
            $ScriptBlock
        )
        begin {
            try {
                #region Initialize local variables.
                [System.String]$private:parameterName = $null
                #endregion

                #region Convert the parameters to private scope.
                foreach ($private:parameterName in @( 'PageId', 'Page', 'ScriptBlock' )) {

```



```

        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:parameterName))
        {
            Set-Variable -Name $private:parameterName -Scope Local -Option Private
        }
    }
    #endregion
} catch {
    throw
}
}
process {
    try {
        $private:selectVisioPageParameters = $PSCmdlet.MyInvocation.BoundParameters
        if ($PSCmdlet.ParameterSetName -eq 'PageObject') {
            Select-VisioPage @private:selectVisioPageParameters
        } else {
            Select-VisioPage -Document $visioDocument @private:selectVisioPageParameters
        }
    } catch {
        throw
    }
}
}
}
}
#endregion
#region Define nested modules in the DSV.
Module = @{
    #region Define the Visio Page DSV.
    Page = @{
        #region Define functions in the DSV.
        Function = @{
            Name = @{
                Scope = 'Script'
                Value = {
                    [CmdletBinding()]
                    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
                    param(
                        [Parameter(Position=0, Mandatory=$true)]
                        [ValidateNotNullOrEmpty()]
                        [System.String]
                        $NewName,

                        [Parameter()]
                        [System.Management.Automation.SwitchParameter]
                        $PassThru
                    )
                    try {
                        $renameVisioPageParameters = $PSCmdlet.MyInvocation.BoundParameters
                        Rename-VisioPage -Page $visioPage @renameVisioPageParameters
                    } catch {
                        throw
                    }
                }
            }
        }
    }
}
AutoEnlarge = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter(Position=0)]
            [System.Boolean]
            $Enabled,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {

```

```

    $passThruParameter = @{}
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and
$PassThru) {
        $passThruParameter['PassThru'] = $true
    }
    if ((-not $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Enabled')) -or
$Enabled) {
        Enable-VisioPageAutoEnlarge -Page $visioPage @passThruParameter
    } else {
        Disable-VisioPageAutoEnlarge -Page $visioPage @passThruParameter
    }
    } catch {
        throw
    }
}
}
DiagramStyle = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter(Position=0, Mandatory=$true)]

[ValidateScript({@( 'Default', 'Radial', 'Flowchart', 'Circular', 'CompactTree', 'Hierarchy') -contains
($_ -replace ' ' )})]
            [System.String]
            $Style,

            [Parameter(Position=1)]

[ValidateScript({@( 'DownThenRight', 'RightThenDown', 'RightThenUp', 'UpThenRight', 'UpThenLeft', 'LeftTh
enUp', 'LeftThenDown', 'DownThenLeft', 'TopToBottom', 'BottomToTop', 'LeftToRight', 'RightToLeft') -
contains ($_ -replace ' ' )})]
            [System.String]
            $Direction,

            [Parameter(Position=2)]
            [ValidateSet('Left', 'Center', 'Right', 'Top', 'Middle', 'Bottom')]
            [System.String]
            $Alignment,

            [Parameter(Position=3)]
            [ValidateSet('Default', 'Shallow', 'Medium', 'Deep')]
            [System.String]
            $PlacementDepth,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $setVisioDiagramPageStyleParameters = $PSCmdlet.MyInvocation.BoundParameters
            Set-VisioPageDiagramStyle -Page $visioPage @setVisioDiagramPageStyleParameters
        } catch {
            throw
        }
    }
}
ConnectorStyle = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter(Position=0)]

[ValidateScript({@( 'Default', 'RightAngle', 'Straight', 'CenterToCenter', 'Network', 'Flowchart', 'Tree',
'OrganizationChart', 'Simple', 'SimpleHorizontalVertical', 'SimpleVerticalHorizontal') -contains ($_ -
replace ' ' )})]

```

```

[System.String]
$Style,

[Parameter(Position=1)]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^(\\d+(\\.\\d+)?) ?([a-z]+)?$')]
[System.String]
$Spacing,

[Parameter(Position=2)]
[ValidateSet('Default','Straight','Curved')]
[System.String]
$Curvature,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
try {
    $setVisioPageConnectorStyleParameters = $PSCmdlet.MyInvocation.BoundParameters
    Set-VisioPageConnectorStyle -Page $visioPage
@setVisioPageConnectorStyleParameters
} catch {
    throw
}
}
}
Theme = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter(Position=0)]
            [System.String]
            $Colors,

            [Parameter(Position=1)]
            [System.String]
            $Effects,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $setVisioPageThemeParameters = $PSCmdlet.MyInvocation.BoundParameters
            Set-VisioPageTheme -Page $visioPage @setVisioPageThemeParameters
        } catch {
            throw
        }
    }
}
Background = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter(Position=0)]
            [System.String]
            $Background,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $setVisioPageBackgroundParameters = $PSCmdlet.MyInvocation.BoundParameters
            Set-VisioPageBackground -Page $visioPage @setVisioPageBackgroundParameters

```

```

    } catch {
        throw
    }
}
}
Layout = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $ArrangeShapes,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $CenterDrawing,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $ShrinkToFit,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $formatVisioPageLayoutParameters = $PSCmdlet.MyInvocation.BoundParameters
            Format-VisioPageLayout -Page $visioPage @formatVisioPageLayoutParameters
        } catch {
            throw
        }
    }
}
Shape = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding(DefaultParameterSetName='NewShape')]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
ParameterSetName='ShapeObject')]
            [ValidateNotNullOrEmpty()]
            [Alias('InputObject')]
            [Microsoft.Office.Interop.Visio.IVShape[]]
            $Shape,

            [Parameter(Position=0, Mandatory=$true, ParameterSetName='NewShape')]
            [ValidateNotNullOrEmpty()]
            [System.String[]]
            $ShapeId,

            [Parameter(Mandatory=$true, ParameterSetName='ByName')]
            [System.Management.Automation.SwitchParameter]
            $ByName,

            [Parameter(Mandatory=$true, ParameterSetName='ByLabel')]
            [System.Management.Automation.SwitchParameter]
            $ByLabel,

            [Parameter(Position=0, Mandatory=$true, ParameterSetName='ByName')]
            [Parameter(ParameterSetName='NewShape')]
            [ValidateNotNullOrEmpty()]
            [System.String[]]
            $Name,

            [Parameter(Position=0, Mandatory=$true, ParameterSetName='ByLabel')]
            [Parameter(ParameterSetName='NewShape')]
            [ValidateNotNullOrEmpty()]

```

```

[Alias('Text')]
[System.String]
$Label,

[Parameter(Position=1, ParameterSetName='ShapeObject')]
[Parameter(Position=1, ParameterSetName='NewShape')]
[Parameter(Position=1, ParameterSetName='ByName')]
[Parameter(Position=1, ParameterSetName='ByLabel')]
[ValidateNotNullOrEmpty()]
[System.Management.Automation.ScriptBlock]
$ScriptBlock,

[Parameter(ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^(\d+(\.\d+)?) ?([a-z]+)?$')]
[System.String]
$X,

[Parameter(ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^(\d+(\.\d+)?) ?([a-z]+)?$')]
[System.String]
$Y,

[Parameter(ParameterSetName='NewShape')]
[System.Management.Automation.SwitchParameter]
$SmartLayout
)
begin {
    try {
        #region Initialize local variables.
        [System.String]$private:parameterName = $null
        #endregion

        #region Convert the parameters to private scope.
        foreach ($private:parameterName in
@('Shape', 'ShapeId', 'ByName', 'ByLabel', 'Name', 'Label', 'ScriptBlock', 'X', 'Y', 'SmartLayout')) {
            if
($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:parameterName)) {
                Set-Variable -Name $private:parameterName -Scope Local -Option Private
            }
        }
        #endregion
    } catch {
        throw
    }
}
process {
    try {
        $private:selectVisioShapeParameters = $PSCmdlet.MyInvocation.BoundParameters
        if ($PSCmdlet.ParameterSetName -eq 'ShapeObject') {
            Select-VisioShape @private:selectVisioShapeParameters
        } else {
            Select-VisioShape -Page $visioPage @private:selectVisioShapeParameters
        }
    } catch {
        throw
    }
}
}
}
}
}
#endregion
#region Define nested modules in the DSV.
Module = @{
    #region Define the Visio Shape DSV.
    Shape = @{
        #region Define functions in the Visio Shape DSV.
        Function = @{
            #Shape = $script:visioCommandVocabulary.Page.Function.Shape

```



```

Name = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0, Mandatory=$true)]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $NewName,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $renameVisioShapeParameters = $PSCmdlet.MyInvocation.BoundParameters
            Rename-VisioShape -Shape $visioShape @renameVisioPageParameters
        } catch {
            throw
        }
    }
}

Label = @{
    Scope='Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0, Mandatory=$true)]
            [ValidateNotNullOrEmpty()]
            [Alias('Text')]
            [System.String]
            $Label,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $setVisioShapeLabelParameters = $PSCmdlet.MyInvocation.BoundParameters
            Set-VisioShapeLabel -Shape $visioShape @setVisioShapeLabelParameters
        } catch {
            throw
        }
    }
}

WebHyperlink = @{
    Scope='Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0, Mandatory=$true)]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $Url,

            [Parameter(Position=1)]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $Description,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $Default,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
    }
}

```

```

    )
    try {
        $addVisioShapeWebHyperlinkParameters =
$PSCmdlet.MyInvocation.BoundParameters
        Add-VisioShapeWebHyperlink -Shape $visioShape
@addVisioShapeWebHyperlinkParameters
    } catch {
        throw
    }
}
}
FileHyperlink = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding(DefaultParameterSetName='Page')]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0, Mandatory=$true, ParameterSetName='ExternalFile')]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $FileName,

            [Parameter(ParameterSetName='Shape')]
            [Parameter(Position=0, Mandatory=$true, ParameterSetName='Page')]
            [Parameter(Position=1, Mandatory=$true, ParameterSetName='ExternalFile')]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $PageName,

            [Parameter(Position=0, Mandatory=$true, ParameterSetName='Shape')]
            [Parameter(Position=2, Mandatory=$true, ParameterSetName='ExternalFile')]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $ShapeName,

            [Parameter()]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $Zoom,

            [Parameter()]
            [ValidateNotNullOrEmpty()]
            [System.String]
            $Description,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $Default,

            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
    }
    try {
        $addVisioShapeFileHyperlinkParameters =
$PSCmdlet.MyInvocation.BoundParameters
        Add-VisioShapeFileHyperlink -Shape $visioShape
@addVisioShapeFileHyperlinkParameters
    } catch {
        throw
    }
}
}
Move = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0)]

```

```

[ValidateNotNullOrEmpty()]
[ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
[System.String]
$X,

[Parameter(Position=1)]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
[System.String]
$Y,

[Parameter(Position=2)]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
[System.String]
$DeltaX,

[Parameter(Position=3)]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
[System.String]
$DeltaY,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
try {
    $moveVisioShapeParameters = $PSCmdlet.MyInvocation.BoundParameters
    Move-VisioShape -Shape $visioShape @moveVisioShapeParameters
} catch {
    throw
}
}
}
MoveToFront = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $moveVisioShapeToFrontParameters = $PSCmdlet.MyInvocation.BoundParameters
            Move-VisioShapeToFront -Shape $visioShape @moveVisioShapeToFrontParameters
        } catch {
            throw
        }
    }
}
MoveToBack = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $moveVisioShapeToBackParameters = $PSCmdlet.MyInvocation.BoundParameters
            Move-VisioShapeToBack -Shape $visioShape @moveVisioShapeToBackParameters
        } catch {
            throw
        }
    }
}
}

```

```

}
MoveForward = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $moveVisioShapeForwardParameters = $PSCmdlet.MyInvocation.BoundParameters
            Move-VisioShapeForward -Shape $visioShape @moveVisioShapeForwardParameters
        } catch {
            throw
        }
    }
}
MoveBackward = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding()]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter()]
            [System.Management.Automation.SwitchParameter]
            $PassThru
        )
        try {
            $moveVisioShapeBackwardParameters = $PSCmdlet.MyInvocation.BoundParameters
            Move-VisioShapeBackward -Shape $visioShape
@moveVisioShapeBackwardParameters
        } catch {
            throw
        }
    }
}
Connect = @{
    Scope = 'Script'
    Value = {
        [CmdletBinding(DefaultParameterSetName='Default')]
        [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
        param(
            [Parameter(Position=0, Mandatory=$true)]
            [ValidateNotNullOrEmpty()]
            [Microsoft.Office.Interop.Visio.IVShape]
            $ToShape,

            [Parameter(Mandatory=$true, ParameterSetName='Top')]
            [System.Management.Automation.SwitchParameter]
            $Top,

            [Parameter(Mandatory=$true, ParameterSetName='Bottom')]
            [System.Management.Automation.SwitchParameter]
            $Bottom,

            [Parameter(Mandatory=$true, ParameterSetName='Left')]
            [System.Management.Automation.SwitchParameter]
            $Left,

            [Parameter(Mandatory=$true, ParameterSetName='Right')]
            [System.Management.Automation.SwitchParameter]
            $Right,

            [Parameter()]
            [ValidateNotNullOrEmpty()]
            [Microsoft.Office.Interop.Visio.IVShape]
            $Connector,

```



```

#region Create aliases for DSV commands that can be used as defined.
if ($private:DsvDefinition.ContainsKey('Alias')) {
    foreach ($private:aliasName in $private:DsvDefinition.Alias.Keys) {
        $private:newAliasParameters = $private:DsvDefinition.Alias[$private:aliasName]
        New-Alias -Name $private:aliasName @private:newAliasParameters -Force
    }
}
#endregion

#region Create functions for DSV commands that require additional logic.
if ($private:DsvDefinition.ContainsKey('Function')) {
    foreach ($private:functionName in $private:DsvDefinition.Function.Keys) {
        $private:scope = $private:DsvDefinition.Function[$private:functionName].Scope
        $private:scriptBlock = $private:DsvDefinition.Function[$private:functionName].Value
        New-Item -Path Function: -Name "${private:scope}:${private:functionName}" -Value
$private:scriptBlock -Force
    }
}
#endregion

#region Create nested DSV modules.
if ($private:DsvDefinition.ContainsKey('Module')) {
    foreach ($private:moduleName in $private:DsvDefinition.Module.Keys) {
        Initialize-Dsv -Dsv $private:DsvDefinition.Module
    }
}
#endregion
} | Import-Module -PassThru
}

Initialize-Dsv -Dsv $script:visioCommandVocabulary

Remove-Item -LiteralPath Function:\Initialize-Dsv

#New-Module -Name VisioApplicationDSV -ArgumentList $script:visioCommandVocabulary.Application -
ScriptBlock $defineDsvScriptBlock | Import-Module
#& (Get-Module -Name VisioApplicationDSV) {New-Module -Name VisioDocumentDSV -ArgumentList
$script:visioCommandVocabulary.Document -ScriptBlock $defineDsvScriptBlock | Import-Module}
#& (Get-Module -Name VisioApplicationDSV) {& (Get-Module -Name VisioDocumentDSV) {New-Module -Name
VisioPageDSV -ArgumentList $script:visioCommandVocabulary.Page -ScriptBlock $defineDsvScriptBlock |
Import-Module}}
#& (Get-Module -Name VisioApplicationDSV) {& (Get-Module -Name VisioDocumentDSV) {& (Get-Module -
Name VisioPageDSV) {New-Module -Name VisioShapeDSV -ArgumentList
$script:visioCommandVocabulary.Shape -ScriptBlock $defineDsvScriptBlock | Import-Module}}}

#endregion

#region Initialize helper variables.

$script:VisioTemplateCache = @{}

#endregion

#region VisioTemplateCache helper functions.

function Update-VisioTemplateCache {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument[]]
        $Document,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
}

```

```

process {
    try {
        foreach ($item in $Document) {
            Write-Progress -Activity 'Updating template cache' -Status "Checking for templates in
""$($item.Name)"" that are not cached."
            if ($script:VisioTemplateCache.Keys -notcontains $item.Application.ProcessId) {
                $script:VisioTemplateCache[$item.Application.ProcessId] = @{
                    Stencils = [String[]]@()
                    Templates = New-Object -TypeName 'System.Collections.Generic.Dictionary[System.String,
Microsoft.Office.Interop.Visio.IVMaster]' -ArgumentList
@([System.StringComparer]::CurrentCultureIgnoreCase)
                }
            }
            if ($visioDocumentWindow = Get-VisioDocumentWindow -Document $item) {
                [String[]]$dockedStencils = @()
                $visioDocumentWindow.DockedStencils([REF]$dockedStencils)
                if ($dockedStencils) {
                    foreach ($stencilName in $dockedStencils) {
                        if ($script:VisioTemplateCache[$item.Application.ProcessId].Stencils -contains
$stencilName) {
                            continue
                        }
                        $script:VisioTemplateCache[$item.Application.ProcessId].Stencils += $stencilName
                        foreach ($visioTemplate in $item.Application.Documents.Item($stencilName).Masters) {
                            Write-Progress -Activity 'Updating template cache' -Status "Adding template
'$($visioTemplate.Name)' ($($visioTemplate.NameU)) to the cache."
                            $visioTemplate =
[System.Runtime.InteropServices.Marshal]::CreateWrapperOfType($visioTemplate,
[Microsoft.Office.Interop.Visio.MasterClass])
                        }
                    }
                }
                $script:VisioTemplateCache[$item.Application.ProcessId].Templates[$visioTemplate.Name] =
[Microsoft.Office.Interop.Visio.IVMaster]$visioTemplate
                $script:VisioTemplateCache[$item.Application.ProcessId].Templates[$visioTemplate.NameU] =
[Microsoft.Office.Interop.Visio.IVMaster]$visioTemplate
            }
        }
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
            $item
        }
    } catch {
        throw
    }
}

```

#endregion

#region Visio functions.

```

function Start-Visio {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVApplication])]
    param(
        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Invisible
    )
    try {
        if ((-not $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Invisible')) -or (-not
$Invisible)) {
            Write-Progress -Activity 'Starting Visio' -Status 'Opening new instance of Visio
application.'
            New-Object -ComObject 'Visio.Application'
        } else {
            Write-Progress -Activity 'Starting Visio' -Status 'Opening new instance of Visio
application.'
        }
    }
}

```

```

        New-Object -ComObject 'Visio.InvisibleApp'
    }
} catch {
    throw
}
}
Export-ModuleMember -Function Start-Visio

function Stop-Visio {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Force
    )
    process {
        try {
            #region Initialize local variables.
            [Microsoft.Office.Interop.Visio.IVDocument]$visioDocument = $null
            [bool]$dirtyBit = $false
            #endregion

            foreach ($item in $Application) {
                #region Close any open documents (by Force, if specified).
                foreach ($visioDocument in $item.Documents) {
                    if ((-not $visioDocument.Saved) -and (-not $Force)) {
                        $dirtyBit = $true
                    } else {
                        $visioDocument.Saved = $true
                        $visioDocument.Close()
                    }
                }
            }
            #endregion

            #region Return an error if any documents were unsaved and Force was not used.
            if ($dirtyBit) {
                Write-Error 'Cannot close Visio because one or more documents it contains have not been saved. If you want to close it anyway, use the -Force to close it.'
                return
            }
            #endregion

            #region Close the Visio application.
            $item.Quit()
            #endregion
        } catch {
            throw
        }
    }
}
Export-ModuleMember -Function Stop-Visio

function Show-Visio {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVApplication])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application,

```

```

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
process {
    try {
        foreach ($visioApplication in $Application) {
            #region Show the Visio application.
            $visioApplication.Visible = $true
            #endregion

            #region Return the Visio application object if requested.
            if ($PassThru) {
                $visioApplication
            }
            #endregion
        }
    } catch {
        throw
    }
}
}
Export-ModuleMember -Function Show-Visio

function Hide-Visio {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVApplication])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioApplication in $Application) {
                #region Show the Visio application.
                $visioApplication.Visible = $false
                #endregion

                #region Return the Visio application object if requested.
                if ($PassThru) {
                    $visioApplication
                }
                #endregion
            }
        } catch {
            throw
        }
    }
}
Export-ModuleMember -Function Hide-Visio

function Use-Visio {
    [CmdletBinding(DefaultParameterSetName='Default')]
    [OutputType([Microsoft.Office.Interop.Visio.IVApplication])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
        ParameterSetName='Application')]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application,

        [Parameter(Position=0, ParameterSetName='Default')]

```

```

[Parameter(Position=1, Mandatory=$true, ParameterSetName='Application')]
[ValidateNotNullOrEmpty()]
[System.Management.Automation.ScriptBlock]
$ScriptBlock,

[Parameter(ParameterSetName='Default')]
[System.Management.Automation.SwitchParameter]
$Invisible,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$AutoExit,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$Force,

[Parameter(ParameterSetName='Application')]
[System.Management.Automation.SwitchParameter]
$PassThru
)
begin {
    try {
        #region Initialize local variables.
        [Microsoft.Office.Interop.Visio.IVApplication]$visioApplication = $null
        [System.String]$private:parameterName = $null
        #endregion

        #region Convert the parameters to private scope.
        foreach ($private:parameterName in
@('ScriptBlock', 'Application', 'Invisible', 'AutoExit', 'Force', 'PassThru')) {
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:parameterName)) {
                Set-Variable -Name $private:parameterName -Scope Local -Option Private
            }
        }
        #endregion
    } catch {
        throw
    }
}
process {
    try {
        switch ($PSCmdlet.ParameterSetName) {
            'Default' {
                #region If no Visio applications were passed in from the pipeline, create one and pass it
                in.
                $private:startVisioParameters = @{}
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Invisible') -and $Invisible) {
                    $private:startVisioParameters['Invisible'] = $Invisible
                }
                $private:useVisioParameters = @{}
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ScriptBlock')) {
                    $private:useVisioParameters['ScriptBlock'] = $ScriptBlock
                }
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('AutoExit') -and $AutoExit) {
                    $private:useVisioParameters['AutoExit'] = $AutoExit
                }
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Force') -and $Force) {
                    $private:useVisioParameters['Force'] = $Force
                }
            }
            if ($private:useVisioParameters.Count) {
                Start-Visio @private:startVisioParameters | Use-Visio @private:useVisioParameters -
                PassThru
            } else {
                Start-Visio @private:startVisioParameters
            }
        }
        #endregion
        break
    }
}
'Application' {

```



```

        #region If we have a Visio application, invoke our DSV script and process optional
parameters.
        foreach ($visioApplication in $Application) {
            #region Invoke the ScriptBlock.
            & (Get-Module -Name VisioApplicationDSV) $ScriptBlock | Out-Null
            #endregion

            #region If the -AutoExit switch was used, close Visio and return.
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('AutoExit') -and $AutoExit) {
                Write-Progress -Activity 'Shutting down Visio' -Status 'Closing the Visio
application.'
                $private:stopVisioParameters = @{
                    Application = $visioApplication
                }
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Force') -and $Force) {
                    $private:stopVisioParameters['Force'] = $true
                }
                Stop-Visio @private:stopVisioParameters
                continue
            }
            #endregion

            #region Return the Visio application object to the client if requested.
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
                $visioApplication
            }
            #endregion
        }
        #endregion
        break
    }
}
} catch {
    throw
}
}
}

Export-ModuleMember -Function Use-Visio

New-Alias -Name Visio -Value Use-Visio -Description 'Starts Visio and allows you to interact with
Visio documents using a PowerShell-driven domain-specific vocabulary (DSV).' -ErrorAction
SilentlyContinue
if ($?) {
    Export-ModuleMember -Alias Visio
}

#endregion

#region VisioShapesPath functions.

function Get-VisioShapesPath {
    [CmdletBinding()]
    [OutputType([System.String])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application
    )
    process {
        try {
            foreach ($visioApplication in $Application) {
                $myShapesPath = $null
                if ($visioApplication | Get-Member -Name MyShapesPath -ErrorAction SilentlyContinue) {
                    $myShapesPath = $visioApplication.MyShapesPath
                }
                if ((-not $myShapesPath) -and
([System.Reflection.Assembly]::GetAssembly('Microsoft.Office.Interop.Visio.IVDocument')).FullName -

```

```

eq 'Microsoft.Office.Interop.Visio, Version=11.0.0.0, Culture=neutral,
PublicKeyToken=71e9bce11e9429c')) {
    $myShapesPath = (Get-ItemProperty -Path
'Registry::HKEY_CURRENT_USER\Software\Microsoft\Office\11.0\Visio\Application' -ErrorAction
SilentlyContinue).MyShapesPath
    }
    if ($myShapesPath) {
        $myShapesPath
    }
}
} catch {
    throw
}
}
}
}
Export-ModuleMember -Function Get-VisioShapesPath

#endregion

#region VisioDefault functions.

function Get-VisioDefaultConfiguration {
    [CmdletBinding()]
    [OutputType([System.Collections.Hashtable])]
    param()
    try {
        #region Create the Visio Default Configuration store if it does not exist.
        if (-not ($visioDefaultConfiguration = Get-Variable -Scope Script -Name
VisioDefaultConfiguration -ErrorAction SilentlyContinue)) {
            $visioDefaultConfiguration = New-Variable -Scope Script -Name VisioDefaultConfiguration -
Option Private -Value @{} -PassThru
            $visioDefaultConfiguration.Value['SmartLayout'] = $true
            $visioDefaultConfiguration.Value['Page' ] = @{}
            $visioDefaultConfiguration.Value.Page['Background' ] = $null
            $visioDefaultConfiguration.Value.Page['Colors' ] = 'None'
            $visioDefaultConfiguration.Value.Page['Effects' ] = 'None'
            $visioDefaultConfiguration.Value.Page['AutoEnlarge' ] = $false
            $visioDefaultConfiguration.Value.Page['DiagramStyle' ] = 'Default'
            $visioDefaultConfiguration.Value.Page['DiagramDirection' ] = $null
            $visioDefaultConfiguration.Value.Page['DiagramAlignment' ] = $null
            $visioDefaultConfiguration.Value.Page['DiagramPlacementDepth' ] = 'Default'
            $visioDefaultConfiguration.Value.Page['ConnectorStyle' ] = 'Default'
            $visioDefaultConfiguration.Value.Page['ConnectorSpacing' ] = '7.5mm'
            $visioDefaultConfiguration.Value.Page['ConnectorCurvature' ] = 'Default'
        }
        #endregion
        $visioDefaultConfiguration.Value
    } catch {
        throw
    }
}
Export-ModuleMember -Function Get-VisioDefaultConfiguration

function Set-VisioDefaultPageBackground {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param(
        [Parameter(Position=0)]
        [System.String]
        $Background
    )
    try {
        #region Lookup the current Visio default configuration.
        $visioDefaultConfiguration = Get-VisioDefaultConfiguration
        #endregion

        #region Set the default page background.
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Background') -and ($Background.Trim()))
        {
            $visioDefaultConfiguration.Page.Background = $Background.Trim()
        }
    }
}

```

```

    } else {
        $visioDefaultConfiguration.Page.Background = 'None'
    }
#endregion
} catch {
    throw
}
}
Export-ModuleMember -Function Set-VisioDefaultPageBackground

function Set-VisioDefaultPageTheme {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param(
        [Parameter(Position=0)]
        [System.String]
        $Colors,

        [Parameter(Position=1)]
        [System.String]
        $Effects
    )
    try {
        #region Lookup the current Visio default configuration.
        $visioDefaultConfiguration = Get-VisioDefaultConfiguration
        #endregion

        #region Set the default page theme.
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Colors') -and ($newColors =
$Colors.Trim() -replace '[^a-z]')) {
            $visioDefaultConfiguration.Page.Colors = $newColors
        } else {
            $visioDefaultConfiguration.Page.Colors = 'None'
        }
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Effects') -and ($newEffects =
$Effects.Trim() -replace '[^a-z]')) {
            $visioDefaultConfiguration.Page.Effects = $newEffects
        } else {
            $visioDefaultConfiguration.Page.Effects = 'None'
        }
        #endregion
    } catch {
        throw
    }
}
Export-ModuleMember -Function Set-VisioDefaultPageTheme

function Enable-VisioDefaultPageAutoEnlarge {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param()
    try {
        #region Lookup the current Visio default configuration.
        $visioDefaultConfiguration = Get-VisioDefaultConfiguration
        #endregion

        #region Set the default page auto enlarge flag.
        $visioDefaultConfiguration.Page.AutoEnlarge = $true
        #endregion
    } catch {
        throw
    }
}
Export-ModuleMember -Function Enable-VisioDefaultPageAutoEnlarge

function Disable-VisioDefaultPageAutoEnlarge {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param()
    try {

```

```

#region Lookup the current Visio default configuration.
$visioDefaultConfiguration = Get-VisioDefaultConfiguration
#endregion

#region Set the default page auto enlarge flag.
$visioDefaultConfiguration.Page.AutoEnlarge = $false
#endregion
} catch {
    throw
}
}
Export-ModuleMember -Function Disable-VisioDefaultPageAutoEnlarge

function Set-VisioDefaultPageDiagramStyle {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param(
        [Parameter(Position=0, Mandatory=$true)]
        [ValidateScript({@('Default','Radial','Flowchart','Circular','CompactTree','Hierarchy') -
contains ($_ -replace ' ')})]
        [System.String]
        $Style,

        [Parameter(Position=1)]
        [ValidateScript({@('DownThenRight','RightThenDown','RightThenUp','UpThenRight','UpThenLeft','LeftTh
enUp','LeftThenDown','DownThenLeft','TopToBottom','BottomToTop','LeftToRight','RightToLeft') -
contains ($_ -replace ' ')})]
        [System.String]
        $Direction,

        [Parameter(Position=2)]
        [ValidateSet('Left','Center','Right','Top','Middle','Bottom')]
        [System.String]
        $Alignment,

        [Parameter(Position=3)]
        [ValidateSet('Default','Shallow','Medium','Deep')]
        [System.String]
        $PlacementDepth
    )
    try {
        #region Initialize local variables.
        [System.String[]]$validDirections = @()
        [System.String[]]$validAlignments = @()
        [System.String]$internalStyle = $null
        [System.String]$internalDirection = $null
        [System.String]$internalAlignment = $null
        #endregion

        #region Lookup the current Visio default configuration.
        $visioDefaultConfiguration = Get-VisioDefaultConfiguration
        #endregion

        #region Pre-process the parameters.
        $internalStyle = $Style -replace ' '
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Direction') -and $Direction) {
            $internalDirection = $Direction -replace ' '
        }
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Alignment') -and $Alignment) {
            $internalAlignment = $Alignment
        }
        if ((@('Default','Radial','Circular') -contains $internalStyle) -and ($internalDirection -or
$internalAlignment)) {
            Write-Warning "'Direction' and 'Alignment' are not applicable to '$Style' diagrams. These
parameters will be ignored."
            $internalDirection = $null
            $internalAlignment = $null
        } elseif (@('Flowchart','CompactTree') -contains $internalStyle) {
            if ($internalAlignment) {

```

```

    Write-Warning "'Alignment' is not applicable to '$Style' diagrams. This parameter will be
ignored."
    $internalAlignment = $null
}
if (-not $internalDirection) {
    switch -exact ($internalStyle) {
        'Flowchart'    {$internalDirection = 'TopToBottom'; break}
        'CompactTree' {$internalDirection = 'DownThenRight'; break}
    }
}
elseif ($internalStyle -eq 'Hierarchy') {
    if (-not $internalDirection) {$internalDirection = 'TopToBottom'}
    if (-not $internalAlignment) {$internalAlignment = 'Center'}
}
if ($internalDirection) {
    if ($internalStyle -eq 'CompactTree') {
        $validDirections =
@('DownThenRight', 'RightThenDown', 'RightThenUp', 'UpThenRight', 'UpThenLeft', 'LeftThenUp', 'LeftThenDo
wn', 'DownThenLeft')
    } else {
        $validDirections = @('TopToBottom', 'BottomToTop', 'LeftToRight', 'RightToLeft')
    }
    if ($validDirections -notcontains $internalDirection) {
        Write-Error "Cannot bind value 'Direction' to the target. The value was invalid. Valid
values for 'Direction' include '$([string]::Join("'", "'", $validDirections))'."
        return
    }
}
if ($internalAlignment) {
    if (@('TopToBottom', 'BottomToTop') -match $internalDirection) {
        $validAlignments = @('Left', 'Center', 'Right')
    } else {
        $validAlignments = @('Top', 'Middle', 'Bottom')
    }
    if ($validAlignments -notcontains $internalAlignment) {
        Write-Error "Cannot bind value 'Alignment' to the target. The value was invalid. Valid
values for 'Alignment' in the '$internalDirection' direction include '$([string]::Join("'", "'",
$validAlignments))'."
        return
    }
}
}
#endregion

#region Set the default page diagram style.
$visioDefaultConfiguration.Page.DiagramStyle = $internalStyle
$visioDefaultConfiguration.Page.DiagramDirection = $internalDirection
$visioDefaultConfiguration.Page.DiagramAlignment = $internalAlignment
$visioDefaultConfiguration.Page.DiagramPlacementDepth = $PlacementDepth
#endregion
} catch {
    throw
}
}
Export-ModuleMember -Function Set-VisioDefaultPageDiagramStyle

function Set-VisioDefaultPageConnectorStyle {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param(
        [Parameter(Position=0)]

[ValidateScript({@('Default', 'RightAngle', 'Straight', 'CenterToCenter', 'Network', 'Flowchart', 'Tree',
'OrganizationChart', 'Simple', 'SimpleHorizontalVertical', 'SimpleVerticalHorizontal') -contains ($_ -
replace ' ' ')})])
        [System.String]
        $Style,

        [Parameter(Position=1)]
        [ValidateNotNullOrEmpty()]
        [ValidatePattern('^\d+(\.\d+)? ?([a-z]+)?$')]

```

```

[System.String]
$Spacing,

[Parameter(Position=2)]
[ValidateSet('Default','Straight','Curved')]
[System.String]
$Curvature
)
try {
#region Lookup the current Visio default configuration.
$visioDefaultConfiguration = Get-VisioDefaultConfiguration
#endregion

#region Set the default page diagram style.
$visioDefaultConfiguration.Page.ConnectorStyle = $Style -replace ' '
$visioDefaultConfiguration.Page.ConnectorSpacing = $Spacing
$visioDefaultConfiguration.Page.ConnectorCurvature = $Curvature
#endregion
} catch {
throw
}
}
Export-ModuleMember -Function Set-VisioDefaultPageConnectorStyle

function Enable-VisioSmartLayout {
[CmdletBinding()]
[OutputType([System.Void])]
param()
try {
#region Lookup the current Visio default configuration.
$visioDefaultConfiguration = Get-VisioDefaultConfiguration
#endregion

#region Set the default smart layout flag.
$visioDefaultConfiguration.SmartLayout = $true
#endregion
} catch {
throw
}
}
Export-ModuleMember -Function Enable-VisioSmartLayout

function Disable-VisioSmartLayout {
[CmdletBinding()]
[OutputType([System.Void])]
param()
try {
#region Lookup the current Visio default configuration.
$visioDefaultConfiguration = Get-VisioDefaultConfiguration
#endregion

#region Set the default smart layout flag.
$visioDefaultConfiguration.SmartLayout = $false
#endregion
} catch {
throw
}
}
Export-ModuleMember -Function Disable-VisioSmartLayout

#endregion

#region VisioDocument functions

function Get-VisioDocument {
[CmdletBinding()]
[OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
param(
[Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
[ValidateNotNullOrEmpty()]

```

```

[Alias('InputObject')]
[Microsoft.Office.Interop.Visio.IVApplication[]]
$Application,

[Parameter(Position=0)]
[ValidateNotNullOrEmpty()]
[System.String[]]
$DocumentId
)
process {
    try {
        foreach ($visioApplication in $Application) {
            #region Get the requested documents.
            if ($visioApplication.Documents) {
                foreach ($visioDocument in $visioApplication.Documents) {
                    if ($visioDocument.Type -eq
[Microsoft.Office.Interop.Visio.VisDocumentTypes]::visTypeDrawing) {
                        if ((-not $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('DocumentId')) -or
                            ($DocumentId -contains $visioDocument.Name) -or
                            ($DocumentId -contains ($visioDocument.Name -replace '\.vsd$')) -or
                            ($DocumentId -contains $visioDocument.FullName) -or
                            ($DocumentId -contains ($visioDocument.FullName -replace
"^$([System.Text.RegularExpressions.Regex]::Escape([System.Environment]::GetFolderPath('MyDocuments
')))\\"))) {
                                $visioDocument
                            }
                        }
                    }
                }
            }
            #endregion
        }
    } catch {
        throw
    }
}
}

Export-ModuleMember -Function Get-VisioDocument

function New-VisioDocument {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application,

        [Parameter(Position=1)]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $TemplateId
    )
    process {
        try {
            foreach ($visioApplication in $Application) {
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('TemplateId')) {
                    #region Add a new document that uses a specific template.
                    if ($TemplateId -notmatch '\.vst$') {
                        $visioDocument = $visioApplication.Documents.Add("$TemplateId.vst")
                    } else {
                        $visioDocument = $visioApplication.Documents.Add($TemplateId)
                    }
                }
                #endregion
            }
            else {
                #region Add a new blank document.
                $visioDocument = $visioApplication.Documents.Add('Basic Diagram.vst')
            }
            #endregion
        }
        #region Process the new document and return it to the caller.
    }
}

```



```

}
}
Export-ModuleMember -Function Open-VisioDocument

function Save-VisioDocument {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument]
        $Document,

        [Parameter(Position=1, Mandatory=$true, ValueFromPipelineByPropertyName=$true)]
        [ValidateNotNullOrEmpty()]
        [ValidateScript({Test-Path -LiteralPath $_ -IsValid})]
        [Alias('FullName')]
        [Alias('As')]
        [System.String]
        $Path,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Force,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            #region Qualify the Path parameter as required.
            if ($Path -notmatch '^(\\.\\.?.?\\|\\|\\\\\\|\\|\\|\\|\\|\\|\\|[a-z]:)') {
                $Path = Join-Path -Path [System.Environment]::GetFolderPath('MyDocuments') -ChildPath $Path
                if ($Path -notmatch '\\.vs[std]$') {
                    $Path += '.vsd'
                }
            }
            #endregion

            #region Save the Visio document and return it if requested.
            $fileExists = Test-Path -LiteralPath $Path -ErrorAction SilentlyContinue
            if (($Path -eq $Document.FullName) -and $fileExists) {
                Write-Progress -Activity 'Saving Visio document' -Status "Saving the
                ""$($Document.FullName)"" Visio document."
                $Document.Save() | Out-Null
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
                    $Document
                }
            } else {
                Write-Progress -Activity 'Saving Visio document' -Status "Saving the
                ""$($Document.FullName)"" Visio document as ""$Path""."
                if ($fileExists -and -not $Force) {
                    Write-Error "The file name ""$Path"" already exists. To overwrite the file, you must use
                    the -Force. The document ""$($Document.Name)"" has not been saved."
                } else {
                    if ($fileExists) {
                        Remove-Item -LiteralPath $Path -Force
                    }
                    $Document.SaveAs($Path) | Out-Null
                    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
                        $Document
                    }
                }
            }
            #endregion
        } catch {
            throw
        }
    }
}

```

```

    }
}
Export-ModuleMember -Function Save-VisioDocument

function Close-VisioDocument {
    [CmdletBinding()]
    [OutputType([System.Void])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument[]]
        $Document,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Force
    )
    process {
        try {
            foreach ($visioDocument in $Document) {
                #region Close the Visio document.
                Write-Progress -Activity 'Closing Visio document' -Status "Closing the
'$($visioDocument.FullName)' Visio document."
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Force') -and $Force) {
                    $visioDocument.Saved = $true
                }
                $visioDocument.Close()
                #endregion
            }
        } catch {
            throw
        }
    }
}

```

```
Export-ModuleMember -Function Close-VisioDocument
```

```
# Syntax:
```

```
# Select-VisioDocument [-Application] <Microsoft.Office.Interop.Visio.IVApplication> [[-ScriptBlock] <ScriptBlock>]
# Select-VisioDocument [-Document] <Microsoft.Office.Interop.Visio.IVDocument> [[-ScriptBlock] <ScriptBlock>]
# Select-VisioDocument [-Application] <Microsoft.Office.Interop.Visio.IVApplication> [-DocumentId[]] <string> [[-ScriptBlock] <ScriptBlock>]
```

```
function Select-VisioDocument {
    [CmdletBinding(DefaultParameterSetName='UnnamedDocument')]
    [OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='DocumentObject')]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument[]]
        $Document,

        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='UnnamedDocument')]
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='NamedDocument')]
        [ValidateNotNullOrEmpty()]
        [Microsoft.Office.Interop.Visio.IVApplication[]]
        $Application,

        [Parameter(Position=1, Mandatory=$true, ParameterSetName='NamedDocument')]
        [ValidateNotNullOrEmpty()]
        [Alias('Name')]
        [System.String[]]
        $DocumentId,

        [Parameter(Position=1, ParameterSetName='UnnamedDocument')]

```

```

[Parameter(Position=1, ParameterSetName='DocumentObject')]
[Parameter(Position=2, ParameterSetName='NamedDocument')]
[ValidateNotNullOrEmpty()]
[System.Management.Automation.ScriptBlock]
$ScriptBlock
)
begin {
    try {
        #region Initialize local variables.
        [System.String]$private:parameterName = $null
        #endregion

        #region Convert the parameters to private scope.
        foreach ($private:parameterName in @('Document','Application','DocumentId','ScriptBlock')) {
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:parameterName)) {
                Set-Variable -Name $private:parameterName -Scope Local -Option Private
            }
        }
        #endregion
    } catch {
        throw
    }
}
process {
    try {
        switch ($PSCmdlet.ParameterSetName) {
            'UnnamedDocument' {
                #region If a new document was requested, create one and pass it in.
                $private:newVisioDocumentParameters = @{
                    Application = $Application
                }
                $private:selectVisioDocumentParameters = @{}
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ScriptBlock')) {
                    $private:selectVisioDocumentParameters['ScriptBlock'] = $ScriptBlock
                }
                New-VisioDocument @private:newVisioDocumentParameters | Select-VisioDocument
            }
            'NamedDocument' {
                #region If a specific document was requested, open it if it's not open and pass it in.
                $private:openVisioDocumentParameters = @{
                    Application = $Application
                    DocumentId = $DocumentId
                }
                $private:selectVisioDocumentParameters = @{}
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ScriptBlock')) {
                    $private:selectVisioDocumentParameters['ScriptBlock'] = $ScriptBlock
                }
                Open-VisioDocument @private:openVisioDocumentParameters | Select-VisioDocument
            }
            'DocumentObject' {
                #region Process the document object.
                foreach ($visioDocument in $Document) {
                    #region Activate the Visio document window if necessary.
                    if ($visioDocument -ne $visioDocument.Application.ActiveDocument) {
                        $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioDocument
                        $visioDocumentWindow.Activate()
                    } else {
                        $visioDocumentWindow = $visioDocument.Application.ActiveWindow
                    }
                }
                #endregion

                #region Invoke the ScriptBlock.
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ScriptBlock')) {
                    & (Get-Module -Name VisioDocumentDSV) $ScriptBlock | Out-Null
                }
            }
        }
    }
}

```

```

    }
    #endregion

    #region Return the Visio document object to the client.
    $visioDocument
    #endregion
}
#endregion
break
}
}
} catch {
    throw
}
}
}
}
}
}
}
}

Export-ModuleMember -Function Select-VisioDocument

#endregion

#region VisioDocumentWindow functions

function Get-VisioDocumentWindow {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVWindow])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument[]]
        $Document
    )
    process {
        try {
            foreach ($visioDocument in $Document) {
                Write-Progress -Activity 'Searching for document window' -Status "Searching for the
document window associated with the Visio document called ""${$visioDocument.Name}""."
                $visioDocumentWindow = $null
                if ($Document -eq $visioDocument.Application.ActiveDocument) {
                    $visioDocumentWindow = $visioDocument.Application.ActiveWindow
                } else {
                    foreach ($window in $visioDocument.Application.Windows) {
                        if ($window.Document -eq $visioDocument) {
                            $visioDocumentWindow = $window
                            break
                        }
                    }
                }
                if ($visioDocumentWindow) {
                    $visioDocumentWindow
                } else {
                    Write-Error "A window associated with the Visio document called
""${$visioDocument.Name}"" could not be found."
                }
            }
        } catch {
            throw
        }
    }
}

Export-ModuleMember -Function Get-VisioDocumentWindow

#endregion

#region VisioStencil functions

function Select-VisioStencil {
    [CmdletBinding(DefaultParameterSetName='Id')]
    [OutputType([Microsoft.Office.Interop.Visio.IVDocument])]
    param(

```

```

[Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
[ValidateNotNullOrEmpty()]
[Alias('InputObject')]
[Microsoft.Office.Interop.Visio.IVDocument[]]
$Document,

[Parameter(Position=1, Mandatory=$true, ParameterSetName='Id')]
[ValidateNotNullOrEmpty()]
[System.String[]]
$StencilId,

[Parameter(Mandatory=$true, ParameterSetName='Default')]
[System.Management.Automation.SwitchParameter]
$Default,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
process {
    try {
        foreach ($visioDocument in $Document) {
            #region Activate the Visio document window if necessary.
            if ($visioDocument -ne $visioApplication.ActiveDocument) {
                $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioDocument
                $visioDocumentWindow.Activate()
            } else {
                $visioDocumentWindow = $visioApplication.ActiveWindow
            }
            #endregion

            #region Load the Visio stencil(s) into the Visio document.
            switch ($PSCmdlet.ParameterSetName) {
                'Id' {
                    foreach ($item in $StencilId) {
                        if ($item -notmatch '\\.vss$') {
                            $item += '.vss'
                        }
                        $myShapesPath = Get-VisioShapesPath -Application $visioDocument.Application
                        if (($item -notmatch '\\\\') -and (-not (Split-Path -Path $item -Qualifier -
ErrorAction SilentlyContinue)) -and $myShapesPath) {
                            $item = Join-Path -Path $myShapesPath -ChildPath $item
                        }
                        Write-Progress -Activity 'Loading Visio stencil' -Status "Loading the Visio stencil
'$($item)' into the Visio document."
                        $visioDocument.Application.Documents.OpenEx($item, 4) | Out-Null
                    }
                    break
                }
                default {
                    if (@('Microsoft.Office.Interop.Visio, Version=12.0.0.0, Culture=neutral,
PublicKeyToken=71e9bce111e9429c', 'Microsoft.Office.Interop.Visio, Version=11.0.0.0,
Culture=neutral, PublicKeyToken=71e9bce111e9429c') -notcontains
[System.Reflection.Assembly]::GetAssembly('Microsoft.Office.Interop.Visio.IVPage')) {
                        #region Load the background and borders and tiles stencils into the document.
                        foreach ($item in @('BCKGRN_M.VSS', 'BORDRS_M.VSS')) {
                            Write-Progress -Activity 'Loading Visio stencil' -Status "Loading the Visio stencil
'$($item)' into the Visio document."
                            $visioDocument.Application.Documents.OpenEx($item, 4) | Out-Null
                        }
                        #endregion
                    }
                    break
                }
            }
            #endregion

            #region Update the template cache when loading additional stencils.
            Update-VisioTemplateCache -Document $visioDocument
            #endregion
        }
    }
}

```

```

        #region Return the Visio document object if requested.
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
            $visioDocument
        }
        #endregion
    }
} catch {
    throw
}
}
}
}

Export-ModuleMember -Function Select-VisioStencil

#endregion

#region VisioPage functions

function Get-VisioPage {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument[]]
        $Document,

        [Parameter(Position=1, Mandatory=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('Name')]
        [System.String[]]
        $PageId,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Force
    )
    process {
        try {
            foreach ($visioDocument in $Document) {
                foreach ($item in $PageId) {
                    $found = $false
                    if ($item -match '^\d+$') {
                        if ($visioDocument.Pages.Count -ge $item) {
                            $found = $true
                            $visioPage = $visioDocument.Pages.ItemU([int]$item)
                            $visioPage =
[System.Runtime.InteropServices.Marshal]::CreateWrapperOfType($visioPage,
[Microsoft.Office.Interop.Visio.PageClass])
                            [Microsoft.Office.Interop.Visio.IVPage]$visioPage
                        }
                    } else {
                        foreach ($visioPage in $visioDocument.Pages) {
                            if (($visioPage.Name -like $item) -or ($visioPage.NameU -like $item)) {
                                $found = $true
                                $visioPage =
[System.Runtime.InteropServices.Marshal]::CreateWrapperOfType($visioPage,
[Microsoft.Office.Interop.Visio.PageClass])
                                [Microsoft.Office.Interop.Visio.IVPage]$visioPage
                            }
                        }
                    }
                }
            }
        }
        if (-not $found) {
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Force') -and $Force) {
                New-VisioPage -Document $visioDocument -PageId $item
            } else {
                Write-Error "Page $item not found."
            }
        }
    }
}

```

```

    }
    }
    } catch {
        throw
    }
}

Export-ModuleMember -Function Get-VisioPage

function New-VisioPage {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVDocument[]]
        $Document,

        [Parameter(Position=1)]
        [ValidateNotNullOrEmpty()]
        [Alias('Name')]
        [System.String[]]
        $PageId
    )
    process {
        try {
            foreach ($visioDocument in $Document) {
                if (-not $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PageId')) {
                    #region Return a new page.
                    Write-Progress -Activity 'Adding page to Visio document' -Status 'Adding page to the
Visio document.'
                    $visioDocument.Pages.Add() | Reset-VisioPageConfiguration -PassThru
                    #endregion
                } else {
                    foreach ($item in $PageId) {
                        if ($item -match '^\\d+$') {
                            #region Create as many new pages as necessary and return the one requested.
                            for ($index -eq 1; $index -le $item; $index++) {
                                $pageCount = $visioDocument.Pages.Count
                                foreach ($visioPage in $visioDocument.Pages) {
                                    if ($visioPage.Type -ne
[Microsoft.Office.Interop.Visio.VisPageTypes]::visTypeForeground) {
                                        $pageCount--
                                    }
                                }
                                if ($index -gt $pageCount) {
                                    Write-Progress -Activity 'Adding page to Visio document' -Status "Adding page
$index to the Visio document."
                                    $visioPage = $visioDocument.Pages.Add() | Reset-VisioPageConfiguration -PassThru
                                    if ($index -eq $item) {
                                        $visioPage
                                    }
                                }
                            }
                            #endregion
                        } else {
                            #region Create a new page and set its name to the one provided.
                            Write-Progress -Activity 'Adding page to Visio document' -Status 'Adding page to the
Visio document.'
                            $visioDocument.Pages.Add() | Reset-VisioPageConfiguration -PassThru | Rename-
VisioPage -NewName ($item -replace '^\\s+|\\s+$')
                            #endregion
                        }
                    }
                }
            }
        } catch {
            throw
        }
    }
}

```

```

    }
}
}
}
Export-ModuleMember -Function New-VisioPage

function Rename-VisioPage {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter(Position=1, Mandatory=$true, ValueFromPipelineByPropertyName=$true)]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $NewName,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioPage in $Page) {
                #region Activate the Visio document window if necessary.
                if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio page if necessary.
                if ($visioDocumentWindow.Page -ne $visioPage) {
                    $visioDocumentWindow.Page = $visioPage
                }
                #endregion

                #region Rename the Visio page.
                $visioPage.Name = $NewName -replace '(\s+|\\s+)'
                #endregion

                #region Return the Visio page object if requested.
                if ($PassThru) {
                    $visioPage
                }
                #endregion
            }
        } catch {
            throw
        }
    }
}
}
}

```

Export-ModuleMember -Function Rename-VisioPage

```

function Select-VisioPage {
    [CmdletBinding(DefaultParameterSetName='NamedPage')]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
        ParameterSetName='PageObject')]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

```



```

[Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='NamedPage')]
[ValidateNotNullOrEmpty()]
[Microsoft.Office.Interop.Visio.IVDocument[]]
$Document,

[Parameter(Position=1, Mandatory=$true, ParameterSetName='NamedPage')]
[ValidateNotNullOrEmpty()]
[Alias('Name')]
[System.String[]]
$pageId,

[Parameter(Position=1, ParameterSetName='PageObject')]
[Parameter(Position=2, ParameterSetName='NamedPage')]
[ValidateNotNullOrEmpty()]
[System.Management.Automation.ScriptBlock]
$ScriptBlock
)
begin {
    try {
        #region Initialize local variables.
        [System.String]$private:parameterName = $null
        #endregion

        #region Convert the parameters to private scope.
        foreach ($private:parameterName in @('Page','Document','PageId','ScriptBlock')) {
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:parameterName)) {
                Set-Variable -Name $private:parameterName -Scope Local -Option Private
            }
        }
        #endregion
    } catch {
        throw
    }
}
process {
    try {
        switch ($PSCmdlet.ParameterSetName) {
            'NamedPage' {
                #region If a specific page was requested, get it and pass it in.
                $private:getVisioPageParameters = @{
                    Document = $Document
                    PageId = $PageId
                    Force = $true
                }
                $private:selectVisioPageParameters = @{}
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ScriptBlock')) {
                    $private:selectVisioPageParameters['ScriptBlock'] = $ScriptBlock
                }
                Get-VisioPage @private:getVisioPageParameters | Select-VisioPage
            }
            'PageObject' {
                #region Process the page object.
                foreach ($visioPage in $Page) {
                    #region Activate the Visio document window if necessary.
                    if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                        $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                        $visioDocumentWindow.Activate()
                    } else {
                        $visioDocumentWindow = $visioPage.Application.ActiveWindow
                    }
                }
                #endregion

                #region Activate the Visio page if necessary.
                if ($visioDocumentWindow.Page -ne $visioPage) {
                    $visioDocumentWindow.Page = $visioPage
                }
                #endregion
            }
        }
    }
}

```



```

function Disable-VisioPageAutoEnlarge {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioPage in $Page) {
                #region Activate the Visio document window if necessary.
                if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio page if necessary.
                if ($visioDocumentWindow.Page -ne $visioPage) {
                    $visioDocumentWindow.Page = $visioPage
                }
                #endregion

                #region Set the auto enlarge property on the Visio page.
                $visioPage.PageSheet.CellsU('ResizePage').ResultIU = 0
                #endregion

                #region Return the Visio page object if requested.
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
                    $visioPage
                }
                #endregion
            }
        } catch {
            throw
        }
    }
}
Export-ModuleMember -Function Disable-VisioPageAutoEnlarge

function Set-VisioPageDiagramStyle {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter(Position=1, Mandatory=$true)]
        [ValidateScript({@( 'Default', 'Radial', 'Flowchart', 'Circular', 'CompactTree', 'Hierarchy' ) -
contains ($_ -replace ' ' )})]
        [System.String]
        $Style,

        [Parameter(Position=2)]

        [ValidateScript({@( 'DownThenRight', 'RightThenDown', 'RightThenUp', 'UpThenRight', 'UpThenLeft', 'LeftTh

```

```

enUp', 'LeftThenDown', 'DownThenLeft', 'TopToBottom', 'BottomToTop', 'LeftToRight', 'RightToLeft') -
contains ($_ -replace ' '))]]
[System.String]
$Direction,

[Parameter(Position=3)]
[ValidateSet('Left', 'Center', 'Right', 'Top', 'Middle', 'Bottom')]
[System.String]
$Alignment,

[Parameter(Position=4)]
[ValidateSet('Default', 'Shallow', 'Medium', 'Deep')]
[System.String]
$PlacementDepth,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
begin {
    try {
        #region Initialize local variables.
        [System.Boolean]$cancelled = $false
        [System.String[]]$validDirections = @()
        [System.String[]]$validAlignments = @()
        [System.String]$internalStyle = $null
        [System.String]$internalDirection = $null
        [System.String]$internalAlignment = $null
        [System.Int32]$newRoutingStyle = 0
        [System.Int32]$newPlacementStyle = 0
        [System.Int32]$newPlacementDepth = 0
        #endregion

        #region Pre-process the parameters.
        $internalStyle = $Style -replace ' '
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Direction') -and $Direction) {
            $internalDirection = $Direction -replace ' '
        }
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Alignment') -and $Alignment) {
            $internalAlignment = $Alignment
        }
        if ((@('Default', 'Radial', 'Circular') -contains $internalStyle) -and ($internalDirection -or
$internalAlignment)) {
            Write-Warning "'Direction' and 'Alignment' are not applicable to '$Style' diagrams. These
parameters will be ignored."
            $internalDirection = $null
            $internalAlignment = $null
        } elseif (@('Flowchart', 'CompactTree') -contains $internalStyle) {
            if ($internalAlignment) {
                Write-Warning "'Alignment' is not applicable to '$Style' diagrams. This parameter will be
ignored."
                $internalAlignment = $null
            }
            if (-not $internalDirection) {
                switch -exact ($internalStyle) {
                    'Flowchart' { $internalDirection = 'TopToBottom'; break }
                    'CompactTree' { $internalDirection = 'DownThenRight'; break }
                }
            }
        } elseif ($internalStyle -eq 'Hierarchy') {
            if (-not $internalDirection) { $internalDirection = 'TopToBottom' }
            if (-not $internalAlignment) { $internalAlignment = 'Center' }
        }
        if ($internalDirection) {
            if ($internalStyle -eq 'CompactTree') {
                $validDirections =
@('DownThenRight', 'RightThenDown', 'RightThenUp', 'UpThenRight', 'UpThenLeft', 'LeftThenUp', 'LeftThenDo
wn', 'DownThenLeft')
            } else {
                $validDirections = @('TopToBottom', 'BottomToTop', 'LeftToRight', 'RightToLeft')
            }
        }
    }
}

```

```

    }
    if ($validDirections -notcontains $internalDirection) {
        Write-Error "Cannot bind value 'Direction' to the target. The value was invalid. Valid
values for 'Direction' include '$([string]::Join("", "", $validDirections))."
        $cancelled = $true
        return
    }
}
if ($internalAlignment) {
    if (@('TopToBottom', 'BottomToTop') -match $internalDirection) {
        $validAlignments = @('Left', 'Center', 'Right')
    } else {
        $validAlignments = @('Top', 'Middle', 'Bottom')
    }
    if ($validAlignments -notcontains $internalAlignment) {
        Write-Error "Cannot bind value 'Alignment' to the target. The value was invalid. Valid
values for 'Alignment' in the '$internalDirection' direction include '$([string]::Join("",
"", $validAlignments))."
        $cancelled = $true
        return
    }
}
}
#endregion
} catch {
    throw
}
}
process {
    try {
        if (-not $cancelled) {
            foreach ($visioPage in $Page) {
                #region Reset page variables.
                $newRoutingStyle = 0
                $newPlacementStyle = 0
                $newPlacementDepth = 0
                #endregion

                #region Activate the Visio document window if necessary.
                if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio page if necessary.
                if ($visioDocumentWindow.Page -ne $visioPage) {
                    $visioDocumentWindow.Page = $visioPage
                }
                #endregion

                #region Set the diagram style of the Visio page.
                switch ($internalStyle) {
                    'Default' {
                        $newRoutingStyle = 1
                        switch ($visioPage.PageSheet.CellsU('RouteStyle').ResultIU) {
                            {@(3,4,10,11) -contains $_} {$newRoutingStyle = 3; break}
                            {@(5,6,12,13) -contains $_} {$newRoutingStyle = 5; break}
                            {@(7,8,14,15) -contains $_} {$newRoutingStyle = 7; break}
                            {@(17,18,19,20) -contains $_} {$newRoutingStyle = 17; break}
                            default { $newRoutingStyle = $_; break }
                        }
                        $visioPage.PageSheet.CellsU('PlaceStyle').ResultIU = 0
                        $visioPage.PageSheet.CellsU('RouteStyle').ResultIU = $newRoutingStyle
                        break
                    }
                }
                {@('Radial', 'Circular') -contains $_} {
                    $newPlacementStyle = $(if ($internalStyle -eq 'Radial') {3} else {6})
                    $newRoutingStyle = $(if ($internalStyle -eq 'Radial') {1} else {16})
                }
            }
        }
    }
}

```

```

switch ($visioPage.PageSheet.CellsU('RouteStyle').ResultIU) {
    {@(3,4,10,11) -contains $_} {$newRoutingStyle = 3; break}
    {@(5,6,12,13) -contains $_} {$newRoutingStyle = 5; break}
    {@(7,8,14,15) -contains $_} {$newRoutingStyle = 7; break}
    {@(17,18,19,20) -contains $_} {$newRoutingStyle = 17; break}
    default {$newRoutingStyle = $_; break}
}
$visioPage.PageSheet.CellsU('PlaceStyle').ResultIU = $newPlacementStyle
$visioPage.PageSheet.CellsU('RouteStyle').ResultIU = $newRoutingStyle
break
}
'Flowchart' {
    $newPlacementStyle = 1
    switch -exact ($Direction) {
        'TopToBottom' {$newPlacementStyle = 1; break}
        'BottomToTop' {$newPlacementStyle = 4; break}
        'LeftToRight' {$newPlacementStyle = 2; break}
        'RightToLeft' {$newPlacementStyle = 5; break}
    }
    $visioPage.PageSheet.CellsU('PlaceStyle').ResultIU = $newPlacementStyle
    break
}
'CompactTree' {
    $newPlacementStyle = 7
    switch -exact ($Direction) {
        'DownThenRight' {$newPlacementStyle = 7; break}
        'RightThenDown' {$newPlacementStyle = 8; break}
        'RightThenUp' {$newPlacementStyle = 9; break}
        'UpThenRight' {$newPlacementStyle = 10; break}
        'UpThenLeft' {$newPlacementStyle = 11; break}
        'LeftThenUp' {$newPlacementStyle = 12; break}
        'LeftThenDown' {$newPlacementStyle = 13; break}
        'DownThenLeft' {$newPlacementStyle = 14; break}
    }
}
switch -regex ($Direction) {
    '^Down' {
        switch ($visioPage.PageSheet.CellsU('RouteStyle').ResultIU) {
            {@(3,4,10,11) -contains $_} {$newRoutingStyle = 3; break}
            {@(5,6,12,13) -contains $_} {$newRoutingStyle = 5; break}
            {@(7,8,14,15) -contains $_} {$newRoutingStyle = 7; break}
            {@(17,18,19,20) -contains $_} {$newRoutingStyle = 17; break}
            default {$newRoutingStyle = $_; break}
        }
    }
    '^Right' {
        switch ($visioPage.PageSheet.CellsU('RouteStyle').ResultIU) {
            {@(0,3,4,10,11) -contains $_} {$newRoutingStyle = 4; break}
            {@(5,6,12,13) -contains $_} {$newRoutingStyle = 6; break}
            {@(7,8,14,15) -contains $_} {$newRoutingStyle = 8; break}
            {@(17,18,19,20) -contains $_} {$newRoutingStyle = 18; break}
            default {$newRoutingStyle = $_; break}
        }
    }
    '^Up' {
        switch ($visioPage.PageSheet.CellsU('RouteStyle').ResultIU) {
            {@(0,3,4,10,11) -contains $_} {$newRoutingStyle = 10; break}
            {@(5,6,12,13) -contains $_} {$newRoutingStyle = 12; break}
            {@(7,8,14,15) -contains $_} {$newRoutingStyle = 14; break}
            {@(17,18,19,20) -contains $_} {$newRoutingStyle = 19; break}
            default {$newRoutingStyle = $_; break}
        }
    }
    '^Left' {
        switch ($visioPage.PageSheet.CellsU('RouteStyle').ResultIU) {
            {@(0,3,4,10,11) -contains $_} {$newRoutingStyle = 11; break}
            {@(5,6,12,13) -contains $_} {$newRoutingStyle = 13; break}
            {@(7,8,14,15) -contains $_} {$newRoutingStyle = 15; break}
            {@(17,18,19,20) -contains $_} {$newRoutingStyle = 20; break}
            default {$newRoutingStyle = $_; break}
        }
    }
}

```

```

    }
  }
  $visioPage.PageSheet.CellsU('PlaceStyle').ResultIU = $newPlacementStyle
  $visioPage.PageSheet.CellsU('RouteStyle').ResultIU = $newRoutingStyle
  break
}
'Hierarchy' {
  $newPlacementStyle = 16
  switch -exact ("$Direction,$Alignment") {
    'TopToBottom,Left'    {$newPlacementStyle = 16; break}
    'TopToBottom,Center' {$newPlacementStyle = 17; break}
    'TopToBottom,Right'  {$newPlacementStyle = 18; break}
    'BottomToTop,Left'   {$newPlacementStyle = 19; break}
    'BottomToTop,Center' {$newPlacementStyle = 20; break}
    'BottomToTop,Right'  {$newPlacementStyle = 21; break}
    'LeftToRight,Top'    {$newPlacementStyle = 22; break}
    'LeftToRight,Middle' {$newPlacementStyle = 23; break}
    'LeftToRight,Bottom' {$newPlacementStyle = 24; break}
    'RightToLeft,Top'    {$newPlacementStyle = 25; break}
    'RightToLeft,Middle' {$newPlacementStyle = 26; break}
    'RightToLeft,Bottom' {$newPlacementStyle = 27; break}
  }
  $newRoutingStyle = 3
  switch ($newPlacementStyle) {
    {@(16,17,18) -contains $_} {$newRoutingStyle = 3; break}
    {@(22,23,24) -contains $_} {$newRoutingStyle = 4; break}
    {@(19,20,21) -contains $_} {$newRoutingStyle = 10; break}
    {@(25,26,27) -contains $_} {$newRoutingStyle = 11; break}
  }
  $visioPage.PageSheet.CellsU('PlaceStyle').ResultIU = $newPlacementStyle
  $visioPage.PageSheet.CellsU('RouteStyle').ResultIU = $newRoutingStyle
  break
}
}
if ($PlacementDepth) {
  $newPlacementDepth = 0
  switch -exact ($PlacementDepth) {
    'Shallow' {$newPlacementDepth = 3; break}
    'Medium'  {$newPlacementDepth = 1; break}
    'Deep'    {$newPlacementDepth = 2; break}
  }
  $visioPage.PageSheet.CellsU('PlaceDepth').ResultIU = $newPlacementDepth
}
#endregion

#region Return the Visio page object if requested.
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
  $visioPage
}
#endregion
}
}
} catch {
  throw
}
}
}
}

Export-ModuleMember -Function Set-VisioPageDiagramStyle

function Set-VisioPageConnectorStyle {
  [CmdletBinding()]
  [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
  param(
    [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
    [ValidateNotNullOrEmpty()]
    [Alias('InputObject')]
    [Microsoft.Office.Interop.Visio.IVPage[]]
    $Page,

    [Parameter(Position=1)]

```

```

[ValidateScript({@( 'Default', 'RightAngle', 'Straight', 'CenterToCenter', 'Network', 'Flowchart', 'Tree',
'OrganizationChart', 'Simple', 'SimpleHorizontalVertical', 'SimpleVerticalHorizontal') -contains ($_ -
replace ' ' )})])
[System.String]
$Style,

[Parameter(Position=2)]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^\d+(\.\d+)? ?([a-z]+)?$')]
[System.String]
$Spacing,

[Parameter(Position=3)]
[ValidateSet('Default', 'Straight', 'Curved')]
[System.String]
$Curvature,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
begin {
    try {
        #region Initialize local variables.
        [System.String]$internalStyle = $null
        #endregion

        #region Pre-process the parameters.
        $internalStyle = $Style -replace ' '
        #endregion
    } catch {
        throw
    }
}
process {
    try {
        foreach ($visioPage in $Page) {
            #region Initialize page connector style variables.
            [System.Int32]$newRoutingStyle = 0
            [System.Double]$spacingValue = 0.0
            [System.String]$spacingUnits = 'mm'
            [System.Double]$newSpacingValue = 0.0
            [System.Int32]$newCurvature = 0
            #endregion

            #region Activate the Visio document window if necessary.
            if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                $visioDocumentWindow.Activate()
            } else {
                $visioDocumentWindow = $visioPage.Application.ActiveWindow
            }
            #endregion

            #region Activate the Visio page if necessary.
            if ($visioDocumentWindow.Page -ne $visioPage) {
                $visioDocumentWindow.Page = $visioPage
            }
            #endregion

            #region Set the connector style of the Visio page.
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Style')) {
                $newRoutingStyle = 0
                switch -exact ($internalStyle) {
                    'Default' {
                        $newRoutingStyle = 0
                    }
                    'RightAngle' {
                        $newRoutingStyle = 1
                    }
                }
            }
        }
    }
}

```



```

        break
    }
    'Straight' {
        $newRoutingStyle = 3
        break
    }
    'CenterToCenter' {
        $newRoutingStyle = 16
        break
    }
    'Network' {
        $newRoutingStyle = 9
        break
    }
    'Flowchart' {
        switch ($visioPage.PageSheet.CellsU('PlaceStyle').ResultIU) {
            {@(0,1,7,14,16,17,18) -contains $_} {$newRoutingStyle = 5; break}
            {@(2,8,9,22,23,24) -contains $_} {$newRoutingStyle = 6; break}
            {@(4,10,11,19,20,21) -contains $_} {$newRoutingStyle = 12; break}
            {@(5,12,13,25,26,27) -contains $_} {$newRoutingStyle = 13; break}
        }
        break
    }
    'Tree' {
        switch ($visioPage.PageSheet.CellsU('PlaceStyle').ResultIU) {
            {@(0,1,7,14,16,17,18) -contains $_} {$newRoutingStyle = 7; break}
            {@(2,8,9,22,23,24) -contains $_} {$newRoutingStyle = 8; break}
            {@(4,10,11,19,20,21) -contains $_} {$newRoutingStyle = 14; break}
            {@(5,12,13,25,26,27) -contains $_} {$newRoutingStyle = 15; break}
        }
        break
    }
    'OrganizationChart' {
        switch ($visioPage.PageSheet.CellsU('PlaceStyle').ResultIU) {
            {@(0,1,7,14,16,17,18) -contains $_} {$newRoutingStyle = 3; break}
            {@(2,8,9,22,23,24) -contains $_} {$newRoutingStyle = 4; break}
            {@(4,10,11,19,20,21) -contains $_} {$newRoutingStyle = 10; break}
            {@(5,12,13,25,26,27) -contains $_} {$newRoutingStyle = 11; break}
        }
        break
    }
    'Simple' {
        switch ($visioPage.PageSheet.CellsU('PlaceStyle').ResultIU) {
            {@(0,1,7,14,16,17,18) -contains $_} {$newRoutingStyle = 17; break}
            {@(2,8,9,22,23,24) -contains $_} {$newRoutingStyle = 18; break}
            {@(4,10,11,19,20,21) -contains $_} {$newRoutingStyle = 19; break}
            {@(5,12,13,25,26,27) -contains $_} {$newRoutingStyle = 20; break}
        }
        break
    }
    'SimpleHorizontalVertical' {
        $newRoutingStyle = 21
        break
    }
    'SimpleVerticalHorizontal' {
        $newRoutingStyle = 22
        break
    }
}
$visioPage.PageSheet.CellsU('RouteStyle').ResultIU = $newRoutingStyle
}
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Spacing')) {
    $spacingValue = $Spacing -replace ' ','' -replace '^(\d+(\.\d+)?) ?([a-z]+)?$', '$1'
    $spacingUnits = $Spacing -replace ' ','' -replace '^(\d+(\.\d+)?) ?([a-z]+)?$', '$3'
    if ($spacingUnits) {
        $newSpacingValue = $visioPage.Application.ConvertResult($spacingValue, $spacingUnits,
''
    } else {
        $newSpacingValue = $spacingValue
    }
}

```

```

        $visioPage.PageSheet.CellsU('AvenueSizeX').ResultIU = $newSpacingValue
        $visioPage.PageSheet.CellsU('AvenueSizeY').ResultIU = $newSpacingValue
    }
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Curvature')) {
        $newCurvature = 0
        switch -exact ($Curvature) {
            'Default' { $newCurvature = 0; break }
            'Straight' { $newCurvature = 1; break }
            'Curved' { $newCurvature = 2; break }
        }
        $visioPage.PageSheet.CellsU('LineRouteExt').ResultIU = $newCurvature
    }
#endregion

#region Return the Visio page object if requested.
if ($PassThru) {
    $visioPage
}
#endregion
} catch {
    throw
}
}
}
}
}

Export-ModuleMember -Function Set-VisioPageConnectorStyle

function Set-VisioPageTheme {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter(Position=1)]
        [System.String]
        $Colors,

        [Parameter(Position=2)]
        [System.String]
        $Effects,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    begin {
        try {
            #region Initialize local variables.
            [System.Boolean]$cancelled = $false
            #endregion

            #region Raise a warning if the running instance of Visio does not support themes.
            if
            ([System.Reflection.Assembly]::GetAssembly('Microsoft.Office.Interop.Visio.IVPage').FullName -eq
'Microsoft.Office.Interop.Visio, Version=11.0.0.0, Culture=neutral,
PublicKeyToken=71e9bce11e9429c') {
                Write-Warning 'Visio 2003 does not support themes. This command will be ignored.'
                $cancelled = $true
            }
            #endregion
        } catch {
            throw
        }
    }
    process {
        try {

```

```

#region Return if cancelled.
if ($cancelled) {
    return
}
#endregion

foreach ($visioPage in $Page) {
    #region Initialize page connector style variables.
    [System.String]$colorThemeId = $(if ((-not
$PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Colors')) -or (-not $Colors)) {'None'} else
{$Colors -replace '^visThemeColors' -replace '\W'})
    [System.String]$effectThemeId = $(if ((-not
$PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Effects')) -or (-not $Effects)) {'None'} else
{$Effects -replace '^visThemeEffects' -replace '\W'})
    [System.Boolean]$colorThemeFound = $false
    [System.Boolean]$effectThemeFound = $false
    [System.String[]]$localizedColorThemes = @()
    [System.String[]]$universalColorThemes = @()
    [System.String[]]$localizedEffectThemes = @()
    [System.String[]]$universalEffectThemes = @()
    #endregion

    #region Activate the Visio document window if necessary.
    if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
        $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
        $visioDocumentWindow.Activate()
    } else {
        $visioDocumentWindow = $visioPage.Application.ActiveWindow
    }
    #endregion

    #region Activate the Visio page if necessary.
    if ($visioDocumentWindow.Page -ne $visioPage) {
        $visioDocumentWindow.Page = $visioPage
    }
    #endregion

    #region Set the theme of the Visio page.

$visioPage.Document.GetThemeNames([Microsoft.Office.Interop.Visio.VisThemeTypes]::visThemeTypeColor
, ([REF]$localizedColorThemes))

$visioPage.Document.GetThemeNamesU([Microsoft.Office.Interop.Visio.VisThemeTypes]::visThemeTypeColor
, ([REF]$universalColorThemes))
    $localizedColorThemes = $localizedColorThemes -replace '\W',''
    $universalColorThemes = $universalColorThemes -replace 'visThemeNone','visThemeColorsNone'
-replace '\W',''
    if (($localizedColorThemes -contains $colorThemeId) -or ($universalColorThemes -contains
$(if ($colorThemeId -match '^visThemeColors') {$colorThemeId} else
{"visThemeColors$colorThemeId"}))) {
        for ($index = 0; $index -lt $universalColorThemes.Count; $index++) {
            if (($localizedColorThemes[$index] -eq $colorThemeId) -or
($universalColorThemes[$index] -eq $(if ($colorThemeId -match '^visThemeColors') {$colorThemeId}
else {"visThemeColors$colorThemeId"}))) {
                $colorThemeId = $universalColorThemes[$index]
                $colorThemeFound = $true
                break
            }
        }
    }
    if (-not $colorThemeFound) {
        Write-Error "The color theme called '$Colors' was not found. These colors will not be
applied to page $($visioPage.Name)."
        $cancelled = $true
        return
    }

$visioPage.Document.GetThemeNames([Microsoft.Office.Interop.Visio.VisThemeTypes]::visThemeTypeEffec
t, ([REF]$localizedEffectThemes))

```

```

$visioPage.Document.GetThemeNamesU([Microsoft.Office.Interop.Visio.VisThemeTypes]::visThemeTypeEffect, ([REF]$universalEffectThemes))
    $localizedEffectThemes = $localizedEffectThemes -replace '\W',''
    $universalEffectThemes = $universalEffectThemes -replace '\W',''
    if (($localizedEffectThemes -contains $effectThemeId) -or ($universalEffectThemes -contains $(if ($effectThemeId -match '^visThemeEffects') {$effectThemeId} else {"visThemeEffects$effectThemeId"}))) {
        for ($index = 0; $index -lt $universalEffectThemes.Count; $index++) {
            if (($localizedEffectThemes[$index] -eq $effectThemeId) -or ($universalEffectThemes[$index] -eq $(if ($effectThemeId -match '^visThemeEffects') {$effectThemeId} else {"visThemeEffects$effectThemeId"}))) {
                $effectThemeId = $universalEffectThemes[$index]
                $effectThemeFound = $true
                break
            }
        }
    }
    if (-not $effectThemeFound) {
        Write-Error "The effect theme called '$Effects' was not found. These effects will not be applied to page $($visioPage.Name)."
        $cancelled = $true
        return
    }
    $visioPage.ThemeColors = [Microsoft.Office.Interop.Visio.VisThemeColors]$colorThemeId
    $visioPage.ThemeEffects = [Microsoft.Office.Interop.Visio.VisThemeEffects]$effectThemeId
#endregion

#region Return the Visio page object if requested.
if ($PassThru) {
    $visioPage
}
#endregion
} catch {
    throw
}
}
}

```

Export-ModuleMember -Function Set-VisioPageTheme

```

function Set-VisioPageBackground {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter(Position=1)]
        [System.String]
        $Background,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioPage in $Page) {
                #region Activate the Visio document window if necessary.
                if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioPage.Application.ActiveWindow
                }
            }
        }
    }
#endregion
}

```

```

#region Activate the Visio page if necessary.
if ($visioDocumentWindow.Page -ne $visioPage) {
    $visioDocumentWindow.Page = $visioPage
}
#endregion

#region Set the background of the Visio page.
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Background') -and $Background) {
    $backgroundPage = $null
    foreach ($item in $visioPage.Document.Pages) {
        if (($item.Type -eq [Microsoft.Office.Interop.Visio.VisPageTypes]::visTypeBackground) -
and
            (($item.Name -eq $Background) -or ($item.NameU -eq $(if ($Background -match
'^Background ' ) {$Background} else {"Background $Background"})))) {
                $backgroundPage = $item
                break
            }
        }
        if (-not $backgroundPage) {
            $key = $(if ($Background -match '^Background ' ) {$Background} else {"Background
$Background"})
            $backgroundTemplate =
$script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$key]
            if (-not $backgroundTemplate) {
                $backgroundTemplate =
$script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$Background]
            }
            if (-not $backgroundTemplate) {
                Write-Error "The shape type '$Background' was not found. This shape will not be set
as a background for page $($visioPage.Name)."
                continue
            }
            $visioPage.BackPage = ''
            $visioPage.Drop($backgroundTemplate,0,0) | Out-Null
            $visioPage.BackPage.Name = $backgroundTemplate.Name
            $visioPage.BackPage.NameU = $backgroundTemplate.NameU
        } else {
            $visioPage.BackPage = $backgroundPage.Name
        }
        if ($visioPage.BackPage) {
            if ($visioPage.BackPage.PageSheet.CellsU('PageWidth').ResultIU -lt
$visioPage.PageSheet.CellsU('PageWidth').ResultIU) {
                $visioPage.BackPage.PageSheet.CellsU('PageWidth').ResultIU =
$visioPage.PageSheet.CellsU('PageWidth').ResultIU
            }
            if ($visioPage.BackPage.PageSheet.CellsU('PageHeight').ResultIU -lt
$visioPage.PageSheet.CellsU('PageHeight').ResultIU) {
                $visioPage.BackPage.PageSheet.CellsU('PageHeight') =
$visioPage.PageSheet.CellsU('PageHeight').ResultIU
            }
        }
    } else {
        $visioPage.BackPage = ''
    }
}
#endregion

#region Return the Visio page object if requested.
if ($PassThru) {
    $visioPage
}
#endregion
}
} catch {
    throw
}
}
}
Export-ModuleMember -Function Set-VisioPageBackground

```

```

function Format-VisioPageLayout {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $ArrangeShapes,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $CenterDrawing,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $ShrinkToFit,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioPage in $Page) {
                #region Activate the Visio document window if necessary.
                if ($visioPage.Document -ne $visioPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document $visioPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioPage.Application.ActiveWindow
                }
            }
            #endregion

            #region Activate the Visio page if necessary.
            if ($visioDocumentWindow.Page -ne $visioPage) {
                $visioDocumentWindow.Page = $visioPage
            }
            #endregion

            #region Set the Visio page layout.
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ArrangeShapes') -and
$ArrangeShapes) {
                $visioPage.Layout()
            }
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('CenterDrawing') -and
$CenterDrawing) {
                $visioPage.CenterDrawing()
            }
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ShrinkToFit') -and $ShrinkToFit) {
                $visioPage.ResizeToFitContents()
            }
            if ($visioPage.BackPage) {
                if ($visioPage.BackPage.PageSheet.CellsU('PageWidth').ResultIU -lt
$visioPage.PageSheet.CellsU('PageWidth').ResultIU) {
                    $visioPage.BackPage.PageSheet.CellsU('PageWidth').ResultIU =
$visioPage.PageSheet.CellsU('PageWidth').ResultIU
                }
                if ($visioPage.BackPage.PageSheet.CellsU('PageHeight').ResultIU -lt
$visioPage.PageSheet.CellsU('PageHeight').ResultIU) {
                    $visioPage.BackPage.PageSheet.CellsU('PageHeight').ResultIU =
$visioPage.PageSheet.CellsU('PageHeight').ResultIU
                }
            }
        }
        #endregion
    }
}

```

```

        #region Return the Visio page object if requested.
        if ($PassThru) {
            $visioPage
        }
        #endregion
    }
} catch {
    throw
}
}
}
}

Export-ModuleMember -Function Format-VisioPageLayout

#endregion

#region VisioPageConfiguration functions

function Reset-VisioPageConfiguration {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVPage])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            $visioDefaultConfiguration = Get-VisioDefaultConfiguration
            foreach ($visioPage in $Page) {
                Write-Progress -Activity 'Applying default Visio page configuration' -Status 'Setting page
                background.'
                Set-VisioPageBackground -Page $visioPage -Background
                $visioDefaultConfiguration.Page.Background
                Write-Progress -Activity 'Applying default Visio page configuration' -Status 'Setting page
                theme.'
                Set-VisioPageTheme -Page $visioPage -Colors $visioDefaultConfiguration.Page.Colors -Effects
                $visioDefaultConfiguration.Page.Effects
                Write-Progress -Activity 'Applying default Visio page configuration' -Status 'Setting page
                auto-enlarge flag.'
                if ($visioDefaultConfiguration.Page.AutoEnlarge) {
                    Enable-VisioPageAutoEnlarge -Page $visioPage
                } else {
                    Disable-VisioPageAutoEnlarge -Page $visioPage
                }
                Write-Progress -Activity 'Applying default Visio page configuration' -Status 'Setting page
                diagram style.'
                $setVisioPageDiagramStyleParameters = @{
                    Page = $visioPage
                    Style = $visioDefaultConfiguration.Page.DiagramStyle
                }
                if ($visioDefaultConfiguration.Page.DiagramDirection) {
                    $setVisioPageDiagramStyleParameters['Direction'] =
                    $visioDefaultConfiguration.Page.DiagramDirection
                }
                if ($visioDefaultConfiguration.Page.DiagramAlignment) {
                    $setVisioPageDiagramStyleParameters['Alignment'] =
                    $visioDefaultConfiguration.Page.DiagramAlignment
                }
                if ($visioDefaultConfiguration.Page.DiagramPlacementDepth) {
                    $setVisioPageDiagramStyleParameters['PlacementDepth'] =
                    $visioDefaultConfiguration.Page.DiagramPlacementDepth
                }
                Set-VisioPageDiagramStyle @setVisioPageDiagramStyleParameters
            }
        } catch {
            Write-Error $_.Exception.Message
        }
    }
}
}
}
}

```

```

    Write-Progress -Activity 'Applying default Visio page configuration' -Status 'Setting page
connector style.'
    $setVisioPageConnectorStyleParameters = @{}
    Page = $visioPage
    }
    if ($visioDefaultConfiguration.Page.ConnectorStyle) {
        $setVisioPageConnectorStyleParameters['Style'] =
$visioDefaultConfiguration.Page.ConnectorStyle
    }
    if ($visioDefaultConfiguration.Page.ConnectorSpacing) {
        $setVisioPageConnectorStyleParameters['Spacing'] =
$visioDefaultConfiguration.Page.ConnectorSpacing
    }
    if ($visioDefaultConfiguration.Page.ConnectorCurvature) {
        $setVisioPageConnectorStyleParameters['Curvature'] =
$visioDefaultConfiguration.Page.ConnectorCurvature
    }
    Set-VisioPageConnectorStyle @setVisioPageConnectorStyleParameters
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PassThru') -and $PassThru) {
        $visioPage
    }
}
} catch {
    throw
}
}
}
Export-ModuleMember -Function Reset-VisioPageConfiguration

#endregion

#region VisioShape functions

function Get-VisioShape {
    [CmdletBinding(DefaultParameterSetName='ByName')]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter(Position=1, Mandatory=$true, ParameterSetName='ByName')]
        [ValidateNotNullOrEmpty()]
        [System.String[]]
        $Name,

        [Parameter(Position=1, Mandatory=$true, ParameterSetName='ByLabel')]
        [ValidateNotNullOrEmpty()]
        [Alias('Text')]
        [System.String[]]
        $Label
    )
    process {
        try {
            foreach ($visioPage in $Page) {
                switch ($PSCmdlet.ParameterSetName) {
                    'ByName' {
                        foreach ($item in $Name) {
                            foreach ($visioShape in $visioPage.Shapes) {
                                $visioShape =
[System.Runtime.InteropServices.Marshal]::CreateWrapperOfType($visioShape,
[Microsoft.Office.Interop.Visio.ShapeClass])
                                if (($visioShape.Name -like $item) -or ($visioShape.NameU -like $item)) {
                                    [Microsoft.Office.Interop.Visio.IVShape]$visioShape
                                }
                            }
                        }
                    }
                }
            }
            break
        }
    }
}

```



```

    }
    'ByLabel' {
        foreach ($item in $Label) {
            foreach ($visioShape in $visioPage.Shapes) {
                $visioShape =
[System.Runtime.InteropServices.Marshal]::CreateWrapperOfType($visioShape,
[Microsoft.Office.Interop.Visio.ShapeClass])
                if ($visioShape.Text -like $item) {
                    [Microsoft.Office.Interop.Visio.IVShape]$visioShape
                }
            }
        }
        break
    }
}
}
} catch {
    throw
}
}

```

```

Export-ModuleMember -Function Get-VisioShape

```

```

function New-VisioShape {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVPage[]]
        $Page,

        [Parameter(Position=1, Mandatory=$true)]
        [ValidateNotNullOrEmpty()]
        [System.String[]]
        $ShapeId,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $Name,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [Alias('Text')]
        [System.String]
        $Label,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [ValidatePattern('^\d+(\.\d+)? ?([a-z]+)?$')]
        [System.String]
        $X,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [ValidatePattern('^\d+(\.\d+)? ?([a-z]+)?$')]
        [System.String]
        $Y,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $SmartLayout
    )
    begin {
        try {
            #region Initialize local variables.
            [System.Boolean]$private:useSmartLayout = $false

```

```

[System.Collections.Hashtable]$private:visioDefaultConfiguration = Get-
VisioDefaultConfiguration
#endregion

#region Determine if we are using a smart layout or not.
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('SmartLayout')) {
    $private:useSmartLayout = $SmartLayout
} else {
    $private:useSmartLayout = $visioDefaultConfiguration.SmartLayout
}
#endregion
} catch {
    throw
}
}
process {
    try {
        foreach ($visioPage in $Page) {
            foreach ($item in $ShapeId) {
                #region Verify that the shape id matches a shape that is available on our loaded
                stencils.
                if (-not
$script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates.ContainsKey($item)) {
                    Write-Error "The shape type '$item' was not found. This shape will not be added to page
 $($visioPage.Name)."
                    continue
                }
                #endregion

                #region Add the shape to the Visio diagram.
                Write-Progress -Activity 'Adding shape to Visio diagram' -Status "Adding a shape of type
 '$item' to the Visio diagram."

                #region Determine the coordinates where the shape should be placed.
                $xCoordinate = 0.0
                $yCoordinate = 0.0
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('X')) {
                    $positionValue = $X -replace '^(\\d+(\\.\\d+)?) ?([a-z]+)?$', '$1'
                    $positionUnits = $X -replace '^(\\d+(\\.\\d+)?) ?([a-z]+)?$', '$3'
                    $xCoordinate = $visioPage.Application.ConvertResult([double]$positionValue,
$positionUnits, '')
                } elseif (@(5,11,12,13,14,16,19,25,26,27) -contains
$visioPage.PageSheet.CellsU('PlaceStyle').ResultIU) {
                    $xCoordinate =
$script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$item].Shapes.Item(1).CellsU
('Width').ResultIU / 2
                } else {
                    $xCoordinate = $visioPage.PageSheet.CellsU('PageWidth').ResultIU -
($script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$item].Shapes.Item(1).Cells
U('Width').ResultIU / 2)
                }
                if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Y')) {
                    $positionValue = $Y -replace '^(-?\\d+(\\.\\d+)?) ?([a-z]+)?$', '$1'
                    $positionUnits = $Y -replace '^(-?\\d+(\\.\\d+)?) ?([a-z]+)?$', '$3'
                    $yCoordinate = $visioPage.Application.ConvertResult([double]$positionValue,
$positionUnits, '')
                } elseif (@(4,9,10,11,12,19,20,21,22,25) -contains
$visioPage.PageSheet.CellsU('PlaceStyle').ResultIU) {
                    $yCoordinate = $visioPage.PageSheet.CellsU('PageHeight').ResultIU -
($script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$item].Shapes.Item(1).Cells
U('Height').ResultIU / 2)
                } else {
                    $yCoordinate =
$script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$item].Shapes.Item(1).CellsU
('Height').ResultIU / 2
                }
                #endregion

                #region Drop the new shape on the page.

```

```

        if ($visioShape =
$visioPage.Drop($script:VisioTemplateCache[$visioPage.Application.ProcessId].Templates[$item],$xCoordinate,$yCoordinate)) {
    #region Set the shape name if a custom name was provided.
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Name')) {
        Rename-VisioShape -VisioShape $visioShape -NewName $Name
    }
    #endregion

    #region Set the shape label if a custom label was provided.
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Label')) {
        Set-VisioShapeLabel -Shape $visioShape -Label $Label
    }
    #endregion

    #region Re-layout the page if smart layout is enabled.
    if ($useSmartLayout) {
        $visioPage.Layout()
        $visioPage.CenterDrawing()
    }
    #endregion

    #region Update the size of the background page if smart layout or auto-enlarge are
enabled.
    if ($visioPage.BackPage -and
($useSmartLayout -or ($visioPage.PageSheet.CellsU('ResizePage').ResultIU -eq 1))) {
        if ($visioPage.BackPage.PageSheet.CellsU('PageWidth').ResultIU -lt
$visioPage.PageSheet.CellsU('PageWidth').ResultIU) {
            $visioPage.BackPage.PageSheet.CellsU('PageWidth').ResultIU =
$visioPage.PageSheet.CellsU('PageWidth').ResultIU
        }
        if ($visioPage.BackPage.PageSheet.CellsU('PageHeight').ResultIU -lt
$visioPage.PageSheet.CellsU('PageHeight').ResultIU) {
            $visioPage.BackPage.PageSheet.CellsU('PageHeight').ResultIU =
$visioPage.PageSheet.CellsU('PageHeight').ResultIU
        }
    }
    #endregion

    #region Return the shape object to the caller.
    $visioShape
    #endregion
}
#endregion

#endregion
}
} catch {
    throw
}
}
}
}
Export-ModuleMember -Function New-VisioShape

function Select-VisioShape {
    [CmdletBinding(DefaultParameterSetName='NewShape')]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true,
ParameterSetName='ShapeObject')]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape[]]
        $Shape,

        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='NewShape')]
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='ByName')]
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true, ParameterSetName='ByLabel')]
        [ValidateNotNullOrEmpty()]

```

```

[Microsoft.Office.Interop.Visio.IVPage[]]
$page,

[Parameter(Position=1, Mandatory=$true, ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[System.String[]]
$ShapeId,

[Parameter(Mandatory=$true, ParameterSetName='ByName')]
[System.Management.Automation.SwitchParameter]
$ByName,

[Parameter(Mandatory=$true, ParameterSetName='ByLabel')]
[System.Management.Automation.SwitchParameter]
$ByLabel,

[Parameter(Position=1, Mandatory=$true, ParameterSetName='ByName')]
[Parameter(ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[System.String[]]
$name,

[Parameter(Position=1, Mandatory=$true, ParameterSetName='ByLabel')]
[Parameter(ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[Alias('Text')]
[System.String]
$Label,

[Parameter(Position=1, ParameterSetName='ShapeObject')]
[Parameter(Position=2, ParameterSetName='NewShape')]
[Parameter(Position=2, ParameterSetName='ByName')]
[Parameter(Position=2, ParameterSetName='ByLabel')]
[ValidateNotNullOrEmpty()]
[System.Management.Automation.ScriptBlock]
$ScriptBlock,

[Parameter(ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^\d+(\.\d+)? ?([a-z]+)?$')]
[System.String]
$X,

[Parameter(ParameterSetName='NewShape')]
[ValidateNotNullOrEmpty()]
[ValidatePattern('^\d+(\.\d+)? ?([a-z]+)?$')]
[System.String]
$Y,

[Parameter(ParameterSetName='NewShape')]
[System.Management.Automation.SwitchParameter]
$SmartLayout
)
begin {
    try {
        #region Initialize local variables.
        [System.String]$private:parameterName = $null
        [System.Boolean]$private:useSmartLayout = $false
        [System.Collections.Hashtable]$private:visioDefaultConfiguration = Get-
VisioDefaultConfiguration
        #endregion

        #region Convert the parameters to private scope.
        foreach ($private:parameterName in
@('Shape', 'Page', 'ShapeId', 'ByName', 'ByLabel', 'Name', 'Label', 'ScriptBlock', 'X', 'Y', 'SmartLayout'))
        {
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:parameterName)) {
                Set-Variable -Name $private:parameterName -Scope Local -Option Private
            }
        }
    }
}

```

```

#endregion

#region Determine if we are using a smart layout or not.
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('SmartLayout')) {
    $private:useSmartLayout = $SmartLayout
} else {
    $private:useSmartLayout = $visioDefaultConfiguration.SmartLayout
}
#endregion
} catch {
    throw
}
}
process {
    try {
        switch ($PSCmdlet.ParameterSetName) {
            'ByName' {
                #region If a specific shape was requested, use it.
                $private:getVisioShapeParameters = @{
                    Page = $Page
                    Name = $Name
                }
                $private:selectVisioShapeParameters = @{}
                foreach ($private:optionalParameterName in @('ScriptBlock')) {
                    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:optionalParameterName))
                    {
                        $private:selectVisioShapeParameters[$private:optionalParameterName] =
$PSCmdlet.MyInvocation.BoundParameters[$private:optionalParameterName]
                    }
                }
                Get-VisioShape @private:getVisioShapeParameters | Select-VisioShape
@private:selectVisioShapeParameters
                #endregion
                break
            }
            'ByLabel' {
                #region If a specific shape was requested, use it.
                $private:getVisioShapeParameters = @{
                    Page = $Page
                    Label = $Label
                }
                $private:selectVisioShapeParameters = @{}
                foreach ($private:optionalParameterName in @('ScriptBlock')) {
                    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:optionalParameterName))
                    {
                        $private:selectVisioShapeParameters[$private:optionalParameterName] =
$PSCmdlet.MyInvocation.BoundParameters[$private:optionalParameterName]
                    }
                }
                Get-VisioShape @private:getVisioShapeParameters | Select-VisioShape
@private:selectVisioShapeParameters
                #endregion
                break
            }
            'NewShape' {
                #region If a specific shape was requested, use it.
                $private:newVisioShapeParameters = @{
                    Page = $Page
                    ShapeId = $ShapeId
                }
                foreach ($private:optionalParameterName in @('Name','Label','X','Y','SmartLayout')) {
                    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:optionalParameterName))
                    {
                        $private:newVisioShapeParameters[$private:optionalParameterName] =
$PSCmdlet.MyInvocation.BoundParameters[$private:optionalParameterName]
                    }
                }
                $private:selectVisioShapeParameters = @{}
                foreach ($private:optionalParameterName in @('ScriptBlock')) {

```

```

        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey($private:optionalParameterName))
    {
        $private:selectVisioShapeParameters[$private:optionalParameterName] =
$PSCmdlet.MyInvocation.BoundParameters[$private:optionalParameterName]
    }
}
New-VisioShape @private:newVisioShapeParameters | Select-VisioShape
@private:selectVisioShapeParameters
#endregion
break
}
'ShapeObject' {
#region Process the shape object.
foreach ($visioShape in $Shape) {
#region Activate the Visio document window if necessary.
if ($visioShape.Document -ne $visioShape.Application.ActiveDocument) {
$visioDocumentWindow = Get-VisioDocumentWindow -Document $visioShape.Document
$visioDocumentWindow.Activate()
} else {
$visioDocumentWindow = $visioShape.Application.ActiveWindow
}
#endregion

#region Activate the Visio page if necessary.
if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
$visioDocumentWindow.Page = $visioShape.ContainingPage
}
#endregion

#region Invoke the ScriptBlock.
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('ScriptBlock')) {
& (Get-Module -Name VisioShapeDSV) $ScriptBlock | Out-Null
}
#endregion

#region Return the Visio shape object to the client.
$visioShape
#endregion
}
#endregion
break
}
}
} catch {
throw
}
}
}
Export-ModuleMember -Function Select-VisioShape

function Rename-VisioShape {
[CmdletBinding()]
[OutputType([Microsoft.Office.Interop.Visio.IVShape])]
param(
[Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
[ValidateNotNullOrEmpty()]
[Alias('InputObject')]
[Microsoft.Office.Interop.Visio.IVShape]
$Shape,

[Parameter(Position=1, Mandatory=$true, ValueFromPipelineByPropertyName=$true)]
[ValidateNotNullOrEmpty()]
[System.String]
$NewName,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
process {

```

```

try {
    foreach ($visioShape in $Shape) {
        #region Activate the Visio document window if necessary.
        if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
            $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
            $visioDocumentWindow.Activate()
        } else {
            $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
        }
        #endregion

        #region Activate the Visio shape if necessary.
        if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
            $visioDocumentWindow.Page = $visioShape.ContainingPage
        }
        #endregion

        #region Rename the Visio shape.
        $visioShape.Name = $NewName -replace '(\s+|\s$)'
        #endregion

        #region Return the Visio shape object if requested.
        if ($PassThru) {
            $visioShape
        }
        #endregion
    }
} catch {
    throw
}
}
Export-ModuleMember -Function Rename-VisioShape

```

```

function Set-VisioShapeLabel {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter(Position=1, Mandatory=$true, ValueFromPipelineByPropertyName=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('Text')]
        [System.String]
        $Label,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioShape in $Shape) {
                #region Activate the Visio document window if necessary.
                if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
                }
                #endregion
            }
        }
    }
}

```

```

#region Activate the Visio shape if necessary.
if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
    $visioDocumentWindow.Page = $visioShape.ContainingPage
}
#endregion

#region Set the Visio shape label if necessary.
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Label')) {
    $visioShape.Text = $Label -replace '(\s+|\s+$)'
}
#endregion

#region Return the Visio shape object if requested.
if ($PassThru) {
    $visioShape
}
#endregion
} catch {
    throw
}
}
}
}
}
Export-ModuleMember -Function Set-VisioShapeLabel

function Add-VisioShapeWebHyperlink {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter(Position=1, Mandatory=$true)]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $Url,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $Description,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Default,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioShape in $Shape) {
                #region Activate the Visio document window if necessary.
                if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio shape if necessary.
                if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
                    $visioDocumentWindow.Page = $visioShape.ContainingPage
                }
            }
        }
    }
}

```



```
}
#endregion

#region Add the hyperlink to the Visio shape.
$visioHyperlink = $visioShape.AddHyperLink()
$visioHyperlink.Address = $Url -replace '(^\\s+|\\s+$)'
if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Description')) {
    $visioHyperlink.Description = $Description -replace '(^\\s+|\\s+$)'
}
$visioHyperlink.IsDefaultLink =
($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Default') -and $Default)
#endregion

#region Return the Visio shape object if requested.
if ($PassThru) {
    $visioShape
}
#endregion
}
} catch {
    throw
}
}
}
```

Export-ModuleMember -Function Add-VisioShapeWebHyperlink

```
function Add-VisioShapeFileHyperlink {
    [CmdletBinding(DefaultParameterSetName='Page')]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter(Position=1, Mandatory=$true, ParameterSetName='ExternalFile')]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $FileName,

        [Parameter(ParameterSetName='Shape')]
        [Parameter(Position=1, Mandatory=$true, ParameterSetName='Page')]
        [Parameter(Position=2, Mandatory=$true, ParameterSetName='ExternalFile')]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $PageName,

        [Parameter(Position=1, Mandatory=$true, ParameterSetName='Shape')]
        [Parameter(Position=3, Mandatory=$true, ParameterSetName='ExternalFile')]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $ShapeName,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $Zoom,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [System.String]
        $Description,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $Default,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
```

```

    $PassThru
)
process {
    try {
        foreach ($visioShape in $Shape) {
            #region Activate the Visio document window if necessary.
            if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
                $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
                $visioDocumentWindow.Activate()
            } else {
                $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
            }
            #endregion

            #region Activate the Visio shape if necessary.
            if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
                $visioDocumentWindow.Page = $visioShape.ContainingPage
            }
            #endregion

            #region Add the hyperlink to the Visio shape.
            $visioHyperlink = $visioShape.AddHyperLink()
            switch ($PSCmdlet.ParameterSetName) {
                'Page' {
                    $visioHyperlink.SubAddress = $PageName -replace '(\s+|\s+)'
                    break
                }
                'Shape' {
                    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('PageName')) {
                        $visioHyperlink.SubAddress = "$($PageName -replace '(\s+|\s+)' )/$($ShapeName -
replace '(\s+|\s+)' )"
                    } else {
                        $visioHyperlink.SubAddress = $ShapeName -replace '(\s+|\s+)'
                    }
                    break
                }
                'ExternalFile' {
                    $visioHyperlink.Address = $Filename
                    $visioHyperlink.SubAddress = "$($PageName -replace '(\s+|\s+)' )/$($ShapeName -
replace '(\s+|\s+)' )"
                    break
                }
            }
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Zoom')) {
                $visioHyperlink.ExtraInfo = "zoom=$($Zoom -replace '(\s+|\s+)' -replace '\W*%$')"
            }
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Description')) {
                $visioHyperlink.Description = $Description -replace '(\s+|\s+)'
            }
            $visioHyperlink.IsDefaultLink =
($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Default') -and $Default)
            #endregion

            #region Return the Visio shape object if requested.
            if ($PassThru) {
                $visioShape
            }
            #endregion
        }
    } catch {
        throw
    }
}
}
Export-ModuleMember -Function Add-VisioShapeFileHyperlink

function Move-VisioShape {
    [CmdletBinding()]

```

```

[OutputType ([Microsoft.Office.Interop.Visio.IVShape])]
param(
    [Parameter(Position=0)]
    [ValidateNotNullOrEmpty()]
    [ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
    [System.String]
    $X,

    [Parameter(Position=1)]
    [ValidateNotNullOrEmpty()]
    [ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
    [System.String]
    $Y,

    [Parameter(Position=2)]
    [ValidateNotNullOrEmpty()]
    [ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
    [System.String]
    $DeltaX,

    [Parameter(Position=3)]
    [ValidateNotNullOrEmpty()]
    [ValidatePattern('^(-?\d+(\.\d+)?) ?([a-z]+)?$')]
    [System.String]
    $DeltaY,

    [Parameter(Mandatory=$true, ValueFromPipeline=$true)]
    [ValidateNotNullOrEmpty()]
    [Alias('InputObject')]
    [Microsoft.Office.Interop.Visio.IVShape]
    $Shape,

    [Parameter()]
    [System.Management.Automation.SwitchParameter]
    $PassThru
)
process {
    try {
        foreach ($visioShape in $Shape) {
            if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('X') -or
                $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Y') -or
                $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('DeltaX') -or
                $PSCmdlet.MyInvocation.BoundParameters.ContainsKey('DeltaY')) {
                #region Initialize local variables.
                [System.Double]$value = 0.0
                [System.String]$units = $null
                [System.Double]$xDestination = 0.0
                [System.Double]$yDestination = 0.0
                #endregion

                #region Activate the Visio document window if necessary.
                if ($visioShape.ContainingPage.Document -ne
                    $visioShape.ContainingPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document
                    $visioShape.ContainingPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio shape if necessary.
                if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
                    $visioDocumentWindow.Page = $visioShape.ContainingPage
                }
                #endregion

                #region Move the Visio shape.
                $xDestination = $visioShape.CellsU('PinX').ResultIU
                $yDestination = $visioShape.CellsU('PinY').ResultIU
            }
        }
    }
}

```

```

        if ($X) {
            $value = $X -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$1'
            $units = $X -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$3'
            $xDestination = $visioShape.Application.ConvertResult($value,$(if ($units) {$units}
else {$null}),'')
        }
        if ($DeltaX) {
            $value = $DeltaX -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$1'
            $units = $DeltaX -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$3'
            $xDestination += $visioShape.Application.ConvertResult($value,$(if ($units) {$units}
else {$null}),'')
        }
        if ($Y) {
            $value = $Y -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$1'
            $units = $Y -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$3'
            $yDestination = $visioShape.Application.ConvertResult($value,$(if ($units) {$units}
else {$null}),'')
        }
        if ($DeltaY) {
            $value = $DeltaY -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$1'
            $units = $DeltaY -replace '^(-?\d+(\.\d+)?) ?([a-z]+)?$', '$3'
            $yDestination += $visioShape.Application.ConvertResult($value,$(if ($units) {$units}
else {$null}),'')
        }
        $visioShape.SetCenter($xDestination,$yDestination)
        #endregion
    }

    #region Return the Visio shape object if requested.
    if ($PassThru) {
        $visioShape
    }
    #endregion
} catch {
    throw
}
}
}

```

Export-ModuleMember -Function Move-VisioShape

```

function Move-VisioShapeToFront {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioShape in $Shape) {
                #region Activate the Visio document window if necessary.
                if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio shape if necessary.
            }
        }
    }
}

```



```

}
Export-ModuleMember -Function Move-VisioShapeToBack

function Move-VisioShapeForward {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {
            foreach ($visioShape in $Shape) {
                #region Activate the Visio document window if necessary.
                if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
                    $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
                    $visioDocumentWindow.Activate()
                } else {
                    $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
                }
                #endregion

                #region Activate the Visio shape if necessary.
                if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
                    $visioDocumentWindow.Page = $visioShape.ContainingPage
                }
                #endregion

                #region Move the Visio shape forward one level.
                $visioShape.BringForward()
                #endregion

                #region Return the Visio shape object if requested.
                if ($PassThru) {
                    $visioShape
                }
                #endregion
            }
        } catch {
            throw
        }
    }
}
Export-ModuleMember -Function Move-VisioShapeForward

```

```

function Move-VisioShapeBackward {
    [CmdletBinding()]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )
    process {
        try {

```

```

    foreach ($visioShape in $Shape) {
        #region Activate the Visio document window if necessary.
        if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
            $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
            $visioDocumentWindow.Activate()
        } else {
            $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
        }
        #endregion

        #region Activate the Visio shape if necessary.
        if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
            $visioDocumentWindow.Page = $visioShape.ContainingPage
        }
        #endregion

        #region Move the Visio shape backward one level.
        $visioShape.SendBackward()
        #endregion

        #region Return the Visio shape object if requested.
        if ($PassThru) {
            $visioShape
        }
        #endregion
    }
} catch {
    throw
}
}
}

```

Export-ModuleMember -Function Move-VisioShapeBackward

```

function Connect-VisioShape {
    [CmdletBinding(DefaultParameterSetName='Default')]
    [OutputType([Microsoft.Office.Interop.Visio.IVShape])]
    param(
        [Parameter(Position=0, Mandatory=$true)]
        [ValidateNotNullOrEmpty()]
        [Microsoft.Office.Interop.Visio.IVShape]
        $ToShape,

        [Parameter(Mandatory=$true, ParameterSetName='Top')]
        [System.Management.Automation.SwitchParameter]
        $Top,

        [Parameter(Mandatory=$true, ParameterSetName='Bottom')]
        [System.Management.Automation.SwitchParameter]
        $Bottom,

        [Parameter(Mandatory=$true, ParameterSetName='Left')]
        [System.Management.Automation.SwitchParameter]
        $Left,

        [Parameter(Mandatory=$true, ParameterSetName='Right')]
        [System.Management.Automation.SwitchParameter]
        $Right,

        [Parameter(Mandatory=$true, ValueFromPipeline=$true)]
        [ValidateNotNullOrEmpty()]
        [Alias('InputObject')]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Shape,

        [Parameter()]
        [ValidateNotNullOrEmpty()]
        [Microsoft.Office.Interop.Visio.IVShape]
        $Connector,

```

```

[Parameter()]
[System.Management.Automation.SwitchParameter]
$SmartLayout,

[Parameter()]
[System.Management.Automation.SwitchParameter]
$PassThru
)
begin {
    try {
        #region Initialize local variables.
        [System.UInt16]$private:direction = 0
        [System.Boolean]$private:directionSupported = $true
        [System.Boolean]$private:useSmartLayout = $false
        [System.Collections.Hashtable]$private:visioDefaultConfiguration = Get-
VisioDefaultConfiguration
        #endregion

        #region Determine the direction that will be used for the connector.
        switch ($PSCmdlet.ParameterSetName) {
            'Top' { $private:direction = 1; break }
            'Bottom' { $private:direction = 2; break }
            'Left' { $private:direction = 3; break }
            'Right' { $private:direction = 4; break }
            default { $private:direction = 0; break }
        }
        if (($private:direction -ne 0) -and

([System.Reflection.Assembly]::GetAssembly('Microsoft.Office.Interop.Visio.IVPage').FullName -eq
'Microsoft.Office.Interop.Visio, Version=11.0.0.0, Culture=neutral,
PublicKeyToken=71e9bcell1e9429c')) {
            Write-Warning 'Visio 2003 does not support specifying a direction when connecting shapes.
The direction will be ignored.'
            $private:directionSupported = $false
        }

        #endregion

        #region Determine if we are using a smart layout or not.
        if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('SmartLayout')) {
            $private:useSmartLayout = $SmartLayout
        } else {
            $private:useSmartLayout = $visioDefaultConfiguration.SmartLayout
        }
        #endregion
    } catch {
        throw
    }
}
process {
    try {
        foreach ($visioShape in $Shape) {
            #region Activate the Visio document window if necessary.
            if ($visioShape.ContainingPage.Document -ne
$visioShape.ContainingPage.Application.ActiveDocument) {
                $visioDocumentWindow = Get-VisioDocumentWindow -Document
$visioShape.ContainingPage.Document
                $visioDocumentWindow.Activate()
            } else {
                $visioDocumentWindow = $visioShape.ContainingPage.Application.ActiveWindow
            }
            #endregion

            #region Activate the Visio shape if necessary.
            if ($visioDocumentWindow.Page -ne $visioShape.ContainingPage) {
                $visioDocumentWindow.Page = $visioShape.ContainingPage
            }
            #endregion
        }
    }
}

```



```

#region Connect the Visio shapes.
if ($private:directionSupported) {
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Connector')) {
        $ToShape.AutoConnect($visioShape, $direction, $Connector)
    } else {
        $ToShape.AutoConnect($visioShape, $direction,
$visioShape.Application.ConnectorToolDataObject)
    }
} else {
    if ($PSCmdlet.MyInvocation.BoundParameters.ContainsKey('Connector')) {
        $visioConnector = $Connector
    } else {
        $visioConnector =
$visioShape.ContainingPage.Drop($visioShape.Application.ConnectorToolDataObject,0,0)
    }
    $visioConnector.CellsU('BeginX').GlueTo($ToShape.CellsU('PinX')) | Out-Null
    $visioConnector.CellsU('EndX').GlueTo($visioShape.CellsU('PinX')) | Out-Null
}
#endregion

#region Center the Visio drawing and refresh the layout.
if ($useSmartLayout) {
    $visioShape.ContainingPage.Layout()
    $visioShape.ContainingPage.CenterDrawing()
}
#endregion

#region Return the Visio shape object if requested.
if ($PassThru) {
    $visioShape
}
#endregion
}
} catch {
    throw
}
}
}
}
Export-ModuleMember -Function Connect-VisioShape
#endregion

```

```

# SIG # Begin signature block
# MIIIdfwYJKoZiIhvcNAQcCoIIdcDCCHWwCAQExCzAJBgUrDgMCGGUAMGkGCisGAQQB
# gjcCAQSGwzBZMDQGCisGAQQBgjcCAR4wJgIDAQAABBAfzDtgWUsITrckOsYpfvNR
# AgEAAgEAAgEAAgEAAgEAMCEwCQYFKw4DAhFAAQUTyJe6H74fvAfHAuXmnEIPzFz
# 0/Kgghi8MIIddTCCA12gAwIBAgILBAAAAAABFUtaW5QwDQYJKoZiIhvcNAQEFBQAw
# VzELMAkGA1UEBhMCQkUxGTAXBgNVBAoTEEdsb2JhbFNpZ24gbnYtc2ExEDA0BGNV
# BAsTB1Jvb3QgQ0EwExGzAZBgNVBAMTEkdsb2JhbFNpZ24gUm9vdCBDQTAeFw05ODA5
# MDEEMjAwMDEwODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAx
# MjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAx
# ExBHBG9iYWxTaWduIG52LXNhMRwDgYDVQQLLEwSb290IENBMRSwGQYDVQQDEExH
# bG9iYWxTaWduIFJvb3QgQ0EwEwgEiMA0GCsGqSIB3DQEBAQUAA4IBDwAwggEKAoIB
# AQDaDuaZjc6j40+KfVvxi4Mla+pIH/EqsLmVEQS98GPR4mdmzxzdxtIK+6NiY6a
# rymAZavpxy0Sy6scTHAHOt0KMM0VjU/43dSMUBUC71DuxC73/01S8pF94G3VNTCO
# XkNz8kHpl1Wrjsok6Vjk4bwY8iGlbKk3Fp1S4bInMm/k8yuX9iFUSPJJ41tbcdG6T
# RGHrJcdGsnUOHugZitVtbNV4FpWi6cgKOOvyJBNPc1STE4U6G7weNLWLBYY5d4ux
# 2x8gkAsJU26Qzns3dLlwr5EiUWMWwa6xrEmCMGzK9FGqkjWZCrXgzT/LCrBbBlD
# SgeF59N89iFo7+ryUp9/k5DPAGMBAAGjQjBAMA4GAlUdDwEB/wQEAWIBBjAPBgNV
# HRMBAf8EBTADAQH/MB0GAlUdDgQWBRRge2YaRQ2Xyo1QL30EzTSo//z9SzANBgkq
# hkiG9w0BAQUFAAOCAQEAlnPNfE920I2/7LqivjTFKDK1fPxsncwrvQmeU79rXqoR
# SlblCKOzyj1hTdnGcbM+w6DjY1Ub8rrvrTnhQ7k4o+YviiY776BQVvnGCv04zcQL
# cFGU15gE38Nf1NUVYrRBNMRddWQVdf9VMOyGj/8N7yy5Y0b2qvzfvGn9LhJIZJrg
# lfCm7ymPABEVtQwdf5pLgkKeB6zpxxxYu7KyJesF12KwvhHhm4qxFYxldBniYUr
# +WymXuadDKqC5J1R3XC321Y9YeRq4VzW9v493kHMB65jUr9TU/Qr6cf9tveCX4XS
# QRjbgbMEHMUfpiBvFSDJ3gyICh3Wz1Xi/EjJKSZp4DCCBAcwgLvoAMCAQICwEA
# AAAAAAR5GQJ02MA0GCSqSIB3DQEBBQUAMGMxCzAJBgNVBAYTAkJKFMRkwFwYDVQK
# ExBHBG9iYWxTaWduIG52LXNhMRwDgYDVQQLLEw1PYmplY3RTaWduIENBMSEwHwYD
# VQDEExhHbG9iYWxTaWduIE9iamVjdFNpZ24gQ0EwEwHhcNMDg0MjY0ODAxMjY0ODAx
# MTEEMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAxMjY0ODAx
# dHdhcmUxZAVBgNVBAMTDlF1ZXN0IFNvZnR3YXJlMSAwHgYJKoZiIhvcNAQkBFhFz

```

dXBwb3J0QHF1ZXN0LmNvbTCBnZANBgbkqhkiG9w0BAQEFAAOBjQAwgYkCgYEAlmza
2hKi1qZnaF1sHhuFRS7MEGg9tYhF7AFbJrvTvhCZk9sxK92thKBfyDSOzJauB7Zt
j+1HwQzpqbbU94EsR09JOf8vB+xQKLCxaBP5YjwhjJzVy+1d6frVWYn1oVxPXRBM
G7BnFgfRkOdtsg/Qn1Uqn1ENS0zyjTuh5iduUy0CAwEAAA0CAUAWggE8MB8GA1Ud
IwQYMBaA8nFJb80smS6W5139Vn/28S44T1OgME4GCCSgAQUFwEBBEIwQDA+Bggr
BgEFBQcWaoYyaHR0cDovL3N1Y3VYzS5nbG9iYWxzawWduLm5ldC9jYWN1cnQvT2Jq
ZWN0U2lnbi5jcnQwOQYDVR0fBDIwMDAuoCygKoYoaHR0cDovL2NybC5nbG9iYWxz
aWduLm5ldC9PYmplY3RTaWduLmNybDAJBgNVHRMEAjAAMA4GA1UdDwEB/wQEAWIH
gDATBgNVHSUEDDAKBggrBgEFBQcDAAzBLBgNVHSAERDBCMEAGCSsGAQQBoDIBMjAz
MDEGCCSgAQUFwIBFiVodHRWoi8vd3d3Lmdsb2JhbHNpZ24ubmV0L3JlcG9zaXRv
cnkVMBEGCWGCSAGG+EIbAQEAWIEEDANBgkqhkiG9w0BAQUFAAOCAQEAG9hUuQek
ddJ/pzfQ9p4hzKBkeKcVsunEeTUMNg90XzgdOYRFJPCD7T+gXXrTs6Y2xFmLJN
G/2lQsjQ/32cBBN9zZdbX+ExhFfEV9/w0gbw3H/PfYkCRvp9VZlTafIt4MJCT/Zp
guPQgggWadScg7jQNYeHEG6H6c3WHO8PMiKcKJp9LuM1PKX9Bjy6F2k8rbdEAYJ
u0mTiAcnEAc/KwoKBZVT1gnT3rkwgTgNlXw2hqT/Zcf8Jy4IDzbKzL+gYmDCNaJu
wAzhaa05oZTLwhFV1sdc5MSJVJnMjVLPnO1jrhi5g60o6EmezM/ke8nzoXbmt1P
JjOApuATvUdFlzCCBA0wggLloAMCAQICcwQAAAAAASoED6yzMA0GCSqGSIb3DQEB
BQUAMFcxCAZAJBgNVBAYTAkFJMRkwFwYDVQQKEXBHbG9iYWxTaWduIG52LXNhMRw
DgYDVQQLLEwdSb290IENBMRswGQYDVQDEExJHbG9iYWxTaWduIFJvb3QgQ0EwHhcN
OTkwMTI4MTMwMDAwWhcNMTcwMTI3MTIwMDAwWjCBGTElMAkGA1UEBHMCMQkUxGTAX
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SIG # End signature block

VisioAssembly.psd1

#####

```

# File:          VisioAssembly.psdl
#
# Author:        Poshoholic
#
# Publisher:     Poshoholic Studios
#
# Copyright:     © 2011 Poshoholic Studios. All rights reserved.
#
# Usage:        To load this module in your Script Editor:
#
#               1. Open the Script Editor.
#
#               2. Select "PowerShell Libraries" from the File menu.
#
#               3. Check the VisioAssembly module.
#
#               4. Click on OK to close the "PowerShell Libraries" dialog.
#
# Alternatively you can load the module from the embedded console by invoking
this:          #
#               Import-Module -Name Visio\VisioAssembly
#
#               Please provide feedback on the PowerGUI Forums.
#
#####
#####

@{

# Script module or binary module file associated with this manifest
ModuleToProcess = 'VisioAssembly.psml'

# Version number of this module.
ModuleVersion = '1.0.0.0'

# ID used to uniquely identify this module
GUID = '{79ec367b-a879-4156-a303-d403b6bd73ab}'

# Author of this module
Author = 'Poshoholic'

# Company or vendor of this module
CompanyName = 'Poshoholic Studios'

# Copyright statement for this module
Copyright = '© 2011 Poshoholic Studios. All rights reserved.'

# Description of the functionality provided by this module
Description = 'Commands for loading Visio assemblies for Microsoft Office document automation'

# Minimum version of the Windows PowerShell engine required by this module
PowerShellVersion = '2.0'

# Minimum version of the .NET Framework required by this module
DotNetFrameworkVersion = '2.0'

# Minimum version of the common language runtime (CLR) required by this module
CLRVersion = '2.0.50727'

# Processor architecture (None, X86, Amd64, IA64) required by this module
ProcessorArchitecture = 'None'

# Modules that must be imported into the global environment prior to importing
# this module
RequiredModules = @()

# Assemblies that must be loaded prior to importing this module
RequiredAssemblies = @()

# Script files (.ps1) that are run in the caller's environment prior to

```



```
# aW5nMS5jcmwwHQYDVR00BBYEFKqpporvpGRzlpXieciP6s+lYcNkMAkGA1UdEwQC
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# ++XmkkeiSW1JsIUtV0L+r3JHpw5m2vFnj1fHLnpgX11LgYhKY6Hs1XHJX370tInT
# yxr5n13qk4fMq6uBGBiWAaABT+rDr2TooYIClZCCApMGCSqGSIb3DQEBjGCAoQw
# ggKAAgEBMGmWVDEYMBYGA1UECwMPVGlTZXN0Yw1waW5nIENBMRMwEQYDVQKKEwPH
# bG9iYWxTaWduMStwIQYDVQDEExpHbG9iYWxTaWduIFRpbWVzdGFtcGluZyBDQQUIL
# AQAAAAABJbC0zaEwCQYfKw4DAhoFAKCB9zAYBgkqhkiG9w0BCQMxCwYJKoZIhvcN
# AQcBMBwGCSqGSIb3DQEBJTEPFw0xMTA0MTcyMjE5MjJaMCMGCSqGSIb3DQEBJDEW
# BBTU/NehKhb51ZvWNO9fE4HFVoGhxjCB1wYLKoZIhvcNAQkQAkwYcGwYQwYwEw
# fwQURT9992u6JBDWfbrxj1uhW0F+SwwZzBYpFYwVDEYMBYGA1UECwMPVGlTZXN0
# Yw1waW5nIENBMRMwEQYDVQKKEwPHbG9iYWxTaWduMStwIQYDVQDEExpHbG9iYWxT
# aWduIFRpbWVzdGFtcGluZyBDQQUILAQAAAAABJbC0zaEwDQYJKoZIhvcNAQEBBQAE
# ggEAC37dts2J269FmZ6+w6DPJvqLT+jKvtgpE6PyWRzVZcx2gXHd800ZQa6iWjs
# Yyx1FF9h1EofcNhrkrl1eWmMyp7kbA0raTnf9zHyEZbLclM4luX+DD+GYCi5HoTP
# WvRjTr65jcnOnVDjmZ2GcuYGw2z7Mi4UyjSOTC8t0ZU1lgXoBLclm9Ft0pwoEKIh
# Ef/zeG+DV9s8JEpSdCGm108cDOM8bZ1XcLy50HmCCc5ULCgMlZB6PeODwcU++Ild
# QzI49wKqy5M3Gwu2/40HH2igbUOAiIng2XhLu0wfDKZHv2Vy8XFKQkedLenfT8j4
# rPg34TaLnc1fOS0Z9zi6xyaRaQ==
# SIG # End signature block
```

VisioAssembly.psm1

```
#####
#####
# File: VisioAssembly.psm1
#
# Author: Poshoholic
#
```

```

# Publisher:      Poshoholic Studios
#
# Copyright:     © 2011 Poshoholic Studios. All rights reserved.
#
# Usage:        To load this module in your Script Editor:
#
#               1. Open the Script Editor.
#
#               2. Select "PowerShell Libraries" from the File menu.
#
#               3. Check the VisioAssembly module.
#
#               4. Click on OK to close the "PowerShell Libraries" dialog.
#
#               Alternatively you can load the module from the embedded console by invoking
this:           #
#               Import-Module -Name Visio\VisioAssembly
#
#               Please provide feedback on the PowerGUI Forums.
#
#####
#####

Set-StrictMode -Version 2

#region Set the module export mode to explicit.

Export-ModuleMember

#endregion

#region OfficeAssembly functions.

function Import-OfficeAssembly {
    [CmdletBinding()]
    [OutputType([System.Reflection.Assembly])]
    param(
        [Parameter(Position=0, Mandatory=$true)]

[ValidateSet('Outlook','Word','Excel','PowerPoint','Access','OneNote','Visio','Project','Publisher',
,'InfoPath')]
        [Alias('Name')]
        [System.String]
        $ProductName,

        [Parameter()]
        [System.Management.Automation.SwitchParameter]
        $PassThru
    )

#region Initialize local variables.
[System.Reflection.Assembly]$officeAssembly = $null
#endregion

#region Define helper functions.
function private:Load-OfficeAssembly {
    #region Initialize local variables.
[System.Reflection.Assembly]$assembly = $null
#endregion

#region Load the Office assembly.
foreach ($supportedVersion in @( '15','14','12','11' )) {
    trap {
        continue
    }
    if ($assembly = [System.Reflection.Assembly]::Load("Microsoft.Office.Interop.${ProductName},
Version=${supportedVersion}.0.0.0, Culture=neutral, PublicKeyToken=71e9bce111e9429c")) {
        break
    }
}
}

```



```

#endregion

#region Return the assembly that was loaded to the client.
if ($assembly) {
    $assembly
}
#endregion
}
#endregion

#region Load the Office assembly if it is installed on the local system.
$officeAssembly = Load-OfficeAssembly
#endregion

#region Throw an error if the Office product is not installed.
if (-not $officeAssembly) {
    throw $(New-Object System.InvalidOperationException "${ProductName} 2003 or later is
required.")
    return
}
#endregion

#region Return the Office assembly object if requested.
if ($PassThru) {
    $officeAssembly
}
#endregion
}
Export-ModuleMember -Function Import-OfficeAssembly

#endregion

#region VisioAssembly functions.

function Import-VisioAssembly {
    <#
    .ForwardHelpTargetName Import-OfficeAssembly
    .ForwardHelpCategory Function
    #>
    [CmdletBinding()]
    [OutputType([System.Reflection.Assembly])]
    param(
        [Switch]
        $PassThru
    )
    begin {
        try {
            #region Initialize local variables.
            [System.String]$commandName = 'Import-OfficeAssembly'
            [System.Int32]$outBuffer = $null
            [System.Management.Automation.CommandInfo]$wrappedCmd = $null
            #endregion

            #region Ensure that objects are sent through the pipeline one at a time.
            if ($PSBoundParameters.TryGetValue('OutBuffer', [ref]$outBuffer)) {
                $PSBoundParameters['OutBuffer'] = 1
            }
            #endregion

            #region Look up the command being proxied.
            $wrappedCmd = $ExecutionContext.InvokeCommand.GetCommand($commandName,
[System.Management.Automation.CommandTypes]::Function)
            #endregion

            #region If the command was not found, throw an appropriate command not found exception.
            if (-not $wrappedCmd) {
                [System.String]$errorMessage =
$PSCmdlet.GetResourceString('DiscoveryExceptions','CommandNotFoundException')
                [System.Management.Automation.CommandNotFoundException]$exception = New-Object -TypeName
System.Management.Automation.CommandNotFoundException -ArgumentList ($errorMessage -f $commandName)

```

```
    $exception.CommandName = $commandName
    [System.Management.Automation.ErrorRecord]$errorRecord = New-Object -TypeName
System.Management.Automation.ErrorRecord -ArgumentList
$exception, 'DiscoveryExceptions', ([System.Management.Automation.ErrorCategory]::ObjectNotFound), $co
mmandName
    $PSCmdlet.ThrowTerminatingError($errorRecord)
}
#endregion

#region Create the proxy command script block.
$scriptCmd = {& $wrappedCmd -ProductName Visio @PSBoundParameters}
#endregion

#region Use the script block to create the steppable pipeline, then invoke its begin block.
$steppablePipeline = $scriptCmd.GetSteppablePipeline($myInvocation.CommandOrigin)
$steppablePipeline.Begin($PSCmdlet)
#endregion
} catch {
    throw
}
}
process {
    try {
        #region Process the element that was just received from the previous stage in the pipeline.
        $steppablePipeline.Process($_)
        #endregion
    } catch {
        throw
    }
}
end {
    try {
        #region Close the pipeline.
        $steppablePipeline.End()
        #endregion
    } catch {
        throw
    }
}
}
}
Export-ModuleMember -Function Import-VisioAssembly
```

#endregion

```
# SIG # Begin signature block
# MIIdfwYJKoZIhvcNAQcCoIIdcDCCHWwCAQExCzAJBgUrDgMCGGUAMGkGCisGAQQB
# gjcCAQSGwBZMDQGcGAQQBgjcCAR4wJgIDAQAABBAfzDtgWUUsITrck0sYpfvNR
# AgEAAgEAAgEAAgEAAgEAMCEwCQYFKw4DAhoFAAQU3cmZQgpHmca8lP2MogLjIFHO
# u8Kggghi8MIIdTCCAl2gAwIBAgILBAAAAAABFUtaW5QwDQYJKoZIhvcNAQEFBQAw
# VzELMAkGA1UEBhMCQkUxGTAxBGQNVBAoTEEdsb2JhbFNpZ24gbnYtc2ExEDAOBgNV
# BAsTB1Jvb3Q0EwGzAZBgNVBAMTEkdsb2JhbFNpZ24gUm9vdCBDQTAeFw05ODA5
# MDExMjAwMDEwMDAxMjg4MjAwMDEwMDA1MDEwMDAwMDAwMDAwMDAwMDAwMDAwMDAw
# MDEwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAwMDAw
# ExBHbG9iYWxTaWduIG52LXNhMRWAdG9yDQYJKoZIhvcNAQEFBQAwIBAwgEKAoIB
# AQDaDuaZj40+Kfvvxi4Mla+pIH/EqsLmVEQS98GPR4mdmzxdzxtIK+6NiY6a
# rymAZavpxy0Sy6scTHAHOt0KMM0VjU/43dSMUBUc71DuxC73/0lS8pF94G3VNTCO
# XkNz8kHp1Wrjsok6Vjk4bwY8iG1bKk3Fp1S4bInMm/k8yuX9iFUSPJ41tbcD6G6T
# RGRHjcdGsnUOhugZitVtbnV4FpWi6cgKOOvyJBNPc1STE4U6G7weNLWLBYY5d4ux
# 2x8gkasJU26Qzns3dLlwr5EiUWMMW6xrkEmCMGzK9FGqkqjWZCrXgzT/LCrBb1D
# SgeF59N89iFo7+ryUp9/k5DPAgMBAAGjQjBAMA4GA1UdDwEB/wQEAwIBBjAPBgNV
# HRMBAf8EBTADAQH/MB0GA1UdDgQWBRRge2YaRQ2Xyo1QL30EzTSO//z9SzanBgkq
# hkiG9w0BAQUFAAOCAQEAlnFnE920I2/7LqivjTFKDK1fPxsncwrVqmeU79rXqoR
# SLb1CKOzyj1hTdNGCbM+w6djY1Ub8rrvrTnhQ7k4o+YviiY776BQVvnGcV04zcQL
# cFGU15gE38fn1NUVYRRBnMRddWQVdf9VMOyGj/8N7yy5Y0b2qvzfvGn9LhJIZJrg
# lfCm7ymPAbEVtQwdpf5pLGkkeB6zpxxxYu7KyJesF12KwvhHhm4qxFYxldBniYUr
# +WymXUadDKqC5J1R3XC321Y9YeRq4VzW9v493kHMB65jUr9TU/Qr6cf9tveCX4XS
# QRjbgbMEHMUfpIBvFSDJ3gyICH3WZ1Xi/EjJKSZp4DCCBAcwggLvoAMCAQICCWEA
# AAAAAR5GQJ02MA0GCSqGSIb3DQEBBQUAMGMxGzAJBgNVBAYTAKJFMRkwFwYDVQK
# ExBHbG9iYWxTaWduIG52LXNhMRWYFAyDQYJKoZIhvcNAQEFBQAwIBAwgEKAoIB
# YQQDExHbG9iYWxTaWduIE9iamVjdFNpZ24gQ0EwHhcNMDEwMTc0ODAyWhcN
```

MTExmJje3MTc0ODAYWjBhMQswCQYDVQQGEwJVUzEXMBUGA1UEChMOUXVlc3QgU29m
dHdhcmUxZmVzAVBGNVBAAMTDLFlZXRNOIFNvZnR3YXJlMSAwHgYJKoZIHvcNAQkBFhFz
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IwQYBBAFNJb80smS6Ww5139Vn/28S44T1OgME4GCCsGAQUFBwEBBEIwQDA+Bgggr
BgEFBQcwoAoYyaHR0cDovL3N1Y3VyZS5nbG9iYWxzawWduLm5ldc9jYWN1cnQvT2Jq
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aWduLm5ldc9PYmplY3RTaWduLmNybDAJBGNVHRMEAjAAMA4GA1UdDwEB/wQEAwIH
gDATBgNVHSUEDDAKBggrBgEFBQcDAzBLBgNVHSAERDBCMEAGCSsGAQQBoDIBMjAz
MDEGCCsGAQUFBwIBFiVodHRwOi8vd3d3Lmdsb2JhbHNpZ24ubmV0L3JlcG9zaXRv
cnkvMBEGCWCsGAGG+EIBAQQEAWIEEDANBgkqhkiG9w0BAQUFAAOCAQEAG9hUuQek
ddDJ/pzfgo9p4hzKBkeKcVsunBeTUMNg90XzgdOYRFJPCD7T+gXXrTs6Y2xFmLJN
G/2lQsjQ/32cBBN9zZdbX+ExhFfEV9/w0gbw3H/PfYkCRvp9VZlTafItt4MJct/Zp
guPQgggWadScg7jQNYeHEG6H6c3WHO8PMiKcKJp9LuM1PKX9Bjy6F2k8rbdEAYJ
u0mTiAcnEAc/KwoKBZVT1gnT3rkwgTgN1Xw2hqT/Zcf8Jy4IDzbKzL+gYmDCNaj
wTzhzaA05ozTLwhFV1sdC5MSJvJnMJVLPnO1jrhhi5g6Oo6EmezM/ke8nzoXbmTlP
Jj0ApuATvUdFlzCCBA0wggLlOAMCAQICcwQAAAAAASoeD6yzMA0GCSqGSIb3DQE
BQUAMFcxZAJBgNVBAYTAKJFMRkwFwYDVQQKEXBHbG9iYWxzawWduIG52LXNhMR
AwDgYDVQQLEwdSb290IENBMRswGQYDVQQDEXJHbG9iYWxzawWduIFJvb3QgQ0EwHhcn
OTkwMTI4MTMwMDAwWhcnMTcwMTI3MTIwMDAwWjCBGTELMAkGA1UEBHMCMQkUxGTAX
BgNVBAoTEEdsb2JhbFNpZ24gbnYtc2ExJTAjBgNVBAsTHFByaW1hcnkgT2JqZWNO
IFB1YmXpc2hpbmcmGQ0EXMDAUwBGNVBAAMTJ0dsb2JhbFNpZ24gUHJpbWYfyeSBPYmpl
Y3QgUHVibGlzaGlzYDQYDVQCCASIAWQYJKoZIhvcNAQEBBQdGgEPADCCAQoCggEB
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RxTtKuaGaJnnJ/SU7JpBUfEW1HqM4USXaHED2FhvvbQQQu4NZnVGi0SW0jAAEGdj
90SbAXDKVm+cWJcqJxeLLnFsbUarpysPfxZIZMhs+gYXAA010WzDPV4lXPoCu7E
4HKMHhgqHrtezm0A05zvc0VawEAAaOBrjCBqzAOBgNVHQ8BAf8EBAMCAQYwDwYD
VR0TAQH/BAUwAwEB/zAdBgNVHQ4EFgQUFVF5GnwMWFnaZzdJEOhOayXgtf00wMwYD
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bDATBgNVHSUEDDAKBggrBgEFBQcDAzAfBgNVHSMEGDAwBRge2YaRQ2XyolQL30E
zTSo//z9SzanBgkqhkiG9w0BAQUFAAOCAQEAtXimonwEt3/Jf3lqvHH6KTBgwvRi
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QMGp88SMTnK6EHZm/2Qrx85Sp/zXmnyORo0Bg01CO9ucP58yYVfXF7CzNmbp/1E
b4E3sZrOp1YliifWK1m0RlyM5JXEKQAhjTnCP8COhkrbktfoBbtq/DimSg3gfkUE0
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ggMcOAMCAQICcwQAAAAAASAZwZBmMA0GCSqGSIb3DQEBBQUAMFcxZAJBgNVBAYT
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MjgWMTI4MTIwMDAwWjBUMRgwFgYDVQQLEw9UaW1lc3RhbXBpbmcmGQ0EXEzARBgNV
BAoTCKdsb2JhbFNpZ24xIzAhBgNVBAMTGkdsb2JhbFNpZ24gVGltdXN0Y1waW5N
IENBMTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4MTI4
8Dy69drND1N7Rp+C8mIT18F3rbuBN35PHpOBwQYi2h1QhMaXlZKpk7Y9q4Z5GVR9
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OYo5XMT+j/sRnL0QGULj0EMii9arkpl0FM8wB75Pvf2Kj55a3208zFqZUJC5rcKX
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yQiRMWVPFKipBdw4HmqqMAq9jceAKO5CRcQ4U895YRamAMgT1WVxqcAA5J5Rn9bRG
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kn4kPqrsFOc6MzSLxjusg6sPFGJ6uhotTUSbxTDwC5J5fTx44Pjm0hWWWZk5KzBh
6Lj4wKHphIhQReH3E3Im+wLuU4XKu67VAQE/vFx5YXtCoizaskijpur8wggQuMIID
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aW1lc3RhbXBpbmcmGQ0EXEzARBgNVBAoTCKdsb2JhbFNpZ24xIzAhBgNVBAMTGkds
b2JhbFNpZ24gVGltdXN0Y1waW5NIEENBMB4XDTA5MTIyMTA5MzI1N1loXDTIwMTIy
MjA5MzI1N1loUjELMAkGA1UEBHMCMQkUxGTAXJFMRkwFwYDVQQKEwRDUdsb2JhbFNpZ24gTlYx
KzApBgNVBAMTIkdsb2JhbFNpZ24gVGltdXN0Y1waW5NIEENBMB4XDTA5MTIyMTA5MzI1N1loXDTIwMTIy
MA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAAoIBAQNwjlddyLQwn04MsMVgx9CajtT
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rZCqXk0yyxeT2X+WwMCJZVbZxbE/mBsn+knuHRvLBowwHDvFp3BbqKsYWv7I9o6/
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MAAwDgYDVR0PAQH/BAQDAgeAMBYGA1UdJQEB/wQMAoGCCsGAQUFBwMIMEsGA1Ud
IAREMEIwQAYJKwYBBAgMgEeMDMwMQYIKwYBBQUHAgEwJWh0dHA6Ly93d3cuZ2xv
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AQUFADCBgTELMAkGA1UEBhMCQkUxGTAXBgNVBAoTEEdsb2JhbFNPZ24gbnYtc2Ex
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J0dsb2JhbFNPZ24gUHJpbWYfSBBYmp1Y3QgUHVibGlzaGluZyBDQTAEFw0wNDEx
MjIxMDAwMDBaFw0xNzAxMjcxMDAwMDBaMGxkZAJBgNVBAYTAKJFMRkwFwYDVQK
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