

**Activate SharePoint Online Migration**

**Scenario Guide 4.3**

Automate migration to SharePoint Online using PowerShell



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## Automate migration to SharePoint Online using PowerShell

## **Objective**

Learn about the PowerShell cmdlets based on the SharePoint Migration Tool (SPMT) migration engine. Learn how to create a script to automate real-world migration scenarios. Understand the advantages of performing a migration using PowerShell.

## **Scenario**

You have content in file shares and SharePoint Server that you want to migrate to SharePoint Online using an automated approach. You want the migrations to occur off hours and run over the weekend in an unattended mode.

* Learn the best practices for improving performance when migrating content to SharePoint Online.
* Create a migration script that uses the SPMT cmdlets to migrate a SharePoint Server site to SharePoint Online.
* Create a migration script that reads from a CSV file and performs multiple tasks.
* Schedule a migration script to run off-hours in unattended mode.
* Monitor progress of a scheduled migration.

## **Getting started**

Before starting the migration scenario, learn the best practices for performance and scaling large scale migrations.

### Best practices for improving migration performance

Utilize the following best practices to minimize issues with throttling and scale out for large migrations.

* Ensure the migration machine(s) meets the recommended hardware and software requirements.
* Schedule migrations for off-hours or over the weekend using a PowerShell script.
* Scale out by scheduling different migration tasks to run simultaneously across multiple migration machines.
* If using multiple migration machines, use multiple migration accounts to avoid the impact of a single account being throttled.

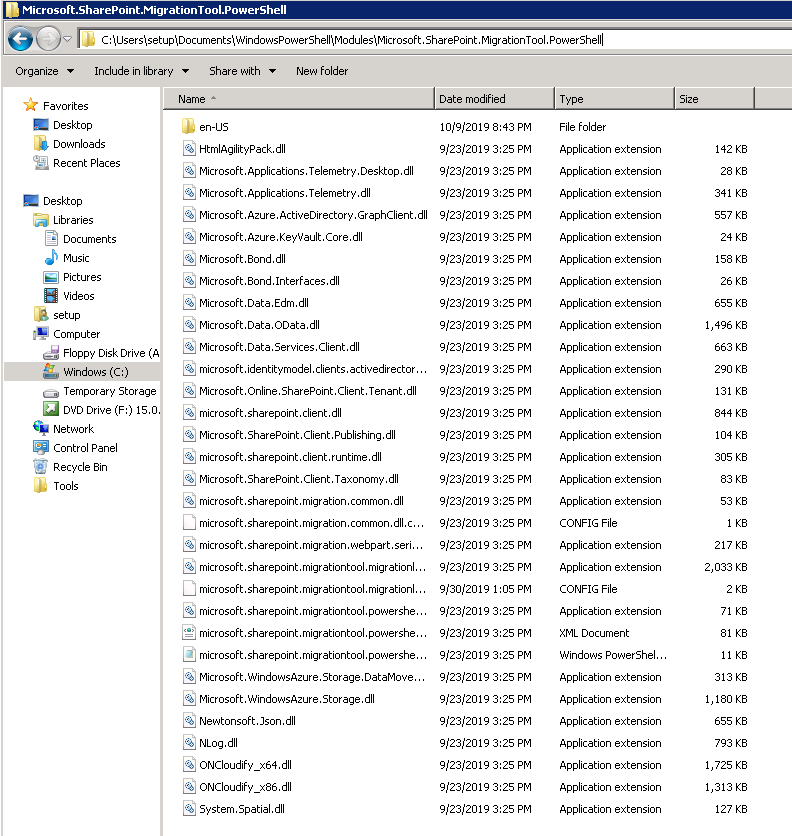
## **Start scenario**

Follow the instructions below to complete the scenario:

### Prepare to the migration machine and identify source content to migrate

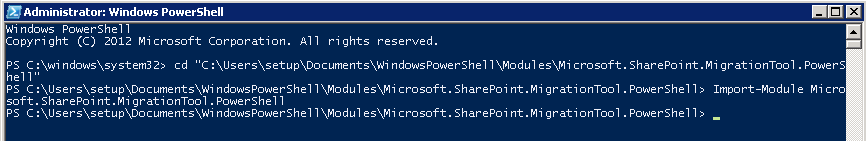
Log onto the migration machine and perform the following tasks:

1. Make sure you see DLL’s inside the following folder location: $env:UserProfile\Documents\WindowsPowerShell\Modules\Microsoft.SharePoint.MigrationTool.PowerShell



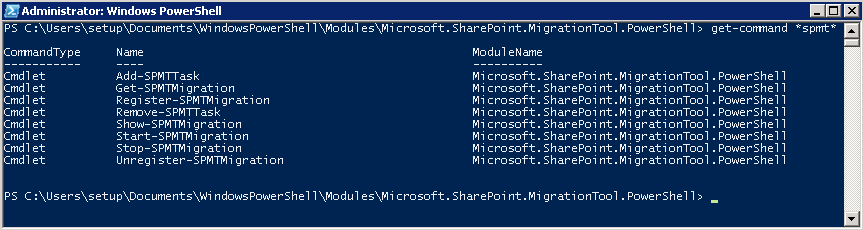
1. From this location above, run the following PowerShell command:

Import-Module Microsoft.SharePoint.MigrationTool.PowerShell



1. Run the following command to ensure the SPMT cmdlets are available:

Get-Command \*spmt\*



**Note**: For information on all current PowerShell cmdlets relating to SharePoint Online migration, please see the [Microsoft SharePoint Migration Tool cmdlet reference](https://docs.microsoft.com/en-us/powershell/module/spmt/?view=spmt-ps).

1. Locate an existing SharePoint Server site with less than **1GB** of content (or create a new site and upload some sample data) to migrate to SharePoint Online. Record the full URL to the site.

### Create a migration script that uses the SPMT cmdlets

Create a migration script that uses the SPMT cmdlets to perform a single migration task.

#### Edit and save the migration script

The following script migrates a single SharePoint Server site to a new SharePoint Online site.

1. From the migration machine open **PowerShell** **ISE** **as** **Administrator**.
2. Copy the PowerShell script below and paste into the **script** window of **PowerShell** **ISE**:

#Define SharePoint 2013 data source.#

$Global:SourceSiteUrl = "http://contoso/sites/fsm"

$Global:OnPremUserName = "contoso\setup"

$Global:OnPremPassword = ConvertTo-SecureString -String "OnPremPassword" -AsPlainText -Force

$Global:SPCredential = New-Object -TypeName System.Management.Automation.PSCredential -ArgumentList $Global:OnPremUserName, $Global:OnPremPassword

#Define SPO target.#

$Global:SPOUrl = "https://contoso.sharepoint.com/sites/fsm"

$Global:UserName = "admin@contoso.onmicrosoft.com"

$Global:Password = ConvertTo-SecureString -String "YourSPOPassword" -AsPlainText -Force

$Global:SPOCredential = New-Object -TypeName System.Management.Automation.PSCredential -ArgumentList $Global:UserName, $Global:Password

#Import SPMT Migration Module.#

Import-Module Microsoft.SharePoint.MigrationTool.PowerShell

#Register the SPMT session with SPO credentials.#

Register-SPMTMigration -SPOCredential $Global:SPOCredential -Force

#Adds the migration tasks into the session.#

Add-SPMTTask -MigrateAll -SharePointSourceSiteUrl $Global:SourceSiteUrl -SharePointSourceCredential $Global:SPCredential -TargetSiteUrl $Global:SPOUrl

#Start Migration in the console.#

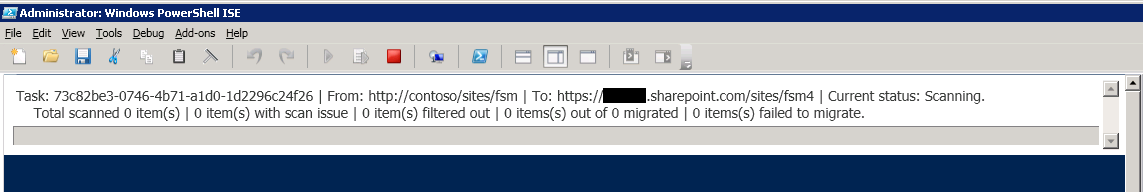
Start-SPMTMigration

1. Edit the following variables to define the source SharePoint Server site:
   * **$Global:SourceSiteUrl**
   * **$Global:OnPremUserName**
   * **$Global:OnPremPassword**
2. Edit the following variables to define the target SharePoint Online site:
   * **$Global:SPOUrl** <Enter a site URL that does not already exist. The SPMT task will create a new site during the migration.>
   * **$Global:UserName**
   * **$Global:Password**
3. Save the script as a **.PS1** file somewhere on the migration machine.
4. Keep the script open in **PowerShell** **ISE** editor.

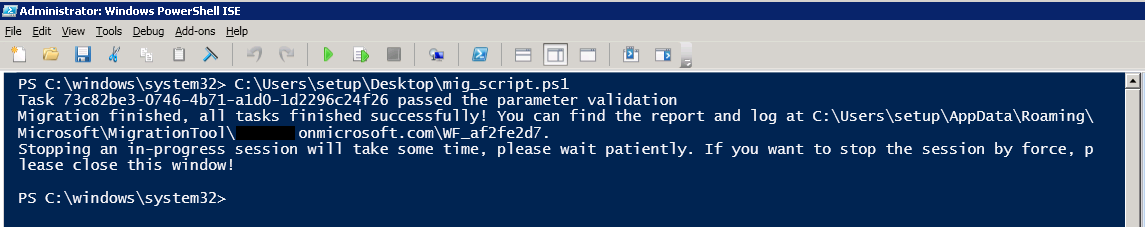
#### Run the migration script

Run the migration script and monitor the progress in the console pane.

1. From **PowerShell** **ISE** editor run the script by clicking the **Run** **Script** icon in the toolbar (or press F5 on the keyboard).
2. Monitor the progress of the migration in the **console** pane of **PowerShell** **ISE**.



1. When the script completes the following message appears in the console pane:
   * **"Task** <GUID 1> **passed the parameter validation"**
   * **"Migration finished, all tasks finished successfully!"**



1. **Optional**: Review the logs and reports to confirm the migration tasks completed successfully. The logs and reports will be in the following location:

C:\users\<account>\AppData\Roaming\Microsoft\MigrationTool\<tenant host URL>\task<#>

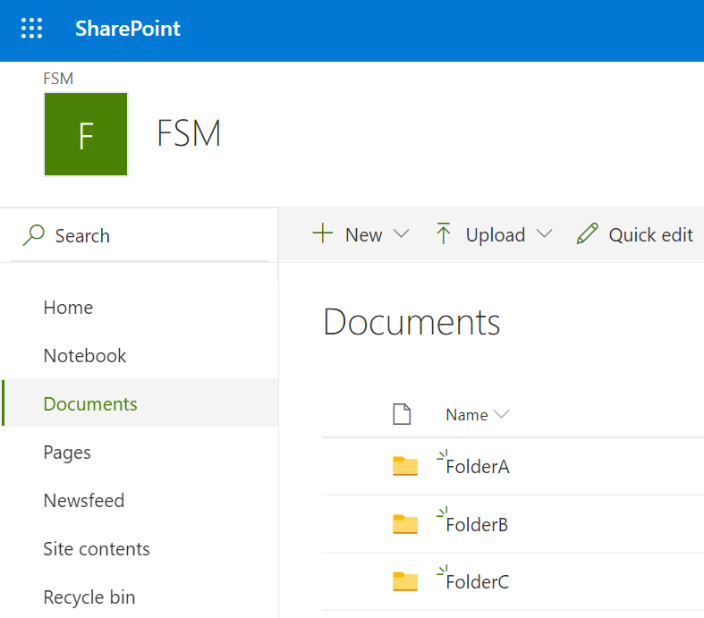
### Perform a scripted migration that reads data from a CSV file

Prepare the source and target environments for a new content migration task. Define the migration source and targets in a CSV file. Edit and run a PowerShell script that reads data from the CSV file.

#### Prepare the target SharePoint Online site and source folders for content migration

Create the target folders and local folder structure used for the next migration task.

1. Browse to the new target SharePoint Online site created in the previous step. Click on the **Settings** gear then click **Site** **Contents**.
2. Click on the "**Documents**" library. Add three **folders** under the root of the library:
   * **FolderA**
   * **FolderB**
   * **FolderC**



1. Create a local folder structure on the migration machine and add some sample content to each sub-folder. This content will be migrated to the target folders created in the previous step. Create the following folder structure:

* **C:\MigContent\FolderA**
* **C:\MigContent\FolderB**
* **C:\MigContent\FolderC**

#### Create a CSV file for content migration

Use any text editor, or an application like Excel, to create the CSV file.

1. Start **Excel**. Enter the values for your migration jobs. Enter one migration source and destination per row.
2. Add **three rows** of values.

**Note**: Do not include a **header row** in your CSV file. Remember to account for all six columns in the file, even if you are not needing a value for a given field.

1. See the reference table below for further explanation of **columns**:

* **Column A**:the path to a sub folder. Example: C:\MigContent\FolderA
* **Column B**:Leave blank.
* **Column C**: Leave Blank.
* **Column D**:Enter the URL of the target SharePoint Online site created in the previous step. Use the same URL for all three rows.
* **Column E**: Enter the name “Documents” for all three rows.
* **Column F**:Enter the target folder in SharePoint Online. Example: FolderA

1. Close and save as a **Comma delimited (\*.csv)** file on the desktop of the migration machine.

Example:

C:\MigContent\FolderA,,,https://contoso.sharepoint.com/sites/fsm,Documents,FolderA

C:\MigContent\FolderB,,,https://contoso.sharepoint.com/sites/fsm,Documents,FolderB

C:\MigContent\FolderC,,,https://contoso.sharepoint.com/sites/fsm,Documents,FolderC

#### Edit and run the PowerShell script that reads data from the CSV file

Copy the migration script to the migration machine. Edit and run the script.

1. From the migration machine open **PowerShell** **ISE** **as** **Administrator**.
2. Copy the PowerShell script below and paste into the **script** pane of **PowerShell** **ISE**:

#Define SPO Credentials#

$Global:UserName = "admin@contoso.onmicrosoft.com"

$Global:PassWord = ConvertTo-SecureString -String "YourSPOPassword" -AsPlainText -Force

$Global:SPOCredential = New-Object -TypeName System.Management.Automation.PSCredential -ArgumentList $Global:UserName, $Global:PassWord

#Import SPMT Migration Module#

Import-Module Microsoft.SharePoint.MigrationTool.PowerShell

#Register the SPMT session with SPO credentials#

Register-SPMTMigration -SPOCredential $Global:SPOCredential -Force

#Import CSV file with the details of the file share migrations.#

$csvItems = import-csv "C:\users\<admin>\desktop\folder\_mig.csv" -Header c1,c2,c3,c4,c5,c6

ForEach ($item in $csvItems)

{

Write-Host $item.c1

#Adds a migration task for each row in the CSV.#

Add-SPMTTask -FileShareSource $item.c1 -TargetSiteUrl $item.c4 -TargetList $item.c5 -TargetListRelativePath $item.c6

}

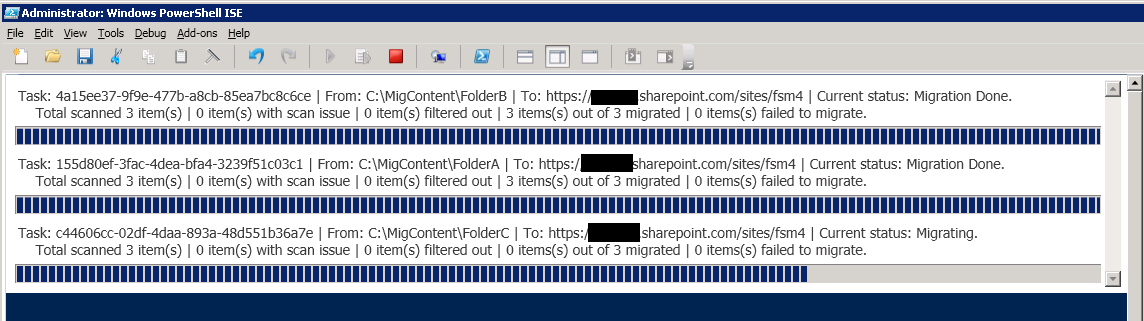
#Start Migration in the console. #

Start-SPMTMigration

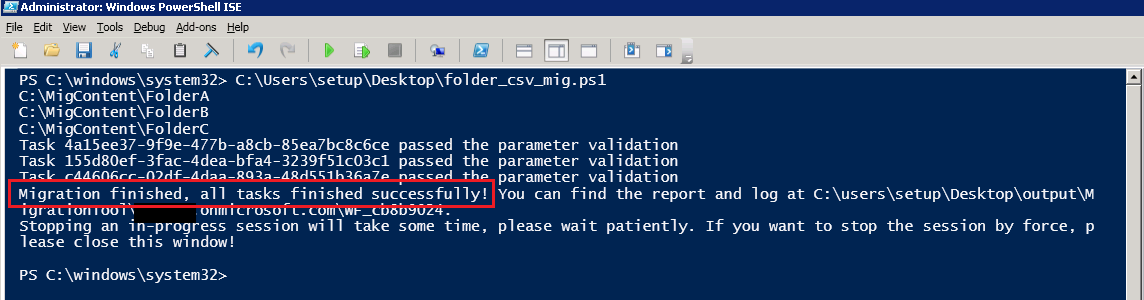
1. Edit the following variables:

* **$Global:UserName**
* **$Global:Password**
* **$csvItems** (ensure the path to the CSV file is correct)

1. Save the script as a **.PS1** file somewhere on the migration machine.
2. From **PowerShell** **ISE** **Editor** run the script by clicking the **Run** **Script** icon in the toolbar (or press F5 on the keyboard).
3. Monitor the progress of the migration tasks in the **console** pane in **PowerShell** **ISE**.



1. When the migration is complete look for the follow message to display in the console:
   * "**Migration finished, all tasks finished successfully!**"



**Note**: The migration script can be scheduled to run during off hours in unattended mode using **Task** **Scheduler** on the migration machine.

