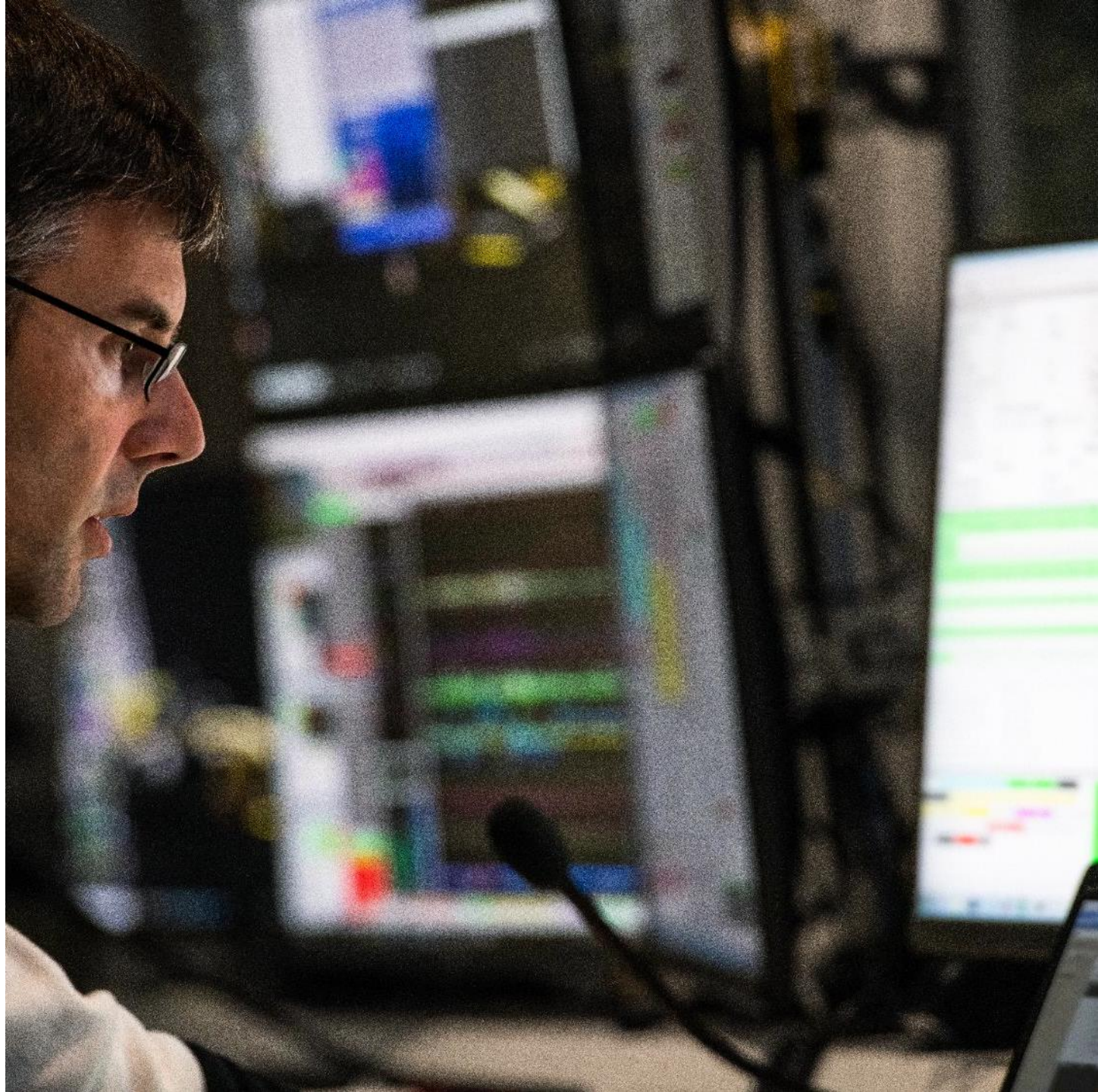




WorkshopPLUS: SharePoint Server Administration

PnP PowerShell for SharePoint



Agenda - Chapter 1

1	Patterns and Practices
2	PowerShell Package
3	Highlighted cmdlets
4	Examples

SharePoint Patterns and Practices



SharePoint Patterns and Practices (PnP/Office Dev PnP) is an **open source** initiative coordinated by SharePoint engineering, lead by Microsoft, together with **community members**



It's a channel to provide **guidance, samples** and **reusable** components for Microsoft 365, SharePoint Online and SharePoint on-premises



The primary objective of the PnP initiative is to **drive community to use supported** and validated patterns



It helps coordinate all SharePoint developer documentation and guidance across **on-premises** and **online**



SharePoint PnP **releases** are done typically first Friday **of each month**

IMPORTANT



Recent versions of PnP PowerShell only support SharePoint Online. On-premise versions are still available, but no longer maintained.

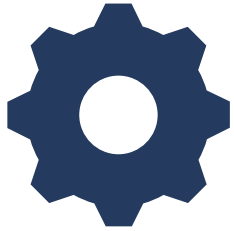


Available via the PowerShell Gallery. More information can be found here: <https://github.com/pnp/PnP-PowerShell>



SharePoint Online version: <https://github.com/pnp/powershell>

Patterns and Practices Components



PnP Core Component

PnP Core Component is a wrapper on top of classic CSOM and REST APIs, which provides an additional abstraction for commonly used capabilities.



PnP PowerShell

Provides SharePoint Automation Commands

- Use a combination of CSOM and REST and can work against both SharePoint Online and SharePoint On-Premise

Patterns and Practices PowerShell



PnP PowerShell Cmdlets are an open source solution available on GitHub



The PnP PowerShell cmdlets are based on the Client-Side Object Module (CSOM) and REST APIs



Package of PowerShell commands that allows performing complex provisioning and artifact management actions towards SharePoint



New PnP PowerShell cmdlets are added regularly and the latest documentation can be found at:

<https://docs.microsoft.com/en-us/powershell/sharepoint/sharepoint-pnp/sharepoint-pnp-cmdlets?view=sharepoint-ps>



SharePoint PnP PowerShell is available for:

SharePoint 2013 / 2016 / 2019
Microsoft 365

Agenda - Chapter 2

1	Patterns and Practices
2	PowerShell Package
3	Highlighted cmdlets
4	Examples

Getting Started



Windows PowerShell 3.0 and above

Go to <https://github.com/pnp/PnP-PowerShell/releases>

Download the latest .msi for SharePoint 2016 / 2019

Install the binaries and close all open sessions

You can check the installation with Get-Command

```
Get-Command -Module *PnP*
```



PowerShell v5.0 and above

```
Install-Module SharePointPnPPowerShell2019
```

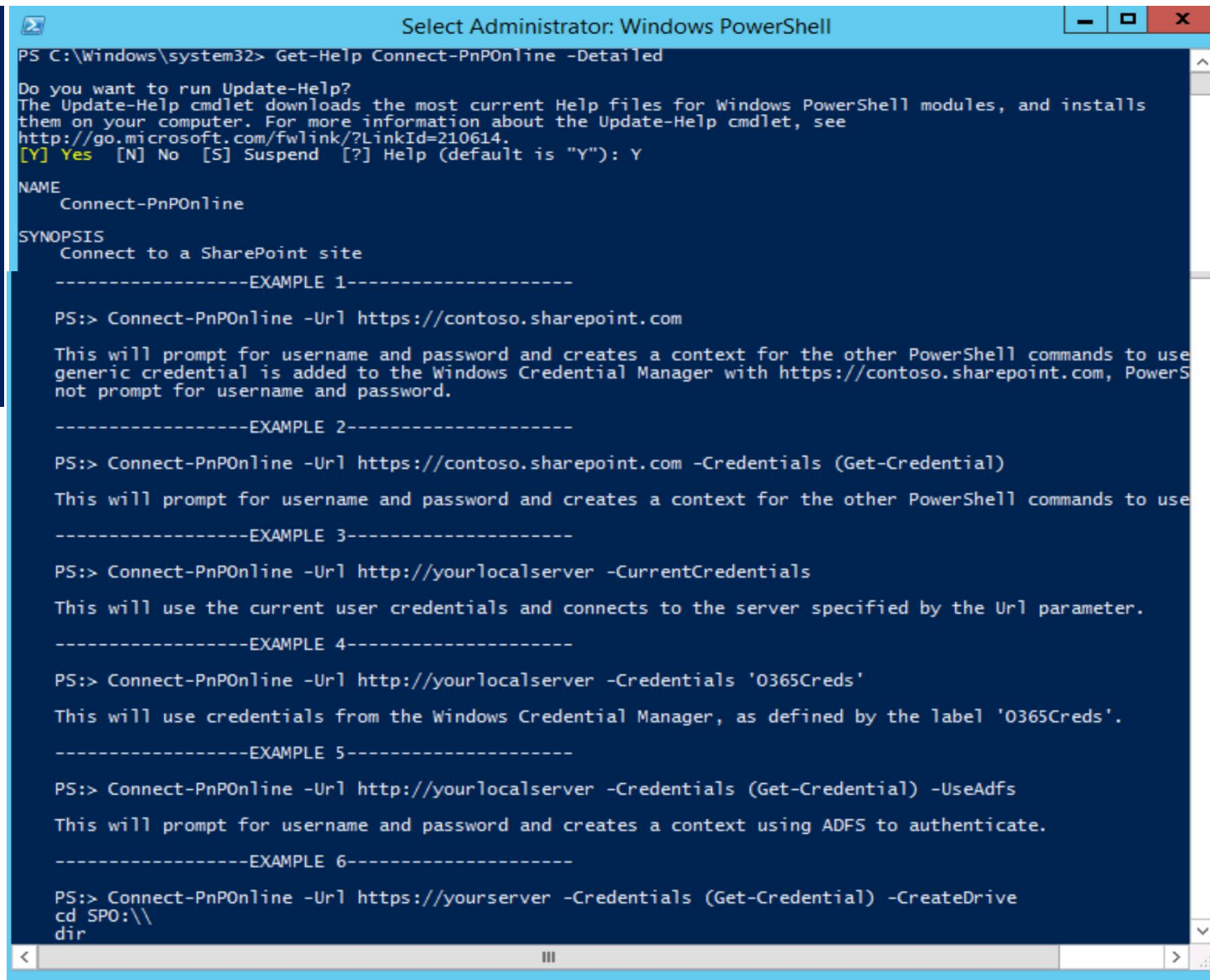

Get-Help

Syntax:

Get-Help <PnP Cmdlet> -Detailed

Example:

Get-Help Connect-PnPOnline -Detailed



```
Select Administrator: Windows PowerShell
PS C:\Windows\system32> Get-Help Connect-PnPOnline -Detailed

Do you want to run Update-Help?
The Update-Help cmdlet downloads the most current Help files for Windows PowerShell modules, and installs them on your computer. For more information about the Update-Help cmdlet, see
http://go.microsoft.com/fwlink/?LinkId=210614.
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

NAME
    Connect-PnPOnline

SYNOPSIS
    Connect to a SharePoint site

-----EXAMPLE 1-----

PS:> Connect-PnPOnline -Url https://contoso.sharepoint.com

This will prompt for username and password and creates a context for the other PowerShell commands to use. A generic credential is added to the Windows Credential Manager with https://contoso.sharepoint.com, PowerShell will not prompt for username and password.

-----EXAMPLE 2-----

PS:> Connect-PnPOnline -Url https://contoso.sharepoint.com -Credentials (Get-Credential)

This will prompt for username and password and creates a context for the other PowerShell commands to use.

-----EXAMPLE 3-----

PS:> Connect-PnPOnline -Url http://yourlocalserver -CurrentCredentials

This will use the current user credentials and connects to the server specified by the Url parameter.

-----EXAMPLE 4-----

PS:> Connect-PnPOnline -Url http://yourlocalserver -Credentials '0365Creds'

This will use credentials from the Windows Credential Manager, as defined by the label '0365Creds'.

-----EXAMPLE 5-----

PS:> Connect-PnPOnline -Url http://yourlocalserver -Credentials (Get-Credential) -UseAdfs

This will prompt for username and password and creates a context using ADFS to authenticate.

-----EXAMPLE 6-----

PS:> Connect-PnPOnline -Url https://yourserver -Credentials (Get-Credential) -CreateDrive
cd SPO:\
dir
```

Agenda - Chapter 3

1

Patterns and Practices

2

PowerShell Package

3

Highlighted cmdlets

4

Examples

Base PnP PowerShell Cmdlets

Cmdlet	Description	Platforms
Get-PnPAppAuthAccessToken	Returns the access token	All
Get-PnPAuthenticationRealm	Returns the authentication realm	All
Get-PnPAzureADManifestKeyCredentials	Return the JSON Manifest snippet for Azure Apps	All
Get-PnPConnection	Returns the current context	All
Get-PnPContext	Returns the current context	All
Set-PnPContext	Set the ClientContext	All
Get-PnPHealthScore	Retrieves the healthscore	All
Connect-PnPOnline	Connect to a SharePoint site	All
Disconnect-PnPOnline	Disconnects the context	All
Get-PnPProperty	Returns a previously not loaded property of a ClientObject	All
Execute-PnPQuery	Execute the current queued actions	All
Get-PnPStoredCredential	Get a credential	All
Set-PnPTraceLog	Turn log tracing on or off	All

Branding PnP PowerShell Cmdlets

Cmdlet	Description	Platforms
Add-PnPCustomAction	Adds a custom action	All
Get-PnPCustomAction	Return user custom actions	All
Set-PnPHomePage	Sets the home page of the current web.	All
Get-PnPMasterPage	Returns the URLs of the default Master Page and the custom Master Page.	All
Set-PnPMasterPage	Set the masterpage	All
Set-PnPMinimalDownloadStrategy	Activates or deactivates the minimal downloading strategy.	All
Add-PnPNavigationNode	Adds an item to a navigation element	All
Remove-PnPNavigationNode	Removes a menu item from either the quicklaunch or top navigation	All
Disable-PnPResponsiveUI	Deactive the PnP Response UI add-on	All
Enable-PnPResponsiveUI	Activates the PnP Response UI Add-on	All
Get-PnPTheme	Returns the current theme/composed look of the current web.	All
Set-PnPTheme	Sets the theme of the current web.	All

Diagnostic PnP PowerShell Cmdlets

Cmdlet	Description	Platforms
Measure-PnPList	Returns statistics on the list object	SharePoint Online, SharePoint 2016
Measure-PnPResponseTime	Measures response time for the specified endpoint by sending probe requests and gathering stats.	All
Measure-PnPWeb	Returns statistics on the web object	SharePoint Online, SharePoint 2016

Provisioning PnP PowerShell Cmdlets

Cmdlet	Description	Platforms
Add-PnPDataRowsToProvisioningTemplate	Adds datarows to a list inside a PnP Provisioning Template	All
Remove-PnPFileFromProvisioningTemplate	Removes a file from a PnP Provisioning Template	All
Add-PnPFileToProvisioningTemplate	Adds a file to a PnP Provisioning Template	All
Convert-PnPFolderToProvisioningTemplate	Creates a pnp package file of an existing template xml, and includes all files in the current folder	All
Add-PnPListFoldersToProvisioningTemplate	Adds folders to a list in a PnP Provisioning Template	All

Provisioning PnP PowerShell Cmdlets (Contd.)

Cmdlet	Description	Platforms
Apply-PnPProvisioningTemplate	Applies a provisioning template to a web	All
Convert-PnPProvisioningTemplate	Converts a provisioning template to an other schema version	All
Get-PnPProvisioningTemplate	Generates a provisioning template from a web	All
Load-PnPProvisioningTemplate	Loads a PnP file from the file systems	All
New-PnPProvisioningTemplate	Creates a new provisioning template object	All
Save-PnPProvisioningTemplate	Saves a PnP file to the file systems	All
New-PnPProvisioningTemplateFromFolder	Generates a provisioning template from a given folder, including only files that are present in that folder	All
Set-PnPProvisioningTemplateMetadata	Sets metadata of a provisioning template	All

Recycle Bin PnP PowerShell Cmdlets

Cmdlet	Description	Platforms
Clear-PnPRecycleBinItem	Permanently deletes all or a specific recycle bin item	All
Get-PnPRecycleBinItem	Returns the items in the recycle bin from the context	All
Restore-PnPRecycleBinItem	Restores the provided recycle bin item to its original location	All

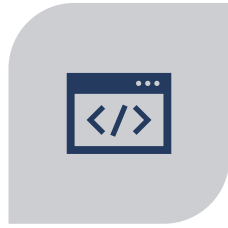
Search PnP PowerShell Cmdlets

Cmdlet	Description	Platforms
Get-PnPSearchConfiguration	Returns the search configuration	All
Set-PnPSearchConfiguration	Sets the search configuration	All
Submit-PnPSearchQuery	Executes an arbitrary search query against the SharePoint search index	All
Get-PnPSiteSearchQueryResults	Executes a search query to retrieve indexed site collections	All

Other Important areas for PnP PowerShell Cmdlets



**User, Groups
and Profile
Management**



**Sites and Pages
Administration**



**Lists,
Publishing
feature
Administrations**



**PnP Apps/Add-
Ins
Administration**



**Fields, Content
Types, Files and
Folders
Administration**



**Features and
Event Receivers
Administration**



**Document Sets
and
Information
Management**



**Records
Management**

Agenda - Chapter 4

1	Patterns and Practices
2	PowerShell Package
3	Highlighted cmdlets
4	Examples

Quickly utilize Property Bags to Tag Sites

```
Connect-PnPOnline -Url https://<YourSite>/ -Credentials $Cred

# Adding a Site Category to the current web PropertyBag
Set-PnPPropertyBagValue -Key "SiteType" -Value "Demo Site"

# Adding a Category to the root folder of current web
Set-PnPPropertyBagValue -Key "FolderType" -Value "Root" -Folder /

# Adding a Category to the MyFolder directory which is located under root folder in
# current web PropertyBag
Set-PnPPropertyBagValue -Key "FolderType" -Value "NonRoot" -Folder /MyFolder

# Want to Index a Property to be searchable? Use Indexed Switch
# Adding an Indexed Category to the current web
Set-PnPPropertyBagValue -Key "SiteType" -Value "Demo Site" -Indexed
```

Easily change Site Theme

```
Connect-PnPOnline -Url https://<YourSite>/ -Credentials $Cred

# Adding files to the site collections libraries
Add-PnPFile -Path C:\MyCustomTheme.spcolor -Folder "_catalogs/theme/15"
Add-PnPFile -Path C:\MyCustomImage.png -Folder "SiteAssets"

# Applying site theme
Set-PnPTheme -ColorPaletteUrl "/_catalogs/theme/15/MyCustomTheme.spcolor"
               -BackgroundImageUrl "/SiteAssets/MyCustomImage.png"
```

Creating a list

```
Connect-PnPOnline -Url https://<YourSite>/ -Credentials $Cred

# Creating a new list
New-PnPList -Title "Demo Location List" -Template GenericList -Url lists/demo

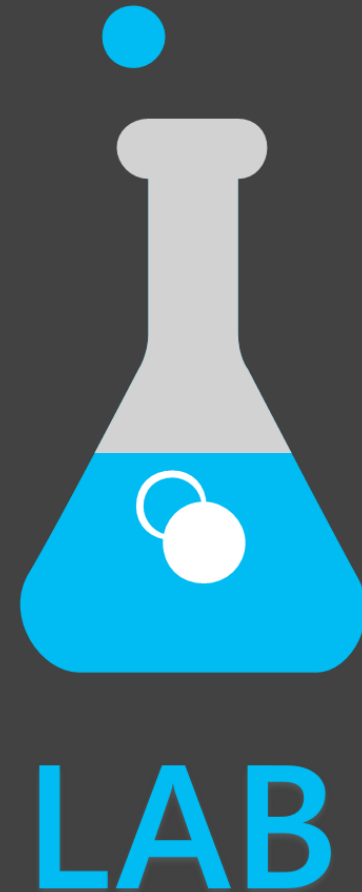
# Adding a custom field to the list
Add-PnPField -List "Demo Location List" -DisplayName "Location" -InternalName
"SPSLocation" -Type Choice -Group "Demo Group" -AddTo DefaultView -Choices "New
Delhi","Seattle","Shanghai"
```


Lab 6: (Optional) PnP PowerShell for SharePoint

Objectives

After completing this lab, you will be able to:

- Use PnP PowerShell to manage SharePoint
- IMPORTANT: SharePoint 2019 and earlier



Knowledge Check

Where can one obtain the Pattern and Practices SharePoint PowerShell?

- GitHub
- PowerShell Gallery

How many ways you can use PnP?

- 2 ways to consume PnP
 - PnP core: Commonly used by developers to build solutions on top of PnP Core components or PnP Samples
 - PnP PowerShell: Handy PowerShell cmdlets for SharePoint Administration

When do you get new release of PnP PowerShell and how to get that?

- Monthly
- Either with Update-Module Command OR by downloading updated binaries

Questions?



