

# Getting Started with Site Designs and Site Scripts for Modern SharePoint Provisioning







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ShareGate:



JOIN US FOR CAKE AS WE CELEBRATE 10 YEARS OF WOMEN IN SHAREPOINT WITH  
A “WOMEN IN TECHNOLOGY PANEL” HEADED BY MICROSOFT’S CATHY DEW.  
FRIDAY MARCH 15TH 2:50—3:50 IN TANEYCOMO B BALLROOM



**Celebrating 10 years**  
of Women in SharePoint





# Win a Surface Book courtesy of Microsoft!



Play Vendor Bingo, Winner drawn during closing session on Friday

# Drew Madelung



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# Agenda

## Getting Started with Site Designs and Site Scripts for Modern SharePoint Provisioning

North American Collab Summit

Site designs?

Site scripts?

What?

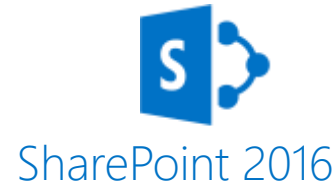
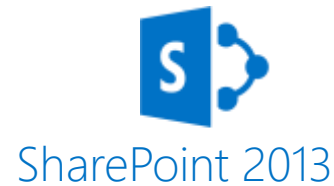
Woah look at that

Ok that's awesome

This is so much better than site templates!!

# Evolution of Site Provisioning Landscape

Technology *evolves* with the expectations of the workplace



*IT owned*

*Helpdesk requests for new sites*

*Site templates utilized*

*Not connected to other resources*

*Nothing out of the box*

*Self service*

*Office 365 group powered*

*Smarter templating*

*Fast*

A photograph of a house under construction. The house has a grey roof and yellowish-brown walls. There are several windows and a door visible. In the foreground, there is a large pile of reddish-brown mulch or soil. The sky is clear and blue. A blue semi-transparent overlay covers the upper left portion of the image, containing white text.

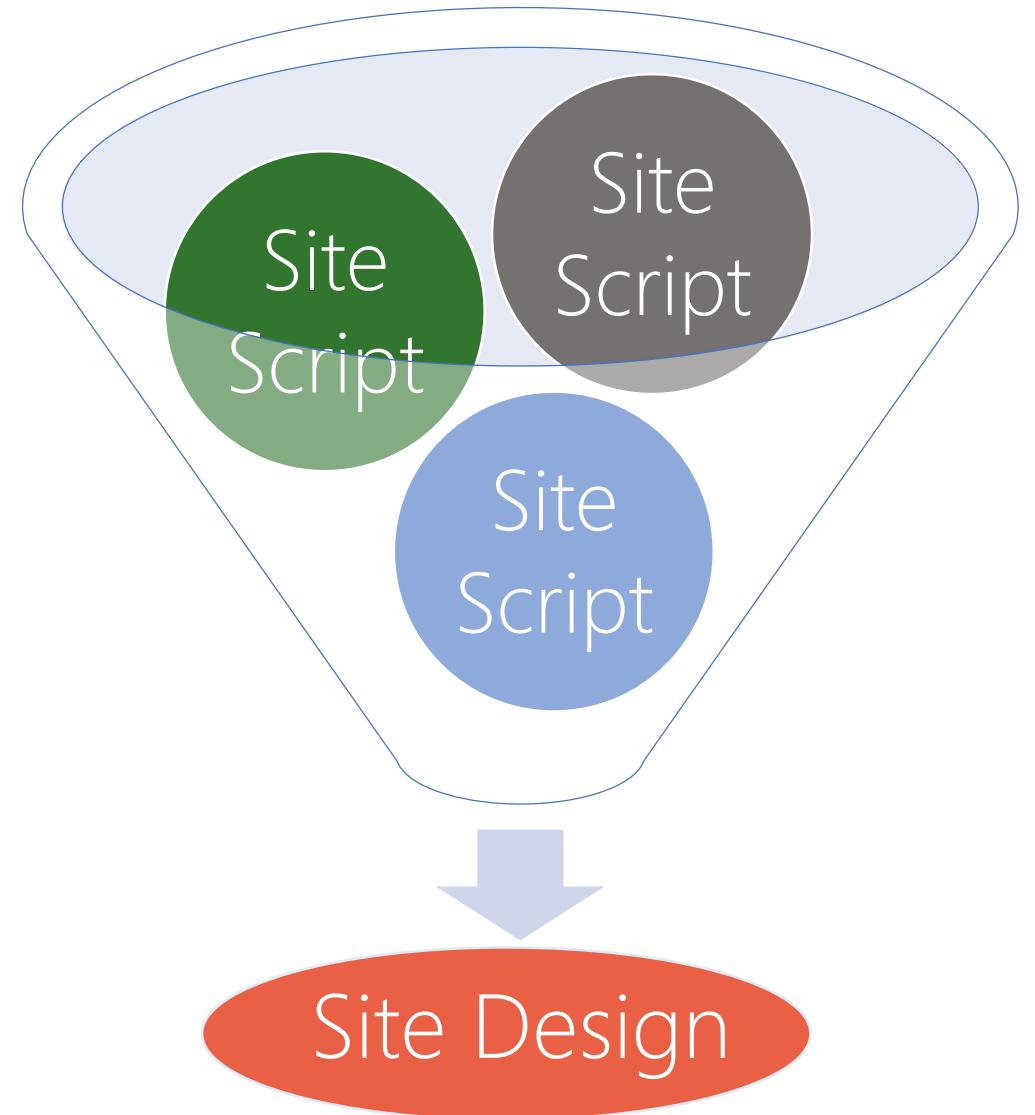
Do you have a provisioning  
process?

Are you using any templates?



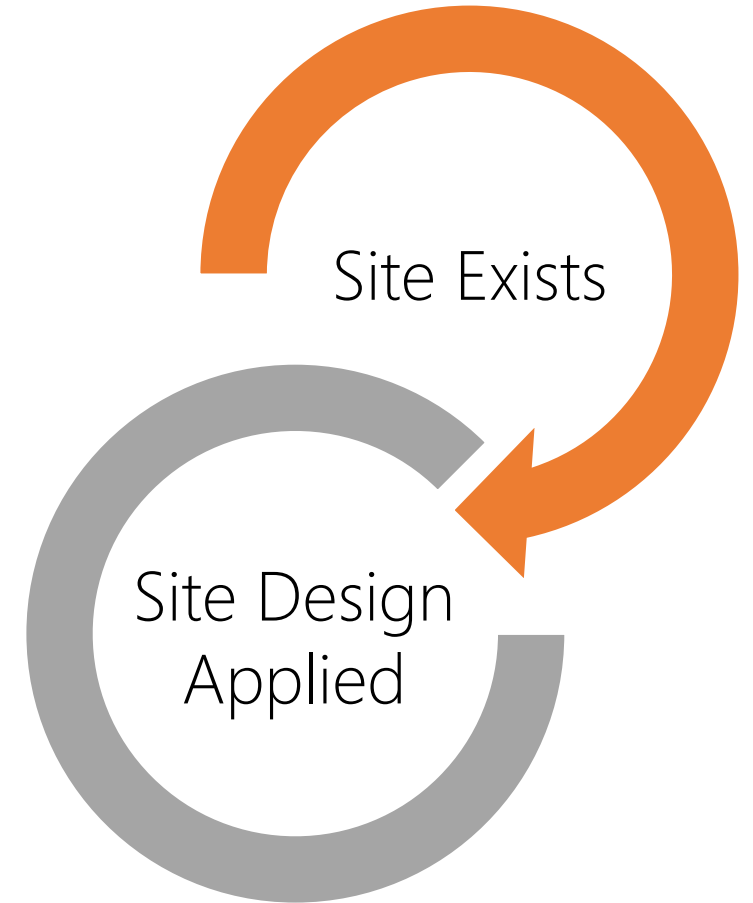
# What are Site Designs and Site Scripts?

- A Site Design is a collection of Site Scripts
- Site Scripts are the actions
- A Site Design is applied to a site or subsite
- Applying a Site Design executes the actions
- Site Designs can be applied:
  - On site collection creation
  - Manually whenever you'd like
  - Joining a hub
- Site Designs are containers for the actions

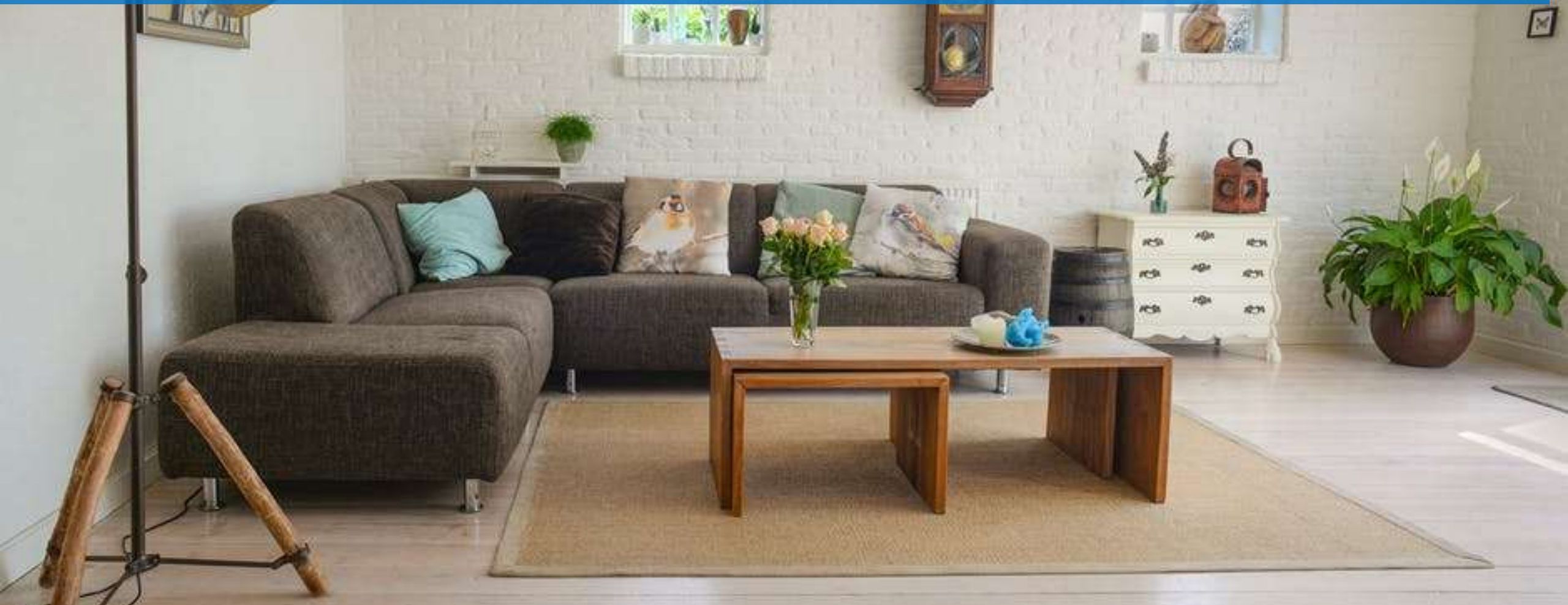


# What are Site Designs and Site Scripts?

- Site Designs are NOT “attached” to sites
- Site Designs are NOT pre-packaged sites
- Changing an existing Site Design does not update existing sites where the Design was applied
- The out of the box site definition and template are not changed
  - Example: STS#3 / Group#0
- The new goodness is added on top to not break root functionality



Site Designs are the interior decorator for a new house and Site Scripts are the things they do.





# Site Design Infrastructure



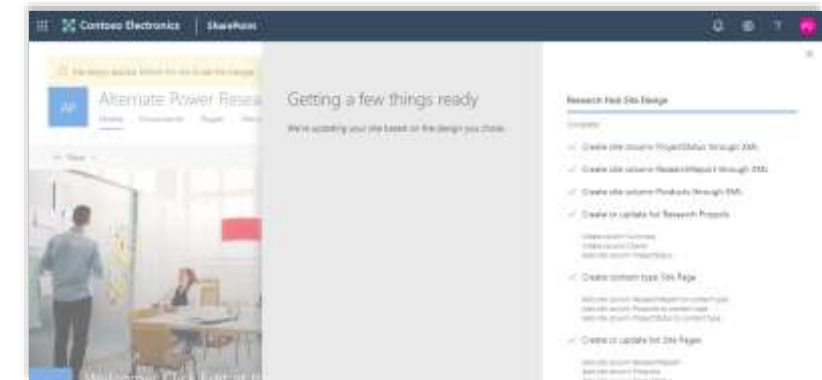
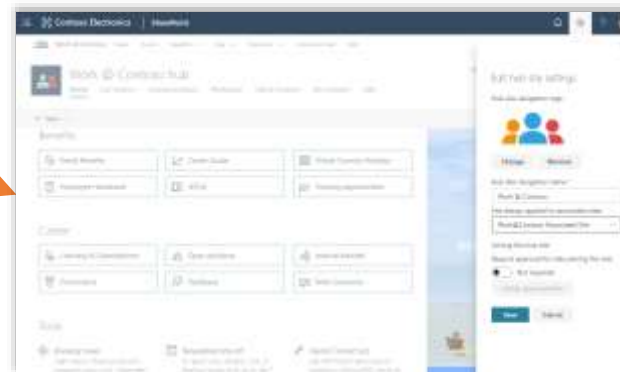
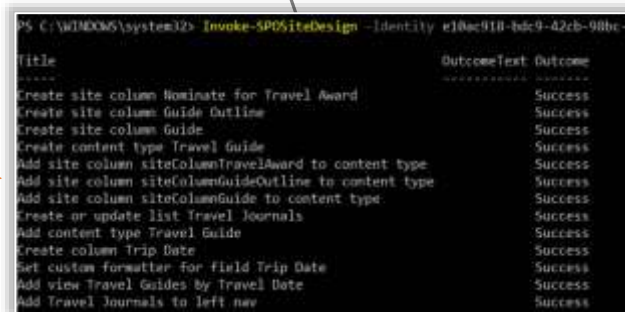
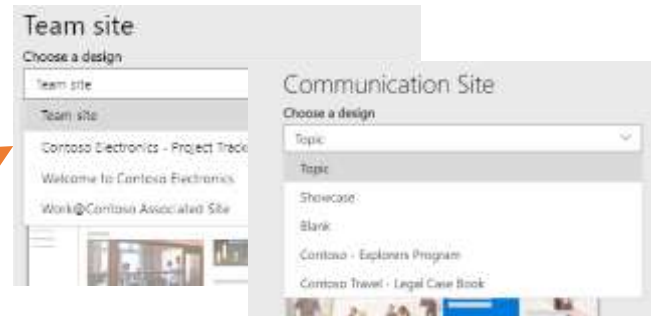
## Site Scripts

- Title
- ID
- Script actions (Create List, Apply Theme, Add to Nav, Trigger Flow...)



## Site Designs

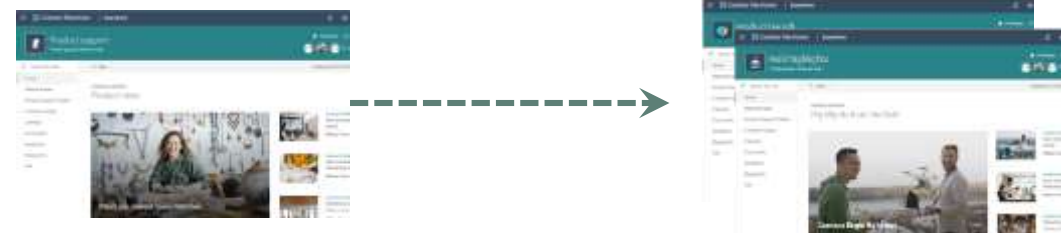
- Title & Desc
- Preview Image
- Web Template
- Site Script Array
- Scope | isDefault



# When to use Site Designs

Application of specific configurations or business logic *consistently* when new sites are created

## Team



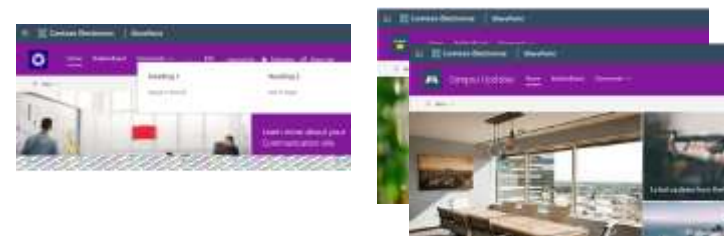
Amending out-of-box templates with select customizations

## STS#0



Updating existing sites with common site elements or changes

## ODSP






Let's take a  
look

Demo



The background of the slide is a deep blue, almost black, underwater scene. Several jellyfish are visible, glowing with a soft pink or magenta light. They are of various sizes and are positioned at different depths, creating a sense of a vast, deep ocean. The jellyfish have translucent, bell-shaped bodies with visible internal structures and long, thin tentacles hanging down.

# Time to dive deeper

# Need to know



These are NOT destructive

- For example, if the site already has a list with the same name that the site script is creating, the site script will only add missing fields to the existing list.



Limit of 100 Site Scripts and 100 Site Designs per tenant



Site Scripts can contain 300 actions (or 100,000 characters)



Not just for modern sites



Site scripts run in order

# Breaking down Site Scripts

Site Script: JSON file of actions to be applied to the site post-creation

Actions can be concatenated in single file or multiple files can be used (and reused)

Include Parent and subactions

Field Xml supported

TriggerFlow action can be used to call published flows to do additional configurations to site, including applying custom solutions or writing site creation info back to a list

*...and select SharePoint Objects...more on that in a minute!*

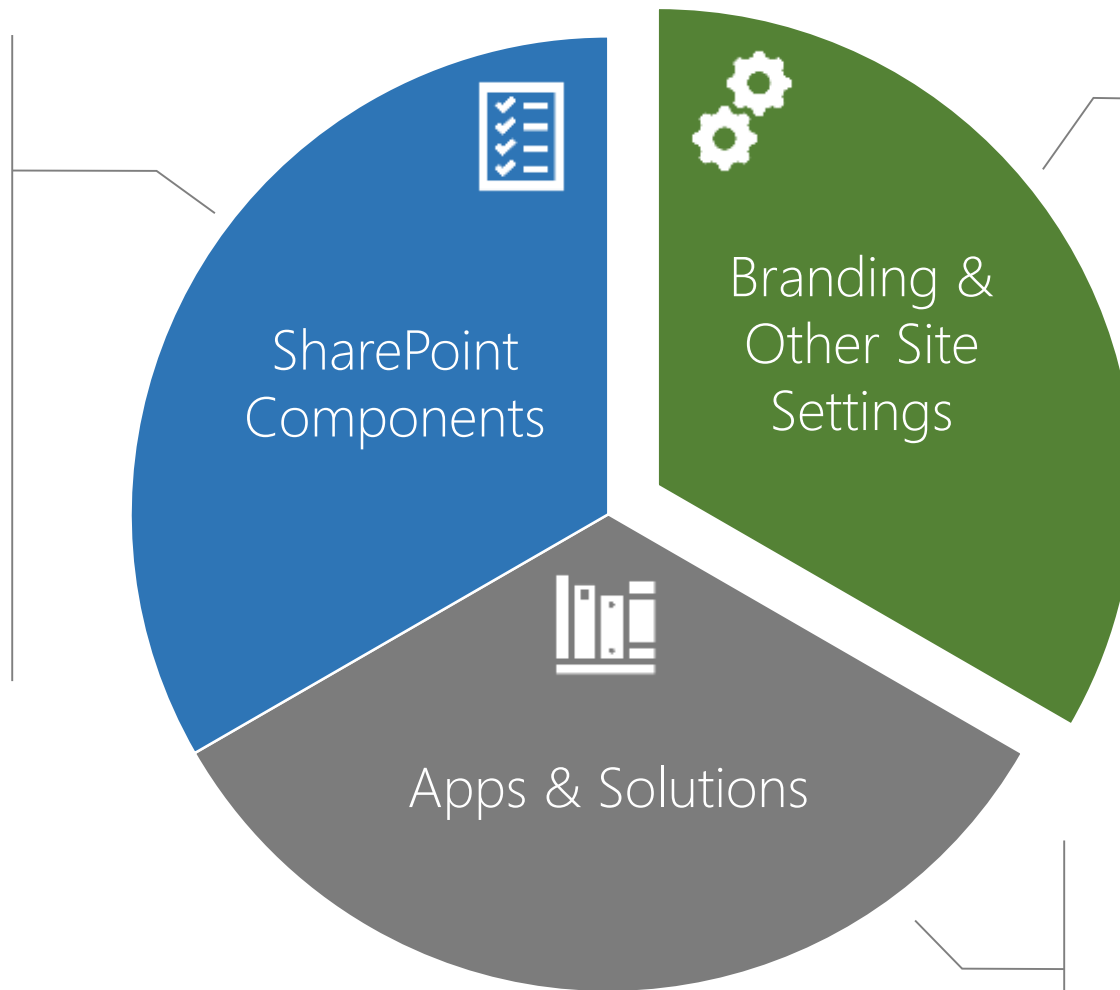
```
actions:  [
...
{
  "verb": "createSPList",
  "listName": "Contoso Project Tracker",
  "templateType": 100,
  "subactions":
  [
    {
      "verb": "setDescription",
      "description": "Custom list to illustrate SharePoint site scripting capabilities"
    },
    {
      "verb": "addContentType",
      "name": "Contoso Projects"
    },
    {
      "verb": "addSPFieldXml",
      "schemaXml": "<Field Type=\"Choice\"
DisplayName=\"Project Status\" Required=\"FALSE\" Format=\"Dropdown\"
StaticName=\"ProjectStatus\" Name=\"ProjectStatus\"><Default>In
progress</Default><CHOICES><CHOICE>In progress</CHOICE><CHOICE>In
review</CHOICE><CHOICE>Hasissues</CHOICE><CHOICE>Done</CHOICE></CHOIC
ES></Field>"
    },
    {
      "verb": "triggerFlow",
      "url": "https://prod-
27.westus.logic.azure.com:443/workflows/e55f61e4a43443e0a3cecb80bcd10
4c8/triggers/manual/paths/invoke?api-version=2016-06-
01&sp=%2Ftriggers%2Fmanual%2Frun&sv=1.0&sig=WCDzWhPTB1rXMPKeGv0GGnMuG
0Fc4f7fsWEcYe2fxE0",
      "name": "update home page and record site creation",
    }
  ]
}
...
]
```



# Site Script Actions

## SharePoint Components

- createSPList
- addSPField
- deleteSPField
- addSPFieldXml
- createSiteColumn
- createSiteColumnXml
- addSiteColumn
- addContentType
- createContentType
- removeContentType
- addSPView
- removeSPView
- setSPFieldCustomFormatter
- addSPFieldLookupXML
- setTitle
- setDescription



## Settings

- addPrincipalToSPGroup
- addNavLink
- removeNavLink
- applyTheme
- setSiteLogo
- setRegionalSettings
- setSiteExternalSharingCapability
- triggerFlow
- joinHubSite
- activateSPFeature

## Register Solutions

- installSolution
- SPFx Extension support
  - associateExtension
  - associateListViewCommandSet
  - associateFieldCustomizer

JSON Schema: <http://bit.ly/sitescriptjson>

# How to work with them?



PowerShell

## Managing Site Scripts

[Get-SPOSiteScript](#)  
[Add-SPOSiteScript](#)  
[Set-SPOSiteScript](#)  
[Remove-SPOSiteScript](#)

[Get-SPOSiteScriptFromList](#)

## Managing Site Designs

[Get-SPOSiteDesign](#)  
[Add-SPOSiteDesign](#)  
[Set-SPOSiteDesign](#)  
[Remove-SPOSiteDesign](#)

## Get Applied Site Design Info for Sites

[Get-SPOSiteDesignRun](#)  
[Get-SPOSiteDesignRunStatus](#)

## Running Site Designs

[Get-SPOSiteDesignTask](#)  
[Add-SPOSiteDesignTask](#)  
[Remove-SPOSiteDesignTask](#)

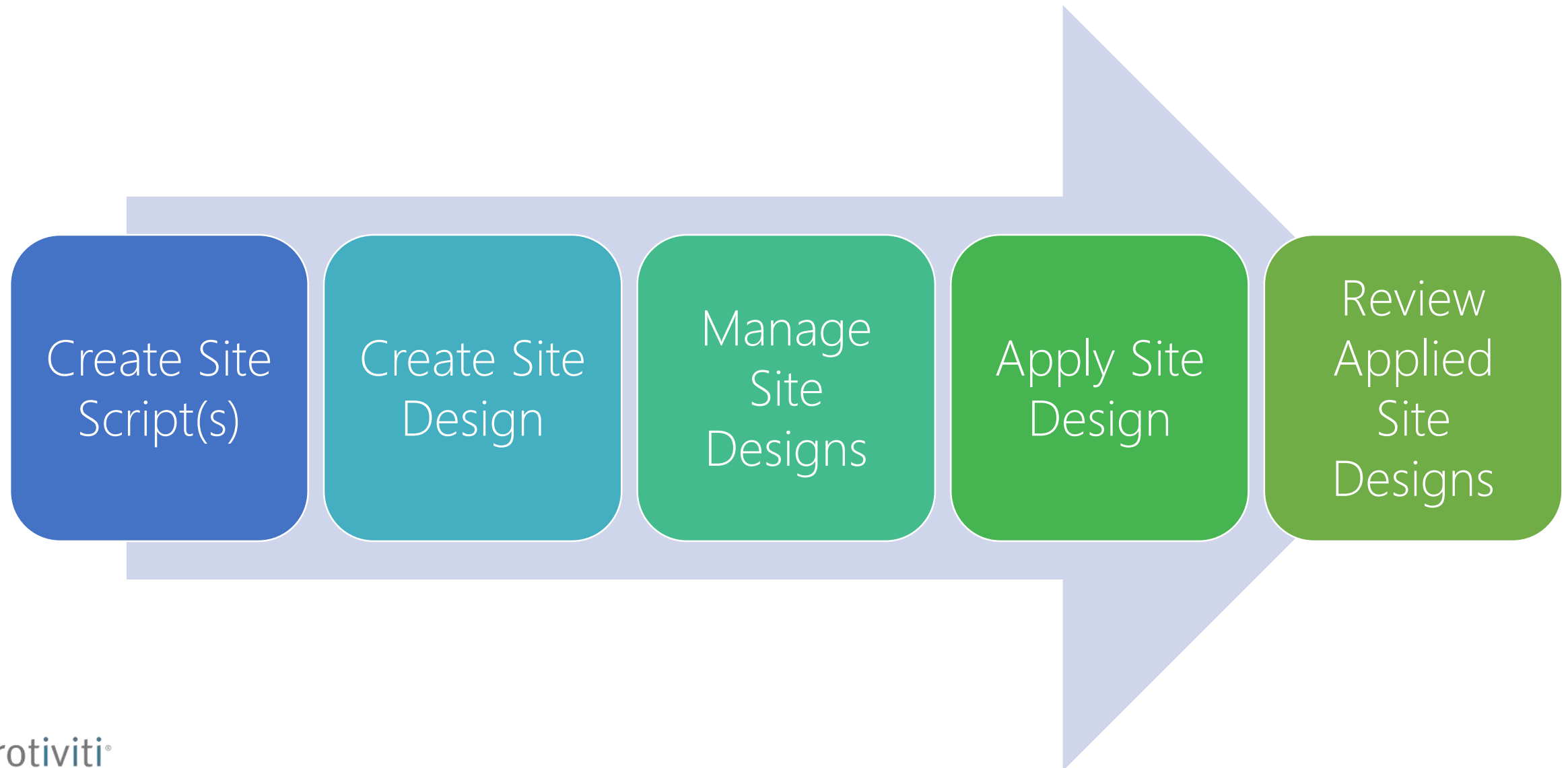
[Invoke-SPOSiteDesign](#)

- No longer needed

## Managing Site Design Rights

[Get-SPOSiteDesignRights](#)  
[Grant-SPOSiteDesignRights](#)  
[Revoke-SPOSiteDesignRights](#)

# Lets get started





# Site Scripts

## Create Site Script(s)

- Create a .json file
- Store it somewhere locally
- Add the script through PowerShell

```
$sitescriptjson = Get-Content 'C:\sitescripts\Contoso-CreateAdvancedList.json' -Raw  
Add-SPOSiteScript -Title "Contoso Lists" -Description "" -Content $sitescriptjson
```

# Site Designs

## Create Site Design

- Add site design through PowerShell with parameters
- Pass in Site Scripts through variable to guid
- WebTemplate: **64**=Team Sites, **68**=Comm Sites, **1**=Groupless team site
- *-isDefault* can be used per template to auto apply to all default sites

```
$sitescript = Get-SPOSiteScript | where {$_.Title -eq "Contoso Advanced Lists"} | select Id

Add-SPOSiteDesign -SiteScripts $sitescript.Id `
-Title "Advanced Design" `
-WebTemplate 1 `
-Description "Applies advanced lists and other cool things" `
-PreviewImageUrl "https://domain.sharepoint.com/SiteAssets/AdvancedSiteDesign.jpg" `
-PreviewImageAltText "It's a picture of a smart cat"
```

# Site Designs

## Mange Site Designs

- Update permissions of who can view (View is only option)
- Utilize Users or Mail Enabled Security Groups (Not O365 Groups yet)

```
$sitedesign = Get-SPOSiteDesign | where {$_.Title -eq "Advanced Design"}
```

```
Grant-SPOSiteDesignRights `
  -Identity $sitedesign.Id `
  -Principals ("advancedsitedesigns@drewmadelung.com") `
  -Rights View
```

```
#Get
Get-SPOSiteDesignRights -Identity $sitedesign.Id
```

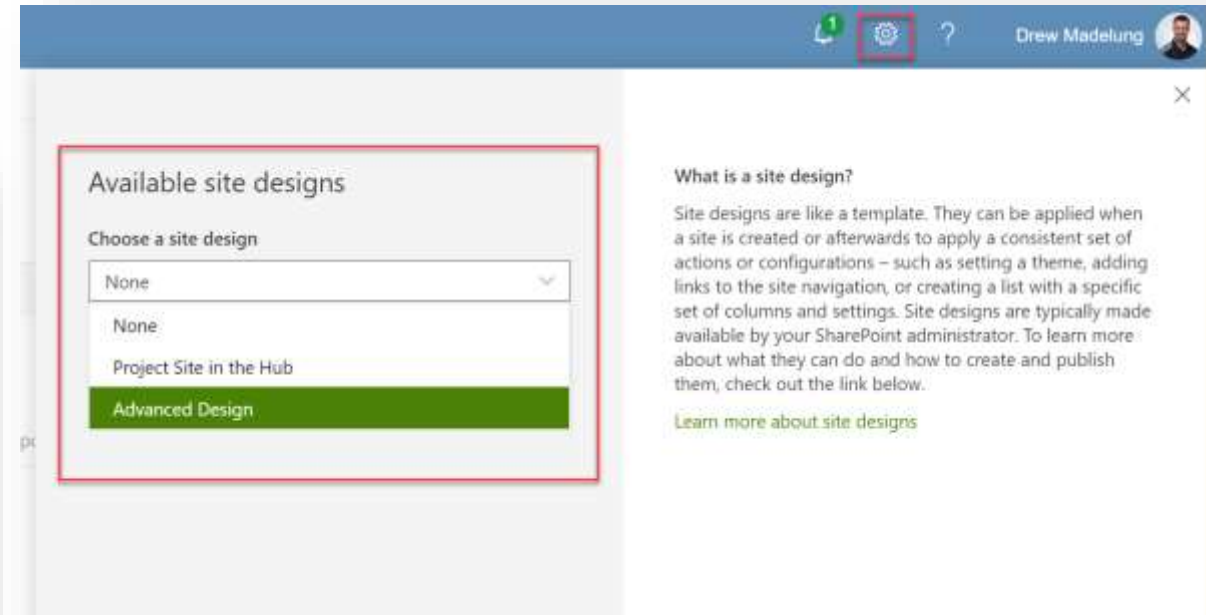
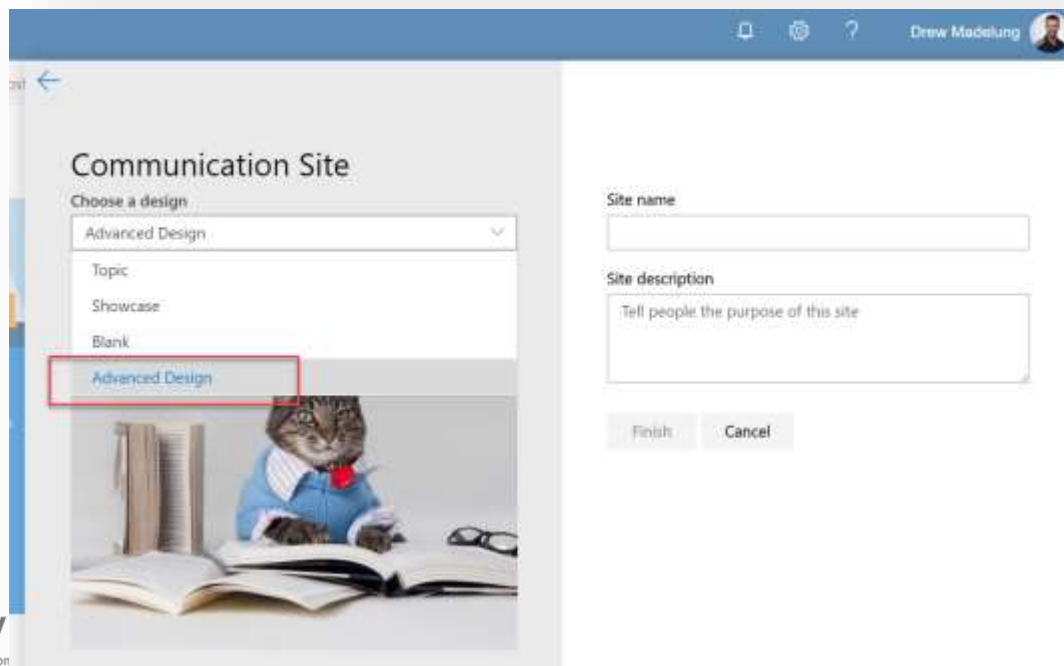
```
#Remove
Revoke-SPOSiteDesignRights -Identity $sitedesign.Id `
  -Principals "advancedsitedesigns@drewmadelung.com"
```



# Site Designs

## Apply Site Design

- Applied through:
  - Site Creation
  - Site Design Panel



# Site Designs

## Apply Site Design

- Applied through:
  - PowerShell
    - Initial limit of 30 actions in a site script (still applies to creation UI)
    - 100k character limit with new cmdlet, info panel & hub join

```
$sitedesign = Get-SPOSiteDesign | where {$_.Title -eq "Advanced Design"}
```

```
#Small
```

```
Invoke-SPOSiteDesign -Identity $sitedesign.Id `  
-webUrl "https://domain.sharepoint.com/sites/design1"
```

```
#Large – Use this one
```

```
Add-SPOSiteDesignTask -SiteDesignId $sitedesign.Id `  
-webUrl "https://domain.sharepoint.com/sites/AdvancedDesign1"
```

# Site Designs

## Review Applied Site Designs

- View Site Designs applied to a site
- View details of ran Site Designs applied to site
- Use to find:
  - Sites where Site Designs were applied to perform an update
  - Finding or debugging errors

#Designs by site

```
Get-SPOSiteDesignRun -webUrl "https://domain.sharepoint.com/sites/AdvancedDesign1"
```

#Details by design run

```
$sdr = Get-SPOSiteDesignRun -webUrl "https://domain.sharepoint.com/sites/AdvancedDesign1"  
foreach($s in $sdr){Get-SPOSiteDesignRunStatus -Run $s}
```



Let's take a  
look

Demo



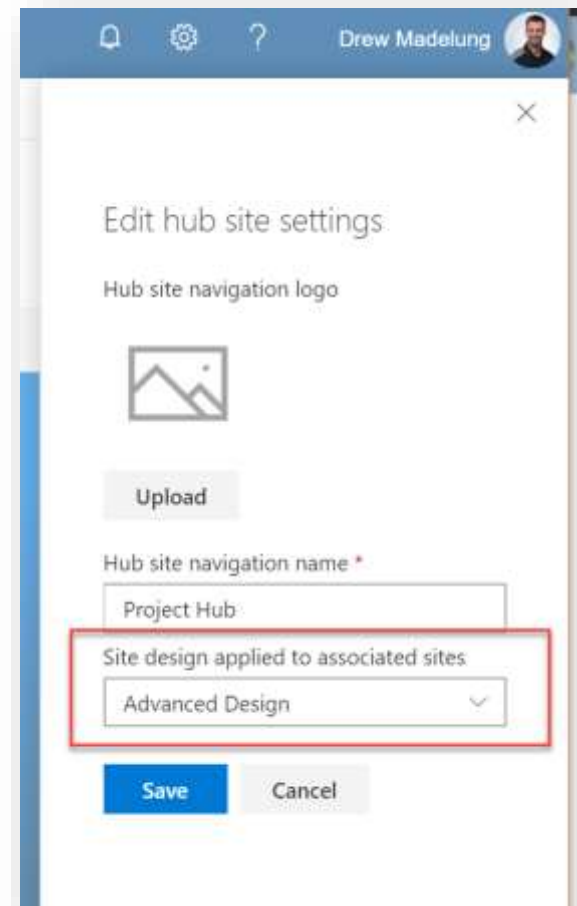


What else?

# Set a Site Design for a Hub Site

- Site Design is associated to the hub site through the UI or Programmatically
- Site Design will apply when joining a hub site
- Leaving a Hub Site will not reverse anything
- Align view permissions of Site Design with Hub Site permissions

```
$hubsite = Get-SPOHubSite | where {$_.Title -eq "Project Hub"}  
$sitedesign = Get-SPOSiteDesign | where {$_.Title -eq "Advanced Design"}  
Set-SPOHubSite -Identity $hubsite -SiteDesignId $sitedesign.Id
```



Edit hub site settings

Hub site navigation logo

Upload

Hub site navigation name \*

Project Hub

Site design applied to associated sites

Advanced Design

Save Cancel

# Get Site Script from a List

- Get the Site Script JSON directly from an existing SharePoint list or library
- All current list actions supported
- Doesn't export as site columns
- Great starting point

```
$listextract = Get-SPOSiteScriptFromList "https://domain.sharepoint.com/sites/site/list"
```

```
#Export to file
```

```
$jsonfile = " C:\sitescripts\ListExport - FavoriteDogs.json"
```

```
Get-SPOSiteScriptFromList "https://" https://domain.sharepoint.com/sites/site/list " `
| Out-File $jsonfile
```

# triggerFlow Action in a Site Script

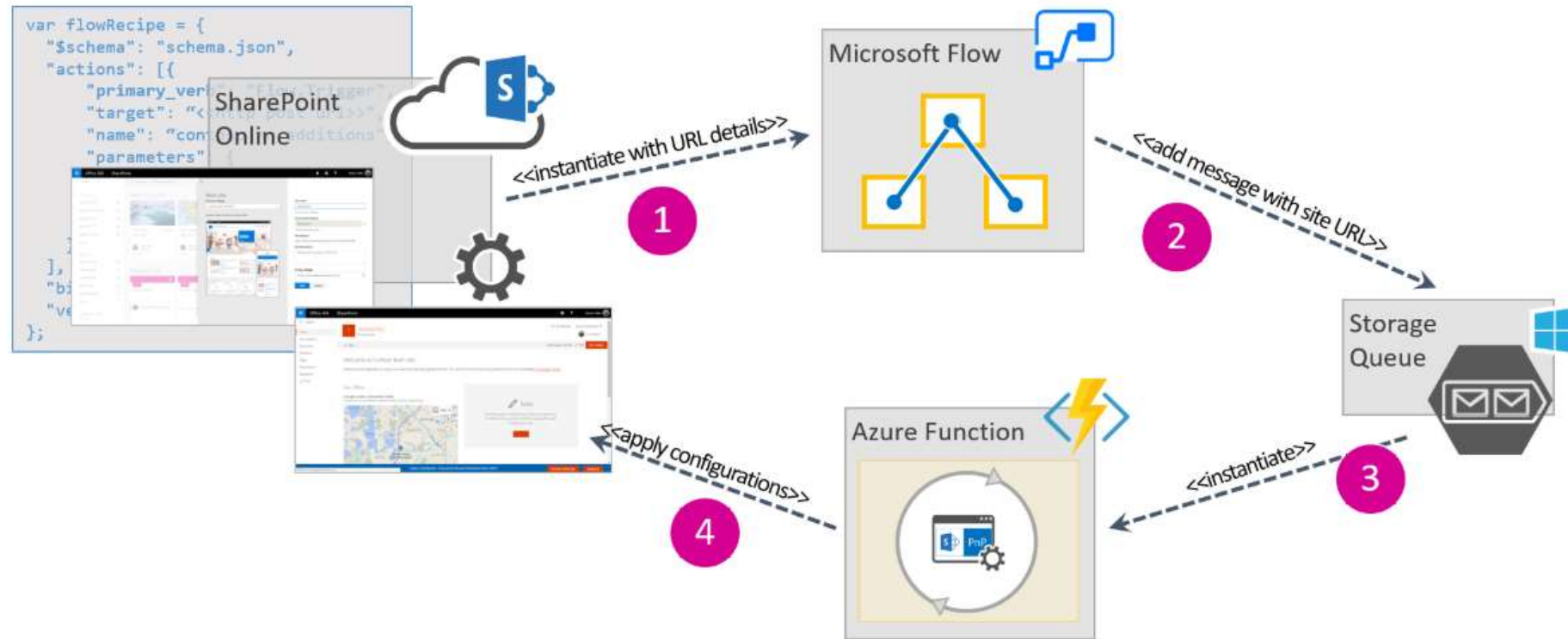
- Very powerful
- Rest of site design will continue to run
- Can use dynamic parameter: webUrl, creatorName, creatorEmail, webDescription, createdTimeUTC

```
{
  "$schema": "schema.json",
  "actions": [
    {
      "verb": "triggerFlow",
      "url": "https://prod-
25.westus.logic.azure.com:443/workflows/b6448f82fe25489985751785a5ce8a3e/triggers/manual/paths/invoke?api-version=2016-06-
01&sp=%2Ftriggers%2Fmanual%2Frun&sv=1.0&sig=DGcLB-w2s40f0-UwwCk9lacHSdniaaMdJwTrYA4Scb8",
      "name": "Site creation event",
      "parameters": {
        "event": "site creation",
        "product": "SharePoint Online"
      }
    }
  ]
}
```



# Flow & PnP Provisioning

You can use the PnP Provisioning framework with Site Designs & Site Scripts by using the triggerFlow action.



# REST APIs

You can use the SharePoint REST interface to perform basic CRUD operations

<http://bit.ly/sitedesignrest>

REST Command	Description
CreateSiteScript	Creates a new site script.
GetSiteScripts	Gets a list of information on existing site scripts.
GetSiteScriptFromList	Creates site script syntax from an existing SharePoint list.
GetSiteScriptMetadata	Gets information about a specific site script.
UpdateSiteScript	Updates a site script with new values.
DeleteSiteScript	Deletes a site script.
CreateSiteDesign	Creates a site design.
ApplySiteDesign	Applies a site design to an existing site collection.
AddSiteDesignTaskToCurrentWeb	Adds a site design task on the current web.
GetSiteDesigns	Gets a list of information on existing site designs.
GetSiteDesignMetadata	Gets information about a specific site design.
UpdateSiteDesign	Updates a site design with new values.
DeleteSiteDesign	Deletes a site design.
GetSiteDesignRights	Gets a list of principals that have access to a site design.
GrantSiteDesignRights	Grants access to a site design for one or more principals.
RevokeSiteDesignRights	Revokes access from a site design for one or more principals.

# Automate the custom configuration of sites across the enterprise *consistently*



## Flexible site configuration model

Site designs can be injected into in-product provisioning experiences or manually applied to automate consistent site creation



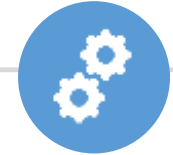
## Clean & consistently branded sites

Apply company theme, add/remove site navigation links, or set other site branding elements at time of creation



## Recreate and configure SharePoint objects

Easily craft or extract configuration details of lists & libraries to reapply to new or related sites



## Apply site settings and call custom solutions

Provision select settings after creation; use Microsoft Flow to call apply additional business logic



More demos



# Current Limitations

- ➔ Primarily based on Site Script action availability , no options to:
  - Configure web parts
  - Site collection features
  - Detailed library/list work
  - Deploying files
  - Creating pages (in schema)
- ➔ Challenges with subsites and inheritance
- ➔ setSiteLogo only for Communication sites

# Site Script Examples

<https://github.com/SharePoint/sp-dev-site-scripts>

# Microsoft Overview

<https://docs.microsoft.com/en-us/sharepoint/dev/declarative-customization/site-design-overview>

# Builders

<https://sptools.netlify.com>

<https://www.sitedesigner.io>

<https://github.com/SharePoint/sp-dev-solutions/tree/master/solutions/SiteDesignsStudio>

# SharePoint Dev Blog

<https://developer.microsoft.com/en-us/sharepoint/blogs>

# Microsoft Tech Community

<https://techcommunity.microsoft.com>

# Microsoft 365 Roadmap

<https://fasttrack.microsoft.com/roadmap>

A photograph of two women in an office environment, viewed from the side. They are both looking at their laptops, which are partially visible on the right side of the frame. The woman in the foreground has dark hair and is wearing a dark top. The woman behind her is also looking at her screen. The background is slightly blurred, showing office furniture and lighting.

Help Contribute &  
Stay Informed!

# Questions?

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Slides: <http://bit.ly/DrewSlides>

Scripts: <http://bit.ly/DrewSDScripts>



# Getting Started with Site Designs and Site Scripts for Modern SharePoint Provisioning

North American Collab Summit 2019

#NACollabSummit

