Microsoft Dynamics 365

Power Pages ALM

Dynamics 365 FastTrack Architecture Insights

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Agenda

- Objectives
- Introduction to the website structure
- Existing tools
- What’s ALM ?
- Download/Upload using Power Platform CLI

Objectives

Purpose of this document

Highlight how to use a **source code version control** system with Power Pages (With approving changes, getting the history of features)

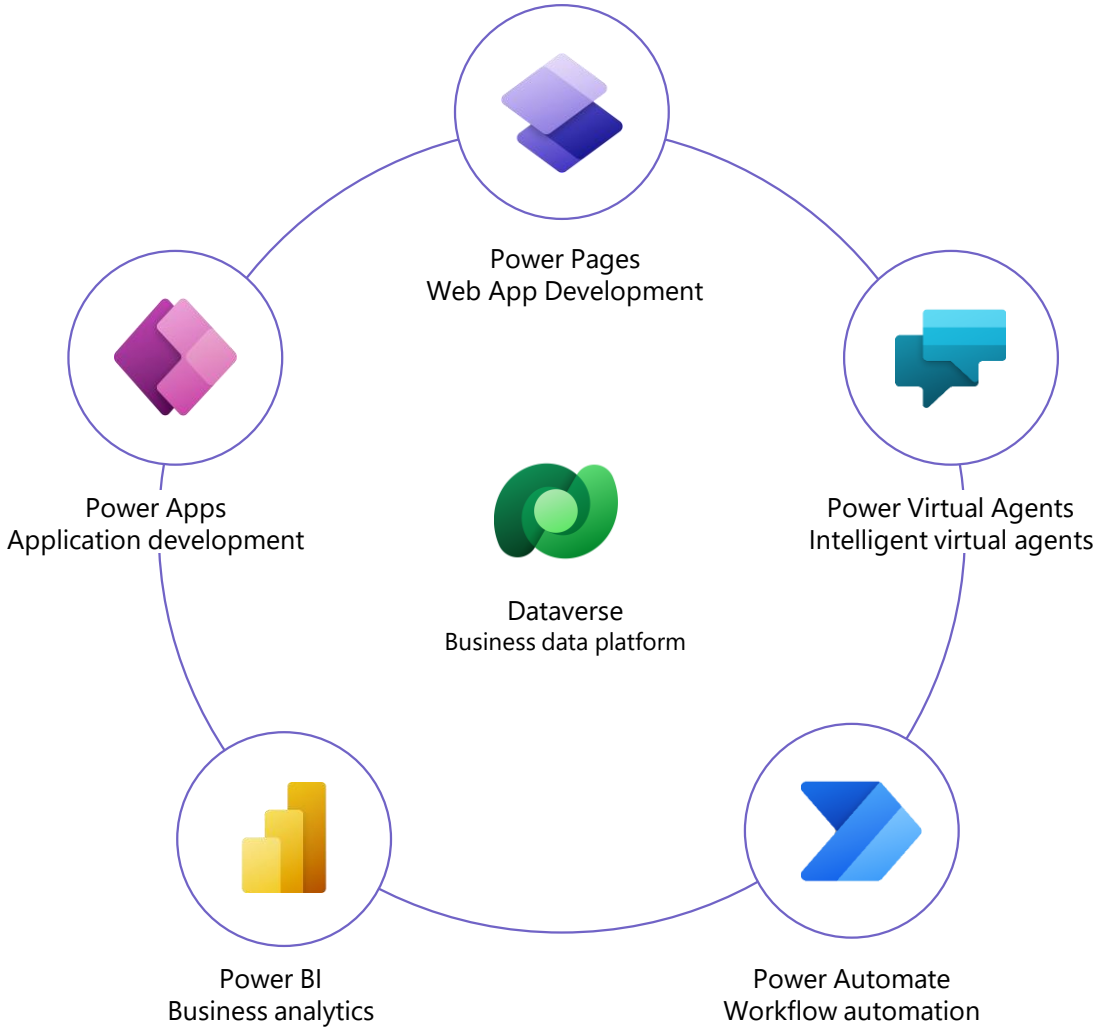
Present a possible use case for a **healthy ALM process** with the development of your website

Define a **common process** to move the website configuration & developments from an environment to another

Automate the website **deployments** & avoid manual tasks

Introduction to the website structure

Components around Power Pages



Components around Power Pages

Dataverse

Metadata & Data

- Business data shown on the website sits in Dataverse records
- **Deliver solutions following the ALM strategy and best practice mentioned in this docs** Application lifecycle management (ALM) basics with Microsoft Power Platform - Power Platform | Microsoft Docs

Power Pages Website

Configuration, Content & Code stored in Dataverse records

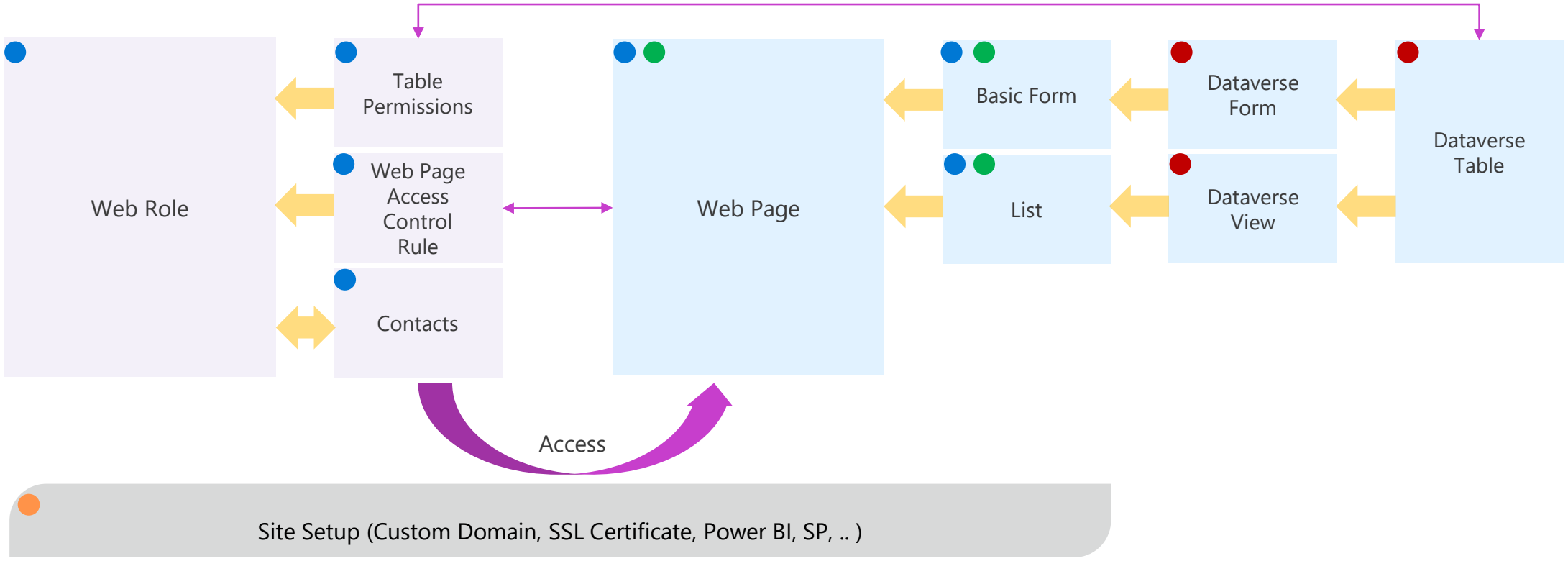
- Entirely of the website is stored records in Dataverse tables installed by Microsoft Power Pages during initial deployment
- Using the **Power Platform Build Tools** with DevOps or the **Power Platform CLI**

Power Pages site

Deployment, Setup and Integration Configuration

- Site that actually runs the website as defined in Dataverse
- **Manual tasks** to be performed by **administrators**, currently are creation of the site itself, setting up the initial URL, enabling integration to SharePoint or Power B, etc/
- Power Pages Admin API to contain List, Update, Create, Delete commands for the Sites hosts

Power Pages Design

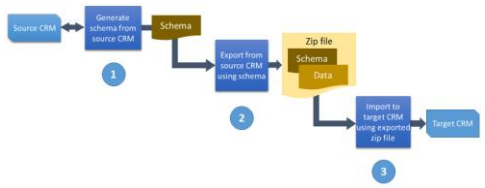


- Configuration stored in Dataverse Data
- Dataverse Metadata
- Content & Code
- Manual Configuration

Existing tools

Power Pages / website Deployment Methods

Microsoft
Configuration Migration Tool



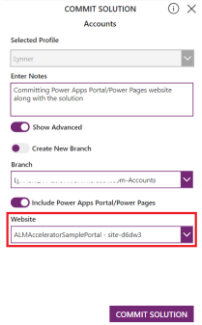
Manual Process
Can be automated with PowerShell
The original way to move whole site or configuration

XrmToolbox*
Portals Records Mover

(* This is a Community Tool)

Manual Process
Flexibility of what to move

ALM Accelerator for Power Platform
features for moving Power Pages Websites (Preview)



Existing project process

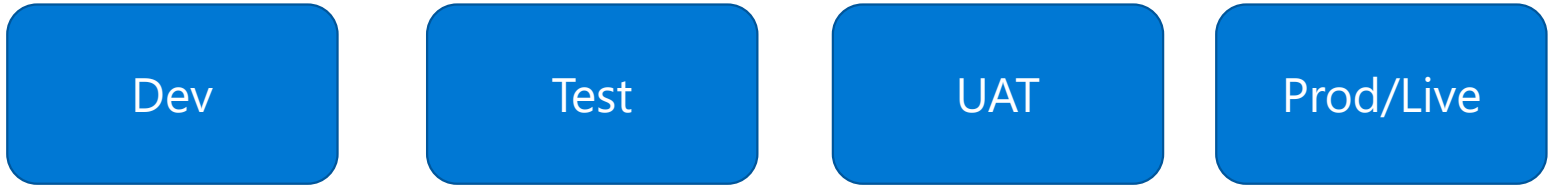
How teams work today : Environment Strategy

Pro-code developers

Low-code makers

Many Dynamics 365 & Power Pages implementations from new projects to ongoing build and maintenance phases:

Simple Environment Layout



Important: Developer Lifecycle for Power Pages requires running in cloud Environment to preview work, this layout works without limitation when there is a single developer working in the DEV environment.

Advanced Environment Layout

Customers can create any number of environment strategist to suite their compliance and governance needs of their organizations. Microsoft only recommendation is to have a **strategy defined.**

How teams work today : Sprint Phase

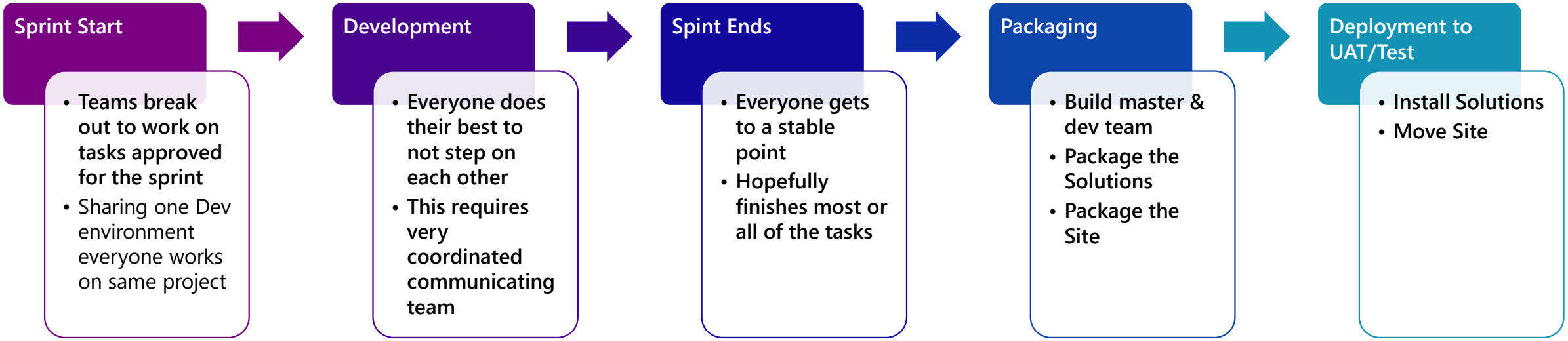
Pro-code developers

Low-code makers

We see this in many Dynamics 365 & Power Pages implementations from new projects to ongoing build and maintenance phases.

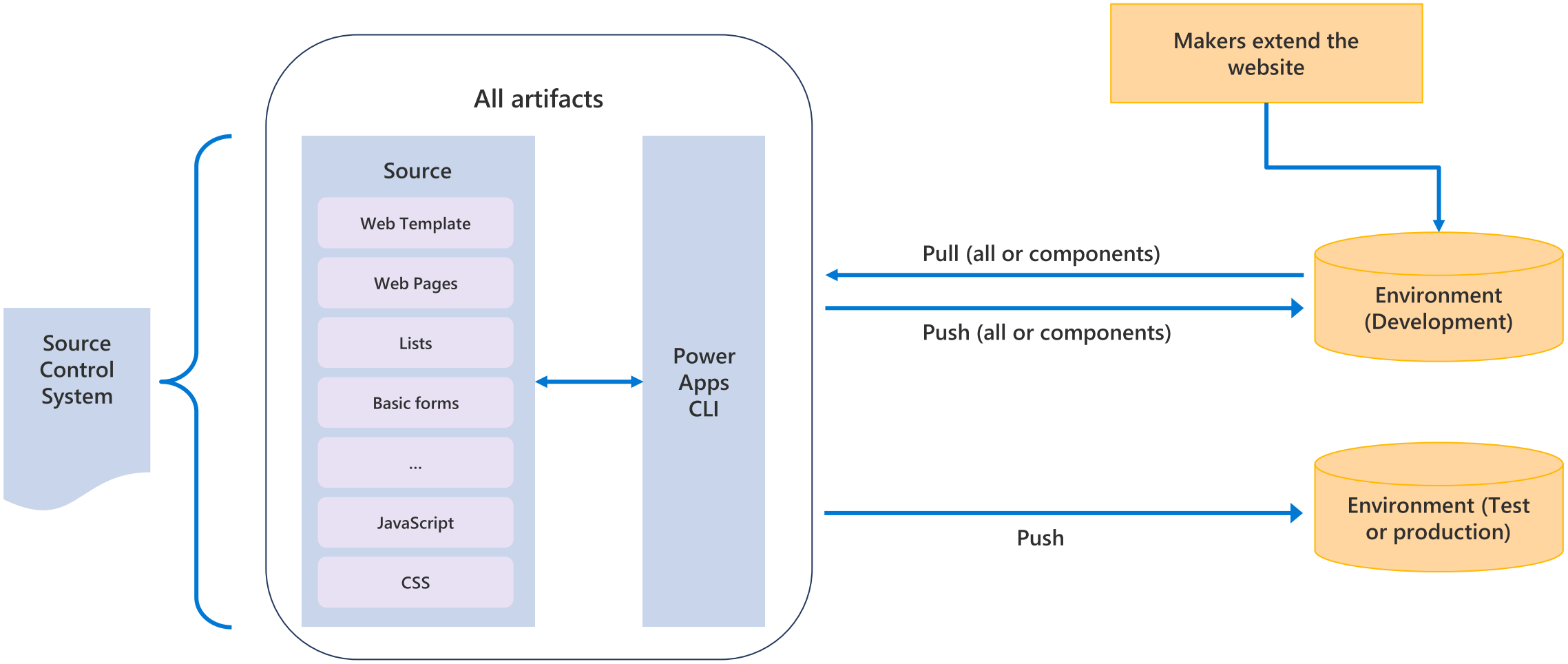
Work tasks are grouped into work duration of time such as a sprint of 2 weeks, more or less.

Single Developer Environment is shared, and everyone waits for all tasks to complete end of sprint.

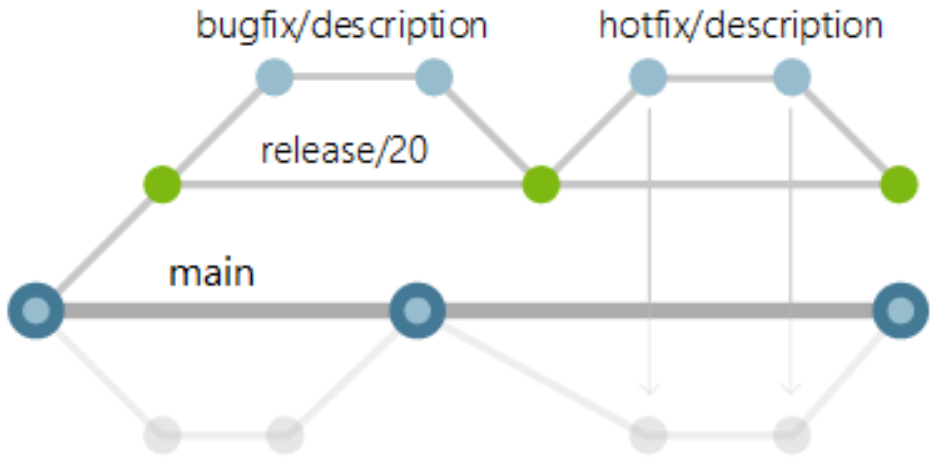


What’s ALM ?

Source control process



Branching Strategy

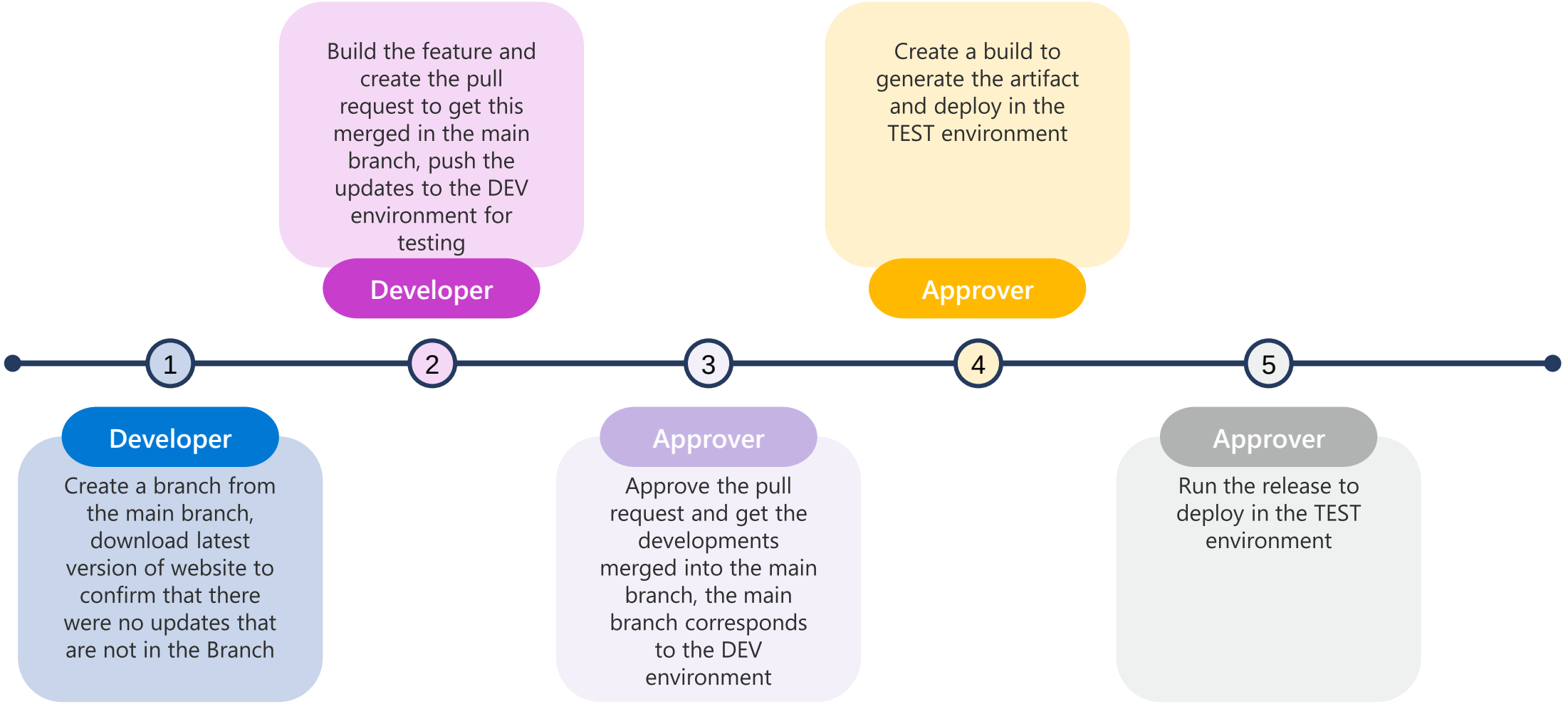


It's the strategy adopted when developing and configuring features, merging and deploying using a version control system

A specific strategy should be defined and clarified when using Power Pages as the low-code makers won't be pushing updates to DevOps branches and won't be pushing their updates.

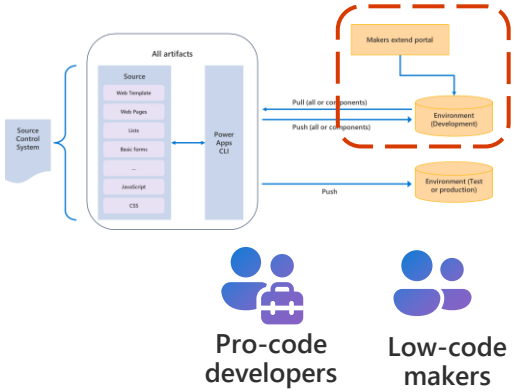
For more Information, refer to: [Application lifecycle management (ALM) basics with Microsoft Power Platform - Power Platform | Microsoft Docs]

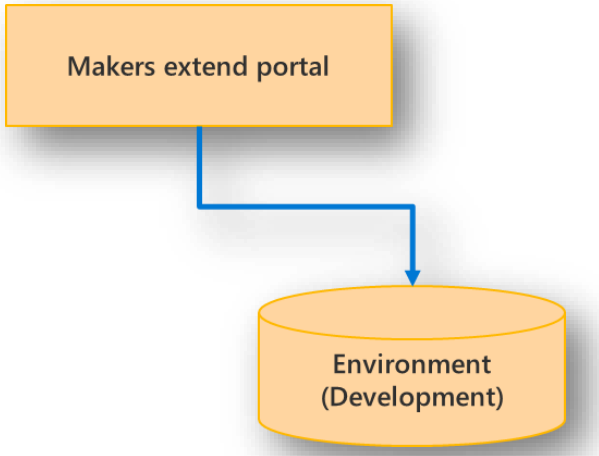
Feature Lifecycle



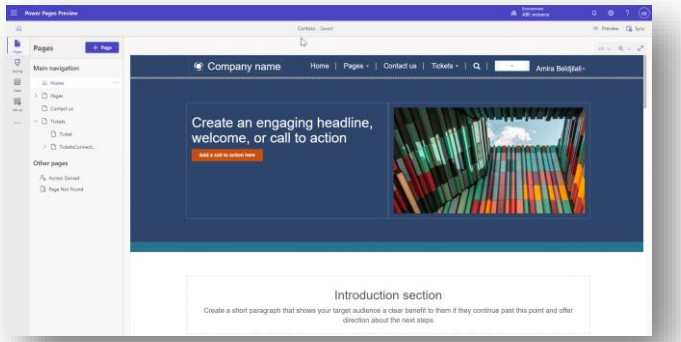
Download/Upload using Power Platform CLI

Extend the Website using the Power Pages Studio





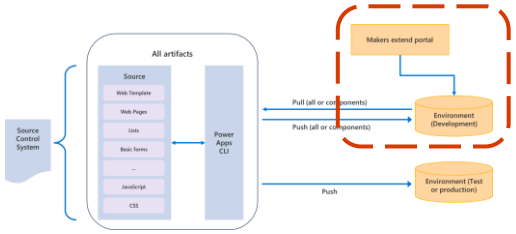
Using



Administrators provide several environments and **authorize updates & developments** in one environment only which is **the Development one**

Makers extend and configure the website using the Power Pages maker

Extend the Website using the Power Pages Studio & Visual Code Online

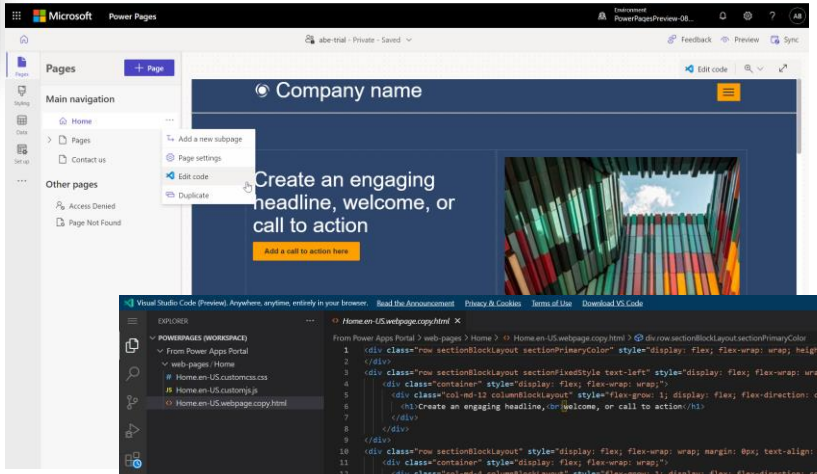


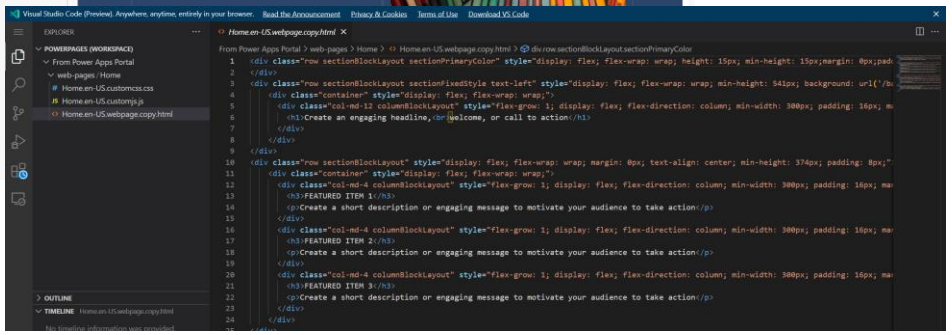
Pro-code developers

Makers extend portal

Environment (Development)

Using

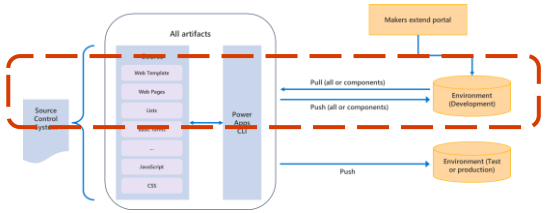


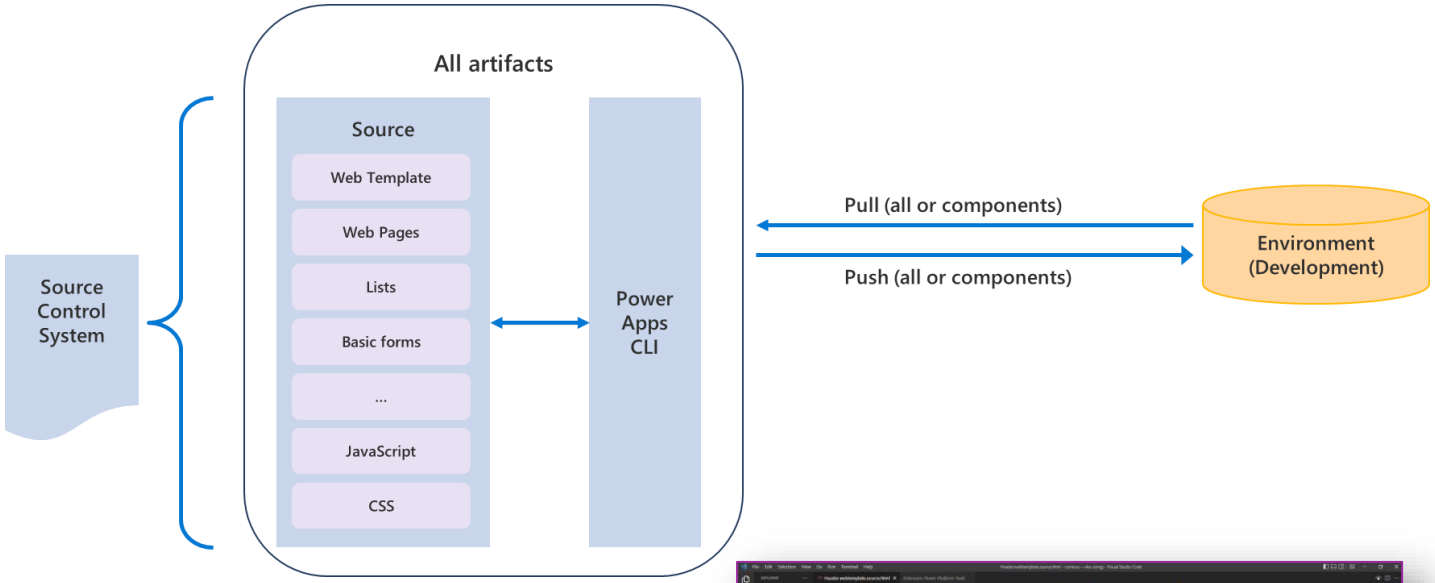


Power Pages offers the possibility to use a **Visual Code extension** to update the code

Developers need to consider using the VC extension **if they are updating only one page for example**

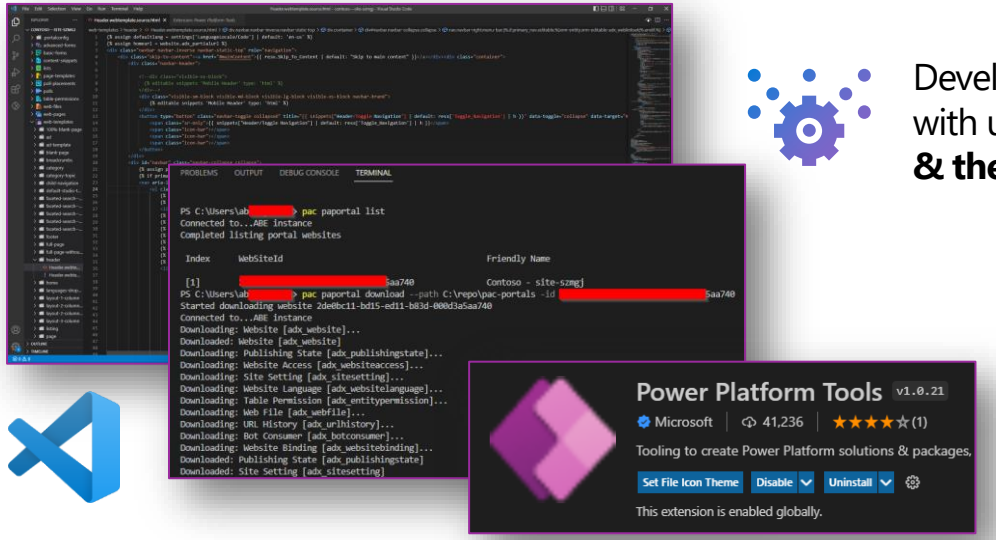
Extend the Website using Visual Code Desktop





Pro-code developers

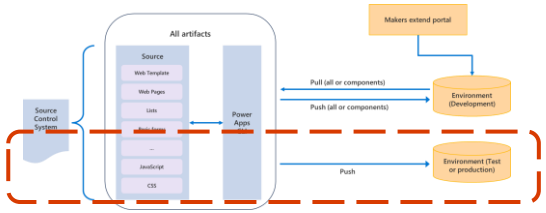
Using

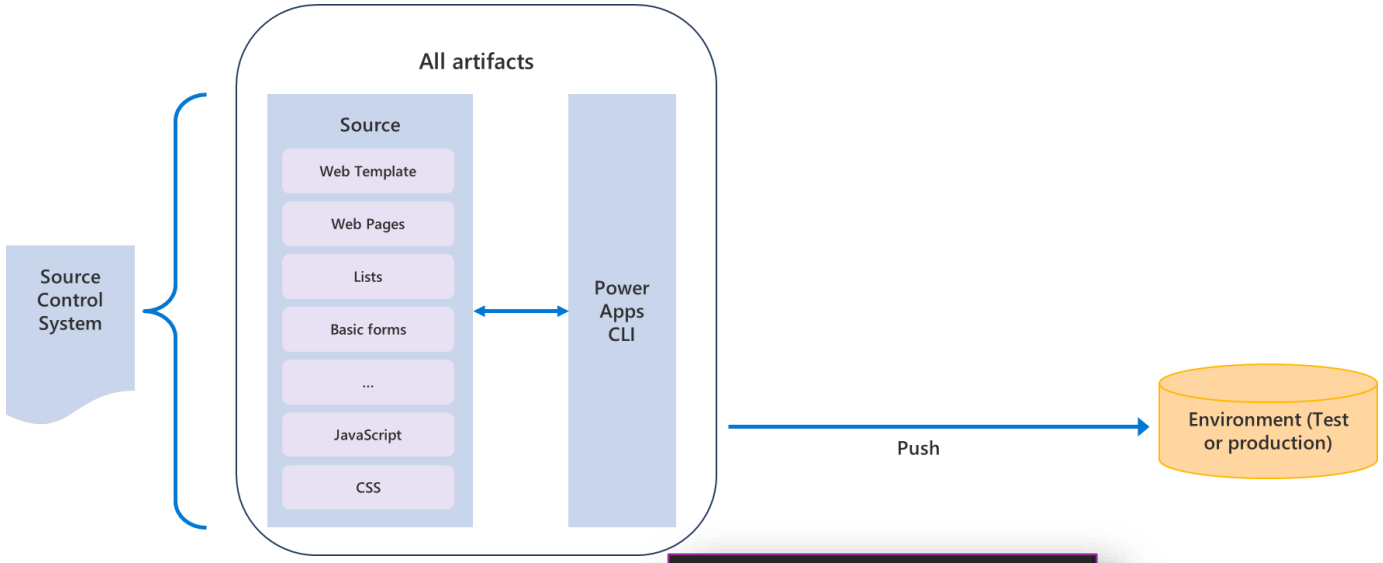


Developers use the **Microsoft Power Platform CLI with portals/ The Power Platform extension** to download and upload updates to the website

Developers use Visual Code to develop features with using : **IntelliSense support, Live preview & the autocomplete**

Deploy the Website using Power Platform CLI



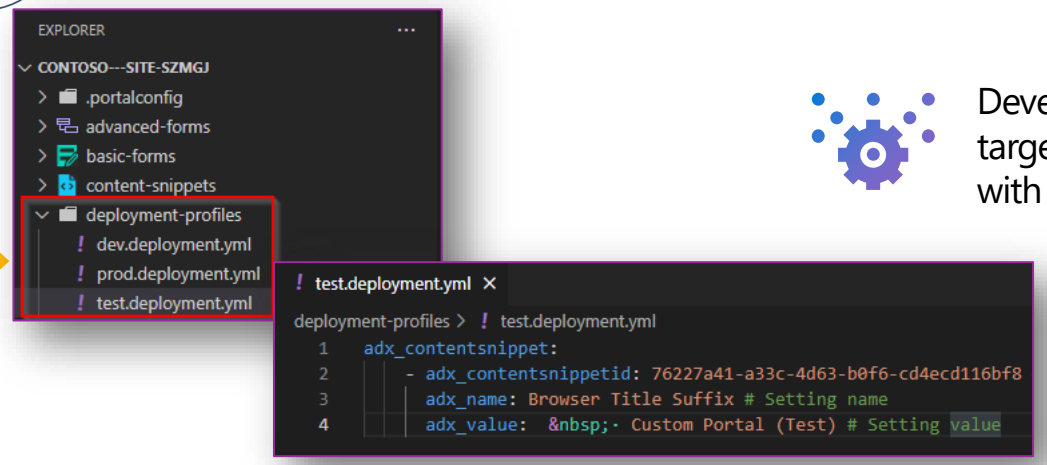


Pro-code developers

Approvers check the developments via the pull requests **according and using the tools & branching strategy** adopted in the project

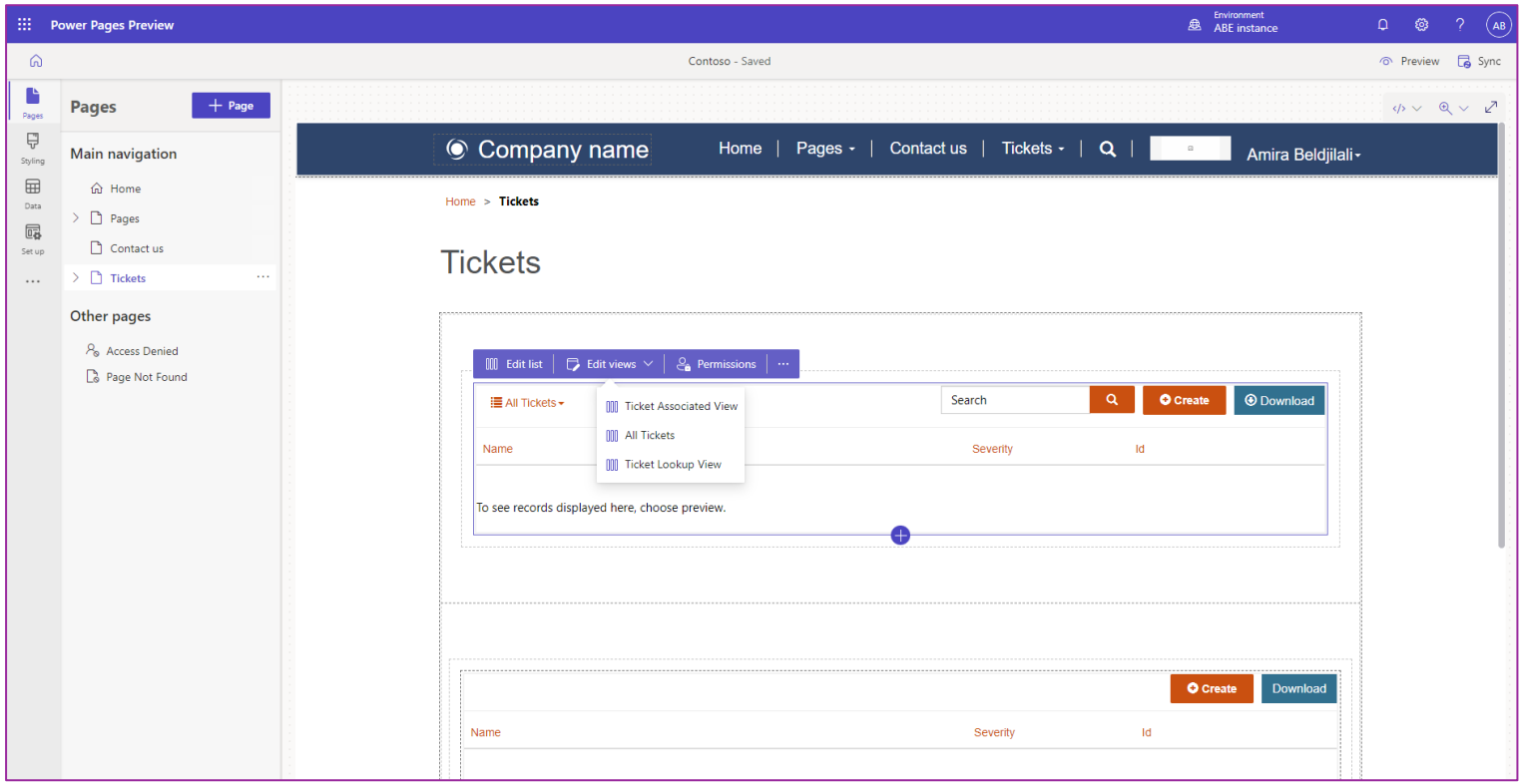
Developers/Approvers push updates to the target environment using **Power Platform CLI** with portals & **deployment profiles**

Using



For more Information, refer to: [Power Apps portals: Create deployment profile for dev/test/prod environment using Power Apps CLI | Microsoft Power Apps]

Extend using the Power Pages maker



Extend using the Power Pages maker

List Websites

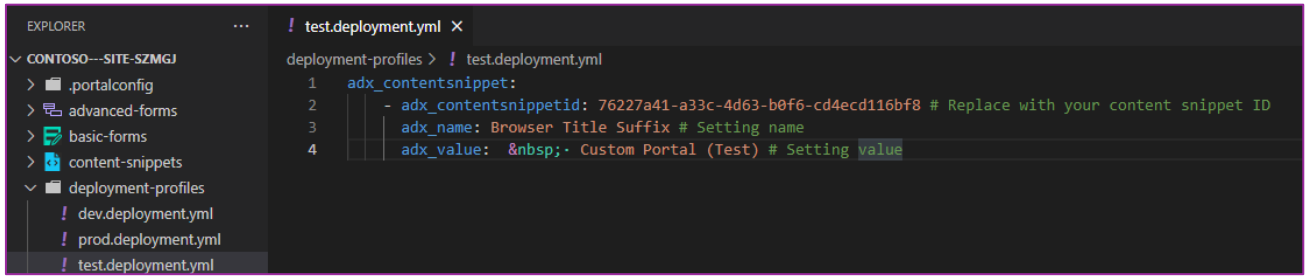
Download Website

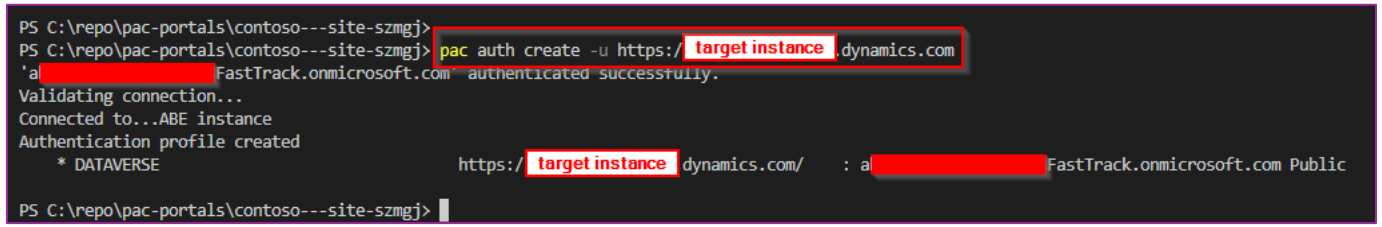
```
PS C:\repo\pac-portals\contoso---site-szmgj>
PS C:\repo\pac-portals\contoso---site-szmgj> pac auth create -u https:/ source instance .dynamics.com
'a                FastTrack.onmicrosoft.com' authenticated successfully.
Validating connection...
Connected to...ABE instance
Authentication profile created
    * DATAVERSE                    https:/ source instance dynamics.com/    : a                FastTrack.onmicrosoft.com Public

PS C:\repo\pac-portals\contoso---site-szmgj>
```

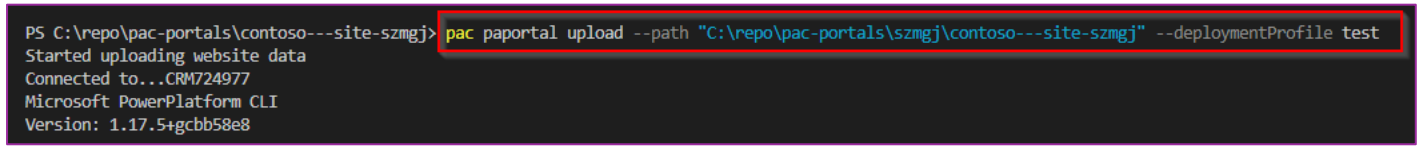
```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\repo\pac-portals\contoso---site-szmgj> pac paportal list
Connected to...ABE instance
Completed listing portal websites

 Index      WebSiteId                                    Friendly Name

 [1]        2c                  000d3a5aa740             Contoso - site-szmgj
PS C:\repo\pac-portals\contoso---site-szmgj>
```

```
PS C:\repo\pac-portals\contoso---site-szmgj>
PS C:\repo\pac-portals\contoso---site-szmgj> pac paportal download --path c:\repo\pac-portals\szmgj -id 2d                0d3a5aa740
Started downloading website 2de0bc11-bd15-ed11-b83d-000d3a5aa740
Connected to...ABE instance
Downloading: Website [adx_website]...
Downloaded: Website [adx_website]
Downloading: Publishing State [adx_publishingstate]...
Downloading: Bot Consumer [adx_botconsumer]...
Downloading: Web File [adx_webfile]...
Downloading: Website Language [adx_websitelanguage]...
Downloading: Website Binding [adx_websitebinding]...
Downloading: Table Permission [adx_entitypermission]...
Downloading: Site Setting [adx_sitesetting]...
Downloading: Website Access [adx_websiteaccess]...
Downloading: URL History [adx_urlhistory]...
```

Extend using the Power Pages maker
List Websites
Download Website
Deploy Website to different environment(s)


EXPLORER
CONTOSO---SITE-SZMGJ
.portalconfig
advanced-forms
basic-forms
content-snippets
deployment-profiles
dev.deployment.yml
prod.deployment.yml
test.deployment.yml
test.deployment.yml
deployment-profiles > test.deployment.yml
1 adx_contentsnippet:
2 - adx_contentsnippetid: 76227a41-a33c-4d63-b0f6-cd4ecd116bf8 # Replace with your content snippet ID
3 adx_name: Browser Title Suffix # Setting name
4 adx_value: · Custom Portal (Test) # Setting value


PS C:\repo\pac-portals\contoso---site-szmgj>
PS C:\repo\pac-portals\contoso---site-szmgj> pac auth create -u https:/ target instance .dynamics.com
'a FastTrack.onmicrosoft.com' authenticated successfully.
Validating connection...
Connected to...ABE instance
Authentication profile created
* DATAVERSE https:/ target instance dynamics.com/ : a FastTrack.onmicrosoft.com Public
PS C:\repo\pac-portals\contoso---site-szmgj>


PS C:\repo\pac-portals\contoso---site-szmgj> pac paportal upload --path "C:\repo\pac-portals\szmgj\contoso---site-szmgj" --deploymentProfile test
Started uploading website data
Connected to...CRM724977
Microsoft PowerPlatform CLI
Version: 1.17.5+gcbb58e8

Deploy using Azure DevOps

Process

Assumption : The latest version is always in the branch

1. ## Prepare

   The DevOps repository needs to be prepared at the start of the project

2. ## Build

   Developers & low-code makers build features and push the code to the main branch

3. ## Deploy

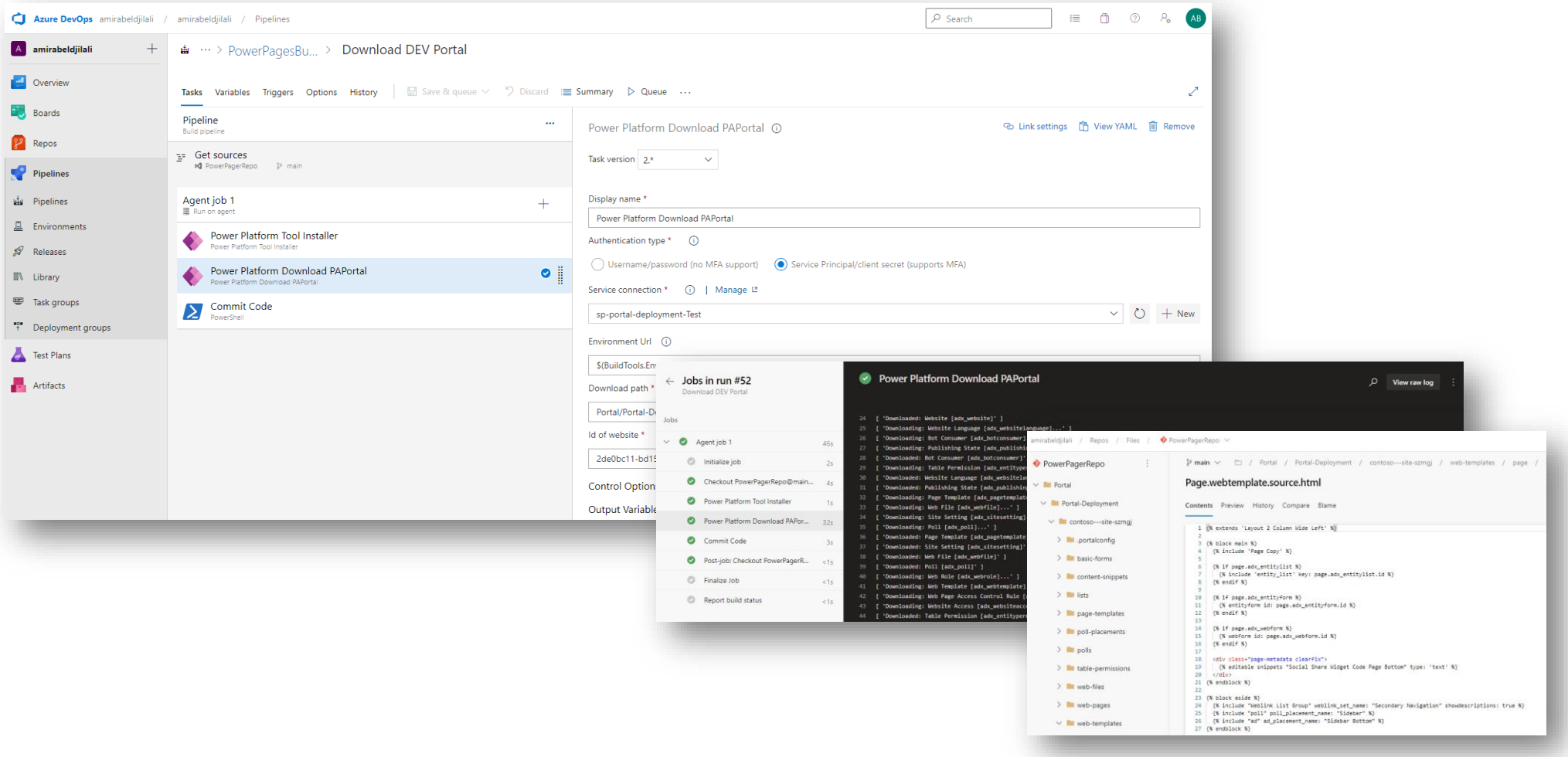
   The website is getting deployed in other environments

Process

Assumption : The latest version is always in the branch

1 Prepare

Download the Website content and commit to the main branch



Process

Assumption : The latest version is always in the branch

1 Prepare

Download

Create the deployment profiles with the configuration

```
adx_contentsnippet:
    - adx_contentsnippetid: 76227a41-a33c-4d63-b0f6-cd4ecd116bf8 # Replace with your content snippet ID
      adx_name: Browser Title Suffix # Setting name
      adx_value:   · Custom Portal (Dev) # Setting value
```

```
adx_contentsnippet:
    - adx_contentsnippetid: 76227a41-a33c-4d63-b0f6-cd4ecd116bf8 # Replace with your content snippet ID
      adx_name: Browser Title Suffix # Setting name
      adx_value:   · Custom Portal (Test) # Setting value
```

```
adx_contentsnippet:
    - adx_contentsnippetid: 76227a41-a33c-4d63-b0f6-cd4ecd116bf8 # Replace with your content snippet ID
      adx_name: Browser Title Suffix # Setting name
      adx_value:   · Custom Portal (PRD) # Setting value
```

Process

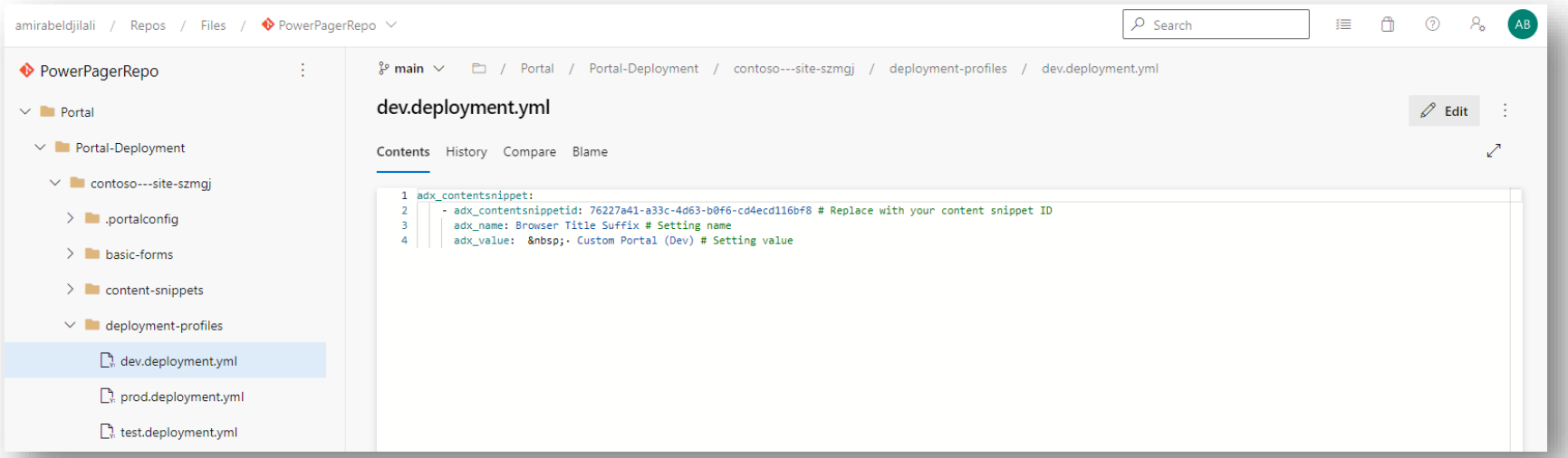
Assumption : The latest version is always in the branch

1 Prepare

Download

Configure

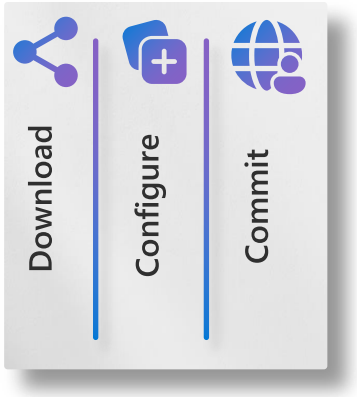
Commit the changes of profiles config to the main branch



Process

Assumption : The latest version is always in the branch

1 Prepare



This should be a one-shot operation to do at the start of the project

- The content of deployment profiles might change from a customer to another based on the need and the configuration
- For more details, refer to [Tutorial on how to use Power Platform CLI with portals - Power Apps | Microsoft Docs]

Process

Assumption : The latest version is always in the branch

2 Build

Low-code makers

- Update the **website using** the Power Pages Maker
- Synchronize with the dev team on tasks avoids conflicts management

Developers

- Create sub-branches to develop features starting from the main branch
  - Before starting the build, download* the content from the **website dev** to get the latest version and avoid conflicts (Download CLI*)
- Create a pull request once the development is finalized

Approver & developers

- Approve the sub-branch and merge changes to dev
- Push the code to the dev environment (Upload CLI*)

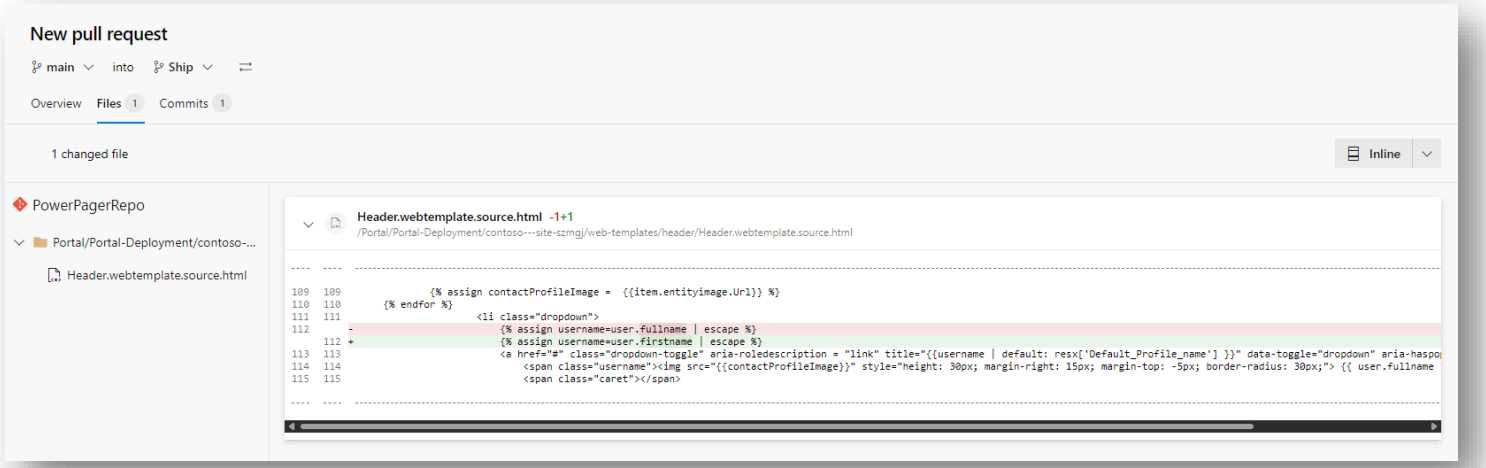
*For more details, refer to [Tutorial on how to use Power Platform CLI with portals - Power Apps | Microsoft Docs]

Process

Assumption : The latest version is always in the branch

3 Deploy

Add a tag to the main branch or use the Ship branch*



** According to the branching strategy you are using, you might need to do this step differently*

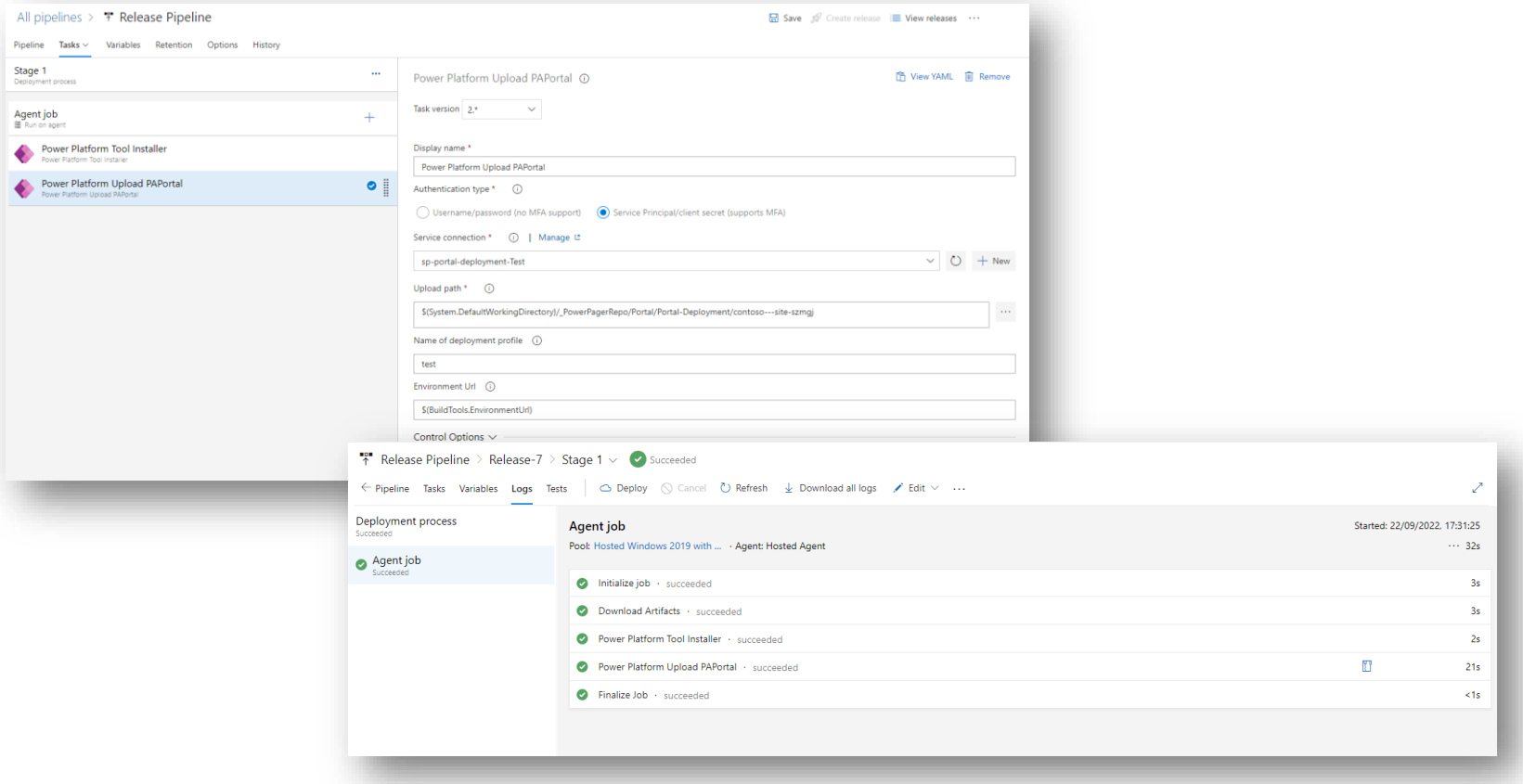
Process

Assumption : The latest version is always in the branch

3 Deploy

Tag & Ship

Deploy using the Power Platform Build Tools



Questions

Microsoft Dynamics 365

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