

#ScottishSummit2024

Build, Deploy, and Scale Power Apps with pipelines for Power Platform



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#ScottishSummit2024

Who are you?







- Tell us a bit about yourself
- Where do you work?
- What is your role?
- Have you used Pipelines before?
- What do you expect of today?



#ScottishSummit2024

Daniel Laskewitz



-  Senior Cloud Advocate @ Microsoft
-  I'm part of Microsoft 365 & Power Platform Community (previously PnP)
-  I maintain Power Platform Samples, Snippets and Prompts
-  Co-Organizer of the PowerAddictsNL

Sharing is caring 



@Laskewitz



Laskewitz.io



@Laskewitz



@Laskewitz



@DanielLaskewitz








Cloud Advocate
@Microsoft

#ScottishSummit2024

Albert-Jan Schot



-  I work at BLIS.digital as the CTO
-  I'm part of Microsoft 365 & Power Platform Community (previously PnP)
-  I co-manage CLI for Microsoft 365
-  Co-Organizer of the DIWUG
-  Co-Organizer of the PowerAddictsNL

Do epic 🥰



@appieschot



cloudappie.nl



@appieschot



@appieschot



CTO
@Blis Digital

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Planning



- 10:00 - 10:30 🖐️ Intro
- 10:30 - 11:15 Lab 1
- 11:15 - 11:30 🍲 Break
- 11:30 - 12:15 Lab 2
- 12:15 - 13:00 🍜 Lunch
- 13:00 - 14:00 Lab 3
- 14:00 - 14:15 🍲 Break
- 14:15 - 15:15 Lab 4
- 15:15 - 15:45 Recap
- ★ Bonus lab 5



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Terminology

The boring basics



Power Platform



Power Apps
Intelligent Apps



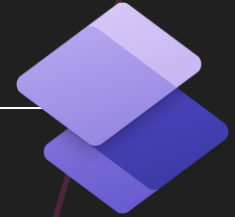
Power Automate
Process automation



Power BI
Business analytics



Copilot Studio
Intelligent Copilots



Power Pages
External websites



**Data
connectors**



**AI
Builder**



**Microsoft
Dataverse**

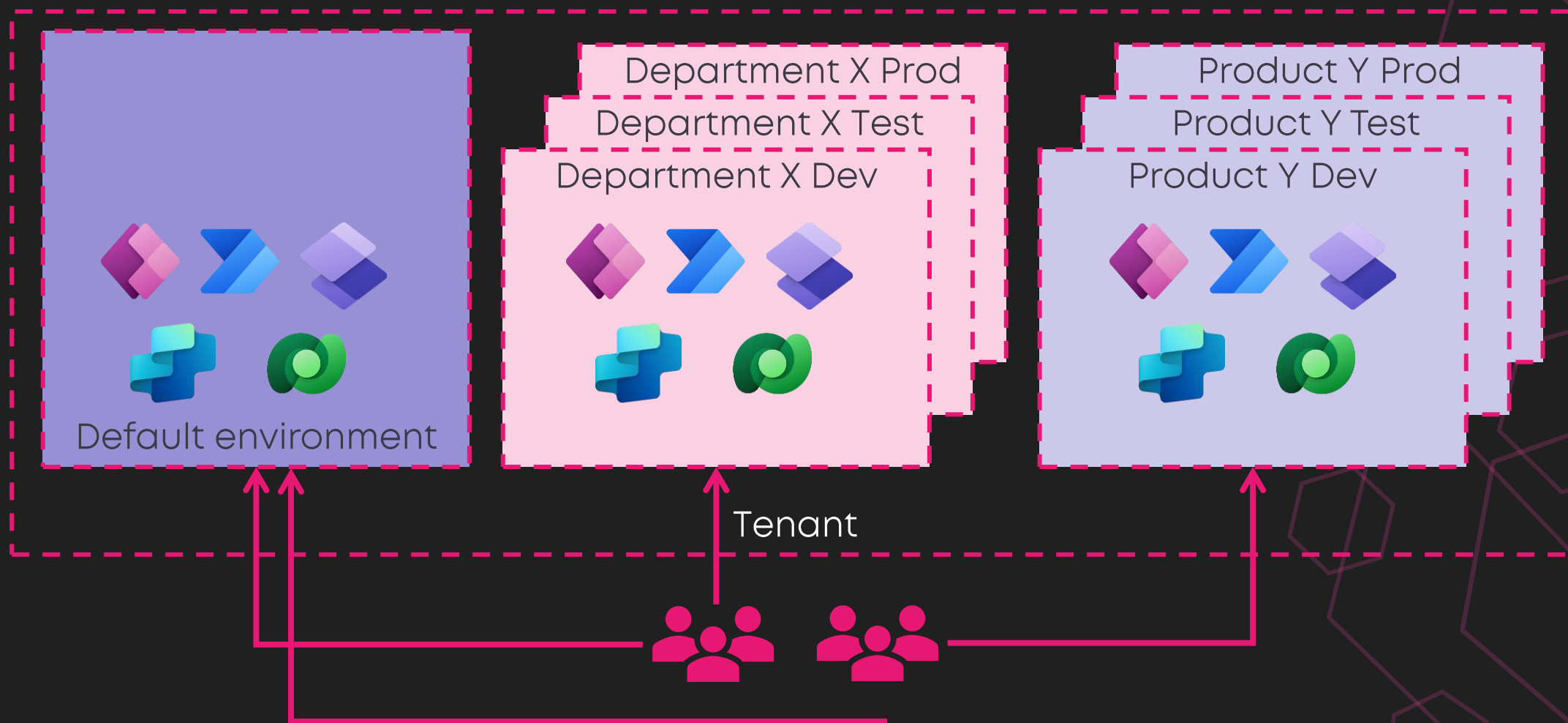


**Power
Fx**



**Managed
Environments**

Environments



Solutions



Unmanaged Solution



Managed Solution

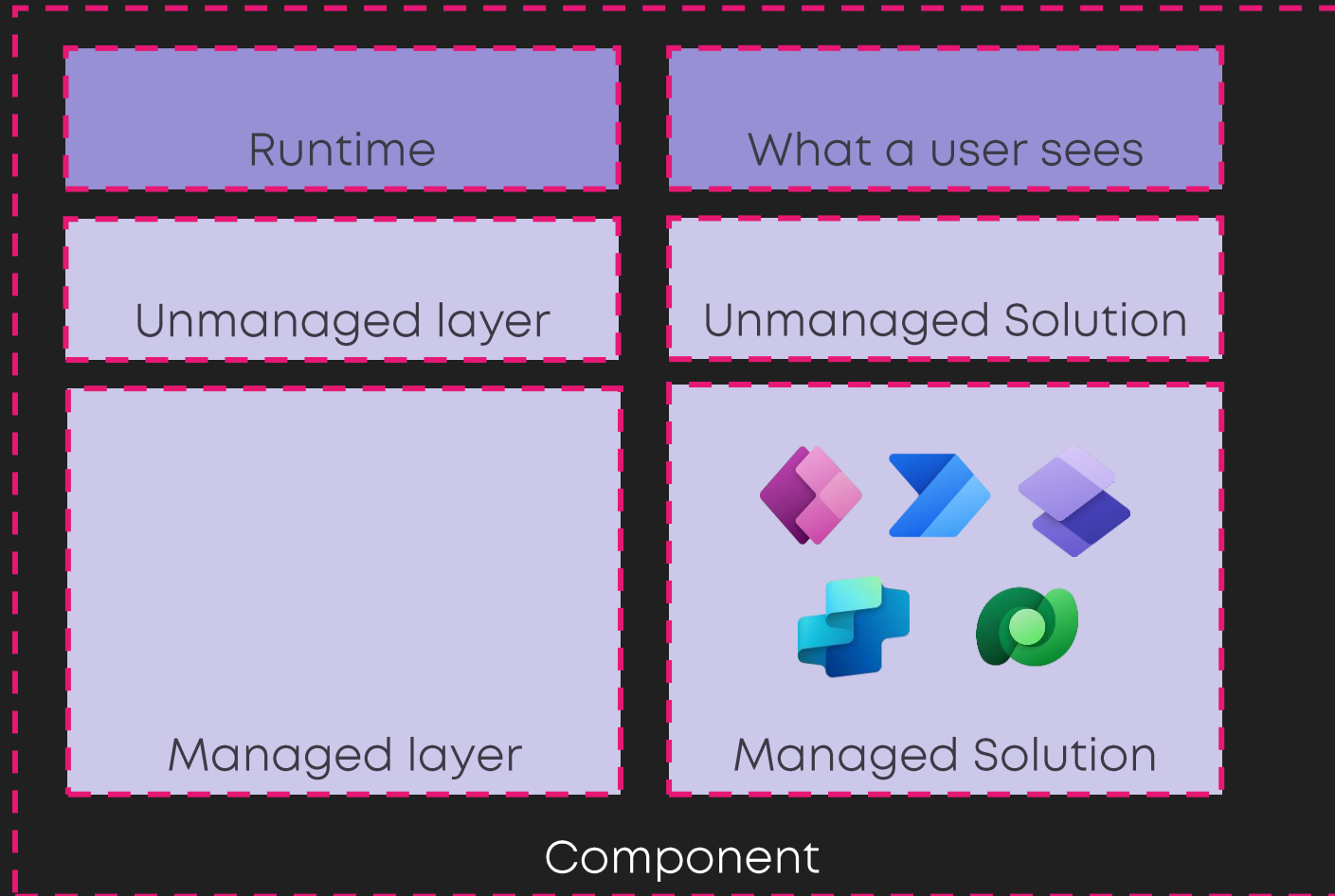


Managed Solution

Environment A

Environment B


Solution layers



Preferred solutions




Solutions





Set your preferred solution

Select where your updates will be saved so your work stays organized.

Current preferred solution
Common Data Services Default Solution
Manage

 Unmanaged

 Managed

 All

Display name ▾

Common Data Services Def.


Default Solution

Set your preferred solution

Select where your updates will be saved so your work stays organized.
[Learn more about healthy application lifecycle management \(ALM.\)](#)

Unless otherwise specified, save my changes in

Common Data Services Default Solution (cr1a7) ▾

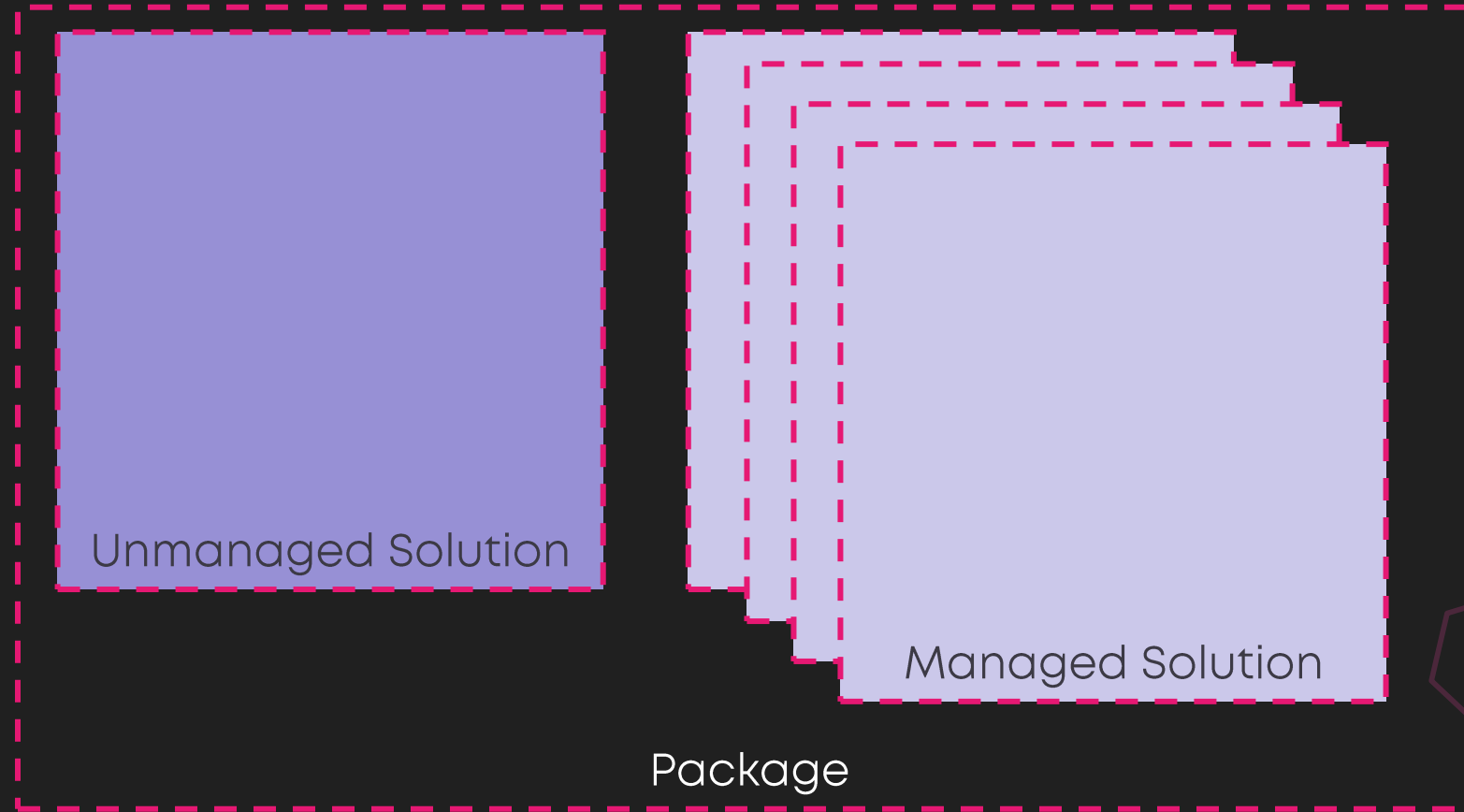
 New Solution

Apply

Cancel

Version ▾	Publisher ▾	Solution check
0.0.0	CDS Default Publ...	Hasn't been run
0	Default Publisher...	Not supported for analy...

Packages vs Solutions



Command Line Interface

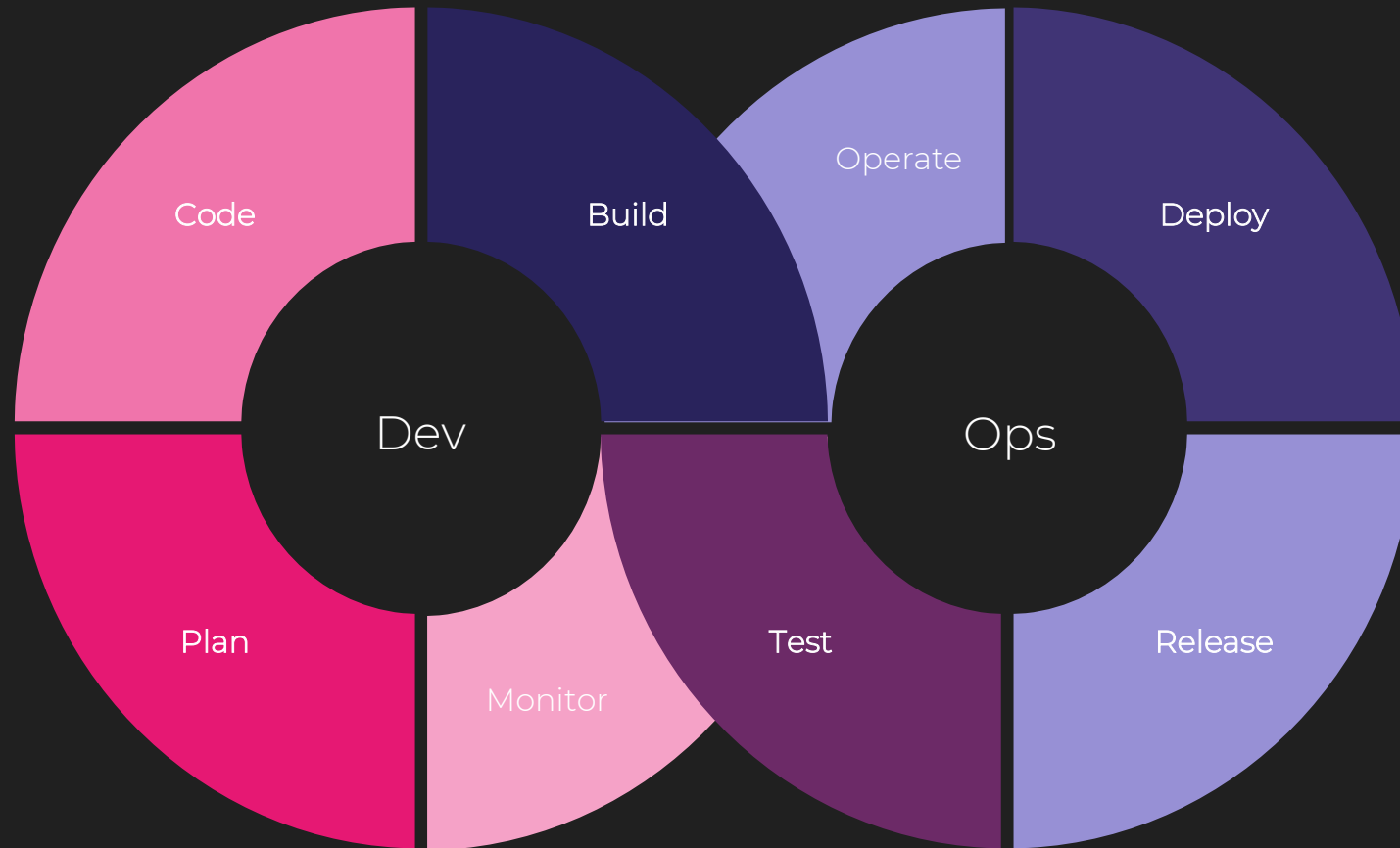


```
Microsoft PowerPlatform CLI
Version: 1.21.4+g4869036
```

```
Usage: pac [admin] [application] [auth] [canvas] [connector] [help] [modelbuilder] [org] [package] [paportal] [pcf] [
pipeline] [plugin] [solution] [telemetry] [virtual-agent]
```

admin	Work with your Power Platform Admin Account
application	Commands for listing and installing available Dataverse applications from AppSource
auth	Manage how you authenticate to various services
canvas	Operating with Power Apps .msapp files
connector	(Preview) Commands for working with Power Platform Connectors
help	Show help for the Microsoft Power Platform CLI
modelbuilder	Code Generator for Dataverse APIs and Tables
org	Work with your Dataverse Organization
package	Commands for working with Dataverse package projects
paportal	Commands for working with Power Pages website
pcf	Commands for working with Power Apps component framework projects
pipeline	Work with Pipelines
plugin	Commands for working with Dataverse plug-in class library
solution	Commands for working with Dataverse solution projects
telemetry	Manage telemetry settings
virtual-agent	Commands for working with Power Virtual Agent bots

DevOps principles



Outerloop options



1. [Power Platform Build Tools for Azure DevOps](#)
2. [GitHub actions for Power Platform](#)
3. [ALM Accelerator for Power Platform](#)
4. [Pipelines for Power Platform](#)

Licensing requirements



- Developer environments aren't required to be Managed Environments. They can be used for development and testing with the developer plan.
- The pipelines host should be a production environment, but the pipelines host doesn't have to be a Managed Environment.
- All other environments used in pipelines must be enabled as Managed Environments.
- Licenses granting premium use rights are required for all Managed Environments.

Environment purpose	Environment type	Standalone license required
Host	Production	No
Development	Developer	No
QA	Developer	No
Production	Production	Yes



Lab setup



- Each user has 3 environments
 - UserID-Dev
 - UserID-QA
 - UserID-Prod
- In a typical scenario you would have a **separate environment** where one would install the pipeline host!

<https://aka.ms/SS24-Pipelines>

Getting started 



Setup and configure

There we go 🏎️



Power Platform pipelines package



- Platform host The default tenant-wide platform host, which can be configured by makers.
- Custom host Admins configure a custom host to centrally govern citizen-led and pro-dev-led projects.
- Ensure that you have the latest Power Platform pipelines package in your custom host

What you will learn



In this lab, you will go through the following tasks:

- ✓ Log into make.preview.powerapps.com with your account
- ✓ Deploy the pipelines solution to your UserXX-Prod environment

<https://aka.ms/SS24-Pipelines>

Getting started 



Develop

Building blocks 🏗️



DEMO: Get started with Copilot in Power Apps



The screenshot shows the Microsoft Power Apps interface. At the top, the header includes "Power Apps | App | Create new tables", a search bar, and environment information "Environment Daniel-Dev". Below the header, the canvas area displays a diagram with three tables: "Showing", "Property", and "Owner", each marked "Generated with AI". They are connected by relationship lines with a cardinality of "1". The right sidebar contains the "Copilot" panel, which shows a message: "Sorry, something went wrong. Please try again, or share your feedback." followed by "AI-generated content may be incorrect". Below this is a prompt "build an app to manage real estate showings" and a response: "Tables for managing real estate showings have been created with their relationships." followed by a list of tables: "Property", "Owner", and "Showing". At the bottom of the sidebar, there is a "View prompts" button and a text input field with the placeholder "What would you like to do next?".

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<https://aka.ms/SS24-Pipelines>

Develop 



What you will learn



In this lab, you will go through the following tasks:

- ✓ Create A Solution
- ✓ Setting your preferred solution
- ✓ Creating A Canvas App With Power Apps Copilot

Deploy

The magic ✨



Deployment notes (US ONLY)



Power Apps

Search

Pipelines

As your app advances, you'll start sharing it to be used in your organization. As it gets widely adopted, it's important to practice building securely in an isolated location so the people using your app don't run into issues while you work on it. Once everything is in place and share there. [Learn more](#)

Pipeline

asheehi pipeline

Details Run history

Development

Securely test and verify in isolation. After you've got everything working properly, it's time to deploy. [Learn more](#)

Solution version

1.0.0.59

asheehi Dev to Test

[Pipelines Master] Test Env

Go to this environment

Anthony's Dev to Test [Pipelines Master] stage

Last successfully installed version

1.0.0.33

Last deployed

May 25, 2023 2:27 PM (4 months ago)

Deploy here

Deploying Solution

Destination

Summary

Pipeline

asheehi pipeline

Display name

Interview Management

Publisher

Microsoft Power Platform

Stage

asheehi Dev to Test

Name

InterviewManagement

Prefix

mspp

Version *

1.0.0.60

Deployment notes

Generating deployment notes...

Stop generating

Back Deploy Close

What you will learn



In this lab, you will go through the following tasks:

- ✓ Create your first pipeline
- ✓ Run the deployment to the QA environment

Enterprise Scale

Approvals 



DEMO: Azure DevOps



← Jobs in run #20230926.1

PowerPlatformOps

Jobs

✓	Job	1m 38s
✓	Initialize job	3s
✓	Checkout PowerPlatfor...	1s
✓	PP: Install tools	<1s
✓	PP: Export	1m 15s
✓	PP: Extract	6s
✓	Blis Digital: Naming Va...	10s
✓	Post-job: Checkout Po...	<1s

✓ Blis Digital: Naming Validator



View raw log

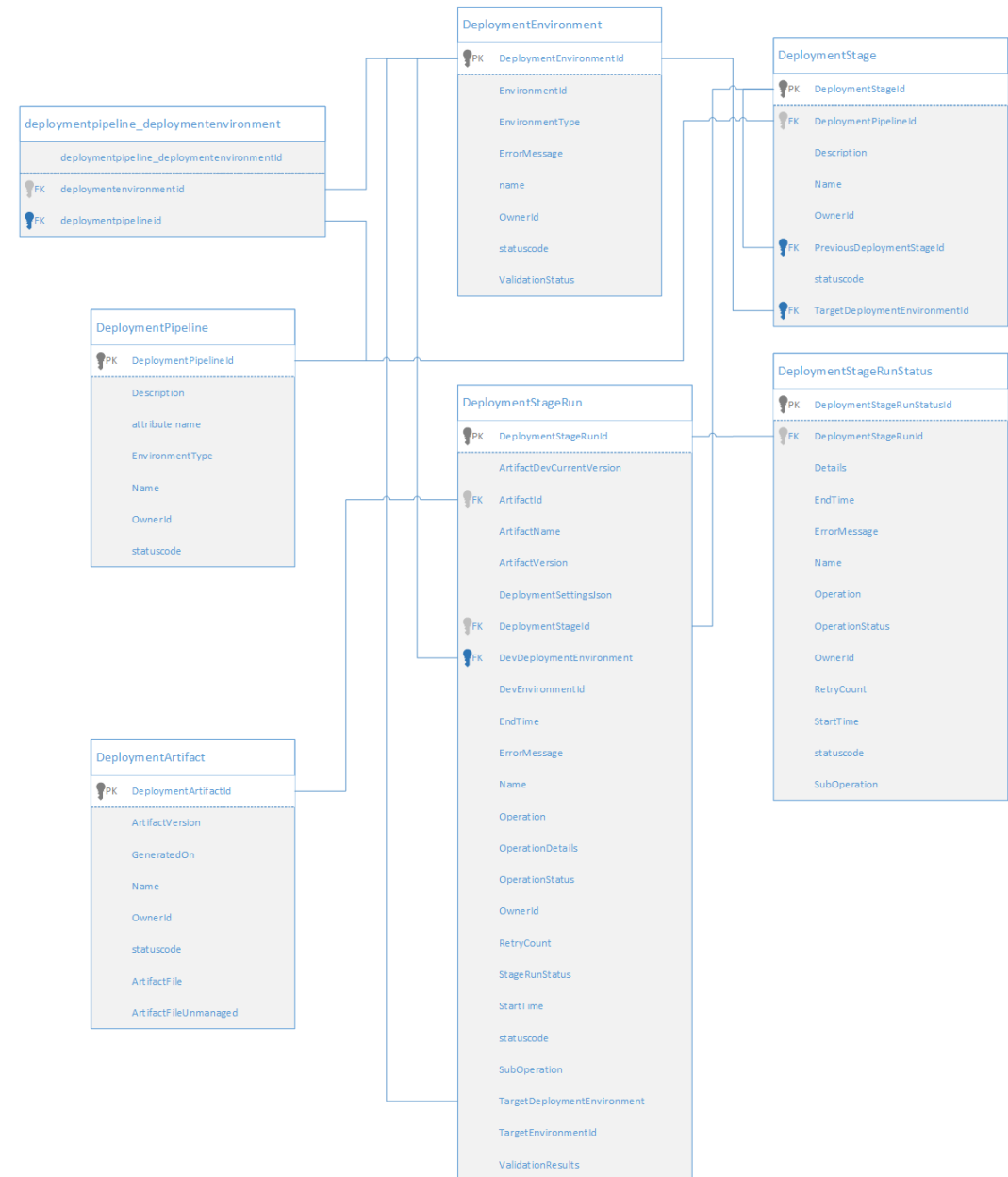


```
137 ✓ Control 'App' matches type 'appinfo' with naming convention 'App'.
138 ✓ Control 'Host' matches type 'hostControl' with naming convention 'Host'.
139 ✗ Screen 'Controls Screen' doesn't match naming convention.
140 ✗ Control 'Dialog_1' with type 'Dialog' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
141 ✗ Control 'SearchBox_1' with type 'SearchBox' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
142 ✗ Control 'Nav1' with type ''Fluent Nav (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
143 ✗ Control 'CommandBar1' with type ''Fluent Command Bar (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
144 ✗ Control 'Elevation1_1' with type ''Fluent Elevation (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
145 ✗ Control 'Calendar1' with type ''Fluent Calendar (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
146 ✗ Control 'btnAddTaskHeader_1' with type ''Fluent Icon (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
147 ✗ Control 'RadioGroup1' with type ''Radio group'' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
148 ✗ Control 'Value1' with type 'pcfDataField' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
149 ✗ Control 'SpinButton1' with type ''Fluent SpinButton (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
150 ✗ Control 'Checkbox1' with type ''Check box'' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
151 ✗ Control 'picTags' with type ''Fluent Picker (1' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
152 ✗ Control 'BorderColor1' with type 'pcfDataField' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
153 ✗ Control 'HoverBorderColor1' with type 'pcfDataField' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
154 ✗ Control 'DisplayName1' with type 'pcfDataField' does not match naming convention, Name should start with '' on Screen named 'Controls Screen'
```

Pipeline table reference

Table and entity overview used by Power Platform Pipelines.

**For brevity, common columns found on all tables are not included here*



Flow triggers for Pipelines



Gated Extension	Action Name	Step completed Trigger	Unbound action
Pre-export step required	OnDeploymentRequested	N/a	UpdatePreExportStepStatus
Is delegated deployment	OnApprovalStarted	OnDeploymentCompleted	
	OnApprovalCompleted		
Predeployment step required	OnPreDeploymentStarted	OnPreDeploymentCompleted	UpdatePreDeploymentStepStatus
	OnPreDeploymentCompleted		
	OnDeploymentStarted		
	OnDeploymentCompleted		

Trigger conditions



Specific Pipeline

```
@equals(triggerOutputs()?['body/OutputParameters/DeploymentPipelineName'], 'Contoso Pipeline')
```

Specific stage

```
@equals(triggerOutputs()?['body/OutputParameters/DeploymentStageName'], 'Contoso UAT')
```

Specific stages (contains)

```
@contains(triggerOutputs()?['body/OutputParameters/DeploymentStageName'], 'QA')
```

Status fields



UpdatePreExportStepStatus, UpdateApprovalStatus, and PreDeploymentStepStatus:

- 10 is the **pending status** set by the system.
- 20 for **completing** the step.
- 30 for **rejecting** the step. The deployment won't proceed and status will be set to failed. You can also add both maker facing and admin facing comments to indicate the reason for rejection.

What you will learn



In this lab, you will go through only one task:

- ✓ Extend the previous pipeline with Approvals

Low code & Code first

Next level 🌟



What you will learn



In this lab, you will go through the following tasks:

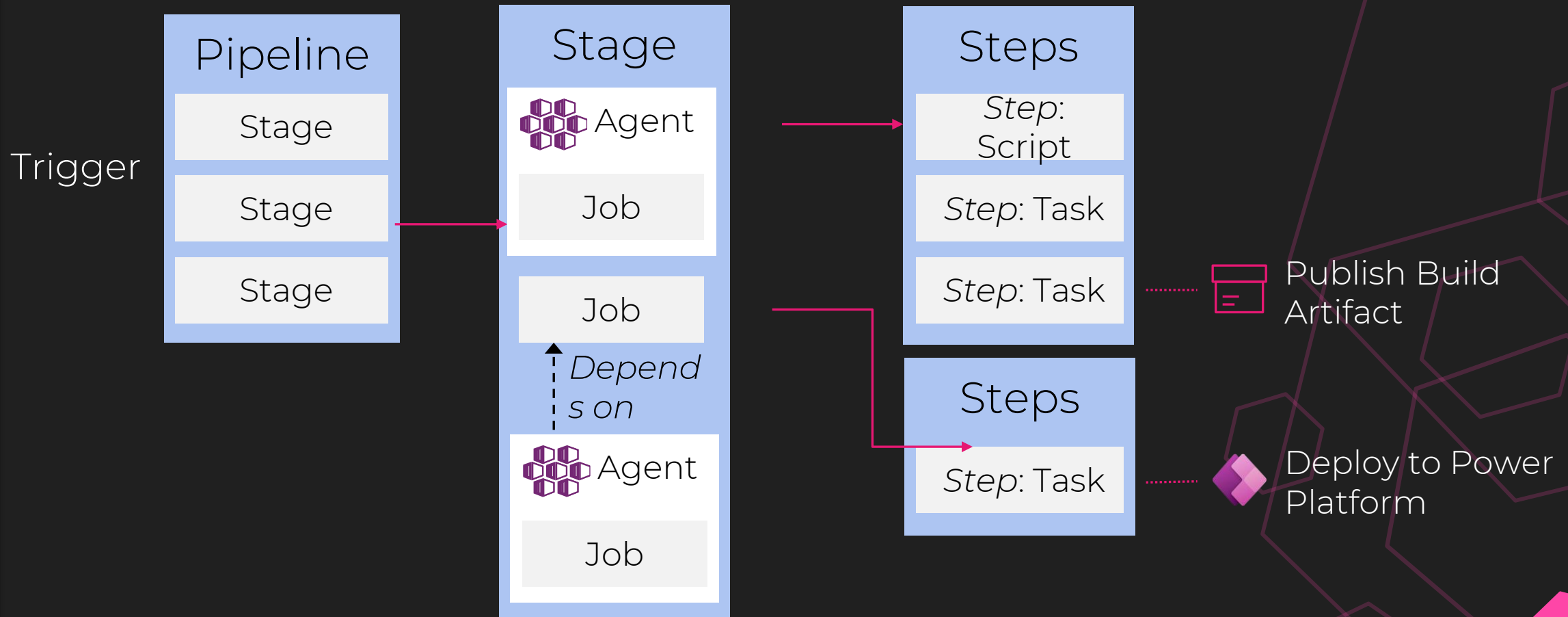
- ✓ Create a GitHub account
- ✓ Create a GitHub repository
- ✓ Create a Power Automate cloud flow to store source code in a GitHub repository

Outerloop options

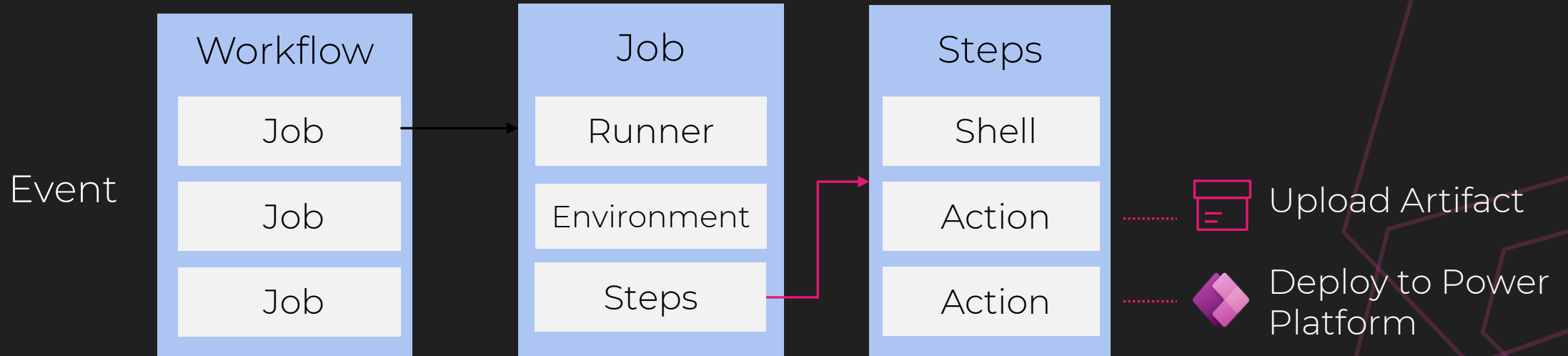


1. [Power Platform Build Tools for Azure DevOps](#)
2. [GitHub actions for Power Platform](#)
3. [ALM Accelerator for Power Platform](#)
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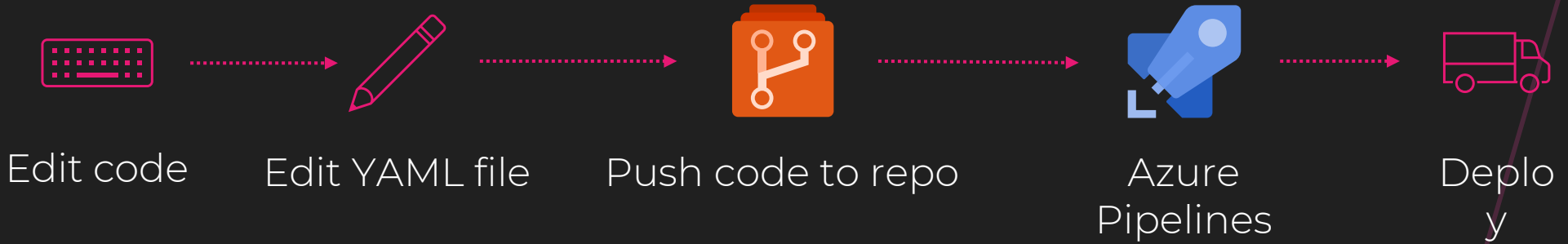
Azure DevOps key concepts



Git key concepts



Pipeline definitions



Why use YAML?

Versioning

Flexibility

Standardization

Reusability

ALM Accelerator



Power Apps | ALM Accelerator for Power Platform

ALM Accelerator for Power Platform

Select Your Maker Environment
Contoso CoE (New Dev)

REFRESH MANAGE SOLUTIONS IMPORT SOLUTION

Search Solutions

SOLUTION				PROFILE		
ALM Accelerator for Makers Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
ALM Accelerator Sample Solution Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	ALM Accelerator Sample Solution Validation - Test - Prod	DELETE SOLUTION <input type="radio"/>
Center of Excellence - ALM Accelerator Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Audit Logs Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Core Components Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Flow Runs Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Governance Co... Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Maker Journey Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Microsoft Teams ... Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
Center of Excellence - Nurture Compon... Open Solution Configure Deployment Settings	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile No Profile Selected	DELETE SOLUTION <input type="radio"/>
CoE - Current Value	COMMIT SOLUTION	<input type="radio"/>	DEPLOY SOLUTION	<input type="radio"/>	Choose a Profile	DELETE SOLUTION <input type="radio"/>

ALM Accelerator Environment: JohannaL_Test ■ Maker Environment: Contoso CoE (New Dev)






Low code & Code first

Next level 🌟



Recap



-  Setup and configure for pipelines
-  Develop Intelligent Apps with Copilot
-  Deploy through a pipeline
-  Enterprise Scale
-  Low Code & Code First - Better together

Resources



- [Power Platform Build Tools for Azure DevOps](#)
- [GitHub actions for Power Platform](#)
- [ALM Accelerator for Power Platform](#)
- [Pipelines for Power Platform](#)
- [Licensing and requirements](#)
- [Extending pipelines](#)
- [Dataverse Pipeline entities / structure](#)

It's a wrap

