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# The Complete Power Platform Pipelines & ALM Setup Guide

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# Introduction

Welcome to The Complete Power Platform Pipelines ALM Setup Guide.

In this guide you will learn how to setup Power Platform Pipelines and the Dataverse Git Integration. I have spent the past 5 years teaching Power Platform ALM best-practices and using them in my own projects. Now I want to share the knowledge I've gained in this set of easy-to-understand, practical instructions.

Power Apps Pipelines already have official documentation by Microsoft. So why did I make my own? A few reasons:

- I wanted a guided-tutorial that anyone could understand which includes clear directions and lots of pictures.
- This tutorial can be continuously improved as new Power Apps Pipelines & ALM features hit "general availability"
- Readers can leave comments on my website describing their own best practices which I can incorporate into future versions

I hope you enjoy my Power Automate Coding Standards For Cloud Flows.



## Support The Site ❤️

I don't have ads on my website because I believe in delivering the best learning experience possible. This website is paid for out of my own pocket. If you've found value in the free resources I've created, I'd love to have your support.

Click on the "Buy Me A Cat Treat" button below to support the site.

 Buy me a cat treat

# Create Power Platform Managed Environments For Dev-Test-Prod

The basic set of Power Platform managed environments required by ALM best practices are a development environment, a test environment and a production environment. A development environment is where makers create the solution. The test environment is where quality assurance testers and end-users test the solution. And the production environment where end-users operate a live version of the solution.

## Open The Power Platform Admin Center

Environments are created in the Power Platform Admin Center. Go to [admin.powerplatform.microsoft.com](https://admin.powerplatform.microsoft.com/home) and open the Admin Center homepage.

The screenshot shows the Power Platform Admin Center interface. The left sidebar contains navigation links: Home, Actions, Manage, Monitor, Security, Deployment, Licensing, Copilot, Support, and Admin centers. The main area features a green banner with the text "Construction zone: the new Power Platform admin center" and a "See what's new" button. Below the banner, there are buttons for "Add cards" and "Share feedback". A "Message center" section displays "34 unread messages" with a list including "Microsoft Dataverse – Service Update 9.2.25022.00000 for CAN", "Power Automate - Process Mining thin client app announcement", "Power Automate – Ingest files from Fabric OneLake", and "Copilot Studio – Agent Builder in Copilot Chat".

## Create A New Power Platform Managed Environment

To find the Power Platform environments menu, select Manage, and then choose Environments from the submenu. Press the New button to create a new environment.

The screenshot shows the Power Platform admin center interface. The left sidebar has a 'Manage' section selected, with 'Environments' highlighted. At the top, there's a 'New' button with a red box around it, indicating where to click to create a new environment. The main area is titled 'Environments' and contains a table listing four existing environments:

Environment	Type	State
Early Access PP	Trial (19 days remaining)	Ready
DEV Developer's Environment	Developer	Ready
Matthew Devaney's Environment...	Developer	Ready
matthewdevaney.com (default)	Default	Ready

## Configure The Managed Environment For Development

On the New Environment menu select the following setup options:

- Name: choose a name for the environment and use the suffix (DEV). This will let developers know they are in a development environment
- Make this a Managed Environment: select Yes. To use Power Platform Pipelines the environment must be a managed environment
- Type: Sandbox for the development environment

New environment X

This operation is subject to [capacity constraints](#)

Name \*

Make this a Managed Environment i  Yes

Group

Region \*  A local region can provide quicker data access

Get new features early i  No

Type i \*

Purpose

Next Cancel

Choose a URL for the Dataverse instance. A common pattern for URLs is *companyname-purpose-environmenttype*. In the example below the environment name is *devaney-almtutorial-dev*. Press the Save button once finished.

← Add Dataverse X

This operation is subject to [capacity constraints](#)

Language \*  
English (United States) ▼  
Default language for user interfaces in this environment

Currency \*  
USD (\$) ▼  
Reports will use this currency

Security group \*  
Restrict environment access to members of a security group or select None to opt for open access across your tenant. [Learn more](#)

None ✎  
(All users across your tenant will have access to the environment)

URL  
If you don't enter a domain name, we will pick one for you

devaney-almtutorial-dev ✎  
crm.dynamics.com

Enable Dynamics 365 apps?  
In addition to Power Apps. [Learn more](#)

No

Save Cancel

After waiting a few moments for the environment to be created the browser will redirect to the development environment's landing page.

The screenshot shows the Power Platform admin center interface. On the left, a sidebar menu is visible with various categories like Home, Actions, Manage, Monitor, Security, Deployment, Licensing, Copilot, and Support. The 'Manage' section is currently selected, and under it, 'Environments' is highlighted. The main content area displays the details of a specific environment named 'ALM Tutorial (Dev)'. The 'Details' card provides information such as Environment URL (almtutorial-dev.crm.dynamics.com), State (Ready), Region (United States), Refresh cadence (Frequent), Type (Sandbox), Security group (Not assigned), Organization ID (148b33c6-96e9-ef11-933d-000d3a10650a), Environment ID (72f71a25-aa46-ed33-a99e-80d5ed52f10c), and Created by (Matthew Devaney). Below this, a 'Version' card shows the Dataverse version as 9.2.24123.252. A 'Managed environments' card indicates that managed environments are Yes, with a link to 'Edit managed environments'. To the right, there are sections for 'Access' (Security roles, Teams, Users, S2S apps, Business units) and 'Resources' (Dynamics 365 apps, Power Pages sites).

## **Setup The Test And Production Managed Environments**

We also require two more environments to be setup for testing and production. Repeat the steps to create a new environment with these settings:

### Test Environment

- Name – Your Environment Name (TEST)
- Make This A Managed Environment – Yes
- Type – Sandbox
- URL – companyname-purpose-test

### Production Environment

- Name – Your Environment Name (PROD)
- Make This A Managed Environment – Yes
- Type – Production
- URL – companyname-purpose-prod

Power Platform admin center

New admin center

Manage

Environments

Environment groups

Tenant settings

Data (preview)

Products

Power Pages

Dynamics 365 Apps

+

Refresh

Search

## Environments

An [environment](#) is a space to store, manage, and share your organization's business data, app chatbots, and flows. When an environment is [managed](#), it allows you greater visibility and control.

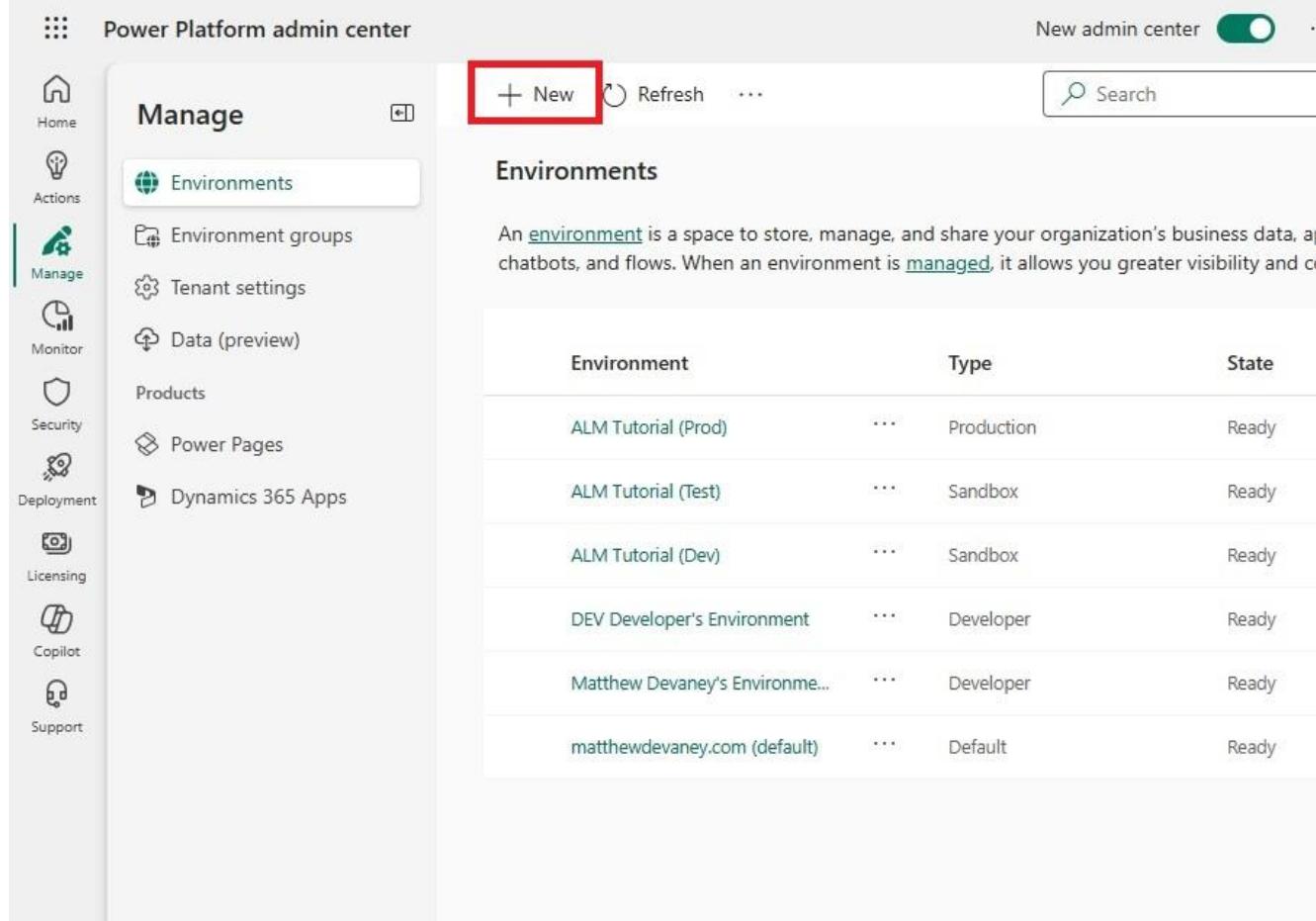
Environment	Type	State
ALM Tutorial (Prod)	Production	Ready
ALM Tutorial (Test)	Sandbox	Ready
ALM Tutorial (Dev)	Sandbox	Ready
DEV Developer's Environment	Developer	Ready
Matthew Devaney's Environment	Developer	Ready
matthewdevaney.com (default)	Default	Ready

# Install Power Platform Pipelines In The Host Environment

The Power Platform Pipelines application allows a user to create and manage pipelines. It must be installed in a host environment. A host environment is simply a production environment where the pipeline definitions are stored. And where the pipelines themselves are executed.

## Open The Environments Menu In Power Platform Admin Center

To create a host environment for the Power Platform Pipelines application go to the [Power Platform Admin Center](#). Then open the Environments menu by selecting the option Mange > Environment and press the New button.



The screenshot shows the Power Platform Admin Center interface. On the left, there's a sidebar with various management options like Home, Actions, Manage, Monitor, Security, Deployment, Licensing, Copilot, and Support. The 'Manage' section is currently selected. Under 'Manage', there are links for Environments, Environment groups, Tenant settings, Data (preview), Products, Power Pages, and Dynamics 365 Apps. The 'Environments' link is highlighted with a red box. On the right, there's a search bar and a 'New admin center' toggle switch. Below the search bar, there's a 'New' button with a red box around it. The main area displays a table titled 'Environments' with columns for Environment, Type, and State. The table lists several environments: 'ALM Tutorial (Prod)', 'ALM Tutorial (Test)', 'ALM Tutorial (Dev)', 'DEV Developer's Environment', 'Matthew Devaney's Environment...', and 'matthewdevaney.com (default)'. All environments are listed as 'Ready'.

Environment	Type	State
ALM Tutorial (Prod)	Production	Ready
ALM Tutorial (Test)	Sandbox	Ready
ALM Tutorial (Dev)	Sandbox	Ready
DEV Developer's Environment	Developer	Ready
Matthew Devaney's Environment...	Developer	Ready
matthewdevaney.com (default)	Default	Ready

## Configure The Power Platform Pipelines Host Environment

In the New Environment menu choose the following setup options:

- Name – PP Pipelines Host
- Make this a managed environment – select Yes.
- Type – select Production

**New environment** X

ⓘ This operation is subject to [capacity constraints](#)

Name \*

Make this a Managed Environment  ⓘ  
 Yes

Group

Region \*

A local region can provide quicker data access.

Get new features early  ⓘ  
 No

Type  ⓘ \*

Purpose

Next Cancel

Then on the Add Dataverse menu choose a URL. A common URL pattern is *companyname-pipelines-host*. In the example below, the URL is *devaney-pipelines-host*. Press the Save button once setup is finished.

← Add Dataverse X

ⓘ This operation is subject to [capacity constraints](#)

Language \* English (United States) Default language for user interfaces in this environment

Currency \* USD (\$) Reports will use this currency

Security group \* Restrict environment access to members of a security group or select None to opt for open access across your tenant. [Learn more](#)

None (All users across your tenant will have access to the environment)

URL If you don't enter a domain name, we will pick one for you

devaney-pipelines-host

crm.dynamics.com

Enable Dynamics 365 apps? In addition to Power Apps. [Learn more](#)

No

**Save** **Cancel**

After a few moments, the web browser redirects to the landing page for the Power Platform Pipelines host environment.

The screenshot shows the Microsoft Power Platform Pipelines host environment details page. The left sidebar has a 'Manage' section with various options like Environments, Environment groups, Tenant settings, Data (preview), Products, Power Pages, Dynamics 365 Apps, Copilot, Support, and Admin centers. The 'Environments' option is selected and highlighted in green. The main content area shows the 'PP Pipelines Host' environment details. The 'Details' section contains the following information:

<b>Environment URL</b>	devaney-pipelines-host.crm.dynamics.com	<b>State</b>	Ready
<b>Region</b>	United States	<b>Type</b>	Production
<b>Refresh cadence</b>	Frequent	<b>Organization ID</b>	c8c2d5de-98e9-ef11-933d-000d3a106b03
<b>Security group</b>	Not assigned	<b>Created by</b>	Matthew Devaney
<b>Environment ID</b>	3e40d71a-3daa-ea44-94b8-899c5b543c16		

Below the details, there is an 'Auditing' section with a 'Manage' button.

## Install The Power Platform Pipelines App

Now that the host environment is setup the Power Platform Pipelines application must be installed. In the Power Platform Admin Center go to Manage > Dynamics 365 Apps. Choose Power Platform Pipelines and select Install.

The screenshot shows the Power Platform Admin Center interface. On the left, there's a sidebar with various navigation options: Home, Actions, Manage (which is selected and highlighted in green), Monitor, Security, Deployment, Licensing, Copilot, and Support. The main area has tabs for Manage, Environments, Environment groups, Tenant settings, Data (preview), Products, Power Pages, and Dynamics 365 Apps. The Dynamics 365 Apps tab is also selected. At the top right, there are buttons for 'Install' (highlighted in a tooltip), 'Details', and a search bar. A message box says 'To manage Power Apps and Power Automate resources, select an environment.' Below this, it says 'Dynamics 365 apps' and provides a link to learn more about available apps. The app list table has columns for Name (sorted by name), Status (Enabled or Not Configured), and three dots for more actions. The 'Power Platform Pipelines' app is listed with a green checkmark icon, indicating it's installed. A tooltip for the 'Install' button is shown over the row for Power Platform Pipelines.

Name ↑	Status ⓘ
Power Pages Stripe v2	Enabled
Power Platform Connection References	Enabled
Power Platform Dataflows	Enabled
Power Platform Environment Settings App	Enabled
Power Platform Pipelines	Enabled
Property Casualty Insurance Data Model	
Retail banking core sample data	Not Configured
Retail banking data model	Not Configured
SAP Setup Assistant	Enabled
ServiceTeam ITAM	Enabled

Choose the Power Platform Pipelines host environment and press the Install button.

**Install Power Platform Pipelines** X

**Name**  
Power Platform Pipelines

**Description**

**Publisher**  
Microsoft Dynamics 365

**Select an environment \***

PP Pipelines Host

[Don't see your environment?](#)

**Package(s)**

Name	Version	
Microsoft App Deployment Anchor Solution	9.1.24123.24121...	<a href="#">Terms of service</a>

I agree to the terms of service

**Install** **Cancel**

The app installation process begins.

The screenshot shows the Microsoft Power Platform Pipelines installation status in the Dynamics 365 apps section. The navigation bar includes 'Install app', 'Open AppSource', and a search bar. A message at the top right indicates the installation started at 5:44 pm, 2/12/2025 by Matthew Devaney. The main table lists various apps with their names, statuses, and update availability.

Name ↑	Status
Power Pages Core	... <span>● Update available</span>
Power Platform Connection References	... <span>Installed</span>
Power Platform Dataflows	... <span>Installed</span>
Power Platform Environment Settings App	... <span>● Update available</span>
Power Platform Pipelines	... <span>● Installing...</span>
Source Control Integration	... <span>Installed</span>
Virtual connectors in Dataverse	... <span>● Update available</span>
Wrap for Power Apps	... <span>Installed</span>

## Verify The Model-Driven App Installation In The Host Environment

After a few minutes the Power Platform Pipelines installation will complete.

The screenshot shows the Microsoft Dynamics 365 Admin Center interface. On the left, there's a vertical navigation bar with icons for Home, Actions, Manage (which is selected), Monitor, Security, Deployment, Licensing, Copilot, Support, and Admin centers. The main content area has a header with 'United States' and a search bar. Below that, it says 'Dynamics 365 apps' and 'See which apps are available to install and configure in your org (tenant). [Learn more](#)'. A table lists various apps with columns for Name, Status, and three dots for more options. The 'Power Platform Pipelines' app is listed as Enabled. Other apps shown include Power Platform Connection References, Power Platform Dataflows, Power Platform Environment Settings App, Property Casualty Insurance Data Model, Retail banking core sample data, Retail banking data model, SAP Setup Assistant, and ServiceTeam ITAM.

Name ↑	Status
Power Platform Connection References	Enabled
Power Platform Dataflows	Enabled
Power Platform Environment Settings App	Enabled
Power Platform Pipelines	Enabled
Property Casualty Insurance Data Model	Not Configured
Retail banking core sample data	Not Configured
Retail banking data model	Not Configured
SAP Setup Assistant	Enabled
ServiceTeam ITAM	Enabled

Go to the Power Platform Pipelines Host environment and look for a model-driven app named Deployment Pipelines Configuration. This is the application used to create and manage pipelines.

The screenshot shows the Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and an environment switcher set to 'PP Pipelines Host'. The left sidebar has sections for Home, Create, Learn, Apps (which is selected and highlighted in purple), Solutions, Flows, Tables, and More. Below the sidebar is a 'Power Platform' section. The main content area is titled 'Apps' and contains four starting points: 'Start with Copilot' (using everyday words to describe what your app should collect, track, list, or manage), 'Start with data' (create new tables, select existing ones, and connect to external data sources), 'Start with a page design' (select from a list of different designs and layouts to get your app going), and 'Start with an app template' (select from a list of fully-functional templates, use as-is or customize). At the bottom, there's a table view of 'My apps' with columns for Name, Modified, and Owner. A single item is listed: 'Deployment Pipeline Configuration' (Modified 1 minute ago, Owner Matthew Deva).

Name	Modified	Owner
Deployment Pipeline Configuration	1 minute ago	Matthew Deva

# Import The Sample Solution Into The Dev Environment

This Power Platform Pipelines tutorial uses a sample solution with a canvas app, a model driven app, a flow, connections references, environment variables and tables. Rather than build them from scratch, we will import them into the development environment. That way we can keep focused on learning Power Platform application lifecycle management.

## Download The Currency Exchange Sample Solution

The Currency Exchange sample solution is available for free in this Github repository. Download the file to your local machine.

The screenshot shows a GitHub repository page for 'power-platform-pipelines-and-git-integration-tutorial'. The repository is public and has 1 branch and 0 tags. The main commit is by 'matthewdevaney' and is titled 'Initial commit'. A file named 'CurrencyExchangeALMSample\_1\_0\_0\_644.zip' is highlighted with a red box. Below the file list is a 'README' section containing the following text:

**power-platform-pipelines-and-git-integration-tutorial**

An end-to-end tutorial where you will learn how to use Power Platform Pipelines and the Git Integration for Dataverse.

## Import The Solution Into the Development Environment

Open the Development environment in Power Apps and go to the Solutions menu. Press the Import solution button.

The screenshot shows the Power Apps interface with the 'Solutions' menu selected. The 'Import solution' button is highlighted with a red box. The 'Deployment' section is visible, and the 'Unmanaged' filter is selected. Two solutions are listed:

Display name	Name	Created	Version	Pub
Common Data S	Cra49cd	1 week ago	1.0.0.0	CDS
Default Solution	Default	1 week ago	1.0	Defa

Select the Currency Exchange sample solution from your local machine and press Next.



## Import a solution

Environment

ALM Tutorial (Dev)

### Select a file

Browse for the solution file to import.

**Browse**

CurrencyExchangeALMSample\_1\_0\_0\_644.zip

**Next**

**Cancel**

Review the import details and press the Next button again.

The screenshot shows a 'Import a solution' dialog box. At the top left is a purple sidebar with the word 'Imports'. The main title is 'Import a solution' with a back arrow icon. Below it is a 'Environment' section showing 'ALM Tutorial (Dev)'. A large 'Details' section follows, containing fields for Name ('CurrencyExchangeALMSample'), Type ('Unmanaged'), Publisher ('Matthew Devaney'), Version ('1.0.0.644'), and Patch ('No'). A 'Patch' section below has a 'No' checkbox. An 'Advanced settings' dropdown is shown. At the bottom are 'Next' and 'Cancel' buttons. On the far left, a vertical grey bar has the word 'Import' at the top and 'Page 1 of 1' at the bottom.

Imports

← Import a solution

Environment

ALM Tutorial (Dev)

Details

Name

CurrencyExchangeALMSample

Type

Unmanaged

Publisher

Matthew Devaney

Version

1.0.0.644

Patch

No

Advanced settings ▾

Page 1 of 1

Next Cancel

## Configure The Connection References

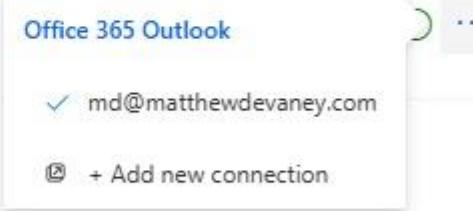
The sample solution contains two connection references used in a Power Automate flow. One for Dataverse and another for Outlook. Wait for the green checkmark to appear beside each connection reference. If it does not appear, press the three dots to troubleshoot the issue. Then press the Next button.

← Import a solution X

Environment  
ALM Tutorial (Dev)

**Connections**  
Re-establish connections to activate your solution.  
2 updates needed

Sign in  
These services use your credentials to sign into apps and create connections. A green check means you're ready to go.

 Microsoft Dataverse CurrencyExchangeRates-b00e5 md_sharedcommondataserviceforapps_b00e5	<span style="color: green;">✓</span> ...
 Office 365 Outlook md_Office365Outlook <small>Permissions</small>	 <p>Office 365 Outlook ✓ md@matthewdevaney.com + Add new connection</p>

**Next** **Cancel**

## Set The Environment Variable Value

The sample solution also contains an environment variable for Email Notifications. The email address in this environment variable will receive email. Set this value to your personal email then press Import.

← Import a solution ×

Environment  
ALM Tutorial (Dev)

**Environment Variables**

Enter information for each field, so your app works properly. You can edit your environment variables later.

1 updates needed

Email Notifications Target

developer@matthewdevaney.com

 Reset

---

**Import** **Cancel**

The sample solution will begin importing.

Power Apps

Search

New solution Import solution Open AppSource Publish all customizations Set preferences

Currently importing solution "Currency Exchange ALM Sample".

Solutions

Deployment

Track all solution deployments in one place. See what's active, what has failed, and get recommendations for improvement.

Unmanaged Managed All

Display name	Name	Created
Common Data Services Def...	Cra49cd	1 week ago
Default Solution	Default	1 week ago

After a few minutes the import process will complete.

The screenshot shows the Microsoft Power Apps portal interface. The left sidebar includes options like Home, Create, Learn, Apps, Solutions, Flows, Tables, More, and Power Platform. The main area has a search bar and navigation links for New solution, Import solution, Open AppSource, and Publish all customizations. A green notification bar at the top right says "Solution 'Currency Exchange ALM Sample' imported successfully." Below this is a "Solutions" section with a "Deployment" card. The "Deployment" card features a rocket icon and text about tracking solution deployments. Below the card are three filter buttons: Unmanaged (selected), Managed, and All. The main list displays three solutions: "Currency Exchange ALM Sample" (Display name: Currency Exchange ALM Sample, Name: CurrencyExchang..., status: Preferred solution), "Common Data Services Def..." (Display name: Common Data Services Def..., Name: Cra49cd, status: Preferred solution), and "Default Solution" (Display name: Default Solution, Name: Default).

Display name	Name
Currency Exchange ALM Sample	CurrencyExchang...
Common Data Services Def...	Cra49cd
Default Solution	Default

## Review The Sample Solution In The Development Environment

Open up the sample solution in the development environment and get to know its components.

The screenshot shows the Microsoft Power Apps portal interface. The left sidebar has a purple header with icons for Home, Recent, My apps, and Power Automate. Below these are sections for Data, AI, and Power BI. The main area has a dark purple header with the title 'Power Apps' and a search bar. The top navigation bar includes 'New', 'Add existing', 'Publish all customizations', and a three-dot menu. The main content area displays the 'Currency Exchange ALM Sample > All' objects. A sorting header 'Display name ↑' is at the top of the list. The objects listed are:

- Currency
- Currency Exchange Admin
- Currency Exchange Admin
- Currency Transaction
- Currency Transactions Monitor
- Email Notifications Target
- Exchange Rate
- Microsoft Dataverse CurrencyExchangeRates-b00e5
- Office 365 Outlook
- Send Currency Rates Summary Email

Note that the environment variable is set to the value we defined during the import process.

The screenshot shows the Microsoft Power Apps interface. On the left, there's a navigation bar with icons for Home, Objects, Data, Cloud, and Power Automate. Below that is a search bar and a list of objects: All (10), Agents (0), Apps (2), Cards (0), Cloud flows (1), Connection references (2), Environment variables (1), Site maps (1), and Tables (3). The 'Environment variables' item is selected. In the center, a modal dialog titled 'Edit Email Notifications Ta...' is open. It contains fields for 'Display name \*' (set to 'Email Notifications Target'), 'Name \*' (set to 'md\_EmailNotificationsTarget'), 'Description' (empty), 'Data Type \*' (set to 'Text'), 'Default Value' (empty), and 'Current Value' (set to 'developer@matthewdevaney.com'). At the bottom right of the dialog are 'Save' and 'Cancel' buttons.

And the connection references for Dataverse and Outlook have been configured with a connection.

The screenshot shows the Power Apps portal interface. On the left, there's a sidebar with various navigation options like Objects, Agents, Apps, Cards, Cloud flows, Connection references, Environment variables, Site maps, and Tables. The main area displays a list of connection references under 'Currency Exchange ALM Sample > Connection references'. There are two entries: 'Microsoft Dataverse CurrencyExchangeRates...' (selected) and 'Office 365 Outlook'. A modal dialog titled 'Edit Microsoft Dataverse Cu...' is open on the right, containing fields for Display name (set to 'Microsoft Dataverse CurrencyExchangeRates...'), Name (set to 'md\_sharedcommondataserviceforapps\_b00e5'), and Connector (set to 'Microsoft Dataverse'). The 'Connection' dropdown shows 'md@matthewdevaney.com'. At the bottom of the dialog are 'Save' and 'Close' buttons.

To see the connections used in the connection references go to the Connections menu.

The screenshot shows the Microsoft Power Apps portal interface. The left sidebar has a dark purple header with the "Power Apps" logo and a search bar. Below the header are navigation links: Home, Create, Learn, Apps, Solutions, Flows, Tables, Connections (which is selected and highlighted in purple), and More. Under the "Connections" link, there is a "Power Platform" section. The main content area has a light gray background. At the top right of the content area is a "New connection" button. Below it is a section titled "Connections in ALM Tutorial (Dev)". This section contains a "Canvas" card and a table listing two connections:

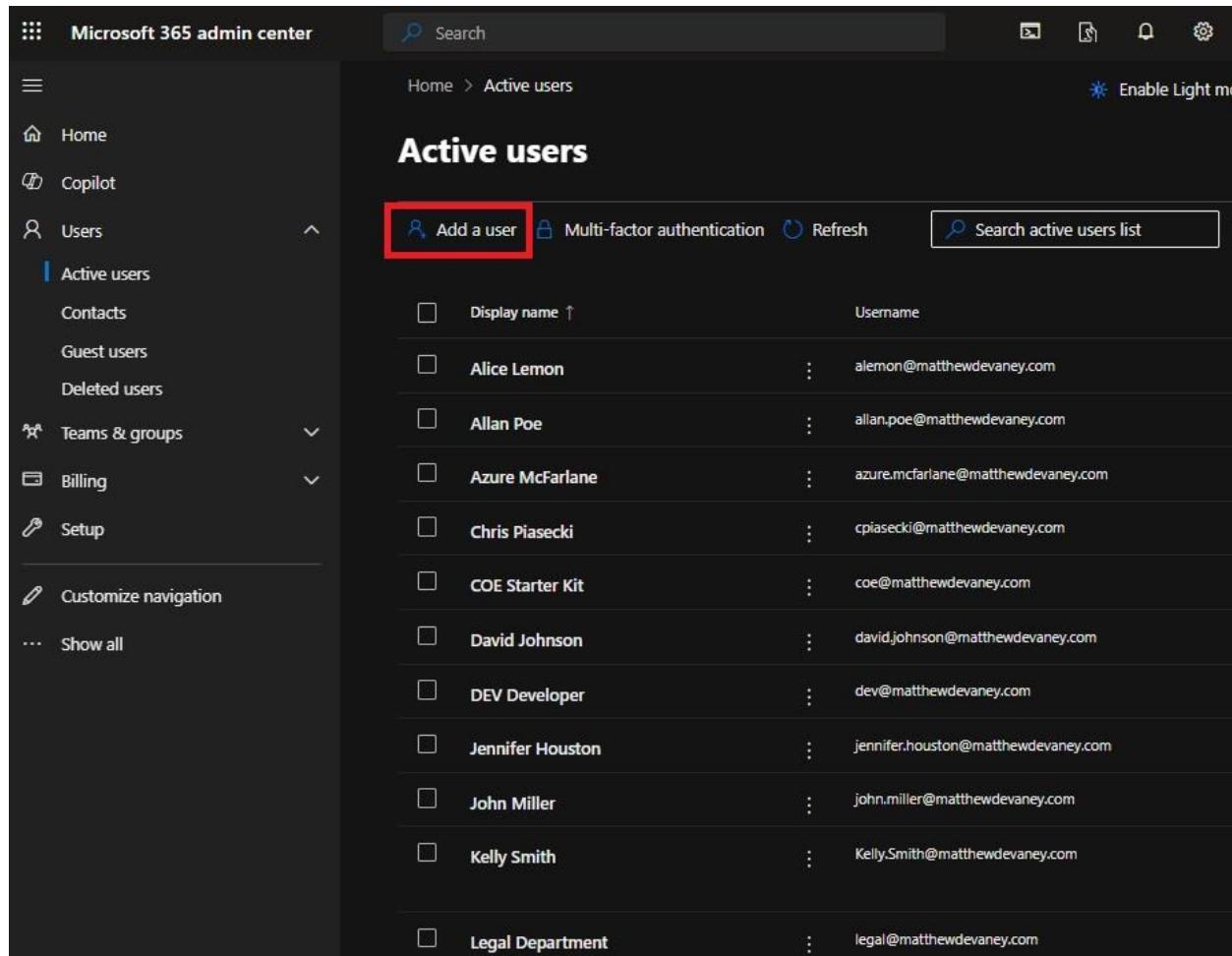
Name	Modified
md@matthewdevaney.com Office 365 Outlook	... 34 sec ago
md@matthewdevaney.com Microsoft Dataverse	... 43 sec ago

# Setup A Power Platform Service Account

A Power Platform Service Account is a Microsoft 365 account used by the system to perform background operations. Service Accounts often have an elevated security role like System Administrator. By using a Service Account, Power Platform Pipelines can deploy solutions as the service account instead of the user who started the deployment. This avoids giving the user system administrator privileges to the target environment

## Add A New User In The Microsoft 365 Admin Center

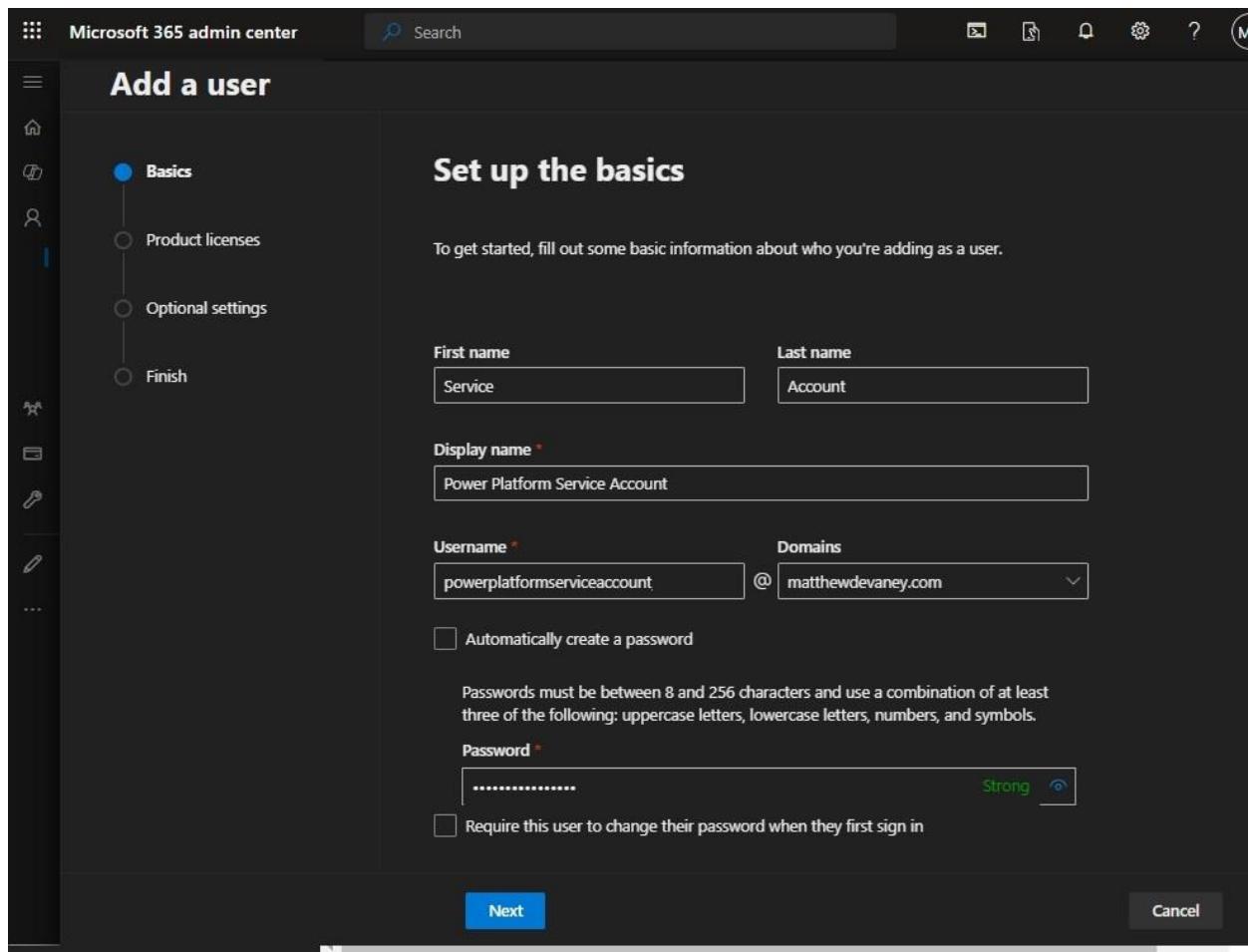
To create a Power Platform Service Account go to the [Microsoft 365 Admin Center](#). Then browse to Users > Active Users and press the Add A User button.



The screenshot shows the Microsoft 365 Admin Center interface. On the left, there's a navigation sidebar with options like Home, Copilot, Users (with Active users selected), Contacts, Guest users, Deleted users, Teams & groups, Billing, Setup, Customize navigation, and Show all. The main content area is titled "Active users". At the top of this section, there's a button labeled "Add a user" which is highlighted with a red box. Below it, there's a search bar and a "Multi-factor authentication" link. The main list displays several user entries, each with a checkbox, a display name, and a username. The users listed are Alice Lemon, Allan Poe, Azure McFarlane, Chris Piasecki, COE Starter Kit, David Johnson, DEV Developer, Jennifer Houston, John Miller, Kelly Smith, and Legal Department.

Display name ↑	Username
Alice Lemon	alemon@matthewdevaney.com
Allan Poe	allan.poe@matthewdevaney.com
Azure McFarlane	azure.mcfarlane@matthewdevaney.com
Chris Piasecki	cpiasecki@matthewdevaney.com
COE Starter Kit	coe@matthewdevaney.com
David Johnson	david.johnson@matthewdevaney.com
DEV Developer	dev@matthewdevaney.com
Jennifer Houston	jennifer.houston@matthewdevaney.com
John Miller	john.miller@matthewdevaney.com
Kelly Smith	Kelly.Smith@matthewdevaney.com
Legal Department	legal@matthewdevaney.com

Set the first name and last name to Service Account. And choose a username such as powerplatformserviceaccount@domain.com. Then press the Next button.



## Assign Power Apps And Power Automate Licenses

The Power Platform Service Account must have premium licenses assigned to it. Apply a Power Apps Premium license and a Power Automate license. Then press Next.

The screenshot shows the 'Add a user' wizard in the Microsoft 365 admin center. The current step is 'Product licenses'. On the left, a navigation pane lists 'Basics' (checked), 'Product licenses' (selected), 'Optional settings', and 'Finish'. The main area is titled 'Assign product licenses' with the sub-instruction 'Assign the licenses you'd like this user to have.' A 'Select location' dropdown is set to 'United States'. Below it, under 'Licenses (2)', the 'Assign user a product license' option is selected. Underneath, two licenses are checked: 'Power Apps Premium' (2 of 5 licenses available) and 'Power Automate Premium' (2 of 5 licenses available). Other options listed are 'Microsoft Dynamics AX7 User Trial', 'Microsoft Fabric (Free)', 'Microsoft Power Apps Plan 2 Trial', and 'Microsoft Power Apps for Developer'. At the bottom are 'Back' and 'Next' buttons.

On the final screen, review the setup details. Then press the Finish button.

The screenshot shows the Microsoft 365 admin center interface for adding a new user. The top navigation bar includes the Microsoft 365 logo, 'Microsoft 365 admin center', a search bar, and various administrative icons. On the left, there's a sidebar with navigation links like Home, Products, Admin, and Help.

The main content area is titled 'Add a user' and shows the progress through four steps: 'Basics' (checked), 'Product licenses' (checked), 'Optional settings' (checked), and 'Finish' (highlighted). The 'Review and finish' step is currently active.

**Assigned Settings**: Review all the info and settings for this user before you finish adding them.

**Display and username**: Power Platform Service Account+ powerplatformserviceaccount@matthewdevaney.com [Edit](#)

**Password**: Type: Custom password [Edit](#)

**Product licenses**: Location: United States  
Licenses: Power Apps Premium, Power Automate Premium  
Apps: Power Pages Internal User, AI Builder capacity Per User add-on, DO NOT USE - AI Builder capacity Per User add-on, 5 more [Edit](#)

**Roles (default)**: User (no admin center access) [Edit](#)

At the bottom, there are three buttons: 'Back', 'Finish adding' (highlighted in blue), and 'Cancel'.

The Power Platform Service Account now appears in the list of Users.

The screenshot shows the Microsoft 365 admin center interface. On the left, there's a navigation sidebar with options like Home, Copilot, Users (selected), Active users, Contacts, Guest users, Deleted users, Teams & groups, Billing, and Setup. Below that are links for Customize navigation and Show all. The main area is titled 'Search active users list' and shows a list of users. The first user listed is 'Matthew Devaney' with the email 'md@matthewdevaney.com'. The second user listed is 'Power Platform Service Account' with the email 'powerplatformserviceaccount@matthewdevaney.com', and this account is currently selected, indicated by a checked checkbox next to its name. Other users listed include 'PROD Proddington', 'Sarah Green', 'TEST Testing', 'VAL Validation', and 'Vivek Bavishi'. Each user entry has a search icon and a more options icon (three dots) to the right.

Display name ↑	Username
Matthew Devaney	md@matthewdevaney.com
<b>Power Platform Service Account</b>	powerplatformserviceaccount@matthewdevaney.com
PROD Proddington	ProdProddington@matthewdevaney.com
Sarah Green	sarah.green@matthewdevaney.com
TEST Testing	test@matthewdevaney.com
VAL Validation	validation@matthewdevaney.com
Vivek Bavishi	vavishi@matthewdevaney.com

## Grant The System Administrator Role

The Power Platform Service Account must be given a System Administrator role in all environments: Development, Test, Production and the Pipelines Host environment. For each environment, go-to the landing page and open the Users menu.

The screenshot shows the Power Platform admin center interface. On the left, there's a sidebar with various management options like Home, Actions, Manage, Monitor, Security, Deployment, Licensing, Copilot, and Support. The main area shows the 'Manage' section with 'Environments' selected. Below that, it shows the 'PP Pipelines Host' environment details. The 'Details' card includes fields for Environment URL (devaney-pipelines-host.crm.dynamics.com), State (Ready), Region (United States), Refresh cadence (Frequent), Type (Production), Security group (Not assigned), Organization ID (c8c2d5de-98e9-ef11-933d-000d3a106b03), Environment ID (3e40d71a-3daa-ea44-94b8-899c5b543c16), and Created by (Matthew Devaney). Below this is a 'Version' card with Dataverse version 9.2.24123.252. To the right, there are sections for Disaster Recovery, Access, and Resources. The 'Access' section has cards for Security roles, Teams, and Users. The 'Users' card is specifically highlighted with a red box. Other cards in the Access section include S2S apps and Business units. The Resources section is partially visible at the bottom.

Add the Power Platform Service Account as a new user.

The screenshot shows the Power Platform admin center interface. The left sidebar has a 'Manage' section with several options: Home, Actions, Manage, Monitor, Security, Deployment, Licensing, Copilot, and Support. Under 'Manage', 'Environments' is selected. The main content area shows the breadcrumb path: Environments > PP Pipelines Host > Settings > Users. A note says 'Manage users so they can access data within their environment. This list includes users with disabled statuses.' with a link to 'Learn more'. It also mentions 'Looking for application users? Click here to go to the app\_users list' and 'To validate user permissions for specific app(s), go to app\_access\_checker.' A table lists three users:

Name	Username
Matthew Devaney	md@matthewdevaney.com
Service Account	powerplatformserviceaccount@matthewdevaney.com
Support User	crmoln@microsoft.com

Assign the System Administrator role to the Service Account.

The screenshot shows the Power Platform admin center interface. On the left, the 'Manage' sidebar includes links for Environments, Environment groups, Tenant settings, Data (preview), Products, Power Pages, and Dynamics 365 Apps. The main area displays the 'Service Account' details for a user named 'SA'. The 'User Name' is listed as powerplatformserviceaccount@matthewdevaney.com. Under 'Direct Assigned Roles', the 'System Administrator' role is selected and highlighted with a red box. Other roles listed include 'Manage roles'. The 'Teams' section shows the team devaney-pipelines-host and a link to 'Manage teams'. The 'Summary' tab is selected. Below the summary, there are sections for 'Contact Information', 'Primary email', 'Phone number', 'Mobile phone', 'Organization Information', 'Position', and 'Administration'. The 'Organization Information' section shows the business unit devaney-pipelines-host and options to change it or manage records. The 'Position' section shows 'None provided' and 'Change position' options. The 'Administration' section shows 'Read-Write' and 'Client Access License (CAL) Information'.

# Start A New Azure DevOps Project

An Azure DevOps project must be setup to take advantage of Power Platform Git Integration. Then we can add an Azure Repo to the DevOps project to store code in Git. An Azure DevOps license is free for the first 5 users in an organization and only takes a few minutes to setup.

## Create A New Azure DevOps Organization

Azure DevOps can be accessed through [the Azure Portal](#). Open the Azure Portal and search for Azure DevOps organizations.

The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with sections for 'Azure services' and 'Resources'. Under 'Recent', there's a list of resources including 'MD-PythonPackageTest', 'MD-PythonPackageTest\_group', 'MD-PythonFx', 'LayoutAnalyzerAITutorial', 'LayoutAnalyzerAI', 'FormRecognizerTutorial', and 'devaneykeys'. A modal window titled 'Recent services' is open in the center, listing various Azure DevOps-related services: 'Azure DevOps organizations', 'Function App', 'Document intelligences', 'Enterprise applications', 'App registrations', 'Tenant properties', 'API Management..', and 'Microsoft Entra ID'. Below this, there's a 'Recent resources' section with the same items as the sidebar, followed by a 'Last Viewed' section showing items from three weeks ago.

Name	Type	Last Viewed
MD-PythonPackageTest	Function App	3 weeks ago
MD-PythonPackageTest_group	Resource group	3 weeks ago
MD-PythonFx	Function App	3 weeks ago
LayoutAnalyzerAITutorial	Document intelligence	3 weeks ago
LayoutAnalyzerAI	Document intelligence	3 weeks ago
FormRecognizerTutorial	Document intelligence	a month ago
devaneykeys	Key vault	2 months ago

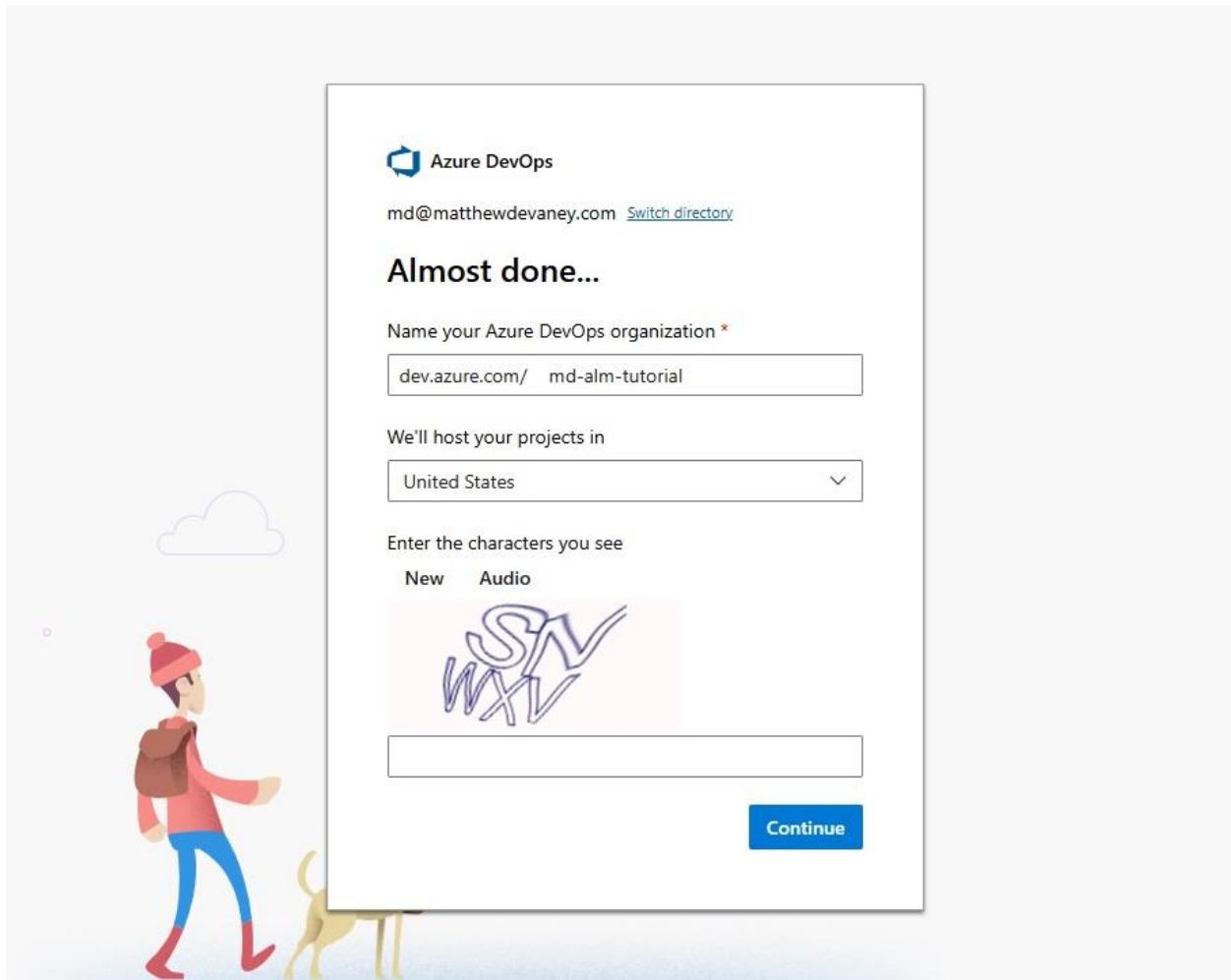
An Azure DevOps organization is needed to create Azure DevOps projects. Press the My Azure Dev Ops Organizations page.

The screenshot shows the Microsoft Azure homepage. At the top, there is a navigation bar with the Microsoft Azure logo, a search bar containing "Search resources, services, and docs (G+/-)", a Copilot button, and a user profile icon. Below the navigation bar, the page title is "Azure DevOps". A large, colorful illustration on the right depicts people working on a rocket launch, symbolizing software development and deployment. The main content area features the heading "Azure DevOps" in large blue text, followed by the subtext "Plan smarter, collaborate better, and ship faster with a set of modern dev services". Below this, there is a red rectangular box highlighting the link "My Azure DevOps Organizations". Other links visible include "Get started using Azure DevOps" and "Billing management for Azure DevOps". At the bottom, there are buttons for "Give feedback" and a link to "Tell us about your experience with the Azure DevOps page".

Press the Create new organization button or select an existing organization.

The screenshot shows the Microsoft Azure DevOps Organizations interface. At the top, there's a blue header bar with the Microsoft logo on the left and 'Matthew Devaney' and 'Sign out' on the right. Below the header, on the left, is a purple circular profile picture with 'MD' in white. Next to it is a section for 'Matthew Devaney' with a 'Edit profile' link and an email address 'md@matthewdevaney.com'. A dropdown menu shows 'matthewdevaney.com' with a dropdown arrow. Below this are links for 'Canada' and 'md@matthewdevaney.com'. On the right, under 'Azure DevOps Organizations', there's a 'Create new organization' button highlighted with a red box. Below it, a section for 'dev.azure.com/md0453 (Owner)' lists several projects: 'Power Apps Co-Authoring', 'Device Management', 'ALM Demo', 'alm-sandbox', and 'PortlandALMDemo'. Each project has an 'Actions' column with a 'Open in Visual Studio' link. A 'New project' button is also present.

If starting a new organization, select a URL and a host country. Then press Continue.



## Setup An Azure DevOps Project

On the Azure DevOps home page, select your organization once again, and fill-in the create a project menu. Choose the name ALM Tutorial Project. Set visibility to Private and version control to Git. Then press the Create project button.

The screenshot shows the 'Create a project to get started' page in Azure DevOps. On the left, there's a sidebar with 'md-alm-tutorial' and 'md0453'. Below it is a link to 'New organization'. The main area has a search bar and navigation icons. The 'Create project' form includes fields for 'Project name \*' (containing 'ALM Tutorial Project'), 'Description' (empty), 'Visibility' (with 'Private' selected), and 'Advanced' settings for 'Version control' (set to 'Git') and 'Work item process' (set to 'Scrum'). A large blue 'Create project' button is at the bottom.

Project name \*

ALM Tutorial Project

Description

Visibility

Public

Anyone on the internet can view the project. Certain features like TFVC are not supported.

Private

Only people you give access to will be able to view this project.

Advanced

Version control

Work item process

Git

Scrum

+ Create project

The new project will appear inside the selected organization. Open the project.

A screenshot of the Azure DevOps interface. At the top, there's a header with the Azure DevOps logo, a search bar containing 'Search', and several icons. Below the header, the organization name 'md-alm-tutorial' is displayed, along with a 'New organization' link and a '+ New project' button. A navigation bar below shows 'Projects' (which is underlined), 'My work items', and 'My pull requests'. There's also a 'Filter projects' button. The main content area shows a single project card for 'ALM Tutorial Project', which has a green icon with 'AP' on it. At the bottom left, there's a link to 'Organization settings'.

The project landing screen appears with a welcome message.

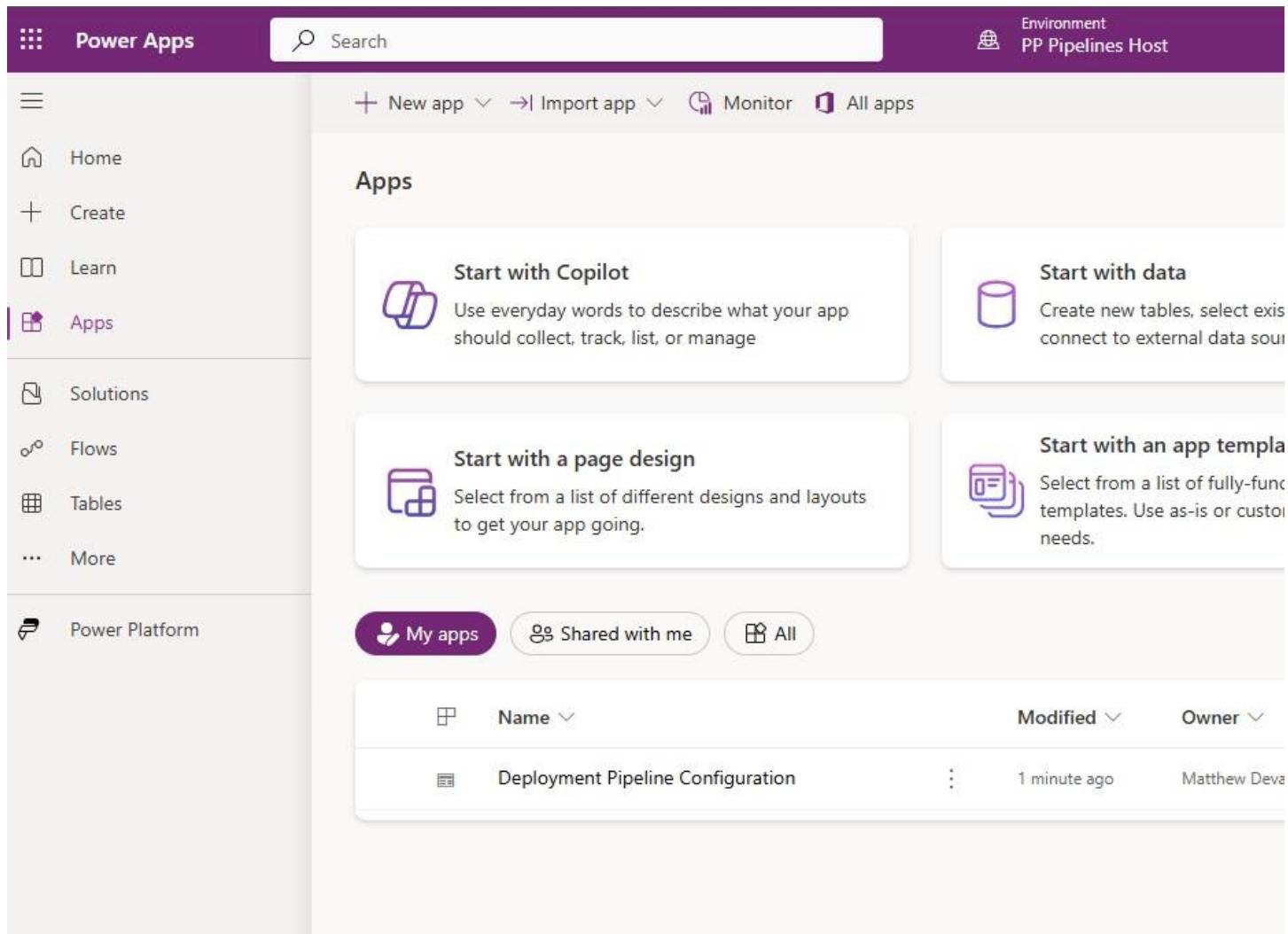
A screenshot of the Azure DevOps project landing screen. At the top, the navigation bar shows 'Azure DevOps md-alm-tutorial / ALM Tutorial Project / Overview / Summary'. A search bar and various icons are also present. On the left, a sidebar lists project services: Overview, Summary (selected), Dashboards, Wiki, Boards, Repos, Pipelines, Test Plans, and Artifacts. The main area features a green header with 'AP' and 'ALM Tutorial Project'. It includes a 'Private' button and an 'Invite' button. Below the header is a cartoon illustration of a person working at a desk with a laptop, and a dog standing nearby. A large 'Welcome to the project!' message is centered, followed by a question 'What service would you like to start with?'. Below this are buttons for Boards, Repos, Pipelines, Test Plans, and Artifacts, with 'Artifacts' being the active tab. At the bottom left is a 'Project settings' link.

# Configure Development And Target Environments

Power Platform Pipelines must be connected to a development environment and one or more target environments. A development environment is where makers develop solutions. Target environments are where solutions get deployed to. For example, the test and production environments. Before creating the pipeline we will add environments to the pipeline configuration app.

## Open The Deployment Pipeline Configuration App

Go to the Power Platform Pipelines host environment and open the Deployment Pipelines Configuration app.



The screenshot shows the Microsoft Power Apps portal interface. At the top, there's a purple header bar with the "Power Apps" logo, a search bar, and the text "Environment PP Pipelines Host". Below the header, on the left, is a sidebar with navigation links: Home, Create, Learn, Apps (which is selected and highlighted in purple), Solutions, Flows, Tables, and More. In the main content area, under the "Apps" section, there are four cards: "Start with Copilot" (using everyday words to describe what your app should collect, track, list, or manage), "Start with data" (create new tables, select existing, or connect to external data sources), "Start with a page design" (select from a list of different designs and layouts to get your app going), and "Start with an app template" (select from a list of fully-functional templates. Use as-is or customize). At the bottom of the main content area, there are three filter buttons: "My apps" (selected and highlighted in purple), "Shared with me", and "All". Below these filters is a table with columns for Name, Modified, and Owner. One row in the table is visible, showing "Deployment Pipeline Configuration" as the name, "1 minute ago" as the modified time, and "Matthew Deva" as the owner. The entire interface has a clean, modern design with a light gray background and purple accents for selected items.

## Add The Development Environment To The Pipelines App

First, we will add a development environment. Go to the Environments page and press the New button.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has a 'Pipeline Setup' category with 'Environments' selected, indicated by a blue bar. The main content area is titled 'Added Deployment Environments'. At the top right of this area are buttons for 'New' (with a red box around it), 'Delete', 'Refresh', 'Visualize this view', and a more options menu. Below the title is a header row with columns: a checkbox, 'Name ↑', 'Environ...', 'Environment ID', and 'Validati...'. There is no data listed under the 'Name' column.

Fill-in the environment details then press the save button. The validation status will switch to pending.

- Name – ALM Tutorial (Dev)
- Owner – set to your own user account
- Environment Type – Development Environment
- Environment ID – the environment ID from the environment's developer resources menu.

The screenshot shows the 'Deployment Pipeline Configuration' screen in the Power Apps portal. On the left is a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments (which is selected), Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings. The main area has a title 'New Deployment Environment - Unsaved'. Below it, under the 'General' tab, are several configuration fields:

- Name: \* ALM Tutorial (Dev)
- Owner: \* Matthew Devaney (Offline) (with a small profile icon)
- Environment Type: \* Development Environment
- Environment ID: \* 72f71a25-aa46-ed33-a99e-80d5ed52f10c
- Validation Status: \* Pending (with a lock icon)
- Error Message: (empty)
- Description: (empty)

At the top of the main area are buttons for Save, Save & Close, New, Force Link, and Flow.

After a few moments pass press the refresh button. The validation status will be updated to success.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has sections for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments (selected), Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings. The main area shows a pipeline named 'ALM Tutorial (Dev)' - Saved under 'Deployment Environment'. The 'General' tab is selected. The pipeline details are as follows:

Name	* ALM Tutorial (Dev)
Owner	*  Matthew Devaney (Offline) <a href="#">×</a>
Environment Type	*  Development Environment
Environment ID	*  72f71a25-aa46-ed33-a99e-80d5ed52f10c
Validation Status	Success
Error Message	
Description	---

## Get The Environment ID From Developer Resources

The environment id is necessary to setup the developer and target environments in Power Platform Pipelines. Go to any environment, press the settings button and select developer resources.

The screenshot shows the Microsoft Power Apps portal interface. At the top, there's a purple header bar with the 'Power Apps' logo, a search bar, and a 'Search' icon. To the right of the search bar, it says 'Environment ALM Tutorial (Dev)' with a gear icon for settings. Below the header, there's a navigation bar with icons for 'New app', 'Import app', 'Monitor', and 'All apps'. The main content area is titled 'Apps' and contains two cards: 'Start with Copilot' (using everyday words to describe what your app should collect, track, list, or manage) and 'Start with a page design' (selecting from a list of different designs and layouts). Below these cards is a list of 'My apps' with two items: 'Currency Transactions Monitor' and 'Currency Exchange Admin', both modified 17 minutes ago. On the right side, there's a 'Settings' sidebar. Under 'Power Apps', the 'Developer resources' option is highlighted with a red box. Other options include 'Admin center', 'Plan(s)', 'Advanced settings', 'Session details', 'Power Apps settings', and 'Set preferred solution'. Below that is a 'Themes' section showing four theme cards (purple, blue, yellow, and orange) with a 'View all' link. At the bottom of the sidebar is a 'Password' section.

The unique identifier of the environment is shown as Environment ID.

The screenshot shows the 'Developer resources' page for an environment named 'ALM Tutorial (Dev)'. The 'Environment ID' field is highlighted with a red box and contains the value '72f71a25-aa46-ed33-a99e-80d5ed52f10c'. Other visible fields include 'Organization ID' (148b33c6-96e9-ef11-933d-000d3a10650a), 'Web API endpoint' (<https://devaney-almtutorial-dev.api.crm.dynamics.com/api/data/v9.2>), 'Discovery endpoint' (<https://globaldisco.crm.dynamics.com/api/discovery/v2.0/Instances>), and 'Documentation' links for the 'Developer center', 'Official NuGet feed', 'PowerShell Gallery feed', and 'Samples'.

Environment  
ALM Tutorial (Dev)

Monitor

Developer resources

×

Environment unique name  
unq148b33c696e9ef11933d000d3a106

Environment ID  
72f71a25-aa46-ed33-a99e-80d5ed52f10c

Organization ID  
148b33c6-96e9-ef11-933d-000d3a10650a

Web API endpoint  
<https://devaney-almtutorial-dev.api.crm.dynamics.com/api/data/v9.2>  
Learn more ↗

Discovery endpoint  
<https://globaldisco.crm.dynamics.com/api/discovery/v2.0/Instances>  
Learn more ↗

Documentation

Developer center ↗

Official NuGet feed ↗

PowerShell Gallery feed ↗

Samples ↗

## Setup The Test Environment As A Target Environment

Continue on with adding the Test Environment as a target environment. Target environments are environments where managed solutions are deployed to.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has a 'Pipeline Setup' section with 'Environments' selected. The main area displays a table titled 'Added Deployment Environments' with one row:

<input type="checkbox"/>	Name ↑ ↴	Environ...	Environment ID ↴	Validati...
<input type="checkbox"/>	ALM Tutorial (Dev)	Develo...	72f71a25-aa46-e...	Success

A red box highlights the 'New' button in the top navigation bar.

Add the environment details then press the save button. Wait for the environment to pass validation.

- Name – ALM Tutorial (Test)
- Owner – set to your own user account
- Environment Type – Target Environment
- Environment ID – the environment ID from the environment's developer resources menu.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar lists various sections: Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments (selected), Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings. The main content area displays the configuration for the 'ALM Tutorial (Test)' environment. The title bar shows 'Power Apps | Deployment Pipeline Configuration'. The top navigation includes 'Save', 'Save & Close', 'New', 'Force Link', and 'Deactivate'. The environment name is 'ALM Tutorial (Test) - Saved' and its type is 'Deployment Environment'. The 'General' tab is selected, showing the following fields:

- Name: ALM Tutorial (Test)
- Owner: Matthew Devaney (Offline)
- Environment Type: Target Environment
- Environment ID: 55087040-c33e-ef70-a0d5-704279d55d00
- Validation Status: Success
- Error Message: (empty)
- Description: ---

## Configure The Prod Environment As A Target Environment

Add a new environment one more time. Supply the environment details then press the save button. Wait for the environment to pass validation.

- Name – ALM Tutorial (Prod)
- Owner – set to your own user account
- Environment Type – Target Environment
- Environment ID – the environment ID from the environment's developer resources menu.

The screenshot shows the 'Deployment Pipeline Configuration' screen in the Power Apps portal. The left sidebar has 'Environments' selected. The main area displays the 'ALM Tutorial (Prod)' environment with the following details:

Setting	Value
Name	ALM Tutorial (Prod)
Owner	Matthew Devaney (Offline)
Environment Type	Target Environment
Environment ID	45cfb346-bddb-efa5-afb4-71f8a4c94c00
Validation Status	Success
Error Message	(empty)
Description	---

All environments have now been added to the Deployment Pipeline Configuration app. The Developer environment is included as development environment. And the Test & Production environments are target environments.

The screenshot shows the 'Power Apps | Deployment Pipeline Configuration' application interface. On the left, there is a navigation sidebar with the following items:

- Home
- Recent
- Pinned
- Overview
- Pipelines Dashboard
- Environments** (selected)
- Pipelines
- Deployments
- Run history
- Solution artifacts
- Settings
- Security Teams
- Advanced Settings

The main content area is titled 'Added Deployment Environments\*' and contains a table with the following data:

<input type="checkbox"/>	Name ↑	Environment Type	Environment ID
<input type="checkbox"/>	ALM Tutorial (Dev)	Development Environment	72f71a25-aa46-ed33-a99e-80d
<input type="checkbox"/>	ALM Tutorial (Prod)	Target Environment	45cfb346-bddb-efa5-afb4-71f8
<input type="checkbox"/>	ALM Tutorial (Test)	Target Environment	55087040-c33e-ef70-a0d5-704

# Create A Power Platform Pipeline

Power Platform Pipelines move solutions from a development environment to a target environment such as the test environment or the production environment. They ensure deployments to the correct environment are performed in a consistent manner. Configuration of components such as connection references and environment variables can be controlled through deployment settings. And a copy of the solution is stored for easy redeployment if needed.

## Create A New Power Platform Pipeline

Go to the pipelines host environment and open the deployment pipeline configuration model-driven app.

The screenshot shows the Microsoft Power Apps portal interface. At the top, there's a navigation bar with 'Power Apps', a search bar, and an 'Environment' dropdown set to 'PP Pipelines Host'. Below the navigation bar, there's a toolbar with icons for 'New app', 'Edit', 'Play', 'Share', 'Details', 'Settings', 'Turn off', and 'Delete'. On the left, there's a sidebar with various icons. The main area is titled 'Apps' and contains four cards: 'Start with Copilot' (using everyday words to describe what your app should collect, track, list, or manage), 'Start with data' (create new tables, select existing tables, or connect to external data sources), 'Start with an app template' (select from a list of fully-functional business app templates), and another partially visible card. At the bottom, there are filters for 'My apps', 'Shared with me', and 'All', followed by a list of apps. One app is selected: 'Deployment Pipeline Configuration'. Its details are shown in a modal on the right, including edit, play, share, details, settings, turn off, and delete options. The timestamp for the app is '31 minutes ago'.

Browse to the pipelines page and create a new pipeline.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has a 'Pipelines' section selected. The main area displays a table titled 'Active Deployment Pipelines' with columns for Name, Description, Modification date, Owner, and a 'C' icon. A large circular placeholder icon with a grid pattern is centered, and the message 'We didn't find anything to show here' is displayed below it. The status bar at the bottom shows 'Rows: 0'.

Name the pipeline ALM Tutorial Pipeline. Allow redeployments of older versions. Then save the pipeline.

The screenshot shows the 'Deployment Pipeline Configuration' screen in the Power Apps portal. The left sidebar has a 'Pipelines' section selected. The main area displays a 'New Deployment Pipeline' configuration with the following details:

- General Tab:** Selected. Pipeline name is 'ALM Tutorial Pipeline'. AI deployment notes are enabled. Description field contains '---'. Owner is 'Matthew Devar'. Option to allow redeployments of older versions is enabled.
- Deployment stages Tab:** Not selected.
- Run history Tab:** Not selected.

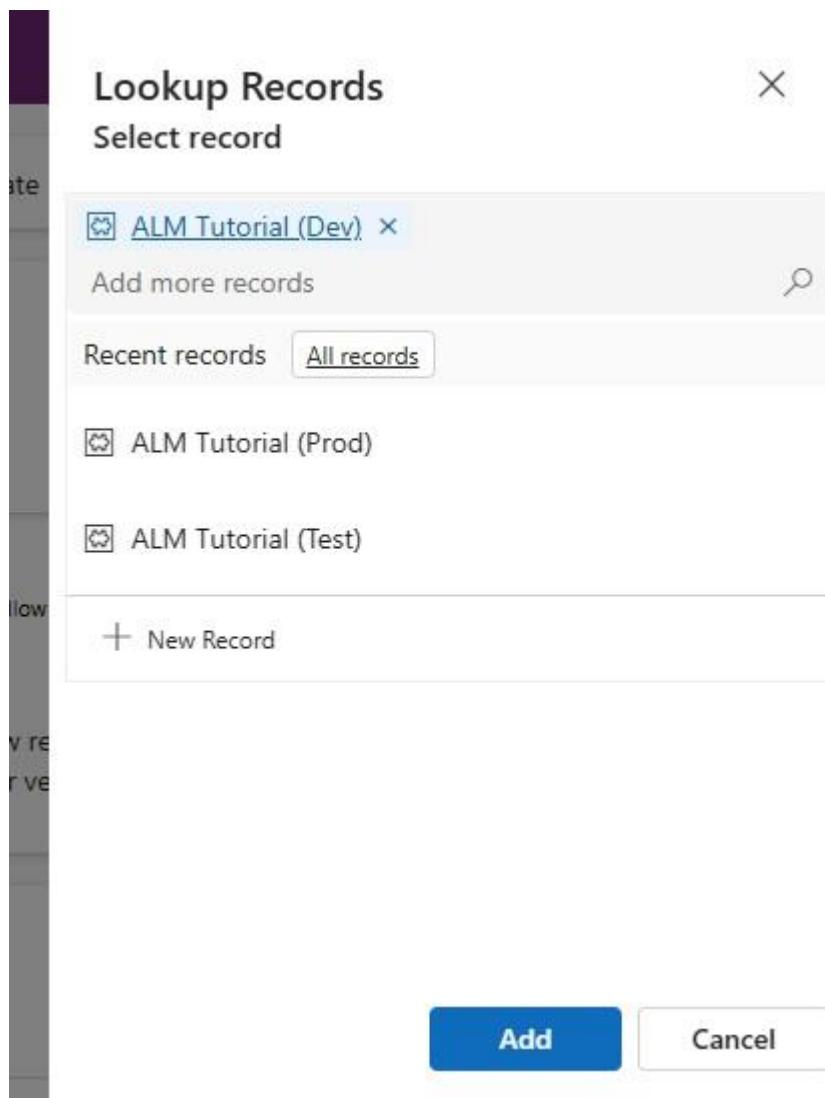
A message at the bottom says 'To enable this content, save the record.' There are two empty save buttons.

## Link A Development Environment To The Power Platform Pipeline

We want the pipeline to export solutions from the development environment and import them into the test and production environments. Add an existing development environment to the pipeline.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. On the left, there's a navigation sidebar with links like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines (which is selected), Deployments, Run history, Solution artifacts, Security Teams, and Advanced Settings. The main area displays the 'ALM Tutorial Pipeline' configuration. The 'General' tab is selected, showing the pipeline name, owner (Matthew Devaney), and various settings. Below this, a message says 'To enable this content, save the record.' Under 'Linked Development Environments', it says 'We didn't find anything to show here' and shows 'Rows: 0'. A context menu is open on the right, listing options such as 'Add Existing Deployment E...', 'Refresh', 'Flow', 'Run Report', 'Excel Templates', 'Export Deployment Environ...', and 'See associated records'.

Select the ALM Tutorial (Dev) development environment to the pipeline. We created this record in a previous module of the tutorial.



The ALM Tutorial (Dev) environment now appears in the linked development environments subgrid.

The screenshot shows the 'Deployment Pipeline Configuration' screen in the Power Apps portal. The pipeline is named 'ALM Tutorial Pipeline'. The 'General' tab is selected. The pipeline has a description: 'Allow this pipeline to generate deployment notes using AI. [Learn more](#)'. The owner is 'Matthew Devane' (MD). The 'Allow redeployments of older versions' setting is set to 'Enabled'. A note at the bottom says 'To enable this content, save the record.' Below this is a subgrid titled 'Linked Development Environments' with columns: Name, Environment Type, Environment ID, and Validation Status. One row is shown: 'ALM Tutorial (Dev)', 'Development En...', '72f71a25-aa46-ed33-a...', and 'Success'. A note at the bottom of the subgrid says 'Rows: 1'.

## Add A Test Environment Deployment Stage To The Pipeline

The test environment is the first target environment we will add to the Power Platform pipeline. Look for the deployment stages subgrid and press the new deployment stage button.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar is titled 'Power Apps' and includes sections for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines (selected), Deployments, Run history, and Solution artifacts. The main area displays the 'ALM Tutorial Pipeline - Saved' deployment pipeline. The 'General' tab is selected, showing tabs for Deployment stages, Run history, and Related. Below these tabs is a table with one row: 'ALM Tutorial (Dev)' under 'Name', 'Development En...' under 'Deployment Environment', '72f71a25-aa46-ed33-a...' under 'Run ID', and 'Success' under 'Status'. A message 'Rows: 1' is displayed below the table. Below the table is a subgrid titled 'Deployment Stages (Deployment Pipeline)'. The subgrid has a header with columns: Name, Deployment Environment, Previous Deployment, Target Deployment, Is Delegated, and Priority. A 'New Deployment Stage' button is located at the top right of the subgrid. A message 'We didn't find anything to show here' is displayed below the subgrid. A message 'Rows: 0' is displayed below the subgrid. The top navigation bar includes icons for Save, Save & Close, New, Deactivate, Delete, and Share.

Setup the test environment deployment stage as follows. Then save and close the stage.

- Name – ALM Tutorial Deployment Stage (Test)
- Owner – your Microsoft 365 account
- Deployment Pipeline – ALM Tutorial Pipeline
- Target Deployment Environment ID – ALM Tutorial (Test)

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. On the left, there's a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Security Teams, and Advanced Settings. The main area is titled 'New Deployment Stage - Unsaved'. It has tabs for General, Stages, and Pipelines. Under General, the Name is set to 'ALM Tutorial Deployment Stage (Test)', the Owner is 'Matthew Devaney (Offline)' (with a placeholder icon), and the Description field is empty. Under Pipelines, the Deployment Pipeline is set to 'ALM Tutorial Pipeline'. Other fields include Previous Deployment Stage (empty), Target Deployment Environment ID (set to 'ALM Tutorial (Test)'), and checkboxes for Pre-Export Step Required (unchecked) and Pre-Deployment Step Required (unchecked). At the bottom, there's a checkbox for Is Delegated Deployment (unchecked). The top navigation bar includes icons for Save, Save & Close, New, Flow, and a search bar.

The test environment deployment stage appears in the subgrid.

The screenshot shows the Power Apps Deployment Pipeline Configuration page. The left sidebar has a 'Pipelines' section selected. The main area displays the 'General' tab for the 'ALM Tutorial Pipeline'. Below it is a subgrid titled 'Deployment Stages (Deployment Pipeline)' containing one row:

Name	Deployment Pipeline	Previous De...	Ta
ALM Tutorial Deployment Stage (Test)	ALM Tutorial Pipeline		AI

At the bottom of the subgrid, it says 'Rows: 1'.

## Configure A Production Environment Deployment Stage

The final deployment stage of the pipeline is the production environment. Add another new deployment stage to the pipeline with the following details. Then save and close the stage.

- Name – ALM Tutorial Deployment Stage (Prod)
- Owner – your Microsoft 365 account
- Deployment Pipeline – ALM Tutorial Pipeline
- Previous Deployment Stage – ALM Tutorial (Test)
- Target Deployment Environment ID – ALM Tutorial (Prod)

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar contains navigation links for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Security Teams, and Advanced Settings. The main area is titled 'New Deployment Stage - Unsaved' and is divided into sections: General, Stages, and Environment. The 'General' section is active, showing fields for Name (ALM Tutorial Pipeline), Owner (Matthew Devaney (Offline)), and Description. The 'Stages' section shows the newly created stage: Name (ALM Tutorial Deployment Stage (Prod)), Owner (Matthew Devaney (Offline)), and Description (---). The 'Environment' section shows the Deployment Pipeline (ALM Tutorial Pipeline), Previous Deployment Stage (ALM Tutorial Deployment Stage (Test)), Target Deployment Environment ID (ALM Tutorial (Prod)), and checkboxes for Pre-Export Step Required and Pre-Deployment Step Required. At the bottom, there is a checkbox for Is Delegated Deployment.

The production environment appears in the deployment stages subgrid.

The screenshot shows the Power Apps Deployment Pipeline Configuration interface. The left sidebar has a 'Pipelines' tab selected. The main area displays the 'General' tab for the 'ALM Tutorial Pipeline'.

**Linked Development Environments:**

Name	Environment	Environment ID	Validation Status
ALM Tutorial (Dev)	Development...	72f71a25-aa46-ed3...	Success

Rows: 1

**Deployment Stages (Deployment Pipeline):**

Name	Deployment Pipeline	Previous De...	Ta
ALM Tutorial Deployment Stage (Test)	ALM Tutorial Pipeline		AL
ALM Tutorial Deployment Stage (Prod)	ALM Tutorial Pipeline	ALM Tutorial ...	AL

Rows: 2

# Assign Power Platform Pipelines Security Roles

A Power Platform Pipelines security role is required to create or use Power Platform pipelines if you are not the system administrator. We can assign a user to the deployment pipeline administrators role or the deployment pipeline users role indirectly through security teams. Security teams are found in the pipelines model-driven app.

## Open The Pipelines Model-Driven App

Go to the pipelines host environment and open the deployment pipeline configuration model-driven app.

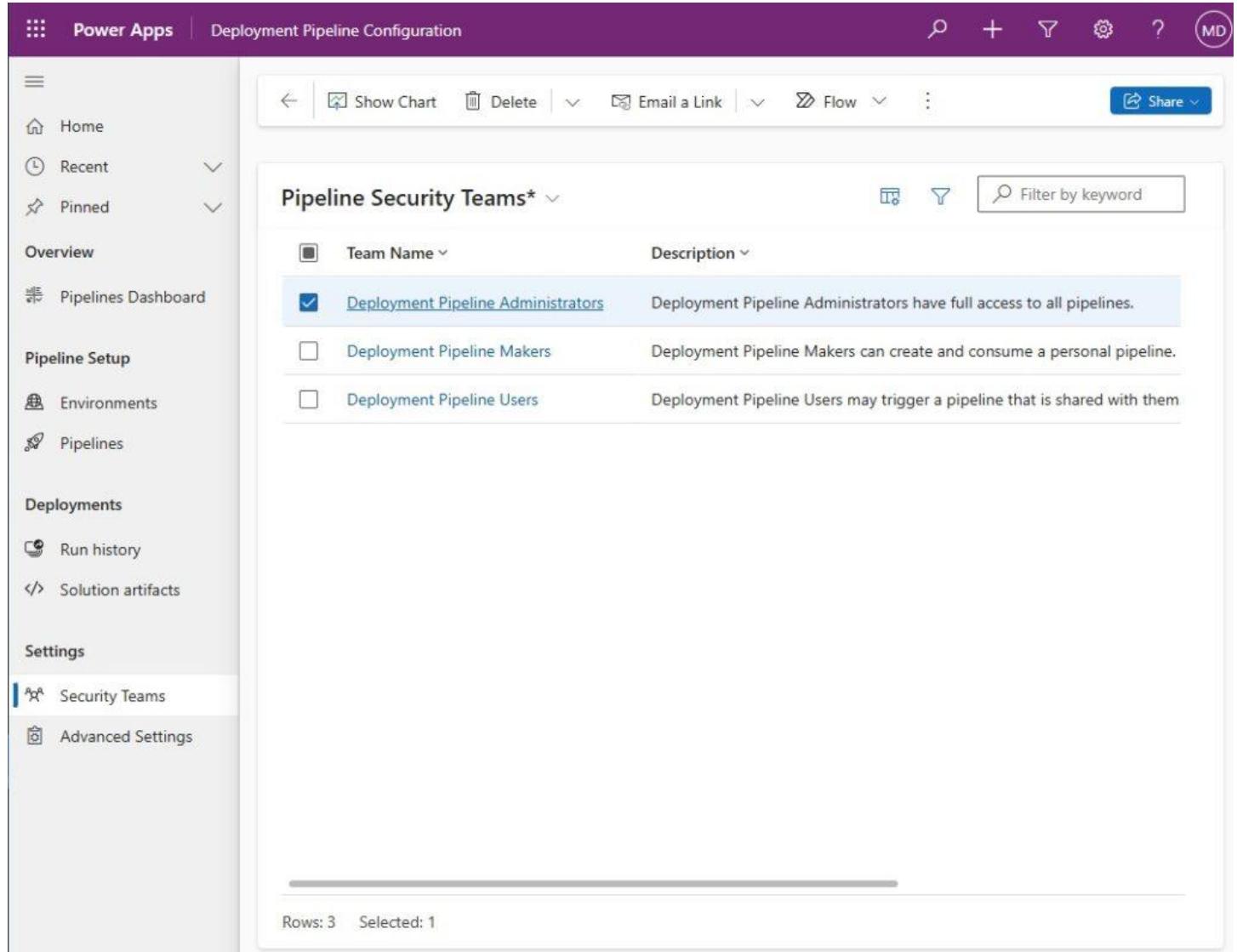
The screenshot shows the Microsoft Power Apps portal interface. At the top, there's a purple header bar with the 'Power Apps' logo, a search bar, and an 'Environment: PP Pipelines Host' indicator. Below the header is a navigation bar with icons for New app, Edit, Play, Share, Details, Settings, Turn off, and Delete. The main area is titled 'Apps' and contains four cards:

- Start with Copilot**: Use everyday words to describe what your app should collect, track, list, or manage. It features a clipboard icon.
- Start with data**: Create new tables, select existing tables, or connect to external data sources. It features a cylinder icon.
- Start with an app template**: Select from a list of fully-functional business app templates. Use as-is or customize to suit your needs. It features a document icon.
- Deployment Pipeline Configuration**: This card is selected, indicated by a checkmark icon. To its right is a context menu with options: Edit, Play, Share, Details, Settings, Turn off, and Delete. The 'Edit' option is highlighted with a purple background.

At the bottom of the screen, there are buttons for 'My apps', 'Shared with me', and 'All'. A search bar and a filter button are also present. The overall theme is purple and white.

## Assign A User To The Deployment Pipeline Administrator Role

The deployment pipeline administrator role gives users access to the deployment pipeline configuration app and the ability to create & edit pipelines in the host environment. To assign a new pipelines administrator, open the security teams page and select deployment pipeline administrators.



The screenshot shows the 'Deployment Pipeline Configuration' app interface. The left sidebar has sections for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, and Settings. 'Security Teams' is selected under Settings. The main area is titled 'Pipeline Security Teams\*' and lists three roles:

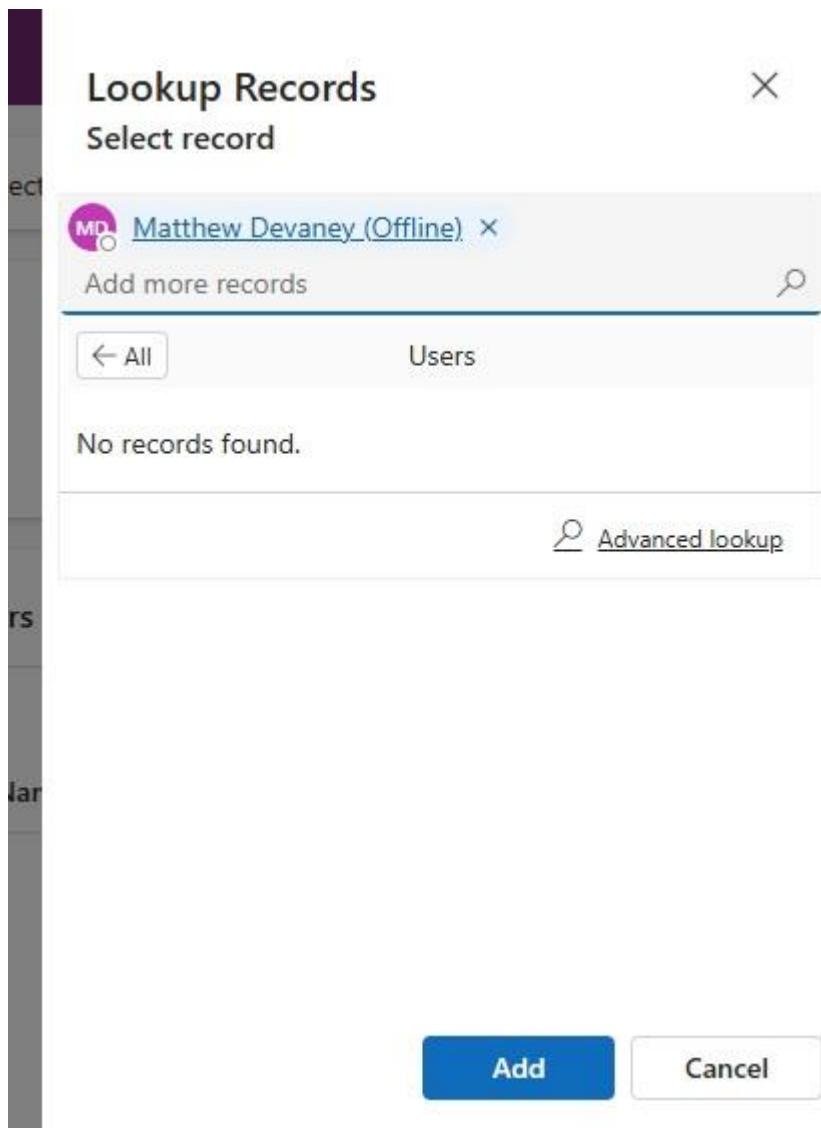
Team Name	Description
<input checked="" type="checkbox"/> Deployment Pipeline Administrators	Deployment Pipeline Administrators have full access to all pipelines.
<input type="checkbox"/> Deployment Pipeline Makers	Deployment Pipeline Makers can create and consume a personal pipeline.
<input type="checkbox"/> Deployment Pipeline Users	Deployment Pipeline Users may trigger a pipeline that is shared with them

At the bottom, it says 'Rows: 3 Selected: 1'.

Press the add existing user button in the Team members subgrid.

The screenshot shows the 'Deployment Pipeline Configuration' page in Power Apps. On the left, there's a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams (which is selected), and Advanced Settings. The main area displays the 'Deployment Pipeline Administrators' team configuration. It includes fields for Team Name (Deployment Pipeline Administrators), Business Unit (devaney-pipelines-host), Administrator (SYSTEM), Team Type (Owner), and Object Id for a group. A subgrid titled 'Team members' is shown, with a tooltip menu open over it. The menu contains options: Add Existing User (highlighted with a red circle), Refresh, Flow, Run Report, Excel Templates, Export Users, and See all records. The subgrid itself is currently empty, showing 'Rows: 0'.

Choose the user you want to become a Power Platform pipelines administrator. Then press the Add button.



The user appears in the team members subgrid.

The screenshot shows the 'Deployment Pipeline Configuration' page in Power Apps. The left sidebar has a 'Security Teams' section selected. The main area displays the 'Deployment Pipeline Administrators' team configuration. The 'General' tab is selected. The 'Team Name' field contains 'Deployment Pipeline Administrators'. The 'Business Unit' field contains 'devaney-pipelines-host'. The 'Administrator' field contains 'SYSTEM'. The 'Team Type' field is set to 'Owner'. In the 'Team members' subgrid, there is one entry: 'Matthew Devaney' (object ID devaney-pipelines-host), represented by a purple circular icon with 'MD' initials.

## Add Users To The Deployment Pipeline Users Role

The deployment pipeline user role gives the user an ability to run a pipeline that is shared with them. To add a new pipelines user, go to the security teams page and select deployment pipeline users

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has a 'Settings' section with 'Security Teams' selected. The main area displays a table titled 'Pipeline Security Teams\*' with three rows. The first two rows have empty checkboxes, while the third row, 'Deployment Pipeline Users', has a checked checkbox and is highlighted with a blue border. The table includes columns for 'Team Name' and 'Description'. A search bar at the top right says 'Filter by keyword'.

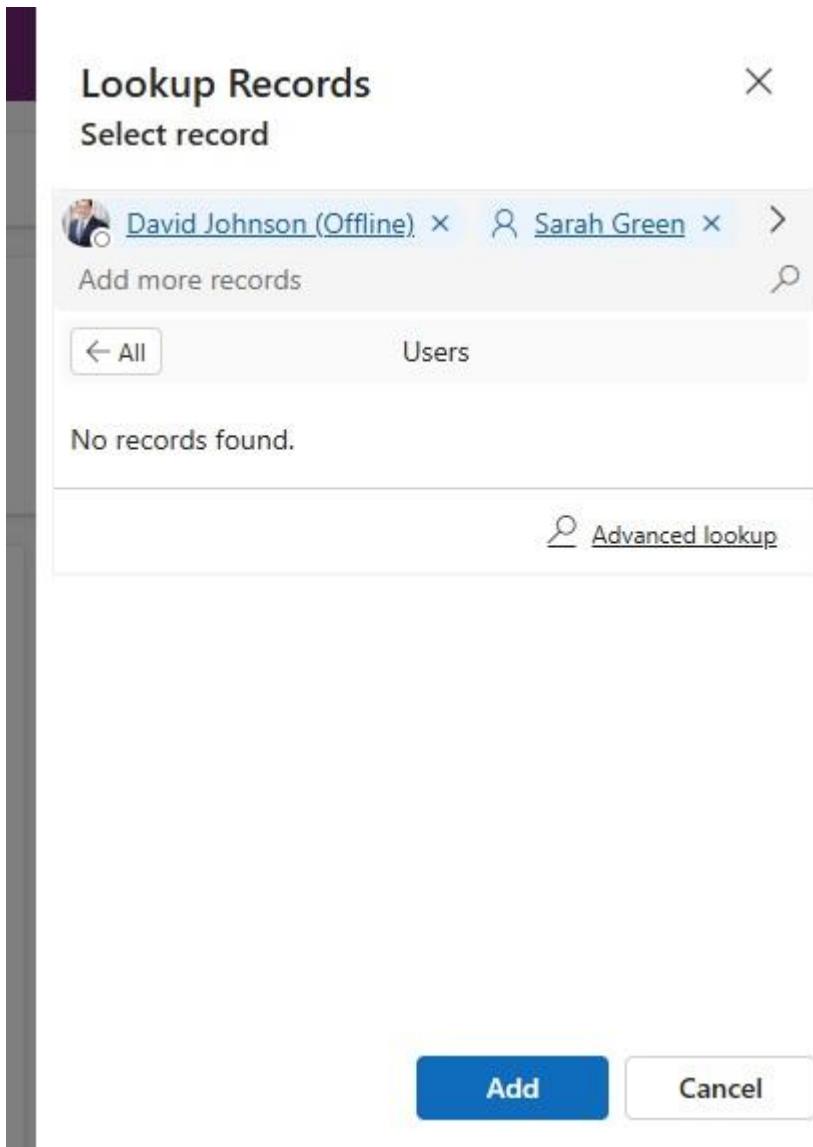
	Team Name	Description
<input type="checkbox"/>	Deployment Pipeline Admin...	Deployment Pipeline Administrators have full access to all pipeline
<input type="checkbox"/>	Deployment Pipeline Makers	Deployment Pipeline Makers can create and consume a personal pipeline
<input checked="" type="checkbox"/>	Deployment Pipeline Users	Deployment Pipeline Users may trigger a pipeline that is shared with them

Rows: 3 Selected: 1

Look for the team members subgrid and press the add existing user button.

The screenshot shows the Microsoft Power Apps interface for 'Deployment Pipeline Configuration'. On the left, there's a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams (which is selected), and Advanced Settings. The main area is titled 'Deployment Pipeline Users - Saved' under 'Team'. It has tabs for General and Related, with General selected. There are fields for Team Name (Deployment Pipeline Users), Business Unit (devaney-pipelines-host), Administrator (SYSTEM), Team Type (Owner), and Object Id for a group. Below these is a 'Description' field containing 'Deployment Pipeline Users may trigger a'. To the right, there's a 'Team members' subgrid with a context menu open. The menu includes options like Search, Add Existing User (which is highlighted with a blue background), Refresh, Flow, Run Report, Excel Templates, Export Users, and See all records. The top of the screen has standard navigation icons: back, forward, save, new, connect, share, and help.

Choose one or more users to become Power Platform pipeline users. Then press the add button.



The Power Platform pipelines users now show up in the team members subgrid.

The screenshot shows the 'Deployment Pipeline Configuration' page in Power Apps. The left sidebar has sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup (Environments, Pipelines), Deployments (Run history, Solution artifacts), and Settings (Security Teams, Advanced Settings). The main area is titled 'Deployment Pipeline Users - Saved'. It shows fields for Team Name (Deployment Pipeline Users), Business Unit (devaney-pipelines-host), Administrator (SYSTEM), Team Type (Owner), and Object Id for a group. On the right, there's a subgrid titled 'Team members' with two entries: David Johnson (devaney-pipelines-host) and Sarah Green (devaney-pipelines-host).

Deployment Pipeline Users - Saved

Team · Team

General Related

Team Name \*

Deployment Pipeline Users

Business Unit \*

devaney-pipelines-host

Administrator \*

SYSTEM

Team Type \*

Description

Team members

Select all

David Johnson  
devaney-pipelines-host

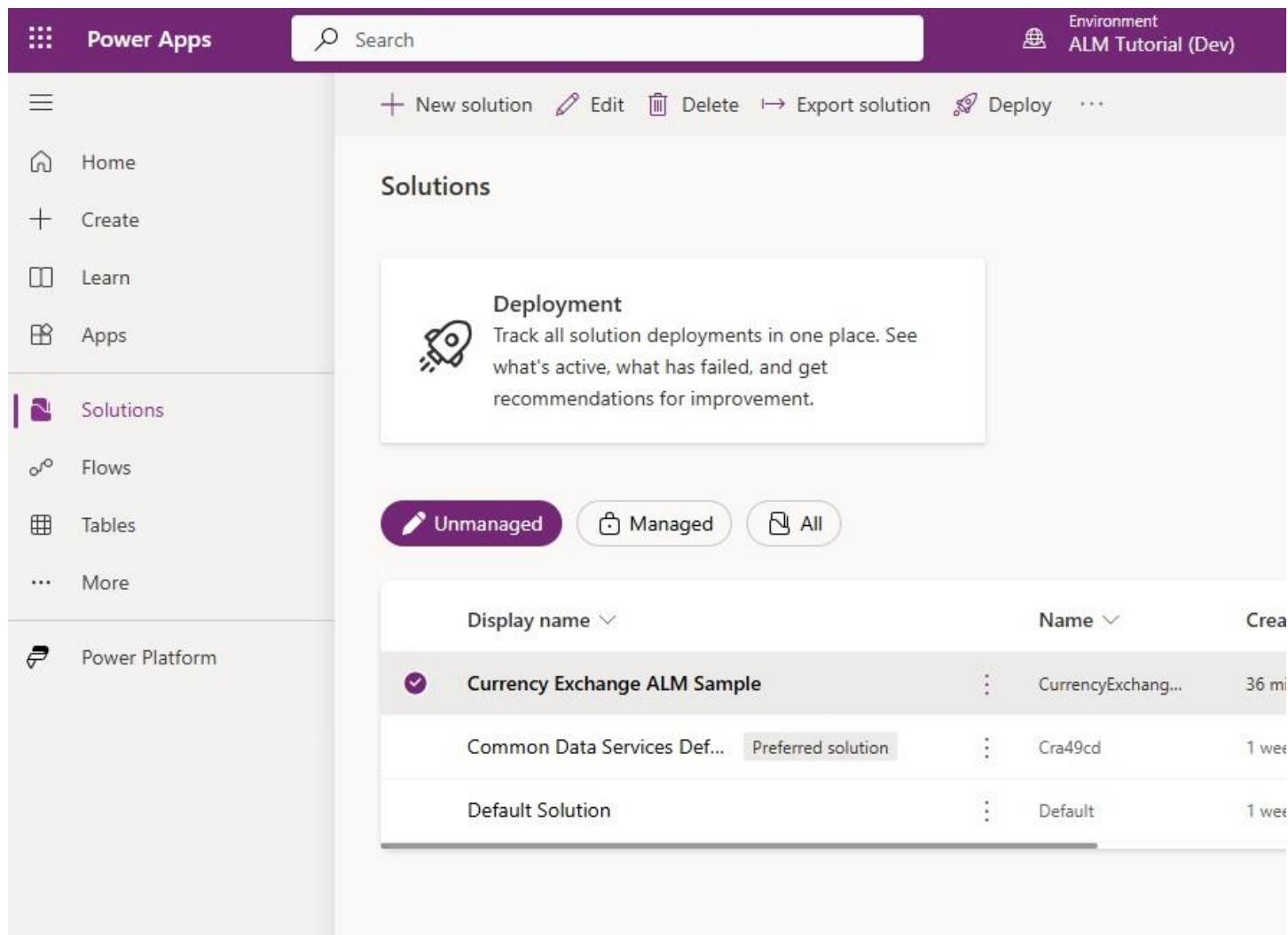
Sarah Green  
devaney-pipelines-host

# Deploy A Solution To The Test Environment

After creating a Power Platform Pipeline, we can use it to import a solution from the development environment into the test environment, before pushing it to production. The test environment allows us to perform quality tests on the solution and validate the deployment while not blocking development. It is recommended to check solutions into git-based source control before moving them into test.

## Deploy The Solution To The Test Environment With Pipelines

Go to the development environment and open the solution you want to move to the test environment.



The screenshot shows the Microsoft Power Apps portal interface. The left sidebar includes links for Home, Create, Learn, Apps, Solutions (which is selected), Flows, Tables, and More. The main content area has a purple header bar with 'Power Apps', a search bar, and an 'Environment ALM Tutorial (Dev)' dropdown. Below the header are buttons for New solution, Edit, Delete, Export solution, Deploy, and more. A callout box titled 'Deployment' explains that it tracks all solution deployments in one place, showing what's active, what has failed, and providing recommendations for improvement. The 'Solutions' table lists three items:

Display name	Name	Created
Currency Exchange ALM Sample	CurrencyExchang...	36 mi
Common Data Services Def...	Preferred solution	1 wee
Default Solution	Default	1 wee

Select the pipelines menu item from the left navigation.

The screenshot shows the Microsoft Power Apps portal interface. On the left, there is a navigation bar with various icons: Home, Power Apps, Data, Pipelines (which is highlighted with a red box), Pages, Flows, and Model-driven apps. The main area is titled "Currency Exchange ALM Sample > All". It features a search bar at the top right and a toolbar with "New", "Add existing", "Publish all customizations", and other options. Below the toolbar is a table listing objects. The table has columns for Display name, Name, Type, Managed, and Cus. The listed objects include Currency, Currency Exchange Ad..., Currency Exchange Ad..., Currency Transaction, Currency Transactions ..., Email Notifications Tar..., Exchange Rate, Microsoft Dataverse C..., Office 365 Outlook, and Send Currency Rates S... . Most objects are of type Table or Site Map, except for the Cloud Flow named "Send Currency Rates S...".

Display name ↑	Name	Type	Managed	Cus
Currency	md_currency	Table	No	Yes
Currency Exchange Ad...	md_CurrencyExc...	Site Map	No	Yes
Currency Exchange Ad...	md_CurrencyExc...	Model-Driven App	No	Yes
Currency Transaction	md_currencytran...	Table	No	Yes
Currency Transactions ...	md_currencytran...	Canvas App	No	Yes
Email Notifications Tar...	md_EmailNotific...	Environment Vari...	No	No
Exchange Rate	md_exchangerate	Table	No	Yes
Microsoft Dataverse C...	md_sharedcomm...	Connection Refer...	No	Yes
Office 365 Outlook	md_Office365Ou...	Connection Refer...	No	Yes
Send Currency Rates S...	Send Currency R...	Cloud Flow	No	Yes

On the Pipelines page, select the ALM Tutorial Pipeline. Then press the Deploy here button.

The screenshot shows the Power Apps Pipelines page. At the top, there is a navigation bar with icons for Home, Power Apps, Search, Environment (ALM Tutorial (Dev)), and a gear icon for Settings. Below the navigation bar, there are buttons for Create pipeline, Add stage, Delete pipeline, Refresh, and Manage pipelines. On the left side, there is a sidebar with icons for Back, Ellipsis, Copy, Refresh, and a refresh/clock icon. The main content area is titled "Pipelines". It displays a message about sharing and managing applications across environments. Below this, it says "Target Environments in pipelines must be enabled as Managed Environments." and provides a link to "Learn more". A section titled "Pipeline" shows a dropdown menu set to "ALM Tutorial Pipeline" and a link to "Create new pipeline". At the bottom of this section, there are tabs for "Details" and "Run history", with "Details" being the active tab. The main content area is divided into two columns. The left column, titled "Development", contains the text: "Securely test and verify in isolation. After you've got everything working properly, it's time to deploy." followed by a link to "Learn more". It also shows the "Solution version" as "1.0.0.644". An arrow points from this column to the right column. The right column is titled "ALM Tutorial Deployment Stage (Test)" and shows the environment "ALM Tutorial (Test)". It includes a "Go to this environment" link and a large "Deploy here" button at the bottom.

Choose to deploy the solution now, then press the Next button.

## Deploying Solution



- Destination
- Summary

### Select deployment target

Select the deployment pipeline you'd like to use. Each deployment pipeline has different stages, after you choose a pipeline - select the stage.

#### Pipeline

ALM Tutorial Pipeline



+ Create new pipeline



ALM Tutorial Deployment Stage (Test)



ALM Tutorial Deployment Stage (Prod)

#### Deployment schedule

Now

Later



An AI-generated description for this solution will be created when you click Next. [Learn more](#)

Back

Next

Close

## Configure Connection References And Environment Variables

The sample solution contains two connection references used in a Power Automate flow. One for Dataverse and another for Outlook. Wait for the green checkmark to appear beside each connection reference. If it does not appear, press the three dots to troubleshoot the issue. Then press the Next button.

### Deploying Solution

The screenshot shows the 'Deploying Solution' dialog with a sidebar on the left and a main content area on the right.

**Left Sidebar:**

- Destination (checkmark)
- Connections (selected, no checkmark)
- Environment variables
- Summary

**Main Content Area:**

#### Connections

Re-establish connections to activate your solution.  
2 updates needed

**Sign in**  
These services use your credentials to sign into apps and create connections.  
A green check means you're ready to go.

	Microsoft Dataverse CurrencyExchange... md_sharedcommondataserviceforapps_b...	<input checked="" type="checkbox"/> ...
	Office 365 Outlook md_Office365Outlook Permissions	<input checked="" type="checkbox"/> ...

**Bottom Buttons:**

Back    **Next**    Close

The sample solution also contains an environment variable for Email Notifications. The email address in this environment variable will receive email. Set this value to the tester's email address then press Next.

## Deploying Solution



- Destination
- Connections
- Environment variables
- Summary

### Environment Variables

Enter information for each field, so your app works properly. You can edit your environment variables later.

1 updates needed

#### Email Notifications Target

Reset

Back

Next

Close

## Write Deployment Notes To Explain Solution Updates

Each deployment will update a the solution in the target environment. To make it easier to track changes it is important to write good deployment notes. Explain the difference between each deployment as opposed to giving an overview of the entire solution. Do not use AI generated deployment notes.

Press the deploy button once finished.

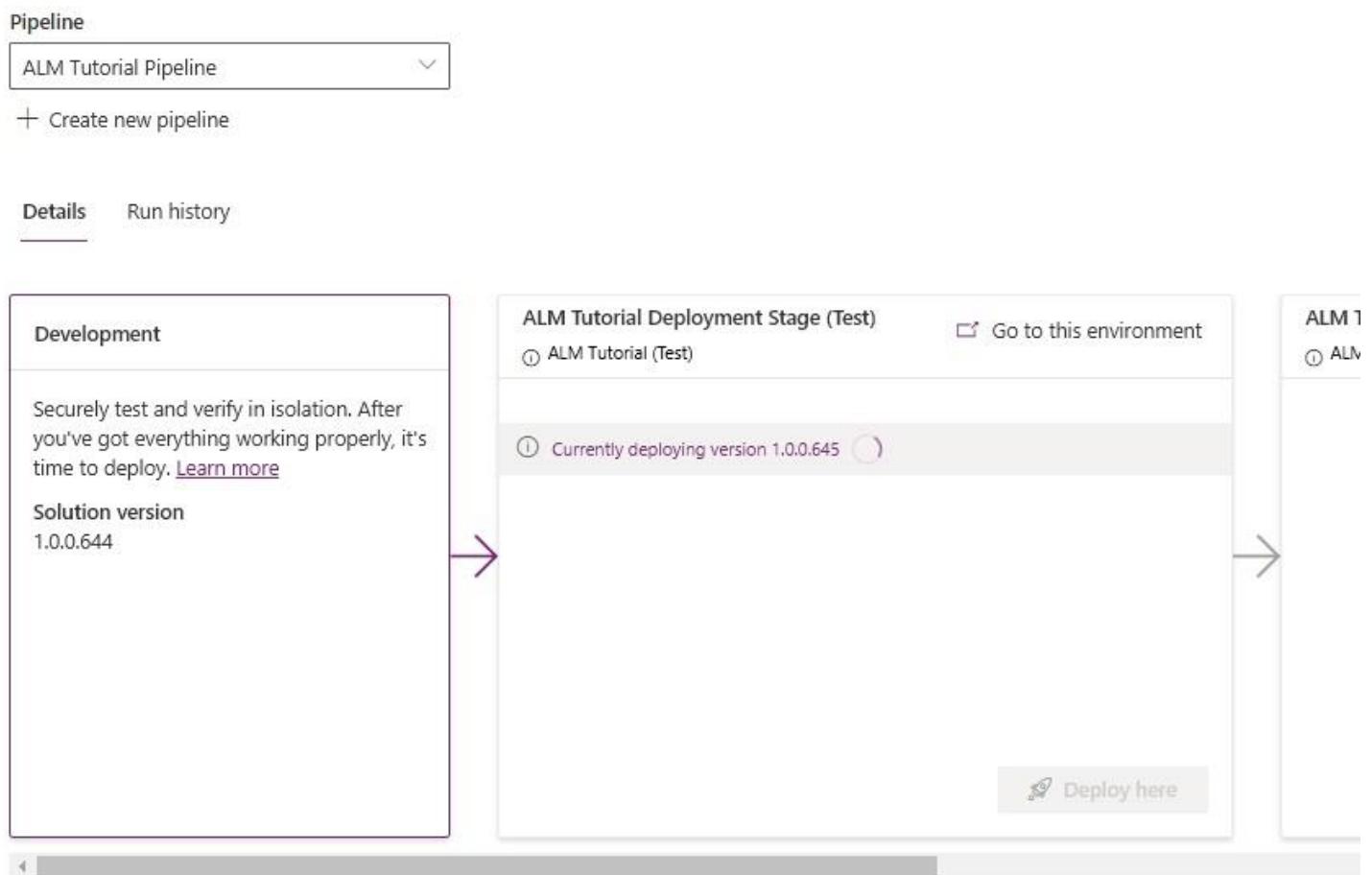
Deploying Solution X

<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Destination</li><li><input checked="" type="checkbox"/> Connections</li><li><input checked="" type="checkbox"/> Environment variables</li><li><input checked="" type="checkbox"/> Summary</li></ul>	<table border="1"><tr><td style="width: 30%;"><b>Pipeline</b></td><td style="width: 30%;"><b>Stage</b></td></tr><tr><td>ALM Tutorial Pipeline</td><td>ALM Tutorial Deployment Stage (Test)</td></tr><tr><td><b>Display name</b></td><td><b>Name</b></td></tr><tr><td>Currency Exchange ALM Sample</td><td>CurrencyExchangeALMSample</td></tr><tr><td><b>Publisher</b></td><td><b>Prefix</b></td></tr><tr><td>Matthew Devaney</td><td>md</td></tr><tr><td colspan="2"><b>Version *</b></td></tr><tr><td colspan="2">1.0.0.645</td></tr></table> <p><b>Deployment notes</b></p> <div style="border: 1px solid #ccc; padding: 10px;"><p>The Currency Exchange ALM Sample solution is designed to manage and monitor currency exchange transactions. It includes various components that facilitate administration, tracking, and communication of currency-related data. The solution provides a structured approach to handle currency information and automate notifications.</p><p><b>Key Components:</b></p><ul style="list-style-type: none"><li>1. Site Map - Currency Exchange Admin: Organizes navigation within the solution, allowing users to easily access tables like Currency, Currency Transaction, and Exchange Rate.</li><li>2. Classic Canvas App - Currency Transactions Monitor: A user interface</li></ul></div> <p style="text-align: right;"><span style="border: 1px solid #ccc; padding: 2px;">X Clear</span> <span style="margin-left: 20px;">Like <span style="color: #f0f0f0;">Dislike</span></span></p> <p style="background-color: #f0f0f0; border-radius: 5px; padding: 5px; margin-top: 10px;"><span style="color: #0078d4;">i</span> AI-generated content can have mistakes. Make sure it's accurate and appropriate before using it. <a href="#">Read terms</a></p>	<b>Pipeline</b>	<b>Stage</b>	ALM Tutorial Pipeline	ALM Tutorial Deployment Stage (Test)	<b>Display name</b>	<b>Name</b>	Currency Exchange ALM Sample	CurrencyExchangeALMSample	<b>Publisher</b>	<b>Prefix</b>	Matthew Devaney	md	<b>Version *</b>		1.0.0.645	
<b>Pipeline</b>	<b>Stage</b>																
ALM Tutorial Pipeline	ALM Tutorial Deployment Stage (Test)																
<b>Display name</b>	<b>Name</b>																
Currency Exchange ALM Sample	CurrencyExchangeALMSample																
<b>Publisher</b>	<b>Prefix</b>																
Matthew Devaney	md																
<b>Version *</b>																	
1.0.0.645																	

Back Deploy Close

## Wait For The Test Stage Deployment To Complete

Power Platform Pipelines will begin to deploy the solution to the test environment. This operation takes a few minutes to complete.



When the deployment successfully completes the last installed version and the deployment date appear in the test stage.

The screenshot shows the Power Apps Pipeline interface. At the top, there's a navigation bar with icons for Home, Power Apps, Search, Environment (ALM Tutorial (Dev)), Notifications, and Settings. Below the navigation bar, there are buttons for Create pipeline, Add stage, Delete pipeline, Refresh, and Manage pipelines. A sidebar on the left contains icons for Home, Pipelines, Data, Pages, Flows, Logic apps, and Model-driven apps. The main content area is titled "Pipelines". It displays a message about sharing the app and managing its lifecycle. A note states that "Target Environments in pipelines must be enabled as Managed Environments." Below this, a section titled "Pipeline" shows a dropdown menu set to "ALM Tutorial Pipeline" and a button to "Create new pipeline". Under "Details", there are tabs for "Details" (which is selected) and "Run history". On the right, the "Development" stage is shown with a summary: "ALM Tutorial Deployment Stage (Test)", "Last successfully installed version: 1.0.0.645", and "Last deployed: Feb 12, 2025 6:47 PM (an hour ago)". A purple arrow points from the "Development" stage summary to the "Last deployed" information. A "Deploy here" button is located at the bottom right of the stage summary.

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 healthy application lifecycle management by 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 ready, you'll move it to a more permanent place and share there. [Learn more](#)

**Target Environments in pipelines must be enabled as Managed Environments.** [Learn more](#)

**Pipeline**

ALM Tutorial Pipeline

+ Create new 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  
1.0.0.645

**ALM Tutorial Deployment Stage (Test)**

① ALM Tutorial (Test) [Go to this environment](#)

Last successfully installed version  
1.0.0.645

Last deployed  
Feb 12, 2025 6:47 PM (an hour ago)

**Deploy here**

## Review The Deployment To The Test Environment

Go to the test environment and open the solutions menu to check on the deployment of the sample solution. Look under the managed solutions tab.

The screenshot shows the Microsoft Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and an 'Environment' dropdown set to 'ALM Tutorial (Test)'. A bell icon is also present. On the left, a sidebar lists 'Home', 'Create', 'Learn', 'Apps', 'Solutions' (which is selected and highlighted in purple), 'Flows', 'Tables', and 'More'. Below the sidebar, under 'Power Platform', there is a section for 'Solutions'. A callout box titled 'Deployment' explains that it tracks all solution deployments in one place, showing what's active, what has failed, and providing recommendations for improvement. Below the callout, three filter buttons are shown: 'Unmanaged' (gray), 'Managed' (purple, indicating it is selected), and 'All' (gray). A table lists the managed solutions:

Display name	Name	Created
Currency Exchange ALM Sample	CurrencyExchang...	54 minutes a...
Power Apps Checker Base	msdyn_PowerAp...	1 week ago
Power Apps Checker	msdyn_PowerAp...	1 week ago
Contextual Help Base	msdyn_Contextu...	1 week ago
Contextual Help	msdyn_Contextu...	1 week ago

It is recommended to verify the deployment by opening applications and automations to ensure they are working in the new environment.

The screenshot shows the Microsoft Power Apps portal interface. The left sidebar is titled "Objects" and lists various managed solution components: Agents (0), Apps (1), Cards (0), Cloud flows (1), Connection references (2), Environment variables (1), Site maps (1), and Tables (3). The "Tables" section is expanded, showing three entries: Currency, Currency Exchange Admin, and Currency Transaction. The main content area displays a list of objects under "Currency Exchange ALM Sample > All". The list includes:

Display name	Name
Currency	md_currency
Currency Exchange Admin	md_CurrencyExchangeAdm
Currency Transaction	md_currencytransaction
Currency Transactions Monitor	md_currencytransactionsr
Email Notifications Target	md_EmailNotificationsTarg
Exchange Rate	md_exchangerate
Microsoft Dataverse CurrencyExchangeRates-...	md_sharedcommondatas
Office 365 Outlook	md_Office365Outlook
Send Currency Rates Summary Email	Send Currency Rates Sum

A yellow warning message at the top right states: "You cannot directly edit the objects within a managed solution. If the managed properties for solution objects are set to allow customization, you can edit them from another unmanaged solution."

## View The Pipeline Run History

To look at the run history of the Power Platform Pipeline, go to the host environment and open the Deployment Pipeline Configuration app. Then go to the run history page and select a run.

The screenshot shows the 'Deployment Pipeline Configuration' app interface. The left sidebar has a 'Run history' item selected under the 'Settings' section. The main area displays a 'Run history\*' table with one visible row:

Deployment Pipeline (...	Name (Deployment Stage)	Start Time
ALM Tutorial Pipeline	ALM Tutorial Deployment St...	2/13/2025 12:4...

At the top right, there are buttons for 'Edit', 'Activate', and 'Deactivate'. The top navigation bar includes 'Power Apps', 'Deployment Pipeline Configuration', a search icon, and a plus sign icon.

The run details page looks like this.

The screenshot shows the Power Apps Deployment Pipeline Configuration page. The left sidebar is titled "Power Apps" and includes sections for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history (selected), Solution artifacts, Settings, Security Teams, and Advanced Settings. The main content area is titled "ALM Tutorial Deployment Stage" and shows a deployment run named "(Test)\_CurrencyExchangeALMSample\_ddda7af8-006b-4483-8c4f-6209e4ce7adf - Saved". It displays deployment details such as Stage Run Status (Succeeded), Deployment Stage (ALM Tutorial Dep...), Operation (Deploy), Start Time (2/13/2025, 12:42 AM), End Time (2/13/2025, 12:47 AM), Scheduled Time (---), Pre-Export Step Required (unchecked), Pre-Deployment Step Required (unchecked), Is Delegated Deployment (unchecked), Development Deployment Environment ID (ALM Tutorial (Dev)), Target Deployment Environment ID (ALM Tutorial (Test)), Artifact ID (CurrencyExc...), Artifact Name (CurrencyExchangeALM...), Solution Artifact Version (1.0.0.645), and Solution Artifact Current Version (1.0.0.644). The top navigation bar includes Save, Save & Close, Deactivate, Cancel Deployment, and Share buttons.

## Get The Managed & Unmanaged Solution ZIP File

During manual exports we download a solution zip file to our machine then import it into the test environment. This gives us a valuable copy of the solution zip file which we can use in redeployments. The Power Platform Pipeline also stores the solution zip files as solution artifacts. Go to the solution artifacts page and open an artifact.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has a 'Solution artifacts' section selected. The main area displays a table titled 'Active Deployment Artifacts\*' with the following data:

	Name ↑ ↓	Artifact Version ↓	Generated On
<input checked="" type="checkbox"/>	<a href="#">CurrencyExchangeALMSample</a>	1.0.0.645	2/13/2025 12:42 AM

The managed and unmanaged solution zip files are found on the solution artifact details page.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. On the left, there's a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts (which is selected), Settings, Security Teams, and Advanced Settings. The main content area has a title 'CurrencyExchangeALMSample - Saved Deployment Artifact'. Below it, there are tabs for General, Deployment information, and Related. The General tab is active. It displays the following fields:

Name	* CurrencyExchangeA...
Owner	*  Matthew D... <a href="#">Edit</a>
Artifact Version	1.0.0.645
Managed Artifact File	CurrencyExchangeALMSample_1.0.0.645_managed.zip <a href="#">Delete</a>
Unmanaged Artifact File	CurrencyExchangeALMSample_1.0.0.645.zip <a href="#">Delete</a>
Generated On	*  2/13/2025 12:42 AM

# Deploy A Solution To The Production Environment

Once testing is completed we can use Power Platform Pipelines to move the managed solution to the production environment and go-live. Using a pipeline ensures the deployment to production is performed in a consistent manner. And it forces all changes to pass through the test environment first.

## Deploy The Solution To The Production Environment With Pipelines

Go to the development environment and open the solution you want to move to the production environment.

The screenshot shows the Power Apps Pipeline interface. At the top, there's a navigation bar with 'Power Apps' and a search bar. The environment is set to 'ALM Tutorial (Dev)'. On the left, there's a sidebar with various icons. The main area is titled 'Pipelines' and contains a message about sharing apps and managing their lifecycle. It also mentions that target environments must be enabled as Managed Environments. Below this, a 'Pipeline' dropdown is set to 'ALM Tutorial Pipeline'. There are buttons for '+ Create new pipeline' and '+ Create new stage'. Under the 'Details' tab, two stages are shown: '(Test)' and 'ALM Tutorial Deployment Stage (Prod)'. Both stages have a 'Go to this environment' button. At the bottom of each stage, there's a 'Deploy here' button. The stages are connected by a large right-pointing arrow.

Schedule the deployment now and press the Next button.

## Deploying Solution

X

- Destination
- Summary

### Select deployment target

Select the deployment pipeline you'd like to use. Each deployment pipeline has different stages, after you choose a pipeline - select the stage.

#### Pipeline

ALM Tutorial Pipeline



+ Create new pipeline



ALM Tutorial Deployment Stage (Test)



ALM Tutorial Deployment Stage (Prod)

#### Deployment schedule

Now

Later



An AI-generated description for this solution will be created when you click Next. [Learn more](#)

Back

Next

Close

## Set Connection References And Environment Variables

The sample solution contains two connection references used in a Power Automate flow. One for Dataverse and another for Outlook. Wait for the green checkmark to appear beside each connection reference. If it does not appear, press the three dots to troubleshoot the issue. Then press the Next button.

### Deploying Solution



- Destination
- Connections
- Environment variables
- Summary

#### Connections

Re-establish connections to activate your solution.

2 updates needed

##### Sign in

These services use your credentials to sign into apps and create connections. A green check means you're ready to go.



Microsoft Dataverse CurrencyExchang...  
md\_sharedcommondataserviceforapps...



...



Office 365 Outlook  
md\_Office365Outlook  
Permissions



...

Back

Next

Close

The sample solution also contains an environment variable for Email Notifications. The email address in this environment variable will receive email. Set this value to the production email address then press Next.

## Deploying Solution

X

- Destination
- Connections
- Environment variables
- Summary

### Environment Variables

Enter information for each field, so your app works properly. You can edit your environment variables later.

1 updates needed

### Email Notifications Target

prod@matthewdevaney.com

↻ Reset

Back

Next

Close

## Give Deployment Notes For Release To Production

Similar to the deployment to the test environment, we want to write an update explaining the changes to production. Highlight the differences between the solution we are about to deploy and the current version in production. This helps us to track changes when troubleshooting issues with a past deployment. Do not use AI generated deployment notes.

Press the deploy button once finished.

### Deploying Solution

The screenshot shows the 'Deploying Solution' dialog box. On the left, a vertical sidebar lists four items: 'Destination' (checked), 'Connections' (checked), 'Environment variables' (checked), and 'Summary'. The main area displays deployment details:

Pipeline	Stage
ALM Tutorial Pipeline	ALM Tutorial Deployment Stage (Prod)
Display name	Name
Currency Exchange ALM Sample	CurrencyExchangeALMSample
Publisher	Prefix
Matthew Devaney	md
Version	1.0.0.645

**Deployment notes**

Currency, currency transaction, and exchange rate.

2. Classic Canvas App - Currency Transactions Monitor: A user interface for monitoring and managing currency transactions.  
3. Entity - Currency: Stores information about different currencies.  
4. Entity - Currency Transaction: Records details of currency transactions.  
5. Entity - Exchange Rate: Maintains exchange rate data between different currencies.  
6. Environment Variable Definition - Email Notifications Target: Defines the target email address for sending notifications.  
7. Modern Flow - Send Currency Rates Summary Email: Automates the process of sending summary emails about currency rates.

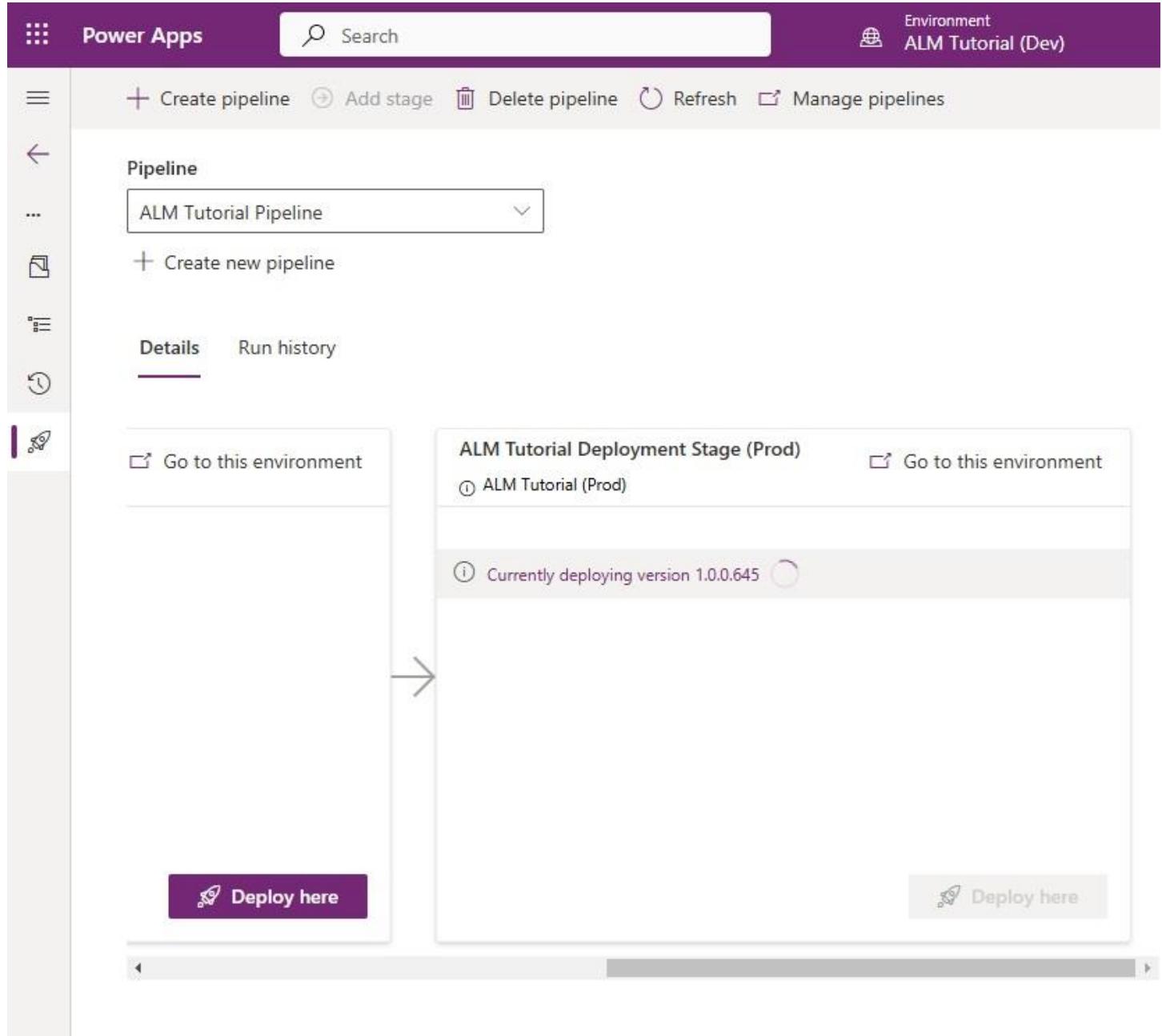
X Clear      Like Unlike

i AI-generated content can have mistakes. Make sure it's accurate and appropriate before using it. [Read terms](#)

Back Deploy Close

## Wait For The Production Stage Deployment To Complete

Power Platform Pipelines needs a few minutes to import the solution into the Production environment.



Once the solution import is completed the last successfully installed version and last deployed date will appear in the production stage card.

[+ Create pipeline](#) [⊕ Add stage](#) [Delete pipeline](#) [⟳ Refresh](#) [Manage pipelines](#)

## Pipeline



ALM Tutorial Pipeline

[+ Create new pipeline](#)[Details](#) [Run history](#)[↗ Go to this environment](#)

## ALM Tutorial Deployment Stage (Prod)

(1) ALM Tutorial (Prod)

[↗ Go to this environment](#)

Last successfully installed version

1.0.0.645

Last deployed

 Feb 12, 2025 7:51 PM (4 minutes ago)[↗ Deploy here](#)[↗ Deploy here](#)

## Validate The Deployment To Production

After a deployment it is important to make sure the solution is working in the target environment. Go to the production environment, browse to the solutions menu, select the Managed tab and open the sample solution.

The screenshot shows the Power Apps interface with the 'Solutions' section selected. A callout box highlights the 'Deployment' feature, which allows tracking of all solution deployments in one place. Below this, three tabs are shown: 'Unmanaged' (disabled), 'Managed' (selected and highlighted in purple), and 'All'. A table lists five solutions, all of which are managed:

Display name	Name	Created	Ver
Currency Exchange ALM Sample	CurrencyExchang...	5 minutes ago	1.0.0
Power Apps Checker Base	msdyn_PowerAp...	1 week ago	2.0.0
Power Apps Checker	msdyn_PowerAp...	1 week ago	2.0.0
Contextual Help Base	msdyn_Contextu...	1 week ago	1.0.0
Contextual Help	msdyn_Contextu...	1 week ago	1.0.0

Go through each of the solution components and give them a brief test.

The screenshot shows the Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and environment information 'Environment ALM Tutorial (Prod)'. A yellow warning message states: 'You cannot directly edit the objects within a managed solution. If the managed properties for solution objects are set to can edit them from another unmanaged solution.' The left sidebar lists various object types: Agents (0), Apps (1), Cards (0), Cloud flows (1), Connection references (2), Environment variables (1), Site maps (1), and Tables (3). The main content area displays a table of objects under 'Currency Exchange ALM Sample > All'. The columns are 'Display name ↑', 'Name ↓', 'Type ↓', and 'Managed ↓'. The table contains the following data:

Display name ↑	Name ↓	Type ↓	Managed ↓
Currency	md_currency	Table	Yes
Currency Exchange Ad...	md_CurrencyExc...	Site Map	Yes
Currency Transaction	md_currencytran...	Table	Yes
Currency Transactions ...	md_currencytran...	Canvas App	Yes
Email Notifications Tar...	md_EmailNotific...	Environment Vari...	Yes
Exchange Rate	md_exchangerate	Table	Yes
Microsoft Dataverse C...	md_sharedcomm...	Connection Refe...	Yes
Office 365 Outlook	md_Office365Ou...	Connection Refe...	Yes
Send Currency Rates S...	Send Currency R...	Cloud Flow	Yes

## View The Pipeline Run History

To look at the run history of the Power Platform Pipeline, go to the host environment and open the Deployment Pipeline Configuration app. Then go to the run history page and select the latest run.

The screenshot shows the 'Run history' page within the 'Deployment Pipeline Configuration' app. The left sidebar contains navigation links for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history (which is selected and highlighted in blue), Solution artifacts, Settings, Security Teams, and Advanced Settings. The main content area has a header with 'Run history\*' and various filter and search options. A table lists two runs: 'ALM Tutorial Pipeline' (Deployment Stage: Prod) and 'ALM Tutorial Pipeline' (Deployment Stage: Test). Both runs occurred on 2/13/2025 at different times. At the bottom of the table, it says '1 - 2 of 2'.

Deployment Pipeline	Name (Deployment Stage)	Start Time	End Time
ALM Tutorial Pipeline	ALM Tutorial Deployment Stage (Prod)	2/13/2025 1:48 ...	2,18:48
ALM Tutorial Pipeline	ALM Tutorial Deployment Stage (Test)	2/13/2025 12:4...	2,12:48

The run details page looks like this.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar is titled 'Power Apps' and includes sections for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments (selected), Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings. The main content area is titled 'ALM Tutorial Deployment Stage' and shows deployment details for '(Prod)\_CurrencyExchangeALMSample\_1.0.0.645\_034e75c0-9712-46dc-98f8-5b64686d1d6f - Saved'. The 'General' tab is selected. Key details include:

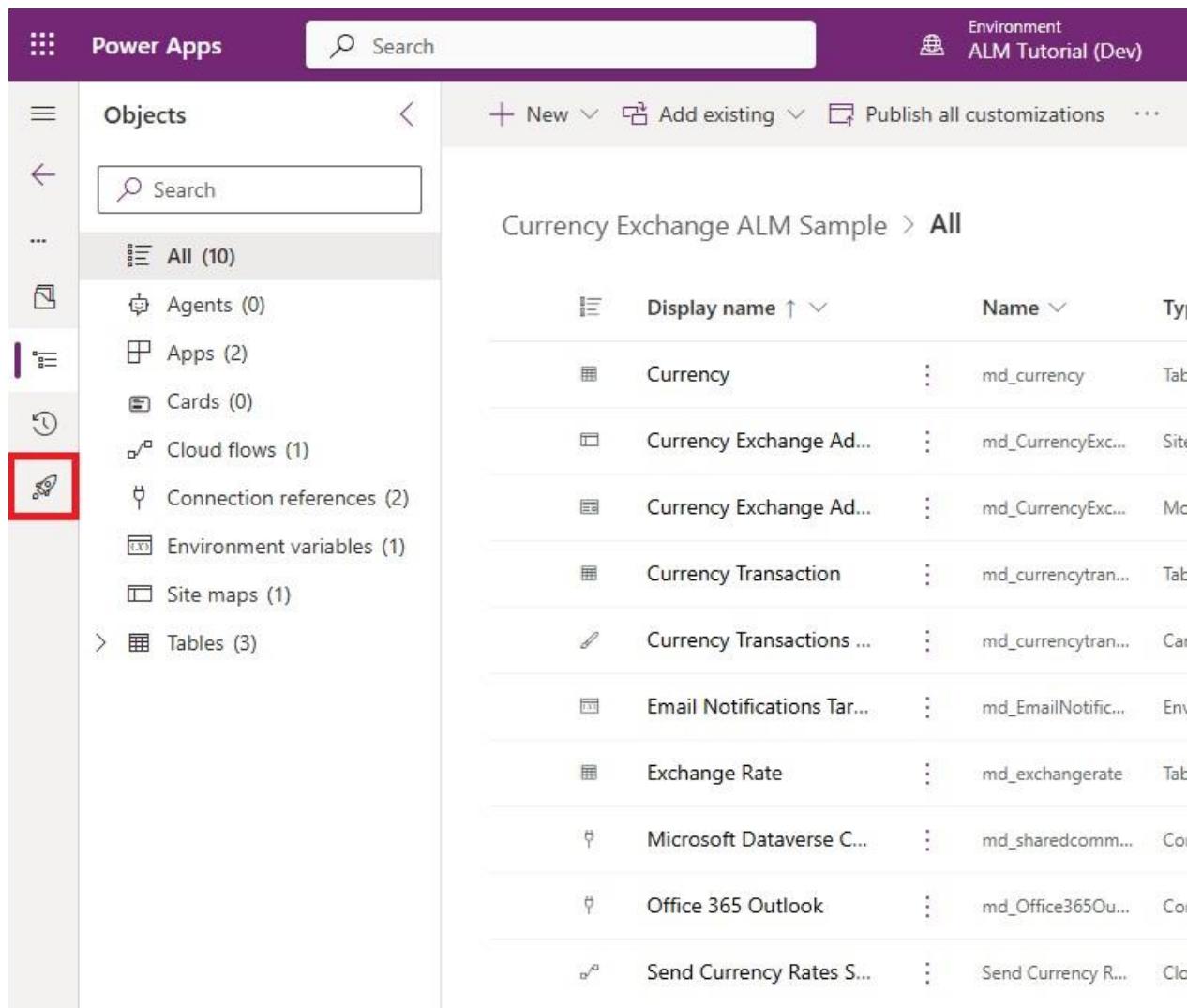
Setting	Value
Stage Run Status	Succeeded
Development Deployment Environment ID	<a href="#">ALM Tutorial (Dev)</a>
Deployment Stage	<a href="#">ALM Tutorial Deployment...</a>
Target Deployment Environment ID	<a href="#">ALM Tutorial (Prod)</a>
Operation	Deploy
Start Time	2/13/2025 1:48 AM
Artifact ID	<a href="#">CurrencyExchangeAL...</a>
Artifact Name	CurrencyExchangeALMSample
End Time	2/13/2025 1:51 AM
Solution Artifact Version	1.0.0.645
Solution Artifact Current Version	1.0.0.645
Scheduled Time	---
Is Redeployment	<input type="checkbox"/>
Pre-Export Step Required	<input checked="" type="checkbox"/>
Pre-Deployment Step Required	<input checked="" type="checkbox"/>
Is Delegated Deployment	<input type="checkbox"/>

# Redeploy A Past Solution Version To A Target Environment

Do you need to roll-back a solution version? This is possible using the Power Platform Pipelines redeploy feature. It allows you to pick a solution and downgrade to an earlier version. Be careful though, if you are removing Dataverse tables or columns then the data in stored them will be lost.

## Open The Power Platform Pipelines Run History

In the development environment, go to the solution you want to rollback and open the Pipelines menu.



The screenshot shows the Microsoft Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and the environment 'ALM Tutorial (Dev)'. On the left, there's a sidebar with icons for Home, Objects, Pipelines (which is highlighted with a red box), Data, and Settings. The main content area shows a list of objects under 'Currency Exchange ALM Sample > All'. The objects listed are:

Display name ↑	Name ↓	Type
Currency	md_currency	Tab
Currency Exchange Ad...	md_CurrencyExc...	Site
Currency Exchange Ad...	md_CurrencyExc...	Mo
Currency Transaction	md_currencytran...	Tab
Currency Transactions ...	md_currencytran...	Can
Email Notifications Tar...	md_EmailNotific...	Env
Exchange Rate	md_exchangerate	Tab
Microsoft Dataverse C...	md_sharedcomm...	Cor
Office 365 Outlook	md_Office365Ou...	Cor
Send Currency Rates S...	Send Currency R...	Clo

Select the run history tab.

The screenshot shows the Power Apps Pipelines page. At the top, there is a navigation bar with icons for Home, Power Apps, Search, Environment (set to ALM Tutorial (Dev)), and a globe icon. Below the navigation bar, there are buttons for Create pipeline, Add stage, Delete pipeline, Refresh, and Manage pipelines. On the left side, there is a vertical sidebar with icons for Home, Pipelines, App studio, Data, and Help. The main content area has a heading "Pipelines". Below it, a text block says: "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 healthy application lifecycle management by 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 ready, you'll move it to a more permanent place and share there. [Learn more](#)". A note below states: "Target Environments in pipelines must be enabled as Managed Environments. [Learn more](#)". Under the "Pipeline" section, a dropdown menu shows "ALM Tutorial Pipeline". Below it, there is a link to "Create new pipeline". At the bottom, there are two tabs: "Details" and "Run history", with "Run history" being the active tab and highlighted with a red box. To the right, there is a section titled "Development" containing the text: "Securely test and verify in isolation. After you've got everything working properly, it's time to deploy. [Learn more](#)". Another section titled "ALM Tutorial Deployment Stage (Test)" shows "Go to this en" and "ALM Tutorial (Test)". Below that, it says "Last successfully installed version 1.0.0.645".

## Redeploy A Solution With Power Platform Pipelines

The run history shows all past deployments to a target environment. To redeploy a past solution version, select the three dots beside it and press choose the redeploy option.

The screenshot shows the Power Apps Pipeline Run History page. At the top, there's a navigation bar with 'Power Apps' and a search bar. Below the navigation bar, there are buttons for 'Create pipeline', 'Add stage', 'Delete pipeline', 'Refresh', and 'Manage pipelines'. The main area is titled 'Pipelines' and contains a brief text about sharing apps. It also includes a note about target environments and a link to learn more. Below this, there's a section for 'Pipeline' with a dropdown set to 'ALM Tutorial Pipeline' and a button to 'Create new pipeline'. Under 'Run history', there are two rows of deployment logs. The first row has a checkmark icon, the date 'Feb 12, 2025 7:48 PM (2 days ago)', and the status 'Completed'. The second row has the date 'Feb 12, 2025 6:42 PM (2 days ago)'. A context menu is open over the first deployment log, showing options: 'Cancel deployment' (with a cancel icon) and 'Redeploy' (with a circular arrow icon). To the right of the table, there's a sidebar titled 'Information' containing detailed deployment metadata: Stage (ALM Tutorial Deployment Stage (Prod)), Source (ALM Tutorial (Dev)), Target (ALM Tutorial (Prod)), Start time (Feb 12, 2025 7:48 PM (2 days ago)), End time (Feb 12, 2025 7:51 PM (2 days ago)), Solution (CurrencyExchangeALMSample), Version (1.0.0.645), Deployed by (Matthew Devaney), Deployment notes (The Currency Exchange ALM Sample solution is designed to manage and monitor currency exchange), and Operation (Deploy).

Start time ↓	End time	Details
Feb 12, 2025 7:48 PM (2 days ago)	Feb 12, 2025 7:51 PM (2 days ago)	Completed
Feb 12, 2025 6:42 PM (2 days ago)		Completed

**Information**

^ Details

Stage

ALM Tutorial Deployment Stage (Prod)

Source

ALM Tutorial (Dev)

Target

ALM Tutorial (Prod)

Start time

Feb 12, 2025 7:48 PM (2 days ago)

End time

Feb 12, 2025 7:51 PM (2 days ago)

Solution

CurrencyExchangeALMSample

Version

1.0.0.645

Deployed by

Matthew Devaney

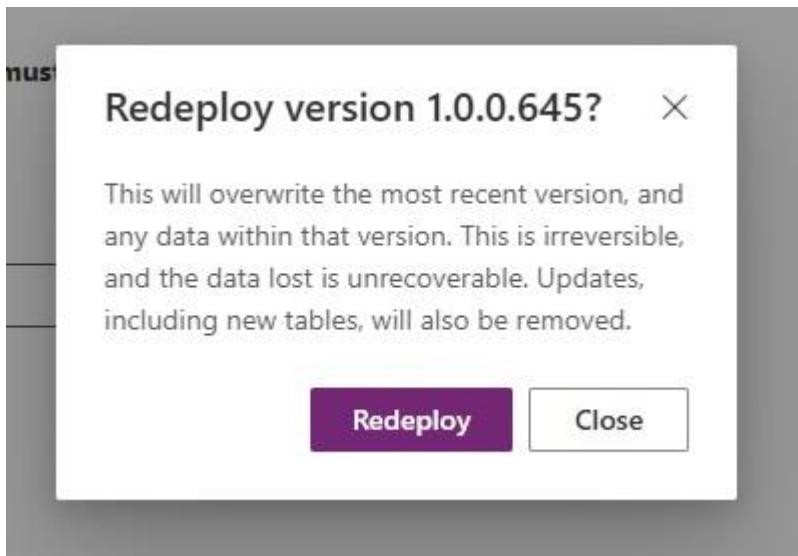
Deployment notes

The Currency Exchange ALM Sample solution is designed to manage and monitor currency exchange

Operation

Deploy

A redeployment will overwrite the current solution in the target environment. If that solution has a different set of Dataverse tables and columns it could result in data loss. Before you redeploy, take a moment to determine the differences between solutions and understand what will be deleted.



# Perform A Delegated Deployment Using A Service Account

A delegated deployment in Power Platform Pipelines is performed by the service account rather than the user who pressed the deploy button. This is useful because we can grant the service account elevated permissions to the target environment while the user is prevented from making any direct changes inside of the environment. It forces them to use pipelines for deployment, which is a good thing. And if the service account performs the initial deployment of a solution the apps and flows within it will be owned by the service account in the new environment.

## Create A Power Automate Flow To Approve Delegated Deployments

Power Platform Pipelines delegated deployments require an approval. Currently, the only way to perform this approval is by using a Power Automate flow.

Go to the Pipelines Host environment and create a new solution named *Pipelines Extensions*.

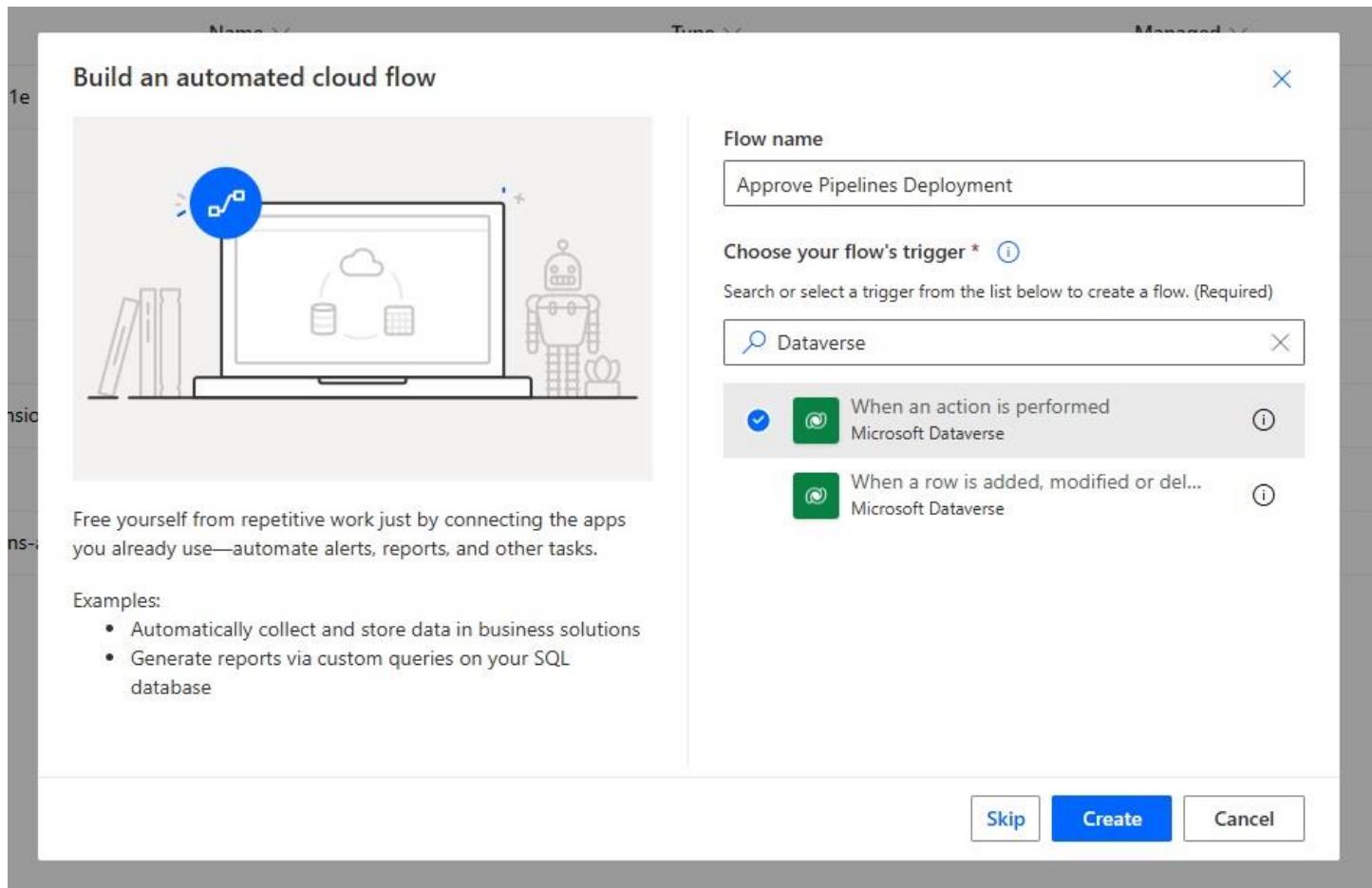
The screenshot shows the Microsoft Power Apps portal interface. On the left, there's a sidebar with various icons for navigation. The main area is titled 'Solutions'. A modal window titled 'New solution' is open on the right. Inside the modal, the 'Display name' field contains 'MD Pipelines Extensions'. The 'Name' field contains 'MDPipelinesExtensions'. The 'Publisher' field is set to 'Default Publisher for devaney-pipeline'. The 'Version' field is set to '1.0.0.0'. At the bottom of the modal are two buttons: 'Create' (in purple) and 'Cancel'.

Then create a new Power Automate flow with an automated trigger inside the Pipelines Extensions solution.

The screenshot shows the Power Apps interface with the 'Objects' list open. The 'Automation' category is expanded, revealing sub-options: Cloud flow, Custom connector, Dataflow, Desktop flow, and Process. A tooltip indicates that the 'Cloud flow' option is 'Automated'. Other categories like Agent, App, Card, Dashboard, Report, Security, and Table are also listed. A search bar at the top right and a navigation bar with icons for globe, bell, gear, and question mark are visible.

Category	Sub-Category	Description
Agent		
App		ons > All
Automation	Cloud flow	Automated
	Custom connector	Instant
	Dataflow	Scheduled
Card		
Dashboard		
Report		
Security		
Table		
More		I didn't find anything to show here

Name the solution Approve Pipelines Deployment and select the when an action is performed Dataverse trigger.



## Auto-Approve A Delegated Deployment In Power Platform Pipelines

Delegated deployments require an approval but we want the approval to be automatic. Set the flow trigger category to Power Platform Pipelines and use the action name OnApprovalStarted. Then add a condition where true=true so it will always evaluate to yes. Inside of the yes condition, perform an unbound action with the following parameters:

- Action Name – UpdateApprovalStatus
- Approval Properties – workflow()
- StageRunId – Action Inputs StageRunId
- Approval Status – 20 (approved)

Also, in the no condition perform the same unbound action with an Approval Status of 30 (rejected). Although it is not necessary in this scenario we have setup the no condition to understand how do it.

When an action is performed: OnApprovalStarted

\* Catalog: Microsoft Dataverse Common

\* Category: Power Platform Pipelines

\* Table name: (none)

\* Action name: OnApprovalStarted

Condition: Auto-Approve

true is equal to  true

+ Add

If yes

Perform an unbound action: UpdateApprovalStatus Completed

Action Name: UpdateApprovalStatus

ApprovalProperties: `fx workflow()`

StageRunId: `fx ActionInputs St...`

ApprovalComments:

ApprovalStatus: 20

Add an action

If no

Perform an unbound action: UpdateApprovalStatus Rejected

Action Name: UpdateApprovalStatus

ApprovalProperties: `fx workflow()`

StageRunId: `fx ActionInputs St...`

ApprovalComments:

ApprovalStatus: 30

Add an action

## Enable Delegated Deployment For A Pipeline Deployment Stage

A delegated deployment can be setup from the deployment stage record in the deployment pipeline configuration app. Launch the app and go to the Pipelines page. Select the ALM Tutorial Pipeline and locate the deployment stages subgrid.

The screenshot shows the 'Deployment Pipeline Configuration' app interface. The left sidebar has a 'Pipelines' section selected, which is highlighted with a blue bar. The main area displays the 'ALM Tutorial Pipeline' - Saved. Below it, there are tabs for General, Deployment stages, Run history, and Related. The 'Deployment stages' tab is active, showing a subgrid titled 'Deployment Stages (Deployment Pipeline)'. The subgrid contains two rows of data:

<input type="checkbox"/>	Name	Deployment Pipeline
<input type="checkbox"/>	ALM Tutorial Deployment Stage (Test)	ALM Tutorial Pipeline
<input type="checkbox"/>	ALM Tutorial Deployment Stage (Prod)	ALM Tutorial Pipeline

Below the subgrid, it says 'Rows: 2'.

Open the test deployment stage and check Is Delegated Deployment. Choose the Delegated Deployment Type Stage Owner and set the Owner to the Service Account. Save and close the record.

The screenshot shows the Power Apps interface for configuring a deployment stage. The top navigation bar includes 'Power Apps', a search icon, and a user profile 'SA'. Below the header are standard navigation buttons: back, forward, save, save & close, and share. The main area displays the 'ALM Tutorial Deployment Stage (Test)' record. The 'General' tab is selected. The form fields include:

- Name: ALM Tutorial Pipeline
- Owner: Matthew Devaney (Offline) (highlighted with a red box)
- Description: (empty)
- Name: ALM Tutorial Deployment Stage (Test)
- Owner: Service Account (Offline) (highlighted with a red box)
- Description: (empty)
- Deployment Pipeline: ALM Tutorial Pipeline
- Previous Deployment Stage: (empty)
- Target Deployment Environment ID: ALM Tutorial (Test) (highlighted with a red box)
- Pre-Export Step Required: (checkbox)
- Pre-Deployment Step Required: (checkbox)
- Is Delegated Deployment: (checkbox checked)
- Delegated Deployment Type: Stage Owner (highlighted with a red box)

Do the same for the production deployment stage.

The screenshot shows the 'ALM Tutorial Deployment Stage (Prod)' record in the Power Apps application. The form has a purple header bar with the 'Power Apps' logo and a search icon. Below the header, there are standard navigation buttons: back, forward, save, save & close, and share. The main content area is titled 'Deployment Stage' and contains tabs for 'General' and 'Related'. The 'General' tab is selected, showing the following fields:

Name	* <input type="text" value="ALM Tutorial Pipeline"/>
Owner	* <input type="text" value="MD Matthew Devaney"/> (with a red box around the input field)
Description	<input type="text" value=""/>
Name	* <input type="text" value="ALM Tutorial Deployment Stage (Prod)"/>
Owner	* <input type="text" value="SA Service Account"/> (with a red box around the input field)
Description	<input type="text" value="---"/>
Deployment Pipeline	* <input type="text" value="ALM Tutorial Pipeline"/>
Previous Deployment Stage	<input type="text" value="ALM Tutorial Deployment Stage (Prod)"/> (with a red box around the input field)
Target Deployment Environment ID	* <input type="text" value="ALM Tutorial (Prod)"/> (with a red box around the input field)
Pre-Export Step Required	<input type="checkbox"/>
Pre-Deployment Step Required	<input type="checkbox"/>
Is Delegated Deployment	<input checked="" type="checkbox"/> (with a red box around the checkbox)
Delegated Deployment Type	<input type="text" value="Stage Owner"/> (with a red box around the dropdown menu)

## Deploy The Solution As The Service Account

The test and production deployment stages are now setup to perform delegated deployments. All future Power Platform Pipeline runs will be performed by the service account.

Go to the Pipelines menu for the sample solution and press the deploy here button to deploy the solution to the test environment.

The screenshot shows the Microsoft Power Apps portal interface. On the left, there's a sidebar with navigation links: 'Power Apps', 'Back to solutions', 'Currency Exchange ALM...', 'Overview', 'Objects', 'History', 'Pipelines' (which is selected), and 'Source control (Preview)'. The main area is titled 'Pipeline' and shows a dropdown menu with 'ALM Tutorial Pipeline' selected. Below it is a link to 'Create new pipeline'. The pipeline view has two tabs: 'Details' (selected) and 'Run history'. The 'Development' stage is shown with the following details:

- Solution version:** 1.0.0.645
- Last successfully installed version:** 1.0.0.645
- Last deployed:** Feb 14, 2025 6:30 PM (an hour ago)
- Note:** Deployments may be pending until an associated background process succeeds. This process is managed by your admin. ([Learn more](#))

To the right of the Development stage, the 'Test' stage is partially visible, showing:

- ALM Tutorial Deployment Stage (Test)**
- ALM Tutorial (Test)**
- Go to this environment**
- Deploy here** (a purple button)

A large purple arrow points from the 'Development' stage details towards the 'Deploy here' button in the 'Test' stage details.

Work through the deploying solution wizard and then press the deploy button on the final page.

## Deploying Solution

X

- Destination
- Connections
- Environment variables
- Summary

Pipeline	Stage
ALM Tutorial Pipeline	ALM Tutorial Deployment Stage (Test)
Display name	Name
Currency Exchange ALM Sample	CurrencyExchangeALMSample
Publisher	Prefix
Matthew Devaney	md
Version *	
1.0.0.646	

### Deployment notes

4. Entity - Currency Transaction: A table that records individual currency exchange transactions, capturing details necessary for tracking and reporting.
5. Entity - Exchange Rate: A table that stores exchange rate information between different currencies, essential for calculating transaction values.
6. Environment Variable Definition - Email Notifications Target: A configuration setting that specifies the target email address for sending notifications, ensuring that relevant stakeholders receive updates.
7. Modern Flow - Send Currency Rates Summary Email: An automated workflow that sends summary emails of currency rates, keeping users informed about current exchange rates.

X Clear



ⓘ AI-generated content can have mistakes. Make sure it's accurate and appropriate before using it. [Read terms](#)

Back

Deploy

Close

## Review The Delegated Deployment Results

Wait for the Power Platform Pipeline to complete the solution deployment.

The screenshot shows the Microsoft Power Platform Pipeline interface. At the top, there's a purple header bar with a search bar, the environment name "Environment ALM Tutorial (Dev)", and a bell icon. Below the header, there are navigation links: "Create pipeline", "Add stage", "Delete pipeline", "Refresh", and "Manage pipelines". A note below these links says: "so the people using your app don't run into issues while you work on it. Once everything is ready, you'll move it to a more permanent place and share there. [Learn more](#)". Another note states: "Target Environments in pipelines must be enabled as Managed Environments. [Learn more](#)".

The main area is titled "Pipeline" and shows a dropdown menu set to "ALM Tutorial Pipeline". Below the dropdown is a link to "Create new pipeline".

Under the pipeline title, there are two tabs: "Details" (which is selected) and "Run history".

The "Development" section contains the following information:

- Solution version:** 1.0.0.645
- Description:** Securely test and verify in isolation. After you've got everything working properly, it's time to deploy. [Learn more](#)

An arrow points from the "Development" section to the "Test" stage in the pipeline details.

The "ALM Tutorial Deployment Stage (Test)" section contains the following information:

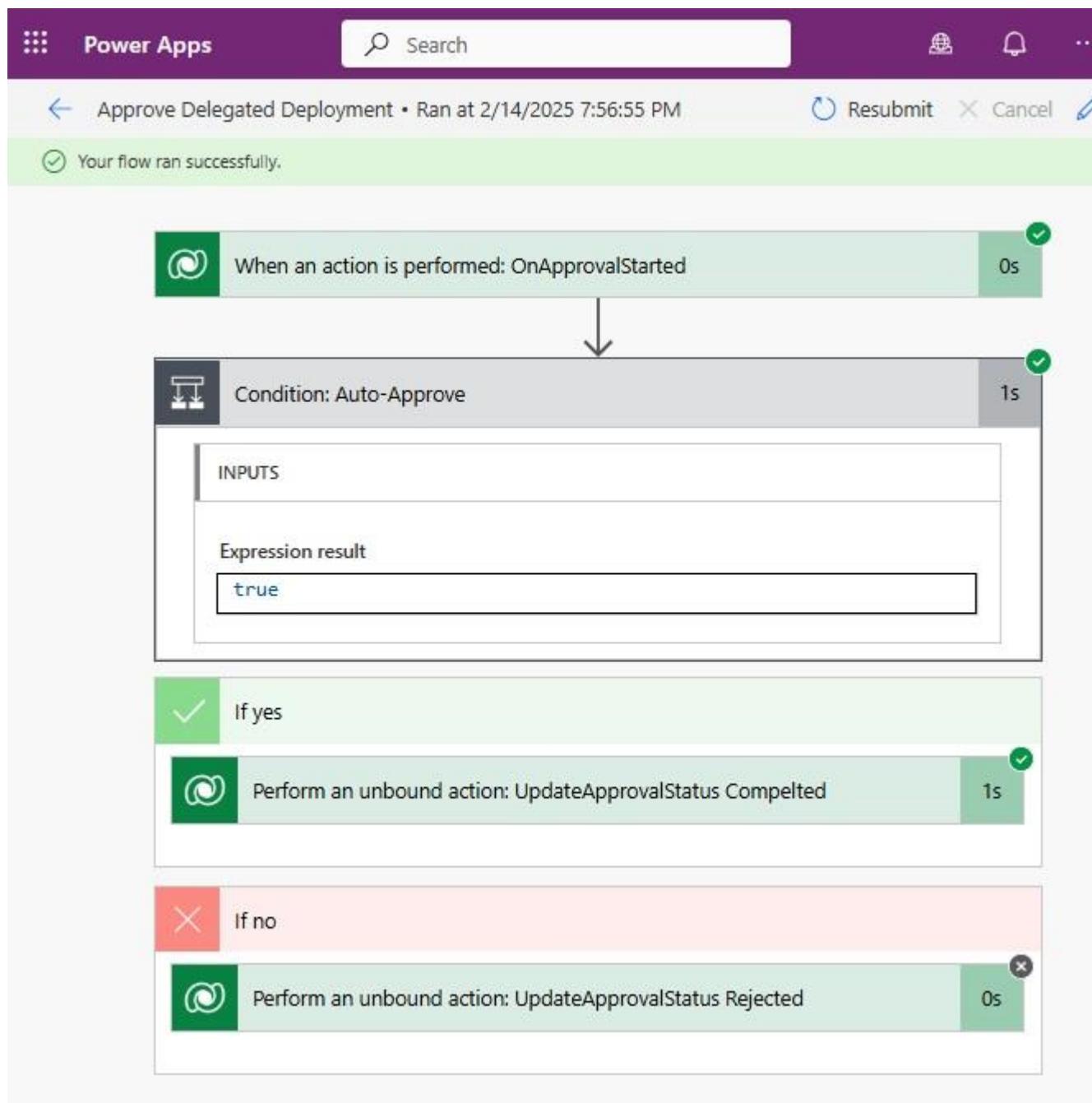
- Environment:** ALM Tutorial (Test)
- Last successfully installed version:** 1.0.0.645
- Last deployed:** Feb 14, 2025 6:30 PM (an hour ago)
- Status:** Currently exporting artifact version 1.0.0.646 (Progress bar)

A "Deploy here" button is located at the bottom right of this section.

Once completed, the deployment stage will show the new version number and last deployed date. Then go to the test environment to review the solution and ensure it deployed correctly.

The screenshot shows the Power Apps pipeline interface. At the top, there's a navigation bar with icons for Home, Search, and User profile. Below the bar, there are buttons for 'Create pipeline', 'Add stage', 'Delete pipeline', 'Refresh', and 'Manage pipelines'. On the left, a sidebar has icons for Pipeline, Details, Run history, and a gear icon. The main area is titled 'Pipeline' and shows 'ALM Tutorial Pipeline' selected. Under 'Development', it says 'Securely test and verify in isolation. After you've got everything working properly, it's time to deploy.' with a 'Learn more' link. It also shows 'Solution version 1.0.0.645'. To the right, the 'ALM Tutorial Deployment Stage (Test)' is shown, with a 'Go to this environment' button. It displays 'Last successfully installed version 1.0.0.646' and 'Last deployed Feb 14, 2025 7:57 PM (2 minutes ago)'. A note says 'Deployments may be pending until an associated background process succeeds. This process is managed by your admin.' with a 'Learn more' link. At the bottom right is a purple 'Deploy here' button.

Look at the latest run in the Approve Pipelines Deployment flow run history. It shows the auto-approval to the test deployment stage.



# Configure Pre-Deployment Stage Approvals

Power Platform pipelines can be enhanced to include deployment stage approvals. Although there are no-built-in pipeline approvals it is possible to create one using a custom Dataverse table and a Power Automate flow. Stage approvals are important because they help the environment owner control what gets deployed into their environment. An approvals process should be a part of any Power Platform Pipelines process.

## Create A Deployment Stage Approver Table

We want to allow a Power Platform pipelines administrator to add approvers to a deployment stage. To do this we will create a new Dataverse table. Go to the Pipelines Host environment and open the solutions menu.

The screenshot shows the 'Solutions' section of the Power Apps portal. The left sidebar includes links for Home, Create, Learn, Apps, AI hub, Solutions, Flows, Tables, More, and Power Platform. The main area displays a 'Deployment' card with a rocket icon and text about tracking solution deployments. Below this, a filter bar shows 'Unmanaged' selected. The 'Solutions' table lists three entries:

Display name	Name
MD Pipelines Extensions	MDPipelinesExte...
Common Data Services Def... <span style="border: 1px solid #ccc; padding: 2px;">Preferred solution</span>	Cra49cd
Default Solution	Default

Inside of a solution, add a new Dataverse table.

The screenshot shows the Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and environment and pipelines links. The left sidebar has icons for Home, Recent, My apps, and Data. The main area is titled 'Objects' with a search bar. A list of objects is displayed, including:

- Agent
- AI Model
- Analytics
- App
- Automation
- Card
- Dashboard
- Report
- Security
- Site
- Table

A message at the bottom right says 'didn't find anything to show here'.

Name the table Deployment Stage Approver and press the Save button.

The screenshot shows the Microsoft Power Apps interface for creating a new table. On the left, there's a sidebar with various icons and a search bar. The main area is titled 'New table' with the sub-instruction 'Use tables to hold and organize your data. Previous Learn more'. It has tabs for 'Properties' (selected) and 'Primary column'. The 'Display name \*' field contains 'Deployment Stage Approver'. The 'Plural name \*' field contains 'Deployment Stage Approvers'. There's a 'Description' section with an empty text area. A checkbox for 'Enable attachments (including notes and files)' is unchecked. An 'Advanced options' link is visible. At the bottom are 'Save' and 'Cancel' buttons.

Power Apps

Objects

Search

New table

Use tables to hold and organize your data. Previous [Learn more](#)

Properties Primary column

Display name \*

Deployment Stage Approver

Plural name \*

Deployment Stage Approvers

Description

Enable attachments (including notes and files) <sup>1</sup>

Advanced options

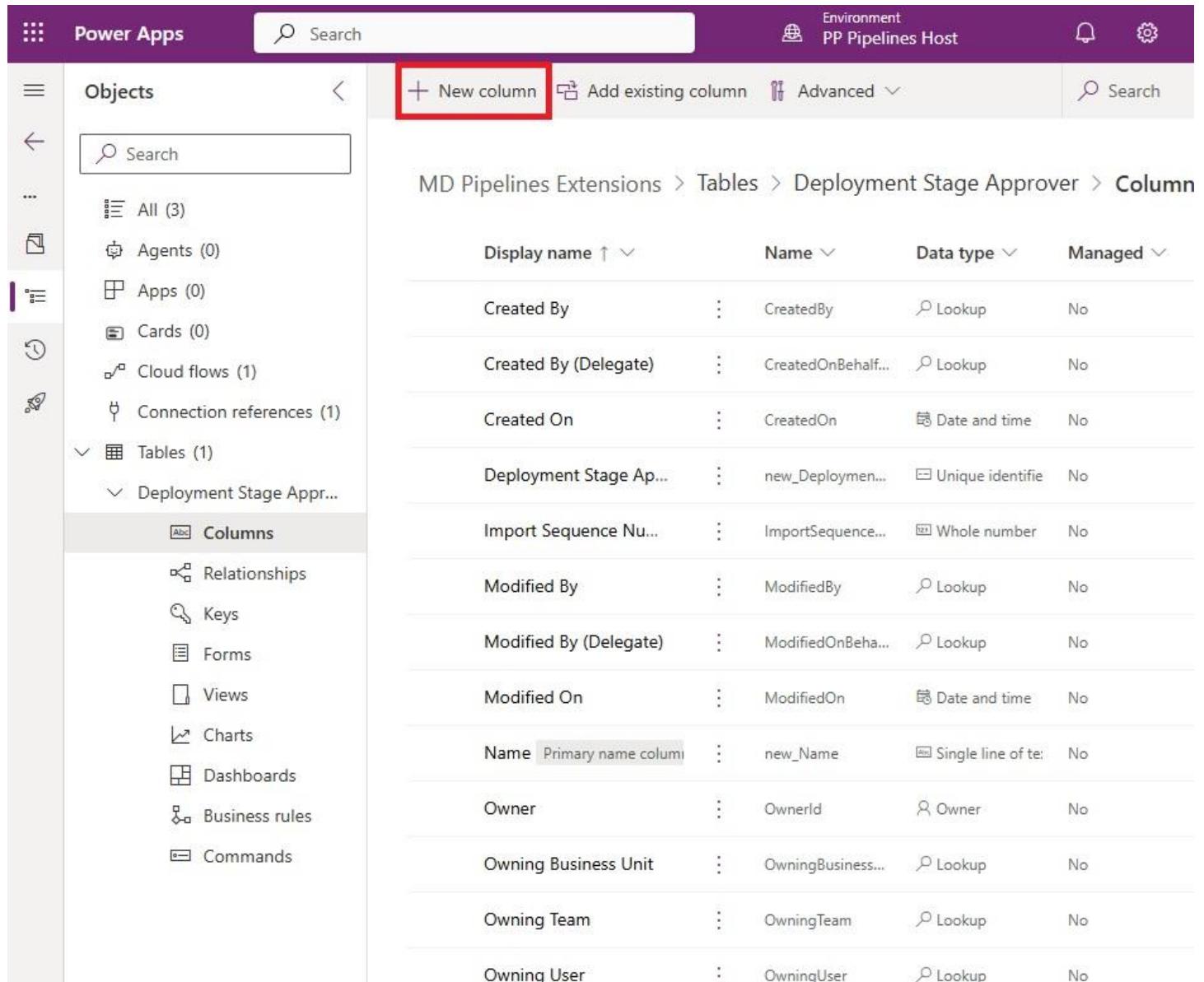
Save Cancel

Power Apps will redirect us to the Deployment Stage Approver table landing page.

The screenshot shows the Power Apps portal interface. The left sidebar contains navigation links for Objects, Agents, Apps, Cards, Cloud flows, Connection references, and Tables. Under Tables, 'Deployment Stage App...' is expanded, showing options for Columns, Relationships, Keys, Forms, Views, Charts, Dashboards, Business rules, and Commands. The main content area displays the 'Deployment Stage Approver' table properties. The table has one primary column, 'Name', which is 'Deployment Stage Approver'. The 'Description' is 'Last modified'. The 'Type' is 'Standard'. Below the table properties are sections for Schema, Data experiences, and Customizations. The Schema section includes 'Columns', 'Relationships', and 'Keys'. The Data experiences section includes 'Forms', 'Views', 'Charts', and 'Dashboards'. The Customizations section includes 'Business rules', 'Commands', and 'Row summary'. At the bottom, there is a section for 'Deployment Stage Approver columns and data' with a 'Create By' dropdown, a 'Created On' dropdown, and a '+13 more' button. A purple 'Edit' button is also present.

## Add Entra ID User & Deployment Stage Lookup Columns

A Power Platform pipelines administrator will configure approvals by adding a user and a deployment stage as a new record in the Deployment Stage Approvers table. Go to the columns page and select New column.



The screenshot shows the Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and environment information ('PP Pipelines Host'). On the left, a sidebar lists various objects: 'Objects' (All (3)), 'Agents (0)', 'Apps (0)', 'Cards (0)', 'Cloud flows (1)', 'Connection references (1)', and 'Tables (1)' which contains 'Deployment Stage Approver'. A sub-menu for 'Deployment Stage Approver' is open, showing options like 'Columns', 'Relationships', 'Keys', 'Forms', 'Views', 'Charts', 'Dashboards', 'Business rules', and 'Commands'. The main content area displays the 'Deployment Stage Approver' table's columns. A red box highlights the '+ New column' button in the top right of the table header. The table has columns for 'Display name' (sorted ascending), 'Name', 'Data type', and 'Managed'. The columns listed are: 'Created By' (CreatedBy, Lookup, No), 'Created By (Delegate)' (CreatedOnBehalfOf, Lookup, No), 'Created On' (CreatedOn, Date and time, No), 'Deployment Stage Ap...' (new\_Deploymen..., Unique identifie..., No), 'Import Sequence Nu...' (ImportSequence..., Whole number, No), 'Modified By' (ModifiedBy, Lookup, No), 'Modified By (Delegate)' (ModifiedOnBeha..., Lookup, No), 'Modified On' (ModifiedOn, Date and time, No), 'Name' (Primary name column, new\_Name, Single line of te..., No), 'Owner' (OwnerId, Owner, No), 'Owning Business Unit' (OwningBusiness..., Lookup, No), 'Owning Team' (OwningTeam, Lookup, No), and 'Owning User' (OwningUser, Lookup, No).

Display name ↑	Name	Data type	Managed
Created By	CreatedBy	Lookup	No
Created By (Delegate)	CreatedOnBehalf...	Lookup	No
Created On	CreatedOn	Date and time	No
Deployment Stage Ap...	new_Deploymen...	Unique identifie...	No
Import Sequence Nu...	ImportSequence...	Whole number	No
Modified By	ModifiedBy	Lookup	No
Modified By (Delegate)	ModifiedOnBeha...	Lookup	No
Modified On	ModifiedOn	Date and time	No
Name	new_Name	Single line of te...	No
Owner	OwnerId	Owner	No
Owning Business Unit	OwningBusiness...	Lookup	No
Owning Team	OwningTeam	Lookup	No
Owning User	OwningUser	Lookup	No

Name the column Entra ID user and select the data type Lookup. Make the field required. And choose the Microsoft Entra ID table. Then press the Save button.

New column

Previously called fields. [Learn more](#)

Display name \*

Description ⓘ

Data type \* ⓘ

Required ⓘ

Searchable ⓘ

Related table \*

Advanced options ▾

**Save** **Cancel**

Create a second column named Deployment Stage as a Lookup data type. Make it a required field and set the related table to Deployment Stage. Press the Save button once finished.

New column

Previously called fields. [Learn more](#)

Display name \*

Description ⓘ

Data type \* ⓘ

Required ⓘ

Searchable ⓘ

Related table \*

Advanced options ▾

**Save** **Cancel**

## Setup The Deployment Stage Approver Main Form

We want the Power Platform pipelines approval to be configurable within the Deployment Pipelines Configuration app. Therefore we will need to setup a the table's main form. Switch to the Deployment Stage Approver table's Forms page and open the main form.

The screenshot shows the Power Apps environment with the following details:

- Header:** Power Apps, Search bar, Environment: PP Pipelines Host, Notifications icon.
- Left Sidebar:** Objects (selected), Search bar, navigation icons for Home, Recent, My apps, and Settings.
- Current Path:** ... > Tables > Deployment Stage Approver > Forms
- Table Headers:** Name ↑, Form type, Status.
- Data Rows:**
  - Information (Quick View, On)
  - Information (Main, On)** (This row is highlighted with a red box.)
  - Information (Card, On)
- Bottom Navigation:** Back, Forward, Refresh, Home, Help.

Add the Deployment Stage field and the Entra ID User field to the form. Save and publish the form then exit.

The screenshot shows the Power Apps Form builder interface. The left sidebar contains a 'Table columns' section with various fields listed, including 'Created By', 'Modified By', and 'Deployment Stage'. The main area displays the 'New Deployment Stage Approver' form with the following fields:

Field	Type	Value
Name	Text	---
Owner	User	Matthew Devaney
Deployment Stage	Text	---
Entra ID User	Text	---

At the bottom of the screen, there are navigation icons and a status bar indicating the window is responsive at 1643 x 797 pixels.

## Configure The Test Deployment Stage Approver

We are now ready to configure the approver for a Power Platform pipelines deployment stage. Open the Deployment Pipeline Configuration app and browse to the Pipelines page. Select the test deployment stage record.

The screenshot shows the 'Deployment Pipeline Configuration' app interface. The left sidebar has a 'Pipelines' section selected. The main area displays the 'ALM Tutorial Pipeline' - Saved Deployment Pipeline. The 'Deployment stages' tab is active. The 'Active Deployment Stages' table lists the following:

<input type="checkbox"/>	Name	Deployment Pipeline
<input checked="" type="checkbox"/>	<a href="#">ALM Tutorial Deployment Stage (Test)</a>	<a href="#">ALM Tutorial Pipeline</a>
<input type="checkbox"/>	<a href="#">ALM Tutorial Deployment Stage (Prod)</a>	<a href="#">ALM Tutorial Pipeline</a>

Rows: 2 Selected: 1

On the deployment stage form, check the pre-deployment step required checkbox.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. On the left, there's a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Deployments, and Settings. The main area is titled 'ALM Tutorial Deployment Stage (Test) - Saved' and shows a 'General' tab selected. The form fields include:

- Name: \* ALM Tutorial Deployment Stage (Test)
- Owner: \* SAO Service Account (Offline) (with a search icon)
- Description: ---
- Deployment Pipeline: \* ALM Tutorial Pipeline (with a search icon)
- Previous Deployment Stage: --- (with a search icon)
- Target Deployment Environment ID: \* ALM Tutorial (Test) (with a search icon)
- Pre-Export Step Required:
- Pre-Deployment Step Required:

Then go to the related tab and select Deployment Stage Approvers.

The screenshot shows the Power Apps Deployment Pipeline Configuration interface. The left sidebar includes links for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings. The main area displays the 'ALM Tutorial Deployment Stage (Test)' configuration. The top navigation bar has options like Save, Save & Close, New, Deactivate, Delete, and a search bar. The 'General' tab is selected. On the right, there's a 'Related - Common' section with fields for Name (ALM Tut), Owner (Matt), and Description. Below this, a list of deployment stage runs is shown, each with an 'AT' status indicator and a timestamp. The bottom right corner shows '1 - 3 of 3'.

Run ID	Status	Timestamp	Description
ALM Tutorial Deployment Stage (Test)_Curr	AT	2/15/2025 1:55 AM	CurrencyExchangeALMSample
ALM Tutorial Deployment Stage (Test)_Curr	AT	2/15/2025 12:27 AM	CurrencyExchangeALMSample
ALM Tutorial Deployment Stage (Test)_Curr	AT	2/15/2025 12:25 AM	

Press the New Deployment Stage Approvers button.

Power Apps | Deployment Pipeline Configuration

Home Recent Pinned Overview Pipelines Dashboard Pipeline Setup Environments Pipelines Deployments Run history Solution artifacts Settings Security Teams Advanced Settings

← Save Save & Close + New : ALM Tutorial Deployment Stage (Test) - Saved Deployment Stage General Deployment Stage Approvers Related Show Chart + New Deployment Stag... Refresh Flow Filter by key Deployment Stage Approver Associa... Name ↑ Created On

We didn't find anything to show here



Fill-in the Deployment Stage Approver form with the Test Deployment Stage and the Entra ID User who will be the approver.

The screenshot shows the 'Deployment Pipeline Configuration' screen in Power Apps. On the left, there's a navigation sidebar with sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings. The main area is titled 'New Deployment Stage Approver - Unsaved'. It has tabs for General, Approval, and Approval History, with 'General' selected. The form fields are:

Name	*	ALM Tutorial Deployment Stage (Test) - Matthew Devaney
Owner	*	MD <a href="#">Matthew Devaney (Offline)</a> <span style="float: right;">🔍</span>
Deployment Stage	*	<a href="#">ALM Tutorial Deployment Stage (Test)</a> <span style="float: right;">🔍</span>
Entra ID User	*	<a href="#">Matthew Devaney</a> <span style="float: right;">🔍</span>

## Assign The Production Deployment Stage Approver

The deployment to the production stage will also require an approver. Select the production deployment stage record.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. The left sidebar has a 'Pipelines' section selected. The main area displays the 'ALM Tutorial Pipeline' - Saved Deployment Pipeline. The 'Deployment stages' tab is active. The 'Active Deployment Stages' list shows two stages: 'ALM Tutorial Deployment Stage (Test)' and 'ALM Tutorial Deployment Stage (Prod)'. The 'Prod' stage is selected, indicated by a checked checkbox. The list includes columns for Name, Deployment Pipeline, and a 'Edit' button. At the bottom, it shows 'Rows: 2 Selected: 1'.

Name	Deployment Pipeline
ALM Tutorial Deployment Stage (Test)	ALM Tutorial Pipeline
<b>ALM Tutorial Deployment Stage (Prod)</b>	<b>ALM Tutorial Pipeline</b>

Rows: 2 Selected: 1

Then on the main form check the pre-deployment stage required checkbox.

The screenshot shows the 'Deployment Pipeline Configuration' screen in the Power Apps portal. The left sidebar contains navigation links for Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup (Environments, Pipelines), Deployments (Run history, Solution artifacts), and Settings (Security Teams, Advanced Settings). The main area displays the details for the 'ALM Tutorial Deployment Stage (Prod)' deployment stage. The 'General' tab is selected. The configuration includes:

- Name: ALM Tutorial Deployment Stage (Prod)
- Owner: Service Account (Offline)
- Description: ---
- Deployment Pipeline: ALM Tutorial Pipeline
- Previous Deployment Stage: ALM Tutorial Deployment Stage (Test)
- Target Deployment Environment ID: ALM Tutorial (Prod)
- Pre-Export Step Required:
- Pre-Deployment Step Required:

Next, open the related tab and choose Deployment Stage Approvers from the dropdown menu.

The screenshot shows the Microsoft Power Apps interface for 'Deployment Pipeline Configuration'. The left sidebar has sections like Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, and Solution artifacts. Under Settings, there are Security Teams and Advanced Settings. The main area shows a deployment stage named 'ALM Tutorial Deployment Stage (Prod) - Saved'. The 'General' tab is selected. A 'Related' tab is open, showing 'Related - Common' and 'Related - Process Sessions' sections. In the 'Related - Common' section, 'Deployment Stage Approvers' is highlighted. On the right, a list of approvers is displayed, showing 'AT' (Matt) as the current approver, with a timestamp of 2/15/2025 12:30 AM and the note 'CurrencyExchangeALMSample'. A 'Select all' checkbox is also present.

Power Apps | Deployment Pipeline Configuration | Search

Home | Recent | Pinned | Overview | Pipelines Dashboard | Pipeline Setup | Environments | Pipelines | Deployments | Run history | Solution artifacts | Security Teams | Advanced Settings

ALM Tutorial Deployment Stage (Prod) - Saved

Deployment Stage

General Related

Related - Common

Name \* Deployment Stages  
Owner \* Deployment Stage Runs  
Deployment Stage Approvers  
Description Deployment Stage Approvers

Related - Process Sessions

Description Background Processes

Name \* ALM Tutorial Deployment Stage (Prod)

Owner \* Service Account (Offline)

Description ---

Deployment Pipeline \* Deployment Pipeline

Select all

AT ALM Tutorial Deployment Stage (Prod)\_Current 2/15/2025 12:30 AM CurrencyExchangeALMSample

1 - 1 of 1

Press the New Deployment Stage Approver button.

Screenshot of the Microsoft Power Apps Deployment Pipeline Configuration page for the "ALM Tutorial Deployment Stage (Prod)".

The left sidebar shows navigation categories: Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Settings, Security Teams, and Advanced Settings.

The main content area displays the "Deployment Stage Approvers" tab under the "Deployment Stage" section. It includes buttons for Show Chart, New Deployment Stag..., Refresh, Flow, and Run.

A message "We didn't find anything to show here" is displayed next to a grid icon.

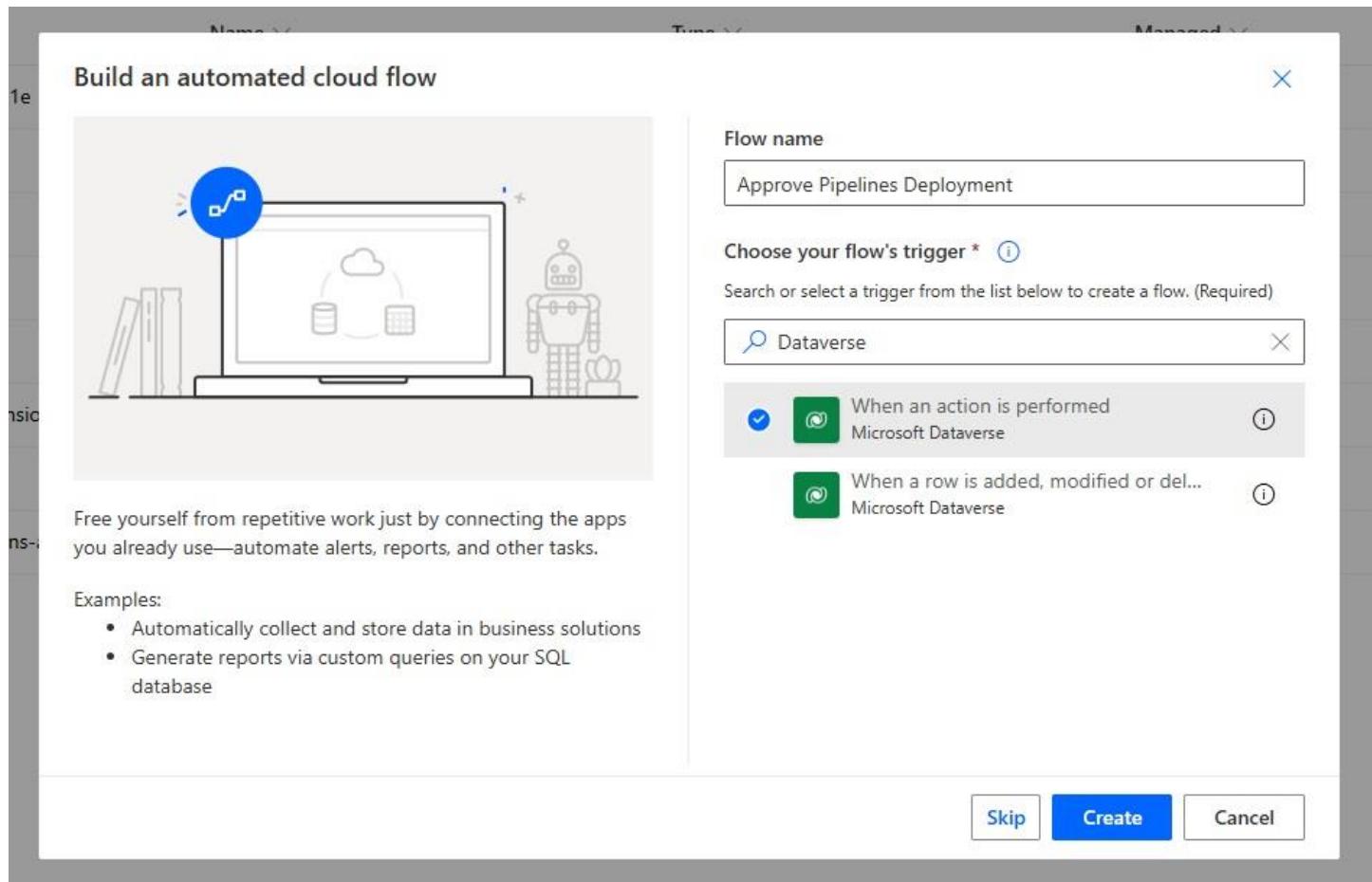
Assign the approver to the Entra ID User field and select the production deployment stage.

The screenshot shows the 'Deployment Pipeline Configuration' page in the Power Apps portal. On the left, a navigation sidebar lists various sections: Home, Recent, Pinned, Overview, Pipelines Dashboard, Pipeline Setup, Environments, Pipelines, Deployments, Run history, Solution artifacts, Security Teams, and Advanced Settings. The main content area is titled 'New Deployment Stage Approver - Unsaved'. It has a 'General' tab selected. The form contains the following fields:

Name	* ALM Tutorial Deployment Stage (Prod) - Mary Baker
Owner	*  Matthew Devaney (Offline) <span style="color: red;">×</span>
Deployment Stage	*  ALM Tutorial Deployment Stage (Prod) <span style="color: red;">×</span>
Entra ID User	*  Mary Baker <span style="color: red;">×</span>

## Create A Power Platform Pipelines Approval Cloud Flow

We will use Power Automate approvals to provide an interface for stage owners to approve and reject deployments. In the solution, create a new automated cloud flow with the name Approve Pipelines Deployment. Select the Dataverse trigger when an action is performed.



Set the flow trigger category to Power Platform Pipelines and use the action name OnApprovalStarted

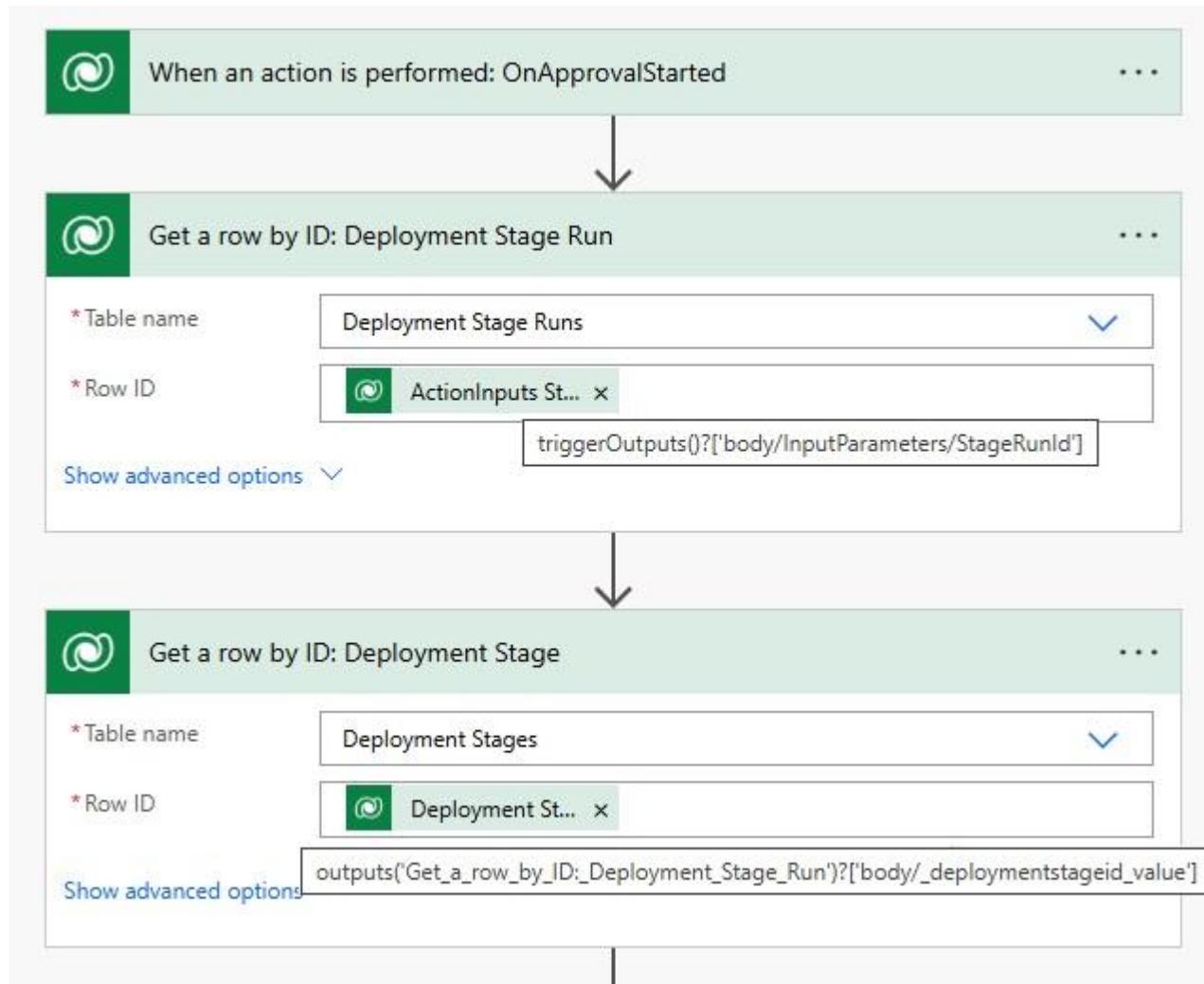
The screenshot shows a configuration interface for a Microsoft Power Automate flow. At the top, there is a green header bar with a circular icon containing a '@' symbol, followed by the text "When an action is performed: OnPreDeploymentStarted" and three vertical dots on the right. Below this, there are four input fields with dropdown arrows on the right:

- \* Catalog: Microsoft Dataverse Common
- \* Category: Power Platform Pipelines
- \* Table name: (none)
- \* Action name: OnPreDeploymentStarted

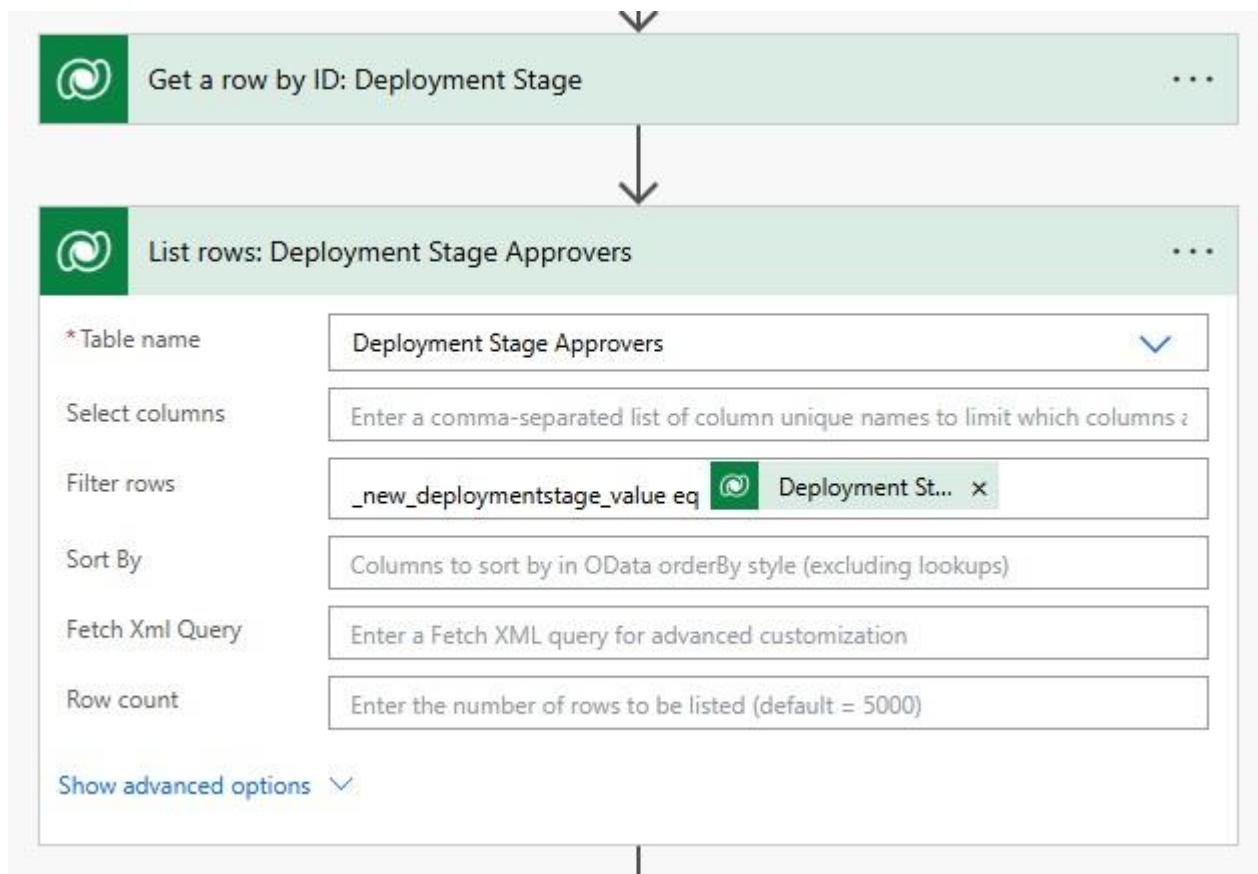
## Get The Deployment Stage Approvers

After the cloud flow is triggered we want to get the list of deployment stage approvers so we can send them an approval request. Determining the approvers requires multiple flow actions.

Start by adding a Dataverse - Get A Row By ID Action and target the Deployment Stage Runs table. Use the StageRunId from the trigger as the Row ID. Then insert another Dataverse - Get A Row By ID action with the Deployment Stages table. Supply the deployment stage id from the previous action in the Row ID field.



There could be multiple deployment stage approvers so the next step requires a Dataverse - List Rows action.



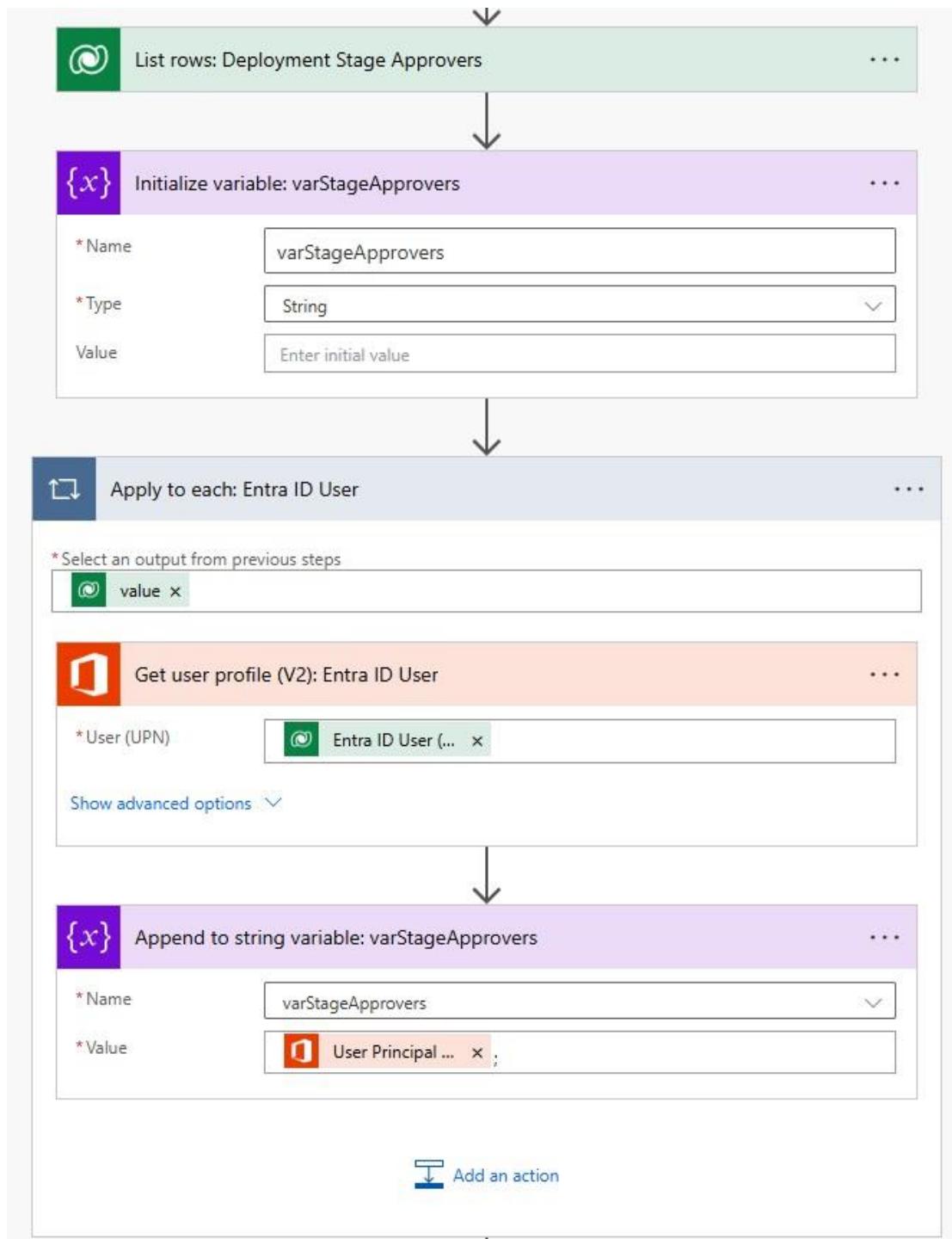
Write this code in the Filter Rows field to get all approvers with a matching deployment stage.

```
_new_deploymentstage_value eq @{outputs('Get_a_row_by_ID:_Deployment_Stage')?['body/deploymentstageid']}
```

## Obtain The Approvers User Principal Name

Now we have an array of deployment stage approvers. But what we really need is a semi-colon separated list of user principal names (emails) to use in an Approvals flow action.

Initialize a string variable named varStageApprovers. Then for each deployment stage approver, use the Office 365 Users - Get User Profile (V2) action and supply the Entra User ID to retrieve the user principal name. Append each user principal name to the string variable with a semi-colon at the end.



## Send An Deployment Stage Approval To Teams

We have everything we need to send an approval request to the deployment stage approvers. Add an Approvals - Start and wait for an approval action with the following values:

- Approval type - Approve/Reject - First to respond
- Title: Deployment Approval Request
- Assigned to: varStageApprovers
- Details: Please approve deployment of the <Artifact Name> solution to the <Deployment Stage Name> stage.

The screenshot shows a sequence of actions in a flow editor. At the top, there is a blue header bar with a downward arrow icon. Below it, the first action is 'Apply to each: Entra ID User'. A large downward arrow points from this action to the second action, 'Start and wait for an approval'. This second action has several configuration fields:

- \* Approval type: Approve/Reject - First to respond
- \* Title: Deployment Approval Request
- \* Assigned to: {x} varStageApprovers
- Details: Please approve deployment of the @ ActionOutputs ... solution to the @ ActionOutputs ... stage.
- Item link: Add a link to the item to approve
- Item link description: Describe the link to the item

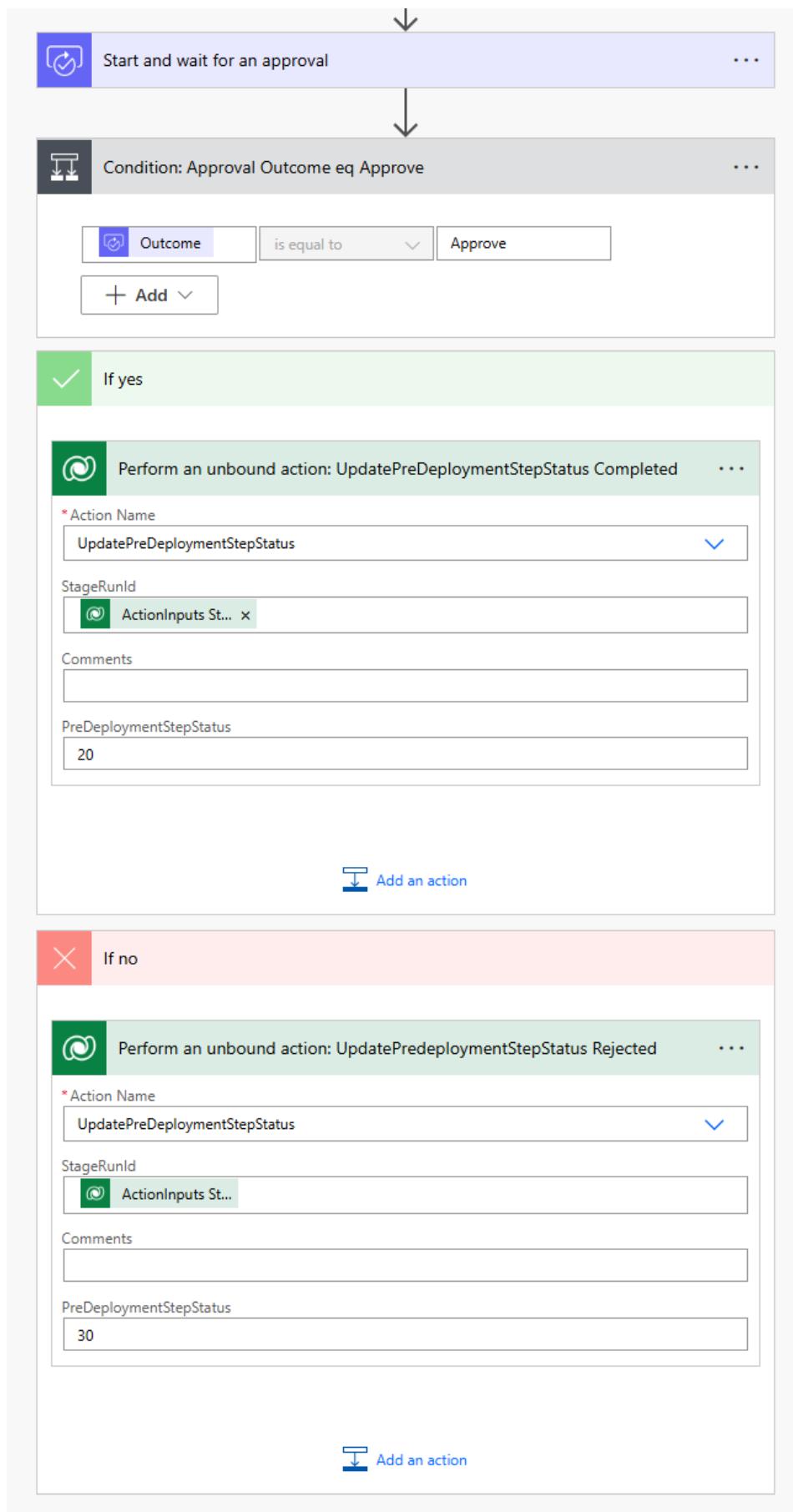
A 'Show advanced options' button is located at the bottom left of the action card.

## Approve Or Reject The Request For Deployment

After the approvals action, insert a condition action to check the outcome of the approval. If yes, perform an unbound action to approve deployment. Fill-in the action with the following values:

- Action Name - UpdateApprovalStatus
- Approval Properties - workflow()
- StageRunId - Action Inputs StageRunId
- Approval Status - 20 (approved)

In the no condition perform the same unbound action with an Approval Status of 30 (rejected).



## Deploy The Solution To The Test Deployment Stage

All that is left now is to run the pipeline make the sure the approvals we setup are working. Navigate to the sample solution in the development environment and open the pipelines menu. Press the deploy here button on the test stage.

The screenshot shows the Power Apps Pipelines interface. At the top, there's a navigation bar with icons for Home, Power Apps, Search, and Environment (set to ALM Tutorial (Dev)). Below the navigation is a toolbar with Create pipeline, Add stage, Delete pipeline, Refresh, and Manage pipelines buttons. On the left, a sidebar has icons for Home, Pipelines, Data, Pages, Flows, and Model-driven apps. The main area is titled 'Pipelines' and shows a message about sharing and lifecycle management. It highlights that target environments must be enabled as Managed Environments. A section for the 'ALM Tutorial Pipeline' is shown, with a dropdown set to 'ALM Tutorial Pipeline'. Below it is a 'Create new pipeline' button. Under 'Details', there are tabs for 'Run history' (selected) and 'Details'. The 'Development' stage is detailed with a description: 'Securely test and verify in isolation. After you've got everything working properly, it's time to deploy.' and a 'Solution version' of '1.0.0.644'. An arrow points from the Development stage to the 'Test' stage. The 'Test' stage is titled 'ALM Tutorial Deployment Stage (Test)' and includes a link to 'ALM Tutorial (Test)'. A 'Go to this environment' button is also present. At the bottom right of the stage card is a purple 'Deploy here' button with a rocket icon.

Behind the scenes the Power Automate flow is triggered and sends an approval request to the deployment stage approver.

The screenshot shows a Microsoft Approvals dialog box. At the top left is a blue icon with a circular arrow. To its right is the word "Approvals" and below it "Approval request details". In the top right corner is a white "X" button. Below the title, the word "Requested" is displayed in a light blue box. The main content area has a dark grey header with the text "Deployment Approval Request". Below this, a message reads: "Please approve deployment of the CurrencyExchangeALMSample solution to the ALM Tutorial Deployment Stage (Test) stage." Underneath the message, a section titled "Status: Requested" is expanded, showing a list of users involved in the request. The first user listed is Matthew Devaney, with a purple circular icon containing "MD" next to their name. The second user listed is also Matthew Devaney, with another purple circular icon containing "MD" next to their name. To the right of the second user's name is the timestamp "2/16/2025, 6:57:03 PM". Below this section is a "Comments" heading with a text input field containing the placeholder "Add your comments here". At the bottom of the dialog are three buttons: "More actions ▾", "Reject", and a large blue "Approve" button.

Approvals

Approval request details

Requested

## Deployment Approval Request

Please approve deployment of the CurrencyExchangeALMSample solution to the ALM Tutorial Deployment Stage (Test) stage.

▼ Status: Requested

Pending response  
Matthew Devaney

Requested by  
Matthew Devaney 2/16/2025, 6:57:03 PM

Comments

Add your comments here

More actions ▾

Reject

Approve

Once the approver presses the Approve button the pipeline continues with deployment.

The screenshot shows the Power Apps Pipeline interface. At the top, there's a navigation bar with icons for Home, Power Apps, Search, Environment (ALM Tutorial (Dev)), Notifications, and Settings. Below the navigation bar, there's a left sidebar with icons for Home, Pipelines, Data, Flows, Logic apps, and Power Automate. The main area is titled "Pipelines". A text block says: "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 healthy application lifecycle management by 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 ready, you'll move it to a more permanent place and share there. [Learn more](#)". Below this, a section titled "Target Environments in pipelines must be enabled as Managed Environments. [Learn more](#)" is shown. The "Pipeline" section has a dropdown menu set to "ALM Tutorial Pipeline" and a "Create new pipeline" button. Below the pipeline section, there are "Details" and "Run history" tabs, with "Details" being the active tab. On the left, a vertical box labeled "Development" contains the text: "Securely test and verify in isolation. After you've got everything working properly, it's time to deploy. [Learn more](#)". It also shows the "Solution version" as "1.0.0.645". An orange arrow points from this box to the "Test" environment box on the right. The "Test" environment box is titled "ALM Tutorial Deployment Stage (Test)" and includes a "Go to this environment" link. It shows the "Last successfully installed version" as "1.0.0.645" and the "Last deployed" time as "Feb 12, 2025 6:47 PM (an hour ago)". At the bottom right of the "Test" box is a "Deploy here" button.

# Setup Dataverse Git Integration For A Solution

A Power Platform solution can be connected to a Git repo for tracking and management of changes to code. This is known as source control. To do this, a Git repo must be setup inside an Azure DevOps project. Then you can choose whether to connect individual solutions or the entire environment to source control

## Initialize A Git Repo In Azure DevOps

Go to Azure DevOps and open a project where you want the repo to be located. Then go to the Repos page and Initialize a new main branch with a readme.

The screenshot shows the Azure DevOps interface for initializing a new repository. On the left, the sidebar is visible with options like Overview, Boards, Repos (selected), Files, Commits, Pushes, Branches, Tags, Pull requests, Advanced Security, Pipelines, Test Plans, and Artifacts. The main content area is titled "ALM Tutorial Project is empty. Add some code!" and contains sections for cloning the repository via HTTPS or SSH, generating Git credentials, and pushing from the command line. At the bottom, there's a section for importing a repository and a prominent "Initialize" button, which is highlighted with a red box. The "Initialize" button has two dropdown menus: "Add a README" (with a checked checkbox) and "Add a .gitignore: None".

The main branch of the repo will appear with a readme file inside of it.

Azure DevOps interface showing the ALM Tutorial Project repository. The main branch is 'main' (9 commits). A single file, 'README.md', is listed with a recent commit message: '8624d6b2 Added READ...'. The interface includes a sidebar with various icons and a navigation bar at the top.

ALM Tutorial Project

main

README.md

Set up build

Clone

Contents History

Name ↑ Last change Commits

README.md Just now 8624d6b2 Added READ...

## Introduction

TODO: Give a short introduction of your project. Let this section explain the objectives or the motivation behind this project.

## Getting Started

TODO: Guide users through getting your code up and running on their own system. In this section you can talk about:

1. Installation process
2. Software dependencies
3. Latest releases
4. API references

## Build and Test

TODO: Describe and show how to build your code and run the tests.

## Connect The Environment To A Git Repo

We want to connect the development environment to our git repo. Go to the development environment and open the Solutions page. Select Connect to Git from the top-menu bar.

The screenshot shows the Microsoft Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and the environment name 'ALM Tutorial (Dev)'. On the far right of the top bar is a bell icon. Below the top bar, there's a horizontal menu with options: '+ New solution', 'Import solution', 'Open AppSource', and three dots (...). The main content area is titled 'Solutions' and features a 'Deployment' card with a lightbulb icon. The card describes tracking all solution deployments in one place, mentioning active status, failed items, and improvement recommendations. Below the card are three filter buttons: 'Unmanaged' (highlighted in purple), 'Managed', and 'All'. The main list of solutions is displayed in a table format:

Display name	Name	Create
Currency Exchange ALM Sample	CurrencyExchang...	1 day
Common Data Services Def...	Preferred solution	1 week
Default Solution	Default	1 week

A vertical sidebar on the left contains links: Home, Create, Learn, Apps, AI hub, Solutions (which is selected and highlighted in purple), Flows, Tables, More, and Power Platform. The 'Solutions' link is underlined with a purple bar.

Fill-in the Connect to Git menu with the following values the press the Next button.

- Connection Type – Solution
- Organization – the Azure DevOps organization where your repo is located
- Project – the Azure DevOps project where your repo is located
- Repository – the name of the repository
- Root Git Folder – “src” (which means source)

The screenshot shows the 'Power Apps' interface on the left with a purple header bar. On the right, a modal window titled 'Connect to Git' is open. The modal contains the following fields:

- Connection type \***: A radio button labeled 'Solution' is selected.
- Organization \***: A dropdown menu shows 'md-alm-tutorial'.
- Project \***: A dropdown menu shows 'ALM Tutorial Project'.
- Repository \***: A dropdown menu shows 'ALM Tutorial Project'.
- Root Git folder \***: An input field contains 'src'.

Below the 'Root Git folder' field, a note states: "Enter an existing folder name from your selected Git repository or create a new one. This will be used". At the bottom of the modal are two buttons: 'Next' (in a purple bar) and 'Cancel'.

## Select A Solution To Connect To Git

On the next screen we must select a solution to connect to git and select a branch and folder. Use the following values and press the Connect button.

- Solution – YourSolutionName
- Branch – main
- Git folder – src/YourSolutionName

The screenshot shows the 'Power Apps' interface with a purple header bar. On the left, there's a sidebar with various icons and a 'Solutions' section. In the center, a modal window titled 'Connect to Git' is open. It displays the selected connection details: 'Connection type' is 'Solution', 'Organization' is 'md-alm-tutorial', 'Project' is 'ALM Tutorial Project', and 'Repository' is also 'ALM Tutorial Project'. Below these, there are three input fields with dropdown arrows:

- Solution \***: 'CurrencyExchangeALMSample'
- Branch \***: 'main'
- Git folder \***: 'src/CurrencyExchangeALMSample'

At the bottom of the modal are two buttons: 'Back' and a large purple 'Connect' button.

After a few moments the solution will become connected to Git.

The screenshot shows the Microsoft Power Apps Solutions page. At the top, there's a purple header bar with the "Power Apps" logo, a search bar, and user profile icons. Below the header, a green banner displays a success message: "CurrencyExchangeALMSample solution successfully connected to Git. View source control". The main area is titled "Solutions" and contains a "Deployment" card with a rocket icon and text about tracking deployments. Below the card are three filter buttons: "Unmanaged" (selected), "Managed", and "All". A table lists three solutions: "Currency Exchange ALM Sample" (created 1 day ago), "Common Data Services Def..." (Preferred solution, created 1 week ago), and "Default Solution" (created 1 week ago). The table has columns for "Display name", "Name", and "Created".

Display name	Name	Created
Currency Exchange ALM Sample	CurrencyExchang...	1 day ago
Common Data Services Def...	Cra49cd	1 week ago
Default Solution	Default	1 week ago

And the solution folder will appear in the repo. The folder will only include a readme file until we commit changes made to the solution.

The screenshot shows the Azure DevOps Files interface for the 'ALM Tutorial Project'. The left sidebar contains various icons for project management, code review, and deployment. The main area displays the repository structure under the 'main' branch. The 'src' folder contains two files: 'Readme.md' and 'README.md'. A table lists these files with their names, last change times, and commit hash links. Below the table, sections for 'Introduction' and 'Getting Started' are present, each with TODO instructions for project documentation.

ALM Tutorial Project

src

CurrencyExchangeALMSample

Readme.md

README.md

main

Set up build

Clone

Contents History

Name ↑	Last change	Commits
src	Just now	<a href="#">b2220416 Cr...</a>
README.md	1h ago	<a href="#">8624d6b2 A...</a>

## Introduction

TODO: Give a short introduction of your project. Let this section explain the objectives or the motivation behind this project.

## Getting Started

TODO: Guide users through getting your code up and running on their own system. In this section you can talk about:

1. Installation process
2. Software dependencies
3. Latest releases
4. API references

## Connect Another Solution To Git

Our Dataverse Git integration was setup with the connection type Solution. This means we must connect individual solutions one-by-one. To connect another solution, open the solution and go to the source control page. Then press the Connect to Git button and go through the wizard steps once again.

The screenshot shows the Power Apps interface with a purple header bar. On the left is a vertical toolbar with various icons. The main area has a search bar at the top. Below it, a button labeled "Connect to Git" is visible. The central content area is titled "Source control" with a "PREVIEW" badge. It contains text about committing changes to Git and collaborating across environments, followed by a "Learn more" link. Below this is a colorful icon depicting a folder, a file, and a plus sign. A section titled "Connect to Git" follows, with a sub-section explaining backup and version control via Microsoft Azure DevOps. A prominent "Connect now" button is at the bottom of this section.

When ready, commit your changes to Git. Check for updates to pull others' changes into this environment. To collaborate across environments, connect them to the same Git location. [Learn more](#).

**Connect to Git**

Backup and version control your work by connecting to a Git repository via Microsoft Azure DevOps.

**Connect now**

# Commit Code Changes To A Git Repository

The Dataverse Git Integration can be used to commit changes to a git repository. A git commit takes a snapshot of the project in its current state and saves it into the repo. It includes a message from the developer explaining the updates made in the commit. This makes it possible to revert back to that version if needed later on.

## Commit Code Changes To A Git Repository

A git commit takes a snapshot of the project in its current state and saves it into source control. We want to use a git commit to perform the initial save of the solution to the repo. Open the solution we will save to the repo.

The screenshot shows the Microsoft Power Apps portal interface. The top navigation bar includes 'Power Apps', a search bar, and the environment name 'ALM Tutorial (Dev)'. The left sidebar has links for 'Back to solutions', 'Currency Exchange ALM...', 'Overview', and 'Objects' (which is currently selected). Under 'Objects', there are links for 'History', 'Pipelines', 'Source control (Preview)', and a list of objects: 'Agents (0)', 'Apps (2)', 'Cards (0)', 'Cloud flows (1)', 'Connection references (2)', 'Environment variables (1)', 'Site maps (1)', and 'Tables (3)'. The main content area displays a list of objects for the 'Currency Exchange ALM Sample > All' category. The columns are 'Display name ↑', 'Name ↓', and three more columns for each item. The items listed are: Currency (md\_currency), Currency Exchange Ad... (md\_Currenc...), Currency Exchange Ad... (md\_Currenc...), Currency Transaction (md\_currency), Currency Transactions ... (md\_currency), Email Notifications Tar... (md\_EmailNc), Exchange Rate (md\_exchang...), Microsoft Dataverse C... (md\_sharedco...), Office 365 Outlook (md\_Office36...), and Send Currency Rates S... (Send Curren...).

Then open the source control menu for the solution. There will be a list of changes to be made to the current branch. When ready, press the commit button to create a save point.

The screenshot shows the Power Apps Source Control page for the 'Currency Exchange ALM...' environment. The 'Commit' button in the top navigation bar is highlighted with a red box. The main area displays the 'Source control (Preview)' section, which includes a brief description of committing changes to Git, the current branch (main), and a list of changes (134). A table lists the changes, including objects like a solution, connection references, environment variables, and a saved query, along with their names and Git operations (Create).

Display name	Name	Object	Git Operation
CurrencyExchangeALMSample	CurrencyExchangeALMSample	Solution	Create
Microsoft Dataverse CurrencyE...	Microsoft Dataverse CurrencyExcha...	Connection Reference	Create
Office 365 Outlook	Office 365 Outlook	Connection Reference	Create
md_EmailNotificationsTarget	md_EmailNotificationsTarget	Environment Variable Defi...	Create
md_EmailNotificationsTarget	md_EmailNotificationsTarget	Environment Variable Value	Create
Exchange Rate Lookup View	Exchange Rate Lookup View	Saved Query	Create

## Write A Commit Message For The Solution

All git commits must have a comment. They will help us to understand what changes were made for a specific commit when we need to know in the future. For the first git commit write the message initial commit. Then press the commit button.



## View The Unpacked Solution In Source Control

Wait a few minutes for the git commit to complete and the Commit Successful banner to appear.

The screenshot shows the Power Apps interface with the 'Source control (Preview)' tab selected. A green banner at the top right indicates a 'Commit Successful' message with the hash '07e1bc57'. Below the banner, the 'Source control' section is visible, showing the 'main' branch and three tabs: 'Changes (0)', 'Updates (0)', and 'Conflicts (0)'. A note below the tabs states: 'Items in this list are changes in your environment that need to be committed to this branch.' A large circular icon with a folder symbol is centered on the page.

Once the git commit is completed we can see the unpacked solution in source control. Browse the unpacked solution to learn more about each components structure.

The screenshot shows the Azure DevOps 'Files' interface with the path 'ALM Tutorial Project / solution.yml'. The left sidebar shows a tree view of the project structure under 'src'. The right pane displays the 'solution.yml' file content, which is a JSON-like configuration file. The 'solution' manifest includes details like version, language code, descriptions, and publisher information.

```
1 ImportExportXml:
2   '@version': 9.2.24123.252
3   '@SolutionPackageVersion': 9.2
4   '@languagecode': 1033
5   '@generatedBy': CrmLive
6   '@xmlns:xsi': http://www.w3.org/2001/XMLSchema-instance
7 SolutionManifest:
8   UniqueName: CurrencyExchangeALMSample
9   LocalizedNames:
10    LocalizedName:
11      '@description': Currency Exchange ALM Sample
12      '@languagecode': 1033
13 Descriptions:
14 Version: 1.0.0.645
15 Managed: 0
16 Publisher:
17   UniqueName: MatthewDevaney
18
```