Center of Excellence Starter Kit

The Center of Excellence (CoE) starter kit is a collection of components or tools that are designed to help get started with developing a strategy for adopting and supporting the Power Platform, with a focus on PowerApps and Flow.

Download the most updated assets from the **GitHub repository**.

The entire content package can be downloaded directly at **aka.ms/CoEStarterKitDownload**

10/22/19

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PowerApps and Flow have drastically matured as a platform since 2017. When it was first announced and gained popularity, there was more focus on understanding and adjusting to the nature of the product and how it could best be utilized on an individual level. Nowadays, PowerApps and Flow has achieved much more widespread adoption, and it's no longer a question of how or whether to use the platform—companies are now looking to understand how to scale adoption throughout their own organizations in a maintainable way to fully benefit from it. Since the Power Platform is a unique type of product, it might be unfamiliar to administrators who want to achieve the latter goal of creating a scalable strategy to adopt and support PowerApps and Flow in their organization.

Developing a Power Platform Center of Excellence (CoE) is a high-level goal, which means there is some focused entity that manages and supports the platform. We often hear that companies wish to develop their own CoE because having this entity provides evidence of a mature approach to utilizing PowerApps and Flow. There are multiple responsibilities of an established CoE, and it's up to each organization to figure out how they decide to define parameters for those responsibilities. These responsibilities can be segmented into the following categories.

Administration & Governance	**Nurture**	**Support & Operations**
Secure	Evangelism and training	Level 2/3 Support
Monitor	Technical guidance	Helpdesk awareness
Alert and Act	Standards and components	Application Lifecycle Management
		Infrastructure automations

The Center of Excellence should consider the way they choose to address each of these responsibilities. For example, what can your organization do to promote Evangelism and Training of PowerApps and Flow? How does the CoE adequately Monitor the activity in the organization? What are the security requirements for the organization, and how are they being implemented? Although these responsibilities might be broken up between different business units within the same organization, they need to be addressed and ideally documented.

The main reason for developing a CoE starter kit was to convey the concept of what a CoE might need to do, while giving an example of how to address some of these requirements. The kit is just a template that might not match every organization's requirements, so it's recommended that you extend the solution to fit your organization's requirements defined by your CoE.

PHILOSOPHY

A Power Platform Center of Excellence is a group in an organization that takes ownership of the Power Platform administration, nurturing and operations support. Part of devising a strategy for this requires interaction with the platform directly.

Follow this process when thinking about the medium in which a Center of Excellence strategy should be executed:

| Admin Center | Platform extensions | Templates and customizations |
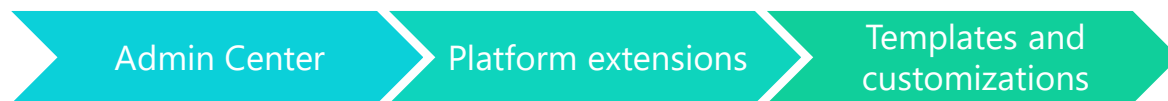
Admin Center The core, most important capabilities for admins and makers exist in the supported product portal features (e.g., PowerApps & Flow maker portals and admin portals). These features are designed to be the easiest and most robust way to complete tasks, and are fully supported by the engineering team:

- Environment and Environment Security management
- Data Loss Prevention (DLP) policy management
- Gateway management
- Admin Analytics (to view Capacity and activity on CDS, PowerApps and Flow)
- Data Integration management
- Support ticket requests

The admin centers include:

- Power Platform Admin Center
- PowerApps Admin Center
- Microsoft Flow Admin Center
- Dynamics 365 Admin Center

Platform extensions There are four connectors that provide access to the same APIs that the out-of-box product use. These have been exposed through the connectors library to give users the ability to create custom solutions to execute administrative or governance related tasks.

Admin connectors (Announcement):

- Power Platform for Admins
- PowerApps for Admins
- Flow Management
- PowerApps for App Makers

Coming back to the Contoso example, the Environment creation process can be automated using the admin connectors to create Environments with Flow, based on a request submitted to some database through an interface designed by the Center of Excellence team. This might take some more initial configuration to design and implement, but it will benefit the administrators because they would no

longer be required to spend time navigating to the admin portals and manually entering in the user's requested information. Since the solution is a custom implementation (e.g., a Flow), the solution itself is not supported by the product group but the correct functionality of the connectors and API will be.

This path also represents a feedback loop that can be used to help develop the product. First, administrators should look to the admin center that is provided from the product team. If the features in the admin center does not meet the need, they can use extensions to achieve their goals, and could potentially be additions to the product in the future if enough people need it. That paradigm can also be seen in the CoE starter kit itself—it may or may not have all the features you are looking for from the start, but we plan to iterate on the solution and can develop the templates in areas that are needed.

Templates & customizations The CoE starter kit falls into this category, which is a set of templates that use the admin connectors in combination with other connectors and formulas to achieve some specified goal. The nature of a template is to provide a good solution for that specific task, but it might not have the exact functionality that everyone needs and could require adjustment to achieve what others might be looking for. It is better to first explore the other two options before instantiating a template, unless it's clear that the template has everything you need from the start.

If our Contoso admins came across a template that implements a process for Environment creation, they will need to consider if the template matches the process they are looking for or if they're willing to adopt the solution it presents instead. If not, they might have to adjust the template to fit their process. Because not all templates are supported by the product group (e.g., found on the community channel), there's no guarantee that it will meet expectations defined. Therefore, it's recommended to first explore the more supported platform features before looking to templates.

PREREQUISITES

The following are prerequisites for installing the CoE starter kit as it comes in the solution.

1. **Admin account**
    a. Global tenant admin or Dynamics 365 service admin for access to all tenant resources through the PowerApps APIs.
    b. This solution will still work for Environment admins, but the view will be restricted.
    c. Dynamics 365 service admin is required for getting details on Model Driven Apps and Solution Aware Flows.
2. **PowerApps Premium License** (Per App, Per User or Dynamics 365 Online licenses)
    This is for using the CDS solution.
3. **Environment with a CDS instance**, where the user installing the solution has System Administrator security role.
4. **Download of the Center of Excellence Solution** and Power BI dashboard files to your device.

These are the requirements for using the solution.

1. PowerApps Premium License (Per App, Per User or Dynamics 365 Online licenses)

NOTE: INSTRUCTIONS TO GRANT ACCESS AND ASSIGN SECURITY ROLES CAN BE FOUND IN THE SETUP INSTRUCTIONS SECTION.

QUICK START GUIDE

Follow these steps to install the CoE Starter Kit in your tenant:

1. **Download the starter ki**t at https://aka.ms/CoEStarterKitDownload
2. **Select a non-production environment**, or create a new one that has a CDS instance provisioned (example name: "Center of Excellence Development")
3. **Locate and install the MANAGED solution** "PowerPlatformAdmin_x_x_x_xx_managed.zip"
4. **Create a new UNMANAGED solution**
5. **Choose components from the CoE starter kit to add to your new solution**, you decide which ones you want to use.
   We recommend adding the following components as a start:
   a. Flows
      i. Admin | Sync Template v2
      ii. Admin | Sync Template v2 (Apps)
      iii. Admin | Sync Template v2 (Flows)
      iv. Admin | Sync Template v2 (Connectors
      v. Admin | Sync Template v2 (Custom Connectors)
      vi. Admin | Sync Template v2 (Model Driven Apps)
   b. Entities
      i. PowerApps App
      ii. Flow
      iii. Environment
      iv. Connector
      v. Connection Reference
      vi. Maker
6. (Optional) **Extend the CoE starter kit** by making modifications to the solution components in the context of your new unmanaged solution.
7. **Deploy to test and production**. We recommend making modifications and installing updates pushed by our team to the solution in a development environment dedicated to this kit and hosting a production environment that has the real data. If data is being accessed and contributed by other end users, that would be a scenario to have a dev/test/prod environment.

NOTE: FULL INSTALLATION INSTRUCTIONS CAN BE FOUND IN THE INSTALLATION SECTION.

INSTALLING UPDATES

Periodically, the solution will receive updates to implement new features and fixes for bugs or optimizations. These updates will be announced on the GitHub repo and can be downloaded from there or the direct download at https://aka.ms/CoEStarterKitDownload

Install the updated managed by importing the latest version to the environment where you originally installed the solution.
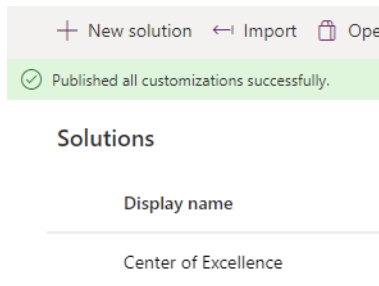
If you originally installed the UNMANAGED solution, uninstall that solution and re-install the MANAGED solution to correctly receive all updates.

SCOPE

The CoE starter kit is a set of tools to **help get started** with adopting the Power Platform. It contains a solution that **helps** manage resources and information about those resources.

The kit **does not represent the entire Center of Excellence**, because **managing a CoE requires more** than the tools alone; the Center of Excellence also requires people, communication, defined requirements and processes. The tools provided here are just a means to get to the end goal, but the Center of Excellence itself must be thoughtfully designed by each organization based on their needs and preferences.

COMPONENTS LIST

The following section describes each component included in the CoE starter kit. Some are included in the solution package (called 'Solution Aware'), and others live just outside of the package ('Non- Solution Aware').

WHERE THE DATA COMES FROM

The "Admin | Sync Template" Flows crawl through all the resources stored in the Power Platform and makes a copy of details in each resource (e.g., apps and flows) to the CDS (entity definitions are provided in this solution). All data displayed in most of the starter kit components are dependent on the data first being in CDS, which means that the sync template must be configured for everything else to work.

If we look back at the responsibilities of the Centre of Excellence, we can categorize the component based on these responsibilities:

Section	Scenario	Starter Kit component
Secure	DLP Strategy + Visibility	1. DLP Editor (Canvas App) 2. DLP Customizer (Canvas App)
Monitor	Catalog tenant resources with Flow Power BI	3. CDS Entities: Environments, Apps, Flows 4. Sync resources template (Flow series) 5. Sync audit logs (Flow) 6. Power BI Dashboard 7. Custom Connector for Office 365 Audit Logs 8. Power Platform Admin View (Model Driven App)
Alert & Action	App Audit example Process New App Owners Act based on unauthorized connectors Archive unused apps	9. Developer Compliance Center (Canvas App) 10. Flow – Compliance detail request 11. Business Process Flow for Auditing resources 12. App Catalog (Canvas App) 13. Set New App Owner (Canvas App) 14. App Archive and Clean Up (Flow) 15. Find and disable Flows that use unauthorized connectors (Flow) 16. Notify app creators of an unauthorized connector and share the app with admins (Flow)
Nurture	Encourage Adoption Provide best practices	14. Welcome Email (Flow) 15. Training in a Day Management (2 Canvas Apps) 16. Training in a Day Notifications (Flow) 17. Newsletter with Product Updates (Flow) 18. Template Catalog (Canvas App)

SOLUTION AWARE COMPONENTS

COMMON DATA SERVICE ENTITIES

These entities are defined in the solution package.

- **ENVIRONMENT**
  Represents the Environment object, which contains PowerApps, Flows and Connectors.
- **POWERAPPS APP**
  Represents a PowerApps App.
- **FLOW**
  Represents a Flow.
- **CONNECTOR**
  Represents a standard or custom connector.
- **CONNECTION REFERENCE**
  Represents a connection used in a PowerApp or Flow.
- **MAKER**
  Represents a user who has created a PowerApp, Flow, Custom Connector or Environment.

- **AUDIT LOG**
    Represents session details for PowerApps.
- **COE SETTINGS**
    Settings configurations live in a record here. This is an important entity to populate data into during the setup process, because it contains details that are important for configuring the branding and support aspect of the solution
- **INADAYATTENDEES**
    Represents attendees that have registered for a Training in a day course using the Training in a day registration canvas app
- **INADAYEVENT**
    Represents training events available and created through the Training in a day management canvas app

SECURITY ROLES

- **POWER PLATFORM ADMIN SR**
    Gives full access to create, read, write and delete operations on the custom entities.
- **POWER PLATFORM MAKER SR**
    Gives read and write access to the custom entities (e.g., Environments, Apps, etc).
- **POWER PLATFORM USER SR**
    Gives read only access to the resources in the custom entities.

FLOWS

List of Flows that come with the solution.

ADMIN | SYNC TEMPLATE V1

DEPRECATED
"Uber" sync Flow that syncs resource data from the admin connectors to the CDS resource entities.

ADMIN | SYNC AUDIT LOGS

Uses the Office 365 Audit logs custom connector to write audit log data into the CDS Audit Log entity. This will generate a view of usage for PowerApps. This Flow also comes in a separate package outside of the solution when you download the CoE Starter Kit because it's easier to import the package separately with the custom connector. Follow the instructions in the audit log section to learn more.

ADMIN | SYNC TEMPLATE V2

Runs on a schedule and updates environments. This and subsequent 'Sync Template V2' Flows are an optimized version of the Sync Template V1, split out into separate Flows to make it easier to read and modify.

ADMIN | SYNC TEMPLATE V2 (APPS)

runs when an environment is created/modified and gets App information, also updates record if Apps are deleted.

ADMIN | SYNC TEMPLATE V2 (FLOWS)

runs when an environment is created/modified and gets Flow information, also updates record if Flows are deleted.

ADMIN | SYNC TEMPLATE V2 (CONNECTORS)

runs once daily on a schedule and gets Connector information.

ADMIN | SYNC TEMPLATE V2 (CUSTOM CONNECTOR)

runs when an environment is created/modified and gets Custom Connector information.

ADMIN | WELCOME EMAIL

Sends an email to a user who creates a PowerApp, Flow, Custom Connector or Environment. This Flow gets triggered when a new record is created in the Maker table.


SCREENSHOT: WELCOME EMAIL

ADMIN | COMPLIANCE DETAIL REQUEST

Sends an email to users who have PowerApps apps in the tenant who are not compliant with specific thresholds:

- The app is shared with > 20 Users or at least 1 group and the business justification details have not been provided.
- The app has business justification details provided but has not been published in 60 days or is missing a description.
- The app has business justification details provided and has indicated high business impact, and has not submitted a mitigation plan to the attachments field.
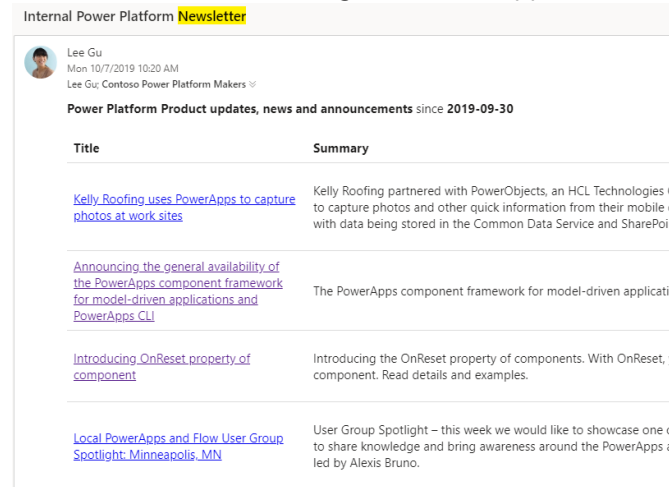
The Flow has a template you can customize in the email sent out by the Flow, but will otherwise look like the following:
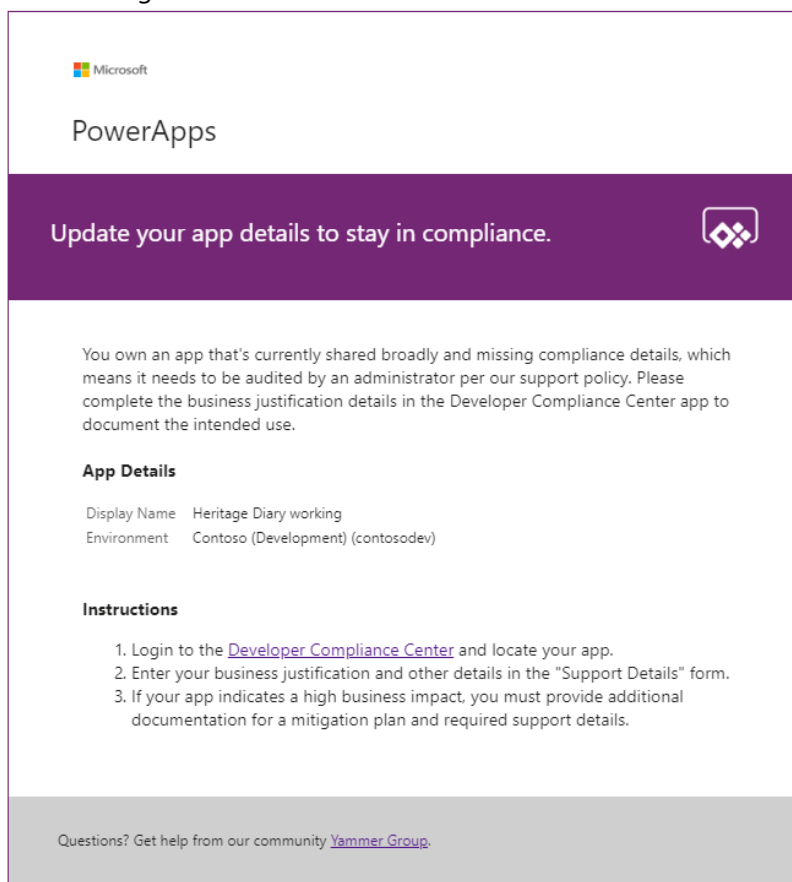
SCREENSHOT: COMPLIANCE REQUEST EMAIL

ADMIN | NEWSLETTER WITH PRODUCT UPDATES

Sends a weekly email with a summary of product updates, consisting of blog posts from the PowerApps / Flow / Power BI Product blogs and PowerApps Community blog

SCREENSHOT: NEWSLETTER WITH PRODUCT UPDATES

ADMIN | APP ARCHIVE AND CLEAN UP

Checks for apps that have not been modified in the last six months (configurable) and aks the app owner (via Flow Approvals) if the app can be archived.

Pre-Requisite: Create a SharePoint document library to store the archived apps and configure this in Flow

Update: Update the Flow based on the archive action, e.g. delete the app from the environment, or remove app permissions.

ADMIN | FIND AND DISABLE FLOWS THAT LEVERAGE UNAUTHORISED CONNECTORS

Checks if any Flows are using unauthorized connectors, notifies the Flow maker and disables the Flow. The admin will receive a report.

Update: Specify what connectors are unauthorized.

ADMIN | NOTIFY APP CREATORS OF AN UN-AUTHORIZED CONNECTOR AND GIVE ACCESS TO THE ADMINISTRATORS

Checks for apps that leverage unauthorized connectors; notifies the app maker and shares the app with the admin security group.

Update: Specify what connectors are unauthorized.

TRAINING IN A DAY | FEEDBACK REMINDER

Sends an email to attendees of a training in a day event on the day and requests feedback

TRAINING IN A DAY | REGISTRATION CONFIRMATION

Sends an email to an attendee when they register for a training in a day event

TRAINING IN A DAY | REMINDER 3 DAYS PRIOR TO EVENT

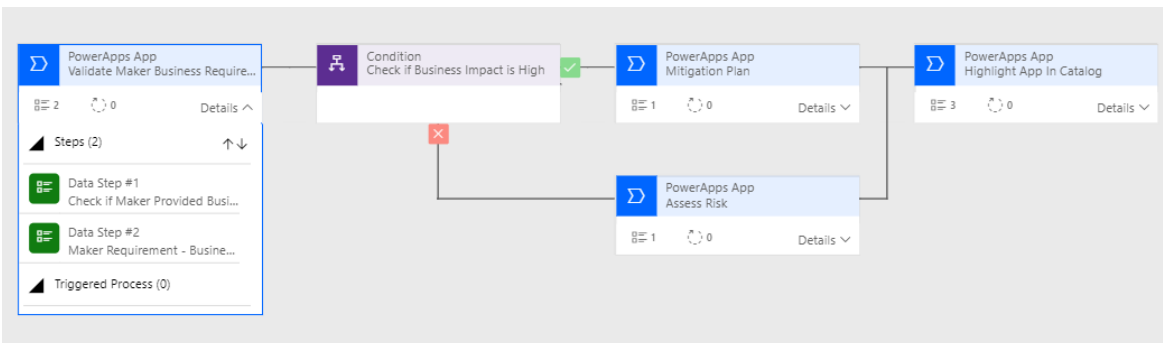Sends an email to an attendee of a training in a day event 3 days prior to the event
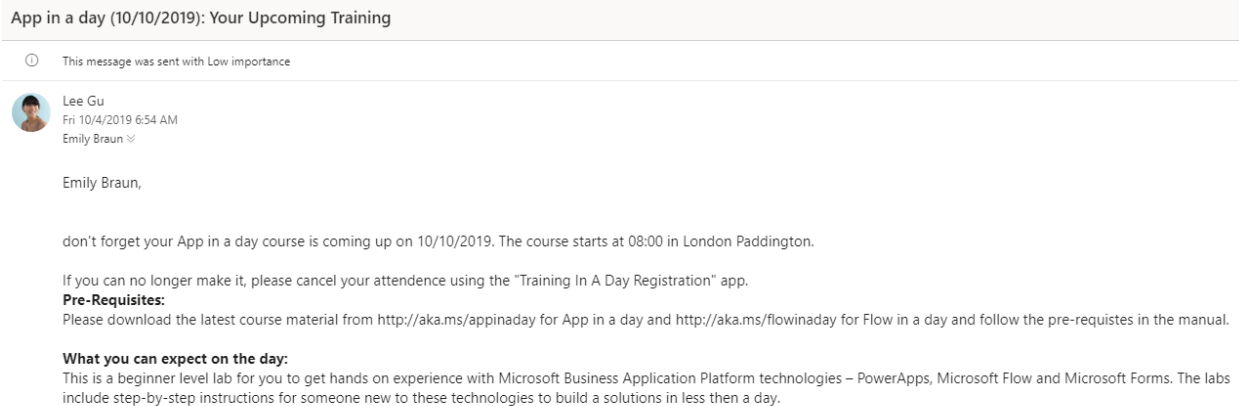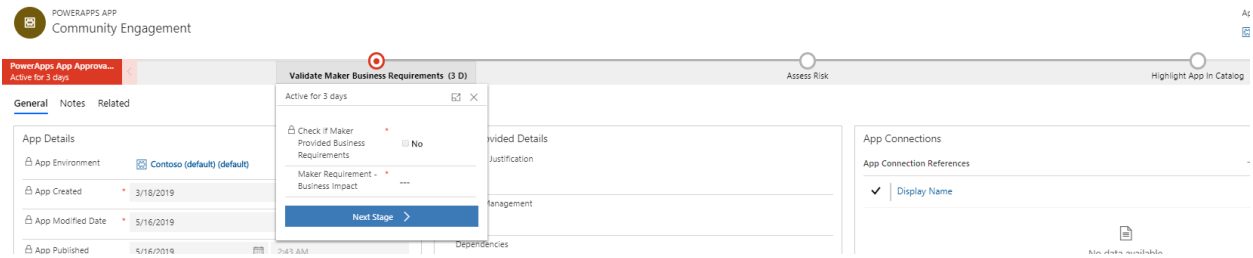

SCREENSHOT: SAMPLE APP IN A DAY REMINDER EMAIL

BUSINESS PROCESS FLOWS

PowerApps App Approval BPF

This process helps the admin audit the PowerApps App audit process by providing a visual placeholder for the stage in the process they are currently on.

SCREENSHOT: AN IMPLEMENTATION OF AN AUDITING PROCESS USING A BUSINESS PROCESS FLOW COMPONENT

SCREENSHOT: THE BPF VIEW WHILE PLAYING THE MODEL DRIVEN APP, ON THE APP FORM.

CANVAS APPS

DEVELOPER COMPLIANCE CENTER

This app is used in the PowerApps App Auditing Process, defined later in this document, as a tool for users to check if their app is compliant and to submit information to the Center of Excellence admins as business justification to stay in compliance. They can also use the app to update the description and re-publish, which are other ways to stay in compliance.

Permission: Once you are using the Compliance process, this app needs to be shared with your App Makers. If you are intending to use this process, modify the "Welcome email" Flow to add users to a Security Group and then share this app with the Security Group.

Pre-Requisite: This app uses CDS, a Premium license is therefore required.

Update: Verify the Support Details form matches your requirement, and update if necessary.
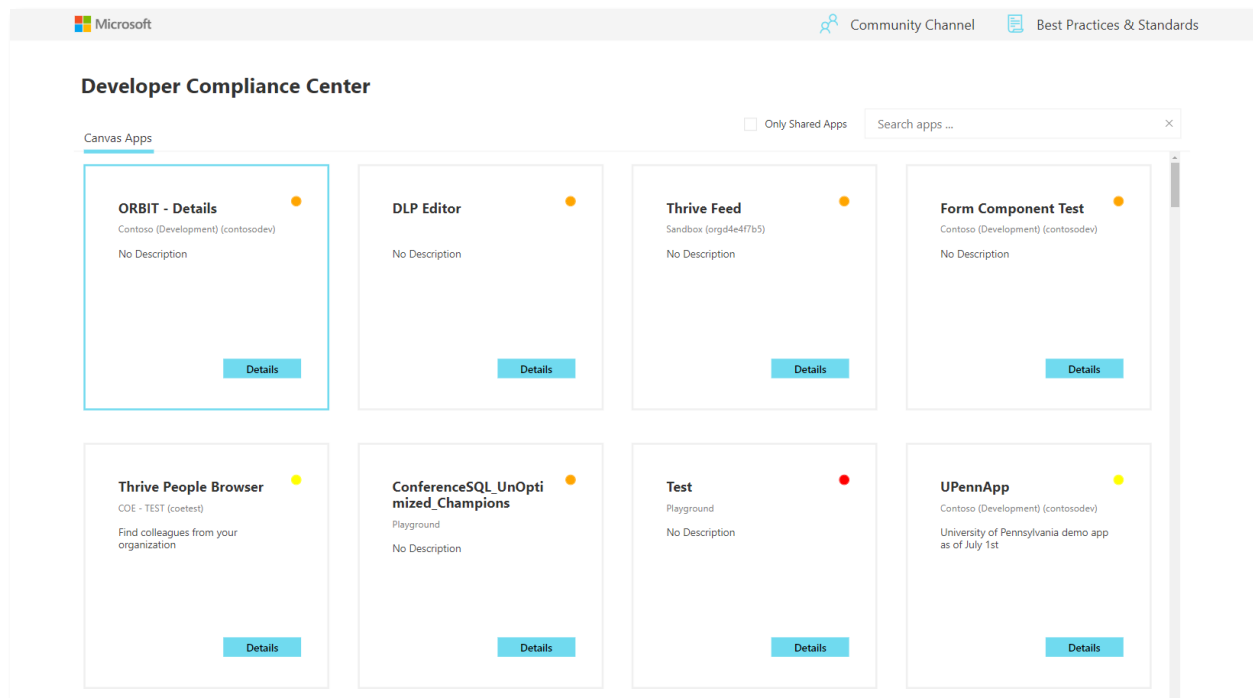
Back to dashboard   App Settings   Re-publish   Launch   Email users   Delete App

App overview

ORBIT - Details

DETAILS

Created
August 14, 2019

Modified	Last published	App Type
September 20, 2019	56 days	Canvas

Description
Please provide a high level description of the application by navigating to the App Settings, then click the refresh button here.

Refresh

PERMISSIONS (2)	ROLE	TYPE
Megan Bowen	Owner	User
Emily Braun	CanEdit	User

APP COMPLIANCE

● Submitted Support Details
● Filled out app description
● Published within 60 days

SUPPORT DETAILS

Maker Requirement - Business Justification

Maker Requirement - Access Management

Maker Requirement - Dependencies

Maker Requirement - Business Impact

Maker Requirement - Data Classification

Mitigation Plan Provided
No

Category

Attachments
There is nothing attached.

Attach file

Submit

APP CATALOG

A Canvas app that gives access to the entire organization to make apps more discoverable. Admins audit and validate certain apps which are graduated to the app catalog if the app is meant to be shared broadly.

When you first open the App Catalog, you will not see any apps there at first. There is a field on the PowerApps App entity called "In App Catalog", which is a two-option set type field (aka Boolean). If the value is set to "Yes", the app will show up in the catalog. Following the Compliance Business Process in the Admin app will allow you to publish an app to the App Catalog.

Permission: Once you are using this process, the App Catalog can be shared with the entire organization.

Pre-Requisite: This app uses CDS, a Premium license is therefore required.

Update: The app is prepared to filter by Category, however you will need to update relevant app categories based on your organization.
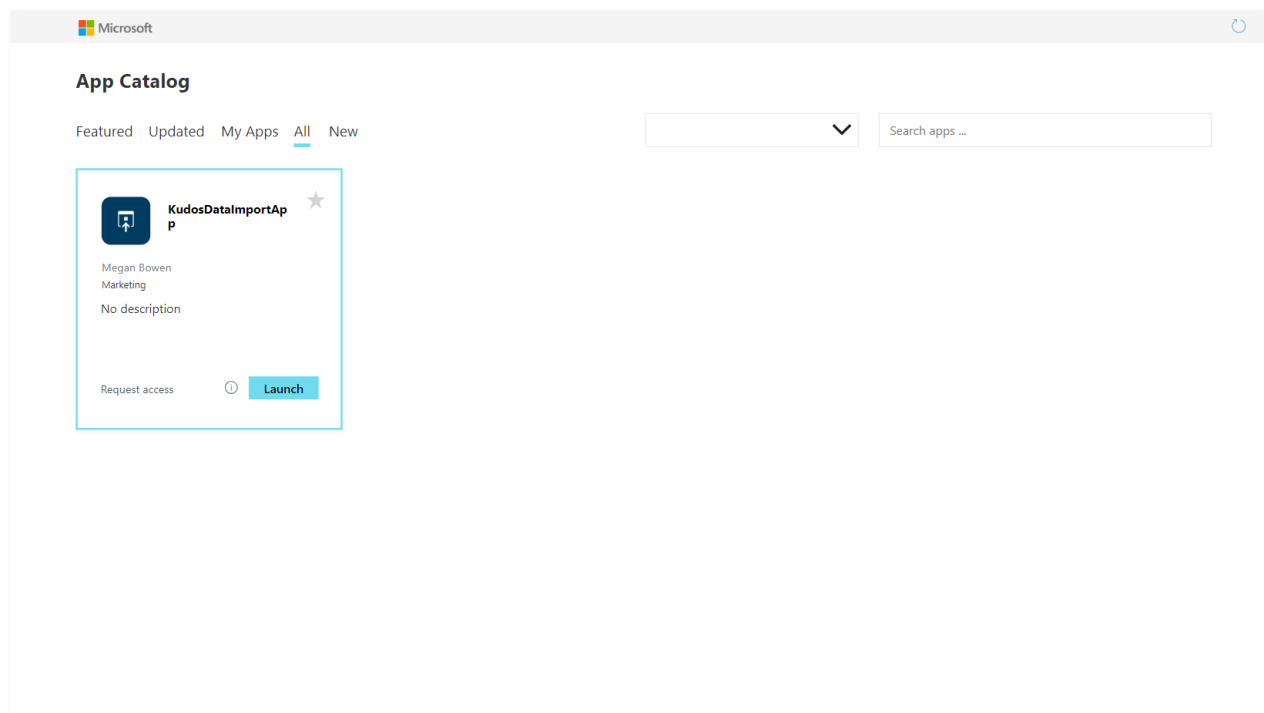
DLP EDITOR

Canvas app that reads and updates DLP policies while showing a list of apps that are affected by the policy configurations.

Use this app to make changes to the DLP policies and see what impact it will have, and mitigate the risk of breaking a Flow / App through DLP changes.

Permission: Intended to be used only by admins, Global Admin permission required. Share with your CoE Admins.

SET NEW APP OWNER

Canvas app that an admin can use to discover apps by app or maker name, and provides ability to set a new app owner or add new co-owners

Permission: Intended to be used only by admins, Global Admin permission required. Share with your CoE Admins.

TEMPLATE CATALOG

Canvas app that allows CoE Admins to share app and component templates as well as best practice documents with their makers.

Permission: Once you have content ready, the Template Catalog can be shared with the entire organization.

Pre-Requisite: This app is using SharePoint in the background and requires a SharePoint site to be configured.
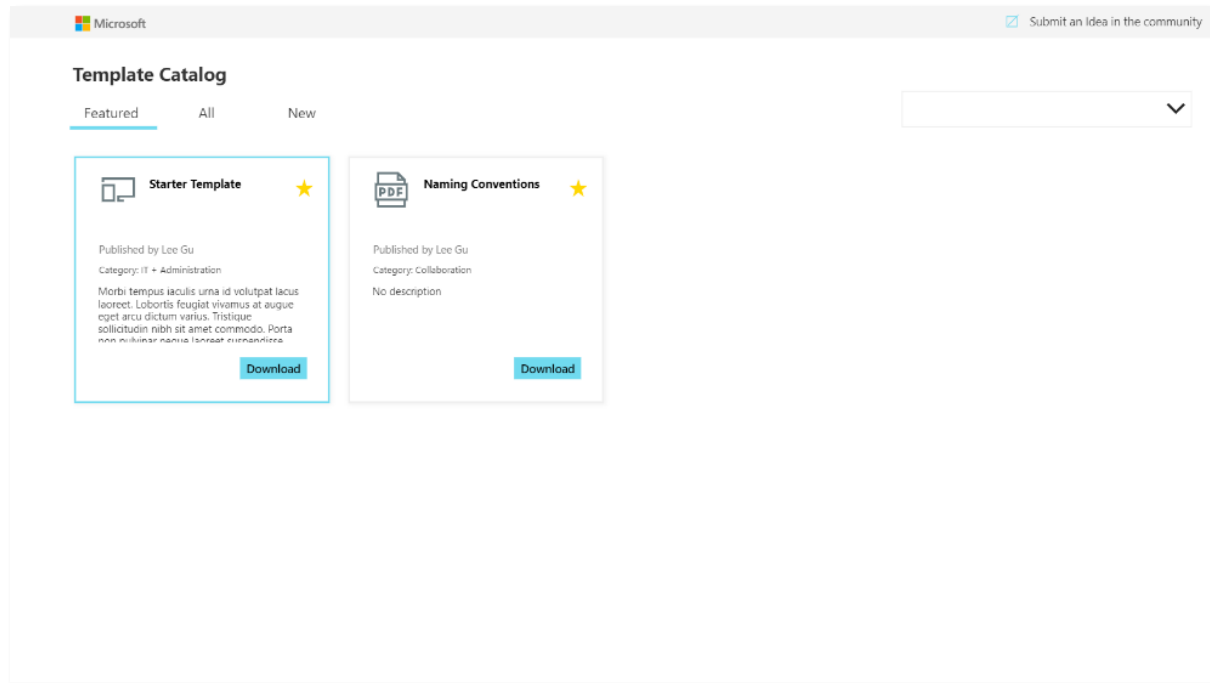
SharePoint setup:

Create a document library to store templates on a SharePoint site of your choice – we recommend having a dedicated PowerApps CoE SharePoint site. Ensure everyone has read-only and download access to this library.

Name	Type
AppTemplates	Document library

Add the following meta-data columns to your library, upload your templates and update the meta-data information.

Title	Single line of text
Description	Multiple lines of text
Featured	Yes/No
Display Name	Single line of text
Category	Choice
Template Type	Choice

PowerApps setup:

Open the Template Catalog PowerApps and edit the SharePoint connection to point to your new Document library.

TRAINING IN A DAY – MANAGEMENT

If you are planning to run internal App / Flow / Custom in a day event, this canvas app will enable you to create and manage events

Permission: Share with CoE Admins or the owners of your internal training events.

Pre-Requisite: This app uses CDS, a Premium license is therefore required.
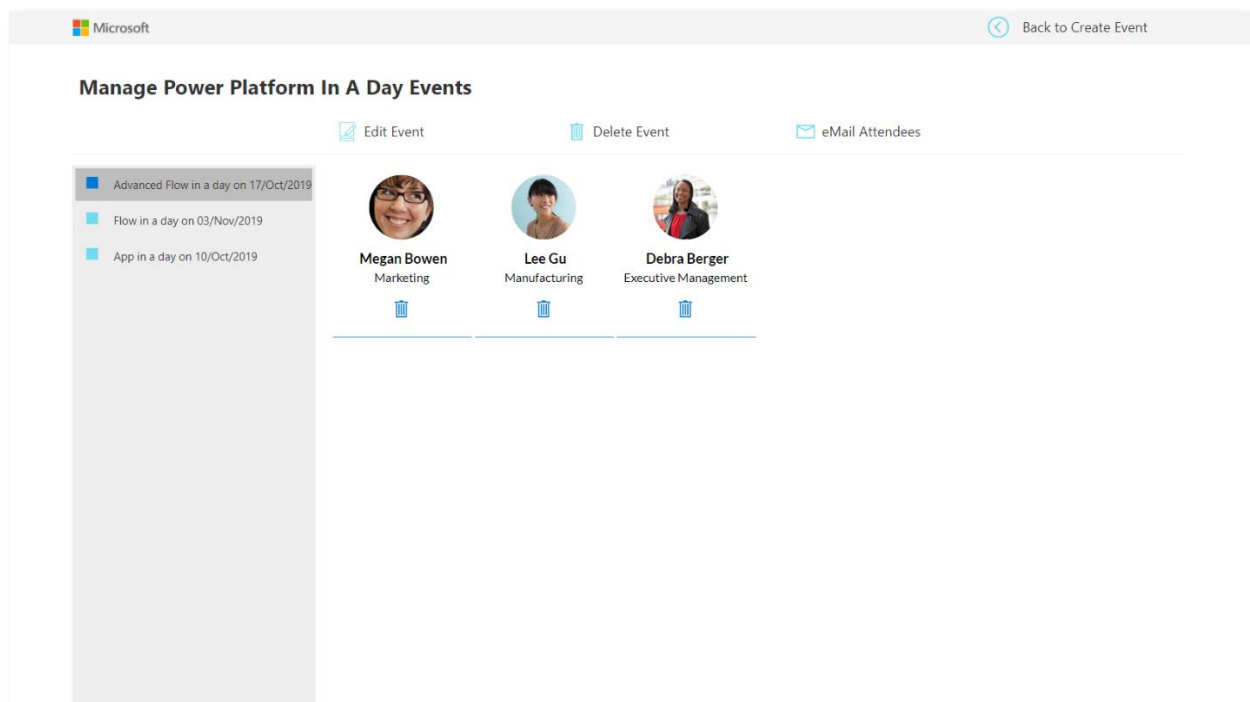
TRAINING IN A DAY – REGISTRATION

If you are planning to run internal App / Flow / Custom in a day event, this canvas app will enable your end users to register for upcoming events

Permission: Once you are running internal training events, share with everyone in the organization.

Pre-Requisite: This app uses CDS, a Premium license is therefore required.
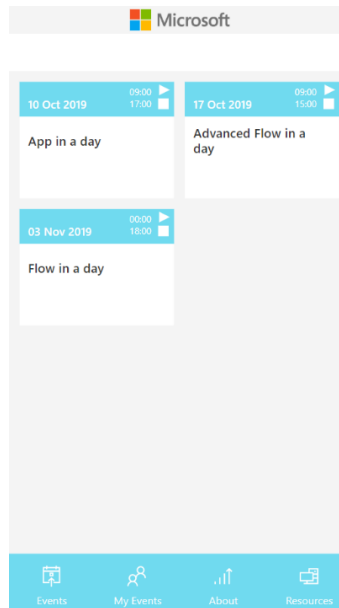
MODEL DRIVEN APP

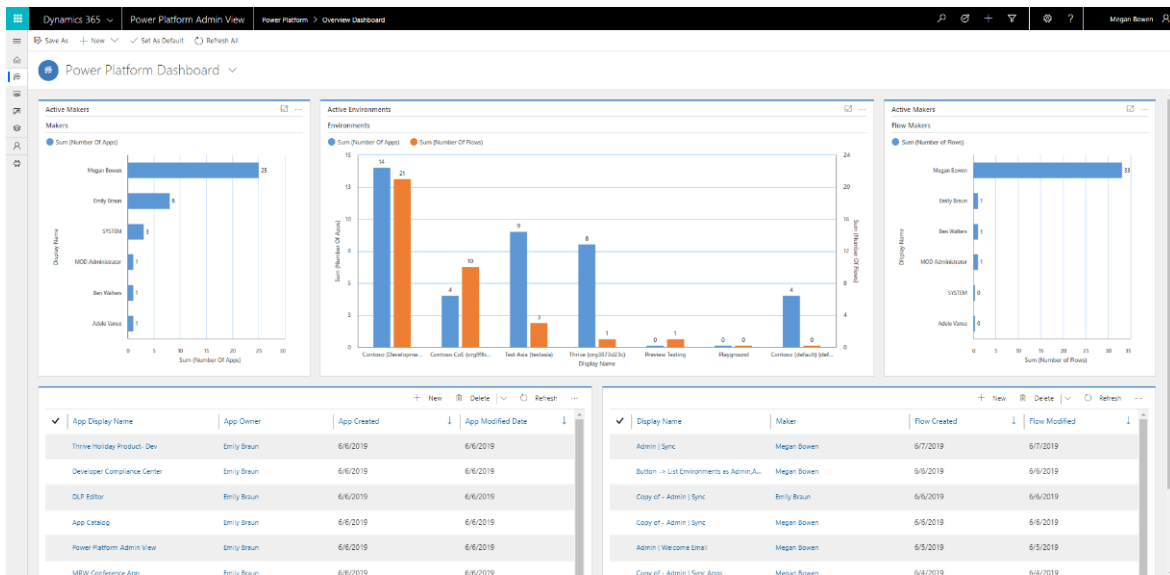Power Platform Admin View. A model driven app that provides an interface used to navigate the items in the CDS custom entities. It provides access to views and forms for the custom entities in the solution.

NON-SOLUTION AWARE

POWER BI REPORT

Provides a wholistic view with visualizations and insights of data in the CDS entities: Environments, PowerApps Apps, Flows, Connectors, Connection References, Makers and Audit Logs.
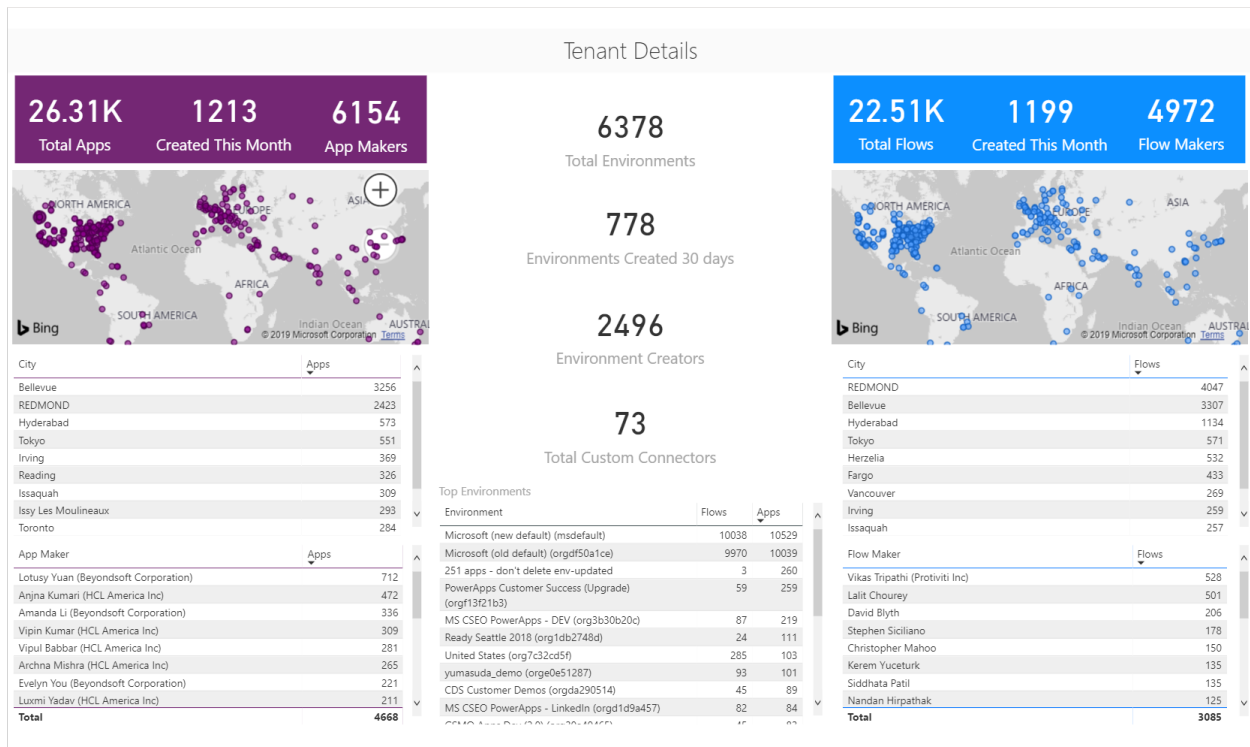
AUDIT LOG CUSTOM CONNECTOR

The Open API definition for the custom connector that can be used to connect to the Audit Logs. This uses Basic authentication to connect to the API, which requires a username and password of an account that has access to the Audit logs. This appears in the download pack as "Office-365-Audit-Logs.swagger.json".

The Flow called Admin | Sync Audit Logs comes in a zip file, which is called a Flow package. The Flow is much easier to import as a Flow package than it is through the solution right now because of the custom connector action. Follow the instructions at the end of this document for more detailed information.

EXAMPLE PROCESSES

The components listed above are designed for multiple uses, including an implementation of some the example processes. These are meant to showcase common patterns that exist, and hopefully act as inspiration on how to define your own processes to manage.

POWERAPPS APP AUDITING PROCESS

Problem statement: There are many apps in the Contoso tenant. IT does not know what all these apps are intended for, how to support individual apps when the helpdesk is called, and it's unclear if all the apps are being maintained to any standard. They can see details like the description and number of shared users from the PowerApps for Admins connector, but they need to communicate directly with the app owner to fully understand the situation around their apps. Especially in a large organization like Contoso, it's not feasible for the IT team to be responsible for manually reaching out to each owner individually for the apps, and those details cannot be stored in email conversations.

Solution: The CoE has decided there should be an auditing process on an app-level basis, using the CDS as a data store for business justification details. They decide to use apps and Flows built around the data to facilitate this process.

The Flow called **'Admin | Compliance detail request'** is used to iterate through all the apps in the tenant and check if the apps are compliant. If the owner has not submitted a business justification and the app was indicated to have been shared broadly (in this example, with more than 20 users or at least 1 group), then the Flow will send the owner an email to notify them that the specific app is not compliant with the company's policy. The email contains a link to the Developer Compliance Center canvas app where they can provide the business justification details in a form submission. The app also contains details about the compliance thresholds and has links to the app settings so they can configure the description and re-publish if needed.

Once the maker has proven compliance by adding these details, the admin can review those details and the app itself. A business process flow in the Power Platform Admin View (model driven app) helps facilitate the auditing process.
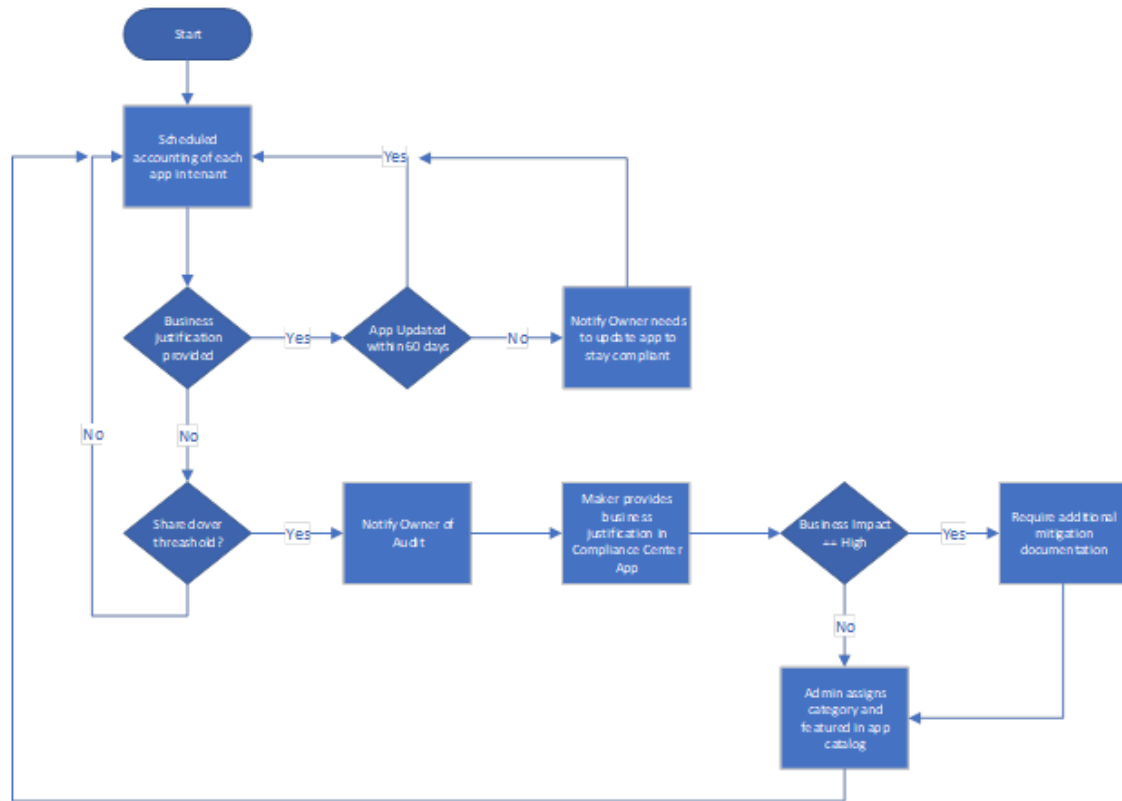
LIMITATIONS

There is no 'one size fits all' solution for a Center of Excellence. Some companies will want a very restrictive set of rules on their organization in the mind-frame of mitigating the unknown, while others will want to let users personally explore without limitations. Because of this, the CoE starter kit does not come equipped with a set of design patterns for everyone. For example, there are no components that are configured to automatically delete resources, because we did not want to provide a tool that might have unintentionally disrupted a business when installed. Therefore, if more restrictive implementations are desired, it must be implemented in addition to these tools.

In addition to this high-level warning, there are some additional notes on some components:

ADMIN | SYNC TEMPLATE V1

- This Flow might take a long time to execute, depending on the amount of resources (Environments, PowerApps, Flows and Connectors) in your tenant. In the Microsoft tenant, which has >6K Environments, >25K PowerApps, >25K Flows, and >1.5K Connectors, it takes 2 days to execute.
- The admin connectors (PowerApps For Admins, Flow Management) might experience some throttling limits if the tenant has a lot of resources. If you see 429 errors in the Flow run history occurring in the later runs, you can turn off the Concurrency control settings in any of the apply to each loops (go to '...' menu > Settings > Concurrency control off).

DLP EDITOR

- The Environments call only returns the first 2000 environments. We will be updating the tool to accommodate up to 6000, but you can also follow the pattern that's implemented and implement it yourself.
- Cannot write back Environment-type policies.

SETUP INSTRUCTIONS

There are multiple components provided in this starter kit, each will require some configuration to install. The installation instructions have been segmented based on the set of components that should be grouped and installed together, and dependencies on other segments are outlined in each section.

PREREQUISITES

1. Admin account (global tenant admin, Dynamics 365 service admin or Power Platform service admin) for access to all tenant resources. This solution will still work for Environment admins, but the view will be restricted.
2. PowerApps Premium License (Per App, Per User, Dynamics 365 Online)
3. Environment with a CDS instance provisioned (installer requires System Administrator security role)
4. Download of the Center of Excellence Solution and Power BI dashboard files to your device

STEP 1: INSTALL THE COMMON DATA SERVICE SOLUTION

COMPONENTS COVERED

- Entities
- Model Driven App
- Canvas Apps
- Security Roles

DEPENDENCIES

All other segments listed below.

DESCRIPTION

This is the first setup step of the installation process and is required for any other component in the starter kit to work.

INSTRUCTIONS

1. Make sure you've downloaded the CoE starter kit compressed file (aka.ms/CoeStarterKitDownload)
2. Go to a **non-default** Environment where the solution will be installed
    a. Go to https://make.powerapps.com
    b. Navigate to the Environment the CoE solution will be hosted in. In the screenshots example, we're importing to the Environment called 'Contoso CoE'.

3. Select Solutions on the left navigation bar.
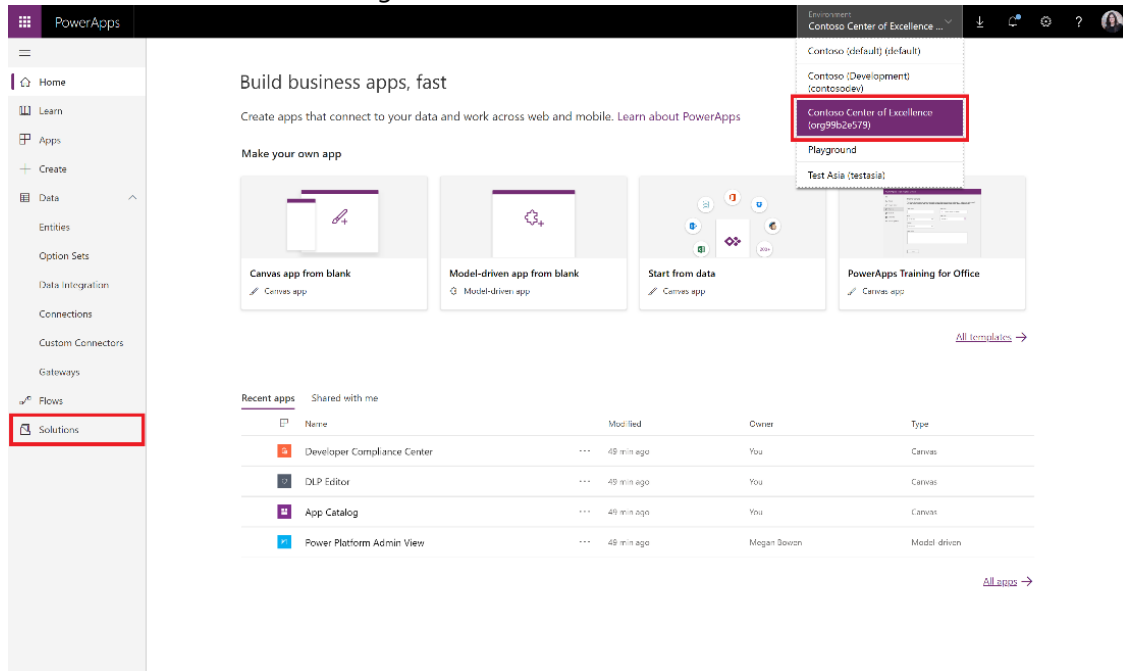
4. Select **Import**, and a pop-up window will appear (make sure to disable the pop-up blocker in your browser and try again if nothing happens when clicking the Import button).

5. In the pop-up window, select **Choose File**.
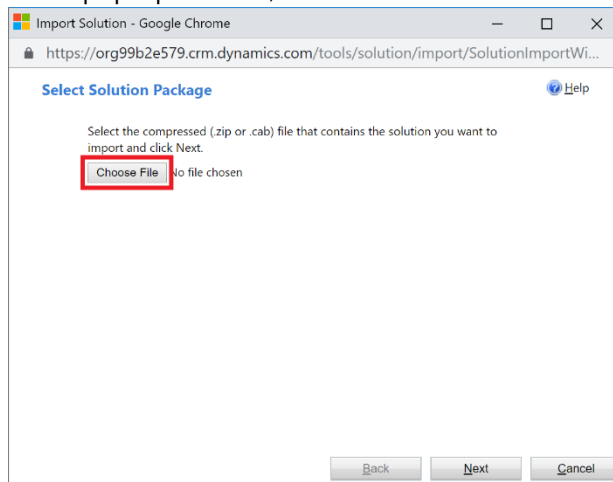
6. Choose the MANAGED **Power Platform** solution from the file explorer (PowerPlatformAdmin_x_x_x_xx_managed.zip).
7. When the solution compressed (.zip) file has been loaded, click **Next**.
8. Review, click **Next**, then click **Import**. (This can take some time.)
9. When the import succeeds, the list of the components that were imported is displayed.

NOTE: SOMETIMES FLOW COMPONENTS SHOW A WARNING MESSAGE AND A DUPLICATE RECORD OF THAT COMPONENT. YOU CAN IGNORE WARNINGS FOR FLOWS

10. Click **Publish All Customizations**. This is good practice to follow whenever you make changes to a solution, but especially so when importing.

(OPTIONAL) GRANT ACCESS TO END USERS

The user account who uploaded the solution and the Environment admin of the Environment the solution exists in will have full access to the solution. There are some features in the starter kit that would warrant sharing with end users, such as:

1. Requiring users to submit more details about their apps to the CDS table
2. Granting users access to the App Catalog
3. Sharing the Training In A Day solution, allowing users to browse and register for internal training events

To share this solution with others, there are some steps needed to configure access.

There are multiple components that must be shared with the end users. The components that must be configured for sharing include:

a. Security role assignment. Security groups can manage assignment of security roles to users.

b. Canvas Apps require shared permissions on an individual basis or through a Security group

NOTE: SECURITY GROUPS CAN BE USED TO SHARE A SECURITY ROLE WITH MULTIPLE PEOPLE IN ONE ACTION.
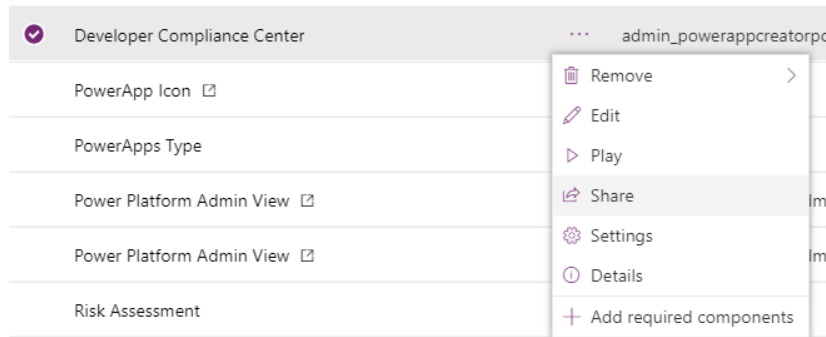
SHARE WITH SECURITY GROUPS

You can manage assignment of security roles and access to canvas apps through Azure AD security groups. Make sure the following prerequisites are met:

- Security group for end users (e.g., *Contoso Power Platform Makers*)
- The Power Platform Admin solution is already imported. (The solution contains a pre-configured Security Role called "Power Platform User SR")

Once the security group is configured:

1. Navigate to the Center of Excellence Solution
   a. Go to https://make.powerapps.com and set the current Environment to the same Environment where the Center of Excellence solution is installed
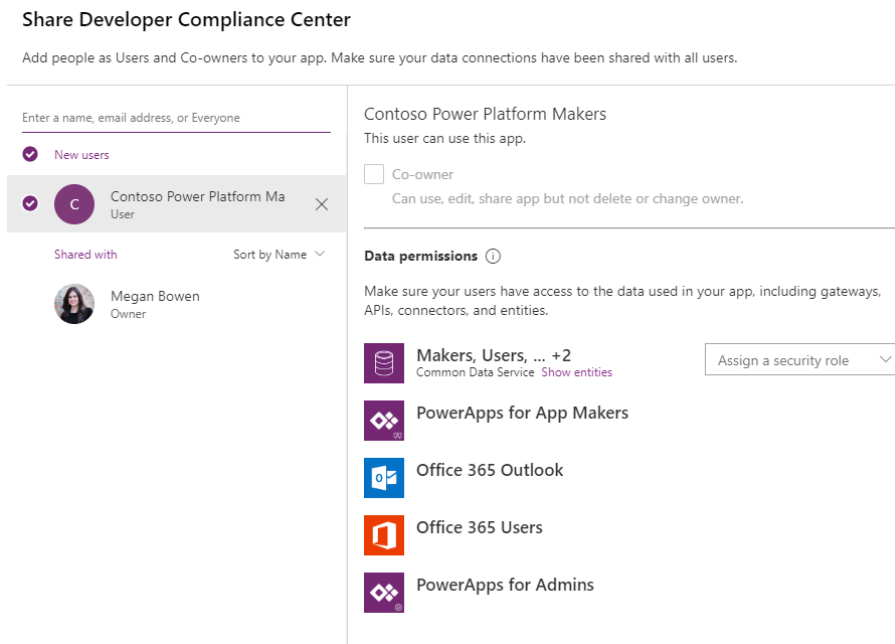   a. Click **Solutions** > **Center of Excellence**

2. Select the ellipse (…) menu of the **Developer Compliance Center** canvas app > **Share**.
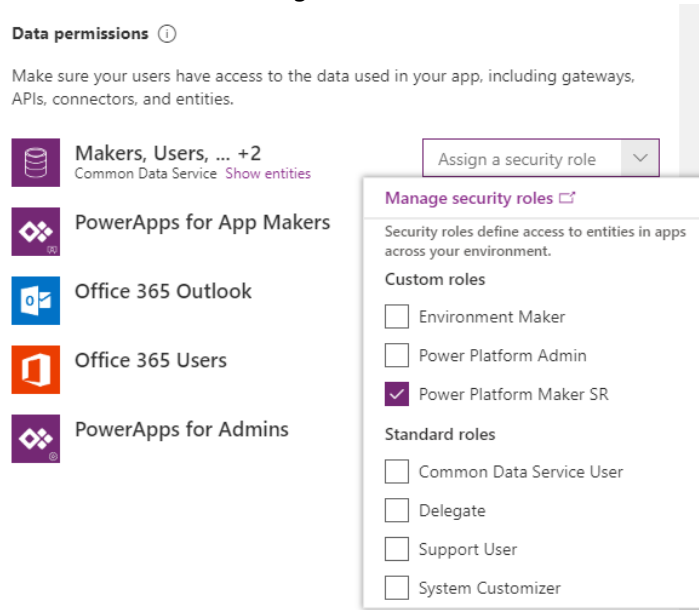

3. In the flyout, search for the security group by name
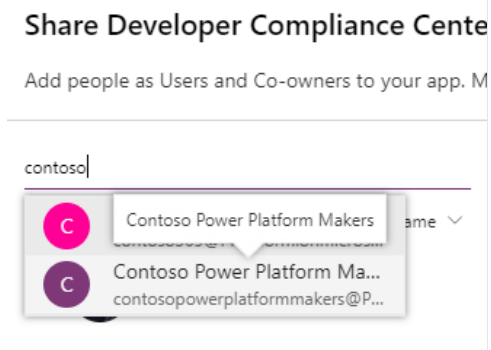
4. When the security group is selected, the Data permissions section on the lower right side of the flyout will populate with details on the connectors.

5. Next to the Common Data Service connector, click the combo box that says **Assign a security role**

6. Select the desired role (e.g. Power Platform Maker SR)

7. Optionally uncheck the "Send an email invitation to new users", then click **Share.**

NOTE: THE SECURITY ROLES WILL BE ASSIGNED TO EACH USER IN THE SECURITY GROUP, AND THE SECURITY GROUP WILL CONTINUE TO MANAGE USER ASSIGNMENT TO THE SECURITY ROLE (E.G., WHEN A USER LEAVES THE SECURITY GROUP, THEY WILL NO LONGER HAVE THE SECURITY ROLE ASSIGNED TO THEM UNLESS THEY WERE INDIVIDUALLY ASSIGNED THE ROLE).

8. Repeat these steps for the **App Catalog** canvas app. Create a different SG that contains the entire organization and is assigned to the Power Platform User SR.

SHARING WITH INDIVIDUAL USERS
Follow the steps in the section above, but search for an individual user account instead of the security group. The steps after selecting the user record will be the same.

SHARING WITH INDIVIDUAL USERS (WITHOUT CANVAS)
The solution can be shared on an individual basis if desired, but it's recommended that you use security groups to share the solution with end users to make access management more maintainable. This section does not share the canvas apps with individual users, in case the canvas app solution is not desired.

1. Navigate to the solution's Environment security
   a. Go to https://admin.powerapps.com.
   b. Select the Environment with the Power Platform Admin solution installed.

c. Click on the **Security** tab.

2. Here, you can add individual sync users to the CDS instance's Users table if they are not already available. If you had created a new Environment for this solution, you will likely need to do this to give other accounts access to the solution.

3. Click on **Assign Security Roles** to view the Users table.

4. In the Users table, select records by checking the check box to the left of each User's name. You can use the search bar at the top right to filter the table by name or email.
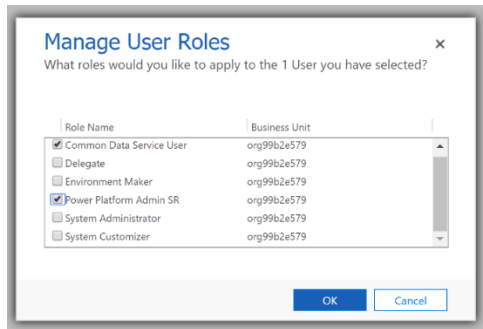

5. With the Users selected, click on **Manage Roles** at the top.

6. Select the checkboxes next to the desired security role. This security role was provided in the solution and only gives read and write access to the custom entities in the solution. Click **OK**.

7. At this point, the individuals who you have assigned to the Security Role to will have access to the data in the custom entities and model driven app that comes in the solution.

NOTE: THIS PROCESS CAN ALSO BE FOLLOWED WITH THE INTENTION OF SHARING POWER PLATFORM ADMIN SR ACCESS TO THE CDS ENTITIES. THIS SECURITY ROLE WILL GIVE MORE CONTROL OVER FULL CRUD OPERATIONS ON THE DATA AND MIGHT MAKE MORE SENSE TO GRANT ON AN INDIVIDUAL BASIS THAN END USERS.

SHARING WITH SECURITY GROUPS (WITHOUT CANVAS)

Please read this article to share the solution without sharing the canvas apps.

STEP 2: CONFIGURE COE SETTINGS

COMPONENTS COVERED
- 'CoE Settings' data

DEPENDENT ON
Install the Common Data Service Solution. The entity must be installed before we can write data to it.

DEPENDENCIES
- **Canvas Apps**. The optional branding details (e.g., logo, brand colors) in all the canvas apps are pulled from this entity. Optional support and community channel links are also used.
- **Optional Flows**. The optional branding details and support channel links are used in the Flows used for communication. You also will configure links to the canvas apps in the settings. The main Flow that syncs data to the resource entities do not depend on this setting configuration.

DESCRIPTION
This section explains how to enter data in this entity, which represents the settings for other components in the solution. It should be completed second.

INSTRUCTIONS
1. Open the Power Platform Admin View model driven app in Play mode.

2. In the left navigation, click on Settings
3. In the Settings view screen, click on "+ New" to create a new record
4. Provide values for each field.
5. Save by clicking CTRL + S or by clicking the Save button in the bottom right corner.
6. Do not add more records to the CoE Settings table, there is no need. The dependent components will always get values from the first record so there only needs to be one record in this table.

STEP 3: INSTALL THE FLOWS

COMPONENTS COVERED
Flows

DEPENDENT ON
- Step 1: Install the CDS Solution
- Step 2: Configure CoE Settings

DEPENDENCIES
The 'Sync' Flows are used to write data from the admin connectors into the CDS entities.

DESCRIPTION
This step should be completed after the first two steps above. The Flows with the prefix 'Sync' are required for populating data in the 'resource' related CDS entities (Environments, PowerApps Apps, Flows, Connectors and Makers).

There are multiple ways to import these Flows, and not all the Flows are required. Please read the description of each Flow to understand which ones are required and how to import it.

Required Flow to sync data to the resource entities:

1. **Admin | Sync Template v2**
   Flow type: Scheduled (daily by default)
   Description: This is a single Flow that syncs data to all the resource related entities in one Flow. It's part of the solution that was imported in the first step. This is the fastest to install, but it takes longer to execute.

Optional Flows. The other Flows available to import are not required to sync data into the resource entities but are recommended for the example audit process to work.

2. **Admin | Welcome Email**
   Flow type: Automated
   Description: When a Maker is added to the Makers table, it will add the user to a specified office group and send a welcome email to that user.

3. **Admin | Compliance detail request**
   Flow type: Scheduled (weekly by default)
   Description: The Flow iterates through the PowerApps apps in the CDS entity and checks for specific thresholds, then emails the app owner how they can stay compliant:
   (a) If an app is shared with >20 users or >0 groups and the user has not submitted business requirements.
   (b) If an app has submitted business requirements but has not been updated or missing a description.

4. **Admin | Newsletter with Product Updates**
   Flow type: Scheduled (weekly by default)
   Description: Collates product updates from PowerApps, Flow, Power BI Blogs and sends out an email

5. **Flow | Sync Audit Logs**
   Do not install this Audit Log Flow yet. This will be covered in the Audit Logs setup instructions, because it has additional requirements. Also, although this flow is provided in the solution, you will be installing the Flow package outside of the solution.

INSTRUCTIONS

The Flows are all stored in the solution. It is automatically available in the Environment when you import the solution, but there are two options to consider. Option 1 takes longer to configure than option 2 but is also easier to receive updates.

## OPTION 1: KEEP FLOW IN THE SOLUTION AND UPDATE EACH ACTION CONNECTION

Use this option if you would like to continue receiving updates to the Flow through this solution. This takes longer to set up because the connections for each action need to be individually configured.

2. Go to the Center of Excellence solution.
   a. Navigate to https://make.powerapps.com and set the current Environment to the same Environment where the Center of Excellence solution is installed
   b. In the left navigation, click on **Solutions**, then select the **Center of Excellence** solution

3. Click on the Flow name to get to the details screen, then select 'Edit'

4. The Flow will open in the maker studio. For each action that requires a connection, there will be a warning icon on the right side of the action. This indicates the need for a connection to be selected.
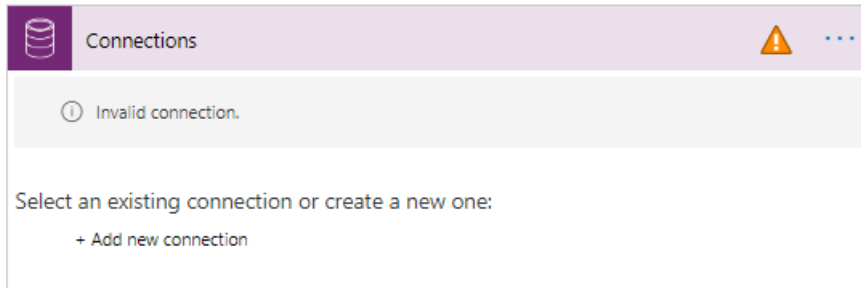
    a. Some connections will need to be created if not already available
    b. Some actions might be hidden within other built in actions, such as a condition or scope. Expand these actions to find the hidden ones so

5. Once all actions have a connection, save the Flow.

## OPTION 2: SAVE A COPY OF THE FLOW OUTSIDE OF THE SOLUTION

This is a temporary workaround until Environment Variables feature is available (November 2019).

Save a copy of the Flow from the solution and the connections are created automatically for you. The drawback from this method is that if you copy the Flow from the solution, the copy Flow does not get updated when you update the solution package with newer versions. You will just have to import the individual flow package updates instead or re-install the updated versions.
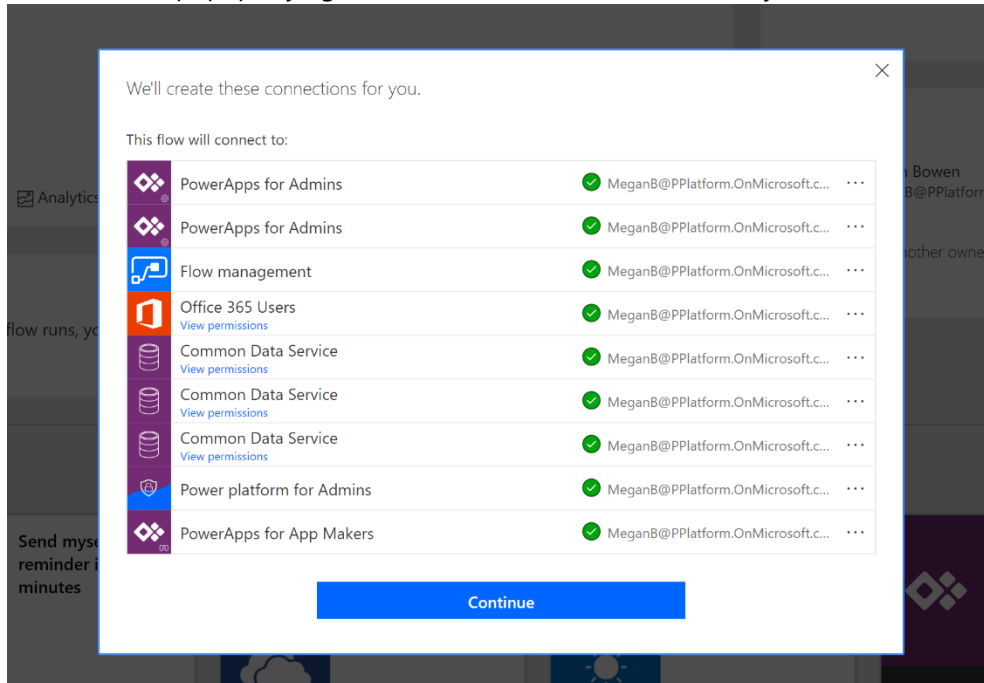
1. Go to the Center of Excellence solution.
    a. Navigate to https://make.powerapps.com and set the current Environment to the same Environment where the Center of Excellence solution is installed
    b. In the left navigation, click on **Solutions**, then select the **Center of Excellence** solution

2. Click on the display name of the Flow you want to enable. This will open a new tab to the Flow's details page.
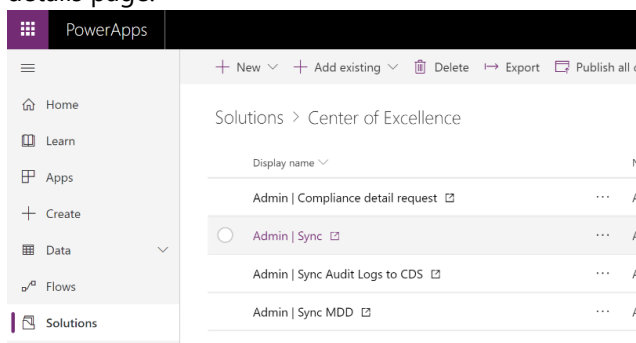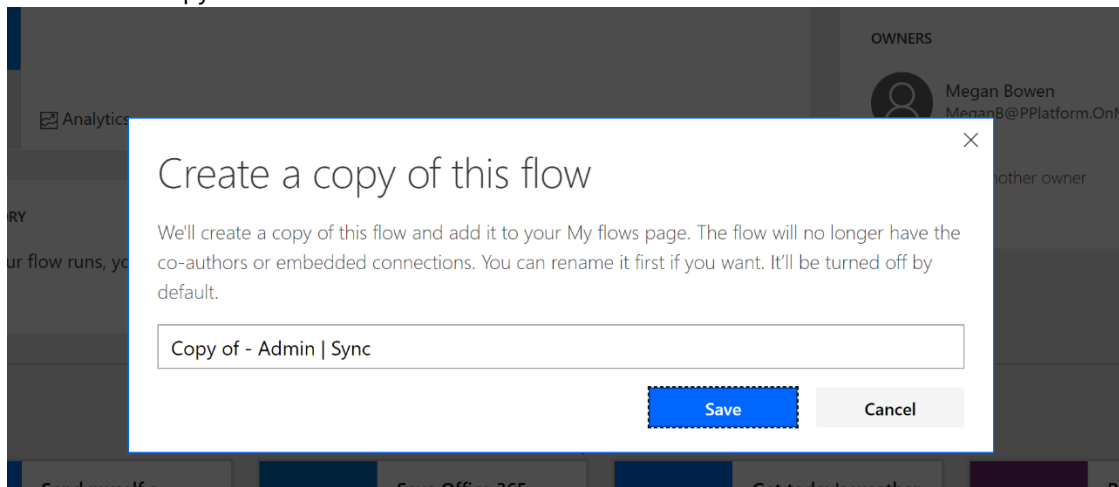
3. Select **Save As** in the ribbon
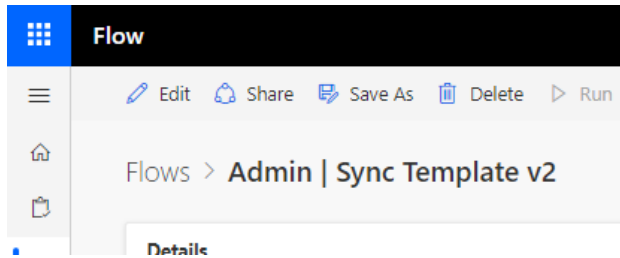
4. A window will popup saying, "We'll create these connections for you". Click Continue.

5. Rename the copy if desired. Click **Save**.

6. At this point, the copy has been created. You can view the Flow in the **My Flows** page in the left navigation. Remember that the copy of the Flow will NOT be visible in the Center of Excellence solution.

7. (Admin | Sync Template) After you've updated the custom variables in each of the required flows, turn on the Flow, then manually run it. The time the Flow runs will depend on how many resources there are in your tenant. The Microsoft tenant has around 6,000 Environments, >20K PowerApps and >20K Flows, ~1K Custom Connectors, and ~4K makers, and this Flow took up to 24 hours to complete.

UPDATES VARIABLES IN FLOWS

Some of the Flows need updating with values specific to your environment, these are for example an Office 365 Group used for makers and URLs to the Developer Compliance Portal.

1. **Admin | Sync Template (v2) – All Flows**
   The v2 Sync Template contains a "Catch" action for errors, in which a link to the Flow run instance will be sent to the admin. In order to compose the Flow run instance, the Flow needs to be aware of the Environment URL.
   If you are not in the US location, edit all Sync Template v2 Flows and update the "Initialize Flow Environment variable" with the highlighted URL from your browser.
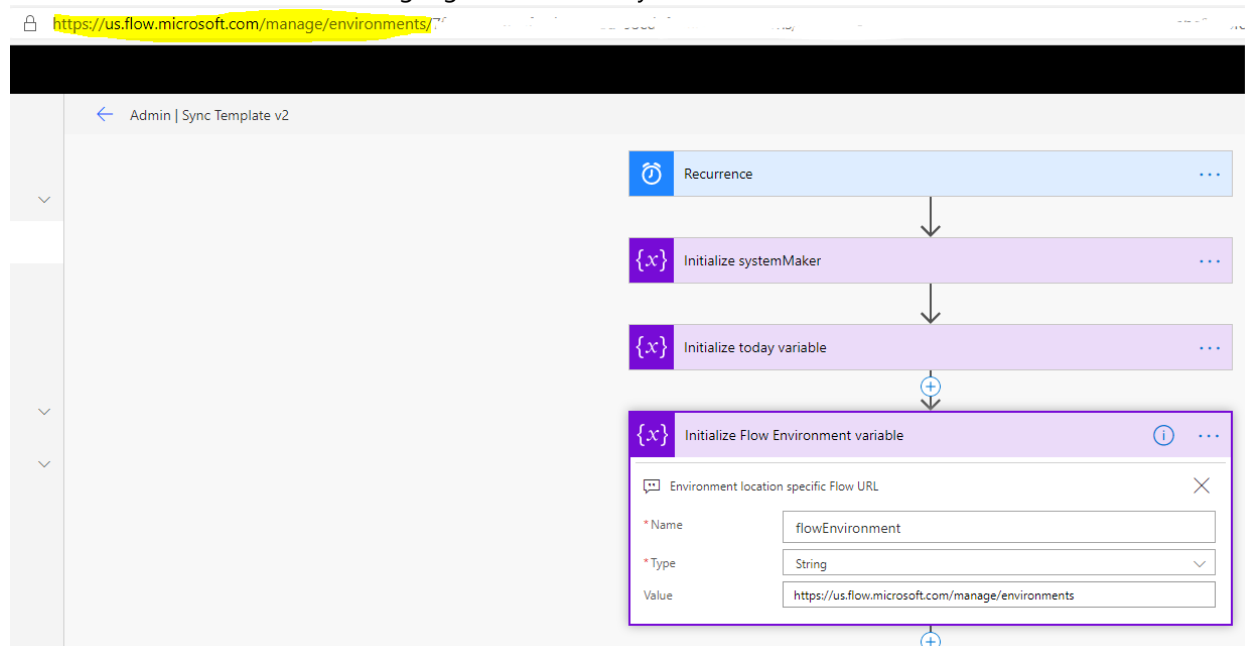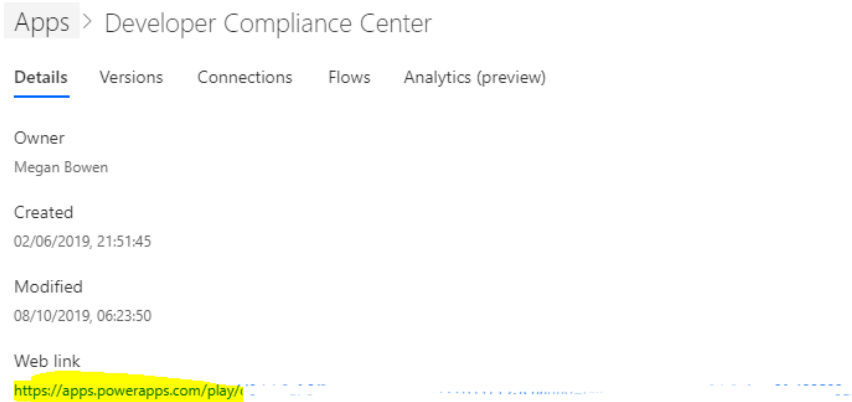

2. **Admin | Welcome Email**
   After you create the Office 365 Group, add the Group ID to the "Initialize Office 365 Group ID" variable. It will be used in subsequent step of the Flow.

3. **Admin | Compliance detail request**
   Navigate to the Details of the Developer Compliance Center and copy the Web link from the details page

   Add this URL to the "Initialize compliancePortalUrl" variable; it will be used in the email that is sent to makers

4. **Admin | Notify app creators of an un-authorized connector and give access to the administrators**
   Add connectors that are unauthorized in your tenant to the array variable

Update the variable with the ID of the Power Platform Admin Security Group

{x} Initialize Power Platform Admin Security Group ⓘ ・・・

💬 Enter the ID of the Power Platform Admin Security Group here   ✕

* Name   ppAdminSecurityGroup

* Type   String

Value   Enter initial value

5. **Admin | Find and disable flows that leverage certain connectors**

Add connectors that are unauthorized in your tenant to the array variable

{x} Initialize Unauthorized Connectors Array ⓘ ・・・

💬 Add connector names that will cause the App to be flagged   ✕

* Name   disableConnectorArray

* Type   Array

Value
```
[
  "PowerPlatform for Admins",
  "Twitter"
]
```

6. **Admin | App Archive and Clean Up**

Configure the time after which an app will be considered for archiving

⏱ Get past time ⓘ ・・・

💬 If the app has not been modified in the past x months, an approval to archive will trigger. Update your desired archive months here.   ✕

* Interval   6

* Time unit   Month

Initialize the top level SharePoint site you will be using to store archived solutions

{x} Initialize Archive Site URL (SharePoint Site) ⓘ ・・・

💬 Initialize the top level site URL (not including the folder path) of your Archive SharePoint Site   ✕

* Name   archiveSiteUrl

* Type   String

Value   https://....

Add dynamic content ⊞

Initialize the name of the Document Library where you will be storing archived solutions

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CHANGE WELCOME EMAIL FROM OFFICE 365 GROUP TO AZURE AD SECURITY GROUP

If you would prefer to use an Azure AD Security Group instead of an Office 365 Group for your makers, the **Admin | Welcome Email** Flow needs amending.

Note: Using an Azure AD Security Group will allow you to share apps with this your maker security group. Currently, apps can not be shared with Office 365 Groups

1. Go to https://make.powerapps.com and set the current Environment to the same Environment where the Center of Excellence solution is installed
2. Click **Solutions** > **Center of Excellence**
3. Select Flow from the Filter option at the top
4. Select the ellipse (…) menu of Admin | Welcome Email and > **Edit**
5. Update the "**Initialize Office 365 Group ID**" with your Azure AD Group ID (you can rename the variable and action as well)

6. Remove the List Group members action underneath
7. In the same place, select + Add an action, search for and insert "**Get Group Members**" from the Azure AD connector. Set the Group ID to the office365GroupID variable from dynamic

content.

8. Click on the **condition** and on the string expression in the left hand value. Update 'List_group_members' to 'Get_group_members' in the body of the expression – the expression should look like the highlighted below.

9. Open the No branch of the condition and remove the **Add member to group** action
10. In the same place, select + Add an action, search for and insert "**Add user to group**" from the Azure AD connector. Set the Group ID to the office365GroupID variable and the User Id to Maker (from Dynamic Content)

11. Save the Flow

ACTIVATE BUSINESS PROCESS FLOW

The PowerApps App Approval BPF, that helps admins implement an audit process, is disabled by default. In order to enable it

12. Go to https://make.powerapps.com and set the current Environment to the same Environment where the Center of Excellence solution is installed

13. Click **Solutions** > **Center of Excellence**
14. Select Process from the Filter option at the top
15. Select the ellipse (...) menu of PowerApps App Approval BPF and > **Turn On**

## STEP 4: CONFIGURE THE POWER BI DASHBOARD

INSTRUCTIONS
1. Get the organization URL
   a. Go to the Power Platform Admin Center (https://aka.ms/ppac)
   b. Click on Environments, and select the Environment where the Center of Excellence solution is installed
   c. Copy the organization URL in the details window.
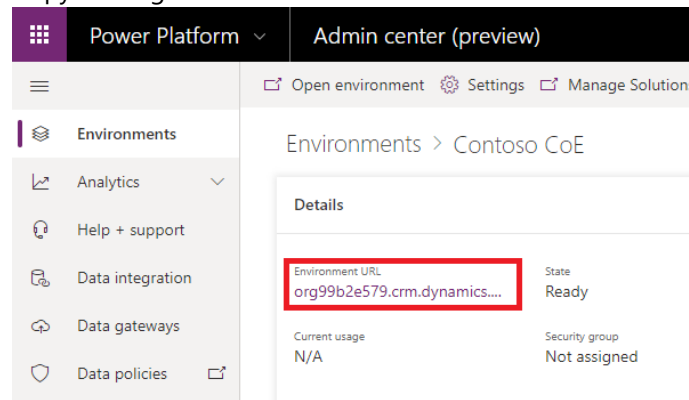
   d. If the URL is cut off, you can see the full URL by clicking See all > Environment URL
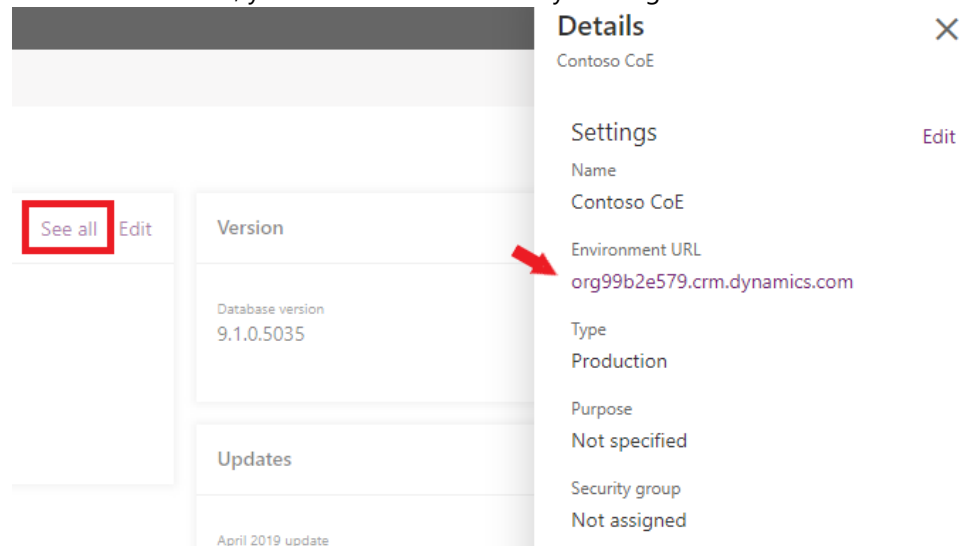
2. Open the **PowerPlatformAdminDashboard.pbix** file, which can be found in the CoE Starter Kit pack you downloaded.
3. Sign-in to your account that has access to the entities.
4. Go to **Edit Query** in the top ribbon (under Home).
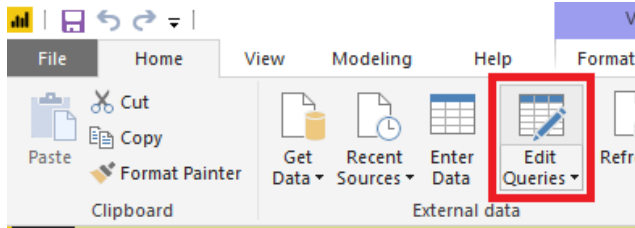
5. Select the OrgUrl parameter and replace the URL with your instance's URL. Make sure to keep the 'https://'.
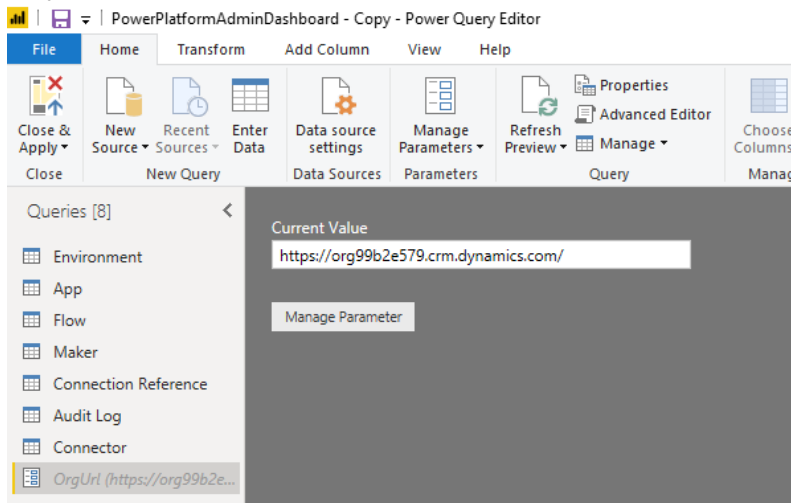
6. If prompted, click **Edit Credentials**
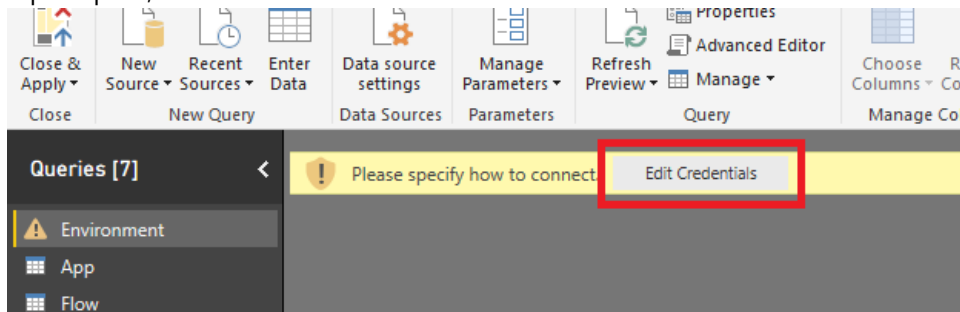
7. Sign-in to your Organizational account. Once signed in, click **Connect**.
8. A preview of the data will load into your table.

9. You may publish this report to a workspace if desired.
10. Click **Close & Apply**.

STEP 5: SETUP AUDIT LOG SYNC

COMPONENTS COVERED
- Custom Connector: Office 365 Logs
- Flow: Sync | Audit Logs

DEPENDS ON
Step 1: Solution is installed

DEPENDENCIES
The Audit Log data is populated with this step. This step is optional, however if you skip it, the usage information will show up as blank in the Power BI dashboard.

INSTRUCTIONS
Make sure the account that is used to configure this section has permission to access the audit logs. Global tenant admins have access to the audit logs by default, but the user account that configures this step is not required to access the audit logs. Tenant admins can grant access to the audit logs for other user accounts or groups through the Exchange Admin Center.

Keep in mind that once a user account has access to the audit logs, they have access to all audit logs across every Microsoft service that reports telemetry to audit logs.

1. Install the custom connector
    a. Go to https://flow.microsoft.com and set the current Environment to the same Environment where the Center of Excellence solution is installed.
    b. In the left navigation, expand Data and click Custom Connectors
    c. Follow instructions on importing the provided swagger file (Office-365-AuditLogs.swagger.json): https://docs.microsoft.com/en-us/connectors/custom-connectors/define-openapi-definition#import-the-openapi-definition

2. Create a connection to the custom connector

        a.   In the test tab of the connector designer, click on the button to create a new connection.

        b.   Enter the credentials of the user account with access to the audit logs.

3. Import the Flow Template compressed (.zip) package called SyncAuditLogs.zip.

        a.   Go to https://flow.microsoft.com and set the current Environment to the same Environment where the Center of Excellence solution is installed.

        b.   In the left navigation, navigate to the Flows tab

        c.   Click Import in the top

        d.   Select the **Flow-SyncAuditLogs.zip** package, click import

        e.   Connect the connections

        f.   Once the connections are configured, click Import

        g.   Open the Flow and make sure there are no errors for any of the actions.

        h.   Click the back arrow in the upper left to go back to the Flow details screen. Turn on the Flow and run it to start syncing audit log data to the CDS entity.

OTHER RESOURCES

While not part of the CoE Starter Kit, you might find the following template Flows useful

- List new apps, flows and connectors - aka.ms/listpoweractivity
- List new custom connectors aka.ms/newconnectornotification

FEEDBACK AND SUPPORT

Questions, comments, concerns, or ideas of additions? Please post your feedback in the Issues section of the GitHub repository https://aka.ms/CoEStarterKitRepo.