

Designing and Developing PowerApps Portals



Agenda

- PowerApps Portal Architecture
 - Portal Editor
 - Portal Management App
 - Portal Configuration
 - Developing Web Templates



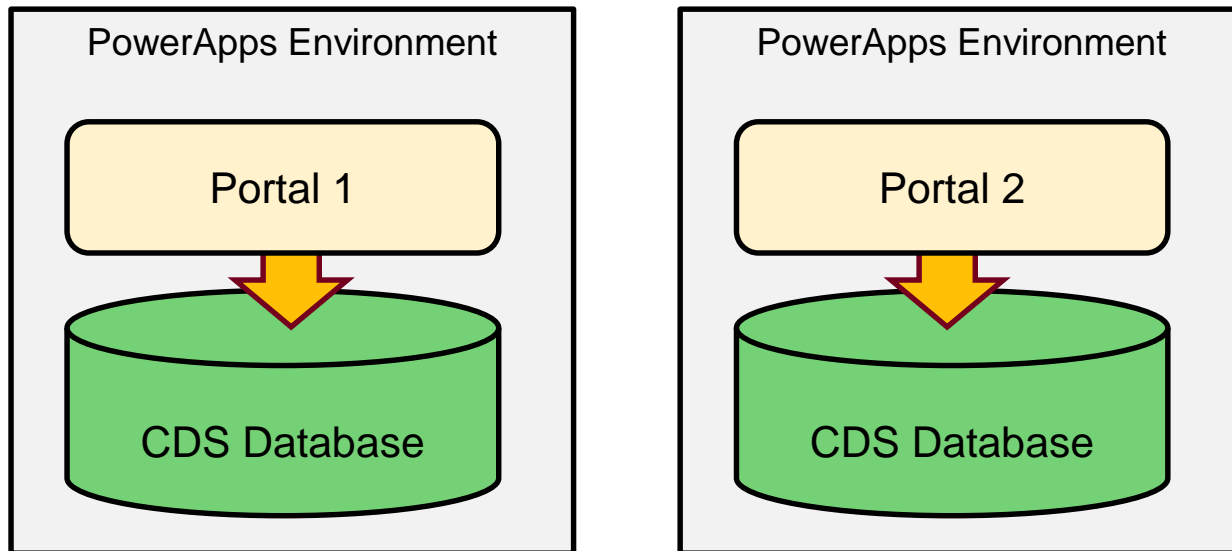
PowerApps Portals

- PowerApps portals provide web development platform
 - Create websites for anonymous users and/or authenticated user
 - Allows for authentication through LinkedIn, Facebook, Twitter, etc.
- Portal content managed by business users
 - Portal Editor used to add pages and author content
 - Portal Management app created along with portal
- Portal can be customized by web developers
 - Portal can be extended with custom web templates
 - Web templates can be written to access CDS entities



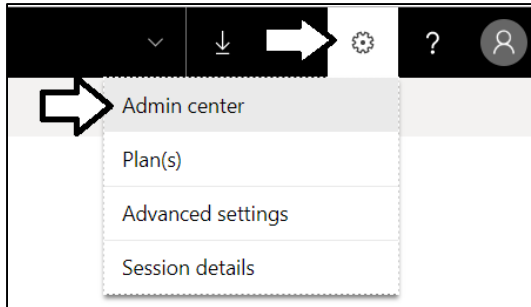
PowerApps Portal Architecture

- PowerApps portals built on Common Data Service
 - You must create a environment with CDS database to create portal
 - CDS used to track data for pages, templates and site content
 - Creating portals triggers installation of several ADX solutions



This Isn't Your Fathers PowerApps Admin Center

- Navigate to the new PowerApps admin center



- Admin center allows you to create and manage environments

Power Platform

Admin center (preview)

Environments

Analytics

Help + support

Data integration

Data gateways

Data policies

+ New

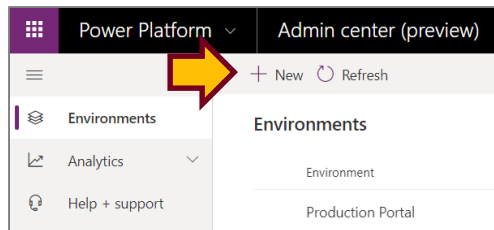
Refresh

Environments

Environment		Type	State	Region
Production Portal	...	Production	Ready	United States
Starter Portal	...	Trial	Ready	United States
Teds Portal	...	Production	Ready	United States
SharePoint Confessions Default	...	Default	Ready	United States

Creating a New Environment

- Use New command in the new admin center



New environment

Name *

Starter Portal

Type ⓘ *

Trial

Region *

Local environments can provide quicker data access.

United States - Default

Purpose

Describe the environment purpose

Create a database for this environment? ⓘ

☒ Yes

Next **Cancel**

Add database

Language *

Default language for user interfaces in this environment

English

Currency *

Reports will use this currency

USD (US\$)

Enable Dynamics 365 apps

In addition to PowerApps. [Learn more](#)

☐ No

Deploy sample apps and data

☐ No

Security group

Restrict environment access to people in this security group. Otherwise, everyone can access. [Learn more](#)

Save **Cancel**



Configuring Environment Features

The screenshot displays the Power Platform Admin center interface. The top navigation bar includes the Power Platform logo, a dropdown menu, and the title "Admin center (preview)". The left sidebar contains a navigation menu with "Environments" selected, showing sub-items like Analytics, Help + support, Data integration, Data gateways, Data policies, and Admin centers. The main content area shows the breadcrumb "Environments > Starter Portal > Settings" and a list of configuration categories: Product, Business, Users + permissions, Email, Services, and Data management. Each category has a list of specific settings, many of which are external links.

Power Platform ▾ Admin center (preview)

Environments > Starter Portal > Settings

- Environments
 - Analytics ▾
 - Help + support
 - Data integration
 - Data gateways
 - Data policies ↗
- Admin centers ▾

Product

- Behavior
- Features
- Languages ↗
- Privacy + Security

Business

- Business closures ↗
- Calendar ↗
- Currencies ↗
- Regional formatting ↗

Users + permissions

- Business units ↗
- Hierarchy security ↗
- Positions ↗
- Security roles ↗
- Teams ↗
- Users ↗

Email

- Email settings
- Email tracking
- Mailboxes ↗
- Server profiles ↗

Services

- Microsoft Social Engagement ↗

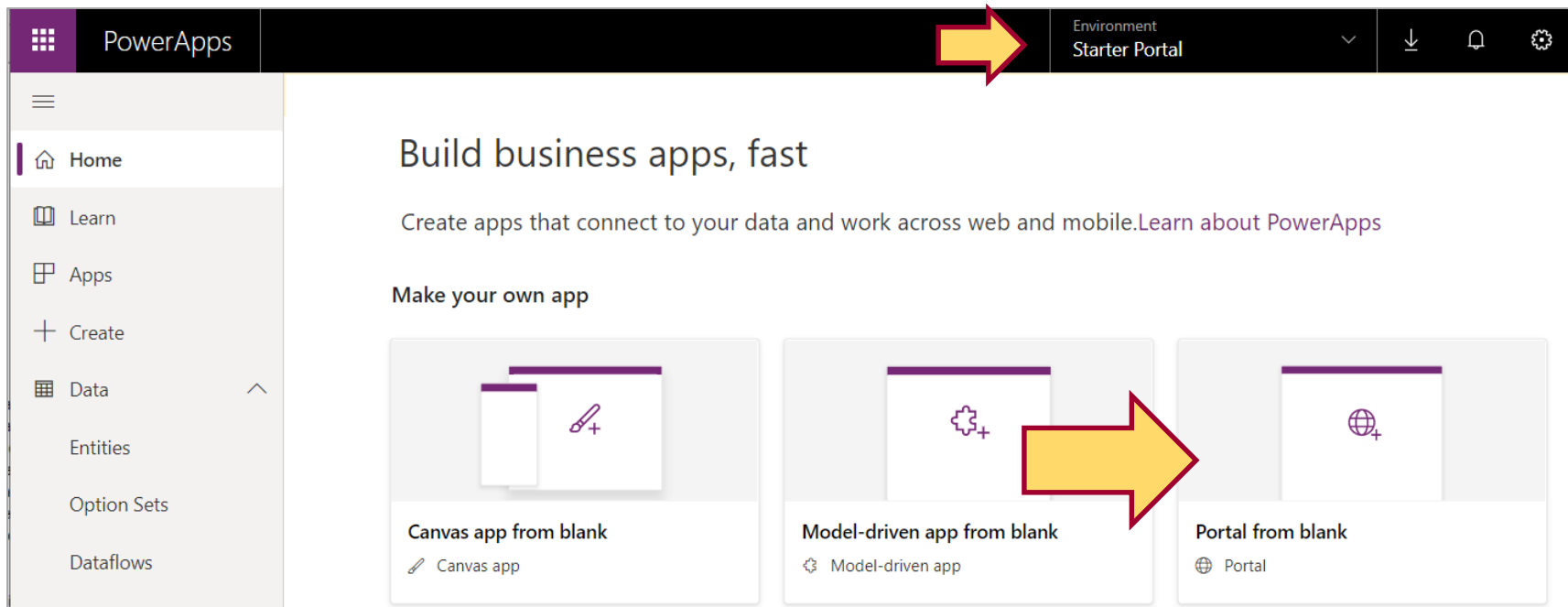
Data management

- Announcements ↗
- Auto numbering ↗
- Automatic record creation policies ↗
- Bulk deletion ↗
- Data import wizard ↗
- Data maps ↗
- Duplicate detection ↗
- Mobile configuration ↗
- Templates ↗



Creating a New PowerApps Portal


- New portal created using PowerApps Maker Portal
 - Select your target environment
 - Create portal using **Portal from blank** template




Providing Portal Provisioning Data

- Portal requires Name and unique address

Portal from blank



Create a website to share data with external and internal users. This template comes with sample pages to get you quickly started. [Learn more](#)

 Portal

① We'd need to install certain prerequisites for try portals, use an environment with them installed or create a new one using the Create new environment button

Name *
Teds Starter Portal

Address * ①
TedsStarterPortal

✓ TedsStarterPortal.powerappsportals.com

Language
English

By clicking on Create, you agree to the Terms of service and the Privacy Statement.

Create Cancel

Name *
Teds Starter Portal

Address * ①
TedsStarterPortal .powerappsportals.com

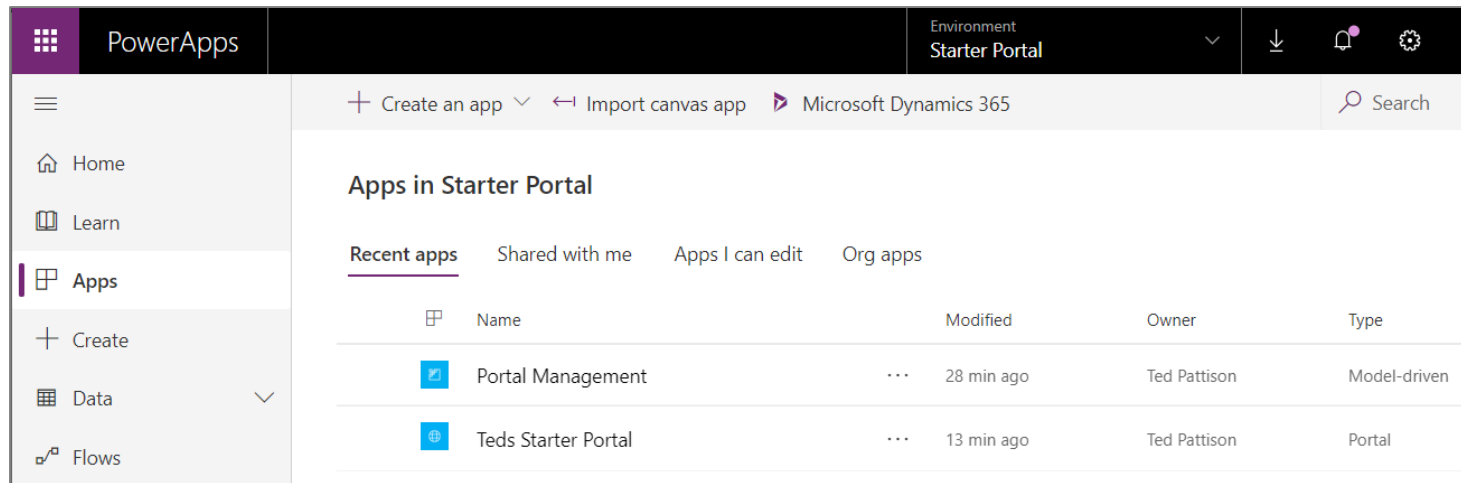

✓ TedsStarterPortal.powerappsportals.com

Environment				
Starter Portal	▼	↓	🔔	⚙️ ?
<div>Portal provisioning in progress</div> <p>Your portal Teds Starter Portal is currently being provisioned and this can take time. You'll be notified via Notifications pane once it is provisioned.</p>				

Portal Apps

- Provisioning a portal creates two applications
 - PowerApps portal
 - Model-driven app named **Portal Management**

The screenshot shows the PowerApps environment for 'Starter Portal'. The left sidebar contains navigation links: Home, Learn, Apps (selected), Create, Data, and Flows. The main content area is titled 'Apps in Starter Portal' and features tabs for 'Recent apps', 'Shared with me', 'Apps I can edit', and 'Org apps'. Below the tabs is a table listing recent applications.

	Name	Modified	Owner	Type
	Portal Management	28 min ago	Ted Pattison	Model-driven
	Teds Starter Portal	13 min ago	Ted Pattison	Portal



Launching the Portal

The image shows the PowerApps interface on the left and a web browser window on the right. In the PowerApps interface, a yellow arrow points to the 'Apps' tab in the left-hand navigation pane. The browser window displays the 'Home - Starter Portal' page for 'Contoso Ltd'. The page features a blue header with the company name and navigation links. The main content area has a large blue banner with the text 'Build your website!' and a subtext 'This is a sample landing page for your website to get started with.' Below this, there is a section titled 'Getting started' with the text 'This is a dummy text. You can start editing directly here.' and three placeholder cards, each with an icon and the text 'Sample title' and 'This is a dummy text. You can start editing directly'.

PowerApps Interface:

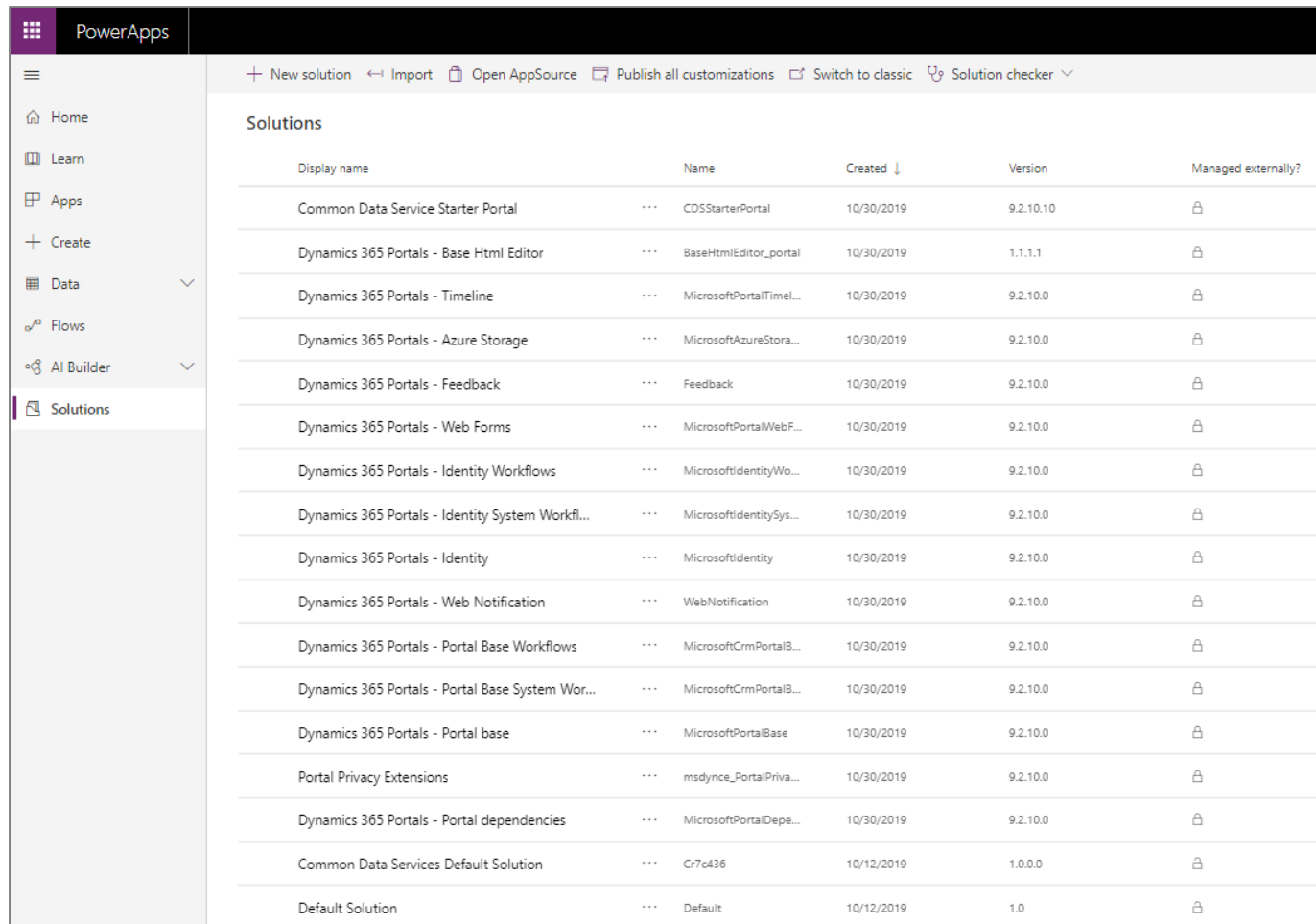
- Environment: Starter Portal
- Microsoft Dynamics 365
- Apps in Starter Portal
- Recent apps: Portal Man, Teds Starter

Web Browser:

- Address: tedsstarterportal.powerappsportals.com
- Page Title: Home - Starter Portal
- Header: Contoso Ltd | Home | Services | About us | Sign in
- Main Content: Build your website! This is a sample landing page for your website to get started with.
- Section: Getting started. This is a dummy text. You can start editing directly here.
- Placeholder Cards: Sample title. This is a dummy text. You can start editing directly.

Solutions Installed to Support Portals

- Creation of portal triggers installation of ADX solutions



The screenshot shows the PowerApps interface with the 'Solutions' tab selected in the left-hand navigation pane. The main area displays a table of installed solutions. At the top of the table area, there are buttons for '+ New solution', 'Import', 'Open AppSource', 'Publish all customizations', 'Switch to classic', and 'Solution checker'. The table has columns for 'Display name', 'Name', 'Created', 'Version', and 'Managed externally?'. The solutions listed include various Dynamics 365 Portal components and extensions.

Display name	Name	Created ↓	Version	Managed externally?
Common Data Service Starter Portal	CDStarterPortal	10/30/2019	9.2.10.10	🔒
Dynamics 365 Portals - Base Html Editor	BaseHtmlEditor_portal	10/30/2019	1.1.1.1	🔒
Dynamics 365 Portals - Timeline	MicrosoftPortalTimel...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Azure Storage	MicrosoftAzureStora...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Feedback	Feedback	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Web Forms	MicrosoftPortalWebF...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Identity Workflows	MicrosoftIdentityWo...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Identity System Workfl...	MicrosoftIdentitySys...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Identity	MicrosoftIdentity	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Web Notification	WebNotification	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Portal Base Workflows	MicrosoftCrmPortalB...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Portal Base System Wor...	MicrosoftCrmPortalB...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Portal base	MicrosoftPortalBase	10/30/2019	9.2.10.0	🔒
Portal Privacy Extensions	msdynce_PortalPriva...	10/30/2019	9.2.10.0	🔒
Dynamics 365 Portals - Portal dependencies	MicrosoftPortalDepe...	10/30/2019	9.2.10.0	🔒
Common Data Services Default Solution	Cr7c436	10/12/2019	1.0.0.0	🔒
Default Solution	Default	10/12/2019	1.0	🔒



PowerApps Portal Entities

Ad	adx_ad
Ad Placement	adx_adplacement
Alert Subscription	adx_alertsubscription
Change Password for Portals Contact	adx_bpf_c2857b638fa7473d
Content Snippet	adx_contentsnippet
Entity Form	adx_entityform
Entity Form Metadata	adx_entityformmetadata
Entity List	adx_entitylist
Entity Permission	adx_entitypermission
External Identity	adx_externalidentity
Invitation	adx_invitation
Invite Redemtion Page Alert	adx_inviteredemtion adx_pagealert
Page Notification	adx_pagenotification
Page Tag	adx_pagetag
Page Template	adx_pagetemplate
Poll	adx_poll
Poll Option	adx_polloption
Poll Placement	adx_pollplacement
Poll Submission	adx_pollsubmission
Portal Comment	adx_portalcomment
Portal Language	adx_portallanguage
Publishing State	adx_publishingstate
Publishing State Transition Rule	adx_publishingstatetransitionrule
Redirect	adx_redirect
Setting	adx_setting
Shortcut	adx_shortcut

Site Marker	adx_sitemarker
Site Setting	adx_sitesetting
Tag	adx_tag
URL History	adx_urlhistory
Web File	adx_webfile
Web File Log	adx_webfilelog
Web Form	adx_webform
Web Form Metadata	adx_webformmetadata
Web Form Session	adx_webformsession
Web Form Step	adx_webformstep
Web Link	adx_weblink
Web Link Set	adx_weblinkset
Web Notification Entity	adx_webnotificationentity
Web Notification URL	adx_webnotificationurl
Web Page	adx_webpage
Web Page Access Control Rule	adx_webpageaccesscontrolrule
Web Page History	adx_webpagehistory
Web Page Log	adx_webpagelog
Web Role	adx_webrole
Website	adx_website
Website Access	adx_websiteaccess
Website Binding	adx_websitebinding
Website Language	adx_websitelanguage
Web Template	adx_webtemplate



Portal Templates

- **Customer self-service portal**
 - Provides customers with access info, support resources and order status
- **Partner portal**
 - Provides portal for with resellers, distributors, suppliers and/or partners
- **Employee self-service portal**
 - streamline common tasks and allows for sharing resource
- **Community portal**
 - Facilitates interactions between customers and experts
- **Portal from blank**
 - Minimum portal with a small set of sample pages



Portal Template Features

Feature	Customer self-service portal	Partner portal	Employee self-service portal	Community portal	Portal from blank
World Ready	•	•	•	•	•
Multi-Language Support	•	•	•	•	•
Portal Administration	•	•	•	•	•
Customization and Extensibility	•	•	•	•	•
Theming	•	•	•	•	•
Content Management	•		•	•	
Knowledge Management	•	•	•	•	
Support/Case Management	•		•	•	
Forums	•		•	•	
Faceted Search	•		•		
Profile Management	•		•		
Subscribe to Forum Thread	•		•		
Comments	•		•	•	
Azure AD Authentication			•		
Ideas				•	
Blogs				•	
Project Service Automation Integration		•			
Field Service Integration		•			
Partner Onboarding		•			
Portal Base	•	•	•	•	•
Portal Workflows	•	•	•	•	•
Web Notifications	•	•	•	•	•
Microsoft Identity	•	•	•	•	•
Identity Workflows	•	•	•	•	•
Web Forms	•	•	•	•	•
Feedback	•	•	•	•	•



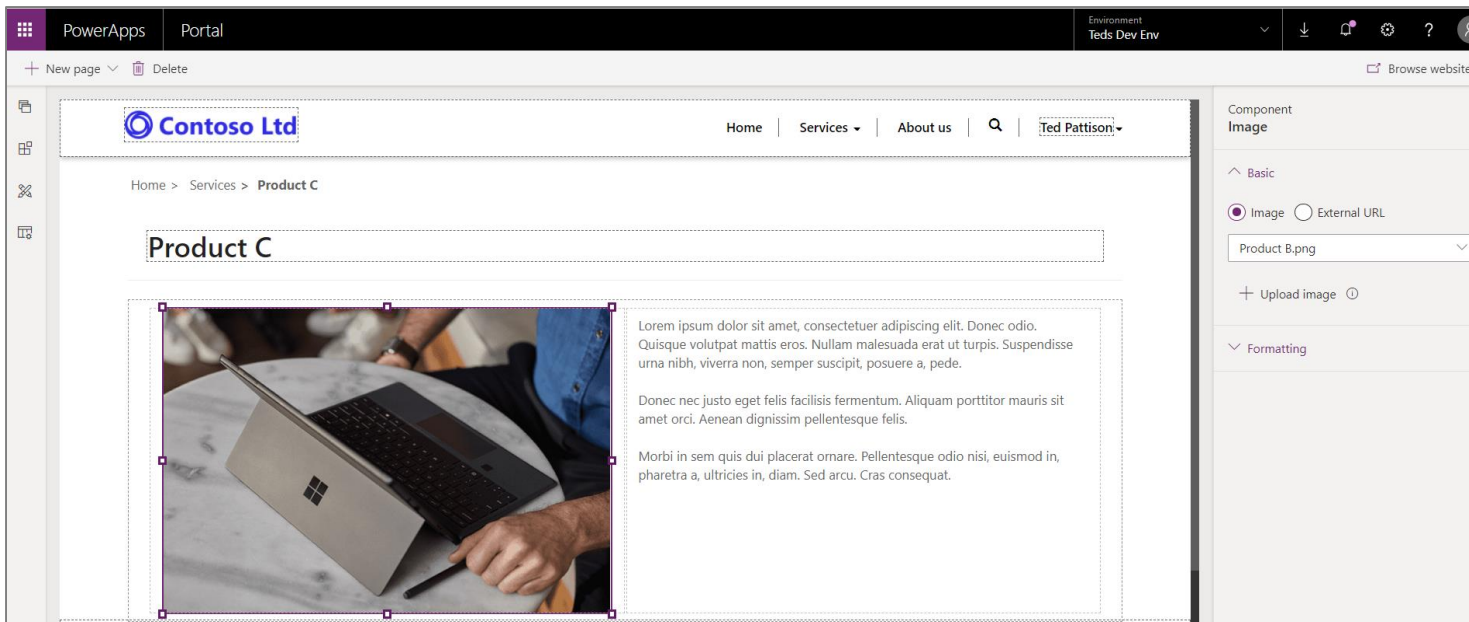
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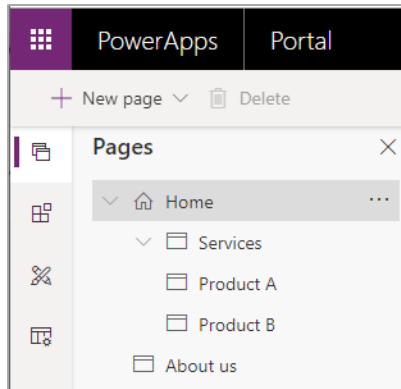
Portal Editor

- Used to add pages and author page content
 - Designed for less-technical users
 - Editor not require web designer/developer skills



Page Hierarchy

- Web Page can have one or more child pages
 - Provides foundation for building page hierarchy

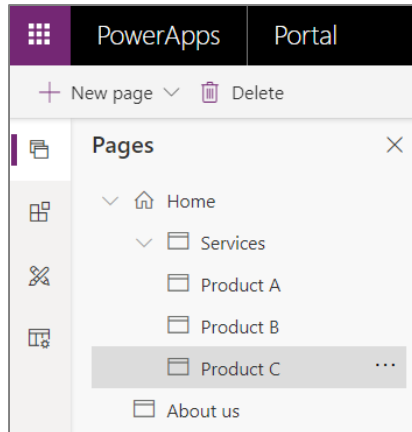


- Page hierarchy used to build navigation menu

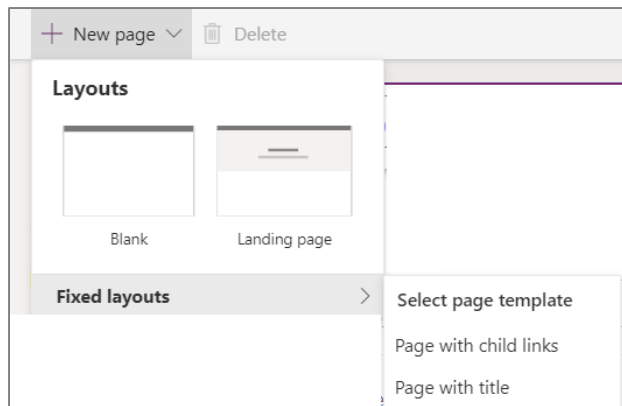


Adding and Navigating Pages

- **Pages** tab provides navigation across pages

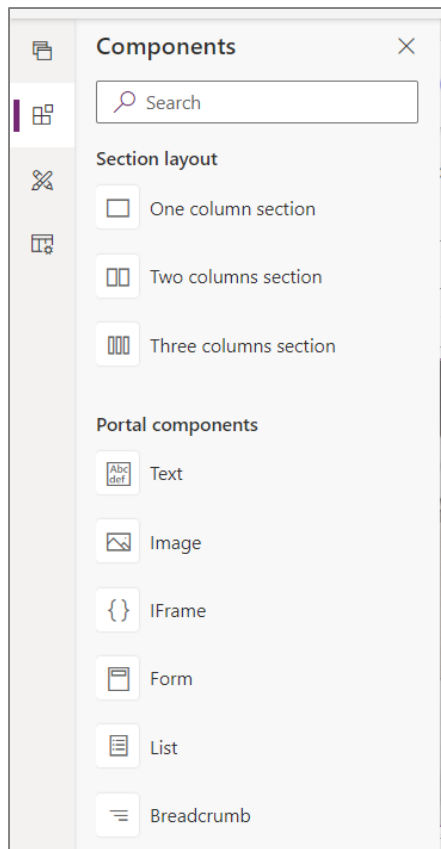


- Pages added using **New page** menu button



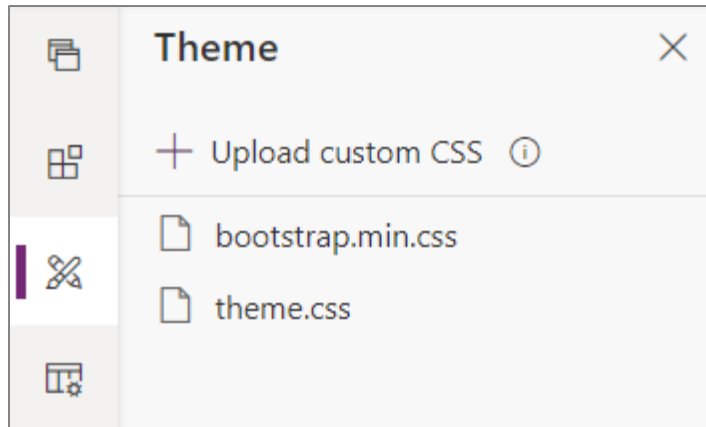
Adding Page Content using Components

- Portal Editor provides Components for content authors
 - You drag components onto page design surface



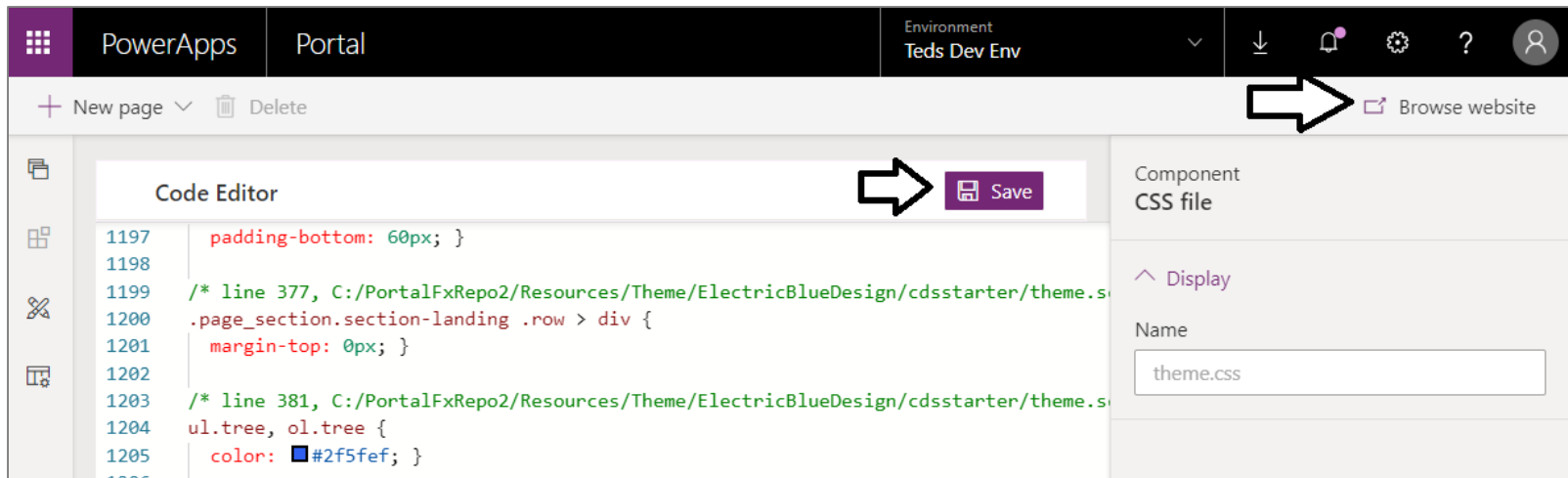
Themes

- PowerApps portals styled using Bootstrap 3
 - Not practical to use a more recent version of bootstrap (e.g. v4)
 - theme.css file is provided for your custom styles



Seeing Your Changes in the Portal

- Portal Editor provides **Browse website** button
 - Used to test how the portal will appear to others
 - Browse website clears cache to enabled development

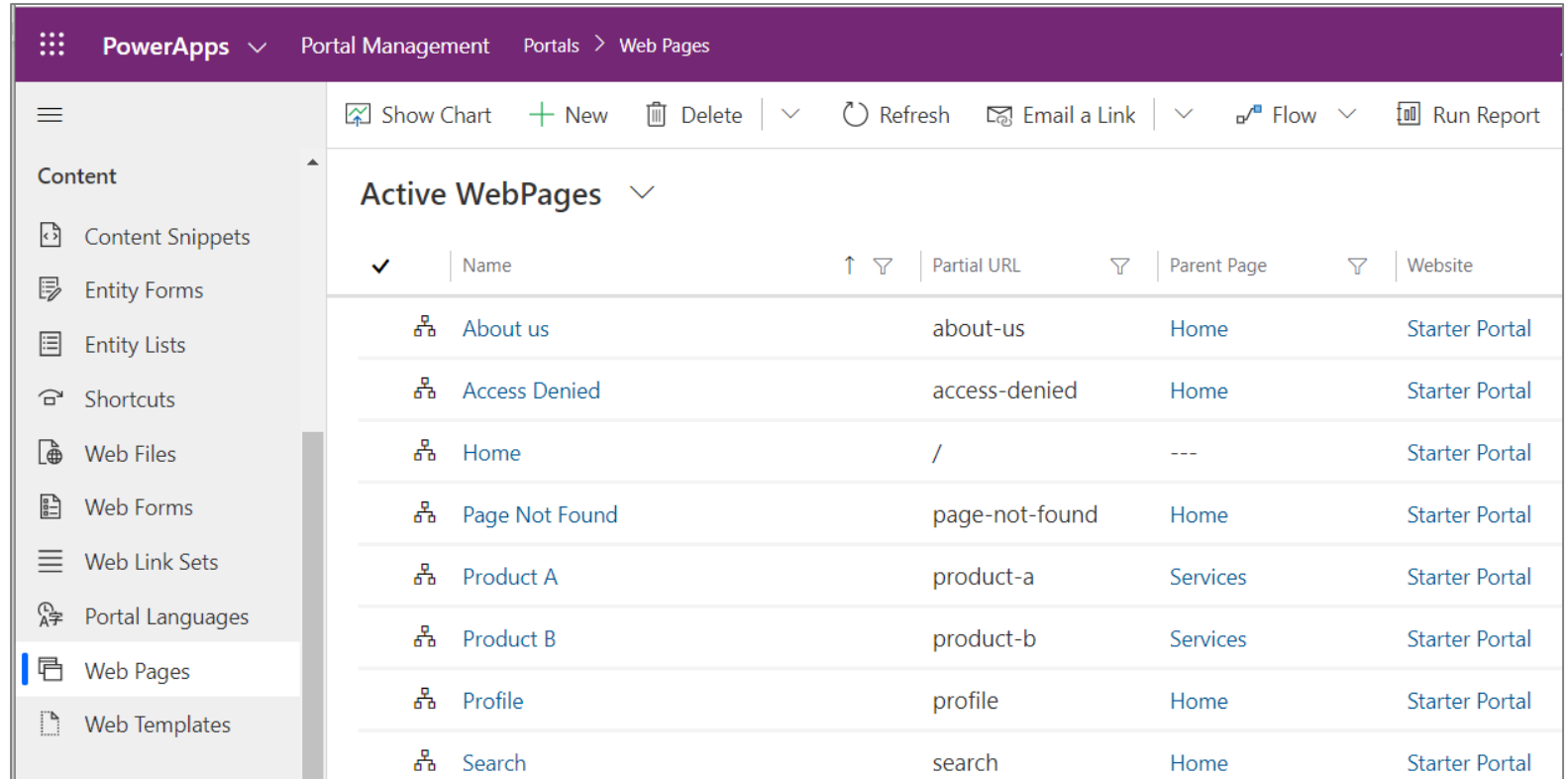
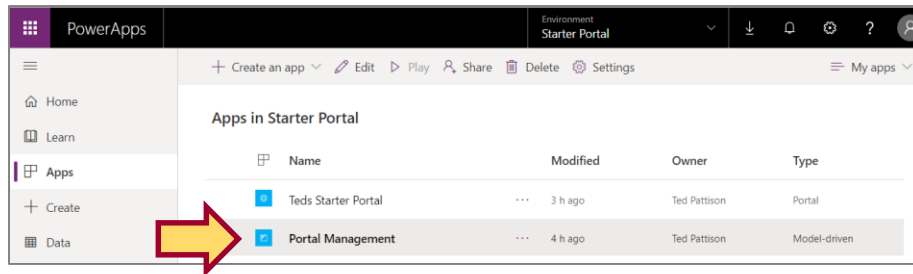


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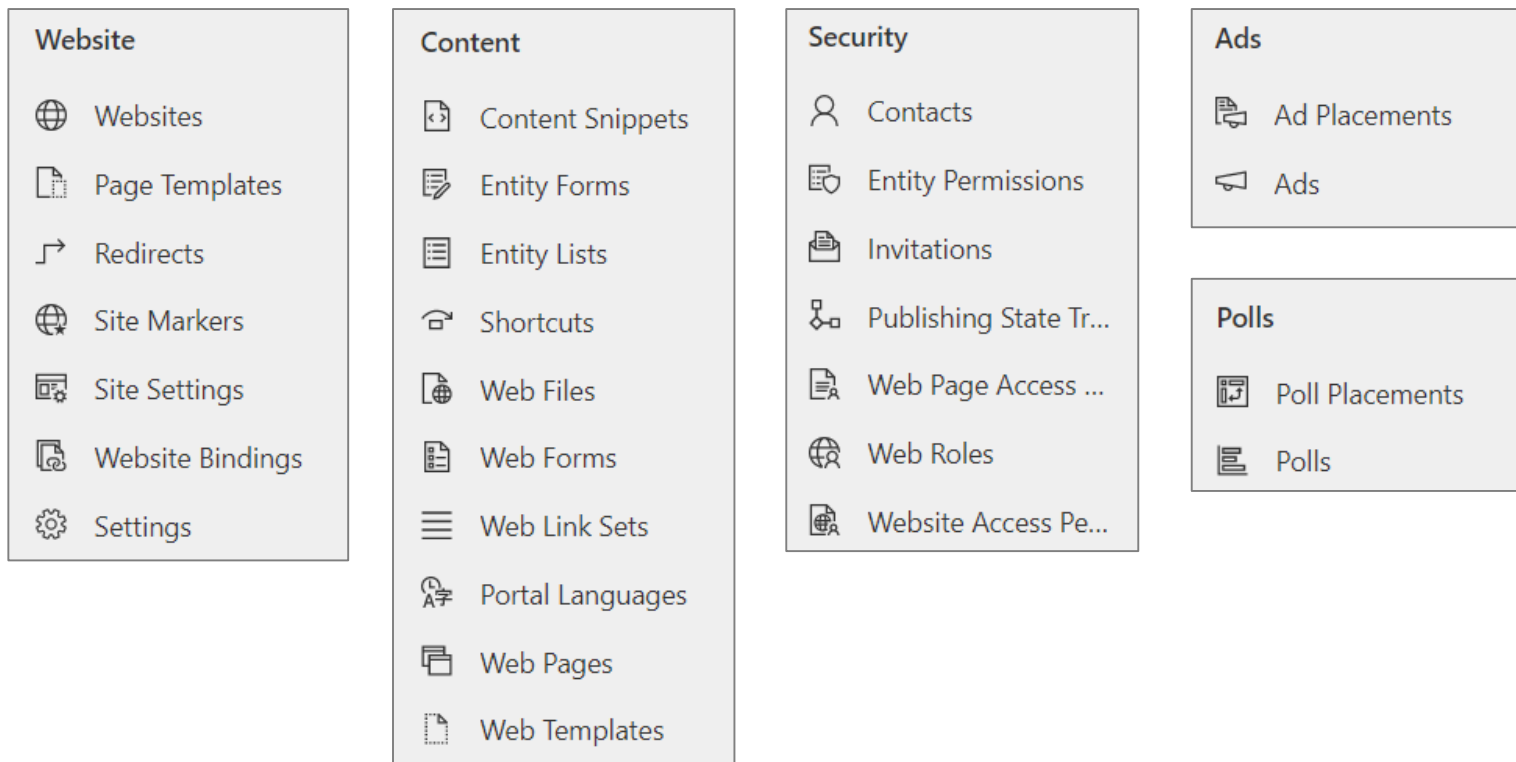


Portal Management App



Portal Management App Entities

- Portal Management app provides access to portal entities
 - Website entities
 - Content entities
 - Security entities
 - Ad and Poll entities

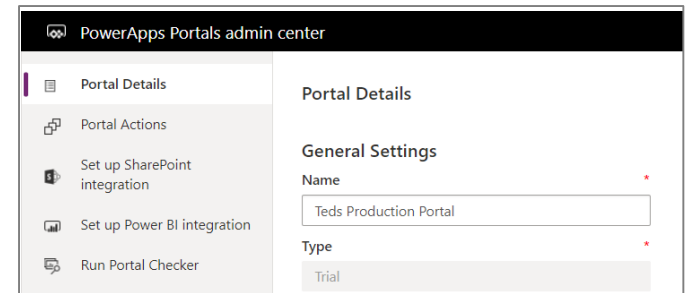
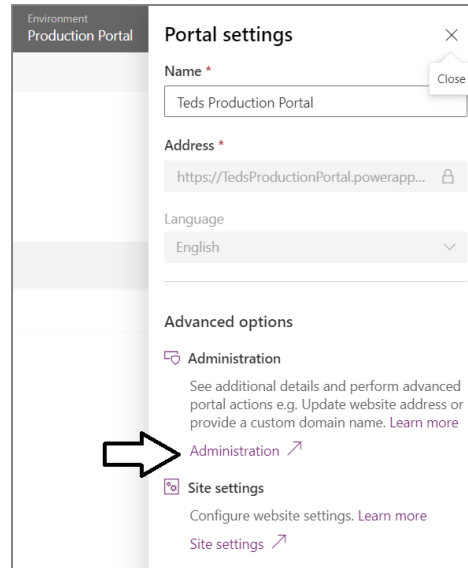
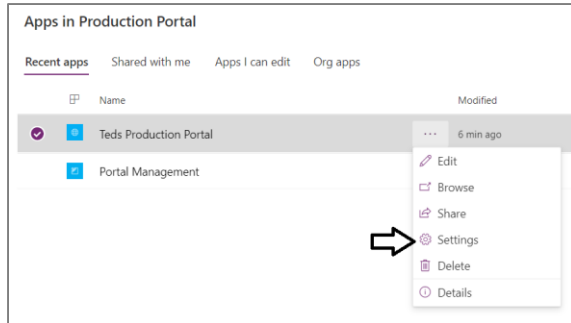


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Navigating to the Portal admin center



Converting from Trial to Production

- Portal is created in trial mode
 - Portal must be converted to production mode within 30 days
 - Host environment must be in production mode to convert portal
 - Important configuration options not available in trial portal

The screenshot displays the 'PowerApps Portals admin center' interface. On the left, a sidebar lists various actions, including 'Convert', which is highlighted by a white arrow. The main panel shows 'Portal Details' for a portal named 'Teds Production Portal'. The 'Type' is currently set to 'Trial'. A yellow warning banner states: 'Your trial portal will expire in 30 day(s). Convert your portal to production to avoid its suspension. Learn more'. Below this, the 'Convert' button is visible. To the right, a modal dialog titled 'Convert trial to production' is open, asking for confirmation: 'This action will convert your trial portal to production. Are you sure you want to continue?'. The dialog includes 'Confirm' and 'Cancel' buttons.

PowerApps Portals admin center

Portal Details

General Settings

Name
Teds Production Portal

Type
Trial

ⓘ Your trial portal will expire in 30 day(s). Convert your portal to production to avoid its suspension. [Learn more](#)

Convert

Application ID
a278550c-49c6-4035-b8da-e4304bc91c37

Owner
Ted Pattison

Portal URL
Base Portal URL
<https://TedsProductionPortal.powerappsportals.com>

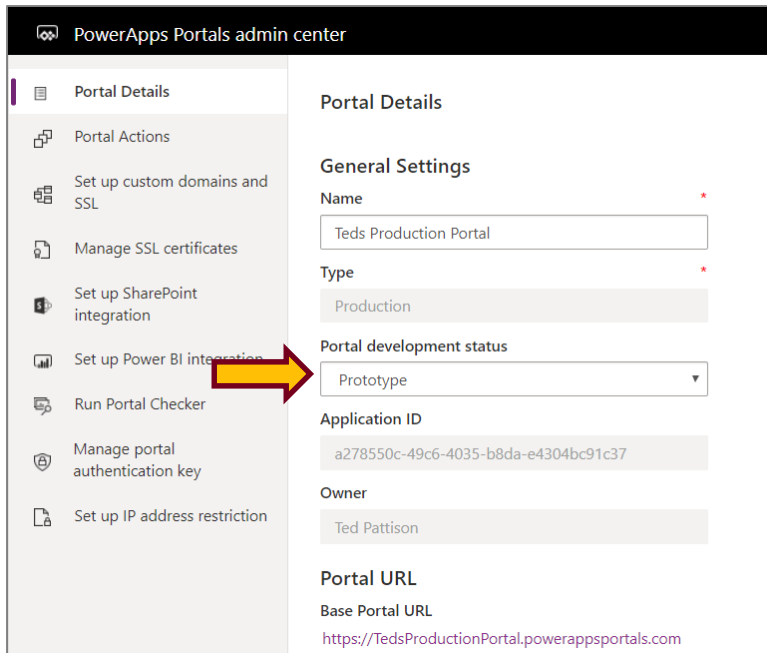
Convert trial to production

This action will convert your trial portal to production. Are you sure you want to continue?

Confirm Cancel

Portal Development Status

- Production portal has develop status property



PowerApps Portals admin center

Portal Details

General Settings

Name
Teds Production Portal

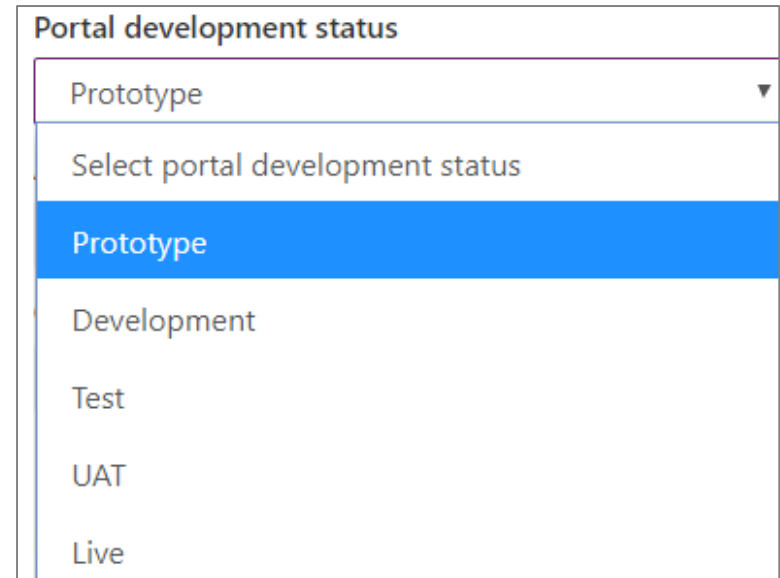
Type
Production

Portal development status
Prototype

Application ID
a278550c-49c6-4035-b8da-e4304bc91c37

Owner
Ted Pattison

Portal URL
Base Portal URL
<https://TedsProductionPortal.powerappsportals.com>



Portal development status

Prototype

Select portal development status

Prototype

Development

Test

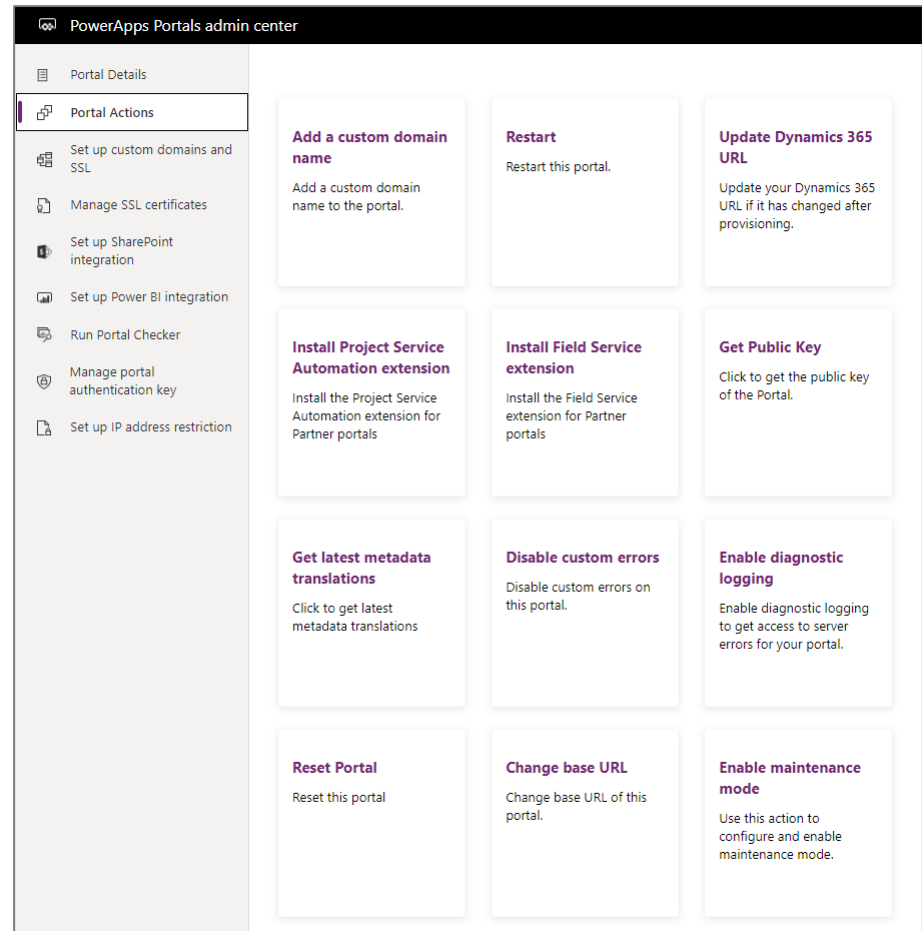
UAT

Live



Portal Actions

- Import portal actions
 - Add custom domain
 - Configure SSL
 - Enable SharePoint Integration
 - Enabled Power BI Integration
 - Restart Portal
 - Reset Portal



Integrating External Authentication Providers

- PowerApps portals allows for external authentication providers
 - Users can authenticate using LinkedIn, Facebook and Twitter
- Brian Knight (MVP) has some very useful videos
 - PowerApps Portals External Authentication with LinkedIn
<https://www.youtube.com/watch?v=8Zx2RBhwV4I>
 - PowerApps Portals External Authentication with Facebook
<https://www.youtube.com/watch?v=egfnaXIqpwU>




Demo Portal at www.TedPattison.net

Public Class Schedule · CPT Portal

tedpattison.net/schedule/

AppsM365 AdminPower BIPowerAppsa Azure PortalTutorial 1CS in Power BIPortal DevSPODig web interface



PowerApps Portals ▾Training Courses ▾ScheduleAboutSearchSign in

Home > Public Class Schedule

Public Class Schedule

Start	Class	Audience	Instructor	Location	Length	Online	Action
Nov 25	Day of Building Business Solutions with PowerApps (DOPAP)	Citizen developers	Christina Wheeler	Online	1 Day	Yes	Register
Nov 26	Day of Building Business Solutions with Microsoft Flow (DOFLO)	Citizen developers	Christina Wheeler	Online	1 Day	Yes	Register
Dec 3	Building Business Solutions with PowerApps and Flow (BBSPA)	Citizen developers	Ted Pattison	Tampa, FL	3 Days	No	Register
Dec 9	Modern SharePoint and Office 365 Development (MSD365)	Professional developers	Ted Pattison	Tampa, FL	4 Days	Yes	Register
Dec 16	Power BI Certification Bootcamp (PBI365)	Citizen developers	Ted Pattison	Tampa, FL	3 Days	Yes	Register
Jan 13	Power BI Developer Bootcamp (PBD365)	Professional developers	Ted Pattison	Tampa, FL	4 Days	Yes	Register
Jan 20	Building Business Solutions with PowerApps and Flow (BBSPA)	Citizen developers	Ted Pattison	Tampa, FL	3 Days	Yes	Register
Feb 3	Modern SharePoint and Office 365 Development (MSD365)	Professional developers	Ted Pattison	Tampa, FL	4 Days	Yes	Register



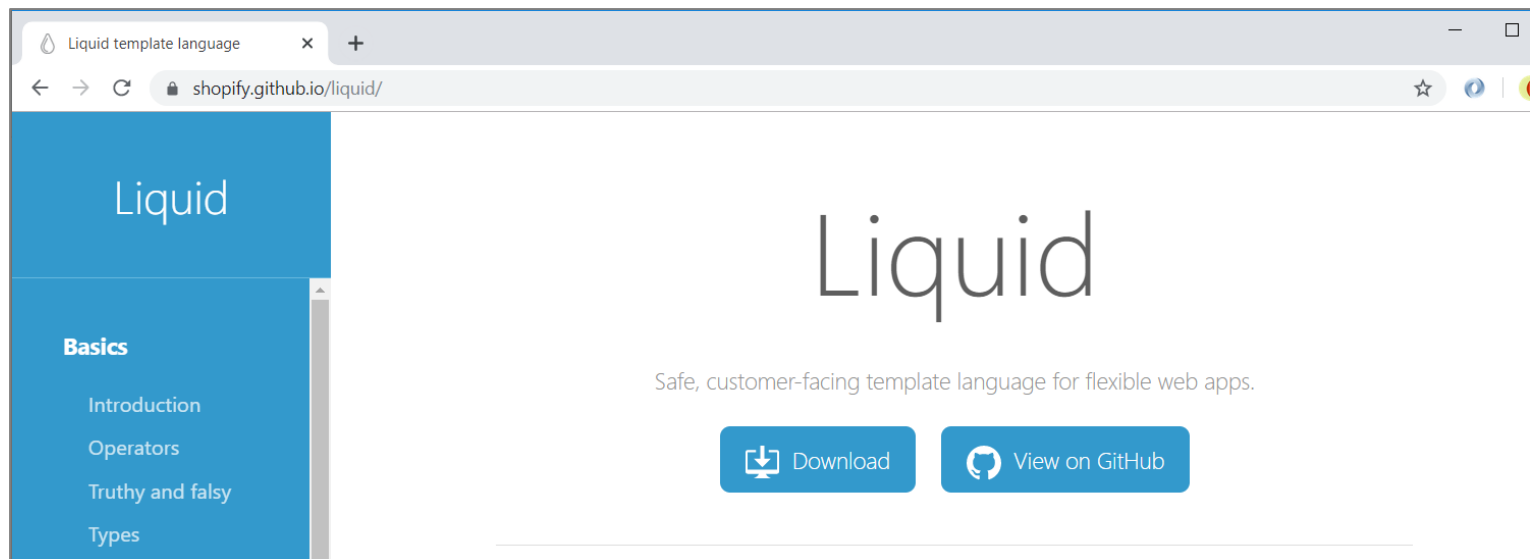
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Liquid Template Language

- Liquid is open-source template language
 - Created by Shopify in 2006
 - Currently used by 100s of websites and ISVs
 - Designed to surface data from databases into web pages
 - Liquid template code runs in the cloud in secure manner
 - Docs and tutorial available at <https://shopify.github.io/liquid/>



Liquid 101 – Objects and Tags

- **Objects** and variables denoted by double curly braces: `{{ and }}`

Input

```
{{ page.title }}
```

Output

Introduction

- **Tags** with logic use curly braces and percent signs: `{% and %}`.

Input

```
{% if user %}  
  Hello {{ user.name }}!  
{% endif %}
```

Output

Hello Adam!



Liquid Objects

- The follow Liquid objects are available in PowerApps portals

now	A date/time object that refers to the current UTC time at the time the template is rendered.
page	current portal request page with title and URL
params	request.params
request	Contains information about the current HTTP request. More information: request
settings	Allows you to load any Site Setting by name. More information: settings
sitemap	Allows access to the portal site map. More information: sitemap
sitemarkers	Allows you to load any Site Markers by name. More information: sitemarkers
snippets	Allows you to load any Content Snippet by name. More information: snippets
user	Refers to the current portal user. If no user is signed in, this variable will be null.
weblinks	Allows you to load any Web Link Set by name or ID. More information: weblinks
website	current portal Website record with website properties

- PowerApps-specific reference for Liquid template language
 - <https://docs.microsoft.com/en-us/powerapps/maker/portals/liquid/liquid-overview>



Liquid 101 - Filters

- Filters transform objects and are separated by a |

Input

```
{{ "/my/fancy/url" | append: ".html" }}
```

Output

```
/my/fancy/url.html
```

Input

```
{{ "adam!" | capitalize | prepend: "Hello " }}
```

Output

```
Hello Adam!
```



Liquid 101 – where filter

- where can be used to filter records

Input

```
All products:
{% for product in products %}
- {{ product.title }}
{% endfor %}

{% assign kitchen_products = products | where: "type", "kitchen" %}

Kitchen products:
{% for product in kitchen_products %}
- {{ product.title }}
{% endfor %}
```

Output

```
All products:
- Vacuum
- Spatula
- Television
- Garlic press

Kitchen products:
- Spatula
- Garlic press
```



Creating a Solution with Custom Entities

Solutions > Critical Path Training Solution			
Display name ▾		Name	Type ▾
Audience	⋮	cpt_audience	Option Set
Class	⋮	cpt_class	Entity
Class Location	⋮	cpt_classlocation	Entity
Course	⋮	cpt_course	Entity
Course Length	⋮	cpt_length	Option Set
Training Class Management 🔗	⋮	cpt_TrainingClassManagement	Client Extension
Training Class Management 🔗	⋮	cpt_TrainingClassManagement	Model-driven App
Import class events from Eventbrite 🔗	⋮	Import class events from Eventbrite	Flow



The Course Entity

Solutions > Critical Path Training Solution > Course

Fields

Relationships

Business rules

Views

Forms

Dashboards

Charts

Keys

Data

Display name ↑ ∨

Name ∨

Data type ∨

Audience

...

cpt_audience

☰ Option ...

Course Code

...

cpt_coursecode

Abc Text

Currency

...

transactioncurrencyid

🔍 Lookup

Description

...

cpt_description

Abc Text Area

Description URL

...

cpt_descriptionurl

Abc URL

Exchange Rate

...

exchangerate

×₂ Decimal...

Length

...

cpt_length

☰ Option ...

List Price

...

cpt_listprice

🏷 Currency

List Price (Base)

...

cpt_listprice_base

🏷 Currency

Name

Primary Field

...

cpt_name

Abc Text



The Class Entity

Solutions > Critical Path Training Solution > **Class**

Fields

Relationships

Business rules

Views

Forms

Dashboards

Charts

Keys

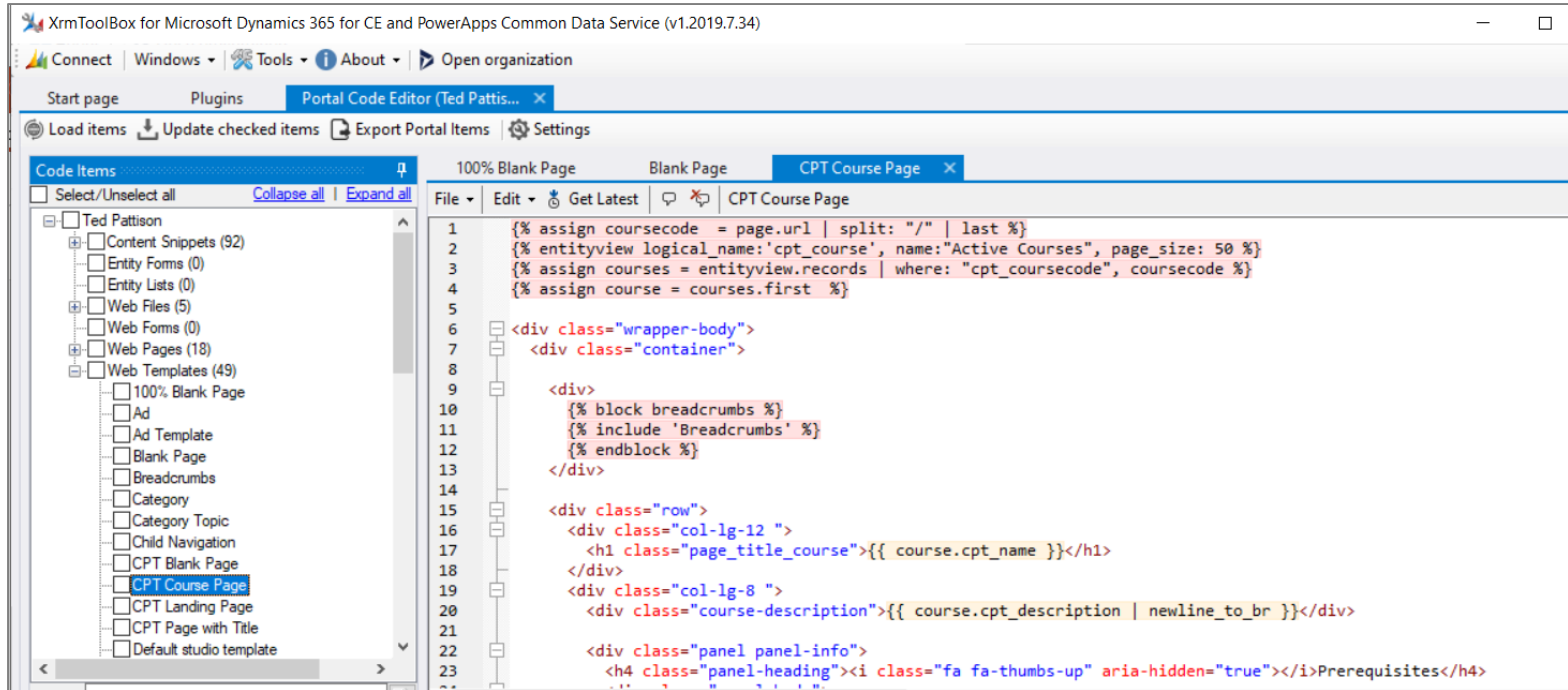
Data

Display name ↑ ∨		Name ∨	Data type ∨
Attend Online	...	cpt_attendonline	Two Options
Course	...	cpt_course	Lookup
Description	...	cpt_description	Text Area
End	...	cpt_end	Date and Time
EventbriteID	...	cpt_eventbriteid	Text
Instructor	...	cpt_instructor	Lookup
Location	...	cpt_location	Lookup
Name Primary Field	...	cpt_name	Text
Registration Url	...	cpt_registrationurl	URL
Start	...	cpt_start	Date and Time



XrmToolbox

- Authoring Tool for PowerApps Portals
 - Provides plug-ins for authoring and managing portals



Using Liquid to Access Entity Data

- Web Template created using Liquid scripting language
 - Can be used to access CDS data

```
<table class="table-schedule table table-bordered table-striped">
  <thead class="thead-dark">
    <tr>
      <th>Start</th>
      <th>Instructor</th>
      <th>Location</th>
      <th>Action</th>
    </tr>
  </thead>
  {% entityview logical_name:'cpt_class', name:"Active Classes", page_size: 50 %}
  {% assign classes = entityview.records | where: "cpt_Class_Course_cpt_Course.cpt_coursecode", course.cpt_coursecode |
    order_by: "cpt_start" %}
  {% for item in classes %}
    <tr>
      <td>{{item.cpt_start | date: "MMM d"}}</td>
      <td>{{item.cpt_instructor.name}}</td>
      <td>{{item.cpt_location.name}}</td>
      <td><a href="{{item.cpt_registrationurl}}" target="_blank">Register</td>
    </tr>
  {% endfor %}
{% endentityview %}
</table>
```



Summary

- ✓ PowerApps Portal Architecture
- ✓ Portal Editor
- ✓ Portal Management App
- ✓ Portal Configuration
- ✓ Developing Web Templates

