



Enhancing User Experience with Embedded Power BI Content

Odeta Jankaitienė



Odeta

Jankaitienė

*Solutions Architect – Data & Analytics
Macaw*



@OdetaJan



[linkedin.com/in/odetajankaitiene](https://www.linkedin.com/in/odetajankaitiene)



DragonsData.com



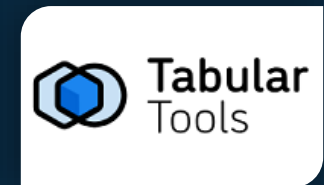
<https://github.com/Odeta-Jankaitiene>



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A Huge Thank You to SPONSORS!



Agenda

- Why does one want to embed Power BI reports?
- Power BI Embedded Solutions
- Demo
- Summary

Introduction

Power BI Embedded Analytics is used to enhance the functionality and value of custom applications by integrating powerful data visualisation and reporting capabilities.

It allows developers to create data-rich, customised, and interactive experiences for their users while maintaining control over security and branding.

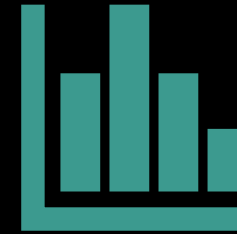
Use Cases



Power BI (PBI) Embedded Solutions



Secure Embed



PBI Embedded Analytics

Embed for your **customers**

Embed for your **organisation**

Secure Embed



The simplest **no-code** way to embed a report into any portal that accepts a URL or iFrame



The viewer must have a PBI **Pro** or **PPU** license, or you need a **Premium workspace**



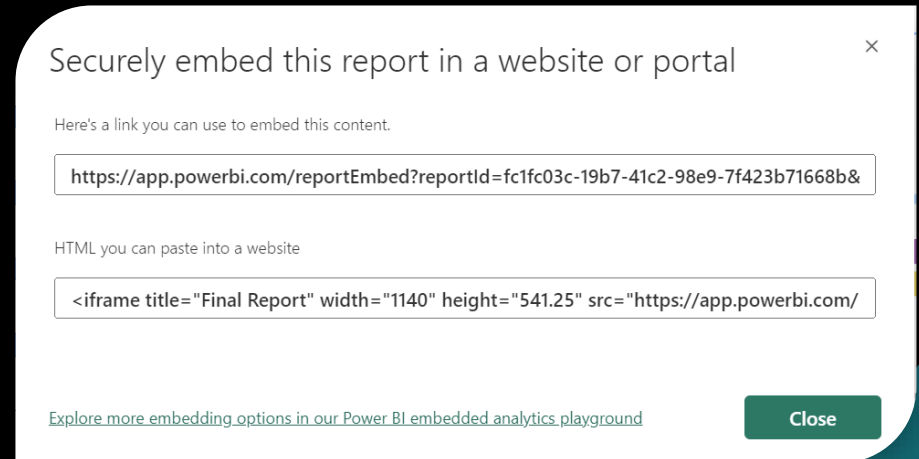
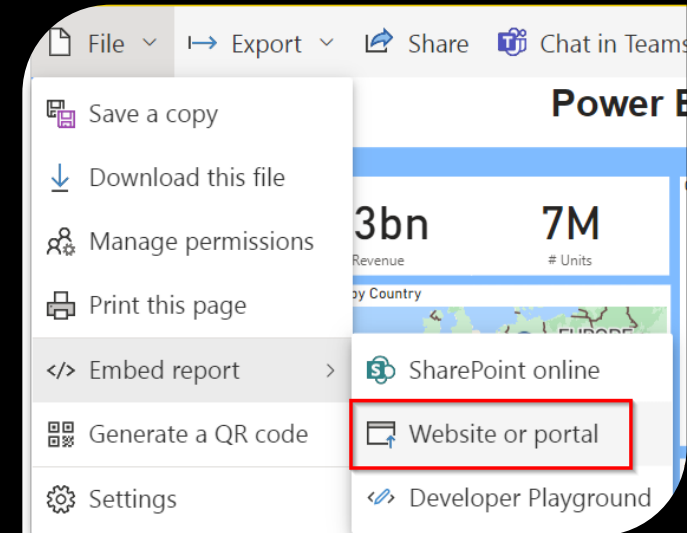
The viewer **cannot make any changes** to the report



Respects **permissions** and **RLS & OLS**



Supports **URL filters** and URL settings





DEMO
Secure Embed

PBI Embedded Analytics

Gives you additional benefits over secure embed. It offers a rich, fully integrated experience with full API support, automatic authentication, and the reports can be hosted in apps and web pages.

There are two solutions:



Embed for your **customers**



Embed for your **organisation**



Embed For Your Customers

Allows you to build an app that uses **non-interactive authentication** against Power BI. Your customers are likely to be external users, and they don't need to sign in using Power BI credentials to view the embedded content.

Embed For Your Organisation

Allows you to build an app that **requires signing in** using Power BI credentials. Once signed in, users can only consume embedded content they can access on the Power BI Service.

This solution is aimed at large organisations that are building an app for internal users.



EMBED FOR YOUR CUSTOMERS

EMBED FOR YOUR ORGANISATION

VS

Also known as app owns data

Aimed at external users

To authenticate app users, use your own authentication method

App users don't need a license

PBIX in any workspace

Need to retrieve Embed Token & Embed URL

Capacity is required (A, EM, P or F SKUs)

Also known as user owns data

Aimed at internal users

App users authenticate against Azure AD

Each app user needs a PBI license

PBIX in App workspace

Use Embed URL from PBI REST API request

Capacity not required (for free users – EM, P or F SKUs)



DEMO

Embed For Your Customers

Prerequisites – Embed for Customers

- Power BI part:
 - Your own Azure Active Directory (AAD) [tenant](#)
 - To authenticate your app against Power BI (use [one](#)):
 - [Service principal](#) or
 - PBI Pro/PPU [license](#) for the master user

Note: To move to production, you'll need [a capacity](#)
- Coding part*:
 - Python 3 (or higher)
 - An integrated [development environment](#), e.g., Visual Studio Code

**depending on what language you use. There are code examples for: .NET Framework, .NET Core, Java, Node JS, Python*

Steps – Embed for Customers

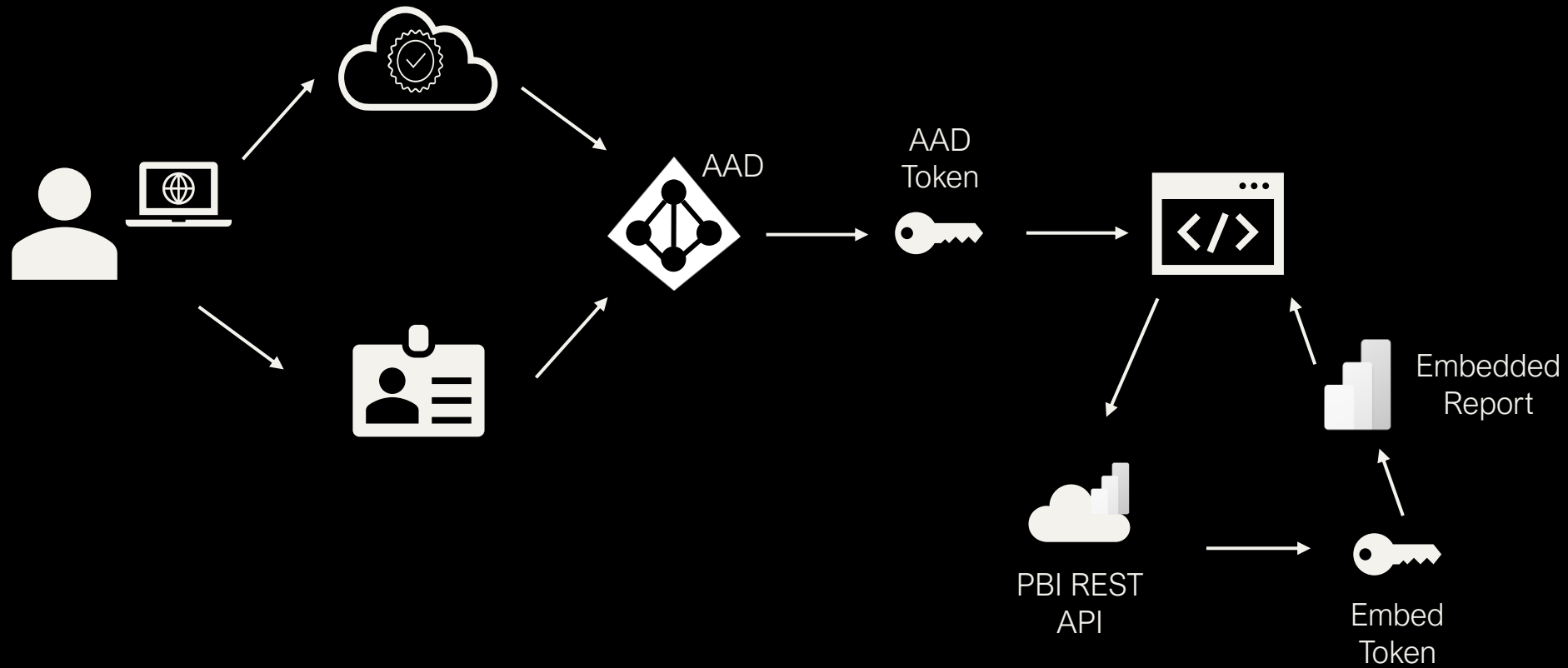
1. Select your authentication method
2. Register an AAD application
3. Create a PBI workspace
4. Create and publish a PBI report
5. Get the embedding parameter values
6. Service principal API access
7. Enable workspace access
8. Embed your content

The screenshot shows the 'Admin portal' interface. On the left is a navigation menu with 'Tenant settings' highlighted. The main content area is divided into 'Developer settings' and 'Embed content in apps'. Under 'Embed content in apps', the setting 'Allow service principals to use Power BI APIs' is shown as 'Enabled for a subset of the organization'. Below this, a note explains that service principals can use APIs to access tenant-level features, and a red box highlights the text: 'Service principals can use APIs to access tenant-level features controlled by Power BI service admins and enabled for the entire organization or for security groups they're included in. You can control access of service principals by creating dedicated security groups for them and using these groups in any Power BI tenant level-settings. Learn More'. At the bottom, the 'Apply to:' section has 'Specific security groups' selected, and a dropdown menu shows 'PBI Rest API Security Group' selected.

The 'Manage access' dialog box is titled 'Embed for Customers'. It features a green '+ Add people or groups' button and a search bar labeled 'Search within workspace'. Below the search bar, two users are listed: 'Odeta Jankaitienė' (Admin) and 'SP Embed for Customers' (Member).

The 'Developer settings' dialog box shows the 'Embed content in apps' setting as 'Enabled'. The 'Apply to:' section has 'Specific security groups' selected.

Embedding Authentication Flow



The background of the slide features a large, dark blue circular area filled with numerous small white stars, resembling a night sky. Below this circle, the silhouette of a mountain range is visible against a lighter blue background. The overall color palette is dominated by various shades of blue and teal.

DEMO

Embed For Your Organisation

Prerequisites – Embed for Organisation

- Power BI part:
 - Your own Azure Active Directory (AAD) [tenant](#)
 - [PBI license](#) (Pro or PPU) or capacity for free users
- Coding part*:
 - .NET Core 3.1 SDK (or higher)
 - An integrated [development environment](#), e.g., Visual Studio Code

**depending on what language you use. There are code examples for: .NET Framework, .NET Core and React TypeScript*

Steps – Embed for Organisation

1. Register an AAD application
2. Create a PBI workspace
3. Create and publish a PBI report
4. Get the embedding parameter values*
5. Embed your content

**The parameter values depend on the language of the sample application you want to use*

A night sky with the Milky Way galaxy visible, set against a dark background with numerous stars. In the foreground, several evergreen trees are silhouetted against the starry sky. The image is framed by a teal circular border on the left and bottom.

DEMO

Power BI Embedded
Analytics Playground

Summary



Things to Remember



Choose an embedding solution according to your needs

- Secure embed
- Embedding for organisation
- Embedding for customers



You will need a developer (for organisation/customers solutions)



You can track users' actions but be mindful of GDPR

Resources

- Secure Embed:
 - [Embed a report in a secure portal or website - Power BI | Microsoft Learn](#)
 - [URL filters](#)
- [Publish to web from Power BI - Power BI | Microsoft Learn](#)
- Every section from [Power BI embedded analytics overview - Power BI | Microsoft Learn](#)
- [Onboarding Embed Tool \(powerbi.com\)](#)
- [Power BI embedded analytics playground, Power BI Playground](#)
- RLS example: [How do you use RLS with Power BI Embedded??? - YouTube](#)
- [Monitor Power BI Embedded data - Power BI | Microsoft Learn](#)
- [Apps & service principals in Azure AD - Microsoft Entra | Microsoft Learn](#)
- [Power BI REST APIs for embedded analytics and automation - Power BI REST API | Microsoft Learn](#)
- Video course about embedding PBI content: [Welcome and Course Introduction | Power BI Developer in a Day - YouTube](#)
- Developer Samples:
 - [microsoft/PowerBI-Developer-Samples: A collection of Power BI samples for developer use. \(github.com\)](#)
 - [Embed Power BI analytics in web portals and apps for your organization and customers | OD353 – YouTube, GitHub demo files](#)



Thank You For Attending!

Odeta Jankaitienė

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