

ProConomics Installation Guide

Complete guide to installing and configuring ProConomics in your environment.

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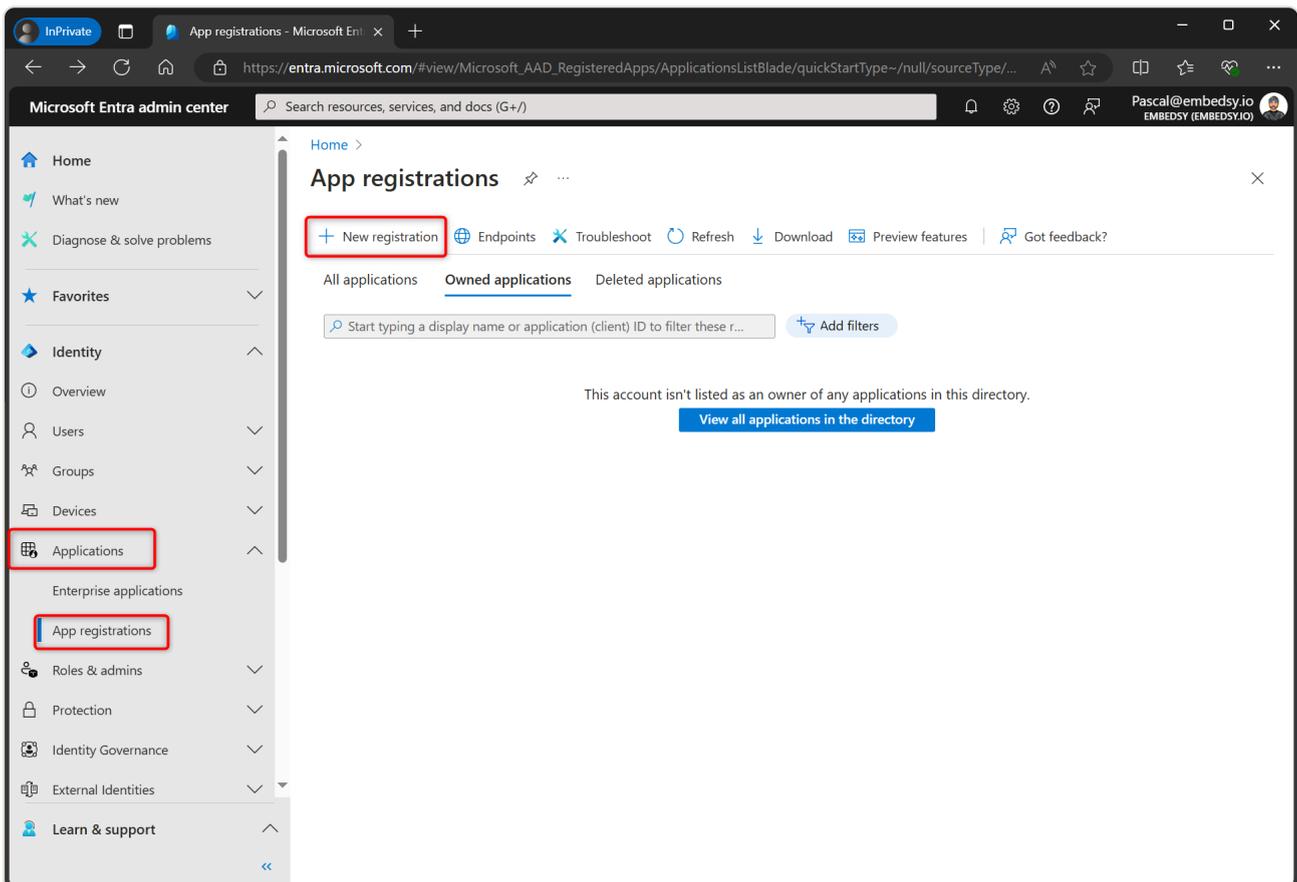
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1. Service Principal

How to create a Service Principal in Microsoft Entra.

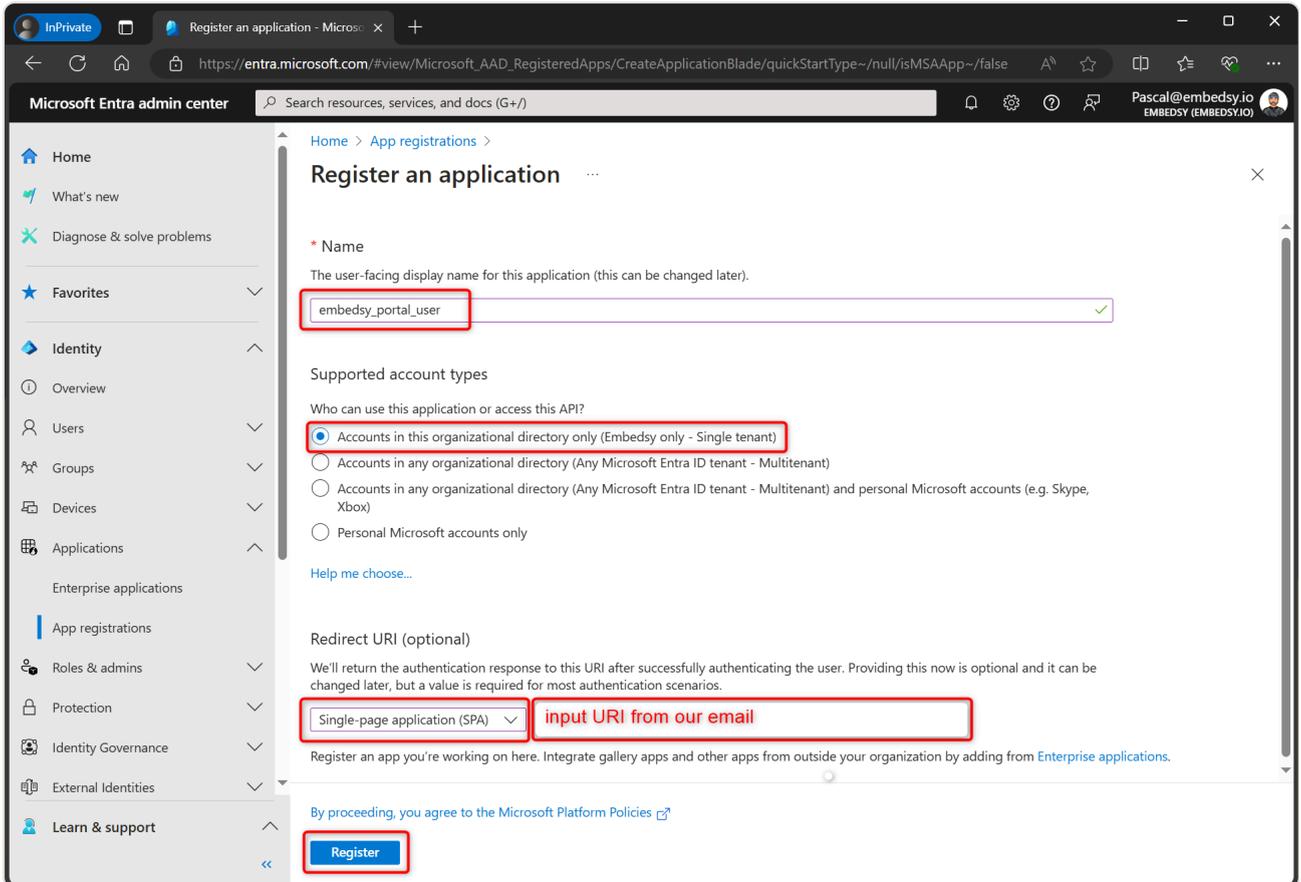
Step 1

Go to Microsoft Entra and navigate to App Registrations.



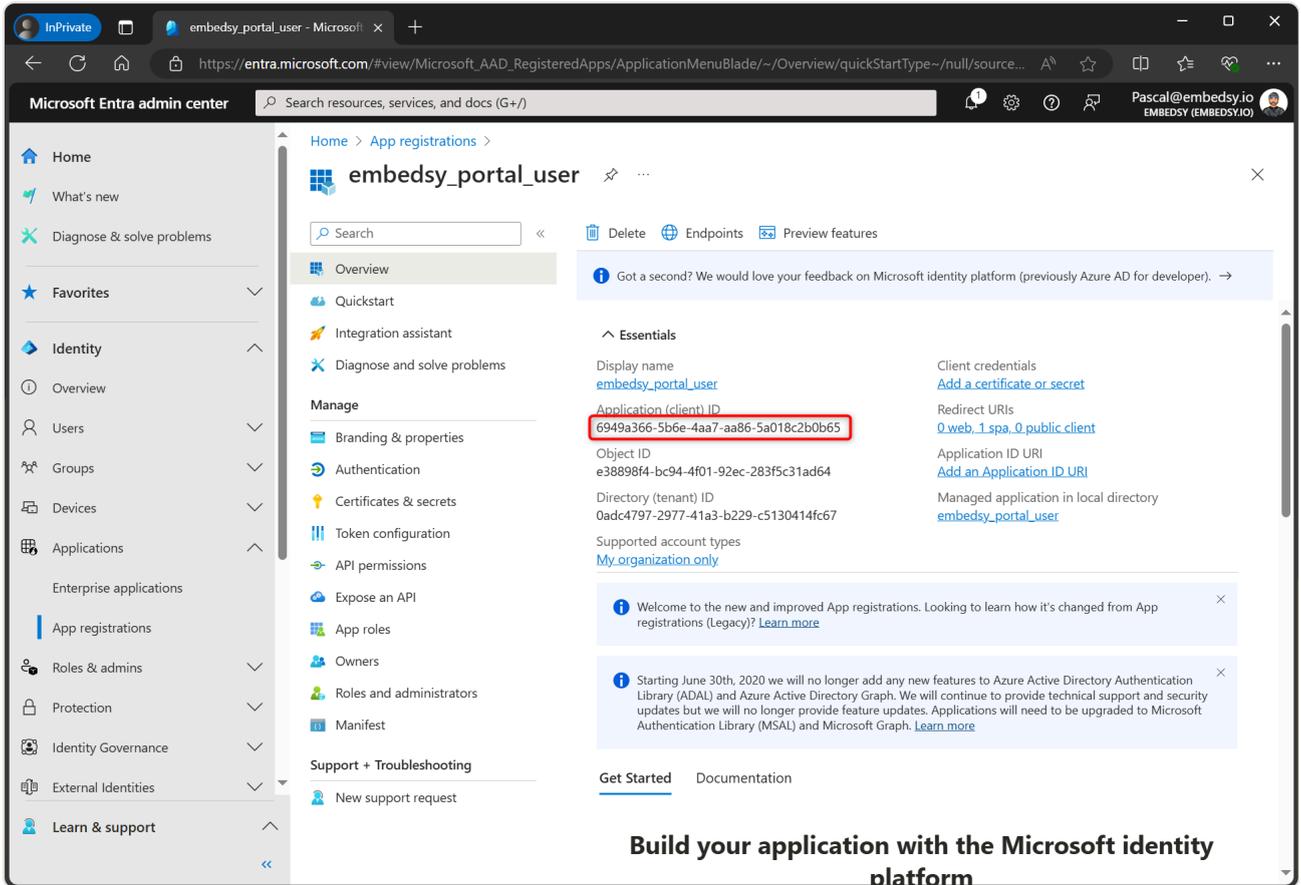
Step 2

Click on New Registration.



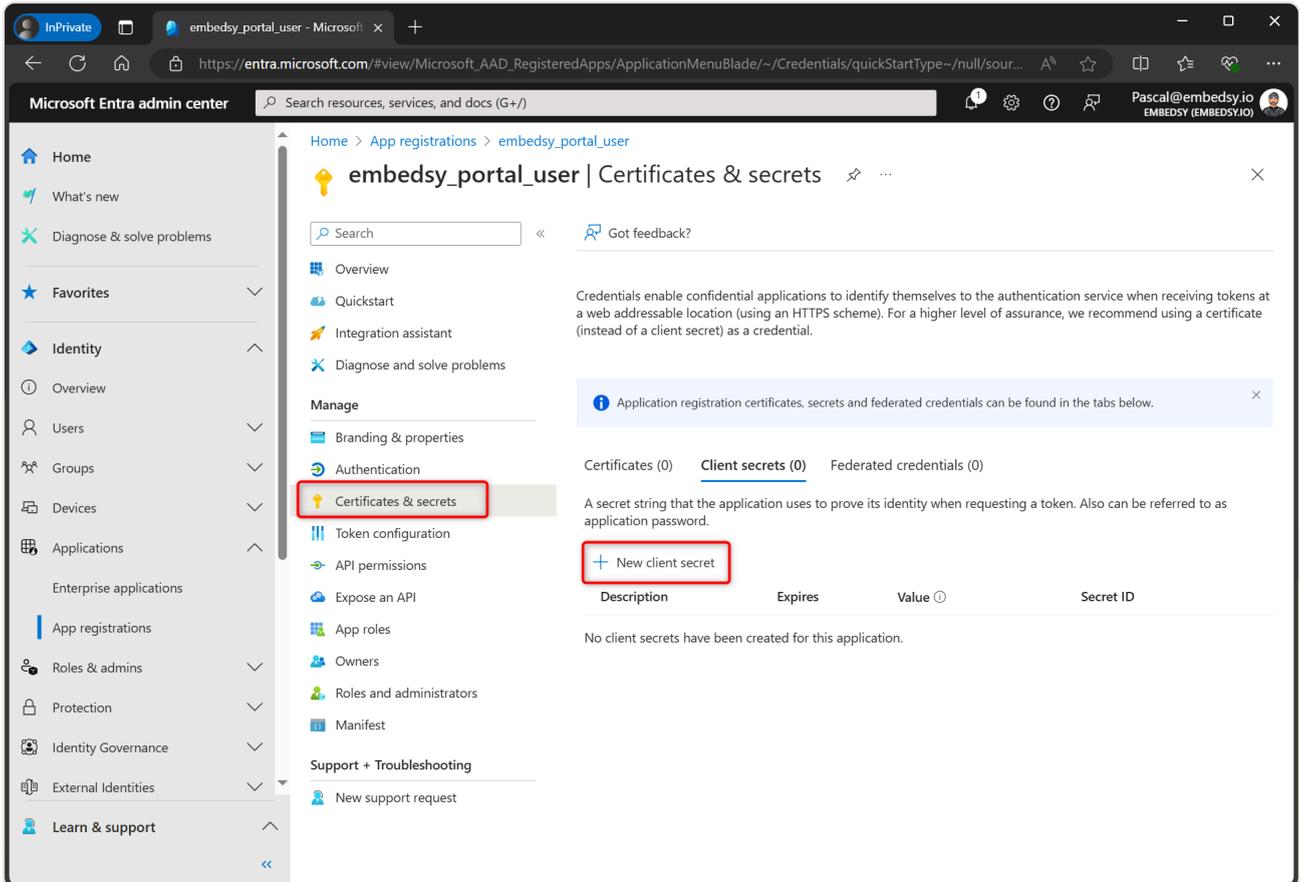
Step 3

Give this Service Principal a name. In the Redirect URI section, select Web and enter a redirect URI. This is the URL that the user will be redirected to after authentication. If you do not have a custom domain yet, you can use the default azurewebsites.net URI. If you have one, use it. You can always change this later.



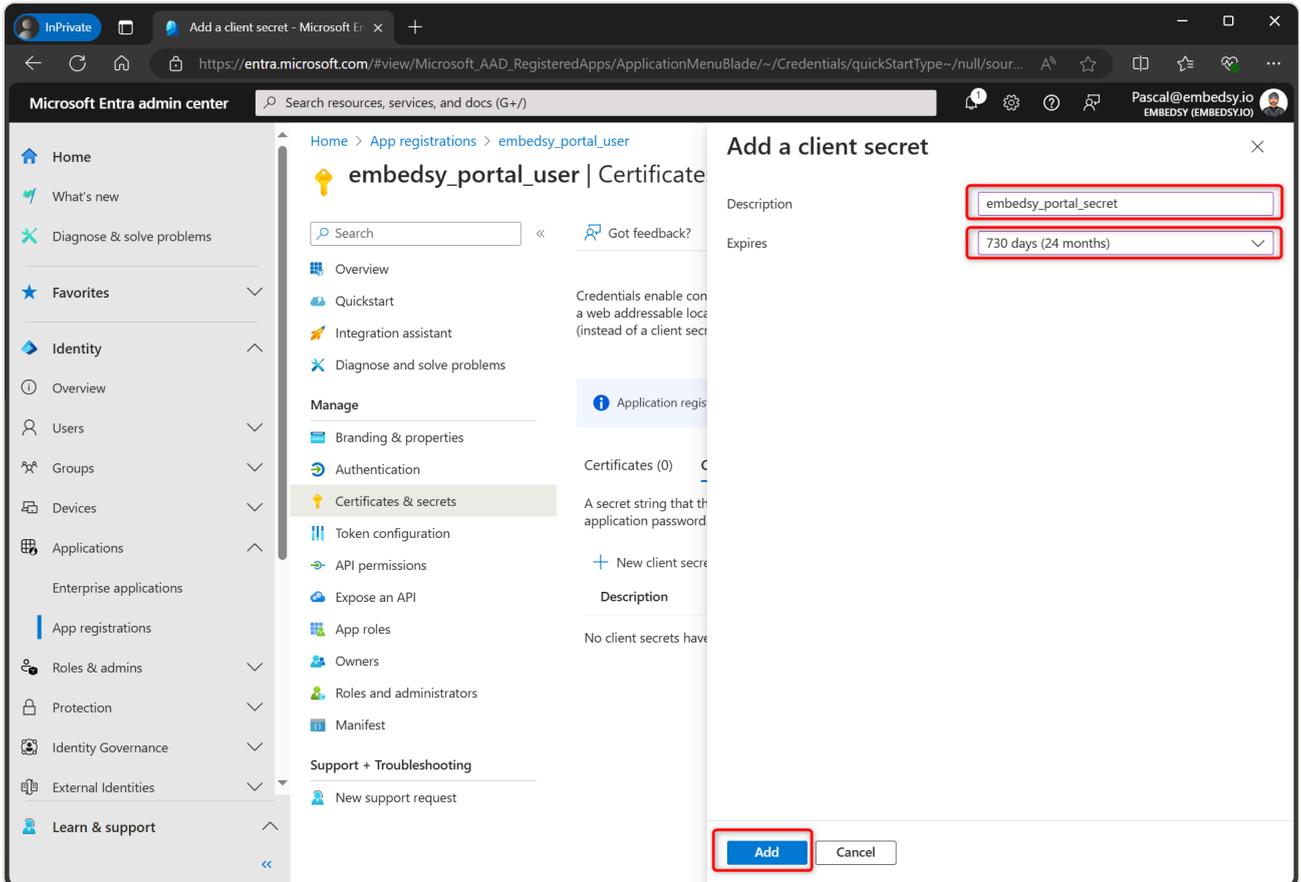
Step 4

Copy the Application (client) ID. This you will need later, and it will be referred to as the Client ID.



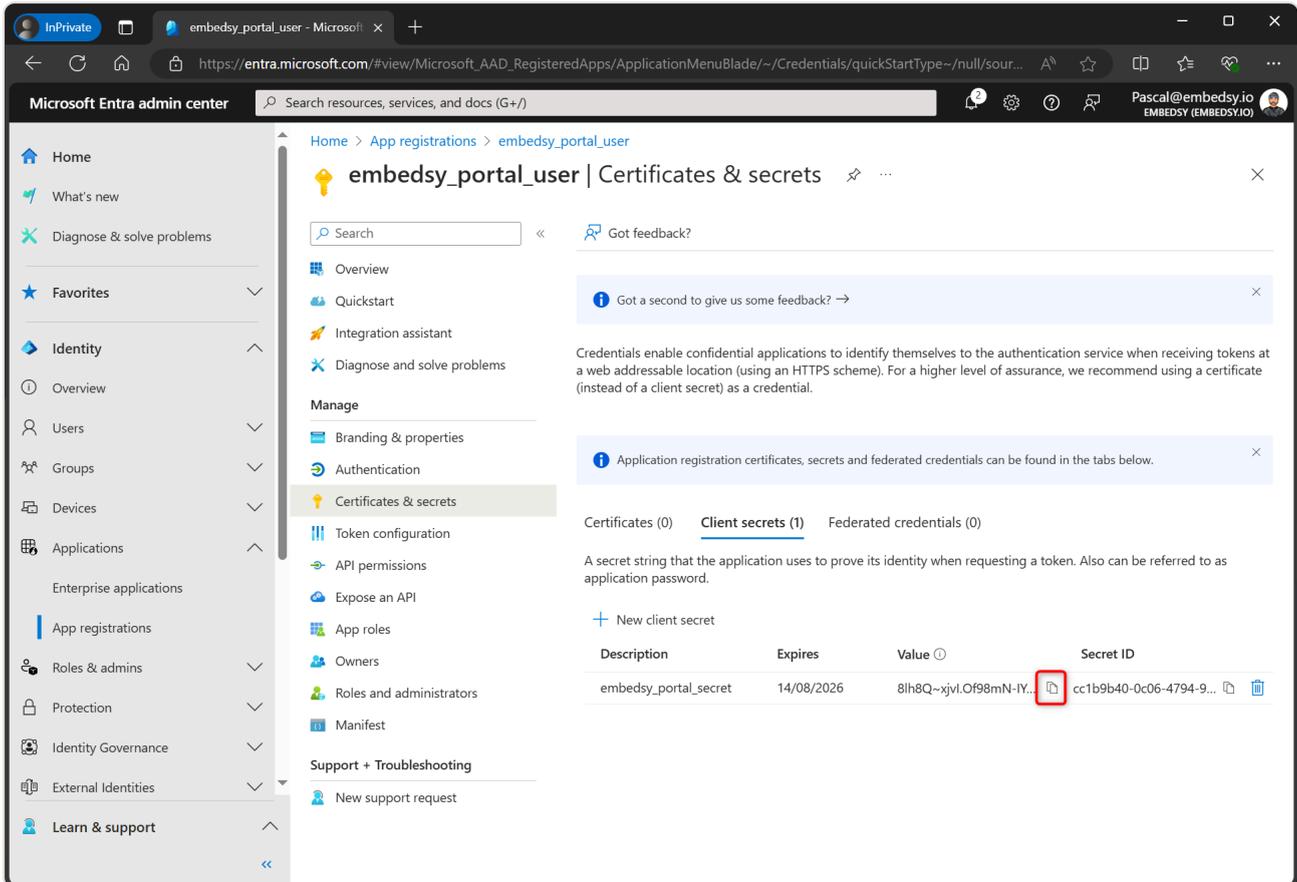
Step 5

Navigate to the Redirect URI section to add an additional Redirect URI. Click on Add a platform.



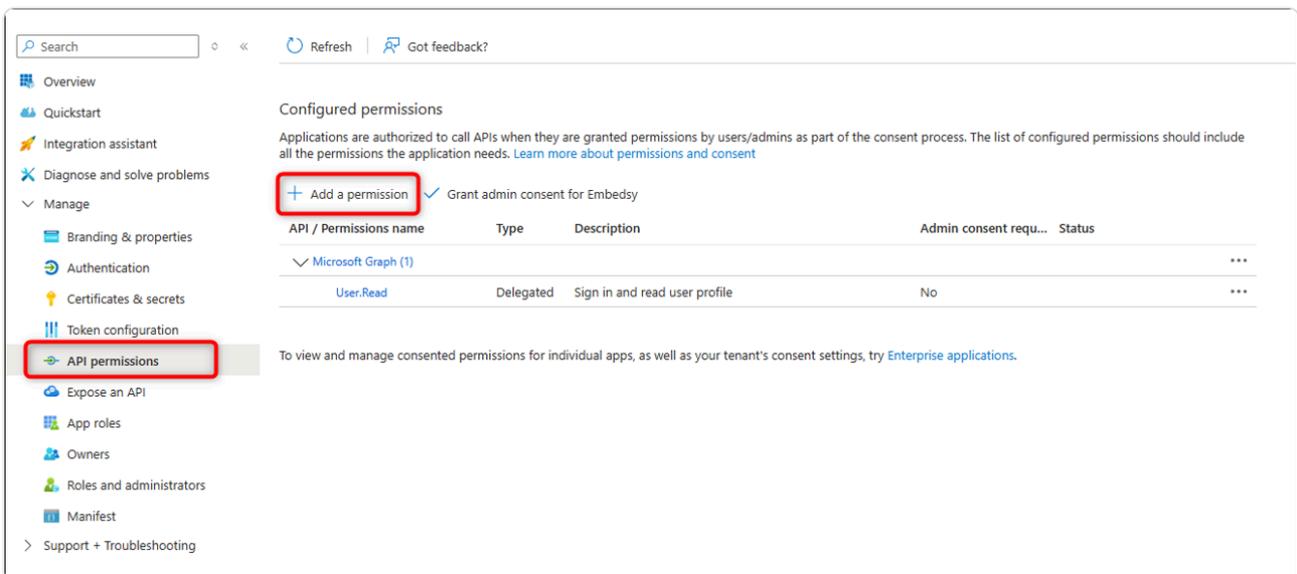
Step 6

Select Single-page application.



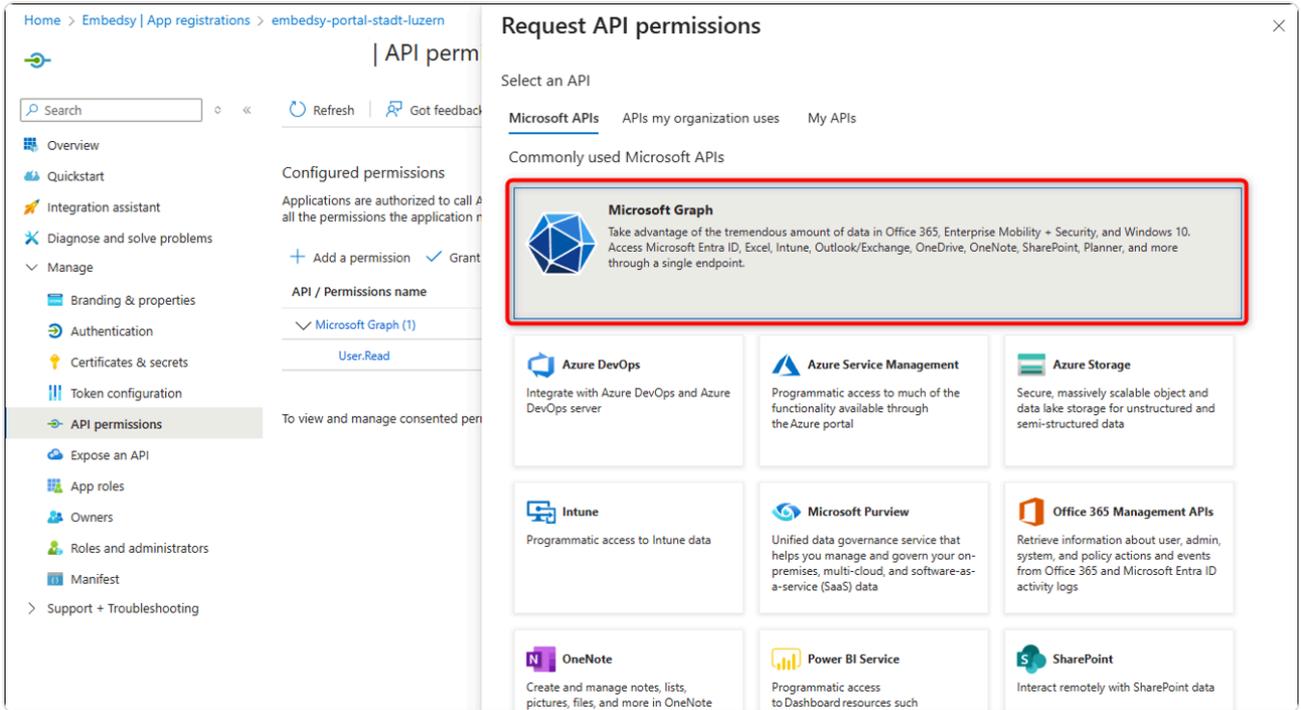
Step 7

Enter the same Redirect URI as in step 3 but append /login/auth-callback to it.



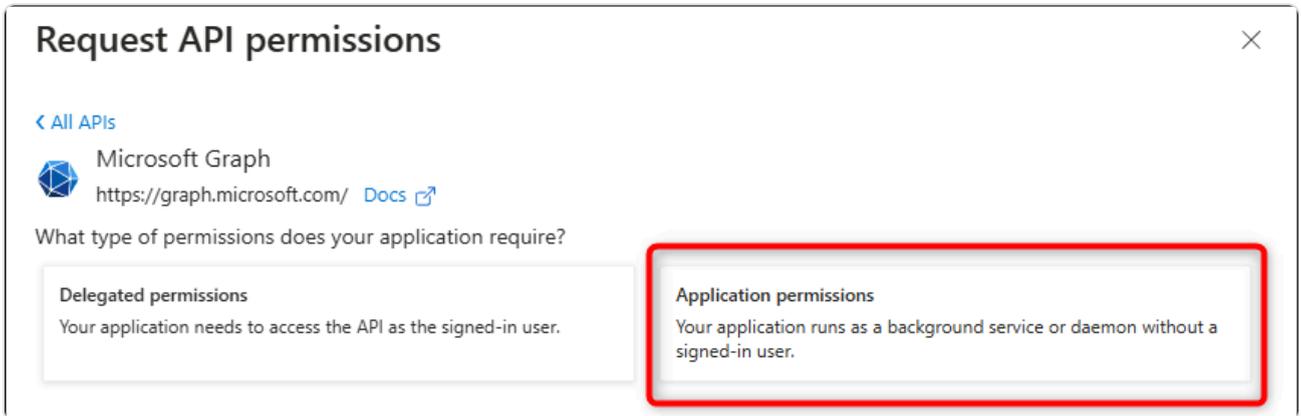
Step 8

Navigate to the Certificates & secrets section and click on New client secret.



Step 9

Add a description and select the expiration period. Click Add.



Step 10

Copy the Value of the client secret. This you will also need later, and it will be referred to as the Client Secret.

Request API permissions

[← All APIs](#)

 Microsoft Graph
<https://graph.microsoft.com/> [Docs](#)

What type of permissions does your application require?

Delegated permissions
Your application needs to access the API as the signed-in user.

Application permissions
Your application runs as a background service or daemon without a signed-in user.

Select permissions [expand all](#)

Permission Admin consent required

Mail (1)

<input checked="" type="checkbox"/>	Mail.Send ⓘ Send mail as any user	Yes
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[Add permissions](#) [Discard](#)

Step 11

Navigate to API permissions and click on Add a permission.

Configured permissions

Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs. [Learn more about permissions and consent](#)

+ Add a permission Grant admin consent for Embeds

API / Permissions name	Type	Description	Admin consent requ...	Status
Microsoft Graph (2)				
Mail.Send	Application	Send mail as any user	Yes	⚠ Not granted for Embeds
User.Read	Delegated	Sign in and read user profile	No	
Power BI Service (2)				
Dataset.Read.All	Delegated	View all datasets	No	
PaginatedReport.Read.All	Delegated	Make API calls that require read permissions on all pagina...	No	

To view and manage consented permissions for individual apps, as well as your tenant's consent settings, try [Enterprise applications](#).

Step 12

First, add the mail.send permission from Microsoft Graph (Application permissions). This is needed to send emails from the ProConomics Portal.

Refresh | Got feedback?

⚠ You are editing permission(s) to your application, users will have to consent even if th

Configured permissions

Applications are authorized to call APIs when they are granted permissions by users/a all the permissions the application needs. [Learn more about permissions and consent](#)

+ Add a permission Grant admin consent for Embeds

API / Permissions name	Type	Description
Microsoft Graph (2)		
Mail.Send	Application	Send mail as any user
User.Read	Delegated	Sign in and read user profile

To view and manage consented permissions for individual apps, as well as your tenant

Select an API

Microsoft APIs | APIs my organization uses | My APIs

Commonly used Microsoft APIs

Microsoft Graph

Take advantage of the tremendous amount of data in Office 365, Enterprise Mobility + Security, and Windows 10. Access Microsoft Entra ID, Excel, Intune, Outlook/Exchange, OneDrive, OneNote, SharePoint, Planner, and more through a single endpoint.

Azure DevOps

Integrate with Azure DevOps and Azure DevOps server

Azure Rights Management Services

Allow validated users to read and write protected content

Azure Service Management

Programmatic access to much of the functionality available through the Azure portal

Azure Storage

Secure, massively scalable object and data lake storage for unstructured and semi-structured data

Dynamics 365 Business Central

Programmatic access to data and functionality in Dynamics 365 Business Central

Dynamics CRM

Access the capabilities of CRM business software and ERP systems

Intune

Programmatic access to Intune data

Microsoft Purview

Unified data governance service that helps you manage and govern your on-premises, multi-cloud, and software-as-a-service (SaaS) data

Office 365 Management APIs

Retrieve information about user, admin, system, and policy actions and events from Office 365 and Microsoft Entra ID activity logs

OneNote

Create and manage notes, lists, pictures, files, and more in OneNote notebooks

Power Automate

Embed flow templates and manage flows

Power BI Service

Programmatic access to Dashboard resources such as Datasets, Tables, and Rows in Power BI

Step 13

Then add the Power BI Service permissions. Select Delegated permissions and add Dataset.Read.All and Report.Read.All.

Request API permissions

< All APIs

Power BI Service
<https://analysis.windows.net/powerbi/api/> Docs

What type of permissions does your application require?

Delegated permissions
Your application needs to access the API as the signed-in user.

Application permissions
Your application runs as a background service or daemon without a signed-in user.

Step 14

If you want to use Paginated Reports, also add the PaginatedReport.Read.All permission.

Request API permissions

< All APIs

Power BI Service
<https://analysis.windows.net/powerbi/api/> Docs

What type of permissions does your application require?

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Application permissions
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Select permissions expand all

i The "Admin consent required" column shows the default value for an organization. However, user consent can be customized per permission, user, or app. This column may not reflect the value in your organization, or in organizations where this app will be used. [Learn more](#)

Permission	Admin consent required
Dataset (1)	
<input checked="" type="checkbox"/> Dataset.Read.All ⓘ View all datasets	No

Step 15

After adding all the permissions, click on Grant admin consent for your organization.

Request API permissions

< All APIs

 Power BI Service
<https://analysis.windows.net/powerbi/api/> [Docs](#)

What type of permissions does your application require?

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Select permissions expand all

i The "Admin consent required" column shows the default value for an organization. However, user consent can be customized per permission, user, or app. This column may not reflect the value in your organization, or in organizations where this app will be used. [Learn more](#)

Permission	Admin consent required
▼ PaginatedReport (1)	
<input checked="" type="checkbox"/> PaginatedReport.Read.All ⓘ Make API calls that require read permissions on all paginated reports	No

Add permissions Discard

Step 16

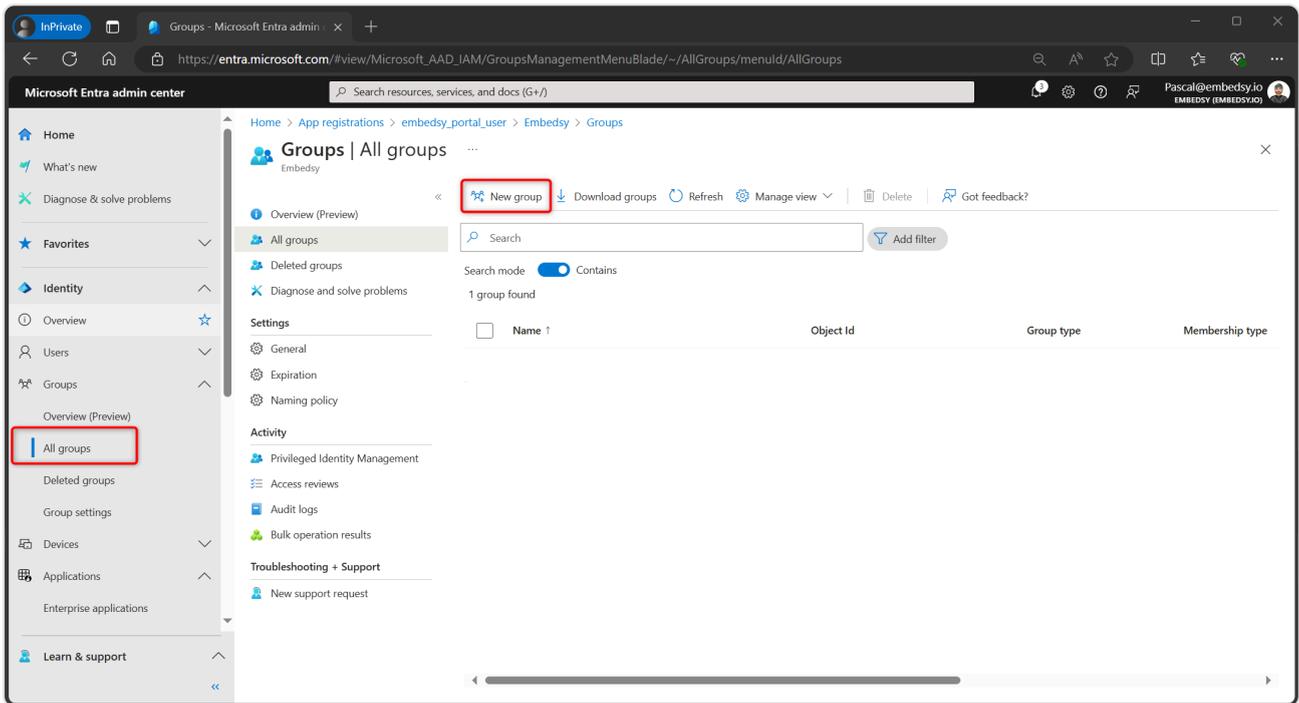
The final result should look like this. All permissions should have a green checkmark under the Status column.

2. Entra Security Group

How to create a Microsoft Entra Security Group and add the Service Principal to it.

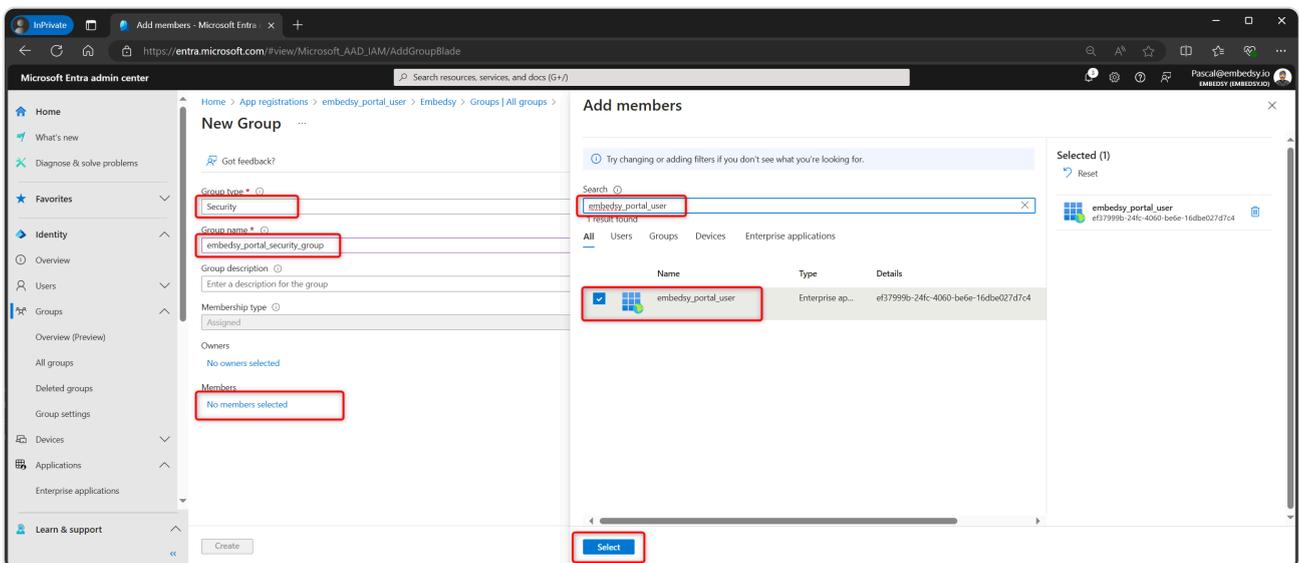
Step 1

Navigate to Microsoft Entra and go to Groups. Click on New group.



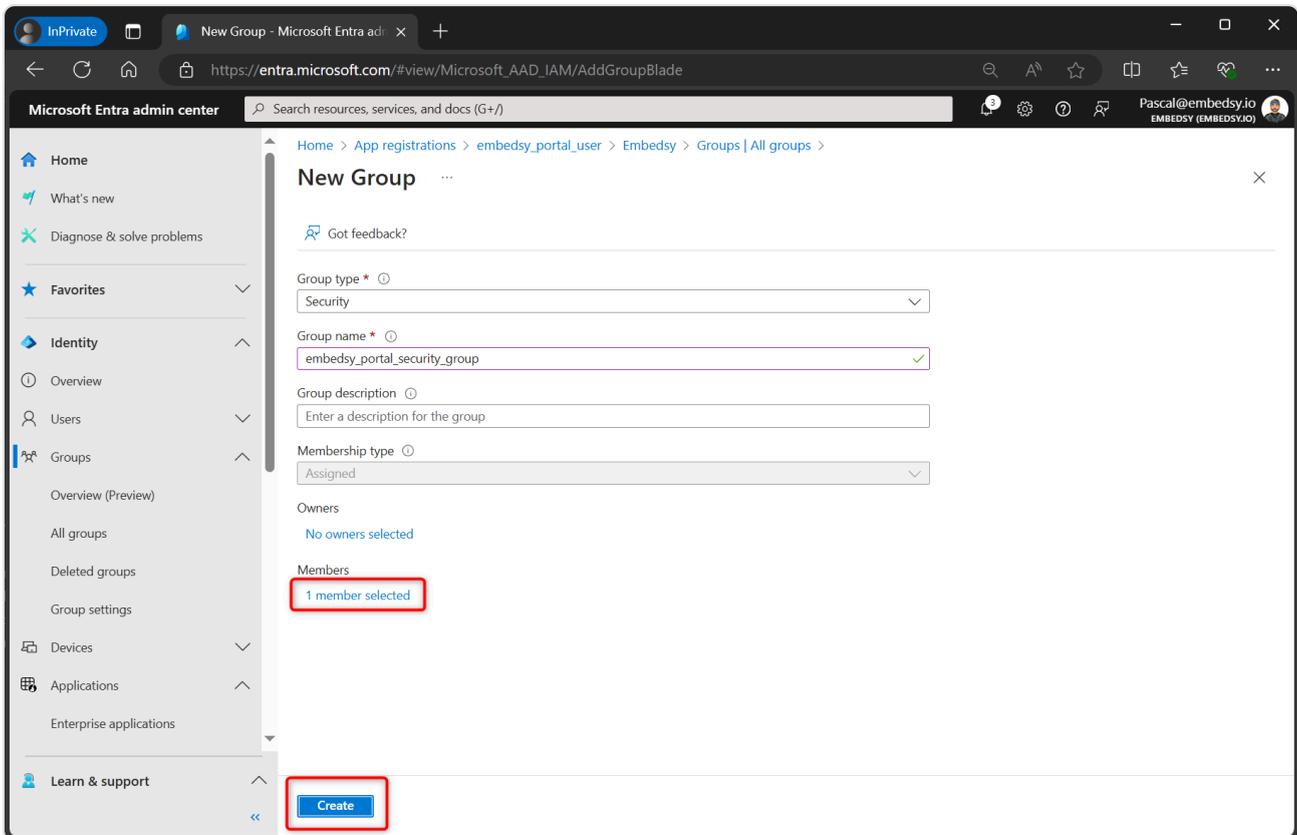
Step 2

Select Security as the Group type and give it a name. Under Members, add the Service Principal you created in the previous step.



Step 3

Verify that the Service Principal is listed as a member and click Create.



3. Use Custom Domain

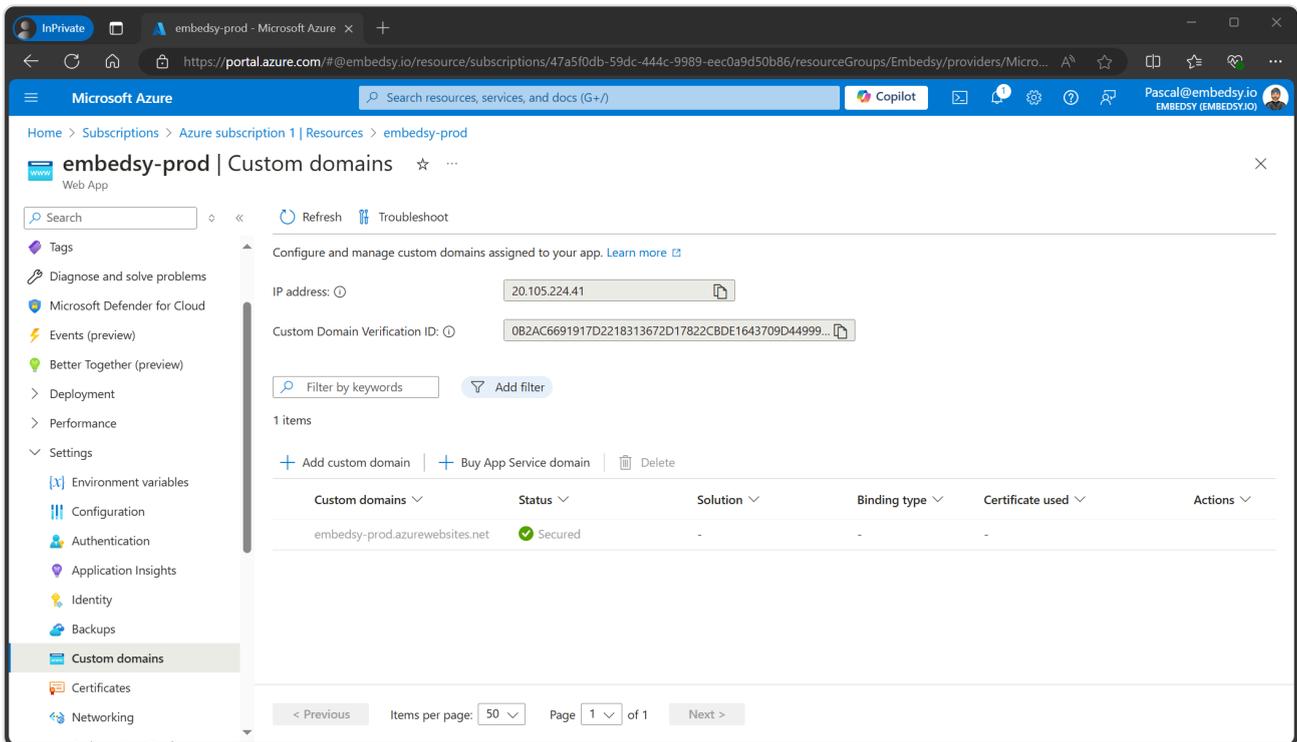
How to configure a custom domain for your ProConomics Portal.

Step 1

Register a custom domain with your preferred domain registrar if you haven't already.

Step 2

Add the required DNS records. You will need to add a CNAME record pointing to your Azure Web App URL.



Step 3

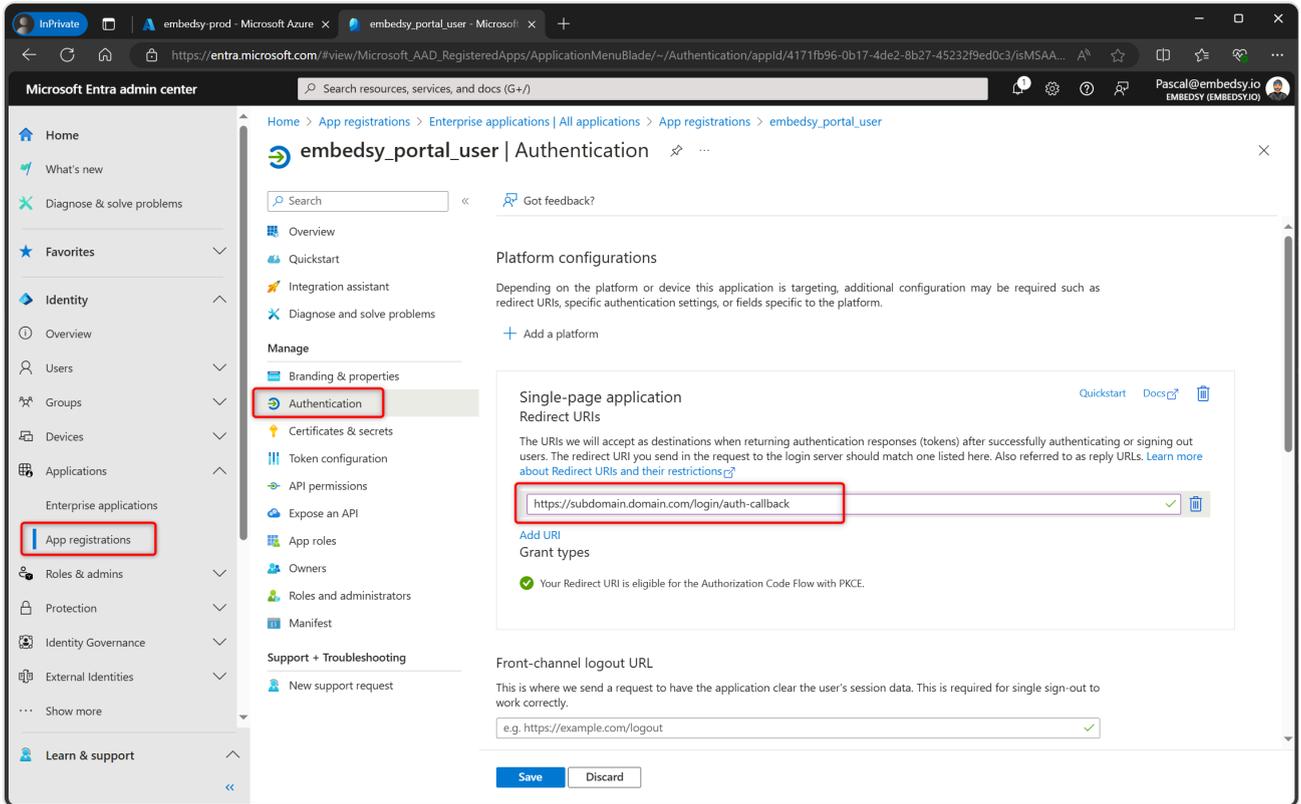
Navigate to your Azure Web App and go to Custom domains. Click on Add custom domain and enter your domain name.

The screenshot shows the 'Add custom domain' configuration page in the Azure portal. The page is for the 'embedsy-prod' App Service. The domain 'portal.yourname.com' is entered, and the configuration is set to 'All other domain services' with 'App Service Managed Certificate' and 'SNI SSL' selected. The domain status is 'Secured'. The domain validation table shows the following records:

Type	Host	Value	Status
CNAME	portal	embedsy-prod.azurewebsites.net	
TXT	asuid.portal	0B2AC6691917D2218313672D17822CBDE1643709D449995888B6619012A4ADF2	

Step 4

After the domain is validated, Azure will automatically provision an SSL certificate for your custom domain.



Step 5

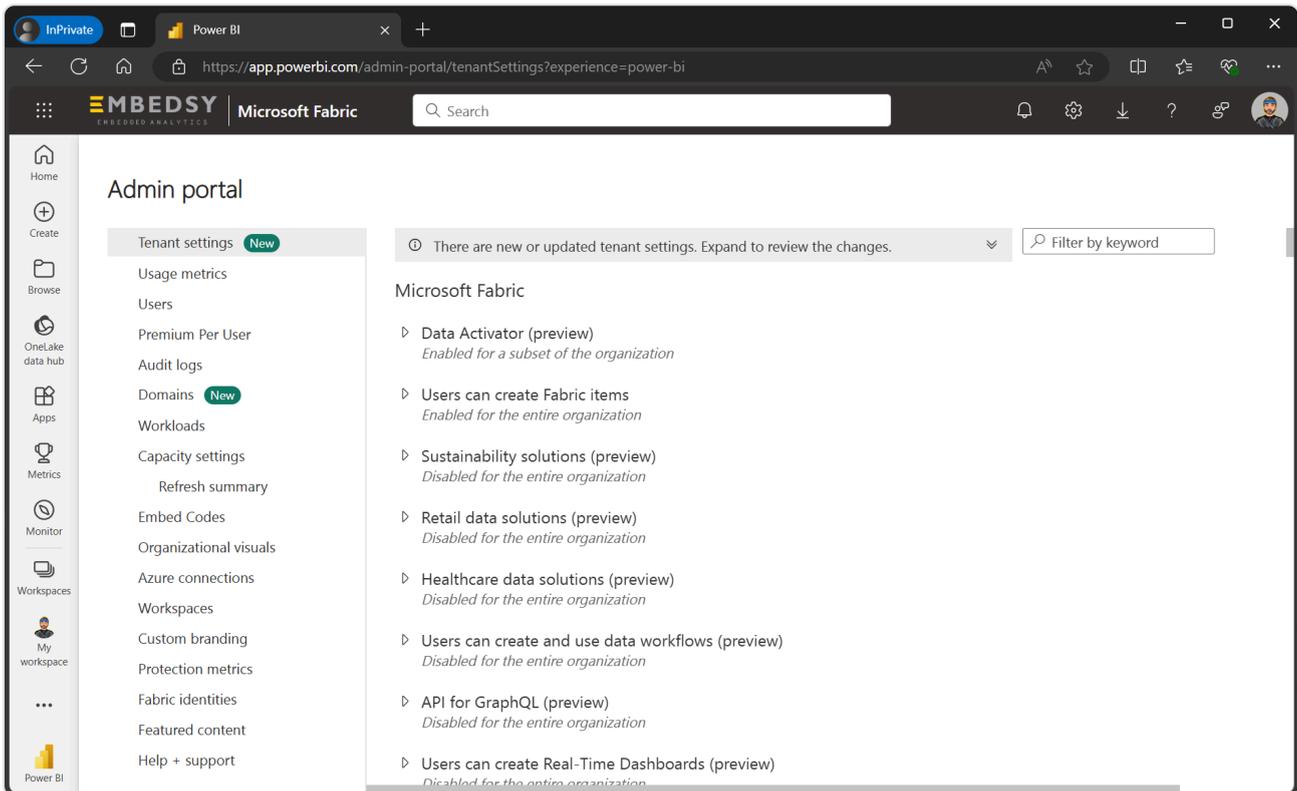
Finally, update the Redirect URI in your Service Principal to include the custom domain. Go back to Microsoft Entra > App Registrations > your Service Principal > Authentication, and add the new redirect URI with your custom domain.

4. Fabric Admin Settings

How to change the Fabric / Power BI Admin settings to allow the Service Principal to embed content.

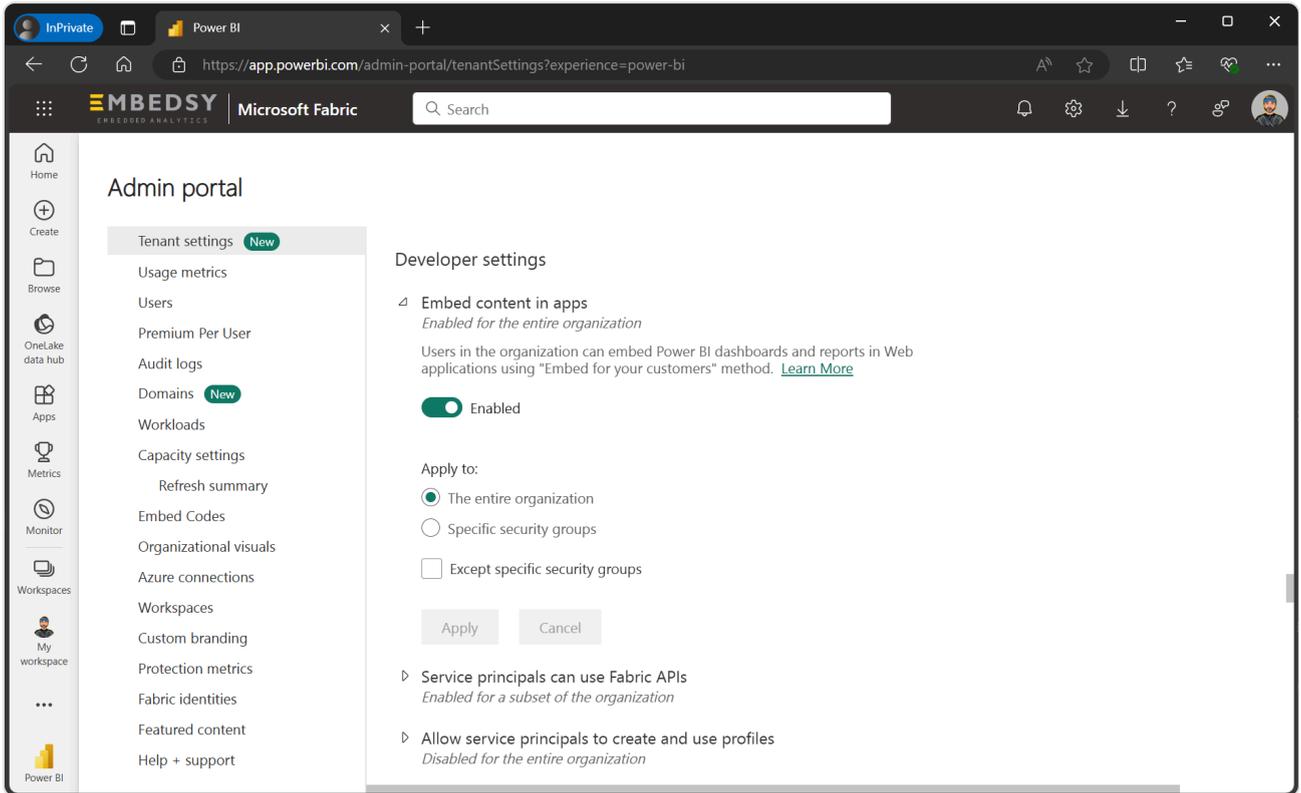
Step 1

Navigate to the Fabric Admin Portal. Go to Tenant Settings.



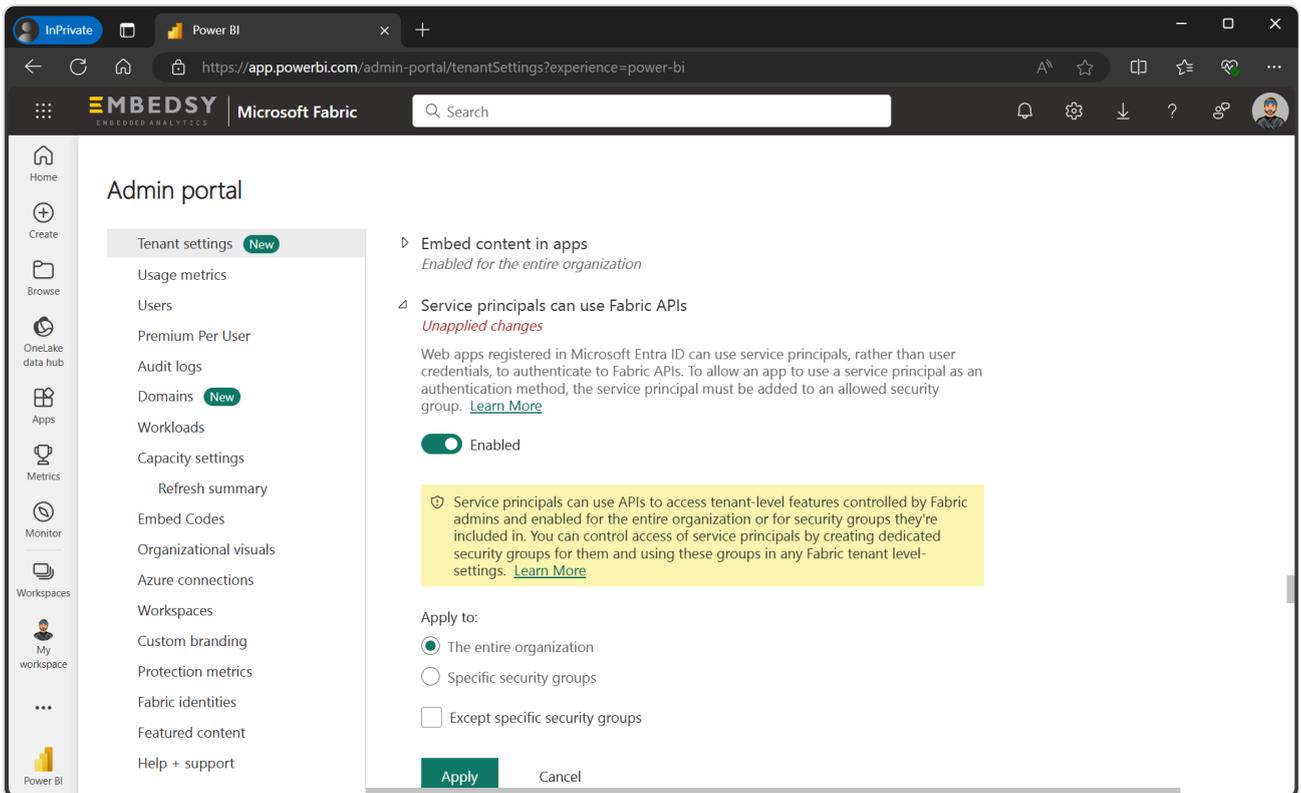
Step 2

Search for "Embed content in apps" and enable it. Apply it to the Security Group you created in the previous step.



Step 3

Search for "Service principals can use Fabric APIs" and enable it. Apply it to the same Security Group.

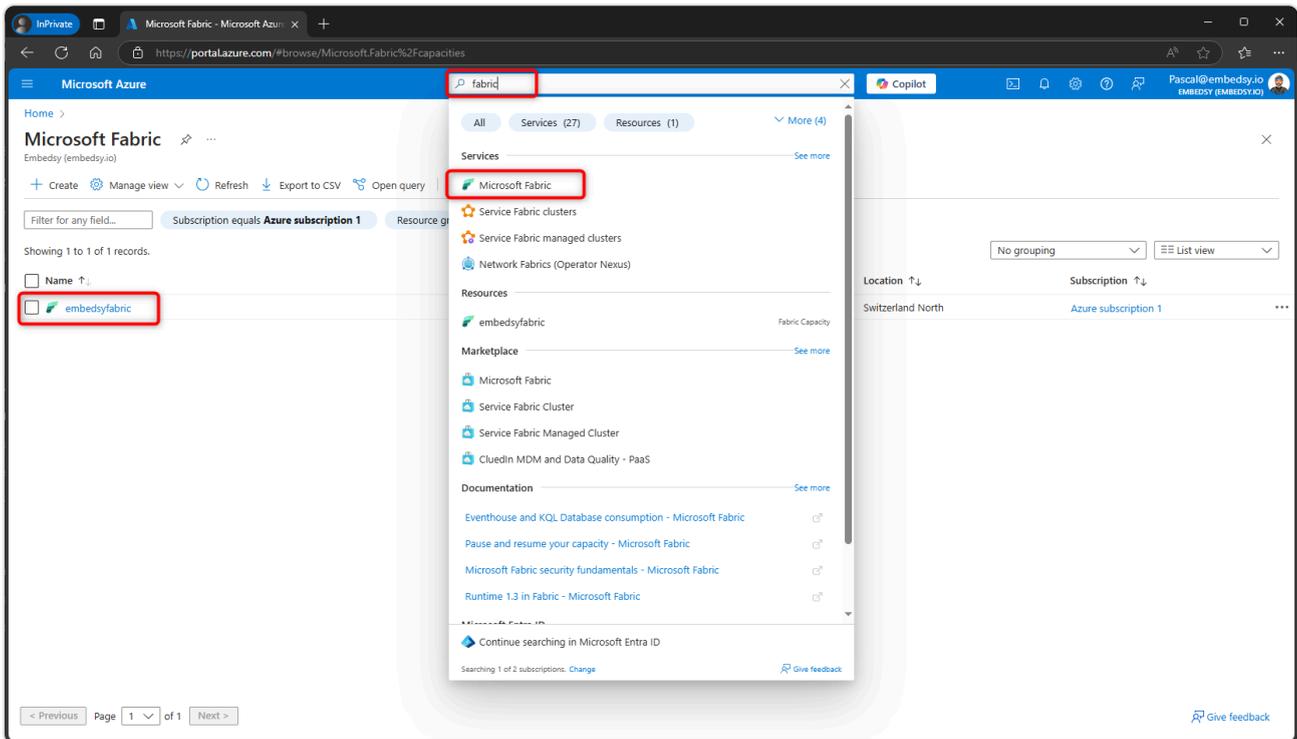


5. Capacity Settings

How to assign the Service Principal to Fabric / Embedded capacity.

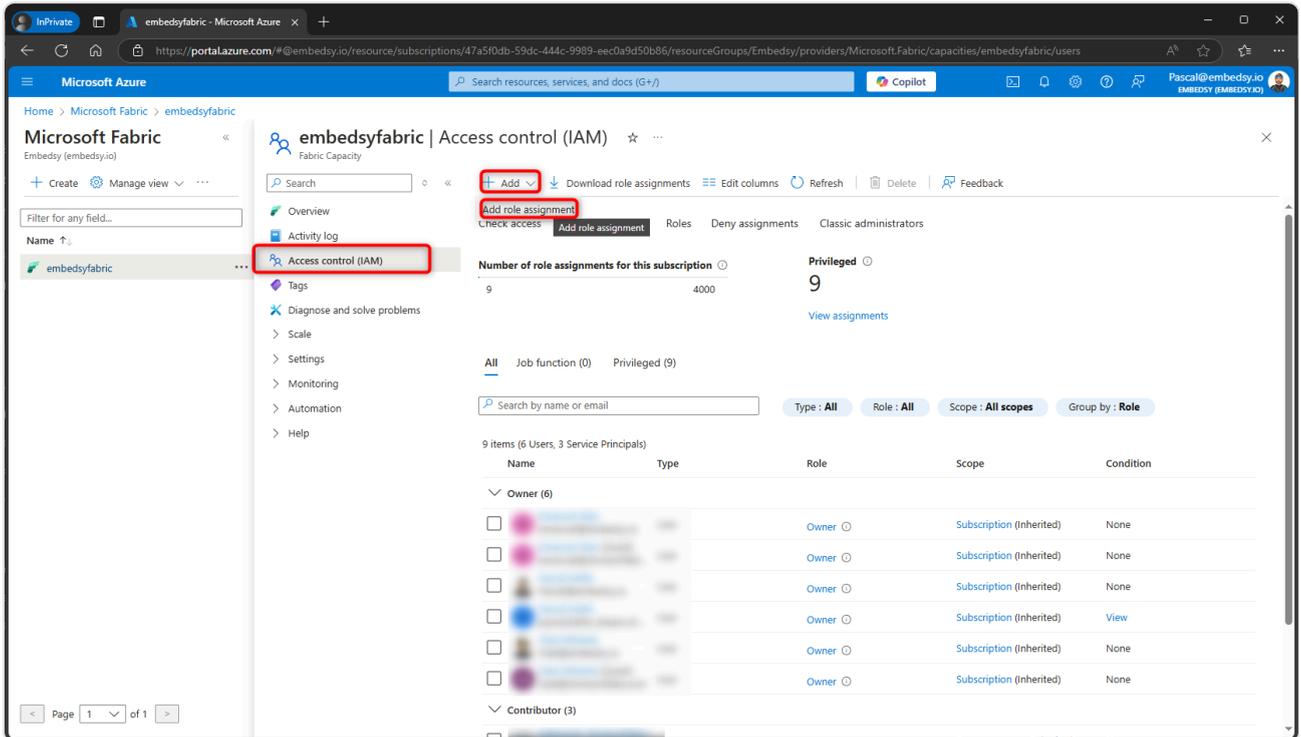
Step 1

Navigate to the Azure Portal and find your Fabric or Power BI Embedded capacity resource.



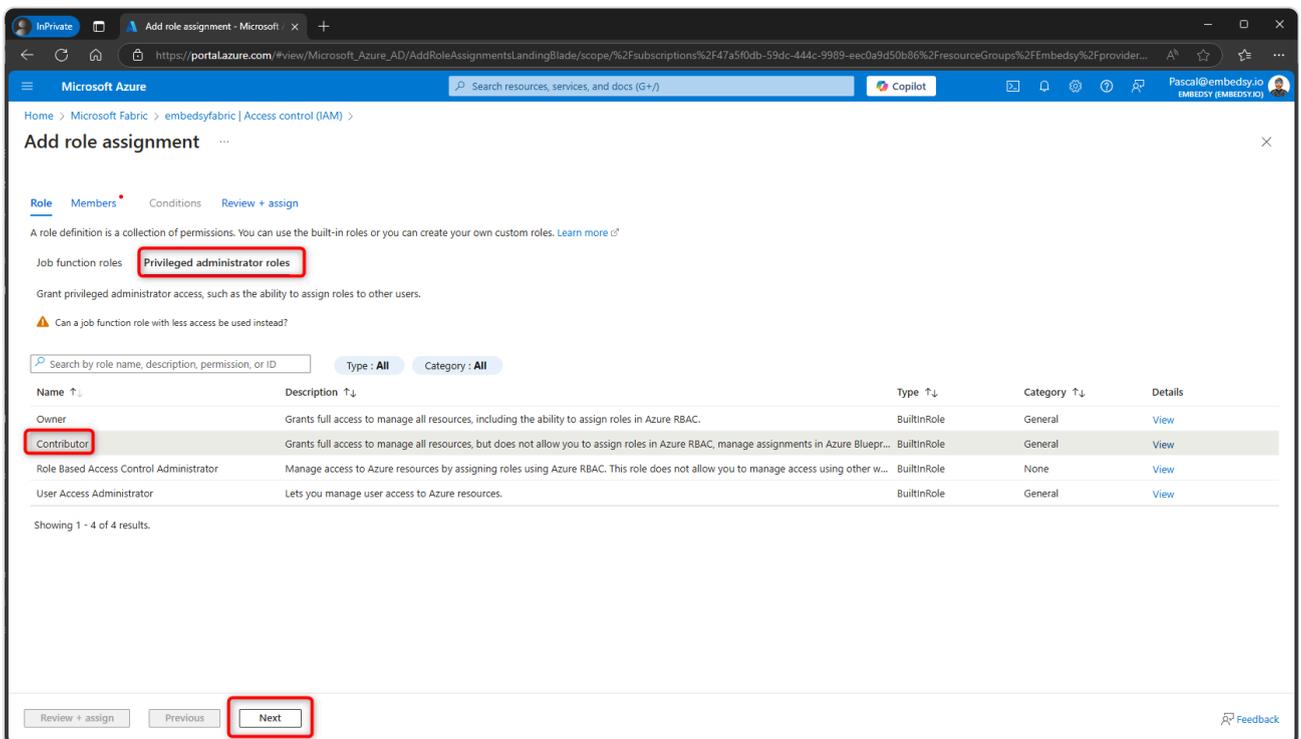
Step 2

Go to Access control (IAM) and click on Add role assignment.



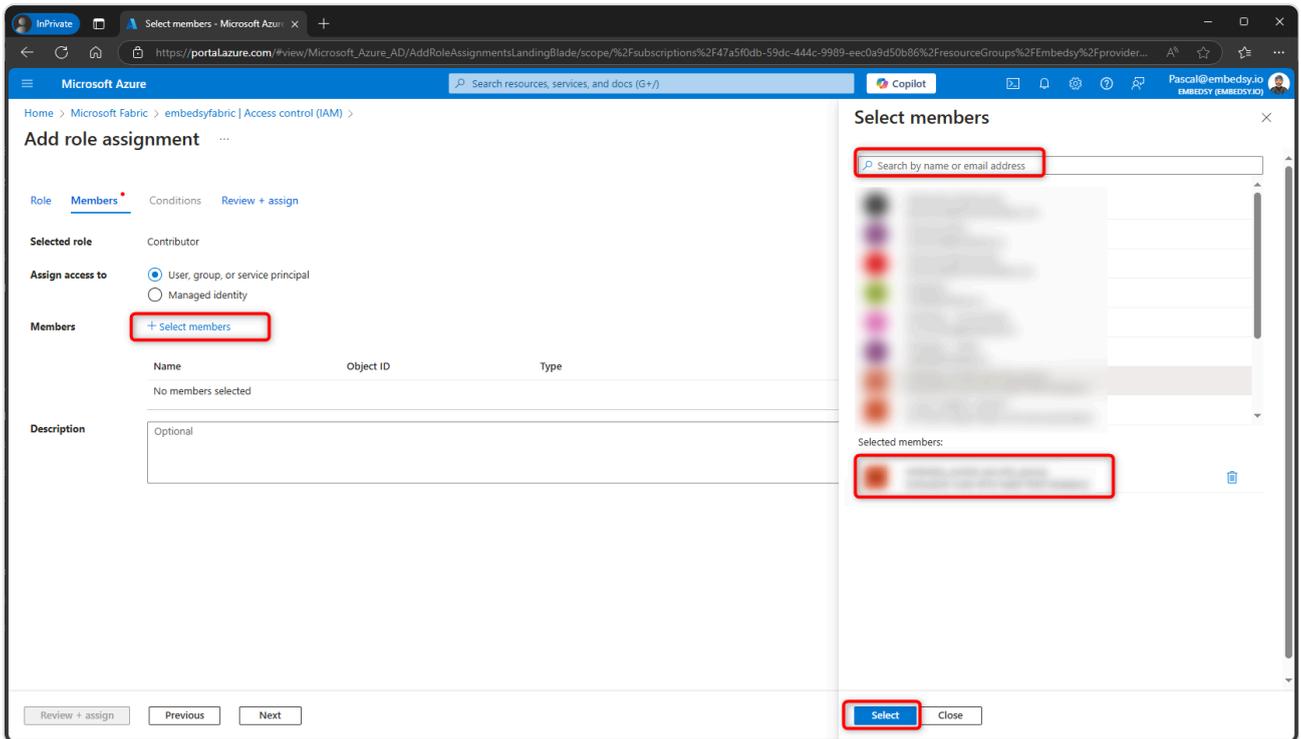
Step 3

Select the Contributor role.



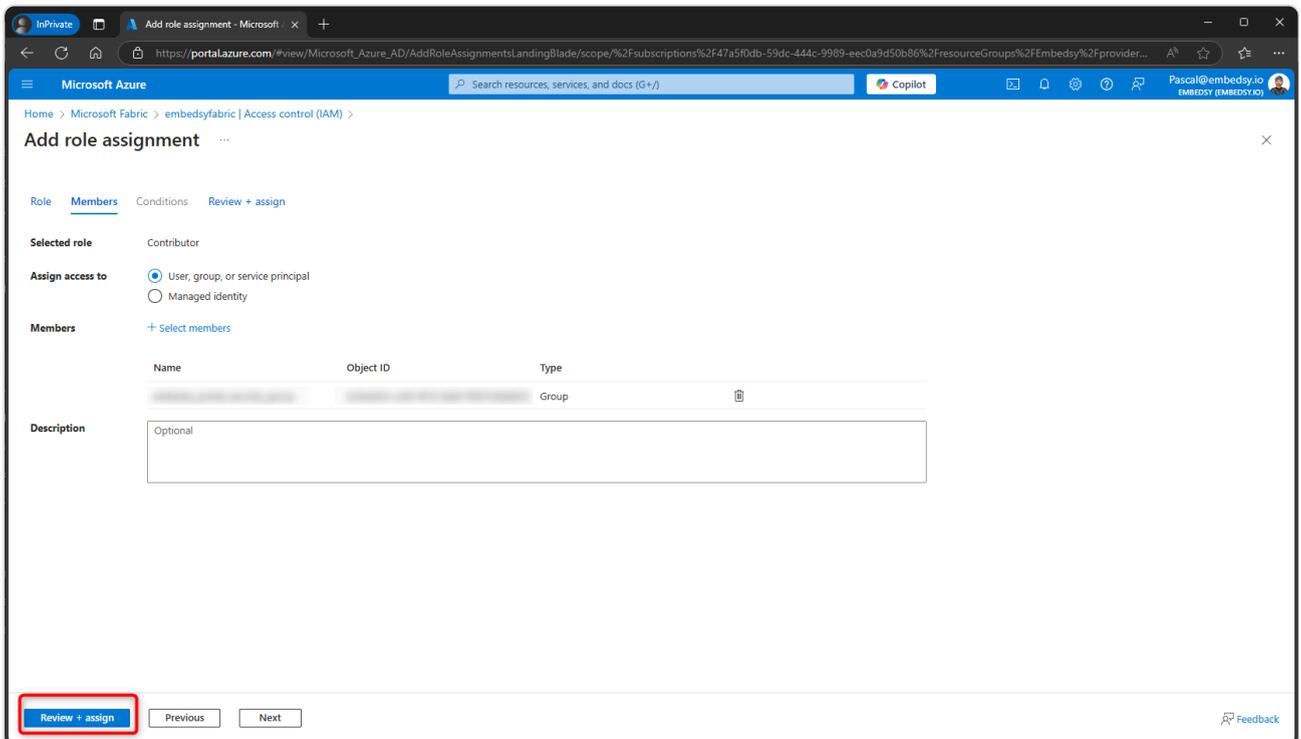
Step 4

Search for and select the Service Principal you created earlier.



Step 5

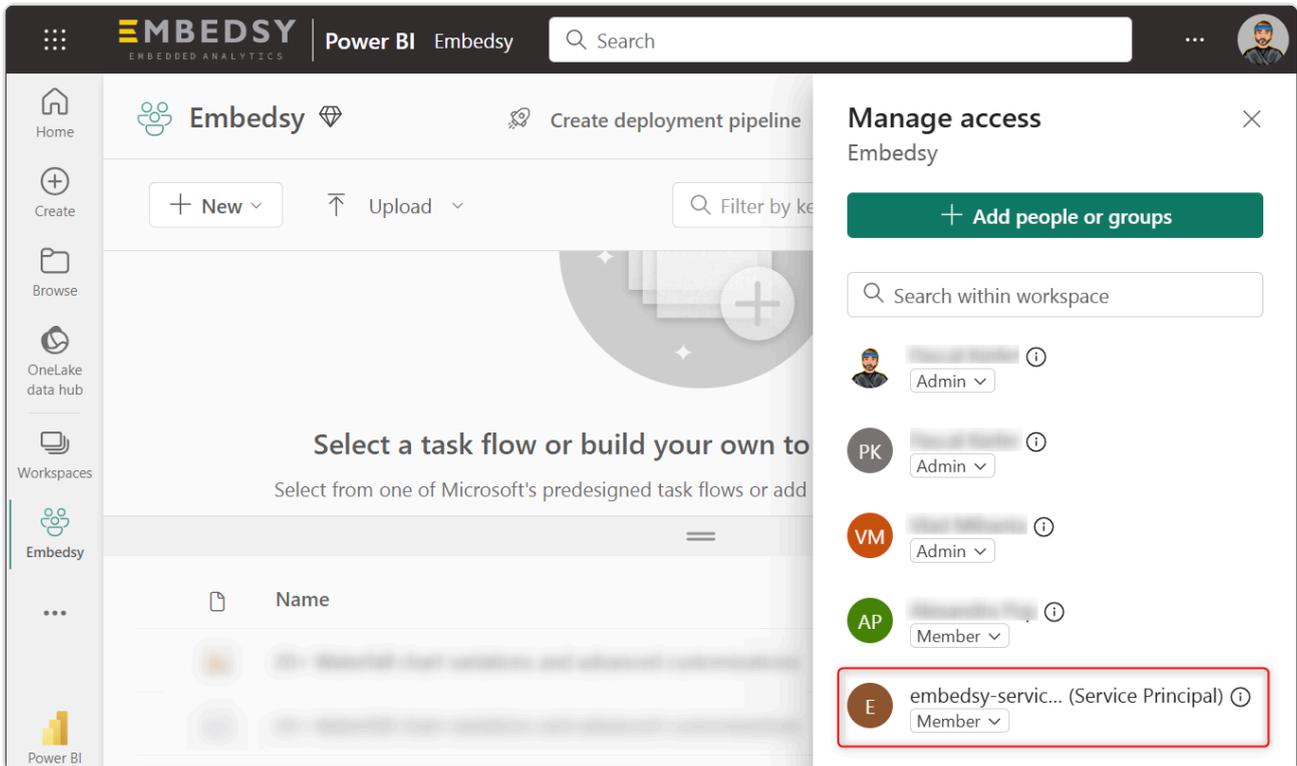
Review and assign the role. The Service Principal should now have Contributor access to the capacity.



6. Workspace Configuration

How to add the Service Principal or Entra Security Group to your Power BI workspaces.

Add the Service Principal or the Entra Security Group as a Member to each Power BI workspace that you want to embed reports from. This allows the ProConomics Portal to access the reports in those workspaces.

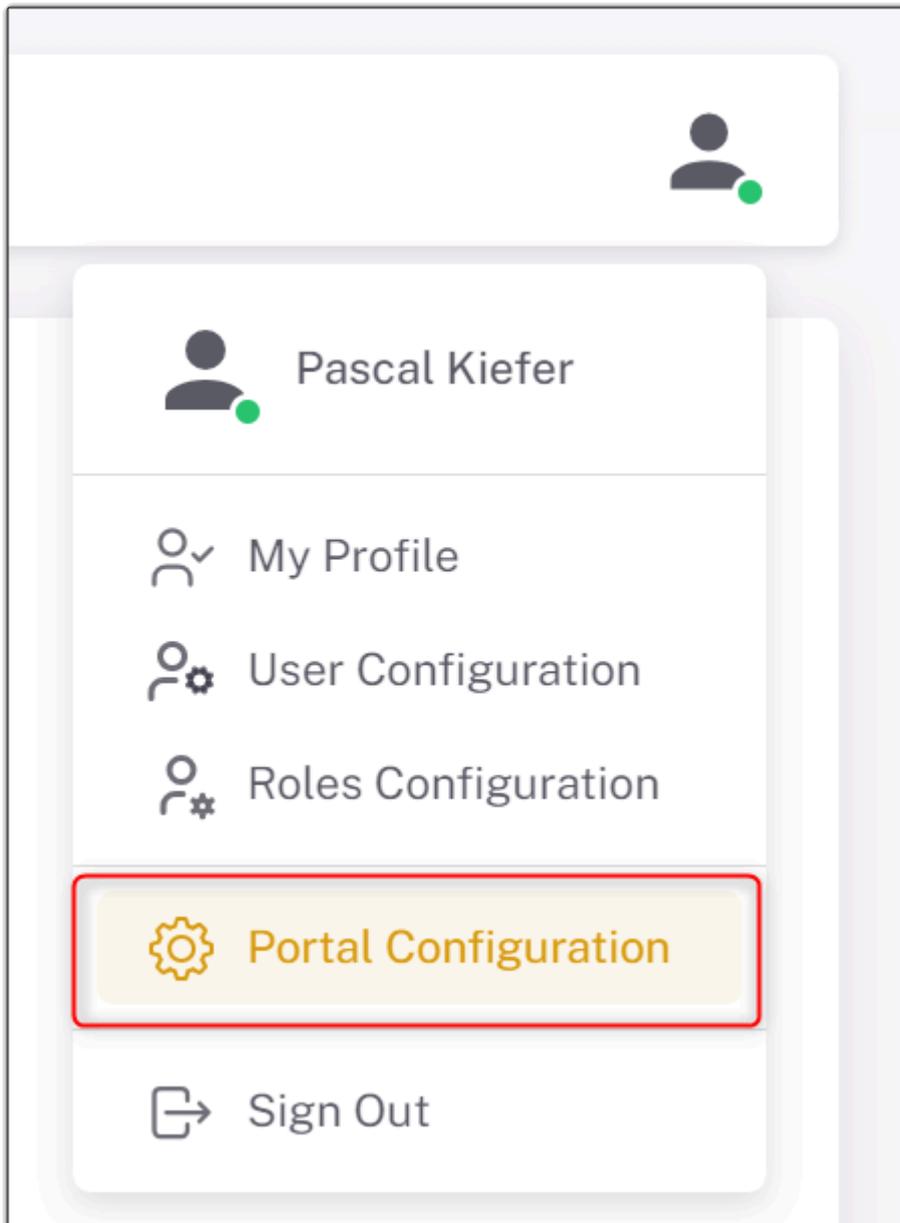


7. Update Client Secret

How to add the Client ID and Client Secret to the ProConomics Portal.

After creating the Service Principal and obtaining the Client ID and Client Secret, you need to add these values to the ProConomics Portal settings.

Navigate to the ProConomics Portal configuration page and enter the Client ID.



Enter the Client Secret and save the configuration.

Portal Configuration

Main Menu Name

Dashboard

Login Layout

Image left, login right

Service Principal Client ID

[Redacted]

Service Principal Client ID Secret

Service Principal Expiry Date

09/09/2025



Microsoft Authentication Service Principal Client ID

[Redacted]

Save Changes

Reset

8. Azure Budget & Cost Control

How to control costs in Azure.

We always recommend to set up a budget in Azure to control your costs. This way you will receive an alert when your costs reach a certain threshold.

You can set up a budget in the Azure Portal by navigating to Cost Management + Billing. From there, you can create a new budget and set the amount and the alert threshold.

For more information, see the [Microsoft documentation on creating budgets](#).