Azure DevOps: How to create my first repo and run a pipeline (.NET 8 WebAPI in VSCode and Visual Studio 2022)

1. How to create a new repo in my Azure DevOps project

By default when we create a new Project inside one Organization in Azure DevOps a new repo is automatically created.

If we need to create a new repo inside an existing Project we can navigate to **Project->Settings->Repositories** and press on the Create button

https://dev.azure.com/organizationName/projectName/_settings/repositories

https://dev.azure.com/luiscocoenriquez/myFirstProject/_settings/repositories
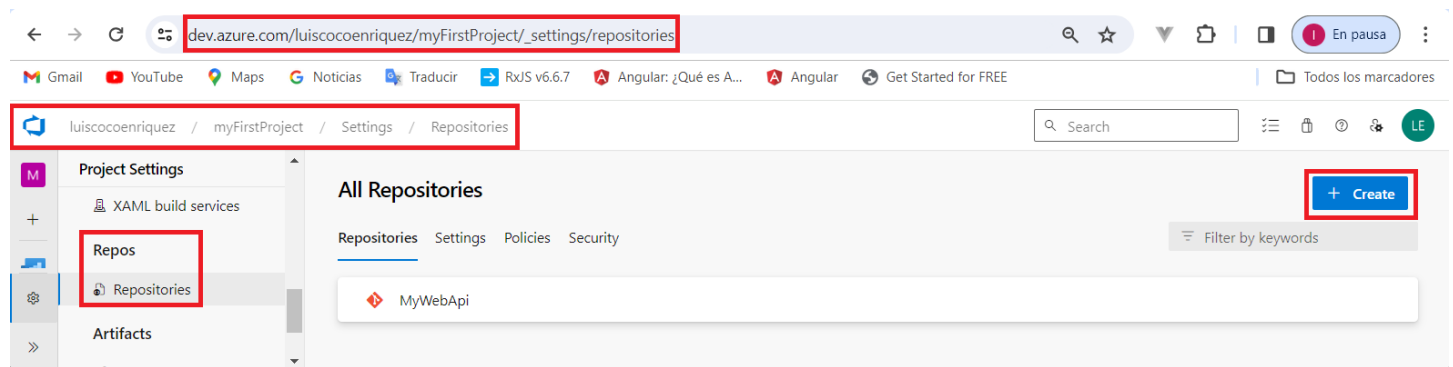
We input the repository type, repo name and gitignore file, then we press the create button

Pay attention the new repo will be initialized with a **main** branch
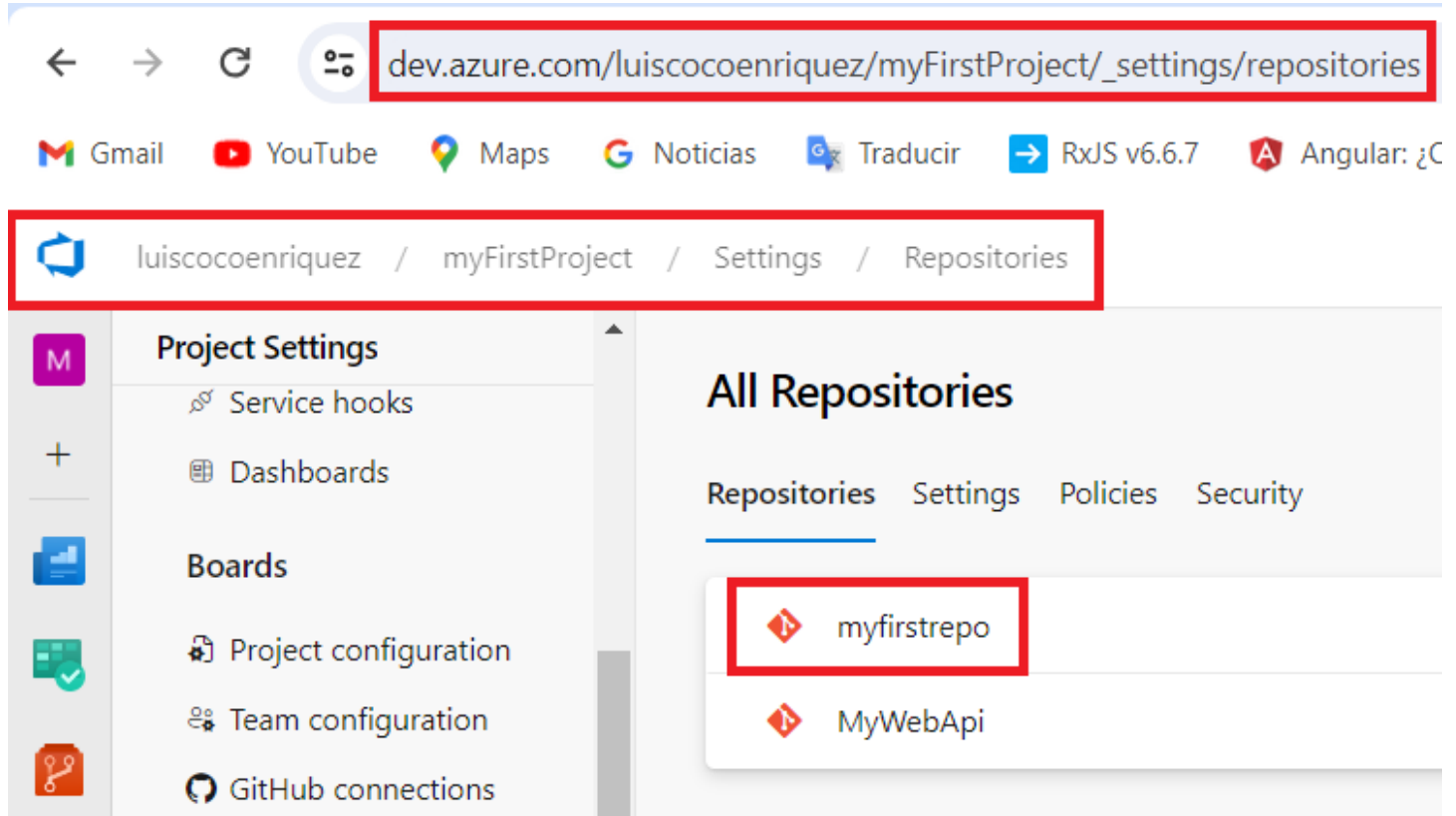
2. How to create a .NET 8 WebAPI in VSCode and

Open VSCode and then open a terminal in VSCode.

Create a new folder for your project and navigate into it:

```
mkdir MyWebApi
cd MyWebApi
```

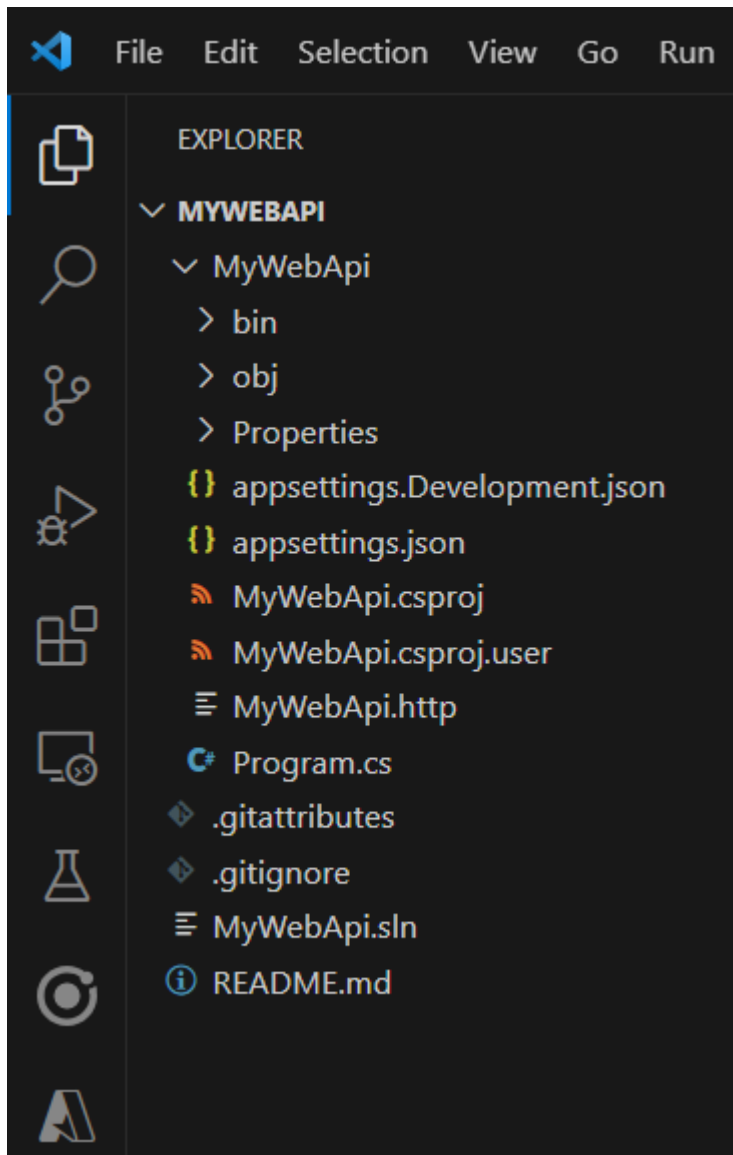**Create a new .NET 8 WebAPI project:**

```
dotnet new webapi -n MyWebApi
```

This command creates a new directory named MyWebApi inside your current folder, and then it generates a basic WebAPI project inside this new directory.

Open your project in VSCode:

```
code . -r
```

The **-r** flag tells VSCode to reload the current window with the contents of the current directory.

Test your application (optional):

Run your application to ensure everything is working correctly.

```
dotnet run
```

By default, your WebAPI will be accessible at

https://localhost:5001/swagger/index.html

or

http://localhost:5000/swagger/index.html

3. Initialize a local git repo, add files, commit changes and push changes to the Azure DevOps repo
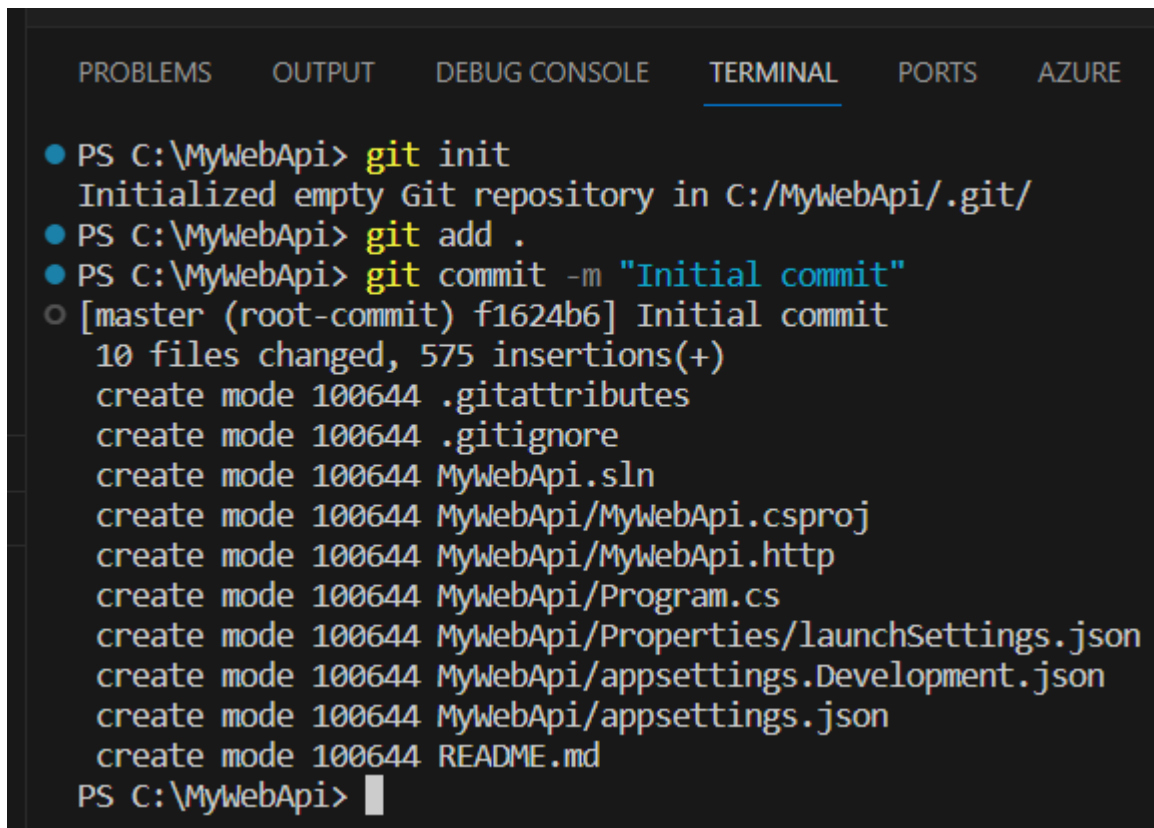
Initialize a Git repository:

```
git init
```

Add your project files to the repository:

```
git add .
```

Commit your changes:

```
git commit -m "Initial commit"
```
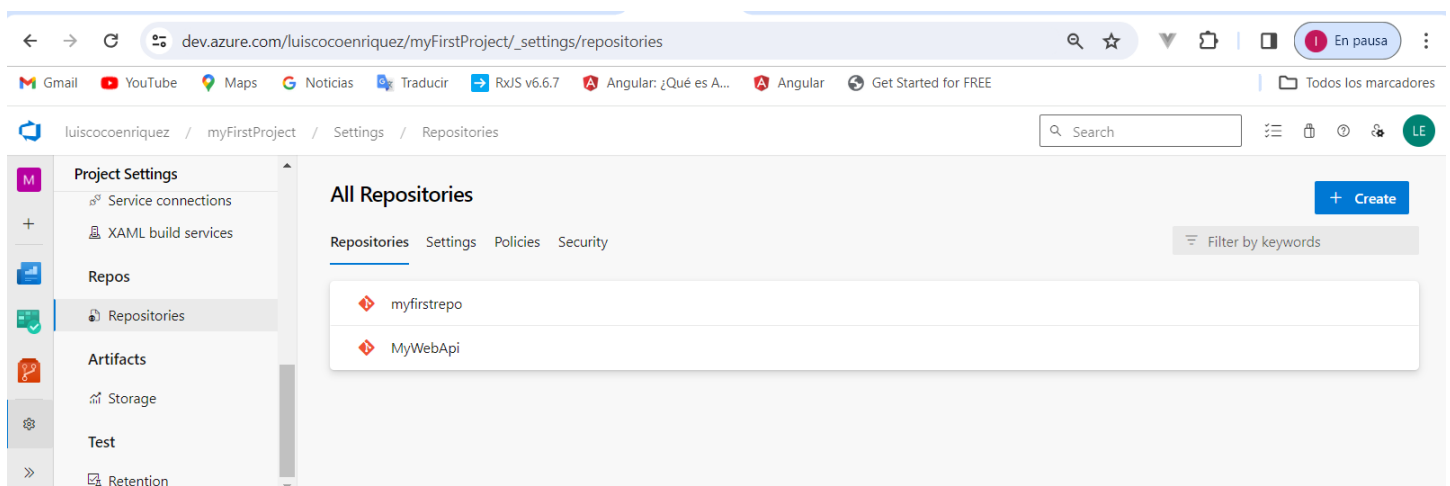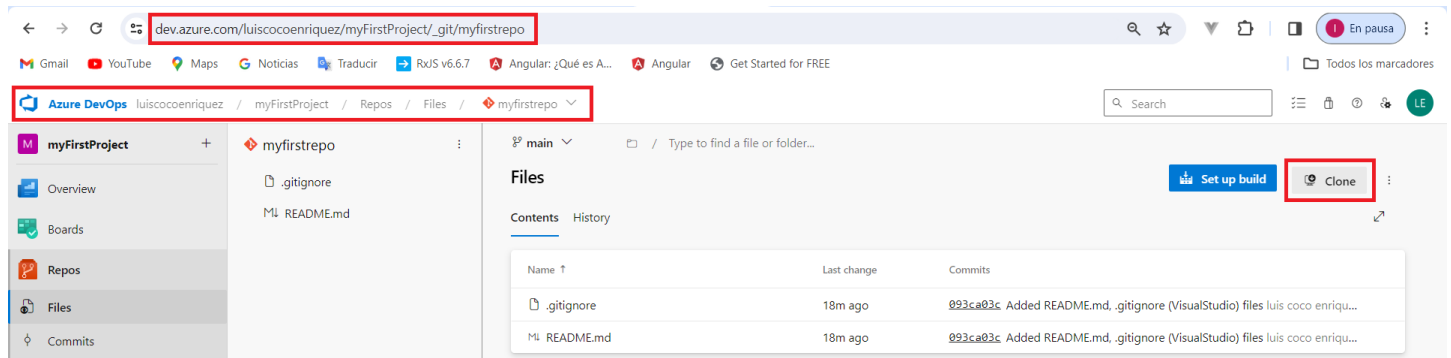

Go to your Azure DevOps project:

Navigate to your **Azure DevOps portal**. Go to the **Repos** section of your project.

Create a **new repository** (if you haven't already)

We navigate to the repo files and we click on the **Clone** button

We copy the **repo URL**:

https://luiscocoenriquez@dev.azure.com/organizationName/projectName/_git/repoName

https://luiscocoenriquez@dev.azure.com/luiscocoenriquez/myFirstProject/_git/myfirstrepo

Git command to push an existing repository from the command line:

```
git remote add origin https://luiscocoenriquez@dev.azure.com/luiscocoenriquez/myFirstProject/_
git branch -M main
git push -u origin main
```

IMPORTANT NOTE:

if you've initialized your Azure DevOps repository with some files (like a **README.md** or any other file) that your local repository doesn't have,

you need to first pull the changes from the remote repository, resolve any conflicts if they exist, and then push your changes again.

We pull the changes from the repo in Azure DevOps

```
git pull origin main --allow-unrelated-histories
```
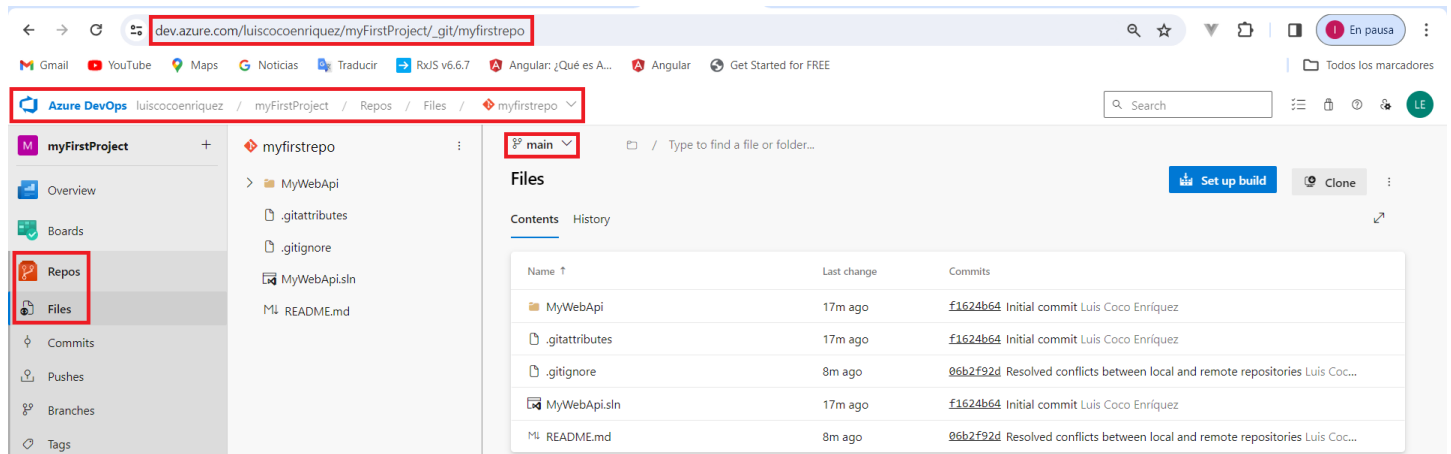
We add the files and commit them

```
git add .
git commit -m "Resolved conflicts between local and remote repositories"
```

Once the conflicts are resolved and the changes from the remote repository are successfully merged into your local repository, we can push your changes:

```
git push -u origin main
```

We verify the new Azure repo with all the pushed changes

4. How to create a new repo in Visual Studio 2022 Community Edition and push the code to Azure DevOps repo

We run Visual Studio 2022 and open the solution

We select the Git changes tab and click on Create Git repo button

We select the organization, project and the repo name. We press on the Create and Send changes button
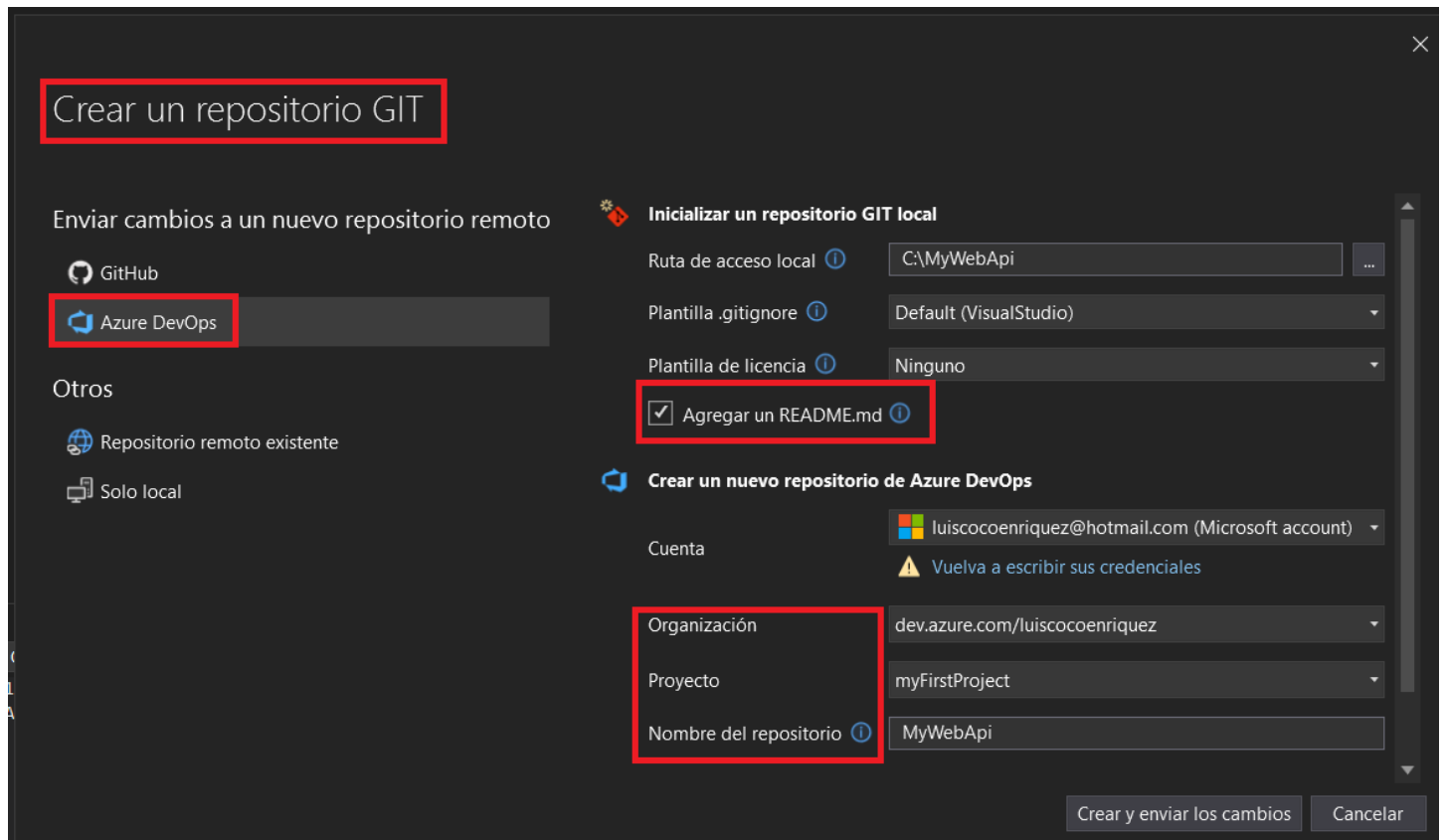
We verify in AzureDevOps the new repo

https://dev.azure.com/organizationName/projectName/_settings/repositories

https://dev.azure.com/luiscocoenriquez/myFirstProject/_settings/repositories

← → C ⊙ dev.azure.com/luiscocoenriquez/myFirstProject/_settings/repositories

M Gmail   ▶ YouTube   9 Maps   G Noticias   ⟡ Traducir   → RxJS v6.6.7   A Angular: ¿(

M   luiscocoenriquez / myFirstProject / Settings / Repositories

Project Settings

   ⌀ Service hooks

   ⊞ Dashboards

Boards

   ⊡ Project configuration

   ⊶ Team configuration

   ◯ GitHub connections

Pipelines

   ⚏ Agent pools

   00 Parallel jobs

   ⚙ Settings

   ☑ Test management

   ⌀ Service connections

   ⚏ XAML build services

Repos

   ⊡ Repositories

All Repositories

Repositories   Settings   Policies   Security

   ◈ MyWebApi

   ◈ NewRepo

5. How to create and run a Pipeline

We click on the Repo button

We click on the drop-down list and select MyWebApi repo
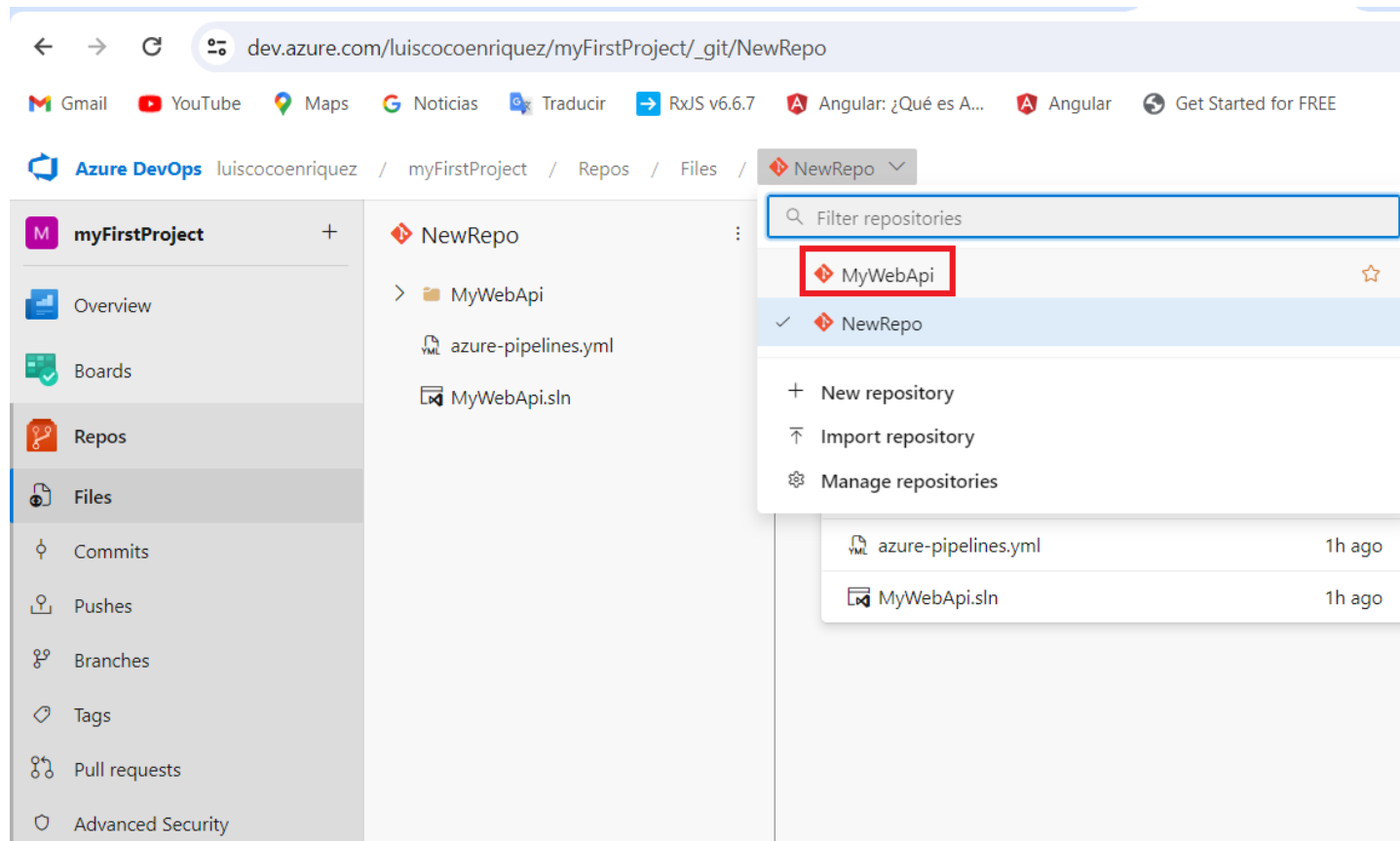
We click on the **Set up build** button
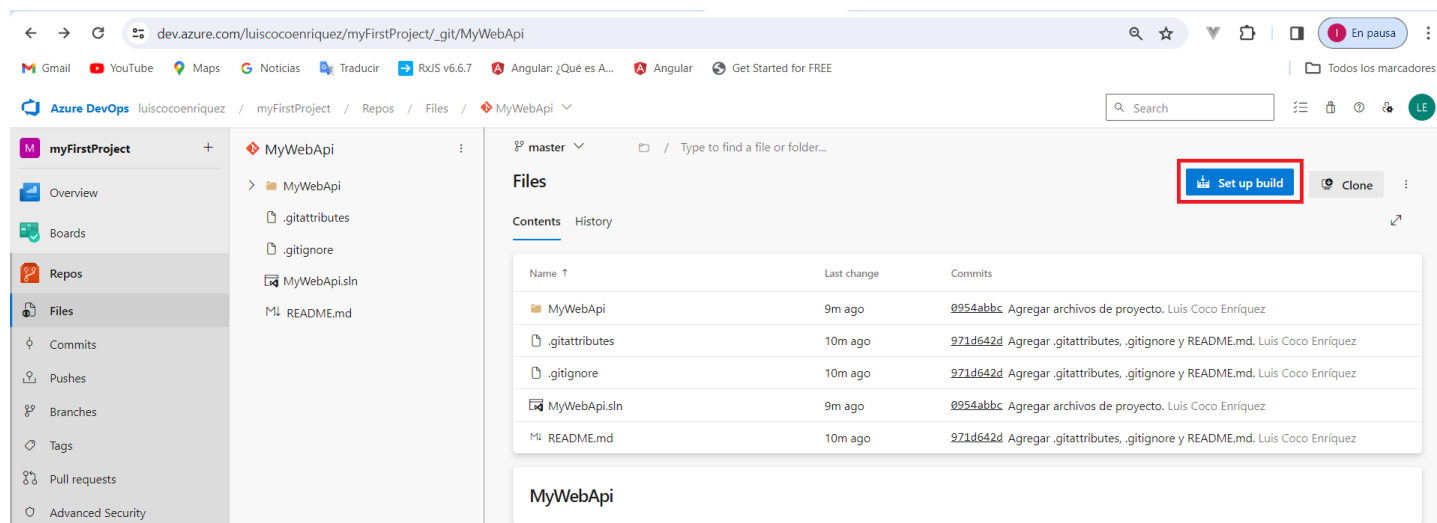
We click on the **Starter pipeline** option

We copy the pipeline yaml file content

```
trigger:
- master

pool:
  vmImage: 'windows-latest'

steps:
- task: UseDotNet@2
  inputs:
    version: '8.x'
    includePreviewVersions: true # Set to true if .NET 8 is still in preview

- script: dotnet restore
  displayName: 'dotnet restore'
```

```yaml
- script: dotnet build --configuration Release
  displayName: 'dotnet build'

- script: dotnet test --configuration Release --logger trx
  displayName: 'dotnet test'

- script: dotnet publish --configuration Release --output publishOutput
  displayName: 'dotnet publish'
```

We click on **Save and run** button

We verify the job is running

We get this error message¨:

"##[error]No hosted parallelism has been purchased or granted.

To request a free parallelism grant, please fill out the following form https://aka.ms/azpipelines-parallelism-request"

If we navigate to this URL: https://aka.ms/azpipelines-parallelism-request

We have to fulfill a form to request **Azure DevOps Parallelism Free**

Azure DevOps Parallelism Request

This form is for users to request increased parallelism in Azure DevOps.

Please consider that it could take 2-3 business days to proceed the request. We are working on improving this process at the moment. Sorry for the inconvenience.

* Required

1. What is your name? *

luis coco enriquez

2. What is your email address? *

luiscocoenriquez@hotmail.com

3. What is the name of your Azure DevOps Organization? *

(E.g. for https://myorganization.visualstudio.com or https://dev.azure.com/myorganization link formats - organization name would be 'myorganization')

luiscocoenriquez

4. Are you requesting a parallelism increase for Public or Private projects? *

◉ Private

◯ Public

Submit

See also the information in this URL regarding **Configure and pay for parallel jobs**:

https://learn.microsoft.com/en-us/azure/devops/pipelines/licensing/concurrent-jobs?view=azure-devops&tabs=ms-hosted

It takes us **2-3 business days** to respond to your free tier request.

Also we can see the **Pricing for Azure DevOps** in the following URL

https://azure.microsoft.com/en-us/pricing/details/devops/azure-devops-services/

INDIVIDUAL SERVICES

Azure Pipelines

1 Free Microsoft-hosted CI/CD
1 Free Self-Hosted CI/CD

Start free

- 1 Microsoft-hosted job with 1,800 minutes per month for CI/CD and 1 self-hosted job with unlimited minutes per month

- $40 per extra Microsoft-hosted CI/CD parallel job and $15 per extra self-hosted CI/CD parallel job with unlimited minutes

Microsoft-hosted

Free

1,800 minutes free with 1 free parallel job   **$0/mo**

Azure Artifacts

2 GiB free,
then starting at $2 per GiB

Start free

- Industry-leading NuGet Server

- Support for Maven, npm, and Python packages

- Upstream sources to help protect open-source dependancies

- Integrated with Azure Pipelines

- Sophisticated access controls
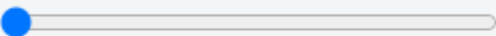
First 2 GiB free

0

$0/extra gigabyte   **$0/mo**

Self-hosted

1

1 free parallel job with unlimited minutes   **$0/mo**

Rate card

- 0 - 2 GiB = Free

- 2 - 10 GiB = $2 per GiB

- 10 - 100 GiB = $1 per GiB

- 100 - 1,000 GiB = $0.50 per GiB

- 1,000+ GiB = $0.25 per GiB

Another option is navigate to **Organization Settings** and press on the **Set up billing**

We link Azure DevOps billing to our **Azure Subscription**
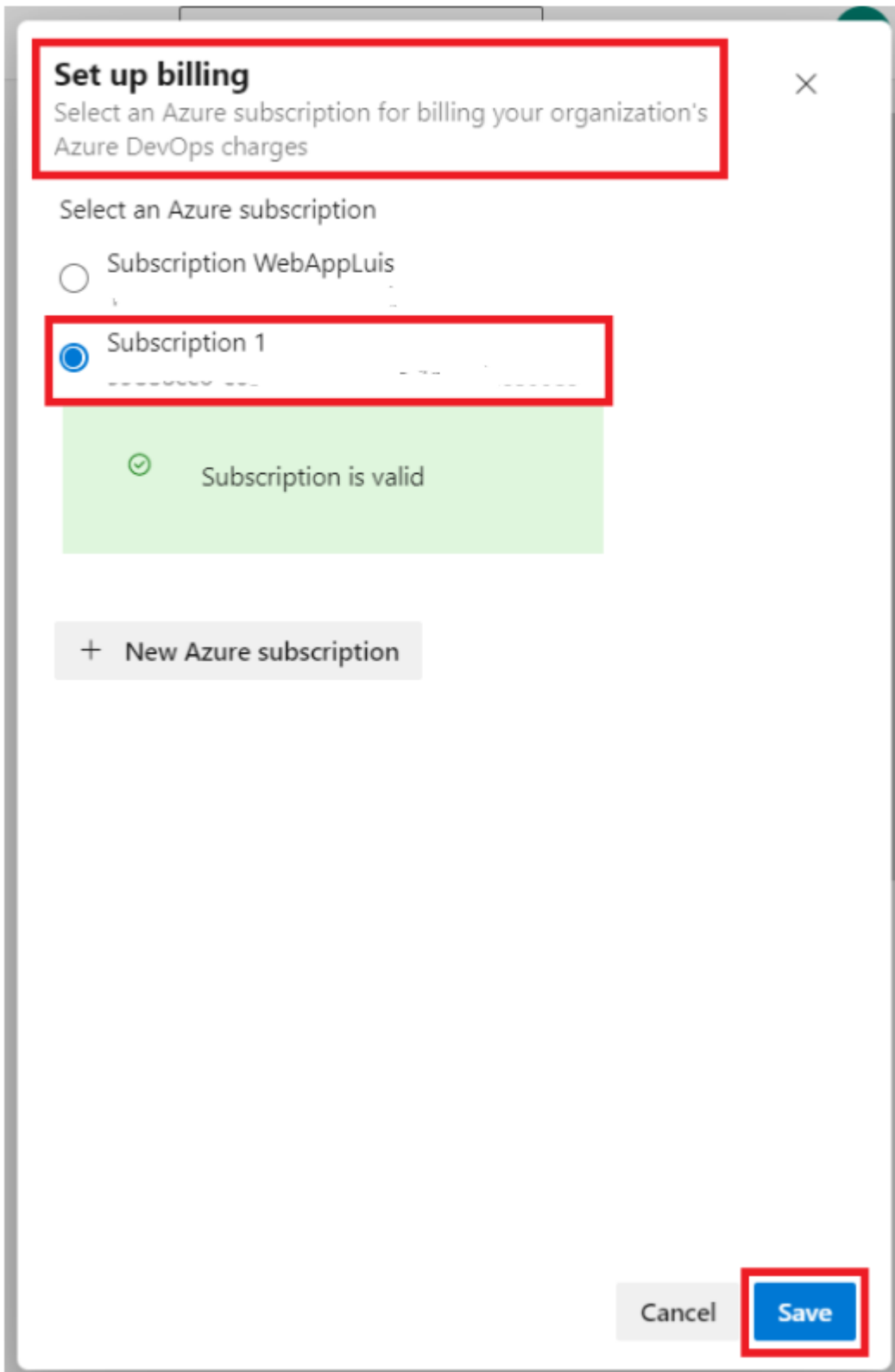
After linking our Azure Subscription to Azure DevOps we can set the **MS Host Parallel job** to **1** and press the **Save** button

dev.azure.com/luiscocoenriquez/_settings/billing

Gmail   YouTube   Maps   Noticias   Traducir   RxJS v6.6.7   Angular: ¿Qué es A...   Angular   Get Started for FREE   Todos los marcadores

Azure DevOps   luiscocoenriquez / Settings / Billing   Search

Organization Setti...
luiscocoenriquez

Search Settings

General

- Overview
- Projects
- Users
- Billing
- Global notifications
- Usage
- Extensions
- Microsoft Entra

Security

- Policies
- Permissions

Boards

- Process

Pipelines

Billing

Azure Subscription ID

Change billing   Configure user billing

Pipelines for private projects	Free	Paid parallel jobs
MS Hosted CI/CD		1
Self-Hosted CI/CD	1	0

Visit parallel jobs for full details on free pipelines and public concurrency

Boards, Repos and Test Plans	Free
Basic users	5
Basic + Test Plans	Start free trial

This organization is enabled for user assignment based billing and daily pro-rated charges, instead of monthly committed purchases. Learn more

We can verify the MS Host Parallel jobs we updated to 1

Now we can navigate to the pipeline and press the **Run pipeline** button

Run pipeline ✕

Select parameters below and manually run the pipeline

Branch/tag

⎇　main ⌄

Select the branch, commit, or tag

Advanced options

Variables This pipeline has no defined variables	>
Stages to run Run as configured	>
Resources Use latest version of all resources	>

☐ Enable system diagnostics　　　　Cancel　　**Run**

We verify one Jos is running

We confirm the final Pipeline job result was successfully