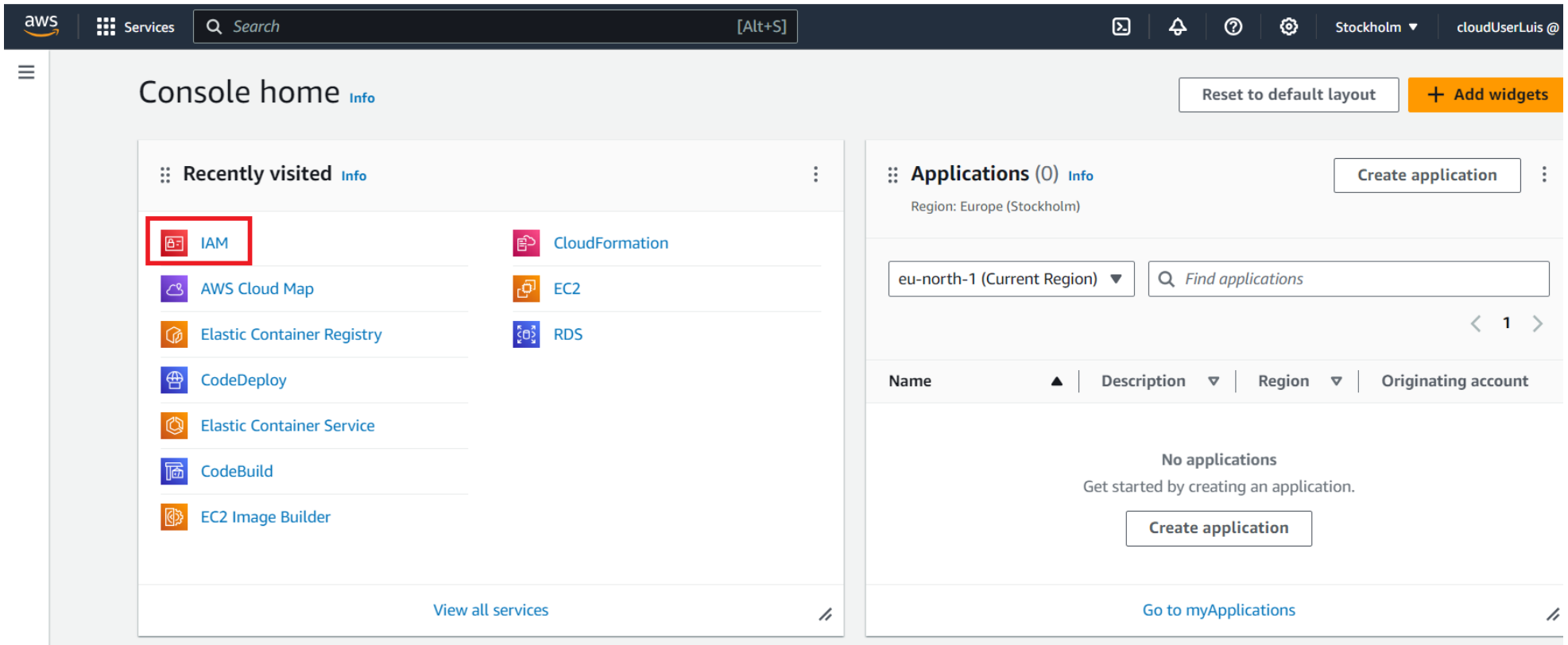
A simple tutorial to start working with AWS CodeCommit and CodeBuild creating and compiling a .NET 6 Web API

IMPORTANT NOTE!: AWS CodeBuild only works with **.NET 6** but not it is not yet available for .NET 7 neither for .NET 8

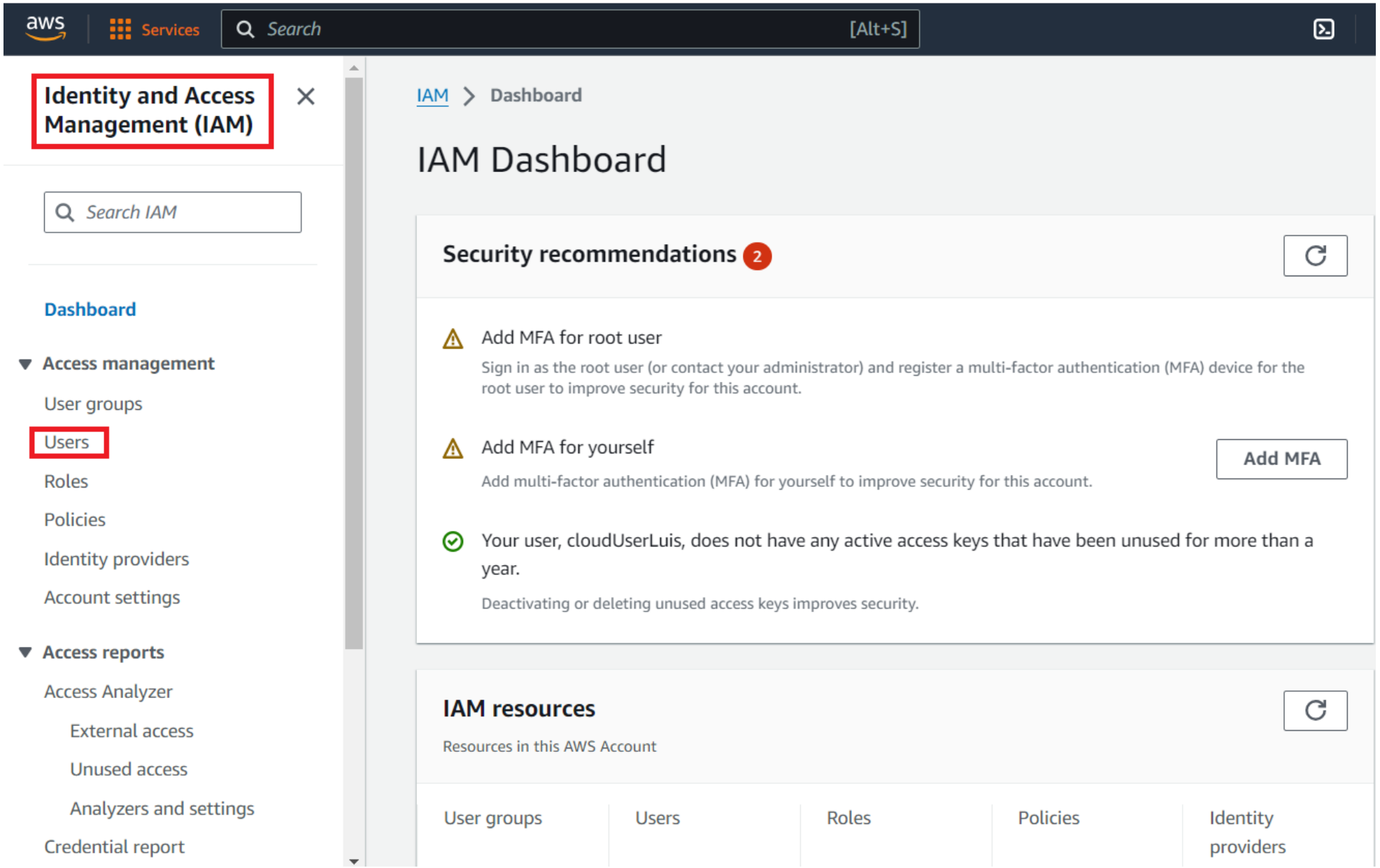
1. Prerequisites

1.1. Grant AWSCodeCommitPowerUser permission to your user

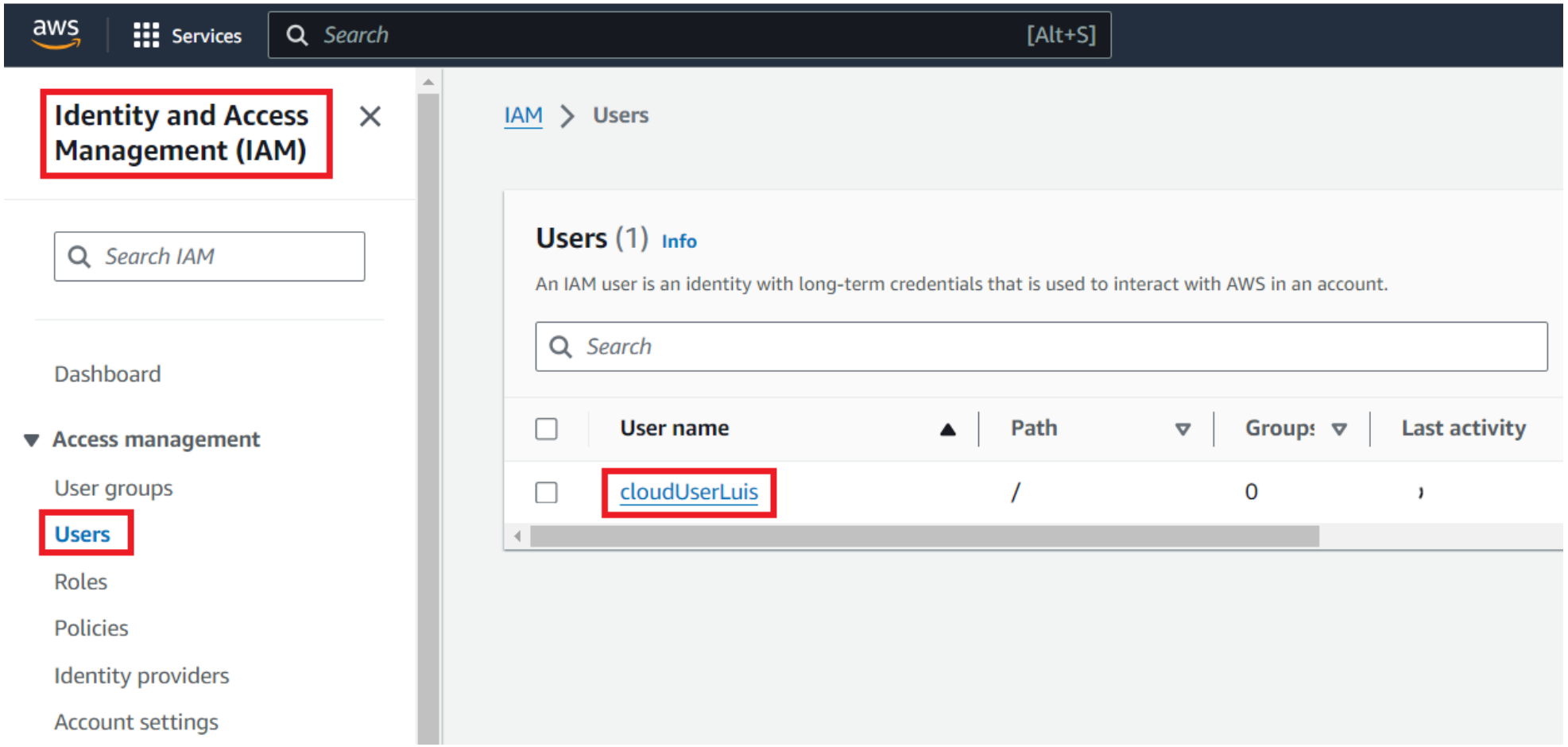
Navigate to **AWS IAM** service and add permission to your user to work with AWS CodeCommit service



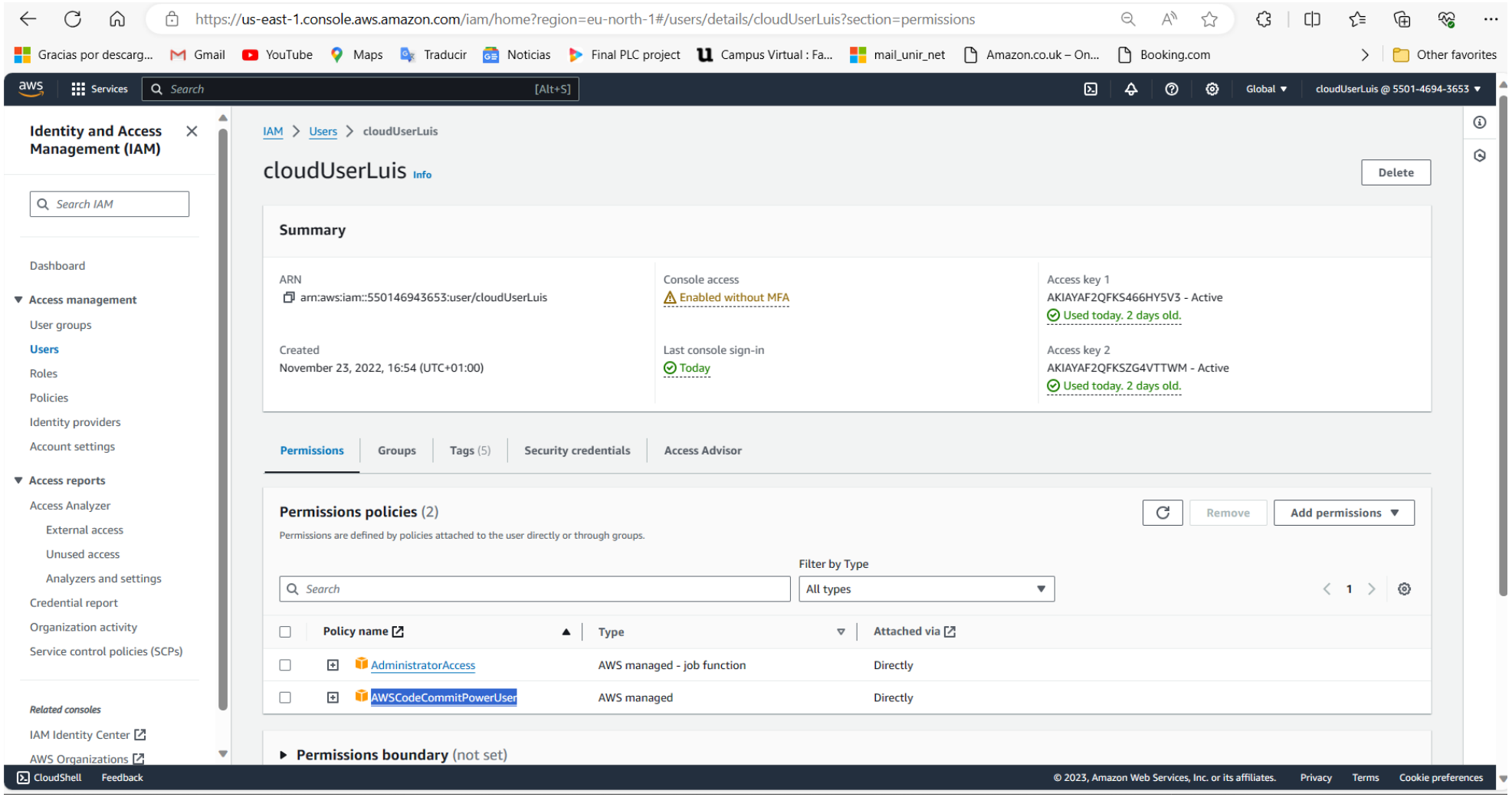
Click on **Users** menu option



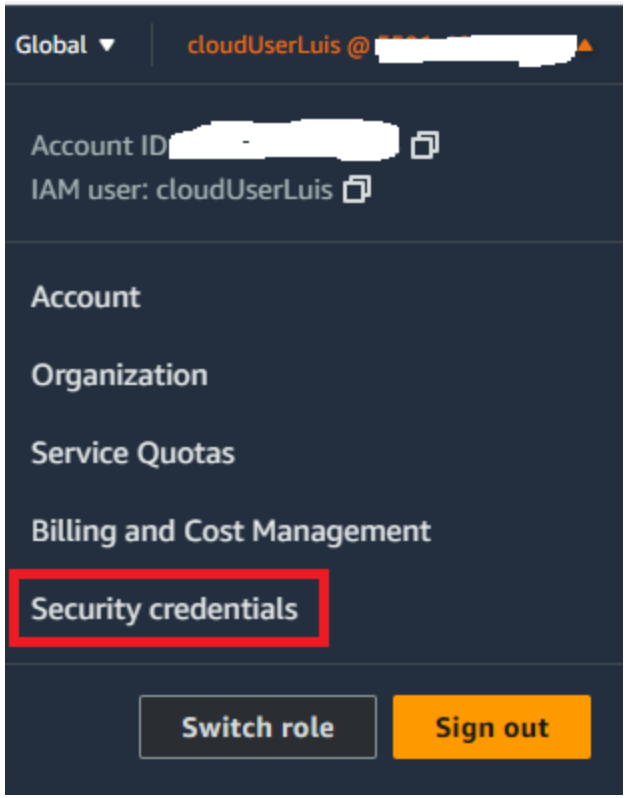
Now we click on our user name, in my case "cloudUserLuis"

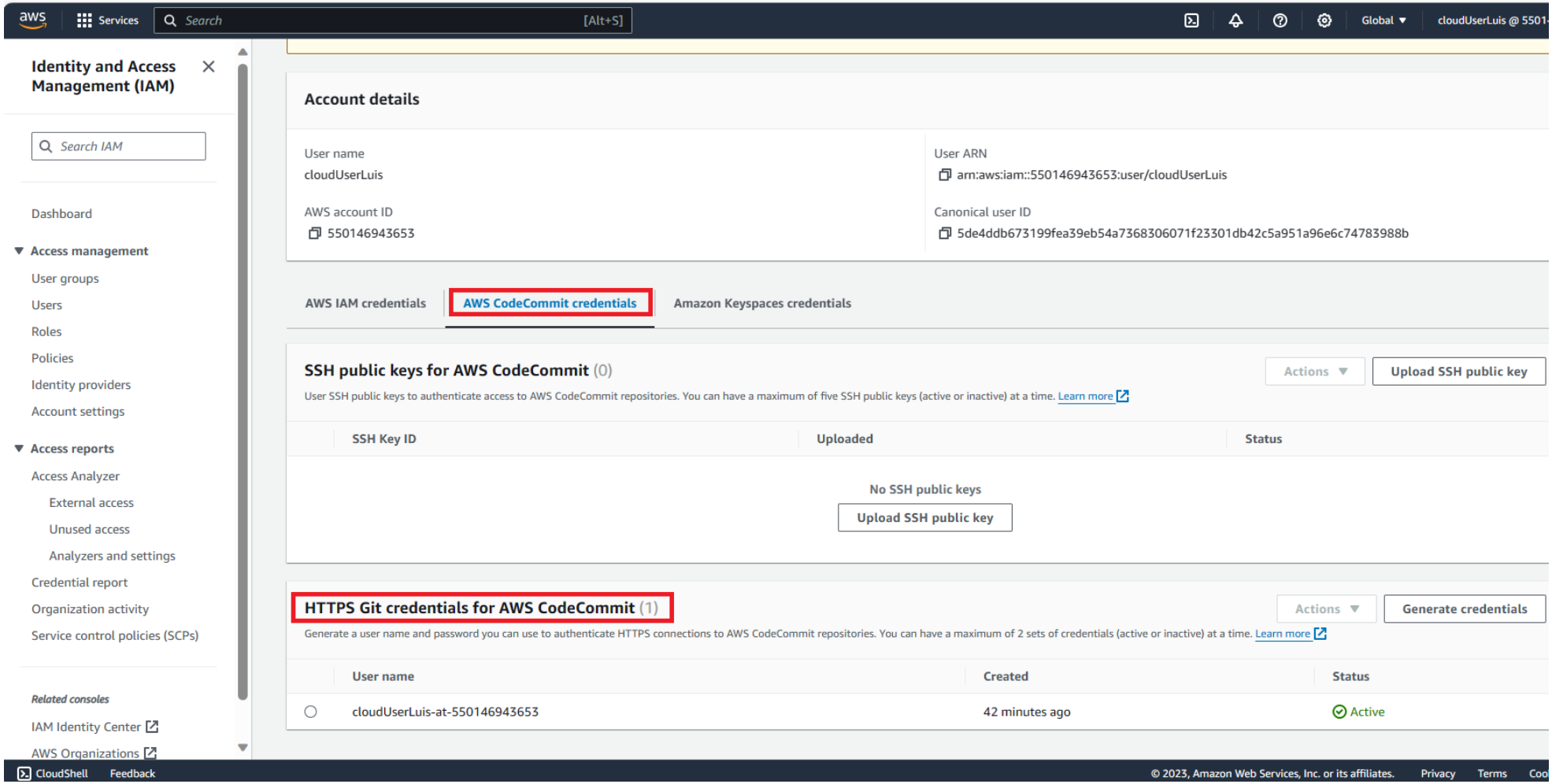


We grant "**AWSCodeCommitPowerUser**" permission to your user

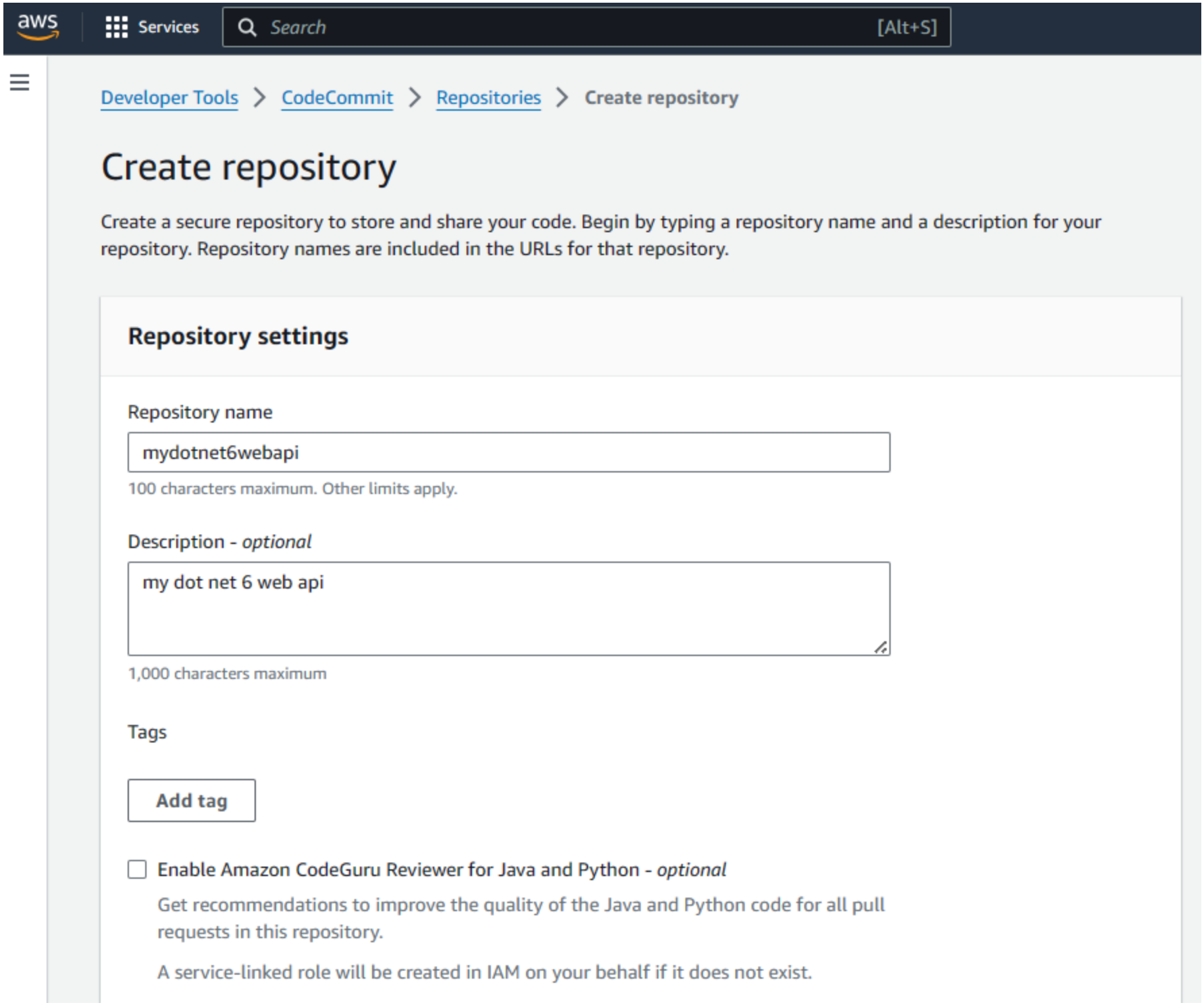


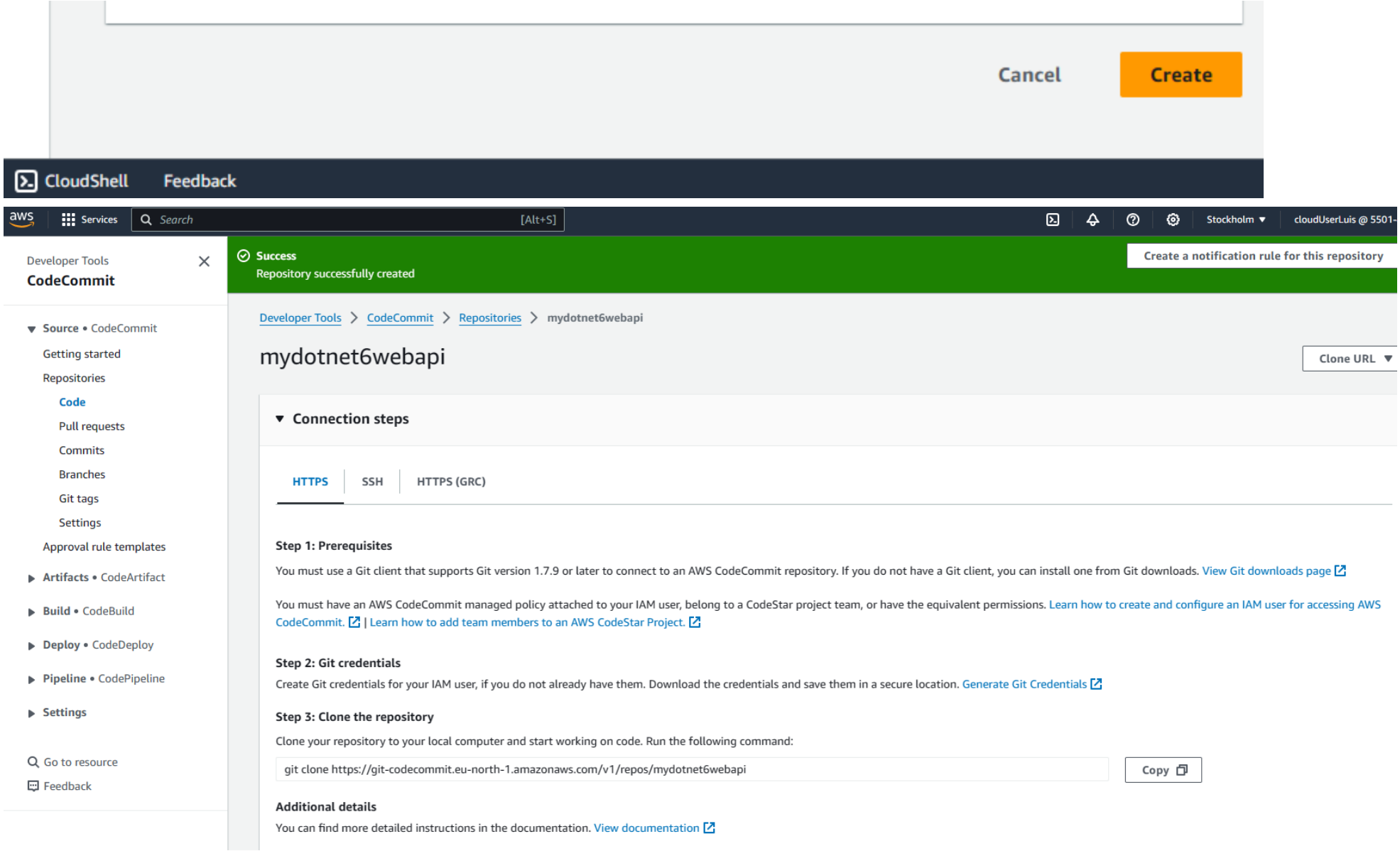
1.2. Generate HTTPS Git credentials for AWS CodeCommit


Global
cloudUserLuis @
Account ID
IAM user: cloudUserLuis
Account
Organization
Service Quotas
Billing and Cost Management
Security credentials
Switch role
Sign out



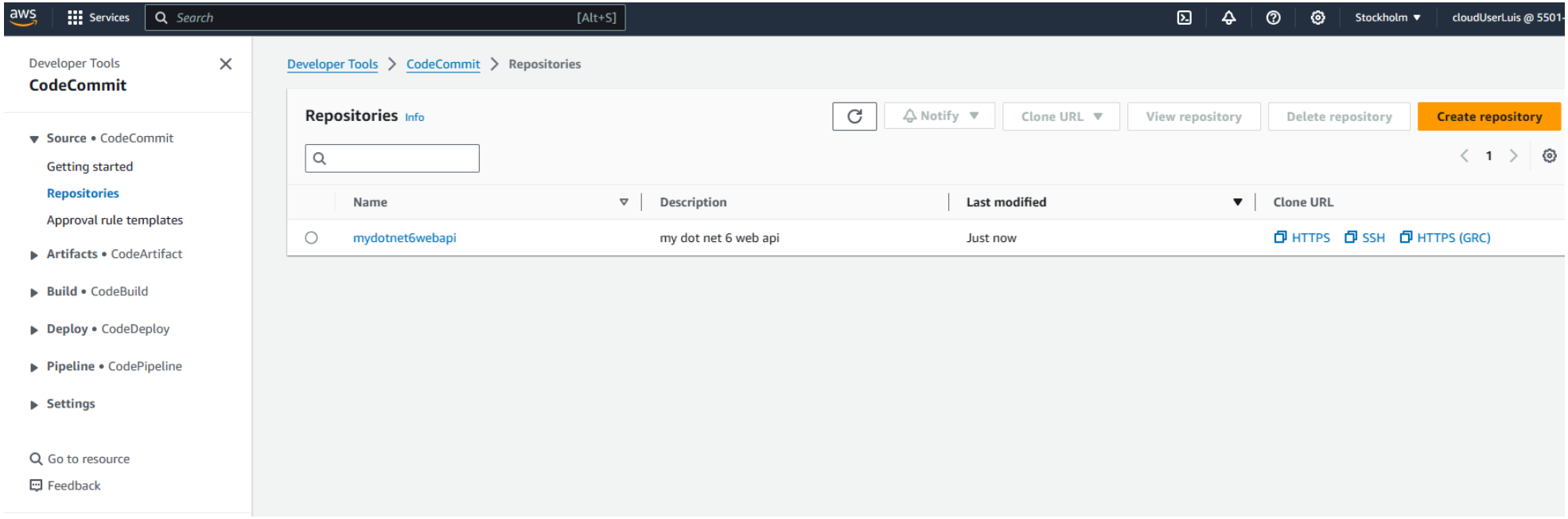
2. Create new code repository in AWS CodeCommit


aws
Services
Search
[Alt+S]
Developer Tools > CodeCommit > Repositories > Create repository
Create repository
Create a secure repository to store and share your code. Begin by typing a repository name and a description for your repository. Repository names are included in the URLs for that repository.
Repository settings
Repository name
mydotnet6webapi
100 characters maximum. Other limits apply.
Description - optional
my dot net 6 web api
1,000 characters maximum
Tags
Add tag
Enable Amazon CodeGuru Reviewer for Java and Python - optional
Get recommendations to improve the quality of the Java and Python code for all pull requests in this repository.
A service-linked role will be created in IAM on your behalf if it does not exist.



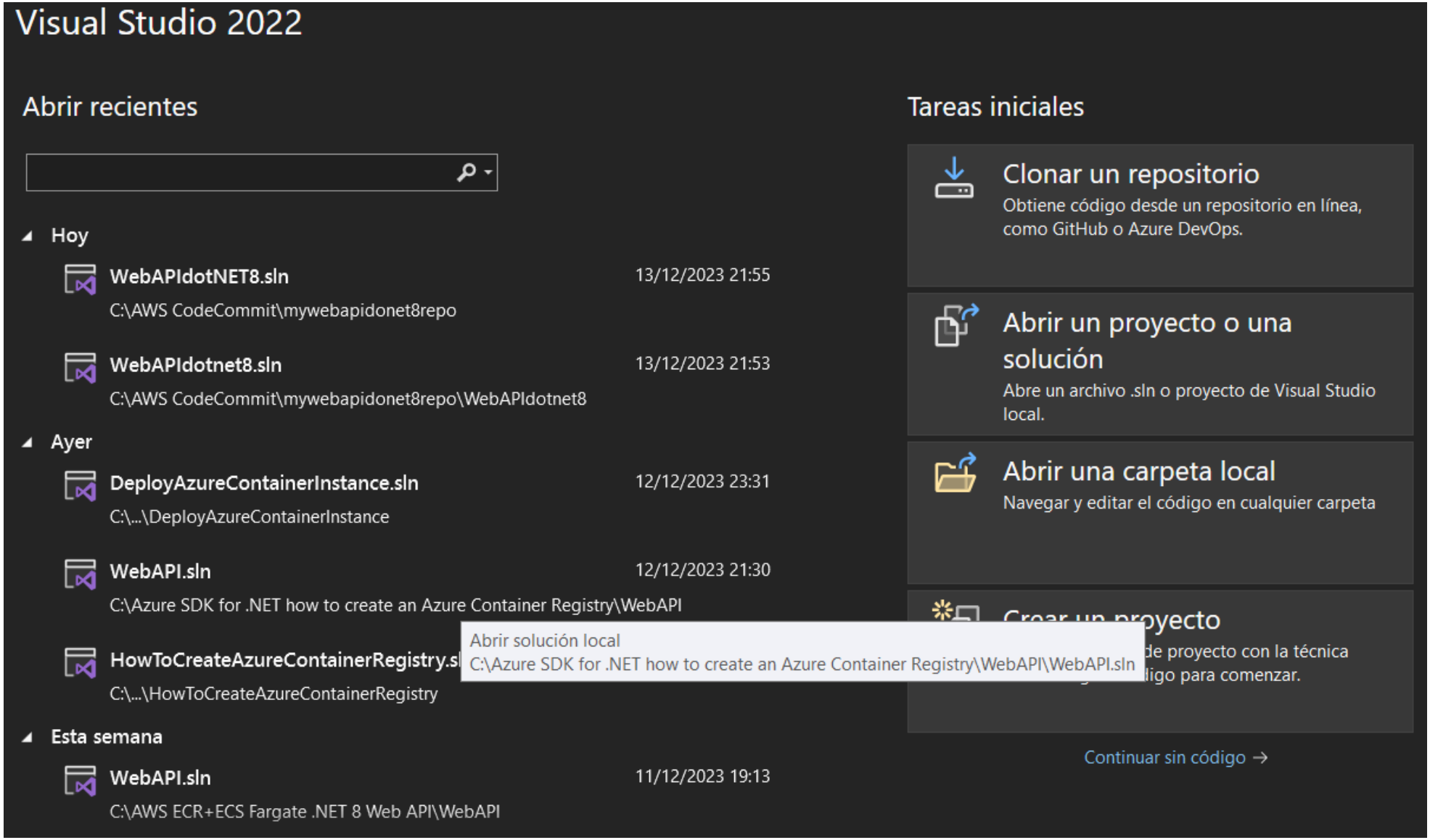
This is the AWS CodeCommit repo we created:

git clone https://git-codecommit.eu-north-1.amazonaws.com/v1/repos/mydotnet6webapi

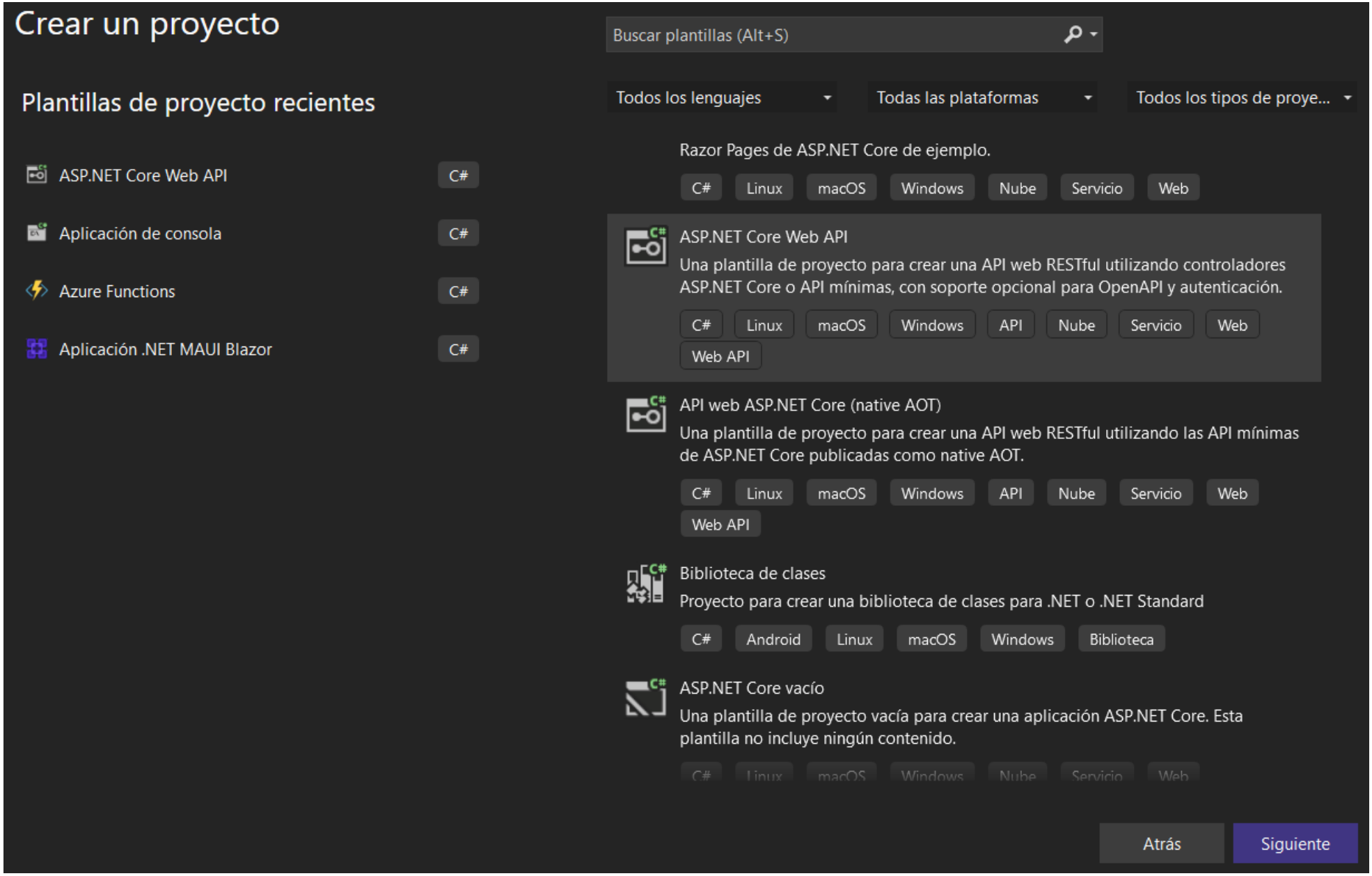


3. Create .NET 6 Web API in Visual Studio 2022

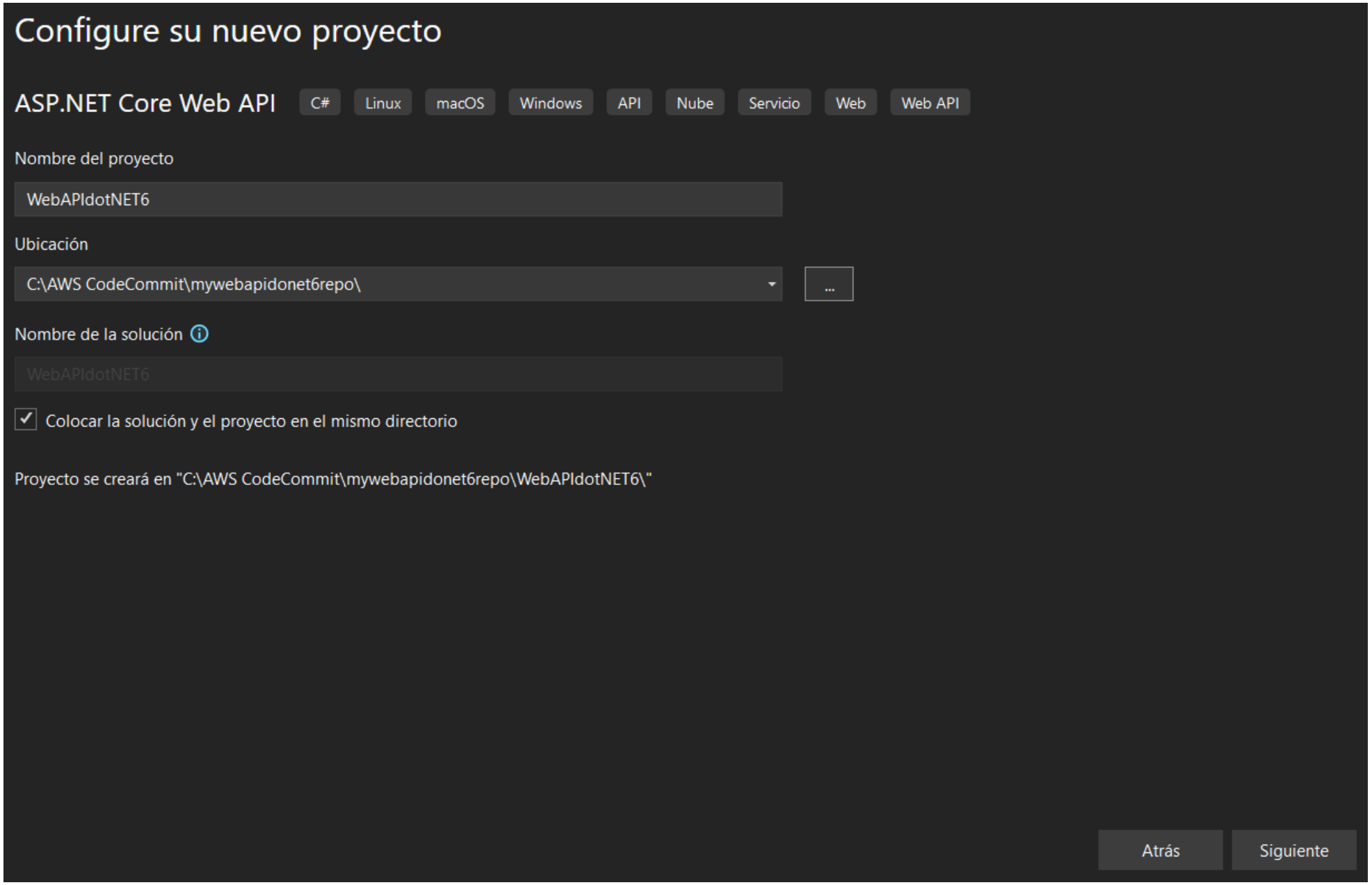
Run Visual Studio 2022 Community Edition and select the option **Create a new project**



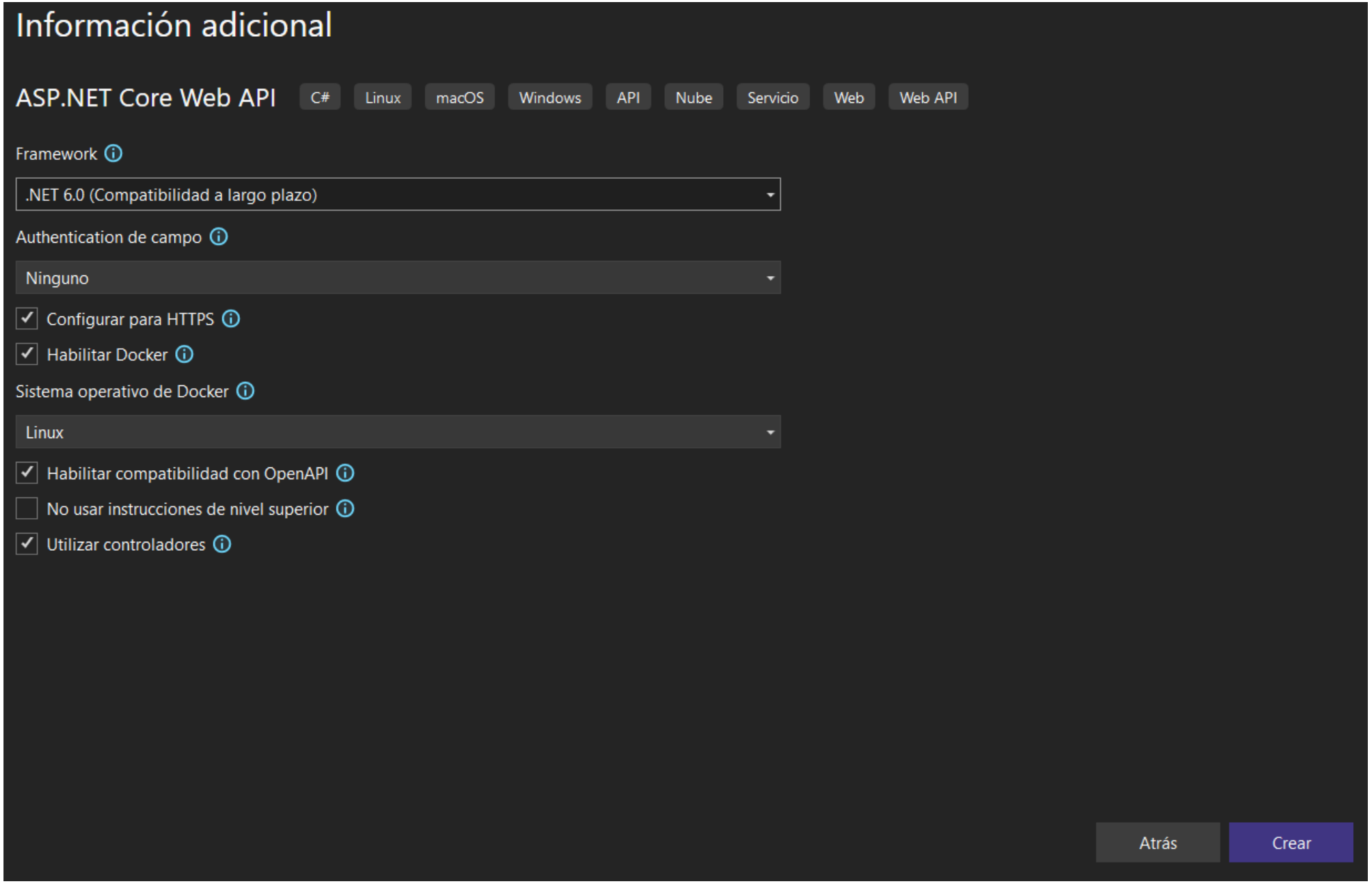
We select the Web API project template

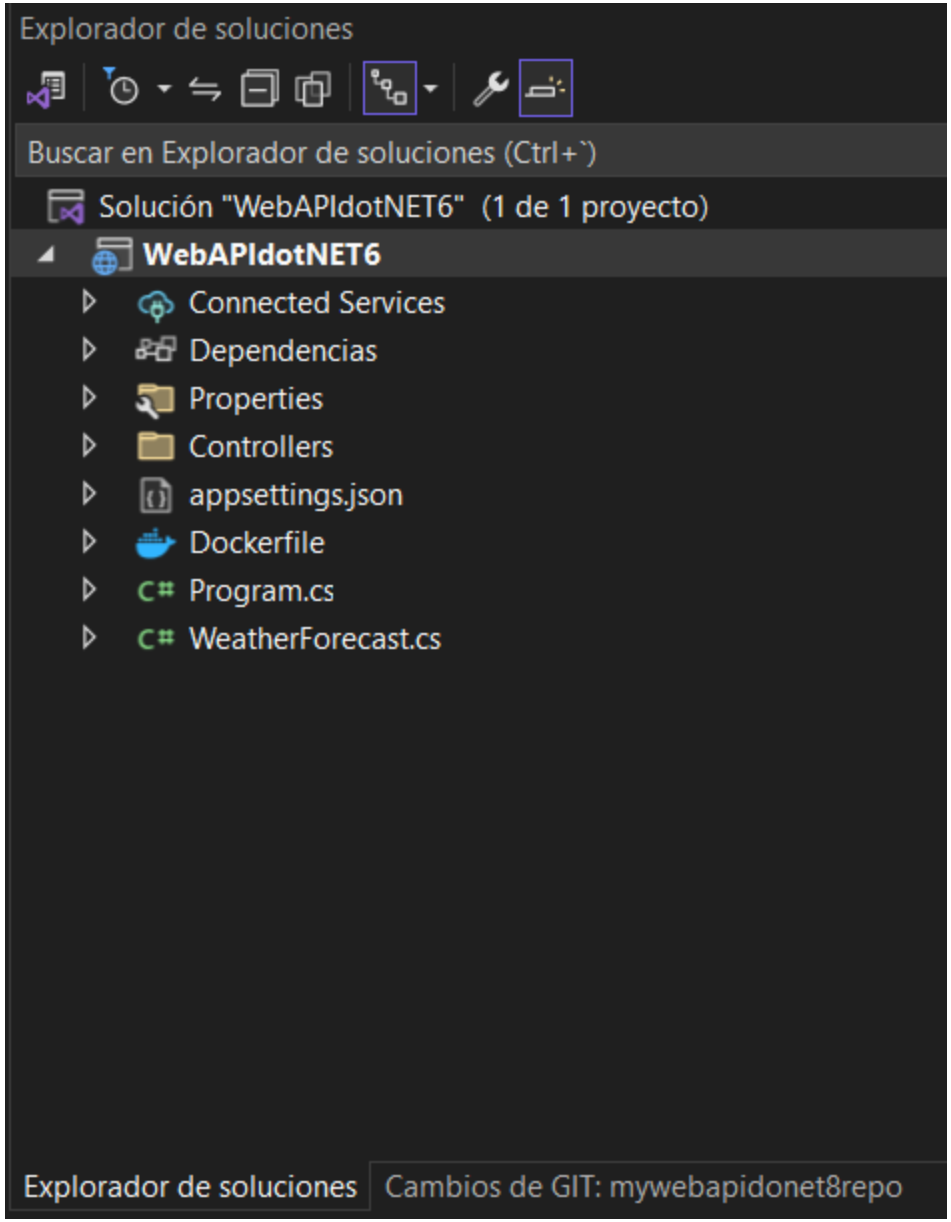


We set the solution name and location

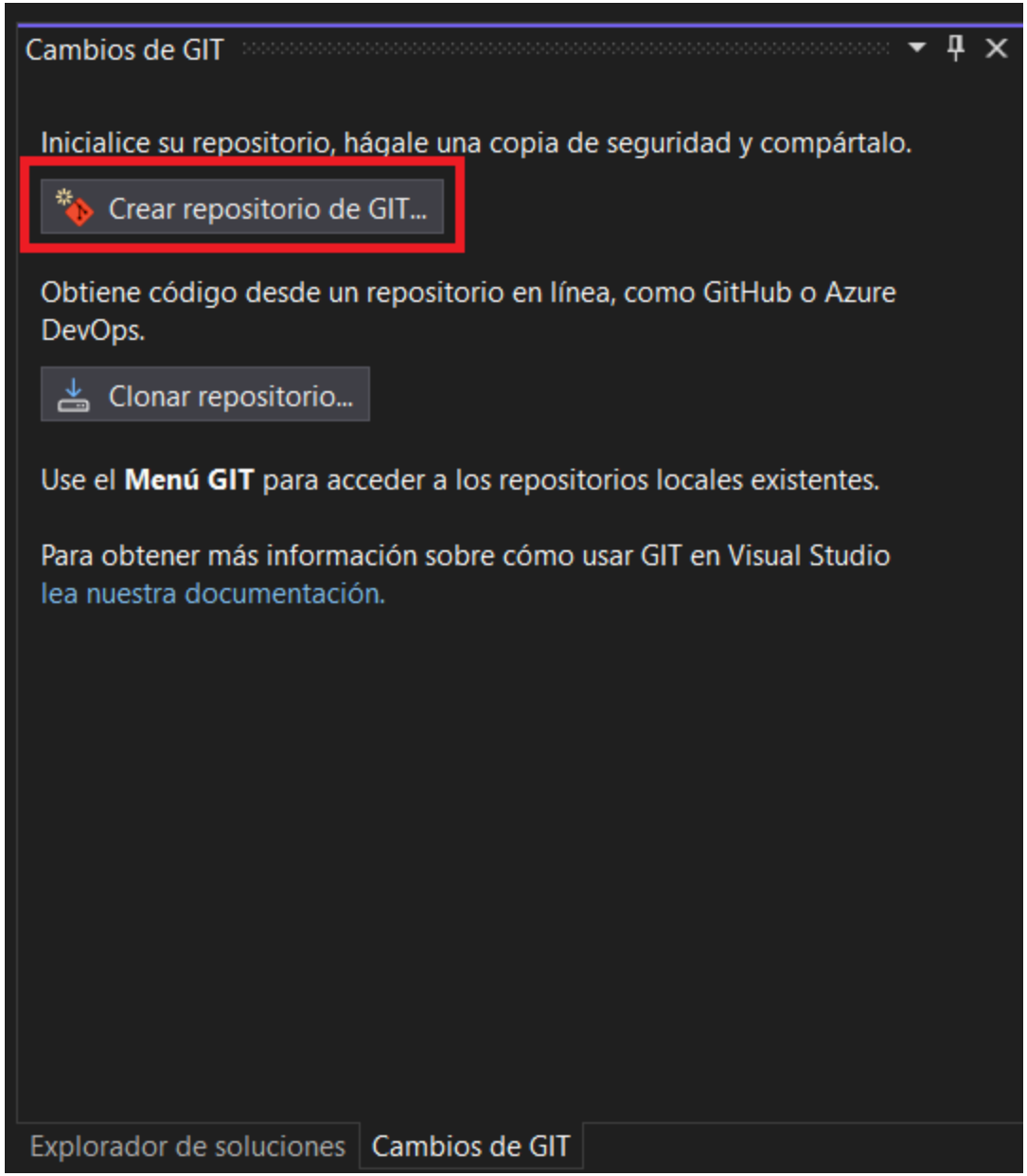


We select the options shown in the following picture

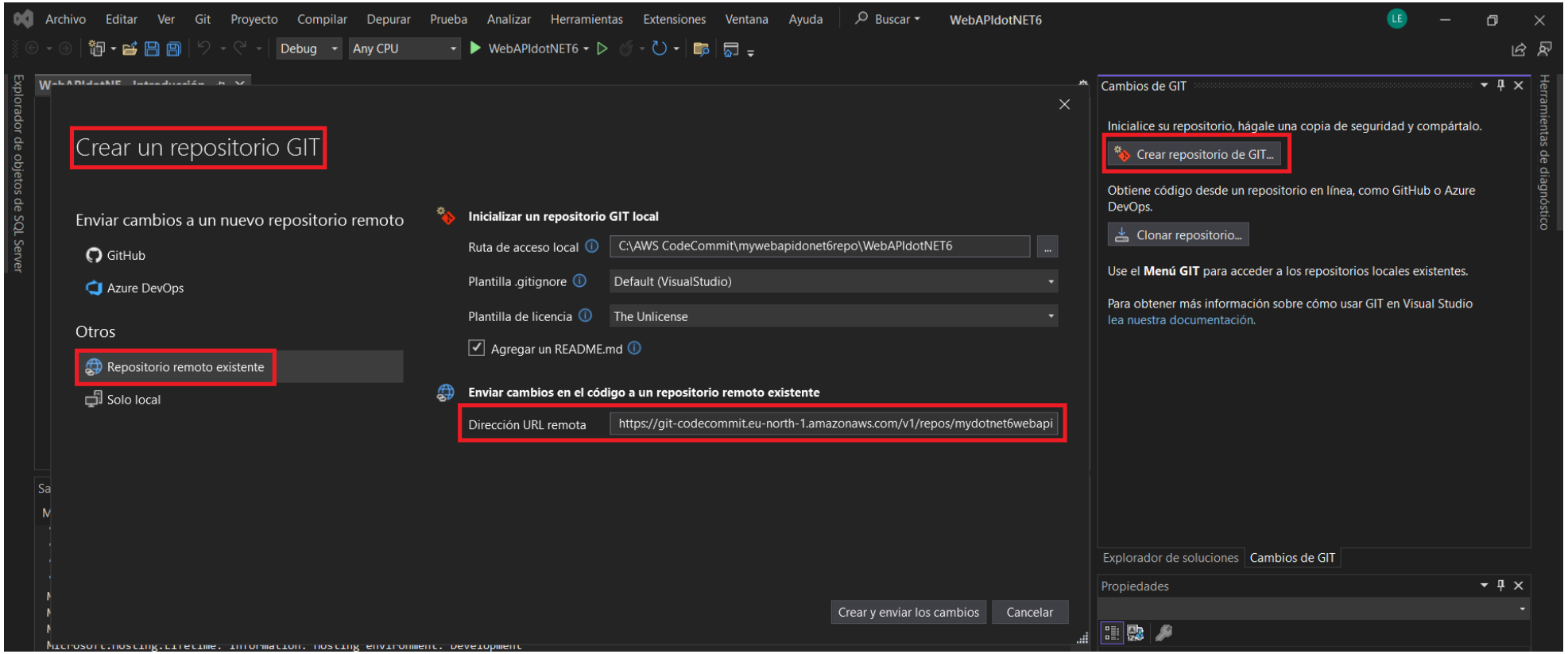

Información adicional
ASP.NET Core Web API
C#
Linux
macOS
Windows
API
Nube
Servicio
Web
Web API
Framework
.NET 6.0 (Compatibilidad a largo plazo)
Authentication de campo
Ninguno
Configurar para HTTPS
Habilitar Docker
Sistema operativo de Docker
Linux
Habilitar compatibilidad con OpenAPI
No usar instrucciones de nivel superior
Utilizar controladores
Atrás
Crear



After creating the project we creat a new Git repo

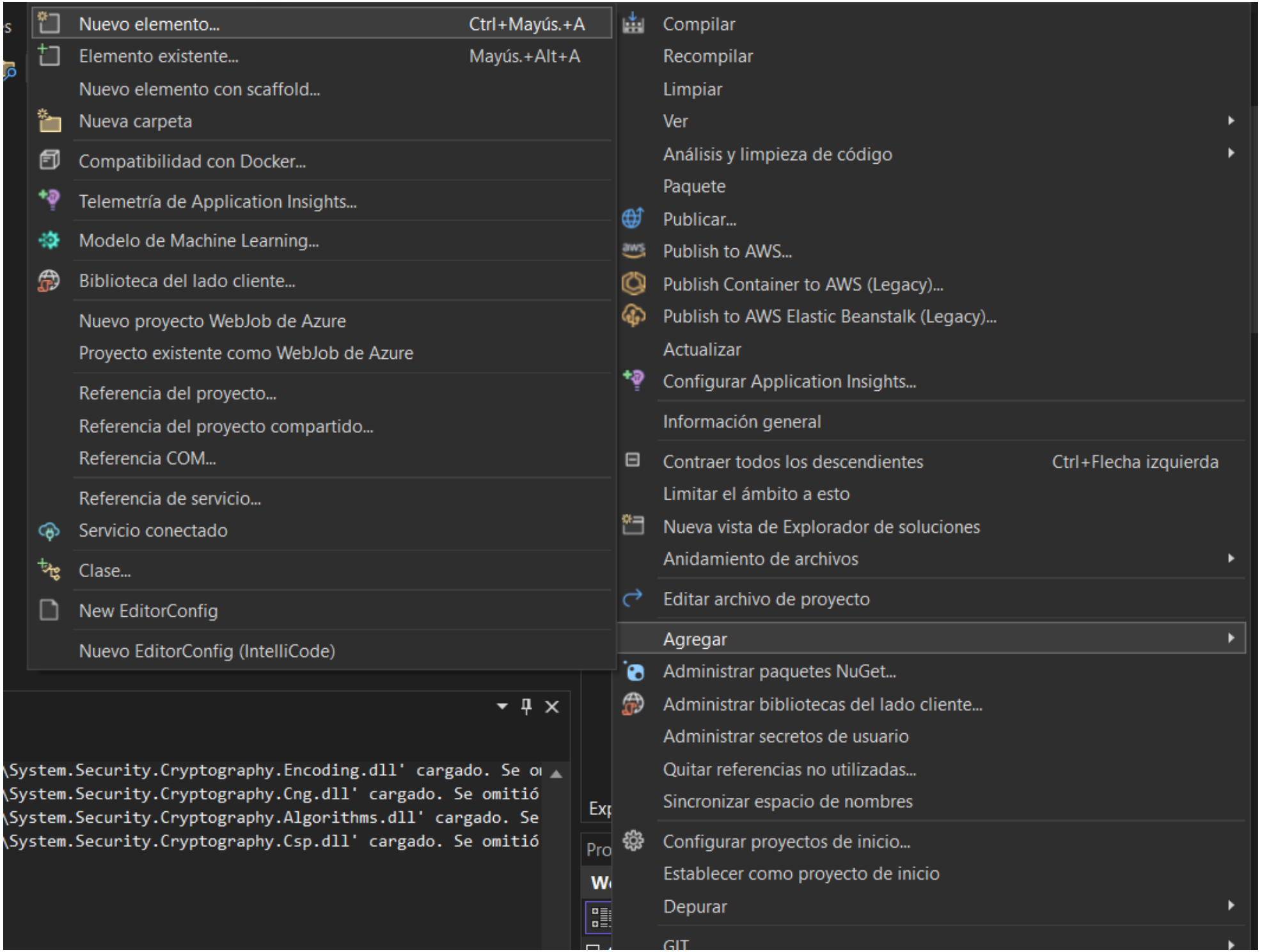


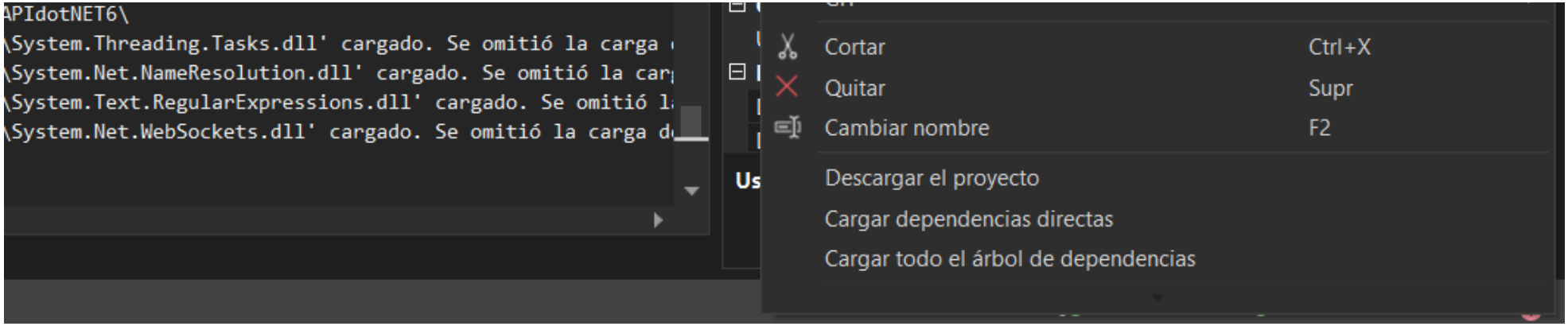
We copy the AWS CodeCommit repo URL in the Git repo URL: https://git-codecommit.eu-north-1.amazonaws.com/v1/repos/mydotnet6webapi

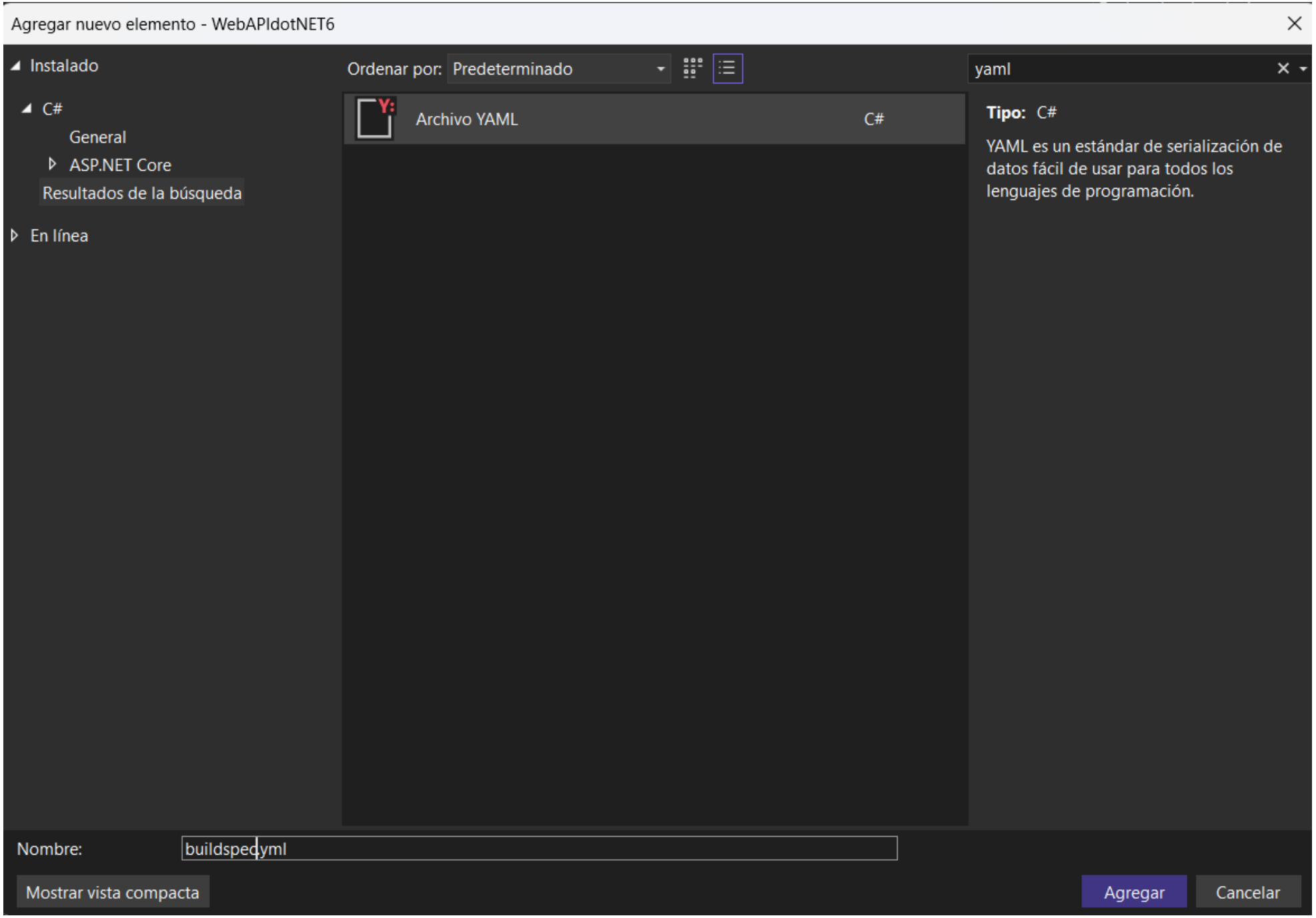


4. Add the buildspec.yml file to the Web API application

We add a new buildspec.yml file in our project


Nuevo elemento... Ctrl+Mayús.+A
Elemento existente... Mayús.+Alt+A
Nuevo elemento con scaffold...
Nueva carpeta
Compatibilidad con Docker...
Telemetría de Application Insights...
Modelo de Machine Learning...
Biblioteca del lado cliente...
Nuevo proyecto WebJob de Azure
Proyecto existente como WebJob de Azure
Referencia del proyecto...
Referencia del proyecto compartido...
Referencia COM...
Referencia de servicio...
Servicio conectado
Clase...
New EditorConfig
Nuevo EditorConfig (IntelliCode)
Compilar
Recompilar
Limpiar
Ver
Análisis y limpieza de código
Paquete
Publicar...
Publish to AWS...
Publish Container to AWS (Legacy)...
Publish to AWS Elastic Beanstalk (Legacy)...
Actualizar
Configurar Application Insights...
Información general
Contraer todos los descendientes Ctrl+Flecha izquierda
Limitar el ámbito a esto
Nueva vista de Explorador de soluciones
Anidamiento de archivos
Editar archivo de proyecto
Agregar
Administrar paquetes NuGet...
Administrar bibliotecas del lado cliente...
Administrar secretos de usuario
Quitar referencias no utilizadas...
Sincronizar espacio de nombres
Configurar proyectos de inicio...
Establecer como proyecto de inicio
Depurar
GIT
\System.Security.Cryptography.Encoding.dll' cargado. Se o
\System.Security.Cryptography.Cng.dll' cargado. Se omitió
\System.Security.Cryptography.Algorithms.dll' cargado. Se
\System.Security.Cryptography.Csp.dll' cargado. Se omitió


APIdotNET6\
\System.Threading.Tasks.dll' cargado. Se omitió la carga
\System.Net.NameResolution.dll' cargado. Se omitió la car
\System.Text.RegularExpressions.dll' cargado. Se omitió l
\System.Net.WebSockets.dll' cargado. Se omitió la carga d
Cortar Ctrl+X
Quitar Supr
Cambiar nombre F2
Descargar el proyecto
Cargar dependencias directas
Cargar todo el árbol de dependencias

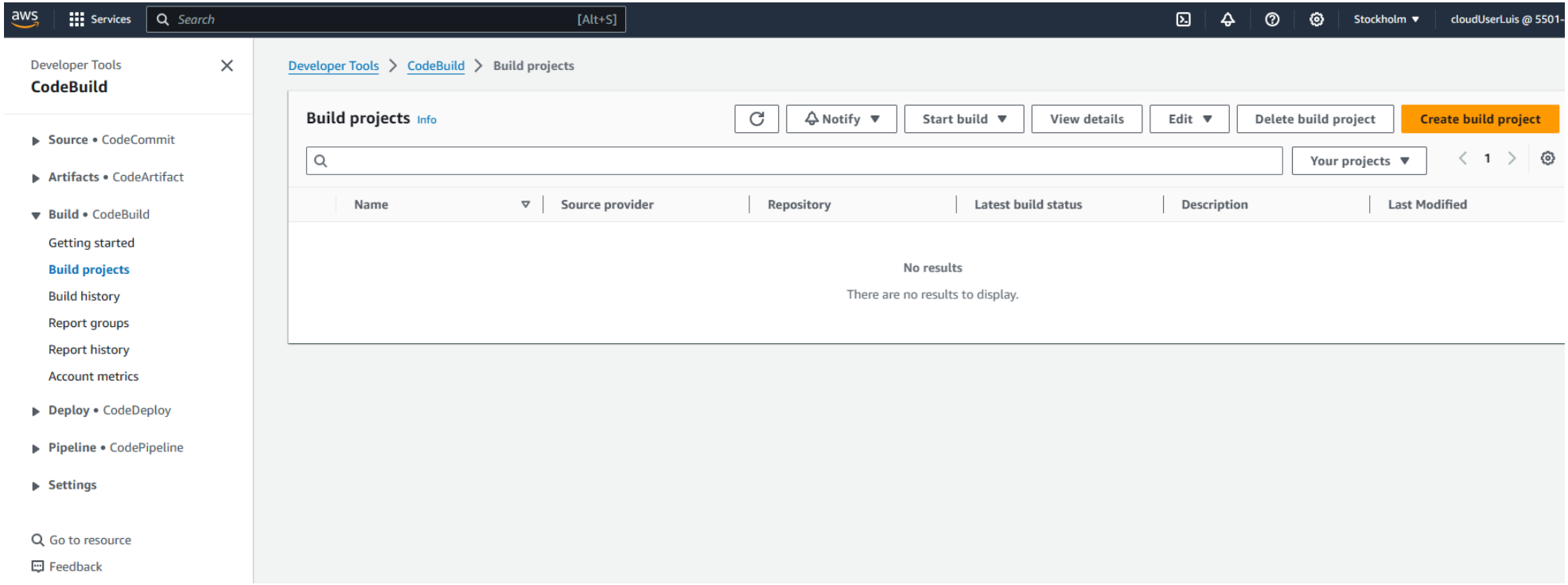


This is the **buildspec.yml** file source code

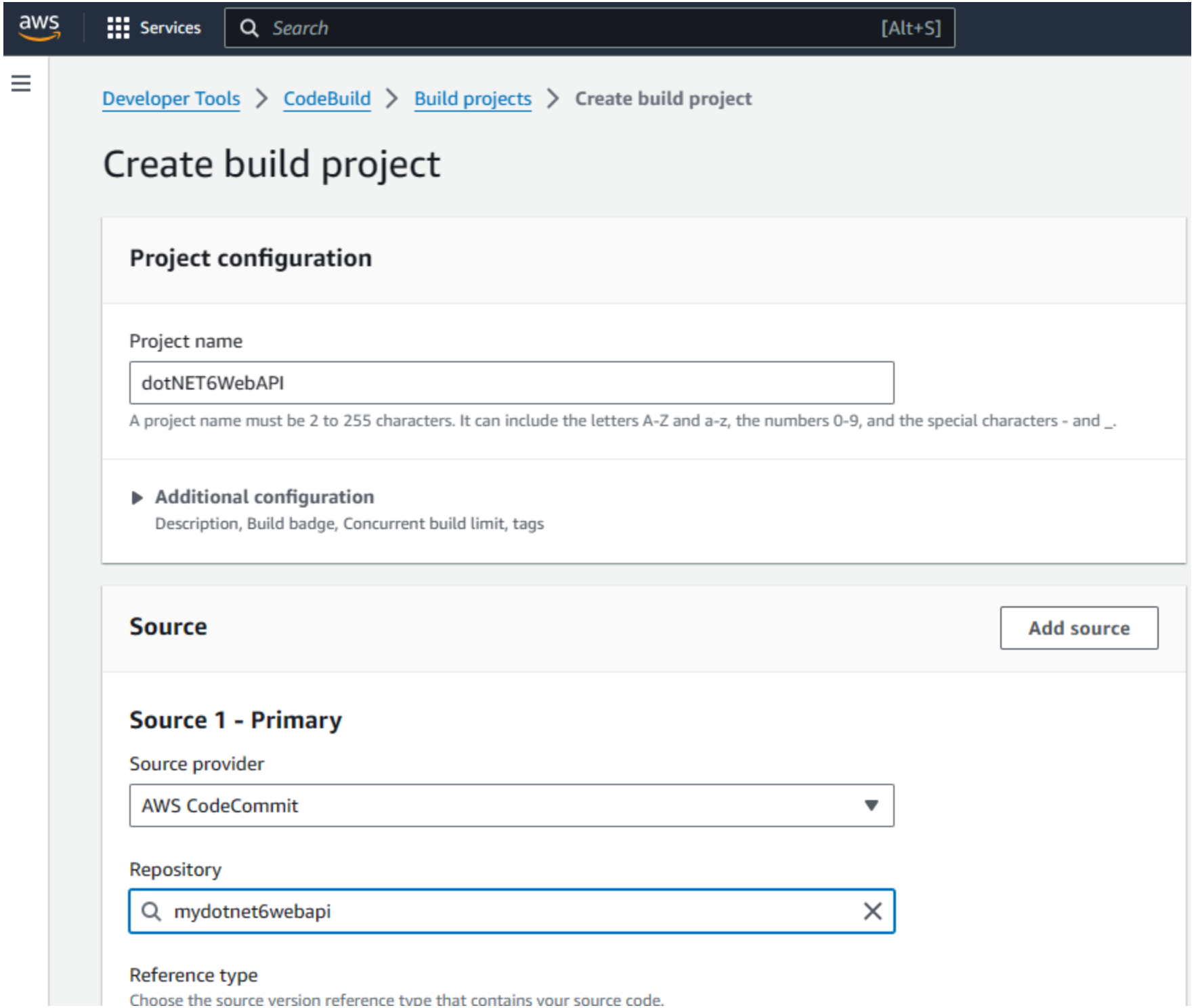
```
version: 0.2

phases:
  install:
    runtime-versions:
      dotnet: 6.0  # Updated to a supported version
  pre_build:
    commands:
      - echo Restoring solution
      - dotnet restore
  build:
    commands:
      - echo Build started on `date`
      - dotnet build -c Release
  post_build:
    commands:
      - echo Build completed on `date`
      - dotnet publish -c Release -o ./publish

artifacts:
  files:
    - '**/*'
  base-directory: './publish'

cache:
  paths:
    - '/root/.nuget/**/*'
```

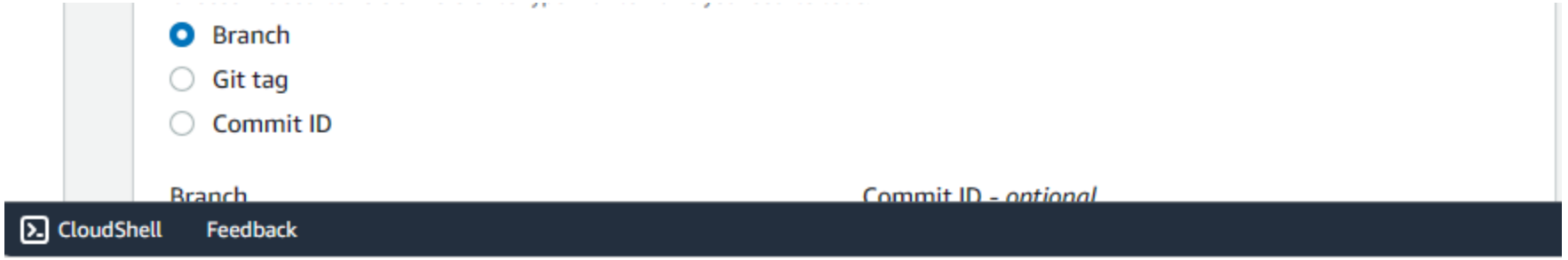
5. Create AWS CodeBuild project

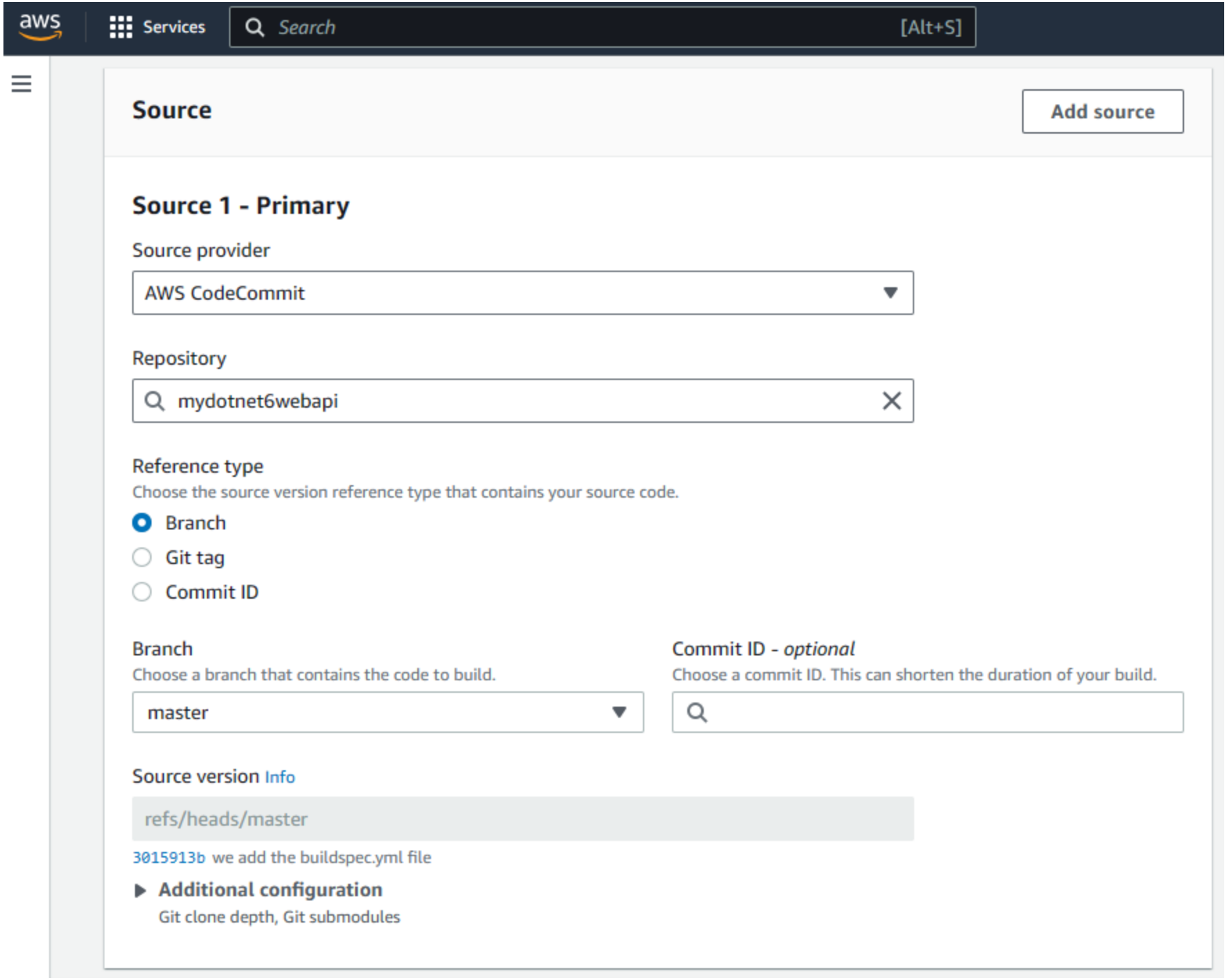
We press the "Create build project"



We set the AWS CodeBuild project name, we select the Source Provider AWS CodeCommit and finally we select the AWS CodeCommit repo

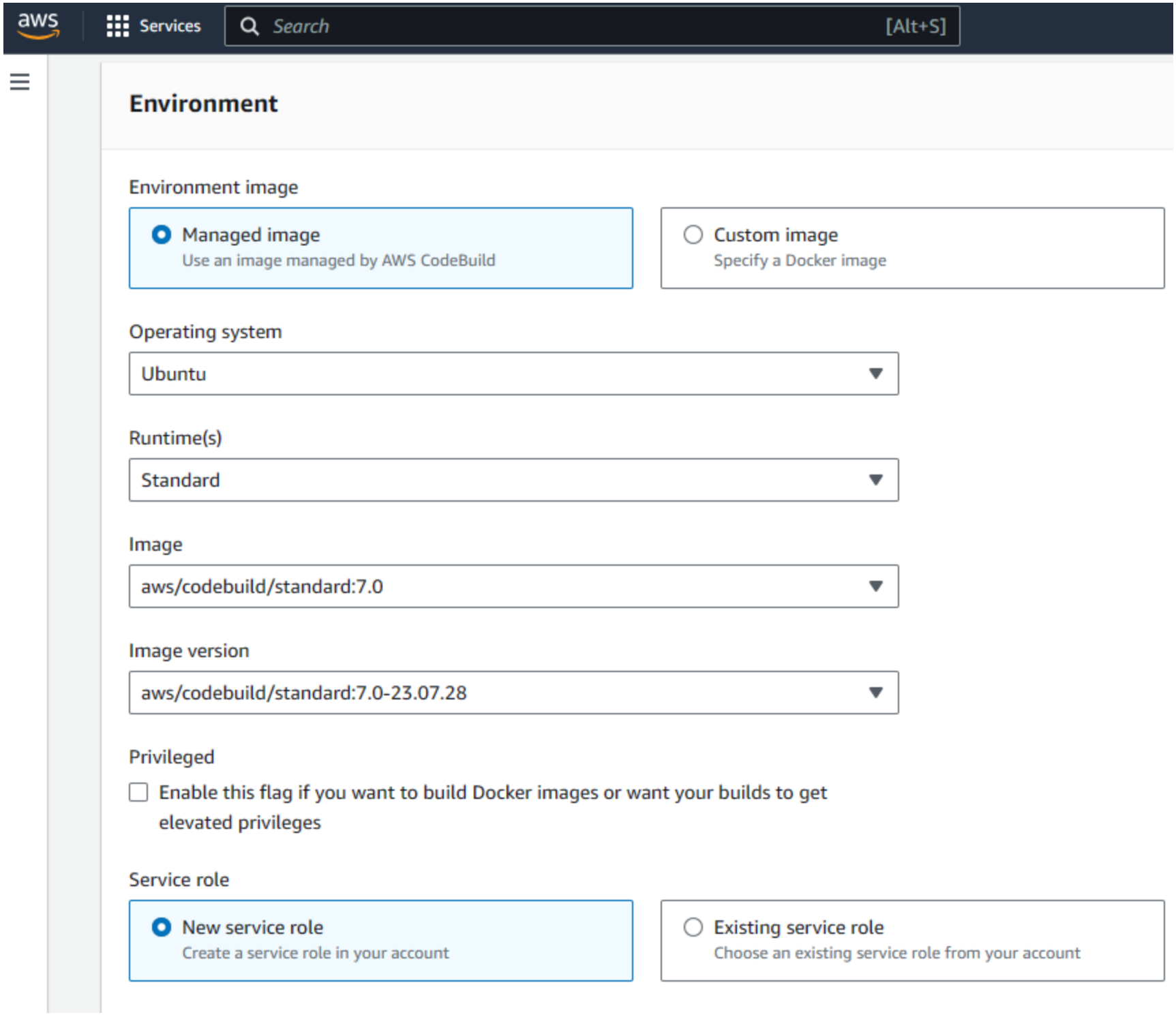

aws
Services
Search
[Alt+S]
Developer Tools > CodeBuild > Build projects > Create build project
Create build project
Project configuration
Project name
dotNET6WebAPI
A project name must be 2 to 255 characters. It can include the letters A-Z and a-z, the numbers 0-9, and the special characters - and _.
Additional configuration
Description, Build badge, Concurrent build limit, tags
Source
Add source
Source 1 - Primary
Source provider
AWS CodeCommit
Repository
mydotnet6webapi
Reference type
Choose the source version reference type that contains your source code.

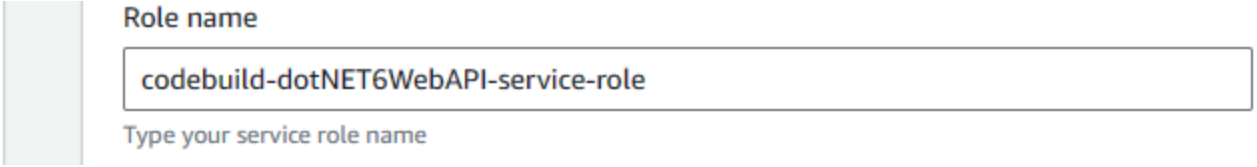

Branch
Git tag
Commit ID
Branch
Commit ID - optional
CloudShell
Feedback


aws
Services
Search
[Alt+S]
Source
Add source
Source 1 - Primary
Source provider
AWS CodeCommit
Repository
mydotnet6webapi
Reference type
Choose the source version reference type that contains your source code.
Branch
Git tag
Commit ID
Branch
Choose a branch that contains the code to build.
master
Commit ID - optional
Choose a commit ID. This can shorten the duration of your build.
Source version Info
refs/heads/master
3015913b we add the buildspec.yml file
Additional configuration
Git clone depth, Git submodules

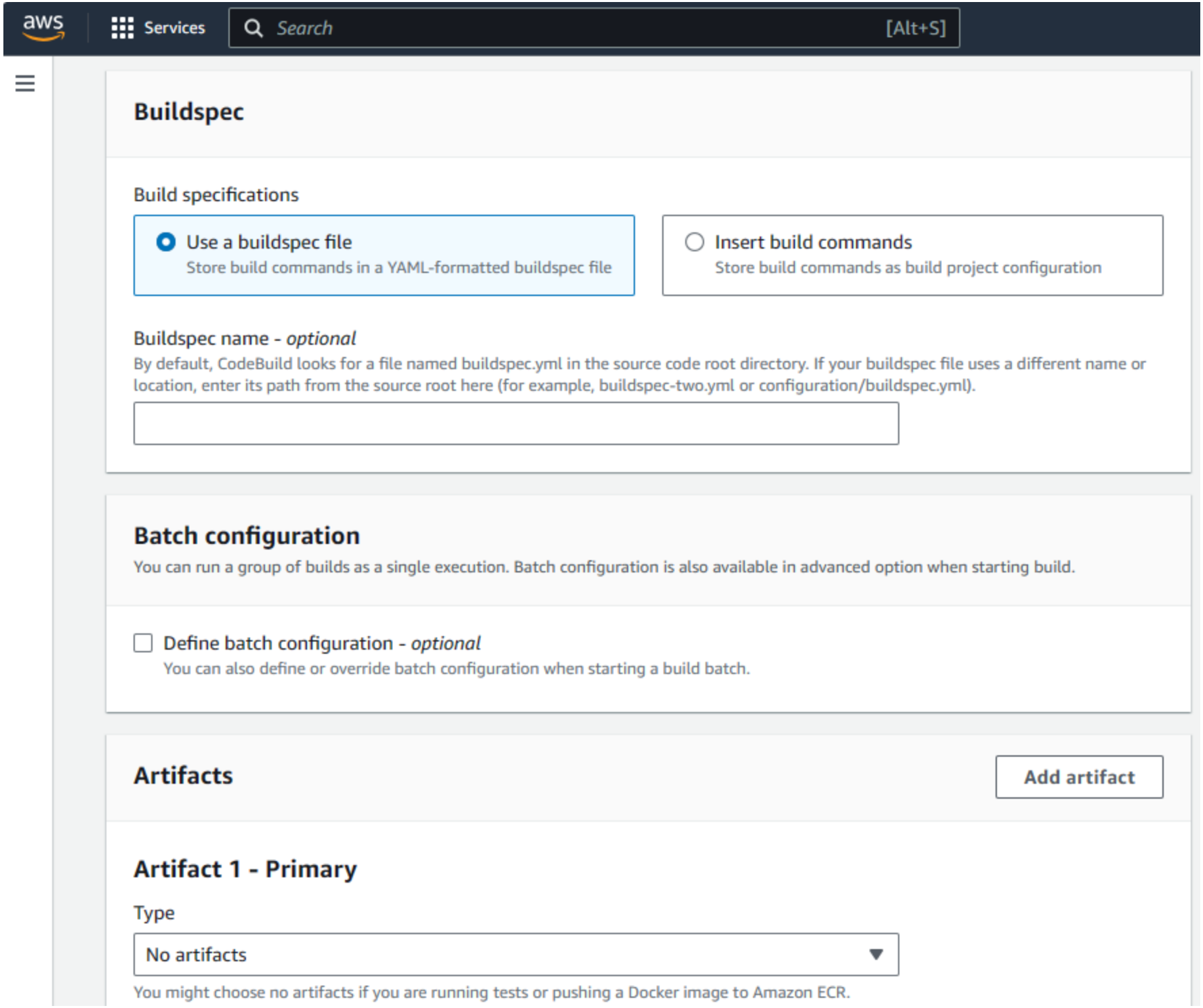
In this step we set the environment for building the solution. We select a Linux Ubuntu Virtual Machine.

We also create a new service role for CodeBuild.

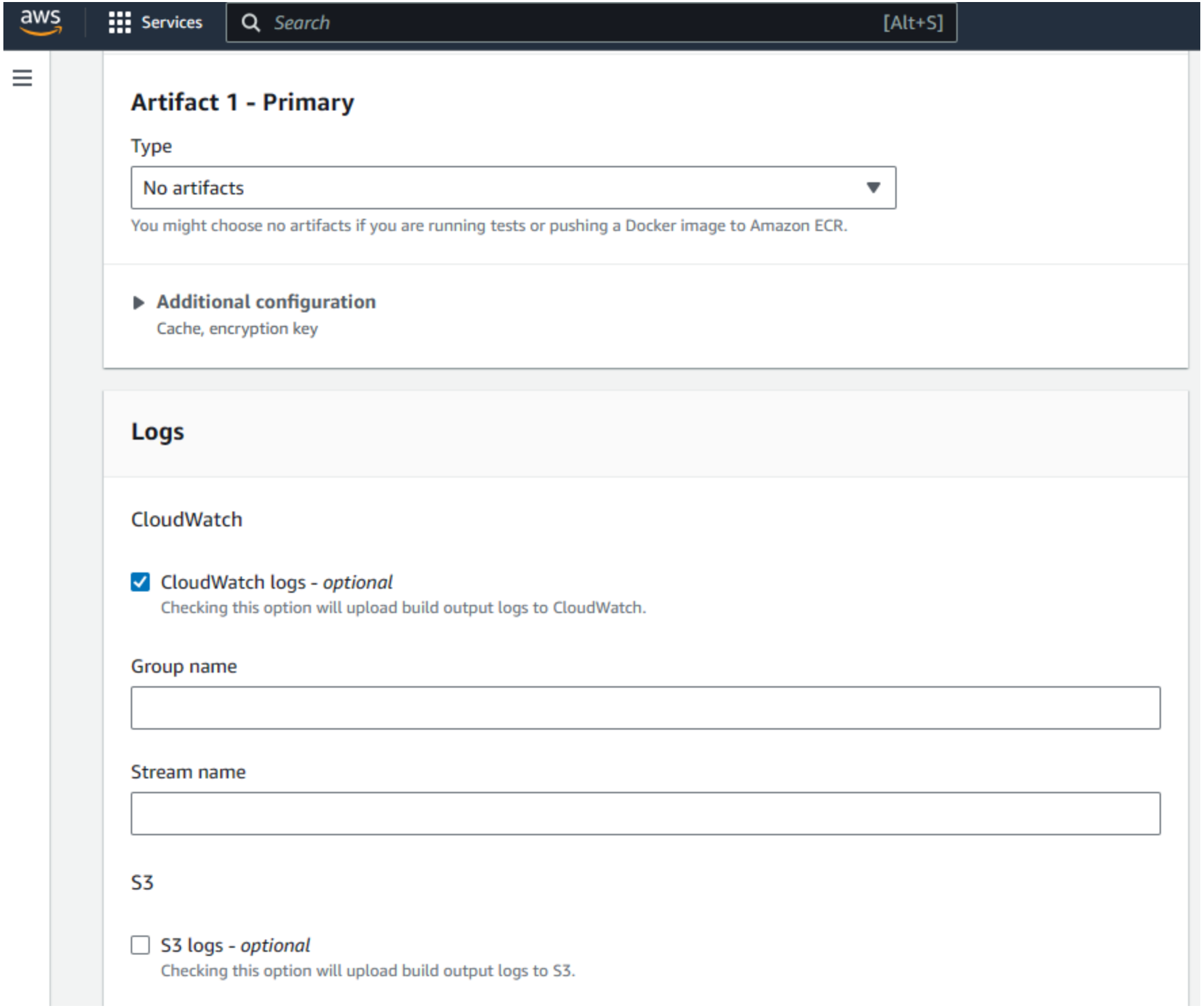

aws
Services
Search
[Alt+S]
Environment
Environment image
Managed image
Use an image managed by AWS CodeBuild
Custom image
Specify a Docker image
Operating system
Ubuntu
Runtime(s)
Standard
Image
aws/codebuild/standard:7.0
Image version
aws/codebuild/standard:7.0-23.07.28
Privileged
Enable this flag if you want to build Docker images or want your builds to get elevated privileges
Service role
New service role
Create a service role in your account
Existing service role
Choose an existing service role from your account

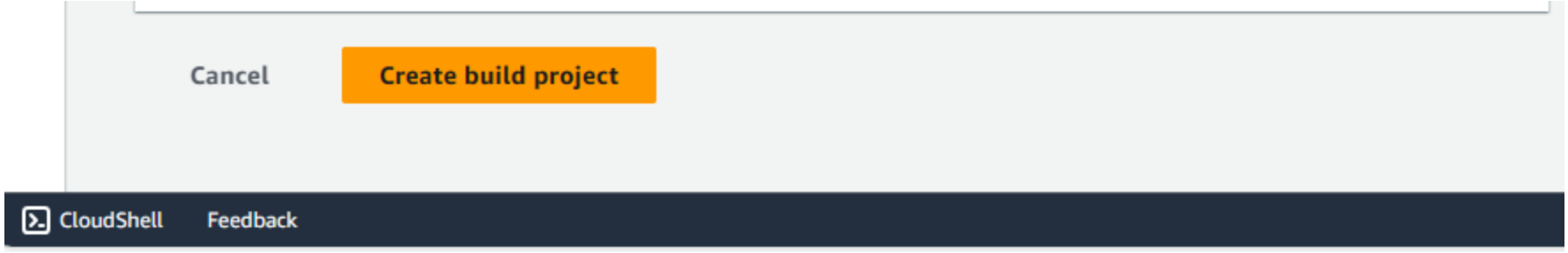


It is time to specify the building commands, for this purpose we created in the above steps a buildspec.yml file. Now we confirm we are going to use the buildspec.yml file for building our solution.

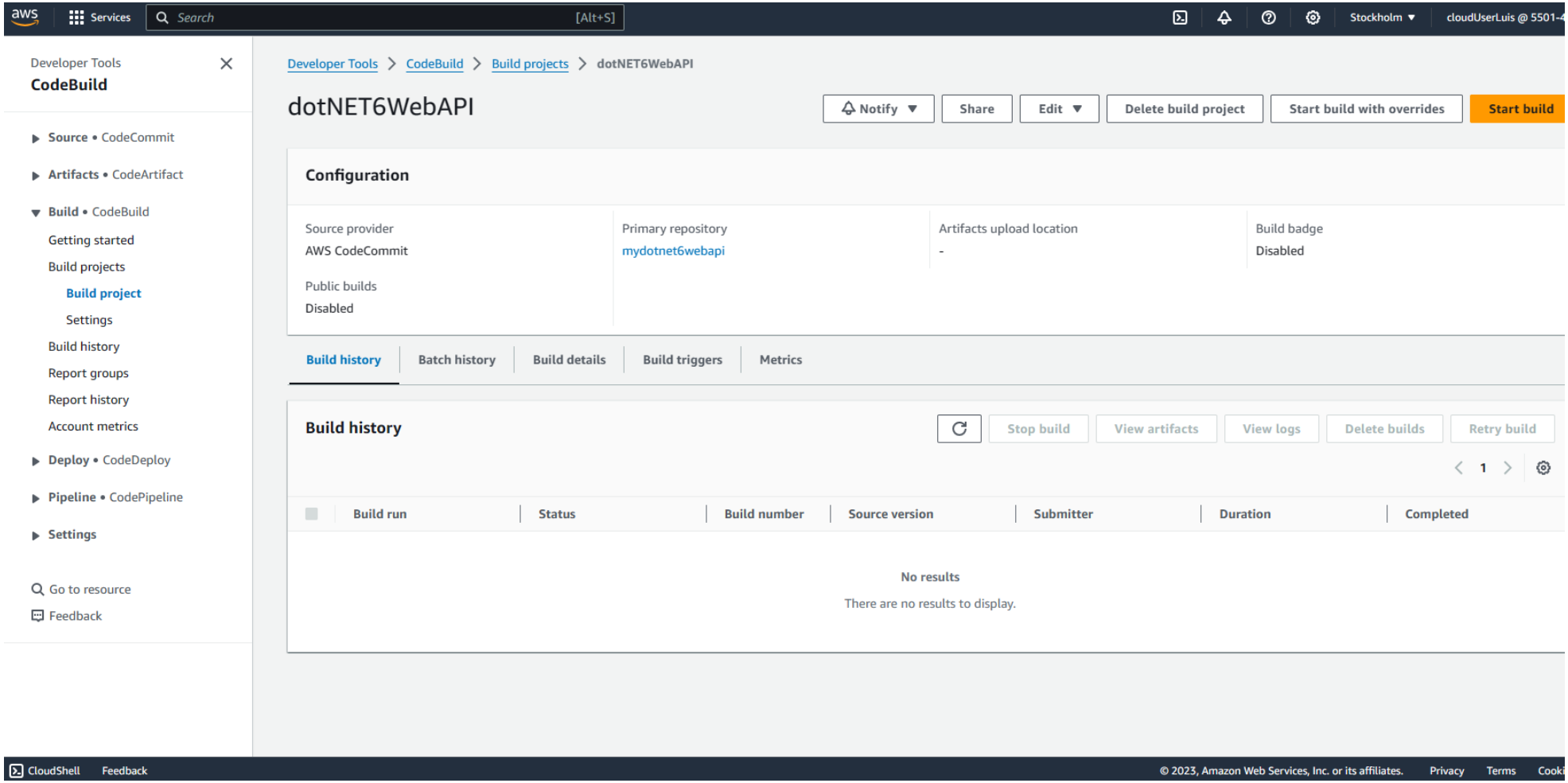

aws
Services
Search
[Alt+S]
Buildspec
Build specifications
Use a buildspec file
Store build commands in a YAML-formatted buildspec file
Insert build commands
Store build commands as build project configuration
Buildspec name - optional
By default, CodeBuild looks for a file named buildspec.yml in the source code root directory. If your buildspec file uses a different name or location, enter its path from the source root here (for example, buildspec-two.yml or configuration/buildspec.yml).
Batch configuration
You can run a group of builds as a single execution. Batch configuration is also available in advanced option when starting build.
Define batch configuration - optional
You can also define or override batch configuration when starting a build batch.
Artifacts
Add artifact
Artifact 1 - Primary
Type
No artifacts
You might choose no artifacts if you are running tests or pushing a Docker image to Amazon ECR.

We press the **Create build project** button

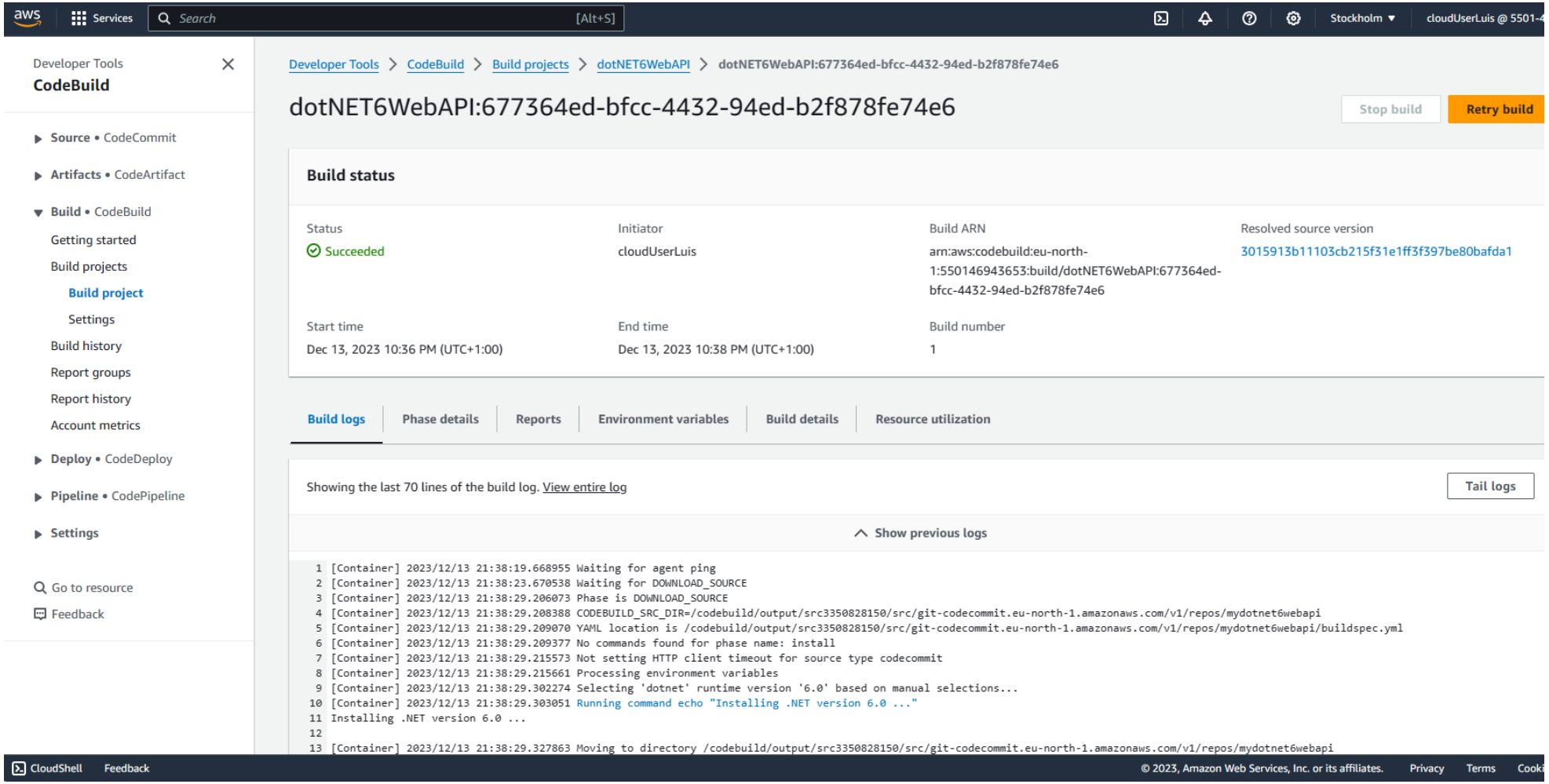

aws
Services
Search
[Alt+S]
Artifact 1 - Primary
Type
No artifacts
You might choose no artifacts if you are running tests or pushing a Docker image to Amazon ECR.
Additional configuration
Cache, encryption key
Logs
CloudWatch
CloudWatch logs - optional
Checking this option will upload build output logs to CloudWatch.
Group name
Stream name
S3
S3 logs - optional
Checking this option will upload build output logs to S3.



We press the **Start build** button



We can verify our solution was successfuly built


aws
Services
Search
[Alt+S]
Stockholm
cloudUserLuis @ 5501-4
Developer Tools
CodeBuild
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Getting started
Build projects
Build project
Settings
Build history
Report groups
Report history
Account metrics
Deploy • CodeDeploy
Pipeline • CodePipeline
Settings
Go to resource
Feedback
Developer Tools > CodeBuild > Build projects > dotNET6WebAPI > dotNET6WebAPI:677364ed-bfcc-4432-94ed-b2f878fe74e6
dotNET6WebAPI:677364ed-bfcc-4432-94ed-b2f878fe74e6
Stop build
Retry build
Build status
Status
Succeeded
Initiator
cloudUserLuis
Build ARN
arn:aws:codebuild:eu-north-1:550146943653:build/dotNET6WebAPI:677364ed-bfcc-4432-94ed-b2f878fe74e6
Resolved source version
3015913b11103cb215f31e1ff3f397be80bafda1
Start time
Dec 13, 2023 10:36 PM (UTC+1:00)
End time
Dec 13, 2023 10:38 PM (UTC+1:00)
Build number
1
Build logs
Phase details
Reports
Environment variables
Build details
Resource utilization
Showing the last 70 lines of the build log. View entire log
Tail logs
Show previous logs
1 [Container] 2023/12/13 21:38:19.668955 Waiting for agent ping
2 [Container] 2023/12/13 21:38:23.670538 Waiting for DOWNLOAD_SOURCE
3 [Container] 2023/12/13 21:38:29.206073 Phase is DOWNLOAD_SOURCE
4 [Container] 2023/12/13 21:38:29.208388 CODEBUILD_SRC_DIR=/codebuild/output/src3350828150/src/git-codecommit.eu-north-1.amazonaws.com/v1/repos/mydotnet6webapi
5 [Container] 2023/12/13 21:38:29.209070 YAML location is /codebuild/output/src3350828150/src/git-codecommit.eu-north-1.amazonaws.com/v1/repos/mydotnet6webapi/buildspec.yml
6 [Container] 2023/12/13 21:38:29.209377 No commands found for phase name: install
7 [Container] 2023/12/13 21:38:29.215573 Not setting HTTP client timeout for source type codecommit
8 [Container] 2023/12/13 21:38:29.215661 Processing environment variables
9 [Container] 2023/12/13 21:38:29.302274 Selecting 'dotnet' runtime version '6.0' based on manual selections...
10 [Container] 2023/12/13 21:38:29.303051 Running command echo "Installing .NET version 6.0 ..."
11 Installing .NET version 6.0 ...
12
13 [Container] 2023/12/13 21:38:29.327863 Moving to directory /codebuild/output/src3350828150/src/git-codecommit.eu-north-1.amazonaws.com/v1/repos/mydotnet6webapi
CloudShell
Feedback
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms