

Instituto Tecnológico de Costa Rica

Computer Engineering School

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Course: Bases de datos – CE3101

Group 1

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Project II – StraviaTEC

Installation Manual

II Semester, 2023

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To install StraviaTEC you will need to have installed the next programs as prerequisites:

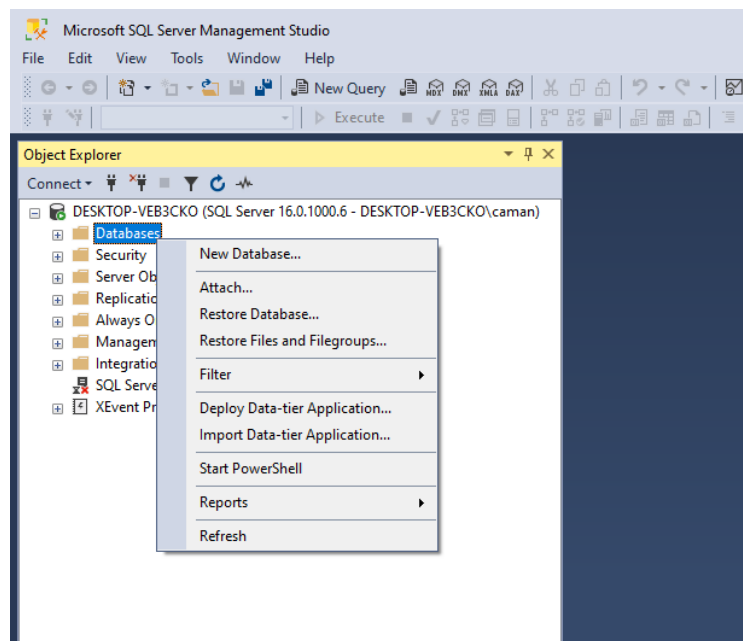
- .NET Runtime 6.0.22
- ASP.NET Core Runtime 6.0.22 (Hosting Bundle)
- MS SQL Server
- Node JS

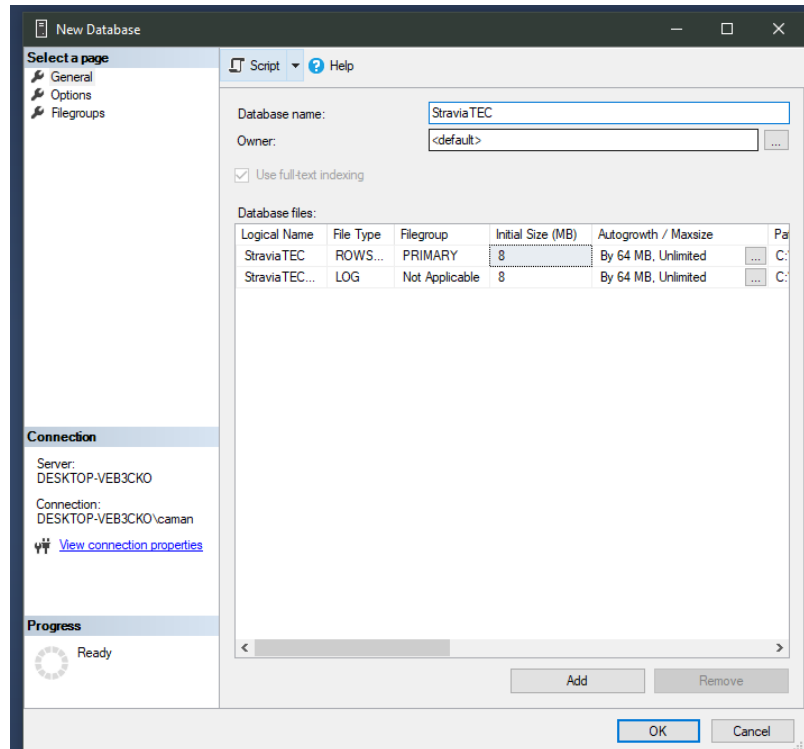
Furthermore, the minimum hardware specifications to run StraviaTEC are the following:

- Processor x64, 4 cores or more
- Minimum 4 GB RAM
- Minimum 30 GB free HDD Space

BackEnd Local Execution

First, we have to set up the SQL Server database and for this you have to open SQL Server GUI and create a new database called StraviaTEC:





Then we have to Run the next queries in the new database StraviaTEC in the following order:

1. CreationScript.sql
2. Views.sql
3. StoredProcedures.sql
4. PopulationScript.sql

You can find those scripts in the following directory in the [StraviaTEC Github repository](#):
[StraviaTEC\StraviaTEC_API\Scripts_DB](#)

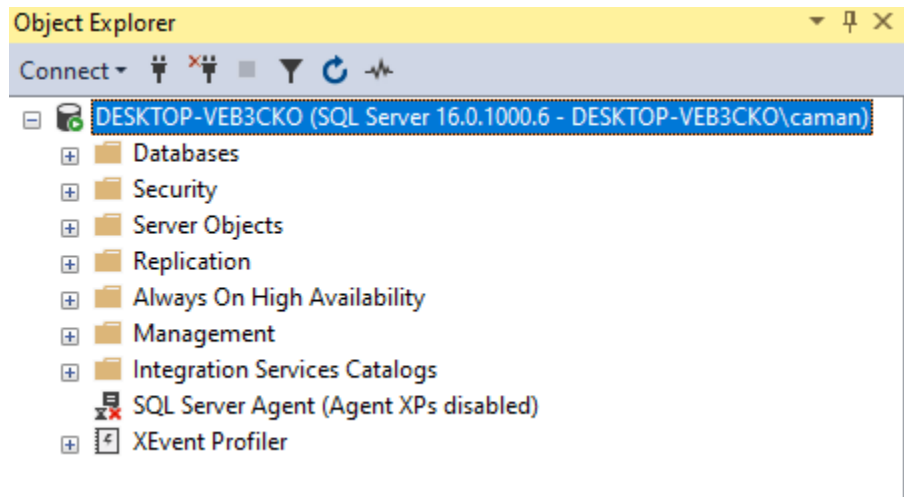
Now you have just configured the database and the next step is to set open the API. For this you have to open the StraviaTEC_API solution with Microsoft Studio and go to the appsettings.json file and change the server name for your own:

```

{
  "AllowedHosts": "*",
  "ConnectionStrings": {
    "ConnectionString": "server=DESKTOP-VEB3CK0; database=StraviaTEC; integrated security=true; Encrypt=False;"
  }
}

```

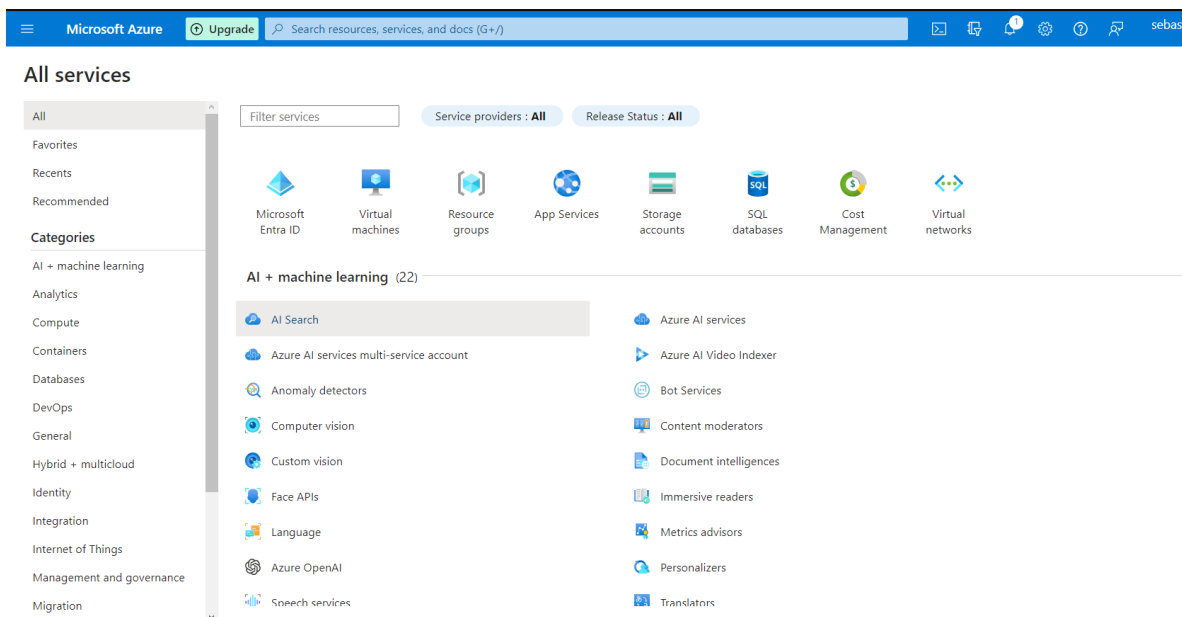
You can check your server name in SQL Server:



Once you have done this you can execute the API and proceed to install the web application.

BackEnd Global Deployment

If you want to deploy StraviaTEC API globally you will need to create an Azzure account, for this you will receive \$200 worth of credits to pay the app hosting for the API for a while. Once you have you account ready, you have to create the resource's group:



Create a resource group ...

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

Subscription * ⓘ

Azure subscription 1

Resource group * ⓘ

Resource details

Region * ⓘ

(US) East US

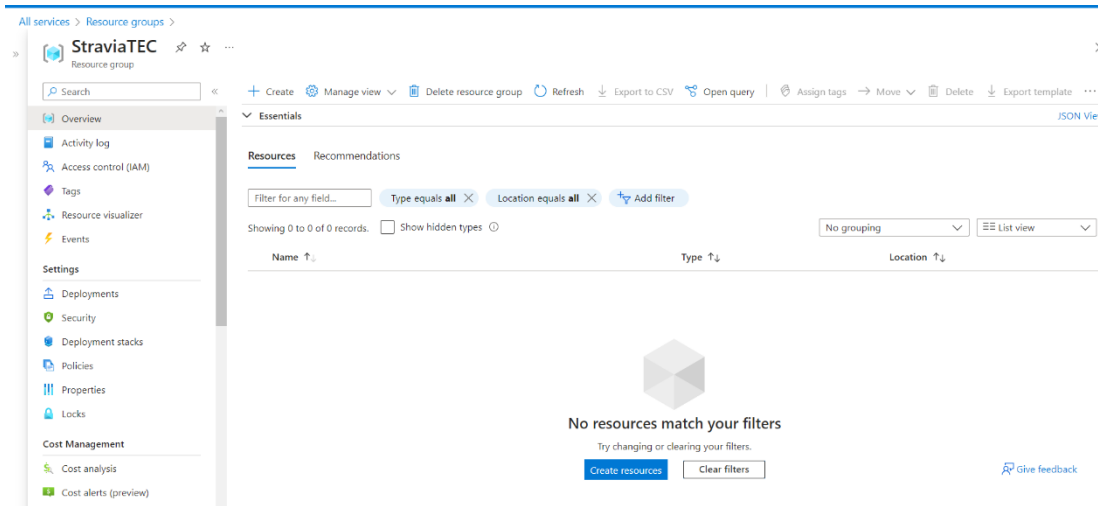
Create a resource group ...

✔ Validation passed.

Basics Tags Review + create

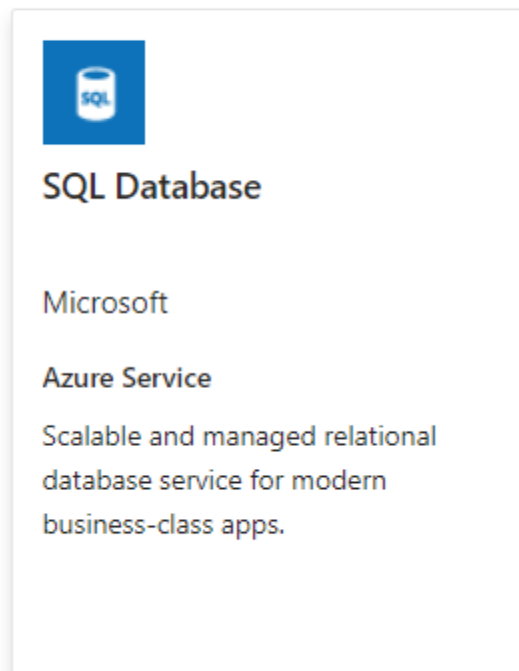
Basics	
Subscription	Azure subscription 1
Resource group	StraviaTEC
Region	East US
Tags	
None	

Then, inside the resource's group you create new resources:



You select the option for a database;

organization



[All services](#) > [Resource groups](#) > [StraviaTEC](#) > [Marketplace](#) > [SQL Database](#) >

Create SQL Database

Microsoft

Basics Networking Security Additional settings Tags Review + create

Create a SQL database with your preferred configurations. Complete the Basics tab then go to Review + Create to provision with smart defaults, or visit each tab to customize. [Learn more](#)

Want to try Azure SQL Database for free? Create a free serverless database with the first 100,000 vCore seconds, 32GB of data, and 32GB of backup storage free per month for the lifetime of the subscription. [Learn more](#)

Apply offer (Preview)

Lower, simplified pricing for SQL Database Hyperscale starts from 15th of December 2023. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *
 Azure subscription 1
 Resource group *
 StraviaTEC
 [Create new](#)

Review + create

Next : Networking >



Cost summary

General Purpose (GP_S_Gen5_1)	
Cost per GB (in USD)	0.12
Max storage selected (in GB)	x 41.6
ESTIMATED STORAGE COST / MONTH	
4.78 USD	
COMPUTE COST / VCORE SECOND ¹	
0.000145 USD	

NOTES

¹ Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

And then create a new server:

Create SQL Database Server

Microsoft

Server name *
 straviateserver
 .database.windows.net

The specified server name is already in use.

Location *
 (US) East US

Authentication

Azure Active Directory (Azure AD) is now Microsoft Entra ID. [Learn more](#)

Select your preferred authentication methods for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Microsoft Entra authentication [Learn more](#) using an existing Microsoft Entra user, group, or application as Microsoft Entra admin [Learn more](#), or select both SQL and Microsoft Entra authentication.

Authentication method
 ☐ Use Microsoft Entra-only authentication
 ☐ Use both SQL and Microsoft Entra authentication
 ☒ Use SQL authentication

Server admin login *
 pipodb

Password *

Confirm password *

You have to set up the details for the SQL database:

Database details

Enter required settings for this database, including picking a logical server and configuring the compute and storage resources

Database name *

Server * [Create new](#)

Want to use SQL elastic pool? ☐ Yes ☒ No

Workload environment ☒ Development ☐ Production

Compute + storage *

General Purpose - Serverless
Standard-series (Gen5), 1 vCore, 32 GB storage, zone redundant disabled
[Configure database](#)

Default settings provided for Development workloads. Configurations can be modified as needed.

And your preview should look like this:

Basics Networking Security Additional settings Tags **Review + create**

Product details

SQL database by Microsoft
[Terms of use](#) | [Privacy policy](#)

Estimated cost
Storage cost 0.60 USD / month + Compute cost 0.000145 USD / vCore second

Terms

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. For additional details see [Azure Marketplace Terms](#).

Basics

Subscription	Azure subscription 1
Resource group	TECAirTEST
Region	eastus
Database name	StraviaTECDeploy
Server	straviatec
Compute + storage	General Purpose - Serverless: Standard-series (Gen5), 1 vCore, 4 GB storage, zone redundant disabled
Backup storage redundancy	Geo-redundant backup storage

Networking

Allow Azure services and resources to access this server	Yes
Private endpoint	None

Cost summary

General Purpose (GP_5_Gen5_1)	
Cost per GB (in USD)	0.12
Max storage selected (in GB)	x 5.2
ESTIMATED STORAGE COST / MONTH	0.60 USD
COMPUTE COST / VCORE SECOND ¹	0.000145 USD

NOTES
¹ Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

Now you have created and ready the deployment of your database and the next step is to deploy the API with the web app option:

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Create a resource ...

Get Started Search services and marketplace Getting Started? Try our Quickstart center

Recently created

Categories

- AI + Machine Learning
- Analytics
- Blockchain
- Compute
- Containers
- Databases
- Developer Tools
- DevOps
- Identity
- Integration
- Internet of Things
- IT & Management Tools
- Media
- Migration
- Mixed Reality
- Monitoring & Diagnostics
- Networking
- Security
- Storage
- Web

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- SQL Database Create | Docs | MS Learn
- Function App Create | Docs
- Key Vault Create | Docs | MS Learn
- Data Factory Create | Docs | MS Learn
- Template deployment (deploy using custom templates) Create | Docs | MS Learn
- Logic App Create | Docs | MS Learn
- Automation Create | Docs
- Public IP address Create | Docs

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- Ubuntu Server 22.04 LTS Create | Learn more
- Red Hat Enterprise Linux 7.4 Create | Learn more
- Essentials 50K Set up + subscribe | Learn more
- MongoDB Atlas (pay-as-you-go) Set up + subscribe | Learn more
- Standard Set up + subscribe | Learn more
- Microsoft Defender for Endpoint Create | Learn more
- Azure Backup - AVS Create | Learn more

https://portal.azure.com/#

You have to set up the web app:

Home > Create a resource > Create Web App ...

Project Details

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Azure subscription 1

Resource Group * StraviaTEC

Create new

Instance Details

Need a database? Try the new Web + Database experience.

Name * StraviaTECAPIDeploy .azurewebsites.net

Publish * Code Docker Container Static Web App

Runtime stack * .NET 6 (LTS)

Operating System * Linux Windows

Region * East US

Not finding your App Service Plan? Try a different region or select your App Service Environment.

Pricing plans

App Service plan pricing tier determines the location, features, cost and compute resources associated with your app. Learn more

Windows Plan (East US) * ASP-TECAIrTEST-8011 (F1)

Create new

Pricing plan Free F1 (Shared Infrastructure)

Zone redundancy

Make sure you set public Access:

Web Apps can be provisioned with the inbound address being public to the internet or isolated to an Azure virtual network. Web Apps can also be provisioned with outbound traffic able to reach endpoints in a virtual network, be governed by network security groups or affected by virtual network routes. By default, your app is open to the internet and cannot reach into a virtual network. These aspects can also be changed after the app is provisioned. [Learn more](#)

Enable public access * ⓘ ☒ On ☐ Off

⚠ Network injection is only available in Basic, Standard, Premium, Premium V2, and Premium V3 Dedicated App Service plans.

Enable network injection ☐ On ☒ Off

And finally your preview should look like this one:

Basics Deployment Networking Monitoring Tags Review + create

Summary



Web App
by Microsoft

Details

Subscription	2909c799-187c-45cc-91d0-f47721497e76
Resource Group	TECAirTEST
Name	StraviaTECAPIDeploy
Publish	Code
Runtime stack	.NET 6 (LTS)

App Service Plan

Name	ASP-TECAirTEST-8011
Operating System	Windows
Region	East US
SKU	Free
ACU	Shared infrastructure
Memory	1 GB memory

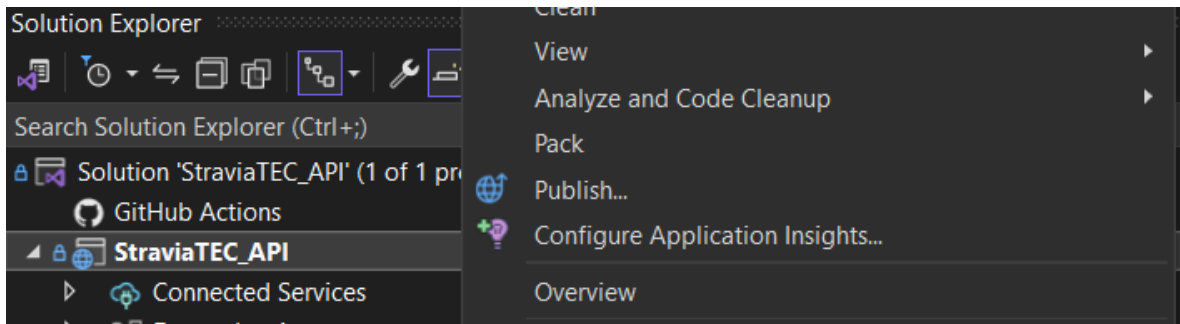
Monitoring (New)

Application Insights (preview)	Enabled
Name	StraviaTECAPIDeploy
Region	East US

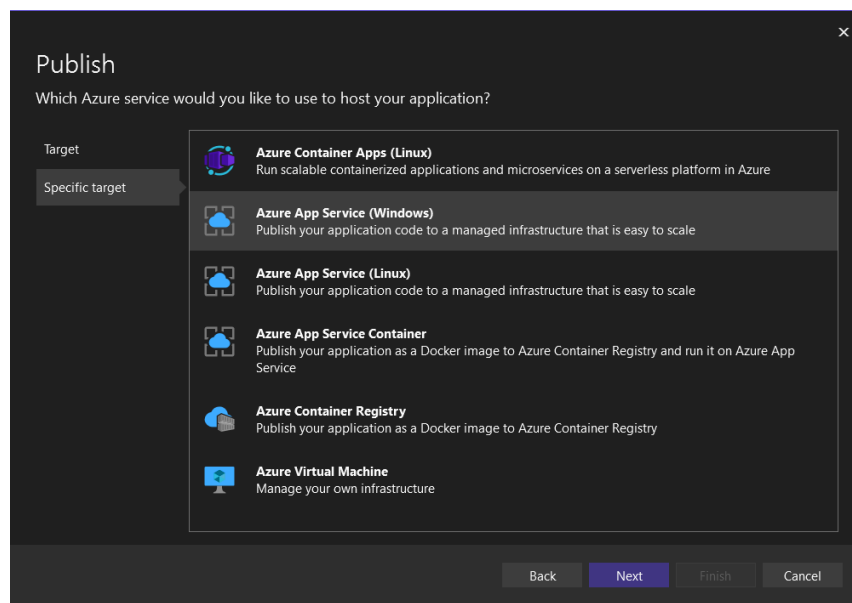
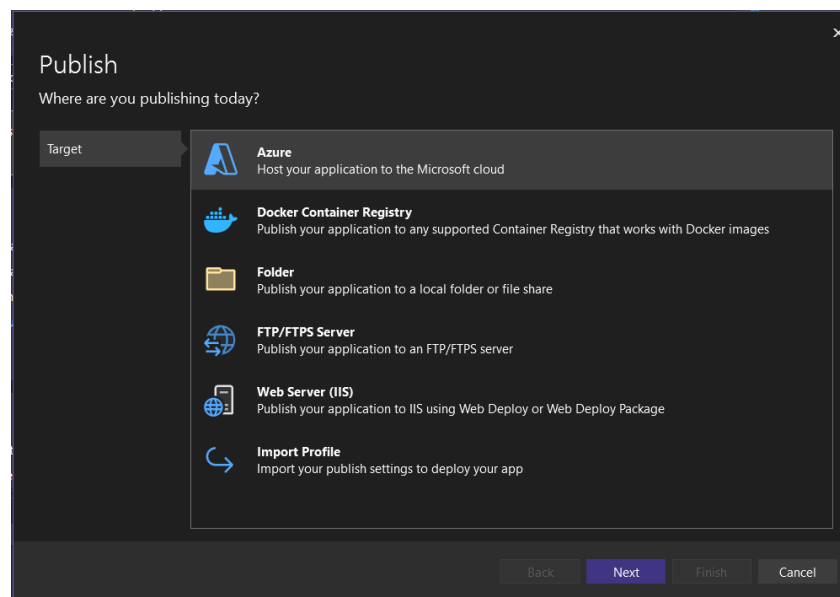
Deployment

Continuous deployment	Not enabled / Set up after app creation
-----------------------	---

Now you go to your StraviaTEC solution in Visual Studio to publish the application:



You set up the next configuration:



Publish

Select existing or create a new Azure App Service

Estudiantes ITCR

sebas.chen@estudiantec.cr

Target

Subscription name

Azure subscription 1

Specific target

App Service

API Management

Deployment type

Search

+ Create new

TECAirTEST

StraviaTECAPI

StraviaTECAPIDeploy

Deployment Slots

TECAirAPI

TECAirClient

☐ Deploy as ZIP package

Back

Next

Finish

Cancel

Publish

Enable API consumption for teams, customers, and Logic and Power Apps

Estudiantes ITCR

sebas.chen@estudiantec.cr

Target

Subscription name

Azure subscription 1

Specific target

App Service

API Management

Deployment type

StraviaTECAPIDeploy

+ Create new

TECAirTEST

StraviaTECAPIDeploy

APIs

TECAirapi

APIs

StraviaTECAPI

TECAir

☐ Skip this step

Back

Next

Finish

Cancel

Publish

How would you like to deploy your application?

- Target
- Specific target
- App Service
- API Management
- Deployment type

Publish (generates pubxml file)
 Deploys application to target on click of Publish button.

CI/CD using GitHub Actions workflows (generates yml file)
 Deploys application to target automatically on code push to GitHub repo.

Back

Next

Finish

Cancel

Overview

Connected Services

Publish

StraviaTECAPIDeploy - Web Deploy.pubxml
 Azure App Service (Windows)

Publish

+ New profile More actions

Ready to publish.

Settings

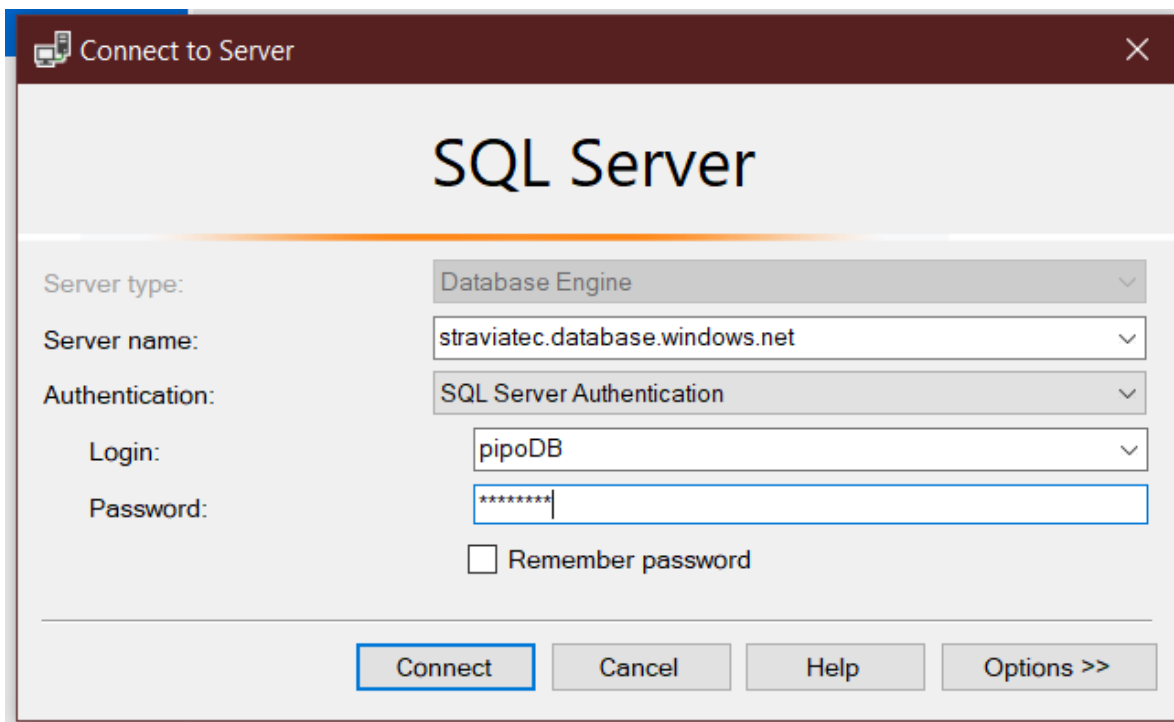
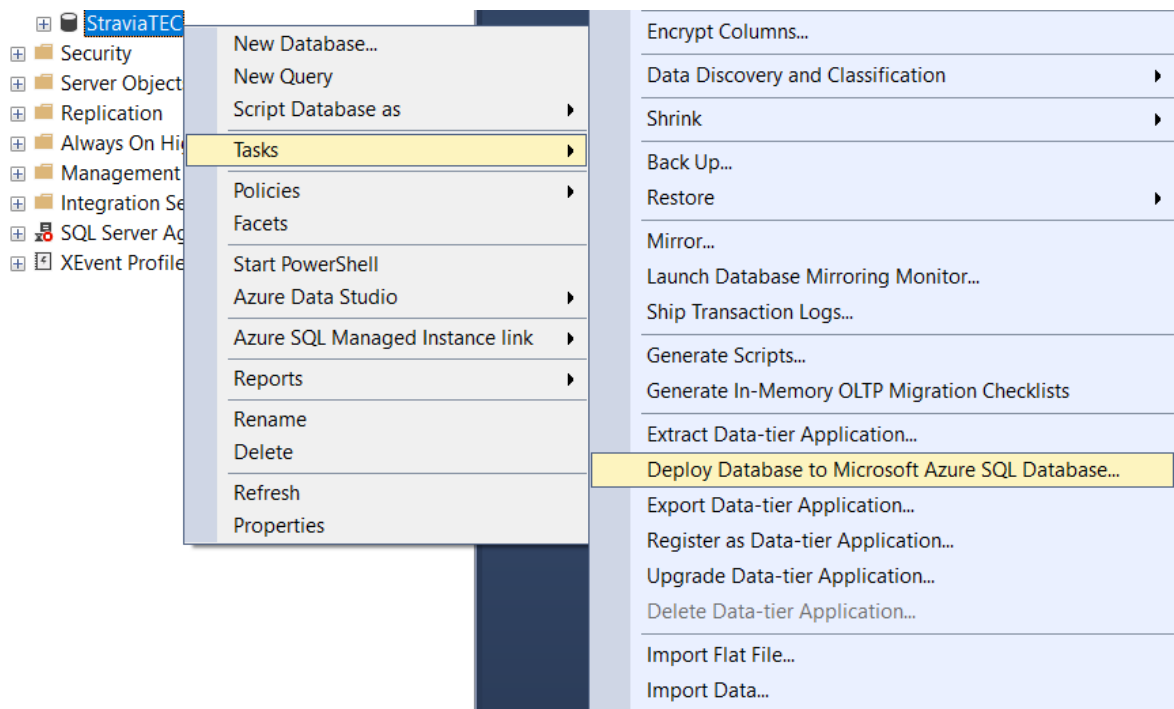
Configuration	Release	
Target Framework	net6.0	
Deployment Mode	Framework-dependent	
Target Runtime	Portable	

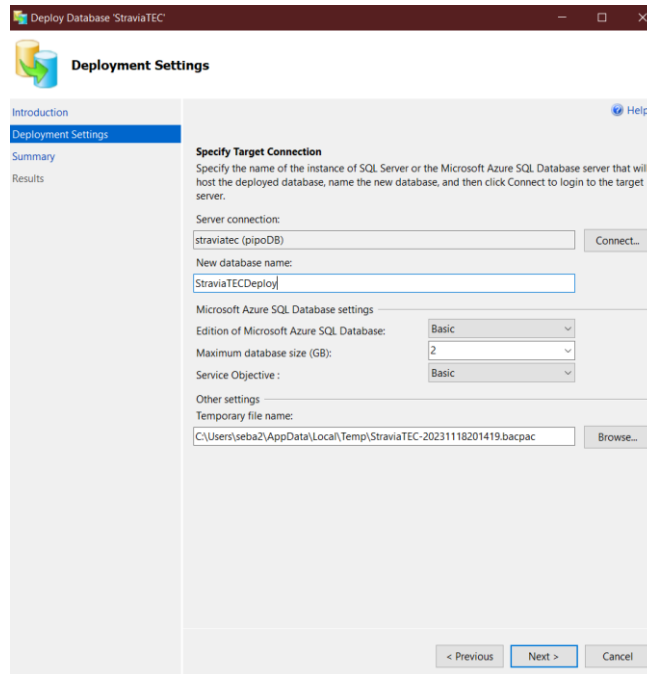
Show all settings

Hosting

Subscription	2909c799-187c-45cc-91d0-f47721497e76	
Resource group	TECAirTEST	
Resource name	StraviaTECAPIDeploy	

Now you have to open SQL Server and select your database to deploy it following the next steps:

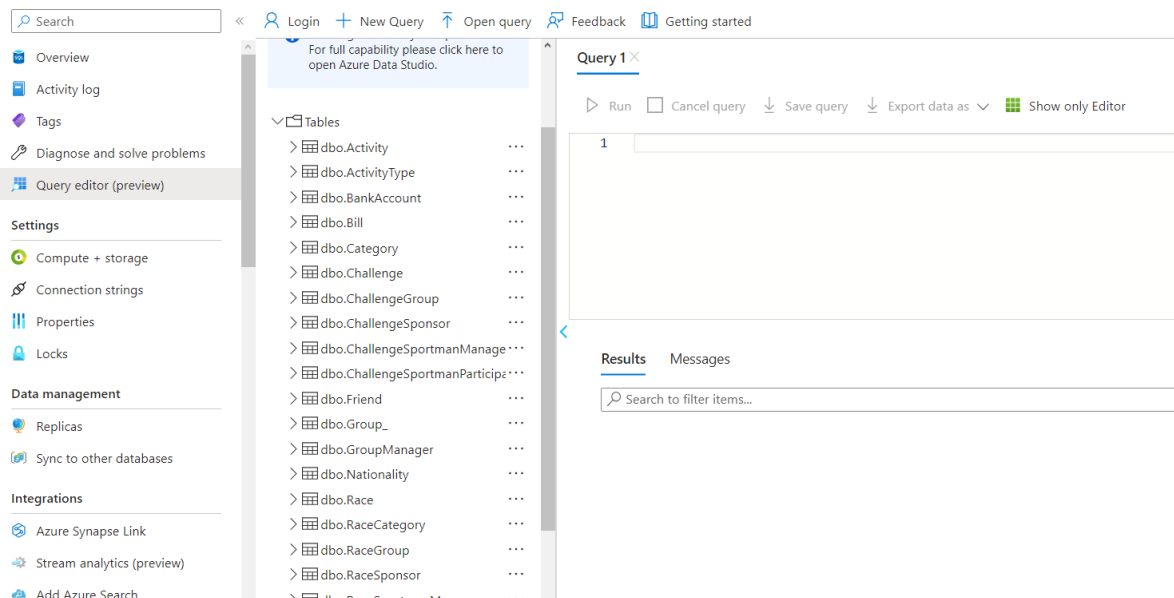




Now you can make the deploy in the Azzure web page:

Home > StraviaTECDeploy (straviatec/StraviaTECDeploy)

StraviaTECDeploy (straviatec/StraviaTECDeploy) | Query editor (preview) ☆ ...



You have configure the access to the database:

Home > straviatec

straviatec | Networking

SQL server

Search

Feedback

Public access Private access Connectivity

Public network access

Public endpoints allow access to this resource through the internet using a public IP address. An application or resource that is granted access with the following Public network access

☐ Disable

☒ Selected networks

Connections from the IP addresses configured in the Firewall rules section below will have access to this database. By d

Virtual networks

Allow virtual networks to connect to your resource using service endpoints. [Learn more](#)

+ Add a virtual network rule

Rule	Virtual network	Subnet	Address range	Endpoint status	Resource group	Subscription	State
StraviaTECAPI							
ClientIPAddress_2023-11-13-16-36-33							

Firewall rules

Allow certain public internet IP addresses to access your resource. [Learn more](#)

+ Add your client IPv4 address (186.179.67.163) + Add a firewall rule

Rule name

Exceptions

☒ Allow Azure services and resources to access this server

Save Discard

Properties Monitoring Logs Capabilities Notifications Recommendations

Web app

Name StraviaTECAPIDeploy

Publishing model Code

Runtime Stack Dotnetcore

Domains

Default domain straviatecapi.azurewebsites.net

Custom domain Add custom domain

Hosting

Plan Type App Service plan

Name ASP-TECAPI-TEST-8011

Operating System Windows

Instance Count 0

SKU and size Free (F1) [Scale up](#)

Deployment Center

Deployment logs [View logs](#)

Last deployment No deployments found [Refresh](#)

Deployment provider None

Application Insights

Name StraviaTECAPIDeploy

Region East US [Show More](#)

Networking

Virtual IP address [Show details](#)

Outbound IP addresses 52.146.80.201,52.146.80.224,52.146.80... [Show More](#)

Additional Outbound IP addresses 52.146.80.201,52.146.80.224,52.146.80... [Show More](#)

Virtual network integration Not supported

Firewall rules

Allow certain public internet IP addresses to access your resource. [Learn more](#)

+ Add your client IPv4 address (186.179.67.163) + Add a firewall rule

Rule name

Exceptions

☒ Allow Azure services and resources to access this server

Add a firewall rule

Rule name Start IP End IP

StraviaTECAPI 20.49.104.14 20.49.104.14

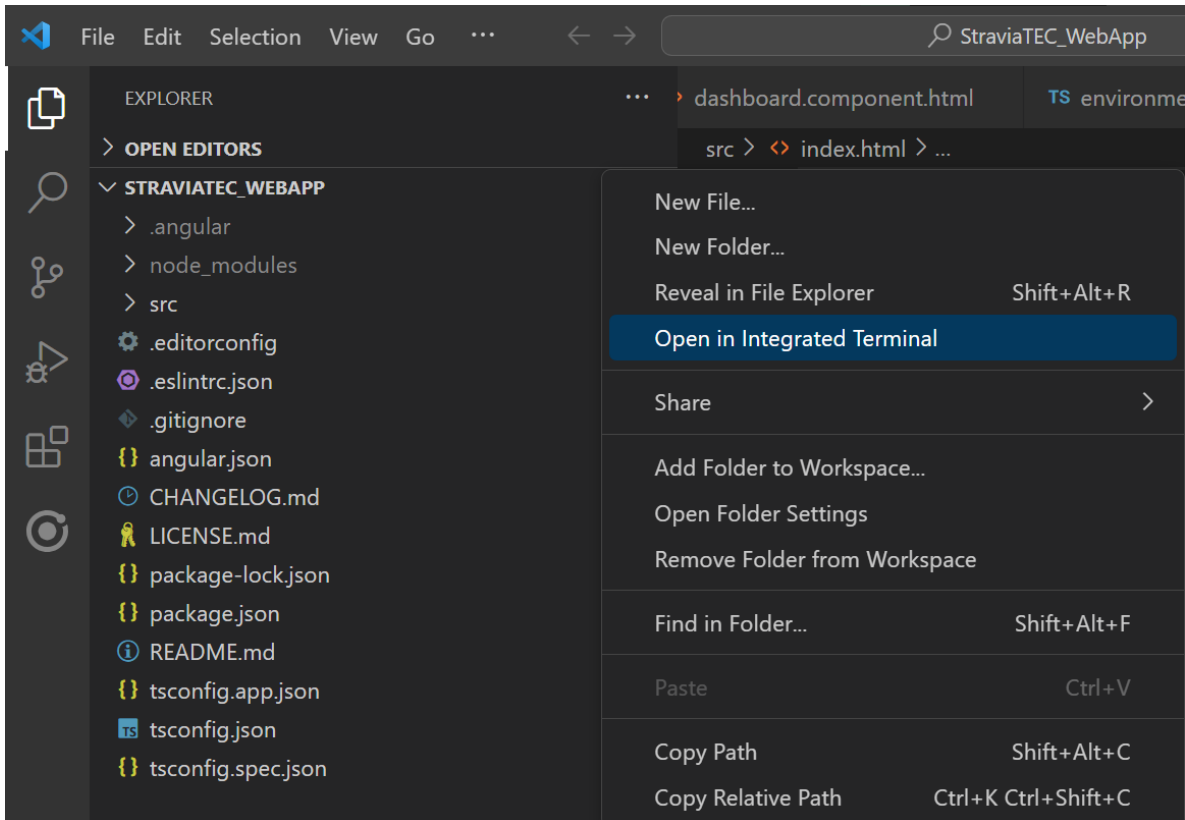
OK Cancel

And that's it, now you have just deployed all the StraviaTEC BackEnd.

FrontEnd Local Execution

Execute the web page is really simple, first of all you have to clone the repository and go to the [StraviaTEC_WebApp](#) folder and open it with Visual Studio Code. Then open a terminal in that location and run the following command lines

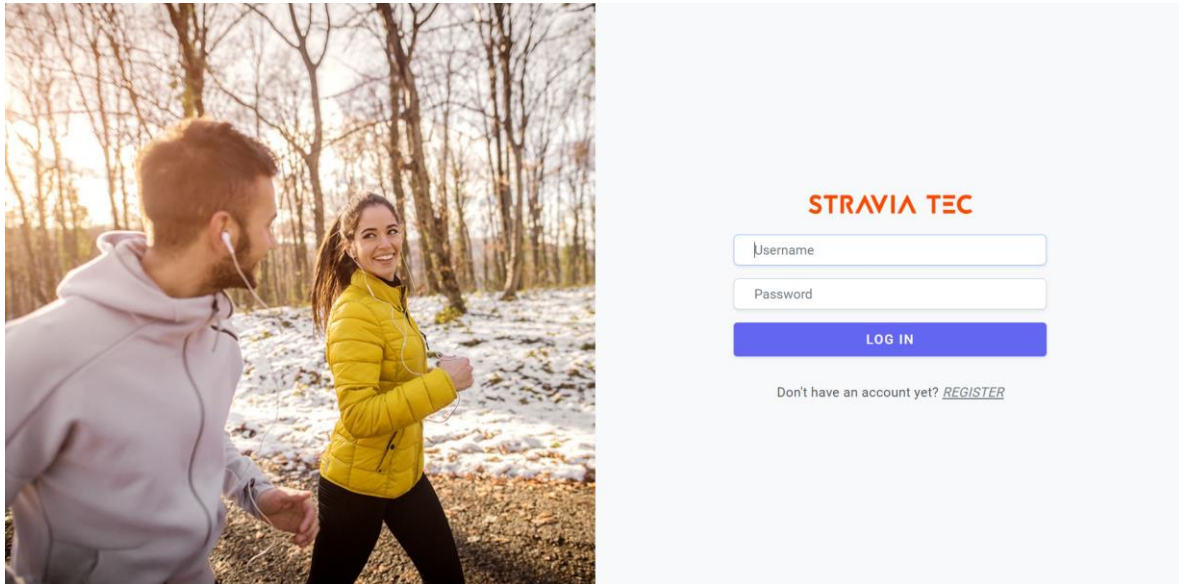
- `npm install`
- `ng serve --o`



```
PS D:\Codes\StraviaTEC\StraviaTEC_WebApp> npm install
```

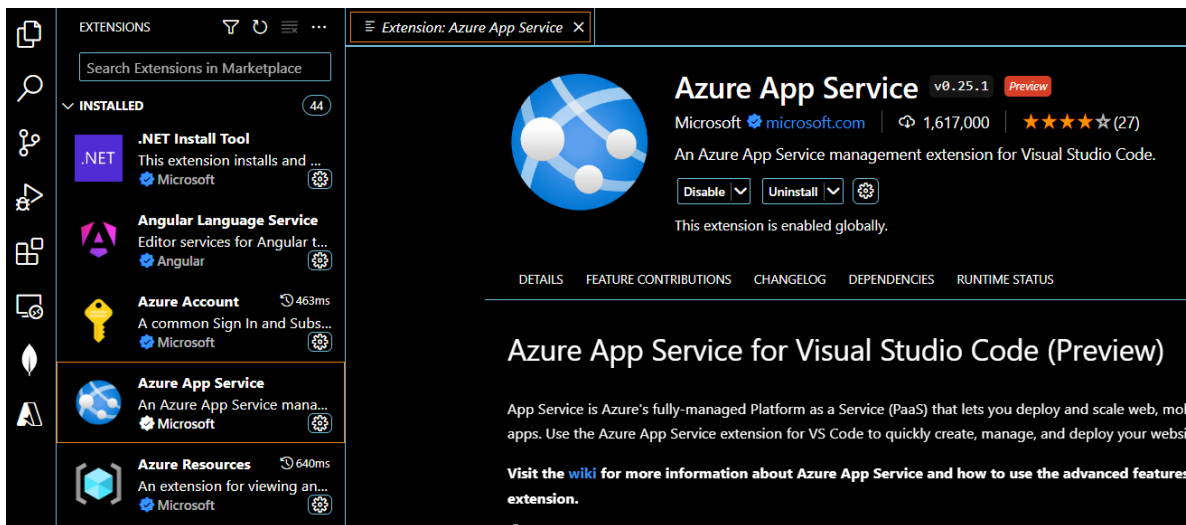
```
PS D:\Codes\StraviaTEC\StraviaTEC_WebApp> ng serve --o
```

And that's it, once you do this you should see the web application opened in your explorer, like this:



FrontEnd Global Deployment

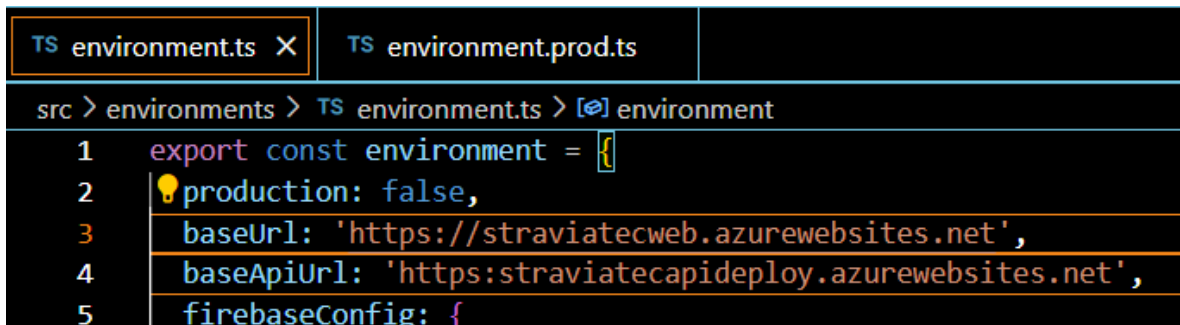
To deploy the StraviaTEC web page with Azzure the first step will be to install the Azzure extension on Visual Studio Code as shown below:



Then you click on the Azzure icon and login with your account:



Now you have to make sure to configure you environments with the API url you got from the [API Global Deployment](#) and run **ng build**:

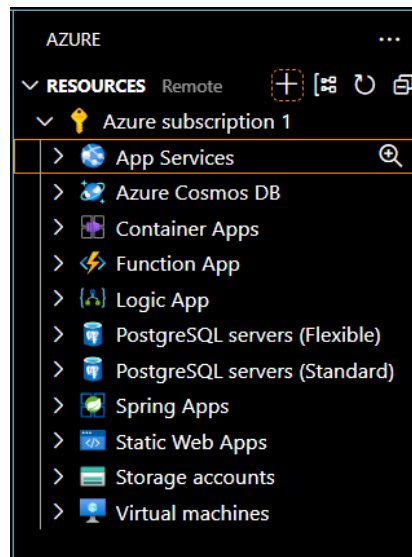


```

1 export const environment = {
2   production: false,
3   baseUrl: 'https://straviatecweb.azurewebsites.net',
4   baseApiUrl: 'https://straviatecapideploy.azurewebsites.net',
5   firebaseConfig: {}

```

Once you are logged in, you have to go to the Azzure page to create the web application:



Then you select the project to do the deployment, it will take a while loading and once it is done you will have the next page to configure the web app creation:

[Home](#) / [Create a resource](#)



Create Web App



[Basics](#) | [Deployment](#) | [Networking](#) | [Monitoring](#) | [Tags](#) | [Review + create](#)

App Service Web Apps lets you quickly build, deploy, and scale enterprise-grade web, mobile, and API apps running on any platform. Meet rigorous performance, scalability, security and compliance requirements while using a fully managed platform to perform infrastructure maintenance. [Learn more](#)

Project Details


Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *  Azure subscription 1 


Resource Group *  StraviaTEC 
[Create new](#)

Instance Details


Need a database? [Try the new Web + Database experience. >](#)


Name * StraviaTECWebsite 
.azurewebsites.net

Publish * ☒ Code ☐ Docker Container ☐ Static Web App

Runtime stack * Node 18 LTS 



Operating System * ☐ Linux ☒ Windows

Region * East US 

 Not finding your App Service Plan? Try a different region or select your App Service Environment.




Pricing plans

App Service plan pricing tier determines the location, features, cost and compute resources associated with your app. [Learn more >](#)

Windows Plan (East US) *  ASP-TECA/TEST-8011 (F1) 
[Create new](#)

Pricing plan **Free F1** (Shared infrastructure)

Zone redundancy

[Disabled \(default\)](#)  [Enabled](#)  [Multi-Region \(Preview\)](#) 

Once you have configured the creation page you and press the blue button, you will have to wait a while but the you finally will have the StraviaTEC web page deployed and anyone else will be able to join to your page from anywhere like any other website.

Mobile App

To install the mobile app you just have to go to the releases in the Github repository and download the mobile app for Android. Once you have it downloaded, allow external installations on you cellphone and touch to the .apk file to proceed with the automatic installation. Here is the link to the [release](#).