

Create a Virtual Machine (VM) :

Imagine you need to host a website or run a specific application that requires a Windows/Linux environment. Creating a VM in Azure can provide you with the required environment without needing physical hardware.

You can start to create and configure your vm on the link below:
<https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM>

Microsoft Azure

Home > Virtual machines > Create a virtual machine

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

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

Subscription *

Resource group *

[Create new](#)

Instance details

Virtual machine name *

Region *

Availability options

Security type

[Configure security features](#)

Image *

[See all images](#) | [Configure VM generation](#)

VM architecture ☐ Arm64 ☒ x64

Run with Azure Spot discount ☐

Size

[See all sizes](#)

Enable Hibernation (preview) ☐

[To enable Hibernation, you must register your subscription. \[Learn more\]\(#\)](#)

Administrator account

[Review + create](#) [Previous](#) [Next: Disks >](#) [Give feedback](#)

By default it will be payment by month , but to save budget you can just choose to pay by hours by checking this checkbox in Basic tab

Run with Azure Spot discount ⓘ



I choose to develop my app on HTTP and HTTPS so i have to check these checkboxes below also

Select inbound ports *

HTTP (80), HTTPS (443), SSH (22) ▼

- ☒ HTTP (80)
- ☒ HTTPS (443)
- ☒ SSH (22)

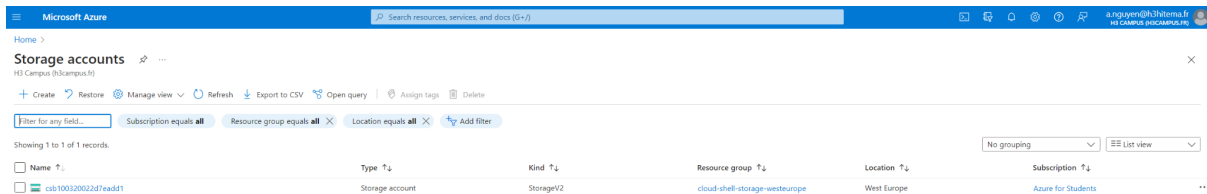
Now the rest is up to you to configure your machine and budget , to note , it's very important to also make an alert price.

Set Up Blob Storage :

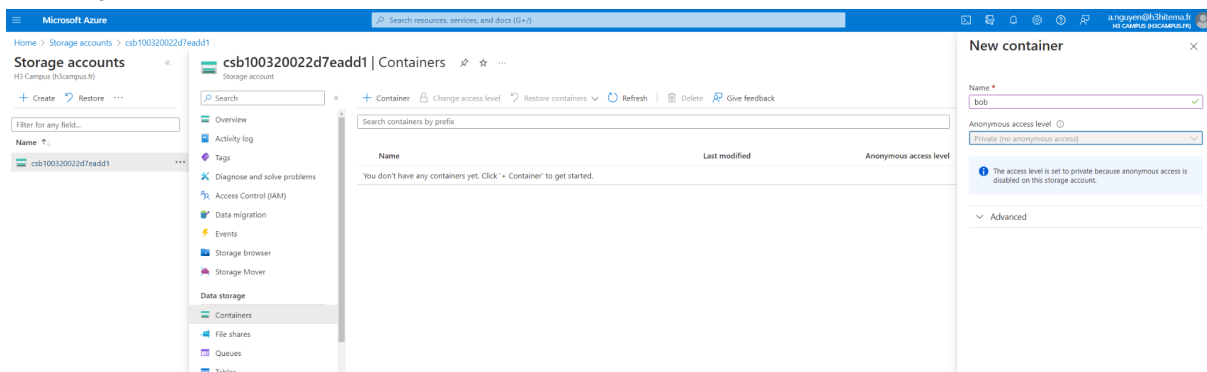
Consider a scenario where your application generates a large number of log files or images that need to be stored and accessed securely. Azure Blob Storage can be used to store such unstructured data.

To do it , go to the link below

<https://portal.azure.com/#view/HubsExtension/BrowseResource/resourceType/Microsoft.Storage%2FStorageAccounts>



Create your container



Up to you to do your configuration

Upload blob

sample-container/

Files

upload-blob.png

☐ Overwrite if files already exist

Advanced

Authentication type

Azure AD user account

Account key

Blob type

Block blob

☒ Upload .vhd files as page blobs (recommended)

Block size

4 MB

Access tier

Hot (Inferred)

Upload to folder

virtual-folder

Blob index tags

| Key | Value |
|-----|-------|
| | |

Encryption scope

☒ Use existing default container scope

☐ Choose an existing scope

Retention policy

☒ No retention

☐ Choose custom retention period:

10/25/2021

1:35:12 PM

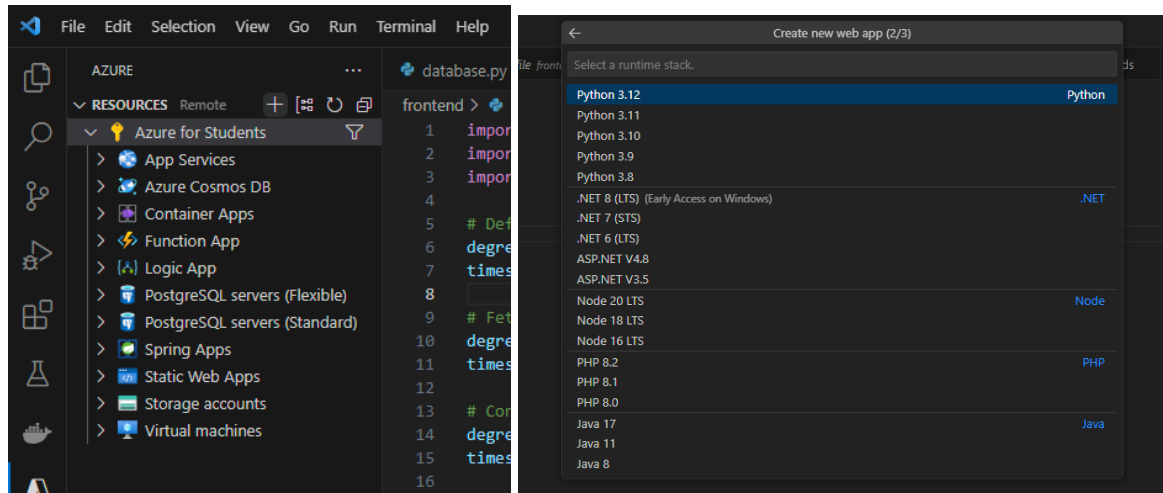
Enable version-level immutability on the container to set a retention policy.

Upload

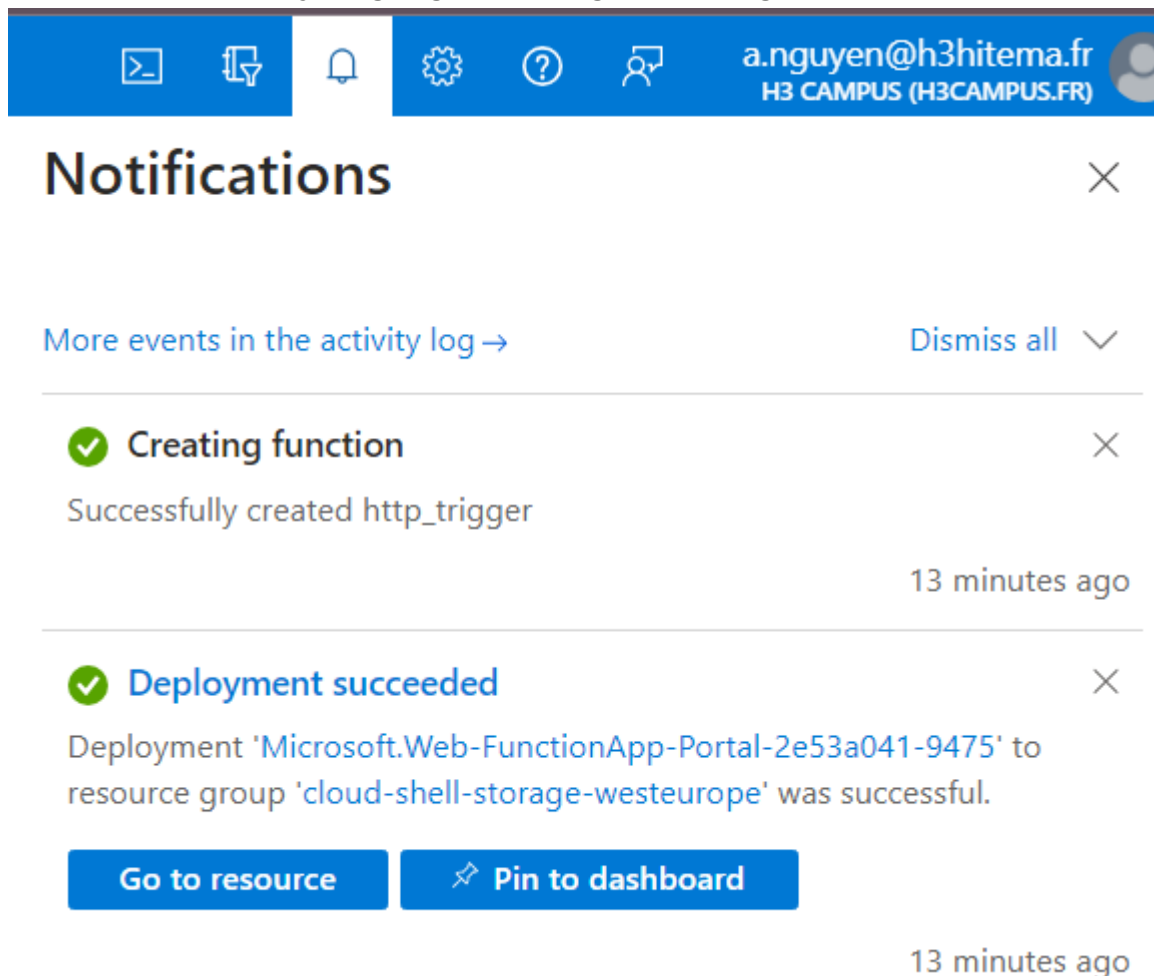
Deploy a Web App :

Suppose you have developed a web application and you need a platform to host it. Azure App Services can provide a managed platform to deploy web apps without managing the underlying infrastructure.

We can simply do it by using azure tool extension on vs code and click on the button + and then choose your configuration



At the end when everything is good u will get a message



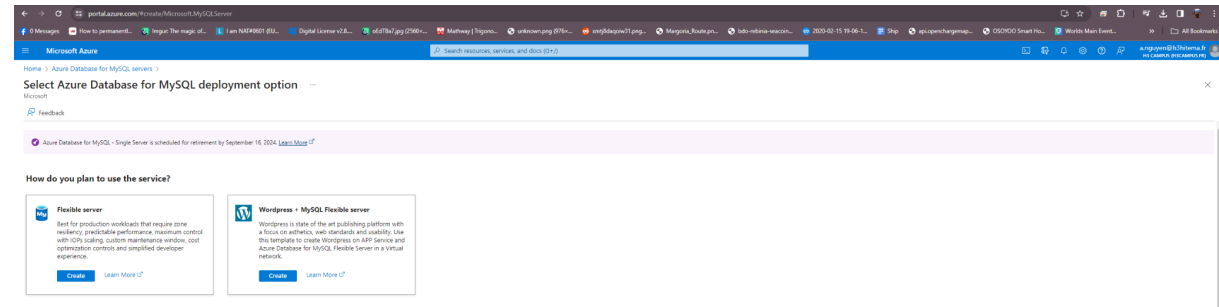
Create a SQL Database :

Imagine developing an application that requires a relational database backend. Creating an Azure SQL Database allows you to have a scalable and managed database service.

To create any MySQL server on azure you can simply going to

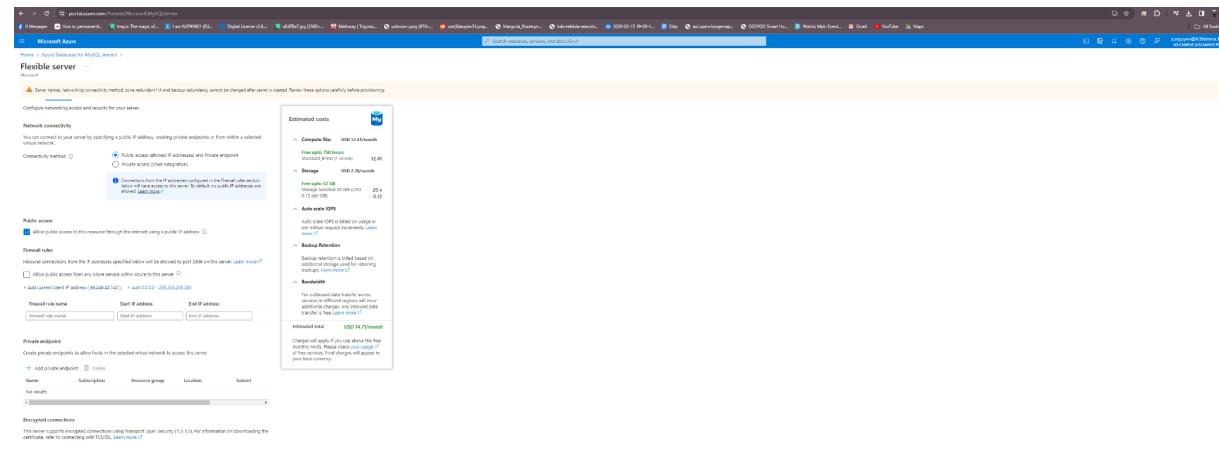
<https://portal.azure.com/#create/Microsoft.MySQLServer>

And then select the configuration that u would liked , in this case i use flexible server

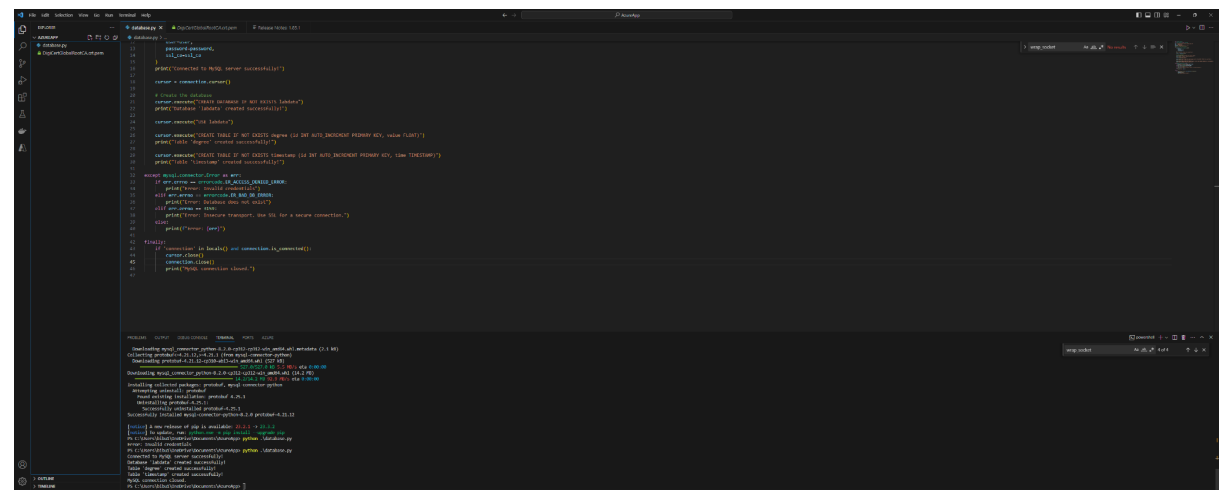


One important thing to note

You have to add your ip address into the networking otherwise you wouldn't be able to connect your azure database mysql on your local machine



So to test out the database and connections between i did some python scripts and a simple api with streamlit app to check:
Create database and tables



Showing databases and tables

```

PS C:\Users\bibu1\OneDrive\Documents\AzureApp> mysql -h myappstreamlit2112.mysql.database.azure.com -u nguyenanhtien -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 53
Server version: 8.0.34 Source distribution

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

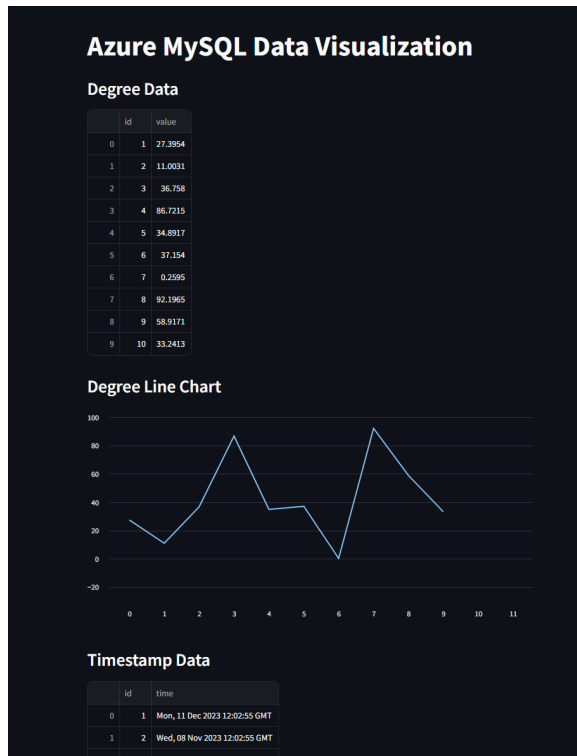
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| labdata |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.02 sec)

mysql> use labdata
Database changed
mysql> show tables;
+-----+
| Tables_in_labdata |
+-----+
| degree |
| timestamp |
+-----+
2 rows in set (0.02 sec)

mysql> 

```

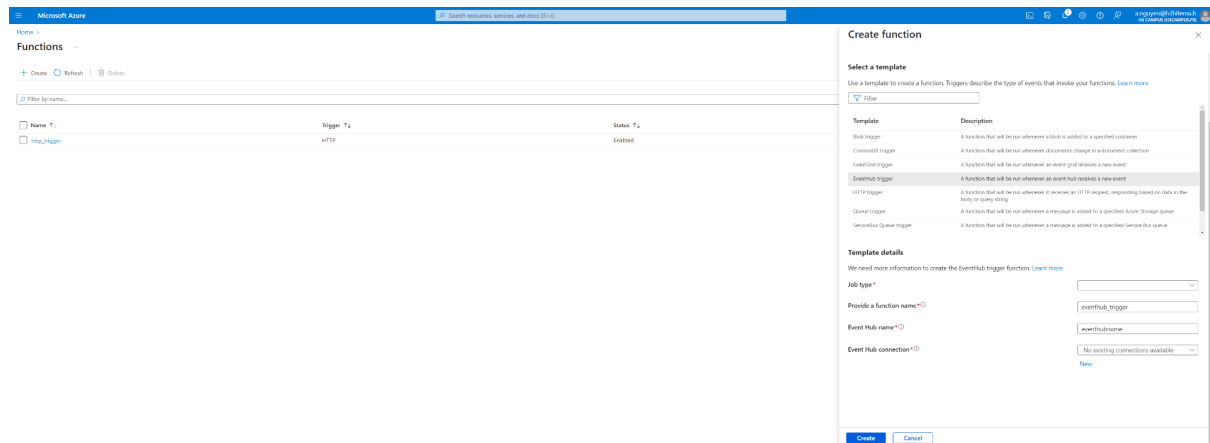
My application streamlit and it's ap (you can check my code at my github :



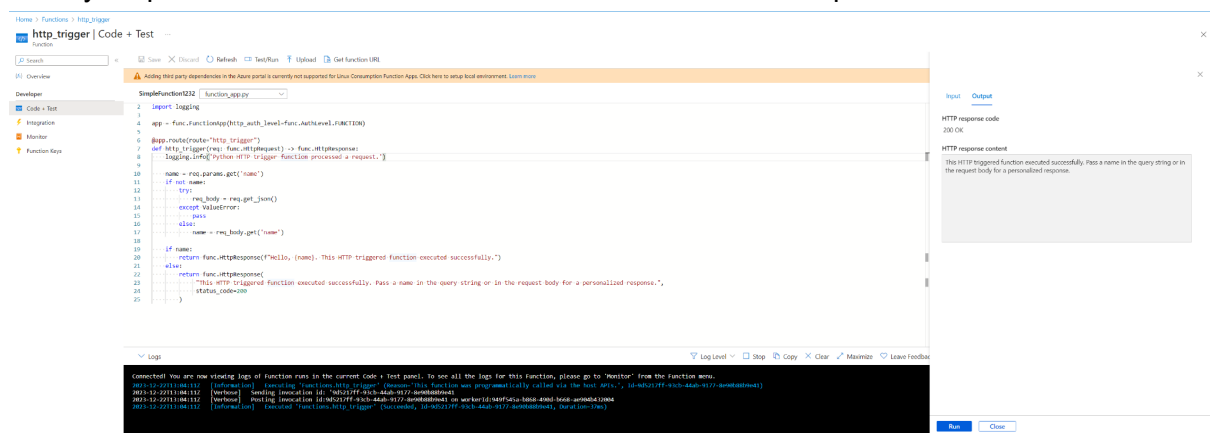
Implement a simple Azure Functions :

Consider a scenario where you need to process data or respond to events without a dedicated server. Azure Functions allow you to write event-driven functions that can be triggered on-demand.

To create a simple function you can just go on search bar and type azure function , it will direct you to this page



After that , you can choose a language that u wanna developpe with , create your code directly on portal azure website and execute it : here is an example



As you see we got HTTP response code 200 OK

Set Up a Networking ressource :

Suppose you have multiple VMs or services that need to communicate securely. Creating a Virtual Network in Azure allows you to isolate and manage network traffic between resources.

You can go to this tab and choose to open port of your application , choose https http

The screenshot displays the Azure portal interface for a virtual machine named 'nguyenanhien'. The left sidebar shows the navigation menu with 'Network settings' selected. The main pane shows the 'Network settings' tab for the VM, displaying various configuration options like Network interface, Virtual network, Public address, Private IP address, Admin security rules, Load balancers, Application security groups, Network security group, Accelerated networking, and Effective security rules.

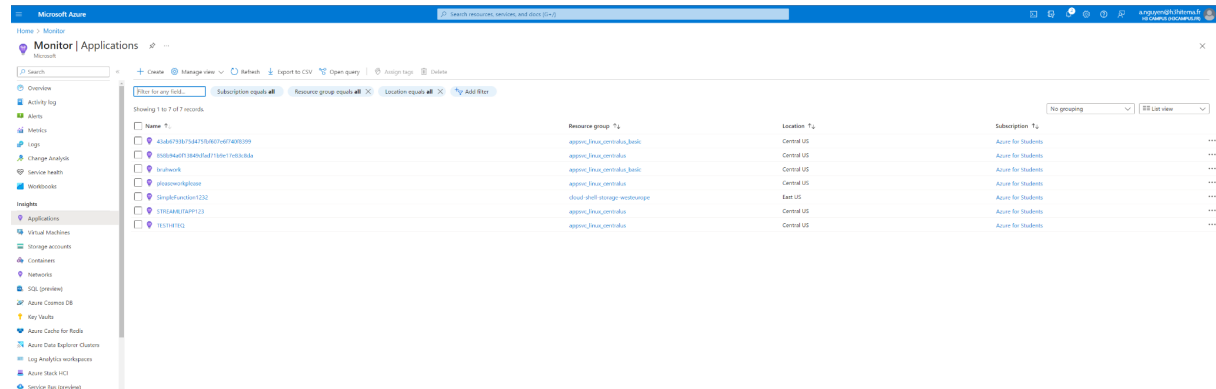
Below the configuration options, the 'Rules' section is expanded, showing the 'Network security group' settings. A table lists the inbound and outbound port rules for the network security group.

| Priority | Name | Port | Protocol | Source | Destination | Action |
|--|-------------------------------|------|----------|-------------------|----------------|--------|
| Inbound port rules (8) | | | | | | |
| 300 | SSH | 22 | TCP | Any | Any | Allow |
| 320 | HTTPS | 443 | TCP | Any | Any | Allow |
| 340 | HTTP | 80 | TCP | Any | Any | Allow |
| 350 | AllowAnyCustom5000Inbound | 5000 | TCP | Any | Any | Allow |
| 360 | AllowAnyCustom3306Inbound | 3306 | TCP | Any | Any | Allow |
| 65000 | AllowVnetInbound | Any | Any | VirtualNetwork | VirtualNetwork | Allow |
| 65001 | AllowAzureLoadBalancerInBound | Any | Any | AzureLoadBalancer | Any | Allow |
| 65500 | DenyAllInBound | Any | Any | Any | Any | Deny |
| Outbound port rules (0) | | | | | | |

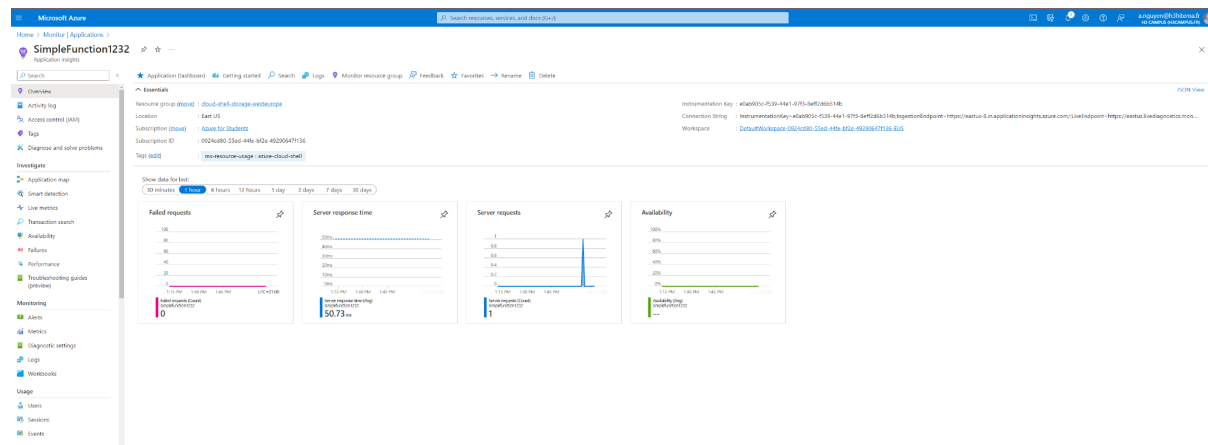
Configure Monitoring and Logging :

Imagine needing insights into the performance and health of your resources. Azure Monitor provides detailed telemetry and logs to help you diagnose issues and optimize performance.

To check the state of your application to help you diagnose problems , you can simply use monitor function of azure portal for live web application and choose your applciation



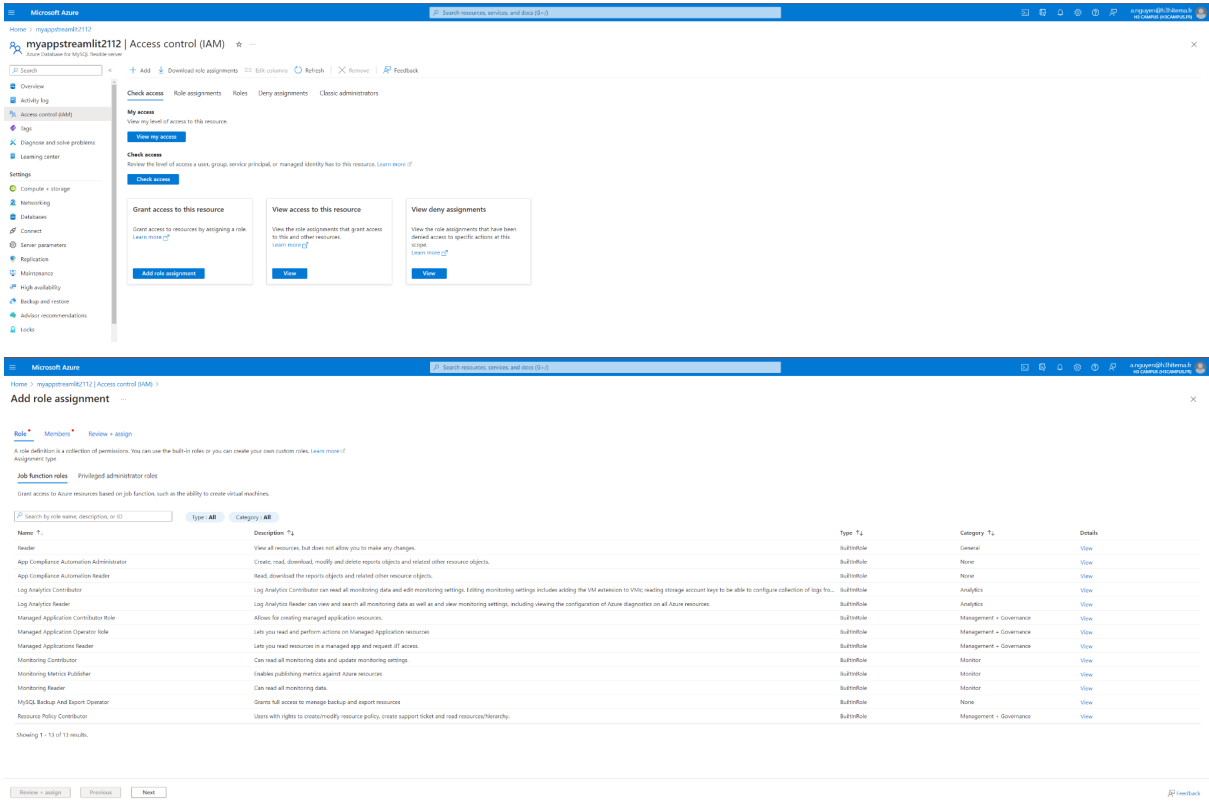
It will tell your time to respond from the server , health of the application Here is an example of my azure function i created



Implement Azure Identity by creating a simple dev role :

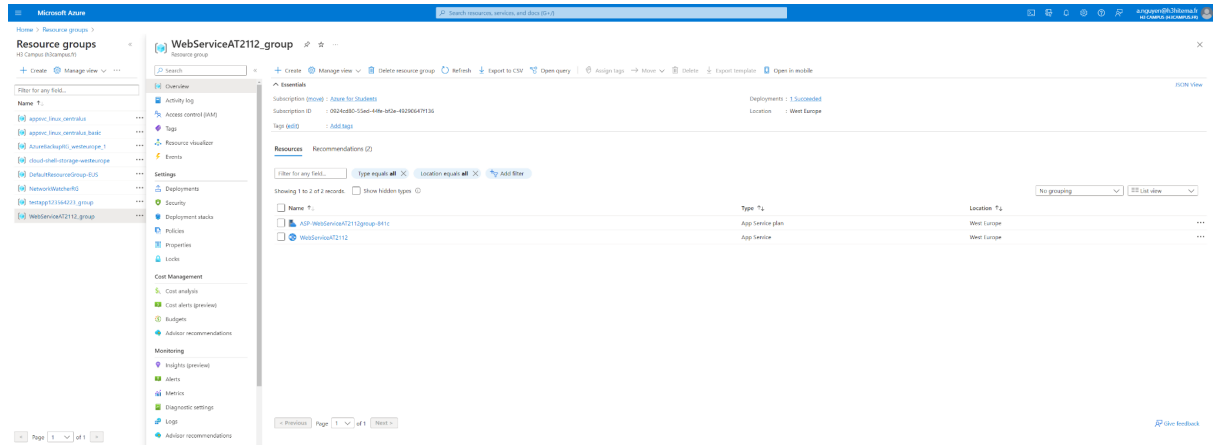
Consider a scenario where you need to manage user access to resources. Azure Active Directory allows you to manage identities and control access to resources.

You can also add an access role for anyone . By simply going to IAM and add role assignment and choose the right and the people you wanted

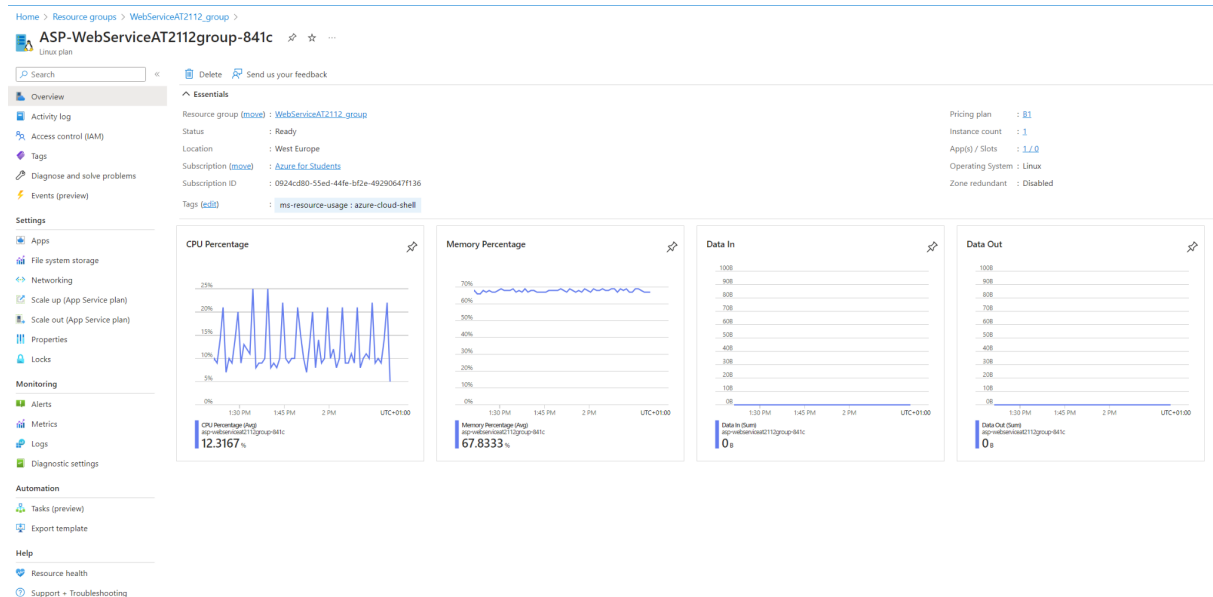


Create a personalized Resource Group :

Imagine needing to organize and manage related Azure resources. Resource Groups in Azure provide a way to group resources based on lifecycle, permissions, or other criteria.



It will help you to manage the resource , as u see below an example of my application , it shows cpu usages etc ...



Set Up Auto-Scaling :

Suppose you have a variable workload and need to adjust resources based on demand. Auto-scaling in Azure allows you to dynamically adjust resources to maintain performance and manage costs.

You can set up your auto scaling via Azure Monitor , and choose the option you would like , here to save budget 100\$ student i didn't set any cause i don't have many clients or users that access my application .

