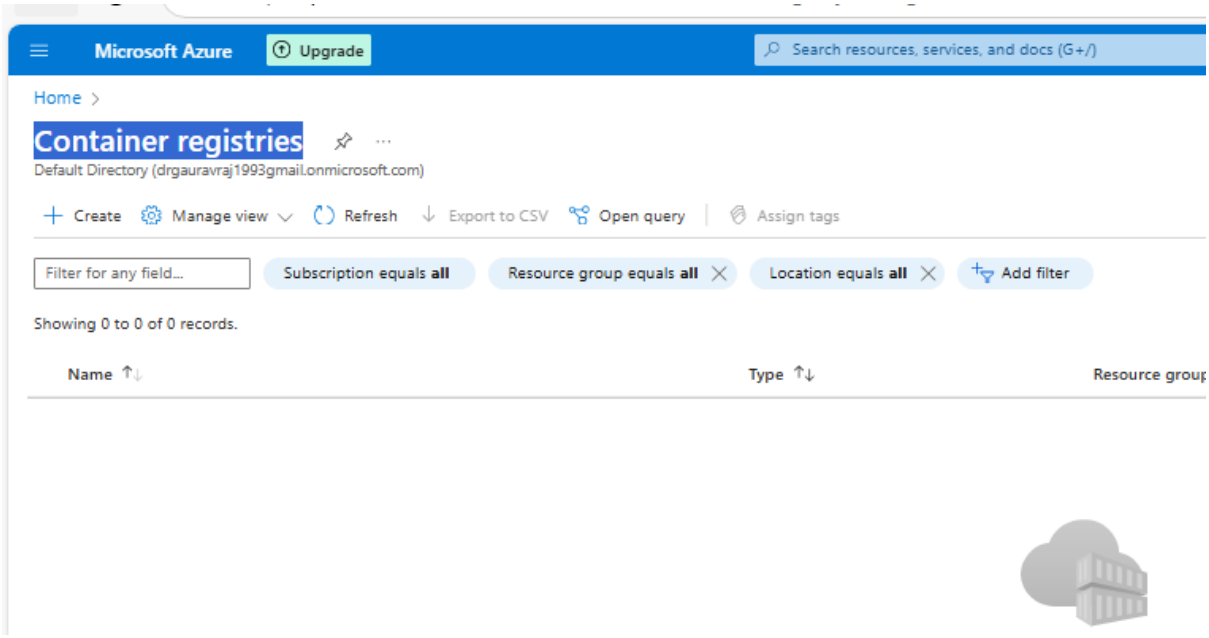
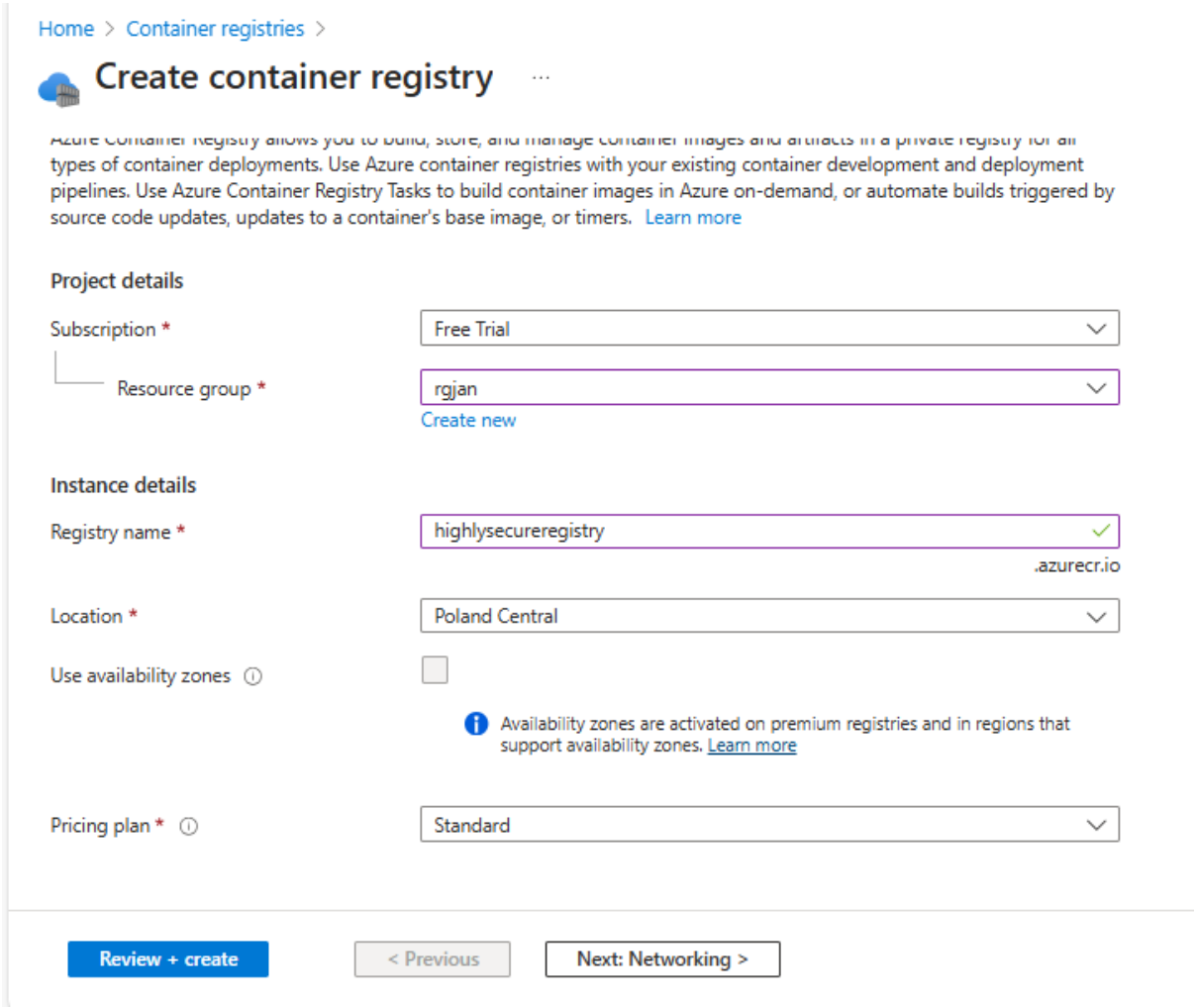
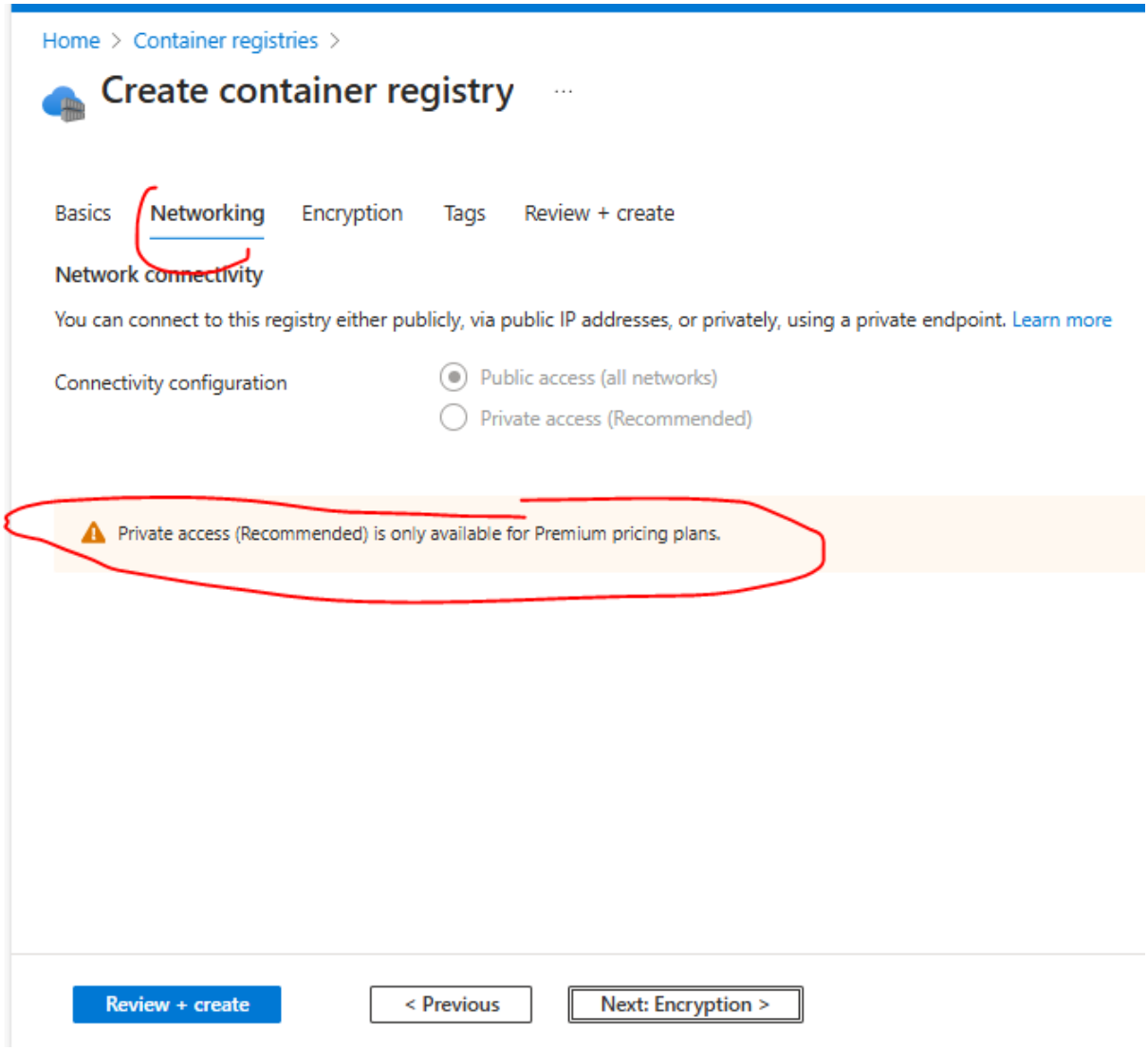
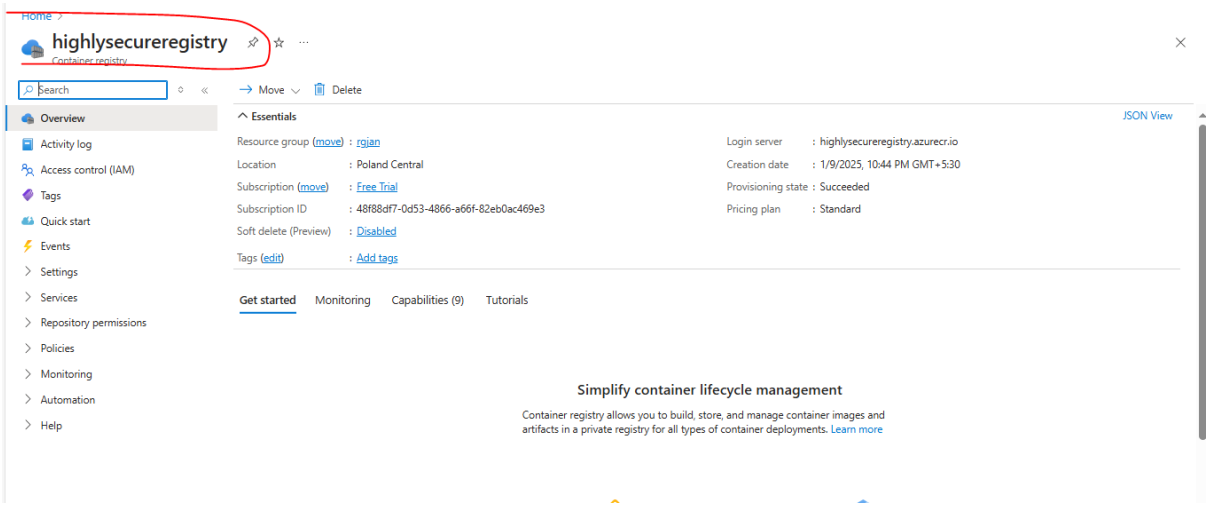
AGENDA – AZURE CONTAINER REGISTRY (ACR)

1) SEARCH = Container registries









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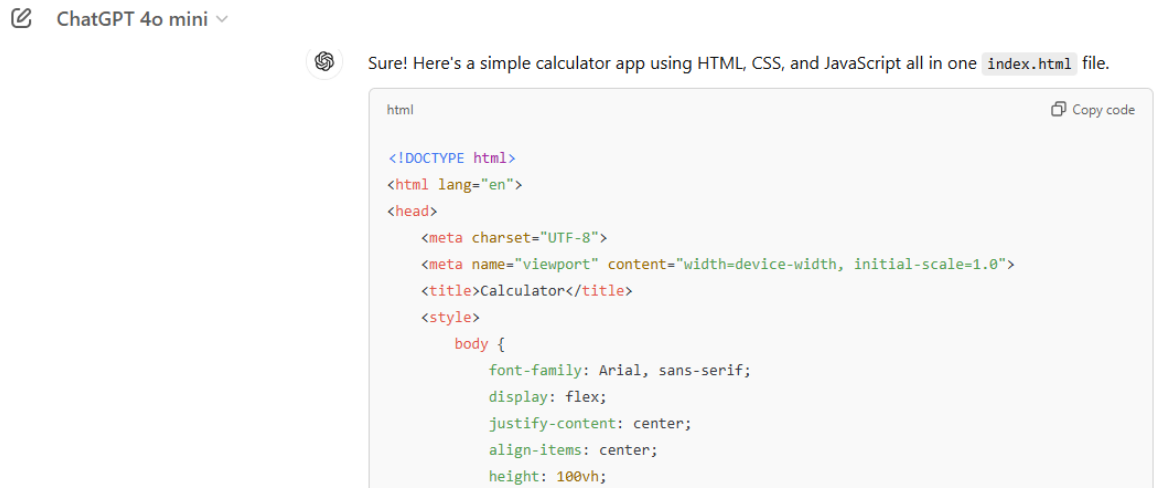
AGENDA – Making image in local

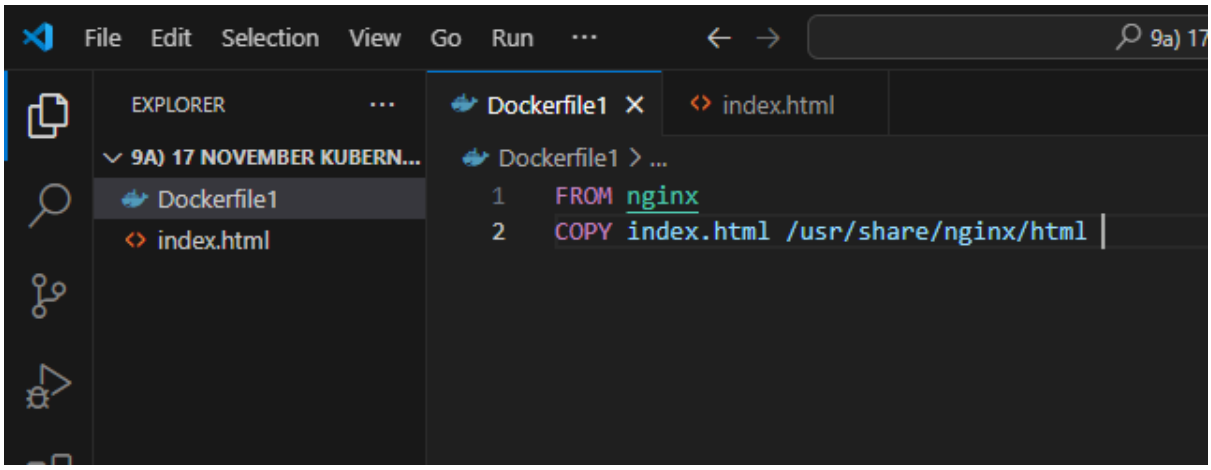
1) Create new folder “9a) 17 November KubernetesACR” and open with vscode

2) Make new file = Dockerfile1

3) SEARCH IN CGPT = Can you create a calculator application in just one index.html file



4) Create index.html file and paste code into it



5) Now don’t use vs code because docker is not locally installed in computer.

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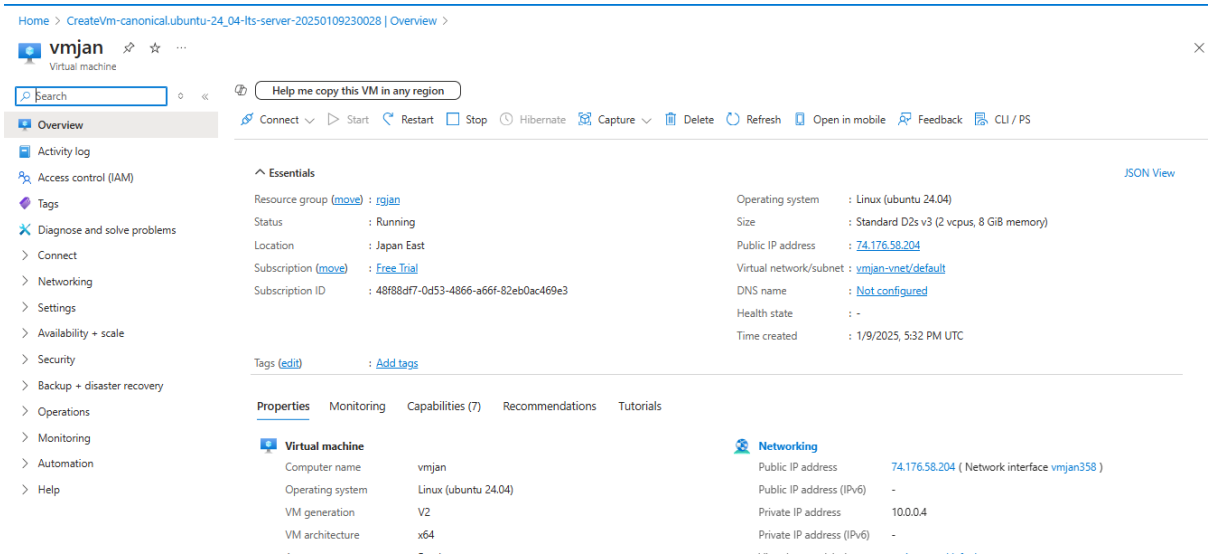
AGENDA = CREATE VM ON PORTAL and install docker on it

1) Create VM



2) open powershell

3) **sudo snap install docker** = install docker

4) **mkdir acr**

5) **touch index.html** = create file

6) **nano index.html** = put code into it from chatgpt for calculator

7) **cat index.html**

```
azureuser@vmjan:~$ cat index.html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Calculator</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            background-color: #f4f4f9;
            margin: 0;
        }
        .calculator {
            background-color: #fff;
            padding: 20px;
```

8) **touch Dockerfile**

9) **nano Dockerfile**

```
azureuser@vmjan: ~
  GNU nano 7.2
FROM nginx
COPY index.html /usr/share/nginx/html
```

10) **cat Dockerfile**

```
azureuser@vmjan:~$ cat  Dockerfile1
FROM nginx
COPY index.html /usr/share/nginx/html
azureuser@vmjan:~$
```

11) **sudo apt install nginx** = INSTALL NGINX

sudo systemctl status nginx =

```
root@vmjan:/home/azureuser/ACR# sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Thu 2025-01-09 17:57:20 UTC; 1min 33s ago
       Docs: man:nginx(8)
    Process: 4263 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
    Process: 4264 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Main PID: 4266 (nginx)
      Tasks: 3 (limit: 9459)
     Memory: 2.4M (peak: 2.5M)
        CPU: 21ms
     CGroup: /system.slice/nginx.service
             ├─4266 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
             ├─4267 "nginx: worker process"
             └─4268 "nginx: worker process"

Jan 09 17:57:20 vmjan systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Jan 09 17:57:20 vmjan systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
root@vmjan:/home/azureuser/ACR#
```

11) Keep name as Dockerfile instead of Dockerfile1 as it is case sensitive and can cause issue

12) **docker build -t calculator .**

```
root@vmjan:/home/azureuser/ACR# docker build -t calculator .
[+] Building 10.7s (7/7) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 86B
 => [internal] load metadata for docker.io/library/nginx:latest
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load build context
 => => transferring context: 3.69kB
 => [1/2] FROM docker.io/library/nginx:latest@sha256:42e917aaa1b5bb40dd0f6f7f4f857490ac7747d7ef73b391c774a41a8b994f15
 => => resolve docker.io/library/nginx:latest@sha256:42e917aaa1b5bb40dd0f6f7f4f857490ac7747d7ef73b391c774a41a8b994f15
 => => sha256:566e42bcee1cd697dcab6098c082789af33bc8cbcbaa95c8adbad87283c85c75 43.84MB / 43.84MB
 => => sha256:c375ae41bb29c0615ab18452822fedf1981f8ba7a7b00508b3d901b7ab682947 2.29kB / 2.29kB
 => => sha256:fd674058ff8f8cfa7fb8a20c006fc0128541cbbad7f7f7f28df570d08f9e4d92 28.23MB / 28.23MB
 => => sha256:2b99b9c5d9e5679c839357944d083c55c4c045e2cae21f84dfcfe5841e2ea59b 627B / 627B
 => => sha256:42e917aaa1b5bb40dd0f6f7f4f857490ac7747d7ef73b391c774a41a8b994f15 10.27kB / 10.27kB
 => => sha256:f876bfc1cc63d905bb9c8ebc5adc98375bb8e22920959719d1a96e8f594868fa 8.58kB / 8.58kB
 => => sha256:bd98674871f548eff8a4e4f3d4aa1ba504320ccbabfb0a217c4ea5c23b6144fd 957B / 957B
 => => sha256:1e109dd2a0d75eb2ab2491daec5b300e99027ffdd528998612b693f3347b97e4 405B / 405B
 => => sha256:da8cc133ff821c8b0ac7a6667e3a2e70ee6eb04f850e38088f59720017a869db 1.21kB / 1.21kB
 => => extracting sha256:fd674058ff8f8cfa7fb8a20c006fc0128541cbbad7f7f7f28df570d08f9e4d92
 => => sha256:c44f27309ea1a5e557aff07fbd5ece457d5cb85583f795b34f342d5550a08a5c 1.40kB / 1.40kB
 => => extracting sha256:566e42bcee1cd697dcab6098c082789af33bc8cbcbaa95c8adbad87283c85c75
 => => extracting sha256:2b99b9c5d9e5679c839357944d083c55c4c045e2cae21f84dfcfe5841e2ea59b
 => => extracting sha256:bd98674871f548eff8a4e4f3d4aa1ba504320ccbabfb0a217c4ea5c23b6144fd
 => => extracting sha256:1e109dd2a0d75eb2ab2491daec5b300e99027ffdd528998612b693f3347b97e4
 => => extracting sha256:da8cc133ff821c8b0ac7a6667e3a2e70ee6eb04f850e38088f59720017a869db
 => => extracting sha256:c44f27309ea1a5e557aff07fbd5ece457d5cb85583f795b34f342d5550a08a5c
 => [2/2] COPY index.html /usr/share/nginx/html
 => exporting to image
 => => exporting layers
 => => writing image sha256:7654a5c1e88371650fe341207738d38fa23510442fa94b0ba2cc4b03abc7b0a5
 => => naming to docker.io/library/calculator
```

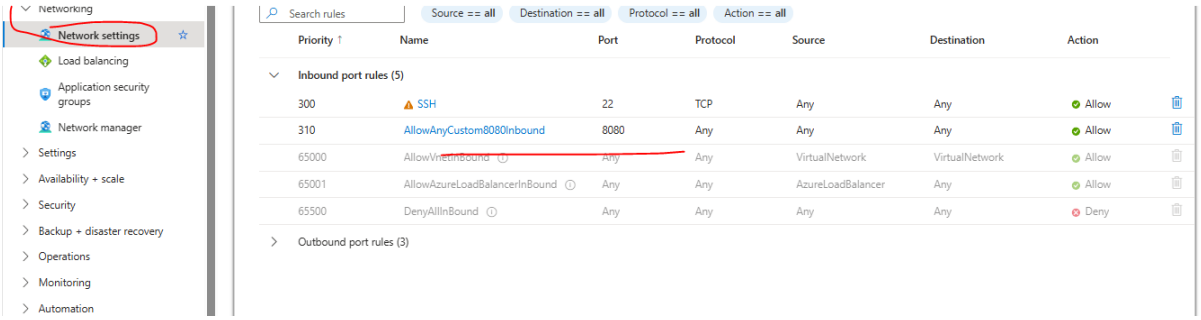
13) **docker images**

```
root@vmjan:/home/azureuser/ACR# docker images
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
calculator   latest    7654a5c1e883   9 seconds ago    192MB
root@vmjan:/home/azureuser/ACR#
```

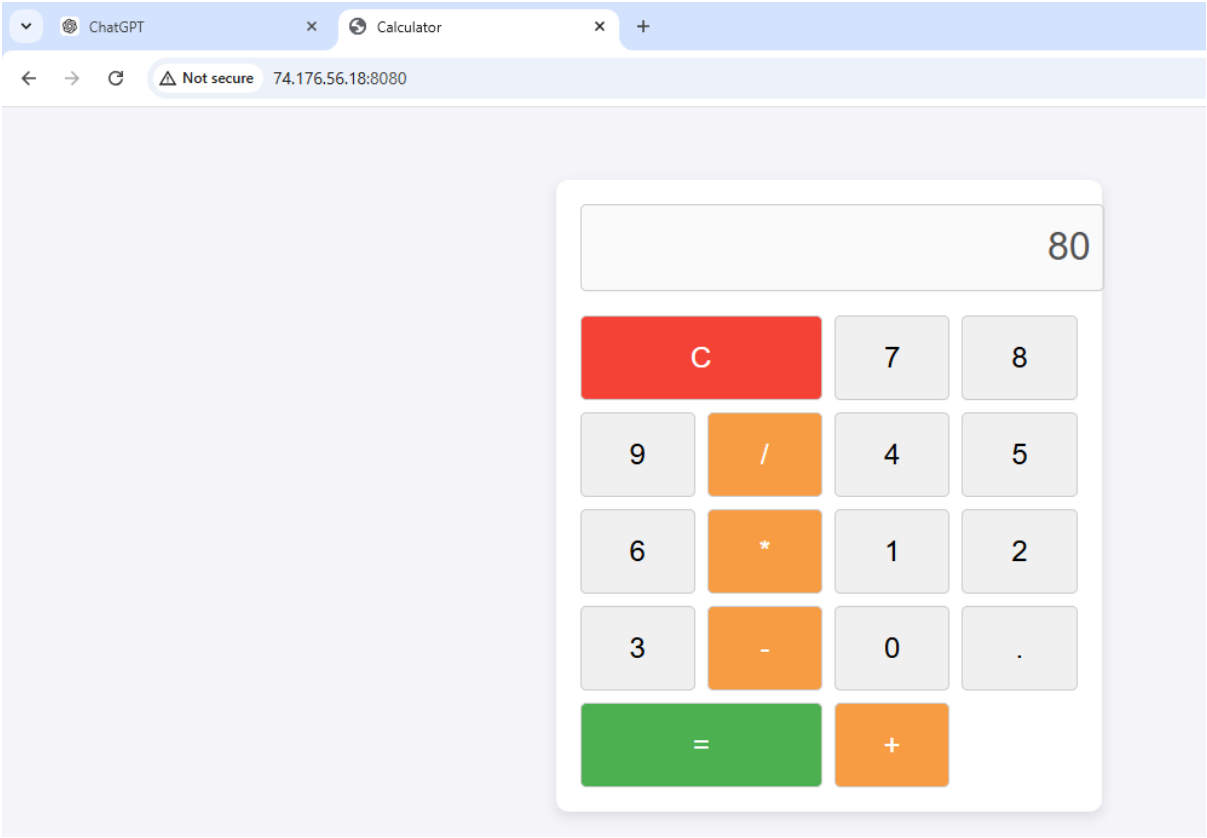
14) **docker run -d -p 8080:80 calculator** = now run image

```
root@vmtabla:/home/azureuser/acr# docker run -d -p 8080:80 calculator
15503b34f6cfbd4dd5674495cb94b0aee2c399b34865e569e2b18971c91d9ae3
root@vmtabla:/home/azureuser/acr#
```

15) open 8080 port on vm in nsg



16) **74.176.56.18:8080** = public ip of vm:8080



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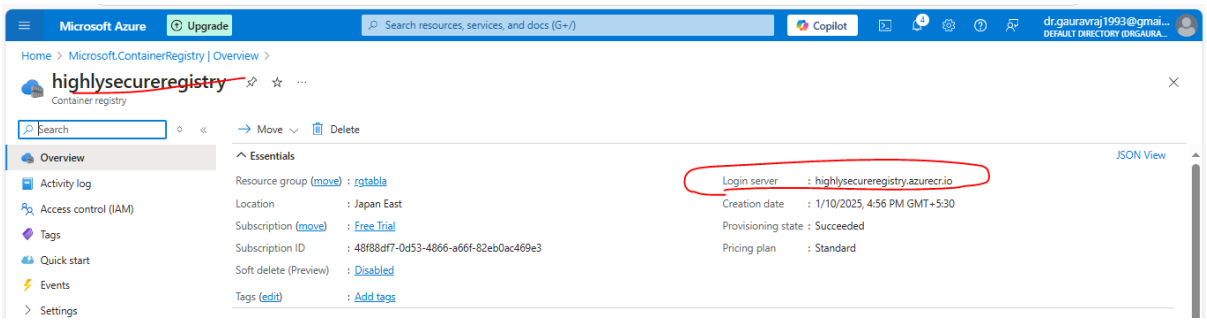
AGENDA – Put docker created image in ACR

1) **docker images** = so we have a tag

```
root@vmtabla:/home/azureuser/acr# docker images
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
calculator   latest    7d48a9f2cd38   18 minutes ago   192MB
root@vmtabla:/home/azureuser/acr#
```

2) in created registry we have login server



url = **highlysecureregistry.azurecr.io**

3) **docker tag** command is used to rename the image

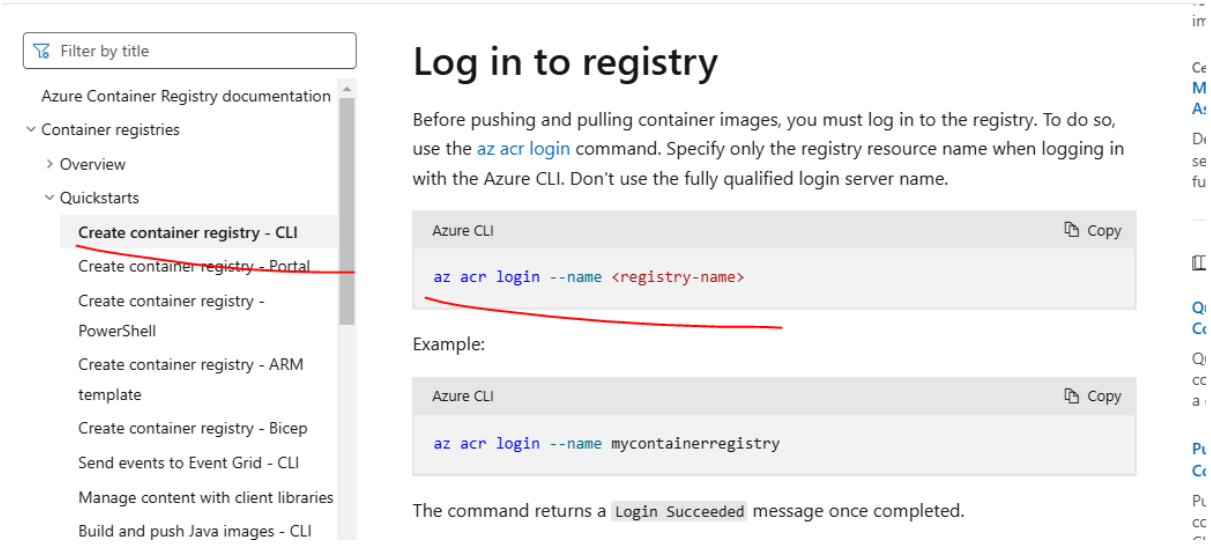
docker tag calculator:latest highlysecureregistry.azurecr.io/calculator:latest

4) **docker images**

```
root@vmtabla:/home/azureuser/acr# docker images
REPOSITORY                                  TAG       IMAGE ID       CREATED          SIZE
calculator                                  latest    7d48a9f2cd38   35 minutes ago   192MB
highlysecureregistry.azurecr.io/calculator  latest    7d48a9f2cd38   35 minutes ago   192MB
root@vmtabla:/home/azureuser/acr#
```

5) SEARCH = azure container registry

https://learn.microsoft.com/en-us/azure/container-registry/container-registry-get-started-azure-cli



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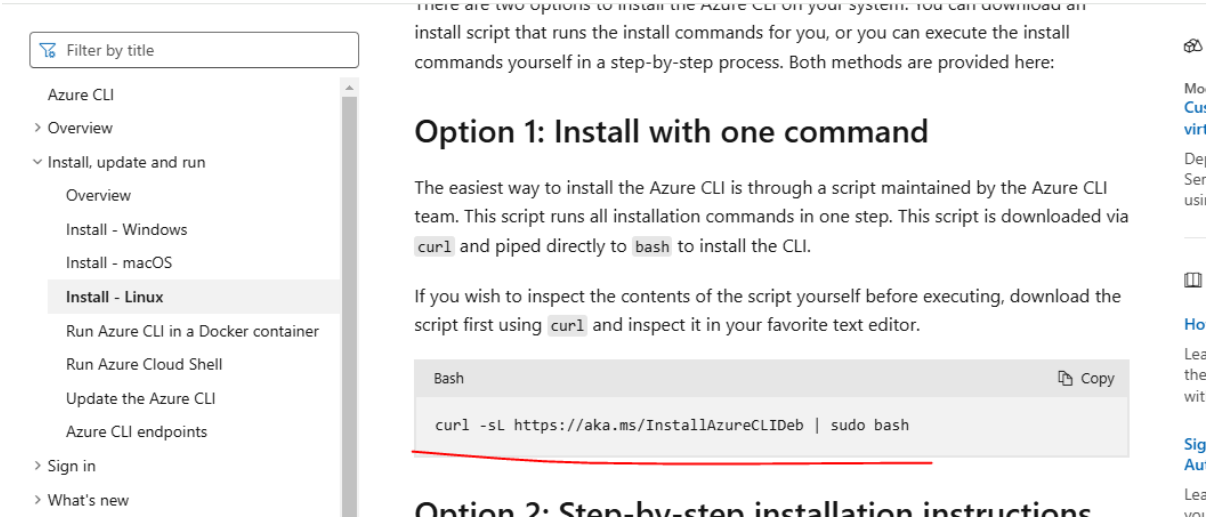
AGENDA – Install az cli in VM

curl -sL https://aka.ms/InstallAzureCLIDeb | sudo bash



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AGENDA = CONNECTING TO ACR and PUSHING Image to ACR

1) **az login** = Authentication will happen to VM

```
root@vmtabla:/home/azureuser/acr# az login
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code IPMLTJV3N to authenticate.
```

2) **az acr login --name highlysecureregistry** = we will login into acr registry

```
root@vmtabla:/home/azureuser/acr# az acr login --name highlysecureregistry
Login Succeeded
root@vmtabla:/home/azureuser/acr#
```

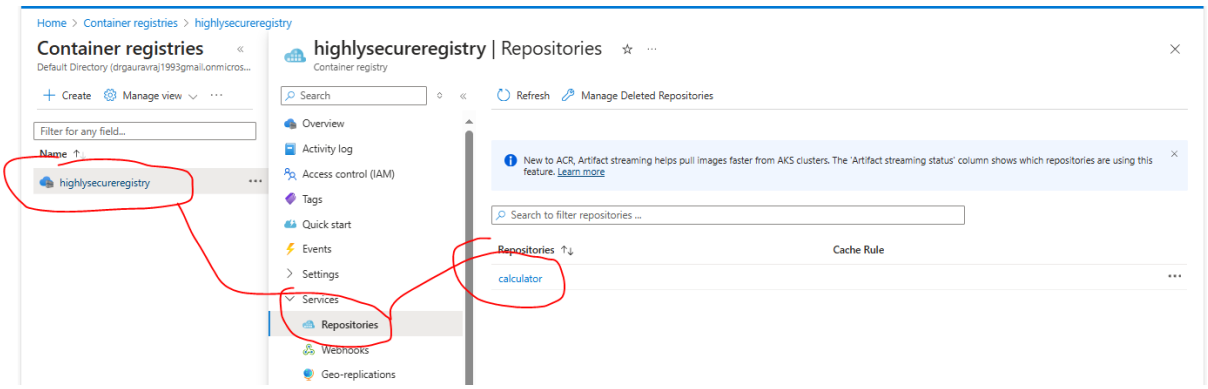
3) **docker images**

```
root@vmtabla:/home/azureuser/acr# docker images
REPOSITORY                                    TAG       IMAGE ID       CREATED        SIZE
calculator                                    latest    7d48a9f2cd38   2 hours ago    192MB
highlysecureregistry.azurecr.io/calculator    latest    7d48a9f2cd38   2 hours ago    192MB
root@vmtabla:/home/azureuser/acr#
```

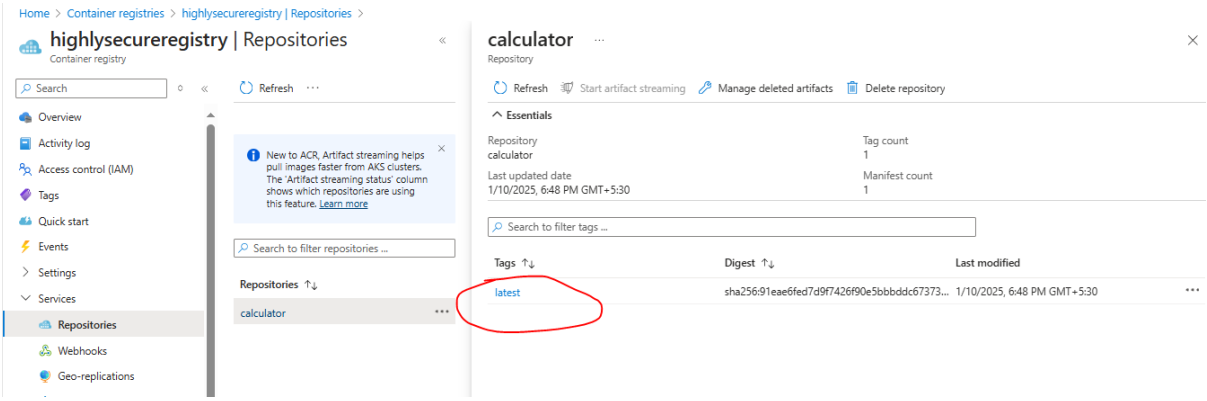
4) **docker push highlysecureregistry.azurecr.io/calculator** = now pushed image into acr

```
root@vmtabla:/home/azureuser/acr# docker push highlysecureregistry.azurecr.io/calculator
Using default tag: latest
The push refers to repository [highlysecureregistry.azurecr.io/calculator]
728e1c879f08: Pushed
af90855d8344: Pushed
ad206e285c61: Pushed
24aeff94f79e: Pushed
d567f5b4517e: Pushed
14a96b2ac595: Pushed
c4c8312766f1: Pushed
8b296f486960: Pushed
latest: digest: sha256:91eae6fed7d9f7426f90e5bbbddc6737374d81287348b72817fd60f036a59574 size: 1986
root@vmtabla:/home/azureuser/acr#
```

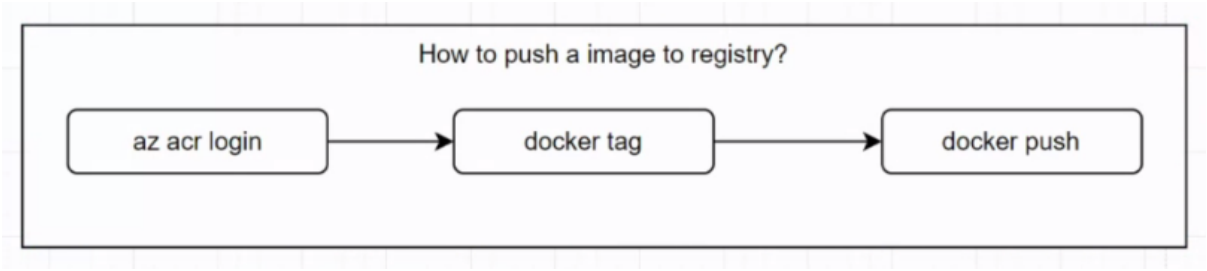
5) Go to portal acr



6) Now we can see the tag passed into it i.e. “latest”



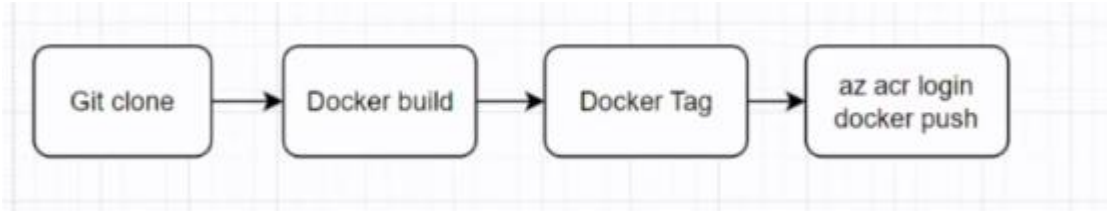
7) So whole steps were



8) **az acr repository list --name highlysecureregistry** = list how many images our registry has on cli

```
root@vmtabla:/home/azureuser/acr# az acr repository list --name highlysecureregistry
[
  "calculator"
]
root@vmtabla:/home/azureuser/acr#
```

9)



10) Image