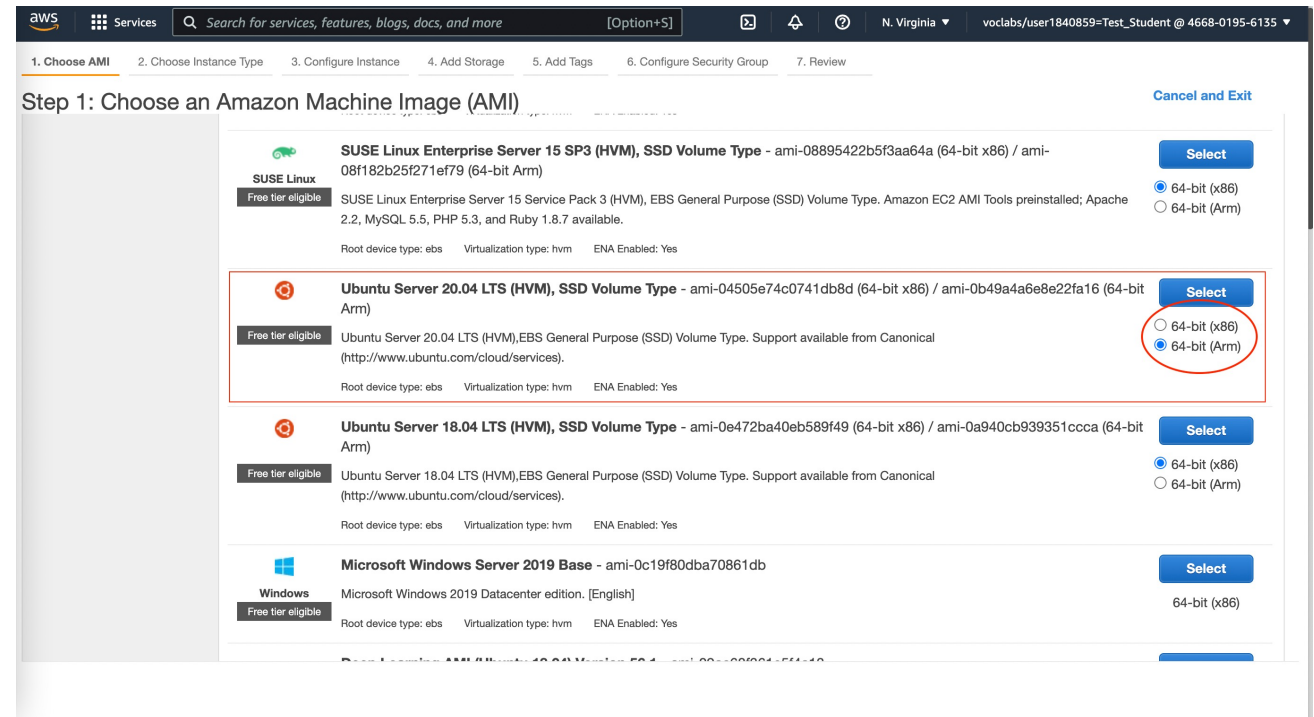


Ne logam pe site-ul AWS si cream o instanta EC2:

Hardware: t4g.small

Software: Ubuntu 20.04 / **ARM**



Avem nevoie de minim 2G RAM asadar
alegem modelul **t4g.small**

aws

Services

Search for services, features, blogs, docs, and more

[Option+S]

N. Virginia

voclabs/user1840859=Test_Student @ 4668-0195-6135

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t4g.small (- ECUs, 2 vCPUs, 2.5 GHz, -, 2 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t4g	t4g.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t4g	t4g.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input checked="" type="checkbox"/>	t4g	t4g.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t4g	t4g.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t4g	t4g.large	2	8	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t4g	t4g.xlarge	4	16	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t4g	t4g.2xlarge	8	32	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	c6g	c6g.medium	1	2	EBS only	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	c6g	c6g.large	2	4	EBS only	Yes	Up to 10 Gigabit	Yes

Cancel

Previous

Review and Launch

Next: Configure Instance Details

Modificam spatiul pe disk din 10G in **25G**.

The screenshot shows the AWS Management Console interface during the 'Add Storage' step of an EC2 instance configuration. The top navigation bar includes the AWS logo, 'Services' link, a search bar, and user information. The main navigation tabs at the top are: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage (highlighted), 5. Add Tags, 6. Configure Security Group, and 7. Review.

Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type ⁱ	Device ⁱ	Snapshot ⁱ	Size (GiB) ⁱ	Volume Type ⁱ	IOPS ⁱ	Throughput (MB/s) ⁱ	Delete on Termination ⁱ	Encryption ⁱ
Root	/dev/sda1	snap-068ec58d7eae94174	25	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt ⁱ

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Shared file systems ⁱ
You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

[Add file system](#)

Navigation buttons at the bottom: [Cancel](#), [Previous](#), [Review and Launch](#) (highlighted), [Next: Add Tags](#)

Dupa ce cream instanta, avem nevoie de o cheie privata pentru a accesa serverul via SSH.

Se poate folosi o cheie existenta daca ati mai creat alte instante anterior. In acest exemplu, se foloseste cheia privata **seria23.pem**

Select an existing key pair or create a new key pair



A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25519 and RSA key pair types.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

Select a key pair

seria23 | RSA

☒ I acknowledge that I have access to the corresponding private key file, and that without this file, I won't be able to log into my instance.

Cancel

Launch Instances

Dupa ce am creat serverul, ne conectam via SSH pe adresa lui IP (in acest exemplu **44.201.193.119**) folosind cheia privata definita anterior (in acest caz **serie23.pem**) si userul **ubuntu** (creat automat).

```
ssh -i serie23.pem ubuntu@44.201.193.119
```

The screenshot displays the AWS Management Console interface for an EC2 instance. The left sidebar shows navigation options like 'EC2 Dashboard', 'Instances', 'Images', and 'Elastic Block Store'. The main content area shows the 'Instance summary for i-065644a61de94d851'. Key details include:

- Instance ID:** i-065644a61de94d851
- Public IPv4 address:** 44.201.193.119 (highlighted with a red circle)
- Instance state:** Running
- Instance type:** t4g.small
- AMI:** Ubuntu (Inferred)

Below the summary, there are tabs for 'Details', 'Security', 'Networking', 'Storage', 'Status checks', 'Monitoring', and 'Tags'. The 'Details' tab is active, showing further information about the instance's configuration and status.

Dupa ce ne conectam pe server via ssh,
instalam docker:

`sudo su -`

`apt-get update`

`apt install -y docker docker-compose`

```
1. ne conectam pe server via ssh
ssh -i .ssh/seria23.pem ubuntu@44.201.193.119
2. ne facem root
sudo su -
3. instalam docker
apt-get update
apt install -y docker docker-compose
```

Tragem imaginea docker cu topologia de laborator:

```
docker pull pliviu/ubmi:ARM64
```

```
docker image ls
```

```
docker run -it -d <image ID>
```

```
docker ps
```

```
docker exec -it <container ID> bash
```

```
cd /opt/ubmi/
```

```
./start.sh L1
```

```
1. tragem imaginea docker  
docker pull pliviu/ubmi:ARM64
```

```
2. aflam ID-ul imaginii docker  
docker image ls  
(IMAGE ID: 467e4bb96012)
```

```
3. cream un container folosind imaginea  
docker run -it -d 467e4bb96012
```

```
4. aflam ID-ul containerului  
docker ps  
(CONTAINER ID: 6dc0feb59731)
```

```
5. ne atasam la container (repetam acest pas in mai multe console)
```

```
6. tragem automat topologia de laborator  
cd /opt/ubmi  
./start.sh L1  
(asteptam cateva zeci de secunde pentru ca se downloadeaza ~ 150Mb)
```

Pornim pe rand fiecare device si ne conectam la el din alta consola. Conectarea se va face cu comanda ***telnet localhost <port>*** iar portul este cel de pe ultima coloana.

Consola principala, cea din figura alaturata, va ramane tot timpul deschisa.

⇒ start R1

⇒ start R2

⇒ start TIER1-ISP

⇒

```
=> list
```

Name	Type	State	Server	Console
R1	7200	stopped	localhost:7200	5101
R2	7200	stopped	localhost:7200	5102
R3	7200	stopped	localhost:7200	5103
R4	3725	stopped	localhost:7200	5104
TIER1-ISP	3725	stopped	localhost:7200	5110
SW1	3725	stopped	localhost:7200	6101
SW2	3725	stopped	localhost:7200	6102
SW	ETHSW	always on	localhost:7200	n/a

```
=>
```


Pentru conectarea la PC-urile virtuale facem ***telnet localhost 7300***

Folosind 1,2,3 ... 6 ne mutam de pe un PC pe altul.

Daca vrem sa parasim aceasta consola folosim comanda ***disconnect***. Comanda quit o sa opreasca toate cele 6 PC-uri si nu ne dorim asta.

```
root@327ba2aa39f0:/opt/ubmi# telnet localhost 7300
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.

Welcome to Virtual PC Simulator, version 0.5b2
Dedicated to Daling.
Build time: Jun 23 2018 13:14:38
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.

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Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

Checking for duplicate address...
PC6 : 1.1.1.1 255.255.255.252 gateway 1.1.1.2

PC1[1]> disconnect

PC1[1]>
Good-bye
Connection closed by foreign host.
```

Topologiile noi se vor incarca astfel:

`cd /opt/ubmi`

`./start.sh Lx` (unde x = numar)

```
root@327ba2aa39f0:/opt/ubmi#  
root@327ba2aa39f0:/opt/ubmi# ./start.sh  
Syntax: ./start <lab number>  
Example: ./start.sh L1  
root@327ba2aa39f0:/opt/ubmi#
```

Diagrama pentru L1 este cea folosita in GNS3
iar interfetele si legaturile dintre PC-uri,
switch-uri si routere sunt identice.

