Run FPGA-design on AWS

Programming FPGAs for Economics:
An Introduction to Electrical Engineering Economics

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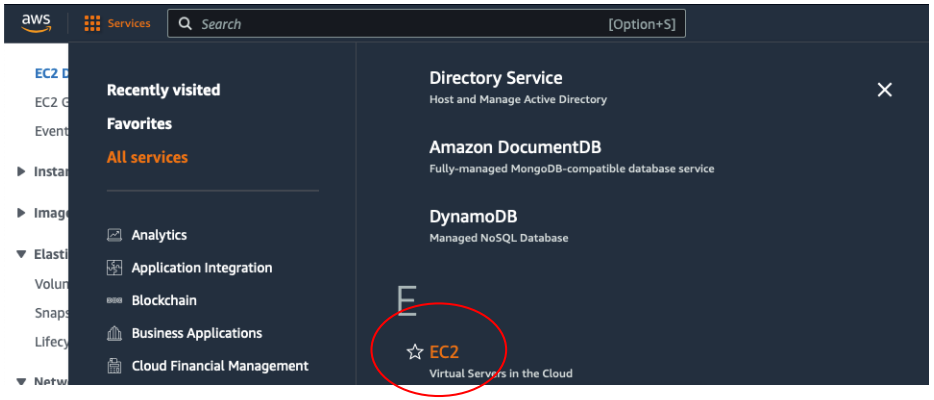
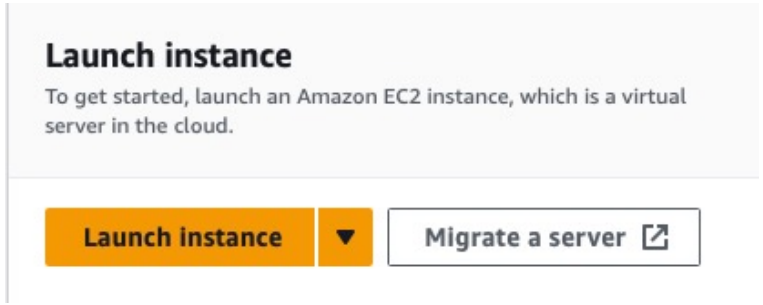
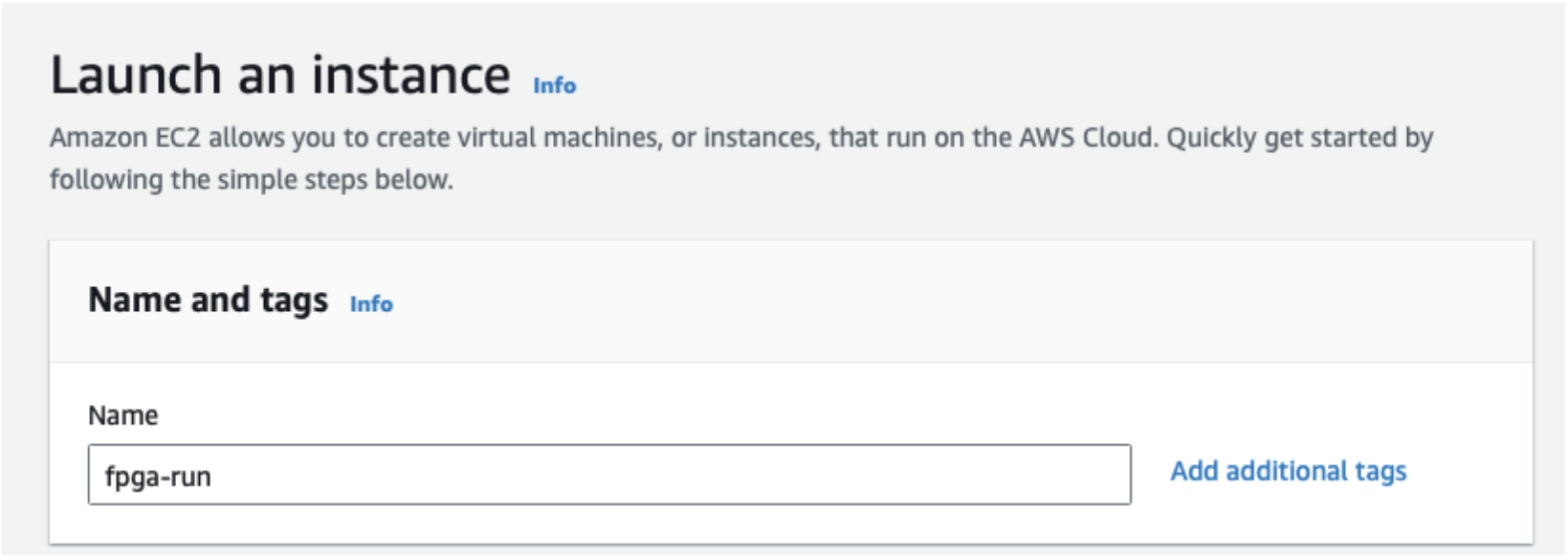
Steps



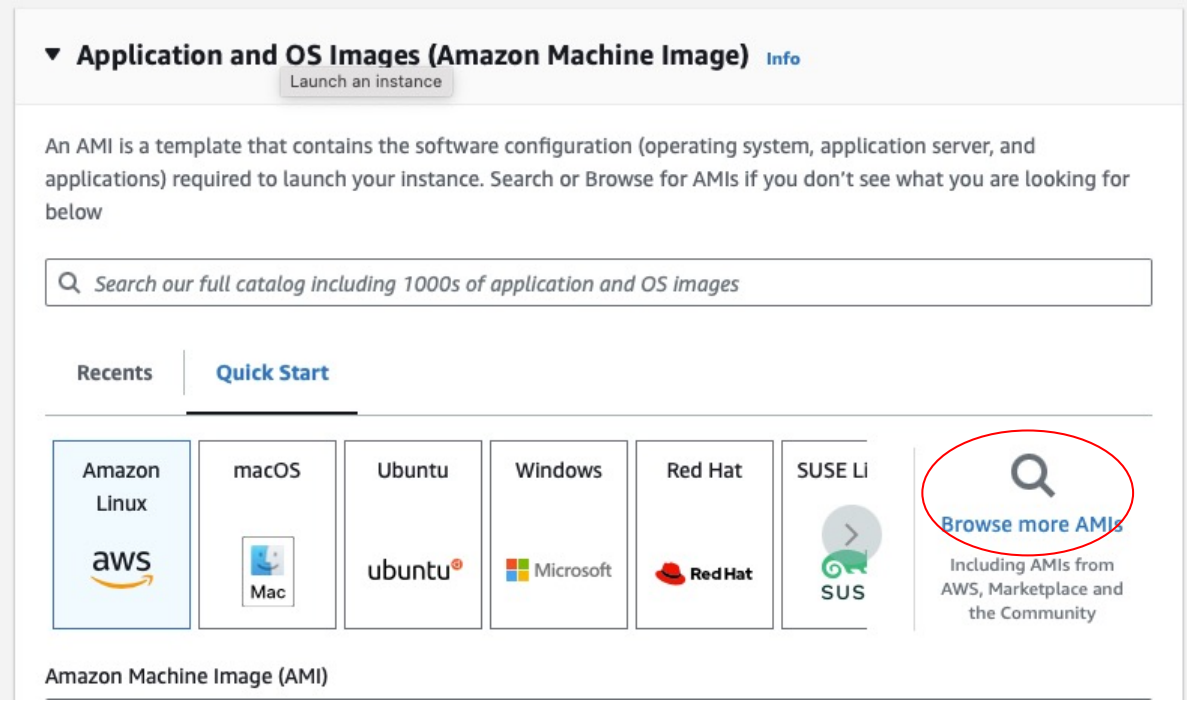
1. **Log into your AWS account:**
2. Navigate to the Home Console
3. Select **EC2**
4. Launch Instance



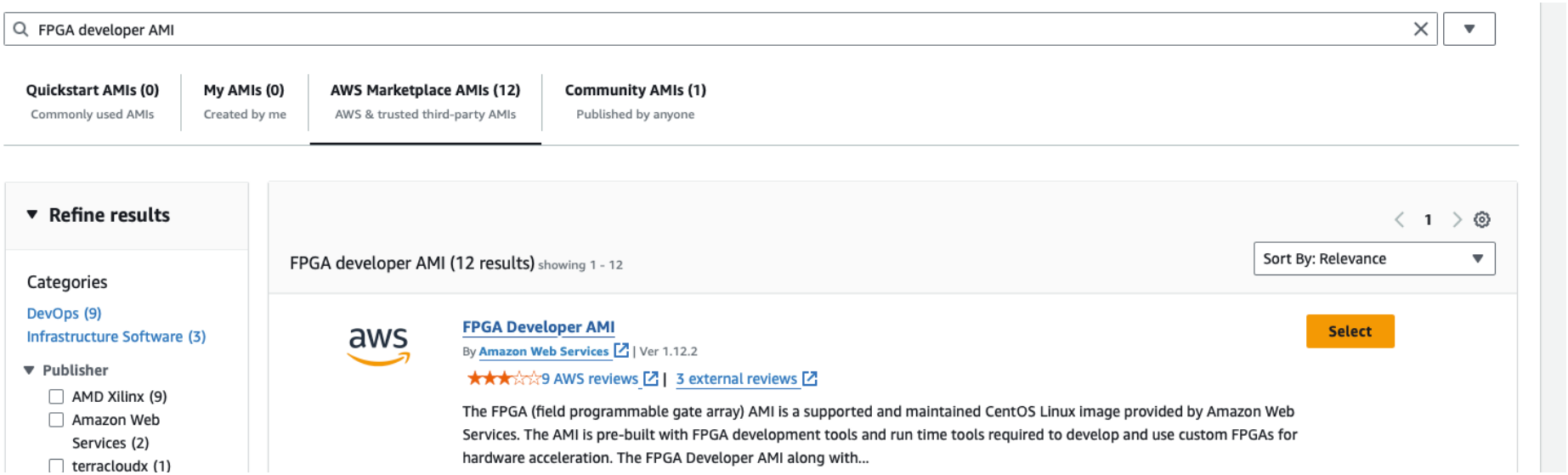
Steps: Name and tags

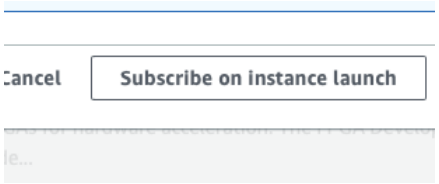


Select FPGA Developer AMI: Browse more AMI



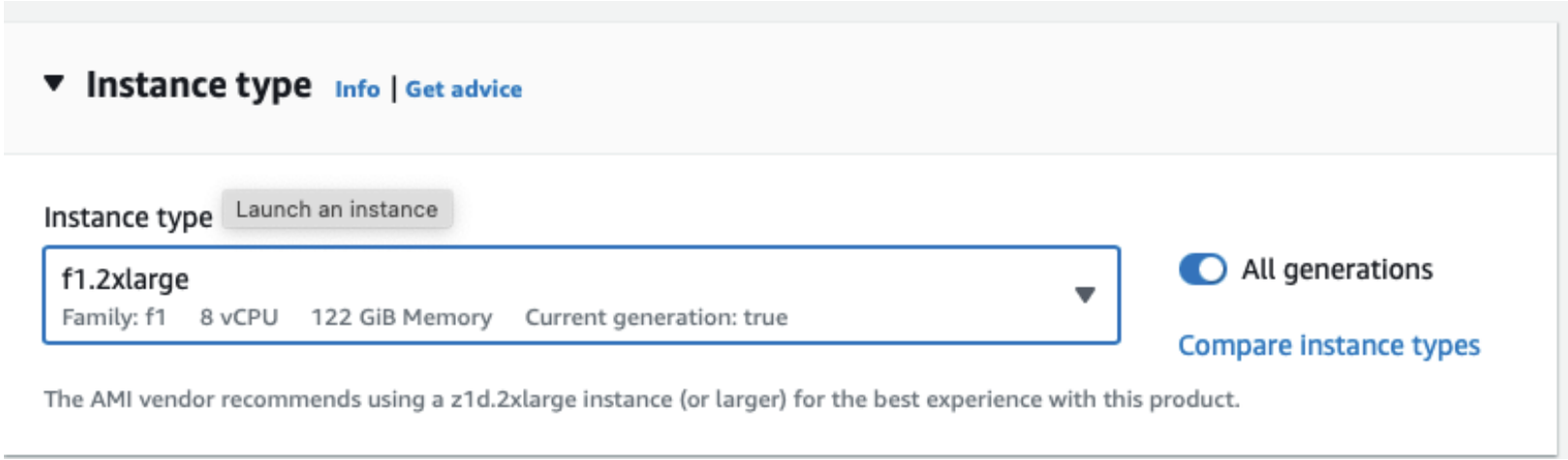
Select FPGA Developer AMI





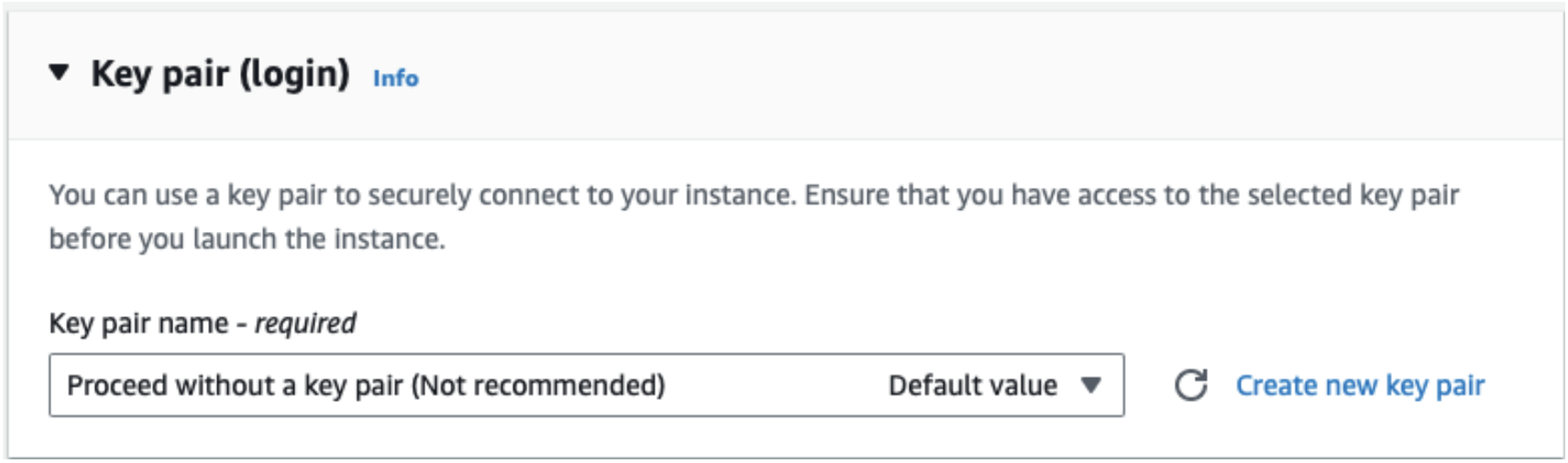
Select: Subscribe on instance Launch.

Select FPGA Instance



Repeat the same for all other FPGA instances: f1.4xlarge, f1.16xlarge

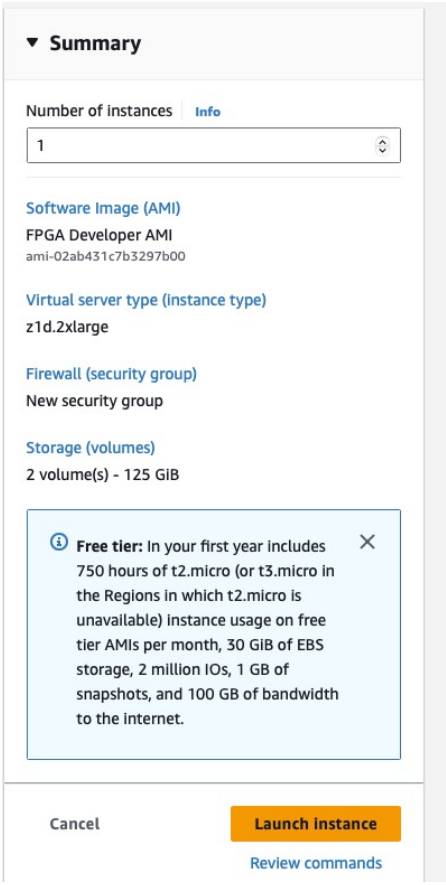
Key pair



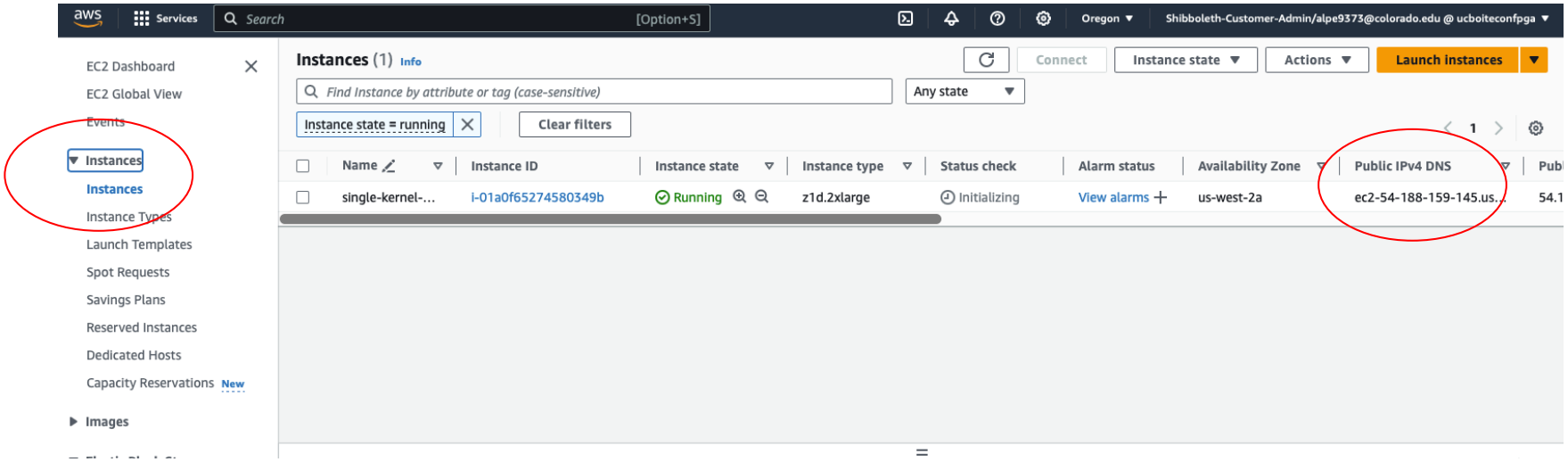
For information on how to create a new key pair go here

Launch f1.2xlarge Instance

Repeat the same for all other FPGA instances

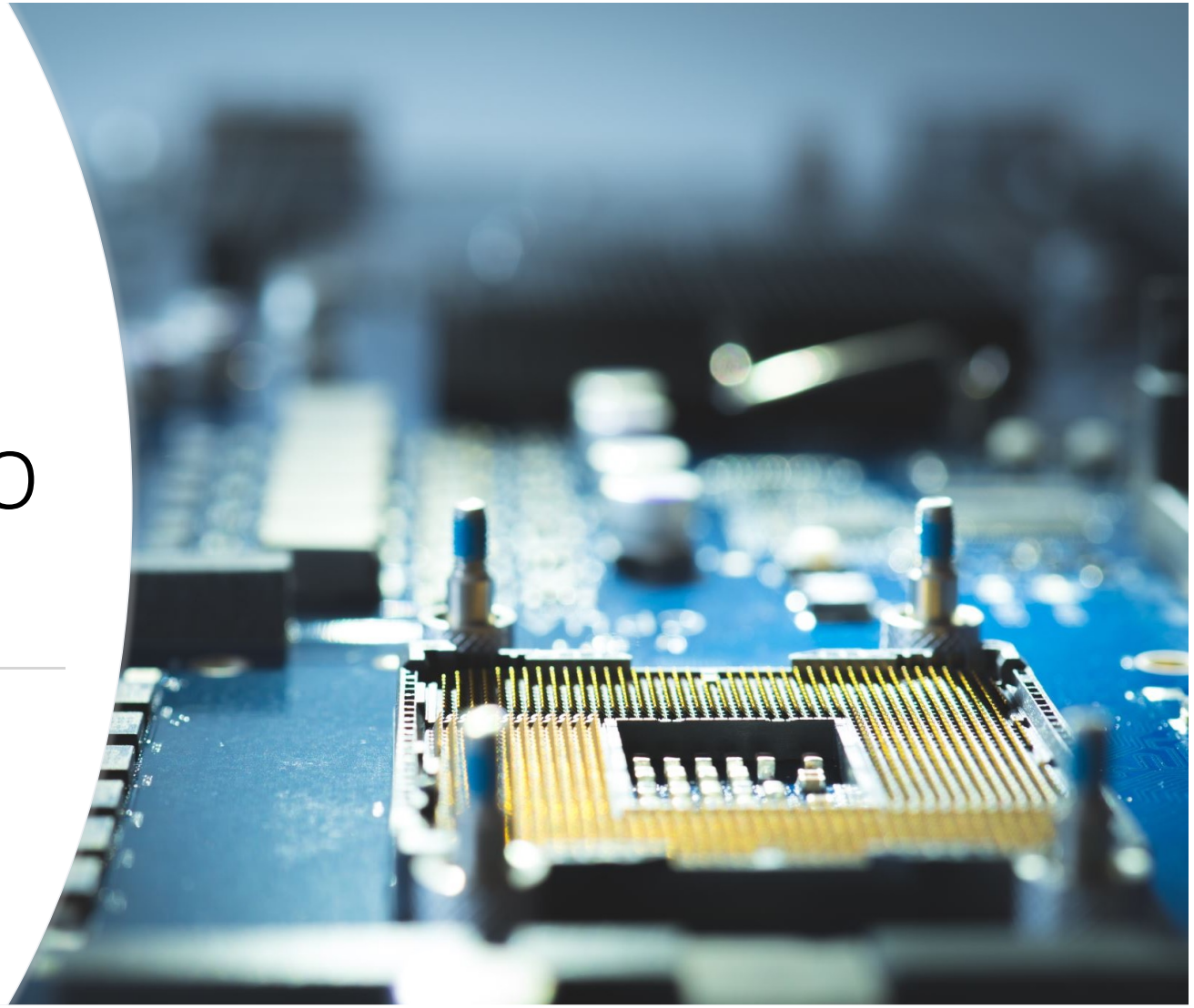


EC2 Instances



- In the top-left menu, select 'Instances’
- Copy the public IPv4 address in Visual Studio code

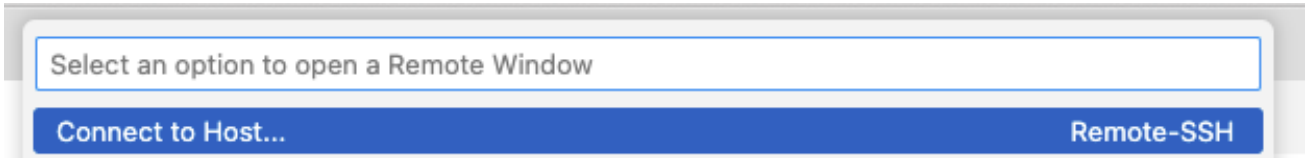
VISUAL STUDIO CODE



Open a Remote Window

- On the bottom-left corner of Visual Studio Code click on the green button ‘Open a Remote Window’
- Click on Connect to Host
- Click on Configure SSH Hosts
- Copy the public IP address
- Connect to aws-ec2.
- If you receive an error try to set: User root (in place of User Centos)


```
# ------------------------------ CONNECT TO AMAZON AWS
Host aws-ec2
HostName ec2-54-188-159-145.us-west-2.compute.amazonaws.com
User centos
IdentityFile ~/[YOUR KEY PATH].pem
# ----------------------------
```



Execute on f1 Instance

Steps

1. Log into your instance. Clone GitHub repository from the terminal of your instance. Alternatively, you can drag and drop the folder code from your local machine to the visual studio code left-panel on your instance.

```
git clone https://github.com/AleP83/FPGA-Econ.git
```

2. Set the AWS credentials `aws configure`

```
$ aws configure
AWS Access Key ID [**************xxxx]: <Your AWS Access Key ID>
AWS Secret Access Key [**************xxxx]: <Your AWS Secret Access
   Key>
Default region name: us-west-2
Default output format: json
```

Steps

3. Modify code/Makefile to select the AWS region of the S3-bucket (default is us-west-2)

```
AWS_REGION := us-west-2
```

4. Modify code/common/util/generate_fpga_results.sh to select the AWS region of the S3-bucket (default is us-west-2):

```
AWS_REGION="us-west-2"
```

Steps

5. Initiate tmux terminal session

```
tmux
```

6.1. On an f1.2xlarge instance, execute:

```
make fpga_results TABLE=all USE_AWS_S3_EXE=yes
```

6.2. On an f1.4xlarge or f1.16xlarge instance, execute:

```
make fpga_results TABLE=3 USE_AWS_S3_EXE=yes
```