Ec2 Note

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1 References

- ref
  - Launch and Manage EC2 Instances Using AWS CLI
  - creating displaying, and deleting Amazon EC2 key pairs

2 blog BLOG

2.1 Using Terraform to set up ec2 instances for data science projects. TERRAFORM

2.1.1 Take Away

- you will learn how to automate ec2 setup using terraform that is suited for data science project.

2.1.2 Tools

- EC2
- Terraform

2.1.3 Requirements

1. Knowledge Requirements
   - understand basic of how to create terraform project
   - understand basic of how to set up ec2 instances
2. System Requirements
   - WSL/Ubuntu
     - I have only tested this in WSL
   - install all dependencies of cuda
     - for list of software requirements, see
       - `https://www.tensorflow.org/install/gpu#linux_setup`
   - optional
     - Docker # References
   - Terraform AWS documentation
     - `https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/instance#availability_zone`
   - pytorch docker image
     - `https://github.com/anibali/docker-pytorch` # Content

2.1.4 Code

1. AWS

   (a) export the following environment variables including

   - AWS$_{\text{ACCESSKEYID}}$
   - AWS$_{\text{SECRET ACCESSKEY}}$
   - AWS$_{\text{DEFAULTREGION}}$

2. Terraform

   (a) create terraform project

   (b) In the project, create main.tf and copy&paste the following code

```
resource "aws_instance" "web" {
  ami = "ami-08962a4068733a2b6"
  instance_type = "p3.8xlarge"
  cpu_core_count = 16
  cpu_threads_per_core = 2
  tags = {
    Name = "HelloWorld"
  }

}
```

   (a) now you have ec2 running with

2.2 A Note of X where X = AWS EC2 services.

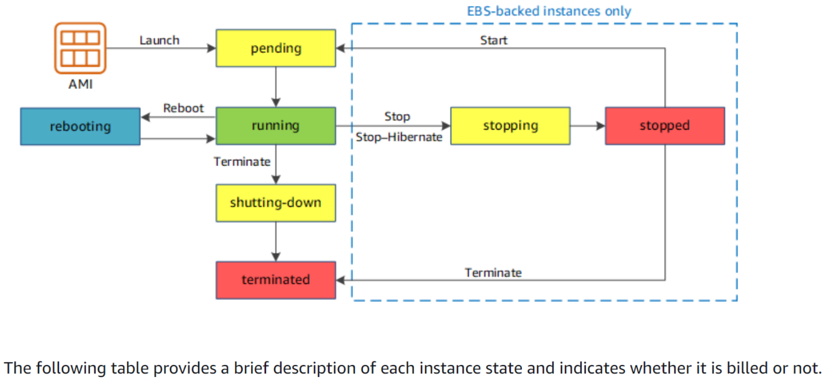
An EC2 instance has 4 state of life cycle: running, stopped, and terminated. Furthermore, state transition (or action) of an EC2 instance is launch, rebooting, pending, shutting-down, and stopping, see

Illustrate EC2 instance life cycle using state and state-transition () To launch EC2 from command line, write ˜˜

3 command line

3.1 start instances

```
aws ec2 start-instances --instance-ids i-04857a8be9b9de952
```



The following table provides a brief description of each instance state and indicates whether it is billed or not.

Figure 1: EC2 instance life cycle

3.2 create security-group

```
aws ec2 create-security-group --group-name "expert-crypto" --description
"expert discovery for crypto"
```

3.3 create key-value pair

```
aws ec2 create-key-pair --key-name <your key name>
```

3.4 create new EC2 instance

```
aws ec2 run-instances --image-id ami-0fb653ca2d3203ac1 --instance-type
t2.micro --count 1 --security-group-ids sg-0db2887fa3dbd0493 --key-name
ExpertCrypto
```

3.5 create tags for resources

```
aws ec2 create-tags --resources i-07f6b9c46c87b4233 --tags Key=test,Value=test
```