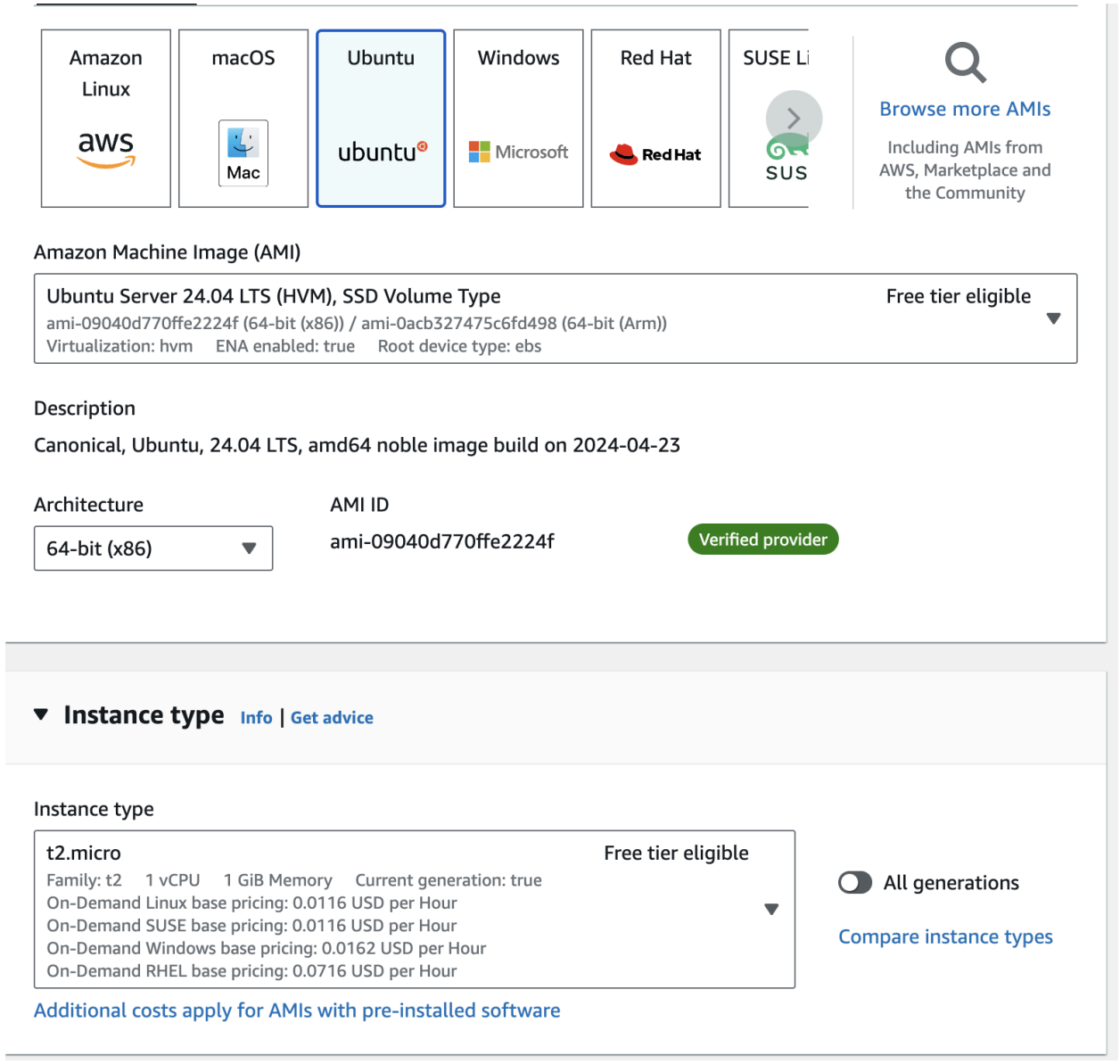
1. EC2 Setup

1.1 Create the EC2 Instance

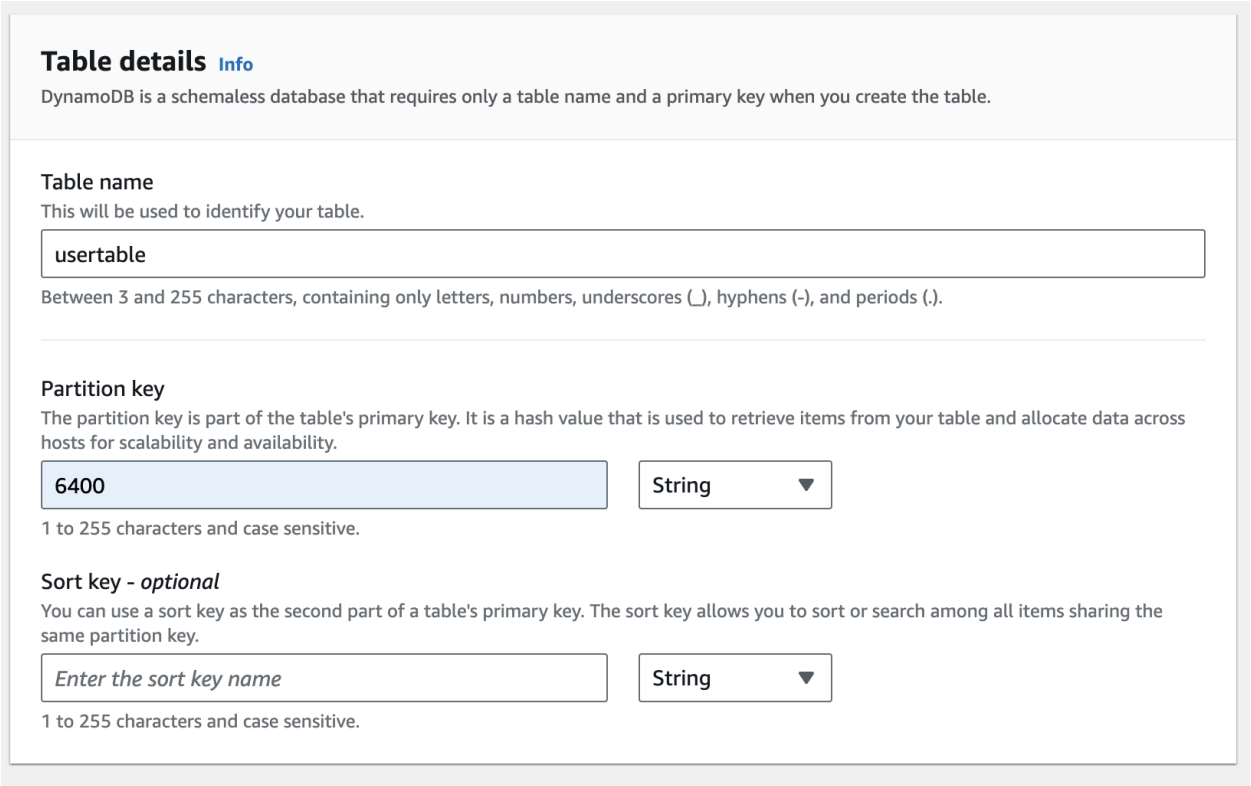
Navigate to EC2 page and click Launch Instance. Select Ubuntu and the t2.micro instance type. All other settings such as storage are up to user discretion and will not impact performance.



2. DynamoDB Setup

2.1 Create Dynamo table

Navigate to the DynamoDB page and click the create new table button. Name the table usertable and create a partition key. Note: The table must be named this. All other settings can be left as default. Click the create table button again to create the table.



2.2

Click on the table you just created and go to the rightmost tab, additional settings. Make sure autoscaling is turned on and set the provisioned reads and write maximum to the desired settings. Free tier is limited to 25 read and 25 write units.

3. YCSB Setup

3.1 install dependencies

SSH into the EC2 instance and run the following commands to install YCSB:

```
curl -O --location
https://github.com/brianfrankcooper/YCSB/releases/download/0.17.0/ycsb-0.17.0.tar.gz
tar xfvz ycsb-0.17.0.tar.gz
cd ycsb-0.17.0
```

You must make sure that python2 is installed since the ycsb script will not work on python3

```
sudo apt install python2.7
```

Additionally, edit ycsb-0.17.0/bin/ycsb and change the top line to make sure it uses the correct python version
Install Java using
```
sudo apt install default-jre
```

3.2 YCSB configurations for DynamoDB

Copy your AWS account security credentials to the $DYNAMODB_HOME/conf/AWSCredentials.properties file from https://console.aws.amazon.com/iam/
The file should be of the format:

```
accessKey =
secretKey =
```

Also copy your $DYNAMODB_HOME/conf/dynamodb.properties as follows

```
dynamodb.awsCredentialsFile = dynamodb-binding/conf/AWSCredentials.properties

# Primarykey of table 'usertable'
dynamodb.primaryKey = 6400

dynamodb.region = us-east-2

dynamodb.endpoint = http://dynamodb.us-east-2.amazonaws.com
requestdistribution = uniform
```

3.3 Running a workload

Use the following commands to run a workload
```
bin/ycsb load dynamodb -P dynamodb-binding/conf/dynamodb.properties -P workloads/workloadf
bin/ycsb run dynamodb -P dynamodb-binding/conf/dynamodb.properties -P workloads/workloadf
```

Replace the last argument with the location of the desired workload.

4. Results

The results for the DynamoDB runs can be found here: https://github.com/ldyim/6400-temp/tree/main/dynamo