

CS 7001-03: Report for AWS Lab 3 - Platform/Application Provisioning and Auto Scaling Adaptation

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1. Use `as-create-launch-config` command to create an AWS launch-configuration with options `--instance-type` set to `'t1.micro'`, `--aws-credential-file` set to `'new-cf'`, `--image-id` set to `'ami-aa0237c2'`, `--key` set to `'new-key'`, `--group` set to `'new-group'` and `--launch-config` set to `'new-lc'`:

```
# as-create-launch-config \
  --instance-type t1.micro \
  --aws-credential-file new-cf \
  --image-id ami-aa0237c2 \
  --key new-key \
  --group new-group \
  --launch-config new-lc
```

Where `'ami-aa0237c2'` is the custom AMI created from an instance of type `'t1.micro'`.

2. Use `as-create-auto-scaling-group` command to create an auto scaling group and pass the name `'new-asg'` as its argument along with options `--aws-credential-file` set to `'new-cf'`, `--availability-zones` set to `'us-east-1b'`, `--launch-configuration` set to `'new-lc'`, `--load-balancers` set to `'ELB'`, `--max-size` set to `'5'` and `--min-size` set to `'1'`:

```
# as-create-auto-scaling-group new-asg \
  --aws-credential-file new-cf \
  --availability-zones us-east-1b \
  --launch-configuration new-lc \
  --load-balancers ELB \
  --max-size 5 \
  --min-size 1
```

Where `'ELB'` is an already created load balancer.

3. Use `as-put-scaling-policy` command to create or update auto scaling policy and pass the name `'scale-up-policy'` as its argument along with options `--auto-scaling-group` set to `'new-asg'`, `--adjustment=2` to scale up two instances, `--type` set to `'ChangeInCapacity'`, and `--cooldown` set to `'240'` for evaluating interval in seconds:

```
# as-put-scaling-policy scale-up-policy \
  --auto-scaling-group new-asg \
  --adjustment=2 \
  --type ChangeInCapacity \
  --cooldown 240
```

4. We should use Amazon CloudWatch to create an Alarm with `'new-asg'` `CPUUtilization` metric to measure the computing resources then define threshold condition and to trigger the policy we need to add AutoScaling Action then set **Whenever this alarm:** `'State is ALARM'`, **From the group:** `'new-asg'`, and **Take this action:** `'scale-up-policy'`.

5. The screenshots taken in Steps 3.5.3 and 3.5.4:

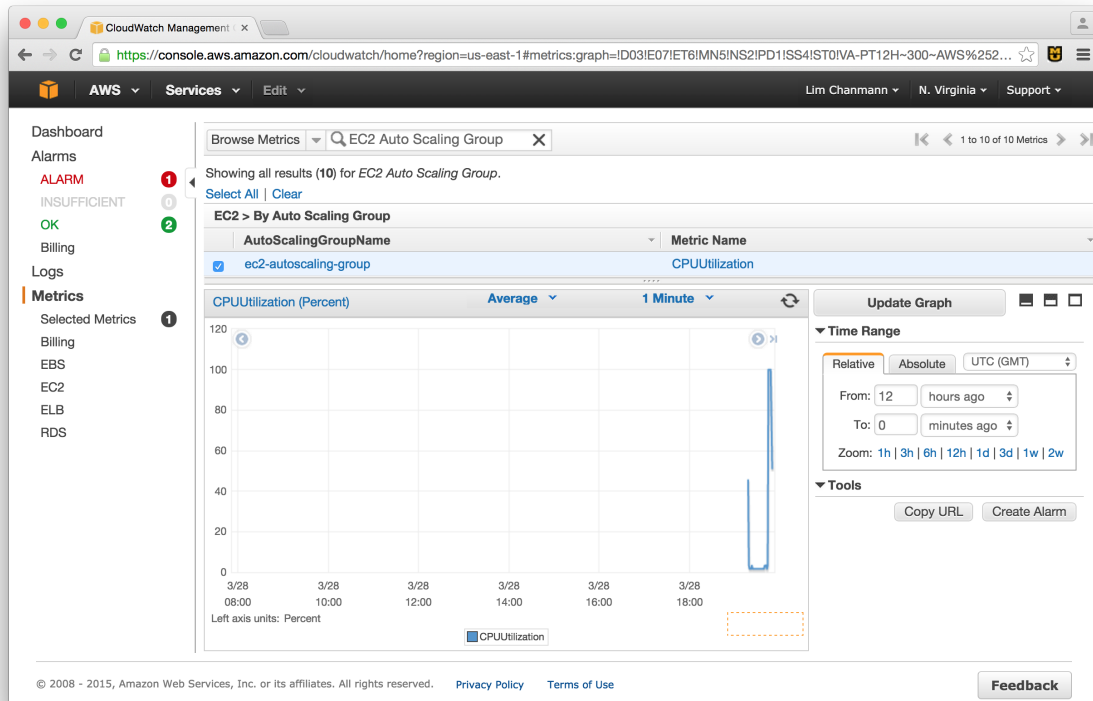


Figure 1: CPUUtilization metric during Apache Server benchmarking

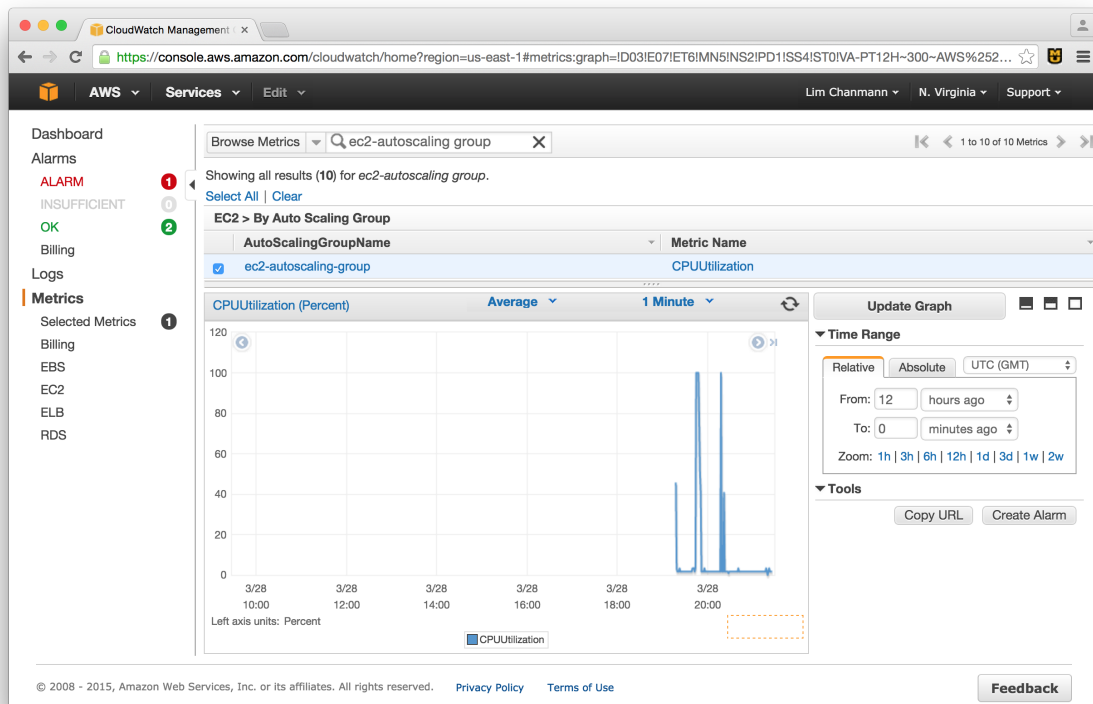


Figure 2: CPUUtilization metric after stopping benchmarking