**To automatically terminate an EC2 instance when its CPU utilization reaches 90%, you can use a CloudWatch alarm configured to trigger an instance termination action.**

###Step 1: Log in to AWS Console

- Go to the [AWS Management Console](https://aws.amazon.com/console/).

- Open \*\*CloudWatch\*\* from the list of services.

#### Step 2: Create a CloudWatch Alarm for EC2 CPU Utilization

* In the \*\*CloudWatch\*\* console, go to \*\*Alarms\*\* on the left panel, and click \*\*Create alarm\*\*.
* Select \*\*Select metric\*\* to choose a metric to monitor.
* In the metric list, navigate to \*\*EC2\*\* > \*\*Per-Instance Metrics\*\*.
* Select \*\*CPUUtilization\*\* for the EC2 instance you want to monitor, and click \*\*Select metric\*\*.
* Configure the \*\*Conditions\*\*:
  + \*\*Threshold type\*\*: Set to “Static.”
  + \*\*Threshold value\*\*: Choose \*\*Greater than or equal to 90\*\* to trigger the alarm if CPU utilization reaches or exceeds 90%.
* Set \*\*Period\*\* to 5 minute (or any preferred interval), and \*\*Statistic\*\* to \*\*Average\*\* to accurately capture average CPU utilization.

#### Step 3: Configure the Termination Action

* Under \*\*Configure actions\*\*, click on \*\*In alarm\*\* to configure an action for when the threshold is breached.
* In the \*\*Take the action\*\* dropdown, choose \*\*Terminate this instance\*\*.
  + \*\*Important\*\*: Ensure you select \*\*Terminate\*\* and not \*\*Stop\*\* if you want to delete the instance.
* \*\*Review warnings\*\*: You may see a warning that termination is irreversible. Confirm you understand this action.

#### Step 4: Add a Name and Description

- Give your alarm a unique \*\*name\*\* and optional \*\*description\*\* so you can easily identify it later.

#### Step 5: Review and Create Alarm

* Review all your settings to ensure accuracy.
* Click \*\*Create alarm\*\* to finalize it.

#### Step 6: Test (Optional)

To test the alarm setup, you can simulate high CPU utilization by running a CPU-intensive process on the instance. If the alarm is configured correctly, it should trigger and automatically terminate the instance when the utilization crosses 90%.

### Important Considerations

- \*\*Irreversible Action\*\*: Terminating the instance deletes it permanently, along with any non-persistent data stored on the instance.

- \*\*Data Backup\*\*: Ensure that any important data is backed up before enabling this action.

- \*\*Alarm Timing\*\*: Be mindful of the period you set; a shorter period could result in more sensitive alarm triggers, while a longer period may delay termination.

This configuration will help automate the termination process, optimizing your costs and resources by removing instances with high, sustained CPU loads.

To trigger alarm through AWS CLI or Cloudshell

aws cloudwatch set-alarm-state --alarm-name test-ec2-testing --state-value ALARM --state-reason "Testing EC2 Alaram" --output json

Note :- Alaram name to be replaced