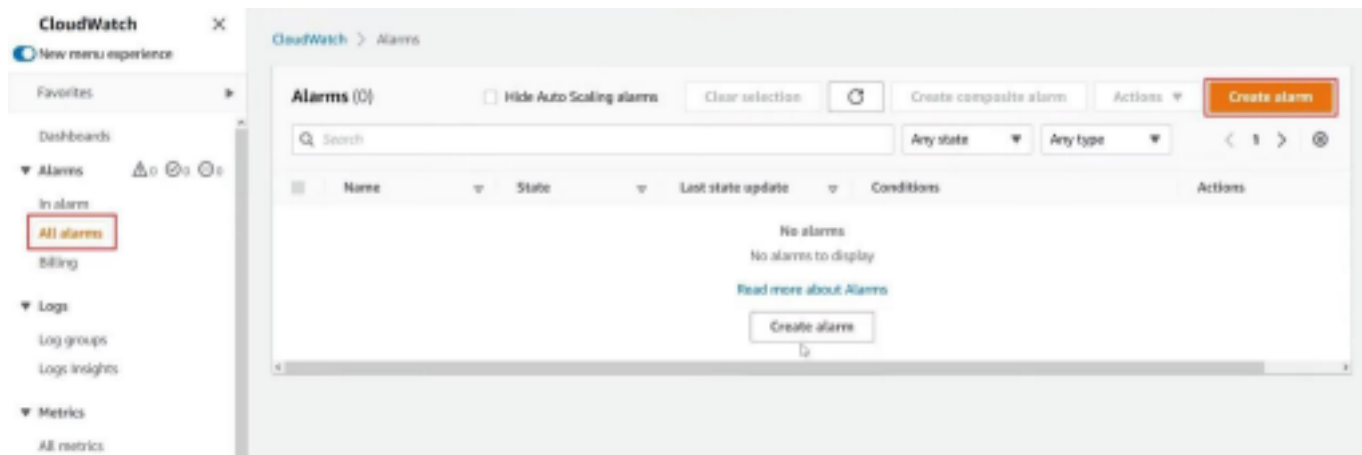


## Initiate the process

To start the process, you will have to first open the CloudWatch Console (<https://console.aws.amazon.com/cloudwatch/>) and use the navigation page to expand “Alarms”, then press on “All Alarms” > “Create Alarm”:



(<https://awsmadeeasy.com/wp-content/uploads/image-51.png>)

## Condition phase

The first step in creating an Alarm is specifying the metric and conditions. When pressing the

“Select Metric” button on the user interface below, the user will have to specify a single CloudWatch metric or add an algebraic expression built around that value metric. Usually, the action that will come next would be associated with a threshold value assigned to a specific metric over a number of time periods.

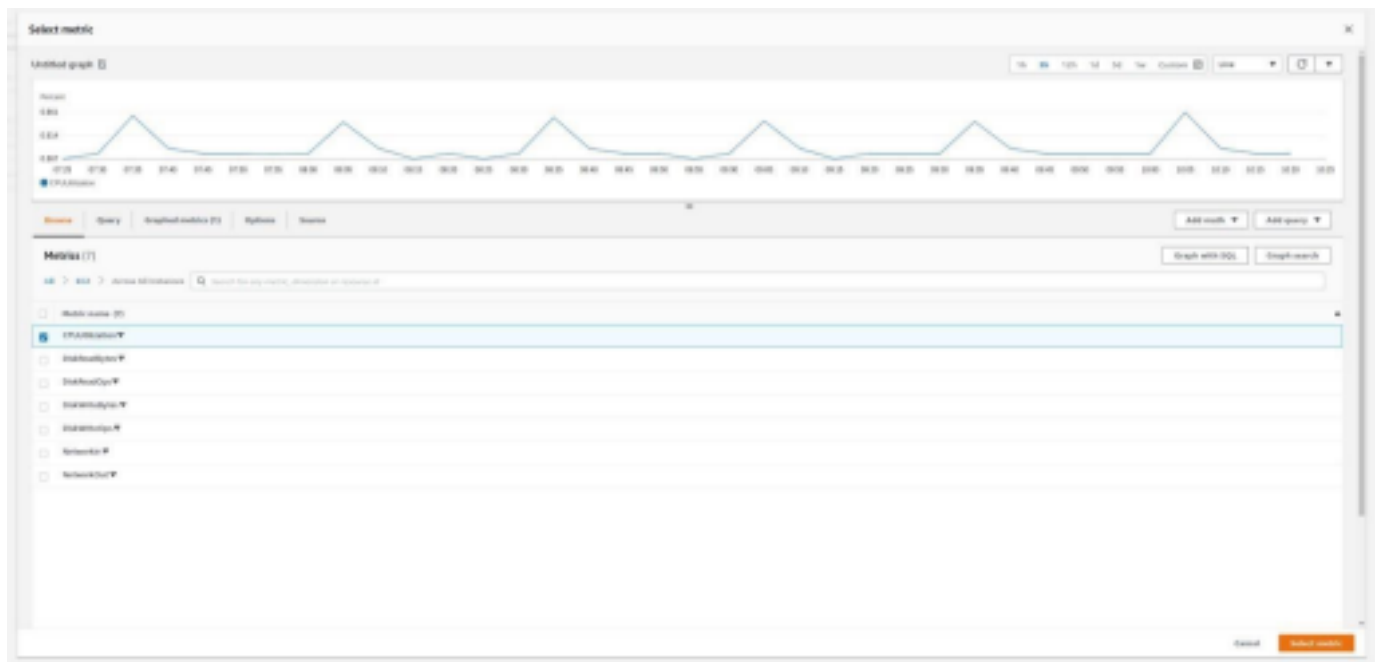
(<https://awsmadeeasy.com/wp-content/uploads/image-50.png>)

## Choosing the metric

Select the metric to monitor with the alarm. The metric options include the free provided insights into resources like Amazon EC2 instances, Amazon EBS volumes, and Amazon RDS DB instances. Detailed monitoring is also supported if enabled, in addition to personal application metrics as those can be added for search, graphing, and alarms.

In the example below, we are monitoring CPU utilization across all EC2 instances:

([https://awsmadeeasy.com/wp-content/uploads/image-49\\_1024\\_493.png](https://awsmadeeasy.com/wp-content/uploads/image-49_1024_493.png))



(<https://awsmadeeasy.com/wp-content/uploads/image-48.png>)

## Statistics and time periods

After choosing the proper metric, you can now choose the statistics which represent aggregations over a time frame pre-determined by the user. In this step, it's important to wisely pick the Period of time as the values collected will span the specified timeframe.

CloudWatch supports a list of statistics documented by AWS here

([https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/Statisticsdefinitions.html#:~](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/Statisticsdefinitions.html#:~:text=CloudWatch%20supports%20the%20following%20statistics%20for%20metrics.)

[:text=CloudWatch%20supports%20the%20following%20statistics%20for%20metrics.](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/Statisticsdefinitions.html#:~:text=CloudWatch%20supports%20the%20following%20statistics%20for%20metrics.)).

As for the conditional options, the user will have the option to define a value or band as a threshold with a specific mathematical condition (greater, lower, lower\equal, greater\equal).

In the example below, we are setting the alarm threshold to 10% of the average CPU utilization over 5 minutes:

2/27/24, 10:11 AM How to create an AWS CloudWatch alarm - AWS Made Easy

The screenshot shows the 'Specify metric and conditions' step in the AWS CloudWatch console. On the left, a sidebar lists four steps: Step 1 (Specify metric and conditions), Step 2 (Configure actions), Step 3 (Add name and description), and Step 4 (Preview and create). The main area is divided into two sections: 'Metric' and 'Conditions'.

**Metric Section:**

- Graph:** A line graph showing CPU utilization over time. A red horizontal line at 10% represents the threshold. A blue line represents the metric data, which is currently below the threshold. A tooltip indicates: 'This alarm will trigger when the blue line goes above the red line for 2 datapoints within 20 minutes.'
- Percent:** A vertical scale from 0 to 10.
- Namespace:** AWS/EC2
- Metric name:** CPUUtilization
- Statistic:** Average
- Period:** 5 minutes

**Conditions Section:**

- Threshold type:** Static (selected) and Anomaly detection.
- Whenever CPUUtilization is...** Define the alarm condition. Options: Greater (selected), Greater/Equal, Lower/Equal, and Lower.
- than...** Define the threshold value. Input: 10. Below the input, it says 'Must be a number'.
- Additional configuration:** A link to expand the section.

At the bottom right, there are 'Cancel' and 'Next' buttons.

(<https://awsmadeeasy.com/wp-content/uploads/image-47.png>)

## Additional Configurations

In the “Additional Configuration” section, the user can define how many data points need to breach the threshold in order for the alarm to be triggered:

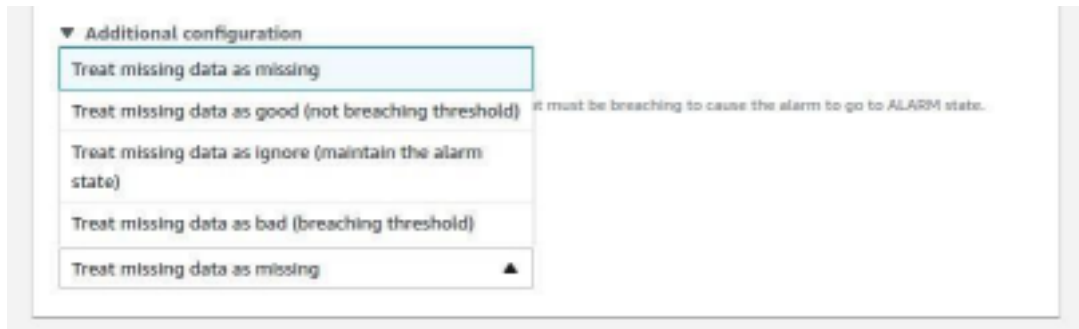
The screenshot shows the 'Additional configuration' section of the AWS CloudWatch console. It contains a section titled 'Datapoints to alarm' with the following text: 'Define the number of datapoints within the evaluation period that must be breaching to cause the alarm to go to ALARM state.'

Below this text, there are two input fields: the first contains the number '2' and the second contains the number '4'. Between these two fields is the text 'out of'.

(<https://awsmadeeasy.com/wp-content/uploads/image-46.png>)

## Missing data treatment

In the “Additional Configuration” section, define how Cloudwatch should treat missing data. In the example below, we are “treating missing data as missing”:



(<https://awsmadeeasy.com/wp-content/uploads/image-45.png>)

(<https://drive.google.com/file/d/1rK34xgcfAWV9BM6vBylTbJfLt3XkER55/view?usp=sharing>)

## Configure actions

After deliberately defining the conditions, next comes choosing the actions that will be triggered given said conditions. The user will have multiple actionable options such as: sending a notification to an Amazon SNS topic, performing an Amazon EC2 action or an Amazon EC2 Auto

Scaling action, or creating an OpsItem or incident in Systems Manager.

In the example below, we are choosing an SNS notification, with an existing SNS topic:

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CloudWatch > Alarms > Create alarm

Step 1  
Specify metric and conditions

Step 2  
**Configure actions**

Step 3  
Add name and description

Step 4  
Preview and create

## Configure actions

### Notification

**Alarm state trigger**  
Define the alarm state that will trigger this action.

☒ **In alarm**  
The metric or expression is outside of the defined threshold.

☐ **OK**  
The metric or expression is within the defined threshold.

☐ **Insufficient data**  
The alarm has just started or not enough data is available.

[Remove](#)

**Select an SNS topic**  
Define the SNS (Simple Notification Service) topic that will receive the notification.

☒ **Select an existing SNS topic**

☐ Create new topic

☐ Use topic ARN

**Send a notification to...**

Only email lists for this account are available.

[Add notification](#)

### Auto Scaling action

[Add Auto Scaling action](#)

### EC2 action

This action is only available for EC2 Per-Instance Metrics.

[Add EC2 action](#)

### Systems Manager action [Info](#)

This action will create an Incident or Opsitem in Systems Manager when the alarm is **In alarm** state.

[Add Systems Manager action](#)

[Cancel](#) [Previous](#) [Next](#)

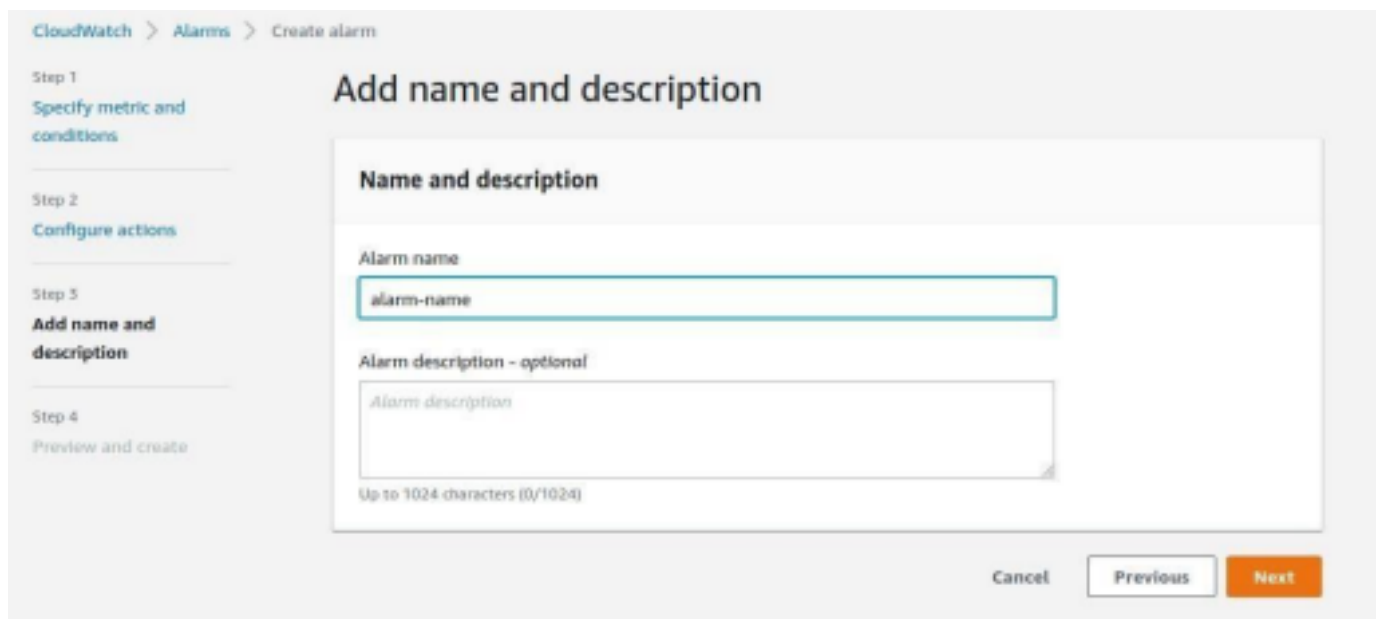
(<https://awsmadeeasy.com/wp-content/uploads/configure-actions.png>)

Note that when creating an Amazon SNS with CloudWatch the publication of alarm notifications will cover both the standard topic or FIFO topic (<https://docs.aws.amazon.com/sns/latest/dg/snsfifo-topics.html>).

## Name and description

Next, enter a name for the new alarm. Users can briefly describe the alarm – this is optional, but is recommended if you create many similar alarms:

<https://awsmadeeasy.com/blog/create-aws-cloudwatch-alarm/> 6/8  
2/27/24, 10:11 AM How to create an AWS CloudWatch alarm - AWS Made Easy



The screenshot shows the AWS CloudWatch console interface for creating a new alarm. The breadcrumb navigation at the top reads 'CloudWatch > Alarms > Create alarm'. On the left, a sidebar lists four steps: 'Step 1: Specify metric and conditions', 'Step 2: Configure actions', 'Step 3: Add name and description' (which is the current step and highlighted in bold), and 'Step 4: Preview and create'. The main content area is titled 'Add name and description'. Inside this area, there is a section titled 'Name and description' containing two input fields: 'Alarm name' with the placeholder text 'alarm-name' and 'Alarm description - optional' with the placeholder text 'Alarm description'. Below the description field, a character count indicates 'Up to 1024 characters (0/1024)'. At the bottom right of the form, there are three buttons: 'Cancel', 'Previous', and 'Next' (which is highlighted in orange).

(<https://awsmadeeasy.com/wp-content/uploads/image-44.png>)

## Summary

Finally, the user can review the alarm preview which summarizes the alarm metric, conditions, and action:

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CloudWatch > Alarms > Create alarm

Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

**Preview and create**

## Preview and create

### Step 1: Specify metric and conditions

Edit

#### Metric

Graph

This alarm will trigger when the blue line goes above the red line for 2 datapoints within 20 minutes.

Percent

10

8

6

4

2

08:0009:0010:00

■ CPUUtilization

Namespace

AWS/EC2

Metric name

CPUUtilization

Statistic

Average

Period

5 minutes

#### Conditions

Threshold type

Static

Whenever CPUUtilization is

Greater (>)

than...

10

▼ Additional configuration

Datapoints to alarm

2 out of 4

Missing data treatment

Treat missing data as missing

(<https://awsmadeeasy.com/wp-content/uploads/preview-and-create.png>)

After thoroughly assessing the summary; if the alarm has been configured correctly, the user simply clicks “Create Alarm”.

<https://awsmadeeasy.com/blog/create-aws-cloudwatch-alarm/> 8/8