**tep 1: Create an AWS Lambda Function**

Create a Lambda function to log the state change events. You specify this function when you create your rule.

**To create a Lambda function**

1. Open the AWS Lambda console at <https://console.aws.amazon.com/lambda/>.
2. If you are new to Lambda, you see a welcome page; choose **Get Started Now**; otherwise, choose **Create a Lambda function**.
3. On the **Select blueprint** page, type hello for the filter, and then choose the **hello-world** blueprint.
4. On the **Configure triggers** page, choose **Next**.
5. On the **Configure function** page, do the following:
   1. Type a name and description for the Lambda function. (For example, name the function "LogEC2InstanceStateChange".)
   2. Edit the sample code for the Lambda function. For example:
   3. 'use strict';
   4. exports.handler = (event, context, callback) => {
   5. console.log('LogEC2InstanceStateChange');
   6. console.log('Received event:', JSON.stringify(event, null, 2));
   7. callback(null, 'Finished');

};

* 1. For **Role**, choose **Choose an existing role** and then choose your basic execution role from **Existing role**. Otherwise, create a new basic execution role.
  2. Choose **Next**.

1. On the **Review** page, choose **Create function**.

## Step 2: Create a Rule

Create a rule to run your Lambda function whenever you launch an Amazon EC2 instance.

**To create a CloudWatch Events rule**

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Events**, **Create rule**.
3. For **Event source**, do the following:
   1. Choose **Event Pattern**.
   2. Choose **Build event pattern to match events by service**.
   3. Choose **EC2** and then choose **EC2 Instance State-change Notification**.
   4. Choose **Specific state(s)** and then choose **Running**.
   5. By default, the rule matches any instance in the region. To make the rule match a specific instance, choose **Specific instance(s)** and then choose one or more instances.
4. 
                               The Event selector pane
                           
5. For **Targets**, choose **Add target** and then choose **Lambda function**.
6. For **Function**, select the Lambda function that you created.
7. Choose **Configure details**.
8. For **Rule definition**, type a name and description for the rule.
9. Choose **Create rule**.

**Step 3: Test the Rule**

To test your rule, launch an Amazon EC2 instance. After waiting a few minutes for the instance to launch and initialize, you can verify that your Lambda function was invoked.

**To test your rule by launching an instance**

1. Open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>.
2. Launch an instance. For more information, see [Launch Your Instance](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/LaunchingAndUsingInstances.html) in the *Amazon EC2 User Guide for Linux Instances*.
3. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
4. In the navigation pane, choose **Events**, **Rules**, select the name of the rule that you created, and choose**Show metrics for the rule**.
5. To view the output from your Lambda function, do the following:
   1. In the navigation pane, choose **Logs**.
   2. Choose the name of the log group for your Lambda function (/aws/lambda/*function-name*).
   3. Choose the name of log stream to view the data provided by the function for the instance that you launched.

# Lambda Functions

If you are new to AWS Lambda, you might ask: How does AWS Lambda execute my code? How does AWS Lambda know the amount of memory and CPU requirements needed to run my Lambda code? The following sections provide an overview of how a Lambda function works.

In subsequent sections, we cover how the functions you create get invoked, and how to deploy and monitor them. We also recommend reading the **Function Code** and **Function Configuration** sections at [Best Practices for Working with AWS Lambda Functions](https://docs.aws.amazon.com/lambda/latest/dg/best-practices.html).