**Events and SNS**

**Introduction**

Since Engineers are critical to keeping our EC2 instances running to serve our traffic with minimal downtime, we are tasked with architecting a solution to have our Engineers alerted on all state changes to our Production EC2 instances. We are using CloudWatch and SNS to receive alerts to all EC2 state changes in our Production environment so that immediate corrective actions can be taken.

**Solution**

Log in to the live AWS environment using the credentials provided. Make sure you're in the N. Virginia (us-east-1) region throughout the lab.

**Create an SNS Topic and Subscribe an Email Address**

1. In the AWS Management Console, navigate to Simple Notification Service (SNS).
2. In the *Create topic* box, enter a *Topic name* of "EC2statechange".
3. Click **Next step**.
4. On the *Create topic* page, leave everything as default, and click **Create topic**.
5. In the *Subscriptions* section, click **Create subscription**.
6. On the *Create subscription* page, change the *Protocol* to **Email**.
7. For *Endpoint*, type your email address.
8. Click **Create subscription**.
9. In a new browser tab, navigate to your email inbox.
10. Open the *AWS Notification - Subscription Confirmation* email, and click the **Confirm subscription** link.
11. Go back to your AWS Management Console browser tab, and refresh the page. The subscription should now be confirmed.

**Create a CloudWatch Events Rule to Trigger the SNS Topic When There Is a State Change to an EC2 Instance**

1. Navigate to CloudWatch.
2. Click **Events** in the left-hand menu.
3. Click **Get started**.
4. Under *Event Source*, leave the **Event Pattern** option selected.
5. For *Service Name*, select **EC2** from the dropdown.
6. For *Event Type*, select **EC2 Instance State-change Notification** from the dropdown.
7. Leave the **Any state** and **Any instance** options selected.
8. Under *Targets*, click **Add target**.
9. Click into the field at the top of the *Targets* menu, and select **SNS topic** from the dropdown.
10. For *Topic*, select **EC2statechange** from the dropdown.
11. Click **Configure details** at the bottom of the page.
12. Name the rule "EC2instancestatechange".
13. For *State*, leave the box next to **Enabled** checked.
14. Click **Create rule**.

**Change the State of the EC2 Instance and Verify Receipt of the SNS Notification**

1. Navigate to EC2.
2. Click **Instances (running)** at the top of the page.
3. With the instance selected, click **Instance State** > **Stop**.
4. Click **Stop**.
5. While the instance state is *stopping*, go back to your email inbox, and check for an email from AWS Notifications.
6. Open the email. The message content should indicate that the instance state is currently *stopping*.
7. Go back to the AWS Management Console, and wait for the instance state to be *stopped*.
8. Go back to your email, and check for another email from AWS Notifications.
9. Open the email. The message content should indicate that the state is now *stopped*.