**Step 1: Setting Up AWS CloudWatch for Monitoring**

**1.1 Go to AWS CloudWatch**

* Log in to the [AWS Management Console](https://aws.amazon.com/console/) and open the **CloudWatch** service from the dashboard.

**1.2 Create a Metric to Monitor**

* In the CloudWatch dashboard, select **Metrics**.
* Choose the service you want to monitor (e.g., **EC2**, **ECS**, or **Lambda** depending on your setup).
* Select the **specific instance or service** and choose the metrics to monitor, such as:
  + **CPU Utilization**
  + **Disk I/O**
  + **Memory Usage**
  + **Network Traffic**
* You can also use **Custom Metrics** for specific values related to your application.

**1.3 Set a Metric Threshold**

* Create an **Alarm** by selecting the metric you wish to track.
* Click **Create Alarm** and set a condition for the threshold. For example:
  + "Trigger the alarm if CPU utilization exceeds 80% for 5 minutes."

**Step 2: Creating an SNS Topic for Notifications**

**2.1 Go to AWS SNS (Simple Notification Service)**

* Open the **SNS** service from the AWS dashboard.

**2.2 Create a Topic**

* Click on **Create Topic** and choose a name for your notification topic (e.g., ServerHighUsageAlerts).
* You can keep it as a **Standard Topic**.
* Once the topic is created, click **Create Subscription**.

**2.3 Add Subscriptions**

* In the subscription settings, add your **email address** or **SMS number** to receive notifications.
* Choose the protocol (email, SMS, etc.).
* Confirm your subscription by clicking on the link sent to your email.

**Step 3: Linking CloudWatch Alarms to SNS**

**3.1 Attach Alarm to SNS**

* Return to the CloudWatch **Alarms** page.
* Under the **Actions** section of your created alarm, choose **Send a notification to an SNS topic**.
* Select the SNS topic you created (e.g., ServerHighUsageAlerts).
* Save the configuration.

**Step 4: Testing and Validating**

**4.1 Simulate High CPU Usage**

* To test, you can simulate high CPU usage on your EC2 instance or container by running high-resource commands.
* Watch the CloudWatch console to see if the alarm is triggered.

**4.2 Verify Notifications**

* Once the alarm is triggered, you should receive an email or SMS notification from the SNS topic informing you of the metric breach.

**Step 5: Automatic Remediation (Optional)**

**5.1 Create Auto-Recovery for EC2**

* For automatic remediation, you can configure the CloudWatch alarm to automatically **recover the EC2 instance** if it goes into an unhealthy state.
* Under **Alarm Actions**, select **EC2 Actions**, and choose **Recover this instance**.

**Illustration**

To help visualize the setup:

* **Step 1: AWS CloudWatch** is the core monitoring tool.
* **Step 2: AWS SNS** is for notifications.
* **Step 3: CloudWatch alarms** will trigger SNS notifications when thresholds are breached.

You can create this flow in **Draw.io** to show the architecture with:

1. EC2 instance monitored by CloudWatch.
2. CloudWatch metrics tracking CPU, disk, etc.
3. SNS sends alerts via email/SMS when alarms trigger.