

# AWS EC2 Memory Utilization - SOP

## AWS EC2 Memory Utilization

### Standard Operating Procedure (SOP)

#### Overview

This SOP outlines the process for monitoring EC2 instance memory utilization on AWS using CloudWatch.

It includes steps to retrieve memory utilization metrics, set up CloudWatch alarms for high memory usage, and take actions based on those alarms.

#### Platform

- AWS

#### Code Language

- Python

#### Required Dependencies

- boto3
- AWS SDK for Python

#### Credentials Required

- AWS\_ACCESS\_KEY\_ID
- AWS\_SECRET\_ACCESS\_KEY
- AWS\_REGION

#### Input Parameters

1. instance\_id
  - Type: String
  - Description: The unique ID of the EC2 instance to monitor
  - Required: true
  - Default: null

#### Logic Flow

1. Pre-Creation Validation
  - Validate AWS credentials
  - Validate EC2 Instance ID

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- Check for the process running under stress-ng and kill (command: pkill -9 stress-ng)
- Validate Alarm Parameters
- Work Notes: AWS credentials validated successfully
- Work Notes: EC2 instance ID is valid
- Work Notes: Process stress-ng detected and terminated using pkill -9
- Work Notes: Alarm parameters validation successful

### **2. Post-Creation Configuration**

- Verify Alarm Creation
- Log Action
- Work Notes: CloudWatch alarm created successfully
- Work Notes: Alarm action logged

### **Error Handling Scenarios**

- Invalid EC2 Instance ID
  - Work Notes: Error - Invalid EC2 Instance ID provided
- Invalid Memory Threshold
  - Work Notes: Error - Memory threshold out of bounds
- Invalid Alarm Name
  - Work Notes: Error - Alarm name not recognized
- Insufficient Permissions
  - Work Notes: Error - Insufficient IAM permissions to perform action

### **Success Criteria**

- Memory utilization metrics are below the set threshold
- CloudWatch alarm is created to monitor memory utilization
- Work Notes: Memory utilization is within acceptable limits
- Work Notes: Monitoring and alarm setup completed successfully

### **Tags**

- aws
- ec2
- cloudwatch
- memory-utilization
- monitoring
- alarm

## **AWS EC2 Memory Utilization - SOP**

Work Notes:

- All outputs in the code should be prefixed with "Work Notes:"