EC2 Disk 90% Alert + Email Notification - Complete Setup Guide

1. Introduction

This guide shows how to:

- Install CloudWatch Agent on EC2

- Monitor disk usage metric

- Send automatic email when disk usage >= 90%

- Retain logs for 2 days

- Setup IAM role, SNS, CloudWatch Alarm

2. Prerequisites

- AWS Account

- EC2 instance (Amazon Linux 2023 recommended)

- SSH access to EC2

- 3 emails ready for alerts

3. Install CloudWatch Agent

Step 3.1: Install

sudo yum install amazon-cloudwatch-agent -y

Step 3.2: Verify

rpm -qa | grep amazon-cloudwatch-agent

4. Configure CloudWatch Agent

Step 4.1: Create JSON config

sudo nano /opt/aws/amazon-cloudwatch-agent/bin/config.json

Paste:

```
{
  "metrics": {
    "metrics_collected": {
      "disk": {
        "measurement": ["used_percent"],
        "resources": ["/"]
      }
    }
  }
}
```

Step 4.2: Apply config

```
sudo /opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-ctl -a fetch-config -m ec2 -c
file:/opt/aws/amazon-cloudwatch-agent/bin/config.json -s
```

Step 4.3: Check status

```
sudo systemctl status amazon-cloudwatch-agent
```

5. Log Rotation (2 Days)

Step 5.1: Create logrotate config

```
sudo nano /etc/logrotate.d/amazon-cloudwatch-agent
```

Paste:

```
/opt/aws/amazon-cloudwatch-agent/logs/*.log {
    daily
    rotate 2
    compress
    missingok
    notifempty
}
```

Step 5.2: Test logrotate

```
sudo logrotate -f /etc/logrotate.d/amazon-cloudwatch-agent
```

6. IAM Role Setup

Step 6.1: Create Role

- IAM -> Roles -> Create Role -> EC2 -> Attach policy CloudWatchAgentServerPolicy

- Role name: EC2-CloudWatch-Agent-Role

Step 6.2: Attach Role to EC2

- EC2 -> Actions -> Security -> Modify IAM Role -> Select EC2-CloudWatch-Agent-Role

Step 6.3: Restart Agent

```
sudo systemctl restart amazon-cloudwatch-agent
```

7. SNS Topic & Email Setup

Step 7.1: Create SNS Topic

- SNS -> Topics -> Create Topic -> Standard -> Name: ec2-disk-90-alert

Step 7.2: Add Emails

- Protocol: Email -> Add 3 emails -> Confirm subscriptions

8. CloudWatch Alarm

Step 8.1: Create Alarm

- CloudWatch -> Alarms -> Create Alarm -> Metric: CWAgent -> disk -> used_percent -> EC2 path /

Step 8.2: Set Threshold

- Statistic: Average, Period: 5 mins, Condition: >=90, Datapoints: 1/1

Step 8.3: Add Notification

- Send to SNS topic: ec2-disk-90-alert

Step 8.4: Alarm Name: EC2-Disk-Usage-90

9. Test Alert (Optional)

```
sudo fallocate -l 3G /testfile
df -h
sudo rm /testfile
```

10. Verification

- CloudWatch Metrics -> CWAgent -> disk -> used_percent
- Alarm triggers at 90%
- Emails received by 3 users

11. Optional Enhancements

- Add 80% warning alert
- Auto-cleanup script for disk
- Slack/Teams notifications
- Keep logs 2 days

Conclusion:

Your EC2 instance now monitors disk usage, triggers alarm at 90%, sends email to 3 users, and has CloudWatch Agent configured properly.