AWS CloudWatch

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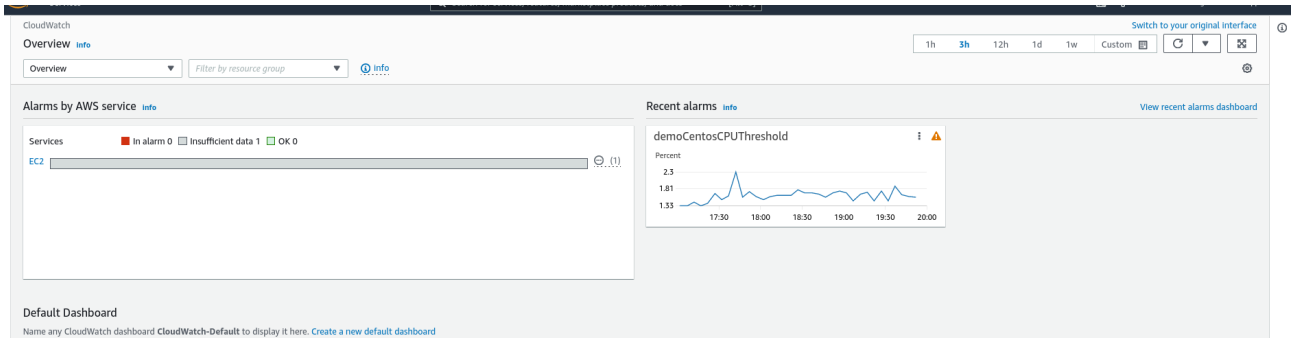
Table of Contents

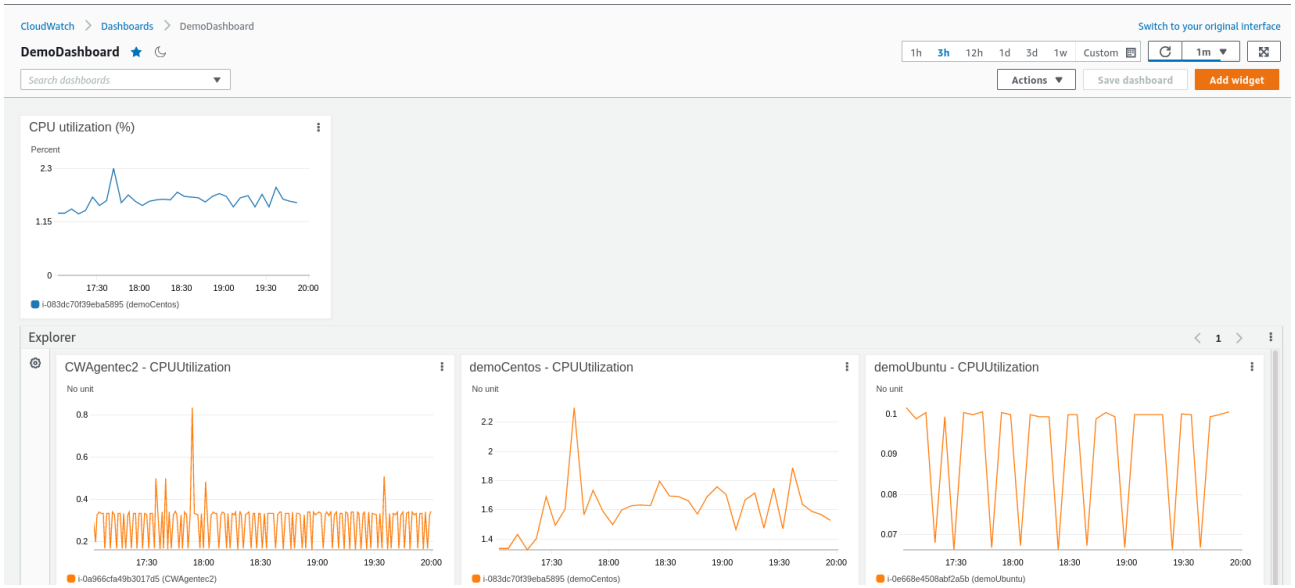
CloudWatch

CloudWatch is aws's native service to monitor resources and applictions and alert the responsible parties when a service or application is not working as expected.



Dashboards

Cloudwatch lets you create dashboards. Each dashboard can be configured to display multiple graphs in the form of widgets, displaying various metrics.



Metrics

CloudWatch lets you monitor metrics such as CPU Utilization, Network In and Network Out and disk write and read statistics.

There are 2 types of metrices

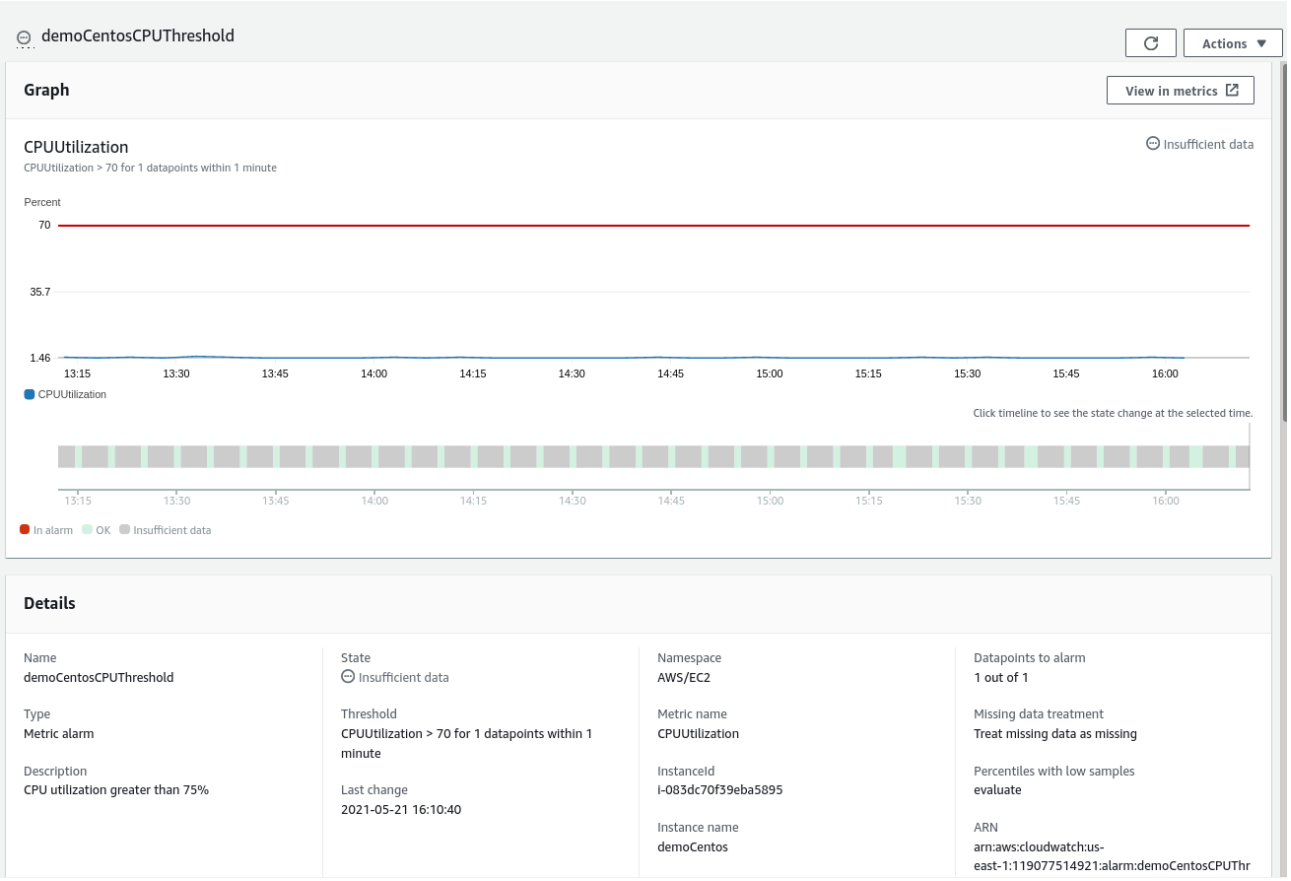
- Built-in metrics: Metrics displayed by Cloudwatch by default.
- Custom Metrics: Needs Cloudwatch Agent installed on ec2 instances.

Logs

CloudWatch lets you stream logs from various services such as ec2, lambda, S3 and various other services. It also offers a feature to filter your logs for entries matching a certain patterns - example error codes or terms such as `Access denied` etc.

Alarms

CloudWatch lets you set Alarms when a particular Metric breaches a set threshold. For example, you could configure an Alarm to send an email whenever `CPU Utilization` of a certain instance breaches a set threshold (ex: 75%)



CloudWatch Agent

ClouWatch by default monitors a certain set of metrics. If you'd like to monitor custom metrics such as RAM utilization and disk space, you'd need to install CloudWatch Agent on the ec2 instances you'd wish to monitor.

Follow the below steps to Install CloudWatchAgent on ec2 instance.

1. Create an IAM Role with the following Permissions:
   - AmazonEC2RoleSSM
   - CloudWatchAgentAdminPoicy
   - CloudWatchAgentServerPolicy
2. Download the appropriate `CloudWatchAgent` for your ec2 instance from CloudWatch Agents Page onto your ec2 instance.
3. Install from CLI
4. For Centos run the below command

```
sudo rpm -U ./amazon-cloudwatch-agent.rpm
```

- For Ubuntu run the below command

```
sudo dpkg -i -E ./amazon-cloudwatch-agent.deb
```

- For Windows run the below command

```
msiexec /i amazon-cloudwatch-agent.msi
```

1. On Linux Machines run the below commands to configure CloudWatch

```
sudo /opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-config-wizard
sudo /opt/aws/amazon-cloudwatch-agent/bin/start-amazon-cloudwatch-agent
```

SSM Installation

Amazon Systems Manager (SSM) is an automation tool that helps you manage the ec2 Instances from a central location. This can let you configure CloudWatch Agents and also save the configuration in `Parameter Store` for reusability.

- Centos based systems (Redhat, Centos, Fedora)

```
## Install AWS SSM Agent (Replace <region> with the region where your ec2 instance
is hosted)

sudo yum install -y
https://s3.<region>.amazonaws.com/amazon-ssm-<region>/latest/linux_amd64/amazon-ss
m-agent.rpm

## Start and enable SSM agent
sudo systemctl enable amazon-ssm-agent
sudo systemctl start amazon-ssm-agent
sudo systemctl status amazon-ssm-agent
```

- Ubuntu

```
# Install AWS SSM Agent (Replace <region> with the region where your ec2 instance
is hosted)

sudo yum install -y
https://s3.us-east-1.amazonaws.com/amazon-ssm-us-east-1/latest/linux_amd64/amazon-
ssm-agent.rpm

## Start and enable SSM agent
sudo systemctl enable amazon-ssm-agent
sudo systemctl start amazon-ssm-agent
sudo systemctl status amazon-ssm-agent
```

Install SSM on Ubuntu

```
## ------
## Ubuntu
## ------

## Install SSM agent
sudo snap install amazon-ssm-agent --classic

## Start and enable SSM agent
sudo systemctl enable snap.amazon-ssm-agent.amazon-ssm-agent.service
sudo systemctl start snap.amazon-ssm-agent.amazon-ssm-agent.service
sudo systemctl status snap.amazon-ssm-agent.amazon-ssm-agent.service
```