



# Amazon CloudWatch

# What is CloudWatch ?



Amazon CloudWatch is a monitoring service for AWS cloud resources and the applications you run on AWS. It is used to collect and track metrics, collect and monitor log files, and set alarms.

CloudWatch watches performance



# What can CloudWatch Monitor ?



Amazon CloudWatch can monitor things like

## **Compute**

EC2 Instances  
Autoscaling Groups  
ELB  
Route53 Health Checks

## **Storage & Content Delivery**

EBS Volumes  
Storage Gateways  
CloudFront

# CloudWatch & EC2



**Host Level metrics consists of**

CPU

Network

Disk

Status Check

# Monitoring



With Amazon CloudWatch, the user can get:

- Up-to-minute statistics
- View graphs
- Set alarms for your metric data
- Use Auto Scaling to add/remove resources based on CloudWatch Metrics

# CloudWatch Monitoring:



- **Basic Monitoring for Amazon EC2 instances:** Ten pre-selected metrics at five-minute frequency, free of charge
- **Detailed Monitoring for Amazon EC2 instances:** Seven pre-selected metrics at one-minute frequency, for an additional charge
- **Amazon EBS volumes:** Ten pre-selected metrics at five-minute frequency, free of charge
- **Elastic Load Balancers:** Ten pre-selected metrics at one-minute frequency, free of charge
- **Auto Scaling groups:** Seven pre-selected metrics at one-minute frequency, optional and charged at standard pricing
- **Amazon RDS DB instances:** Thirteen pre-selected metrics at one-minute frequency, free of charge.

# CloudWatch Monitoring:



- **Metrics:** Metrics form the core of the Amazon CloudWatch functionality. Essentially, these are nothing more than certain values to be monitored. Each metric has some data points associated with it which tend to change as time progress.
- **Alarms:** An Alarm basically watches over a particular metric for a stipulated period of time and performs some actions based on its trigger. These actions can be anything from sending a notification to the user using SNS.

# Alarm States



- **State is Alarm**
- **State is OK**
- **State is INSUFFICIENT**



# Metrics



- **Namespaces:** It is a grouping to know what this metric belongs to. For example: AWS/EC2, AWS/AutoScaling/ AWS/ELB
- **Dimensions:** Dimension is a name/value pair that you uniquely identify a metric. For example: AutoScalingGroupName, ImageId, InstanceID, InstanceType, Volume ID.
- **Timestamps:** To know what timestamp it had captured.
- **Units:** Unit represents the statistic's unit of measure. For example: EC2 NetworkIn metric in bytes.

# Metrics Retention Period



CloudWatch Metrics now supports the following three retention schedules:

- 1 minute datapoints are available for 15 days
- 5 minute datapoints are available for 63 days
- 1 hour datapoints are available for 455 days

# CloudWatch Events



Amazon CloudWatch Events delivers a near real-time stream of system events that describe changes in Amazon Web Services (AWS) resources.

- Determine events of interest
- Create rules to match events
- Route to targets

# CloudWatch LOGS



You can Analyze your logs with CloudWatch Logs Insights. No Infrastructure or setup needed.

CloudWatch Logs helps you to aggregate, monitor, and store logs. For example, you can:

- Monitor HTTP response codes in Apache logs
- Receive alarms for errors in kernel logs
- Count exceptions in application logs

# CloudWatch LOGS



## Start Sending Log Data to CloudWatch



### Install the Agent

Install and configure the CloudWatch Logs agent to send your logs to the CloudWatch Logs service.



### Monitor

Create metric filters to automatically monitor the logs sent to CloudWatch Logs.



### Access

View the log data you have sent and stored in CloudWatch Logs.

# What is CloudTrail



AWS CloudTrail increases visibility into your user and resources activity by recording AWS Management Console actions and API calls.

You can identify which users and accounts called AWS, the sources IP address from which the calls were made, and when the calls occurred.

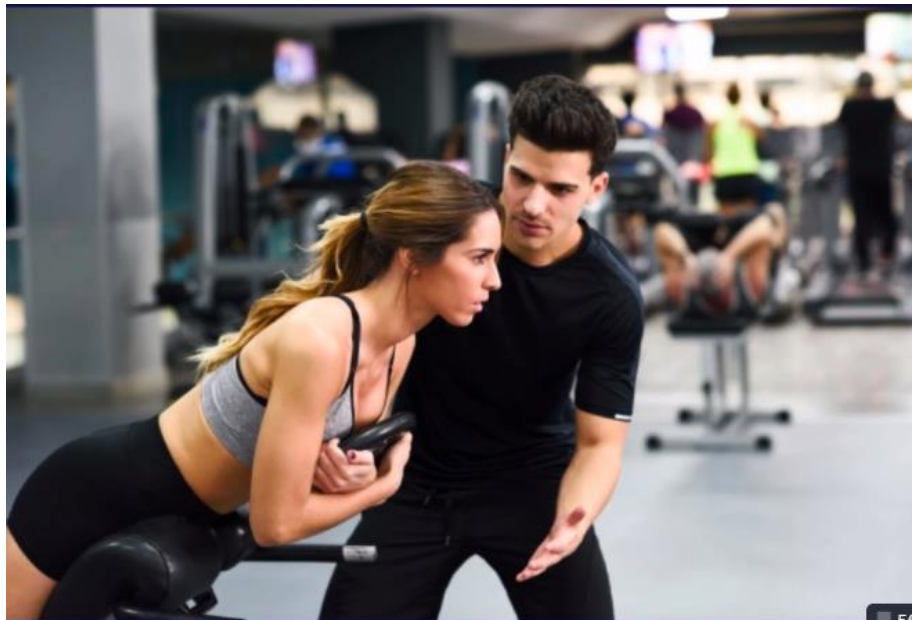


# CloudWatch vs CloudTrail



AWS CloudWatch monitor performance

AWS CloudTrail monitors API calls in the AWS Platform



# Exam Tips : CloudWatch



- CloudWatch is used for monitoring performance.
- CloudWatch can monitor most of AWS as well as your applications that run on AWS.
- CloudWatch with EC2 will monitor events every 5 mins for default.
- You can have 1 minute intervals by turning on detailed monitoring.
- You can create CloudWatch alarms which trigger notifications.
- CloudWatch is all about performance, CloudTrail is all about auditing