

AWS CloudWatch

- Monitoring and observability service
- Collects monitoring and operational data in the form of logs, metrics, and events
- Set alarms, visualize logs, take automated actions and troubleshoot issues
- Integrates with more than 70 AWS services:
 - *Amazon EC2*
 - *Amazon DynamoDB*
 - *Amazon S3*
 - *Amazon ECS*
 - *AWS Lambda*
 - *And so on*

AWS CloudWatch

Amazon CloudWatch Alarm - Example

- You set a CPU Utilization alarm on EC2 instance with a threshold of 50% . If CPU utilization is 50%, does the alarm get triggered?

AWS CloudWatch Alarms

Create alarms based on:

- Amazon EC2 instance CPU utilization
- Amazon SQS queue length
- Amazon DynamoDB table throughput or
- Your own custom metrics

Take immediate action:

- Send a SNS event notification
 - Send an email using SNS
- Execute an Auto Scaling policy

AWS CloudWatch Dashboards

- Create auto refreshed graphs around all CloudWatch metrics
- Automatic Dashboards are available for most AWS services and resources
- Each Dashboard can have graphs from multiple regions

AWS CloudWatch Events

- Enable you to take immediate action based on events on AWS resources
 - Call a AWS Lambda function when an EC2 instance starts
 - Notify an Amazon SNS topic when an Auto Scaling event happens
- Schedule events - Use Unix cron syntax
 - Schedule a call to Lambda function every hour
 - Send a notification to Amazon SNS topic every 3 hours

.

AWS SNS - Simple Notification Service

- Publish-Subscribe (pub-sub) paradigm
- Broadcast asynchronous event notifications
- Simple process
 - Create an SNS Topic
 - Subscribers can register for a Topic
 - When an SNS Topic receives an event notification (from publisher), it is broadcast to all Subscribers
- Use Cases : Monitoring Apps, workflow systems, mobile apps

AWS SNS

- Provides mobile and enterprise messaging web services
 - Push notifications to Apple, Android, FireOS, Windows devices
 - Send SMS to mobile users
 - Send Emails

AWS SNS

- Standard Queue
 - Unlimited throughput
 - BUT NO guarantee of ordering (Best-Effort Ordering)
 - and NO guarantee of exactly-once processing
 - Guarantees at-least-once delivery (some messages can be processed twice)
- FIFO (first-in-first-out) Queue
 - First-In-First-out Delivery
 - Exactly-Once Processing
 - BUT throughput is lower
 - Upto 300 messages per second (300 send, receive, or delete operations per second)
 - If you batch 10 messages per operation (maximum), up to 3,000 messages per second

Choose

- Standard SQS queue if throughput is important
- FIFO Queue if order of events is important