

Monitoring Services : CloudWatch

Basics of CloudWatch

- CloudWatch is used to monitor AWS services such as EC2, ELB and S3
- You can monitor your environment by configuring and viewing CloudWatch **metrics**
- Metrics are specific to each AWS service or resource, For example:
 - EC2 per-instance metrics:
 - CPU Utilization
 - CPUCreditUsage
 - S3 Metrics:
 - NumberOfObjects
 - BucketSizeBytes
 - ELB Metrics
 - RequestCount
 - UnhealthyHostCount
- Detailed Vs Basic Level monitoring
 - Basic Level : Data is available automatically in 5-minute periods at no charge
 - Detailed Level : Data is available in 1-minute periods but it will cost you.
- CloudWatch alarms can be created to trigger alerts (or other actions in your AWS accounts, such as an SNS topic), based on threshold you set on CloudWatch metrics.
- AutoScaling heavily utilizes CloudWatch - relying on threshold and alarms to trigger the addition (or removal) of instances from an auto scaling group.

CloudWatch Alarms

- CloudWatch Alarms allow for you (or the system admin) to be notified when certain defined thresholds are met on CloudWatch Metrics
- For example, you can setup an alarm to be triggered whenever the CPU utilization metric on EC2 instance goes above 70%
- Alarms can also be used to trigger other events in AWS like publishing to an SNS topic or triggering auto scaling

CloudWatch EC2 Monitoring

- System Status Checks (things that are out of our control)
 - Loss of network connectivity
 - Loss of system power
 - Software issues on the physical host

- Hardware issues on the physical host
- HOW TO SOLVE: Generally stopping and restarting the instance will fix the issue. This causing the instance to launch on a different physical hardware device

- Instance Status Check (software issues that we do control)
 - Failed system status checks
 - Misconfigured networking or startup configuration
 - Exhausted memory
 - Corrupted file system
 - Incompatible kernel
 - HOW TO SOLVE: Generally a reboot, or solving the file system configuration issue.

- By default, CloudWatch will automatically monitor metrics that can be viewed at the host level (NOT the software level), such as :
 - CPU utilization
 - Network in/out
 - CPUCreditBalance
 - CPUCreditUsage

- OS Level metrics that required a third party script (perl) to be installed (provided by AWS)
 - Memory utilization, memory used, memory available
 - Disk swap utilization
 - Disk Space utilization, disk space used, disk space available