AWS Solution Architect Associate Certification Training – Module 21

21. Cloudwatch

Overview of Cloudwatch

Amazon CloudWatch is a monitoring and management service built for developers, system operators, site reliability engineers (SRE), and IT managers. CloudWatch provides you with data and actionable insights to monitor your applications, understand and respond to system-wide performance changes, optimize resource utilization, and get a unified view of operational health. CloudWatch collects monitoring and operational data in the form of logs, metrics, and events, providing you with a unified view of AWS resources, applications and services that run on AWS, and on-premises servers. You can use CloudWatch to set high resolution alarms, visualize logs and metrics side by side, take automated actions, troubleshoot issues, and discover insights to optimize your applications, and ensure they are running smoothly.

With Amazon CloudWatch, it is easy to get started. There is no up-front commitment or minimum fee; you simply pay for what you use. You will be charged at the end of the month for what you use.

CloudWatch Dashboard

Amazon CloudWatch dashboards are customizable home pages in the CloudWatch console that you can use to monitor your resources in a single view, even those resources that are spread across different Regions. You can use CloudWatch dashboards to create customized views of the metrics and alarms for your AWS resources. You can select the color used for each metric on each graph, so that you can easily track the same metric across multiple graphs.A common view of critical resource and application measurements that can be shared by team members for faster communication flow during operational events.

Metrics

Metrics are data about the performance of your systems. By default, several services provide free metrics for resources (such as Amazon EC2 instances, Amazon EBS volumes, and Amazon RDS DB instances). You can also enable detailed monitoring some resources, such as your Amazon EC2 instances, or publish your own application metrics. Amazon CloudWatch can load all the metrics in your account (both AWS resource metrics and application metrics that you provide) for search, graphing, and alarms.

Alarms

You can create a CloudWatch alarm that watches a single CloudWatch metric or the result of a math expression based on CloudWatch metrics. The alarm performs one or more actions based on the value of the metric or expression relative to a threshold over a number of time periods. The action can be an Amazon EC2 action, an Amazon EC2 Auto Scaling action, or a notification sent to an Amazon SNS topic.You can also add alarms to CloudWatch dashboards and monitor them

visually. When an alarm is on a dashboard, it turns red when it is in the ALARM state, making it easier for you to monitor its status proactively.Alarms invoke actions for sustained state changes only. CloudWatch alarms do not invoke actions simply because they are in a particular state, the state must have changed and been maintained for a specified number of periods. After an alarm invokes an action due to a change in state, its subsequent behavior depends on the type of action that you have associated with the alarm.

An alarm has the following possible states:

- OK—The metric or expression is within the defined threshold.
- ALARM—The metric or expression is outside of the defined threshold.
- INSUFFICIENT_DATA—The alarm has just started, the metric is not available, or not enough data is available for the metric to determine the alarm state.