**Chapter 7: Monitoring and Analytics**

**Amazon CloudWatch**

* Is a web service that enables you to monitor and manage various matrics and configure alarm actions based on data from those metrics.
* Uses metrics to represent the data points for your resources.
* Metrics are data about the performance of your systems
* Uses this metrics to create graphs automatically that show how performance has changed over time.

**CloudWatch Alarms**

* You can create alarms that automatically perform actions if the value of your metric has gone above a predefined threshold.

**Using CloudWatch Dashboard**

* Enables you to access all the metrics for your resources from a single location.

**AWS CloudTrail**

* Track user activity and API usage
* Protect your organisation from penalties using CloudTrail logs to prove compliance with regulations such as SOC, PCI and HIPAA
* Filter logs to assist with operational analysis and troubleshooting
* Records API calls for your account
* The recorded information includes the identity of the API caller, the time of the API call, the source IP address of the API caller etc.
* You can view a complete history of user activity and API calls for your applications and resources.

**CloudTrail Insights**

* This feature allows AWS users to automatically detect unusual API activities associated with write API calls by continuously analysing CloudTrail managements events
* After you enable CloudTrail Insights for the first time on a trail, it can take up to 36 hours for CloudTrail to deliver the first Insights event, if unusual activity is detected.

**AWS Trusted Advisor**

* Is a web service that inspects your AWS environment and provides real-time recommendations in accordance with AWS best practises.
* Provides recommendations that helps you follow AWS best practices.
* Trusted Advisor evaluates your account by using checks
* **These checks identify ways to :**

1. Optimize your AWS infrastructure
2. Improve security
3. Performance
4. Reduce cost
5. Monitor service quotas

**AWS Trusted Advisor Priority**

* Helps you focus on the most important recommendation to optimize your cloud deployments, improve resilience and address security gaps.