**AWS Solution Architect MODULES**

**Elastic Beanstalk**

**SNS 🡪 Simple notification services**

**SQS 🡪 Simple queuing service**

**Cloudwatch 🡪 Monitoring service**

1. Monitor AWS resources
2. EC2 monitoring
3. Set alarm with actions 🡪 Events
4. See a graphical representation of our resources
5. View statistic
6. Store logs from our instances

**2 Types**

1. **Basic Monitoring**

* Its free
* Pulls every 5 minutes
* Works on 10 metrics
* 5GB of data ingestion
* 5GB of data storage

1. **Detail monitoring**

* It’s chargeable
* Charged per instance per hr
* Pulls per minutes.

**For monitoring memory**

* Install an agent into your ec2 instance(EBS) and link it to cloudwatch

**CloudTrail vs CloudWatch**

* **CloudTrail is an Auditing service while cloudwatch is a monitoring service**
* **Cloudtrail is used for tracking changes in aws account**
* **Can access details of all changes that occur in an aws account**
* **Can further download log files use to detail analysis**

**CloudFormation 🡪**

**Trust Advisor 🡪**

* [Cost Optimization](https://console.aws.amazon.com/trustedadvisor/home?region=us-east-1#/category/cost-optimizing)
* [Performance](https://console.aws.amazon.com/trustedadvisor/home?region=us-east-1#/category/performance)
* [Security](https://console.aws.amazon.com/trustedadvisor/home?region=us-east-1#/category/security)
* [Fault Tolerance](https://console.aws.amazon.com/trustedadvisor/home?region=us-east-1#/category/fault-tolerance)
* [Service Limits](https://console.aws.amazon.com/trustedadvisor/home?region=us-east-1#/category/service-limits)

**S3 Glacier 🡪**

* **Storing long term achievable data**
* **ON top of our glacier storage, we can perform analysis**
* **Long term storage need**

**Lambda functions 🡪**

**Resume**

**Certification**

**Interview process85**

**Cloud Computing Models**

**3 types**

1. Saas 🡪 Software as a service 🡪 example Microsoft SQL Server, Wordpress
   1. Running software in a compute space on the cloud
2. Iaas 🡪 Infrastructure as a service 🡪 example CloudFormation is written in JSON or YAML(YML)
   1. Advantages
      1. Create, update and delete cloud resources in a single file.
      2. Reduce effort and increase productivity
      3. Provide versioning for changes in our environment
      4. Keeps history of collective changes in the form of stack sets.
   2. stack sets
   3. Stacks
      1. YML or JSON file used to create, update or delete a single or multiple aws resources
   4. Templates
      1. Reusable stack or a composition or multiple stacks that can be executed in same aws region, account or different aws account

VPC

4 subnets

2 NAT G/W

2 IGW

SG

* 1. Components of cloudformation
     1. Parameter 🡪 Optional
     2. Resources 🡪 Required
     3. Mappings 🡪 Optional
     4. Output 🡪 Required
     5. Description 🡪 Optional
     6. Metadata 🡪 Optional
     7. Conditions 🡪 Optional
     8. AWScloudformationVersion 🡪 Optional

1. Paas 🡪 Platform as a service 🡪 example Elastic beanstalk

**Simple Notification Service (SNS)**

1. Introduction to SNS.
2. Creating topics and Evaluating ARNs.
3. Subscribing using Various Protocols.
4. Publishing Notifications using SNS.
5. Integrating SNS Topics with CloudWatch and Autoscaling Services.

LAB:

Setup Email notification for auto scaling group

SQS:

A queues message can contain max up to 256 KB of messages queue times.

Min time 1 min to max 14 days, default is 4 days.

**CloudWatch**

1. Introduction of AWS Monitoring
   1. Amazon CloudWatch is a monitoring service for AWS cloud resources and the applications you run on AWS.
   2. You can use Amazon CloudWatch to collect and track metrics, collect and monitor log files, set alarms, and automatically react to changes in your AWS resources.
   3. Amazon CloudWatch can monitor AWS resources such as Amazon EC2 instances,
   4. Amazon DynamoDB tables, and Amazon RDS DB instances, as well as custom metrics generated by your applications and services.
2. Understanding Virtualization
3. Making a Status Check Failed Incident manually
4. CloudWatch Basic and Detailed Monitoring and Its Features.
5. Implementing Real Time monitoring by Integrating with SNS.
6. Understanding CloudWatch Logs and Metrics.
7. Creating Alarms and Its Actions.
8. Configuring Dashboards for Organization Architectures.

**CloudFront**

1. Introduction to Content Delivery Network (CDNs).
2. Understanding AWS EDGE Network Locations.
3. Understanding CloudFront Distributions and Origins.
4. Implementing CDN for Websites using CloudFront.
5. Going through CloudFront Reports and Analytics.
6. CloudFront Security for S3 buckets using OAI (Origin Access Identity).
7. Configuring origins and behaviors.

**Elastic Beanstalk**

1. Understanding DevOps tools of AWS.
2. Automation by Elastic Beanstalk.
3. Creating an Application Environment using EB.
4. Application versioning and Deploying.
5. Clean up of EB Environment.

LAB:

Deploy Lamp Stack App 🡪 DevOps (Development and Operations)

1. You must have the application (I will provide)
2. Steps to configure Lamp Stack Environment
   1. Launch a DB instance using RDS
      1. Manually create db in RDS
   2. Creating and configuring ElasticBeanstalk
      1. Created EC2 instance
      2. AS group
      3. App Load balancer
      4. Target
      5. Security group
   3. Test and Clean up.

**Cloud Formation**

1. Introduction to Cloud Formation
2. Understanding Stacks and Cloud Former Tool.
3. Automating a Ruby on Rails Application using Cloud Formation.
4. Clean up of Cloud formation Environment.
5. Creating custom Templates using Cloud Former Tool.

**Dynamo DB**

1. Understanding NOSQL Databases.
2. Creating a DynamoDB table with Sample Data.
3. Understanding RCU and WCU of DynamoDB Tables.
4. Understanding Throttling in DynamoDB.
5. Creating Alarms in DynamoDB.

**Glacier**

1. Introduction to Glacier Storage.
2. Creating Vaults.
3. Uploading data to Vaults.
4. Key differences between S3 and Glacier.

**CloudTrail**

1. Introduction to Audit logging by CloudTrail.
2. Creating Trials.
3. Storing Trial logs in S3 Buckets.

**Trusted Advisor**

1. Introduction to Trusted Advisor.
2. Understanding Cost Optimization Tab.
3. Understanding Performance Tab.
4. Understanding Security Tab.
5. Understanding Fault Tolerance Tab.
6. Understanding Service Limits Tab.