ASSESSMENT

Contents

Assessment Objectives

At the successful completion of this training assessment, the trainee should be competent in the following:

Cloud based Architecture/Design Objectives
• Idealize a cloud solution based on a requirement
• Design a cloud network infrastructure
• Design Restful APIs
• Pick the right solution by considering vendor lock-in & cloud constraints
Technical Objectives
• Set up development/supportive tools for cloud based development
• Understand of AWS SDKs and APIs and proper usage
• Understand on-premise data migration
• Set up Domains
• Email Integration
• Batch Processing
Monitoring & Automation
• Add Logs in the implementation
• Automation scripts for Network infrastructure
Security
• Understand Security by design – Make sure security best practices are in place
• Proper usage of AWS keys/IAM roles
• Usage of HTTPS – TLS/SSL
Reliability
• Considerations in overall solution to be fault tolerant and high available

• Proactive Planning for disaster using Cloud best practices
Cost Optimization
• Selection of solutions optimizing cost
• Calculate infrastructure cost and cost baselines
Soft-Skills
• Engage with facilitators to solve problems during assessment
• Present final workable solution in an organized manner

Assessment Info

Facilitators/Mentors	**<List of Facilitator for Trainees to get support>**
References	<AWS Documentation> <Blogs Articles>

Assessment Schedule

Tasks	Timeline
Briefing and Introduction • Introduce facilitators • Overview of the Assessment and the process	2hrs
Challenge 1 • Implementation • Demo to Facilitator (Pitching the solution)	2 days
Challenge 2 • Implementation • Demo to Facilitator (Pitching the solution)	5 days
Challenge 3 • Implementation • Demo to Facilitator (Pitching the solution)	3 days
Recap and Feedback for trainee • Strengths and Weakness Identification • Rewards and Recognition • Focus areas in AWS and building specialty	2hrs (for the session with trainee)

Assessment Case Study

AcmeCorp is a frontier in Digital marketing and Advertising. The Company has dealt with many fortune 500 companies and is now focusing more on expanding its reach.

With the vision of expanding its reach in this fiscal year, AcmeCorp has identified that there been in the digital marketing space for a decade they have the resources, designs and knowledge that could benefit everyone seeking such expertise.

With this intention in mind they have come up with the following strategy to expand their global reach.

- REQ 1: The current Acme Corporate branding site is slow and people complain when they access it from different parts of the world.
- REQ 2: AcmeCorp believes that true engagement is with value added services to their clients and end users. Therefore they are planning to build a REST based Data platform exposing their current service offerings.
- REQ 3: AcmeCorp also believes in Visibility, Actionable reports, Analytics and time to market. So they are keen on improving their internal processes related to deployment and delivery and bringing in tools for getting insight in monitoring and management.

You, being the Chief architect of the organization is entrusted with finding solutions and achieving the above. You have decided that Amazon is the most suitable Cloud provider that your organization wishes to partner with. Therefore all solutions you provide would be based on the Amazon Eco system.

We hope your ready! lets make AcemCorp the leader in Digital Marketing and Advertising!

To start please fork the repository at this *<URL>*. This repository has subfolders with challenges. You are required to understand each of the challenges (either by reading the README.md files alongside the challenge or using this guide). Provide your answers/artifacts to your forked repository.

To make things interesting your progress would be tracked on the leaderboard (*<URL to LeaderBoard>*)

Challenge 1

"The current Acme Corporate branding site is slow and people complain when they access it from different parts of the world"

AcmeCorp already has a branding site and you could finding under the challenge1/branding-site folder. This is a dist version of an angular application.

Challenge 1.1

Come up with a **solution design** on how you would migrate the branding site to Amazon. Consider scalability, availability and cost when coming up with your solution. Also create a budget for your solution including recurring costs incurred to AcmeCorp.

Commit your finalized solution design and the budget to the challenge1/solution folder.

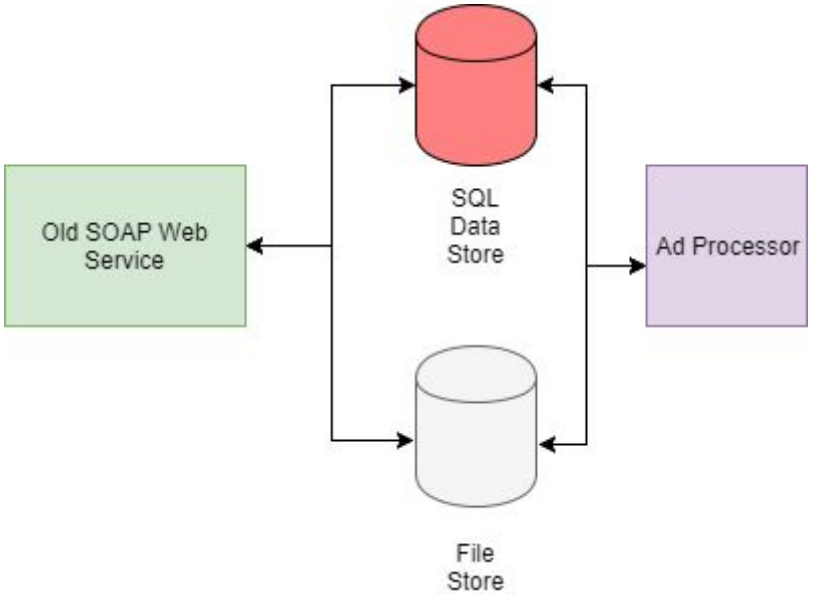
Challenge 1.2

Implement your solution on Amazon and provide a working URL to your facilitator.

Challenge 2

"AcmeCorp believes that true engagement is with value added services to their clients and end users. Therefore they are planning to build a REST based Data platform exposing their current service offerings."

AcmeCorp currently has the following in-house architecture



Current Solution has a legacy SOAP service which no one is confident to move ahead with and the company believes that they need to migrate it to a rest service. You can find the service endpoints in the folder challenge2/api-definition.md

The SQL Database is the source of truth for the company and has all the data gathered during its years. The data needs to be imported to AWS.

Challenge 2.2

Considering the volume of data suggest implement a data migration to AWS.

The file Store contains all the files that are uploaded and processed by the Ad Processor.

Challenge 2.3

Migrate all files to a proper file store.

Processing an advertisement is a long running batch process (>5 minutes) and the team believes that when there are many pending Ads, processing takes a long time since a single instance is processing ads now. Also there is a high bottleneck since the Ad processor depends on the SQL database to receive processing jobs.

Challenge 2.4

Propose an architecture suggesting a scalable batch processing mechanism and an improvement to removing the dependency with the SQL database. Prepare a Budget for your architecture.

The Ad processing node script can be found in the folder Challenge2/AdProcessor make necessary changes and deploy the working implementation to AWS.

Once everything is migrated and ready.

Challenge 2.5

Design a Swagger documentation based on the textual representation of the Service endpoints.

Implement the service in AWS.

Demonstrate a working solution

Challenge 3

AcmeCorp also believes in Visibility, Actionable reports, Analytics and time to market. So they are keen on improving their internal processes related to deployment and delivery and bringing in tools for getting insight in monitoring and management.

Challenge 3.1

Add sufficient logging and trails to capture application level errors and warnings.

Challenge 3.2

Implement monitoring dashboards to demonstrate API usage, execution times, CPU utilization.

Challenge 3.3

Make sure your solution fully automated considering 2 previous challenges. Use AWS CLI, AWS SDK, Cloudformation to support your automation and commit your automation scripts

Assessment Scorecard (Facilitators feedback scorecard)

Should reflect in leaderboard while the trainee level ups in the training.

Cloud based Architecture/Design Objectives	Score	Comments
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• Designing a cloud network infrastructure.		
• Designing Restful APIs		
• Picking the right solution by considering vendor lock-in & cloud constraints.		
Technical Objectives		
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