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PGPCC | Project

Building an Automated Business Process using Managed Services on a Public Cloud

Creating an event triggered business process leveraging multiple managed services from AWS

Scenario – The Extended Enterprise

In the connected world, it is imperative that the organizations be interlinked with their customers and vendors. This process has been very sluggish, manual, batch based and prone to failures. Such integration design has lead to impaired decision making and delay in detection of fraudulent actions.

The objective of this project is to create an automated, event based real time process that does not have these limitations. Data should flow rapidly from the source to the destination.

You will use and leverage multiple managed services available from a public cloud platform (AWS in this case) to achieve this.

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Project Outcome

An automated real time business process to accept artifacts from customers, transform the data and analyze it to detect any potential anomaly or fraud.

Skills Required

VPC, IAM, EC2, S3, Athena, SNS,
Programming (any compatible language of your choice), SQL

The Solution

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The business process will be developed completely on the AWS public cloud using multiple managed services with some custom code for data transformation.

1. The customer uploads the invoice data to S3 bucket in a text format as per their guidelines and policies. This bucket will have a policy to auto delete any content that is more than 1 day old (24 hours).

2. An event will trigger in the bucket that will place a message in SNS topic.

3. A custom program running in EC2 will subscribe to the SNS topic and get the message placed by S3 event.

4. The program will use S3 API to read from the bucket, parse the content of the file and create a CSV record along with saving the original record in DynamoDB.

5. The program will use S3 API to write CSV record to destination S3 bucket as new S3 object.

6. Athena is used to query the CSV file (query to show aggregated expenses grouped by date).

Helpful Link - Step 3

- https://docs.aws.amazon.com/sns/latest/dg/SendMessageToHttp.html

- Refer following link for EC2 application installation steps, codebase and sample invoice
  - https://drive.google.com/drive/folders/1h2wjP5fyDrOSNcvq70teMDa0w-K0q5dT?usp=sharing

What should you do?

- Read this Project Brief and understand the requirements

- **Phase 1 - Architecture**
  - Create a solution architecture **diagram** based on “The Solution” slide. (You can use tools like Lucidchart for drawing this architecture diagram.)

- **Phase 2 - Implementation**
  - Based on your solution architecture, go ahead and implement the solution using multiple AWS managed services.

Grading Policy & Tasks

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❖ **TOTAL = 40 points**

- Phase 1 (Architecture) Submission = 10 points
- *Step 1,2 = 5 points
- Step 3,4,5 = 10 points
- Step 6 = 10 points
- **Solution Documentation (Project Report) = 5 points

* Refer steps from “The Solution” slide.

** Please include the final architecture diagram from Phase 1 in your project report while submitting the final solution.

Submission Guidelines

- The solution document should strictly follow the sequence of steps listed in “The Solution” slide.
- Please submit your solution in the form of :

  · PDF document with screenshot and brief description of the screenshots. **Account userid should be visible in all screenshots**.

  · OR a link to the recorded demo video (make sure the link is given appropriate access permissions).
- Participants should explicitly write comments and remarks if they wish to notify the evaluator of specific points.
- It is mandatory to share “Lessons & Observations” at the end of the solution document.
- When you have finished your project and documented everything, you MUST clean up your AWS account by deleting all the resources created by you. (except for default items)
- DO NOT WAIT UNTIL THE LAST MINUTE. The program office will not extend the project submission deadline under any circumstances.

Submission Guidelines – 2

- Screenshots of the following are mandatory
  - Process of logging into the EC2 instance via SSH
  - Running of the custom program in the EC2 instance along with the S3 event message received via SNS

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How to submit your solution?

1. Navigate to the “PROJECTS” course in Olympus.
2. Name your solution document appropriately in the format of: BATCH_FIRSTNAME_LASTNAME_PROJECT2;
    - e.g. PGPCCMARCH18_VIJAY_DWIVEDI_PROJECT2.pdf
    - e.g pgpccmarch18_vijay_dwivedi_project2.pdf
3. Upload your solution document and hit submit.
4. Upload any associated files, if you wish to substantiate your solution.

***Note**: If you wish to make modifications to your submitted solution, you can resubmit your solution document “within the submission window” and mark your comments accordingly.*