System Analysis Document

Includes suppliers' data in the data of APAR

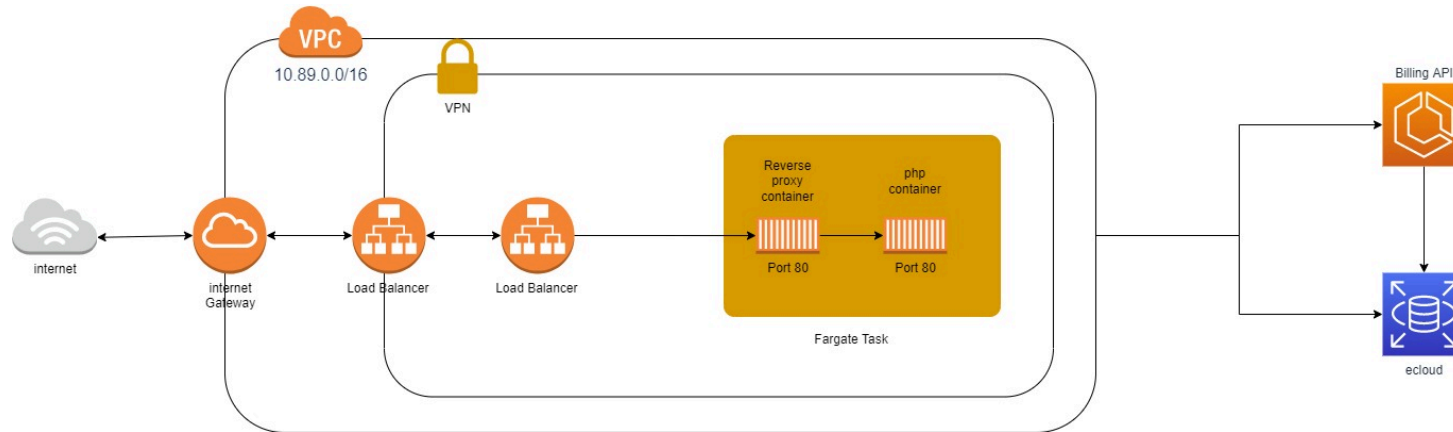| Version	Date	Description	Author
1.0	2022-10-26	Initial	SA
1.1	2022-11-01	To analyze accounting reports, and to list tables which need to add supplier field	SA
1.2	2022-11-09	Update the project list and identify which scripts need to be amended	SA
1.3	2022-11-22	Update DB Schema and Resource & Schedule	SA

Reference Doc/Link

Doc Name	Path

Contents

1. System Architecture

2. Requirements of Software/Hardware

Hardware:

infra	AWS Services
Computing	EC2, Fargate, ECS, Lambda
Distributing	ALB
Database	RDS
Storage	S3
Workflow	Step Function
Repository	Code Commit, ECR

Software:

Stack	Languages
Frontend	Php,
Backend	C#
Data processing	Python

3. Use Case

Use Case			
Customer	**AWS**	**Billing Portal**	**SAP**
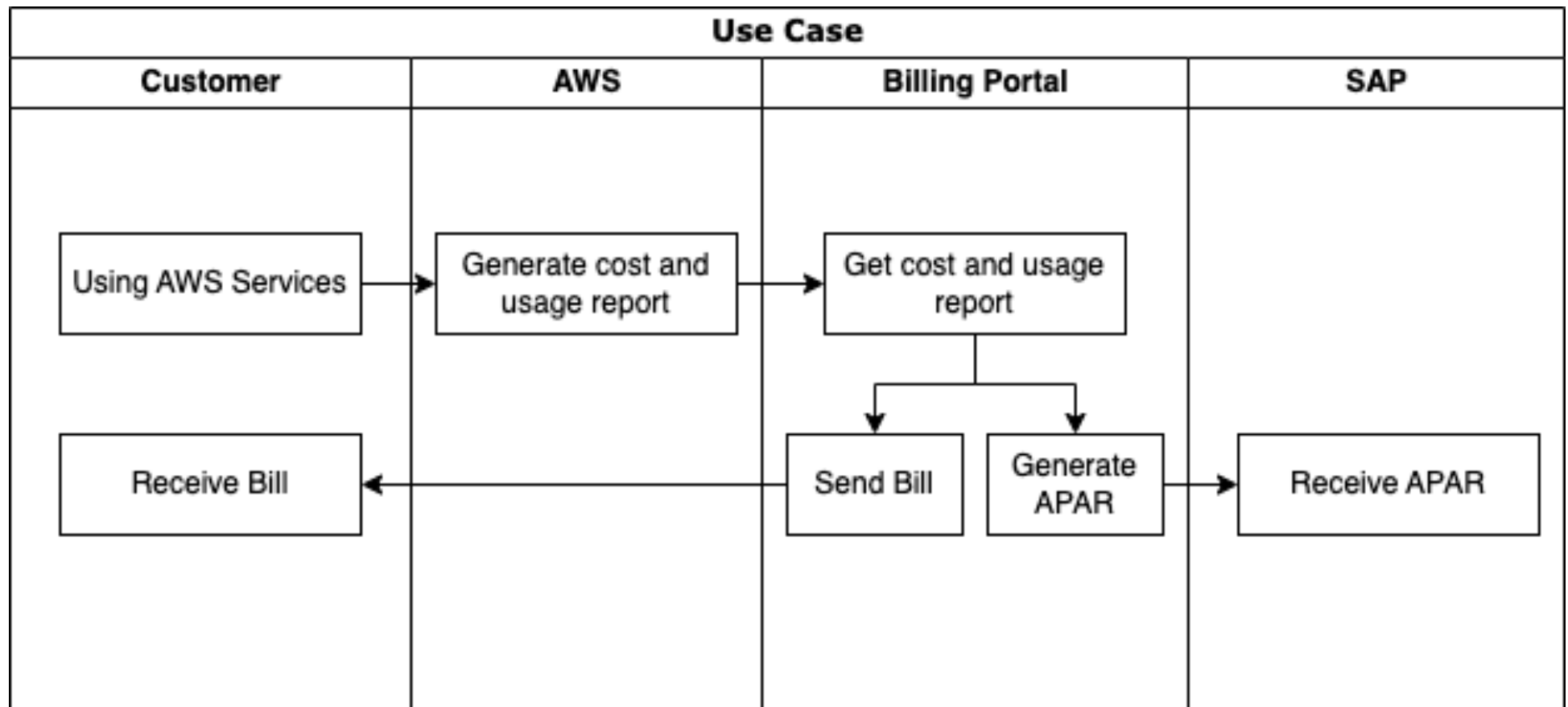
4. Analyse AWS Branches (Supplier)

- There is a field called **"bill/InvoicingEntity"** in AWS CUR that records the name of the AWS branch that issued the AWS invoice. For example
  - Amazon Web Services - The entity that issues invoices to customer globally, where applicable.
  - Amazon Web Services EMEA SARL - The entity that issues invoices to customers based in Europe, the Middle East, and Africa (excluding South Africa).
  - Amazon Internet Services Pvt. Ltd - The entity that issues invoices to customers based in India.
- **List of AWS Branches**

    ⏩ SoR AWS Inc. 🇺🇸

SOP Ref.

    ⏩ SoR AISPL 🇮🇳

SOP Ref.

    ⏩ SoR AWS Canada 🇨🇦

SOR Wiki. AR_Email ID Ref.

    ⏩ SoR AWS Australia 🇦🇺

SOR Wiki. AR_Email ID Ref.

    ⏩ SoR AWS New Zealand 🇳🇿

SOR Wiki. AR_Email ID Ref.

    ⏩ AWS SBL Brazil 🇧🇷

SOR Wiki. AR_Email ID Ref.

    ⏩ AWSK SoR in South Korea 🇰🇷

SOR Wiki. AR_Email ID Ref.

    ⏩ SoR AWS South Africa 🇿🇦

SOR Wiki. AR_Email ID Ref.

    ⏩ SoR AWS Singapore 🇸🇬

SOR Wiki. AR_Email ID Ref.

    ⏩ AWS EMEA SARL (AWS Europe)

SOR Wiki. AR_Email ID Ref.

- Table: raw_item, Field: invoiceid
  - There is field in raw_item table which records invoice id
  - The coding rules for the invoice ID can currently be analyzed to determine which AWS supplier issued it, but the complete supplier name cannot yet be obtained.
  - The invoice ID is only recorded in the cost and usage report on the billing date, which is normally the third of the month. The billing portal retrieves this information on or after that date.
  - Sample data as below:

Update time	invoiceid	Prefix	Branch
left(from_unixtime(change_time),10)		LEFT (invoiceid,2)	
2022/10/3	1137030949	11	US
2022/10/3	AUIN22-1748910	AU	Australia
2022/10/3	EUINSC22-2349	EU	Europe
2022/10/3	JPIN22-2220931	JP	Japan
2022/10/3	SGIN22-440353	SG	Singapore

5. Repository List

The following list of repositories needs to be updated to add the supplier field to the output reports.

Repository	name	Note
/billing-portal	/bill-master/billing_cost_report_csv_custid_gen2.php	Related to accounting reports
	/bill_master/billing_round_verify.php	APAR
	/bill_maaster/billing_round.php	APAR
/billing-cost-report-sql	/*	Sql scripts
/billing-cron-job	/glue/scripts/dop_report_2_s3_.py	n/a

6. Analysing the impact of financial reports

Report	Add field	Impact
Report D	Supplier	If AWS account is transferred to a payment organization belonging to another subsidiary, there may be a situation of a single product with multiple suppliers.
Report E	Supplier	If an AWS account is transferred to a payment organization belonging to another subsidiary, there may also be a situation of multiple suppliers for Savings Plans costs.
Report F	Supplier	No Impact, As of October 2022, there are no RI fees.
Report G	Supplier	"Due to the fees of the Marketplace or the transfer of AWS account, it may result in multiple suppliers for a single AWS account."
Report for Credit	Supplier	No Impact

7. UI Layout(Optional)

8. Diagram (Optional)

Class Diagram:

Sequence Diagram:

9. Data Flow (Optional)

10. DB Schema (Optional)

(You can put DB schema or ER Diagram here)

- It is necessary to create a new table for the SAP system integration

Column	data_type
add_time	varchar(10)
change_time	varchar(10)
add_master	int(11)
card_code	archar(15)
supplier_entity	text

- Existing tables require addition of supplier field:
    - raw_item
    - sap_raw_item_settle
    - sap_raw_item_settle_check

11. Resource & Schedule

Phase	Task	Output	Owner	Due Date
Requirement Discuss	Discussing requirements and impacts	URD	Accounting, BD Team Lead, RD Team Lead, PM	End of January
SA/SD	Analyzing the impact of the database and related data	SA Report	SA	Mid-February
	Analysis of the impact of related system programs.			
	Data analysis of AWS CUR			
	Integration analysis of SAP			
Implement	Amendments are required for raw data ETL program.	ST Report	Data Engineer, SA, DBA	Mid-March
	SQL script			
	Amending financial reports			
	Developing supplier data integration			
SIT	Comparison of financial reports data	SIT Report	Data Engineer, SA	End of March
	Generating APAR			
Production	Release	Release Note	DevOps	TBD

R&D Dep. Supervisor _____