



Bansilal Ramnath Agarwal Charitable Trust's
Vishwakarma Institute of Information Technology

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Subject Name & Code: Cloud Computing and Analytics

Title of Assignment: Study of Cloud Computing & Architecture

Date of Performance: 22-8-2022

Date of Submission: 26-8-2022

Aim: Study of Cloud Computing & Architecture

Problem Statement: To explore different fields of AWS cloud such as Cloud Architecture and Cloud Services Provided by AWS cloud.

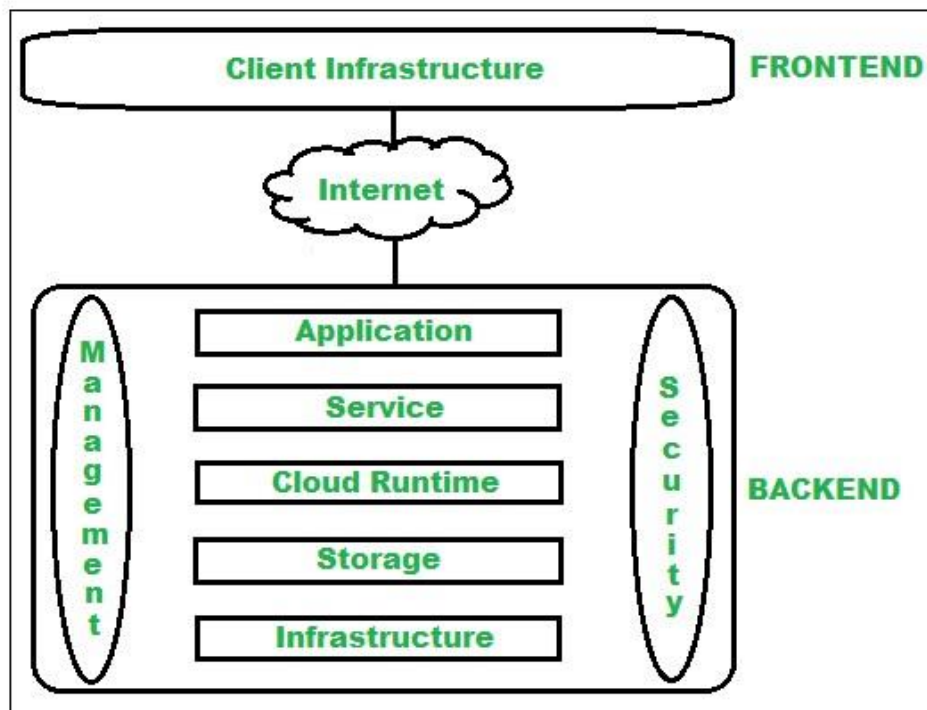
Background Information:

1. Cloud Architecture:

The cloud architecture is divided into 2 parts i.e.

Frontend

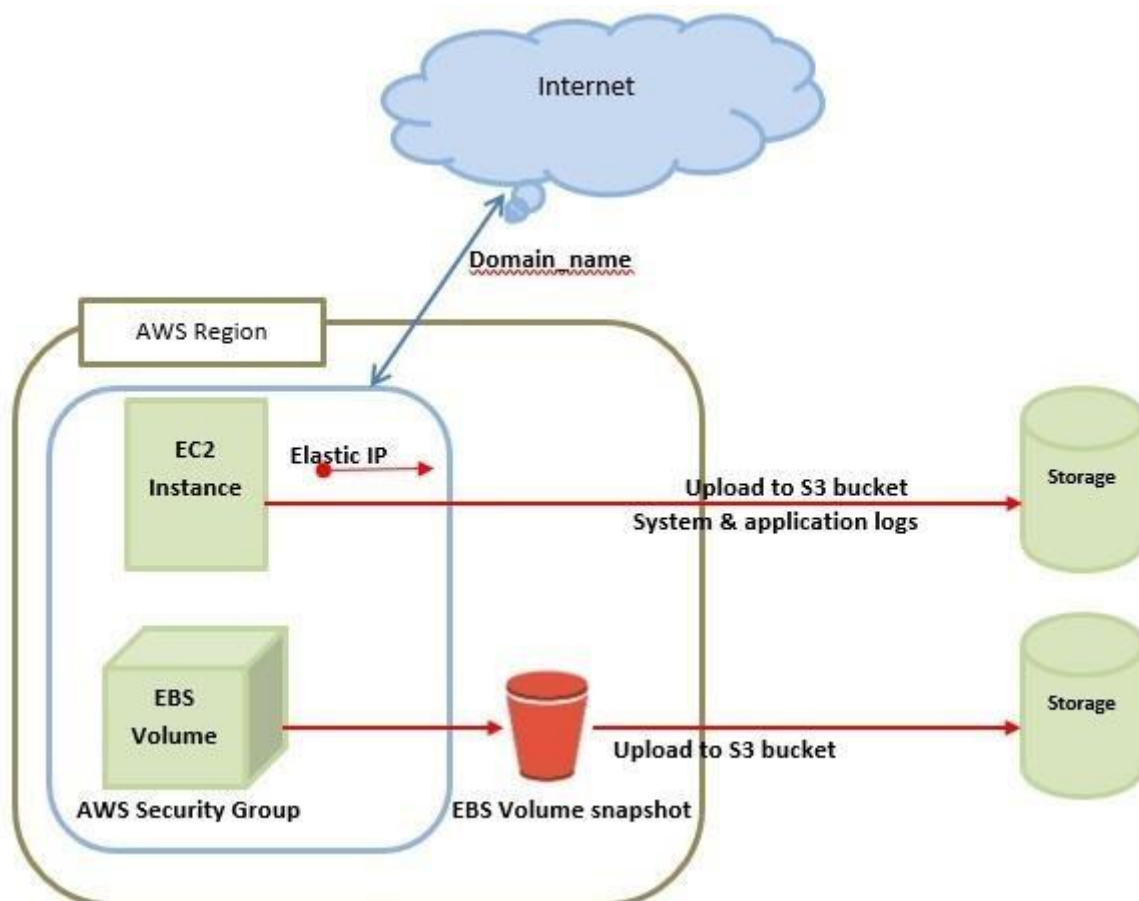
Backend



Architecture of cloud computing is the combination of both SOA (Service Oriented Architecture) and EDA (Event Driven Architecture). Client infrastructure, application, service, runtime cloud, storage, infrastructure, management and security all these are the components of cloud computing architecture.

Benefits of Cloud Computing Architecture :

- Makes overall cloud computing system simpler.
- Improves data processing requirements.
- Helps in providing high security.
- Makes it more modularized.
- Results in better disaster recovery.
- Gives good user accessibility.
- Reduces IT operating costs.



2.Resource Components

1.IAM- IAM is a cloud service that controls the permissions and access for users and cloud resources. IAM policies are sets of permission policies that can be attached to either users or cloud resources to authorize what they access and what they can do with it.

2.EC2- Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) Cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster.

3.VPN- A cloud virtual private network (cloud VPN) is a form of technology designed to help users access their organization's applications, data, and files through a website or an application. Unlike traditional or static VPNs, a cloud VPN provides a secure connection that can be rapidly deployed globally.

4.Security Groups- A security group is an AWS firewall solution that performs one primary function: to filter incoming and outgoing traffic from an EC2 instance. It accomplishes this filtering function at the TCP and IP layers, via their respective ports, and source/destination IP addresses.

5.Lambda Function:- Lambda runs your code on high availability compute infrastructure and performs all the administration of your compute resources. This includes server and operating system maintenance, capacity provisioning and automatic scaling, code and security patch deployment, and code monitoring and logging.

3.Billing Information

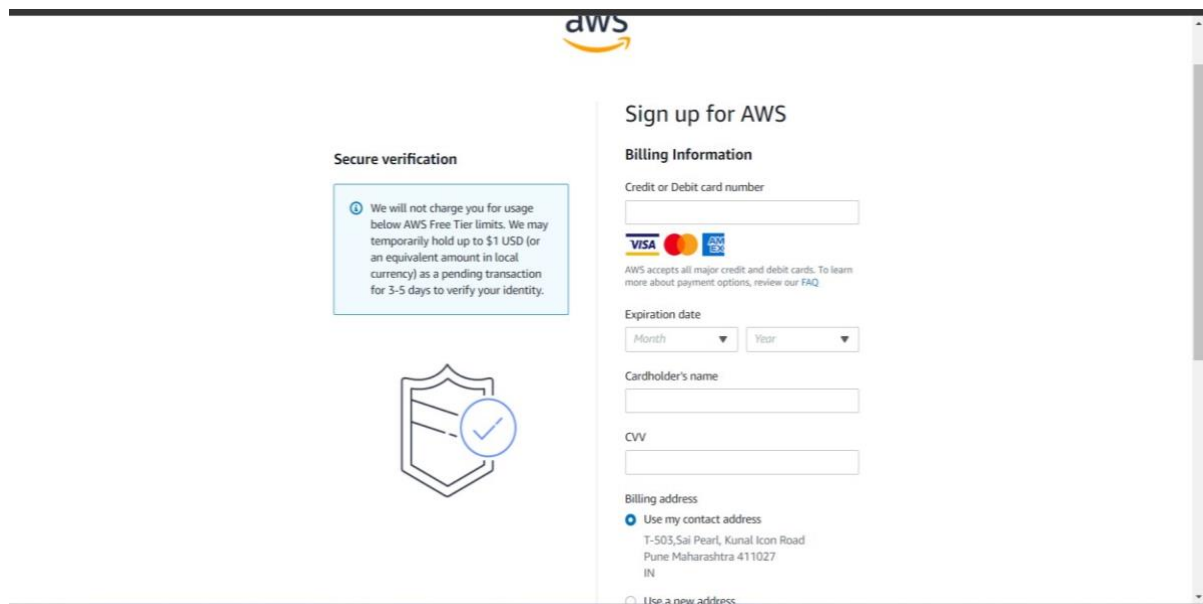
The AWS Billing console allows you to easily understand your AWS spending, view and pay invoices, manage billing preferences and tax settings, and access additional Cloud Financial Management services. Quickly evaluate whether

your monthly spend is in line with prior periods, forecast, or budget, and investigate and take corrective actions in a timely manner. The AWS Bills page provides a monthly view of your chargeable costs. For monthly billing periods that have not yet closed, the Bills page will display the most recent estimated charges based on services metered to date. Invoices are generated when a monthly billing period closes, or when subscriptions or one-time purchases are made

Cloud Resource Requirements:

AWS CLOUD ROOT LOGIN

Steps:



The screenshot shows the AWS sign-up page for billing information. On the left, there is a 'Secure verification' section with a blue box containing text: 'We will not charge you for usage below AWS Free Tier limits. We may temporarily hold up to \$1 USD (or an equivalent amount in local currency) as a pending transaction for 3-5 days to verify your identity.' Below this is a shield icon with a checkmark. On the right, the 'Sign up for AWS' section is titled 'Billing Information'. It includes a 'Credit or Debit card number' field, a dropdown for 'Expiration date' (Month and Year), a 'Cardholder's name' field, and a 'CVV' field. Below these is the 'Billing address' section, which has two radio buttons: 'Use my contact address' (selected) and 'Use a new address'. The contact address is listed as 'T-503,Sai Pearl, Kunal Icon Road, Pune Maharashtra 411027, IN'.

GitHub Repo Link:

<https://github.com/harshalv1/CCA>

Conclusion:

In this assignment we have explored some of the concepts of cloud Architecture, how it works, the interface of Amazon Web Service and billing system of AWS cloud.