Research Paper

Dynamic Hosting on Café Website Using Amazon Web Services (AWS)

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ABSTRACT: *Amazon Web Services (AWS) provides a reliable, scalable, secure, and highly performing infrastructure for the most demanding web applications. A café website files will get deployed in Amazon S3 bucket to store the details and the data of the website. All the folders related to website will get deployed into the S3 Bucket.S3 bucket will get connected to EC2(Elastic Cloud Compute) and we will launch EC2. EC2 is used to launch the virtual servers. After launching EC2 we will EC2 to ELB and we will Elastic Load Balancer (ELB). EC2 is connected to Amazon Virtual Private Cloud (VPC). Moba-Xterm and Amazon CLI is installed. Moba-Xterm is a software used as remote desktop tool. By using linux command, we will create a directory in ec2 server like* **mkdir /var/www/html cd var/www/html**. *Using linux commands we will copy the files stored in S3 bucket to ec2 server. After copying gets done an IP Address will get generated and that is the instant link of the website. Here Elastic Load Balancer balances the load very subtle and it also generates the health reports/status of the website. If the website got loaded in between* **5 sec to 30 sec** *about 10 times the website is in* **Good and Healthy State**. *If the Loading of website got* **crossed 30 secs** *then it was in latent state (**latency**) or in* **Unhealthy state**.*
KEYWORDS: *Virtual private Cloud, S3 Storage Bucket, Elastic Load Balancer, Subnets.*

I. INTRODUCTION

Amazon Web Services (AWS) provides a reliable, scalable, secure, and highly performing infrastructure for the most demanding web applications. This infrastructure matches IT costs with customer traffic patterns in real time. This whitepaper is for IT managers and system architects who look to the cloud to help them achieve the scalability to meet their on-demand computing needs.

A traditional web hosting architecture that implements a common three-tier web application model. In this model, the architecture is separated into presentation, application, and persistence layers. Scalability is provided by adding hosts at these layers. The architecture also has built-in performance, failover, and availability features. The traditional web hosting architecture is easily ported to the AWS Cloud with only a few modifications.

Hardware load balancers are a common network appliance used in traditional web application architectures. AWS provides this capability through the Elastic Load Balancing (ELB) service. ELB is a configurable load-balancing solution that supports health checks on hosts, distribution of traffic to EC2 instances across multiple Availability Zones, and dynamic addition and removal of Amazon EC2 hosts from the load-balancing rotation.

Static Hosting provides the users only the previously recorded data. whereas for any restaurants or for any café websites Dynamic Hosting should be required for the users to get to know about the daily/weekly offers and all. By using Amazon Web Services we can provide instances i.e website instant links for the users who cannot able to access the website due to any reasons.

The main purpose of the project is to develop a café website and to deploy the website into the cloud using Amazon web services like S3 storage bucket, Elastic Load Balancer (ELB), Elastic Block Storage (EBS),

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ec2 instances and Virtual Private Cloud (VPC) we establish the instances and send it to the required users and also generate the reports regarding the strength of the website to the users.

II.   EXISTING SYSTEM

• A Person always monitor's when the load increases while he/she will use different techniques to manage the hold.
• Every time storage will be a problem to maintain websites.
• Sometimes the load may not be managed as there may be some errors in the manual work.
• There are different websites leads to hacking because lack of security and lack of privacy.


III.   PROPOSED SYSTEM

• There are three main processes in this proposed system, which are designing a website and uploading/deploying the website into S3 Bucket and connecting website instance with Elastic load balancer.
• Then it will provide the website instances and with a good storage capacity and maintains traffic load perfect with a best security approach using VPC.
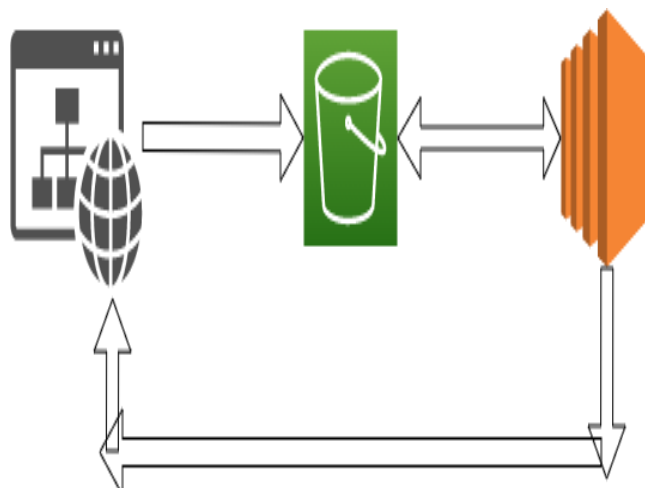
IV.   METHODOLOGY
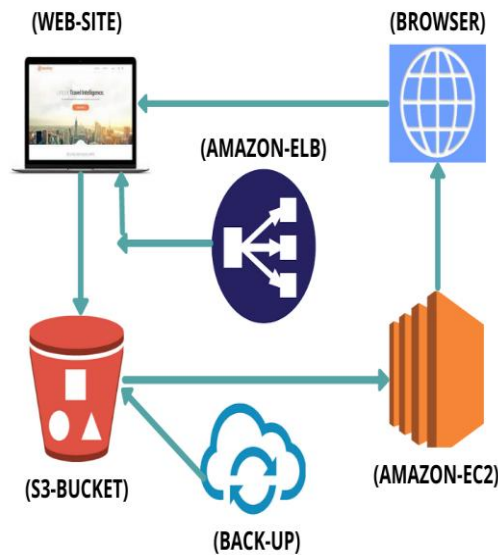
V.   SYSTEM IMPLEMENTATION

In this project the implementation is done by using
•   Moba-Xterm
•   Aws Console
•   Amazon Web services

S3 Storage Bucket and Elastic Block Storage

Amazon Simple Storage Service (S3) provides scalable object storage for data backup, collection and analytics. An IT professional stores data and files range up to 5(GB) inside S3 buckets to keep them organized. Amazon Elastic Block Store provides block-level storage volumes for persistent data storage when using EC2 instances. Amazon Elastic File System offers managed cloud-based file storage.

Elastic Cloud Compute (EC2)

Amazon Elastic Compute Cloud (EC2) is a service that provides virtual servers called EC2 instances for compute capacity. The EC2 service offers dozens of instance types with varying capacities and sizes, tailored to specific workload types and applications, such as memory-intensive and accelerated-computing jobs.

Elastic Load Balancer (ELB)

Elastic Load Balancing automatically distributes your incoming traffic across multiple   targets, such as EC2 instances, containers, and IP addresses, in one or more Availability Zones. It monitors the health of its registered targets, and routes traffic only to the healthy targets. Elastic Load Balancing scales your load balancer as your incoming traffic changes over time. It can automatically scale to the vast majority of workloads.

Virtual Private Cloud

We have complete control over your virtual networking environment, including selection of your own IP address range, creation of subnets, and configuration of route tables and network gateways. You can use both IPv4 and IPv6 for most resources in your virtual private cloud, helping to ensure secure and easy access to resources and applications. VPC makes it easy to customize your VPC's network configuration.

You can create a public-facing subnet for your web servers that have access to the internet. It also lets you place your backend systems, such as databases or application servers, in a private-facing subnet with no internet access. Amazon VPC lets you to use multiple layers of security, including security groups and network access control lists, to help control access to Amazon EC2 instances in each subnet.
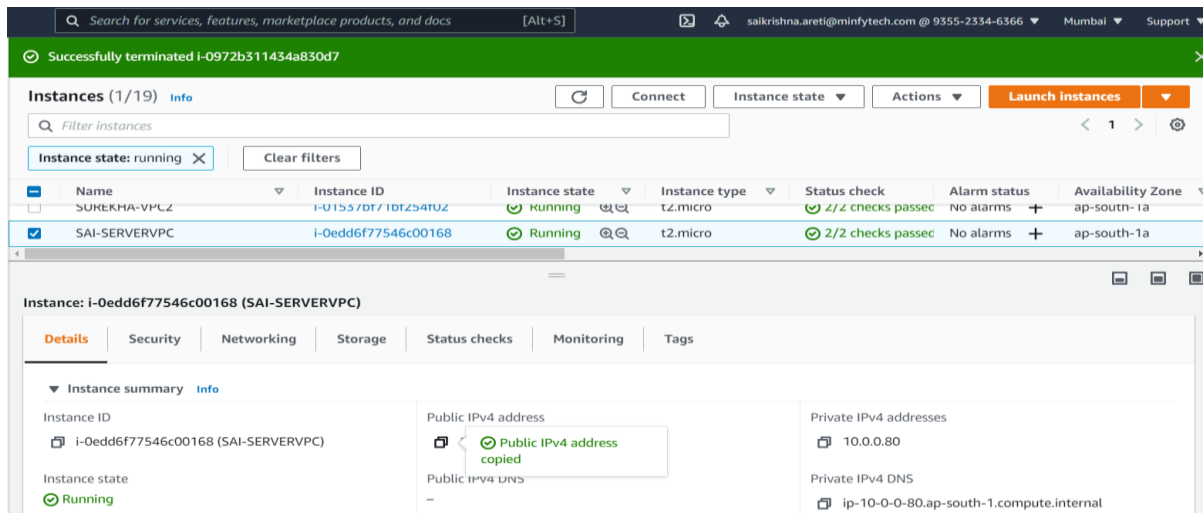
Benefits of VPC
•   Secure and monitored network connection.
•   Simple set-up and use.
•   Customizable Virtual network.

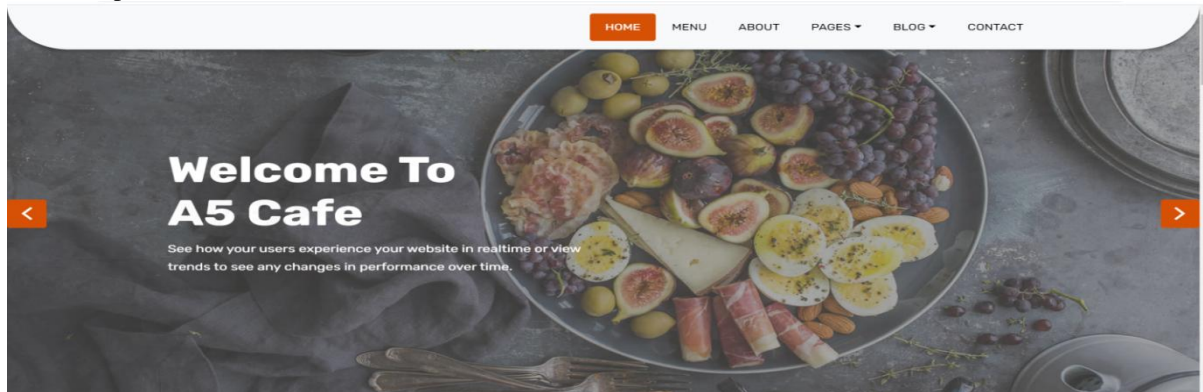Hosting Website Using Moba-Xterm by   Ec2 Instance
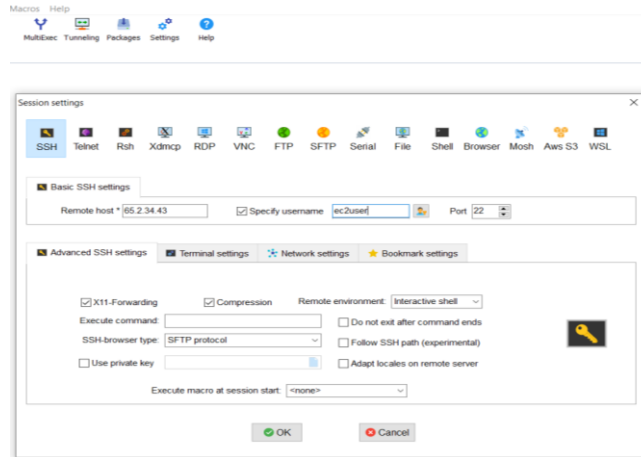
Key was generated

By using linux commands, the files present in S3 storage Bucket copies into EC2 server.
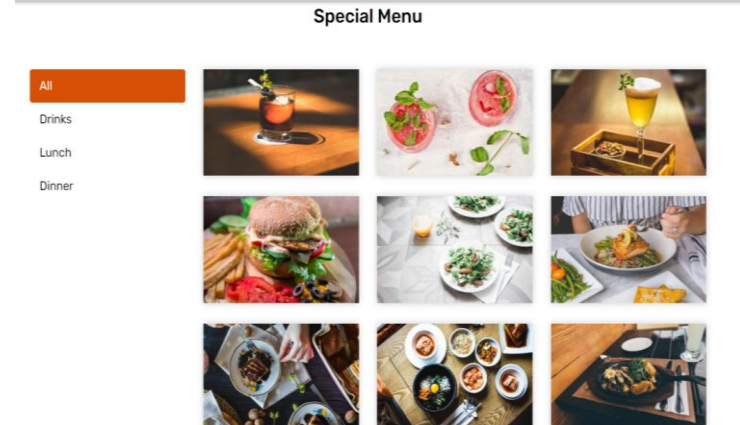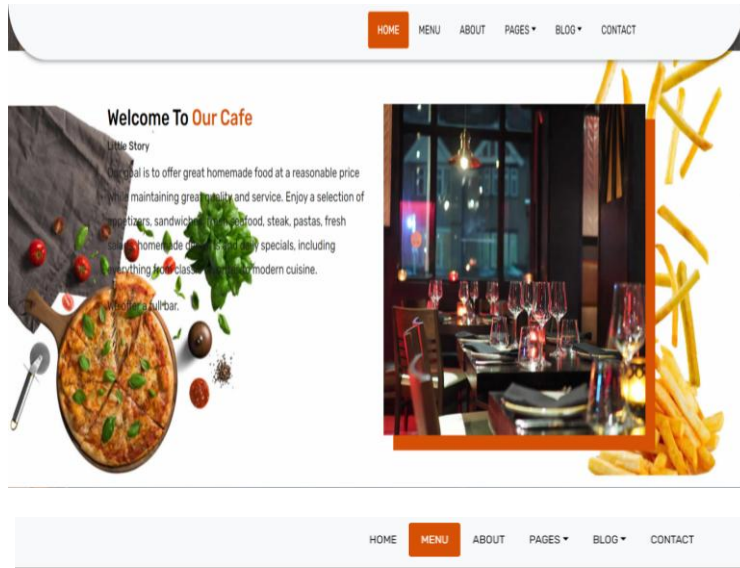

Instant links will be provided to the users.

Website opened

Connecting EC2 Instance to Load Balancer (ELB) to check the Health status of the website.

VI.   RESULT
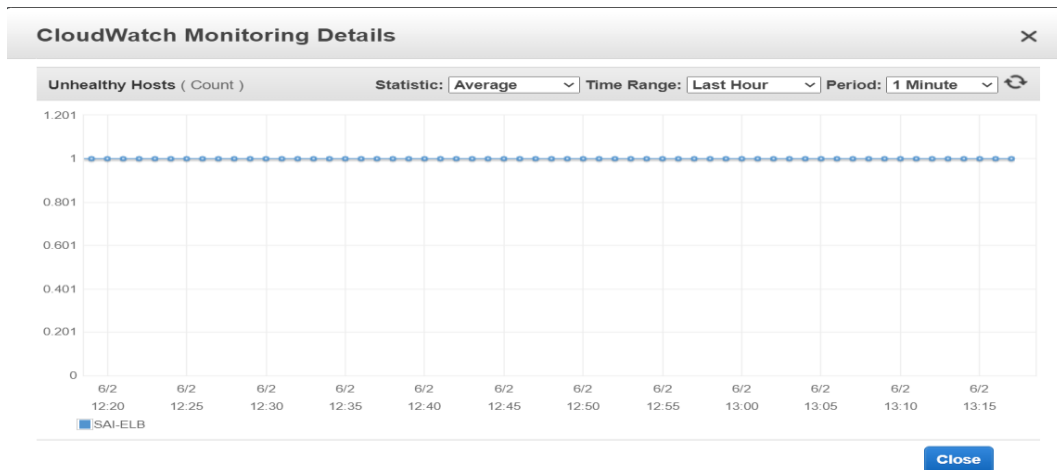
Reservation

Book a table

[ ]

[ ]

[Select Person* ⬍]

Contact Details

[Your Name]

[Your Email]

[Your Numbar]

[BOOK TABLE]

+ Options

date	tim	np	nam	em	mn
0000-00-00	00:00:00	1	sri	kak	31241
2021-06-23	23:30:00	1	Wheeler	krishnaareti6@gmail.com	9182248582
2021-06-23	23:35:00	1	Wheeler	krishnaareti6@gmail.com	9182248582
2021-06-08	21:15:00	2	Areti Sai Krishna	krishnaareti6@gmail.com	9182248582
2021-06-17	02:20:00	4	Sai Krishna Areti	krishnaareti6@gmail.com	8374340633
2021-06-23	20:24:00	2	Kavya Harini	Kavya@gmail.com	7882248582

☐ Show all | Number of rows: [25 ⌄] Filter rows: [Search this table]

CloudWatch Monitoring Details   ✕

Unhealthy Hosts (Count)   Statistic: [Average ⌄] Time Range: [Last Hour ⌄] Period: [1 Minute ⌄] ↻

■ SAI-ELB

[Close]

If the Loading of website got crossed 30 secs then it was in latent state (latency) or in unhealthy state. In the above report the statisctics of website is mentioning Average. Here we have taken the range of time 1 hour, In 1 minute period time the website is in latent state that means Unhealthy state.
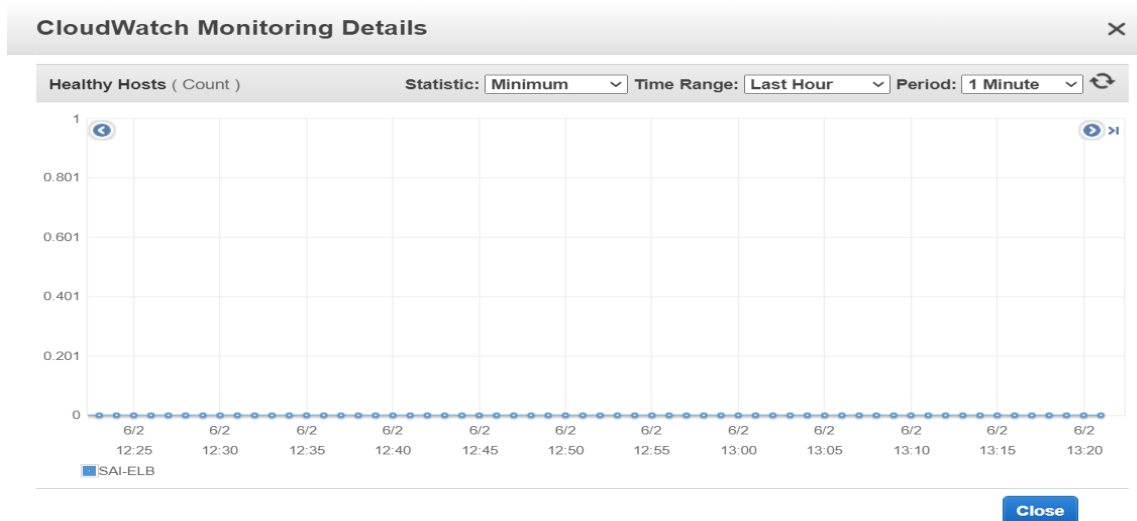
If the website got loaded in between 5 sec to 30 sec about 10 times the website is in Good and Healthy State. In the above report the statisctics of website is mentioning Minimum. Here we have taken the range of time 1 hour, In 1 minute period time the website remains in constatnt working state. That means the website is in Good or Sound or in Healthy State.

VII. CONCLUSION

This project describes about the hosting websites dynamically using Amazon Web Services that can change the old path of deploying websites through server's and databases. AWS service maintains the all in actions that can starts from deploying data in S3 Bucket and creating a computing device that can acts as out virtual server and able to access from anywhere. We use Elastic Load Balancer (ELB) service that can help in checking the performance of the websites, while the website is accessing slow or fast and also health of website is also maintained. Virtual Private Cloud (VPC) service that prevents the website and provide security to the website and by that the perfect website hosting will be done by using the services of Amazon Web Services.

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