

Amazon Web Service for LAMP stack

41001 | Cloud Computing and Software as a Service

Andrew Soen

andrew.soen-1@student.uts.edu.au

<http://thestartupapp-env.eba-djqyrk2j.us-east-1.elasticbeanstalk.com/>

1. Introduction

This document outlines the proposed system for a small startup company leveraging Amazon Web Services (AWS). It includes the requirements for the analysis and specifications provided by the startup, as also assumptions could be made during the process of the system designing. AWS for LAMP Stack offers a comprehensive suite of cloud services specifically designed to streamline the web development and hosting process for small startups. The startup's concerns revolve around scalable infrastructure to accommodate uncertain demand and disaster recovery for high performance. The objective is to design and implement a scalable, elastic, highly available, and fault-tolerant architecture that facilitates organic growth. Leveraging AWS's capabilities, the proposed solution will address the startup's requirements, optimize costs, and ensure continuity. Together, we will develop a tailored infrastructure that aligns with their vision, setting them on a path to success in the dynamic business landscape. By leveraging the scalability and reliability of AWS, businesses can focus on their core competencies while leaving the infrastructure management to the experts. The AWS services selected to fulfill all the requirements needed for requirement to be met, and CloudFormation's auto template will generate an architecture diagram.

2. Assumptions and Constraints

As the startup's requirement is provided and gives lots of description, some assumptions and constraints can be seen and need to think about to give better service as great as possible as what is show below are the assumptions made during design.

Assu 1. Startup's application was compatible with AWS environment and can be easily be modified from the lamp stack that exist before.

Assu 2. Their environment is running the recent version of PHP language.

Assu 3. Startup does not need to have PHP language with storage of 512 MB or larger.

Assu 4. The notification of email is supposed to be sent to the environment developer.

Assu 5. It requires auto scaling as it was based on the output of the connectivity to ensures that one instances is created or removed during the time necessary

Assu 6. The implementation of the classic Load Balancer can be used and implemented in the environment.

Assu 7. Startup's MySQL database does not need to have 5 GB or more worth of storage to start up the database.

Assu 8. Database and web server needed Security group of HTTP and SSH for it to run.

There are certain constraints that should be taken into account throughout the building of the environment, as specified in the assignment deliverables and description. The following constraints have been taken into account.

Cons 1. When it starts up, RDS could use up to 5 GB worth of storage to start up their database

Cons 2. All instances must use the same custom key pairs.

Cons 3. All of the Subnets need to be public and have at least two of them with the availability zone.

Cons 4. The request of HTTP and SSH connectivity can be triggered by any ip since it's 0.0.0.0/0

Cons 5. Auto scaling must have a minimum of 2 instances and maximum of 8 instances.

Cons 6. Since it uses elastic beanstalk, email notification is crucial for important events in the environment.

3. AWS Services

Although these can be expensive to operate over time, Amazon Web Services offers a wide selection of services that enable developers to build anything from a basic web server to an incredibly complete web server that can handle a lot. A variety of services was employed in order to finish this starting web server and give the new business a practical and efficient solution, which is include services such as:

- a. **AWS Beanstalk** It uses AWS Beanstalk to create applications uses all the service shown on the picture as it was developed by an application. This way makes it easy and simple to be use in manage

all the services in one application (*image of the application environment shown below and the web server on the appendix a*)

Elastic Beanstalk > Environments									
Environments (2) Info									
<input type="text" value="Filter environments"/>									
	Enviro...	Health	Applica...	Platform	Platform...	Domain	Runnin...	Tier na...	Date cr...
	LampStar...	No Data	lampStart...	PHP 8.1 r...	Supported...	LampStartupApp-env.eba-tra...	1.0	WebServer	May 31, 2...
	TheStartu...	Ok	theStartu...	PHP 8.1 r...	Supported...	TheStartupApp-env.eba-djgyr...	1.0	WebServer	May 31, 2...

- b. **Amazon EC2** This service allows for the development of a web server which when used with Beanstalk integration with RDS and other services is easy. This was a vital service required in completing the assignment allowing me to work with instances and create a Custom AMI
- c. **Custom AMI (Amazon Machine Image).** A custom AMI was generated specifically for the Beanstalk environment, utilizing Amazon's documentation. This involved substituting the automatically generated AMI ID with the custom AMI ID, resulting in an updated environment.

Amazon Machine Images (AMI) (1/2)									
<input type="text" value="Search"/>									
	Name	Owner	Image ID	Platform	Architecture	OS	Creation date	Platform	Root device type
	ami-0f96c3229d5126a0a	aws	ami-0f96c3229d5126a0a	Linux	x86_64	Ubuntu 20.04 LTS	2020-10-01 10:00:00	Linux	gp2
	ami-0f96c3229d5126a0a	aws	ami-0f96c3229d5126a0a	Linux	x86_64	Ubuntu 20.04 LTS	2020-10-01 10:00:00	Linux	gp2

Amazon Machine Images (AMI) (1/2)									
<input type="text" value="Search"/>									
	Name	Owner	Image ID	Platform	Architecture	OS	Creation date	Platform	Root device type
	ami-0f96c3229d5126a0a	aws	ami-0f96c3229d5126a0a	Linux	x86_64	Ubuntu 20.04 LTS	2020-10-01 10:00:00	Linux	gp2
	ami-0f96c3229d5126a0a	aws	ami-0f96c3229d5126a0a	Linux	x86_64	Ubuntu 20.04 LTS	2020-10-01 10:00:00	Linux	gp2

The Instance was used with Amazon Machine Image

Instances (10) Info									
<input type="text" value="Find instance by attribute or tag (case-sensitive)"/>									
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
	Server2	i-0f425e8c3557282b	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-54-90-42-44.com...	54.90.42.44
	Server1	i-06e1390f4476ca1c7	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-5-90-57-170.com...	3.90.57.170
	TheStartupAp...	i-0175635d31ab26c87	Running	t2.nano	2/2 checks passed	No alarms	us-east-1b	ec2-5-90-57-170.com...	54.90.75.35
	TheStartupAp...	i-0991159b0bbbc466	Running	t2.nano	2/2 checks passed	No alarms	us-east-1a	ec2-5-90-57-170.com...	184.72.141.58

- d. **Custom Security groups allowing HTTP and SSH requests.** To facilitate HTTP and SSH requests, custom security groups were implemented. Inbound rules were established for both protocols, functioning as a firewall for instances. This concept is similar to configuring advanced settings in the Windows Defender Firewall on a Windows 11 system. (Shown in the appendix).

Here are the Inbound rules:

sg-0d2814c0b87f2fe1e6f - Inbound rules									
<input type="text" value="Find security group rule"/>									
	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description	
	sg-0d2814c0b87f2fe1e6f	SSH	IPv4	ingress	TCP	22	0.0.0.0/0	SSH	
	sg-0d2814c0b87f2fe1e6f	HTTP	IPv4	ingress	TCP	80	0.0.0.0/0	HTTP	

Here are the Outbound rules:

sg-0d2814c0b87f2fe1e6f - Outbound rules									
<input type="text" value="Find security group rule"/>									
	Name	Security group rule...	IP version	Type	Protocol	Port range	Destination	Description	
	sg-0d2814c0b87f2fe1e6f	SSH	IPv4	egress	TCP	22	0.0.0.0/0	SSH	
	sg-0d2814c0b87f2fe1e6f	HTTP	IPv4	egress	TCP	80	0.0.0.0/0	HTTP	

A security group for the MySQL database was also developed to allow requests made through the web server.

Security group rule ID	IP versi...	Type	Protocol	Port range	Source
sgr-09d77b173c15a338a	--	MySQL/Aurora	TCP	3306	sg-002067898f2fe1e6f / awseb-e-2pfm6rmkp-stack-AWSEBSecurityGroup-05G0G9EJFD



- e. **Load Balancer** Application Load Balancer was integrated into the system during the transition from a single-instance setup to a load-balanced environment. This load balancer plays a critical role in distributing the workload across instances, ensuring efficient resource

EC2 > Load balancers

Load balancers (1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Q Find resources by attribute or tag

<input type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
<input type="checkbox"/>	awselb-AWSEB-1636V527DCDZ	 awseb-AWSEB-1636V527...	 Active	vpc-0f7717dc936d4142d	2 Availability Zones	application	May 31, 2023, 18:48 (UTC+10:00)

- | | | |
|-----------------------|----------------------|----------------------|
| Environment type | Min instances | Max instances |
| Load balanced | 2 | 8 |
| Fleet composition | On-demand base | On-demand above base |
| On-Demand instances | 0 | 70 |
| Capacity rebalancing | Processor type | Instance types |
| Deactivated | x86_64 | t2.nano,t2.micro |
| AMI ID | Availability Zones | Metric |
| ami-0ca42562f43556e13 | Any | NetworkOut |
| Statistic | Unit | Period |
| Average | Percent | 5 |
| Breach duration | Upper threshold | Scale up increment |
| 5 | 60 | 1 |
| Lower threshold | Scale down increment | |
| 30 | -1 | |

- | Database | | |
|-----------------------|-------------------------|--|
| Database availability | Has coupled database | Database deletion policy |
| true | true | Delete |
| Database engine | Database engine version | Database instance class |
| mysql | 8.0.32 | db.t2.micro |
| Database password | Database storage | Database subnets |
| ***** | 5 | subnet-0730aa0fd0586e9d,subnet-04a826c9d48b8ccdb |
| Database username | | |
| lampUsername | | |

- | <h2>VPC</h2> | <div> <div> <div>Your VPCs (2) info</div> <div> <input type="text" value="Filter VPCs"/> </div> </div> <table> <thead> <tr> <th>Name</th><th>VPC ID</th><th>State</th><th>IPv4 CIDR</th><th>IPv6 CIDR</th><th>DHCP option set</th><th>Main route table</th><th>Main network ACL</th><th>Tenancy</th><th>Default VPC</th><th>Owner ID</th></tr> </thead> <tbody> <tr> <td>theStartupVPC</td><td>vpc-0f7717dc936d4142d</td><td>Available</td><td>10.0.0.0/16</td><td>-</td><td>dhcp-0ba6712a3b3c...</td><td>rtb-030c8024c634f4bcb</td><td>acl-071c486dc12a90f71</td><td>Default</td><td>No</td><td>900087919992</td></tr> </tbody> </table> </div> | Name | VPC ID | State | IPv4 CIDR | IPv6 CIDR | DHCP option set | Main route table | Main network ACL | Tenancy | Default VPC | Owner ID | theStartupVPC | vpc-0f7717dc936d4142d | Available | 10.0.0.0/16 | - | dhcp-0ba6712a3b3c... | rtb-030c8024c634f4bcb | acl-071c486dc12a90f71 | Default | No | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|------------------------------|--------------------------------|------------------------------|---------------------------------|--------------------------|-----------------------|--------------------------|----------------------|-----------------------|----------------------|----------|-------------------------|---------------------------------|----------------------|-----------------|-----------------------|--------------------------|-----------------------|-----------------------|---------------------------------|--------------|--------------------------|-----------------------|----------------------|----------------|-----|-----------------------|--------------|-----------------|-----------------------|--------------------------|--------------------------|-----------|---------------------------------|--------------|---|-----|------------|------------|-----------|---|-------------------------|-----------|----------------------|----------------|---|------|------------|------------|-----------|---|--------------------------|-----------|----------------------|----------------|---|------|------------|------------|-----------|--------------|-------------------------|-----------|--------------------------------|-------------|---|-----|------------|------------|-----------|---|-------------------------|-----------|----------------------|---------------|---|------|------------|------------|-----------|---|-------------------------|-----------|----------------------|----------------|---|------|------------|------------|-----------|
| Name | VPC ID | State | IPv4 CIDR | IPv6 CIDR | DHCP option set | Main route table | Main network ACL | Tenancy | Default VPC | Owner ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| theStartupVPC | vpc-0f7717dc936d4142d | Available | 10.0.0.0/16 | - | dhcp-0ba6712a3b3c... | rtb-030c8024c634f4bcb | acl-071c486dc12a90f71 | Default | No | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <h2>Subnets</h2> | <div> <div> <div>Subnets (8) info</div> <div> <input type="text" value="Filter subnets"/> </div> </div> <table> <thead> <tr> <th>Name</th><th>Subnet ID</th><th>State</th><th>VPC</th><th>IPv4 CIDR</th><th>IPv6 CIDR</th><th>Available IPv4 addresses</th><th>Availability Zone</th><th>Availability Zone ID</th><th>Network border group</th></tr> </thead> <tbody> <tr> <td>-</td><td>subnet-02a46d41e35bb0a6</td><td>Available</td><td>vpc-02a46d41e35bb0a6</td><td>172.31.0.0/20</td><td>-</td><td>4091</td><td>us-east-1f</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>-</td><td>subnet-0a8d57bf18d36791c</td><td>Available</td><td>vpc-02a46d41e35bb0a6</td><td>172.31.32.0/20</td><td>-</td><td>4091</td><td>us-east-1b</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>lampSubnet1a</td><td>subnet-0730aa0fd05868...</td><td>Available</td><td>vpc-0f7717dc936d4142d the...</td><td>10.0.2.0/24</td><td>-</td><td>240</td><td>us-east-1b</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>-</td><td>subnet-01c1b100195f6bde</td><td>Available</td><td>vpc-02a46d41e35bb0a6</td><td>172.31.48.0/20</td><td>-</td><td>4091</td><td>us-east-1b</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>-</td><td>subnet-0d51b786c4f7f82af</td><td>Available</td><td>vpc-02a46d41e35bb0a6</td><td>172.31.16.0/20</td><td>-</td><td>4091</td><td>us-east-1a</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>lampSubnet1a</td><td>subnet-0a62dc9d48bba0db</td><td>Available</td><td>vpc-0f7717dc936d4142d the...</td><td>10.0.1.0/24</td><td>-</td><td>240</td><td>us-east-1a</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>-</td><td>subnet-0b15c2263b98f634</td><td>Available</td><td>vpc-02a46d41e35bb0a6</td><td>172.31.0.0/20</td><td>-</td><td>4091</td><td>us-east-1c</td><td>us-east-1a</td><td>us-east-1</td></tr> <tr> <td>-</td><td>subnet-02a46d41e35bb0a6</td><td>Available</td><td>vpc-02a46d41e35bb0a6</td><td>172.31.80.0/20</td><td>-</td><td>4091</td><td>us-east-1d</td><td>us-east-1a</td><td>us-east-1</td></tr> </tbody> </table> </div> | Name | Subnet ID | State | VPC | IPv4 CIDR | IPv6 CIDR | Available IPv4 addresses | Availability Zone | Availability Zone ID | Network border group | - | subnet-02a46d41e35bb0a6 | Available | vpc-02a46d41e35bb0a6 | 172.31.0.0/20 | - | 4091 | us-east-1f | us-east-1a | us-east-1 | - | subnet-0a8d57bf18d36791c | Available | vpc-02a46d41e35bb0a6 | 172.31.32.0/20 | - | 4091 | us-east-1b | us-east-1a | us-east-1 | lampSubnet1a | subnet-0730aa0fd05868... | Available | vpc-0f7717dc936d4142d the... | 10.0.2.0/24 | - | 240 | us-east-1b | us-east-1a | us-east-1 | - | subnet-01c1b100195f6bde | Available | vpc-02a46d41e35bb0a6 | 172.31.48.0/20 | - | 4091 | us-east-1b | us-east-1a | us-east-1 | - | subnet-0d51b786c4f7f82af | Available | vpc-02a46d41e35bb0a6 | 172.31.16.0/20 | - | 4091 | us-east-1a | us-east-1a | us-east-1 | lampSubnet1a | subnet-0a62dc9d48bba0db | Available | vpc-0f7717dc936d4142d the... | 10.0.1.0/24 | - | 240 | us-east-1a | us-east-1a | us-east-1 | - | subnet-0b15c2263b98f634 | Available | vpc-02a46d41e35bb0a6 | 172.31.0.0/20 | - | 4091 | us-east-1c | us-east-1a | us-east-1 | - | subnet-02a46d41e35bb0a6 | Available | vpc-02a46d41e35bb0a6 | 172.31.80.0/20 | - | 4091 | us-east-1d | us-east-1a | us-east-1 |
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| - | subnet-02a46d41e35bb0a6 | Available | vpc-02a46d41e35bb0a6 | 172.31.0.0/20 | - | 4091 | us-east-1f | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | subnet-0a8d57bf18d36791c | Available | vpc-02a46d41e35bb0a6 | 172.31.32.0/20 | - | 4091 | us-east-1b | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lampSubnet1a | subnet-0730aa0fd05868... | Available | vpc-0f7717dc936d4142d the... | 10.0.2.0/24 | - | 240 | us-east-1b | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | subnet-01c1b100195f6bde | Available | vpc-02a46d41e35bb0a6 | 172.31.48.0/20 | - | 4091 | us-east-1b | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | subnet-0d51b786c4f7f82af | Available | vpc-02a46d41e35bb0a6 | 172.31.16.0/20 | - | 4091 | us-east-1a | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lampSubnet1a | subnet-0a62dc9d48bba0db | Available | vpc-0f7717dc936d4142d the... | 10.0.1.0/24 | - | 240 | us-east-1a | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | subnet-0b15c2263b98f634 | Available | vpc-02a46d41e35bb0a6 | 172.31.0.0/20 | - | 4091 | us-east-1c | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | subnet-02a46d41e35bb0a6 | Available | vpc-02a46d41e35bb0a6 | 172.31.80.0/20 | - | 4091 | us-east-1d | us-east-1a | us-east-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <h2>Route Table</h2> | <div> <div> <div>Route tables (4) info</div> <div> <input type="text" value="Find resources by attribute or tag"/> </div> </div> <table> <thead> <tr> <th>Name</th><th>Route table ID</th><th>Explicit subnet associati...</th><th>Edge associations</th><th>Main</th><th>VPC</th><th>Owner ID</th></tr> </thead> <tbody> <tr> <td>-</td><td>rtb-030c8024c634f4bcb</td><td>-</td><td>-</td><td>Yes</td><td>vpc-0f7717dc936d4142d theS...</td><td>900087919992</td></tr> <tr> <td>lampRouteTable2</td><td>rtb-00b318d0c34af5b1c</td><td>subnet-0730aa0fd05868...</td><td>-</td><td>No</td><td>vpc-0f7717dc936d4142d theS...</td><td>900087919992</td></tr> <tr> <td>-</td><td>rtb-07943fa784e268532</td><td>-</td><td>-</td><td>Yes</td><td>vpc-0c2a46d41e35bbae6</td><td>900087919992</td></tr> <tr> <td>lampRouteTable1</td><td>rtb-0ca5f7979ce49023b</td><td>subnet-04a826c9d48bc8...</td><td>-</td><td>No</td><td>vpc-0f7717dc936d4142d theS...</td><td>900087919992</td></tr> </tbody> </table> </div> | Name | Route table ID | Explicit subnet associati... | Edge associations | Main | VPC | Owner ID | - | rtb-030c8024c634f4bcb | - | - | Yes | vpc-0f7717dc936d4142d theS... | 900087919992 | lampRouteTable2 | rtb-00b318d0c34af5b1c | subnet-0730aa0fd05868... | - | No | vpc-0f7717dc936d4142d theS... | 900087919992 | - | rtb-07943fa784e268532 | - | - | Yes | vpc-0c2a46d41e35bbae6 | 900087919992 | lampRouteTable1 | rtb-0ca5f7979ce49023b | subnet-04a826c9d48bc8... | - | No | vpc-0f7717dc936d4142d theS... | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Name | Route table ID | Explicit subnet associati... | Edge associations | Main | VPC | Owner ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | rtb-030c8024c634f4bcb | - | - | Yes | vpc-0f7717dc936d4142d theS... | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lampRouteTable2 | rtb-00b318d0c34af5b1c | subnet-0730aa0fd05868... | - | No | vpc-0f7717dc936d4142d theS... | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | rtb-07943fa784e268532 | - | - | Yes | vpc-0c2a46d41e35bbae6 | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lampRouteTable1 | rtb-0ca5f7979ce49023b | subnet-04a826c9d48bc8... | - | No | vpc-0f7717dc936d4142d theS... | 900087919992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

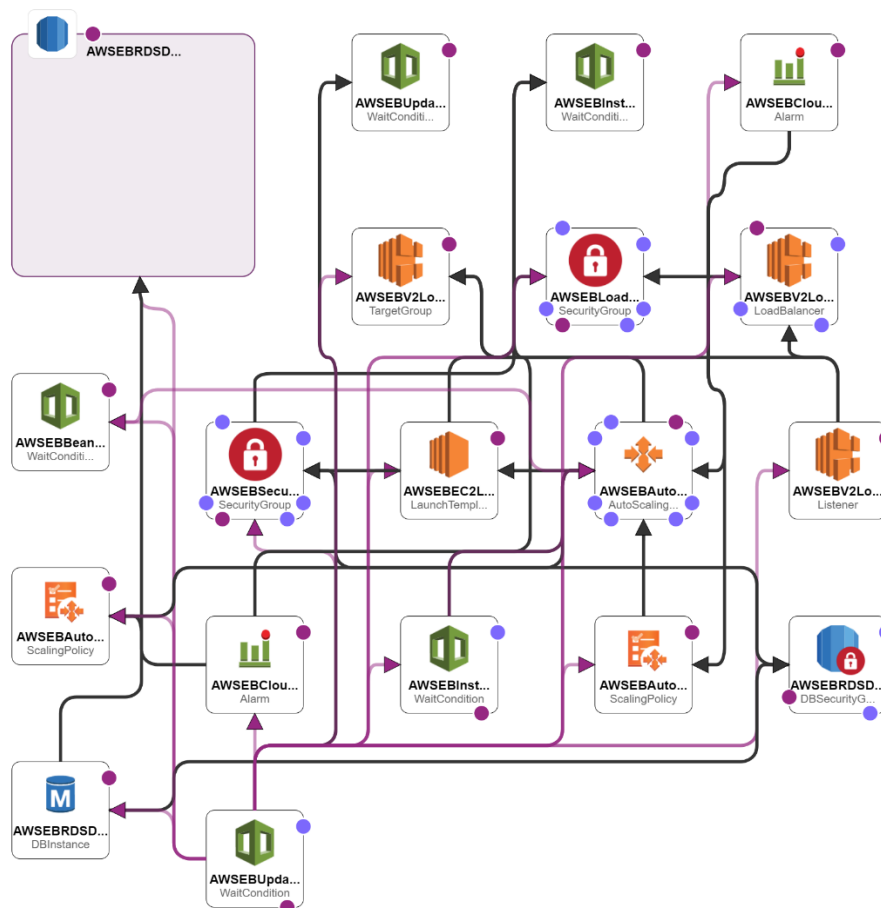
Internet Gateway	Internet gateways (2) Info					
	<input type="text" value="Filter internet gateways"/>					
	<input type="checkbox"/>	Name ▾	Internet gateway ID ▾	State ▾	VPC ID ▾	Owner
	<input type="checkbox"/>	lampInternetGateway	igw-01ad1d308c7a3689d	Attached	vpc-0f7717dc936d4142d theStartup...	900087919992

- | | | | |
|-----------------|-------------------|----------|------|
| lampKeyPair.ppk | 5/31/2023 4:54 PM | PPK File | 2 KB |
|-----------------|-------------------|----------|------|

-
- AWS Notification - Subscription Confirmation
- AWS Notifications**
Andrew Scott
- You have chosen to subscribe to the topic:
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environment, particularly if using Elastic Beanstalk, trigger email notifications. This feature keeps developers informed of server status changes without requiring constant monitoring of the system health screen.

4. Architecture Diagram



5. Conclusion

Overall, moving the startup's LAMP stack to AWS gives it a scalable and adaptable infrastructure. AWS compatibility and the most recent version of PHP make it simple for startups to adapt their applications for cloud environments. To achieve scalability, high availability, and fault tolerance, the architectural design combines services like EC2 instances, RDS for MySQL, Elastic Beanstalk, Auto Scaling, and the Classic Load Balancer. In order to provide optimal resource utilization, restrictions on storage, security groups, subnets, and instance limitations are taken into account. Overall, the firm is better able to manage its application effectively, support future expansion, and make use of cloud computing features thanks to the shift to AWS.

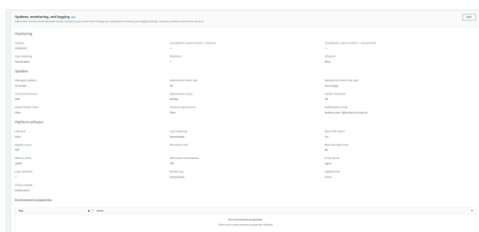
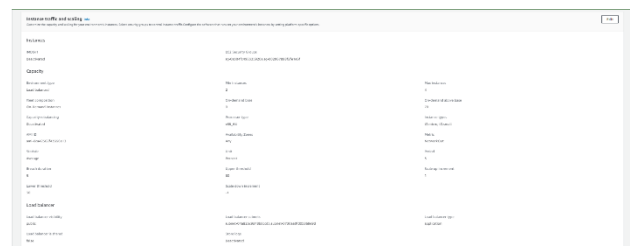
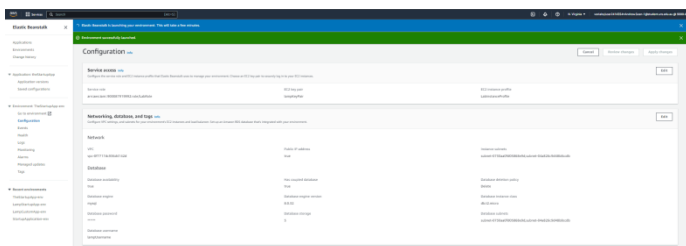
6. Appendix and Resources

Appendix

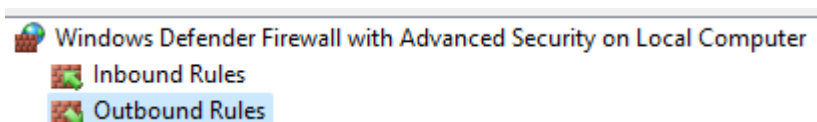
a. Appendix 1: Web Server



b. Appendix 2: Configuration Screen



c. Appendix 3: Defender Firewall Advanced Security settings Windows 11



Resource:

- Lab and contents regarding AWS
- Amazon Web Services. (n.d.). Elastic Beanstalk: Getting Started. Retrieved from <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/GettingStarted.html>
- Amazon Web Services. (n.d.). Tutorial: Set up a scaled and load-balanced application. Retrieve from <https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-register-lbs-with-asg.html#as-register-lbs-console>
- Amazon Web Services. (n.d.). What is Amazon VPC?. Retrieve from <https://docs.aws.amazon.com/vpc/latest/userguide/what-is-amazon-vpc.html>