

Capstone Project – 1

1. One instance created for webserver to create custom Image

Instances (1/1) [Info](#)

Last updated 2 minutes ago [Refresh](#) [Connect](#) [Instance state](#) [Actions](#)

[All states](#)

<input checked="" type="checkbox"/>	Name ↗	Instance ID	Instance state	Instance type	Status check	Alarm s
<input checked="" type="checkbox"/>	Webserver	i-09f1f89d51c69e500	Running	t2.micro	Initializing	View all

i-09f1f89d51c69e500 (Webserver)

▼ Instance summary [Info](#)

Instance ID

i-09f1f89d51c69e500

IPv6 address

–

Hostname type

IP name: ip-172-31-7-223.ap-south-1.compute.internal

Answer private resource DNS name

IPv4 (A)

Public IPv4 address

65.192.84 | [open address](#)

Instance state

Running

Private IP DNS name (IPv4 only)

ip-172-31-7-223.ap-south-1.compute.internal

Instance type

t2.micro

Private IPv4 addresses

172.31.7.223

Public IPv4 DNS

ec2-65-1-92-84.ap-south | [open address](#)

Elastic IP addresses

–

2. Installing httpd

```
[root@ip-172-31-7-223 ~]# yum update
Last metadata expiration check: 0:03:47 ago on Fri Oct 25 05:27:28 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-7-223 ~]# yum install httpd
Last metadata expiration check: 0:03:55 ago on Fri Oct 25 05:27:28 2024.
Dependencies resolved.
```

Package	Architecture	Version
Installing:		
httpd	x86_64	2.4.62-1.amzn2023
Installing dependencies:		
apr	x86_64	1.7.2-2.amzn2023.0.2
apr-util	x86_64	1.6.3-1.amzn2023.0.1
generic-logos-httpd	noarch	18.0.0-12.amzn2023.0.3
httpd-core	x86_64	2.4.62-1.amzn2023
httpd-filesystem	noarch	2.4.62-1.amzn2023
httpd-tools	x86_64	2.4.62-1.amzn2023
libbrotli	x86_64	1.0.9-4.amzn2023.0.2
mailcap	noarch	2.1.49-3.amzn2023.0.3
Installing weak dependencies:		
apr-util-openssl	x86_64	1.6.3-1.amzn2023.0.1
mod_http2	x86_64	2.0.27-1.amzn2023.0.3
mod_lua	x86_64	2.4.62-1.amzn2023

3. Service started and enabled

```
[root@ip-172-31-7-223 ~]# systemctl start httpd
[root@ip-172-31-7-223 ~]#
[root@ip-172-31-7-223 ~]# systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service
[root@ip-172-31-7-223 ~]#
```

4. Installing DB

```
[root@ip-172-31-7-223 ~]# yum install mariadb105-3:10.5.25-1.amzn2023.0.1.x86_64
Last metadata expiration check: 0:07:15 ago on Fri Oct 25 05:27:28 2024.
Dependencies resolved.
=====
Package                                Architecture                               Version
=====
Installing:
mariadb105                             x86_64                                    3:10.5.
Installing dependencies:
mariadb-connector-c                     x86_64                                    3.1.13-
mariadb-connector-c-config              noarch                                    3.1.13-
mariadb105-common                       x86_64                                    3:10.5.
perl-Sys-Hostname                       x86_64                                    1.23-47
=====

Transaction Summary
=====
Install 5 Packages

Total download size: 1.8 M
Installed size: 19 M
Is this ok [y/N]: y
Downloading Packages:
(1/5): mariadb-connector-c-config-3.1.13-1.amzn2023.0.3.noarch.rpm
(2/5): mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64.rpm
(3/5): mariadb105-10.5.25-1.amzn2023.0.1.x86_64.rpm
(4/5): mariadb105-common-10.5.25-1.amzn2023.0.1.x86_64.rpm
(5/5): perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64.rpm
=====
```

5. PHP file created

```
[root@ip-172-31-7-223 html]# ls -lrth
total 4.0K
-rw-r--r--. 1 root root 2.1K Oct 25 05:38 index.php
[root@ip-172-31-7-223 html]#
```

6. PHP installed:

```
[root@ip-172-31-7-223 ~]# yum install -y php8.3-cli-8.3.10-1.amzn2023.0.1.x86_64
Last metadata expiration check: 0:34:57 ago on Fri Oct 25 05:27:28 2024.
Dependencies resolved.
```

Package	Architecture	Version
Installing:		
php8.3-cli	x86_64	8.3.10-1.amzn2023.0.1
Installing dependencies:		
php8.3-common	x86_64	8.3.10-1.amzn2023.0.1
Transaction Summary		
Install 2 Packages		
Total download size: 4.4 M		
Installed size: 25 M		
Downloading Packages:		
(1/2): php8.3-common-8.3.10-1.amzn2023.0.1.x86_64.rpm		
(2/2): php8.3-cli-8.3.10-1.amzn2023.0.1.x86_64.rpm		
Total		
Running transaction check		
Transaction check succeeded.		
Running transaction test		
Transaction test succeeded.		
Running transaction		

7. DB created RDS with mySql

RDS > Databases > webserver-db

webserver-db

Summary

DB identifier webserver-db	Status Available	Role Instance	Engine MySQL Community
CPU <div><div></div>28.40%</div>	Class db.t4g.micro	Current activity	Region & AZ ap-south-1a

Connectivity & security

Monitoring

Logs & events

Configuration

Zero-ETL integrations

Maintenance & backups

Tags

Recommendatio

Connectivity & security

Endpoint & port

Endpoint
webserver-db.cfk8syamyomd.ap-south-1.rds.a
amazonaws.com

Port
3306

Networking

Availability Zone
ap-south-1a

VPC
default vpc (vpc-01a1bdba3c00bd81a)

Subnet group
default-vpc-01a1bdba3c00bd81a

Subnets
subnet-0083193be9d7bed20

Security

VPC security groups
default (sg-0b255a32a49ae59a9)
Active

Publicly accessible
No

Certificate authority
rds-ca-rsa2048-g1

Certificate authority date

8. DB details filled in php file

```
<?php
$firstname=$_POST['firstname'];
$email=$_POST['email'];
$servername = "webserver-db.cfk8syamyomd.ap-south-1.rds.amazonaws.com";
$username = "intel";
$password = "intel123";
$db = "intel";
// Create connection
$conn = new mysqli($servername, $username, $password, $db);

// Check connection
if ($conn->connect_error) {
    "index.php" 57L, 2142B
```

9. Connected to DB

```
[root@ip-172-31-7-223 ~]# mysql -h webserver-db.cfk8syamyomd.ap-south-1.rds.amazonaws.com -u intel -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 52
Server version: 8.0.39 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

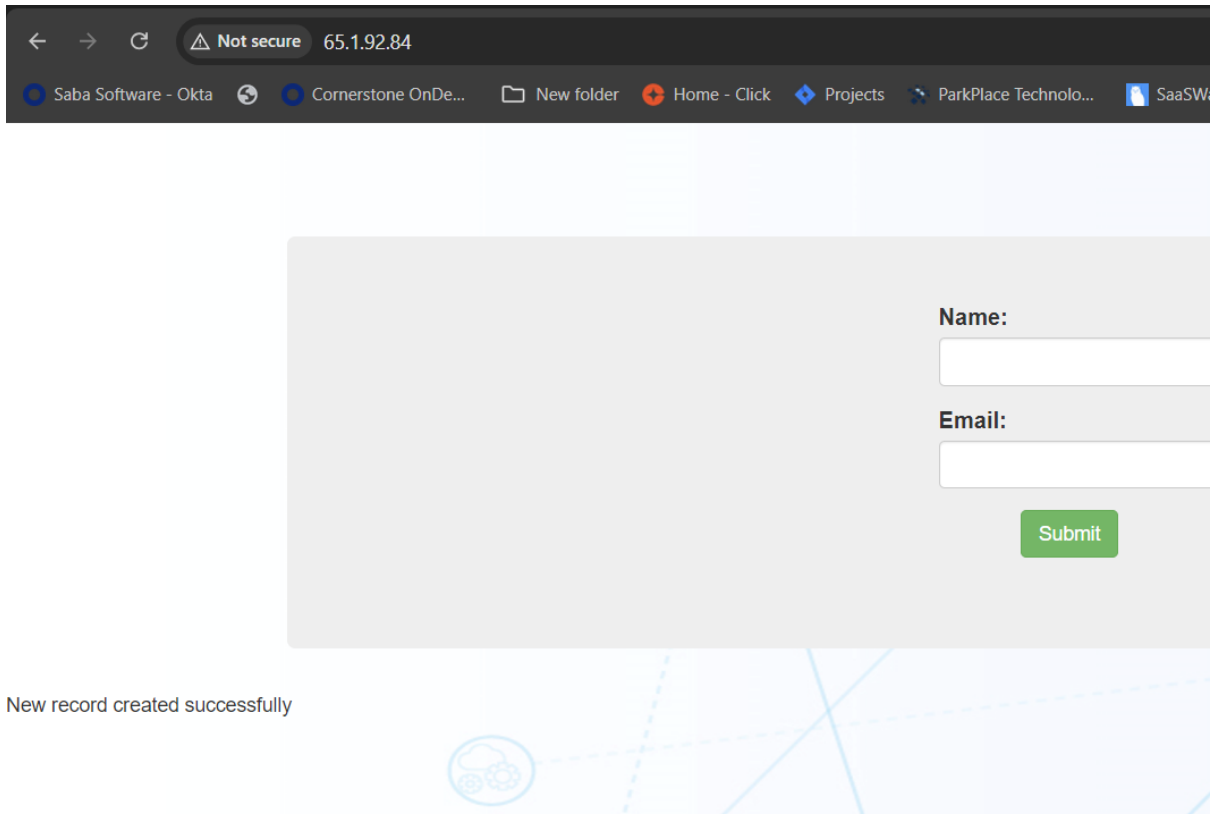
MySQL [(none)]>
MySQL [(none)]>
```

10. Table created with name data

```
MySQL [(none)]> create database intel
->
-> ;
Query OK, 1 row affected (0.011 sec)
```

```
MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| intel |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.002 sec)
```

11. Demo data entered and reflecting to DB



The screenshot shows a web browser window with a dark theme. The address bar displays 'Not secure' and the IP address '65.192.84'. The browser's tab bar shows several open tabs, including 'Saba Software - Okta', 'Cornerstone OnDe...', 'New folder', 'Home - Click', 'Projects', 'ParkPlace Technolo...', and 'SaaS...'. The main content area features a light gray form with two input fields labeled 'Name:' and 'Email:'. A green 'Submit' button is positioned below the 'Email:' field. Below the form, a message 'New record created successfully' is displayed, accompanied by a small circular icon containing a gear and a cloud.

```
MySQL [intel]> select * from data;
+-----+-----+
| firstname | email          |
+-----+-----+
| jay       | xyz@gmail.com  |
+-----+-----+
1 row in set (0.001 sec)
```

```
MySQL [intel]> █
```

12. Custom AMI created from demo webserver

Amazon Machine Images (AMIs) (1/1) Info

Owned by me

Find AMI by attribute or tag

Recycle Bin

EC2 Image Builder

Actions

<input checked="" type="checkbox"/>	Name	AMI name	AMI ID	Source	Owner	Visibility	Status
<input checked="" type="checkbox"/>	task_by_jay		ami-05b91fd70b0db8330	465047645687/task_by_jay	465047645687	Private	Available

AMI ID: ami-05b91fd70b0db8330

Details

Permissions

Storage

Tags

AMI ID	Image type	Platform details	Root device type
ami-05b91fd70b0db8330	machine	Linux/UNIX	EBS
AMI name	Owner account ID	Architecture	Usage operation
task_by_jay	465047645687	x86_64	RunInstances
Root device name	Status	Source	Virtualization type
/dev/xvda	Available	465047645687/task_by_jay	hvm
Boot mode	State reason	Creation date	Kernel ID
uefi-preferred	-	2024-10-25T08:59:06.000Z	-
Description	Product codes	RAM disk ID	Deprecation time
-	-	-	-
Last launched time	Block devices	Deregistration protection	
-	/dev/xvda=snap-010af59d6b0812946:8:true:gp3	Disabled	

13. Launch template created by custom AMI

Launch Templates (1/1) Info

Search

Recycle Bin

Actions

<input checked="" type="checkbox"/>	Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By
<input checked="" type="checkbox"/>	lt-0677054bd3a97e23b	jay_task	1	1	2024-10-25T09:04:42.000Z	arn:aws:iam::465047645687:root

jay_task (lt-0677054bd3a97e23b)

Launch template details

Actions

Launch template ID	Launch template name	Default version	Owner
lt-0677054bd3a97e23b	jay_task	1	arn:aws:iam::465047645687:root

Details

Versions

Template tags

Launch template version details

Actions

Version

1 (Default)

Description	Date created	Created by
jay_task_prod	2024-10-25T09:04:42.000Z	arn:aws:iam::465047645687:root

Instance details

Storage

Resource tags

Network interfaces

Advanced details

AMI ID	Instance type	Availability Zone	Key pair name
ami-05b91fd70b0db8330	-	-	-

14. Auto scaling group created with launch template

EC2 > Auto Scaling groups > jay_as

jay_as

Details | Activity | Automatic scaling | Instance management | Monitoring | Instance refresh

Group details

Auto Scaling group name jay_as	Desired capacity 2	Desired capacity type Units (number of instances)	Amazon Resource Name (ARN) arn:aws:autoscaling:ap-south-1:ScalingGroup:089ea2a1-68d2-4f2-f:autoScalingGroupName/jay_as
Date created Fri Oct 25 2024 14:47:46 GMT+0530 (India Standard Time)	Minimum capacity 2	Status -	
	Maximum capacity 4		

Launch template

Launch template lt-0677054bd3a97e23b jay_task	AMI ID ami-05b91fd70b0db8330	Instance type -	Owner am:aws:iam::465047645687:root
Version Default	Security groups -	Security group IDs -	Create time Fri Oct 25 2024 14:34:42 GMT+0530 (India Standard Time)
Description jay_task_prod	Storage (volumes) -	Key pair name -	Request Spot Instances No

15. Now two instance is running as per given in auto scaling group

Instances (2) Info Last updated less than a minute ago

Find Instance by attribute or tag (case-sensitive) All states

Instance state = running Clear filters

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	ec1	i-03aae509a44c90fef	Running	t2.micro	2/2 checks passed	View alarms
<input type="checkbox"/>	ec2	i-0b6438b8e64ae6f61	Running	t2.micro	2/2 checks passed	View alarms

16. Now page is serving after created with auto scaling group

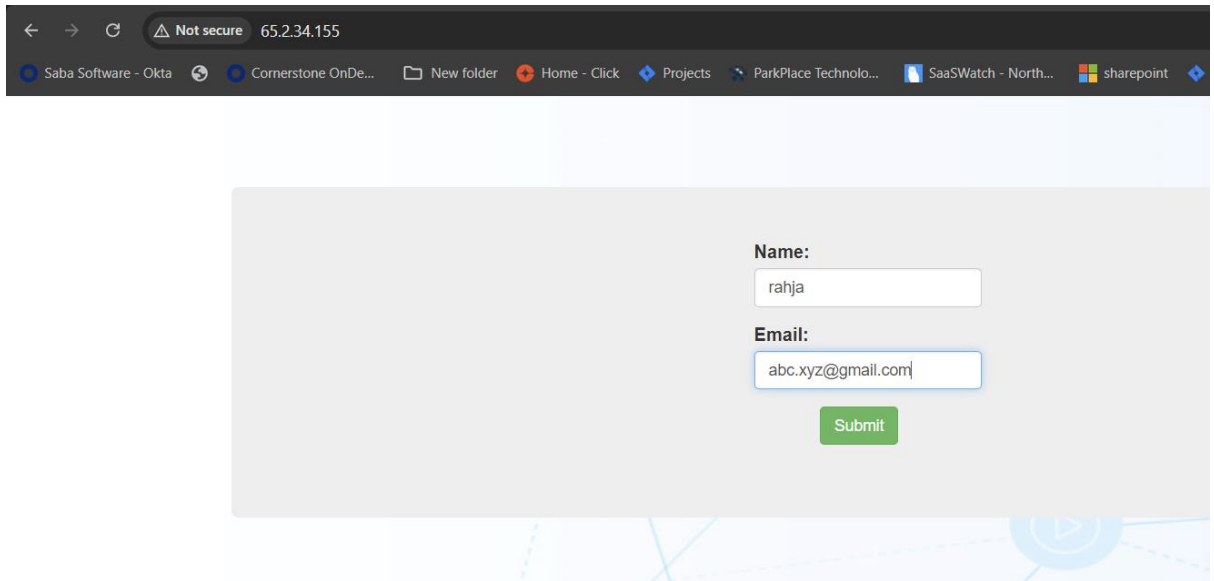
Not secure 65.2.34.155

Saba Software - Okta Cornerstone OnDe... New folder Home - Click Projects ParkPlace Technolo... SaaSWatch - North... sharep...

Name:

Email:

17. New data entered on web page



A screenshot of a web browser window. The address bar shows "65.2.34.155" and "Not secure". The browser's tab bar includes "Saba Software - Okta", "Cornerstone OnDe...", "New folder", "Home - Click", "Projects", "ParkPlace Technolo...", "SaaSWatch - North...", and "sharepoint". The main content area displays a form with two input fields: "Name:" containing "rahja" and "Email:" containing "abc.xyz@gmail.com". Below the fields is a green "Submit" button.

18. Data visible on DB with old as well as new output

```
MySQL [intel]> show tables;
+-----+
| Tables_in_intel |
+-----+
| data             |
+-----+
1 row in set (0.001 sec)

MySQL [intel]>
MySQL [intel]>
MySQL [intel]> select * from date
-> ;
ERROR 1146 (42S02): Table 'intel.date' doesn't exist
MySQL [intel]> select * from data;
+-----+-----+
| firstname | email |
+-----+-----+
| rahja     | abc.xyz@gmail.com |
| Jay       | abc@gmail.com     |
| jay       | xyz@gmail.com     |
+-----+-----+
3 rows in set (0.001 sec)

MySQL [intel]>
MySQL [intel]>
```