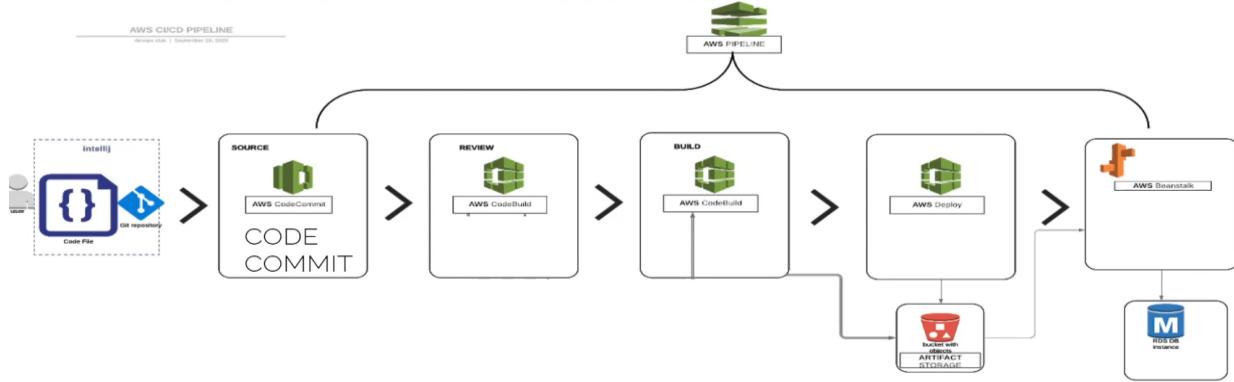


AWS CI/CD PROJECT



Creating Amazon Elastic Beanstalk :

Step 1: Configure environment.

Screenshot of the 'Configure environment' step in the AWS Elastic Beanstalk console. The application name is set to 'vprofile'. The environment tier is selected as 'Web server environment'. The environment information section shows the environment name as 'vprofile-prod' and the domain as 'Vprofile-prod01.us-west-1.elasticbeanstalk.com'. The platform type is set to 'Managed platform'.

Screenshot of the 'Configure environment' step in the AWS Elastic Beanstalk console. The environment name is 'vprofile-prod'. The domain is 'Vprofile-prod01.us-west-1.elasticbeanstalk.com'. The environment description is left blank. The platform type is set to 'Managed platform'.

Screenshot of the 'Platform' configuration step in the AWS Elastic Beanstalk console. The platform type is 'Managed platform' (Tomcat). The platform branch is 'Tomcat 8.5 with Corretto 11 running on 64bit Amazon Linux 2'. A warning message states: 'Warning: Deprecated platform branches aren't recommended for use in production environments.' The platform version is '4.5.3 (Recommended)'.

The screenshot shows the 'Configure environment' step of the AWS Elastic Beanstalk wizard. It includes sections for 'Application code' (with options for 'Sample application', 'Existing version', or 'Upload your code'), 'Presets' (with configuration presets like 'Single instance (free tier eligible)', 'High availability (using spot and on-demand instances)', and 'Custom configuration'), and a 'Next' button.

Step 2 : Configure service access.

The screenshot shows the 'Configure service access' step. It allows setting up a new service role ('Create and use new service role') or using an existing one ('Use an existing service role'). It also requires specifying an EC2 key pair ('aws-elasticbeanstalk-service-role') and an EC2 instance profile ('vprofile-bean-key'). A 'Next' button is at the bottom.

Step 3 : Set up networking, database, and tags.

The screenshot shows the 'Set up networking, database, and tags - optional' step. It includes a 'Virtual Private Cloud (VPC)' section where a default VPC is selected ('vpc-04b4e3d1843b9586 | (172.31.0.0/16) | DEFAULT_VPC'), and an 'Instance subnets' section listing two subnets: 'us-west-1b' and 'us-west-1a'. A 'Next' button is at the bottom.

Step 4 : Configure instance traffic and scaling

The screenshot shows the 'Configure instance traffic and scaling - optional' step. It includes sections for 'Instances' (root volume type 'Container default', IOPS '1000', throughput '125 MB/s'), 'Amazon CloudWatch monitoring' (monitoring interval '5 minute'), 'Instance metadata service (IMDS)' (IMDSv1 checked), and 'EC2 security groups' (select 'Allow security group to control traffic'). A 'Next' button is at the bottom.

Instance metadata service (IMDS)
Your environment's platform supports both IMDSv1 and IMDSv2. To enable IMDSv2, deactivate IMDSv1. Learn more [\[?\]](#)

IMDSv1
With the current setting, the environment enables only IMDSv1.
 Deactivated

EC2 security groups
Select security groups to control traffic.

EC2 security groups (1)
Filter security groups
Group name Group ID Name
default sg-0a024c283b200cb

Capacity [\[info\]](#)
Configure the compute capacity of your environment and auto scaling settings to optimize the number of instances used.

Auto scaling group

Environment type
Select a single-instance or load-balanced environment. You can develop and test an application in a single-instance environment and then migrate to a load-balanced environment when the application is ready for production. Learn more [\[?\]](#)

Load balanced

Instances
Min: 2 Max: 6

Fleet composition
Spot instances are launched at the lowest available price. Learn more [\[?\]](#)

On-Demand Instances
 Combine purchase options and instances

Maximum spot price
The maximum price per instance-hour, in USD, that you're willing to pay for a Spot Instance. Setting a custom price limits your chances to fulfill your target capacity using Spot Instances.

Capacity [\[info\]](#)
Configure the compute capacity of your environment and auto scaling settings to optimize the number of instances used.

Auto scaling group

Environment type
Select a single-instance or load-balanced environment. You can develop and test an application in a single-instance environment to save costs and then migrate to a load-balanced environment when the application is ready for production. Learn more [\[?\]](#)

Load balanced

Instances
Min: 2 Max: 6

Fleet composition
Spot instances are launched at the lowest available price. Learn more [\[?\]](#)

On-Demand Instances
 Combine purchase options and instances

Maximum spot price
The maximum price per instance-hour, in USD, that you're willing to pay for a Spot Instance. Setting a custom price limits your chances to fulfill your target capacity using Spot Instances.

On-Demand base
The minimum number of On-Demand instances that your Auto Scaling group provisions before considering Spot Instances as your replacement strategy.

On-Demand share base
The percentage of On-Demand instances as part of any additional capacity that your Auto Scaling group provisions beyond the On-Demand base instances.

Capacity rebalancing
Used to automatically rebalance the capacity by releasing resources for Spot Instances in your Auto Scaling Group. This option is only relevant when **DefaultSpot** is set to **in the second-tier instances**, and there is at least one Spot instance in your Auto Scaling group.

Turn on capacity rebalancing

Architecture
The underlying architecture determines the instance types that are made available. You can't change this selection after you create the environment. Learn more [\[?\]](#)

ARM
This architecture uses ARM processors and is compatible with most third-party tools and libraries.

Choose Availability Zones [\[info\]](#)

Scaling cooldown
360 seconds

Scaling triggers

Metric
Change the metric that is monitored to determine if the environment's capacity is too low or too high.
 NetworkOut

Status
Choose how the metric is interpreted.
 Average

Unit
 Bytes

Period
The period between metric evaluations.
5 Min

Breach duration
The amount of time a metric can exceed a threshold before triggering a scaling operation.
5 Min

Upper threshold
1000000

Scale up increment
1 EC2 instances

Lower threshold
2000000 capacity

Scale down increment
-1 EC2 instances

Load balancer network settings

Load balancer network settings

Visibility
Isolate your load balancer from all of your application services requests only from connected VPCs. Public load balancers serve requests from the internet.

Public

Load balancer subnets

Filter load balancer subnets	Availability Zone	Subnet	CIDR	Name
<input checked="" type="checkbox"/>	us-west-1b	subnet-03fe1f20a...	172.31.16.0/20	Default-pubsub1
<input checked="" type="checkbox"/>	us-west-1a	subnet-09d075df...	172.31.0.0/20	Default-pubsub2

Load Balancer Type

- Application load balancer**
Application layer load balancer—routing HTTP and HTTPS traffic based on protocol, port, and route rules for your application requests.
- Classic load balancer**
Previous generation — HTTP, HTTPS, and TCP.
- Network load balancer**
Used to connect multiple and static IP addresses for your applications.

Dedicated
Use a load balancer that Elastic Load Balancing creates exclusively for this environment.

Shared
Use a load balancer that someone in your account created and is serving multiple clients in a multi-client, multi-environment environment.

Listeners
You can specify listeners for your load balancer. Each listener routes incoming client traffic on a specified port using a specified protocol to your environment processes. By default, we've configured your load balancer with a standard web server on port 80.

Actions	Add listener			
Listener Port: 80	Listener Protocol: HTTP	SSL certificate: —	Default process: default	Enabled: <input checked="" type="checkbox"/>

The screenshot shows the AWS Elastic Load Balancing configuration interface. At the top, there's a table for defining rules based on port and protocol. Below it, a section for 'Rules' explains how they handle requests. Under 'Log files access', users can configure CloudWatch logs to capture detailed information about requests sent to their load balancer. The bottom of the screen includes standard AWS navigation and footer links.

Step 5 : Configure updates, monitoring, and logging

This screenshot shows the 'Configure updates, monitoring, and logging - optional' step. It includes sections for 'Monitoring' (with 'Enhanced' selected), 'CloudWatch Custom Metrics - Instance' (with 'Choose metrics' dropdowns), and 'Health monitoring rule customization' (with options for ignoring application and load balancer 4xx errors). The left sidebar lists other configuration steps.

This screenshot shows the 'Health event streaming to CloudWatch Logs' configuration. It includes sections for 'Log streaming' (with 'Activated' checked), 'Retention' (set to 7 days), and 'Lifecycle' (with 'Keep logs after terminating environment' option). The left sidebar lists other configuration steps.

This screenshot shows the 'Managed platform updates' and 'Email notifications' configuration. Under 'Managed platform updates', 'Activated' is checked, and a weekly update window is set for Wednesday at 19:47 UTC. Under 'Email notifications', an email address 'syedshaar2@gmail.com' is entered. The left sidebar lists other configuration steps.

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Activated

Instance log streaming to CloudWatch logs
(standard S3 charges apply.)
 Activated

Log streaming
(standard CloudWatch charges apply.)
 Activated

Retention
 7

Lifecycle
 Keep logs after terminating envir...

Environment properties
The following properties are passed in the application as environment properties. Learn more ↗

Name	Value	Remove
JDBC_CONNECTION_STRING		Remove

Add environment property

Cancel Previous Next

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Step 6 : Review

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Step 1 Configure environment

Step 2 Configure service access

Step 3 - optional Set up networking, database, and tags

Step 4 - optional Configure instance traffic and scaling

Step 5 - optional Configure updates, monitoring, and logging

Step 6 Review

Review Info

Step 1: Configure environment Edit

Environment information	
Environment tier	Application name
Web server environment	vprofile
Environment name	Application code
Vprofile-prod	Sample application
Platform	
arn:aws:elasticbeanstalk:us-west-1:platform/Tomcat 8.5 with Corretto 11 running on 64bit Amazon Linux 2/4.5.3	

Step 2: Configure service access Edit

Service access Info		
Configure the service role and EC2 instance profile that Elastic Beanstalk uses to manage your environment. Choose an EC2 key pair to securely log in to your EC2 instances.		
Service role	EC2 key pair	EC2 instance profile
arn:aws:iam::356452499282:role/service-role/aws-elasticbeanstalk-service-role	vprofile-bean-key	vprofilebean-role

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Step 2: Configure service access

Edit

Service access Info

Configure the service role and EC2 instance profile that Elastic Beanstalk uses to manage your environment. Choose an EC2 key pair to securely log in to your EC2 instances.

Service role	EC2 key pair	EC2 instance profile
arn:aws:iam::356452499282:role/service-role/aws-elasticbeanstalk-service-role	vprofile-bean-key	vprofilebean-role

Step 3: Set up networking, database, and tags

Edit

Networking, database, and tags [Info](#)

Configure VPC settings, and subnets for your environment's EC2 instances and load balancer. Set up an Amazon RDS database that's integrated with your environment.

Network

VPC	Public IP address	Instance subnets
vpc-0b44b3d1843fe95f6	true	subnet-03fef30a13bfecdf9, subnet-09d073df351b50f3e

Tags

Key	Value
No tags	

There are no tags defined

Step 4: Configure instance traffic and scaling

Edit

Instance traffic and scaling [Info](#)

Customize the capacity and scaling for your environment's instances. Select security groups to control instance traffic. Configure the software that runs on your environment's instances by setting platform-specific options.

Instances

IMDSv1
Deactivated

Capacity

Environment type	Min instances	Max instances
Load balanced	2	6
Fleet composition	On-demand base	On-demand above base
On-Demand Instances	0	0
Capacity rebalancing	Scaling cooldown	Processor type
Deactivated	360	x86_64
Instance types	AMI ID	Availability Zones
t3.micro	ami-066b764f19ed132f4	Any
Metric	Statistic	Unit
NetworkOut	Average	Bytes
Period	Breach duration	Upper threshold
5	5	6000000
Scale up increment	Lower threshold	Scale down increment
1	2000000	-1

Load balancer

Load balancer visibility	Load balancer subnets	Load balancer type
public	subnet-03fef30a13bfecdf9, subnet-09d073df351b50f3e	application
Load balancer is shared	Store logs	Deactivated

Step 5: Configure updates, monitoring, and logging

Edit

Updates, monitoring, and logging [Info](#)

Define when and how Elastic Beanstalk deploys changes to your environment. Manage your application's monitoring and logging settings, instances, and other environment resources.

Monitoring

System enhanced	Cloudwatch custom metrics - instance	Cloudwatch custom metrics - environment
Log streaming	Retention	Lifecycle

Deactivated 7 false

Updates

Managed updates Activated	Deployment batch size 50	Deployment batch size type Percentage
Command timeout 600	Deployment policy Rolling	Health threshold Ok
Ignore health check false	Instance replacement false	Notifications email syedshaar2@gmail.com

Platform software

Lifecycle false	Log streaming Deactivated	Initial JVM heap size (Xms) 256m
Max JVM heap size (Xmx) 256m	JVM options -	Proxy server nginx
Logs retention 7	Rotate logs Deactivated	Update level minor

X-Ray enabled
Deactivated

Environment properties

Key	Value
JDBC_CONNECTION_STRING	

Cancel Previous Submit

RDS & App Setup on Beanstalk:

Creating RDS instance.

The screenshot shows the 'Create database' step of the AWS RDS wizard. Under 'Choose a database creation method', 'Standard create' is selected. In the 'Engine options' section, 'MySQL' is chosen from a list that includes Aurora (MySQL Compatible), Aurora (PostgreSQL Compatible), MySQL, MariaDB, PostgreSQL, and Oracle. A detailed description of the MySQL engine is provided on the right, highlighting its popularity and various features like support for up to 64 TIB, General Purpose, Memory Optimized, and Burstable Performance instance classes, automated backup, point-in-time recovery, and up to 15 Read Replicas per instance.

This screenshot shows the 'MySQL' engine details page. It lists supported features such as database sizes up to 64 TIB, General Purpose, Memory Optimized, and Burstable Performance instance classes, automated backup, point-in-time recovery, and up to 15 Read Replicas per instance. It also notes that MySQL is the most popular open source database in the world.

The 'Templates' section allows selecting a template for the new database. Options include 'Production' (for high availability and fast performance), 'Dev/Test' (for development or testing outside a production environment), and 'Free tier' (for AWS Free Tier usage). The 'Free tier' option is currently selected.

The 'Settings' section includes fields for 'DB instance identifier' (set to 'vp不知不識'), 'Master username' (set to 'admin'), and 'Auto generate password' (checked). It also contains a note about viewing credentials after database creation.

The 'Instance configuration' section shows the selected 'DB instance class' as 'db.t3.micro' (2 vCPUs, 1 GB RAM, Network 2,085 Mbps). It also includes a note about storage optimization.

The 'Storage' section shows the selected 'Storage type' as 'General Purpose SSD (gp2)' with a baseline performance of 1000 IOPS. It also includes a note about storage optimization.

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MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Connectivity Info

Choose where to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

- Don't connect to an EC2 compute resource**
Don't set up a connection to a compute resource for this database. You can still set up a connection to a compute resource later.
- Connect to an EC2 compute resource**
Set up a connection to an EC2 compute resource for this database.

Network type [Info](#)

To use dual-stack mode, make sure that you associate an IPv6-CIDR block with a subnet in the VPC you specify.

- IPv4**
Your resources can communicate only over the IPv4 addressing protocol.
- Dual-stack mode**
Your resources can communicate over IPv4, IPv6, or both.

Virtual private cloud (VPC) Info

Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you specified.

Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change its VPC.

DB subnet group [Info](#)

Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you specified.

default

Public access [Info](#)

Yes
RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.

No

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VPC security group (Required) [Info](#)

Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

- Choose existing**
Choose existing VPC security groups.
- Create new**
Create new VPC security group.

New VPC security group name: vpcrds-prod-SG

Availability Zone [Info](#)

No preference

RDS Proxy [Info](#)

RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resilience, and security. RDS automatically creates an IAM role and a Secrets Manager service for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#).

Create an RDS proxy

Certificate authority - optional [Info](#)

Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does not require a client certificate that is automatically installed on all databases that you provision.

fdca-na2048-1 (Default)
Expires May 20, 2061

If you don't select a certificate authority, RDS chooses one for you.

Additional configuration

Tags - optional

A tag consists of a case-sensitive key-value pair.

No tags associated with the resource.

Add new tag

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Database authentication

Database authentication options [Info](#)

- Password authentication**
Authenticates using database passwords.
- Password and IAM database authentication**
Authenticates using the database password and user credentials through AWS IAM users and roles.
- Password and Kerberos authentication**
Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.

Monitoring

Enable Enhanced Monitoring
Enabling Enhanced Monitoring metrics are useful when you want to see how different processes or threads use the CPU.

Additional configuration

Database softnet, eni_gw0 turned on, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.

Database options

Initial database name [Info](#)

accounts

If you do not specify a database name, Amazon RDS does not create a database.

DB parameter group [Info](#)

default.mysql5.7

Option group [Info](#)

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Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.

Estimated Monthly costs

DB instance	16.06 USD
Storage	2.76 USD
Total	18.82 USD

This billing estimate is based on on-demand usage as described in [Amazon RDS Pricing](#). Estimate does not include costs for backup storage, I/O (if applicable), or data transfer.

Estimate your monthly costs for the DB Instance using the [AWS Simple Monthly Calculator](#).

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro, db.t3.micro or db.t4g.micro instance.
- 20 GB of General Purpose Storage (SSD)
- 20 GB for automatic backup storage and any user-initiated DB Snapshots.

Learn more about [AWS Free Tier](#).

When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page](#).

You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.

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The screenshot shows the AWS RDS console with the following details:

- Summary:**
 - DB identifier: vprofile-rds-prod
 - Status: Available
 - Role: Instance
 - Engine: MySQL Community
 - Region & AZ: us-west-1a
 - CPU: db.t3.micro
 - Current activity: 0 Connections
 - Reserved instances: 3.07%
- Connectivity & security:**
 - Endpoint: vprofile-rds-prod.cgxgj8s0sida.us-west-1.rds.amazonaws.com
 - Port: 3306
 - Networking:
 - Availability Zone: us-west-1a
 - VPC: DEFAULT_VPC (vpc-0b44b3d1843fe95f6)
 - Subnet group: default-rpc-0b44b3d1843fe95f6
 - Subnets:
 - subnet-0ffef50a13bfecc09
 - subnet-09bd073d0351b50f9e
 - Security:
 - VPC security groups: vprofile-rds-prod-SG (sg-0388576560ce71702)
 - Publicly accessible: No
 - Certificate authority: rds-ca-rsa2048-g1
 - Certificate authority date: May 20, 2061, 01:34 (UTC+05:30)

Update RDS instance security group – allowing port-3306 from beanstalk SG.

The screenshot shows the AWS EC2 Security Groups console with the following details:

- Edit inbound rules:**
 - Inbound rules control the incoming traffic that's allowed to reach the instance.
- Inbound rules:**

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
-	Custom TCP	TCP	3306	Custom	-00ee4a475675e5d73
- Security Groups:**
 - awseb-e-m2lwhkjkv-stack-AWSEBSecurityGroup-D7TXFc3CDcw
 - | sg-00ee4a475675e5d73
 - vprofile-prod
- Buttons:** Cancel, Preview changes, Save rules

SSH to the beanstalk instance and connect to RDS from there.

```

root@ip-172-31-30-78:~
syedashar@BLUPTOP-HDDEMS: MINGW64 ~
$ ssh -i ./downloads/vprofile-bean-key.pem ec2-user@54.241.51.29
[...]
Amazon Linux 2 AMI

This EC2 instance is managed by AWS Elastic Beanstalk. Changes made via SSH
WILL BE LOST if the instance is replaced by auto-scaling. For more information
on customizing your Elastic Beanstalk environment, see our documentation here:
http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/customize-containers-ec2.html

[ec2-user@ip-172-31-30-78 ~]$ sudo -i
[ec2-user@ip-172-31-30-78 ~]$ yum install mariadb -y
Last metadata expiration check was 0 days ago on Mon Mar 27 08:44:22 UTC 2023.
Is this ok? (y/n) y
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 1:5.5.68-1.amzn2.0.1 will be installed
--> Finished Dependency Resolution
Dependencies Resolved

Transaction Summary
Install 1 Package

Total download size: 8.8 M
Installed size: 8.8 M
Downloaded packages:
mariadb-1:5.5.68-1.amzn2.0.1.x86_64.rpm
Running transaction test
Running transaction test succeeded
Running transaction
  Installing : mariadb-1:5.5.68-1.amzn2.0.1.x86_64
  Verifying : mariadb-1:5.5.68-1.amzn2.0.1.x86_64
Installed:
  mariadb.x86_64 1:5.5.68-1.amzn2.0.1

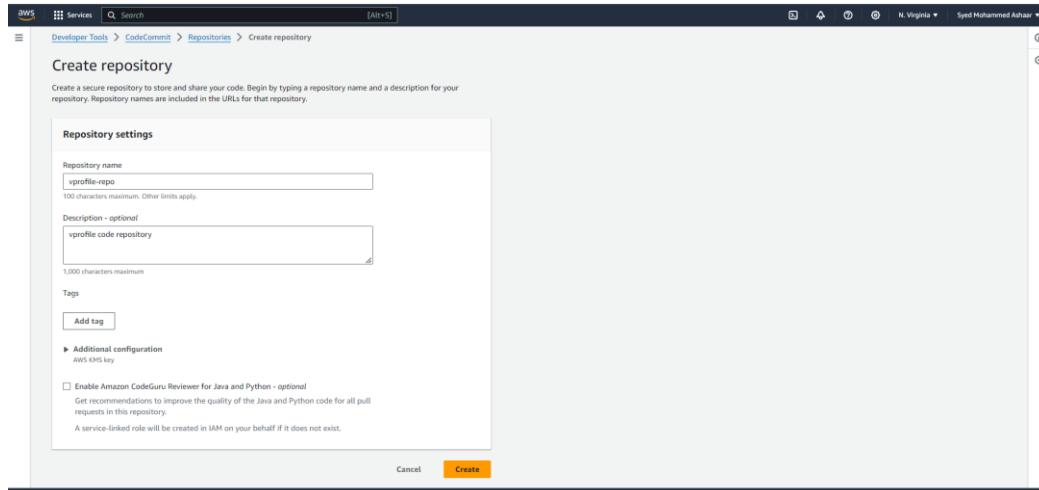
Complete!
[ec2-user@ip-172-31-30-78 ~]$ mysql -h vprofile-rds-prod.cgxgj8s0sida.us-west-1.rds.amazonaws.com -u admin -pZ1CK1u2FNuE7EtvrFj accounts
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 30
Server version: 8.0.36 Source distribution
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
MySQL [accounts] > exit
Bye
[ec2-user@ip-172-31-30-78 ~]$ yum install qt5-qtbase

```

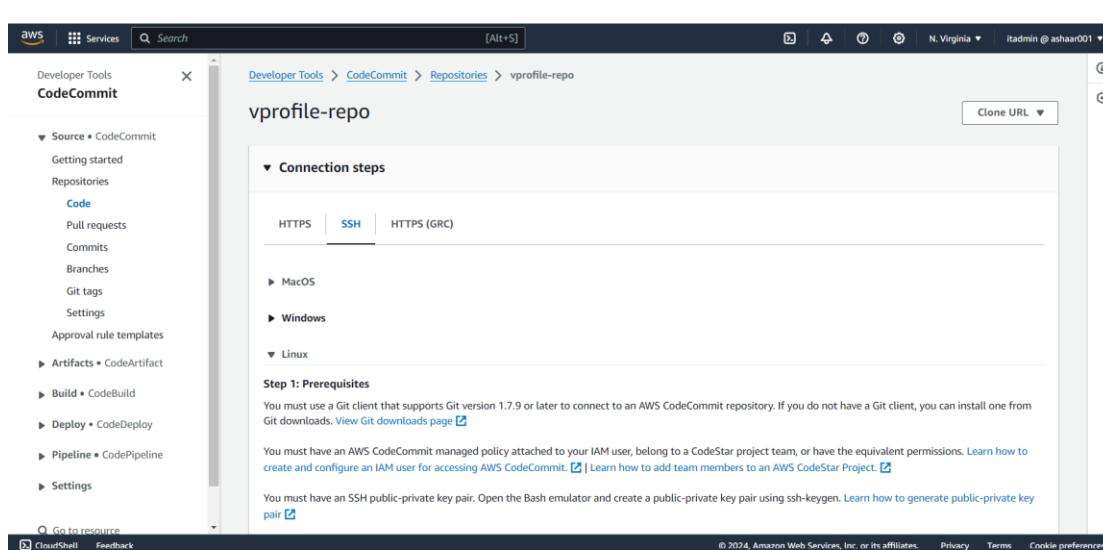
Beanstalk and RDS is ready.

CI/CD PIPELINE:

Code commit service:



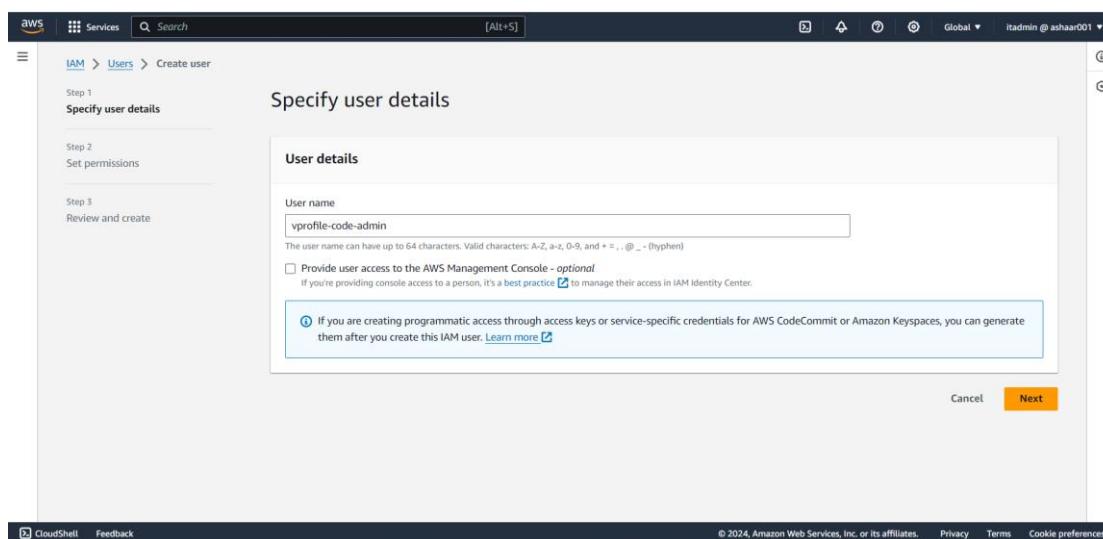
The screenshot shows the 'Create repository' page in the AWS CodeCommit console. It includes fields for 'Repository name' (vprofile-repo), 'Description' (vprofile code repository), and 'Tags'. There's also an 'Additional configuration' section with an optional 'Enable Amazon CodeGuru Reviewer for Java and Python' checkbox.



The screenshot shows the repository details page for 'vprofile-repo'. It displays connection steps for 'SSH' (selected), 'HTTPS', and 'HTTPS (GRC)'. It also lists operating systems: 'MacOS', 'Windows', and 'Linux'. A 'Step 1: Prerequisites' section provides instructions for setting up a Git client and IAM permissions.

Accessing this repository by using SSH connection.

Creating a user that have access to service.



The screenshot shows the 'Specify user details' step in the AWS IAM 'Create user' wizard. It includes fields for 'User name' (vprofile-code-admin) and a note about generating programmatic access keys. Navigation links for 'Step 1: Specify user details', 'Step 2: Set permissions', and 'Step 3: Review and create' are visible on the left.

Creating policy which only need for a specific repository that created

The screenshot shows the AWS IAM 'Create policy' wizard at Step 2: Set permissions. In the 'Permissions options' section, the 'Attach policies directly' radio button is selected. A red box highlights the 'Create policy' button. Below this, a table lists existing policies: 'AccessAnalyzerServiceRolePolicy' (AWS managed), 'AdministratorAccess' (AWS managed - job function), and 'AdministratorAccess-Amplify' (AWS managed). The table includes columns for Policy name, Type, and Attached entities.

Attaching policy.

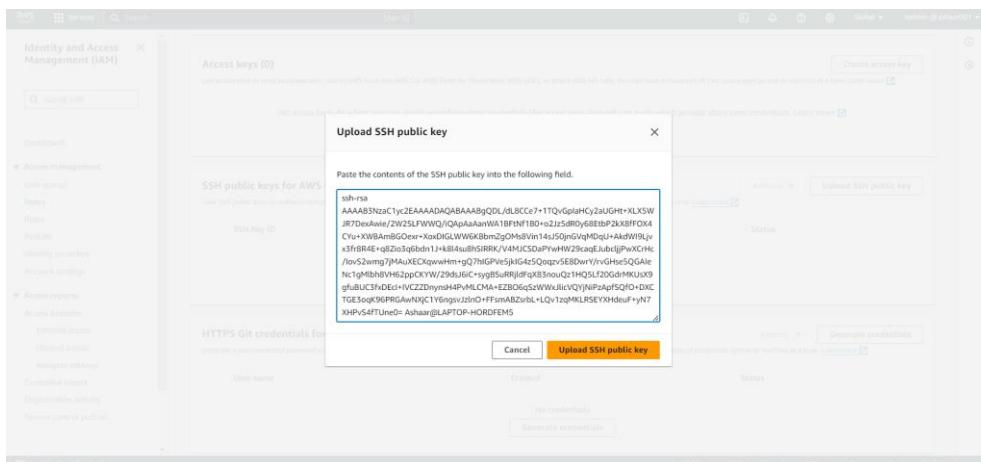
The screenshot shows the AWS IAM 'Create user' wizard at Step 2: Set permissions. In the 'Permissions options' section, the 'Attach policies directly' radio button is selected. A red box highlights the 'Create policy' button. Below this, a table lists existing policies: 'vprofile-code-admin-fullaccess' (Customer managed). The table includes columns for Policy name, Type, and Attached entities.

The screenshot shows the AWS IAM 'Create user' wizard at Step 3: Review and create. The 'User details' section shows a user named 'vprofile-code-admin'. The 'Permissions summary' section shows the attached policy 'vprofile-code-admin-fullaccess' (Customer managed). The 'Tags' section indicates no tags are associated with the resource. The 'Create user' button is highlighted with a red box.

SSH keys need for AWS code commit.

Generate SSH keys from our local machine and upload it.

```
MINGW64:/c/Users/Ashaar/.ssh
Ashhaar@LAPTOP-HORDFEMS MINGW64 ~/.ssh
$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/c/Users/Ashaar/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/Ashaar/.ssh/id_rsa
Your public key has been saved in /c/Users/Ashaar/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:3072...
The key's randomart image is:
+---[RSA 3072]----+
|...o.|
|..o .S0o + o o|
|..o .OOo.o |=|
|... o+=o|
|... .+=+1|
|... .=O|
+---[SHA256]---+
Ashhaar@LAPTOP-HORDFEMS MINGW64 ~/.ssh
$ ls
id_rsa.id_rsa.pub known_hosts known_hosts.old
Ashhaar@LAPTOP-HORDFEMS MINGW64 ~/.ssh
$ cat id_rsa.pub
ssh-rsa AAAAB3NzaC1eBAAQAAAQgDOL/ds8Ce7+1TQvGpIAHcyAUGtXLxSwJ7RexAwie/2wZSLFwQ/iQApAaAanWAIBFTNF180+o2z5dRo68Etbp2kx8FFox4CyU+xwAmBG0ex+XoxDIGlw6KBbm2g0M
$8vin14s35OjGVqMquAldhr19LjvFr84E+0821o3q6dn13+k814suhsIRK/v4MjCSdPvhmW29casEubclj3jPxKxCRHc/ovs2wmjtjAuKECxowhm=q0zhIGPvE5j3kxG4z5QozvzSE8DwvY/rvGhs65QGAIeC1ghn
blhlnVwq2pcxWv/29d1361c4syglh1k1drqX3nrou221M03L2f04d9PMus9yBuUC3fDEc1+IVCZDonyhs4PvRLCM+E2B06iq5Zwxk1?cvqjNIP2apf5Qf0+DCTGE3oq96fRGawhKjC1y6ngsv21Ino+FFSma8Zsrlbl+
LQ12qMLEs7XMs6f+-v/XmpV54fTUmcE Ashhaar@LAPTOP-HORDFEMS
Ashhaar@LAPTOP-HORDFEMS MINGW64 ~/.ssh
$
```



Successfully authenticated over SSH and its working.

```
Ashaar@LAPTOP-HORDFEMS MINGW64 ~
$ ssh -o StrictHostKeyChecking=no git-codecommit.us-east-2.amazonaws.com
The authenticity of host 'git-codecommit.us-east-2.amazonaws.com (52.95.19.19)' can't be established.
RSA key fingerprint is SHA256:35OjGVqMquAldhr19LjvFr84E+0821o3q6dn13+k814suhsIRK/v4MjCSdPvhmW29casEubclj3jPxKxCRHc/ovs2wmjtjAuKECxowhm=q0zhIGPvE5j3kxG4z5QozvzSE8DwvY/rvGhs65QGAIeC1ghn
blhlnVwq2pcxWv/29d1361c4syglh1k1drqX3nrou221M03L2f04d9PMus9yBuUC3fDEc1+IVCZDonyhs4PvRLCM+E2B06iq5Zwxk1?cvqjNIP2apf5Qf0+DCTGE3oq96fRGawhKjC1y6ngsv21Ino+FFSma8Zsrlbl+
LQ12qMLEs7XMs6f+-v/XmpV54fTUmcE Ashhaar@LAPTOP-HORDFEMS
Connection to git-codecommit.us-east-2.amazonaws.com closed.
```

Already have code repository from GitHub that clone. Going to transition that code repository from GitHub to Code Commit.

```
Ashaar@LAPTOP-HORDFEMS MINGW64 ~/desktop/vprofile-app/vprofile-project (vp-rem)
$ cat .git/config
[core]
    repositoryformatversion = 0
    filemode = false
    bare = false
    logallrefupdates = true
    symlinks = false
    ignorecase = true
[remote "origin"]
    url = https://github.com/devopshydlclub/vprofile-project.git
    fetch = +refs/heads/*:refs/remotes/origin/*
[branch "vp-rem"]
    remote = origin
    merge = refs/heads/vp-rem
```

The remote repository is GitHub. Going to change it to code commit repository.

```
Ashaar@LAPTOP-HORDFEM5 MINGW64 ~/desktop/vprofile-app/vprofile-project (vpro-upgrade)
$ cat .git/config
[core]
    repositoryformatversion = 0
    filemode = false
    bare = false
    logallrefupdates = true
    symlinks = false
    ignorecase = true
[remote "origin"]
    url = https://git-codecommit.us-east-1.amazonaws.com/v1/repos/vprofile-repo
    fetch = +refs/heads/*:refs/remotes/origin/*
Ashaar@LAPTOP-HORDFEM5 MINGW64 ~/desktop/vprofile-app/vprofile-project (vpro-upgrade)
$
```

Code Build :

The screenshot shows the 'Create build project' page in the AWS CodeBuild console. In the 'Project configuration' section, the 'Project name' is set to 'vprofile-build'. Under 'Additional configuration', there is a note about build badge, concurrent build limit, and tags. In the 'Source' section, the 'Source provider' is set to 'AWS CodeCommit', and the 'Repository' is 'vprofile-repo'. The 'Reference type' is set to 'Branch' with 'vp-rem' selected. The 'Commit ID' field is optional. The bottom of the page includes CloudShell and Feedback links.

The screenshot shows the 'Environment' configuration section of the AWS CodeBuild 'Create build project' page. It includes fields for 'Provisioning model info' (On-demand), 'Environment image' (Managed image), 'Compute' (EC2), 'Operating system' (Ubuntu), 'Runtime(s)' (Standard), 'Image' (aws/codebuild/standard:7.0), 'Image version' (Always use the latest image for this runtime version), and 'Service role' (New service role). The 'Existing service role' option is also available.

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Buildspec

Build specifications

- Insert build commands Store build commands as build project configuration
- Use a buildspec file Store build commands in a YAML-formatted buildspec file

Build commands Info

```

1 version: 0.2
2
3 #env:
4 #variables:
5 # key: "value"
6 # key: "value"
7 #parameters:
8 # key: "value"
9 # key: "value"
10
11+ phases:
12+ install:
13+ runtime-versions:
14+ java: corretto8
15+ pre_build:
16+ commands:
17+ apt-get update
18 - apt-get install -y jq
19 - curl -s https://dlcdn.apache.org/maven/maven-3/3.8.8/binaries/apache-maven-3.8.8-
20 - tar xf apache-maven-3.8.8-bin.tar.gz
21 - ln -s apache-maven-3.8.8 maven
22 - sed -i 's!/usr/local/dbc.password=adwin123!/dbc.password=$sepaYs7ul!' src/main/repo/
23 < 35:1 YAML Spaces: 2

```

0 1 Switch to single line

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Artifacts

Artifact 1 - Primary

Type: Amazon S3 You might choose no artifacts if you are running tests or pushing a Docker image to Amazon ECR.

Bucket name: Q.artifact01

Name: The name of the folder or compressed file in the bucket that will contain your output artifacts. Use Artifacts packaging under Additional configuration to choose whether to use a folder or compressed file. If the name is not provided, defaults to project name.

Enable semantic versioning Use the artifact name specified in the buildspec file.

Path - optional: The path to the build output ZIP file or folder. Example: MyPath/MyArtifact.zip.

Namespace type - optional: None Choose Build ID to insert the build ID into the path to the build output ZIP file or folder, e.g. MyPath/MyBuildID/MyArtifact.zip. Otherwise, choose None.

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Logs

CloudWatch

CloudWatch logs - optional Checking this option will upload build output logs to CloudWatch.

Group name - optional: vprofile-cicd-project The group name of the logs in CloudWatch Logs. The log group name will be /aws/codebuild/<project-name> by default.

Stream name prefix - optional: buildlogs The prefix of the stream name of the CloudWatch Logs.

S3 logs - optional Checking this option will upload build output logs to S3.

Cancel Create build project

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Developer Tools > CodeBuild > Build projects > vprofile-build:b36b7d2c-63d8-40a3-b193-5e6681687346 Stop build Retry build

Build status					
Status	Initiator	Build ARN	Resolved source version		
Succeeded	itadmin	arn:aws:codebuild:us-east-1:1564524992:82:build/vprofile-build:b36b7d2c-63d8-40a3-b193-5e6681687346	b193-5e6681687346		
Start time	End time	Build number	Reports		
Jul 7, 2024 8:27 PM (UTC+5:30)	Jul 7, 2024 8:28 PM (UTC+5:30)	20	<ul style="list-style-type: none"> vprofile-build-JUNITXML-AutoDiscovered vprofile-build-JACOCOXML-AutoDiscovered 		

Build logs Phase details Reports Environment variables Build details Resource utilization

Name	Status	Context	Duration	Start time	End time
SUBMITTED	Succeeded	-	<1 sec	Jul 7, 2024 8:27 PM (UTC+5:30)	Jul 7, 2024 8:27 PM (UTC+5:30)
QUEUED	Succeeded	-	<1 sec	Jul 7, 2024 8:27 PM (UTC+5:30)	Jul 7, 2024 8:27 PM (UTC+5:30)
PROVISIONING	Succeeded	-	4 secs	Jul 7, 2024 8:27 PM (UTC+5:30)	Jul 7, 2024 8:27 PM (UTC+5:30)
DOWNLOAD_SOURCE	Succeeded	-	8 secs	Jul 7, 2024 8:27 PM (UTC+5:30)	Jul 7, 2024 8:27 PM (UTC+5:30)
INSTALL	Succeeded	-	34 secs	Jul 7, 2024 8:27 PM (UTC+5:30)	Jul 7, 2024 8:27 PM (UTC+5:30)

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Build-Job run successfully and uploaded to the S3 bucket.

The screenshot shows the AWS Amazon S3 console. The left sidebar has 'Amazon S3' selected under 'Buckets'. The main area shows the 'artifact01' bucket. There is one object named 'yprofile-build/' which is a folder. The 'Actions' dropdown menu for this object includes options like 'Copy', 'Copy URL', 'Download', 'Open', 'Delete', 'Create folder', and 'Upload'.

Creating CodePipeline :

Step 1 - Choose pipeline settings.

The screenshot shows the 'Choose pipeline settings' step of the AWS CodePipeline creation wizard. It's Step 1 of 5. The pipeline name is set to 'yprofile-cicd-Pipeline'. The pipeline type is selected as 'Code Pipeline type V2 required'. The service role is chosen as 'New service role'.

The screenshot shows the 'Variables' section of the AWS CodePipeline creation wizard. It indicates that no variables are defined at the pipeline level. Under 'Advanced settings', the 'Artifact store' is configured to use a custom location in the 'artifact01' S3 bucket. The 'Encryption key' is set to 'Default AWS Managed Key'.

Step 2 - Add source stage

The screenshot shows the 'Add source stage' step of the AWS CodePipeline creation wizard. It's Step 2 of 5. The source provider is selected as 'AWS CodeCommit'. The repository is 'yprofile-repo' and the branch is 'y-profile'. The 'Change detection options' section shows 'Amazon CloudWatch Events (recommended)' selected.

Step 3 - Add build stage

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1 Choose pipeline settings Step 2 Add source stage Step 3 Add build stage Step 4 Add deploy stage Step 5 Review

Add build stage [Info](#) Step 3 of 5

Build - optional

Build provider This is the tool of your build project. Provide build artifact details like operating system, build spec file, and output file names.

AWS CodeBuild

Region US East (N. Virginia)

Project name Choose a build project that you have already created in the AWS CodeBuild console. Or create a build project in the AWS CodeBuild console.

vp-profile-build or [Create project](#)

Environment variables - optional Choose one or more values, and trigger for your CodeBuild environment variables. In the value field, you can reference variables generated by CodePipeline. [Learn more](#)

vp-profile-build

Environment variables - optional Choose one or more values, and trigger for your CodeBuild environment variables. In the value field, you can reference variables generated by CodePipeline. [Learn more](#)

Batch build Triggers multiple builds as a single execution.

Build type

Single build Triggers a single build.

Batch build Triggers multiple builds as a single execution.

Cancel Previous Skip build stage **Next**

Step 4 - Add deploy stage

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1 Choose pipeline settings Step 2 Add source stage Step 3 Add build stage Step 4 Add deploy stage Step 5 Review

Add deploy stage [Info](#) Step 4 of 5

Deploy - optional

Deploy provider Choose how you're deploying to instances. Choose the provider, and then provide the configuration details for that provider.

AWS Elastic Beanstalk

Region US East (N. Virginia)

Application name Choose an application that you have already created in the AWS Elastic Beanstalk console. Or create an application in the AWS Elastic Beanstalk console and then return to this task.

vp-profile

Environment name Choose an environment that you have already created in the AWS Elastic Beanstalk console. Or create an environment in the AWS Elastic Beanstalk console and then return to this task.

vp-profile-prod

Configure automatic rollback on stage failure

Cancel Previous Skip deploy stage **Next**

Step 5 - Review

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1 Choose pipeline settings Step 2 Add source stage Step 3 Add build stage Step 4 Add deploy stage Step 5 Review

Review [Info](#) Step 5 of 5

Step 1: Choose pipeline settings

Pipeline settings

Pipeline name vp-profile-build-Pipeline

Pipeline type V2

Execution mode ONDEMAND

Artifact location artifact01

Service role name AWSCodePipelineServiceRole-us-east-1-vp-profile-build-Pipeline

Variables

Name	Default value	Description
No variables		
No variables defined at the pipeline level in this pipeline		

Step 2: Add source stage

Source action provider

Source action provider AWS CodeCommit

Step 3: Add build stage

Build action provider

Build action provider AWS CodeBuild

Project name vp-profile-build

Step 4: Add deploy stage

Deploy action provider

Deploy action provider AWS Elastic Beanstalk

Application name vp-profile

Environment name vp-profile-prod

Configure automatic rollback on stage failure Disabled

Cancel Previous **Create pipeline**

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1 Choose pipeline settings Step 2 Add source stage Step 3 Add build stage Step 4 Add deploy stage Step 5 Review

Review [Info](#) Step 5 of 5

Step 1: Choose pipeline settings

Pipeline settings

Pipeline name vp-profile-build-Pipeline

Pipeline type V2

Execution mode ONDEMAND

Artifact location artifact01

Service role name AWSCodePipelineServiceRole-us-east-1-vp-profile-build-Pipeline

Variables

Name	Default value	Description
No variables		
No variables defined at the pipeline level in this pipeline		

Step 2: Add source stage

Source action provider

Source action provider AWS CodeCommit

Step 3: Add build stage

Build action provider

Build action provider AWS CodeBuild

Project name vp-profile-build

Step 4: Add deploy stage

Deploy action provider

Deploy action provider AWS Elastic Beanstalk

Application name vp-profile

Environment name vp-profile-prod

Configure automatic rollback on stage failure Disabled

Cancel Previous **Create pipeline**

Deployment using CICD Pipeline successful

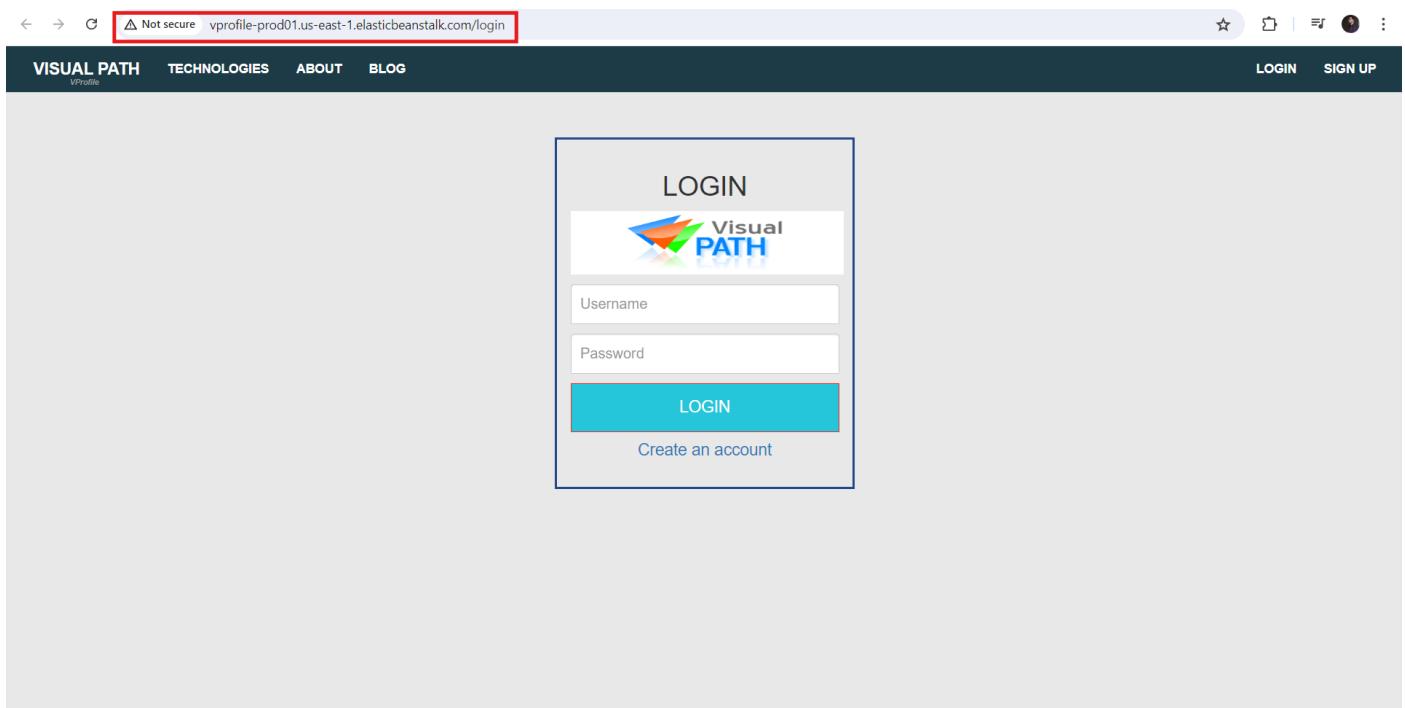
The screenshot shows the AWS CodePipeline console with a successful pipeline execution. The pipeline consists of three stages: Source, Build, and Deploy. The Source stage (AWS CodeCommit) has succeeded. The Build stage (AWS CodeBuild) has also succeeded. The Deploy stage (AWS Elastic Beanstalk) has succeeded and is currently in progress. The pipeline execution ID is 5044d69-58b5-45e0-a298-7242445df67d.

Testing whether website working with Beanstalk.

The screenshot shows the AWS Elastic Beanstalk console for the environment vprofile-prod. The environment overview indicates that the health is Ok. The platform is Tomcat 9 with Corretto 11 running on 64bit Amazon Linux 2023/5.0. The application name is vprofile. The events section shows 42 events, with the most recent being "Upload and deploy" at just now.

Website launch successful.

Website UI is working successful.



Integrate with RDS successful.

A screenshot of a social media profile page for 'admin_vp'. The top navigation bar includes 'HKH Infotech', 'Stream', 'My Activity', a notification bell with '2', an envelope icon, and a user dropdown for 'admin_vp'. The profile section features a large photo of a baby wearing glasses. Below it is a bio section with the title 'Bio' and a detailed paragraph about DevOps strategy at HKH Infotech. There's also a 'Location' section listing 'Earth'. The main feed shows a post from 'admin_vp' with the text: "'The Key to DevOps Success.' Collaboration is essential to DevOps, yet how to do it is often unclear with many teams falling back on ineffective conference calls, instant messaging, documents, and SharePoint sites. In this keynote, we will share a vision for a next generation DevOps where collaboration, continuous documentation, and knowledge capture are combined with automation toolchains to enable rapid innovation and deployment." The post has '42' likes and a timestamp of '42 minutes ago'. A comment section is partially visible below the post.