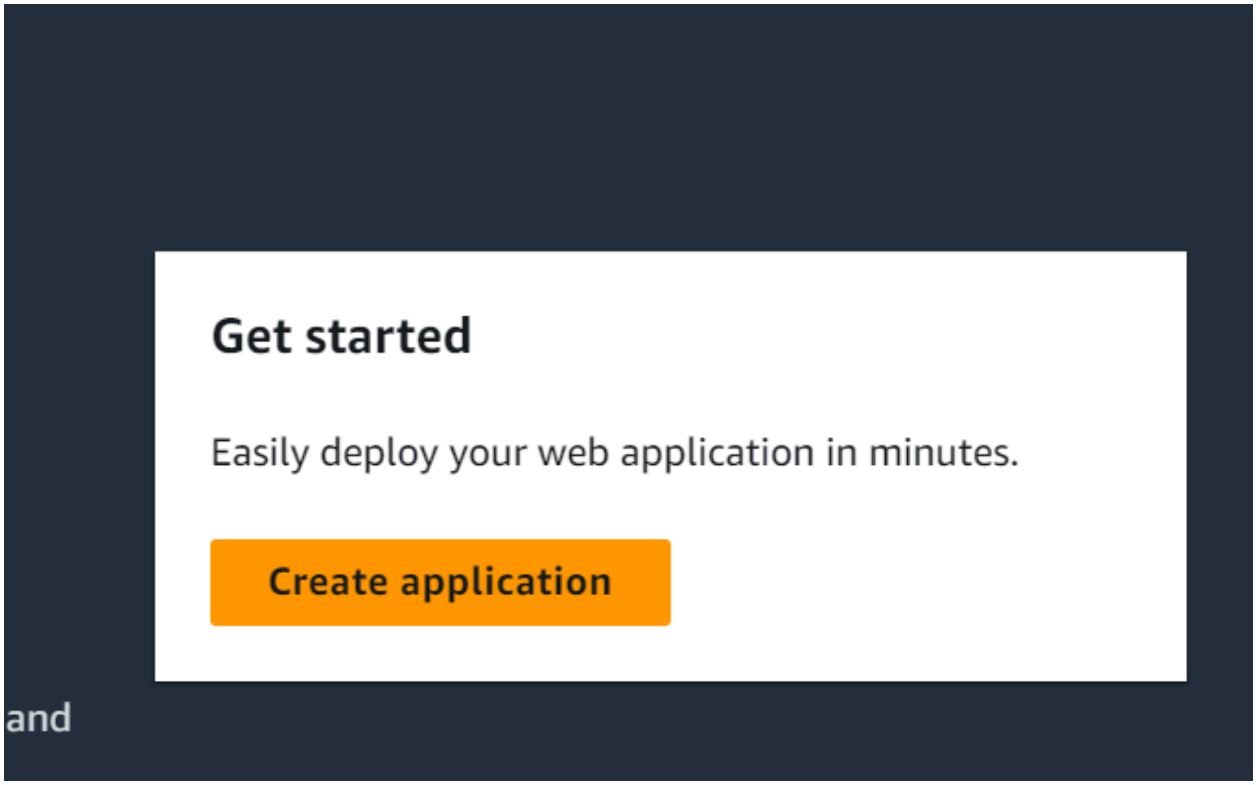
Date:-23/01/2024 Submission **Date:- 30/01/2024**

Writeup:-

- **Platform as a service**
- **Elastic Beanstalk**
- **Components of beanstalk**
- **IAM**

- Implement paas using elastic beanstalk for the following.
    1. Server
    2. Java
    3. Python
    4. Node.js



Environment tier Info

Amazon Elastic Beanstalk has two types of environment tiers to support different types of web applications.

- (•) Web server environment
  Run a website, web application, or web API that serves HTTP requests. Learn more
- ( ) Worker environment
  Run a worker application that processes long-running workloads on demand or performs tasks on a schedule. Learn more

Application information Info

Application name

platform1

Maximum length of 100 characters.

Environment information Info

Choose the name, subdomain and description for your environment. These cannot be changed later.

Environment name

Platform1-env

Must be from 4 to 40 characters in length. The name can contain only letters, numbers, and hyphens. It can't start or end with a hyphen. This name must be unique within a region in your account.

Domain

Leave blank for autogenerated value .eu-north-1.elasticbeanstalk.com Check availability

Environment description

This platform will excute python web apps

Platform Info

Platform type

- (•) Managed platform
  Platforms published and maintained by Amazon Elastic Beanstalk. Learn more
- ( ) Custom platform
  Platforms created and owned by you. This option is unavailable if you have no platforms.

Platform

Java

Platform branch

Corretto 21 running on 64bit Amazon Linux 2023

Platform version

4.2.0 (Recommended)

Application code Info

- (•) Sample application
- ( ) Existing version
  Application versions that you have uploaded.
- ( ) Upload your code
  Upload a source bundle from your computer or copy one from Amazon S3.

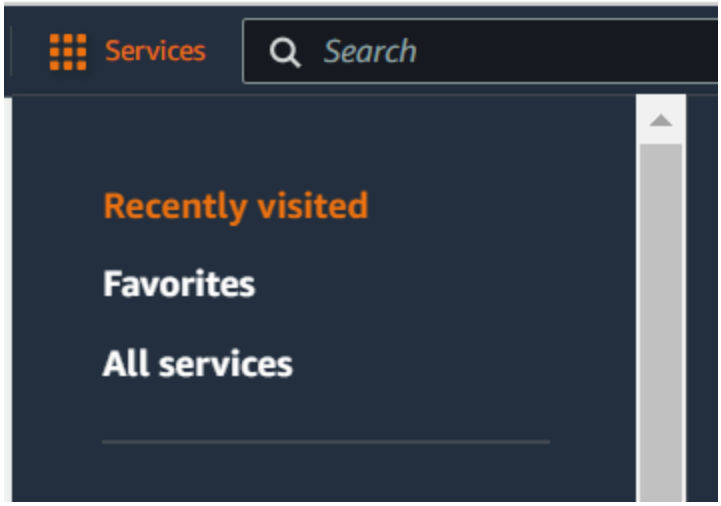
Presets Info

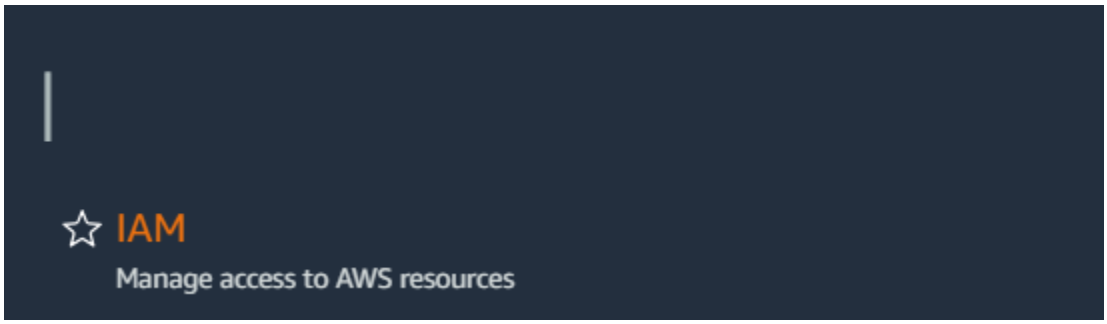
Start from a preset that matches your use case or choose custom configuration to unset recommended values and use the service's default values.

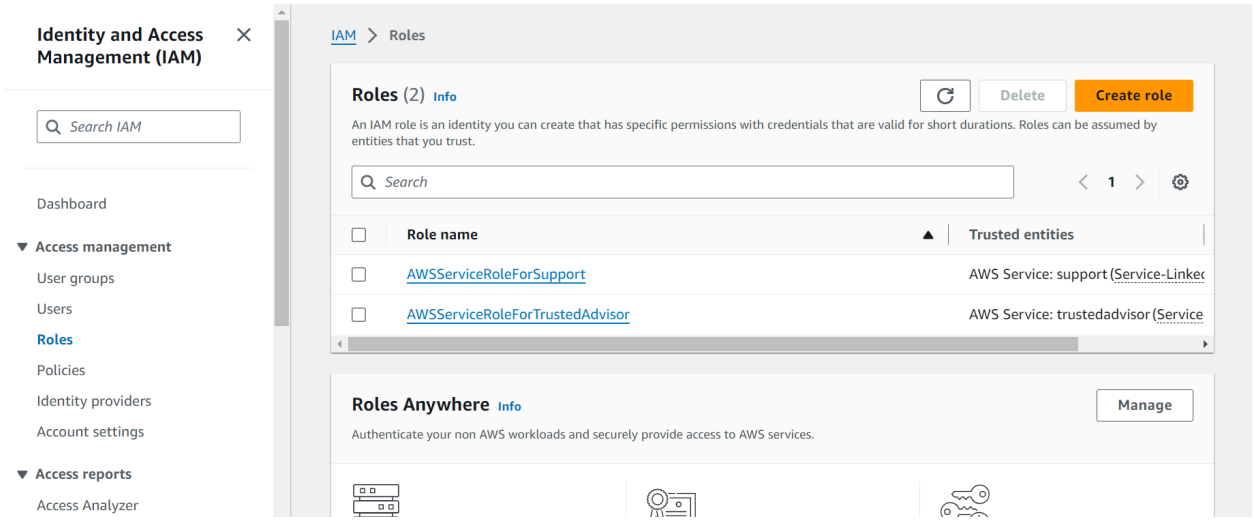
Configuration presets

- (•) Single instance (free tier eligible)
- ( ) Single instance (using spot instance)
- ( ) High availability
- ( ) High availability (using spot and on-demand instances)
- ( ) Custom configuration

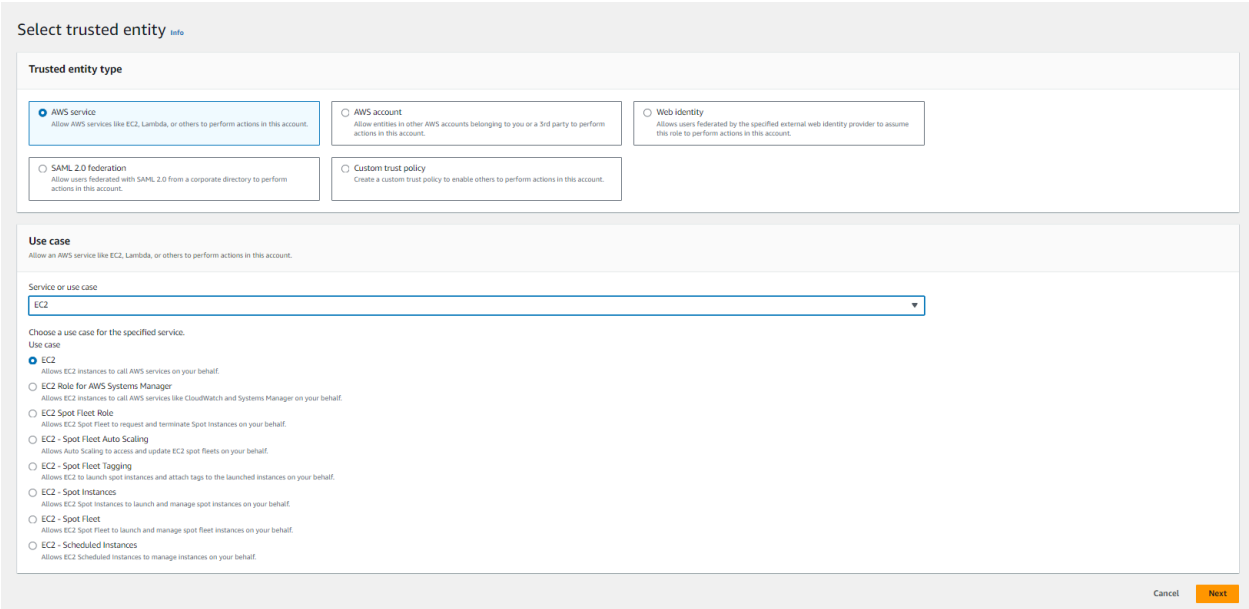
next>>>


Services
Search
Recently visited
Favorites
All services

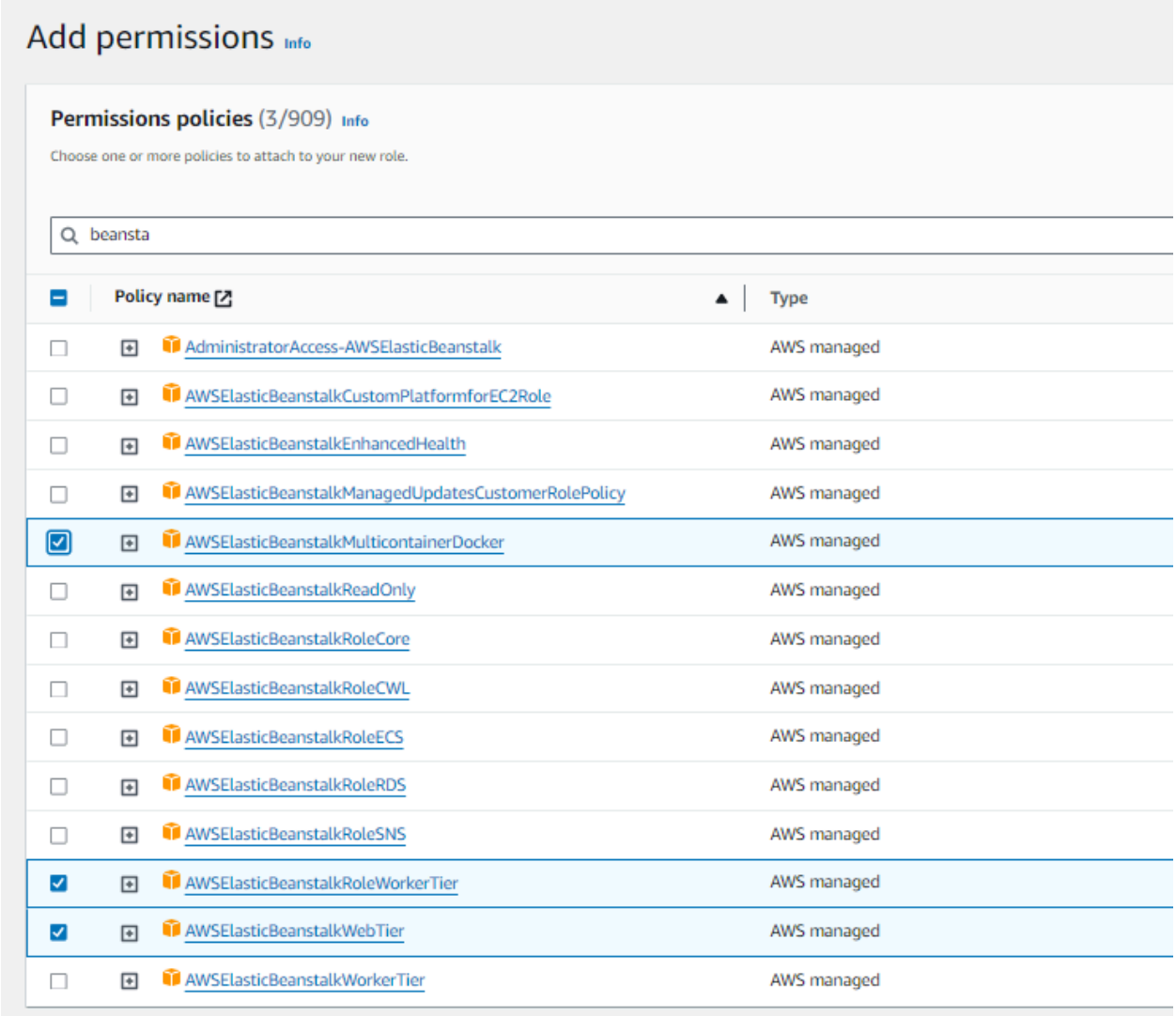

IAM
Manage access to AWS resources


Identity and Access Management (IAM)
Search IAM
Dashboard
Access management
User groups
Users
Roles
Policies
Identity providers
Account settings
Access reports
Access Analyzer
IAM > Roles
Roles (2) Info
Delete
Create role
An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.
Search
1
Role name
Trusted entities
AWSServiceRoleForSupport
AWS Service: support (Service-Linke
AWSServiceRoleForTrustedAdvisor
AWS Service: trustedadvisor (Service
Roles Anywhere Info
Manage
Authenticate your non AWS workloads and securely provide access to AWS services.

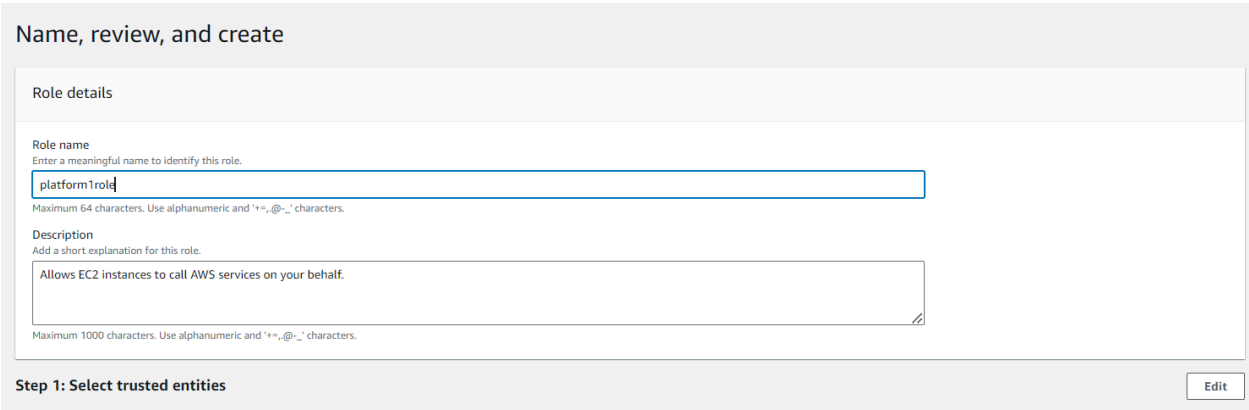
Create role

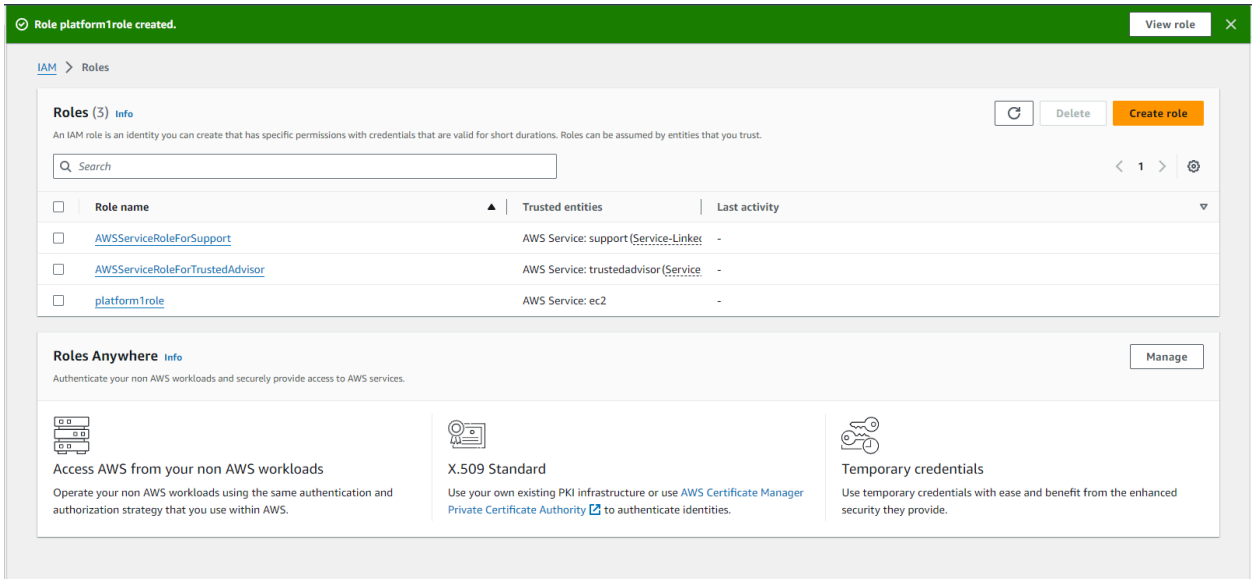

Select trusted entity Info
Trusted entity type
AWS service
Allow AWS services like EC2, Lambda, or others to perform actions in this account.
AWS account
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.
Web identity
Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.
SAML 2.0 federation
Allow users federated with SAML 2.0 from a corporate directory to perform actions in this account.
Custom trust policy
Create a custom trust policy to enable others to perform actions in this account.
Use case
Allow an AWS service like EC2, Lambda, or others to perform actions in this account.
Service or use case
EC2
Choose a use case for the specified service.
Use case
EC2
Allows EC2 instances to call AWS services on your behalf.
EC2 Role for AWS Systems Manager
Allows EC2 instances to call AWS services like CloudWatch and Systems Manager on your behalf.
EC2 Spot Fleet Role
Allows EC2 Spot Fleet to request and terminate Spot Instances on your behalf.
EC2 - Spot Fleet Auto Scaling
Allows Auto Scaling to access and update EC2 spot fleets on your behalf.
EC2 - Spot Fleet Tagging
Allows EC2 to launch spot instances and attach tags to the launched instances on your behalf.
EC2 - Spot Instances
Allows EC2 Spot Instances to launch and manage spot instances on your behalf.
EC2 - Spot Fleet
Allows EC2 Spot Fleet to launch and manage spot fleet instances on your behalf.
EC2 - Scheduled Instances
Allows EC2 Scheduled Instances to manage instances on your behalf.
Cancel
Next

NEXT>>>>


Add permissions Info
Permissions policies (3/909) Info
Choose one or more policies to attach to your new role.
beansta
Policy name
Type
AdministratorAccess-AWSElasticBeanstalk
AWS managed
AWSElasticBeanstalkCustomPlatformforEC2Role
AWS managed
AWSElasticBeanstalkEnhancedHealth
AWS managed
AWSElasticBeanstalkManagedUpdatesCustomerRolePolicy
AWS managed
AWSElasticBeanstalkMulticontainerDocker
AWS managed
AWSElasticBeanstalkReadOnly
AWS managed
AWSElasticBeanstalkRoleCore
AWS managed
AWSElasticBeanstalkRoleCWL
AWS managed
AWSElasticBeanstalkRoleECS
AWS managed
AWSElasticBeanstalkRoleRDS
AWS managed
AWSElasticBeanstalkRoleSNS
AWS managed
AWSElasticBeanstalkRoleWorkerTier
AWS managed
AWSElasticBeanstalkWebTier
AWS managed
AWSElasticBeanstalkWorkerTier
AWS managed

NEXT>>>


Name, review, and create
Role details
Role name
Enter a meaningful name to identify this role.
platform1role
Maximum 64 characters. Use alphanumeric and '+=,.@-_' characters.
Description
Add a short explanation for this role.
Allows EC2 instances to call AWS services on your behalf.
Maximum 1000 characters. Use alphanumeric and '+=,.@-_' characters.
Step 1: Select trusted entities
Edit



Go to the previous tab refresh instance profile and platform1role is visible

Configure service access Info

Service access

IAM roles, assumed by Elastic Beanstalk as a service role, and EC2 instance profiles allow Elastic Beanstalk to create and manage your environment. Both the IAM role and instance profile must be attached to IAM managed policies that contain the required permissions. Learn more

Service role

- ○ Create and use new service role
- ◉ Use an existing service role

Existing service roles

Choose an existing IAM role for Elastic Beanstalk to assume as a service role. The existing IAM role must have the required IAM managed policies.

EC2 key pair

Select an EC2 key pair to securely log in to your EC2 instances. Learn more

Choose a key pair

EC2 instance profile

Choose an IAM instance profile with managed policies that allow your EC2 instances to perform required operations.

platform1role

Cancel | Skip to review | Previous | Next

Configure service access Info

Service access

IAM roles, assumed by Elastic Beanstalk as a service role, and EC2 instance profiles allow Elastic Beanstalk to create and manage your environment. Both the IAM role and instance profile must be attached to IAM managed policies that contain the required permissions. Learn more

Service role

- (•) Create and use new service role
- ( ) Use an existing service role

Service role name

Enter the name for an IAM role that Elastic Beanstalk will create to assume as a service role. Beanstalk will attach the required managed policies to it.

aws-elasticbeanstalk-service-role

View permission details

EC2 key pair

Select an EC2 key pair to securely log in to your EC2 instances. Learn more

Choose a key pair

EC2 instance profile

Choose an IAM instance profile with managed policies that allow your EC2 instances to perform required operations.

platform1role

View permission details

Cancel | Skip to review | Previous | Next

Set up networking, database, and tags - *optional* Info

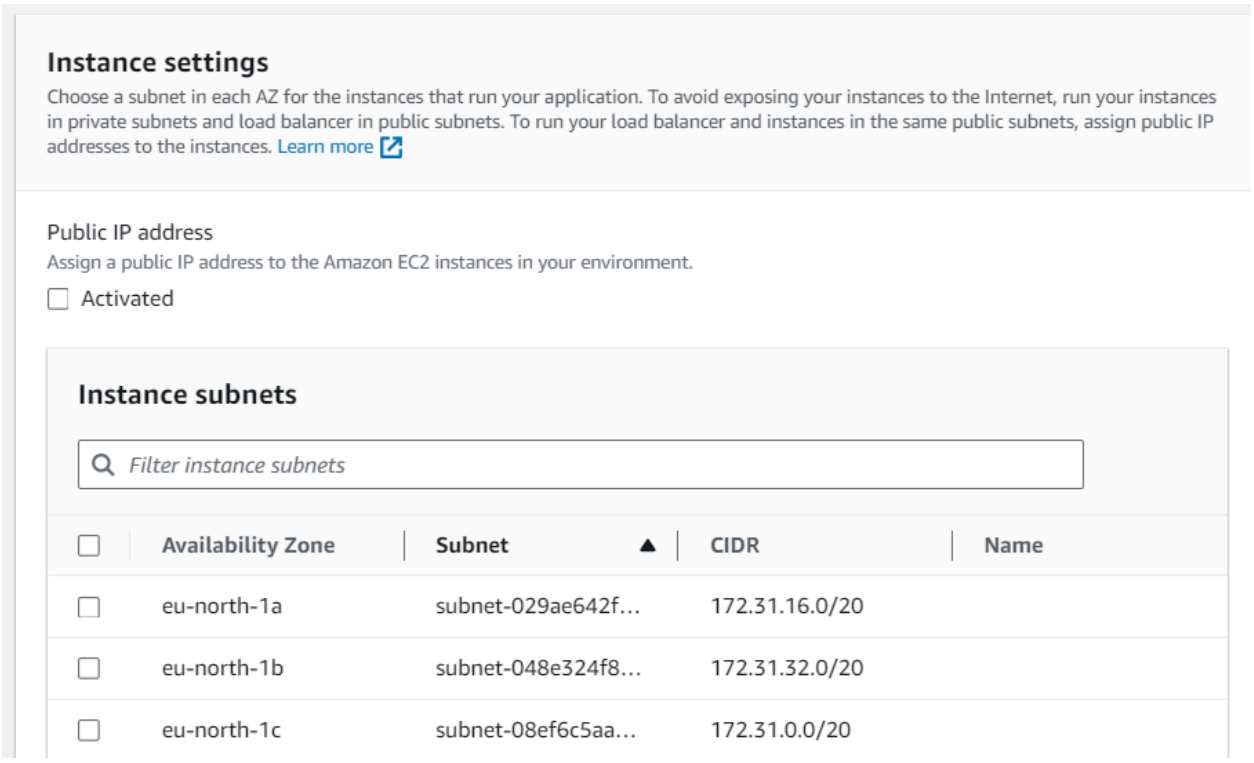
Virtual Private Cloud (VPC)

VPC

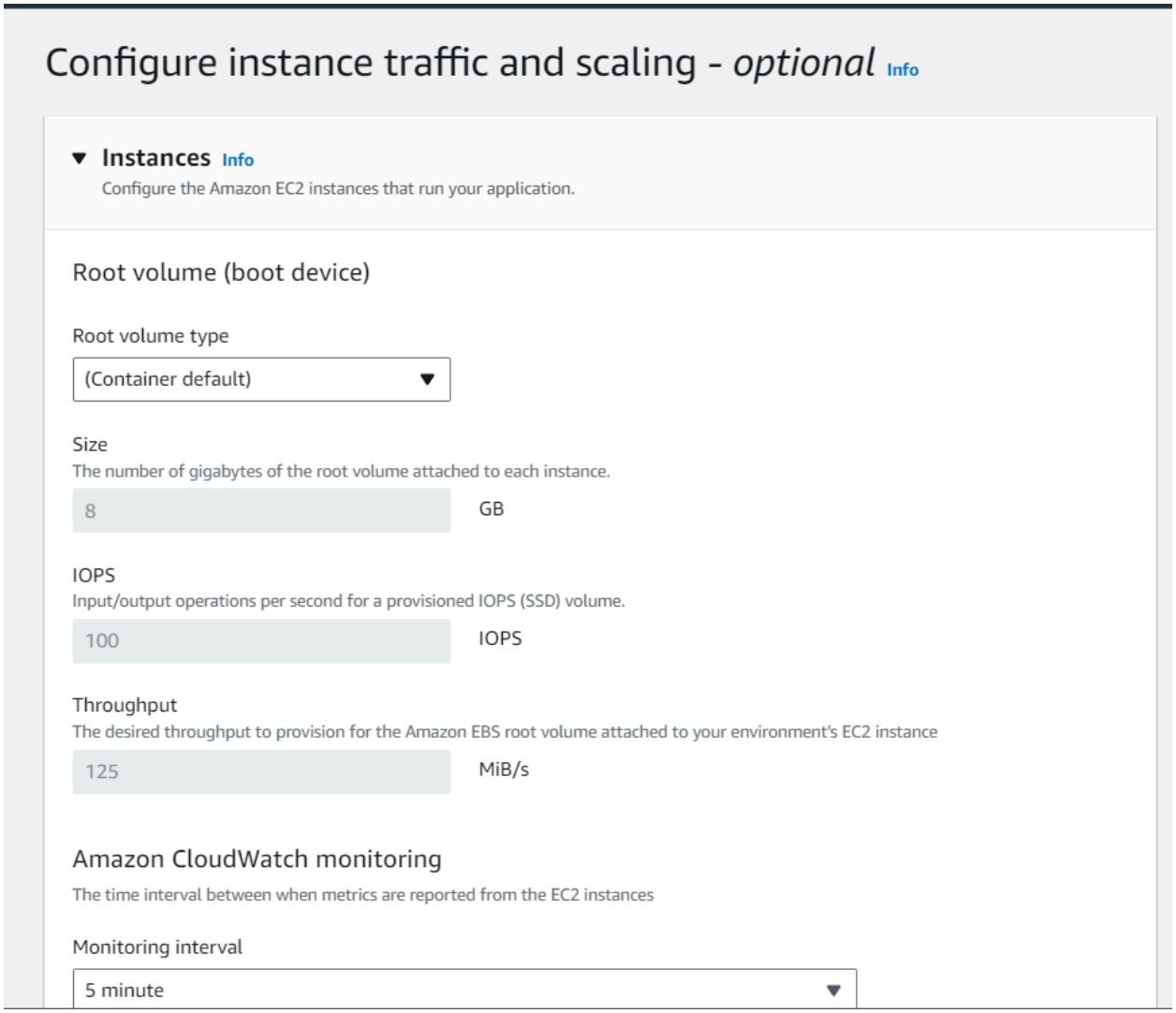
Launch your environment in a custom VPC instead of the default VPC. You can create a VPC and subnets in the VPC management console. Learn more

vpc-04c6b6def8137de11 | (172.31.0.0/16)

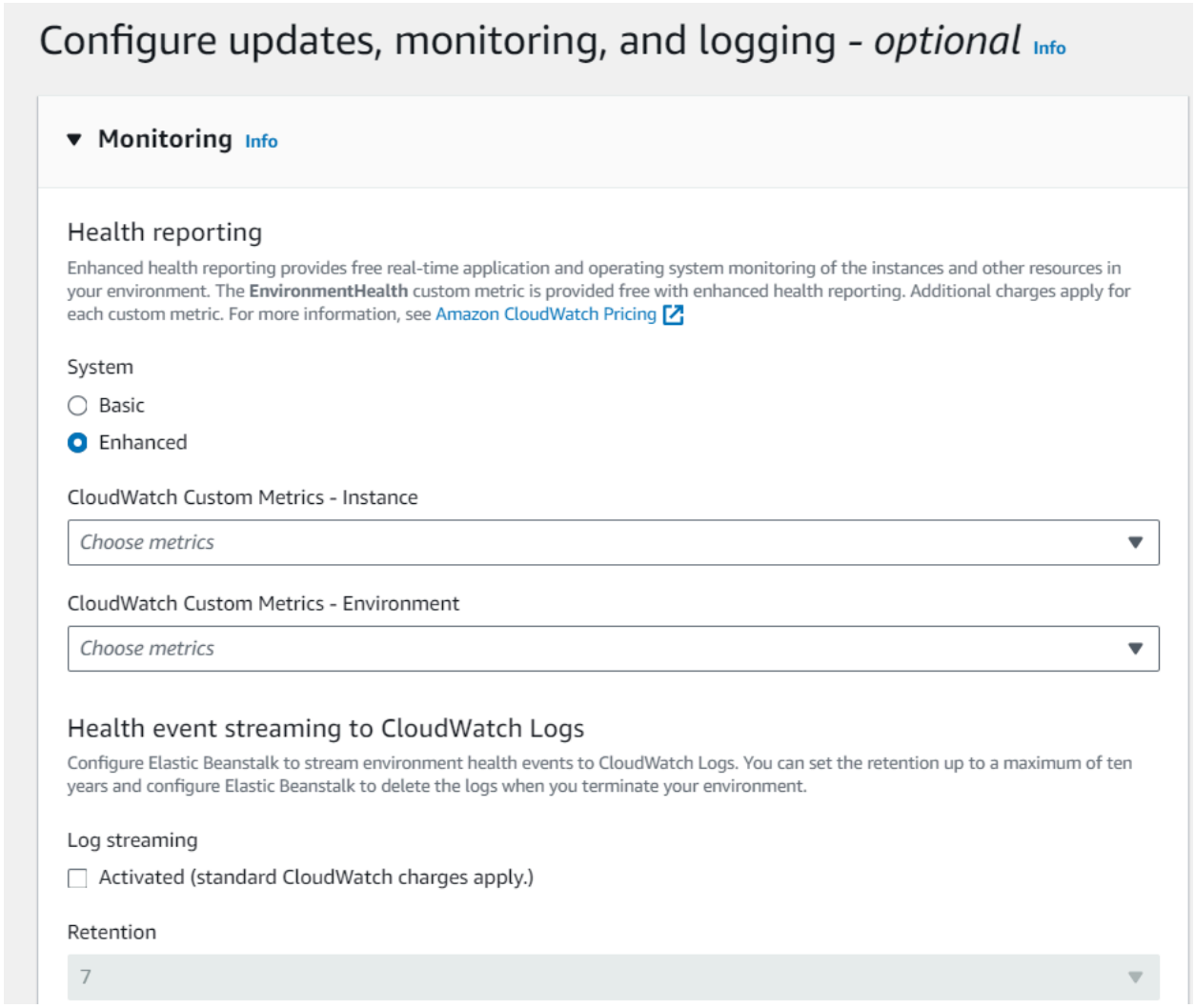
Create custom VPC


Instance settings
Choose a subnet in each AZ for the instances that run your application. To avoid exposing your instances to the Internet, run your instances in private subnets and load balancer in public subnets. To run your load balancer and instances in the same public subnets, assign public IP addresses to the instances. Learn more
Public IP address
Assign a public IP address to the Amazon EC2 instances in your environment.
Activated
Instance subnets
Filter instance subnets
Availability Zone
Subnet
CIDR
Name
eu-north-1a
subnet-029ae642f...
172.31.16.0/20
eu-north-1b
subnet-048e324f8...
172.31.32.0/20
eu-north-1c
subnet-08ef6c5aa...
172.31.0.0/20

next>>>


Configure instance traffic and scaling - optional Info
Instances Info
Configure the Amazon EC2 instances that run your application.
Root volume (boot device)
Root volume type
(Container default)
Size
The number of gigabytes of the root volume attached to each instance.
8
GB
IOPS
Input/output operations per second for a provisioned IOPS (SSD) volume.
100
IOPS
Throughput
The desired throughput to provision for the Amazon EBS root volume attached to your environment's EC2 instance
125
MiB/s
Amazon CloudWatch monitoring
The time interval between when metrics are reported from the EC2 instances
Monitoring interval
5 minute

next>>>


Configure updates, monitoring, and logging - optional Info
Monitoring Info
Health reporting
Enhanced health reporting provides free real-time application and operating system monitoring of the instances and other resources in your environment. The EnvironmentHealth custom metric is provided free with enhanced health reporting. Additional charges apply for each custom metric. For more information, see Amazon CloudWatch Pricing
System
Basic
Enhanced
CloudWatch Custom Metrics - Instance
Choose metrics
CloudWatch Custom Metrics - Environment
Choose metrics
Health event streaming to CloudWatch Logs
Configure Elastic Beanstalk to stream environment health events to CloudWatch Logs. You can set the retention up to a maximum of ten years and configure Elastic Beanstalk to delete the logs when you terminate your environment.
Log streaming
Activated (standard CloudWatch charges apply.)
Retention
7

next>>>

Review Info

Step 1: Configure environment

Edit

Environment information

Environment tier
Web server environment

Application name
platform1

Environment name
Platform1-env

Application code
Sample application

Platform
arn:aws:elasticbeanstalk:eu-north-1::platform/Corretto 21 running on 64bit Amazon Linux 2023/4.2.0

Step 2: Configure service access

Edit

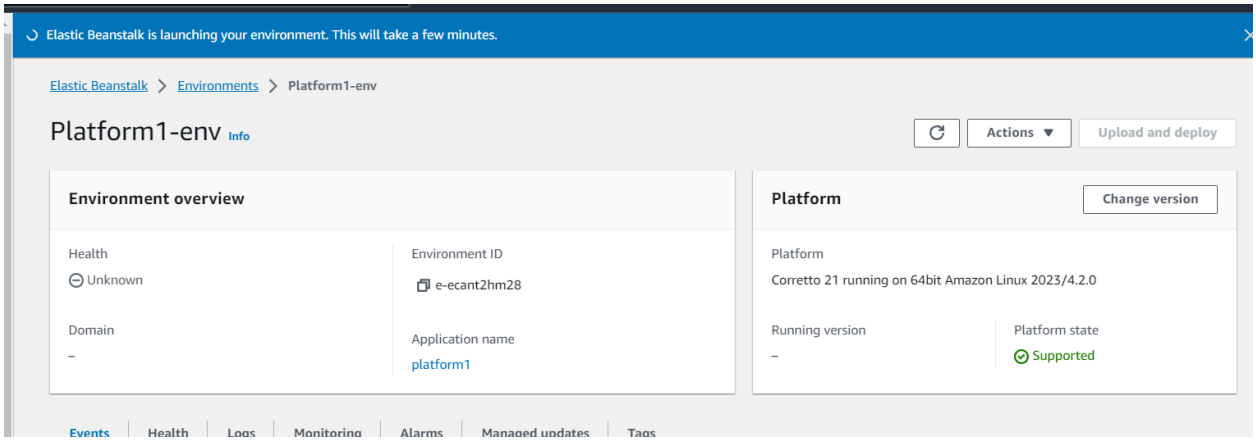
Service access Info

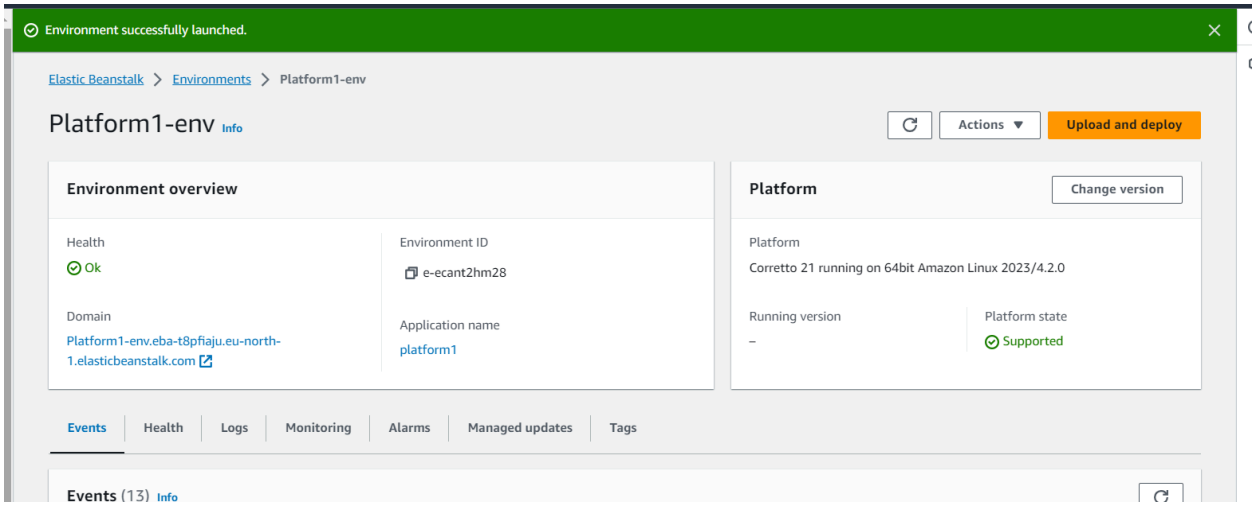
Configure the service role and EC2 instance profile that Elastic Beanstalk uses to manage your environment. Choose an EC2 key pair to securely log in to your EC2 instances.

Service role
arn:aws:iam::891377155147:role/service-role/aws-elasticbeanstalk-

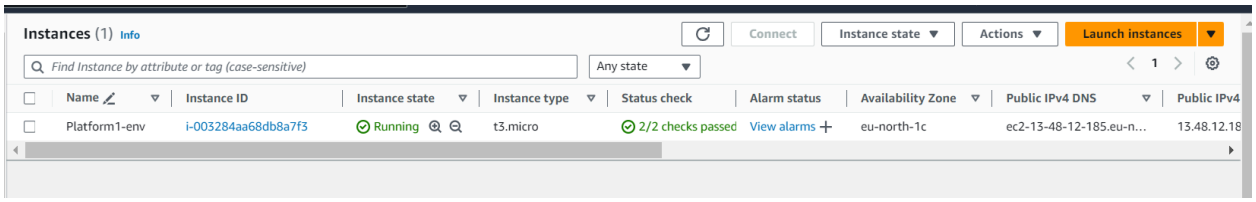
EC2 instance profile
platform1role

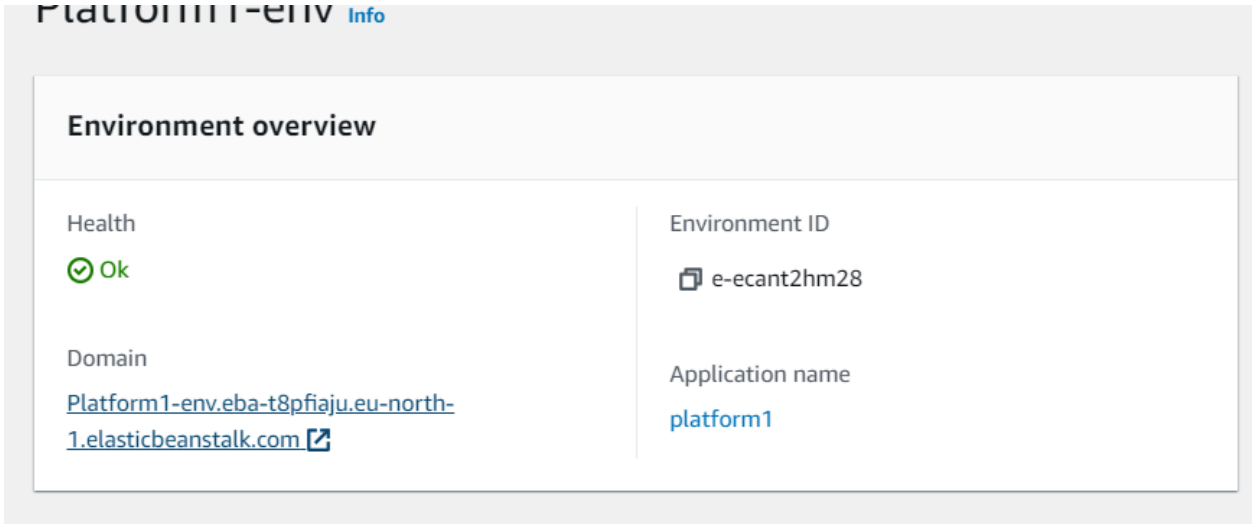
submit>>>



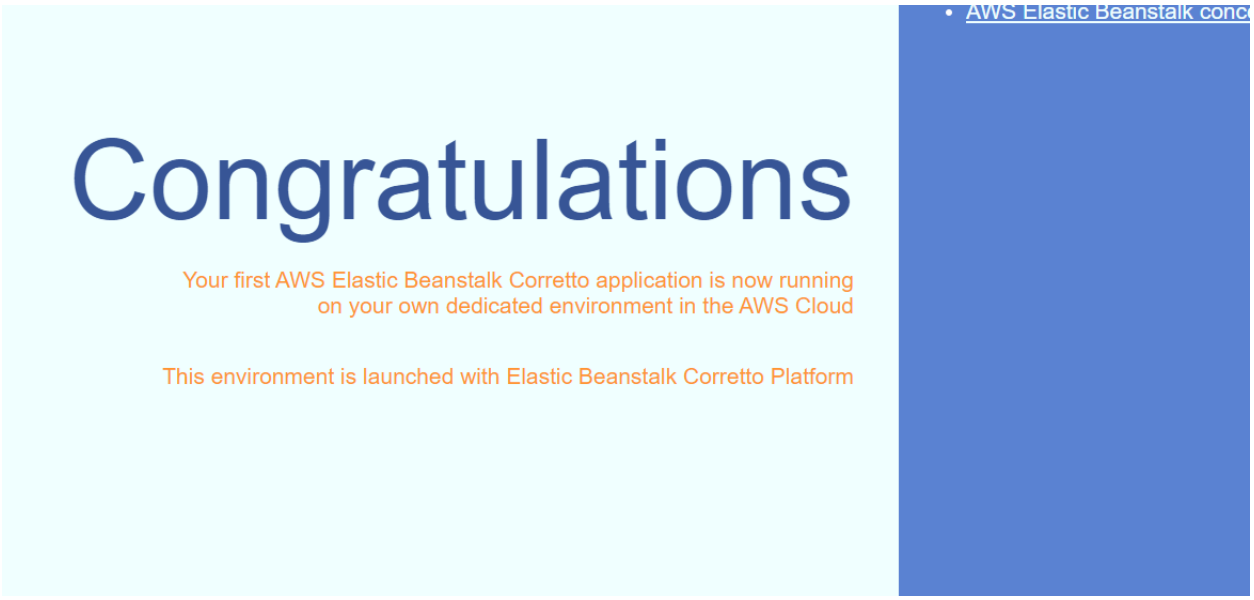


On the other tab open EC2 and confirm the instance is formed





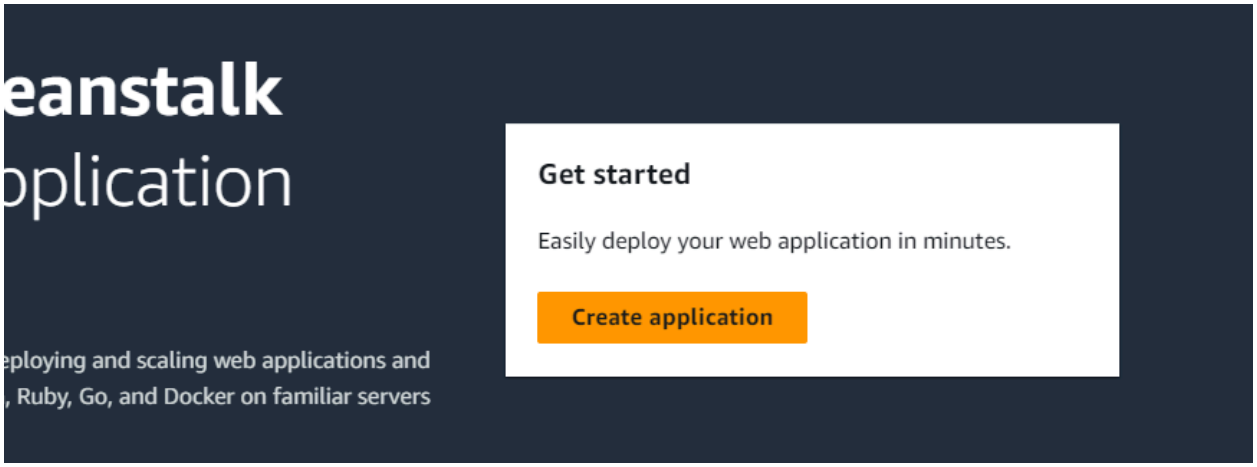
Click on Domain>>



2nd part

To configure an elastic beanstalk with Tomcat Application

>>>Go to Elastic BeanStalk
>>>Create Application



Configure environment Info

Environment tier Info

Amazon Elastic Beanstalk has two types of environment tiers to support different types of web applications.

- (•) Web server environment
  Run a website, web application, or web API that serves HTTP requests. Learn more
- ( ) Worker environment
  Run a worker application that processes long-running workloads on demand or performs tasks on a schedule. Learn more

Application information Info

Application name

myapp1

Maximum length of 100 characters.

▶ Application tags (optional)

Environment information Info

Choose the name, subdomain and description for your environment. These cannot be changed later.

Environment name

Myapp1-env

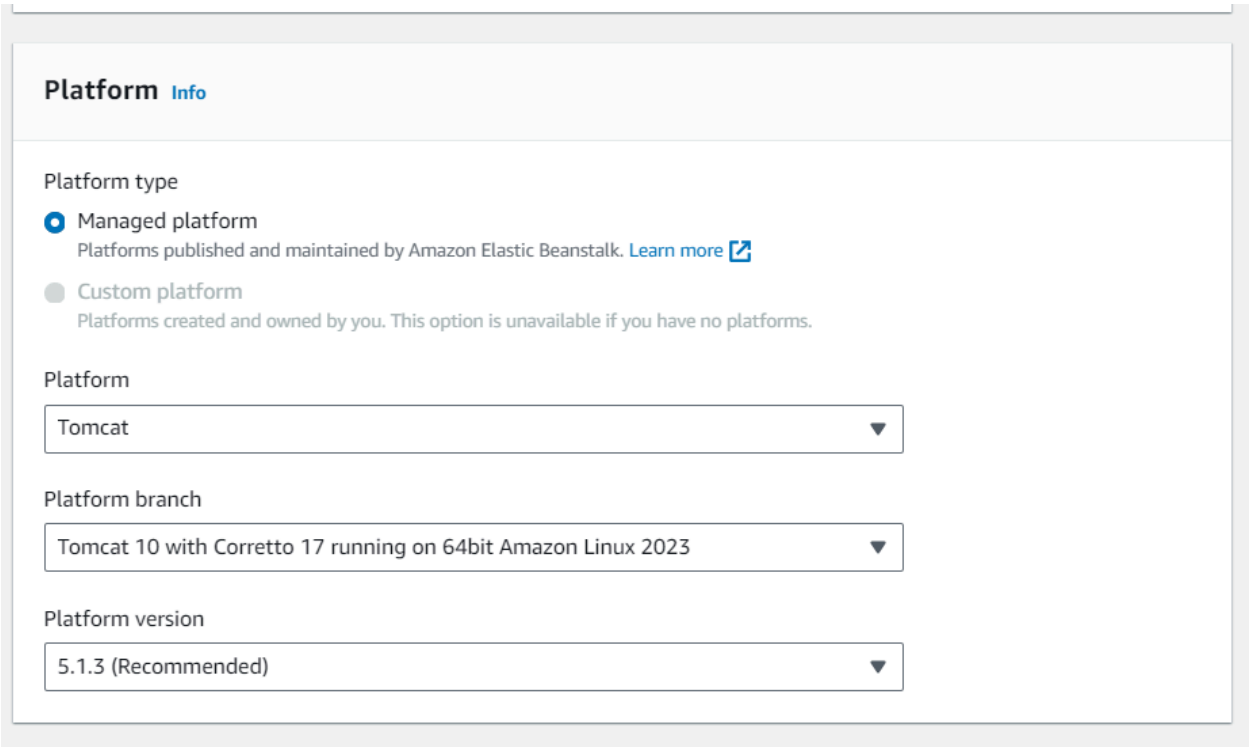
Must be from 4 to 40 characters in length. The name can contain only letters, numbers, and hyphens. It can't start or end with a hyphen. This name must be unique within a region in your account.

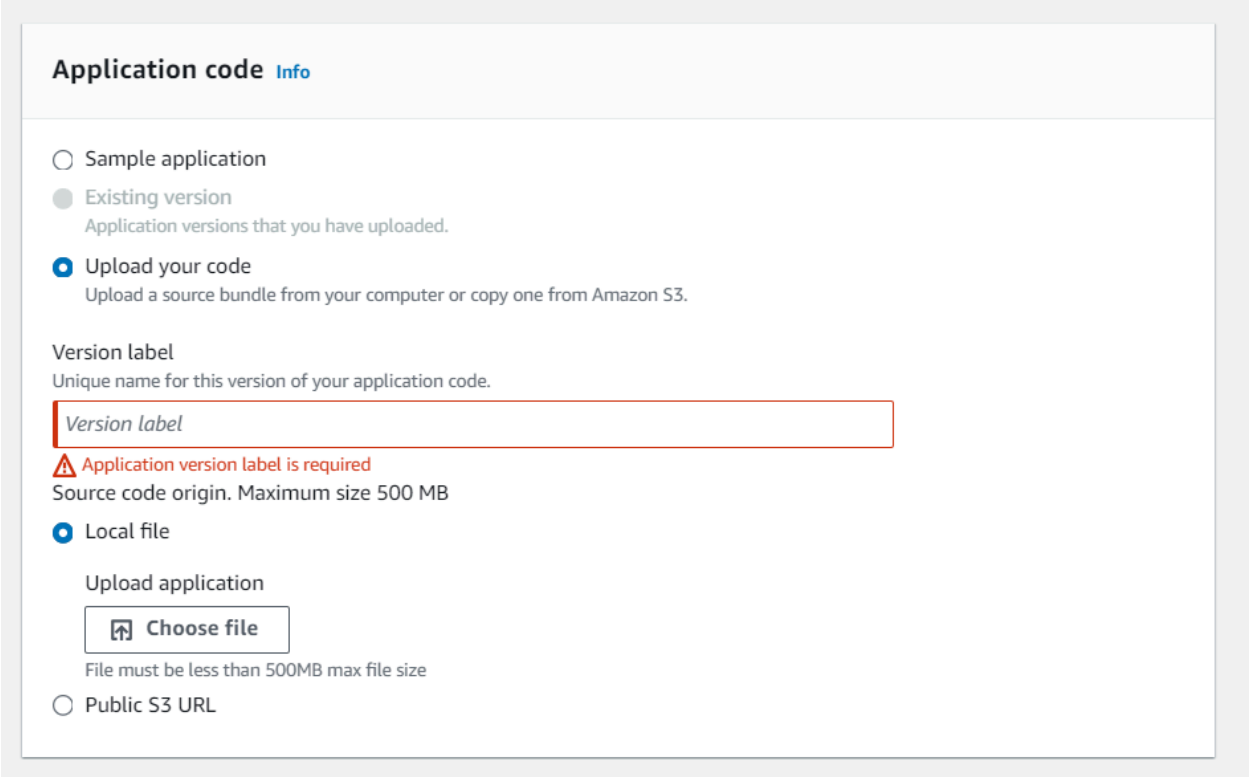
Domain

Leave blank for autogenerated value .eu-north-1.elasticbeanstalk.com Check availability

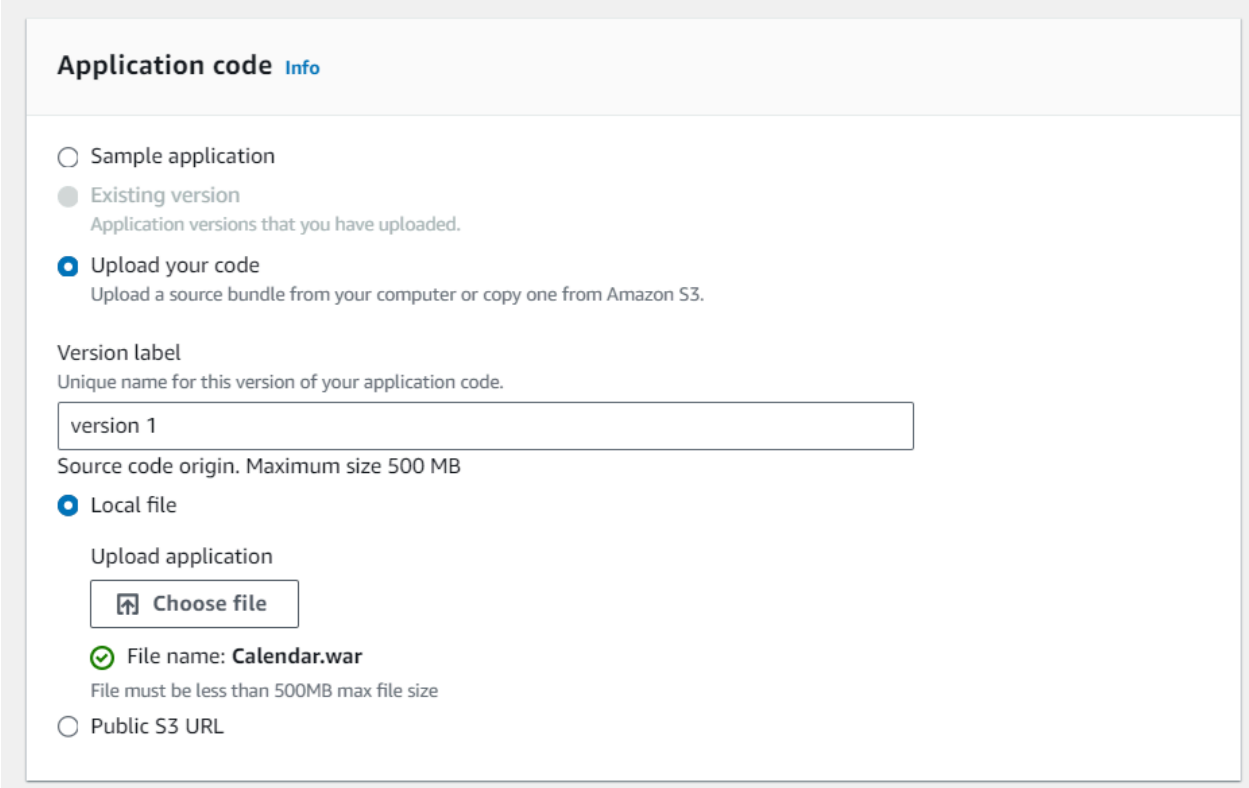
Environment description

creating Tomcat platform





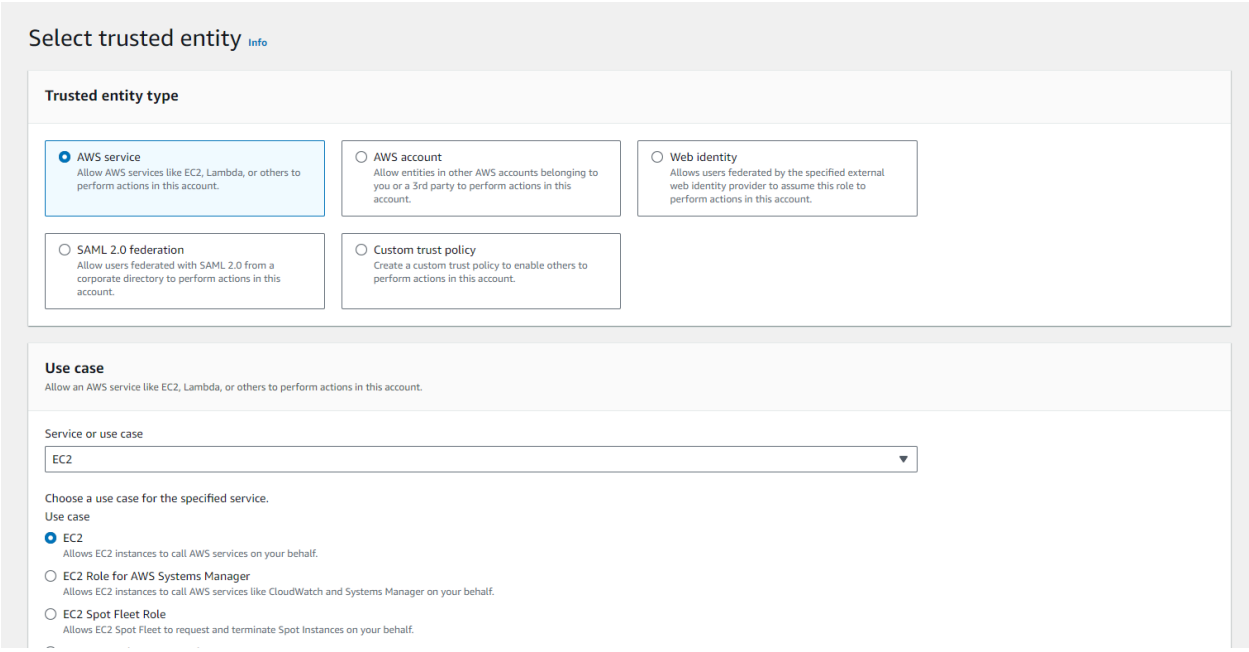
Download calendar from calendar.war (github) and upload it



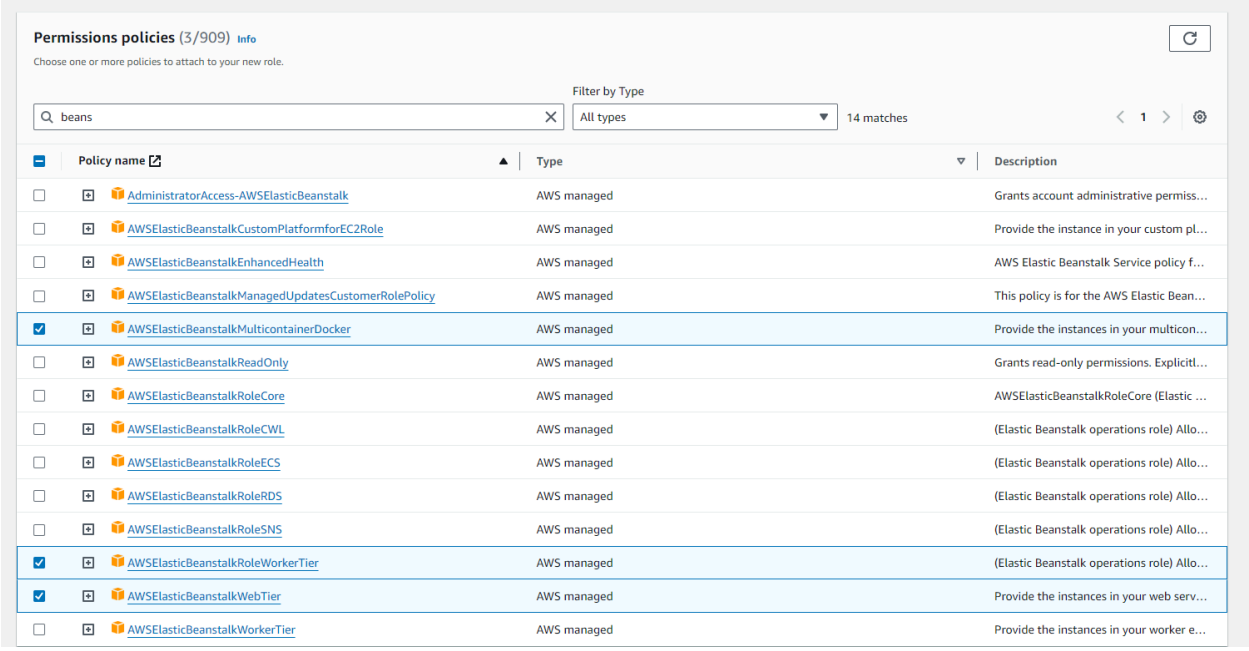
next>>>

Creating Role in IAM

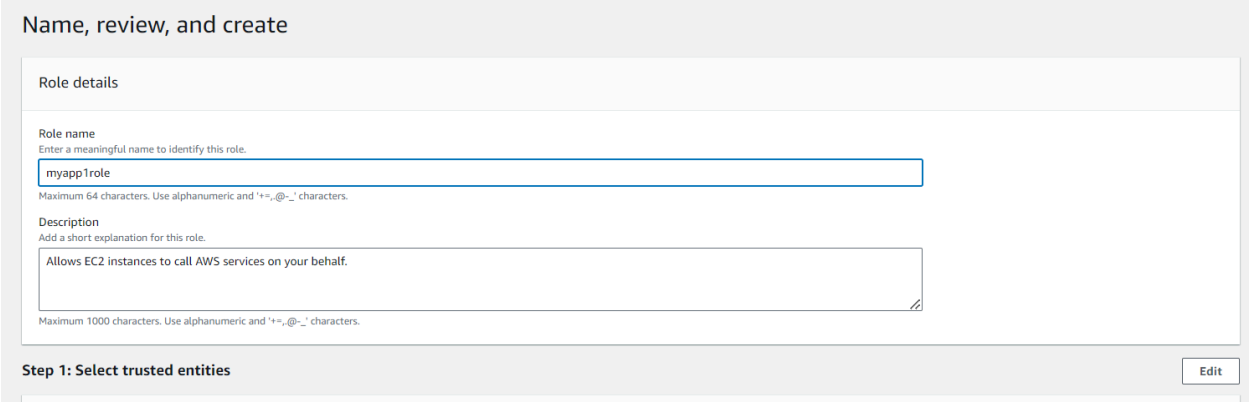
In IAM create role>>
Use case EC2>>>



Select multicontainer,web tier, worker tier

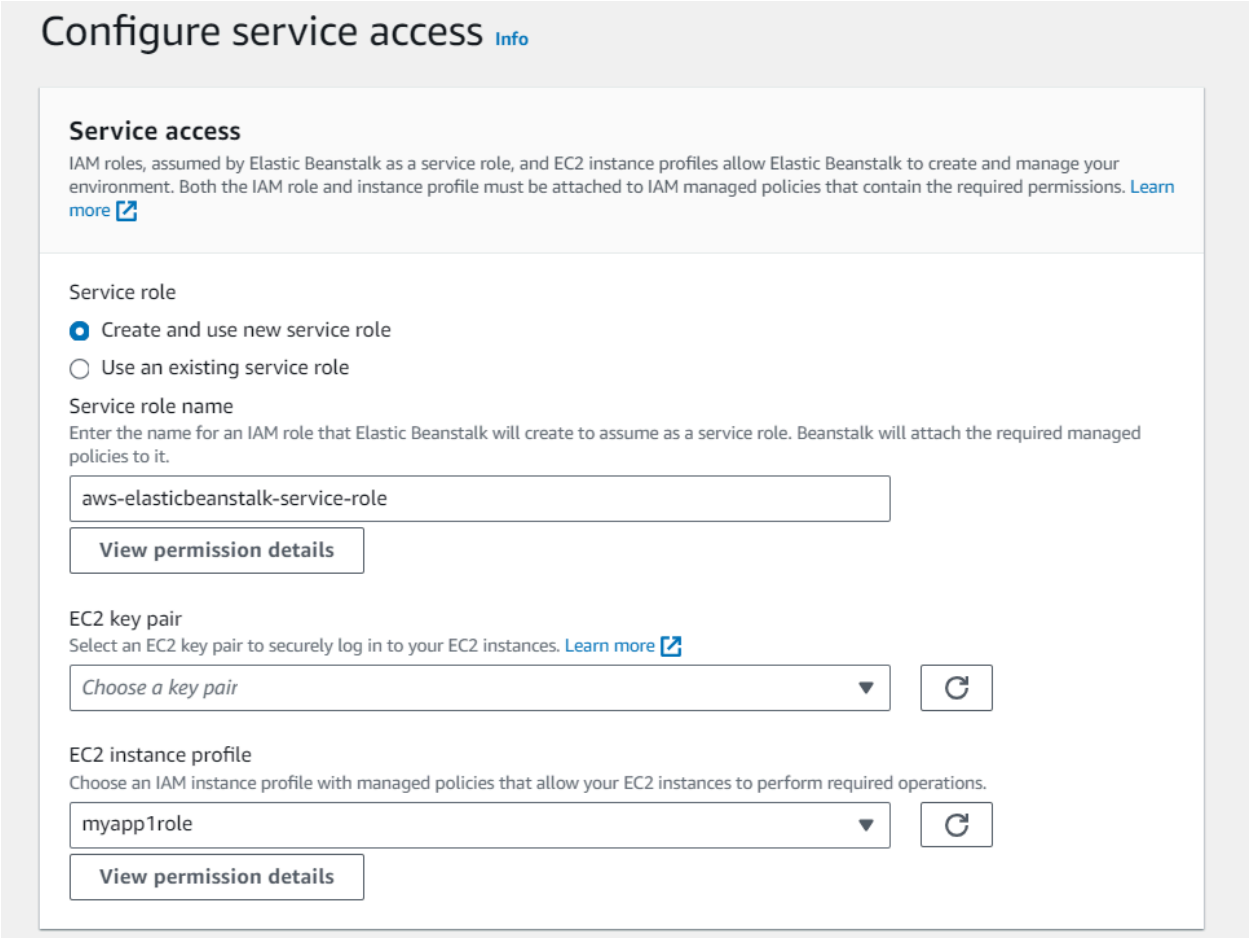


next>>>



Give role name>>>

In the previous tab refresh the instance profile and click on created role



Here I got an error after three steps so came back and checked use an existing service role

Configure service access Info

Service access

IAM roles, assumed by Elastic Beanstalk as a service role, and EC2 instance profiles allow Elastic Beanstalk to create and manage your environment. Both the IAM role and instance profile must be attached to IAM managed policies that contain the required permissions. Learn more

Service role

- ○ Create and use new service role
- ◉ Use an existing service role

Existing service roles

Choose an existing IAM role for Elastic Beanstalk to assume as a service role. The existing IAM role must have the required IAM managed policies.

aws-elasticbeanstalk-service-role

EC2 key pair

Select an EC2 key pair to securely log in to your EC2 instances. Learn more

Choose a key pair

EC2 instance profile

Choose an IAM instance profile with managed policies that allow your EC2 instances to perform required operations.

myapp1role

View permission details

Cancel | Skip to review | Previous | Next

VPC

Launch your environment in a custom VPC instead of the default VPC. You can create a VPC and subnets in the VPC management console.
Learn more

vpc-04c6b6def8137de11 | (172.31.0.0/16)

Create custom VPC

Instance settings

Choose a subnet in each AZ for the instances that run your application. To avoid exposing your instances to the Internet, run your instances in private subnets and load balancer in public subnets. To run your load balancer and instances in the same public subnets, assign public IP addresses to the instances. Learn more

Public IP address

Assign a public IP address to the Amazon EC2 instances in your environment.

☐ Activated

Instance subnets

Filter instance subnets

	Availability Zone	Subnet	CIDR	Name
☐	eu-north-1a	subnet-029ae642f...	172.31.16.0/20	
☐	eu-north-1b	subnet-048e324f8...	172.31.32.0/20	
☑	eu-north-1c	subnet-08ef6c5aa...	172.31.0.0/20	

Click next on Next>> for 3 times and submit

Environment successfully launched.

Elastic Beanstalk > Environments > Myapp1-env

Myapp1-env Info

Actions | Upload and deploy

Environment overview

Health
Ok

Environment ID
e-asjpyjfggd

Domain
Myapp1-env.eba-vmfi96hc.eu-north-1.elasticbeanstalk.com

Application name
myapp1

Platform

Change version

Platform
Tomcat 10 with Corretto 17 running on 64bit Amazon Linux 2023/5.1.3

Running version
version 1

Platform state
Supported

Events | Health | Logs | Monitoring | Alarms | Managed updates | Tags

GWT Calendar

Click on day to get date popup. Example Datepicker. Built with the tomcat war builder.
http://code.google.com/p/gwt-examples/

< February >				< 2024 >		
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		

After performing delete the application

Applications>>>check the application>>>actions>>>delete
Console home>>>S3>>>storage>>>Delete>>>empty the bucket>>>permanently delete