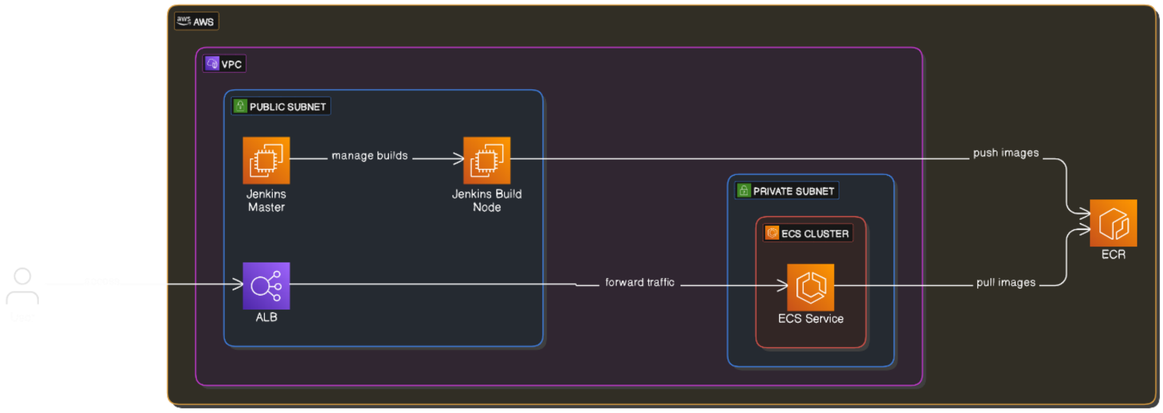
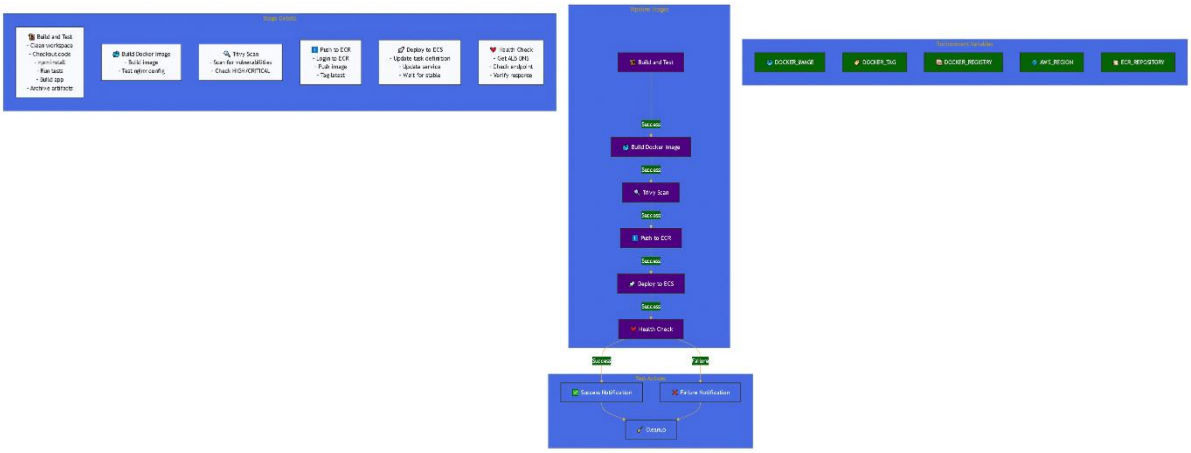
Jenkins CI/CD Pipeline for AWS ECS Deployment



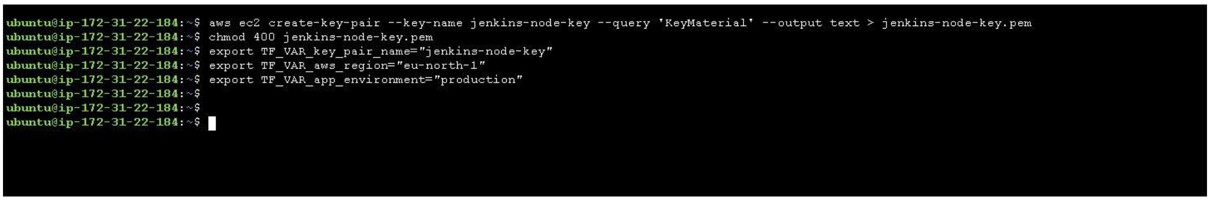


1. Create AWS Key Pair

```
aws ec2 create-key-pair --key-name jenkins-node-key --query 'KeyMaterial' --output text > jenkins-node-key.pem

  chmod 400 jenkins-node-key.pem
```

2. Set Required Environment Variables

```
export TF_VAR_key_pair_name="jenkins-node-key"

export TF_VAR_aws_region="eu-north-1"

export TF_VAR_app_environment="production"
```



```
ubuntu@ip-172-31-22-184:~$ aws ec2 create-key-pair --key-name jenkins-node-key --query 'KeyMaterial' --output text > jenkins-node-key.pem
ubuntu@ip-172-31-22-184:~$ chmod 400 jenkins-node-key.pem
ubuntu@ip-172-31-22-184:~$ export TF_VAR_key_pair_name="jenkins-node-key"
ubuntu@ip-172-31-22-184:~$ export TF_VAR_aws_region="eu-north-1"
ubuntu@ip-172-31-22-184:~$ export TF_VAR_app_environment="production"
ubuntu@ip-172-31-22-184:~$
ubuntu@ip-172-31-22-184:~$
ubuntu@ip-172-31-22-184:~$
```

3. Creating IAM Role: MySessionManagerrole

Step 1: Create the IAM Role

1. Navigate to the **AWS Management Console**.
2. Open the **IAM (Identity and Access Management) service**.
3. Select **Roles** from the left-hand menu.
4. Click on **Create Role**.
5. For **Trusted entity type**, select **AWS Service**.
6. Choose **EC2** as the service that will use this role.
7. Click **Next: Permissions**.

Step 2: Attach Managed Policies

Attach the following managed policies to the role:

1. **AmazonEC2ContainerRegistryPowerUser**
   - ARN: arn:aws:iam::aws:policy/AmazonEC2ContainerRegistryPowerUser
2. **AmazonSSMManagedInstanceCore**
   - ARN: arn:aws:iam::aws:policy/AmazonSSMManagedInstanceCore
3. **AmazonEC2FullAccess**
   - ARN: arn:aws:iam::aws:policy/AmazonEC2FullAccess
4. **AmazonECS_FullAccess**
   - ARN: arn:aws:iam::aws:policy/AmazonECS_FullAccess

Step 3: Configure Trust Relationship

1. On the **Review** page, enter the **Role Name** as MySessionManagerrole.
2. Add a **Description**: "Allows EC2 instances to call AWS services on your behalf."
3. Click **Create Role**.

Step 4: Verify the Role

1. Go to the IAM **Roles** section.
2. Search for MySessionManagerrole.
3. Confirm that all the managed policies are attached and the trust relationship is set to allow ec2.amazonaws.com to assume the role.

4. Clone the project

git clone https://github.com/sandeepkalathil/Jenkins-ECS-Project.git

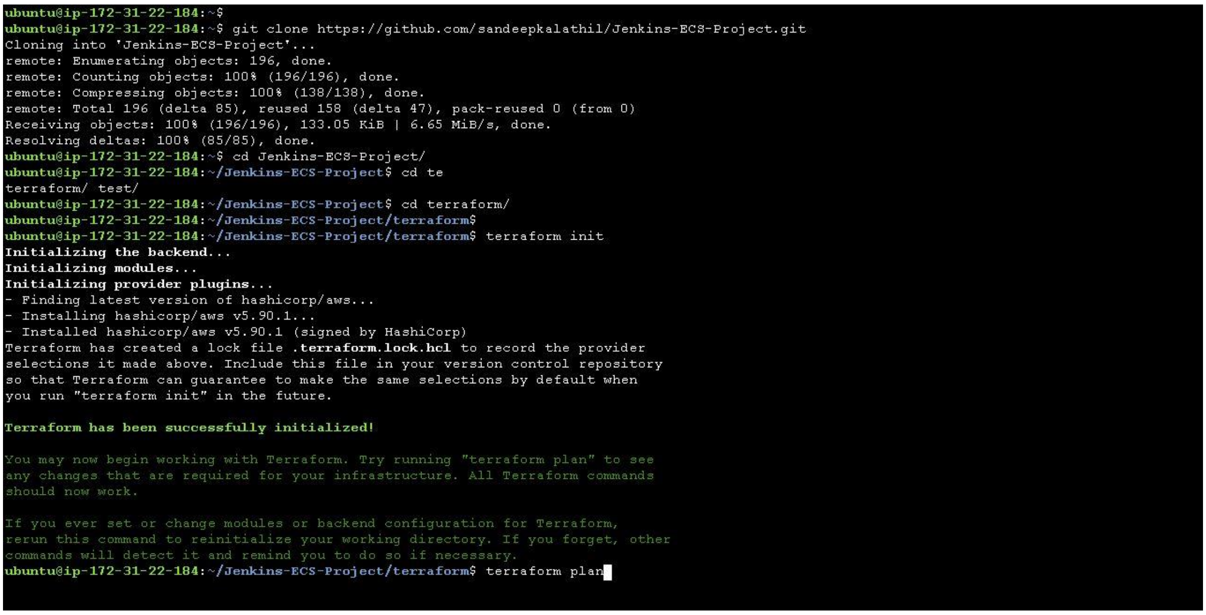
cd Jenkins-ECS-Project/

cd terraform

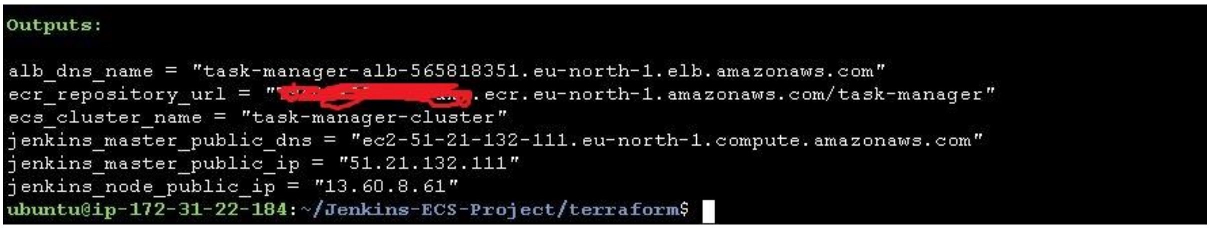
terraform init

terraform plan

terraform apply



```
ubuntu@ip-172-31-22-184:~$
ubuntu@ip-172-31-22-184:~$ git clone https://github.com/sandeepkalathil/Jenkins-ECS-Project.git
Cloning into 'Jenkins-ECS-Project'...
remote: Enumerating objects: 196, done.
remote: Counting objects: 100% (196/196), done.
remote: Compressing objects: 100% (138/138), done.
remote: Total 196 (delta 85), reused 158 (delta 47), pack-reused 0 (from 0)
Receiving objects: 100% (196/196), 133.05 KiB | 6.65 MiB/s, done.
Resolving deltas: 100% (85/85), done.
ubuntu@ip-172-31-22-184:~$ cd Jenkins-ECS-Project/
ubuntu@ip-172-31-22-184:~/Jenkins-ECS-Project$ cd te
terraform/ test/
ubuntu@ip-172-31-22-184:~/Jenkins-ECS-Project$ cd terraform/
ubuntu@ip-172-31-22-184:~/Jenkins-ECS-Project/terraform$
ubuntu@ip-172-31-22-184:~/Jenkins-ECS-Project/terraform$ terraform init
Initializing the backend...
Initializing modules...
Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v5.90.1...
- Installed hashicorp/aws v5.90.1 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
ubuntu@ip-172-31-22-184:~/Jenkins-ECS-Project/terraform$ terraform plan
```



```
Outputs:

alb_dns_name = "task-manager-alb-565818351.eu-north-1.elb.amazonaws.com"
ecr_repository_url = "[redacted].ecr.eu-north-1.amazonaws.com/task-manager"
ecs_cluster_name = "task-manager-cluster"
jenkins_master_public_dns = "ec2-51-21-132-111.eu-north-1.compute.amazonaws.com"
jenkins_master_public_ip = "51.21.132.111"
jenkins_node_public_ip = "13.60.8.61"
ubuntu@ip-172-31-22-184:~/Jenkins-ECS-Project/terraform$
```

5.Key Components of the Infrastructure

Networking (VPC Module):

- Creates a VPC with public and private subnets.
- Configures a single NAT gateway for outbound internet access from private subnets.

Jenkins Master and Node EC2 Instances:

- Installs Jenkins, Docker, and AWS CLI on the master node.
- Configures the build node with Docker and Java for running builds.
- Security groups allow SSH and Jenkins access (though wide-open ingress rules should be restricted for production).

ECR for Container Storage:

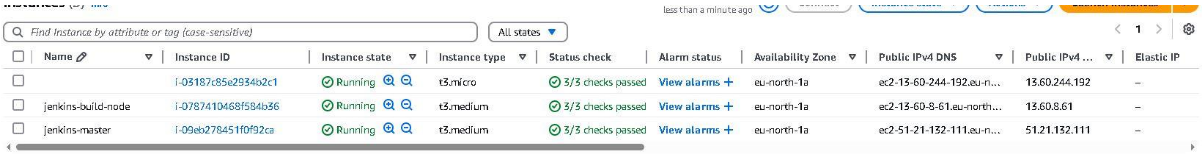
- Creates an Elastic Container Registry (ECR) for storing Docker images.

ECS Cluster and Fargate Task Definition:

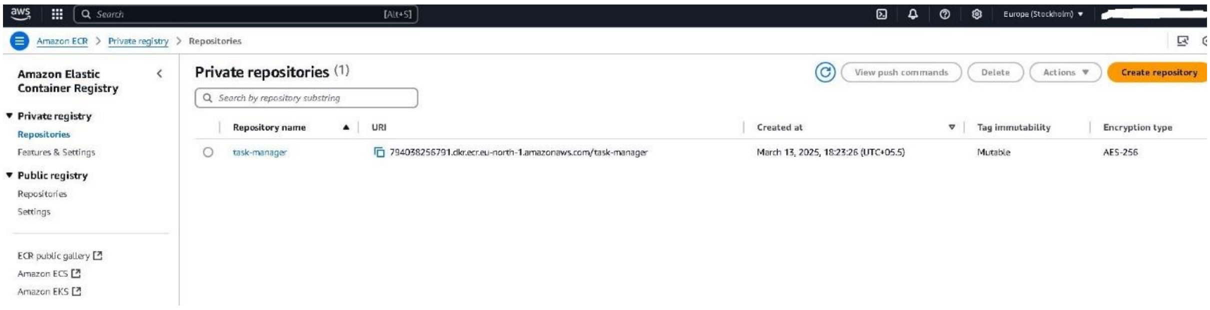
- Defines an ECS cluster and Fargate-based service.
- Deploys the containerized application with an ALB for load balancing.
- Manages IAM roles and policies for task execution and logging.

Security and IAM Roles:

- Separate security groups for ALB and ECS tasks.
- IAM role for ECS task execution with access to ECR and CloudWatch logs.

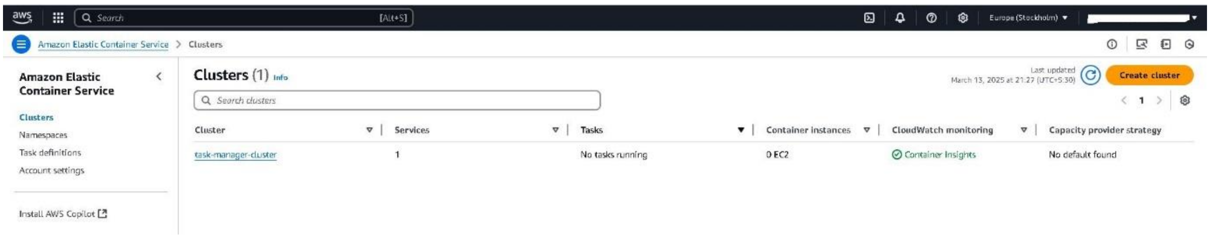


□ Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
□	i-03187c85e2934b2c1	Running	t3.micro	3/3 checks passed	View alarms +	eu-north-1a	ec2-13-60-244-192.eu-n...	13.60.244.192	–
□ jenkins-build-node	i-0787410468f584b36	Running	t3.medium	3/3 checks passed	View alarms +	eu-north-1a	ec2-13-60-8-61.eu-north...	13.60.8.61	–
□ jenkins-master	i-09eb278451f0f92ca	Running	t3.medium	3/3 checks passed	View alarms +	eu-north-1a	ec2-51-21-132-111.eu-n...	51.21.132.111	–



Private repositories (1)

	Repository name	URI	Created at	Tag immutability	Encryption type
○	task-manager	794038256791.dkr.ecr.eu-north-1.amazonaws.com/task-manager	March 13, 2025, 18:23:26 (UTC+05.5)	Mutable	AES-256



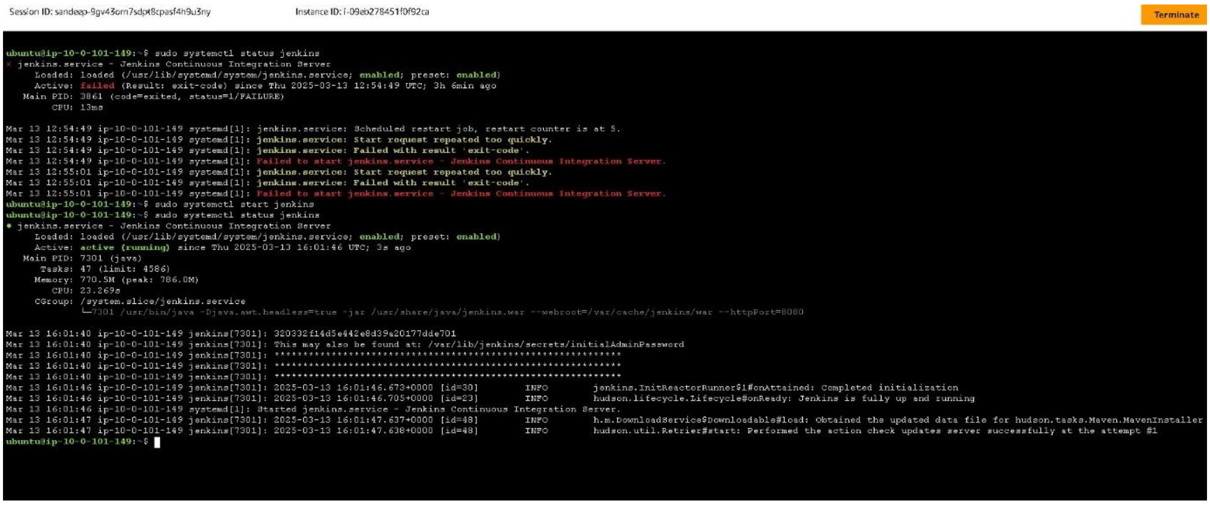
Clusters (1)

Last updated
March 13, 2025 at 21:27 (UTC+5:30)

Cluster	Services	Tasks	Container instances	CloudWatch monitoring	Capacity provider strategy
task-manager-cluster	1	No tasks running	0 EC2	✓ Container Insights	No default found

1. Jenkins Setup

On the Jenkins master server make sure that the Jenkins service is running, else start the service.



Session ID: sandeep-9gv43orn7sdpt8cpasf4h9u3ny

Instance ID: i-09eb278451f0f92ca

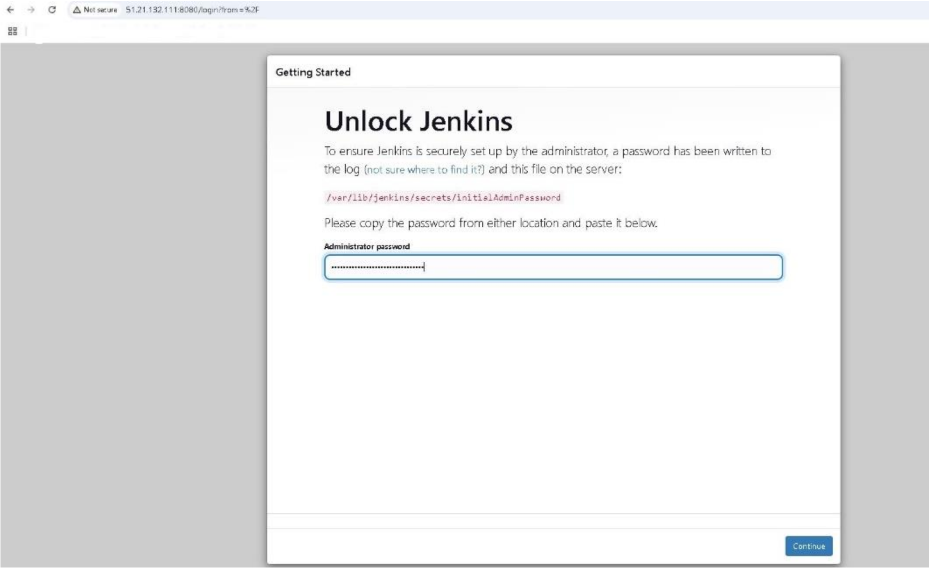
```
ubuntu@ip-10-0-101-149:~$ sudo systemctl status jenkins
× jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
     Active: failed (Result: exit-code) since Thu 2025-03-13 12:54:49 UTC; 3h 6min ago
   Main PID: 3861 (code=exited, status=1/FAILURE)
        CPU: 13ms

Mar 13 12:54:49 ip-10-0-101-149 systemd[1]: jenkins.service: Scheduled restart job, restart counter is at 5.
Mar 13 12:54:49 ip-10-0-101-149 systemd[1]: jenkins.service: Start request repeated too quickly.
Mar 13 12:54:49 ip-10-0-101-149 systemd[1]: jenkins.service: Failed with result 'exit-code'.
Mar 13 12:54:49 ip-10-0-101-149 systemd[1]: Failed to start jenkins.service - Jenkins Continuous Integration Server.
Mar 13 12:55:01 ip-10-0-101-149 systemd[1]: jenkins.service: Start request repeated too quickly.
Mar 13 12:55:01 ip-10-0-101-149 systemd[1]: jenkins.service: Failed with result 'exit-code'.
Mar 13 12:55:01 ip-10-0-101-149 systemd[1]: Failed to start jenkins.service - Jenkins Continuous Integration Server.
ubuntu@ip-10-0-101-149:~$ sudo systemctl start jenkins
ubuntu@ip-10-0-101-149:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
     Active: active (running) since Thu 2025-03-13 16:01:46 UTC; 3s ago
   Main PID: 7301 (java)
      Tasks: 47 (limit: 4586)
     Memory: 770.5M (peak: 786.0M)
        CPU: 23.269s
     CGroup: /system.slice/jenkins.service
             └─7301 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Mar 13 16:01:40 ip-10-0-101-149 jenkins[7301]: 320332f14d5e442e8d39a20177dde701
Mar 13 16:01:40 ip-10-0-101-149 jenkins[7301]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Mar 13 16:01:40 ip-10-0-101-149 jenkins[7301]: *************************************************************
Mar 13 16:01:40 ip-10-0-101-149 jenkins[7301]: *************************************************************
Mar 13 16:01:40 ip-10-0-101-149 jenkins[7301]: *************************************************************
Mar 13 16:01:46 ip-10-0-101-149 jenkins[7301]: 2025-03-13 16:01:46.673+0000 [id=30]        INFO        jenkins.InitReactorRunner$1#onAttained: Completed initialization
Mar 13 16:01:46 ip-10-0-101-149 jenkins[7301]: 2025-03-13 16:01:46.705+0000 [id=23]        INFO        hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and running
Mar 13 16:01:46 ip-10-0-101-149 systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
Mar 13 16:01:47 ip-10-0-101-149 jenkins[7301]: 2025-03-13 16:01:47.637+0000 [id=48]        INFO        h.m.DownloadService$Downloadable#load: Obtained the updated data file for hudson.tasks.Maven.MavenInstaller
Mar 13 16:01:47 ip-10-0-101-149 jenkins[7301]: 2025-03-13 16:01:47.638+0000 [id=48]        INFO        hudson.util.Retrier#start: Performed the action check updates server successfully at the attempt #1
ubuntu@ip-10-0-101-149:~$ 
```

1. Access Jenkins Master

- Get Jenkins master public IP from Terraform output
- Access Jenkins UI: http://<jenkins_master_public_ip>:8080
- Get initial admin password:

ssh -i jenkins-node-key.pem ubuntu@<jenkins_master_public_ip>

sudo cat /var/lib/jenkins/secrets/initialAdminPassword



Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

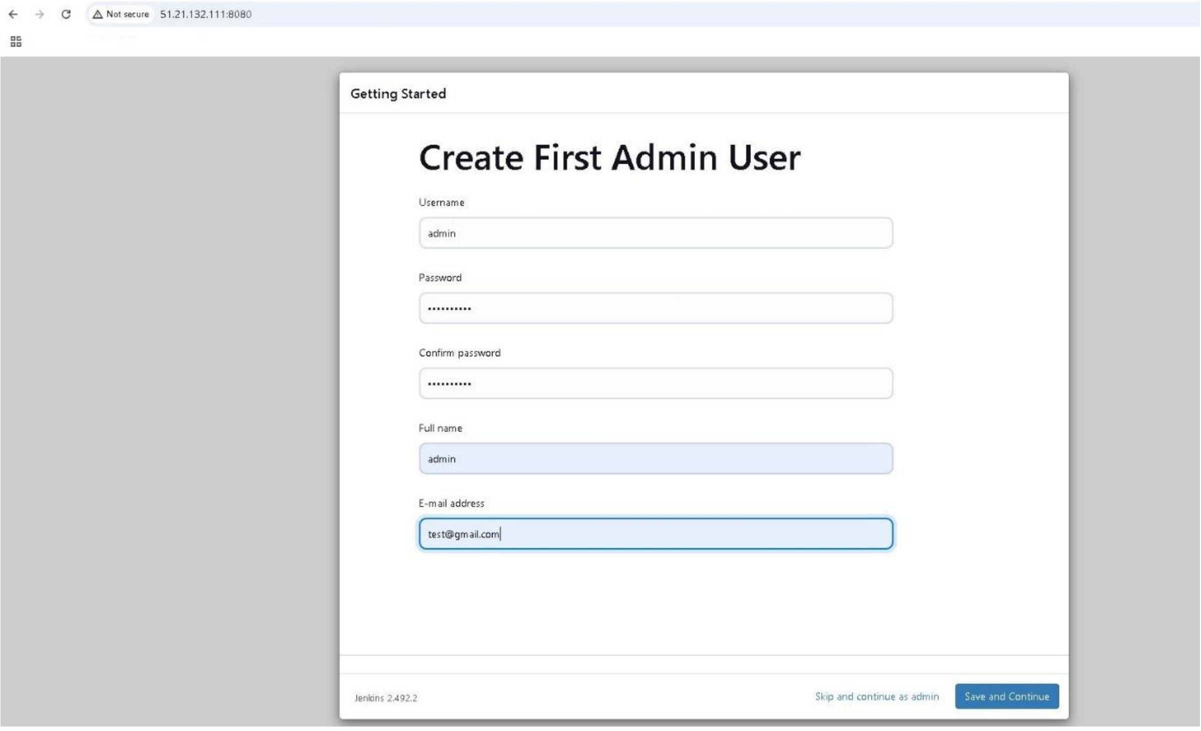
`/var/lib/jenkins/secrets/initialAdminPassword`

Please copy the password from either location and paste it below.

Administrator password: ································

2. Configure Jenkins Master

1. Install suggested plugins
2. Create admin user
3. Install additional plugins:
   - Docker Pipeline
   - AWS Credentials
   - Blue Ocean



Not secure 51.21.132.111:8080

Getting Started

Create First Admin User

Username: admin

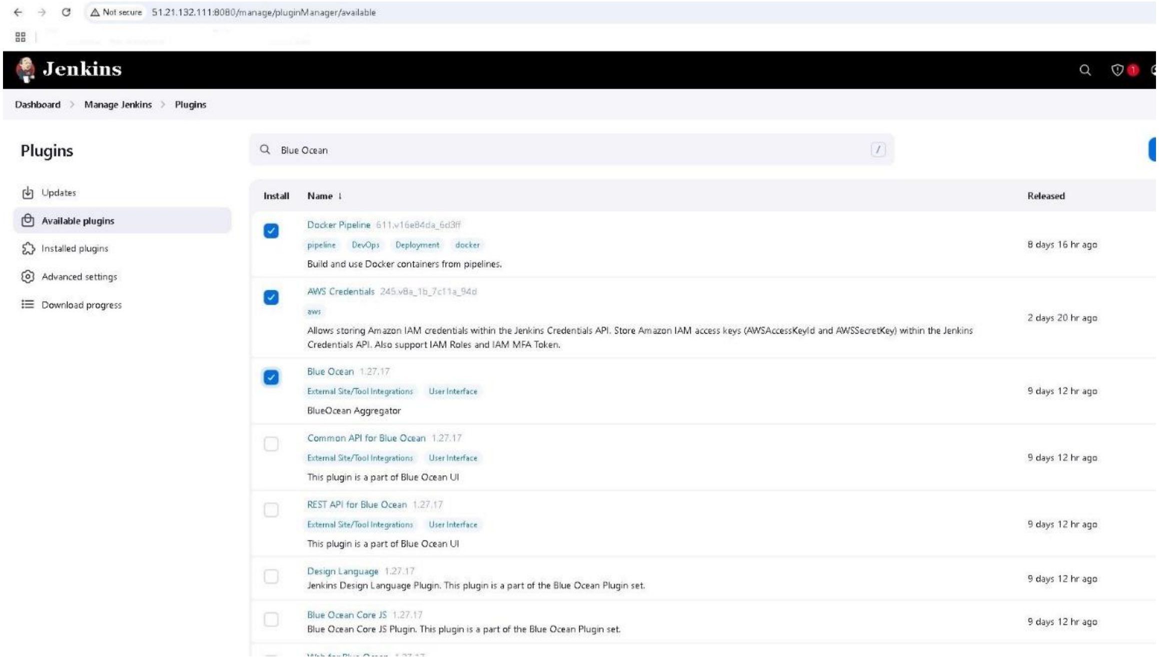
Password: ••••••••••

Confirm password: ••••••••••

Full name: admin

E-mail address: test@gmail.com

Jenkins 2.492.2



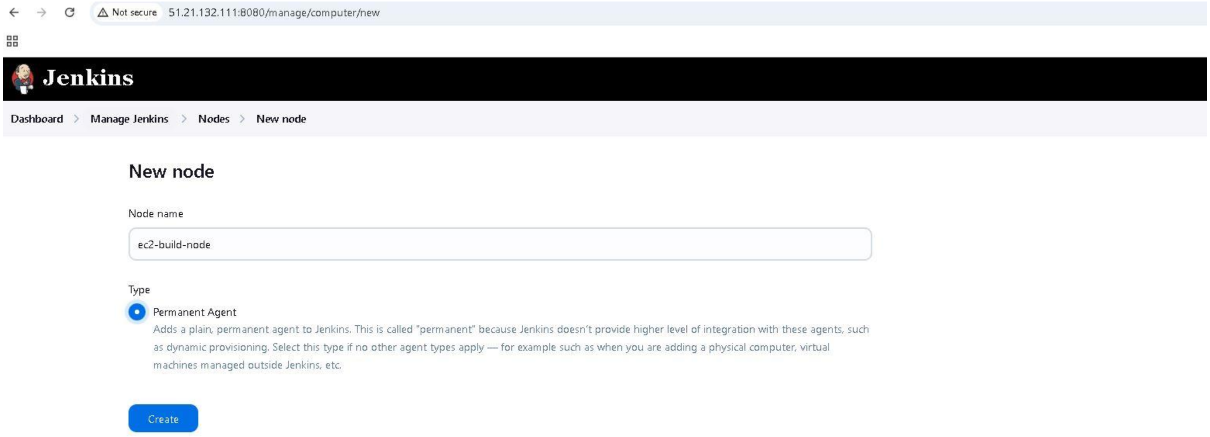
Not secure 51.21.132.111:8080/manage/pluginManager/available

Blue Ocean

Install	Name ↓	Released
☑	Docker Pipeline 611.v16e84da_6d3ff pipeline DevOps Deployment docker Build and use Docker containers from pipelines.	8 days 16 hr ago
☑	AWS Credentials 245.v8a_1b_7c11a_94d aws Allows storing Amazon IAM credentials within the Jenkins Credentials API. Store Amazon IAM access keys (AWSAccessKeyId and AWSSecretKey) within the Jenkins Credentials API. Also support IAM Roles and IAM MFA Token.	2 days 20 hr ago
☑	Blue Ocean 1.27.17 External Site/Tool Integrations User Interface BlueOcean Aggregator	9 days 12 hr ago
□	Common API for Blue Ocean 1.27.17 External Site/Tool Integrations User Interface This plugin is a part of Blue Ocean UI	9 days 12 hr ago
□	REST API for Blue Ocean 1.27.17 External Site/Tool Integrations User Interface This plugin is a part of Blue Ocean UI	9 days 12 hr ago
□	Design Language 1.27.17 Jenkins Design Language Plugin. This plugin is a part of the Blue Ocean Plugin set.	9 days 12 hr ago
□	Blue Ocean Core JS 1.27.17 Blue Ocean Core JS Plugin. This plugin is a part of the Blue Ocean Plugin set.	9 days 12 hr ago

7. Configure Jenkins Build Node

1. Go to Manage Jenkins → Manage Nodes
2. Add new node:
   - Name: ec2-build-node
   - Permanent Agent: Yes
   - Remote root directory: /home/ubuntu/jenkins-agent
   - Labels: ec2-build-node
   - Launch method: Launch agent via SSH
   - Host: <EC2_INSTANCE_PUBLIC_IP> (from Terraform output)
   - Credentials: Add SSH with private key
   - Host Key Verification Strategy: Non verifying



Not secure 51.21.132.111:8080/manage/computer/new

New node

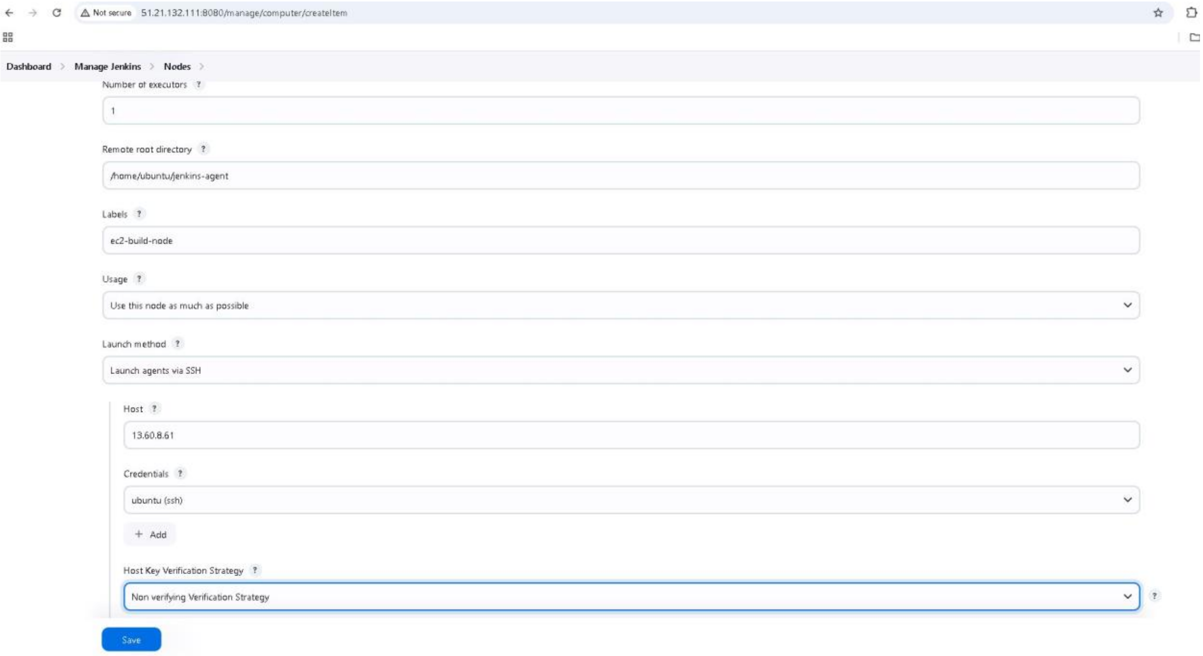
Node name

ec2-build-node

Type

● Permanent Agent

Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.



Not secure 51.21.132.111:8080/manage/computer/createItem

Dashboard > Manage Jenkins > Nodes >

Number of executors: 1

Remote root directory: /home/ubuntu/jenkins-agent

Labels: ec2-build-node

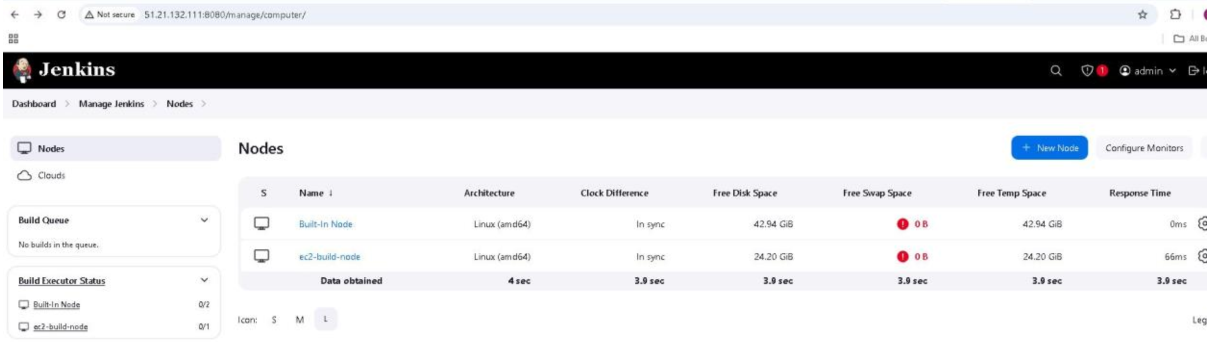
Usage: Use this node as much as possible

Launch method: Launch agents via SSH

Host: 13.60.8.61

Credentials: ubuntu (ssh)

Host Key Verification Strategy: Non verifying Verification Strategy



Not secure 51.21.132.111:8080/manage/computer/

Nodes

Build Queue

No builds in the queue.

Build Executor Status

Built-In Node	0/2
ec2-build-node	0/1

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Built-In Node	Linux (amd64)	In sync	42.94 GiB	0 B	42.94 GiB	0ms
	ec2-build-node	Linux (amd64)	In sync	24.20 GiB	0 B	24.20 GiB	66ms
	Data obtained	4 sec	3.9 sec	3.9 sec	3.9 sec	3.9 sec	3.9 sec

8. Configure Jenkins Credentials

1. AWS Credentials:

   - Kind: AWS Credentials
   - ID: aws-credentials
   - Description: AWS Credentials
   - Access Key ID: Your AWS access key

- Secret Access Key: Your AWS secret key

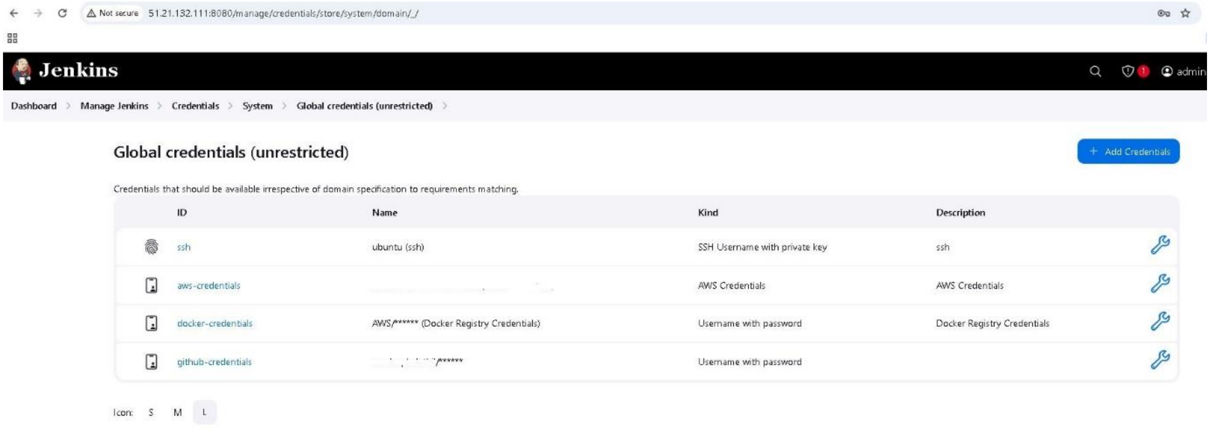
2. Docker Registry:

   - Kind: Username with password
   - ID: docker-credentials
   - Description: Docker Registry Credentials
   - Username: AWS
   - Password: (Use AWS CLI get-login-password output)

Use command to generate password : aws ecr get-login-password --region eu-north-1

3. GitHub:

   - Kind: Username with password
   - ID: github-credentials
   - Add your GitHub credentials



Not secure 51.21.132.111:8080/manage/credentials/store/system/domain/_/
Jenkins
admin
Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) >
+ Add Credentials

Global credentials (unrestricted)

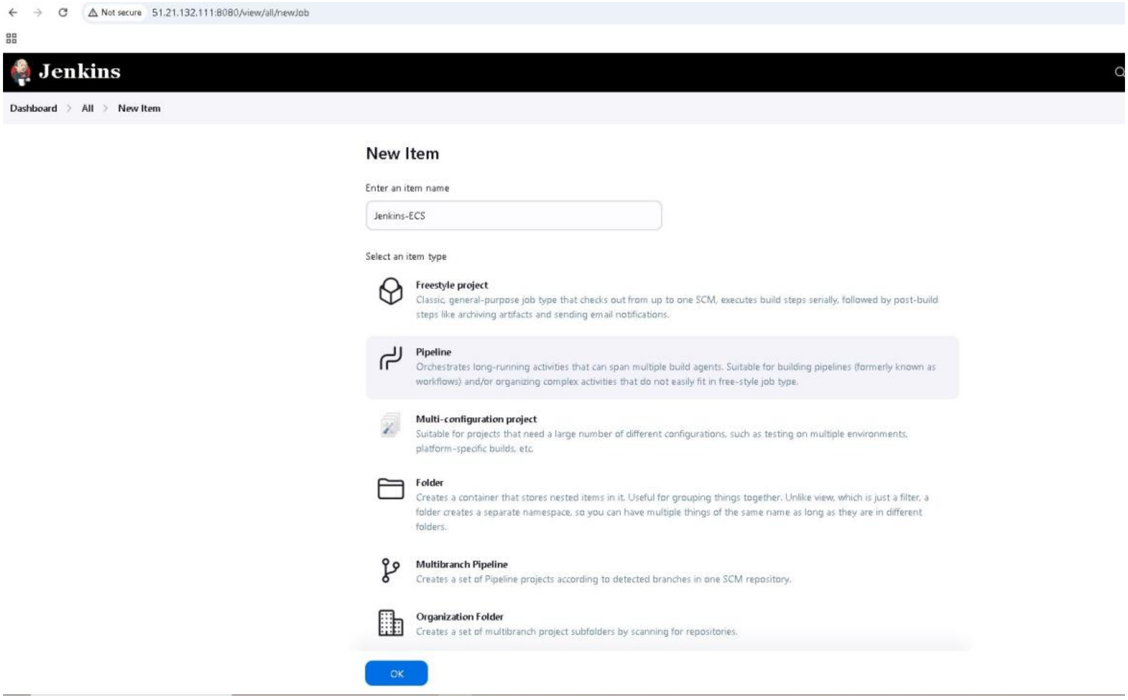
Credentials that should be available irrespective of domain specification to requirements matching.

ID	Name	Kind	Description
ssh	ubuntu (ssh)	SSH Username with private key	ssh
aws-credentials		AWS Credentials	AWS Credentials
docker-credentials	AWS/****** (Docker Registry Credentials)	Username with password	Docker Registry Credentials
github-credentials	/******	Username with password	

9. Pipeline Setup

1. Create Jenkins Pipeline

1. New Item → Pipeline
2. Configure Pipeline:
   - Definition: Pipeline script from SCM
   - SCM: Git

- Repository URL: Your repository URL
- Credentials: github-credentials (in case of Private Repo)
- Branch Specifier: */main
- Script Path: Jenkinsfile
- 

Not secure 51.21.132.111:8080/view/all/newJob

Dashboard > All > New Item

New Item

Enter an item name

Jenkins-ECS

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

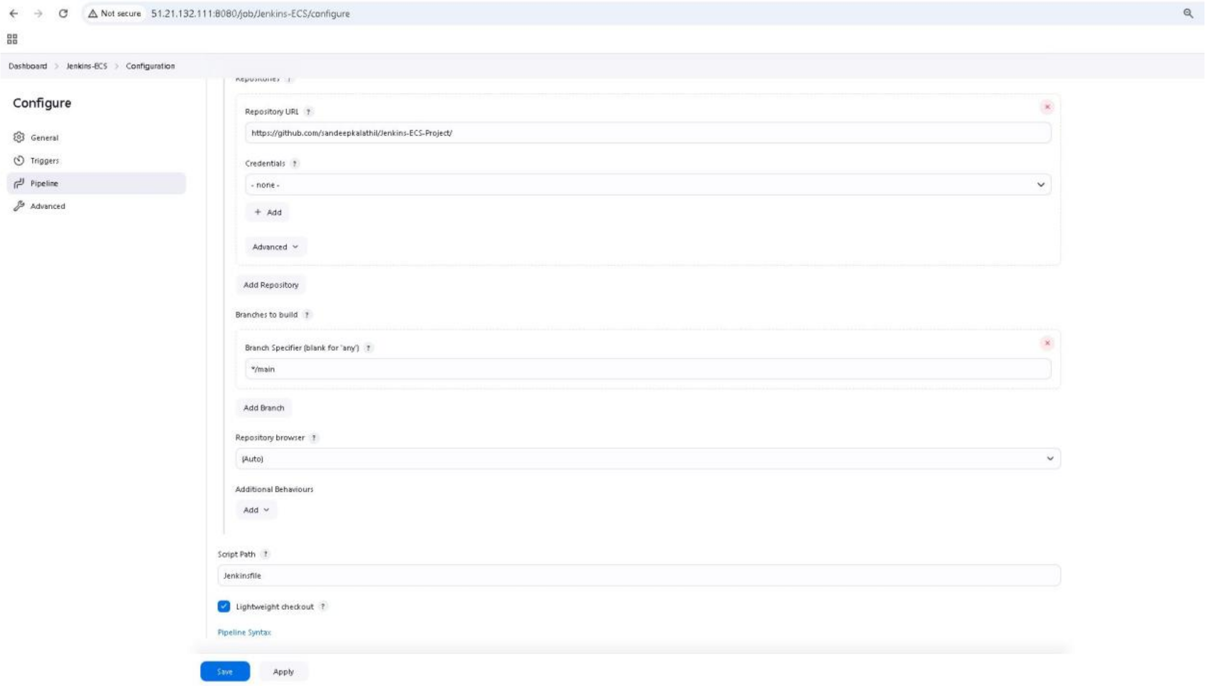
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.

Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.



Not secure 51.21.132.111:8080/job/Jenkins-ECS/configure

Dashboard > Jenkins-ECS > Configuration

Configure

Repositories

Repository URL: https://github.com/sandeepkalathil/Jenkins-ECS-Project/

Credentials: - none -

Branches to build

Branch Specifier (blank for 'any'): */main

Repository browser: (Auto)

Additional Behaviours

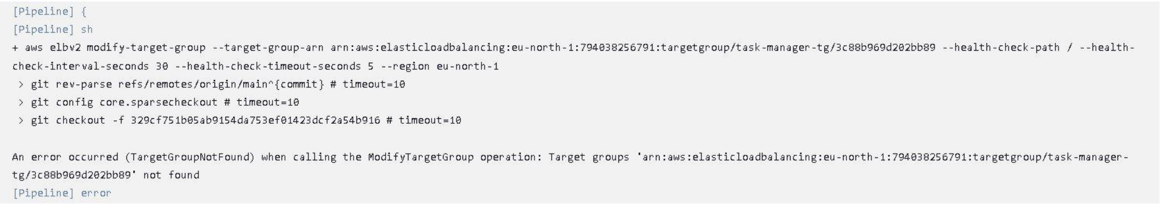
Script Path: Jenkinsfile

☑ Lightweight checkout

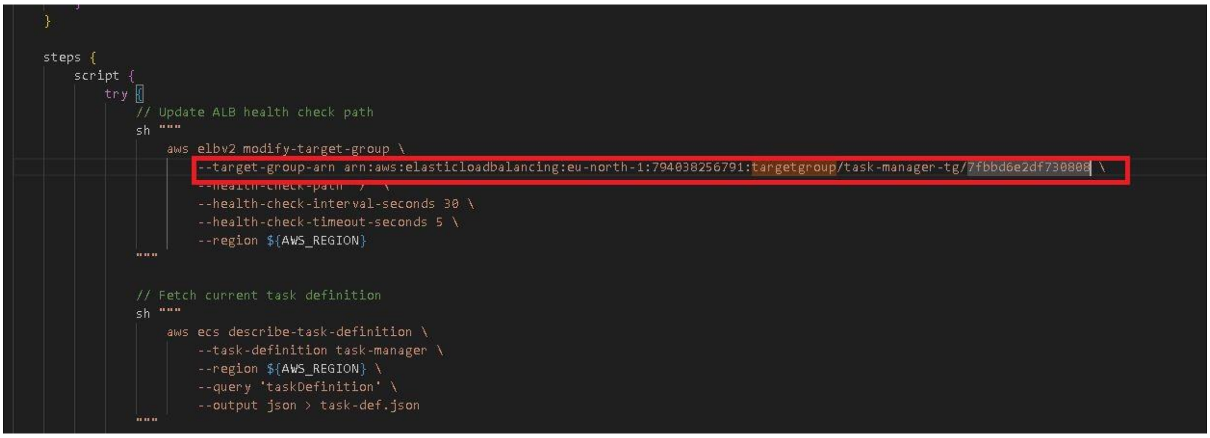
2. Pipeline Stages

- Build and Test: Runs in Docker container, NPM install and build, unit tests, static code analysis.
- Docker Image Creation: Builds Docker image, tests image configuration.
- Security Scan (Trivy): Scans for vulnerabilities.
- Push to ECR: Authenticates with ECR, pushes image with versioning.
- Deployment: Updates ECS service, performs health checks.

Before proceeding with the build, update the "Jenkinsfile" with the Target group ARN as shown below.

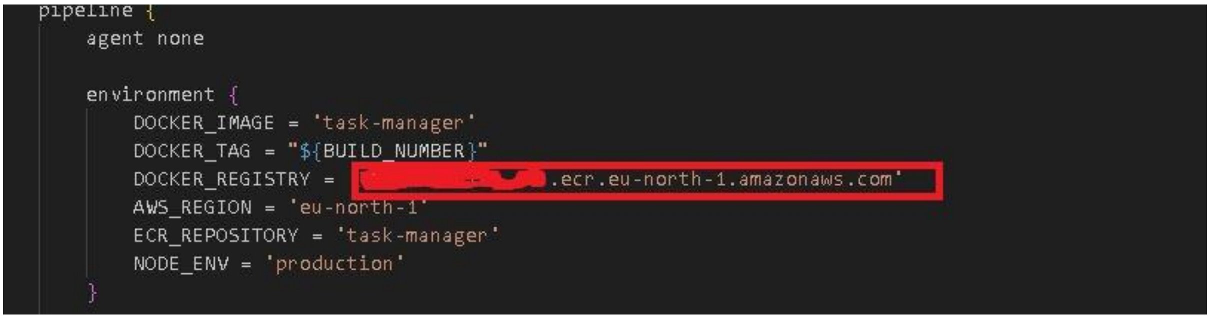


```
[Pipeline] {
[Pipeline] sh
+ aws elbv2 modify-target-group --target-group-arn arn:aws:elasticloadbalancing:eu-north-1:794038256791:targetgroup/task-manager-tg/3c88b969d202bb89 --health-check-path / --health-check-interval-seconds 30 --health-check-timeout-seconds 5 --region eu-north-1
 > git rev-parse refs/remotes/origin/main^{commit} # timeout=10
 > git config core.sparsecheckout # timeout=10
 > git checkout -f 329cf751b05ab9154da753ef01423dcf2a54b916 # timeout=10

An error occurred (TargetGroupNotFound) when calling the ModifyTargetGroup operation: Target groups 'arn:aws:elasticloadbalancing:eu-north-1:794038256791:targetgroup/task-manager-tg/3c88b969d202bb89' not found
[Pipeline] error
```



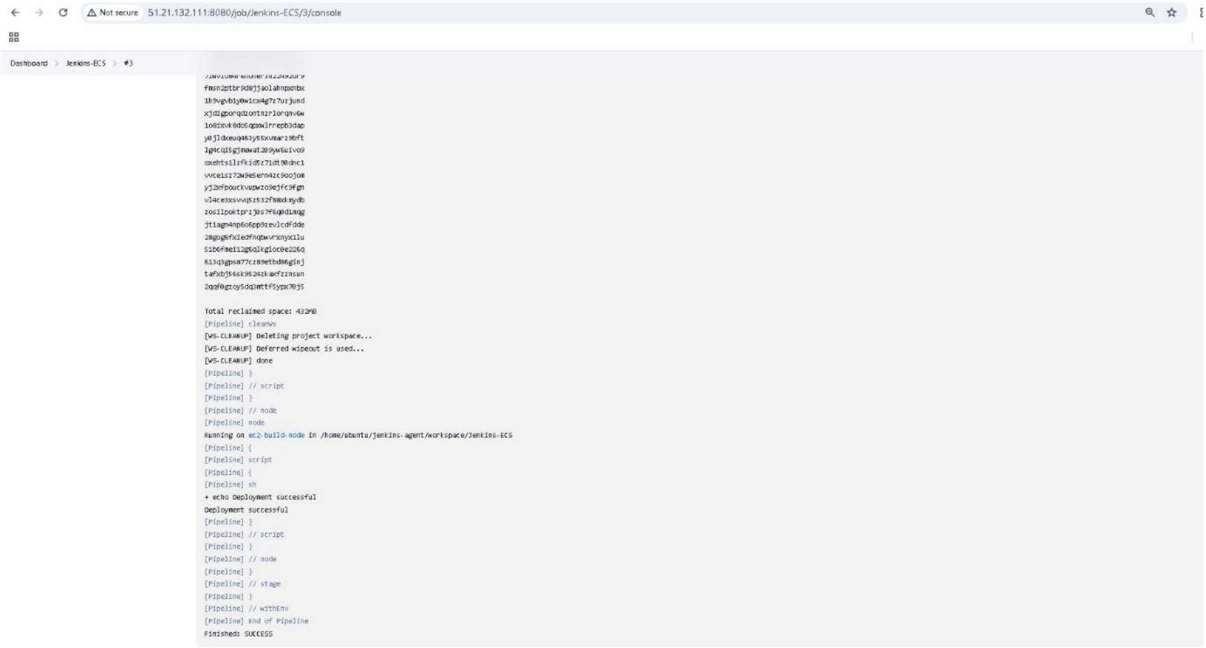
```
        }

        steps {
            script {
                try {
                    // Update ALB health check path
                    sh """
                        aws elbv2 modify-target-group \
                            --target-group-arn arn:aws:elasticloadbalancing:eu-north-1:794038256791:targetgroup/task-manager-tg/7fbbd6e2df730808 \
                            --health-check-path / \
                            --health-check-interval-seconds 30 \
                            --health-check-timeout-seconds 5 \
                            --region ${AWS_REGION}
                    """

                    // Fetch current task definition
                    sh """
                        aws ecs describe-task-definition \
                            --task-definition task-manager \
                            --region ${AWS_REGION} \
                            --query 'taskDefinition' \
                            --output json > task-def.json
                    """
```

Also, in the Jenkins file update the ECR repository name (Which can be found from the Terraform output)



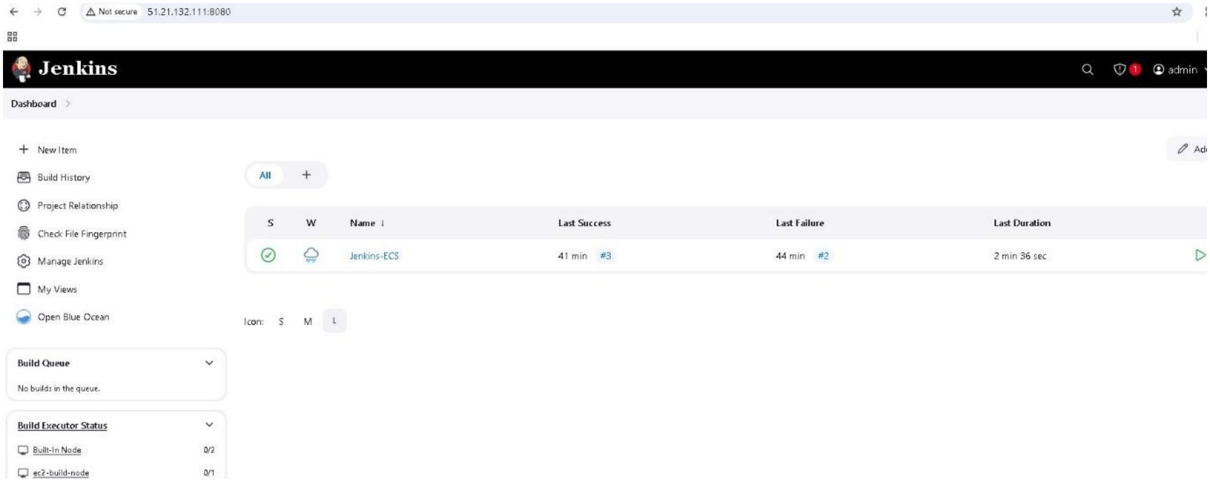
```
pipeline {
    agent none

    environment {
        DOCKER_IMAGE = 'task-manager'
        DOCKER_TAG = "${BUILD_NUMBER}"
        DOCKER_REGISTRY = '[redacted].ecr.eu-north-1.amazonaws.com'
        AWS_REGION = 'eu-north-1'
        ECR_REPOSITORY = 'task-manager'
        NODE_ENV = 'production'
    }
```

Once the build is complete the Jenkins build console will show Success message.



Not secure
51.21.132.111:8080/job/Jenkins-ECS/3/console
Dashboard > Jenkins-ECS > #3

```
fmsn2ptbr9d8jjaolahnpxnbx
1h9vgvb1y0w1cx4g7z7uzjund
xjdigporqdzontnzrlorqnv6w
1o8dxvk0do5qpowlrrepb3dap
y0jldxeuq463y55xvmarz9bft
1g4cq15gjmawat209yw6u1vo9
oxehts1lzfkid5z71dt90dnc1
vvce1sz72w9e5ern4zc9oojom
yj2xfpouckvupwzo9ejfc9fgn
vl4ce3xsvvq5z532f88xkmydb
zosilpoktprzj0s7f6q0dimqg
jt1agn4np6o6pp9zevlcdfdde
28gog6fxiedfnqbwvrxnyx1lu
51b6fmei12g6qlkgloc0e226q
613q3gpsm77cz89etbd86ginj
tafxbj56sk9524zkaxfzznsun
2qqf0gzoy5dq3mttf5ypx70j5

Total reclaimed space: 432MB
[Pipeline] cleanWs
[WS-CLEANUP] Deleting project workspace...
[WS-CLEANUP] Deferred wipeout is used...
[WS-CLEANUP] done
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // node
[Pipeline] node
Running on ec2-build-node in /home/ubuntu/jenkins-agent/workspace/Jenkins-ECS
[Pipeline] {
[Pipeline] script
[Pipeline] {
[Pipeline] sh
+ echo Deployment successful
Deployment successful
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // node
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] End of Pipeline
Finished: SUCCESS
```



S	W	Name ↓	Last Success	Last Failure	Last Duration
✓		Jenkins-ECS	41 min #3	44 min #2	2 min 36 sec

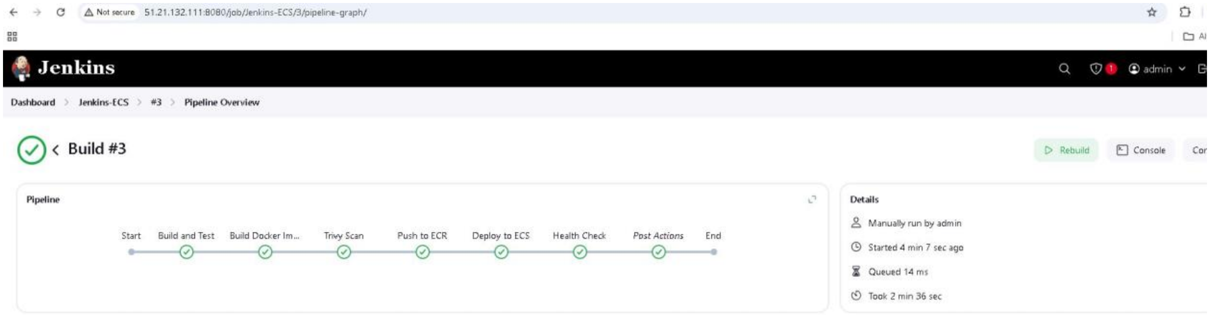
Build Queue

No builds in the queue.

Build Executor Status

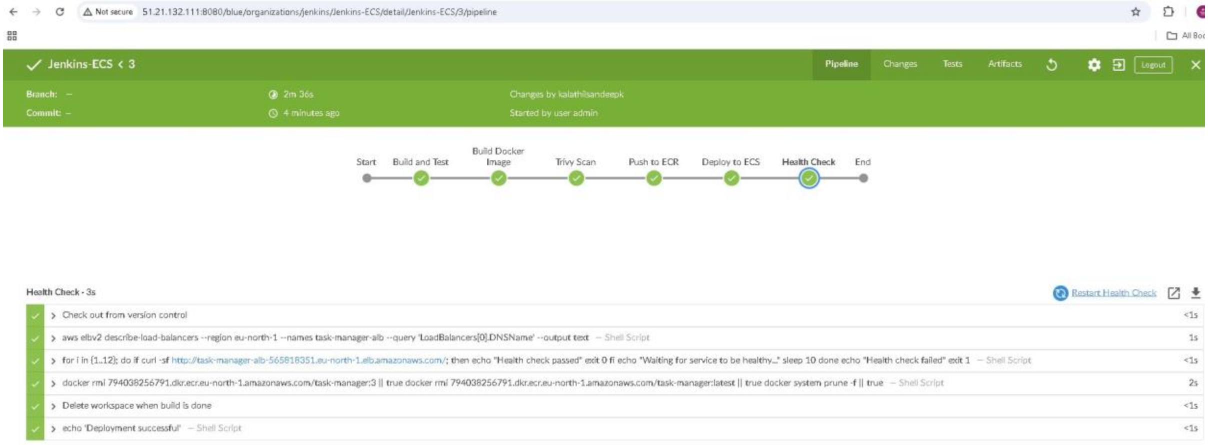
Built-In Node	0/2
ec2-build-node	0/1

The image shows various steps used in the build and its status.



Manually run by admin
Started 4 min 7 sec ago
Queued 14 ms
Took 2 min 36 sec

The below image is from Blue Ocean plugin interface. This also shows the Status in the pipeline.



Branch: –
Commit: –
2m 36s
4 minutes ago
Changes by kalathilsandeepk
Started by user admin

Health Check - 3s

```
> Check out from version control                                                                                   <1s
> aws elbv2 describe-load-balancers --region eu-north-1 --names task-manager-alb --query 'LoadBalancers[0].DNSName' --output text — Shell Script   1s
> for i in {1..12}; do if curl -sf http://task-manager-alb-565818351.eu-north-1.elb.amazonaws.com/; then echo "Health check passed" exit 0 fi echo "Waiting for service to be healthy..." sleep 10 done echo "Health check failed" exit 1 — Shell Script   <1s
> docker rmi 794038256791.dkr.ecr.eu-north-1.amazonaws.com/task-manager:3 || true docker rmi 794038256791.dkr.ecr.eu-north-1.amazonaws.com/task-manager:latest || true docker system prune -f || true — Shell Script   2s
> Delete workspace when build is done                                                                              <1s
> echo 'Deployment successful' — Shell Script                                                                       <1s
```

10. Verify the Deployment

Verify that the newly built Docker images are present in ECR.

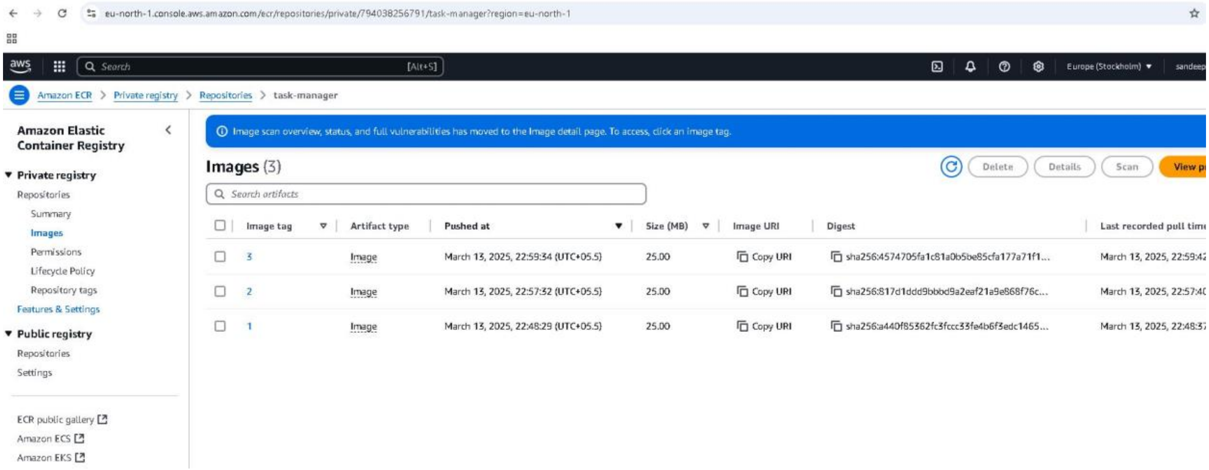
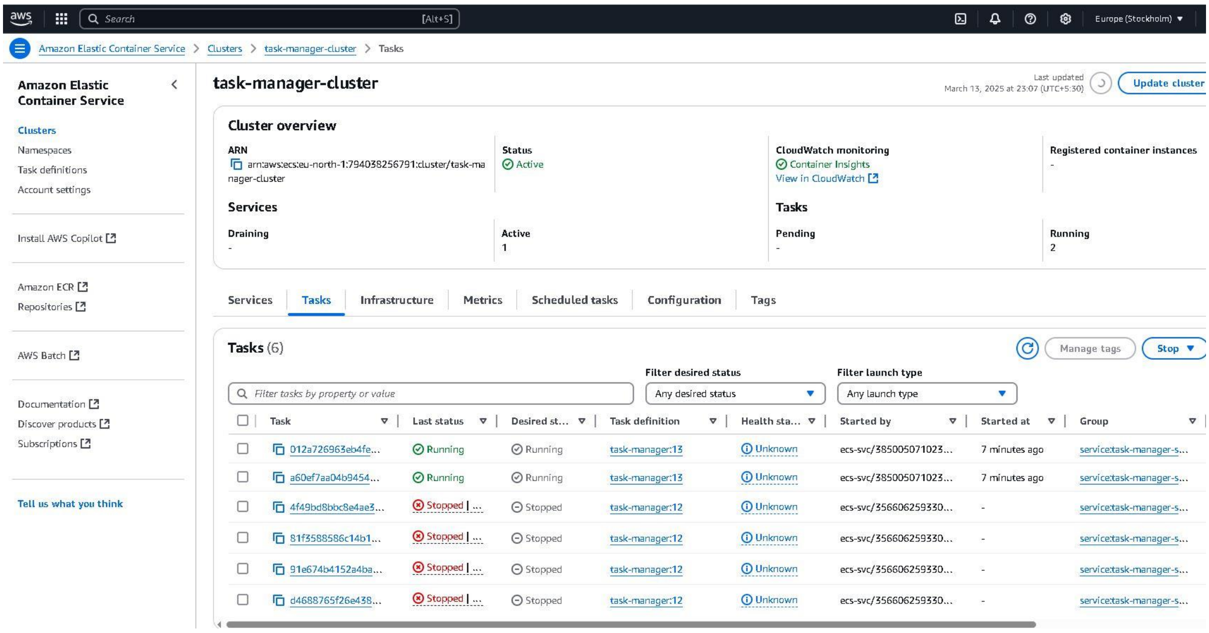


Image scan overview, status, and full vulnerabilities has moved to the Image detail page. To access, click an image tag.

Images (3)

	Image tag	Artifact type	Pushed at	Size (MB)	Image URI	Digest	Last recorded pull time
□	3	Image	March 13, 2025, 22:59:34 (UTC+05.5)	25.00	Copy URI	sha256:4574705fa1c81a0b5be85cfa177a71f1...	March 13, 2025, 22:59:42
□	2	Image	March 13, 2025, 22:57:32 (UTC+05.5)	25.00	Copy URI	sha256:817d1ddd9bbbd9a2eaf21a9e868f76c...	March 13, 2025, 22:57:40
□	1	Image	March 13, 2025, 22:48:29 (UTC+05.5)	25.00	Copy URI	sha256:a440f85362fc3fccc33fe4b6f3edc1465...	March 13, 2025, 22:48:37

Check the ECS console to ensure tasks are running and services are active.



task-manager-cluster

Cluster overview

ARN: arn:aws:ecs:eu-north-1:794038256791:cluster/task-manager-cluster

Status: Active

CloudWatch monitoring: Container Insights, View in CloudWatch

Registered container instances: -

Services

Draining: -

Active: 1

Tasks

Pending: -

Running: 2

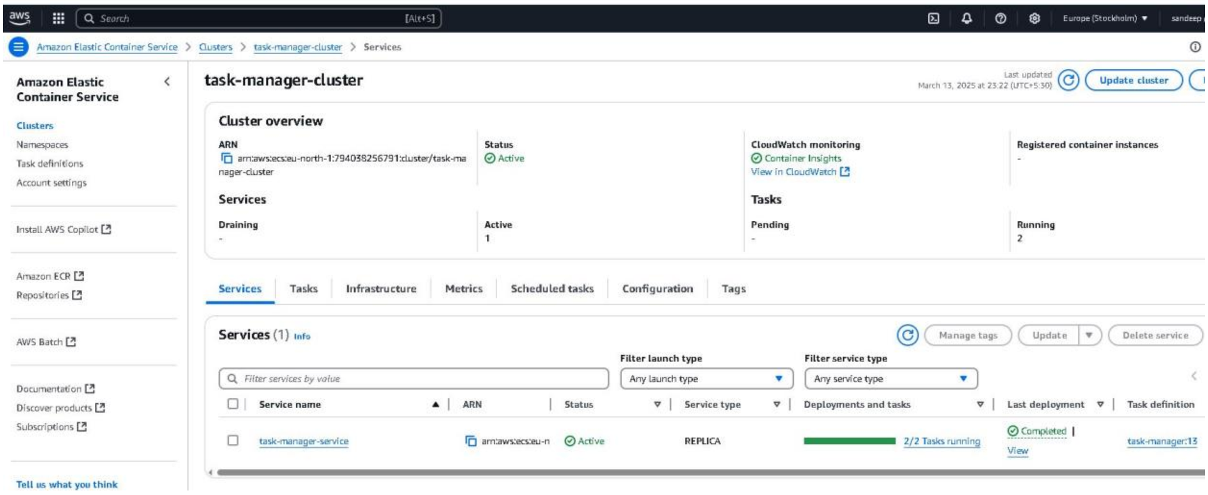
Tasks (6)

Filter tasks by property or value

Filter desired status: Any desired status

Filter launch type: Any launch type

Task	Last status	Desired st...	Task definition	Health sta...	Started by	Started at	Group
012a726963eb4fe...	Running	Running	task-manager:13	Unknown	ecs-svc/385005071023...	7 minutes ago	service:task-manager-s...
a60ef7aa04b9454...	Running	Running	task-manager:13	Unknown	ecs-svc/385005071023...	7 minutes ago	service:task-manager-s...
4f49bd8bbc8e4ae3...	Stopped | ...	Stopped	task-manager:12	Unknown	ecs-svc/356606259330...	-	service:task-manager-s...
81f3588586c14b1...	Stopped | ...	Stopped	task-manager:12	Unknown	ecs-svc/356606259330...	-	service:task-manager-s...
91e674b4152a4ba...	Stopped | ...	Stopped	task-manager:12	Unknown	ecs-svc/356606259330...	-	service:task-manager-s...
d4688765f26e438...	Stopped | ...	Stopped	task-manager:12	Unknown	ecs-svc/356606259330...	-	service:task-manager-s...



task-manager-cluster

Cluster overview

ARN: arn:aws:ecs:eu-north-1:794038256791:cluster/task-manager-cluster

Status: Active

CloudWatch monitoring: Container Insights, View in CloudWatch

Registered container instances: -

Services

Draining: -

Active: 1

Tasks

Pending: -

Running: 2

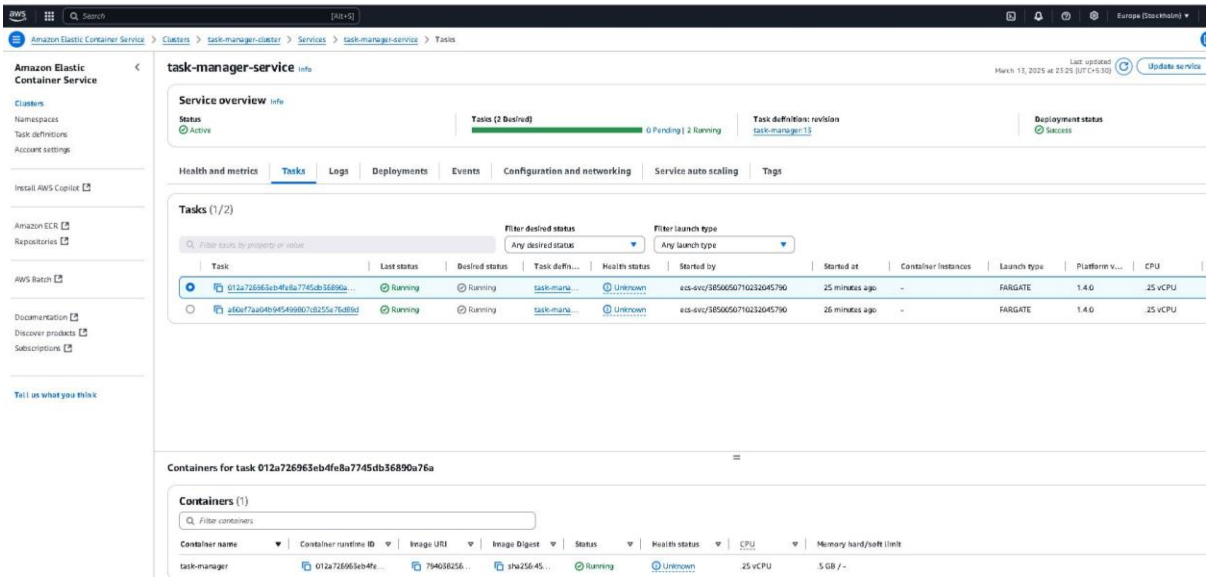
Services (1) Info

Filter services by value

Filter launch type: Any launch type

Filter service type: Any service type

Service name	ARN	Status	Service type	Deployments and tasks	Last deployment	Task definition
task-manager-service	arn:aws:ecs:eu-n	Active	REPLICA	2/2 Tasks running	Completed | View	task-manager:13



task-manager-service

Last updated
March 13, 2025 at 23:25 (UTC+5:30)

Service overview

Status	Tasks (2 Desired)	Task definition: revision	Deployment status
Active	0 Pending | 2 Running	task-manager:13	Success

Tasks (1/2)

Filter desired status: Any desired status ▾

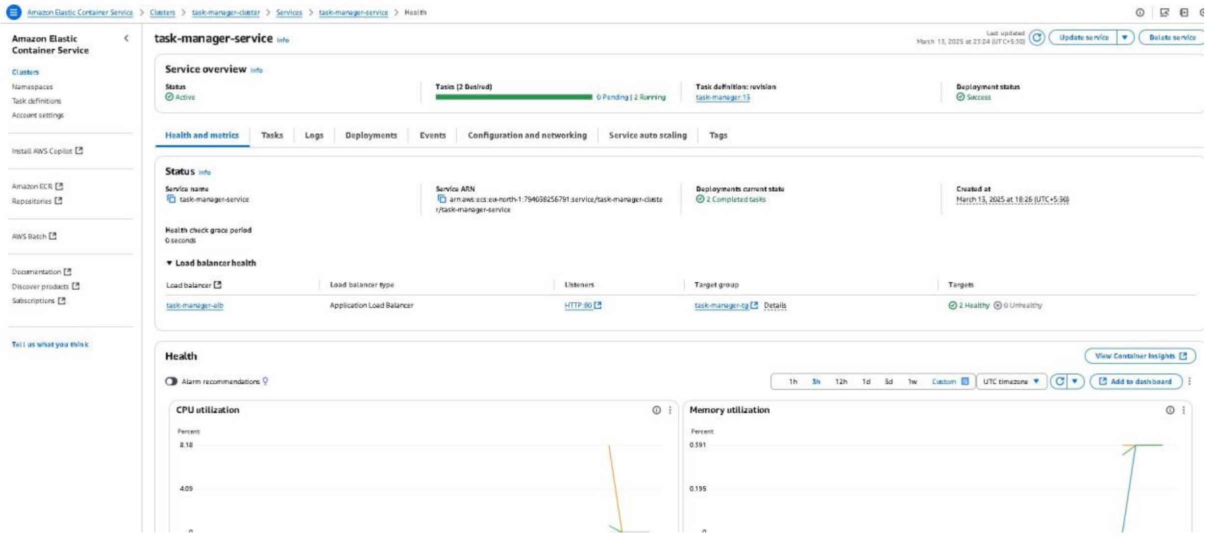
Filter launch type: Any launch type ▾

	Task	Last status	Desired status	Task defin...	Health status	Started by	Started at	Container instances	Launch type	Platform v...	CPU
●	012a726963eb4fe8a7745db36890a...	Running	Running	task-mana...	Unknown	ecs-svc/3850050710232045790	25 minutes ago	-	FARGATE	1.4.0	.25 vCPU
○	a60ef7aa04b945499807c8255e76d89d	Running	Running	task-mana...	Unknown	ecs-svc/3850050710232045790	26 minutes ago	-	FARGATE	1.4.0	.25 vCPU

Containers for task 012a726963eb4fe8a7745db36890a76a

Containers (1)

Container name	Container runtime ID	Image URI	Image Digest	Status	Health status	CPU	Memory hard/soft limit
task-manager	012a726963eb4fe...	794038256...	sha256:45...	Running	Unknown	.25 vCPU	.5 GB / -



task-manager-service

Last updated
March 13, 2025 at 23:24 (UTC+5:30)

Service overview

Status	Tasks (2 Desired)	Task definition: revision	Deployment status
Active	0 Pending | 2 Running	task-manager:13	Success

Status

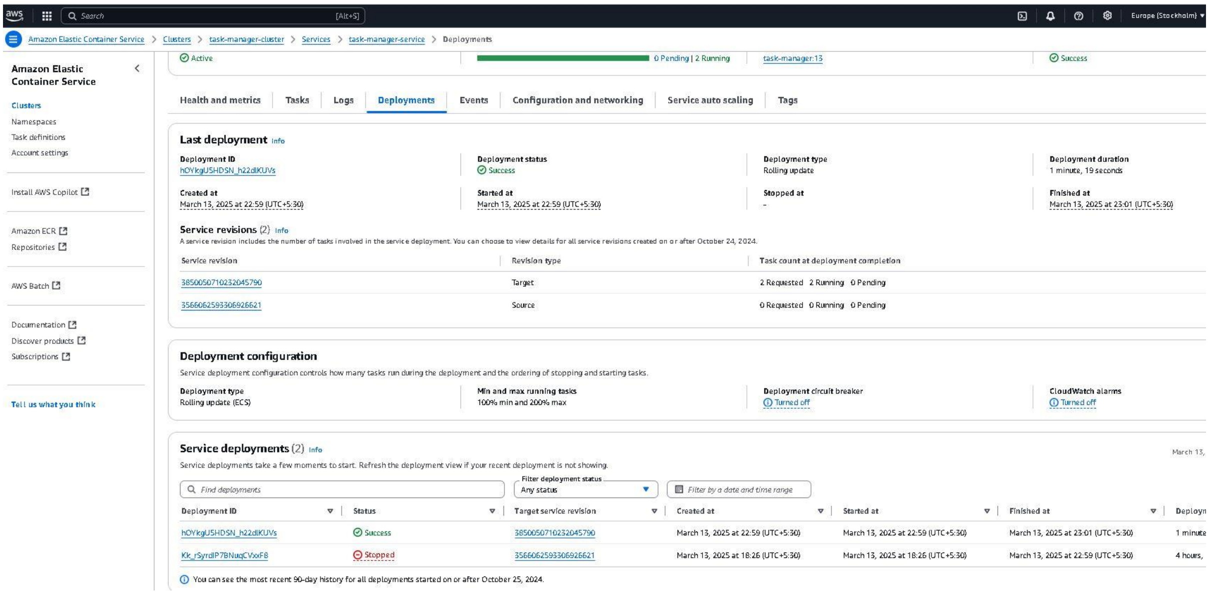
Service name	Service ARN	Deployments current state	Created at
task-manager-service	arn:aws:ecs:eu-north-1:794038256791:service/task-manager-cluster/task-manager-service	2 Completed tasks	March 13, 2025 at 18:26 (UTC+5:30)

Health check grace period
0 seconds

▾ Load balancer health

Load balancer	Load balancer type	Listeners	Target group	Targets
task-manager-alb	Application Load Balancer	HTTP:80	task-manager-tg Details	2 Healthy 0 Unhealthy

Health


aws
Search [Alt+S]
Europe (Stockholm) ▾
Amazon Elastic Container Service > Clusters > task-manager-cluster > Services > task-manager-service > Deployments
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Install AWS Copilot
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
Subscriptions
Tell us what you think
Health and metrics | Tasks | Logs | Deployments | Events | Configuration and networking | Service auto scaling | Tags

✓ Active | 0 Pending | 2 Running | task-manager:13 | ✓ Success

Last deployment Info

Deployment ID hOYkgU5HDSN_h22dlKUVs	**Deployment status** ✓ Success	**Deployment type** Rolling update	**Deployment duration** 1 minute, 19 seconds
Created at March 13, 2025 at 22:59 (UTC+5:30)	**Started at** March 13, 2025 at 22:59 (UTC+5:30)	**Stopped at** -	**Finished at** March 13, 2025 at 23:01 (UTC+5:30)

Service revisions (2) Info

A service revision includes the number of tasks involved in the service deployment. You can choose to view details for all service revisions created on or after October 24, 2024.

Service revision	Revision type	Task count at deployment completion
3850050710232045790	Target	2 Requested 2 Running 0 Pending
3566062593306926621	Source	0 Requested 0 Running 0 Pending

Deployment configuration

Service deployment configuration controls how many tasks run during the deployment and the ordering of stopping and starting tasks.

Deployment type Rolling update (ECS)	**Min and max running tasks** 100% min and 200% max	**Deployment circuit breaker** ⓘ Turned off	**CloudWatch alarms** ⓘ Turned off

Service deployments (2) Info

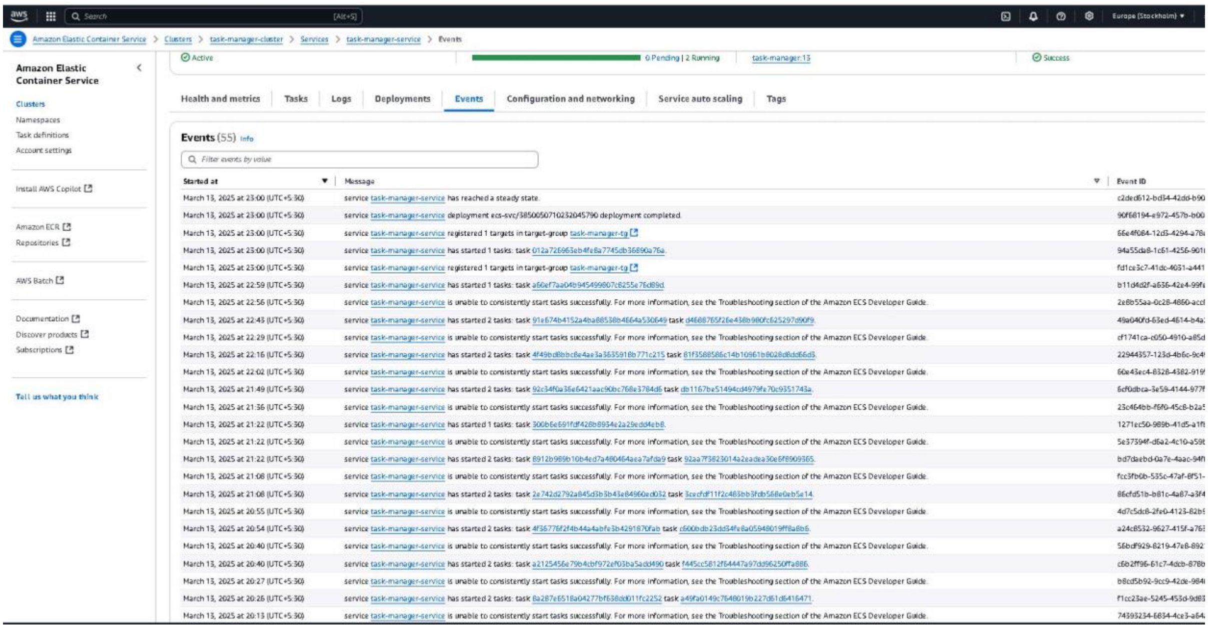
March 13,

Service deployments take a few moments to start. Refresh the deployment view if your recent deployment is not showing.

Find deployments | Filter deployment status: Any status ▾ | Filter by a date and time range

Deployment ID	Status	Target service revision	Created at	Started at	Finished at	Deployn
hOYkgU5HDSN_h22dlKUVs	✓ Success	3850050710232045790	March 13, 2025 at 22:59 (UTC+5:30)	March 13, 2025 at 22:59 (UTC+5:30)	March 13, 2025 at 23:01 (UTC+5:30)	1 minute
Kk_rSyrdlP7BNuqCVxxF8	⊖ Stopped	3566062593306926621	March 13, 2025 at 18:26 (UTC+5:30)	March 13, 2025 at 18:26 (UTC+5:30)	March 13, 2025 at 22:59 (UTC+5:30)	4 hours,

ⓘ You can see the most recent 90-day history for all deployments started on or after October 25, 2024.


aws
Search [Alt+S]
Europe (Stockholm) ▾
Amazon Elastic Container Service > Clusters > task-manager-cluster > Services > task-manager-service > Events
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Install AWS Copilot
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
Subscriptions
Tell us what you think
Health and metrics | Tasks | Logs | Deployments | Events | Configuration and networking | Service auto scaling | Tags

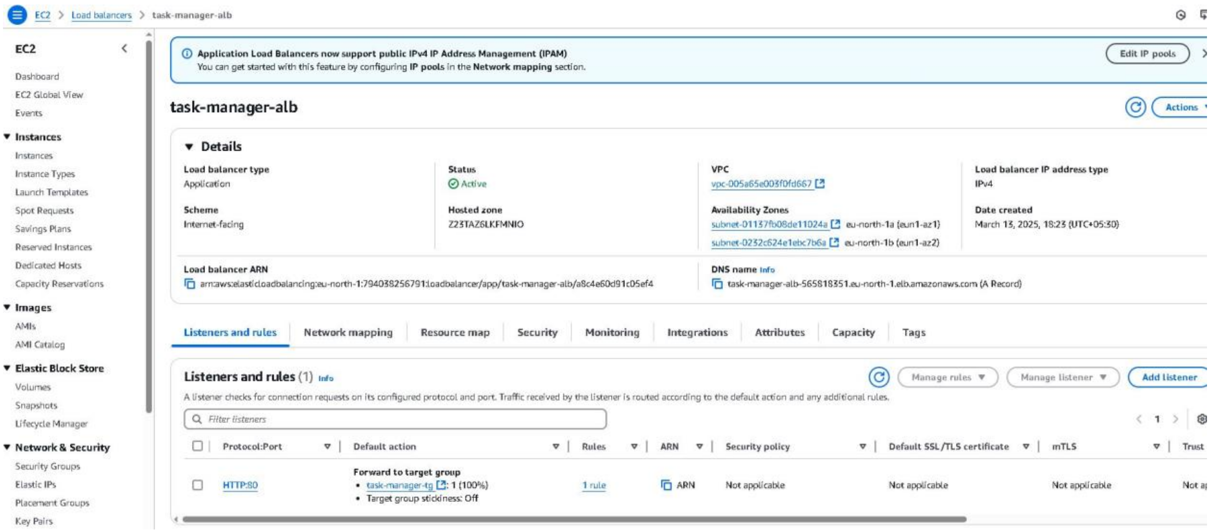
✓ Active | 0 Pending | 2 Running | task-manager:13 | ✓ Success

Events (55) Info

Filter events by value

Started at	Message	Event ID
March 13, 2025 at 23:00 (UTC+5:30)	service task-manager-service has reached a steady state.	c2ded612-bd34-42dd-b90
March 13, 2025 at 23:00 (UTC+5:30)	service task-manager-service deployment ecs-svc/3850050710232045790 deployment completed.	90f68194-e972-457b-b00
March 13, 2025 at 23:00 (UTC+5:30)	service task-manager-service registered 1 targets in target-group task-manager-tg	66e4f084-12d3-4294-a78
March 13, 2025 at 23:00 (UTC+5:30)	service task-manager-service has started 1 tasks: task 012a726963eb4fe8a7745db36890a76a.	94a55da8-1c61-4256-901
March 13, 2025 at 23:00 (UTC+5:30)	service task-manager-service registered 1 targets in target-group task-manager-tg	fd1ce3c7-41dc-4031-a441
March 13, 2025 at 22:59 (UTC+5:30)	service task-manager-service has started 1 tasks: task a60ef7aa04b945499807c8255e76d89d.	b11d4d2f-a636-42e4-99f
March 13, 2025 at 22:56 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	2e8b55aa-0c28-4860-acc
March 13, 2025 at 22:43 (UTC+5:30)	service task-manager-service has started 2 tasks: task 91e674b4152a4ba88538b4664a530649 task d4688765f26e438b980fc625297d90f9.	49a040fd-63ed-4614-b4a
March 13, 2025 at 22:29 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	cf1741ca-c050-4910-a85d
March 13, 2025 at 22:16 (UTC+5:30)	service task-manager-service has started 2 tasks: task 4f49bd8bbc8e4ae3a3635918b771c215 task 81f3588586c14b10961b8028d8dd66d8.	22944357-123d-4b6c-9c4
March 13, 2025 at 22:02 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	60e43ec4-8328-4382-919
March 13, 2025 at 21:49 (UTC+5:30)	service task-manager-service has started 2 tasks: task 92c34f0a36e6421aac90bc768e3784d6 task db1167be51494cd4979fe70c9351743a.	6cf0dbca-3e59-4144-977f
March 13, 2025 at 21:36 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	23c464bb-f6f0-45c8-b2a5
March 13, 2025 at 21:22 (UTC+5:30)	service task-manager-service has started 1 tasks: task 300b6e691fdf428b8934e2a29edd4eb8.	1271ec50-989b-41d5-a1f
March 13, 2025 at 21:22 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	5e37394f-d6a2-4c10-a59b
March 13, 2025 at 21:22 (UTC+5:30)	service task-manager-service has started 2 tasks: task 8912b989b10b4ed7a480464aea7afda9 task 92aa7f3823014a2eadea30e6f8909365.	bd7daebd-0a7e-4aac-94f
March 13, 2025 at 21:08 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	fcc3fb0b-535c-47af-8f51-
March 13, 2025 at 21:08 (UTC+5:30)	service task-manager-service has started 2 tasks: task 2e742d2792a845d3b3b43e84960ed032 task 3cecfdf11f2c483bb3fdb568e0eb5e14.	86cfd51b-b81c-4a87-a3f4
March 13, 2025 at 20:55 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	4d7c5dc8-2fe0-4123-82b
March 13, 2025 at 20:54 (UTC+5:30)	service task-manager-service has started 2 tasks: task 4f36776f2f4b44a4abfe3b4291870fab task c600bdb23dd34fe8a05948019ff8a8b6.	a24c8532-9627-415f-a763
March 13, 2025 at 20:40 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	56bdf929-8219-47e8-892
March 13, 2025 at 20:40 (UTC+5:30)	service task-manager-service has started 2 tasks: task a2125456e79b4cbf972ef03ba5add490 task f445cc5812f64447a97dd96250ffa886.	c6b2ff96-61c7-4dcb-878b
March 13, 2025 at 20:27 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	b8cd5b92-9cc9-42de-984
March 13, 2025 at 20:26 (UTC+5:30)	service task-manager-service has started 2 tasks: task 8a287e6518a04277bf638dd011fc2252 task a49fa0149c7648019b227d61d6416471.	f1cc23ae-5245-453d-9d8
March 13, 2025 at 20:13 (UTC+5:30)	service task-manager-service is unable to consistently start tasks successfully. For more information, see the Troubleshooting section of the Amazon ECS Developer Guide.	74393234-6834-4ce3-a64

Use the ALB DNS name to access the deployed website in the browser.



Application Load Balancers now support public IPv4 IP Address Management (IPAM)
You can get started with this feature by configuring **IP pools** in the **Network mapping** section.

task-manager-alb

Details

Load balancer type
Application

Status
Active

VPC
vpc-005a65e003f0fd667

Load balancer IP address type
IPv4

Scheme
Internet-facing

Hosted zone
Z23TAZ6LKFMNIO

Availability Zones
subnet-01137fb08de11024a eu-north-1a (eun1-az1)
subnet-0232c624e1ebc7b6a eu-north-1b (eun1-az2)

Date created
March 13, 2025, 18:23 (UTC+05:30)

Load balancer ARN
arn:aws:elasticloadbalancing:eu-north-1:794038256791:loadbalancer/app/task-manager-alb/a8c4e60d91c05ef4

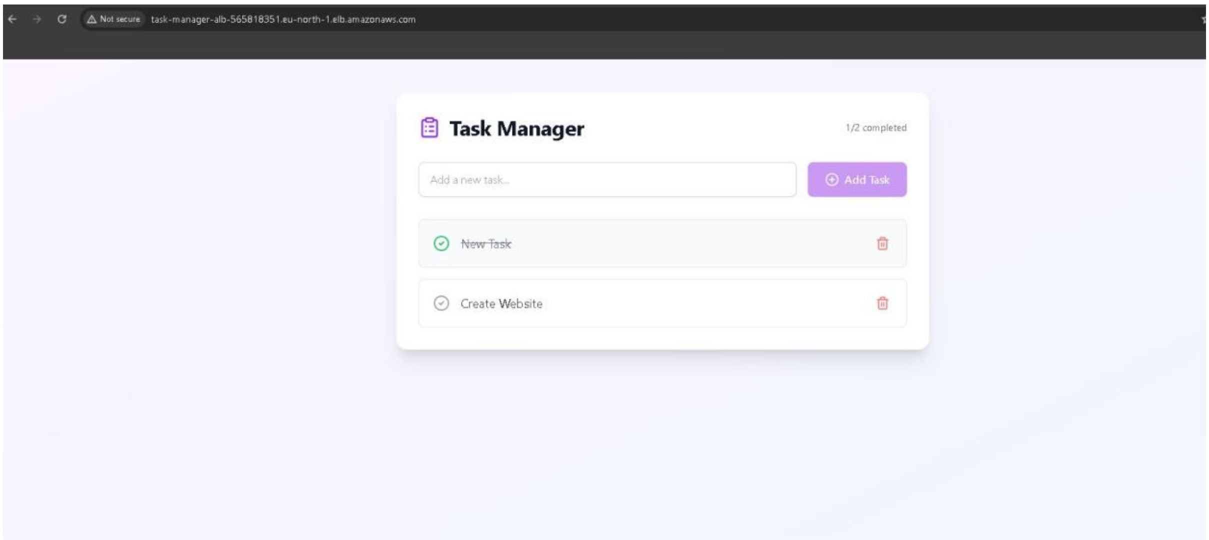
DNS name Info
task-manager-alb-565818351.eu-north-1.elb.amazonaws.com (A Record)

Listeners and rules (1) Info

A listener checks for connection requests on its configured protocol and port. Traffic received by the listener is routed according to the default action and any additional rules.

□	Protocol:Port	Default action	Rules	ARN	Security policy	Default SSL/TLS certificate	mTLS	Trust
□	HTTP:80	Forward to target group • task-manager-tg: 1 (100%) • Target group stickiness: Off	1 rule	ARN	Not applicable	Not applicable	Not applicable	Not a

Confirm that the website loads successfully and functions as expected.



task-manager-alb-565818351.eu-north-1.elb.amazonaws.com

Task Manager

1/2 completed

Add a new task...

✓ ~~New Task~~

○ Create Website