DevOps Intern Assessment R1

Candidate: P N V HARI SURYA PRAKASH REDDY
Project: Directus Deployment using Docker on AWS EC2 + GitLab CI/CD Validation
Directus URL: http://13.232.23.3:8055
GitLab Repo: https://gitlab.com/hspr2227/directus-assessment.git

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✅ 1. Objective

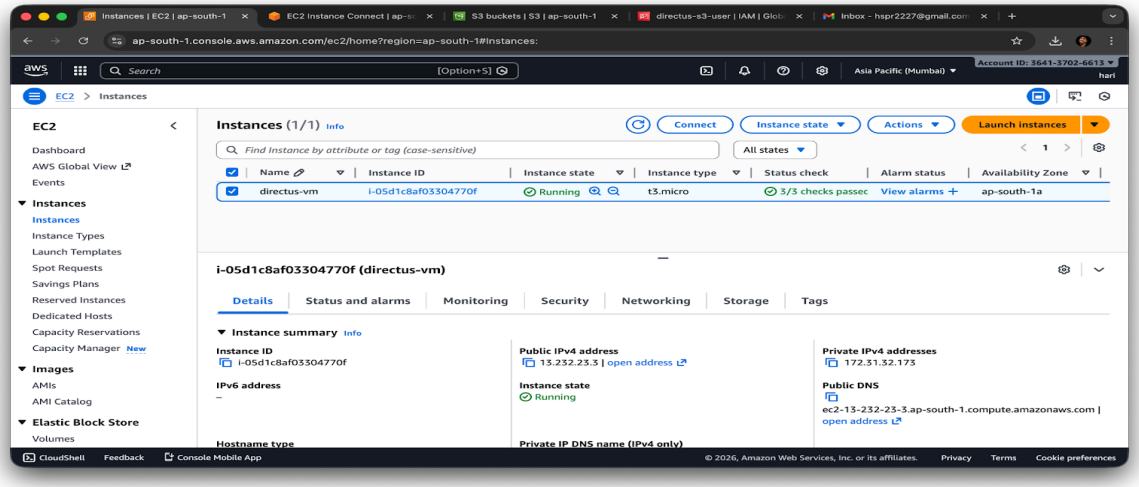
The goal of this assessment is to deploy **Directus (Headless CMS)** on a cloud VM using **Docker + PostgreSQL**, make it publicly accessible via **HTTP**, and validate the deployment using a **GitLab CI/CD pipeline** that performs health checks using `curl` and generates artifacts like homepage HTML and a deployment report.

✅ 2. Cloud Setup (AWS EC2)

✅ 2.1 EC2 Instance Creation

- **Cloud provider:** AWS
- **OS:** Ubuntu 22.04 LTS
- **Instance type:** t3.micro (Free Tier eligible)
- **Region:** ap-south-1 (Mumbai)
- **Instance name:** directus-vm

📌 **Screenshot:** EC2 Instance

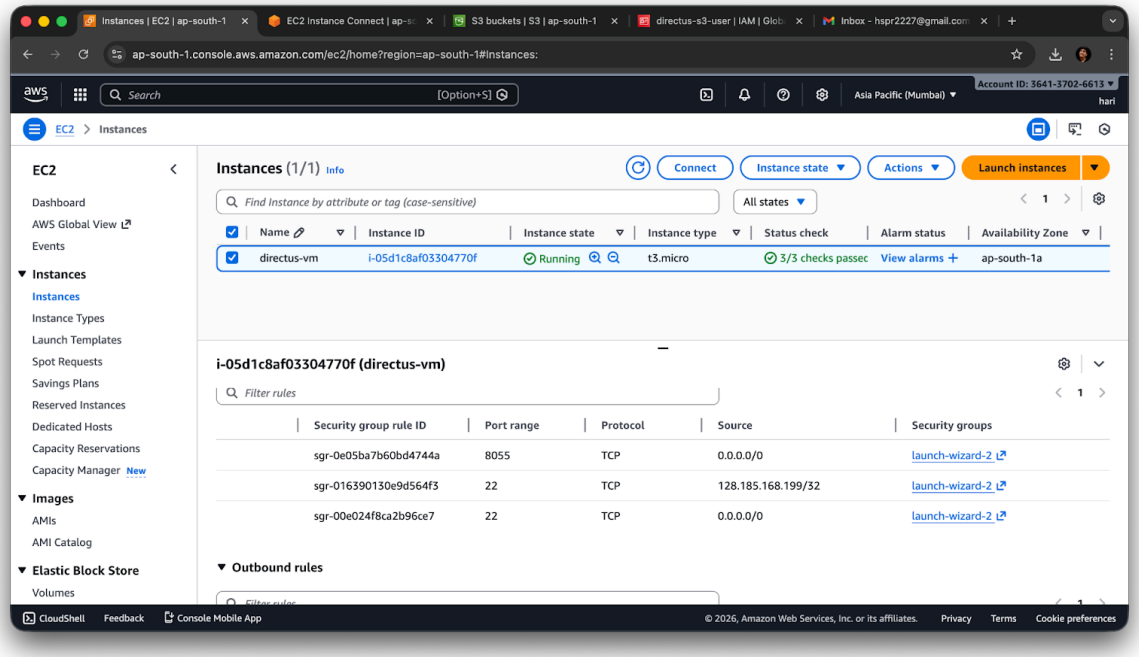


✅ 2.2 Security Group Configuration

Inbound rules configured:

- **22 / SSH** → My IP
- **8055 / TCP** → `0.0.0.0/0` (public access for Directus)

📌 **Screenshot:** `security group`



✅ 3. Docker + Directus Deployment (Using Docker Compose)

✅ 3.1 Install Docker and Docker Compose

Installed Docker and Docker Compose on the EC2 Ubuntu instance.

Commands used:

```
sudo apt update
sudo apt install -y docker.io docker-compose
sudo systemctl enable docker
sudo systemctl start docker
docker --version
```

```
docker-compose --version
```

✅ 3.2 Project Structure

Created the following directory:

```
mkdir ~/directus
cd ~/directus
```

✅ 3.3 Docker Compose Deployment

Created a `docker-compose.yml` which includes:

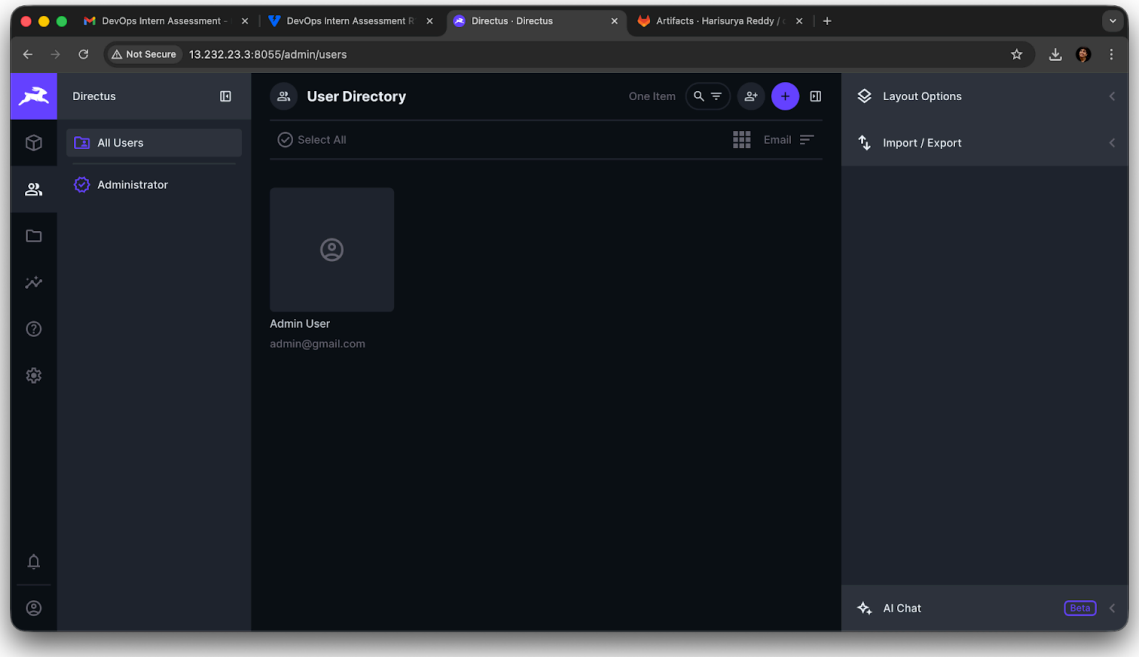
- PostgreSQL database container
- Directus container connected to PostgreSQL
- Directus exposed on port **8055**

Started deployment:

```
docker-compose up -d
docker ps
```

Verified Directus is running publicly:
✅ http://13.232.23.3:8055

📌 **Screenshot:** `Directus running`



✅ 4. S3 Storage Setup (AWS S3)

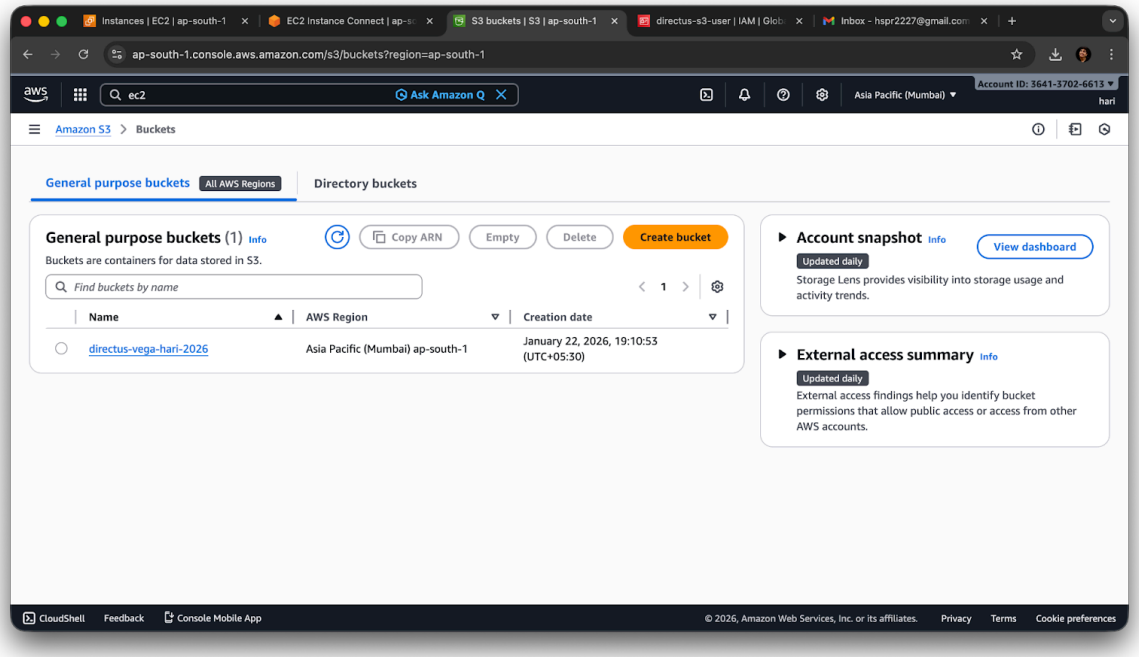
Created an S3 bucket:

- **Bucket name:** directus-vega-hari-2026
- **Region:** ap-south-1

IAM User created for Directus S3 access:

- **User:** directus-s3-user
- **Permissions:** S3 access policy attached
- Generated **Access Key + Secret Key** for Directus Storage

📌 **Screenshot:** `S3 bucket`



✅ 5. GitLab Repository Setup

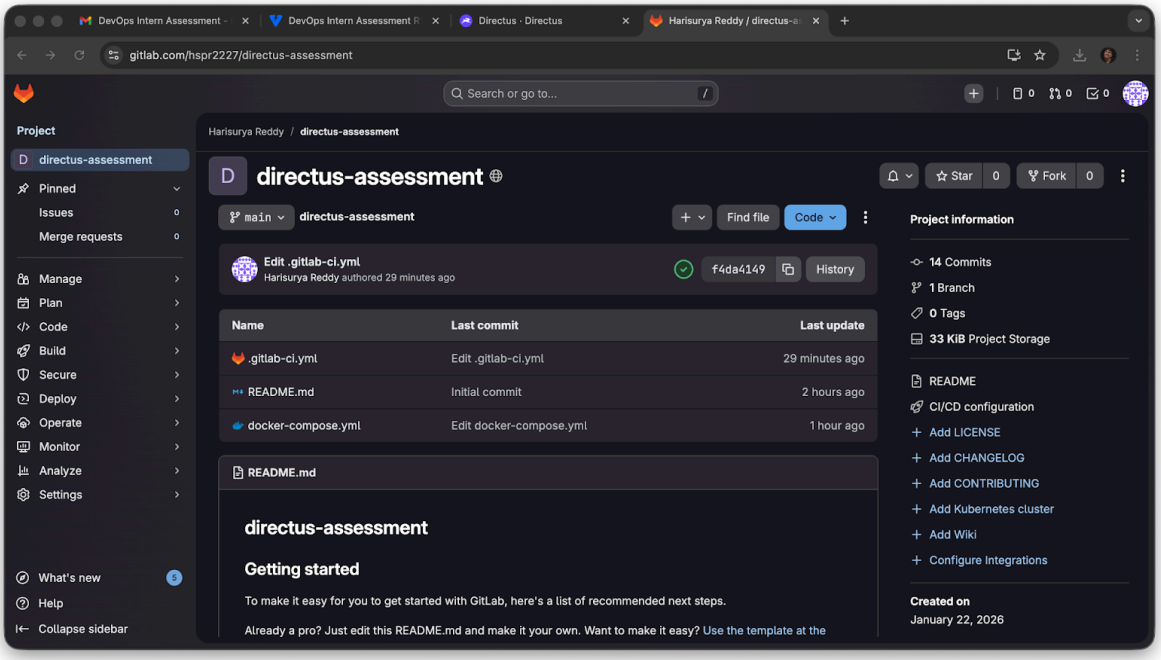
Created a public GitLab project:

- **Repo name:** directus-assessment
- **Repo link:** https://gitlab.com/hspr2227/directus-assessment.git

Added required files:

- `docker-compose.yml`
- `.gitlab-ci.yml`

📌 **Screenshot:** `gitlab repo`



✅ 6. GitLab CI/CD Pipeline Setup

✅ 6.1 Pipeline Stages

Pipeline contains 3 stages:

1. **Validate** → validate configuration files
2. **Test** → curl Directus deployment + download homepage
3. **Report** → generate deployment summary report

✅ 6.2 Jobs Included

Jobs configured in `.gitlab-ci.yml`:

✅ validate_config

- Validates Docker Compose file

✅ health_check

- Checks Directus URL using `curl -I`

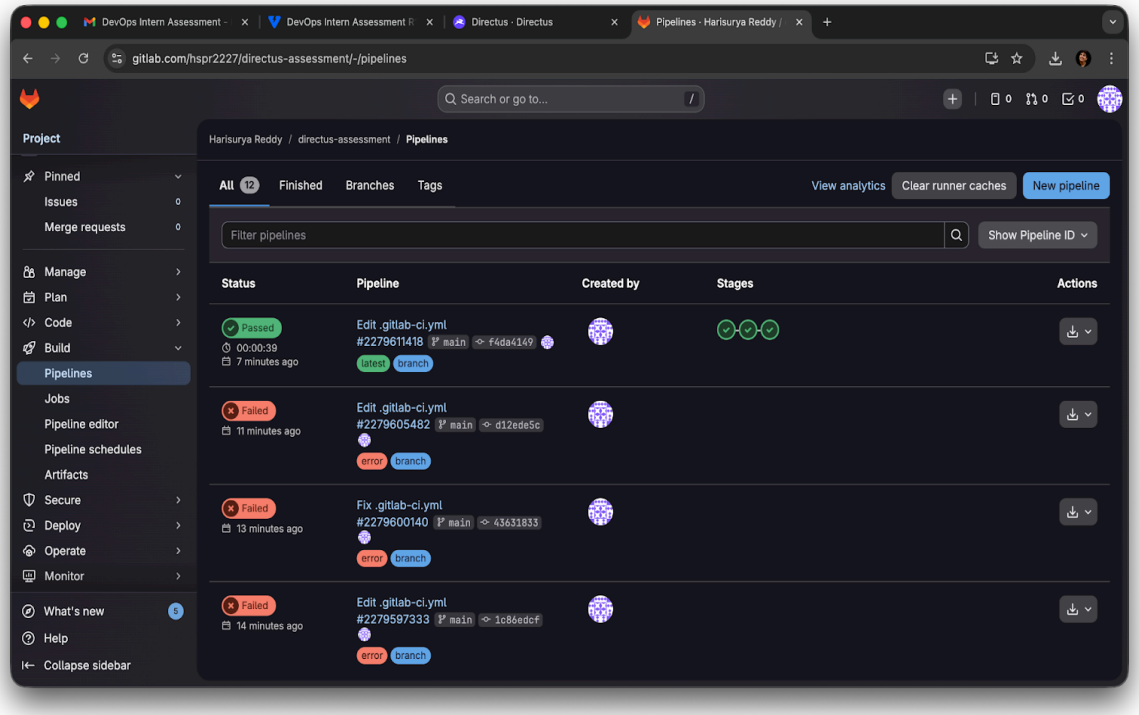
✅ **capture_homepage**

- Downloads homepage HTML
- ✅ Artifact generated: `directus_homepage.html`

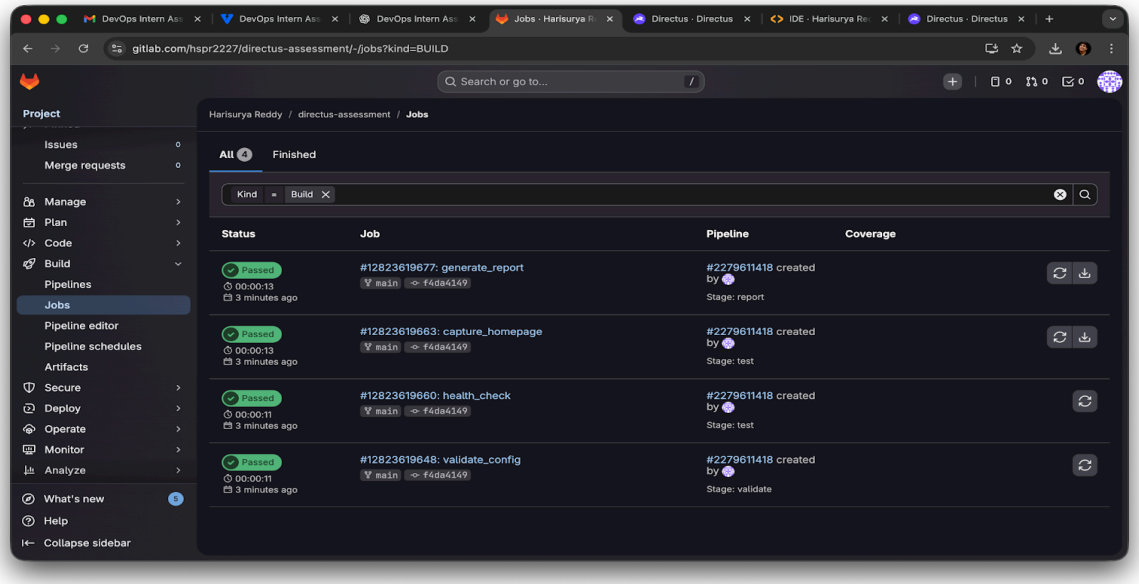
✅ **generate_report**

- Generates report
- ✅ Artifact generated: `deployment_report.md`

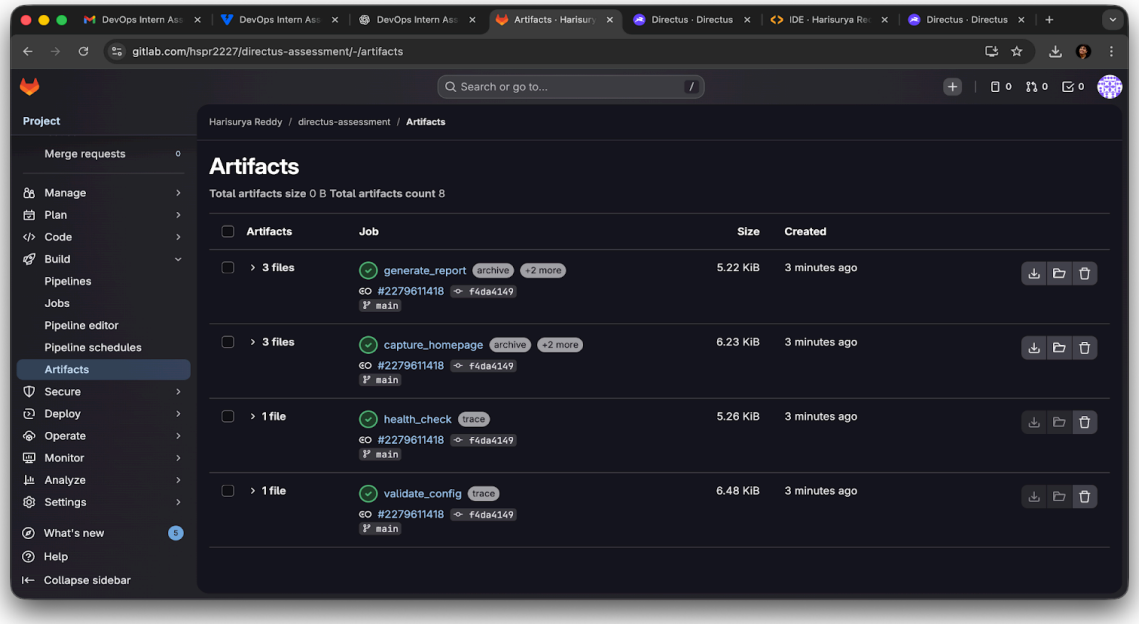
📌 **Screenshot:** `pipelines`



📌 **Screenshot:** `jobs`



📌 **Screenshot:** `artifacts`



✅ 7. Final Verification

✅ Directus is reachable publicly at:
http://13.232.23.3:8055

✅ GitLab CI/CD pipeline passes successfully and validates the deployment.

✅ 8. Challenges Faced & Fixes

❌ Issue:

Initially, GitLab pipeline failed due to YAML errors (indentation and script format issues), especially around:

`jobs:generate_report:script config should be a string or nested array`

✅ Fix:

- Simplified the `.gitlab-ci.yml`
- Corrected YAML indentation
- Validated in **GitLab Pipeline Editor**
- Re-ran and confirmed pipeline passed successfully

✅ After fixing, the pipeline ran and generated required artifacts.

✅ 9. Submission Links

✅ **Directus URL:** http://13.232.23.3:8055
✅ **GitLab Project URL:** https://gitlab.com/hspr2227/directus-assessment.git
✅ **Google Doc URL:**
https://docs.google.com/document/d/12aI7qAf2XRNvcnNhpWfrSC4OinwEs4Z5Q2bYrPZOcPM/edit?usp=sharing