

→The CI/CD benefits proposal contains essential benefits of CI/CD and describes the business context that will benefit from the automation tools. Explanation should include benefits that translate to revenue and cost for the business.

There are enormous benefits to put into consideration for towards the exploration and integration CI/CD operations on the management and supporting our ever-changing environment.

Which sole determinants are out of our control, these determinants are not limited to: Evolution within Regulation industries, Climate changes intervention and Cyber Attacks.

The robustness and reliability of system stood out to me, because as an Organisation that provide service to external customers, we love the users of our services to find us

Robustness and Reliable at the core of our values; also, to feel it in the usage of our services which made available through Information Technology. In-addition to this, there is global call to embrace the World of AI which literal mean automated services that available at pace faster than legacy way of delivery ser to end User.

In aspiration to reduce repetition of tasks; chances of risks and continuous increase support cost, there is need to avail the company to CICD operations, which will offer below benefits.

### **Benefits of CICD**

Releasing software can be a pain, involving weeks of manual integration, configuration, and testing, with the constant fear of showstopping issues.

Continuous integration, delivery, and deployment (CI/CD) offer a better way, allowing organizations to release more frequently without compromising quality.

CI/CD automates repetitive tasks and notifies you of any issues, making the release process smoother and more efficient.

With an automated CI/CD pipeline, you can ship changes weekly, daily, or even hourly, enabling faster time to market and the ability to respond to trends and user needs.

Regular and thorough automated testing leads to better code quality, as bugs are caught earlier and fixed before more functionality is built upon them.

Automating infrastructure creation and deployment streamlines the release process, making it faster, more reliable, and less prone to errors.

CI/CD provides measurable progress through metrics, allowing you to identify areas for improvement and celebrate successes.

Rapid feedback loops and tighter team collaboration enhance efficiency, creativity, and communication.

With an automated process, individuals are freed from repetitive tasks, allowing them to focus on problem-solving and innovation.

Building a CI/CD pipeline benefits the entire software development process, fosters collaboration, and improves job satisfaction.

## Screenshots:

### SCREENSHOT01

The screenshot shows a CircleCI pipeline run for the 'cd backend' job. The pipeline consists of four steps: 'Spin up environment', 'Preparing environment variables', 'Checkout code', and 'Restoring cache', all of which completed successfully. The fifth step, 'Back-end build', failed with an exit code of 2. The error message indicates a TypeScript compilation error: 'addBearerAuth(x // here is an intentional compile error. Remove the "x" and the backend should compile.' The terminal output shows the command 'npm run build' and the resulting error.

### SCREENSHOT02

The screenshot shows a CircleCI pipeline run for the 'cd frontend' job. The pipeline consists of four steps: 'Spin up environment', 'Preparing environment variables', 'Checkout code', and 'Restoring cache', all of which completed successfully. The fifth step, 'Front-end test', failed with an exit code of 1. The error message indicates a Jest test failure: 'npm ERR! Failed at the typescript-react-redux-boilerplate@1.0.0 test script.' The terminal output shows the command 'npm run test' and the resulting error.

SCREENSHOT03

✔ Spin up environment1s

✔ Preparing environment variables0s

✔ Checkout code0s

✔ Restoring cache6s

❗ back-end scan19s

Explain this error

AI Experiment

```
#!/bin/bash -eo pipefail
cd frontend
npm install
## npm install oauth-sign@0.9.0
npm audit --audit-level-critical
```

|       |  |   |
|-------|--|---|
| 11916 | Path   | babel-core > json5  |
| 11917 |  |   |
| 11918 | More info  | <a href="https://github.com/advisories/GHSA-9c47-m6qq-7p4h">https://github.com/advisories/GHSA-9c47-m6qq-7p4h</a> |
| 11919 |  |   |
| 11920 | High   | minimatch ReDoS vulnerability   |
| 11921 | Package  | minimatch   |
| 11922 | Patched in   | >=3.0.5   |
| 11923 | Dependency of  | webpack-clean-plugin [dev]  |
| 11924 | Path   | webpack-clean-plugin > minimatch  |
| 11925 | More info  | <a href="https://github.com/advisories/GHSA-f8q6-p94x-37w3">https://github.com/advisories/GHSA-f8q6-p94x-37w3</a> |
| 11926 |  |   |
| 11927 | found 793 vulnerabilities (5 low, 237 moderate, 402 high, 149 critical) in 1896 scanned packages |   |
| 11928 | run 'npm audit fix' to fix 537 of them.  |   |
| 11929 | 245 vulnerabilities require semver-major dependency updates.                                     |   |
| 11930 | 11 vulnerabilities require manual review. See the full report for details.                       |   |
| 11931 | Exited with code exit status 1   |   |
| 11932 |  |   |
| 11933 |  |   |
| 11934 |  |   |
| 11935 |  |   |
| 11936 |  |   |
| 11937 |  |   |
| 11938 |  |   |
| 11939 |  |   |

CircleCI received exit code 1

SCREENSHOT04

[Workflow] Failed: cci-pnvr6/olan\_cdond-c3-projectstarter on master / default (7aa1a70)

CircleCI Builds

to

Uh-oh, this workflow did not succeed.

Project

Workflow

Branch

Commit

cci-pnvr6/olan\_cdond-c3-projectstarter

default

master

7aa1a70

Jobs

build-backend

test-backend

scan-backend

build-frontend

test-frontend

deploy-infrastructu...

✔ Success

✔ Success

✔ Success

✔ Success

✔ Success

❗ Failed

You're receiving this email because you follow cci-pnvr6/olan\_cdond-c3-projectstarter on CircleCI.

Unsubscribe by unfollowing cci-pnvr6/olan\_cdond-c3-projectstarter or changing your email notification settings.

# SCREENSHOT05

Duration / Finished

6s / 14m ago

Queued

0s

Executor / Resource Class

Docker / Large

Branch

master

Commit

c668c6b

Author & Message

Updated config.yml

STEPS

TESTS

TIMING

ARTIFACTS

RESOURCES

Spin up environment

4s

Preparing environment variables

0s

Checkout code

0s

Ensure back-end infrastructure exists

0s

Explain this error

AI Experiment

```
#!/bin/bash -eo pipefail
aws cloudformation deploy \
  --template-file .circleci/files/backend.yml \
  #--tags project=your-tag \
  # --stack-name "your back-end stack name with workflow id" \
  # --parameter-overrides ID="your workflow id" \
  --stack-name "udapeople-backend-${CIRCLE_WORKFLOW_ID:8:7}" \
  --parameter-overrides ID="${CIRCLE_WORKFLOW_ID:8:7}" \
  --tags project-udapeople

1
2
3 usage: aws [options] <command> [<subcommand> ...] [parameters]
4 To see help text, you can run:
5
6 aws help
7 aws <command> help
8 aws <command> <subcommand> help
9
10 aws: error: the following arguments are required: --stack-name
11
12 Exited with code exit status 252
13

CircleCI received exit code 252
```

# SCREENSHOT06

OlanInnovator

Dashboard

Projects

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Insights

Self-Hosted Runners

Organization Settings

Plan

COMING SOON

Test your LLM-powered features with CircleCI

Notifications

Status

Docs

Preparing environment variables

0s

Checkout code

0s

Install dependencies

25s

Attaching workspace

0s

Get backend url

10m 56s

Frontend smoke test.

0s

Explain this error

AI Experiment

```
#!/bin/sh -eo pipefail
URL="http://udapeople-${CIRCLE_WORKFLOW_ID:8:7}.s3-us-east-1.amazonaws.com/#/employees"
echo $URL
if curl -s $URL | grep "Welcome"
then
  return 1
else
  return 1
fi

1
2 http://udapeople-ba36alc.s3-*****.amazonaws.com/#/employees
3
4 Exited with code exit status 1

CircleCI received exit code 1
```

SCREENSHOT07

smoke-testFailed

Duration / Finished

Queued

Executor / Resource Class

Branch

Commit

Author & Message

11m 30s / 5d ago

0s

Docker / Large

master

9974028

add 1

STEPS

TESTS

TIMING

ARTIFACTS

RESOURCES

Accessible step output

Spin up environment2s

Preparing environment variables0s

Checkout code0s

Install dependencies25s

Attaching workspace0s

Get backend uri10m 56s

Frontend smoke test.0s

#!/bin/sh -eo pipefail

1http://udspeople-ba96a1c.s3-\*\*\*\*\*.amazonaws.com/#/employees

2

3Exited with code exit status 1

4

CircleCI received exit code 1

Destroy environments2s

Revert migrations0s

SCREENSHOT08

OlanInnovator

Dashboard

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COMING SOON

Test your LLM-powered features with CircleCI

Notifications

Status

Docs

Orbs

Support

cloudfront-updateSuccess

Duration / Finished

Queued

Executor / Resource Class

Branch

Commit

Author & Message

4m 57s / 2m ago

0s

Docker / Large

master

2e3abbe

add o workflow

STEPS

TESTS

TIMING

ARTIFACTS

RESOURCES

Accessible step output

Spin up environment

Preparing environment variables

Checkout code

Install dependencies

Update cloudfront distribution

#!/bin/sh -eo pipefail

aws cloudformation deploy \

--template-file .circleci/files/cloudfront.yml \

--stack-name InitialStack \

--parameter-overrides WorkflowID="\${CIRCLE\_WORKFLOW\_ID:0:7}" \

--tags project=udapeople

echo OldWorkflowID: "\${OldWorkflowID}"

echo New WorkflowID: \${CIRCLE\_WORKFLOW\_ID:0:7}

1

2Waiting for changeset to be created..

3Waiting for stack create/update to complete

4Successfully created/updated stack - InitialStack

5OldWorkflowID:

6New WorkflowID: 08ed43c

7

## SCREENSHOT09

Machine Runner 3.0 is now available for preview! The newest version of runner provides improvements to usability, setup, and maintenance of machine runners. [Learn more](#)

Dashboard

Project

Branch

Workflow

Job

All Pipelines > ccond-c3-projectstarter > master > default > cleanup (1348)

cleanup

Success

Rerun

Duration / Finished

Queued

Executor / Resource Class

Branch

Commit

Author & Message

7s / 2m ago

0s

Docker / Large

master

00a3a84

change ssh keys

STEPS

TESTS

TIMING

ARTIFACTS

RESOURCES

Accessible step output

Spin up environment 4s

Preparing environment variables 0s

Checkout code 0s

Get old stack workflow id & Remove old stack and files 1s

#!/bin/bash -eo pipefail

1 OldWorkflowID: c6dalbd

2 CIRCLE\_WORKFLOW\_ID c6dalbd

3 Stack Names: udapeople-frontend-c6dalbd udapeople-backend-c6dalbd udapeople-frontend-4f99121 udapeople-backend-4f99121 udapeople-frontend-08ed43c udapeople-backend-08ed43c

4 ----- Nothing to cleanup - Current: udapeople-frontend-c6dalbd -----

5 ----- Nothing to cleanup - Current: udapeople-backend-c6dalbd -----

6 ----- Nothing to cleanup - Current: udapeople-frontend-4f99121 -----

7 ----- Nothing to cleanup - Current: udapeople-backend-4f99121 -----

8 ----- Nothing to cleanup - Current: udapeople-frontend-08ed43c -----

9 ----- Nothing to cleanup - Current: udapeople-backend-08ed43c -----

10

## SCREENSHOT10

OlanInnovator

Dashboard

Projects

Releases

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Self-Hosted Runners

Organization Settings

Plan

COMING SOON

Test your LLM-powered features with CircleCI

Notifications

Machine Runner 3.0 is now available for preview! The newest version of runner provides improvements to usability, setup, and maintenance of machine runners. [Learn more](#)

Dashboard

Project

Branch

Workflow

All Pipelines > ccond-c3-projectstarter > master > default

default

Success

Insights

Rerun

Duration / Finished

Branch

Commit

Author & Message

23m 27s / 7m ago

master

00a3a84

change ssh keys

build-frontend 45s

scan-frontend 1m 16s

test-frontend 1m 14s

build-backend 37s

scan-backend 1m 20s

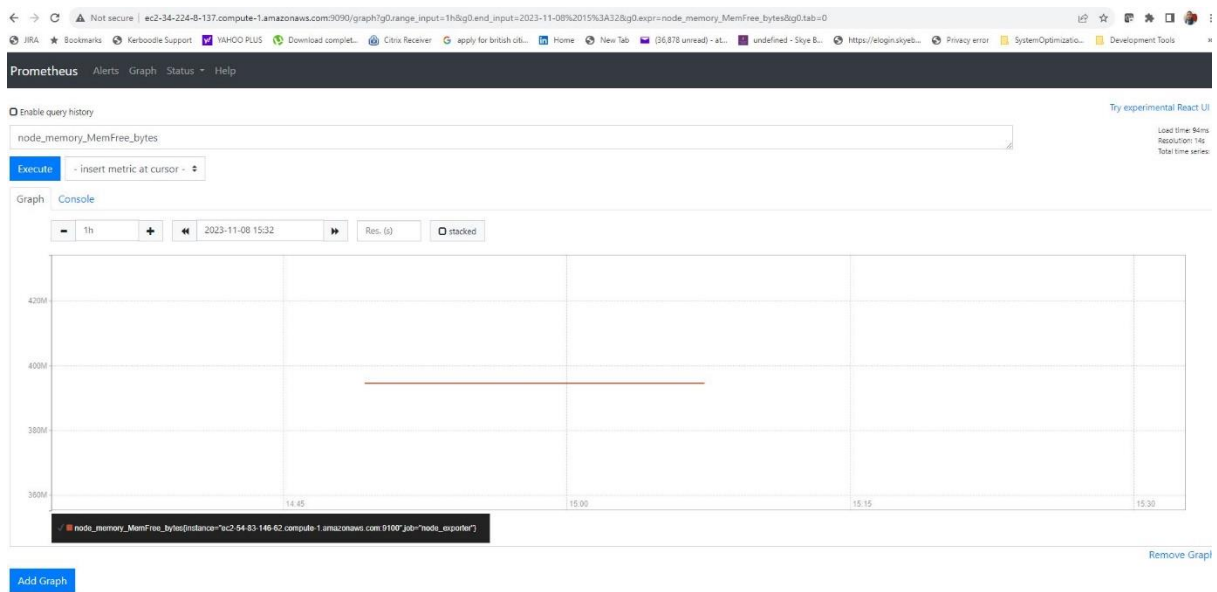
test-backend 1m 3s

deploy-infrastructure 1m 59s

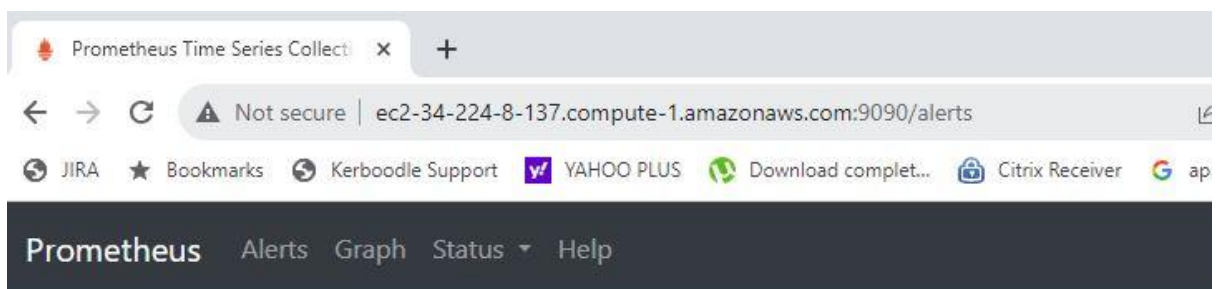
configure-infrastructure... 5m 39s

run-migrations

## SCREENSHOT11



## SCREENSHOT12



## Alerts

Inactive (1) Pending (0) Firing (0)

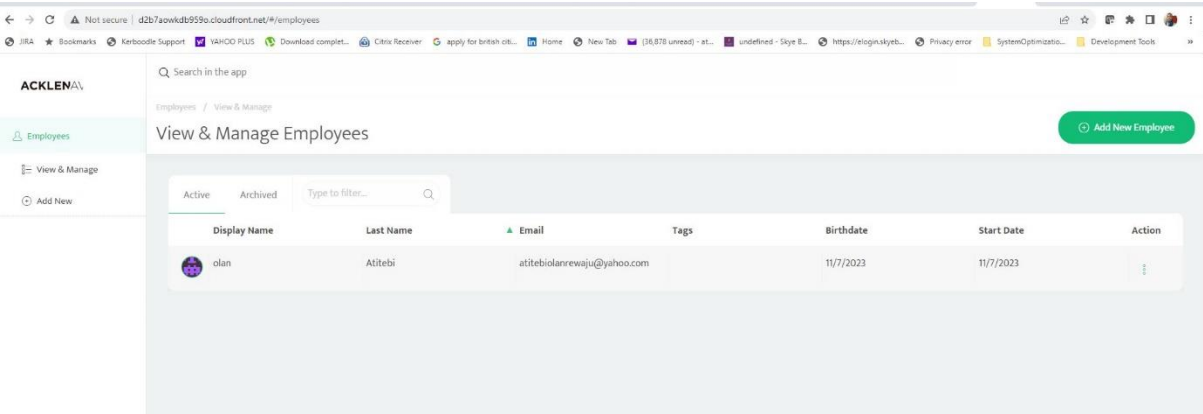
Show annotations

/etc/prometheus/rules.yml > Down

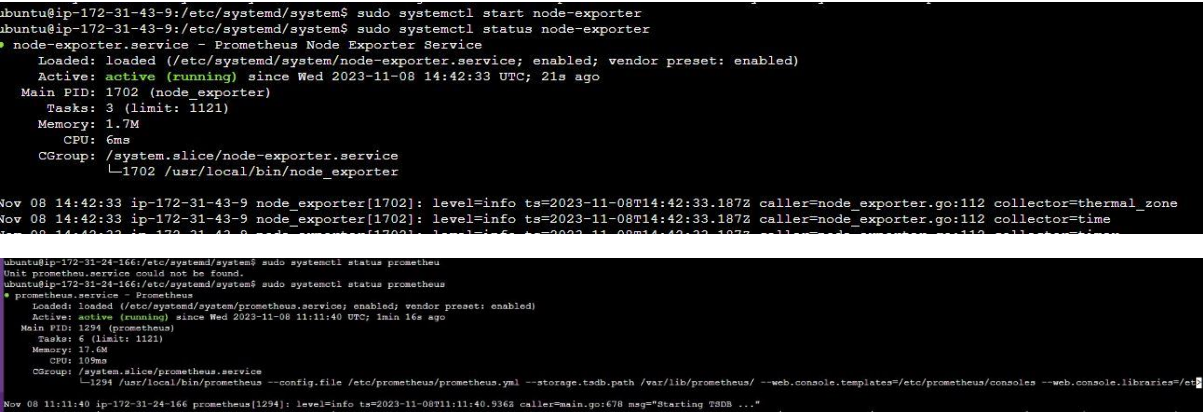
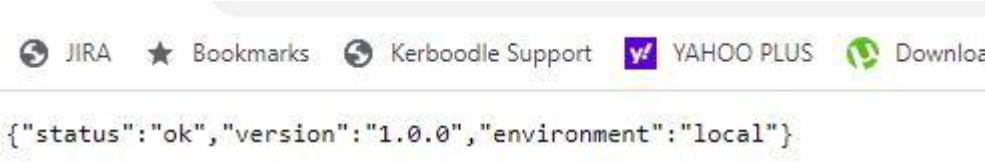
**InstanceDown** (0 active)

```
alert: InstanceDown
expr: up == 0
for: 3m
labels:
  severity: critical
annotations:
  description: ' of job  has been down for more than 3 minutes.'
  summary: Instance is down
```

URL03\_SCREENSHOT



URL04\_SCREENSHOT:





# URL05\_SCREENSHOT

← → ↻ ⚠ Not secure | ec2-34-224-8-137.compute-1.amazonaws.com:9090/targets

JIRA ★ Bookmarks Kerboodle Support YAHOO PLUS Download complet... Citrix Receiver apply for british citi... Home New Tab (36,878 unread) - at... undefined - Skye B... https://ellogin.skyeb... Privacy error

Prometheus Alerts Graph Status ▾ Help

## Targets

All Unhealthy

node\_exporter (1/1 up) [show less](#)

| Endpoint   | State | Labels   | Last Scrape | Scrape Duration | Error |
|--|-------|--|-------------|-----------------|-------|
| http://ec2-54-83-146-62.compute-1.amazonaws.com:9100/metrics | UP    | instance="ec2-54-83-146-62.compute-1.amazonaws.com:9100" job="node_exporter" | 13.895s ago | 15.45ms         |       |