



The Automatic Deployment

With CircleCI & AWS CodeDeploy

Ready Techie
2022 Season 2

Taehyun Lee
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1. Why did I choose this topic? 🤔

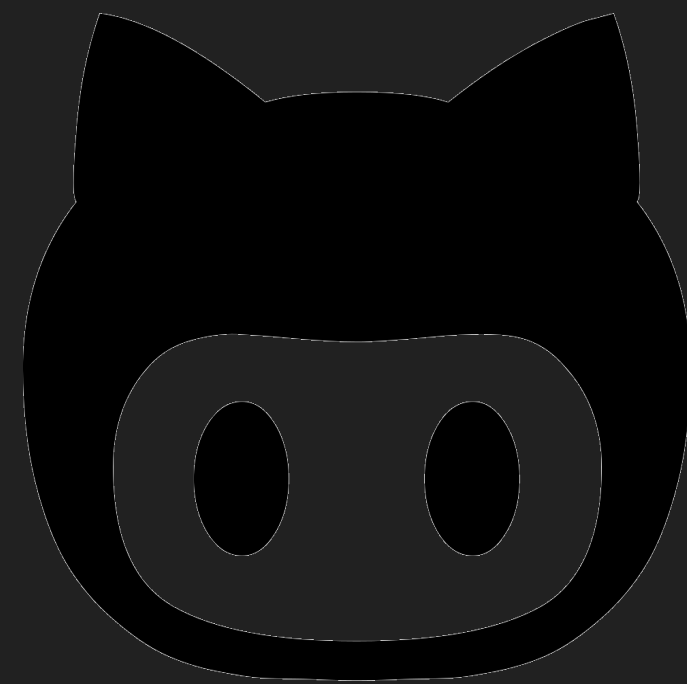


1.1. Situation

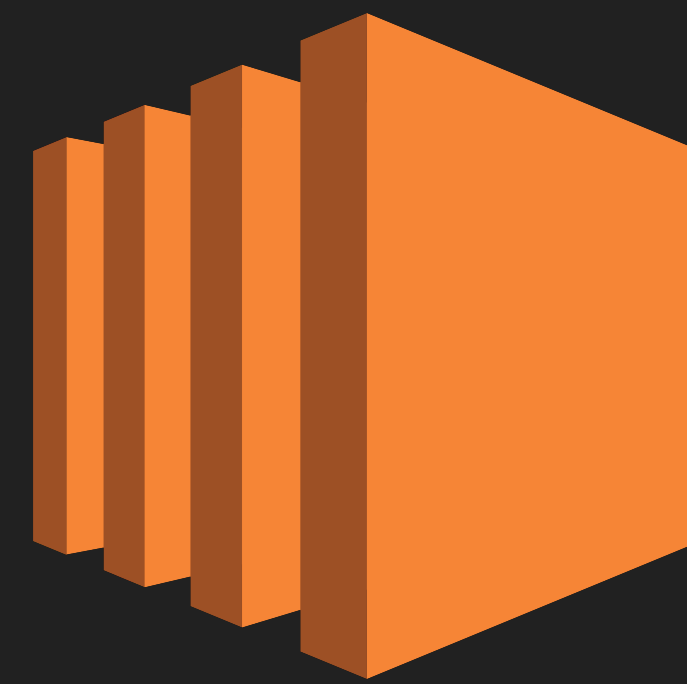
Manage Enviornment Variables

Deploy Source Code Automatically

Build Monitoring System of Deployment



GitHub



AWS EC2

1. Why did I choose this topic? 🤔



1.2. Approach



2. Continuous Integration & Continuous Delivery



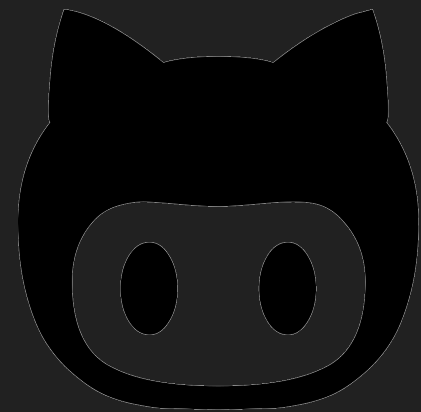
2.1. About CI / CD (Continuous Integration / Continuous Delivery)



2. Continuous Integration & Continuous Delivery



2.1. About CI / CD (Continuous Integration / Continuous Delivery)



GitHub Actions

Options to create
the Build Matrix



CircleCI

Dashboard to Monitor
multiple Deployments



Jenkins

Completely Free Software
and Plugins to Simplify the
Deployment Flow



Travis CI

Options to create
the Build Matrix

2. Continuous Integration & Continuous Delivery



2.2. CircleCI

All Pipelines

Everyone's Pipelines

All Projects

All Branches

Auto-expand

Pipeline	Status	Workflow	Branch / Commit	Start	Duration	Actions
<div><div>dongju-industry-backend</div><div>88</div></div>	Success	deploy	<div><div></div>main</div> <div>bffb011 :recycle: Search API</div>	23h ago	54s	<div><div></div><div></div><div></div><div></div></div>
Jobs	ci-cd	71			41s	
<div><div>dongju-industry-backend</div><div>87</div></div>	Success	deploy	<div><div></div>main</div> <div>ae5f048 :recycle: Notification Get API</div>	2d ago	47s	<div><div></div><div></div><div></div><div></div></div>
Jobs	ci-cd	70			35s	
<div><div>dongju-industry-backend</div><div>86</div></div>	Success	deploy	<div><div></div>main</div> <div>46f919c :recycle: Notice multi GET API ordered by created_at with descending</div>	5d ago	43s	<div><div></div><div></div><div></div><div></div></div>
Jobs	ci-cd	69			39s	
<div><div>dongju-industry-backend</div><div>85</div></div>	Success	deploy	<div><div></div>main</div> <div>dc64e3c :wrench: CircleCI configuration value</div>	5d ago	40s	<div><div></div><div></div><div></div><div></div></div>
Jobs	ci-cd	68			37s	
<div><div>dongju-industry-backend</div><div>84</div></div>	Failed	deploy	<div><div></div>main</div> <div>9fc70e1 :recycle: Certification and Notice PATCH API</div>	5d ago	30s	<div><div></div><div></div><div></div><div></div></div>
Jobs	ci-cd	67			29s	

CircleCI

Job Failed.

Job: ci-cd

Project: dongju-industry-backend

Author: 0417taehyun

Branch: main

Mentions:

View Job

CircleCI

Job Succeeded.

Job: ci-cd

Project: dongju-industry-backend

Commit: dc64e3cdff00a72cb71a20221406afc1f801007a

Author: 0417taehyun

Branch: main

Mentions:

View Job

CircleCI

Job Succeeded.

Job: ci-cd

Project: dongju-industry-backend

Commit: 46f919c1d2f6551c1a9d1243b8433075922776ce

Author: 0417taehyun

Branch: main

Mentions:

View Job

Manage Multiple Projects and Deployments Easily

Build Slack Notification Easily

2. Continuous Integration & Continuous Delivery



2.2. CircleCI

backend-slack-secrets

Security

Groups listed are able to execute this context on a workflow.

Add Security Group

Group Name

All members

X

Environment Variables

Environment variables are available to any job that requests this context. See [Using Environment Variables](#) documentation.

Add Environment Variable

Name	Value	
SLACK_ACCESS_TOKEN	****qlbR	X

Manage Common Environmental Variables

Environment Variables

Environment variables let you add sensitive data (e.g. API keys) to your jobs rather than placing them in the repository. The value of the variables cannot be read or edited in the app once they are set.

If you're looking to share environment variables across projects, try [Contexts](#).

Name	Value	
ADMIN_EMAIL	xxxx.com	X
ADMIN_EMAIL_PASSWORD	xxxx10**	X
AWS_ACCESS_KEY_ID	xxxxSN5Z	X
AWS_DEFAULT_REGION	xxxxst-2	X
AWS_S3_BUCKET_NAME	xxxxiles	X
AWS_SECRET_ACCESS_KEY	xxxxsgbH	X

Manage Specific Environmental Variables

3. AWS CodeDeploy



3.1. About AWS CodeDeploy



AWS CodeDeploy

Automated Instance Deployments

Rolling and Blue/Green Updates

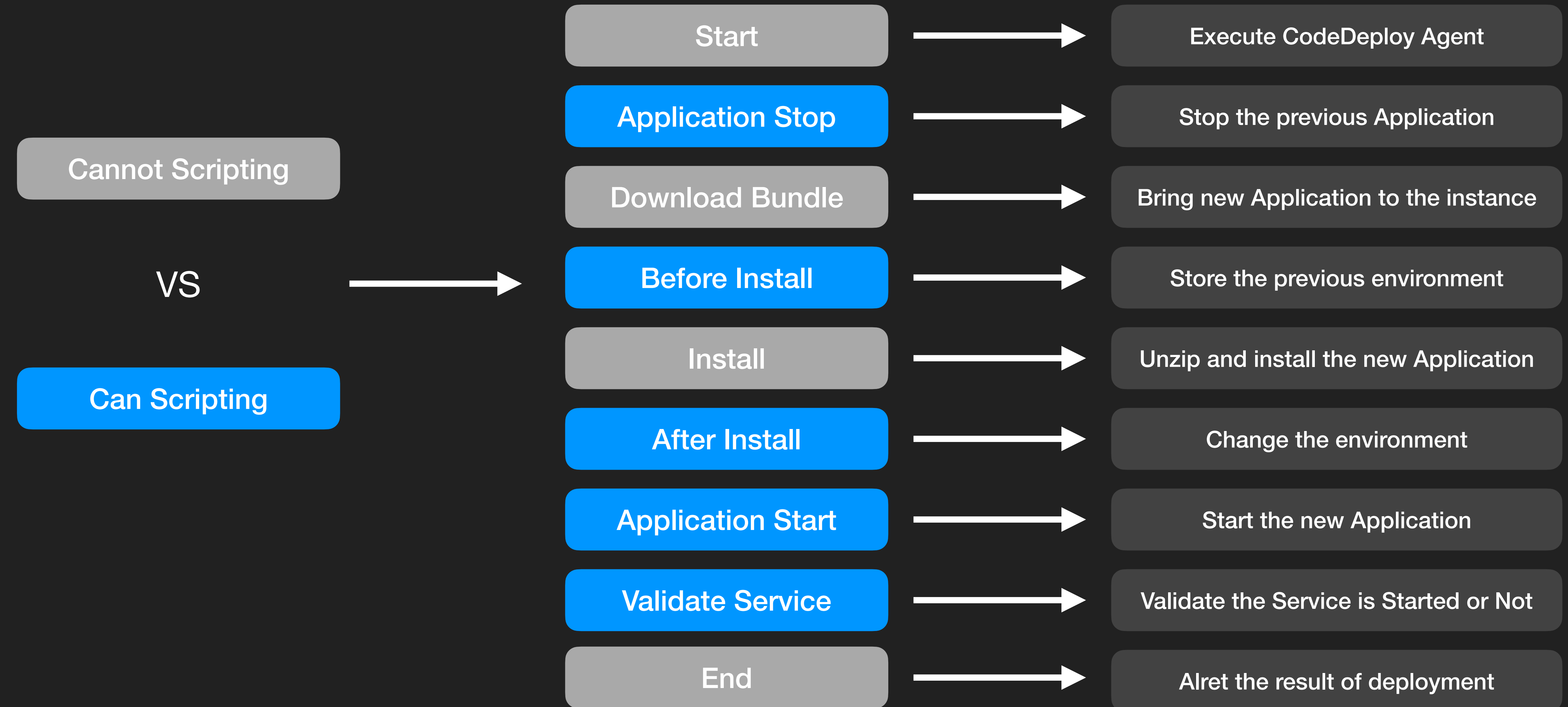
Centralized Control

Notifications

3. AWS CodeDeploy



3.2. Event Hook Life Cycle

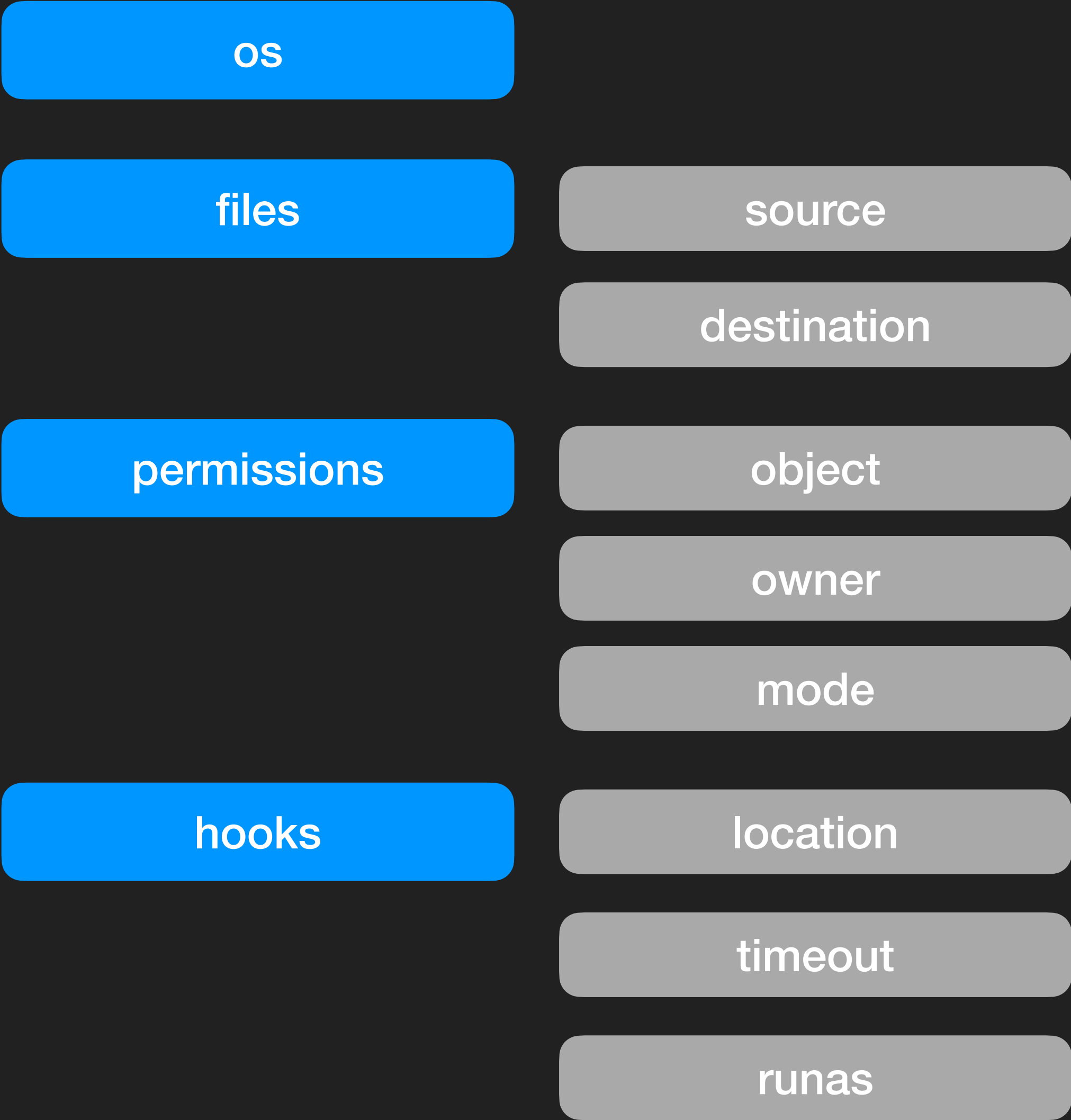
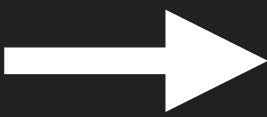


3. AWS CodeDeploy



3.3. Appspec file

```
version: 0.0
os: linux
files:
  - source: /
    destination: /home/ubuntu/build/
permissions:
  - object: /home/ubuntu/build
    owner: root
    mode: 700
hooks:
  AfterInstall:
    - location: scripts/install_dependencies.sh
      timeout: 600
      runas: root
  ApplicationStart:
    - location: scripts/start_server.sh
      timeout: 3600
      runas: root
  ApplicationStop:
    - location: scripts/stop_server.sh
      timeout: 600
      runas: root
```



3. AWS CodeDeploy 🚀



3.3. Appspec file

install_dependencies.sh

```
# !/bin/bash

# Get Environmental Variables
aws ssm get-parameters \
  --name \
  "LEVEL" \
  "DB_NAME" \
  "PRODUCT_DB_URL" \
  "PRODUCT_AWS_S3_BUCKET_NAME" \
  "PRODUCT_AWS_ACCESS_KEY_ID" \
  "PRODUCT_AWS_SECRET_ACCESS_KEY" \
  > env.json

# Make .env file
jq -jr '.Parameters[]|.Name, "=", .Value, "\n"' \
  < env.json >> .env

# Install Dependencies
poetry install
```

start_server.sh

```
# !/bin/bash

poetry run gunicorn \
  -k uvicorn.workers.UvicornWorker src.main:app \
  --access-logfile /home/ubuntu/logs/access \
  --bind 0.0.0.0:80 \
  --workers 2 \
  --daemon
```

4. To do



4.1. Manage Environmental Variables



CircleCI



AWS Systems Manager

Environment Variables

Environment variables let you add sensitive data (e.g. API keys) to your jobs rather than placing them in the repository. The value of the variables cannot be read or edited in the app once they are set.

If you're looking to share environment variables across projects, try [Contexts](#).

Name	Value	
ADMIN_EMAIL	xxxx.com	×
ADMIN_EMAIL_PASSWORD	xxxx10**	×
AWS_ACCESS_KEY_ID	xxxxSN5Z	×
AWS_DEFAULT_REGION	xxxxst-2	×
AWS_S3_BUCKET_NAME	xxxxiles	×
AWS_SECRET_ACCESS_KEY	xxxxsgbH	×

AWS Systems Manager > Parameter Store

[My parameters](#) | [Public parameters](#) | [Settings](#)

My parameters

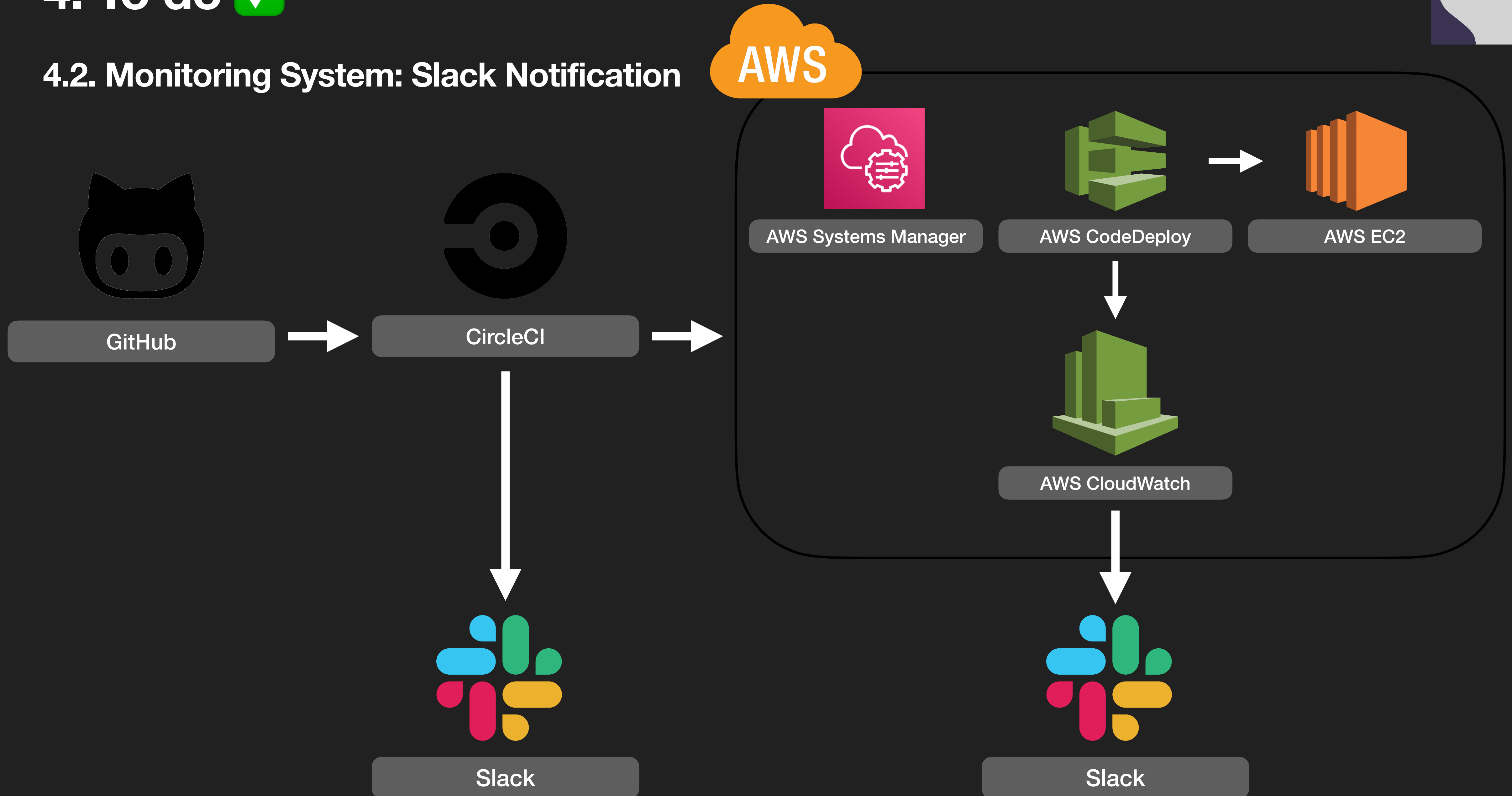
[Refresh](#) [View details](#) [Edit](#) [Delete](#) [Create parameter](#)

<input type="checkbox"/>	Name	Tier	Type	Last modified
<input type="checkbox"/>	DB_NAME	Standard	String	Tue, 19 Apr 2022 07:19:14 GMT
<input type="checkbox"/>	LEVEL	Standard	String	Tue, 19 Apr 2022 07:19:05 GMT
<input type="checkbox"/>	PRODUCT_ADMIN_EMAIL	Standard	String	Tue, 19 Apr 2022 07:19:17 GMT
<input type="checkbox"/>	PRODUCT_ADMIN_EMAIL_PASSWORD	Standard	String	Tue, 19 Apr 2022 07:19:19 GMT
<input type="checkbox"/>	PRODUCT_AWS_ACCESS_KEY_ID	Standard	String	Tue, 19 Apr 2022 07:19:10 GMT
<input type="checkbox"/>	PRODUCT_AWS_S3_BUCKET_NAME	Standard	String	Tue, 19 Apr 2022 07:19:09 GMT
<input type="checkbox"/>	PRODUCT_AWS_SECRET_ACCESS_KEY	Standard	String	Tue, 19 Apr 2022 07:19:12 GMT
<input type="checkbox"/>	PRODUCT_DB_URL	Standard	String	Tue, 19 Apr 2022 07:19:07 GMT
<input type="checkbox"/>	PRODUCT_EMAIL_HOST	Standard	String	Tue, 19 Apr 2022 07:19:20 GMT
<input type="checkbox"/>	PRODUCT_EMAIL_PORT	Standard	String	Tue, 19 Apr 2022 07:19:22 GMT

4. To do



4.2. Monitoring System: Slack Notification



Thank You 🎉