GitLab CI / CD / DevOps / Auto DevOps / ...

Kamil Trzciński, Staff Developer

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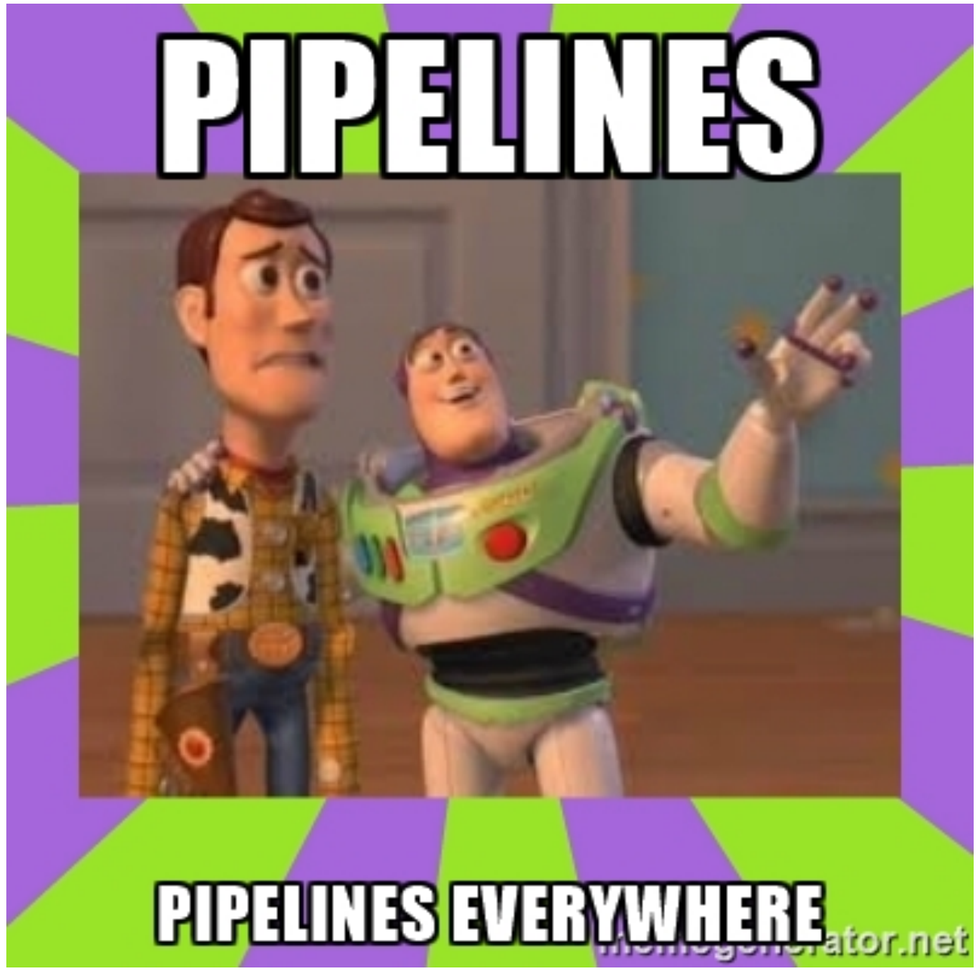
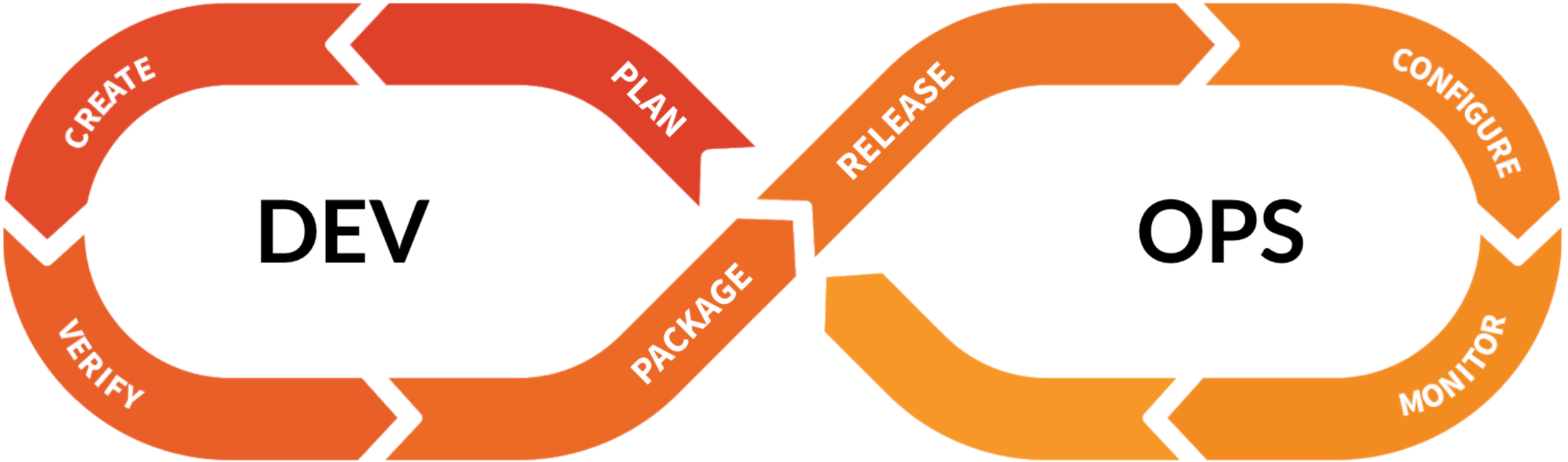
CERN

GitLab CI? or CD?? or Auto DevOps???



http://es.memegenerator.net/instance/61228673

Bitbucket

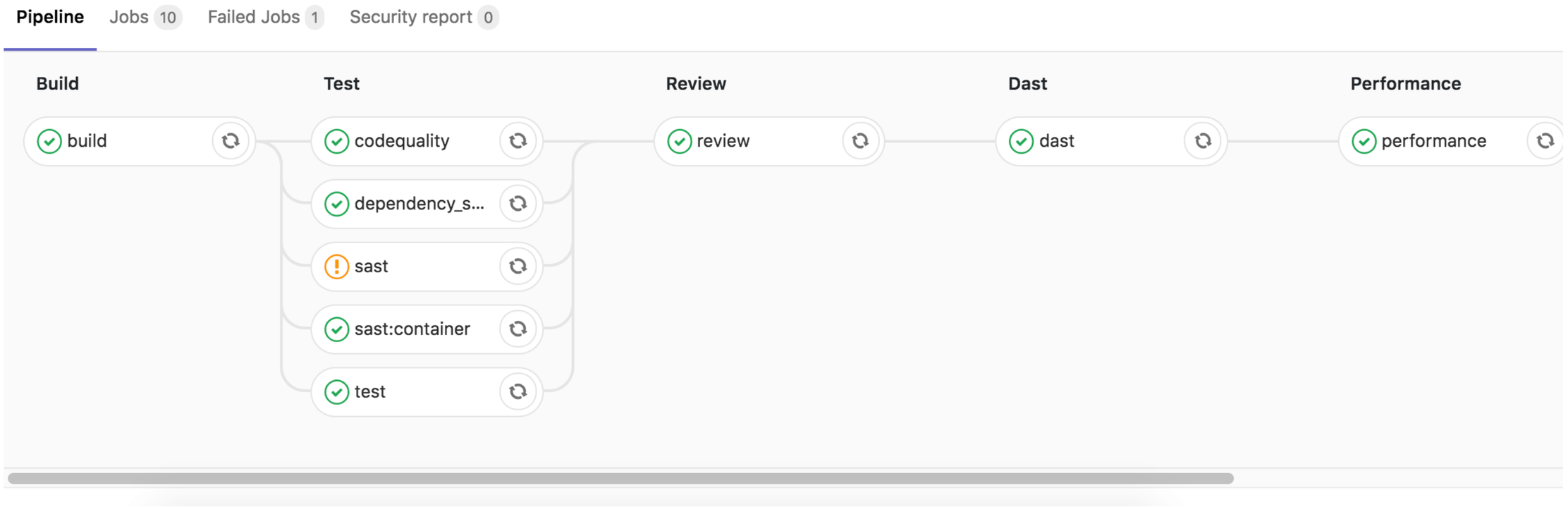

CREATE
PLAN
DEV
VERIFY
PACKAGE
RELEASE
CONFIGURE
OPS
MONITOR

Manage	Plan	Create	Verify	Package	Release	Configure	Monitor	Secure
Cycle Analytics	Issue Trackers	Source Code Management	Continuous Integration (CI)	Container Registry	Continuous Delivery (CD)	Auto DevOps	Metrics	SAST
DevOps Score	Issue Boards	Code Review	Unit Testing	Maven Packages Repository	Pages	Kubernetes Configuration	Logging	DAST
Audit Management	Service Desk	Wiki	Integration Testing		Review apps	ChatOps	Cluster Monitoring	Dependency Scanning
Authetication and Authorization	Portfolio Management	Snippets	Code Quality		Incremental Rollout			Container Scanning
		Web IDE	Performance Testing					License Management

Verify	Package	Release	Configure	Monitor	Secure
Continuous Integration (CI)	Container Registry	Continuous Delivery (CD)	Auto DevOps	Metrics	SAST
Unit Testing	Maven Packages Repository	Pages	Kubernetes Configuration	Logging	DAST
Integration Testing		Review apps	ChatOps	Cluster Monitoring	Dependency Scanning
Code Quality		Incremental Rollout			Container Scanning
Performance Testing					License Management

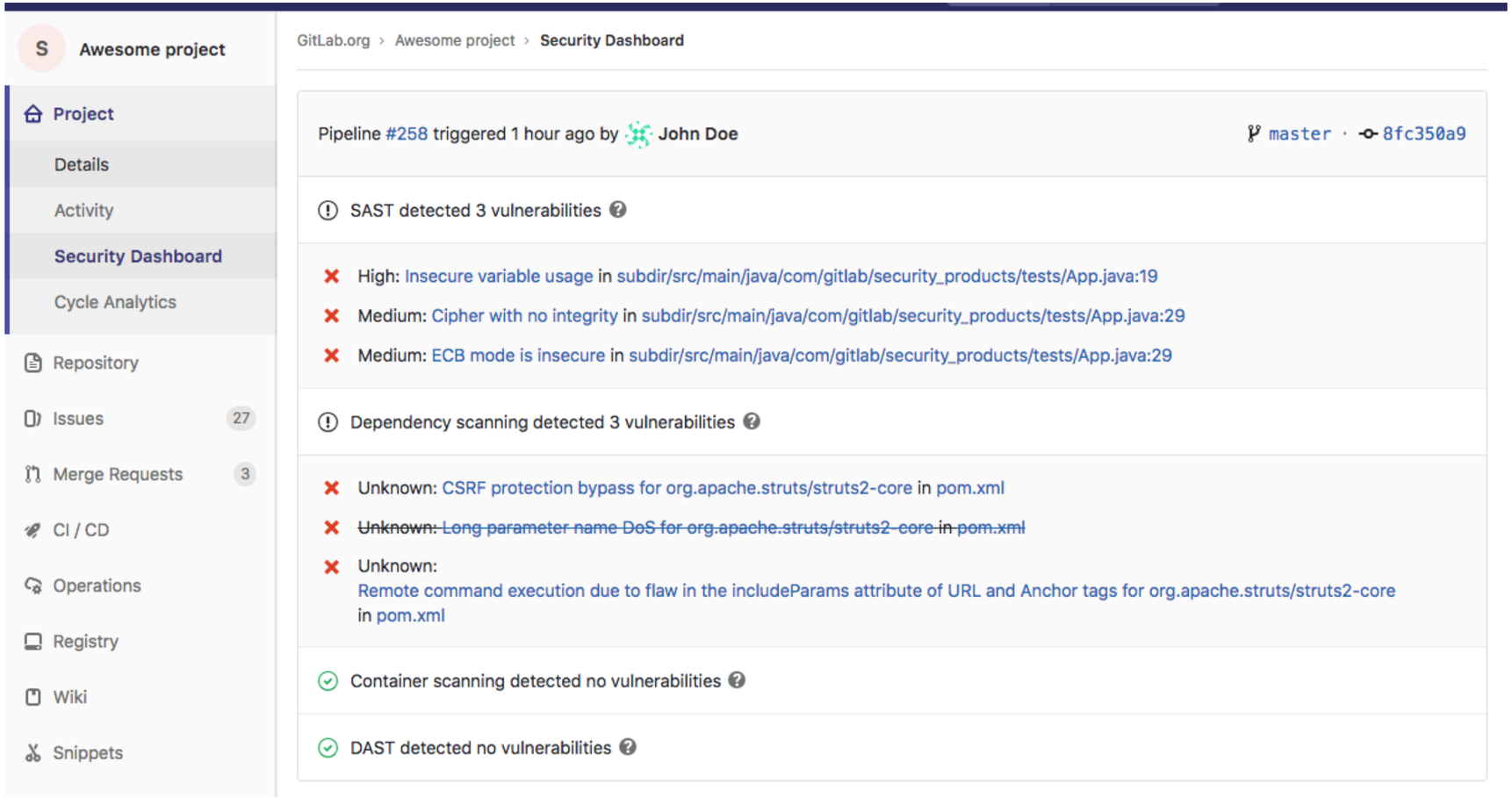
Recent features

Auto DevOps (11.0)

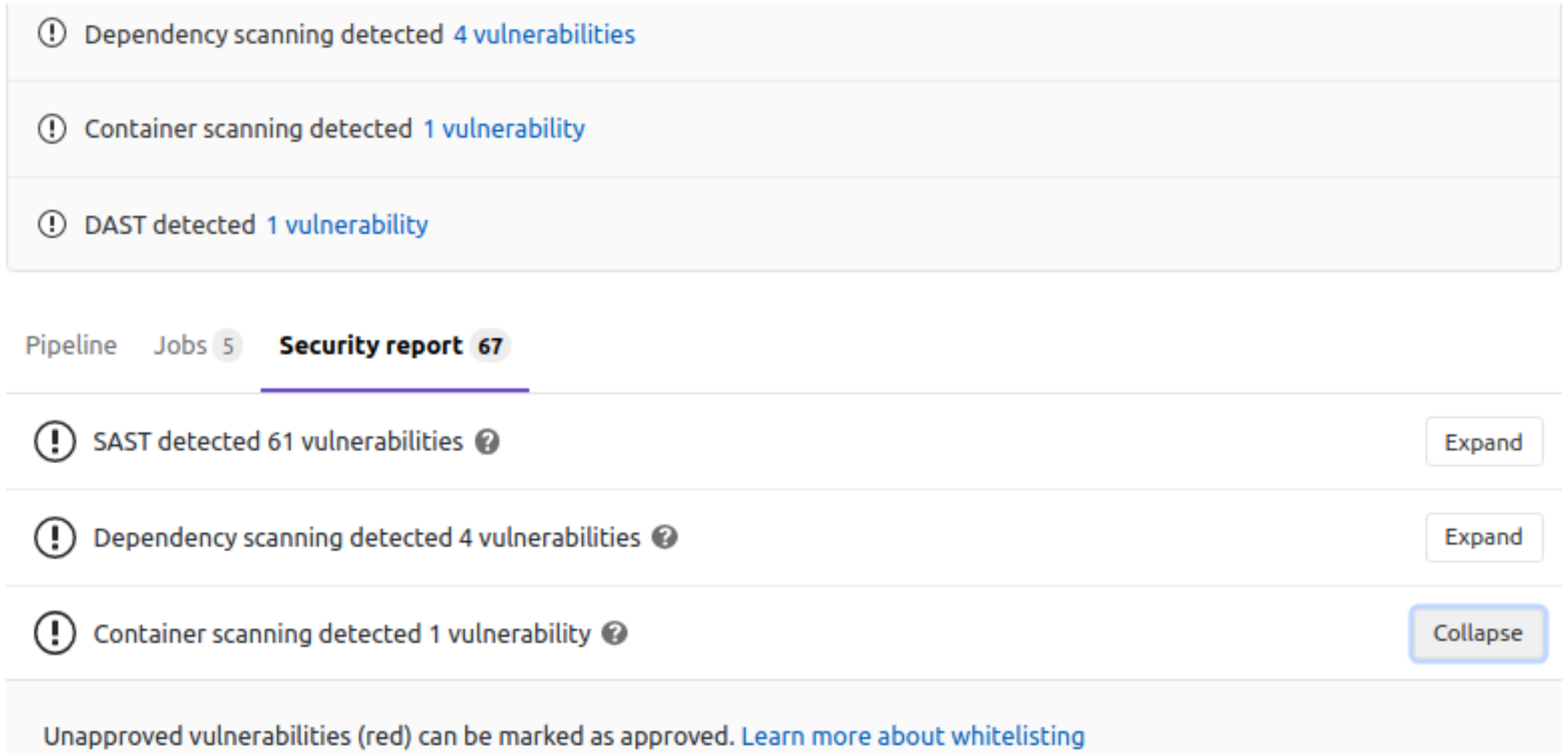


https://docs.gitlab.com/ee/topics/autodevops/

Security Dashboard (11.1)



Security Reports (11.1)

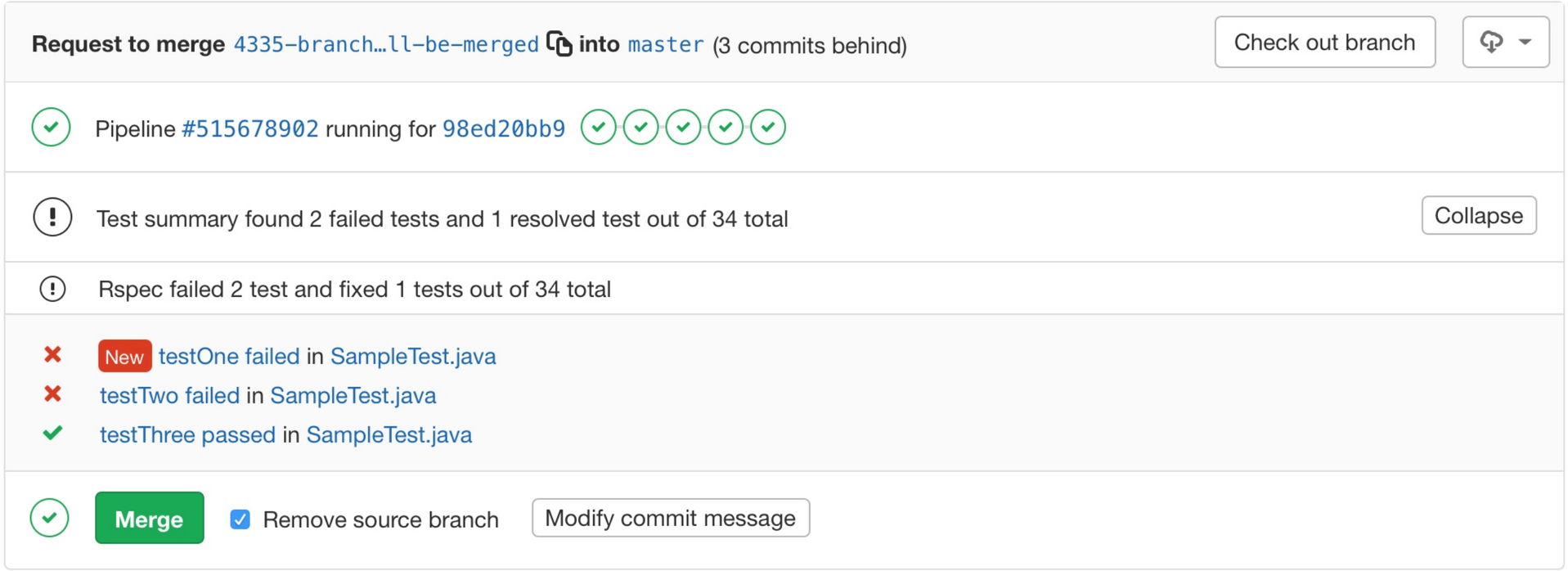


Kaniko support (11.2)

```
build:
  stage: build
  image:
    name: gcr.io/kaniko-project/executor:debug
    entrypoint: [""]
  script:
    - 'mkdir -p /root/.docker'
    - echo ... > /root/.docker/config.json
    - /kaniko/executor \
        --context "$CI_PROJECT_DIR" \
        --dockerfile "$CI_PROJECT_DIR/Dockerfile" \
        --destination "$CI_REGISTRY_IMAGE:$CI_COMMIT_TAG"
```

https://docs.gitlab.com/ee/ci/docker/using_kaniko.html

JUnit (11.2)



https://docs.gitlab.com/ee/ci/junit*test*reports.html

JUnit (11.2)

```
rspec:
  script:
  - rspec spec/lib/ --format RspecJunitFormatter --out rspec.xml
  artifacts:
    reports:
      junit: rspec.xml
```

https://docs.gitlab.com/ee/ci/junit*test*reports.html

Maven Packages (11.3)

GitLab.org › Examples › mvn-example › Packages › com/mycompany/app/my-app › **1.5-SNAPSHOT**

1.5-SNAPSHOT

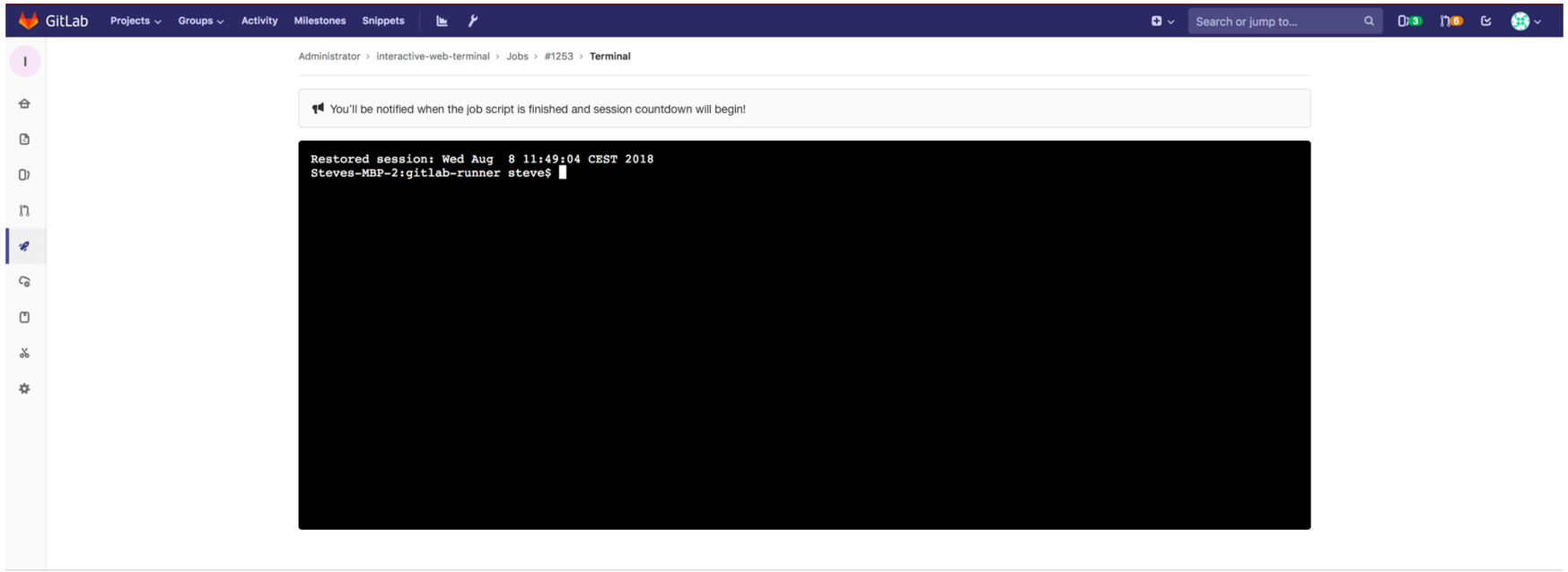
Package information	
Name	com/mycompany/app/my-app
Version	1.5-SNAPSHOT
Created on	Sep 14, 2018 7:43am

Maven Metadata	
Group ID	com.mycompany.app
Artifact ID	my-app
Version	1.5-SNAPSHOT

Name	Size	Created
maven-metadata.xml	767 Bytes	20 hours ago
my-app-1.5-20180914.074901-1.pom	1.4 KB	20 hours ago
my-app-1.5-20180914.074901-1.jar	2.4 KB	20 hours ago

https://docs.gitlab.com/ee/user/project/packages/maven_repository.html

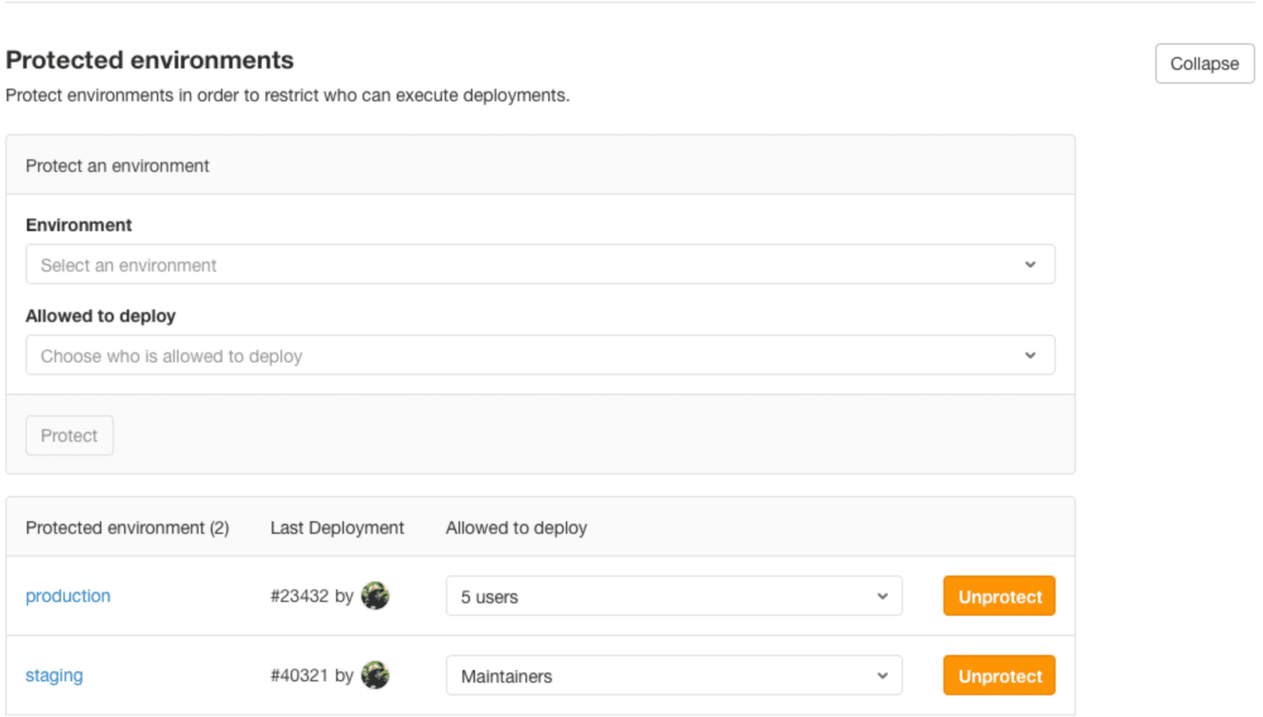
Interactive Web Terminal (11.3)



Limited to Kubernetes and Shell

https://docs.gitlab.com/ee/administration/integration/terminal.html

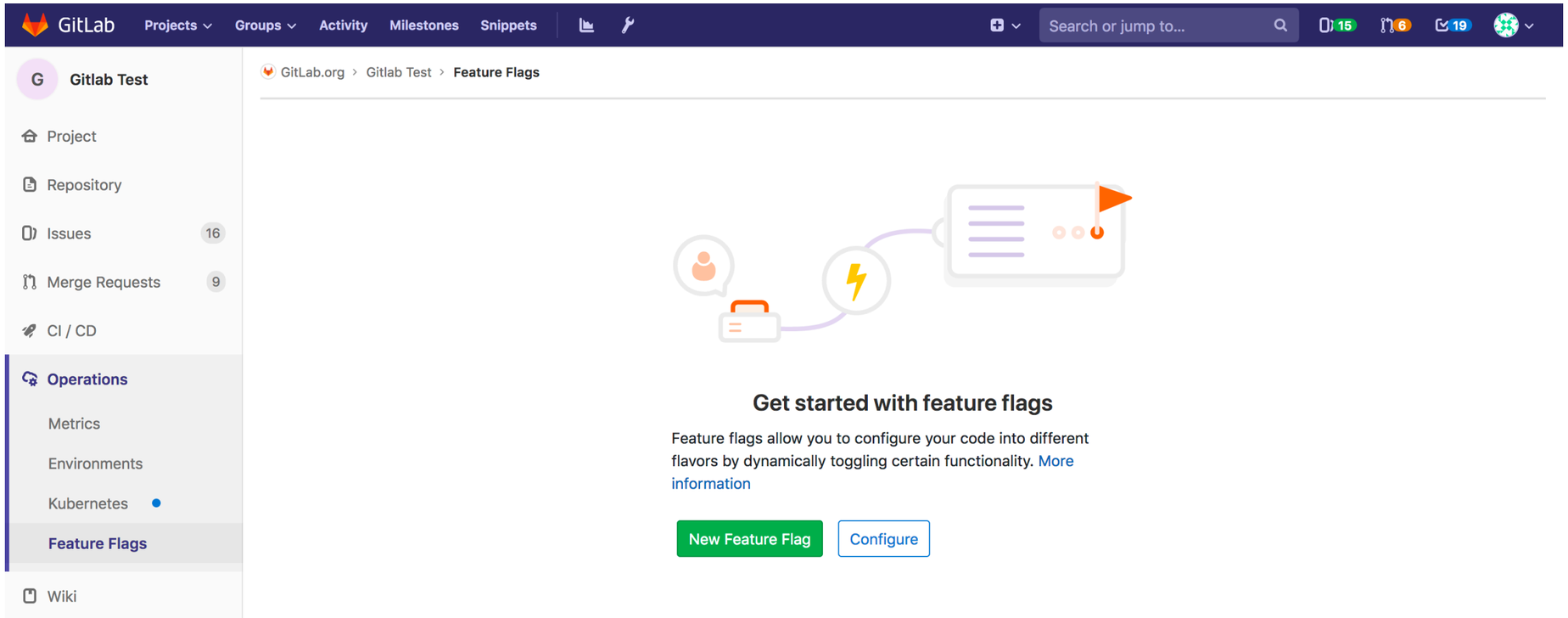
Protected Environments (11.3)



https://docs.gitlab.com/ee/ci/environments/protected_environments.html

Upcoming features

Feature Flags (11.4)



Provides Unleash-compatible interface

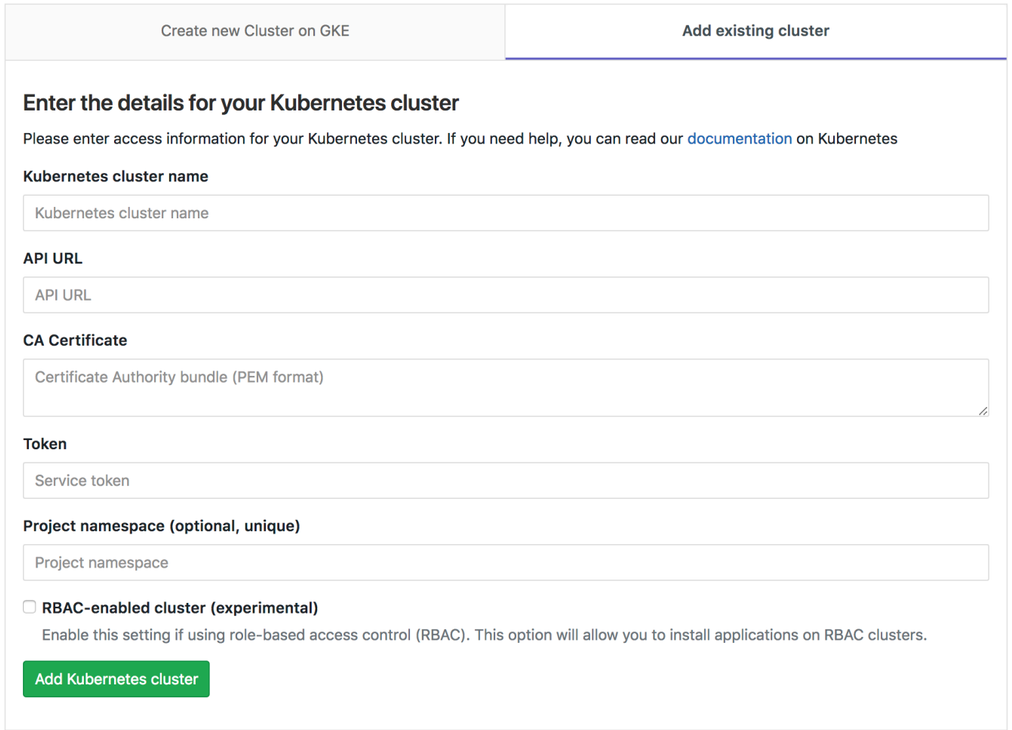
https://gitlab.com/gitlab-org/gitlab-ee/issues/779

Feature Flags (11.4)

```
func init() {
    unleash.Initialize(
        unleash.WithUrl("https://gitlab.com/api/v4/feature_flags/unleash/14"),
        unleash.WithInstanceId("29QmjsW6KngPR5JNPMWx"),
        unleash.WithAppName("production")
    )
}

func helloServer(w http.ResponseWriter, req *http.Request) {
    if unleash.IsEnabled("my_feature_name") {
        io.WriteString(w, "Feature enabled\n")
    } else {
        io.WriteString(w, "hello, world!\n")
    }
}
```

Kubernetes RBAC (11.4)



Support for Role-based access control

Auto DevOps RBAC (11.4)

RBAC will limit Kubernetes API access only to given namespace.

https://gitlab.com/gitlab-org/gitlab-ce/merge_requests/21867

Web Terminal (11.4)

1. Support for **Docker** executor,
2. **docker exec** run strategy for Runner (stretch).

https://gitlab.com/gitlab-org/gitlab-runner/issues/3467

Run jobs on changed files (11.4)

```
docker_build:
  only:
    changes:
      - Dockerfile
      - assets/*
```

The new branches workflow not yet supported:
we need Pipeline for Merge Requests

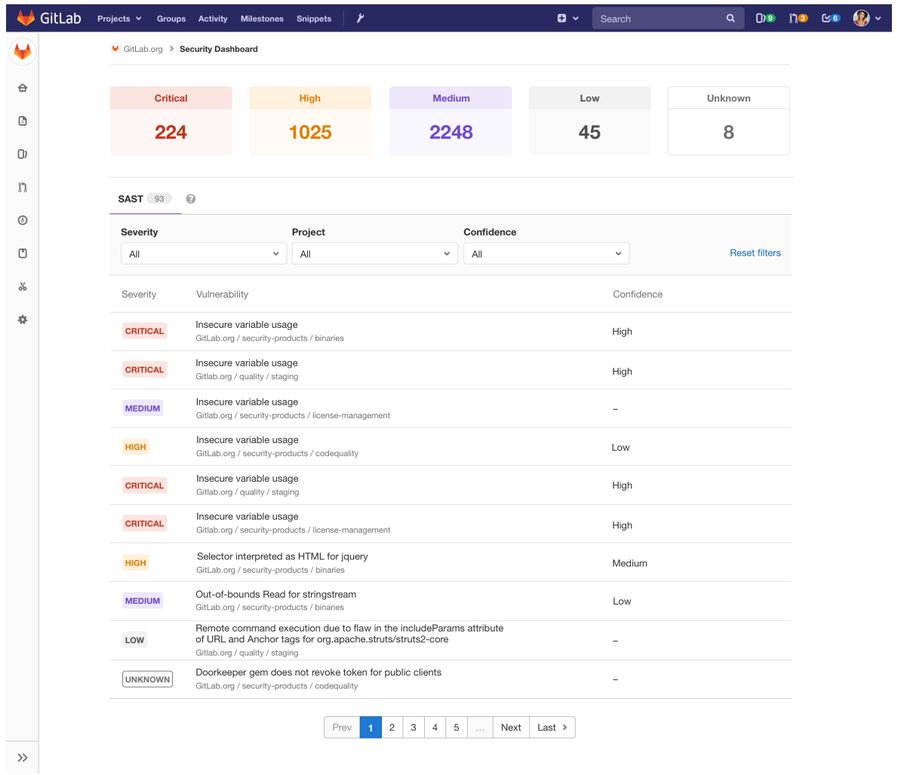
Delayed jobs (11.4)

```
rollout 10%:
  script: ...
  when: delayed
  start_in: 20 minutes
```

Ideal use-case Incremental Rollouts

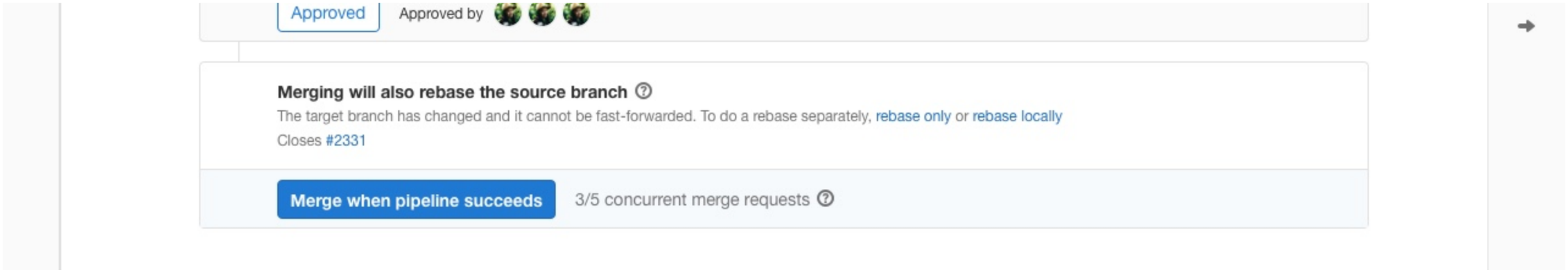
https://gitlab.com/gitlab-org/gitlab-ce/issues/51352

Group Security Dashboards (11.4)



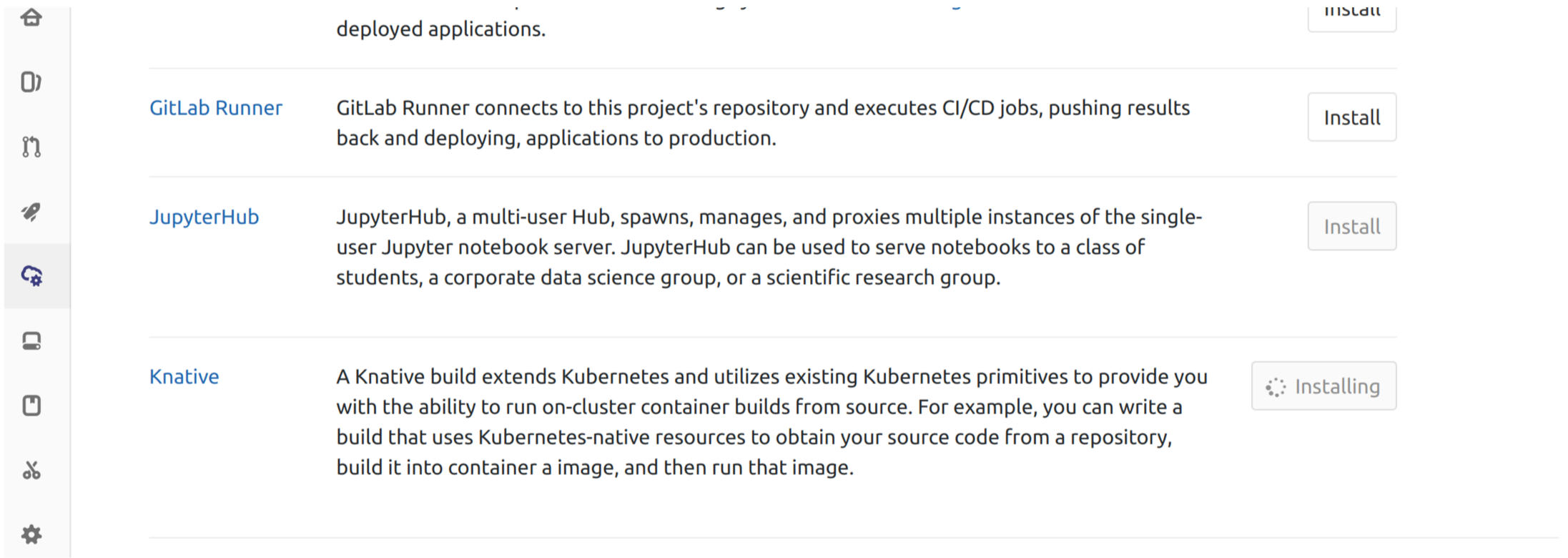
https://gitlab.com/gitlab-org/gitlab-ee/issues/6709

Merge Trains (11.5?)



https://gitlab.com/gitlab-org/gitlab-ee/issues/7380

Serverless (11.5?)



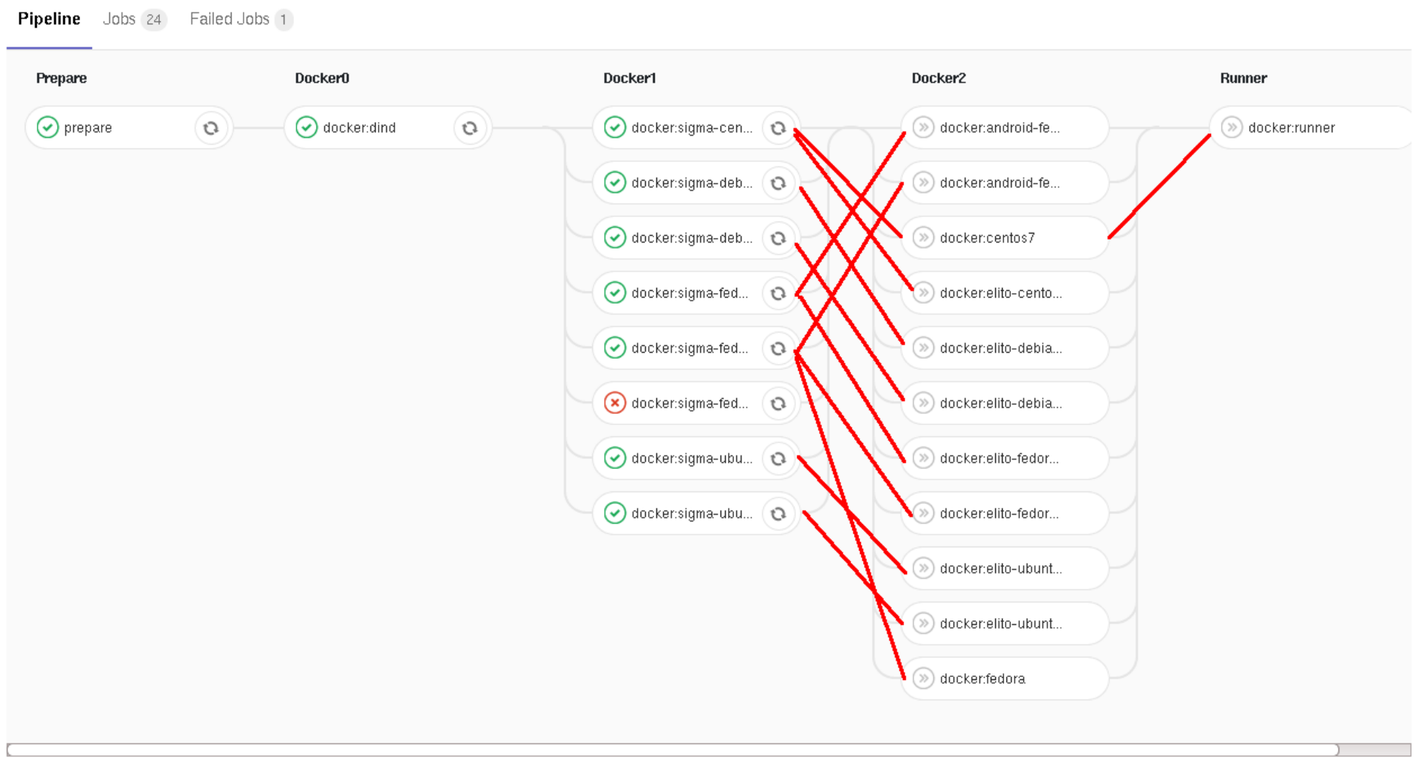
https://gitlab.com/gitlab-org/gitlab-ce/issues/43959

Knative (11.5?)

1. **Scale to zero**, request-driven compute model,
2. Cloud-native source to container orchestration (uses **kaniko**),
3. Universal subscription, delivery and management of **events**,
4. GitLab will add abstraction to provide **FaaS** (functions-as-a-service).

Auto DevOps on Knative? or **Auto Serverless**?

Direct acyclic graphs (??)



https://gitlab.com/gitlab-org/gitlab-ce/issues/47063

Manage	Plan	Create	Verify	Package	Release	Configure	Monitor	Secure
Code analytics Workflow Policies Product Design Management	Program Management Requirements Management Value Stream Management		System Testing Acceptance Testing (UAT) Usability Testing Compatibility Testing	NPM Registry Rubygems Registry	Feature flags Binary authorization	Serverless PaaS Chaos Engineering Runbooks	Tracing Error Tracking Incident Management Service Status Page Production Monitoring	Interactive Application Security Testing (IAST) Web Application Firewall (WAF) Runtime Application Self-Protection (RASP)

Thanks!

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