
CI/CD mit GitLab und AWS Codepipeline

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Why

Code sollte unter keinen Umständen von Hand auf die Zielsysteme geschoben werden.

- Wurden in nicht versionierten Dateien Änderungen vorgenommen?
 - kann jemand anderes Code ändern / builden und deployen? Ist der Ablauf “dokumentiert”?
 - Kommt der Entwickler überhaupt auf das Zielsystem?
-

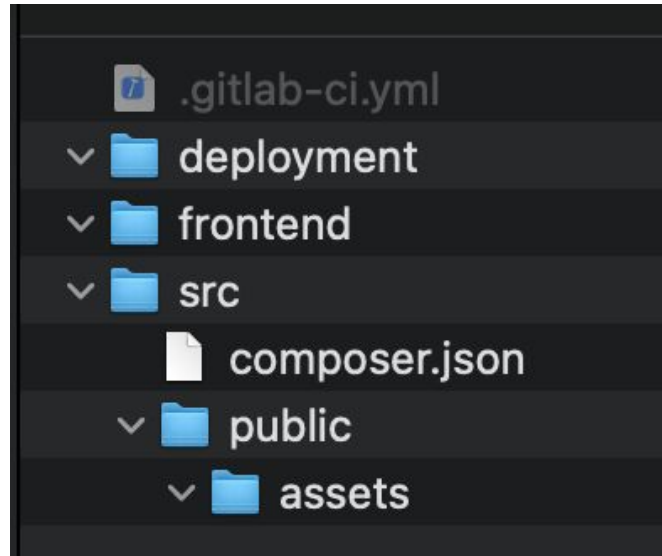
How - GitLab

Unterschiedliche Standard-Stages (ist erweiterbar):

- build
- test / lint
- deploy

→ Einfaches Hosting: SSH Zugang, Server benötigt kein Node, composer, keine Verbindung “nach außen” für Installation usw.

meine Ordnerstruktur (vereinfacht)



.gitlab-ci.yml und deploy.php

<https://gist.github.com/akiessling/9459c46a1de96a8ae3fc09c033bbf439>

- Production-Deployment möglichst mit manueller Komponente, z.B. release-Tag
 - Test-Deployments automatisiert über Branch
 - Deployment mit <https://deployer.org/> : Zero-Downtime, neuer Code-Stand wird gesymlinked. Wichtig: auf php-fpm Config achten oder opcache beim Deployment leeren, z.B. mit <https://github.com/gordalina/cachetool/>
-

- Build
- Pipelines**
- Jobs
- Pipeline editor
- Pipeline schedules
- Artifacts
- Secure
- Deploy
- Operate
- Monitor

 Passed ⌚ 00:02:00 📅 3 weeks ago	[62236] update dependencies #181896  12-lts  4177a4d6 		 
 Passed ⌚ 00:03:15 📅 3 weeks ago	[62236] configure default mail sender #181861  nextlive  531ea624 		  
 Passed ⌚ 00:01:59 📅 3 weeks ago	[62236] configure default mail sender #181860  12-lts  531ea624 		 
 Failed ⌚ 00:03:54 📅 3 weeks ago	[62236] configure nextlive deployment #181857  nextlive  910ee6a4 		  

🔍 Search or go to...

Project

Commits

Pipelines

👤 Manage >

📅 Plan >

</> Code >

🚀 Build >

🛡️ Secure >

🔄 Deploy >

🏠 Operate >

Environments

Kubernetes clusters

Terraform states

▼ nextlive

✔ Success Latest Deployed #186 ae586aee 🔄 Deployed 1 week ago

🌐 [62236] fix search constraints for publication search

Triggerer	Job	Branch
@andreas.kiessling	deploy-nextlive	nextlive

> nextstaging

▼ production

✔ Success Latest Deployed #176 58feb5e 🔄 Deployed 1 month ago

🌐 [64173] apply security update to 11.5.40

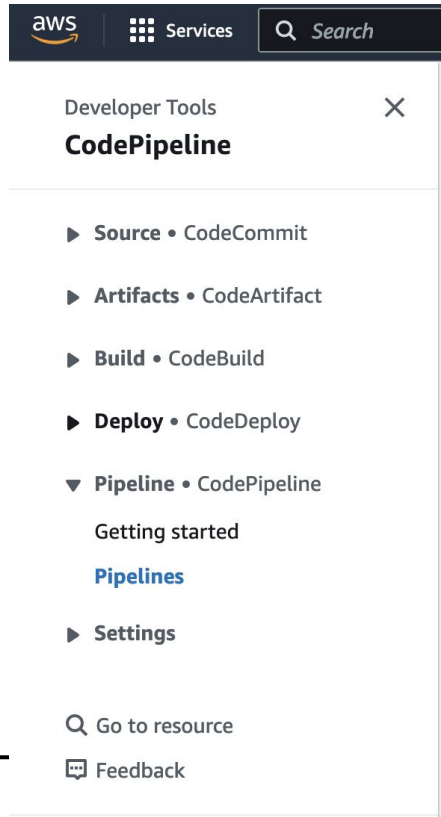
Triggerer	Job	Tags
@andreas.kiessling	API	releases/prod/1.4.2

AWS (Amazon Web Services)

High-Availability Setup

- Application Load Balancer (ALB)
 - mehrere Server zur Lastaufteilung (EC2), Auto Scaling Groups
 - zentrale Datenbank (RDS) mit Primary und Replica
 - zentraler Datenspeicher (EFS)
-

AWS CodePipeline



The image shows a screenshot of the AWS CodePipeline navigation menu. At the top, there is a dark header bar containing the AWS logo, a grid icon labeled 'Services', and a search box with the text 'Search'. Below the header, the menu is titled 'Developer Tools' with a close button (X) on the right. The main menu item is 'CodePipeline'. Underneath, there is a list of sub-items: 'Source • CodeCommit', 'Artifacts • CodeArtifact', 'Build • CodeBuild', 'Deploy • CodeDeploy', 'Pipeline • CodePipeline' (which is expanded to show 'Getting started', 'Pipelines', and 'Settings'), and 'Settings'. At the bottom of the menu, there are two options: 'Go to resource' with a magnifying glass icon and 'Feedback' with a speech bubble icon.

aws Services Search

Developer Tools X

CodePipeline

- ▶ Source • CodeCommit
- ▶ Artifacts • CodeArtifact
- ▶ Build • CodeBuild
- ▶ Deploy • CodeDeploy
- ▼ Pipeline • CodePipeline
 - Getting started
 - Pipelines**
 - ▶ Settings

Q Go to resource

Feedback

AWS Source

Edit action

Action name

Choose a name for your action

No more than 100 characters

Action provider

Repository name

Choose a repository that you have already created where you have pushed your source code.

Branch name

Choose a branch of the repository

Change detection options - *optional*

Choose a detection mode to automatically start your pipeline when a change occurs in the source code.

Amazon CloudWatch Events (recommended)
Use Amazon CloudWatch Events to automatically start my pipeline when a change occurs

AWS CodePipeline
Use AWS CodePipeline to check periodically for changes

Output artifact format - *optional*

Choose the output artifact format.

CodePipeline default
AWS CodePipeline uses the default zip format for artifacts in the pipeline. Does not include Git metadata about the repository.

Full clone
AWS CodePipeline passes metadata about the repository that allows subsequent actions to do a full Git clone. Only supported for AWS CodeBuild actions.

Variable namespace - *optional*

Choose a namespace for the output variables from this action. You must choose a namespace if you want to use the variables this action produces in your configuration. [Learn more](#)

Action provider

AWS CodeCommit



AWS CodeCommit

Amazon ECR

Amazon S3

Bitbucket

GitHub (via GitHub App)

GitHub (via OAuth app)

GitHub Enterprise Server

GitLab

GitLab self-managed

Test

AWS CodeBuild

AWS Device Farm

Add link...

AWS CodePipeline uses the default zip format for artifacts in the pipeline. Does not include Git metadata about the repository.

AWS CodePipeline passes metadata about the repository that allows subsequent actions to do a full Git clone. Only supported for AWS CodeBuild

AWS CodeBuild

Edit action

Action name

Choose a name for your action

No more than 100 characters

Action provider

Region

Input artifacts

Choose an input artifact for this action. [Learn more](#)

SourceArtifact ✕

Defined by: Source

No more than 100 characters

Project name

Choose a build project that you have already created in the AWS CodeBuild console. Or create a build project in the AWS CodeBuild console and then return to this task.

Environment variables - *optional*

Choose the key, value, and type for your CodeBuild environment variables. In the value field, you can reference variables generated by CodePipeline. [Learn more](#)

Name

Value

Type

qa

Plaintext

Remove

BUILD_BRANCH

qa

Plaintext

Remove

AWS CodeBuild

- Build wird über eigenes Docker Image erzeugt
 - Docker Image wird aus AWS Docker Repository geladen und über eine eigene Pipeline via CodeCommit verwaltet
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AWS CodeDeploy

- bestehende Requests werden noch verarbeitet
 - LoadBalancer nimmt Server aus Auto Scaling Group heraus
 - Applikation wird installiert
 - Server wird wieder in Auto Scaling Group eingehängt
 - nächster Server wird aktualisiert
 - verschiedene Szenarien möglich: OneAtATime, HalfAtATime, AllAtOnce, 2-at-once, Blue/Green
-

Event	Duration	Status
BeforeBlockTraffic	less than one second	✔ Succeeded
BlockTraffic	20 seconds	✔ Succeeded
AfterBlockTraffic	less than one second	✔ Succeeded
ApplicationStop	less than one second	✔ Succeeded
DownloadBundle	14 seconds	✔ Succeeded
BeforeInstall	9 seconds	✔ Succeeded
Install	23 seconds	✔ Succeeded
AfterInstall	14 seconds	✔ Succeeded
ApplicationStart	less than one second	✔ Succeeded
ValidateService	less than one second	✔ Succeeded
BeforeAllowTraffic	less than one second	✔ Succeeded
AllowTraffic	21 seconds	✔ Succeeded
AfterAllowTraffic	less than one second	✔ Succeeded

Deployment type

Choose how to deploy your application

In-place

Updates the instances in the deployment group with the latest application revisions. During a deployment, each instance will be briefly taken offline for its update

Blue/green

Replaces the instances in the deployment group with new instances and deploys the latest application revision to them. After instances in the replacement environment are registered with a load balancer, instances from the original environment are deregistered and can be terminated.

Deployment configuration

Choose from a list of default and custom deployment configurations. A deployment configuration defines how an application is deployed and the success or failure conditions for a deployment.

CodeDeployDefault.OneAtATime ▲

CodeDeployDefault.OneAtATime ✓

CodeDeployDefault.HalfAtATime

CodeDeployDefault.AllAtOnce

2-at-once

Select a load balancer to manage incoming traffic during the deployment

buildspec.yml und appspec.yml

- buildspec.yml: ähnlich Gitlab, erzeugt deploybares Artefakt
 - appspec.yml: Artefakt wird auf Server geladen und Script abgearbeitet
 - EC2 Server benötigt hierfür den CodeDeploy agent (<https://docs.aws.amazon.com/codedeploy/latest/userguide/codedeploy-agent.html>)
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