

CODING Continuous Deployment

Getting Started

Product Documentation





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Getting Started

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This document describes the basic operations in CODING Continuous Deployment.

Prerequisites

You must activate the CODING DevOps service for your Tencent Cloud account before you can use Coding project management.

Open Project

1. Log in to the CODING console and click Use Now to go to the CODING page.

2. On the Workspace homepage, click



on the left to go to the Continuous Deployment console.

Function Overview

CODING-CD is used to manage the project release, deployment, and delivery processes after build. It can seamlessly connect to upstream Git repositories and downstream artifact repositories to achieve automated deployment. Based on a stable technical architecture and Ops tools, it enables blue/green deployment, grayscale release (canary release), rolling release, and fast rollback.

The following Demo project shows how to use the CODING-CD console to release an application to a Tencent Cloud cluster.

Preparation

Configure the permissions required for operations in CODING-CD.

Prepare a Kubernetes cluster that is accessible to CODING-CD. Learn how to apply for Tencent Cloud Standard Clusters.



Import the sample code repository.

Prepare a Docker artifact repository. Learn how to use Docker Artifact Repositories in a project.

Procedure

Step 1. Obtain and associate a cloud account

Because Tencent Kubernetes Engine (TKE) is used, a deployed application is released to the cluster. The team account used in the example has been associated with the Tencent Cloud account in **Team Management** > **Service Integration**.

1. Click **Deployment Console** on the left of the homepage, and bind the Tencent Cloud account in **Cloud Accounts**. You can customize your cloud account name. After selecting a region, you will automatically get the corresponding cluster.

Console Application	Cloud Account Management CODING CD is based on cloud-native capabilities to manage t your cloud account on this page.View cloud account description Search by name Q	the deployment process, and can be easily and quickly deployed in Kuber in $\ensuremath{\mathcal{C}}$	netes, Ten Binding Cloud Accounts Cloud account category
Cloud Account	Account Name	Account Status	 (e) (b) (c) (c)
Host management	flaskapp Licensed CODING Docker	Failed D 27 Re-verify	TKE Kubernetes TercentCloud Cloud account name • Support upper and lower case, middle and underscore Please select a locale * Please select a locale * Please select TKE cluster • • Please select TKE cluster • • Auto-generate CODING Docker Repository Access Credentials O • Please select namespace • Allow continuous deployment to manage existing resources of the cluster • CK Cancel

2. Automatically generated artifact repository access credentials are stored in **Namespace**. You can create new credentials in the Tencent Cloud console.

Cloud Overview Pro	duct 👻					man	8 Q	-	14%	-	-	88-	
Container Service	← Cluster(Guangzhou)											YAML (Reso	Create urce
Overview	Basic Information	N	lamespace									Operat	ion Guide 🕑
Oluster	Node Management 🔻	Г	New									0	6.1
😟 Elastic Container 🛛 👻	Namespace	Ľ	New									4	·2 ×
Edge Cluster	Workload -		Name	Status	Description		Create Time			Action			
🔅 Service Mesh	Auto Scaling 🔹		default 🕞	Active			2021-07-27			Quota	Delete		
Application Center	Services and Routing						14:32:34			Management			
🛱 Application	Configuration		kube-node-lease	Active	-		2021-07-27 14:32:32			Quota Management	Delete		
Image Repository *	Authorization -						2021-07-27			Queta			
Application Market	Storage 👻		kube-public 🛅	Active	-		14:32:32			Management	Delete		
Ops Center	Component		kube-system	Active			2021-07-27			Quota	Delete		
Cluster Ops •	Log						14:32:32			management			
🔁 Cloud-Native Monitoring	5 mm		page 1								20 -	4	•
Container Image Service	Event												
∞ DevOps ⊠													- 0
🔳 Quick Start													

Step 2. Configure an application

1. After adding a cloud account, go to the deployment console and click **Create Application**. Then, enter the application name and select a deployment method.

Console Application	
Cloud Account: All Associated Project: All Sort by: Rev	Create Application
Cloud Account app Host management Cloud account: 0 Associated Project: 1 ■	Application Name * Fill In the name of the application, it cannot be changed a Deployment Method * Centre Content a description Content Cancel

2. Select **Deploy to Kubernetes Cluster** template, and then enter the name and description to create the application.

Console Application	C app C Status All V	Create a deployment process	Creation process Action
Host management	> image	Deploy the Helm application to the Kubernetes cluster Configure Bake (Menife Deploy (Mani Deploy (Mani Description	start up Elit ···
		Deploy Deployment and Service to Kubernetes cluster Please enter a descripti Configure Deployment Deploy Service	on
		Manual confirmation before deploying to a Kubernetes cluster Configure Manual confirm Bake (Manife Deploy (Mani. Confirm Cancel	
		Deploy Deployments and Services In parallel Configure Deployment Deploy Service	
		Deployment Deploy Service	_

Step 3. Initialize project

1. This step configures the code and artifact repositories involved in continuous deployment. In the **Code Repository** field, choose to import an external repository. Go to the sample repository and clone the repository address.

codingtest-cd			Log in sign up for free
k8sdemo / k8sDemo			Z clone
cument submit branch	Label		
* master v 🔒 / Enter	r to find files		
administrator Create a new file	nginx.yaml		last commit 2d2167098c 🗍 7months ago
gradle	administrator	first commit	1 year ago
k8s	administrator	Create a new file nginx.yaml	7 months ago
lib	administrator	first commit	1 year ago
src	administrator	v2: web api	1 year ago
] .gitignore	administrator	first commit	1 year ago
Dockerfile	administrator	docker	1 year ago
build.gradle	administrator	docker	1 year ago
gradlew	administrator	first commit	1 year ago
gradlew.bat	administrator	first commit	1 year ago
B	administrator	first commit	1 voor ogo

2. After the import, start to manage artifacts. Host the to-be-released Docker artifacts in the CODING artifact repository. For more information, see Docker Artifacts.

Operation	Pull	
Guide	Enter the following	pull information to generate the pull command:
Configure Credentials	Name:	python-flask-app
Pull	Version:	master-067ff4b6b3ae61f5d79b856dcc22ca25ee57c4c0
Mirror	Run the following c	command in the command line to pull.
Acceleration	docker pull St	ravBirds-docker.pkg.coding.net/coding-demo/python-demo/python-

3. After pushing the artifacts to the artifact repository, get the artifact pulling address and enter it as the image address in the code repository's /k8s/deployment.yaml file.



← k8sDemo - B	Growse Commit Branch Merge Request Version Compare Settings	C + Create Code Repository -
♠ k8sDemo	😵 master → 👘 Search File → k8s / deployment.yaml	紧 Clone
> 🧧 gradle/wrapper		
✓ 📁 k8s	File History 4 Code Comparison View By Line	🖉 Modify …
> 🖿 kustomize	Admin Update deployment.yaml	Last Committed 3c8baef8c6 🗊 At 9 months ago
deployment	deployment.yaml 502 Bytes	
	1 apiVersion: apps/v1	
service.yaml	3 metadata:	
> 🖿 lib	4 labels:	
> src	6 name: k8sdemo-deployment	
	7 namespace: cd-demo	
.gitignore	8 spec:	
	10 selector:	
	11 matchLabels:	
🗋 build.gradle	12 app: k8sdemo	
D	13 template:	
gradiew	15 labels:	
gradlew.bat	16 app: k8sdemo	
	17 spec:	
🖞 settings.gradle	18 imagePullSecrets:	
	19 – name: cooling-registry-cred-8064028	
	21 - image: 'codinatest-cd-docker.pkg.coding.net/k8sdemo/k8sdemo/k8s-demo'	
	22 name i k8sdemo	
	23 ports:	
	24 – containerPort: 8080	

4. Next, import the cloud account's imagePullSecrets to the code repository. Go to **Deployment Console** > **Cloud Account**, click "View Details", and copy the name.

Build Job	express 🛱 🗢 CODING	Shanghai Status Badge	Scheduled Trigger	🛛 Cache 🛛 🌣 Settings	Build Nov
My Stars System Source All Ungrouped More *					
Trigger: All Plan Source: Customize Search Q	Only Me 🔵 Filter: All 🗵				
	Status	Trigger Info	Time Information	Quick View	Oper ation
express-docker • ···	Build succeeded.	Manually triggered by Tester #7 \$* master ->- 0045b7e	8 minutes ago 54 seconds	n 🛛 🕄 🖉	
Suild succeeded.	Automatically cancelled (duplic ate version number)	Manually triggered by Tester #6 ₽ master -> 0045b7e	🟥 8 minutes ago 🕔 –	98 @ LJ	
Manually triggered by	Build succeeded.	Manually triggered by Tester #5 ₽ master → 0045b7e	8 minutes ago 53 seconds	10 C Z	
	Build image and push to CODI NG Docker AR / Aborted by	Manually triggered by Tester #4 \$? master -> 0045b7e	9 minutes ago 44 seconds	% o 1;	
	Build succeeded.	Manually triggered by Tester #3 0045b7e	aqo 10 minutes	% o 11 &	
	1–7. Total: 7.			Entries per pag	ge 15 👻 🚺 1

5. Paste the name in the deployment.yaml file of the code repository. Make sure that the namespace matches the **Namespace** specified above.



🔶 k8sDemo 👻 🛛	Growse Commit Branch Merge Request Version Compare Settings	C + Create Code Repository -
♠ k8sDemo	😵 master 👻 🔺 Search File 🗸 k8s / deployment.yaml	紧 Clone
> 📒 gradle/wrapper		
V ⊨ k0a	File History 4 Code Comparison View By Line	🗹 Modify 🚥
- K 05		
> 📒 kustomize	Admin Update deployment.yaml	Last Committed 3c8baef8c6 🗊 At 9 months ago
deployment	deployment.yaml 502 Bytes	
Character and	1 apiVersion: apps/v1	
service.yami	3 metadata:	
> 📕 lib	4 labels:	
N 🖿	5 app: k8sdemo	
> Src	7 namespace: cd-demo	
🗋 .gitignore	8 spec:	
Deckorfile	9 replicas: 1 10 selector:	
Dockernie	11 matchLabels:	
build.gradle	12 app: k8sdemo	
Characteria (13 template:	
gradiew	15 labels:	
🗋 gradlew.bat	16 app: k8sdemo	
	17 spec:	
settings.gradle	19 - name: coding-registry-cred-8064028	
	20 containers:	
	21 - image: 'codingtest-cd-docker.pkg.coding.net/k8sdemo/k8s-demo'	
	ZZ name: k8sdemo	
	23 ports: 24 – containerPort: 8080	

6. It must also match the namespace in the service.yaml file at the same level.

← k8sDemo - B	rowse Commit Branch Merge Request Version Compare Settings
k8sDemogradle/wrapper	
 k8s kustomize 	Admin Update service.yaml
🗋 deployment	service.yaml 181 Bytes 1 apiVersion: v1
🗋 service.yaml	2 kind: Service 3 metadata:
> 📕 lib	4 name: k8sdemo 5 namespace: cd-demo
> isrc	6 spec: 7 selector:
] .gitignore	8 app: k8sdemo 9 ports:
	10 - port: 8080 11 targetPort: 8080
build.gradle	12 type: LoadBalancer 13
∐ gradlew	
∐ gradlew.bat	
☐ settings.gradle	

Step 4. Configure deployment pipeline

Go to the Deployment Pipeline Configuration page to set:

Pipeline execution options (in this demo, all the default values are retained).

Artifacts needed in the deployment and service deployment stages.



Manual or automatic trigger.

1. Configure the deployment (Manifest) stage. For basic settings, select the cloud account bound, select **CODING Code Repository** for "Manifest Source", enter the relevant path, and choose to automatically get the image version configuration.

- image 🖉		6	Basic configuration	
+		_6	Execution options Automatic triggers Launch Parameters Notifications	Descripti
↓ ↑ Basic configuration	Deploy Deployment Stage type: Deploy (Manifest)	Deploy Service Stage type: Deploy (Manifest)	~ Automatic triggers	
Artifacts			✓ CODING docker trigger	۵
•			Trigger Enable Switch	
			Trigger Type	
			CODING docker trigger	Ť
			CCR Trigger	
			TCR trigger	- 1
			TCR Helm trigger	- 1
			Git trigger	- 1
			webhook trigger	- 1
			CODING Generic trigger	
			Versions ③	
			Please enter the version	

2. Configure the service deployment stage by following the same steps as above. You also need to select the file path of the k8s/service.yaml file.

Step 5. Configure the trigger

1. After configuring the deployment stage, you can select "Auto Trigger" or "Manually Submit Release Order" as the deployment method.

Auto Trigger

Manually Submit Release Order

Click the trigger type in **Basic Configuration** and select Docker repository trigger. When a developer updates the code repository and uses CI to package and push the image to the artifact repository, the updates of the Docker image version will automatically trigger the deployment process and release the application to the Kubernetes (TKE) cluster. Then, you can check whether the application has been successfully released in the infrastructure page.

► image 🗶	Basic configuration	
· · · · · · · · · · · · · · · · · · ·	Execution options Automatic triggers Launch Parameters Notifications	Descript
Image: Stage type: Deploy Deploy (Manifest)	Deploy Service Stage type: Deploy (Manifest)	
Artifacts	✓ CODING docker trigger	۵
	Trigger Enable Switch	
	Trigger Type	
	CODING docker trigger	~
	CODING docker trigger	
	TCR trigger	
	TCR Helm trigger	
	Git trigger	
	webhook trigger Cron	
	CODING Generic trigger	
	Versions ⑦	
	Please enter the version	

To trigger the deployment process by manually submitting a release order, associate the **application** (such as flaskapp in this example) with a project. Search for the project to be associated in the **App List** in the deployment console.

Cloud Account: All - A	ssociated Project: All Sort	by: Reverse update ti	me - Search	Q	
app 🚍			demo 🚍		
Cloud account: 0	Associated Project: 1	8 A Ø	Cloud account: 0	Associated Project: 1	8 A ¢

2. After association, click **Continuous Deployment** > **Kubernetes** in the project to manually submit a release order.

app - Posting Order Cluster Deployment Process	Help Documentation New Release
tuis: All + Created by All + Denloyment Process: All + Release time: Last tan days + Searc Enter Leavenrie to searc	Quick Release
h:	New Release
No release order at the moment, You can click the button in the upper right corner Add Release Order	
No release order at the moment, You can click the button in the upper right corner Add Release Order	
No release order at the moment, You can click the button in the upper right corner Add Release Order	

Step 6. Complete the release

1. After a successful release, you can view the released artifacts, launch parameters, and stage execution details.

← Success		Deployment
Basic Information	Stage	Status Success Start Time 2021-07-27 19:53:03 Time Consuming
 A ain Account 2021-07-27 19:53:02 25s 	Deployment Time Consuming: 19s	Stage Details Status Script Name Start Time Time Consuming
Artificial Product StrayBirds-docker.pk g.coding.net/flask-d emo/cd-demo/hello -world latest		Success Deployment 2021-07-27 19:53:03 19 s DeployStatus Task Status Artifact Status Deployment Nent View Yaml content, jump to view resource details
 k8s/deployment.yaml master k8s/service.yaml master 		ScalingReplicaSet 3 minutes ago Scaled up replica set byment-994479977 to 1

2. To view the operating status of a resource in the cluster, click the workload under **Cluster** to view details (such as workload's pod instances and logs).



← cd–demo → Release Cluster Deploy Order	ment process	
Workload Service Cloud : All V Namespace	: All 🔻 Type : All 👻 Status : All 💌	deployment-994479977
Name	Namespace Cloud Account	Basic Information
v deploymen -deployment	cd–demo Go	Creation Time 2021–07–27 19:53:05 Cloud Account Go
V001 StrayBirds-docker.pkg.coding.net/flask-demo	o/cd-demo/hello-world:latest 🛛 🖧 Load E	Resource Type replicaSet Controller deployme eployment
		Image
		eq:strayBirds-docker.pkg.coding.net/flask-demo/cd-demo/hello-world: latest @
		Event
		All Setus: All Cloud Account Go Basic Information Creation Time 2021-07-27 19:53:05 Cloud Account Go Go Namespace cd-demo vorldt:latest Load E Resource Type replicaSet Controller deployme eployment Image StrayBirds-docker.pkg.coding.net/flask-demo/cd-demo/hello-world:latest ① Event 1 x Succession - Before Created pod: All Created pod: - deployment-994479977-nmkdx
	-deployment cd-demo Go rayBirds-docker.pkg.coding.net/flask-demo/cd-demo/hello-world:latest ♣ Load E Resource T Controller Image StrayBird Event 1 x Suc - Before Created	- Before Created pod: -deployment-994479977-nmkdx
		LABELS
		арр
		app
		pod

3. View workload in Tencent Kubernetes Engine.

Container Service	- Cluster(Guangzhou)								YAML Crea Resource	nt e
Overview	Basic Information		Deployment							Operation G	G
Elastic Container Y	Node Management	*	New Monitor			Namespace cd-demo 💌				Q ¢	+ 2
Carlinge Cluster	Workload	-	Name	Labels	Selector	Number of running/expected pods	Request/Limits	Action			
Application Center	DeploymentStatefulSet		-	80-10-00-0. L	-	1/1	CPU : Unlimited / Unlimited RAM : Unlimited	Update the number of PODs	Update POD configuration	More 🔻	
중 Application 회 Image Repository 👻	DaemonSetJob		page 1				/ Unlimited		20 👻	4	
Application Market	 CronJob Auto Scaling 	*									
ps Center 2 Cluster Ops 🛛 👻	Services and Routing	-									
Cloud-Native Monitoring	Configuration Management Authorization	*									
Container Image Service	Management Storage	Ŧ									
Quick Start	Component Management										
	Log Event										