

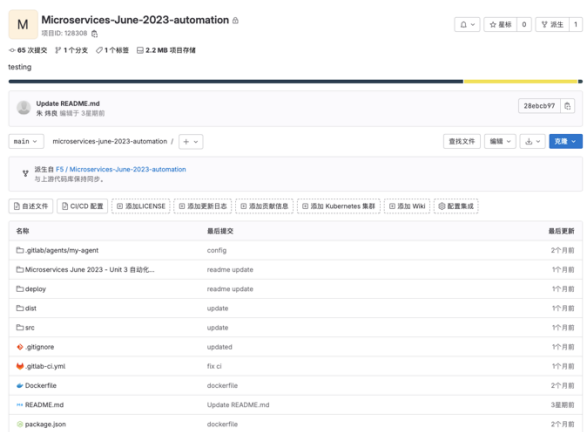
利用 Docker、Kubernetes 和 Gitlab 实现微服务自动化部署和 CI/CD

准备工作

```
[root@master microservices-june-2023-automation]# kubectl get nodes
NAME        STATUS    ROLES    AGE   VERSION
master      Ready     control-plane  78d   v1.25.3
node1       Ready     <none>    78d   v1.25.3
[root@master microservices-june-2023-automation]# helm version
version.BuildInfo{Version:"v3.7.1", GitCommit:"1d11fcb5d3f3bf00db6fe31b8412839a96b3dc4", GitTreeState:"clean", GoVersion:"go1.16.9"}
[root@master microservices-june-2023-automation]# git version
git version 1.8.3.1
[root@master microservices-june-2023-automation]# node -v
v16.18.1
[root@master microservices-june-2023-automation]#
```

挑战 1: 安装 CI/CD 环境

1 创建分支



```
(root@master microservices-june-2023-automation)# git branch
* main
(root@master microservices-june-2023-automation)#
```

2 克隆到本地

```
(root@master microservices-june-2023-automation)# tree .
.
├── deploy
│   └── xc-simple-login.yaml
├── dist
│   ├── about.5a214882.css
│   ├── app.ec22f811.css
│   ├── img
│   │   └── star.f1f8d3aa.jpg
│   └── index.html
├── js
│   ├── about.1b94e2d1.js
│   ├── about.1b94e2d1.js.map
│   ├── app.6b36338a.js
│   ├── app.6b36338a.js.map
│   ├── chunk-vendors.09e709ed.js
│   └── chunk-vendors.09e709ed.js.map
├── Dockerfile
├── Microservices June 2023 - Unit 3
│   ├── Untitled.18.png
│   ├── Untitled.1.png
│   ├── Untitled.2.png
│   ├── Untitled.3.png
│   ├── Untitled.4.png
│   ├── Untitled.5.png
│   ├── Untitled.6.png
│   ├── Untitled.7.png
│   ├── Untitled.8.png
│   ├── Untitled.9.png
│   └── Untitled.png
├── package.json
├── README.md
├── src
│   ├── App.vue
│   ├── assets
│   │   ├── rs-logo-rgb.png
│   │   ├── girl.jpg
│   │   ├── logo-lock.png
│   │   ├── M2B00-white-type-RGB.png
│   │   └── star.jpg
│   ├── components
│   │   └── HelloWorld.vue
│   ├── main.js
│   ├── router
│   └── index.js
└── views
    ├── About.vue
    ├── Home.vue
    ├── Login.vue
    └── Secure.vue
```

挑战 2 – 配置 Agent Config

检查 agent 的部署情况

```
[root@master microservices-june-2023-automation]# helm list -A
```

NAME	NAMESPACE	REVISION	UPDATED	STATUS	CHART	APP VERSION
istio-base	istio-system	1	2023-05-24 10:31:07.241773461 +0800 CST	deployed	base-1.17.2	1.17.2
istio-ingressgateway	istio-ingress	1	2023-05-24 10:38:03.125542404 +0800 CST	deployed	gateway-1.17.2	1.17.2
istiod	istio-system	1	2023-05-24 10:31:53.203545327 +0800 CST	deployed	istiod-1.17.2	1.17.2
my-agent	gitlab-agent-my-agent	1	2023-07-05 15:38:03.637070447 +0800 CST	deployed	gitlab-agent-1.16.0	v16.1.3

```
[root@master microservices-june-2023-automation]#
```

概览

项目概览

学习 GitLab

已部署

议题

合并请求

管理

计划

代码

test - Microservices-June-2023-automation - Kubernetes

代理

告诉我们您的想法
我们想要了解您对 GitLab Agent 的想法。
提供反馈

名称	连接状态	最后一次联系	版本	Agent ID	配置
my-agent	已连接	刚刚	16.1.3	914	gitlab/agents/my-agent

检查 deploy, service, pod 的启动情况

```
[root@master microservices-june-2023-automation]# kubectl get all -A
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
default	pod/app-server-canary-5bc7896f94-wvjgx	1/1	Running	1 (45d ago)	51d
default	pod/app-server-stable-6768dd6fb-hrd8s	1/1	Running	1 (45d ago)	51d
default	pod/details-v1-5ff6b64f7-rzjtk	2/2	Running	0	27d
default	pod/f5-hello-world-web-c955749dc-hgj94	2/2	Running	0	16d
default	pod/f5-hello-world-web-c955749dc-xg55k	2/2	Running	0	16d
default	pod/loki-0	0/2	Pending	0	43d
default	pod/my-nginx-dd5b4b7dd-z88g2	1/1	Running	2 (45d ago)	56d
default	pod/nginx-deployment-76d6c9b8c-js29l	2/2	Running	0	34d
default	pod/nginx-v1-76c4795866-6vkhb	1/1	Running	2 (45d ago)	52d
default	pod/nginx-v1-76c4795866-s6dxk	1/1	Running	2 (45d ago)	52d
default	pod/nginx-v2-788c7db6d9-2l66c	1/1	Running	2 (45d ago)	52d
default	pod/nginx-v2-788c7db6d9-bk6fw	1/1	Running	2 (45d ago)	52d
default	pod/production-846769889f-2846h	1/1	Running	1 (45d ago)	51d
default	pod/productpage-v1-979d4d9fc-bvr6b	2/2	Running	0	27d
default	pod/ratings-v1-5f9699cfd-f-j4b6m	2/2	Running	0	27d
default	pod/reviews-v1-569db879f5-ctk8w	2/2	Running	0	27d
default	pod/reviews-v2-65c4dc6fdc-bw8vw	2/2	Running	0	27d
default	pod/reviews-v3-c9c4fb987-gk7gd	2/2	Running	0	27d
default	pod/tea-68bb484dcd-8mzr2	1/1	Running	2 (45d ago)	55d
default	pod/tea-68bb484dcd-zxsfw	1/1	Running	2 (45d ago)	55d
default	pod/xc-simple-login-84b78ccd76-bp72m	2/2	Running	0	93s
gitlab-agent-my-agent	pod/my-agent-gitlab-agent-v1-676d95f45b-nzq7p	1/1	Running	0	23h
ingress-nginx	pod/ingress-nginx-admission-create-2kjzg	0/1	Completed	0	56d
ingress-nginx	pod/ingress-nginx-admission-patch-vjfgn	0/1	Completed	0	56d
ingress-nginx	pod/ingress-nginx-controller-q65vs	1/1	Running	2 (45d ago)	56d
istio-system	pod/grafana-5f98b97b64-tdwcs	1/1	Running	0	43d
istio-system	pod/istio-egressgateway-85649899f8-959n4	1/1	Running	0	43d
istio-system	pod/istio-ingressgateway-f56888458-zxtzl	1/1	Running	0	43d
istio-system	pod/istiod-64848b6c78-xtl4f	1/1	Running	0	43d
istio-system	pod/jaeger-76cd7c7566-tjbv4	1/1	Running	0	43d
istio-system	pod/kiali-7799445c94-2rhn6	1/1	Running	0	43d
istio-system	pod/prometheus-67599c8d5c-mhk9f	2/2	Running	0	43d
kube-system	pod/calico-kube-controllers-798cc86c47-8w9gt	1/1	Running	4 (45d ago)	78d
kube-system	pod/calico-node-7m9xd	1/1	Running	4 (45d ago)	78d
kube-system	pod/calico-node-mr5xj	1/1	Running	4 (45d ago)	78d
kube-system	pod/coredns-c676cc86f-nph4v	1/1	Running	4 (45d ago)	78d
kube-system	pod/coredns-c676cc86f-wpnv6	1/1	Running	4 (45d ago)	78d
kube-system	pod/etcd-master	1/1	Running	4 (45d ago)	78d
kube-system	pod/k8s-bigip-ctlr-595c596956-t6lp7	1/1	Running	4 (45d ago)	49d

挑战 3 – 配置 CI

自我检查：

- 1. 检查上面 pipeline 截图的 2 个 stage 都是绿色的✅状态

test > Microservices-June-2023-automation > 流水线 > #1347377

init

✅ 已通过

Johnny 提交 d4d82cfc 触发了流水线 7分钟前

对于 main

最新 @ 2 个作业 1.37 1分 22秒, queued for 0 seconds

流水线

依赖关系图

作业 2

测试 0

package

deploy

✅ docker-build

🔄

✅ deploy-job

🔄

test > Microservices-June-2023-automation > 作业 > #6378014

搜索作业日志

105 #5 DONE 8.9s

106 #6 [2/2] COPY dist/ /usr/share/nginx/html/

107 #6 DONE 0.6s

108 #7 exporting to image

109 #7 exporting layers 8.8s done

110 #7 writing image sha256:51fb358539cb538c59c1c92587149772b62ba0e632897ecd16794684fb53442a done

111 #7 naming to registry.jihuLab.com/test4451826/microservices-june-2023-automation done

112 #7 DONE 0.8s

113 WARNING: buildx: git was not found in the system. Current commit information was not captured by the build

114 \$ docker push "\$CI_REGISTRY_IMAGE:\$tag"

115 Using default tag: latest

116 The push refers to repository [registry.jihuLab.com/test4451826/microservices-june-2023-automation]

117 b9ba4280b1fa: Preparing

118 3c9d84c9ebd5: Preparing

119 434c6a715c30: Preparing

120 9fdfd12b85b: Preparing

121 f36897eea34d: Preparing

122 1998c5cd2230: Preparing

123 b821d93f6666: Preparing

124 24839d45ca45: Preparing

125 1998c5cd2230: Waiting

126 b821d93f6666: Waiting

127 24839d45ca45: Waiting

128 f36897eea34d: Layer already exists

129 3c9d84c9ebd5: Layer already exists

130 434c6a715c30: Layer already exists

131 9fdfd12b85b: Layer already exists

132 1998c5cd2230: Layer already exists

133 b821d93f6666: Layer already exists

134 24839d45ca45: Layer already exists

135 b9ba4280b1fa: Pushed

136 latest: digest: sha256:375adfbac7fa0bd46cae140ddfb71f1cc149a04933f12bfd1d2369e42f18f3 size: 1988

137 Cleaning up project directory and file based variables

140 Job succeeded

docker-build

时长: 1分 1秒

已完成: 8分钟前

队列中: 0秒

超时: 1h (来自 project)

Runner: #3582 (eaY5SYFxz) saas-shared-runner-manager-2

提交 d4d82cfc

init

✅ 对于 main 的流水线 #1347377

package

→ docker-build

命令查看 pod 的状态

```
[root@master microservices-june-2023-automation]# kubectl get pod
```

NAME	READY	STATUS	RESTARTS	AGE
app-server-canary-5bc7896f94-wvjgx	1/1	Running	1 (45d ago)	51d
app-server-stable-6768dd6fb-hrd8s	1/1	Running	1 (45d ago)	51d
details-v1-5ffd6b64f7-rzjtk	2/2	Running	0	27d
f5-hello-world-web-c955749dc-hgj94	2/2	Running	0	16d
f5-hello-world-web-c955749dc-xg55k	2/2	Running	0	16d
loki-0	0/2	Pending	0	43d
my-nginx-dd5b4b7dd-z88g2	1/1	Running	2 (45d ago)	56d
nginx-deployment-76d6c9b8c-js29l	2/2	Running	0	34d
nginx-v1-76c4795866-6vkhb	1/1	Running	2 (45d ago)	52d
nginx-v1-76c4795866-s6dxk	1/1	Running	2 (45d ago)	52d
nginx-v2-788c7db6d9-2l66c	1/1	Running	2 (45d ago)	52d
nginx-v2-788c7db6d9-bk6fw	1/1	Running	2 (45d ago)	52d
production-846769889f-2846h	1/1	Running	1 (45d ago)	51d
productpage-v1-979d4d9fc-bvr6b	2/2	Running	0	27d
ratings-v1-5f9699cfd-f-j4b6m	2/2	Running	0	27d
reviews-v1-569db879f5-ctk8w	2/2	Running	0	27d
reviews-v2-65c4dc6fdc-bw8vw	2/2	Running	0	27d
reviews-v3-c9c4fb987-gk7gd	2/2	Running	0	27d
tea-68bb484dcd-8mzr2	1/1	Running	2 (45d ago)	55d
tea-68bb484dcd-zxsfw	1/1	Running	2 (45d ago)	55d
xc-simple-login-84b78ccd76-bp72m	2/2	Running	0	11m

```
[root@master microservices-june-2023-automation]#
```

2. 检查本地能够打开网页

