

# Kubectl AI

Kubectl AI 是一个可以生成 OpenAI GPT 模型和 Kubernetes manifest YAML 文件的工具。Kubectl AI 可以在 Github 上找到。

[Kubectl AI Github](#)

本文档将介绍如何安装 Kubectl AI，并演示如何使用它来生成 Kubernetes manifest 文件。

## 安装

Kubectl AI 可以通过 Homebrew 或 Krew 来安装。

Krew 是一个 Kubernetes 插件管理器，可以通过 [Installing Krew](#) 来安装。

本文档将介绍如何使用 Krew 来安装 Kubectl AI。

本文档将介绍如何使用 Git 来安装 Kubectl AI。

```
# Red Hat 安装 git
dnf install git

# Ubuntu 安装 git (root 用户)
apt install git
```

本文档将介绍如何使用 Krew 来安装 Kubectl AI。

```
(
  set -x; cd "$(mktemp -d)" &&
  OS="$(uname | tr '[:upper:]' '[:lower:]')" &&
  ARCH="$(uname -m | sed -e 's/x86_64/amd64/' -e 's/(arm|aarch64)/\1/' -e 's/aarch64/arm64/' )" &&
  KREW="krew-${OS}_${ARCH}" &&
  curl -fsSLO "https://github.com/kubernetes-sigs/krew/releases/latest/download/${KREW}.tar.gz" &&
```

```

tar zxvf "${KREW}.tar.gz" &&
./"${KREW}" install krew
)

# 检查安装
++ mktemp -d
+ cd /tmp/tmp.sQZg2NfgQ0
++ uname
++ tr '[:upper:]' '[:lower:]'
+ OS=linux
++ uname -m
++ sed -e s/x86_64/amd64/ -e 's/\(arm\)\(64\)\{0,1\}/aarch64/' -e 's/aarch64$/arm64/'
+ ARCH=amd64
+ KREW=krew-linux_amd64
+ curl -fsSLO https://github.com/kubernetes-sigs/krew/releases/latest/download/krew-linux_amd64.tar.gz
+ tar zxvf krew-linux_amd64.tar.gz
./LICENSE
./krew-linux_amd64
+ ./krew-linux_amd64 install krew
Adding "default" plugin index from https://github.com/kubernetes-sigs/krew-index.git.
Updated the local copy of plugin index.
Installing plugin: krew
Installed plugin: krew
\
| Use this plugin:
| kubectl krew
| Documentation:
| https://krew.sigs.k8s.io/
| Caveats:
| \
| | krew is now installed! To start using kubectl plugins, you need to add
| | krew's installation directory to your PATH:
| |
| | * macOS/Linux:
| |   - Add the following to your ~/.bashrc or ~/.zshrc:
| |     export PATH="${KREW_ROOT:-$HOME/.krew}/bin:$PATH"
| |   - Restart your shell.
| |
| | * Windows: Add %USERPROFILE%\krew\bin to your PATH environment variable
| |

```

```
| | To list krew commands and to get help, run:
| | $ kubectl krew
| | For a full list of available plugins, run:
| | $ kubectl krew search
| |
| | You can find documentation at
| | https://krew.sigs.k8s.io/docs/user-guide/quickstart/.
| /
/
```

Install Krew on Linux or macOS by adding Krew to your bash Shell PATH.

```
# Add Krew to your PATH
export PATH="${KREW_ROOT:-$HOME/.krew}/bin:$PATH"
```

Open a new Shell and run `source ~/.bashrc` to reload your Shell configuration. Krew will be available in your PATH.

```
kubectl krew
```

krew is the kubectl plugin manager.

Krew allows you to install and manage kubectl plugins. To install Krew index, run `kubectl ai`.

```
# index Krew
# Krew
kubectl krew index add kubectl-ai https://github.com/sozercan/kubectl-ai
```

WARNING: You have added a new index from "https://github.com/sozercan/kubectl-ai"  
The plugins in this index are not audited for security by the Krew maintainers.  
Install them at your own risk.

Install Krew on Linux or macOS by adding Krew to your bash Shell PATH.

```
kubectl krew install kubectl-ai/kubectl-ai
```

Updated the local copy of plugin index.

Updated the local copy of plugin index "kubectl-ai".

Installing plugin: kubectl-ai

Installed plugin: kubectl-ai

\

| Use this plugin:

| `kubectl kubectl-ai`

| Caveats:

| \

| | This plugin requires an OpenAI key.

| /

/

## ❏ ❏

❏ `kubectl AI` ❏ ❏ ❏, ❏ ❏ ❏ OpenAI API❏ ❏ ❏ ❏.

❏ ❏ ❏ ❏ ❏ ❏. ❏ ❏ ❏ ❏ ❏ ❏.

```
export OPENAI_API_KEY=<OpenAI ❏>
```

❏❏ OpenAI GPT ❏❏ ❏ ❏ ❏. ❏❏❏❏ `gpt-3.5-turbo-0301` ❏ ❏ ❏ ❏.

```
export OPENAI_DEPLOYMENT_NAME=<OpenAI GPT ❏ ❏>
```

❏❏❏ ❏ ❏❏ ❏❏❏:

- `code-davinci-002`
- `text-davinci-003`
- `gpt-3.5-turbo`
- `gpt-3.5-turbo-0301` (default)
- `gpt-4-0314`
- `gpt-4-32k-0314`

❏ `kubectl AI`❏ ❏ ❏ ❏ ❏❏❏ ❏❏❏ ❏ ❏❏.

❏❏❏ ❏ ❏❏ ❏❏❏❏ ❏ ❏❏

```
# 创建 nginx 部署
```

```
kubectll kubectl-ai "create an nginx deployment with 3 replicas"
```

```
? Attempting to apply the following manifest:
```

```
apiVersion: apps/v1
```

```
kind: Deployment
```

```
metadata:
```

```
  name: nginx-deployment
```

```
spec:
```

```
  replicas: 3
```

```
  selector:
```

```
    matchLabels:
```

```
      app: nginx
```

```
  template:
```

```
    metadata:
```

```
      labels:
```

```
        app: nginx
```

```
    spec:
```

```
      containers:
```

```
        - name: nginx
```

```
          image: nginx:1.7.9
```

```
          ports:
```

```
            - containerPort: 80
```

```
Use the arrow keys to navigate: ↓ ↑ → ←
```

```
? Would you like to apply this? [Reprompt/Apply/Don't Apply]:
```

```
+   Reprompt
```

```
  ▶ Apply
```

```
    Don't Apply
```

```
创建 nginx 部署 在 部署 YAML 中 将 副本数 从 3 改为 2 并 使用 最新的 nginx 镜像 并 添加 提示 "Reprompt" 以 防止 误操作
```

```
# replica 2 使用 latest nginx 镜像 并 减少副本数
```

```
Reprompt: Use the latest nginx image and reduce the replica count to 2
```

```
Attempting to apply the following manifest:
```

```
apiVersion: apps/v1
```

```
kind: Deployment
```

```
metadata:
```

```
name: nginx-deployment
spec:
  replicas: 2# 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: nginx:latest# latest
          ports:
            - containerPort: 80
```

"Reprompt" 尝试添加 Service Object

```
# nodeport 添加 nodeport
Reprompt: Include a service nodeport for the nginx deployment
Attempting to apply the following manifest:
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
```

...

✓ Apply

[[[]]] get all [[[]]] [[[]]]

# 2 Replica

NAME	DESIRED	CURRENT	READY	AGE
------	---------	---------	-------	-----

nginx가 30080 포트에 열려있는지 확인합니다.



## Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to [nginx.org](https://nginx.org).  
Commercial support is available at [nginx.com](https://nginx.com).

*Thank you for using nginx.*

nginx가 30080 포트에 열려있는지 확인합니다. nginx가 30080 포트에 열려있는지 확인합니다.

Kubectl AI가 nginx-service와 nginx-deployment을 삭제합니다.

```
[root@node1 ~]# kubectl kubectl-ai "delete nginx-service and nginx-deployment"
Error: [429:server_error] The server had an error while processing your request. Sorry about that!
```

Revision #2

Created 1 June 2023 01:33:36 by jh

Updated 1 June 2023 05:32:23 by jh