

# Kubernetes Configuration & Best Practices

Version 1.18-SNAPSHOT

2018-09-15

# Table of Contents

1. Installation .....	2
2. Use helm to setup a CI/CD stack .....	2
2.1. Initialization .....	2
2.2. SonarQube .....	3
2.3. Jenkins .....	4
2.3.1. Gerrit .....	4
2.4. Gitlab .....	4
2.4.1. Prerequisite .....	4
2.5. Installation .....	4
2.6. Nexus3 .....	5

*Table 1. History*

Date	Author	Detail
2018-09-15	bcouetil	- Sample asciidoctor maven project — published on Github - Github & LinkedIn links - Sample project tree - images resizing positioning - new images
2018-08-29	bcouetil	Asciidoc HTML look & feel changes
2018-08-24	bcouetil	Icones added for download + favicon added for webpage

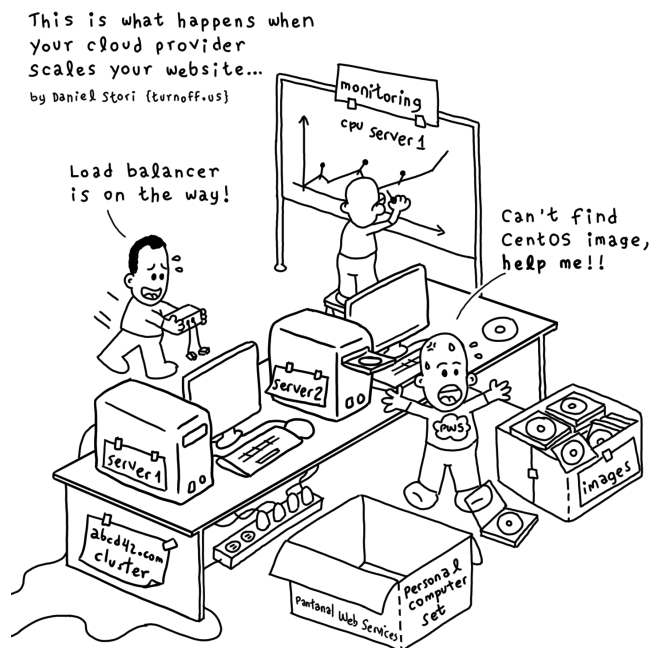


Figure 1. Cloud autoscaling

# 1. Installation

Create an account on Google Cloud.

## 2. Use helm to setup a CI/CD stack

## 2.1. Initialization

Enter these in console.

### Cluster creation

```
gcloud container clusters get-credentials cluster-1 --zone us-central1-a
kubectl create ns cid
kubectl config set-context cid --cluster gke_zenika-test_us-central1-a_cluster-1 --user gke_zenika-test_us-central1-a_cluster-1 --namespace cid
```

## Helm installation

```
wget "https://storage.googleapis.com/kubernetes-helm/helm-v2.9.1-linux-amd64.tar.gz"
tar -zxvf helm-v2.9.1-linux-amd64.tar.gz
mv linux-amd64/ helm-install-files
cd helm-install-files/
sudo mv helm /usr/local/bin/helm
```

```
vi rbac-tiller-config.yaml
```

### *rbac-tiller-config.yaml*

```
apiVersion: v1
kind: ServiceAccount
metadata:
  name: tiller
  namespace: kube-system
---
apiVersion: rbac.authorization.k8s.io/v1beta1
kind: ClusterRoleBinding
metadata:
  name: tiller
roleRef:
  apiGroup: rbac.authorization.k8s.io
  kind: ClusterRole
  name: cluster-admin
subjects:
- kind: ServiceAccount
  name: tiller
  namespace: kube-system
```

```
kubectl create -f rbac-tiller-config.yaml
helm init --service-account tiller
helm repo update
```



if already initialized by mistake, use this command :

```
helm reset --force
```

## 2.2. SonarQube

```
helm install stable/sonarqube
```

### *deployment data example*

```
resources:
  cpu: 100m
  memory: 1536Mi
persistence:
  enabled: true
  storageClass: "-"
  accessMode: ReadWriteOnce
  size: 5Gi
plugins:
  install:
    - "https://github.com/AmadeusITGroup/sonar-stash/releases/download/1.3.0/sonar-stash-plugin-1.3.0.jar"
    - "https://github.com/SonarSource/sonar-ldap/releases/download/2.2-RC3/sonar-ldap-plugin-2.2.0.601.jar"
```



- See how to add plugins
  - Findbugs
  - LDAP
  - SoftVis3D Sonar plugin
  - SonarJava (update)
  - SonarQube :: Plugins :: SCM :: Git (update)

## 2.3. Jenkins

```
helm install stable/jenkins
```

To get the admin password :

```
printf $(kubectl get secret --namespace cicd silly-clam-jenkins -o jsonpath="{.data.jenkins-admin-password}" | base64 --decode);echo
```

### 2.3.1. Gerrit

In progress, not in Helm/Charts yet. See ongoing project : <https://github.com/Novitoll/charts/tree/master/incubator/gerrit>

## 2.4. Gitlab

### 2.4.1. Prerequisite

*Get a fixed IP*

- Open the web console
- In the sidebar, browse to VPC Network > External IP addresses
- Click Reserve static address
- Choose Regional and select the region of your cluster
- Leave Attached to blank, as it will be automatically assigned during deployment

*Have a domain*

- TODO

## 2.5. Installation

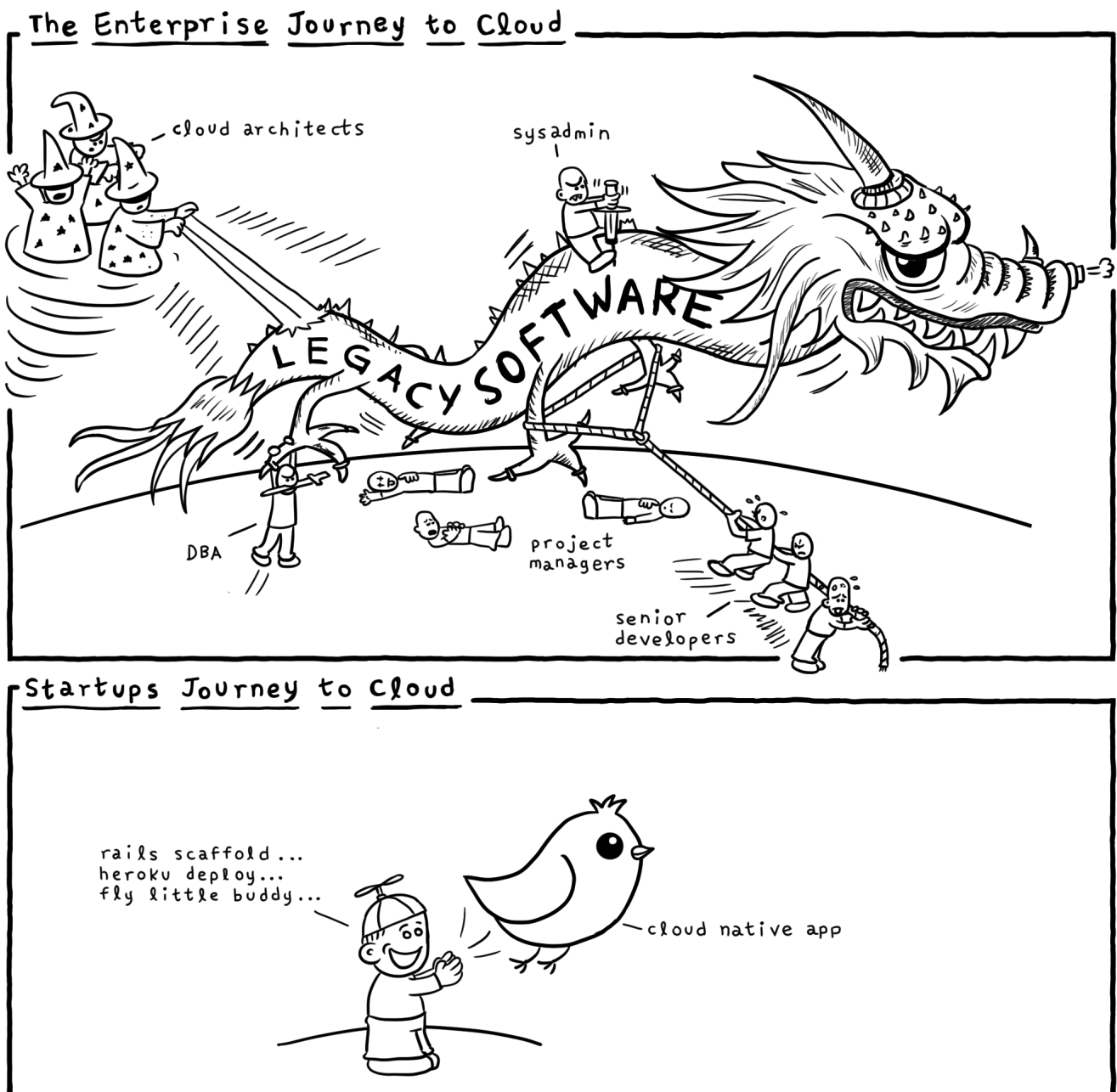
Start the Gitlab installation, example :

```
helm upgrade --install gitlab gitlab/gitlab \
--timeout 600 \
--set global.hosts.domain=gitlab.nevrax-cicd.com \
--set global.hosts.externalIP=35.184.74.117 \
--set certmanager-issuer.email=nevraxgoespro@gmail.com
--set gitlab.migrations.image.repository=registry.gitlab.com/gitlab-org/build/cng/gitlab-rails-ce
--set gitlab.sidekiq.image.repository=registry.gitlab.com/gitlab-org/build/cng/gitlab-sidekiq-ce
--set gitlab.unicorn.image.repository=registry.gitlab.com/gitlab-org/build/cng/gitlab-unicorn-ce
```

## 2.6. Nexus3



TODO



Daniel Stori {turnoff.us}  
Thanks to Michael Tharrington

Figure 2. Journey to Cloud