Kubernetes Configuration & Best Practices

Version 1.18-SNAPSHOT

2018-09-15

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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

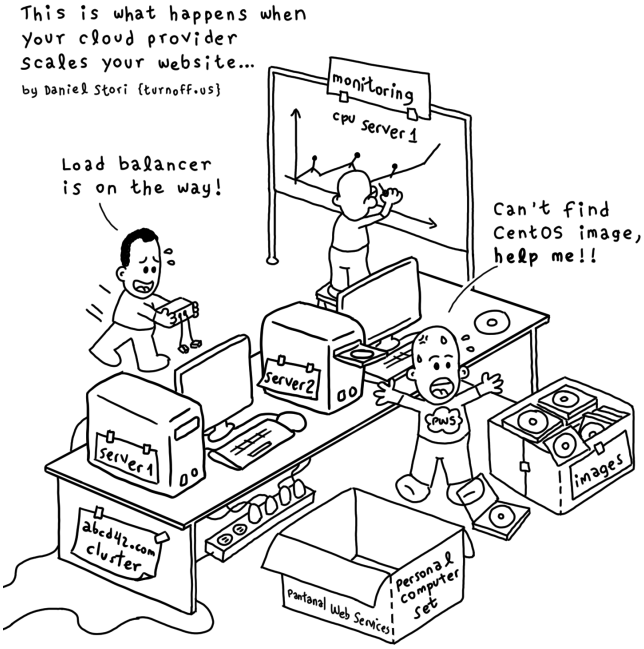

Figure 1. Cloud autoscaling

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 cicd
kubectl config set-context cicd --cluster gke_zenika-test_us-central1-a_cluster-1 --user gke_zenika-test_us-central1-
a_cluster-1 --namespace cicd
```

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

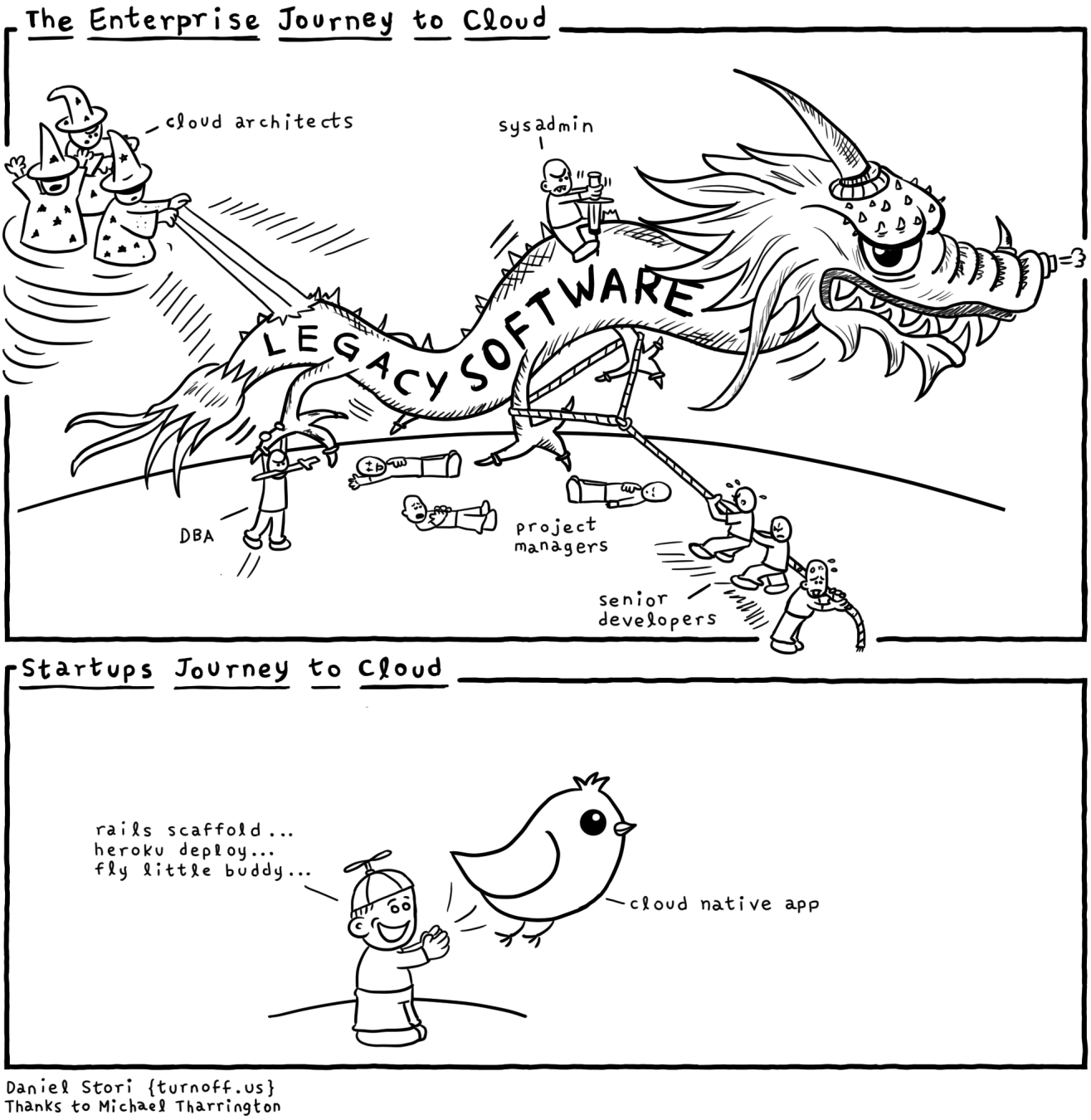

Figure 2. Journey to Cloud