

# Helm Taller 1

## 1. Registrar repositorio

Registramos el repositorio

```
C:\Users\josem>helm repo add bootCamp https://charts.bitnami.com/bitnami
"bootCamp" has been added to your repositories
```

## 2. Instalar chart de apache

Primero instalamos el chart de apache dentro de bootcamp y comprobamos la versión

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-t1-jmmd>helm pull bootCamp/apache
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-t1-jmmd>helm search repo bootCamp
NAME                CHART VERSION  APP VERSION     DESCRIPTION
bootcamp/airflow    14.0.3         2.4.2           Apache Airflow is a tool to express and execute...
bootcamp/apache     9.2.7          2.4.54          Apache HTTP Server is an open-source HTTP serve...
```

## 3. Crear chart simple

Creamos el chart con el comando helm create y comprobamos si ha tenido fallos con el comando helm lint

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-t1-jmmd>helm create bootCampTest
Creating bootCampTest
```

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-t1-jmmd>helm lint bootCampTest
==> Linting bootCampTest
[INFO] Chart.yaml: icon is recommended
[WARNING] templates/deployment.yaml: object name does not conform to Kubernetes naming requirements: "test-release-bootCampTest": metadata.name: Invalid value: "test-release-bootCampTest": a lowercase RFC 1123 subdomain must consist of lower case alphanumeric characters, '-' or '.', and must start and end with an alphanumeric character (e.g. 'example.com', regex used for validation is '[a-z0-9]([-a-z0-9]*[a-z0-9])?(\.[a-z0-9]([-a-z0-9]*[a-z0-9])?)*')
[WARNING] templates/service.yaml: object name does not conform to Kubernetes naming requirements: "test-release-bootCampTest": metadata.name: Invalid value: "test-release-bootCampTest": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. 'my-name', or 'abc-123', regex used for validation is '[a-z]([-a-z0-9]*[a-z0-9])?')
[WARNING] templates/serviceaccount.yaml: object name does not conform to Kubernetes naming requirements: "test-release-bootCampTest": metadata.name: Invalid value: "test-release-bootCampTest": a lowercase RFC 1123 subdomain must consist of lower case alphanumeric characters, '-' or '.', and must start and end with an alphanumeric character (e.g. 'example.com', regex used for validation is '[a-z0-9]([-a-z0-9]*[a-z0-9])?(\.[a-z0-9]([-a-z0-9]*[a-z0-9])?)*')
[WARNING] templates/tests/test-connection.yaml: object name does not conform to Kubernetes naming requirements: "test-release-bootCampTest-test-connection": metadata.name: Invalid value: "test-release-bootCampTest-test-connection": a lowercase RFC 1123 subdomain must consist of lower case alphanumeric characters, '-' or '.', and must start and end with an alphanumeric character (e.g. 'example.com', regex used for validation is '[a-z0-9]([-a-z0-9]*[a-z0-9])?(\.[a-z0-9]([-a-z0-9]*[a-z0-9])?)*')
1 chart(s) linted, 0 chart(s) failed
```

### 3.1 Ejercicio extra 1

Borramos todos los yaml y creamos uno denominado mycharttest

| <div> <div></div> <div> <div></div> <div>Escritorio &gt; Desarrollo &gt; NTT DATA &gt; Bootcamp &gt; App &gt; nttdatacenter-helm-t1-jmmd &gt; bootCampTest &gt; templates</div> </div> </div> |                       |                       |        |  |
|---|-----------------------|-----------------------|--------|--|
| Nombre  | Fecha de modificación | Tipo                  | Tamaño |  |
| tests   | 22/11/2022 11:17      | Carpeta de archivos   |        |  |
| _helpers.tpl  | 22/11/2022 11:17      | Archivo TPL           | 2 KB   |  |
| mycharttest.yaml  | 22/11/2022 12:01      | Archivo de origen ... | 1 KB   |  |
| NOTES.txt   | 22/11/2022 11:17      | Documento de tex...   | 2 KB   |  |

```
! mycharttest.yaml x ! mycharttest-conditional.yaml ! values.yaml
C: > Users > josem > Desktop > Desarrollo > NTT DATA > Bootcamp > App > nttdatacenter-helm-t1-jmmd > bootCampTest > templates > ! mycharttest.yaml
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: "{{ include "bootCampTest.fullname" . }}-test-connection"
5    labels:
6      {{- include "bootCampTest.labels" . | nindent 4 }}
7    annotations:
8      "helm.sh/hook": test
9  spec:
10   containers:
11     - name: nginx
12       image: nginx:alpine
13       port: {{ .Values.labels.ports.httpPort }}
```

Ahora añadimos **.Values.labels.ports.httpPort** a nuestro value.yaml. Yo he usado el 8080 como puerto.

```
C: > Users > josem > Desktop > Desarrollo > NTT DATA > Bootcamp > App > nttdatacenter-helm-t1-jmmd > bootCampTest > ! values.yaml
1  replicaCount: 1
2
3  image:
4    repository: nginx
5    pullPolicy: IfNotPresent
6    tag: ""
7
8  labels:
9    ports:
10     httpPort: 8080
```

Hacemos lint para comprobar si tiene errores.

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-t1-jmmd>helm lint bootCampTest
==> Linting bootCampTest
[INFO] Chart.yaml: icon is recommended
[WARNING] templates/mycharttest.yaml: object name does not conform to Kubernetes naming requirements: "test-release-bootCampTest-test-connection": metadata.name: Invalid value: "test-release-bootCampTest-test-connection": a lowercase RFC 1123 subdomain must consist of lower case alphanumeric characters, '-' or '.', and must start and end with an alphanumeric character (e.g. 'example.com', regex used for validation is '[a-z0-9]([-a-z0-9]*[a-z0-9])?(\.[a-z0-9]([-a-z0-9]*[a-z0-9])?)*')
[WARNING] templates/tests/test-connection.yaml: object name does not conform to Kubernetes naming requirements: "test-release-bootCampTest-test-connection": metadata.name: Invalid value: "test-release-bootCampTest-test-connection": a lowercase RFC 1123 subdomain must consist of lower case alphanumeric characters, '-' or '.', and must start and end with an alphanumeric character (e.g. 'example.com', regex used for validation is '[a-z0-9]([-a-z0-9]*[a-z0-9])?(\.[a-z0-9]([-a-z0-9]*[a-z0-9])?)*')
1 chart(s) linted, 0 chart(s) failed
```

### 3.2 Ejercicio extra 2

Creamos el archivo mycharttest-conditional. Usamos la expresión if eq que sirve para comparar valores. Como vamos a comparar un número debemos transformar la variable a int.

```
! mycharttest.yaml ! mycharttest-conditional.yaml X ! values.yaml
C: > Users > josem > Desktop > Desarrollo > NTT DATA > Bootcamp > App > nttdatcenter-helm-t1-jmmd > bootCampTest > templates > ! mycharttest-conditional.yaml
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: "{{ include \"bootCampTest.fullname\" . }}-test-connection"
5    labels:
6      {{- include \"bootCampTest.labels\" . | nindent 4 }}
7    annotations:
8      "helm.sh/hook": test
9  spec:
10   containers:
11   - name: nginx
12     image: nginx:alpine
13     port:
14       {{- if eq (int .Values.labels.ports.httpPort) 8080 }}
15       value: {{ required \"Valid .Values.labels.ports.httpPort entry\" .Values.labels.ports.httpPort }}
16       {{ else }}
17       value: {{ required \"Value 8080 .Values.labels.ports.httpPort entry required!\" .Values.labels.ports.httpPort }}
18       {{- end }}
```

Ahora probamos a instalarlo.

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatcenter-helm-t1-jmmd>helm install myrelease .
NAME: myrelease
LAST DEPLOYED: Tue Nov 22 13:39:37 2022
NAMESPACE: default
STATUS: deployed
REVISION: 1
NOTES:
1. Get the application URL by running these commands:
  export POD_NAME=$(kubectl get pods --namespace default -l "app.kubernetes.io/name=bootCampTest,app.kubernetes.io/instance=myrelease" -o jsonpath="{.items[0].metadata.name}")
  export CONTAINER_PORT=$(kubectl get pod --namespace default $POD_NAME -o jsonpath="{.spec.containers[0].ports[0].containerPort}")
  echo "Visit http://127.0.0.1:8080 to use your application"
  kubectl --namespace default port-forward $POD_NAME 8080:$CONTAINER_PORT
```

## 4. Dummy image

Como ya se encuentra instalado, procedo a hacer un list para comprobar que todo esta correcto. Una vez comprobado, hago el upgrade a myrelease y le pongo la imagen igual a dummy

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatcenter-helm-t1-jmmd>helm list
NAME                NAMESPACE    REVISION    UPDATED                               STATUS          CHART              APP VERSION
myrelease           default       4           2022-11-22 14:10:36.3643262 +0100 CET deployed        bootCampTest-0.1.0 1.16.0

C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatcenter-helm-t1-jmmd>helm upgrade myrelease bootCampTest --set=image=dummy
Release "myrelease" has been upgraded. Happy Helming!
NAME: myrelease
LAST DEPLOYED: Tue Nov 22 14:10:53 2022
NAMESPACE: default
STATUS: deployed
REVISION: 5
NOTES:
1. Get the application URL by running these commands:
  export POD_NAME=$(kubectl get pods --namespace default -l "app.kubernetes.io/name=bootCampTest,app.kubernetes.io/instance=myrelease" -o jsonpath="{.items[0].metadata.name}")
  export CONTAINER_PORT=$(kubectl get pod --namespace default $POD_NAME -o jsonpath="{.spec.containers[0].ports[0].containerPort}")
  echo "Visit http://127.0.0.1:8080 to use your application"
  kubectl --namespace default port-forward $POD_NAME 8080:$CONTAINER_PORT
```

## 5. Instalar apache en Kubernetes

Como ya habíamos descargado previamente el tgz de apache, lo usamos para instalarlo.

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-tl-jmmd>helm install apache-release apache-9.2.7.tgz
NAME: apache-release
LAST DEPLOYED: Tue Nov 22 14:33:51 2022
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
CHART NAME: apache
CHART VERSION: 9.2.7
APP VERSION: 2.4.54

** Please be patient while the chart is being deployed **

1. Get the Apache URL by running:

** Please ensure an external IP is associated to the apache-release service before proceeding **
** Watch the status using: kubectl get svc --namespace default -w apache-release **

export SERVICE_IP=$(kubectl get svc --namespace default apache-release --template "{{ range (index .status.loadBalancer.ingress 0) }}{{ . }}{{ end }}" )
echo URL : http://$SERVICE_IP/

WARNING: You did not provide a custom web application. Apache will be deployed with a default page. Check the README section "Deploying your custom web application" in https://github.com/bitnami/charts/blob/main/bitnami/apache/README.md#deploying-a-custom-web-application.

C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-tl-jmmd>helm list
NAME                NAMESPACE    REVISION    UPDATED                                 STATUS          CHART           APP VERSION
apache-release      default       1           2022-11-22 14:33:51.8343273 +0100 CET  deployed        apache-9.2.7    2.4.54
myrelease           default       5           2022-11-22 14:10:53.4276565 +0100 CET  deployed        bootCampTest-0.1.0 1.16.0
```

## 6. Configurar apache

Como se ha instalado correctamente, ahora vamos a comprobar que funciona. Para ello usamos el comando:

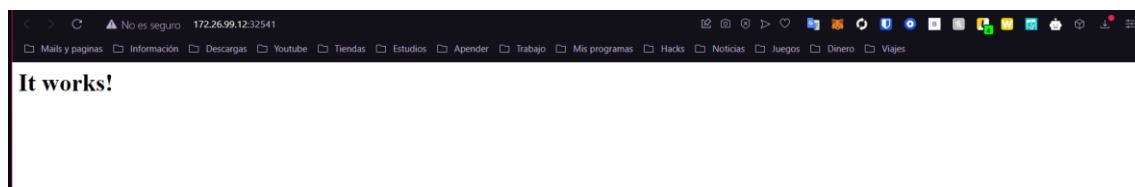
- `kubectl get svc --namespace default -w apache-release`

Esto nos devuelve el servicio de apache-release que hemos instalado.

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-tl-jmmd>kubectl get svc --namespace default -w apache-release
NAME                TYPE           CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
apache-release      LoadBalancer   10.101.72.70   <pending>       80:32541/TCP,443:30914/TCP  3m24s
```

Por último, con el comando para que nos devuelva su url (`minikube service apache-release --url`) obtenemos las urls. Si vamos a la primera podemos comprobar que está todo correcto.

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-tl-jmmd>minikube service apache-release --url
http://172.26.99.12:32541
http://172.26.99.12:30914
```



## 7. Eliminar apache

Ahora procedemos a eliminar apache con el comando `uninstall` y con `list` lo comprobamos

```
C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-tl-jmmd>helm uninstall apache-release
release "apache-release" uninstalled

C:\Users\josem\Desktop\Desarrollo\NTT DATA\Bootcamp\App\nttdatacenter-helm-tl-jmmd>helm list
NAME                NAMESPACE    REVISION    UPDATED                               STATUS          CHART              APP VERSION
myrelease           default       5           2022-11-22 14:10:53.4276565 +0100 CET deployed        bootCampTest-0.1.0 1.16.0
```