

Configuring Helm Repositories



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Overview



Repository overview

Packaging a Helm Chart

Creating a local Helm repository

Creating a remote Helm repository



Repository Overview





Helm Hub

Repository is any HTTP server

<https://hub.helm.sh>

Multiple repositories available

Repositories can be added



Packaging a Helm Chart



Creating a Helm Chart

```
helm create ourchart
```

```
PS C:\> helm create ourchart
Creating ourchart
PS C:\> ls ./ourchart
```

```
Directory: C:\ourchart

Mode                LastWriteTime      Length Name
----                -----          ---- -
d----        25/06/2020    17:13          0 charts
d----        25/06/2020    17:13          0 templates
-a---        25/06/2020    17:13       342 .helmignore
-a---        25/06/2020    17:13       906 Chart.yaml
-a---        25/06/2020    17:13     1491 values.yaml

PS C:\>
```



Within the Templates Directory

```
PS C:\ourchart\templates> ls

    Directory: C:\ourchart\templates

Mode                LastWriteTime         Length Name
----                -----          ---- -  
d----        25/07/2020      12:45            tests
-a---        25/07/2020      12:45       1830 _helpers.tpl
-a---        25/07/2020      12:45       1833 deployment.yaml
-a---        25/07/2020      12:45        911 hpa.yaml
-a---        25/07/2020      12:45       1054 ingress.yaml
-a---        25/07/2020      12:45      1585 NOTES.txt
-a---        25/07/2020      12:45        364 service.yaml
-a---        25/07/2020      12:45       322 serviceaccount.yaml

PS C:\ourchart\templates> |
```



```
apiVersion: apps/v1
kind: Deployment
metadata:
  labels:
    run: nginx
  name: nginx
spec:
  replicas: 1
  selector:
    matchLabels:
      run: nginx
  template:
    metadata:
      labels:
        run: nginx
    spec:
      containers:
        - image: nginx
          name: nginx
```

Yaml Files

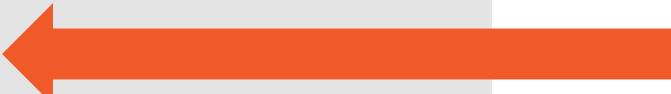
```
kubectl create deployment nginx
--image=nginx
--dry-run=client
--output=yaml
```



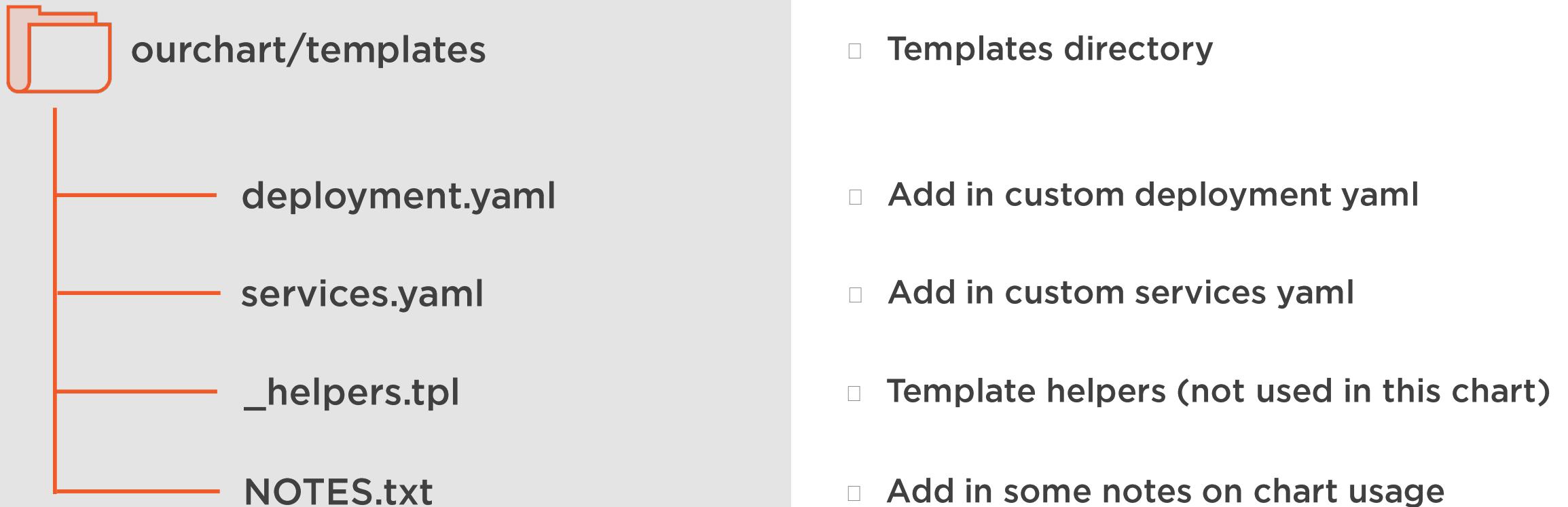
Yaml Files

```
apiVersion: v1
kind: Service
metadata:
  labels:
    run: nginx
  name: nginx
spec:
  ports:
  - port: 80
    protocol: TCP
    targetPort: 80
  selector:
    run: nginx
  type: LoadBalancer
```

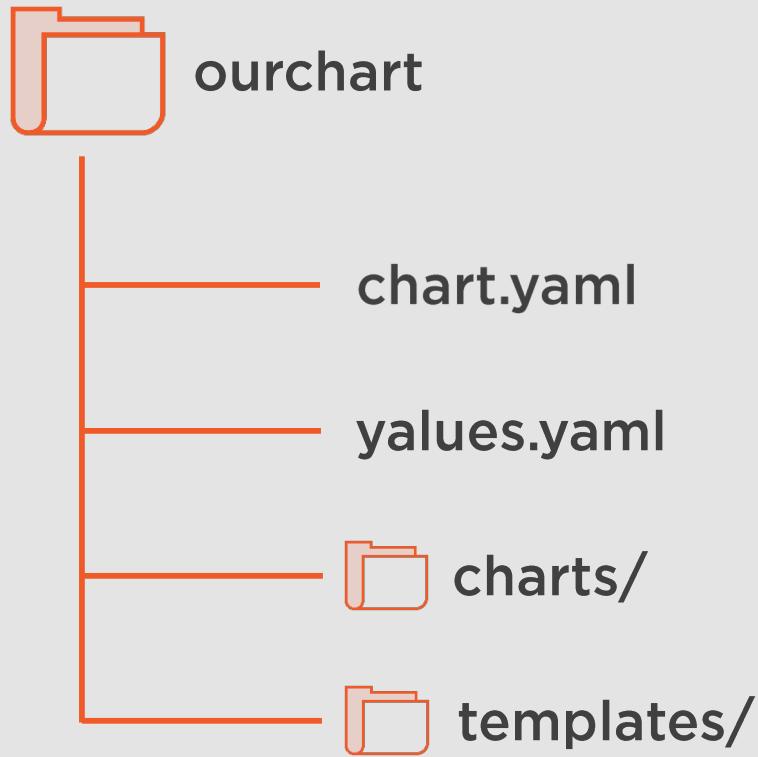
```
kubectl expose deployment nginx
--type=LoadBalancer
--port=80
--dry-run=client
--output=yaml
```



Updating Templates



Updating Chart Directory



- **Chart Name**
- Add in **description of the chart**
- Add in **default values (not used)**
- **No other charts required**
- **Templates already updated**



Deploy Chart

```
helm install ourchart .\ourchart\
```

```
PS C:\> helm install ourchart .\ourchart\
NAME: ourchart
LAST DEPLOYED: Sat Aug  1 14:10:39 2020
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
A test Helm Chart
PS C:\>
```



View Deployment

```
helm list
```

NAME	NAMESPACE	REVISION	UPDATED	STATUS	CHART	APP VERSION
ourchart	default	1	2020-07-01 15:47:50.516902 +0100 BST	deployed	ourchart-0.1.0	1.16.0

```
kubectl get all
```

PS C:\> kubectl get all						
NAME		READY	STATUS	RESTARTS	AGE	
pod/nginx-6db489d4b7-v8l46		1/1	Running	0	43s	
NAME	TYPE		CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP		10.96.0.1	<none>	443/TCP	5d6h
service/nginx	LoadBalancer		10.108.51.202	localhost	80:32691/TCP	43s
NAME		READY	UP-TO-DATE	AVAILABLE	AGE	
deployment.apps/nginx		1/1	1	1	43s	
NAME		DESIRED	CURRENT	READY	AGE	
replicaset.apps/nginx-6db489d4b7		1	1	1	43s	



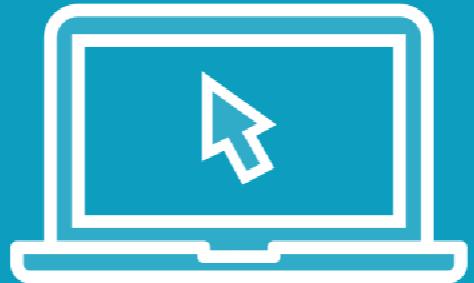
Package the Chart

```
helm package .\ourchart --destination C:\charts
```

```
PS C:\> helm package .\ourchart --destination C:\charts
Successfully packaged chart and saved it to: C:\charts\ourchart-0.1.0.tgz
PS C:\> |
```



Demo



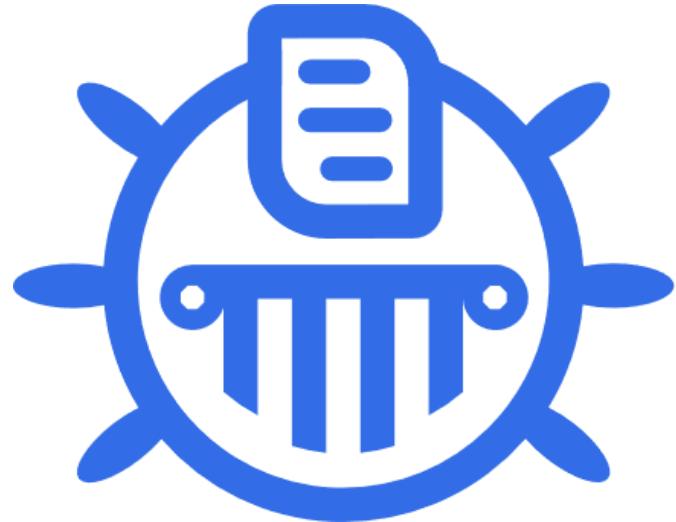
Packaging a Helm Chart



Creating a Local Helm Repository



Chart Museum



<https://chartmuseum.com>

Open source Helm Chart Repository

Deployed as a Helm Chart



Deploy Chart Museum

```
helm install chartmuseum stable/chartmuseum --set env.open.DISABLE_API=false
```

```
PS C:\> helm install chartmuseum stable/chartmuseum --set env.open.DISABLE_API=false
NAME: chartmuseum
LAST DEPLOYED: Wed Jul  1 15:50:29 2020
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
** Please be patient while the chart is being deployed **

Get the ChartMuseum URL by running:

    export POD_NAME=$(kubectl get pods --namespace default -l "app=chartmuseum" -l "rele
    ase=chartmuseum" -o jsonpath="{.items[0].metadata.name}")
    echo http://127.0.0.1:8080/
    kubectl port-forward $POD_NAME 8080:8080 --namespace default
PS C:\> |
```



Set up Port Forwarding

```
$POD_NAME=$(kubectl get pods -l "app=chartmuseum" -o jsonpath='{.items[0].metadata.name}')
```

```
kubectl port-forward $POD_NAME 8080:8080 --namespace default
```

```
PS C:\> $POD_NAME=$(kubectl get pods -l "app=chartmuseum" -o jsonpath='{.items[0].metadata.name}')  
PS C:\> kubectl port-forward $POD_NAME 8080:8080 --namespace default  
Forwarding from 127.0.0.1:8080 -> 8080  
Forwarding from [::1]:8080 -> 8080  
|
```



Add Chart Museum as a Repository

```
helm repo add chartmuseum http://127.0.0.1:8080
```

```
PS C:\> helm repo add chartmuseum http://127.0.0.1:8080
"chartmuseum" has been added to your repositories
PS C:\> helm repo list
NAME          URL
stable        https://kubernetes-charts.storage.googleapis.com
chartmuseum   http://127.0.0.1:8080
PS C:\> |
```



Push to Chart Museum

```
curl --data-binary "@ourchart-0.1.0.tgz"  
http://localhost:8080/api/charts
```

```
PS C:\charts> curl --data-binary "@ourchart-0.1.0.tgz" http://localhost:8080/api/charts  
{"saved":true}  
PS C:\charts> |
```



Search Chart Museum

helm repo update

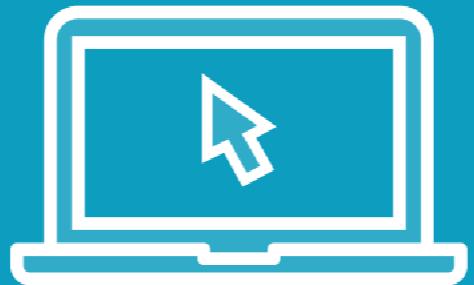
```
PS C:\charts> helm repo update
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "chartmuseum" chart repository
...Successfully got an update from the "stable" chart repository
Update Complete. * Happy Helming!*
```

helm search repo chartmuseum/ourchart

```
PS C:\charts> helm search repo chartmuseum/ourchart
NAME          CHART VERSION  APP VERSION      DESCRIPTION
chartmuseum/ourchart    0.1.0        1.16.0       A Helm chart for Kubernetes
PS C:\charts> |
```



Demo



Creating a local Helm repository



Creating a Remote Helm Repository



Helm Repository Options



Chart Museum

Cloud Storage

Nexus

JFrog Container Registry

GitHub





Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?
[Import a repository.](#)

Owner *



dbafromthecold ▾

Repository name *

DemoHelmRepo



Great repository names are short and memorable. Need inspiration? How about [vigilant-rotary-phone](#)?

Description (optional)

Repo for Helm Charts

Public

Anyone on the internet can see this repository. You choose who can commit.

Private

You choose who can see and commit to this repository.

Skip this step if you're importing an existing repository.

Initialize this repository with a README

This will let you immediately clone the repository to your computer.

Add .gitignore: None ▾

Add a license: None ▾



Create repository



Clone Repository Locally

A screenshot of a GitHub repository page for 'dbafromthecold/DemoHelmRepo'. The page includes navigation links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The 'Code' tab is currently active. At the top right, there are buttons for Unwatch (with 1 notification), Star (with 0 notifications), and a copy icon.

Quick setup — if you've done this kind of thing before

Set up in Desktop

or

HTTPS

SSH

<https://github.com/dbafromthecold/DemoHelmRepo.git>



Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

```
git clone https://github.com/dbafromthecold/DemoHelmRepo.git
```

```
PS C:\git> git clone https://github.com/dbafromthecold/DemoHelmRepo.git
Cloning into 'DemoHelmRepo'...
warning: You appear to have cloned an empty repository.
PS C:\git> |
```



Copy Chart to Repo and Index

```
cp C:\charts\ourchart-0.1.0.tgz .
helm repo index .
```

```
PS C:\git\DemoHelmRepo> cp C:\charts\ourchart-0.1.0.tgz .
PS C:\git\DemoHelmRepo> helm repo index .
PS C:\git\DemoHelmRepo> ls

Directory: C:\git\DemoHelmRepo

Mode                LastWriteTime       Length Name
----                -----          ----  --
-a---        01/07/2020     16:12         391  index.yaml
-a---        25/06/2020     18:13       1763  ourchart-0.1.0.tgz

PS C:\git\DemoHelmRepo> |
```



View Repository Status

git status

```
PS C:\git\DemoHelmRepo> git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)

    index.yaml
    ourchart-0.1.0.tgz

nothing added to commit but untracked files present (use "git add" to track)
PS C:\git\DemoHelmRepo>
```



Push Chart to GitHub

```
git add .
git commit -m "added chart to repo"
git push
```

```
PS C:\git\DemoHelmRepo> git add .
PS C:\git\DemoHelmRepo> git commit -m "added chart to repo"
[master 58c81e9] added chart to repo
 2 files changed, 14 insertions(+)
  create mode 100644 index.yaml
  create mode 100644 ourchart-0.1.0.tgz
PS C:\git\DemoHelmRepo> git push
Counting objects: 4, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 2.26 KiB | 2.26 MiB/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com/dbafromthecold/DemoHelmRepo.git
  c398d9c..58c81e9  master -> master
PS C:\git\DemoHelmRepo> |
```



Add GitHub Repository as Helm Repository

Andrew Pruski added chart to repo Latest commit 58c81e9 26 seconds ago [History](#)

0 contributors

14 lines (14 sloc) | 391 Bytes

Raw Blame   

```
1 apiVersion: v1
2 entries:
3   ourchart:
4     apiVersion: v2
5     appVersion: 1.16.0
6     created: "2020-07-01T16:12:31.5770791+01:00"
7     description: A Helm chart for Kubernetes
8     digest: fdf0228d556ee2041838eb950bbcea4aa7ad222c8b4b23e8ced01621d2fa3242
9     name: ourchart
10    type: application
11    urls:
12      - ourchart-0.1.0.tgz
13    version: 0.1.0
14   generated: "2020-07-01T16:12:31.5761149+01:00"
```

<https://raw.githubusercontent.com/dbafromthecold/DemoHelmRepo/master/index.yaml>



Add GitHub Repository as Helm Repository

```
helm repo add dbafromthecold  
https://raw.githubusercontent.com/dbafromthecold/DemoHelmRepo/master
```

```
PS C:\> helm repo add dbafromthecold https://raw.githubusercontent.com/dbafromthecold/DemoHelmRepo/master/  
"dbafromthecold" has been added to your repositories  
PS C:\> helm repo list  
NAME          URL  
stable        https://kubernetes-charts.storage.googleapis.com  
dbafromthecold https://raw.githubusercontent.com/dbafromthecold/DemoHelmRepo/master/  
PS C:\> |
```



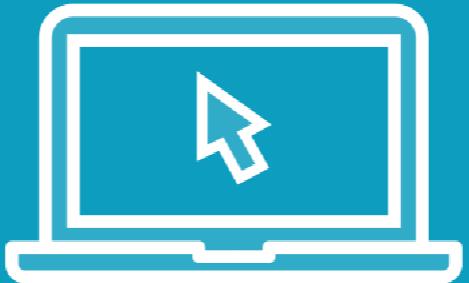
Search New Helm Repository

```
helm search repo dbafromthecold/ourchart
```

```
PS C:\> helm search repo dbafromthecold/ourchart
NAME          CHART VERSION  APP VERSION  DESCRIPTION
dbafromthecold/ourchart  0.1.0        1.16.0       A Helm chart for Kubernetes
PS C:\> |
```



Demo



Creating a remote Helm repository

