Managing Dependencies



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Managing Dependencies



Packaging a chart

Publishing to a repository

How to define dependencies

Tags and conditions



Packaging Your Charts



Packaging a Chart

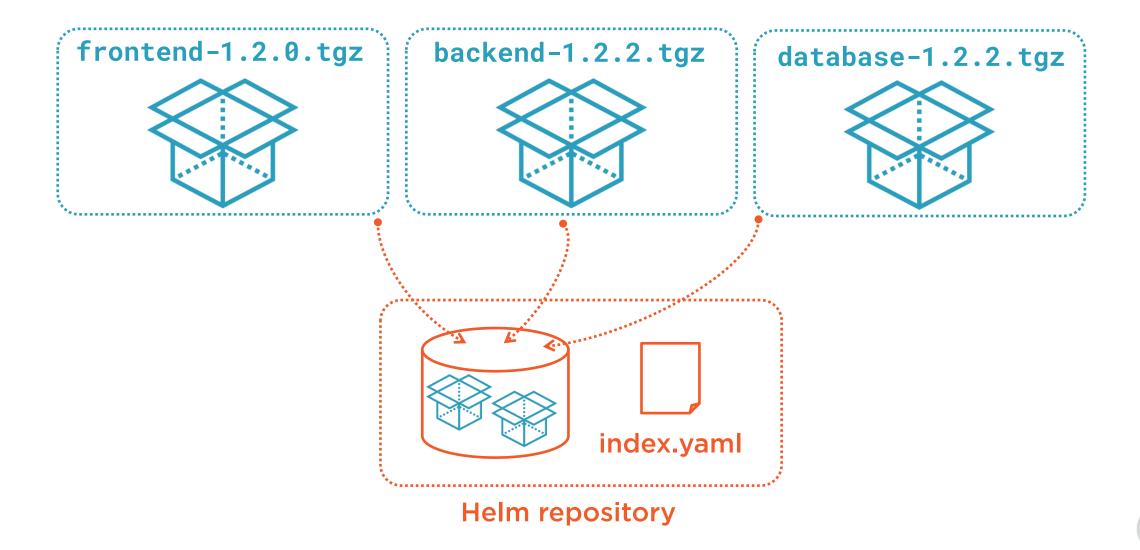
Compress chart folder in a .tar.gz archive
 Add a version number to the archive
 chart_name-1.2.0.tgz

- > tar -zcvf chart_name-1.2.0.tgz chart_name-
- > helm package chart_name

Publishing Charts in Repositories



Helm Repository



Publishing in a Repository

Create the index.yaml

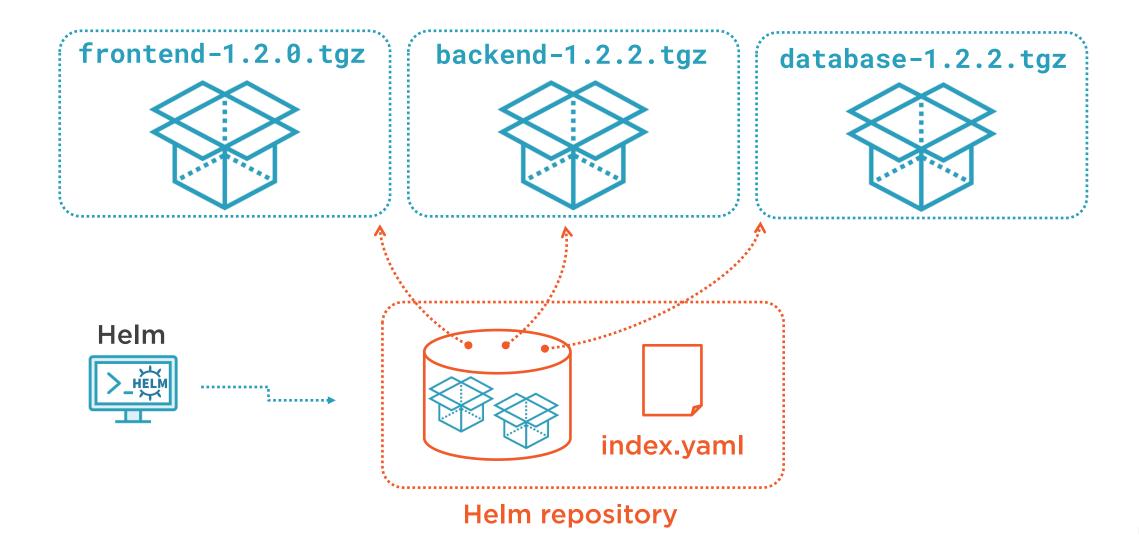
Upload charts' archives and index file to an http server

- Nginx, Apache, Cloud or use Chartmuseum

Provenance files

- > helm repo index .
- > helm package --sign
- > helm verify chart.tgz
- > helm install --verify

Helm Repository





Managing a Repository List

Helm maintains a list of repositories

- Stable
- Customs

Update that list by adding or removing repositories

```
me@cursus:~/.helm$ helm repo list
NAME URL
stable https://kubernetes-charts.storage.googleapis.com
```

Default Repository

No repository by default in Helm 3

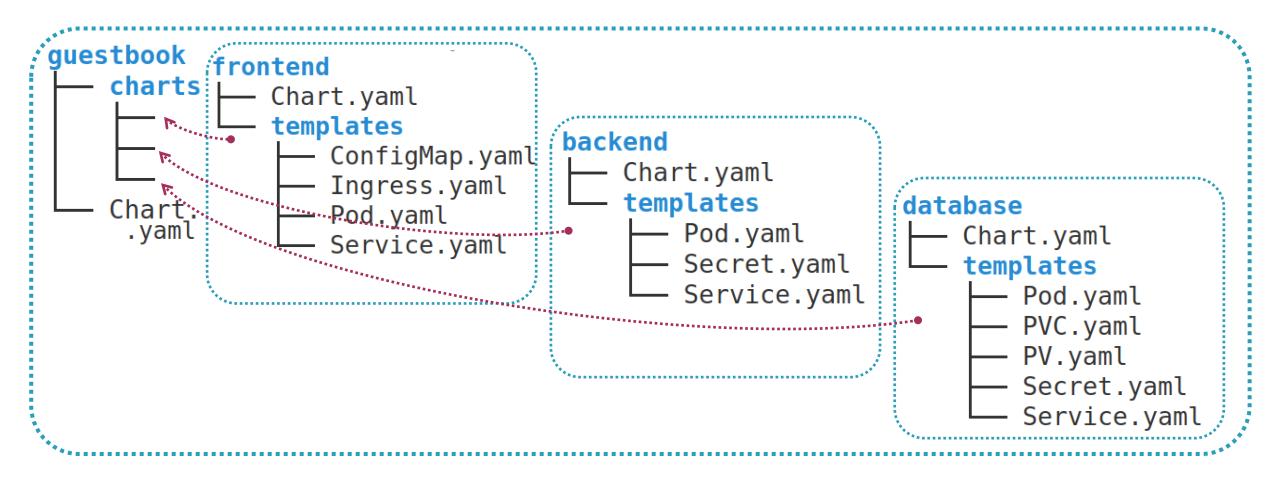
Highly recommended to add stable helm repository

> helm repo add stable https://kubernetescharts.storage.googleapis.com/

Defining Dependencies



Charts Dependencies





Charts Dependencies

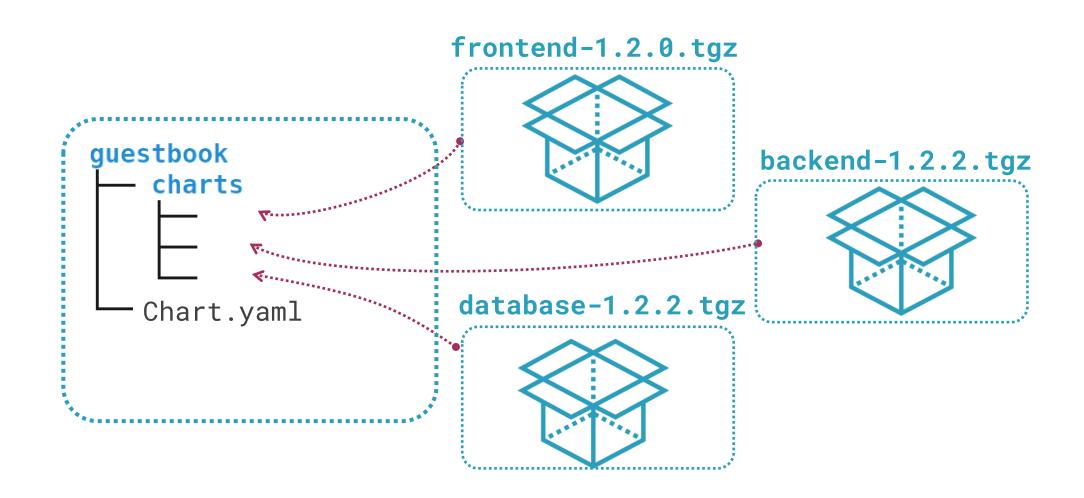




Chart.yaml

```
apiVersion: v2
name: guestbook
appVersion: "2.0"
description: A Helm chart for Guestbook 2.0
version: 1.2.2
type: application
dependencies:
  name: backend
    version: ~1.2.2
    repository: http://localhost:8080
  - name: frontend
    version: ^1.2.0
    repository: http://localhost:8080
  - name: mongodb
    version: 7.8.x
    repository: https://kubernetes-charts.storage.googleapis.com
```



Requirements.yaml

```
requirements.yaml
dependencies:
  name: backend
   version: ~1.2.2
    repository: http://127.0.0.1:8879/charts
  name: frontend
   version: ^1.2.0
    repository: http://127.0.0.1:8879/charts
  name: mariadb
    version: 5.x.x
    repository: https://kubernetes-charts.storage.googleapis.com/
```



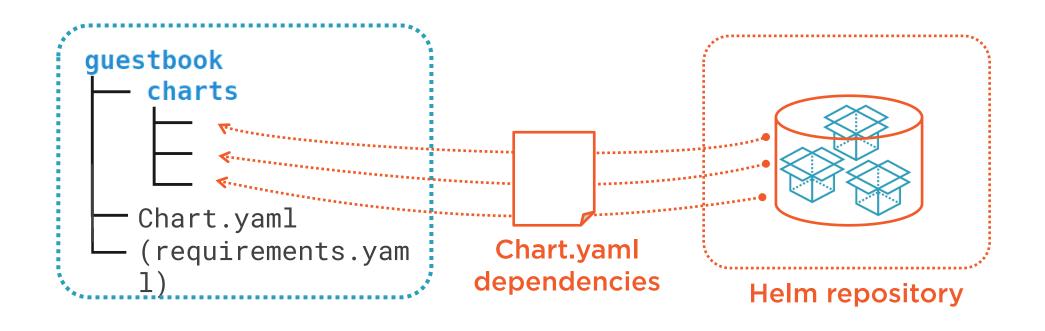
Semver 2.0 Versions

Range **Versions** >= 1.2.3, < 1.3.0 ~1.2.3 1.2.x >= 1.2.0, < 1.3.0 ^1.2.3 >= 1.2.3, < 2.0.0 >= 1.2.0, < 2.0.0 1.x.x 1.2 - 1.4.5 >= 1.2, <= 1.4.5

https://github.com/masterminds/semver



Charts Dependencies



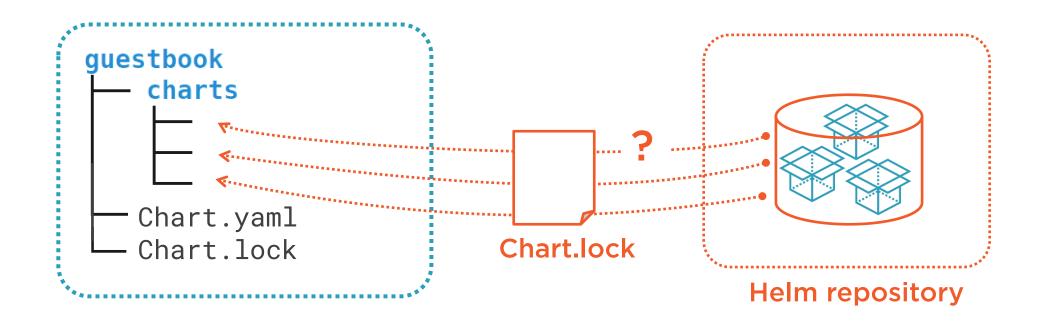
- > helm dependency update guestbook
- > helm dependency list guestbook

Chart.lock

```
dependencies:
- name: backend
  repository: http://localhost:8080
 version: 1.2.2
- name: frontend
  repository: http://localhost:8080
 version: 1.2.2
- name: database
  repository: http://localhost:8080
 version: 1.2.2
digest: sha256:6a58a52c55ee4296ec43ffe1985ec1147186025c4d9724bcbe5c5354a13df635
generated: "2020-02-27T12:16:00.991397779+01:00"
```



Charts Dependencies



> helm dependency build guestbook

Adding Conditions and Tags



Conditions & Tags

```
Chart.yaml
apiVersion: v2
name: guestbook
                                                                          values.yaml
[...]
dependencies:
  - name: backend
                                                                            backend:
    version: ~1.2.2
    repository: http://localhost:8080
                                                                            frontend:
    condition: backend.enabled,backend.another condition
                                                                            database:
    tags:
  name: frontend
    version: ^1.2.0
    repository: http://localhost:8080
  - name: mongodb
    version: 7.8.x
    repository: https://kubernetes-charts.storage.googleapis.com
conditions: database.enabled 4
    conditions: database.enabled 4**
    tags:
      - api
```

Conditions & Tags

All charts are downloaded with "helm dependency update"

Partial installation with "helm install"

"--set .." overrides value.yaml

Conditions override tags

- > helm dependency update guestbook
- > helm install demo guestbook
- > helm install demo guestbook --set database.enabled=true
- > helm install demo guestbook --set tags.api=false

Demo



Packaging charts

Publishing charts in repositories

http://github.com/phcollignon/helm3/lab10_helm_dependencies_begin lab10_helm_dependencies_final



Demo



Managing dependencies

http://github.com/phcollignon/helm3/lab10_helm_dependencies_begin lab10_helm_dependencies_final



Demo



Controlling dependencies with conditions and tags

http://github.com/phcollignon/helm3/lab10_helm_dependencies_begin lab10_helm_dependencies_final



Summary



Packaging your chart

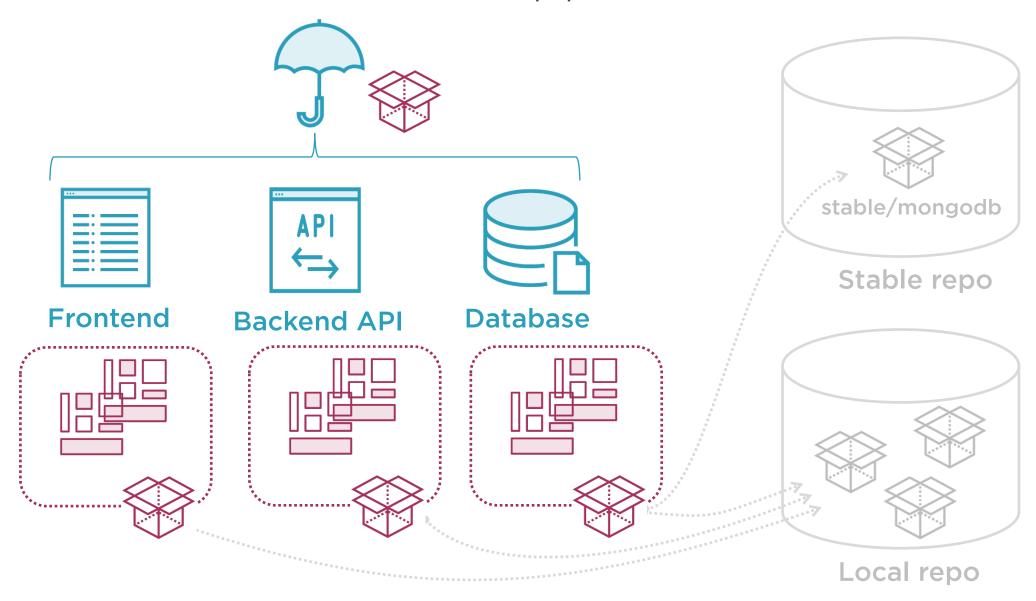
Publishing in a Helm repository

Define and manage dependencies

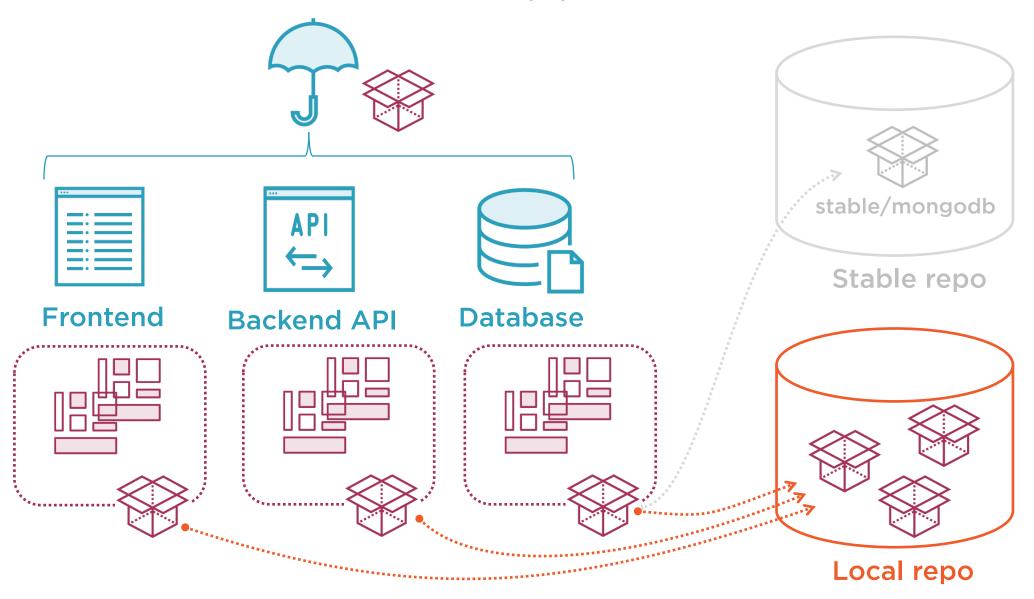
Add conditions and tags



Guestbook Application



Guestbook Application



Guestbook Application

