

Managing Dependencies



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Managing Dependencies



Packaging a chart

Publishing to a repository

How to define dependencies

Tags and conditions

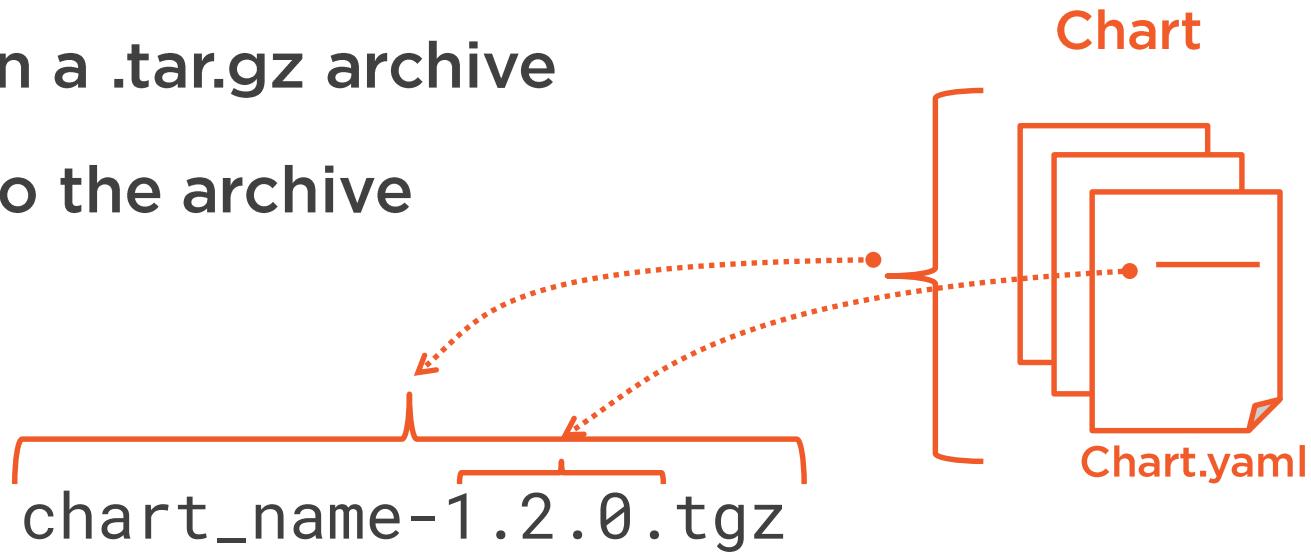


Packaging your Charts



Packaging a Chart

- Compress chart folder in a `.tar.gz` archive
- Add a version number to the archive

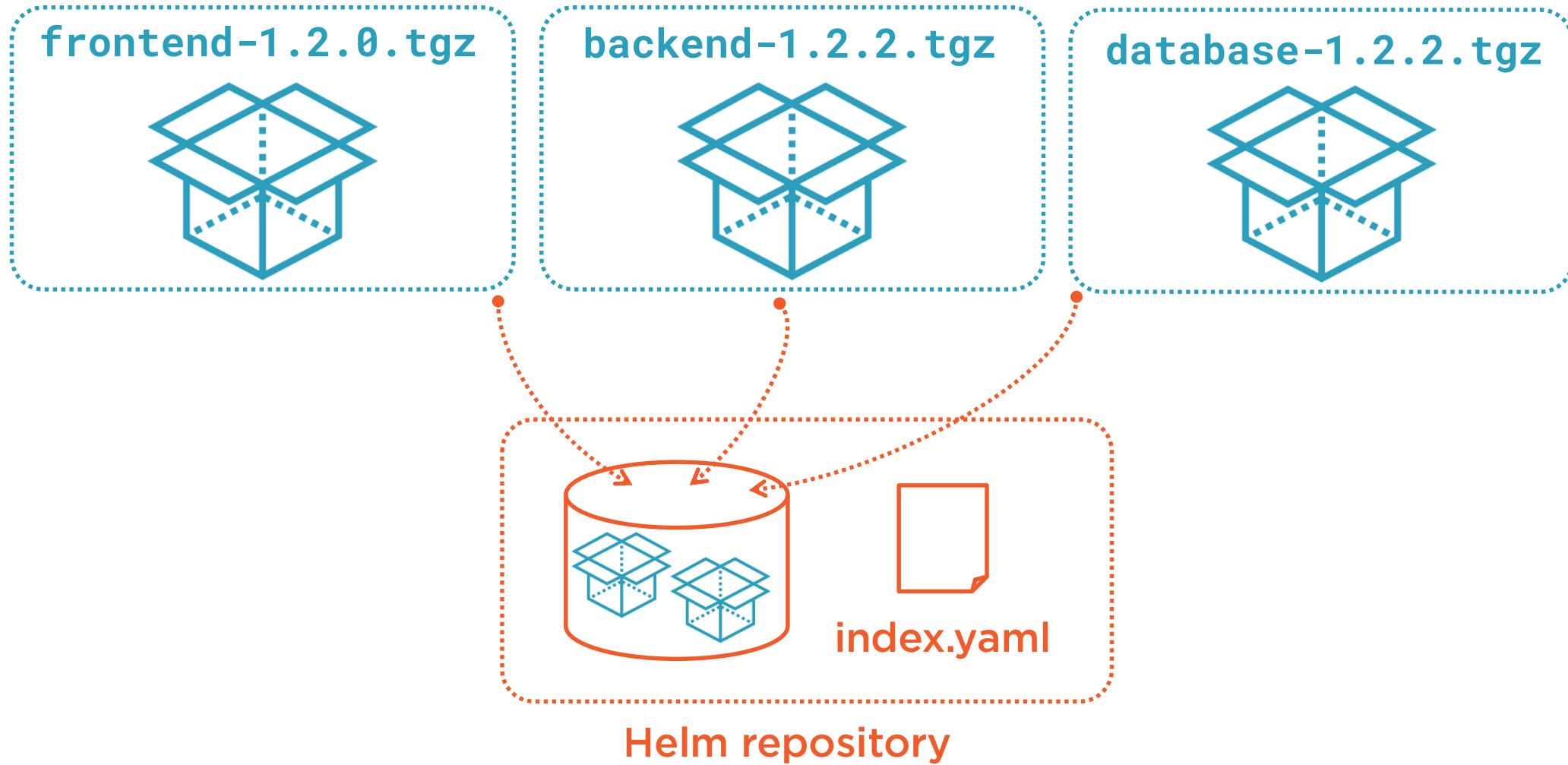


```
> tar -zcvf chart_name-1.2.0.tgz chart_name  
> helm package chart_name
```

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
```

Local Repository

Local repository built by “helm package”

```
> helm package frontend backend database  
> ls ~/.helm/repository/local/
```

```
me@cursus:~/helm$ (master) ls ~/.helm/repository/local/  
backend-1.2.2.tgz database-1.2.2.tgz frontend-1.2.0.tgz  
index.yaml
```

Managing Repository List

Helm maintains a list of repositories

- Local
- Stable
- Customs

Update that list by adding or removing repositories

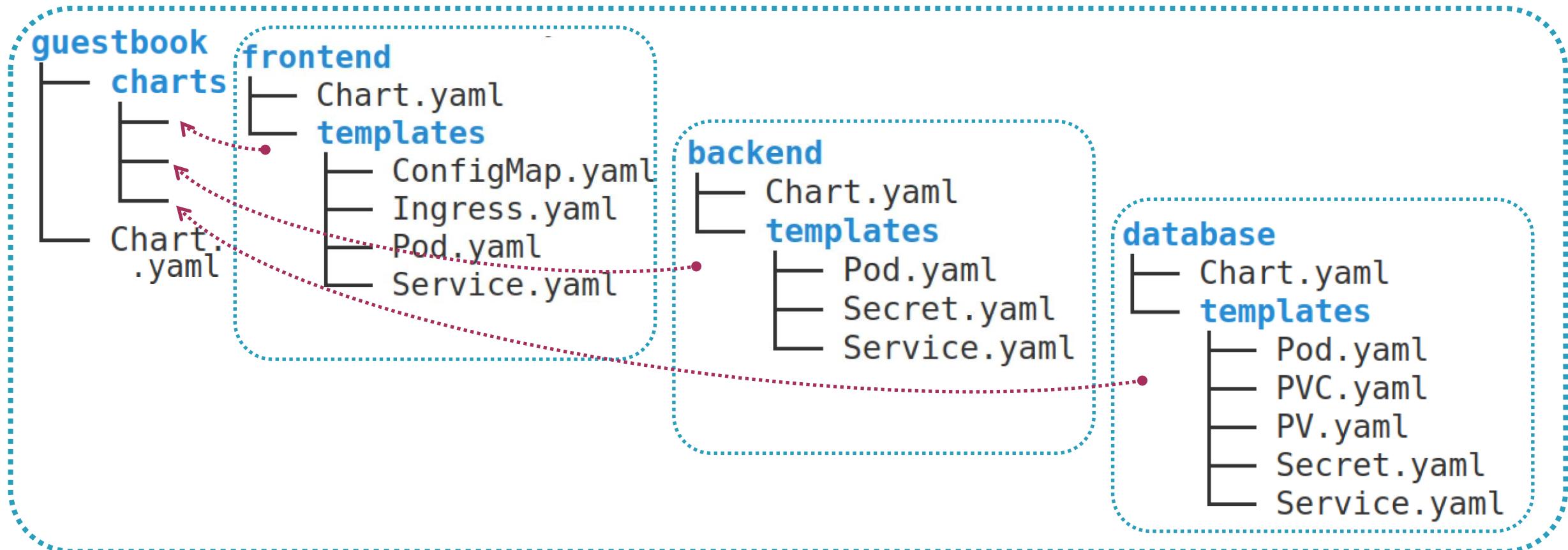
```
me@cursus:~/.helm$ helm repo list
NAME      URL
stable    https://kubernetes-charts.storage.googleapis.com
local     http://127.0.0.1:8879/charts
```

→ > helm serve

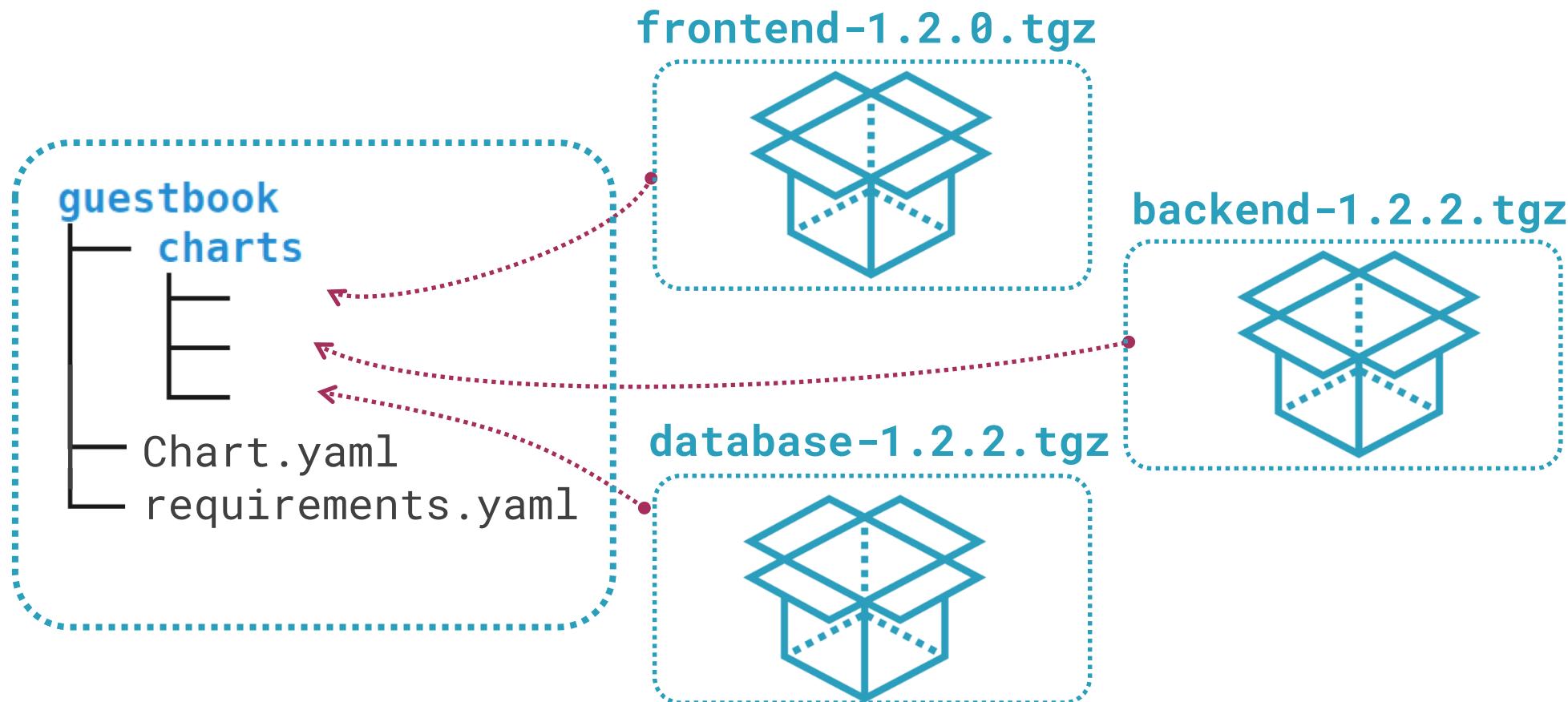
Defining Dependencies



Charts Dependencies



Charts Dependencies



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/
```



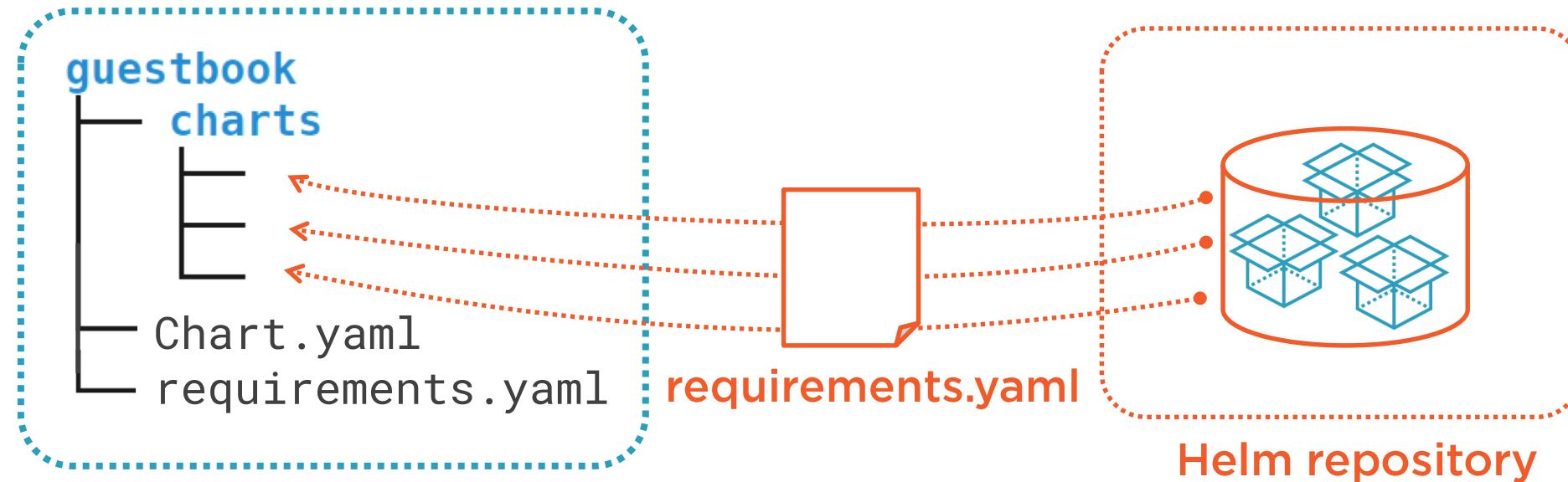
Semver 2.0 Versions

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

<https://github.com/masterminds/semver>



Charts Dependencies



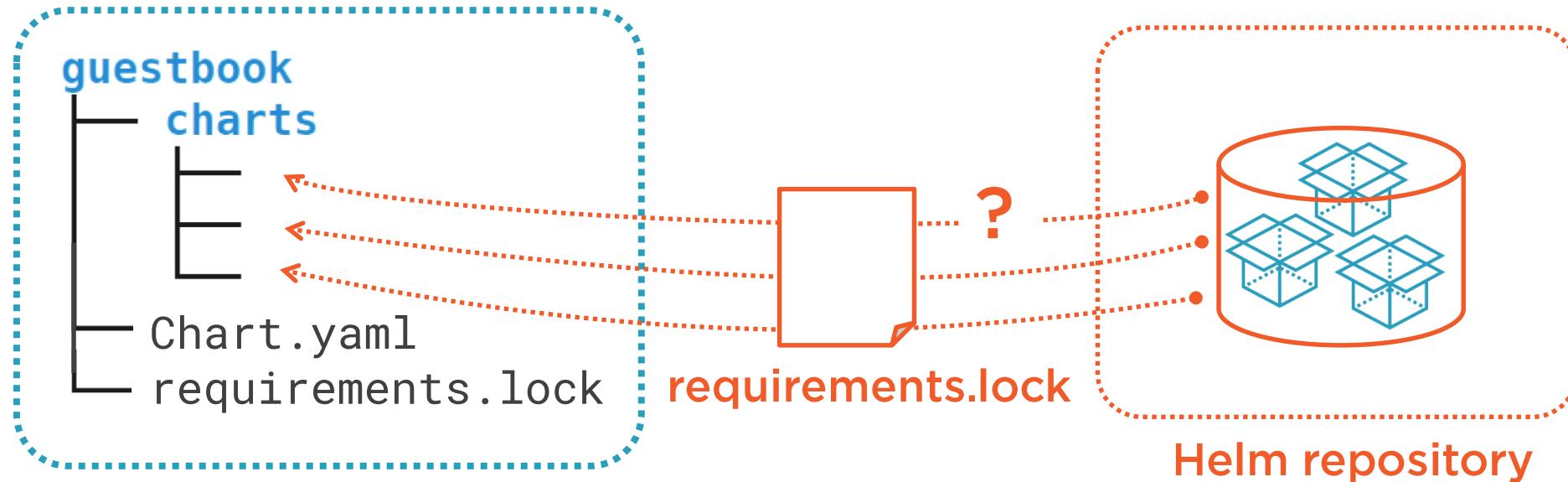
```
> helm dependency update guestbook  
> helm dependency list guestbook
```

requirements.lock

```
dependencies:
- name: backend
  repository: http://127.0.0.1:8879/charts
  version: 1.2.2
- name: frontend
  repository: http://127.0.0.1:8879/charts
  version: 1.2.0
- name: database
  repository: http://127.0.0.1:8879/charts
  version: 1.2.2
digest: sha256:021df6d202b36b9a972ec3defe46be409a725febce216343326c87716790c8a9
generated: 2019-07-06T12:19:15.669827225+02:00
```



Charts Dependencies



```
> helm dependency build guestbook
```

Adding Conditions and Tags



Conditions & Tags

requirements.yaml

```
dependencies:
  - name: backend
    version: ~1.2.2
    repository: http://127.0.0.1:8879/charts
    condition: backend.enabled,global.backend.enabled
    tags:
      - api
  - name: frontend
    version: ^1.2.0
    repository: http://127.0.0.1:8879/charts
  - name: database
    version: ~1.2.2
    repository: http://127.0.0.1:8879/charts
    condition: database.enabled,global.database.enabled
    tags:
      - api
```

values.yaml

```
backend:
  # ...
frontend:
  # ...
database:
  # ...
```



Conditions & Tags

All charts are downloaded

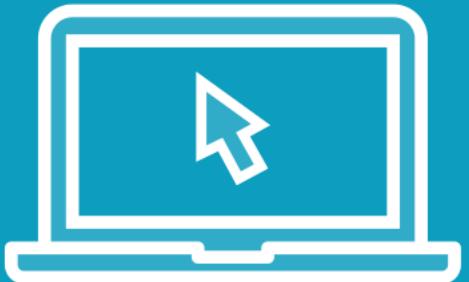
Partial installation with helm install

--set override value.yaml

Conditions override tags

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

Demo



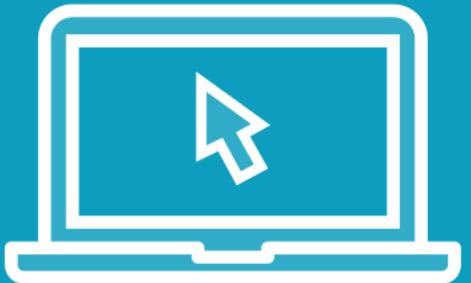
Packaging charts

Publishing charts in repositories

`http://github.com/phcollignon/helm/
lab10_helm_dependencies_begin
lab10_helm_dependencies_final`



Demo

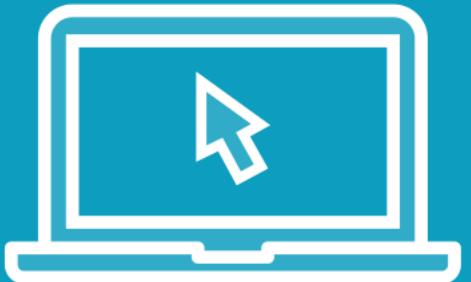


Managing dependencies

[http://github.com/phcollignon/helm/
lab10_helm_dependencies_begin](http://github.com/phcollignon/helm/lab10_helm_dependencies_begin)
[lab10_helm_dependencies_final](http://github.com/phcollignon/helm/lab10_helm_dependencies_final)



Demo



Controlling dependencies with conditions and tags

[http://github.com/phcollignon/helm/
lab10_helm_dependencies_begin](http://github.com/phcollignon/helm/lab10_helm_dependencies_begin)
[lab10_helm_dependencies_final](http://github.com/phcollignon/helm/lab10_helm_dependencies_final)

