

Managing Dependencies



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Managing Dependencies



Packaging a chart

Publishing to a repository

How to define dependencies

Tags and conditions

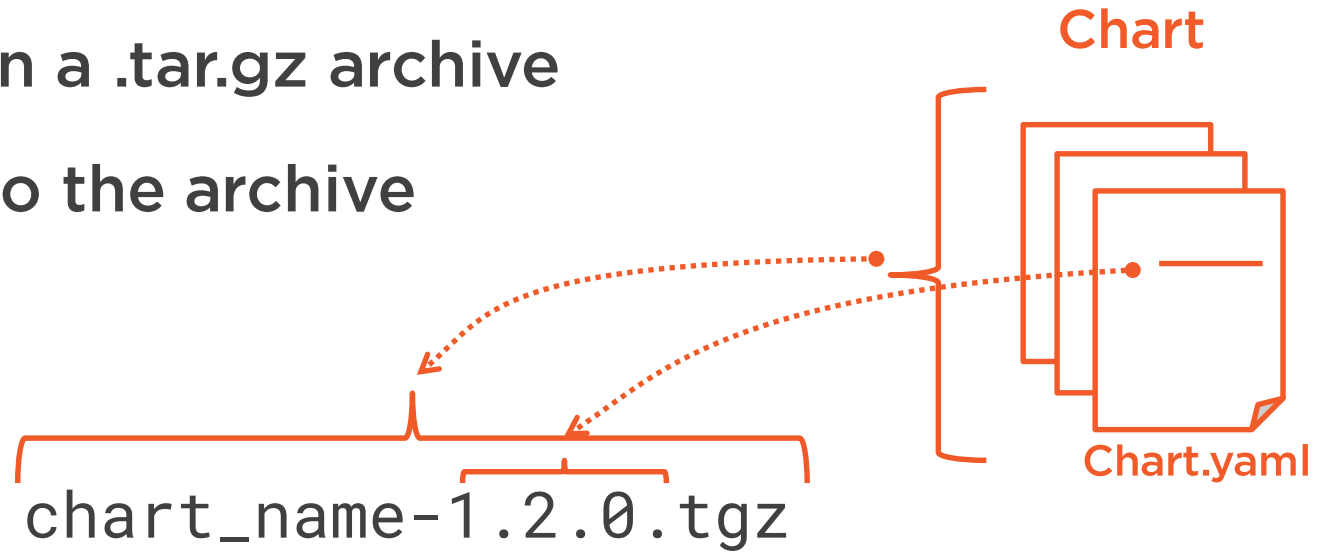


Packaging your Charts



Packaging a Chart

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

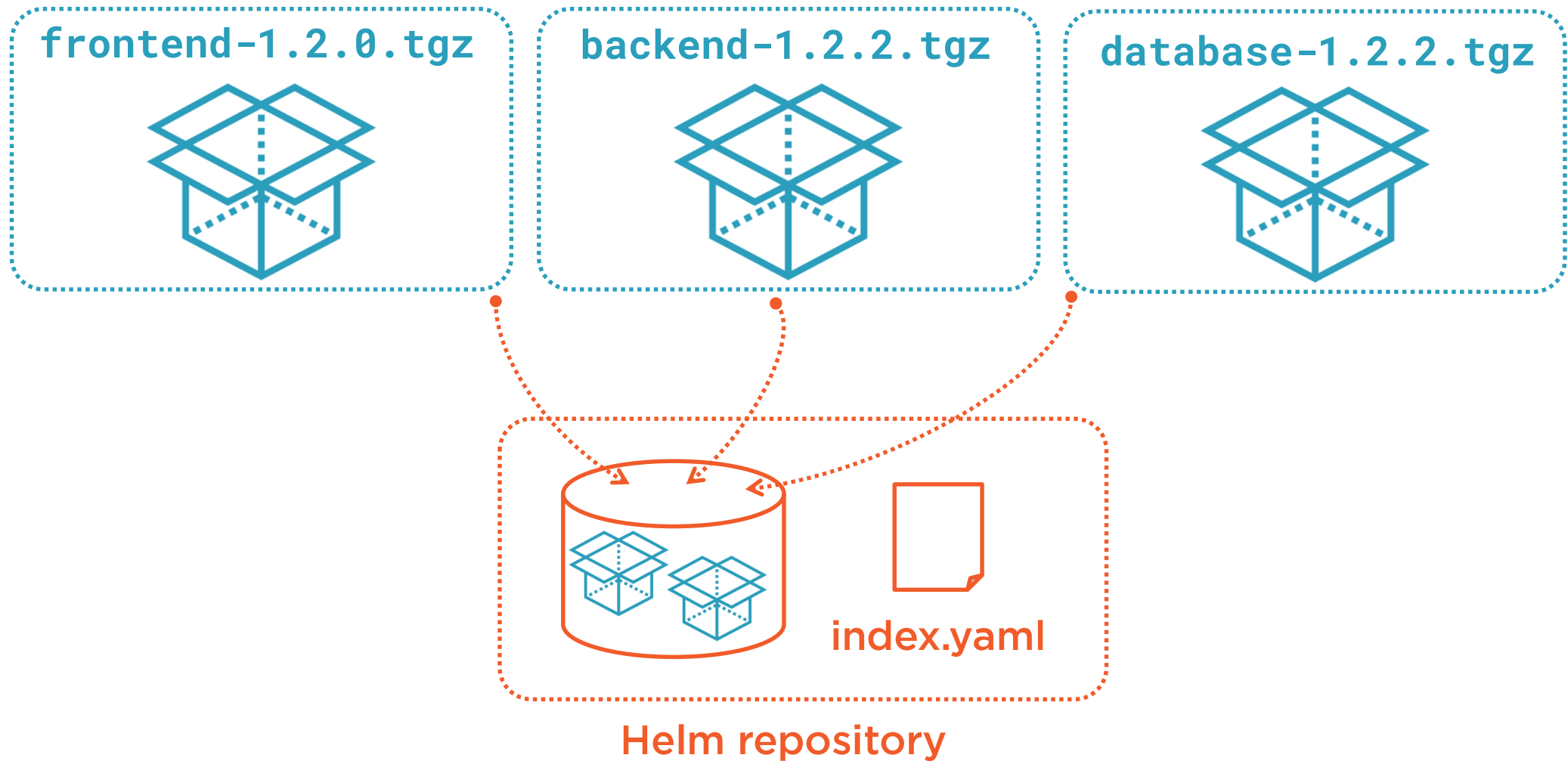


```
> tar -zcvf chart_name-1.2.0.tgz chart_name  
> helm package chart_name
```

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
```

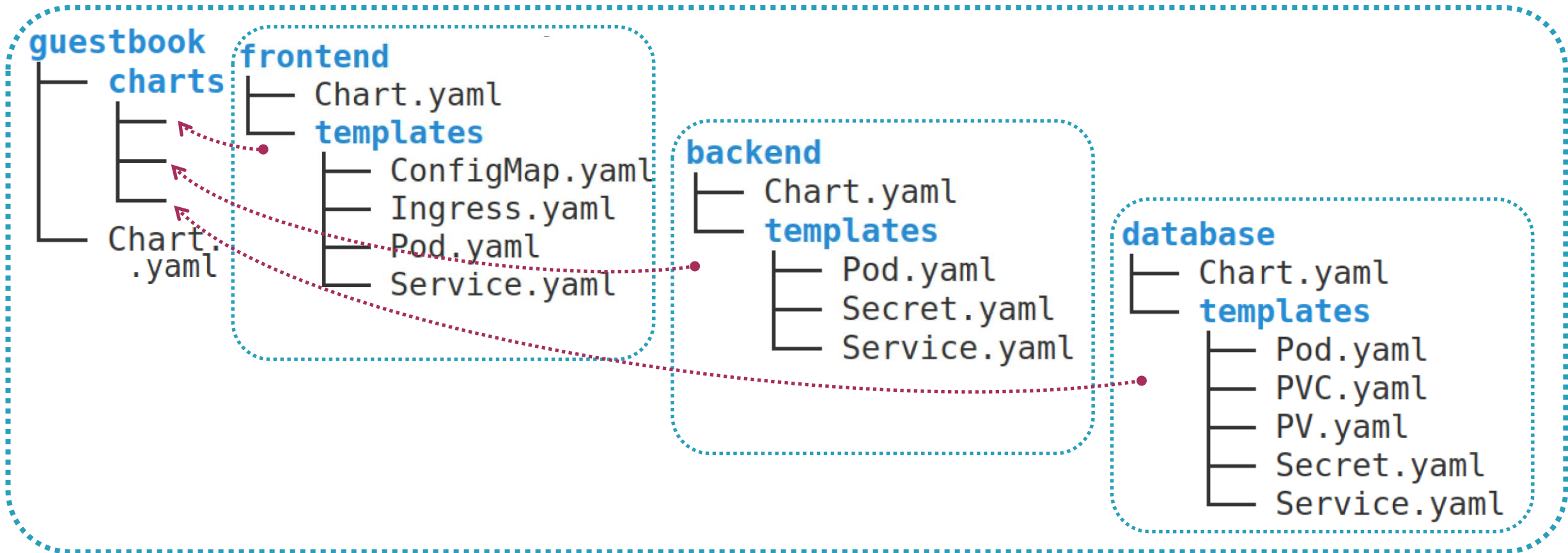
NAME	URL
stable	https://kubernetes-charts.storage.googleapis.com
local	http://127.0.0.1:8879/charts

 > helm serve

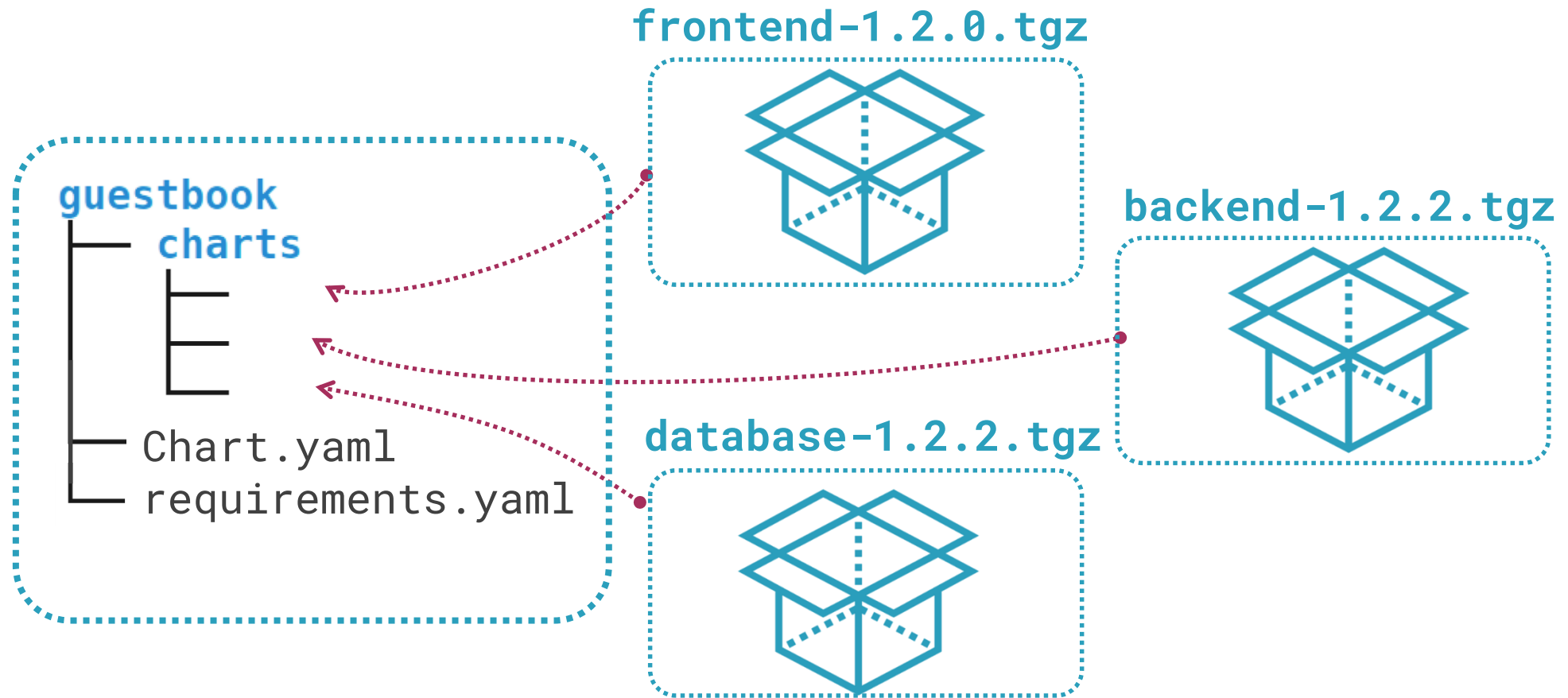
Defining Dependencies



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/
```



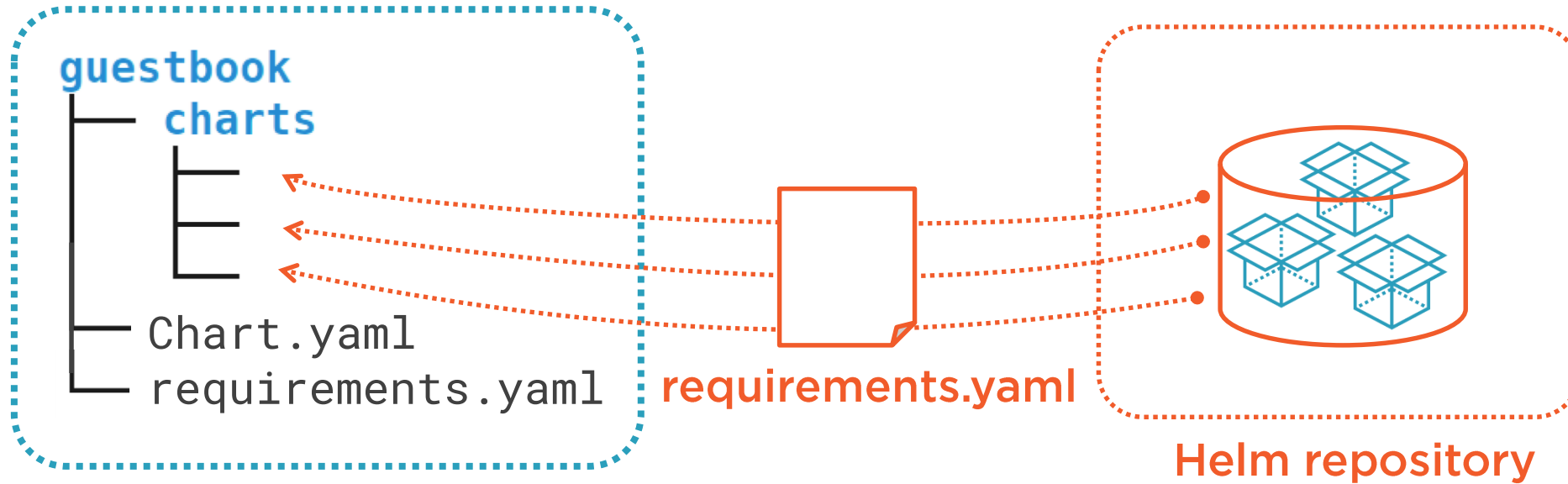
Semver 2.0 Versions

Range	Versions
~1.2.3	$\geq 1.2.3, < 1.3.0$
1.2.x	$\geq 1.2.0, < 1.3.0$
^1.2.3	$\geq 1.2.3, < 2.0.0$
1.x.x	$\geq 1.2.0, < 2.0.0$
1.2 - 1.4.5	$\geq 1.2, \leq 1.4.5$

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



Charts Dependencies



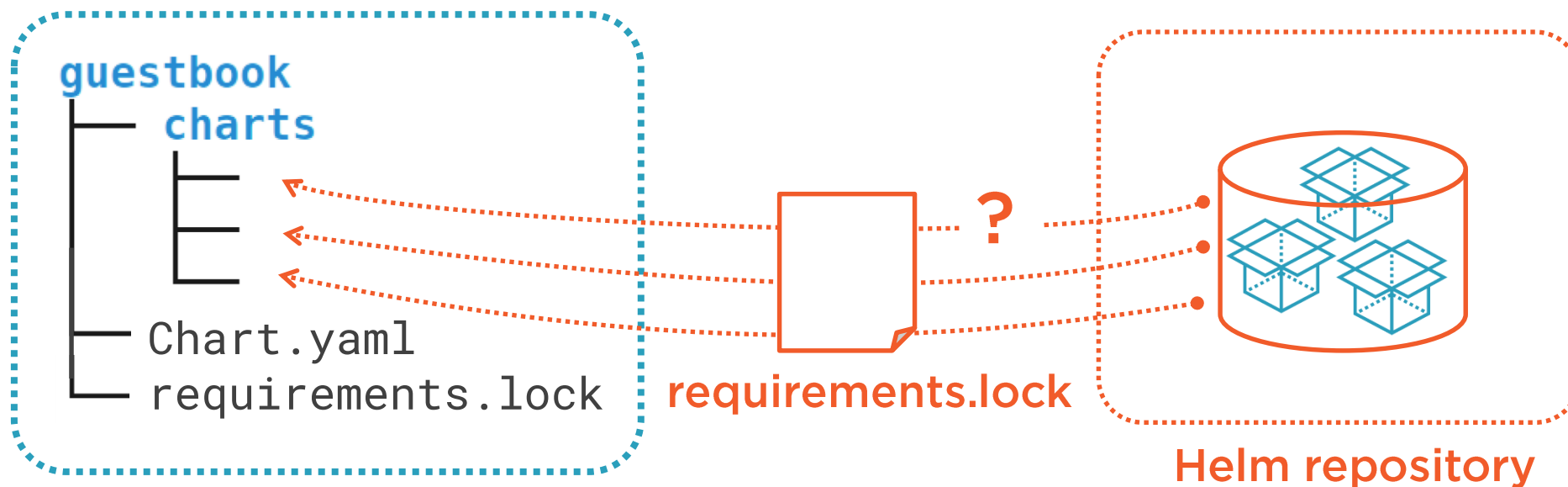
- > `helm dependency update guestbook`
- > `helm dependency list guestbook`

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
```

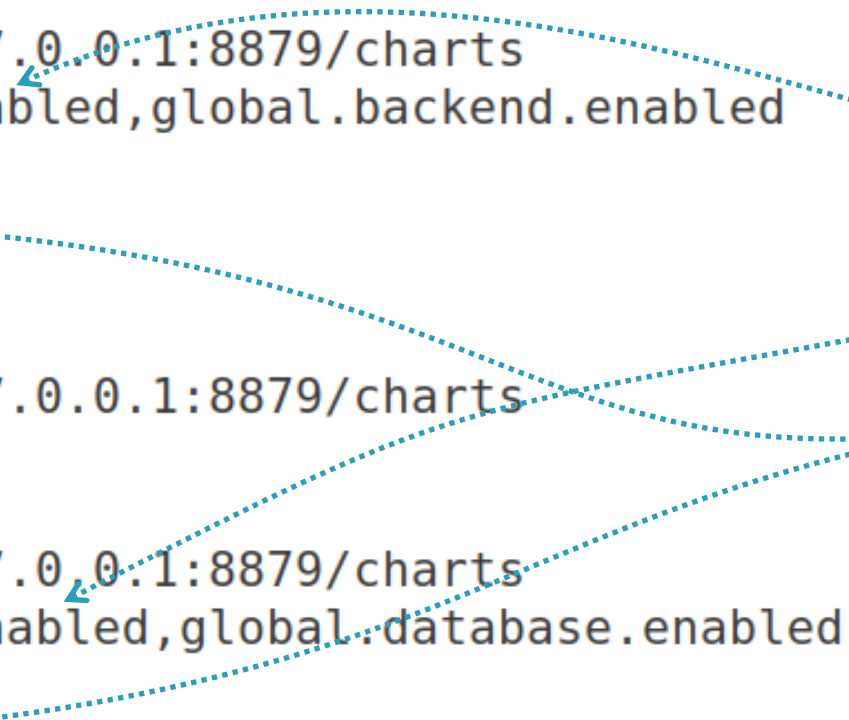
Adding Conditions and Tags



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  
lab10_helm_dependencies_final
```



Demo



Controlling dependencies with conditions and tags

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

