Rancher Training

Session 2

RANCHER LABS

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Afternoon Agenda

- Infrastructure Services
- Catalog
- Exercise 1
- API
- Exercise 2
- CLI/rancher-compose
- Exercise 3

Infrastructure Services

- Infrastructure Services
- Networking
- Metadata Service
- DNS Service
- Persistent Storage Service

Infrastructure Services

- Include type of orchestration, external DNS, networking, storage, and framework services (i.e. internal dns, metadata, and health check).

Networking

- Networking Options:
  - Managed
  - Bridge
  - None
  - Host
  - Container
- Container Networking Interface(CNI) framework
- Support different network drivers
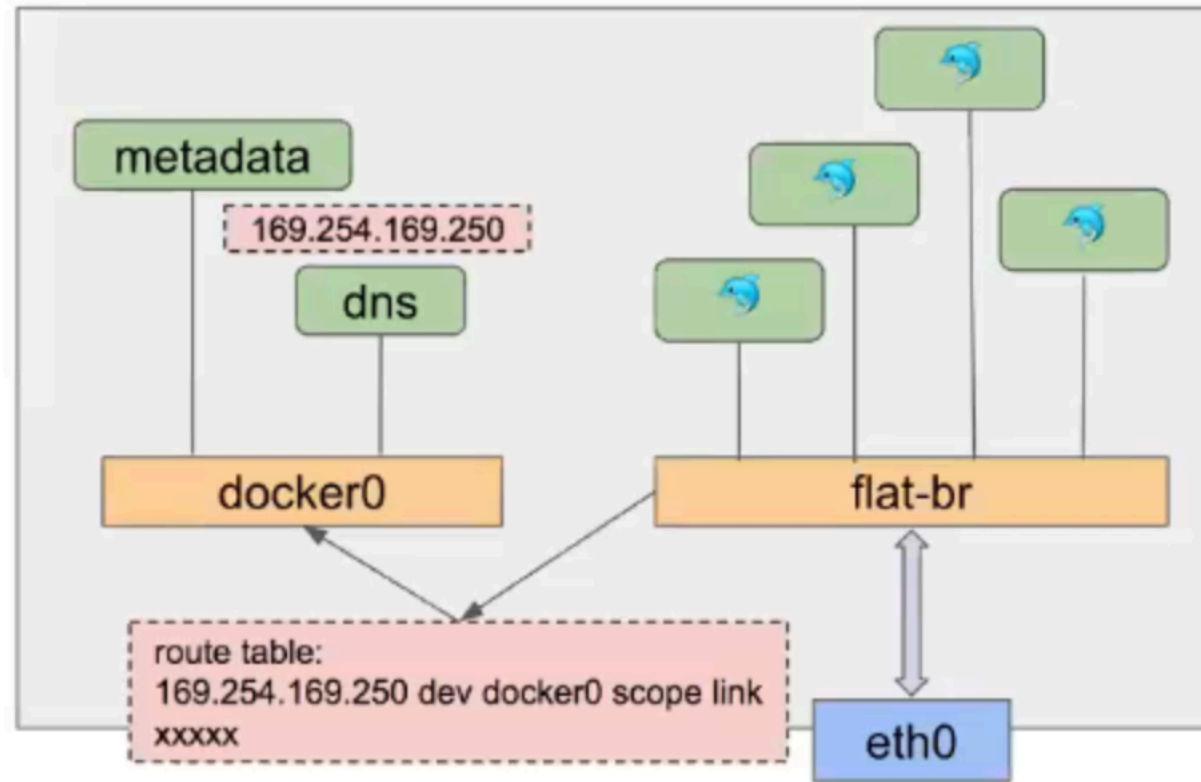
Networking - IPSec
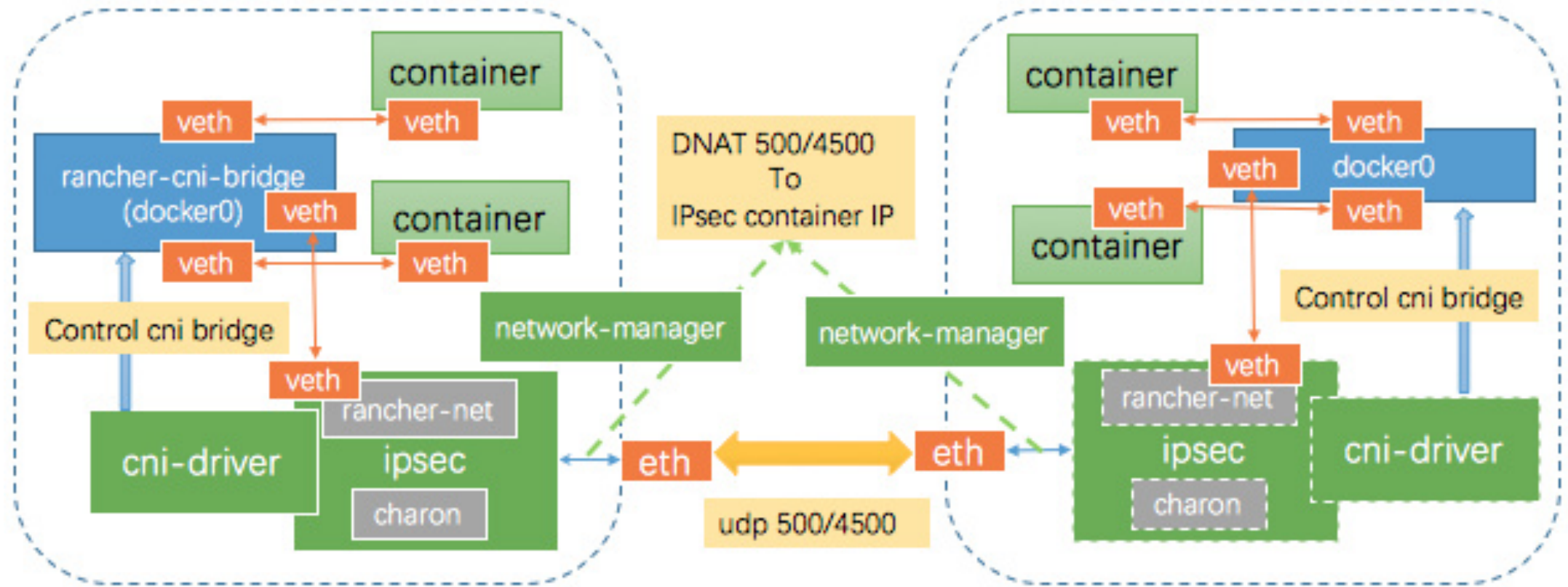
Networking - VxLAN


```
root@f00873447840:/# ip route
default via 10.42.0.1 dev eth0
10.42.0.0/16 dev eth0  proto kernel  scope link  src 10.42.122.252
10.42.12.14 dev vtep1042
10.42.38.72 dev vtep1042
10.42.43.231 dev vtep1042
10.42.48.174 dev vtep1042
10.42.51.147 dev vtep1042
10.42.88.225 dev vtep1042
10.42.117.91 dev vtep1042
10.42.153.46 dev vtep1042
```

eth0

Rancher-net-vxlan   vtep1042   ↔   eth   ⇔   eth   Another host

udp 4789
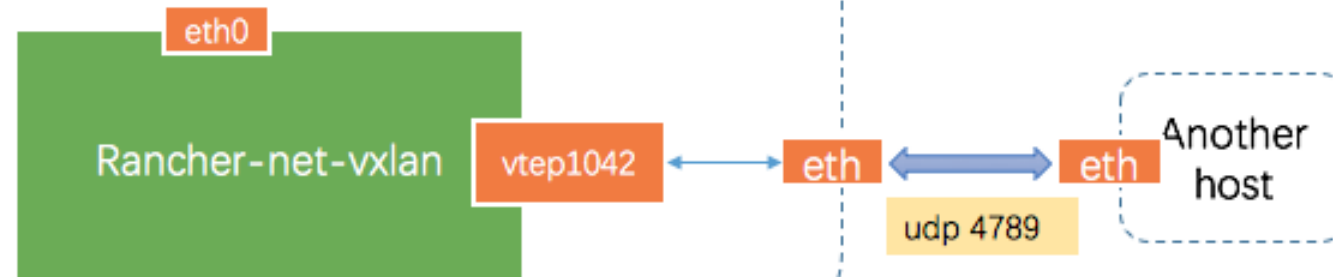
```
root@f00873447840:/# bridge fdb show vetp1042
33:33:00:00:00:01 dev eth0 self permanent
01:00:5e:00:00:01 dev eth0 self permanent
33:33:ff:63:41:83 dev eth0 self permanent
0e:00:0a:2a:2b:e7 dev vtep1042 dst 10.2.203.133 self permanent
0e:00:0a:2a:c2:ea dev vtep1042 dst 10.2.2.43 self permanent
0e:00:0a:2a:e9:49 dev vtep1042 dst 10.2.1.67 self permanent
0e:00:0a:2a:d9:5d dev vtep1042 dst 10.2.222.218 self permanent
0e:00:0a:2a:33:93 dev vtep1042 dst 10.2.246.17 self permanent
```

Networking - Flat

Extend Networking

Related Codes

1. https://github.com/rancher/rancher-net
2. https://github.com/rancher/plugin-manager

Network Policy

- A network policy allows you to define specific networking rules within the environment (only for cattle currently)

Network Policy

```
root@ip-172-31-16-111:~# iptables -t filter  -nvL CATTLE_NETWORK_POLICY
Chain CATTLE_NETWORK_POLICY (1 references)
 pkts bytes target     prot opt in      out     source               destination
  510 30294 RETURN     all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-S-9363986724208910864 src
    0     0 RETURN     all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-S-3308273598065079164 src
    0     0 RETURN     all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-S-13647065898704439585 src
    0     0 RETURN     all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-S-15242666270991449833 src
  510 39372 RETURN     all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-S-17252670097841251797 src
    0     0 DROP       all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-U-4778702015894033141 dst m
    0     0 DROP       all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-U-4778702015894033140 dst m
    2   168 DROP       all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-U-16595770286602213533 dst
    0     0 DROP       all  --  *       *       0.0.0.0/0            0.0.0.0/0            match-set RNCH-U-10594850245288165044 dst
```

Metadata Service

- Subscribe Rancher events
- Download and reload answer file
- Acting as IPAM service for IPSec/vxlan CNI network

	network-services	Up to date	2 Services	9 Containers	
Active	metadata + 1 Sidekick ⓘ	Image: rancher/metadata:v0.7.0	Service	6 Containers	
Active	network-manager ⓘ	Image: rancher/network-manager:v0.4.0	Service	3 Containers	

Metadata Service

- Access metadata
- Versioning of metadata
- Add user metadata to a service

> Shell: jenkins-ci_jenkins-primary_1

ProTip: Hold the Control key when opening shell access to launch a new window.

```
jenkins@jenkins-ci_jenkins-primary_1:/$ curl
curl: try 'curl --help' or 'curl --manual' for more information
jenkins@jenkins-ci_jenkins-primary_1:/$ curl http://rancher-metadata
2015-07-25
2015-12-19
latest
jenkins@jenkins-ci_jenkins-primary_1:/$ curl http://rancher-metadata/latest
containers/
hosts/
self/
services/
stacks/
version
jenkins@jenkins-ci_jenkins-primary_1:/$ █
```

Connected

Close

EXAMPLE RANCHER-COMPOSE.YML

```
service:
  # Scale of service
  scale: 3
  # User added metadata
  metadata:
    example:
      name: hello
      value: world
    example2:
      foo: bar
```

Metadata Service

cattle

Subscribe:
config.update

Get answer data
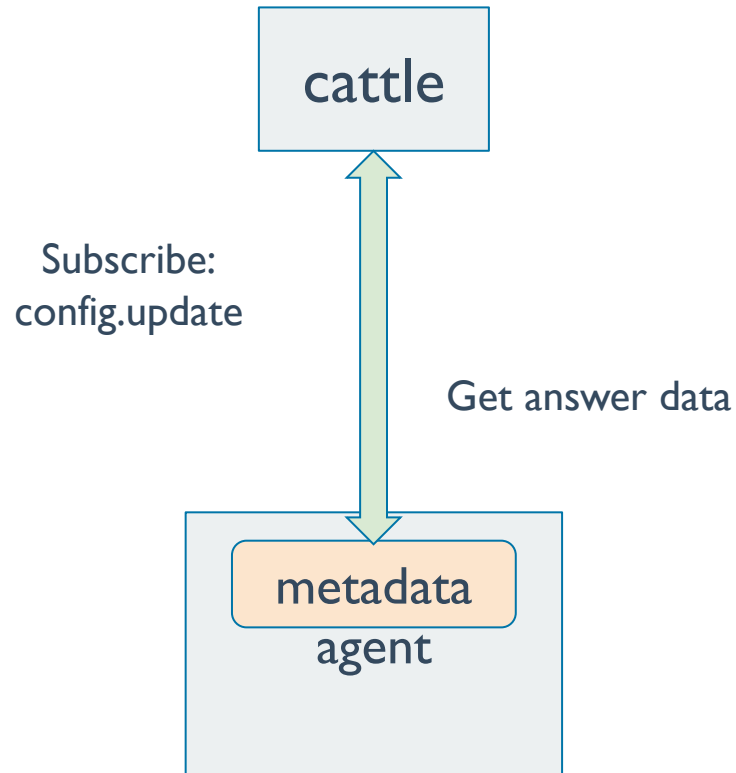
metadata
agent

```
root@9a9cc37f86ed:/# curl http://rancher-metadata
2015-07-25
2015-12-19
2016-07-29
latest
root@9a9cc37f86ed:/# curl http://rancher-metadata/latest
containers/
hosts/
networks/
self/
services/
stacks/
version
```

DNS Service

- Resolve containers within the same stacks by the service names
- Cross stack can be resolved by <service_name>.<stack_name>
- Container can be resolved by container name (<stack_name>-<service_name>-# by default)

```
$ ping bar
PING bar.stacka.rancher.internal (10.42.x.x) 58(84) bytes of data.
64 bytes from 10.42.x.x: icmp_seq=1 ttl=62 time=1.63 ms
64 bytes from 10.42.x.x: icmp_seq=2 ttl=62 time=1.13 ms
64 bytes from 10.42.x.x: icmp_seq=3 ttl=62 time=1.07 ms
```

```
$ ping bar.stackb
PING bar.stackb (10.42.x.x) 56(84) bytes of data.
64 bytes from 10.42.x.x: icmp_seq=1 ttl=62 time=1.43 ms
64 bytes from 10.42.x.x: icmp_seq=2 ttl=62 time=1.15 ms
64 bytes from 10.42.x.x: icmp_seq=3 ttl=62 time=1.27 ms
```

DNS Service

> Shell: network-services-metadata-3

```
root@d098f54df072:/# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defaul
t
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
3421: eth0@if3422: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue stat
e UP group default
    link/ether 02:96:41:41:83:f4 brd ff:ff:ff:ff:ff:ff link-netnsid 0
    inet 172.17.0.2/16 scope global eth0
       valid_lft forever preferred_lft forever
    inet 169.254.169.250/32 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::96:41ff:fe41:83f4/64 scope link
       valid_lft forever preferred_lft forever
root@d098f54df072:/# █
```

ProTip: Hold the Control key when opening shell access to launch a new window.

> Shell: network-services-metadata-dns-1

```
root@2b3b49f4d738:/# ps auxww
USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.1 211932 10856 ?        Ssl  Jan15   5:19 rancher-dns --m
etadata-server=localhost --answers=/etc/rancher-dns/answers.json
root        16  0.0  0.0   4508   700 ?        Ss+  06:34   0:00 /bin/sh -c TERM
=xterm-256color; export TERM; [ -x /bin/bash ] && ([ -x /usr/bin/script ] && /us
r/bin/script -q -c "/bin/bash" /dev/null || exec /bin/bash) || exec /bin/sh
root        20  0.0  0.0   4508    96 ?        S+   06:34   0:00 /bin/sh -c TERM
=xterm-256color; export TERM; [ -x /bin/bash ] && ([ -x /usr/bin/script ] && /us
r/bin/script -q -c "/bin/bash" /dev/null || exec /bin/bash) || exec /bin/sh
root        21  0.0  0.0  19128  1948 ?        R+   06:34   0:00 /usr/bin/script
 -q -c /bin/bash /dev/null
root        22  0.0  0.0   4508   700 pts/0    Ss   06:34   0:00 sh -c /bin/bash
root        23  0.0  0.0  18244  3348 pts/0    S    06:34   0:00 /bin/bash
root        28  0.0  0.0  34424  2848 pts/0    R+   06:34   0:00 ps auxww
root@2b3b49f4d738:/# █
```

DNS Service

Network namespace

rancher-metadata

rancher-dns
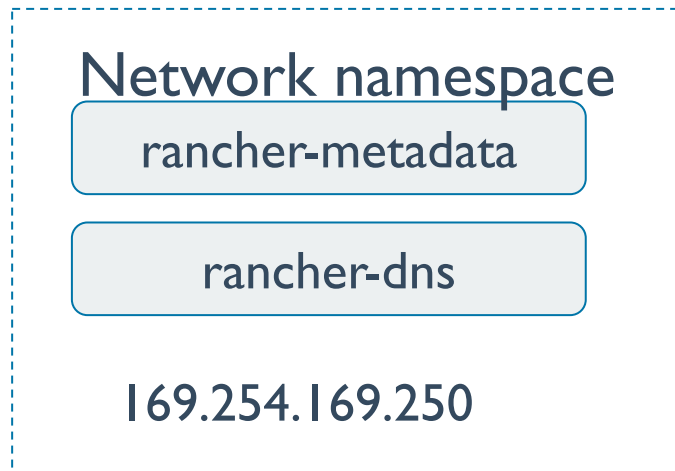
169.254.169.250

```
root@63ae1c61b1cd:/# cat /etc/resolv.conf
search default.rancher.internal ubuntu-2.defau
al cn-north-1.compute.internal
nameserver 169.254.169.250
```

```
root@63ae1c61b1cd:/# ip route
default via 10.42.0.1 dev eth0
10.42.0.0/16 dev eth0   proto kernel   scope li
169.254.169.250 via 10.42.0.1 dev eth0
```

```
root@ip-172-31-23-130:/home/ubuntu# ip route
default via 172.31.16.1 dev eth0
10.42.0.0/16 dev docker0   proto kernel   scope link   src
169.254.169.250 dev docker0   scope link
172.17.0.0/16 dev docker0   proto kernel   scope link   sr
172.31.16.0/20 dev eth1   proto kernel   scope link   src
172.31.16.0/20 dev eth0   proto kernel   scope link   src
```

Healthcheck Service
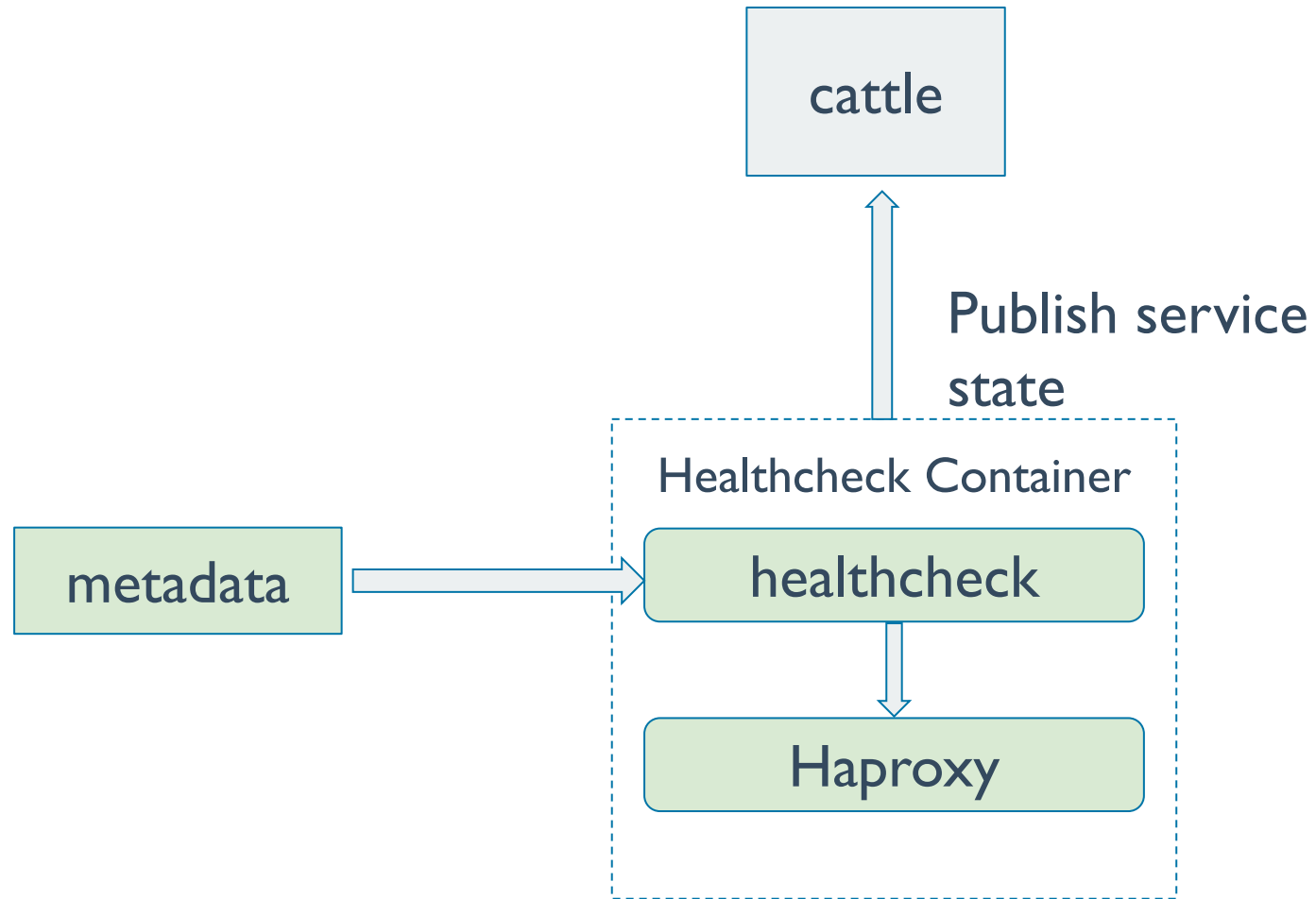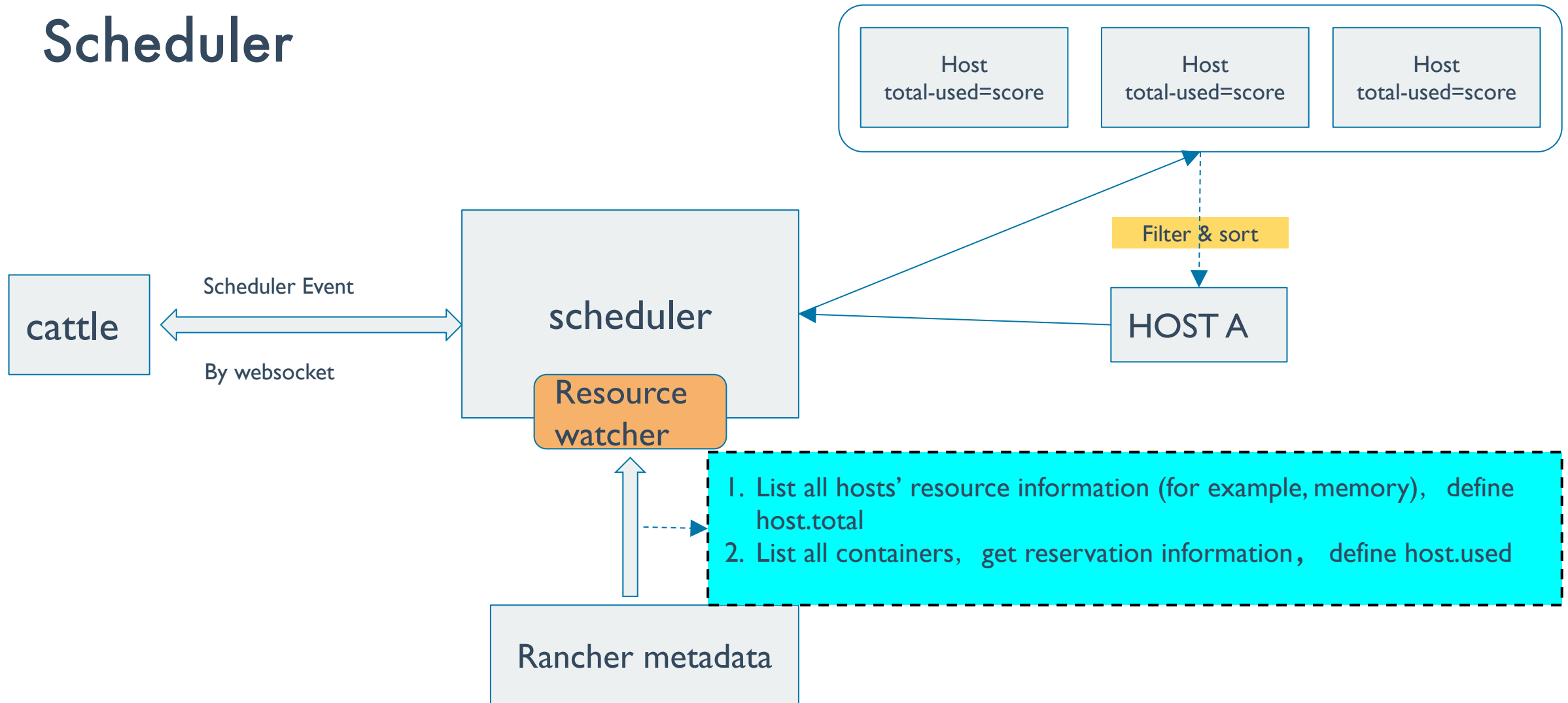
Healthcheck Service

⌐ 命令行: healthcheck-healthck-1

```
root@462766c37bea:/# ps -ef
UID         PID  PPID  C STIME TTY          TIME CMD
root          1     0  0 Jan28 ?        00:00:12 /tini -- healthcheck --metadata-address 169.254.169.250
root         13     1  0 Jan28 ?        00:09:51 healthcheck --metadata-address 169.254.169.250
haproxy    1043     1  0 02:11 ?        00:00:36 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf 640
haproxy    1113     1  0 02:11 ?        00:00:39 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy    3181     1  0 02:23 ?        00:00:45 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy    3401     1  0 02:24 ?        00:00:55 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy    4023     1  0 02:28 ?        00:00:54 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy   10102     1  0 06:35 ?        00:00:38 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy   10127     1  0 06:35 ?        00:00:33 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy   10143     1  0 06:35 ?        00:00:31 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf
haproxy   10406     1  0 15:07 ?        00:00:06 haproxy -p /var/run/haproxy.pid -f /etc/haproxy/haproxy.cfg -sf 10399
```

Scheduler

| Host total-used=score | Host total-used=score | Host total-used=score |

cattle

Scheduler Event

By websocket

scheduler

Resource watcher

Filter & sort

HOST A

1. List all hosts' resource information (for example, memory), define host.total
2. List all containers, get reservation information, define host.used

Rancher metadata

Scheduler-Host total setting

Edit Host

Hostname
ip-172-31-2-230.cn-north-1.compute.internal
As reported by the host operating system.

Custom Name

> e.g. dev1

If this is left empty, the Hostname will be shown as the Name.

Description

> e.g. My development host

Local Storage Limit   5353930   MB   **Memory Limit**   1800   MB

mCPU Limit   1000

Labels

⊕ Add Label

Key   Value

Scheduler-Container used setting

Persistent Storage Service

- ## Storage Drivers
  - Rancher-NFS
  - Rancher-RBD
  - Rancher-EBS
- ## Volume Scope (only supported in Rancher-Compose)
  - Environment
  - Stack
  - Container

Persistent Storage Service

Rancher-NFS Plugin demo

External-LB & External-DNS

rancher / external-lb

`<> Code` `Pull requests 3` `Projects 0` `Wiki`

Branch: master ▾   **external-lb / providers /**

janeczku Don't register instances when ELB uses incorrect port

..

📁 elbv1 — Don't register instances

📁 f5 — Update main

📄 external_lb_provider.go — Update main

rancher / external-dns

`<> Code` `Pull requests 5` `Projects 0` `W`

Branch: master ▾   **external-dns / providers /**

janeczku Fix go fmt errors

..

📁 cloudflare — Refactoring

📁 digitalocean — Fix go fmt errors

📁 dnsimple — Throttle API calls to C

📁 gandi — Fix go vet errors

📁 pointhq — Refactoring

📁 powerdns — Refactoring

📁 rfc2136 — Fix go fmt errors

📁 route53 — Fix go vet errors

Catalog

- Catalog
- Catalog Service
- Creating Private Catalog

Catalog

- Lots of examples of "pre configured applications"
- Easily write your own
- Adding private repo

https://github.com/rancher/community-catalog
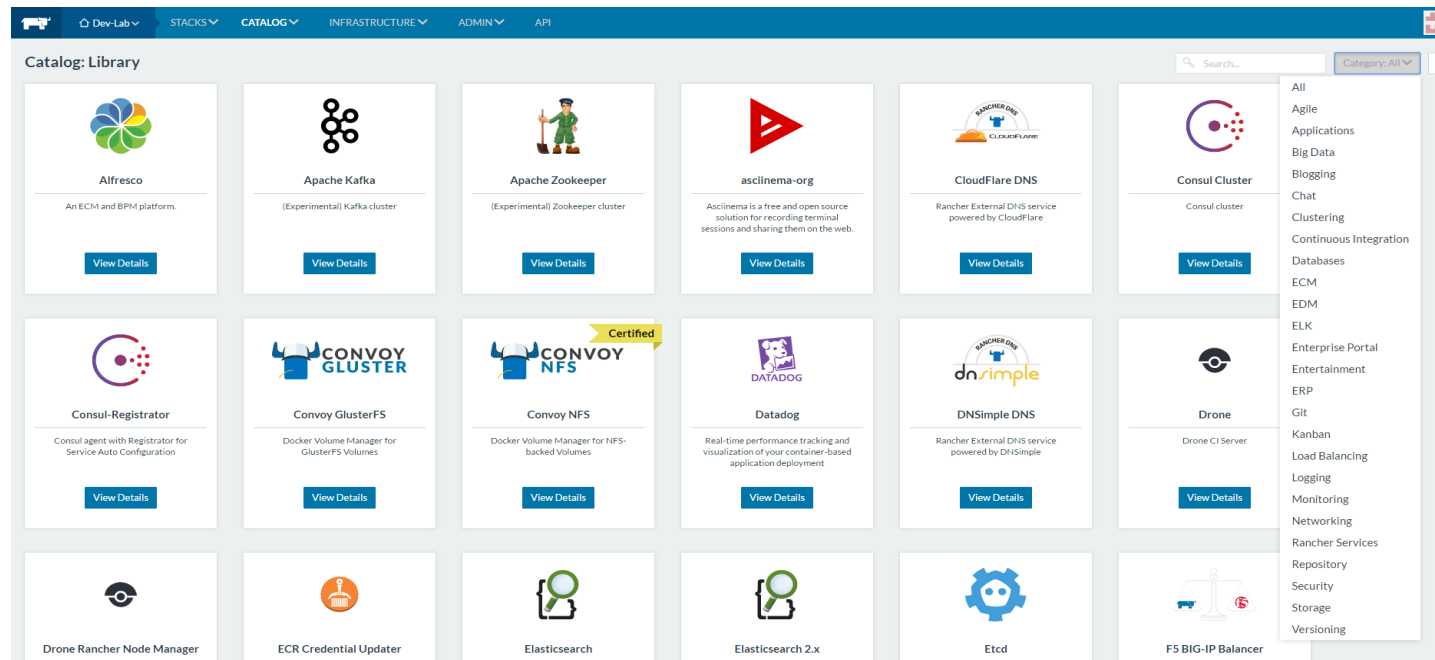
Catalog Service

- rancher-catalog-service

```
MemoryError -XX:HeapDumpPath=/var/lib/cattle/logs -Dlogback.bootstrap.level=WARN
 -cp /usr/share/cattle/f7a48ecb251f47be0327fa235781109c:/usr/share/cattle/f7a48e
cb251f47be0327fa235781109c/etc/cattle io.cattle.platform.launcher.Main
mysql        24  0.1 19.1 910328 391004 ?        Ssl   Feb06    5:51 /usr/sbin/mysql
d --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --u
ser=mysql --log-error=/var/log/mysql/error.log --pid-file=/var/run/mysqld/mysqld
.pid --socket=/var/run/mysqld/mysqld.sock --port=3306
root        139  0.1  1.0 290756 21940 ?        Sl    Feb06    5:32 rancher-catalog
-service -configFile repo.json -refreshInterval 300
root        245  0.0  0.3  26140  6196 ?        Sl    Feb06    0:00 secrets-api ser
ver --enc-key-path .
root        246  0.1  0.9 192980 19100 ?        Sl    Feb06    4:25 websocket-proxy
root        247  0.0  0.6 108256 12324 ?        Sl    Feb06    0:01 webhook-service
root        277  0.0  0.7 117740 15220 ?        Sl    Feb06    0:03 rancher-auth-se
rvice
root      10979  0.3  0.1  19764  3744 ?        Ss    07:54    0:00 bash
root      10994  0.0  0.1  17172  2676 ?        R+    07:54    0:00 ps auxww
root      26321  0.0  0.7  49472 15168 ?        Sl    Feb06    0:04 telemetry clien
t
```

Creating Private Catalog

- ## Folder Structure

```
-- templates OR kubernetes-templates OR swarm-templates
 |-- cloudflare
 |    |-- 0
 |    |    |-- docker-compose.yml
 |    |    |-- rancher-compose.yml
 |    |-- 1
 |    |    |-- docker-compose.yml
 |    |    |-- rancher-compose.yml
 |    |-- catalogIcon-cloudflare.svg
 |    |-- config.yml
...
```

- ## config.yml example

```
name: # Name of the Catalog Entry
  description: |
    # Description of the Catalog Entry
  version: # Version of the Catalog to be used
  category: # Category to be used for searching catalog entries
  maintainer: # The maintainer of the catalog entry
  license: # The license
  projectURL: # A URL related to the catalog entry
```

Creating Private Catalog

- rancher-compose.yml

```
version: '2'
catalog:
  name: # Name of the versioned template of the Catalog Entry
  version: # Version of the versioned template of the Catalog Entry
  description: # Description of the versioned template of the Catalog Entry
  minimum_rancher_version: # The minimum version of Rancher that supports the template, v1.0.1 and 1.0.1 are acceptable
inputs
  maximum_rancher_version: # The maximum version of Rancher that supports the template, v1.0.1 and 1.0.1 are acceptable
inputs
  upgrade_from: # The previous versions that this template can be upgraded from
  questions: #Used to request user input for configuration options
    - variable: # A single word that is used to pair the question and answer.
      label: # The "question" to be answered.
      description: | # The description of the question to show the user how to answer the question.
      default: # (Optional) A default value that will be pre-populated into the UI
      required: # (Optional) Whether or not an answer is required. By default, it's considered `false`.
      type: # How the questions are formatted and types of response expected
```

Creating Private Catalog

- Question type: controls how the questions are formatted in the UI as well as the types of responses that are expected.
- Supported type:
- string
- int
- Boolean
- password
- service
- enum

API

- API Version
- API Key
- API UI

API Version

Endpoint (v2-beta): `http://rancherapps.com:8080/v2-beta`

Endpoint (v1): `http://rancherapps.com:8080/v1`

API Key

- Account API Key
- Environment API Key

API UI

CLI/rancher-compose

Set environment variables:

•# Set the url that Rancher is on
•$ export RANCHER_URL=http://<server_ip>:8080
• # Set the access key
•$ export RANCHER_ACCESS_KEY=<accessKey_of_account_api_key>
• # Set the secret key
•$ export RANCHER_SECRET_KEY=<secretKey_of_account_api_key>

CLI/rancher-compose

```
Usage: rancher [OPTIONS] COMMAND [arg...]

Version: v0.6.7

Options:
  --debug                          Debug logging
  --config value, -c value         Client configuration file (default ${HOME}/.rancher/cli.json) [$RANCHER_CLIENT_CONFIG]
  --environment value, --env value Environment name or ID [$RANCHER_ENVIRONMENT]
  --url value                      Specify the Rancher API endpoint URL [$RANCHER_URL]
  --access-key value               Specify Rancher API access key [$RANCHER_ACCESS_KEY]
  --secret-key value               Specify Rancher API secret key [$RANCHER_SECRET_KEY]
  --host value                     Host used for docker command [$RANCHER_DOCKER_HOST]
  --wait, -w                       Wait for resource to reach resting state
  --wait-timeout value             Timeout in seconds to wait (default: 600)
  --wait-state value               State to wait for (active, healthy, etc)
  --help, -h                       show help
  --version, -v                    print the version

Commands:
  catalog              Operations with catalogs
  config               Setup client configuration
  docker               Run docker CLI on a host
  environment, env     Interact with environments
  events, event        Displays resource change events
  exec                 Run a command on a container
  export               Export configuration yml for a stack as a tar archive or to local files
  hosts, host          Operations on hosts
  logs                 Fetch the logs of a container
  ps                   Show services/containers
  restart              Restart service, container
  rm                   Delete service, container, stack, host, volume, secret
  run                  Run services
  scale                Set number of containers to run for a service
  secrets, secret      Operations on secrets
  ssh                  SSH into host
  stacks, stack        Operations on stacks
  start, activate      Start or activate service, container, host, stack
  stop, deactivate     Stop or deactivate service, container, host, stack
  up                   Bring all services up
  volumes, volume      Operations on volumes
  inspect              View details for service, container, host, environment, stack, volume, secret
  wait                 Wait for resources service, container, host, stack, machine, projectTemplate
  help                 Shows a list of commands or help for one command

Run 'rancher COMMAND --help' for more information on a command.
root@node06:~#
```

```
root@node06:~# rancher-compose -h
Usage: rancher-compose [OPTIONS] COMMAND [arg...]

Docker-compose to Rancher

Version: v0.12.5

Author:
  Rancher Labs, Inc.

Options:
  --verbose, --debug
  --file value, -f value          Specify one or more alternate compose files (default: docker-compose.yml) [$COMPOSE_FILE]
  --project-name value, -p value  Specify an alternate project name (default: directory name) [$COMPOSE_PROJECT_NAME]
  --url value                     Specify the Rancher API endpoint URL [$RANCHER_URL]
  --access-key value              Specify Rancher API access key [$RANCHER_ACCESS_KEY]
  --secret-key value              Specify Rancher API secret key [$RANCHER_SECRET_KEY]
  --rancher-file value, -r value  Specify an alternate Rancher compose file (default: rancher-compose.yml)
  --env-file value, -e value      Specify a file from which to read environment variables
  --bindings-file value, -b value Specify a file from which to read bindings
  --help, -h                      show help
  --version, -v                   print the version

Commands:
  create      Create all services but do not start
  up          Bring all services up
  start       Start services
  logs        Get service logs
  restart     Restart services
  stop, down  Stop services
  scale       Scale services
  rm          Delete services
  pull        Pulls images for services
  upgrade     Perform rolling upgrade between services
  help        Shows a list of commands or help for one command

Run 'rancher-compose COMMAND --help' for more information on a command.
```

Rancher Deep Dive (Zhibo)

Exercise 1

Creating Private Catalog

Create Private Catalog

- 1. Register a github account if you don't have. Create a project

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

⬇ Set up in Desktop   or   **HTTPS**   SSH   `https://github.com/rancher-cn/training.git`

We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# training" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/rancher-cn/training.git
git push -u origin master
```

•2. Create a test stack as what you want.

⊜ —	CatalogDemo		Add Service ⌄	**2** Services	**2** Containers
⟲ Active	lb ⓘ	To: nginx Ports: 80/tcp		Load Balancer	1 Container
🔀 Active	nginx ⓘ	Image: nginx:1.9		Service	1 Container

docker-compose.yml 📋

```
version: '2'
services:
  nginx:
    image: nginx:1.9
    stdin_open: true
    tty: true
    labels:
      io.rancher.container.pull_image: always
  lb:
    image: rancher/lb-service-haproxy:v0.5.9
    ports:
    - 80:80/tcp
    labels:
      io.rancher.container.agent.role: environmentAdmin
      io.rancher.container.create_agent: 'true'
```

rancher-compose.yml 📋

```
version: '2'
services:
  nginx:
    scale: 1
    start_on_create: true
  lb:
    scale: 1
    start_on_create: true
    lb_config:
      certs: []
      port_rules:
      - hostname: ''
        priority: 1
        protocol: http
        service: nginx
        source_port: 80
        target_port: 80
    health_check:
      response_timeout: 2000
      healthy_threshold: 2
      port: 42
      unhealthy_threshold: 3
      interval: 2000
```

- 3. Refer to https://github.com/rancher/community-catalog , create folder structure in your host as below:

```
-- templates
 |-- demo
 |    |-- 0
 |    |    |-- docker-compose.yml
 |    |    |-- rancher-compose.yml
 |    |-- catalogIcon-demo.png
 |    |-- config.yml
```

•4. Sample files
•

```yaml
version: '2'
services:
  nginx:
    image: nginx:1.9
    stdin_open: true
    tty: true
    labels:
      io.rancher.container.pull_image: always
  lb:
    image: rancher/lb-service-haproxy:v0.5.9
    ports:
    - $ext_port:$ext_port/tcp
    labels:
      io.rancher.container.agent.role: environmentAdmin
      io.rancher.container.create_agent: 'true'
```

```yaml
.catalog:
  name: Demo
  description: |
    (Training) Catalog Demo
  version: 0.1
  minimum_rancher_version: v1.0.0
  maintainer: "Rancher-CN <rancher-cn@outlook.com>"
  questions:
    - variable: "scale_number"
      description: |
        Scale Number
      label: "Nginx Scale Number:"
      default: "1"
      required: true
      type: "int"
    - variable: "ext_port"
      description: |
        External Port
      label: "HAProxy External Port:"
      default: "8080"
      required: true
      type: "int"

  …………………..
```

```yaml
name: Catalog Demo
description: |
  Demo nginx service
version: 0.1
category: Demo
maintainer: community
license:
```

•4. Git push

```
$git config --global user.email "xxx@xxx.xxx"
$git config --global user.name "xxxx"
$git add .
$git commit -m "first commit"
$git remote add origin https://github.com/rancher-cn/xxx.git
$git push -u origin master
```

•5. Add Catalog and try to deploy

Catalog: Training

Catalog Demo

Demo nginx service

View Details

Add Catalog Demo Stack

Demo nginx service

Catalog: Training
Category: Demo
Support: Maintained by community members
Maintainer: community

Template Version

0.1	▾

Select a version of the template to deploy

New Stack

Name*

demo

Description

Description

Configuration Options

Nginx Scale Number:*

1

Scale Number

HAProxy External Port:*

8080

External Port

☑ Start services after creating

Exercise 2

Working with API UI

Use API UI to change settings

1. Choose one service and click view in API

2. Click Edit and try to change the scale number

Edit service

Field Name	Type	Value
accountId	reference[account]	1a5
createIndex	int	3
created	date	2017-03-03T06:24:10Z
description	string	☐ ☑ NULL
externalId	string	–
healthState	string	healthy
id	int	1s361
kind	string	service
* name	string	nginx ☐ NULL
removed	date	–
selectorContainer	string	☐ ☑ NULL
selectorLink	string	☐ ☑ NULL
stackId	reference[stack]	1st112
state	enum	active
system	boolean	–
uuid	string	65ab75ba-0428-4d22-9856-da4878bad02c
vip	string	–
transitioning	enum	no
transitioningMessage	string	–
transitioningProgress	int	–
scale	int	3
currentScale	int	3
scalePolicy	scalePolicy	null
launchConfig	launchConfig	{"type":"launchConfig","imageUuid":"docker:nginx:1.9","instanceTriggeredStop":"stop","kind":"container","labels":{"io.rancher.container.pull_image":"always","io.rancher.service.hash":"f96b4ea2a84cbadaed2fdce8e5918f7a317f6637"},"logConfig":{"type":"logConfig"},"networkMode":"managed","privileged":false,"publishAllPorts":false,"readOnly":false,"startOnCreate":true,"stdinOpen":true,"system":false,"tty":true,"version":"0","vcpu":1}
upgrade	serviceUpgrade	null
secondaryLaunchConfigs	array[secondaryLaunchConfig]	–

CLI/rancher-compose

- CLI
- rancher-compose

Rancher CLI

```
zhangzhibodeMacBook-Pro:lb-controller niusmallnan$ rancher -h
Rancher CLI, managing containers one UTF-8 character at a time

Usage: rancher [OPTIONS] COMMAND [arg...]

Version: v0.2.0

Options:
  --debug                               Debug logging
  --config value, -c value              Client configuration file (default ${HOME}/.r
  --environment value, --env value      Environment name or ID [$RANCHER_ENVIRONMENT]
  --url value                           Specify the Rancher API endpoint URL [$RANCHE
  --access-key value                    Specify Rancher API access key [$RANCHER_ACCE
  --secret-key value                    Specify Rancher API secret key [$RANCHER_SECR
  --host value                          Host used for docker command [$RANCHER_DOCKER
  --wait, -w                            Wait for resource to reach resting state
  --wait-timeout value                  Timeout in seconds to wait (default: 600)
  --wait-state value                    State to wait for (active, healthy, etc)
  --help, -h                            show help
  --version, -v                         print the version

Commands:
  catalog        Operations with catalogs
  config         Setup client configuration
  docker         Run docker CLI on a host
```

Rancher-compose

```
$ rancher-compose --url http://server_ip:8080 --access-key <username_of_environment_api_key> --secret-key <password_of_environment_api_k
ey> up
```

```
zhangzhibodeMacBook-Pro:lb-controller niusmallnan$ rancher-compose -h
Usage: rancher-compose [OPTIONS] COMMAND [arg...]

Docker-compose to Rancher

Version: v0.12.0

Author:
  Rancher Labs, Inc.

Options:
  --verbose, --debug
  --file value, -f value          Specify one or more alternate compose files (de
  --project-name value, -p value  Specify an alternate project name (default: dir
  --url value                     Specify the Rancher API endpoint URL [$RANCHER_
  --access-key value              Specify Rancher API access key [$RANCHER_ACCESS
  --secret-key value              Specify Rancher API secret key [$RANCHER_SECRET
  --rancher-file value, -r value  Specify an alternate Rancher compose file (defa
  --env-file value, -e value      Specify a file from which to read environment v
  --bindings-file value, -b value Specify a file from which to read bindings
  --help, -h                      show help
  --version, -v                   print the version

Commands:
  create      Create all services but do not start
  up          Bring all services up
  start       Start services
```

Exercise 3

Working with CLI/rancher-compose

Launching a stack with docker compose file

1. Create an Environment API Key
2. Prepare docker-compose/rancher-compose file (you can download it from your existing stack), launch a stack by rancher-compose

   ```
   $ rancher-compose --url http://server_ip:8080 --access-key <username_of_environment_api_key> --secret-key <password_of_environment_api_key> up
   ```

3. Try other rancher-compose commands, http://docs.rancher.com/rancher/v1.6/en/cattle/rancher-compose/commands/

-

   ```
   $ rancher-compose --url http://server_ip:8080 --access-key <username_of_environment_api_key> --secret-key <password_of_environment_api_key> -p your_stack_name scale your_service_name=scale_number
   ```

- 4. Create an Account API Key

- 5. Try Rancher CLI (config Rancher_URL as ***/v2-beta), http://docs.rancher.com/rancher/v1.6/en/cli/commands/

rancher --env default stack ls

rancher --env default catalog ls

……