Rancher 新特性介绍

Peng Jiang

Apr 22nd, 2017

peng@rancher.com

Rancher Labs 产品

An open-source software platform for managing containers

A simplified Linux distribution built from containers, for containers

An open source project for microservices-based distributed block storage

- **Rancher OS GA – April 12, 2017**
  - RancherOS 1.0 is now generally available
  - A simplified Linux distribution built from containers, for containers
- **Project Longhorn – April 17, 2018 at 8AM PDT**
  - New open source project
  - A new way to build distributed block storage in cloud and container-based deployments
- **Rancher Labs Partners with Docker - April 18, 2017 at 6AM PDT**
  - Obtain official support from Rancher Labs for Docker Enterprise Edition
  - Docker Enterprise Edition embedded into Rancher platform
  - Easily deploy Docker Enterprise Edition clusters using Rancher

RANCHER | IT大咖说 知识分享平台

https://github.com/moby/moby/pull/32691

A new upstream project to break up Docker into independent components #32691

Merged shykes merged 2 commits into master from moby 7 hours ago

Conversation 107   Commits 2   Files changed 2

shykes commented 3 days ago • edited   Collaborator +☺

Work has been ongoing to break Docker into modular components for some time, with runc and containerd as examples. Containerd for example has been donated to the CNCF. We are now completing this work with the goal being that the monolithic docker repo eventually ceases to exist, instead being assembled from a set of components.

Docker is, and will remain, a open source product that lets you build, ship and run containers. It is staying exactly the same from a user's perspective. Users can download Docker from the docker.com website.

Moby is a project which provides a "Lego set" of dozens of components, the framework for assembling them into custom container-based systems, and a place for all container enthusiasts to experiment and exchange ideas. You can learn more at http://mobyproject.org

Docker the product will be assembled from components that are packaged by the Moby project.

The Moby project provides a command-line tool called moby which assembles components. Currently it assembles bootable OS images, but soon it will also be used by Docker for assembling Docker out of components, many of which will be independent projects.

As the Docker Engine continues to be split up into more components the Moby project will also be the home for those components until a more appropriate location is found.

Docker is transitioning all of its open source collaborations to the Moby project going forward. During the transition, all open source activity should continue as usual.

This pull request changes the README and kicks off the process of breaking up the engine under Moby. Again: if you are a Docker user, nothing changes.
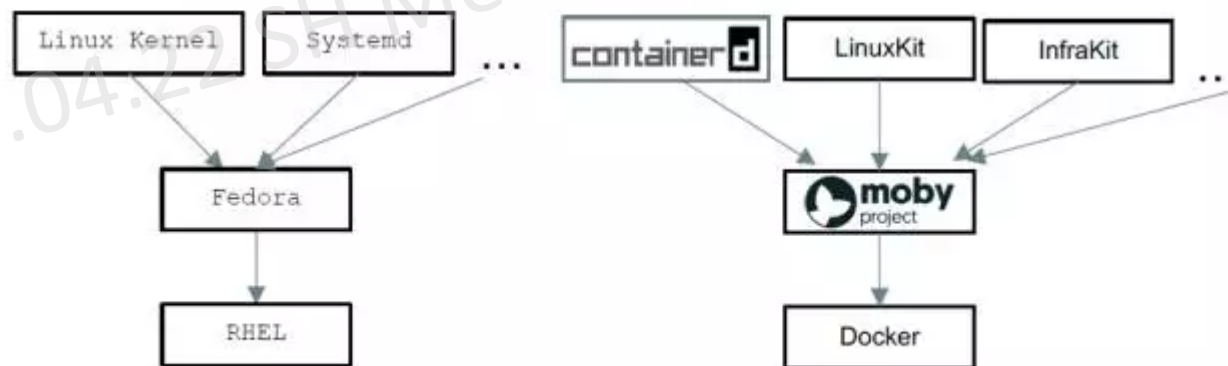
👍 108   👎 536   😄 21   🎉 77   😕 424   ❤ 22

Docker Upstream Components   moby project

2003: Linux

Linux Kernel   Systemd   ...

Fedora

RHEL

2017: Containers

containerd   LinuxKit   InfraKit   ...

moby project

Docker

Rancher 2017.04.22 SH Meetup

4

RANCHER

对于Rancher用户的影响

http://rancher.com/rancher-moby-project/

https://github.com/rancher/rancher/issues/8541

Moby = open source development
Docker CE = free product release based on Moby
Docker EE = commercial product release based on Docker CE

Moby is recommended for anyone who wants to assemble a container-based system, this includes:

- Hackers who want to customize or patch their Docker build
- System engineers or integrators building a container system
- Infrastructure providers looking to adapt existing container systems to their environment
- Container enthusiasts who want to experiment with the latest container tech
- Open-source developers looking to test their project in a variety of different systems
- Anyone curious about Docker internals and how it's built

Moby is NOT recommended for:

- Application developers looking for an easy way to run their applications in containers. We recommend Docker CE instead.
- Enterprise IT and development teams looking for a ready-to-use, commercially supported container platform. We recommend Docker EE instead.
- Anyone curious about containers and looking for an easy way to learn. We recommend the docker.com website instead.

🖥 rancher / **rancher**

👁 Watch ▾ 402 ★

<> Code   ⓘ Issues 1,488   ⑂ Pull requests 12   ▥ Projects 0   ▤ Wiki   〰 Pulse   ▥ Graphs

How will Moby affect Rancher? #8541

🚫 Closed   willseward opened this issue 3 days ago · 6 comments

willseward commented 3 days ago · edited   + ☺

It appears as if Docker has restructured. I'm curious to know how this will affect the Rancher project. Obviously everything is still a bit in flux.

👍 1

frekele commented 3 days ago   + ☺

Docker has always been a problem with every release, they changed the entire design structure, including and removing components in each release. This affected compatibility all the time, after a while it seemed that the project began to stabilize. But now with this surprise, a refactoring will be necessary in many projects.

Also would like to know what will affect in the Rancher Project.

shykes commented 2 days ago   + ☺

This change will not affect Rancher. Docker binaries remain installable and usable in exactly the same way. All the source from the docker/docker repo is still available. And Moby makes it easier for Rancher to create custom builds if they want to.

@frekele I believe I have already explained this to you on the Moby repo :)

👍 2

Rancher 架构概览
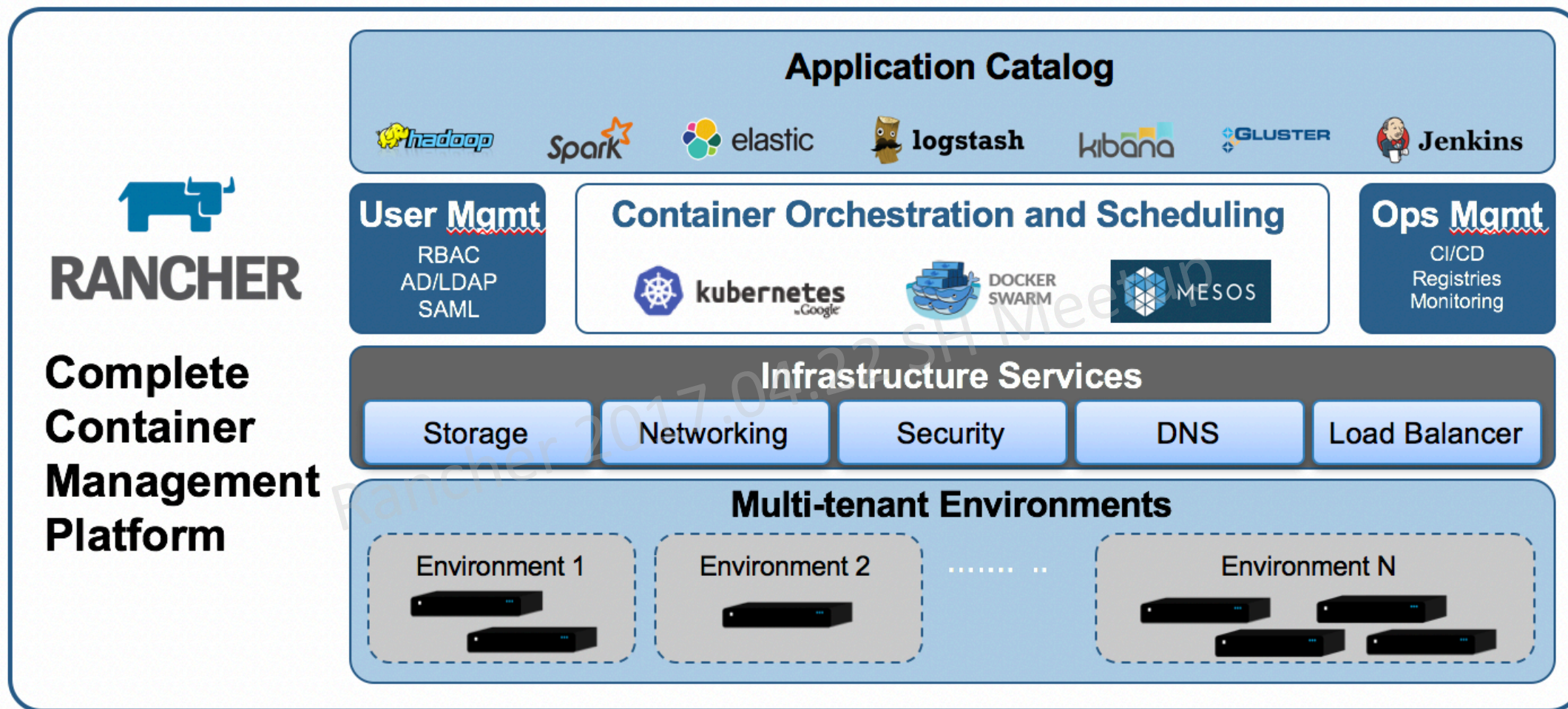
- Templating support for catalog templates
- API interceptor
- More network policies
- More webhook drivers
- Restrict container scheduling to specific hosts
- Metadata service phase 1 improvements
- Swarm uses Portainer.io as the default UI
- Flat and Calico Network

Catalog Template

Advanced Settings

Proceed with caution; typical users will not need to cha

```
access.log=/dev/null
```
Path to write access logs to (HA installation only)

```
api.auth.jwt.token.expiry=57600000
```
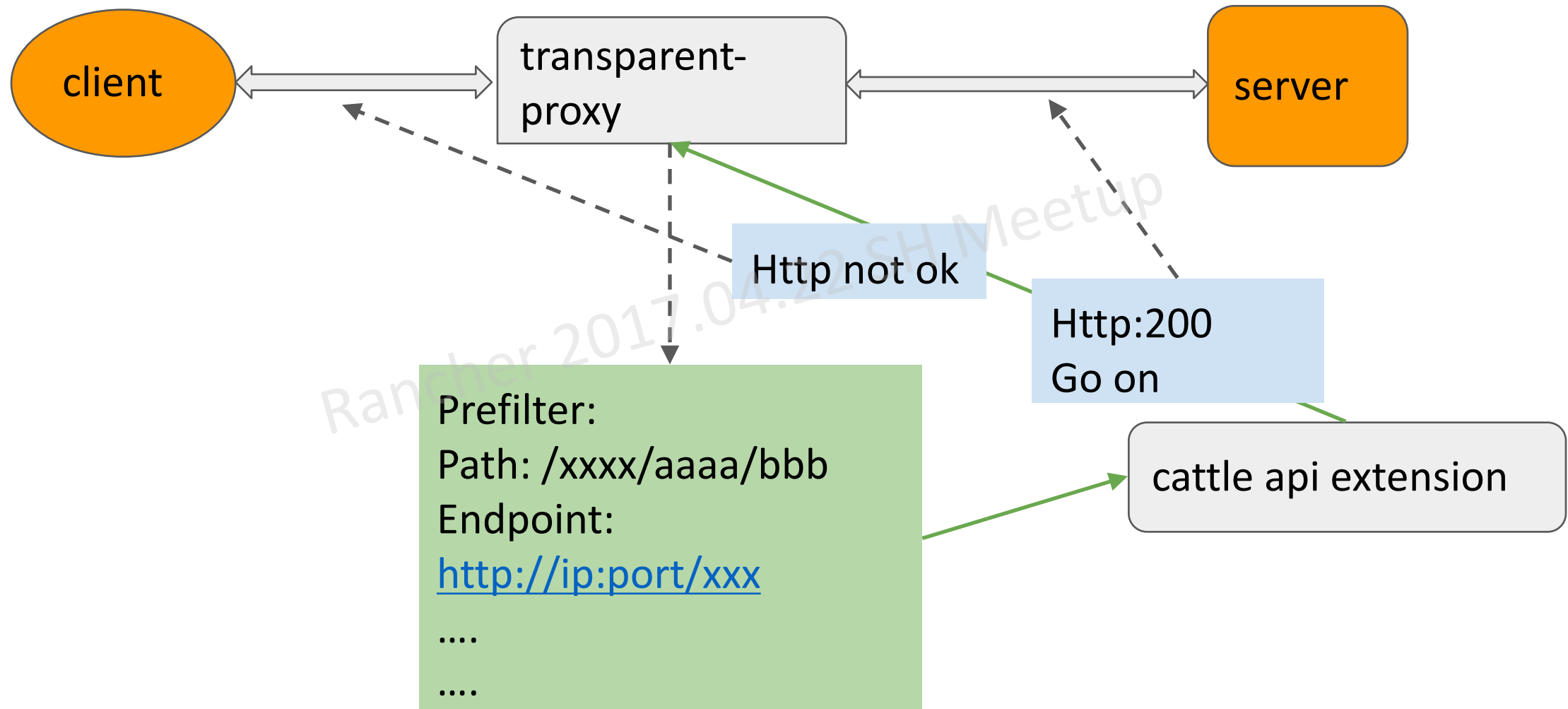Authorization token/UI session lifetime (milliseconds)

```
api.auth.realm=Enter API access key and
```
HTTP Basic Auth realm for requests without Authorization header

```
api.interceptor.config=<none>
```
JSON configuration for API Interceptor

```
{
    "requestInterceptors": [{
            "type": "authTokenValidator",
            "paths": ["/v2-beta/projects", "/v2-beta/projects/{path:.*}"],
            "endpoint": "",
            "methods": ["post", "delete"],
            "secretToken": ""
    }, {
            "type": "http",
            "paths": ["/v2-beta/projects/{path:.*}"],
            "endpoint": "http://localhost:8092/external-interceptor",
            "methods": ["post", "delete", "get"],
            "secretToken": "pqrs"
    }, {
            "type": "http",
            "paths": ["/v2-beta/projects/{path:.*}"],
            "endpoint": "http://localhost:8094/another-external-interceptor",
            "methods": ["post", "delete", "get"],
            "secretToken": "xyz"
    }],

    "destinations": [{
            "paths": ["/v1/services/{id:.*}"],
            "destinationURL": "http://...:8080/"
    }]
}
```

client

transparent-proxy

server

Http not ok

Http:200
Go on

Prefilter:
Path: /xxxx/aaaa/bbb
Endpoint:
http://ip:port/xxx
….
….

cattle api extension

Restrict container scheduling to specific hosts

Require Container Label

⊕ Add Required Label

Key

| io.rancher.container.system | = | Value | — |

| Key | = | Value | — |

ProTip: Paste one or more lines of key=value pairs into any key field for easy bulk entry.

If provided, containers must have one or more of the given labels in order to be eligible for scheduling onto this host. If the value is left empty, a container with a matching key is eligible regardless of value. `io.rancher.container.system` is required to allow system containers on to the host.

Save   Cancel

Metadata Improvement
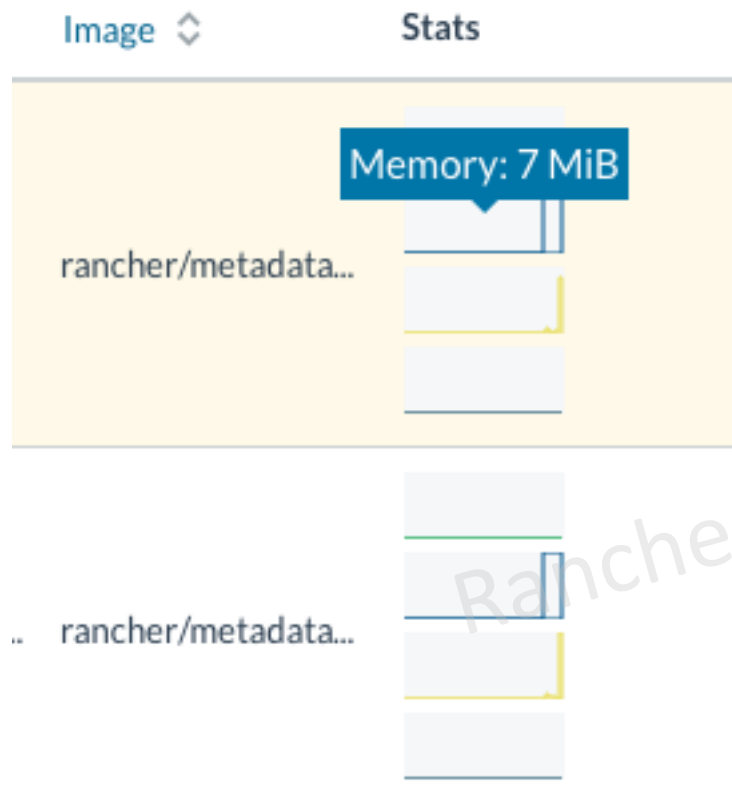
1. Generate basic set of data only on cattle side (list of containers, hosts, services, etc). All versions generation should be done on the rancher-metadata microservice side.

2. Stream json payload to the microservice instead of generating yml

3. Cache data on cattle side to minimize number of DB queries

RANCHER

Webhook-upgrade a service

Name*

e.g. scale-web

Kind

Upgrade a Service

Image Tag*

Only registry pushes to the given tag will cause a service upg

Service Selector*

⊕ Add Selector Label

Repo Info   Tags   Collaborators   **Webhooks**   Settings

Workflows

TRIGGER EVENT

Image Pushed

When an image is pushed to this repo, your workflows will kick off based on your specified webhooks. Learn More

WEB HOOKS ✕
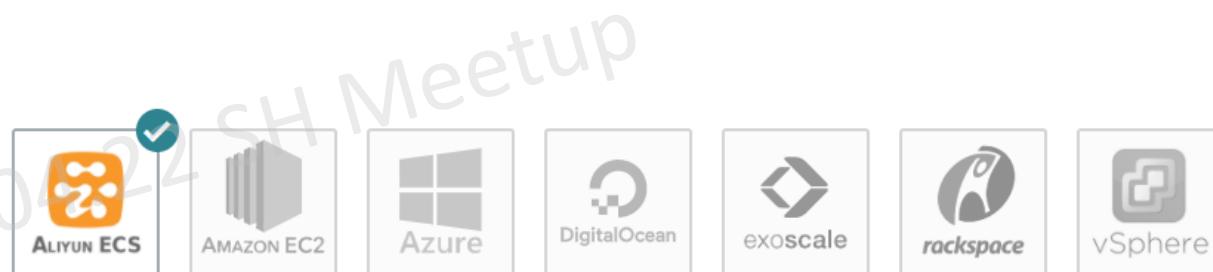
Webhook name

Webhook-scale hosts

Name*

e.g. scale-web

Kind

Scale the number of Hosts

Action

● Scale Up   ○ Scale Down

Host Selector*

⊕ Add Selector Label

Hosts with matching labels will be used as the template for deploying th

ALIYUN ECS   AMAZON EC2   Azure   DigitalOcean   exoscale   rackspace   vSphere

Manage available machine drivers

Rancher k8s improve

```
183  addon-starter:
184      image: rancher/k8s:v1.5.2-rancher1-4
185      labels:
186          io.rancher.container.create_agent:
187          io.rancher.container.agent.role: env
188      environment:
189          KUBERNETES_URL: https://kubernetes.
190          DISABLE_ADDONS: ${DISABLE_ADDONS}
191          REGISTRY: ${REGISTRY_ADDONS}
192      command:
193          - addons-update.sh
194      links:
195          - kubernetes
```

Branch: **master** ▾   **rancher-catalog** / **infra-templates** / **vxlan** / **config.yml**

alena1108 Rancher v1.5.0

3 contributors

9 lines (8 sloc) | 225 Bytes

```
1   name: Rancher VXLAN
2   description: |
3       Rancher Networking plugin using VXLAN overlay.
4   version: v0.0.5
5   category: Networking
6   labels:
7       io.rancher.certified: rancher
8       io.rancher.orchestration.supported: 'cattle,mesos,kubernetes'
```

15

Upgrade manager

```
service_log.purge.after.secon
```
Auto-purge Service Log entries after this long (sec

```
supported.docker.range=~v1.10
```
Semver range for suported Docker engine version:

```
ui.pl=rancher
```
Private-Label company name

```
upgrade.manager=true
```
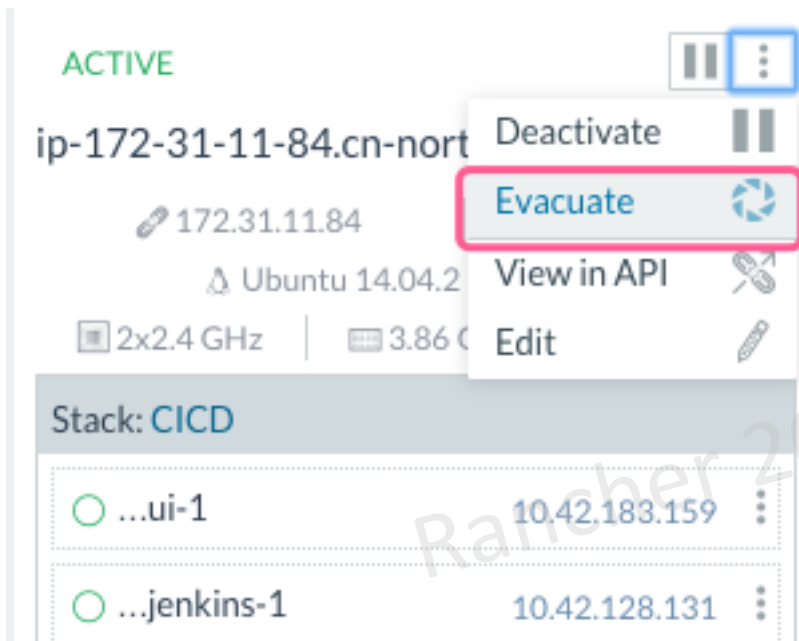Automatic upgrades of infrastructure stacks

⚙ + healthcheck

⚙ + ipsec

⚙ + network-services

⚙ − scheduler

⊞ Active   scheduler ⓘ

Evacuate Containers

1. deactivate the host
2. delete all non-infrastructure containers running on it.

Network enhancement

CNI网络
- IPsec
- Vxlan
- 扁平网络
- Calico

Roadmap Q2
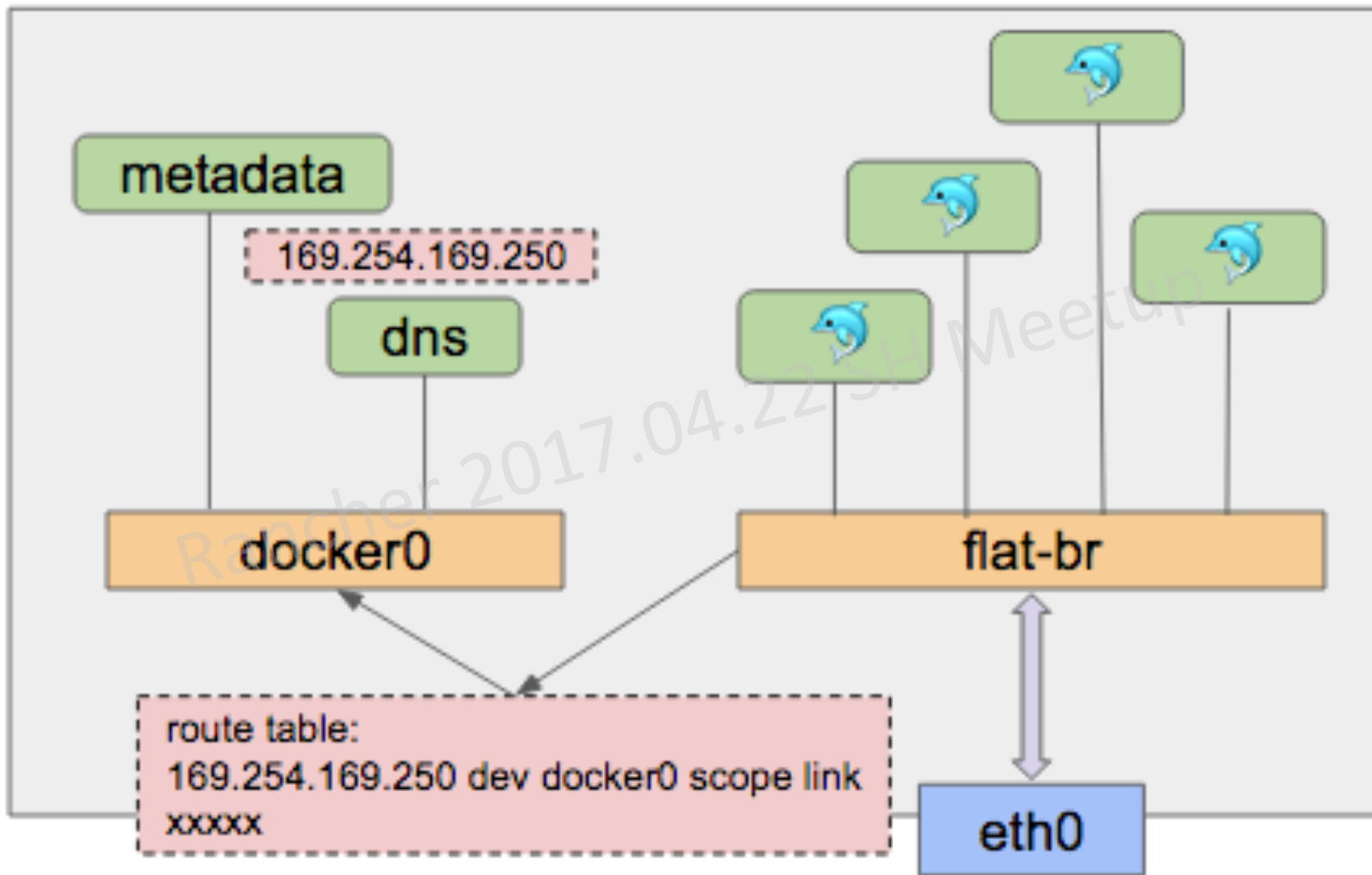
- ## Scale and performance improvements

  - Metadata Service Phase 2 improvements – Goal is to improve container scheduling and processing of changes to any resources in Rancher. Phase 1 completed in 1.5.

    - o Further reduce the metadata footprint being distributed to MD service

    - o Only push data to a single MD "master" service

- ## UI v2

  - Improved UX – more simplified container and host management

  - Performance and scale improvements to host management screens.

  - More to come…

- Kubernetes Enhancements
  - Production grade ectd management – includes monitoring, recovery, backup, and restoration of ectd during loss of quorum
  - Better integration with authentication and authorization
  - Better integration with network and policies
  - General "operations" improvements (upgrades, monitoring, logging…)
- RBAC Phase 1
  - Shared hosts within an environment
    - Each user can manage their own stacks/services/containers and still use hosts within same environment
  - Add new static roles that match this capability

Roadmap Q2

- RBAC Phase 2
  - Dynamic creation of roles at API + object level
- Rancher Server Federation
  - Single controller plane for multiple Rancher server clusters
  - Allow network to span across environments across Rancher server clusters
- Ubernetes support
  - Allows Kubernetes server cluster federation across multiple environment

谢谢

rancher.com