

Rancher模块自定义

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可自定义的模块

- Docker-machine driver 和 Custom add Host UI
- Rancher-storage (NFS、EFS、EBS)
- Rancher-net CNI (VXLAN、IPSec)
- Infra Service 组合
-

关于主机

Docker-machine 驱动加载

The image shows two screenshots from a GitHub repository. The left screenshot displays the file browser for the 'community-catalog' repository, with the 'machine-templates' directory highlighted by a purple box. The right screenshot shows the commit history for the 'machine-templates' directory, listing files like 'rancher-compose.yml', 'uiUrl', and 'url'.

Branch: master ▾ New pull request

deniseschannon committed with cloudnautique Swarm Updates

infra-templates	Swarm Updates
integration	Add template va
kubernetes-templates	Added cloud9 te
machine-templates	Adding updated
mesos-templates	code review cha
scripts	Fix branch alrea
swarm-templates	Fixes versions ir

Branch: master ▾ community-catalog / machine-templates

km4rcus committed with galal-hussein Added OpenNebula Machine

..

rancher-compose.yml	Added OpenNebula M
uiUrl	Added OpenNebula M
url	Added OpenNebula M

<https://github.com/rancher/community-catalog>

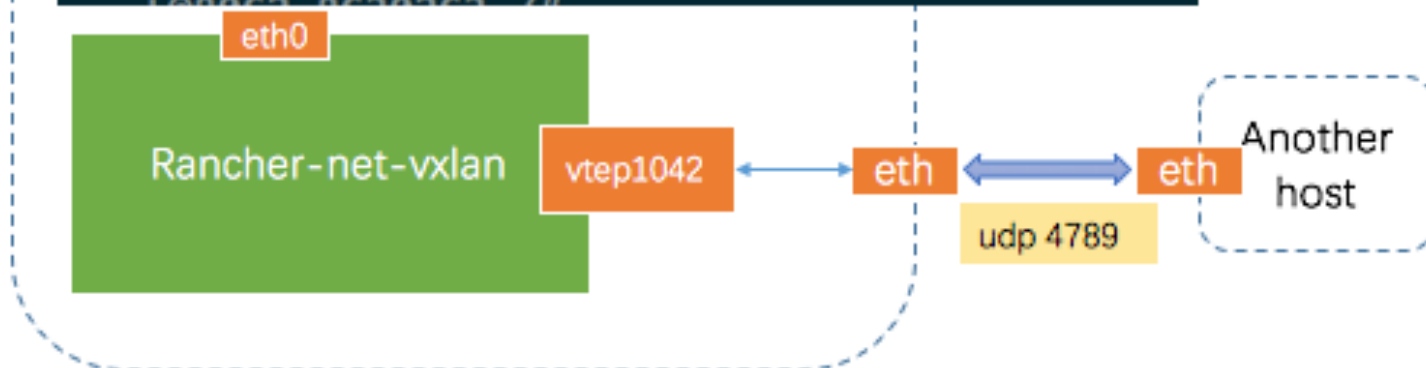
注意事项

- v1.2 使用docker-machine v0.8.2，所以添加的driver，需要使用相应的docker-machine编译
（目前aliyun-ecs的driver实际上在v1.2下无法使用，原因就是如此， <https://github.com/rancher/community-catalog/tree/master/machine-templates/aliyunecs>）
- 添加主机失败，返回错误信息不够，需要debug更多信息时。在rancher-server中查找create host的参数，使用docker-machine -D create xxxx ... 来调试

关于网络

新增的VXLAN网络

```
root@8062a8630263:/# ip route
default via 10.42.0.1 dev eth0
10.42.0.0/16 dev eth0 proto kernel scope link
10.42.23.14 via 169.254.242.26 dev vtep1042
10.42.28.255 via 169.254.242.26 dev vtep1042
10.42.242.26 via 169.254.242.26 dev vtep1042
169.254.0.0/16 dev vtep1042 proto kernel scope link
169.254.169.250 via 10.42.0.1 dev eth0
```



Bridge fdb

user-vxlan-1

```
root@29d8e1aec8d9:/# bridge fdb show device vtep1042
33:33:00:00:00:01 dev eth0 self permanent
01:00:5e:00:00:01 dev eth0 self permanent
33:33:ff:9d:f7:1a dev eth0 self permanent
00:ab:a9:fe:ce:4d dev vtep1042 dst 10.0.113.76 self permanent
00:ab:a9:fe:2b:5e dev vtep1042 dst 10.0.23.73 self permanent
00:ab:a9:fe:7e:94 dev vtep1042 dst 10.0.53.116 self permanent
00:ab:a9:fe:91:df dev vtep1042 dst 10.0.10.237 self permanent
00:ab:a9:fe:a7:e7 dev vtep1042 dst 10.0.0.102 self permanent
root@29d8e1aec8d9:/#
```

目前VXLAN网络还不是太稳定

CNI其他插件怎么支持？

```
environment:
  DOCKER_BRIDGE: docker0
  METADATA_IP: 169.254.169.250
network_mode: host
volumes:
- /var/run/docker.sock:/var/run/docker.sock
- /var/lib/docker:/var/lib/docker
- /lib/modules:/lib/modules:ro
- /run:/run:ro
- /var/run:/var/run:ro
- rancher-cni-driver:/etc/cni
- rancher-cni-driver:/opt/cni
dns:
- 169.254.169.250
logging:
  driver: json-file
  options:
    max-file: '2'
    max-size: 25m
pid: host
command:
- plugin-manager
- --metadata-url
- http://rancher-metadata/2016-07-29
```

network-manager

<https://github.com/rancher/plugin-manager>

network-manager能够动态设置不同插件的初始化规则，

以metadata作为 host port和host nat规则的数据源，然后获取数据后生成相应的Iptables规则加入的Host中。

而对于真正的CNI插件，需要在network-manager容器的卷中加载。

目前还没有具体DEMO

关于存储

几种标准对比

Docker volume plugin :

VolumeDriver.Create
VolumeDriver.Remove
VolumeDriver.Mount
VolumeDriver.Path
VolumeDriver.Unmount
VolumeDriver.Get
VolumeDriver.List
VolumeDriver.Capabilities

K8s flex volume plugin:

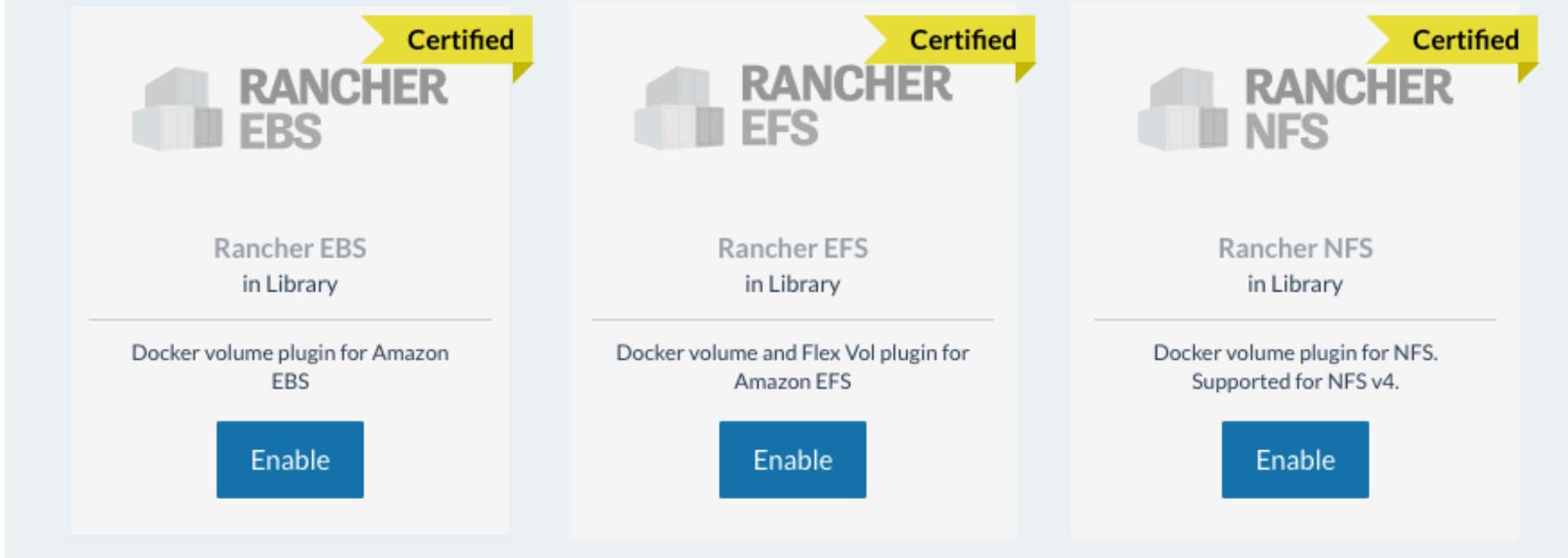
<driver executable> init
<driver executable> attach
<driver executable> detach
<driver executable> mount
<driver executable> unmount

Rancher storage :

Init
Create
Delete
Attach
Detach
Mount
Unmount

Rancher storage

Storage



The screenshot displays three storage options in a grid layout, each with a 'Certified' badge in a yellow ribbon. Each option includes a Rancher logo, the plugin name, its status in the library, a brief description, and an 'Enable' button.

- Rancher EBS**
Rancher EBS in Library
Description: Docker volume plugin for Amazon EBS
- Rancher EFS**
Rancher EFS in Library
Description: Docker volume and Flex Vol plugin for Amazon EFS
- Rancher NFS**
Rancher NFS in Library
Description: Docker volume plugin for NFS. Supported for NFS v4.

<https://github.com/rancher/storage>

```
1 FROM ubuntu:16.04
2 RUN apt-get update && \
3     apt-get install -y jq curl nfs-common
4 COPY storage /usr/bin/
5 COPY nfs/rancher-nfs common/* /usr/bin/
6 CMD ["start.sh", "storage", "--driver-name", "rancher-nfs"]
```


```
. (up a dir)
/github.com/rancher/storage/
docker/volumeplugin/
  exec.go
  plugin.go
  rancher.go
  utils.go
package/
└─ common/
└─ ebs/
└─ efs/
└─ example/
└─ nfs/
    Dockerfile
    rancher-nfs*
    README.md
scripts/
vendor/
.dockerignore
.drone.yml
```

```
5
6 if [ -e "$(dirname $0)/common.sh" ]; then
7     source "$(dirname $0)/common.sh
8 elif [ -e "$(dirname $0)/../common/common.sh" ]; then
9     source "$(dirname $0)/../common/common.sh
10 fi
11
12 mount_default_share() {
13     local mntDest=$1
14
15     # get host:export from environment variables
16     if [ -z "${NFS_SERVER}" ]; then
17         print_error "Failure: No environment variable NFS_SERVER"
18     fi
19
20     if [ -z "${MOUNT_DIR}" ]; then
21         print_error "Failure: No environment variable MOUNT_DIR"
22     fi
23
24     local mntOptions=""
```





Infra Service 组合

Catalog中即可定义

Branch: master ▾ rancher-catalog / project-templates

 deniseschannon Remove scheduler from k8s template

..

 cattle	Add network-services (#300)
 kubernetes	Remove scheduler from k8s template
 mesos	Updated project templates with correct location of swa
 swarm	Updated project templates with correct location of swa

初始化时加载

```
$ docker run -d -e  
DEFAULT_CATTLE_CATALOG_URL=  
  'xxxxx'  
.....  
rancher/server:stable
```

```
ENV DEFAULT_CATTLE_RANCHER_COMPOSE_DARWIN_URL https://releases.rancher.com  
ENV DEFAULT_CATTLE_RANCHER_COMPOSE_WINDOWS_URL https://releases.rancher.com  
ENV CATTLE_RANCHER_CLI_VERSION v0.4.0  
ENV DEFAULT_CATTLE_RANCHER_CLI_LINUX_URL https://releases.rancher.com  
ENV DEFAULT_CATTLE_RANCHER_CLI_DARWIN_URL https://releases.rancher.com  
ENV DEFAULT_CATTLE_RANCHER_CLI_WINDOWS_URL https://releases.rancher.com  
#ENV DEFAULT_CATTLE_CATALOG_URL='{"catalogs":{"community":{"url":"https://git.rancher.io/community-catalog.git"}}}'  
ENV DEFAULT_CATTLE_CATALOG_URL=community=https://git.rancher.io/community-catalog.git  
  
EXPOSE 3306  
ENV CATTLE_CATTLE_VERSION v0.175.0
```


安装完成后重新加载

Catalog

Catalogs contain templates that allow users to easily deploy applications by answering a few questions

Rancher Certified Library

Enabled Disabled

Templates required for core Rancher features such as Kubernetes/Mesos/Swarm orchestration support.
Maintained and supported by Rancher Labs

Community Contributed

Enabled Disabled

Templates created and maintained by community

Custom

You can define your own custom catalog sources here. Each one needs a unique name and a URL that `git clone` can handle (see docs for more info).

Add Catalog

Name

library

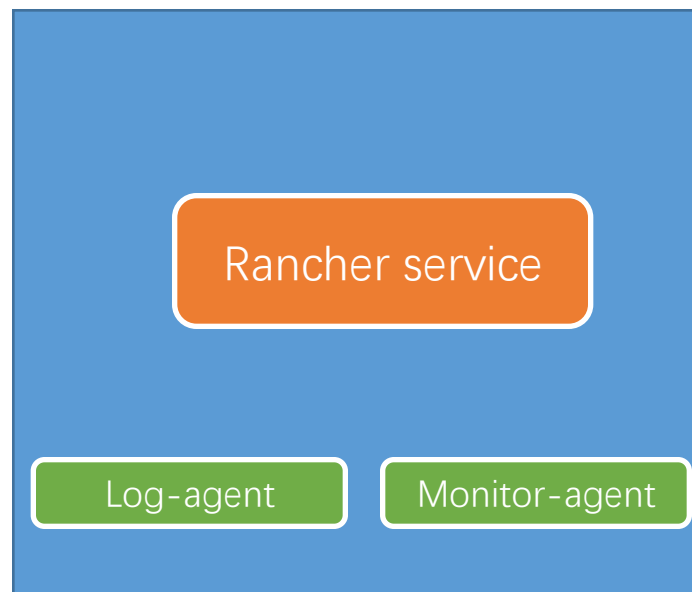
URL

https://github.com/leodotcloud/rancher-catalog.git

举个栗子

每个Host添加到Rancher集群时，除了自动部署基本的rancher自带的infra service


还希望自动每个新增Host添加日志和监控的agent程序。



Branch: master ▾

rancher-catalog / infra-templates /

This branch is 14 commits ahead, 15 commits behind rancher:m

 niusmallnan add cattle new version

..

 beancounter-agent fix tab space

 ebs Merge pull request #13

 efs Merge pull request #14

 healthcheck Updated for labels for certified

 hna-qlb add cattle new version

 **custom-monitor-logging** update images

```
1 name: custom
2 description: Custom user template
3 stacks:
4   - name: network-services
5     templateId: 'library:infra*network-services'
6   - name: vxlan-user
7     templateId: 'library:infra*vxlan-user'
8   - name: scheduler
9     templateId: 'library:infra*scheduler'
10  - name: healthcheck
11    templateId: 'library:infra*healthcheck'
12  - name: beancounter-agent
13    templateId: 'library:infra*beancounter-agent'
14  - name: hna-log-mon
15    templateId: 'library:infra*custom-monitor-logging'
```

admin STACKS CATALOG INFRAS

Infrastructure Stack

- All
- User
- Infrastructure**

- healthcheck
- network-services
- custom-monitor-logging**
- vxlan-admin

回答群内网友的两个问题

Rancher 如何实现服务发现

```
/ # ip route
default via 10.42.0.1 dev eth0
10.42.0.0/16 dev eth0 src 10.42.169.157
169.254.169.250 via 10.42.0.1 dev eth0
/ # cat /etc/resolv.conf
search cn-north-1.compute.internal beancounter.rancher.internal rancher.internal
nameserver 169.254.169.250
/ #
```

network-services-metadata-dns-2

```
root@e191a2662f73:/# ping rancher-metadata
PING rancher-metadata.rancher.internal (169.254.169.250): 64 bytes of data:
64 bytes from 169.254.169.250: icmp_seq=0 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=1 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=2 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=3 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=4 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=5 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=6 ttl=63 time=0.042 ms
64 bytes from 169.254.169.250: icmp_seq=7 ttl=63 time=0.042 ms
```

```
root@b919ce471370:/# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN
    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
17: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
    link/ether 02:9f:cf:32:3d:f7 brd ff:ff:ff:ff:ff:ff
    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::9f:cfff:fe32:3df7/64 scope link
        valid_lft forever preferred_lft forever
```

Metadata & dns file

```
metadata:
  cap_add:
  - NET_ADMIN
  image: rancher/metadata:v0.6.8
  network_mode: bridge
  logging:
    driver: json-file
    options:
      max-file: '2'
      max-size: 25m
  command:
```

```
c24 0:31 rancher-metadata -subscribe
c24 0:04 rancher-dns --metadata-server=localhost --answers=/etc/rancher-dns/answers.json
```

```
func (c *ConfigGenerator) GetRecords() (map[string]RecordA, map[string]RecordC) {
> aRecs := make(map[string]RecordA)
> cRecs := make(map[string]RecordC)
```

```
func (c *ConfigGenerator) GenerateAnswers() (Answers, error) {
> answers := make(Answers)
> aRecs, cRecs, clientIpsToLinks, clientIpToContainer, svcNameToSvc, err := c.GetRecords()
> if err != nil {
>   return nil, err
> }
}
```

```
dns:
  image: rancher/dns:v0.10.8
  network_mode: container:metadata
  logging:
    driver: json-file
    options:
      max-file: '2'
      max-size: 25m
  command:
```

```
> //generate client record
> for clientIp, container := range clientIpToContainer {
>   aRecs := make(map[string]RecordA)
>   cNameRecs := make(map[string]RecordCName)
>   for key, linkAlias := range clientIpsToLinks[clientIp] {
>     if strings.EqualFold(key, linkAlias) {
>       // skip non-aliased service links
>       // they are present in defaults
```

AWS中国的ec2主机为什么添加过程很慢

- 现象：使用ec2 driver添加host，添加AWS美国VM速度尚可，添加AWS中国VM等待时间较长。
- 使用前面提到的docker-machine debug方式，会发现主机加入时卡在了apt-get update上（以ubuntu为例）
- AWS VM默认有UpdateOnBoot的行为，AWS中国VM的apt源访问非常慢。所以等待apt-get update结束后，add host的逻辑有时候甚至已经超时。
- 解决方案，修改VM的apt源，重新生成AMI

更多关于v1.2的内容，请访问：

<http://niusmallnan.com/tags/rancher-v1.2/>