

FME Server Scaler Transformer using Rancher

Overview

This transformer will scale Rancher hosts and an FME Engine service to dynamically add or remove capacity for an FME Server when lots of jobs need to be run.

Prerequisites

Usage of this transformer requires an existing [Rancher](#) server with an FME Server stack deployed on it.

This deployment requires one host that is always up with the rancher label “role=core”. This makes sure that the core, web, db and one engine are always on that machine.

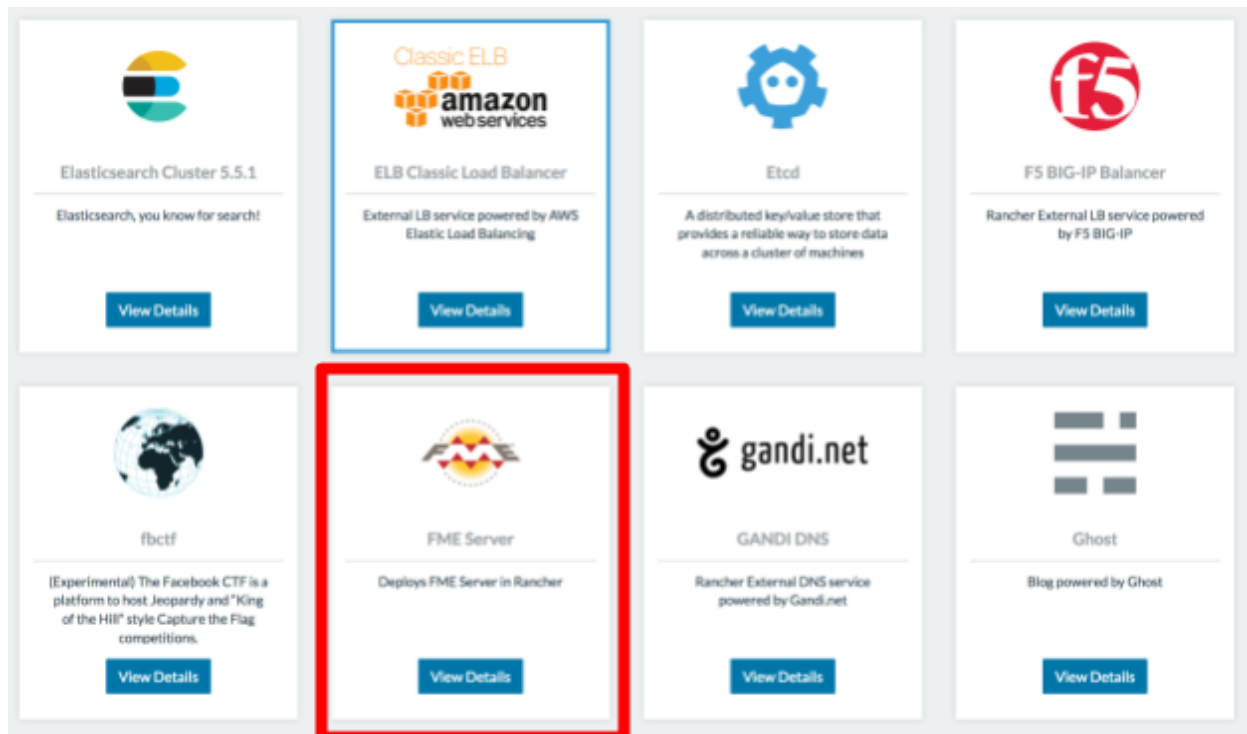
FME Server can be deployed by adding a rancher [catalog](#) from the following URL:
<https://github.com/safesoftware/fmeserver-scaler-rancher-catalog>

The screenshot shows the 'Manage Catalogs' page in Rancher. It includes a table of existing catalogs and a form to add a new one.

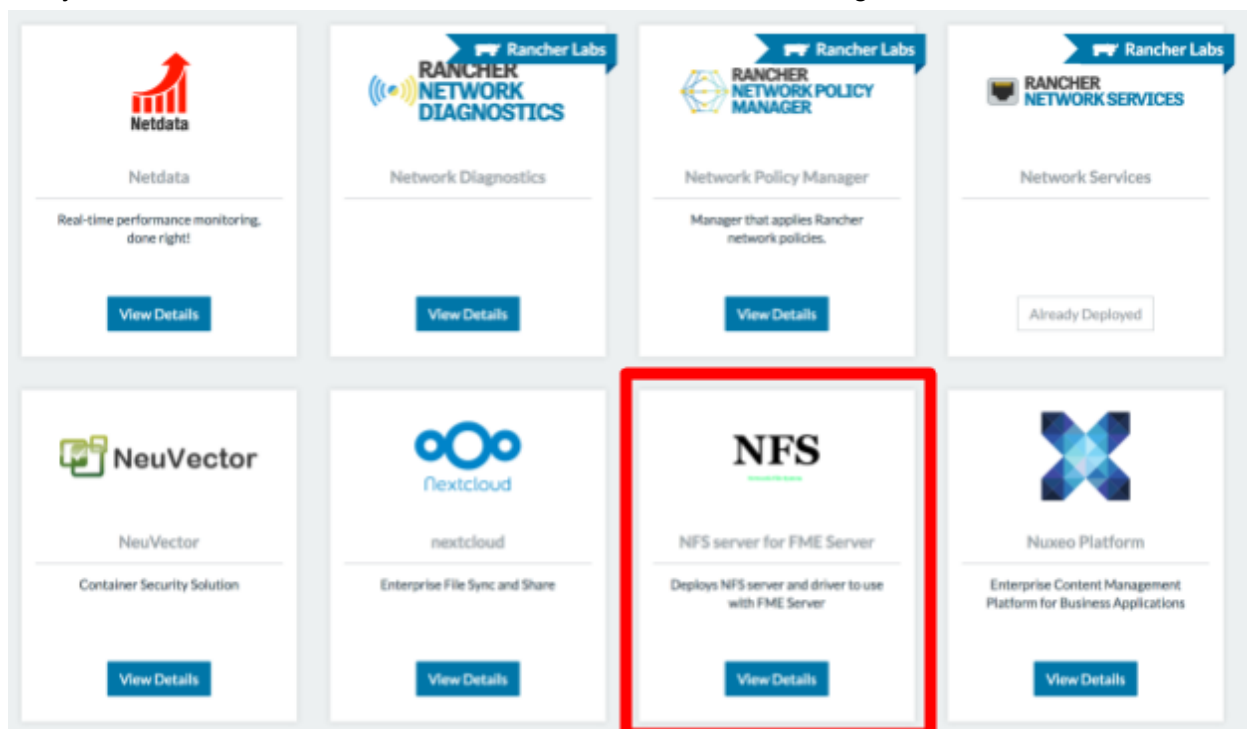
Name	URL	Kind	Branch
community	https://git.rancher.io/community-catalog.git	Global	master
library	https://git.rancher.io/rancher-catalog.git	Global	v1.6-release
FME Server	b.com/safesoftware/fmeserver-scaler-rancher-catalog	Environment	master

Buttons: Save, Cancel

If successful you will now see FME Server in the catalog as shown below.



and you will also see the NFS Server for FME Server in the catalog as shown below.



Simply deploy the NFS Server first. Successful deployment is shown below.

Stack: nfs-server Add Service Up to date Active

State	Name	Image	Service Type	Containers	Actions
Active	driver	Image: rancher/storage-nfs:v0.8.3	Storage Service	1 Container	[Refresh] [More]
Active	server	Image: itsthenetwork/nfs-server-alpine:4 Ports: 2049	Service	1 Container	[Refresh] [More]

Next launch FME Server. The default values should be sufficient. The one setting that might need to be tweaked is the memory reservation. It defaults to around 4GB. This setting should be used to control the maximum amount of engines on a single host. If you launch instances with 16 GB of RAM, then you will get 4 engines per machine.

You will also need to generate an **Environment** API Key in Rancher for use in the transformer. Note this is different than an account API key and is under the “Advanced” section of the API page in Rancher:

Account API Keys Add Account API Key

Account API Keys are tied to your specific account (**Administrator**) and can create, delete, and manipulate all Environments which you have access to.

Endpoint (v2-beta): <http://ec2-54-186-81-80.us-west-2.compute.amazonaws.com/v2-beta>

Endpoint (v1): <http://ec2-54-186-81-80.us-west-2.compute.amazonaws.com/v1>

State	Name	Description	Access Key	Created
Active	rancher cli	None	507FDC06AE70A32EA5B7	11/08/2017

ADVANCED OPTIONS

Environment API Keys Add Environment API Key

Environment API keys are tied to this specific Environment (**default**) and can only manipulate resources within there. Other accounts with access to this Environment can also manage these keys.

Endpoint (v2-beta): <http://ec2-54-186-81-80.us-west-2.compute.amazonaws.com/v2-beta/projects/1a5>

Endpoint (v1): <http://ec2-54-186-81-80.us-west-2.compute.amazonaws.com/v1/projects/1a5>

State	Name	Description	Access Key	Created
There are no keys for this Environment yet.				

It is important you use an Environment API key with this transformer.

Usage

Parameters

This transformer takes 3 parameters:

- Number of Machines - The number of worker machines you would like in your cluster for running FME Engines
- Number of Engines - The number of FME Engines you would like to have running in your cluster
- Config file - A json formatted file specifying various parameters for your AWS machines to add and some information about your Rancher configuration. The format of this file is explained in the section below

Workflow

This transformer is able to add hosts and FME Engines to a cluster, or remove those hosts and Engines. When this transformer is run, if more than 0 machines are specified, an AWS auto-scaling group will be created to create the specified number of machines. Those machines will automatically join your Rancher cluster and the number of FME Engine containers will be scaled up and deployed on those machines. If 0 machines are specified, then the auto-scaling group will be removed and all machines will be removed from the Rancher cluster.

In this way, you can develop workflows that have a scaler transformer to add machines and engines, then a transformer that perhaps read a list of jobs that need to be run from a database or another external source, a Server job submitter transformer to submit all the jobs, then another scaler transformer to scale back down and remove the machines after everything has completed.

If a number of machines are specified but there are some that already exist (i.e., the auto-scaling group still exists), then the transformer will error. If 0 machines are specified but none exist already, then the transformer will error.

Config JSON file

The config file is used to specify AWS and Rancher parameters for your cluster.

Rancher Parameters:

Required:

- `RancherAccessKey` - Rancher API access key. This should be an **Environment** API key
- `RancherSecretKey` - Rancher API secret key
- `RancherHost` - The host or IP of your Rancher server
- `RancherStackName` - The name of your deployed FME Server stack in Rancher
- `RancherEngineServiceName` - The name of the FME Engine service in Rancher to scale
- `StackName`- The name for this group of machines. This will be used for the auto scaling group name

Optional:

- `EngineInstallURL` - A URL to a script to install the docker engine

AWS Parameters

- `AWSAccessKey` - Your AWS Access Key
- `AWSSecretKey` - Your AWS Secret Key
- `AWSRegion` - The AWS region
- `AWSAMIID` - The AWS AMI ID to use for creating worker machines
- `AWSSecurityGroup` - The AWS Security Group
- `AWSSubnetID` - The AWS Subnet ID
- `AWSInstanceType` - The AWS Instance type
- `AWSRootSize` - The root size of the EBS volume

Example:

(sensitive info starred out)

```
{
  "AWSAccessKey": "****",
  "AWSSecretKey": "****",
  "AWSRegion": "us-west-2",
  "AWSAMIID": "ami-835b4efa",
  "AWSSecurityGroup": "sg-****",
  "AWSSubnetID": "subnet-****",
  "AWSInstanceType": "m4.xlarge",
  "AWSRootSize": "16",

  "RancherStackName": "fmeserver",
  "RancherEngineServiceName": "fmeserverengine",

  "RancherAccessKey": "****",
  "RancherSecretKey": "****",
  "RancherHost": "rancher-1",
```

```
    "EngineInstallURL":  
    "https://releases.rancher.com/install-docker/1.12.6.sh",  
  
    "StackName": "rancher-worker"  
}
```