Jupyter Hub

Kun

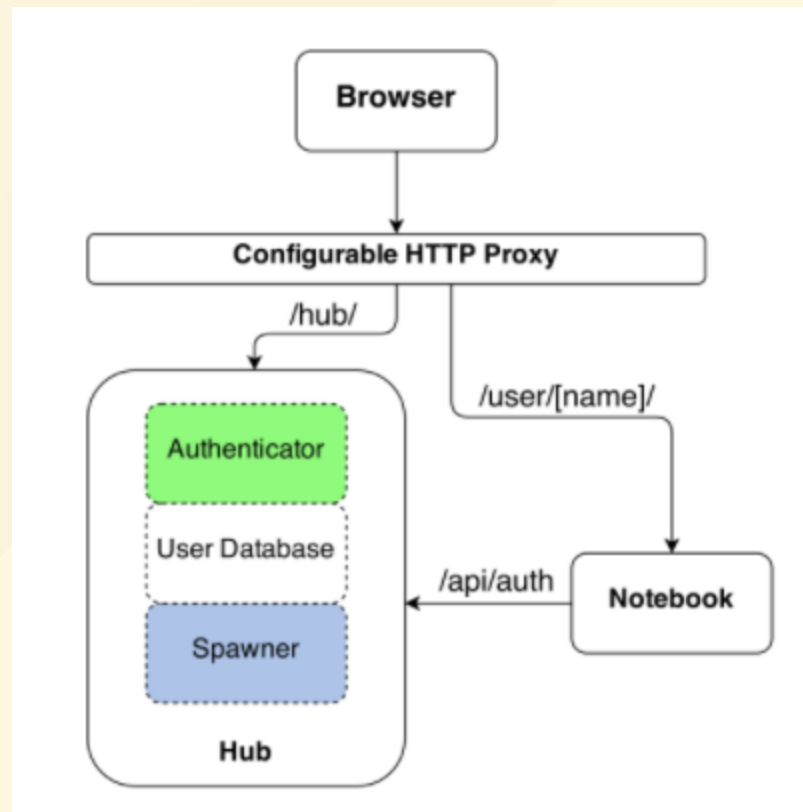**March 6, 2017**

Interesting Features

- Configurable http proxy (node-http-proxy)

- Well written documentation

- Authenticators

- Spawners

Architecture

- a notebook server process **for each user** ([Slide](#))

- use **global http proxy** to handle, redirect requests

How to run (w/ Docker)

Dosen't work 😭

```
docker run -p 8000:8000 --name jupyterhub --rm jupyterhub/
```

How to run (w/o Docker)

```
pyenv local 3.6.0

npm install -g configurable-http-proxy
pip3 install jupyterhub notebook

# jupyterhub --generate-config

jupyterhub
```

DEMO

Cluster Computing for Python

- ipyparallel

Authenticator

- PAM (default)

- [OAuth](#) - Github, Gitlab, Google, Openshift, ...

- [LDAP](#)

Authenticator: **Config**

1. Install oauthenticator and set `jupyterhub_config.py`

```
c.JupyterHub.authenticator_class ='oauthenticator.GitHubOA
import os
c.GitHubOAuthenticator.oauth_callback_url = os.environ['OA
c.GitHubOAuthenticator.client_id = os.environ['GITHUB_CLIE
c.GitHubOAuthenticator.client_secret = os.environ['GITHUB_
```

2. Then, run jupyterhub with envs

```
OAUTH_CALLBACK_URL=http://your-public-domain:8000 \
GITHUB_CLIENT_ID=YOUR_CLIENT_ID \
GITHUB_CLIENT_SECRET=YOUR_SECCRET \
jupyterhub
```

Authenticator: **Implementation**

- jupyterhub: [LocalAuthenticator](#)

- oauthenticator: [GithubAuthenticator](#)

Spawner

- local-process (default)

- docker

- kube

- sudo: w/o being root

- systemd

- batch: for clusters using batch scheduling

- wrap: enabling runtime configuration of spawners

Spawner supports resource limitation

Docker Spawner: Config

1. install dockerspawner and build docker image

```
cd dockerspawner
pip install -r requirements.txt
python setup.py install
docker build -t jupyterhub/singleuser singleuser
```

2. Setup spawner in `jupyterhub_config.py` (issue#291)

```
c.JupyterHub.spawner_class = 'dockerspawner.DockerSpawner'
c.DockerSpawner.hub_ip_connect = 'your-local-ip-addr'
c.JupyterHub.hub_ip = 'your-local-ip-addr'
```

Docker Spawner: **Implementation**

jupyterhub: spawner.py
jupyterhub: [dockerspawner - singleuser](dockerspawner-singleuser)
jupyterhub scripts/singleuser.py

Kube Spawner

- [Setup jupyterhub on kubernetes with LDAP](#)

Features which Zeppelin doens't have

- Well abstracted authenticator, spawner layers

- Edit metadata for note / paragraph

- Toggle header, toolbar (more like IDE)

- Cell toolbar

- Fertile help button

- Merging cells

References

- Docs: JupyterHub
- Docs: JupyterHub Authenticators
- Docs: JupyterHub Spwaners
- Video: Deploying Jupyter Notebooks
- Slide: Jupyterhub Overview
- Issue: jupyterhub #291