

Using docker and docker-compose April 2018







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Time line

- 2014-2015 Initial experiments with Docker
- 2015-2016 Custom shell scripts for building and running services
- 2017-2018 Compose for building and running services







Custom virtual machine image to host docker services

Minimal install of Fedora, with docker, docker-compose fedoro
 and admin tools



 Automated build using RedHat kickstarter fedora-docker-base.txt



~30sec to create and launch a new VM using Libvirt scripts



Compatible with the university OpenStack system **Eleanor Researcher Cloud Service**







Secrets and passwords

Shell script function that looks up a secret:

```
secret <key>
```

Implemented using a combination of ssh and sed:

Server side text file contains name value pairs :

toad=Brown Toad frog=Green Frog fish=Blue Sea











Basic Firethorn components

Main TAP and JSON/REST webservice





gilliar

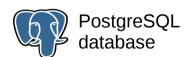
OGSA-DAI data handling webservice





jarmila

PostgreSQL database



bethany

Python client



angela

Using human names for the services avoids duplication and hard coded values.

Worst case, and all too common:

hostname = postgres,
database = postgres
username = postgres
password = ...

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2015-2016 Shell scripts for building and running the services

```
# Start our Firethorn webservice container.
docker run \
    --detach \
    --publish 8080:8080 \
    --name "${firename}" \
    --link "${ogsaname}" \
    --link "${metaname}" \
    --link "${dataname}" \
    --link "${username}" \
    --volume "${properties}:/etc/firethorn.properties" \
    --volume /etc/localtime:/etc/localtime:ro \
    "firethorn/firethorn:${version}"
```





2017-2018 Compose for building and running the services Single compose.yml configuration file for a set of services

```
bethany:
    image:
       "firethorn/postgres:${buildtag}"
    . . . .
jarmila:
    image:
       "firethorn/ogsadai:${buildtag}"
    . . . .
gillian:
    image:
       "firethorn/firethorn:${buildtag}"
    depends_on:
        bethany:
            condition: service_started
        jarmila:
            condition: service_healthy
```

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