Wide Field Astronomy Unit (WFAU)

Docker deployment

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What is a container ?

bubble

User land

Linux Kernel

Linux name space = bubble

What it is not

- Motherboard
- PCI bus
- Hard disc
- Network card
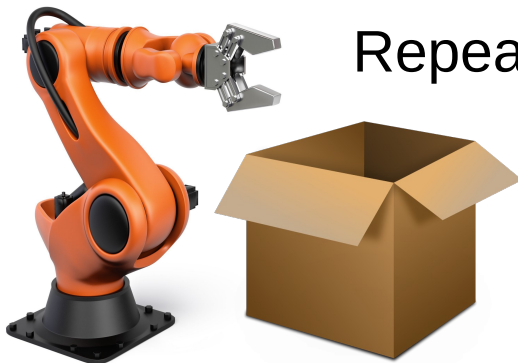- Video card
- Screen
- Keyboard
- Mouse
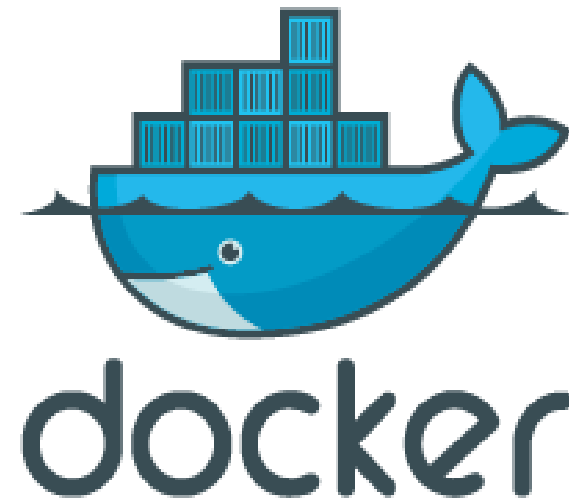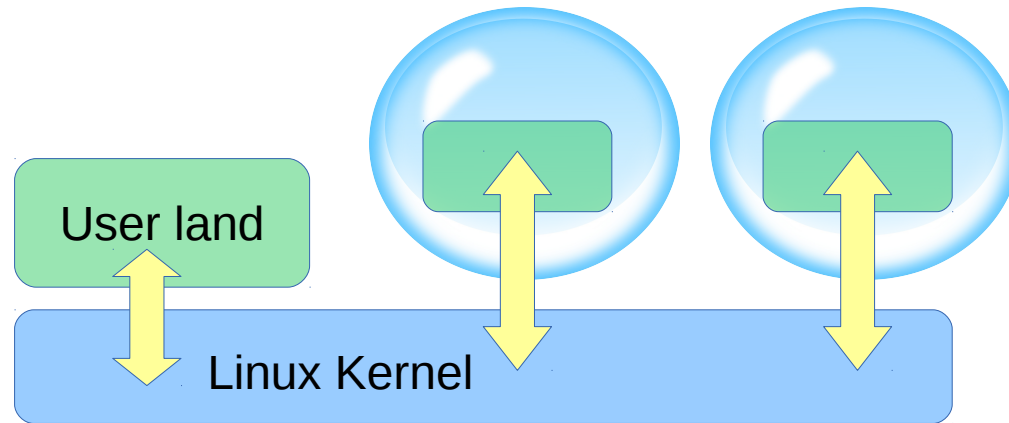
- BIOS boot

Container = portable unit

- Standard shape
- Standard connectors

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docker

Why use Docker ...

Rapid
prototyping

Repeatable builds

Flavour independent

Platform independent

Documented configuration

- Version info
- Dependencies

GitHub

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Dockerfile = recipe for making a container

```
FROM firethorn/java:8
MAINTAINER Dave Morris

#
# Expose Tomcat port
EXPOSE :8080

#
# Download the Tomcat tar file
ADD https://archive.apache.org/dist/tomcat...

#
# Unpack the tar file.
RUN tar -zxf  ${TOMCAT_TARFILE}

#
# Run Tomcat
USER     tomcat
WORKDIR /var/local/tomcat
CMD /var/local/tomcat/bin/catalina.sh run
```

Industrial recipe, not home cooking

- Standard format
- Machine readable
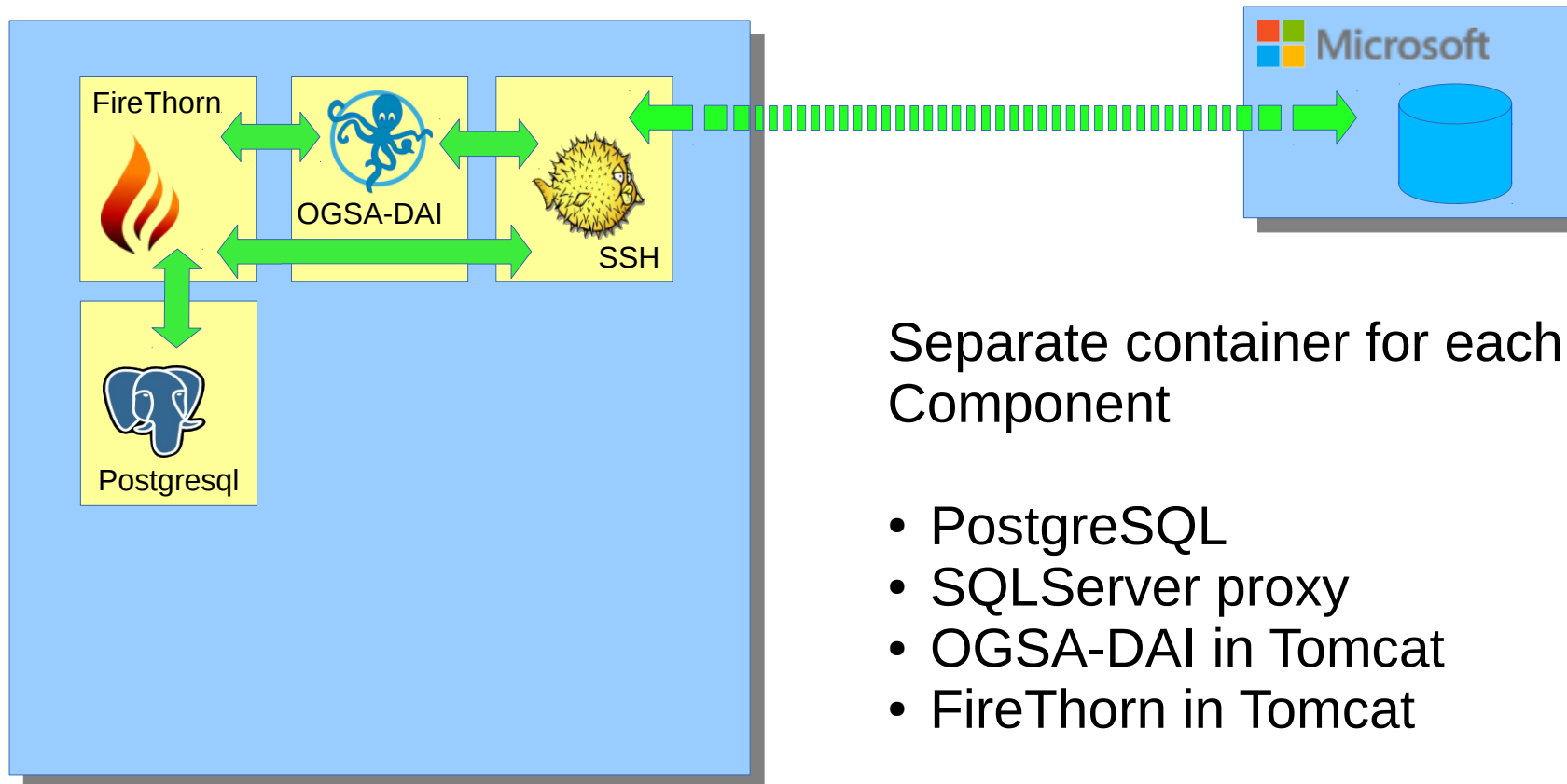- Repeatable again and again

- Standard shape
- Standard connectors

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Webapp – service deployment

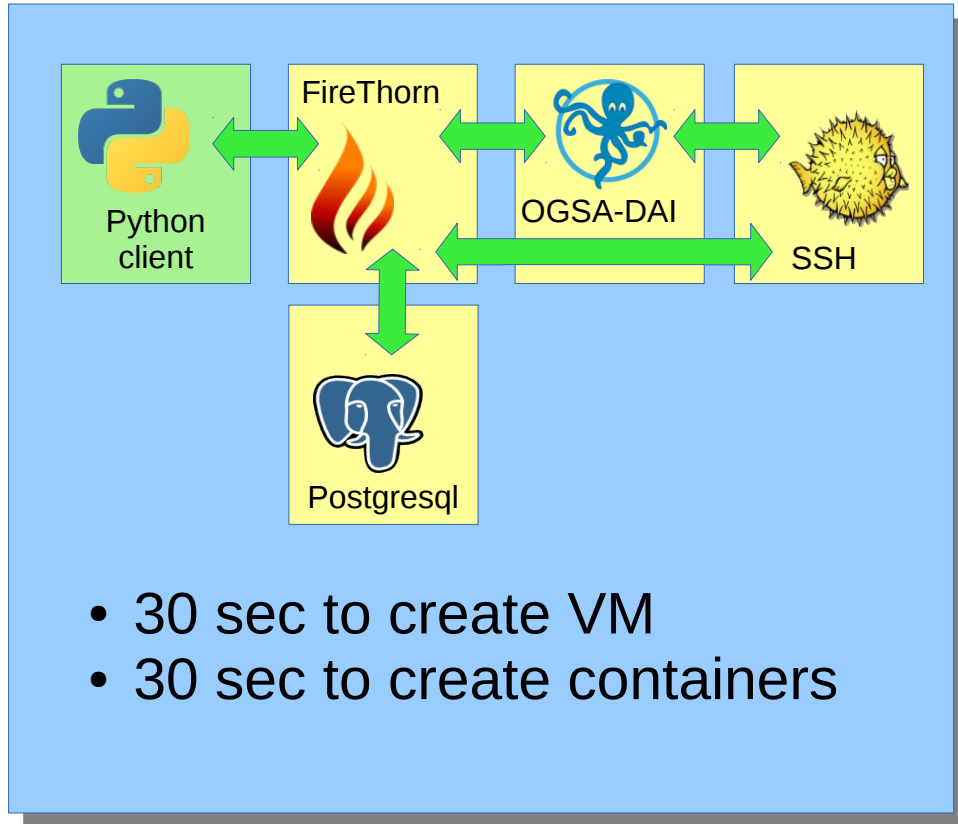## Docker containers inside a virtual machine
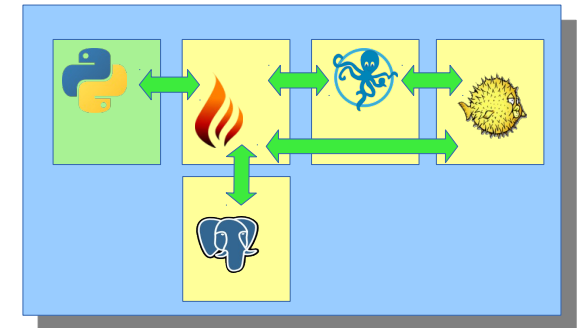

Separate container for each Component

- PostgreSQL
- SQLServer proxy
- OGSA-DAI in Tomcat
- FireThorn in Tomcat

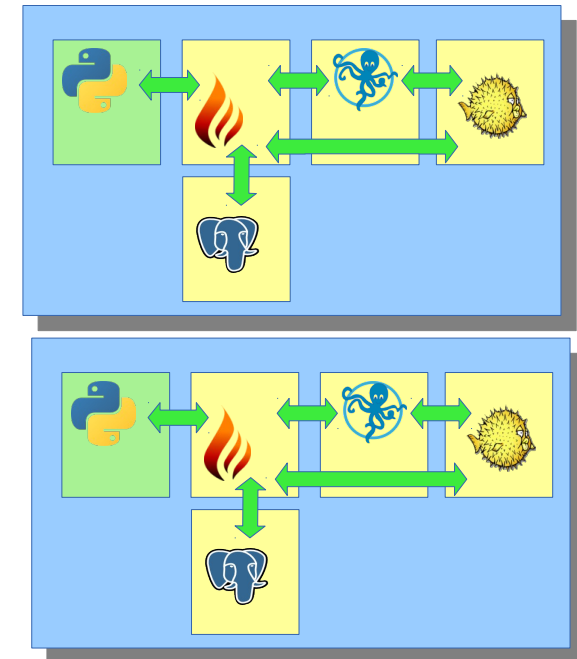- Basic shell script to launch
- Not using Docker Compose (yet)

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Reproducible testing (in testing)

Python client — FireThorn — OGSA-DAI — SSH — Postgresql

- 30 sec to create VM
- 30 sec to create containers

Quick and easy developer testing

Long duration testing

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Reproducible deployment (in development)

FireThorn

OGSA-DAI

socat

Microsoft

Postgresql

Documented configuration

- Version info
- Dependencies

mercurial
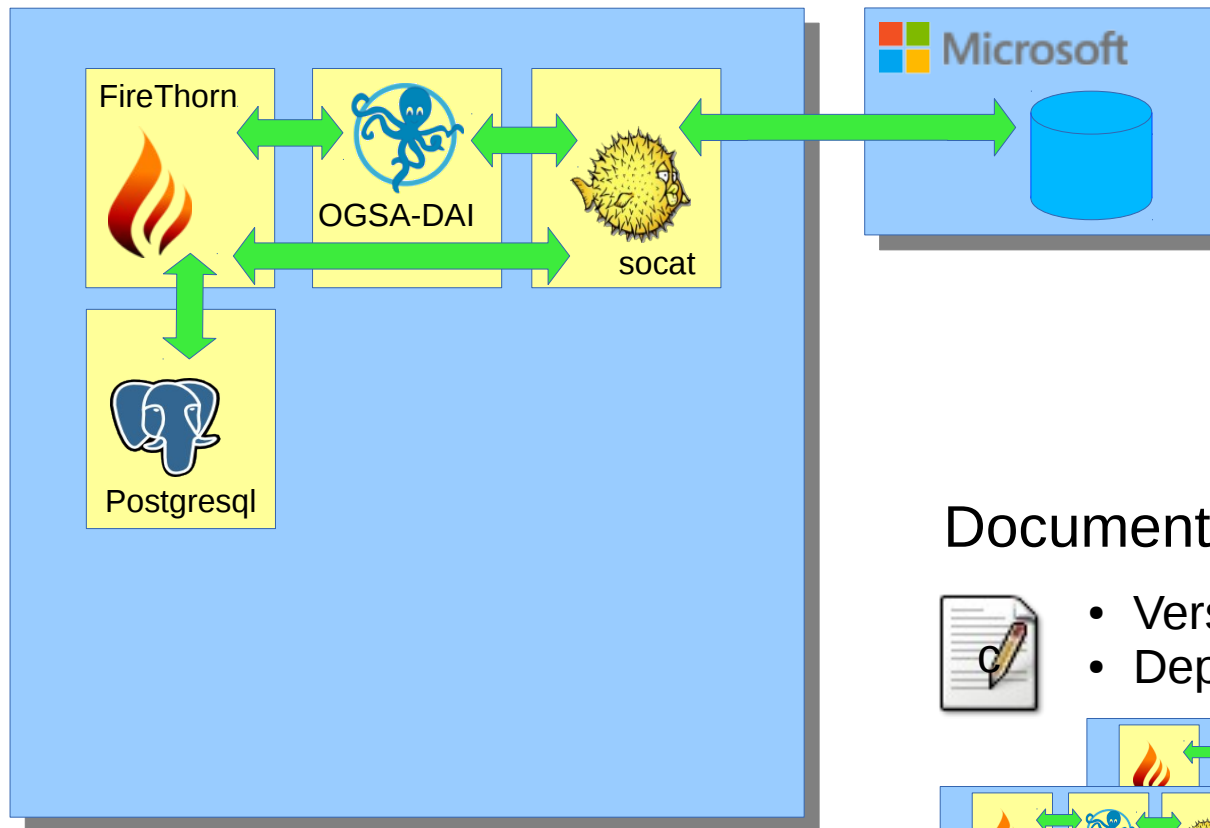
docker

- Historical archive

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Maven - application deployment (in use)

Maven running in a container, deploying Java webaps into Tomcat containers

FireThorn

OGSA-DAI

IvoaTex - application deployment (in use)

https://github.com/ivoa/ivoatex

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Issues

Resource issues

Security issues

Tricks and tips

Ambassador – socat or ssh

Unix sockets – Docker, SSH and X

Normal user - notroot

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