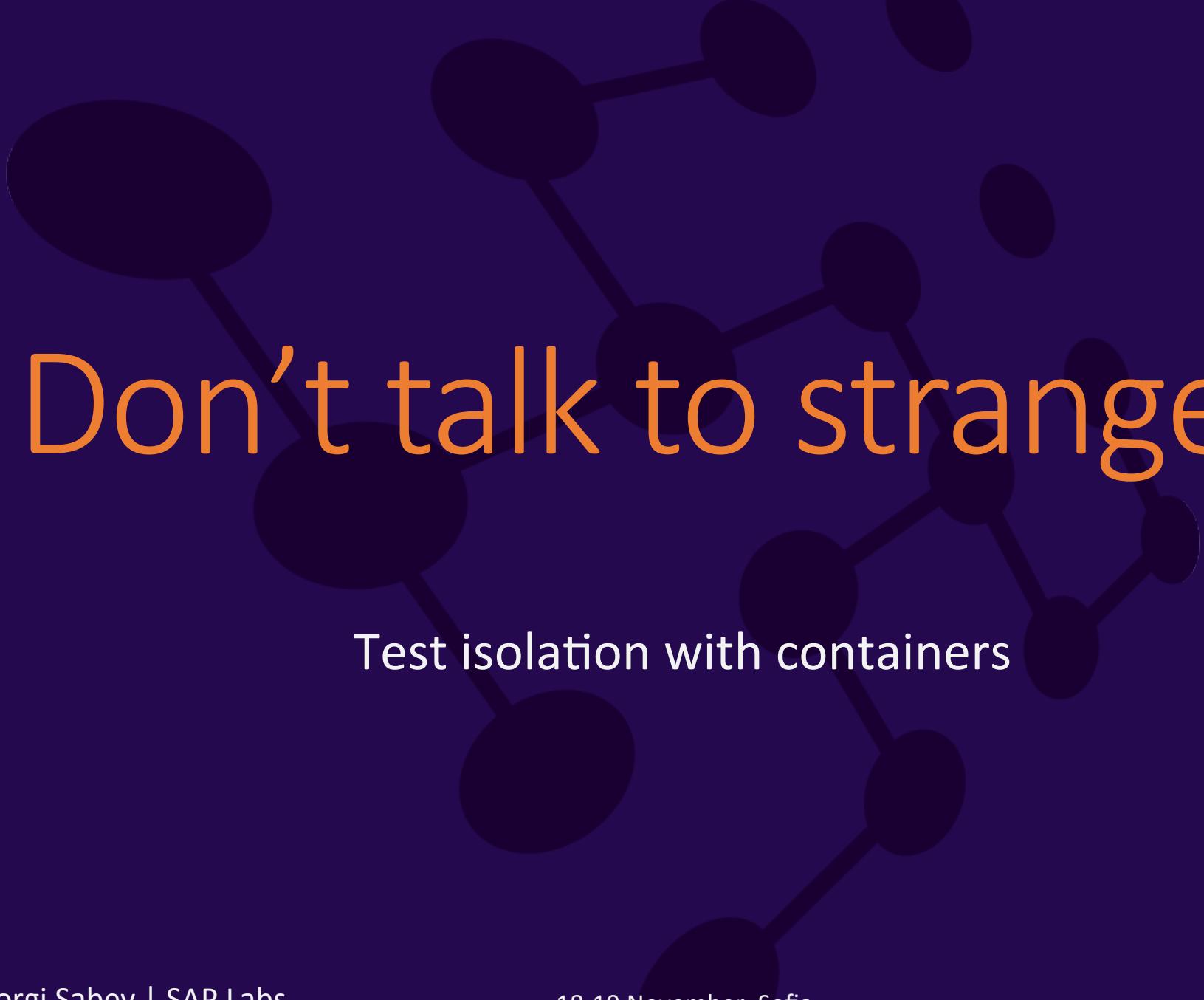


Don't talk to strangers



Test isolation with containers



Test pollution

Resources left behind

- Environment variables
- Database records
- Files
- Programs / libraries



Popular solutions

- Workspace Folders
- Cleanup Scripts
- Discipline





Resource contention

CPU & Memory

Resource contention

- Processes compete for
 - CPU
 - Memory
 - I/O



Popular solutions

- ???

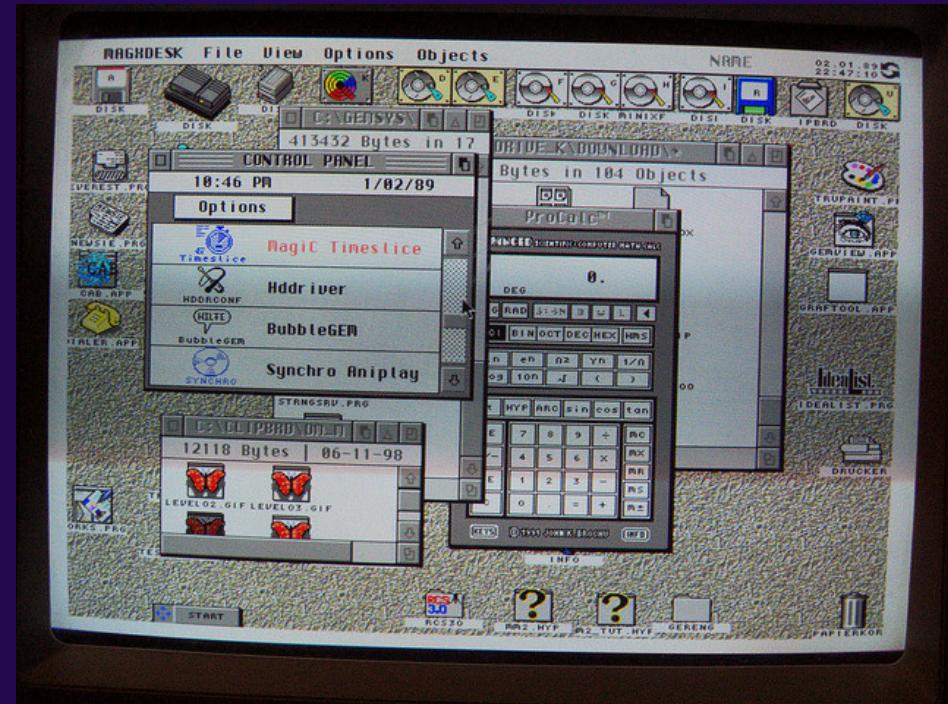


@rvcroffi

Multiple environments

Build and test

- Environment
 - OS
 - Mobile / Desktop
 - Cloud / Standalone
 - Databases
 - Versions



Popular solutions

- Dedicated hardware
- Virtual machines
- Cloud: AWS, Azure

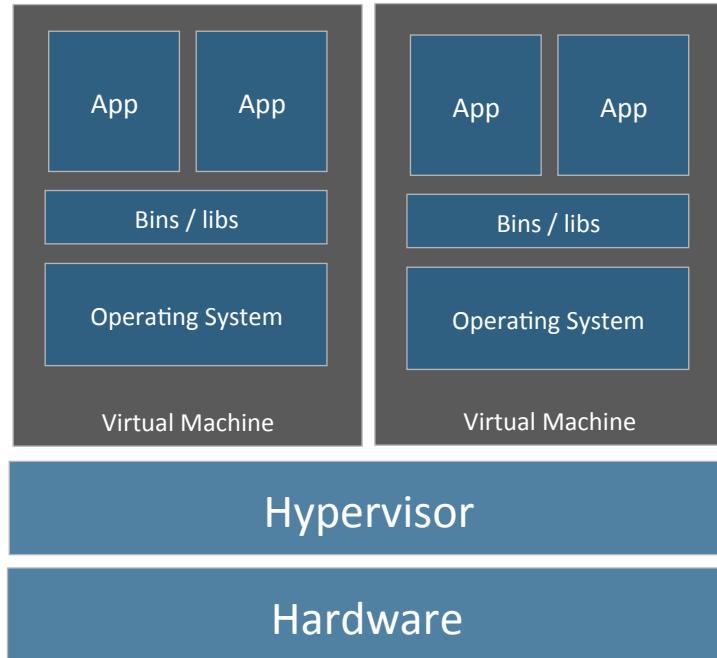




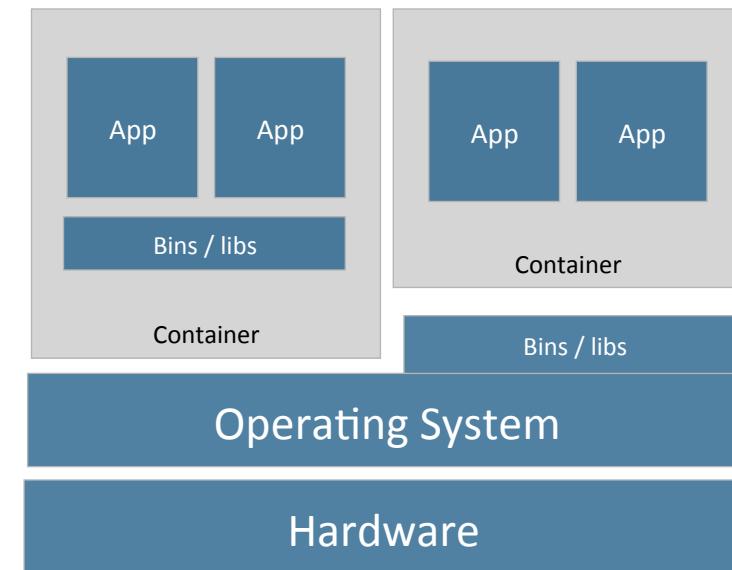
Containers

build, isolate, ship

Containerization = Lightweight Virtualization

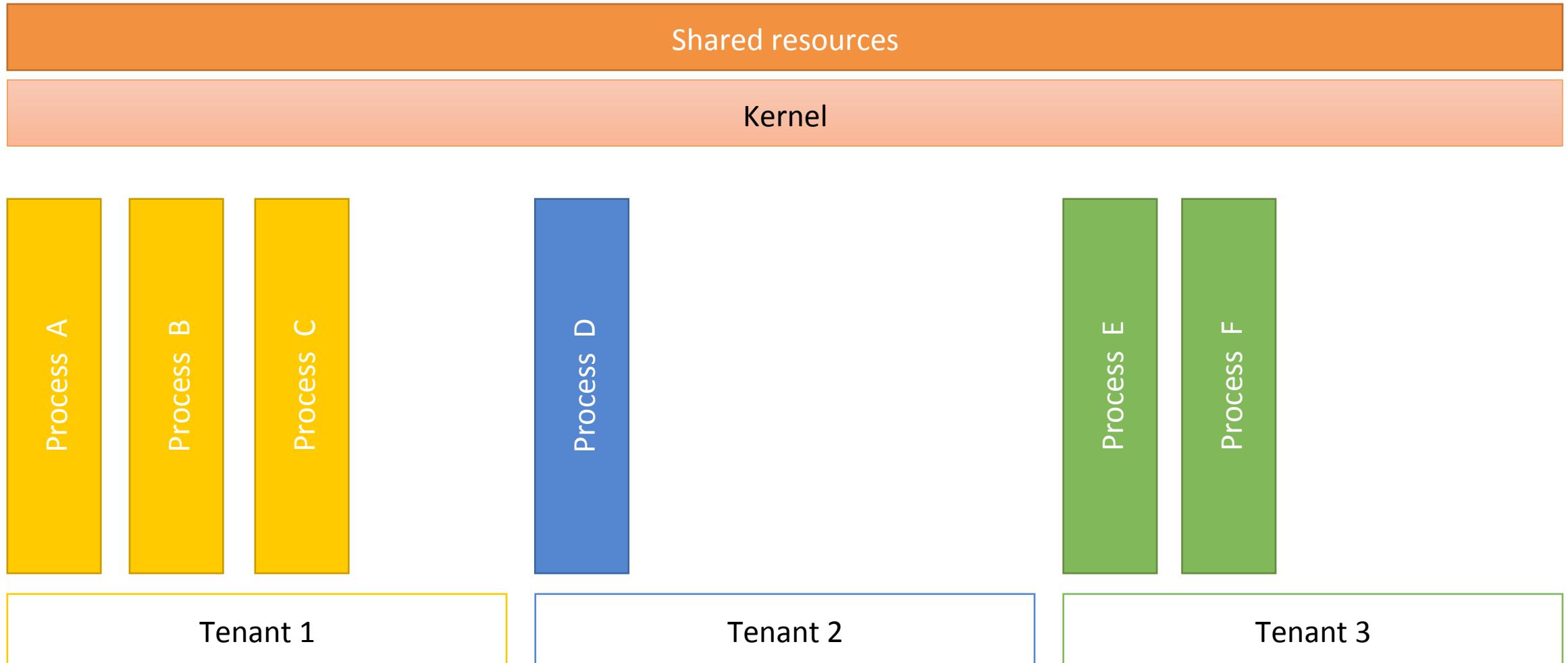


Virtualization

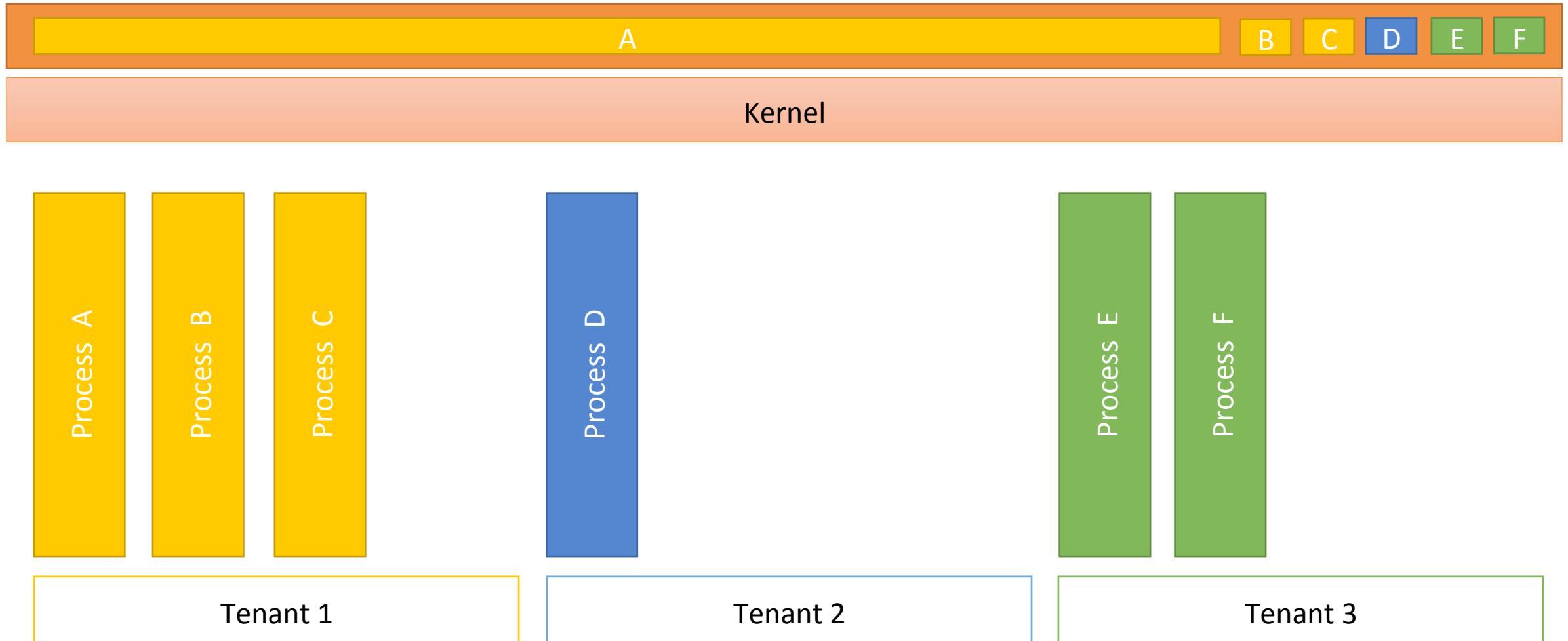


Containerization

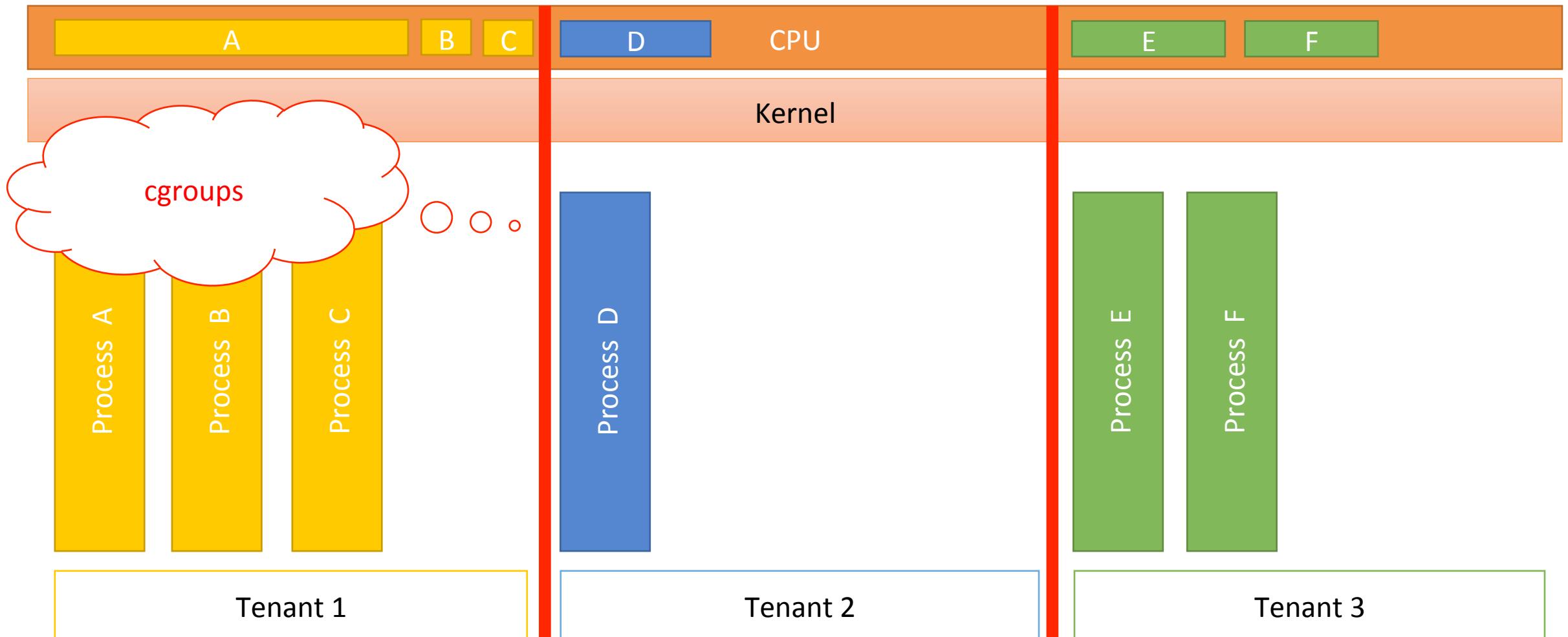
Container: Resource isolation



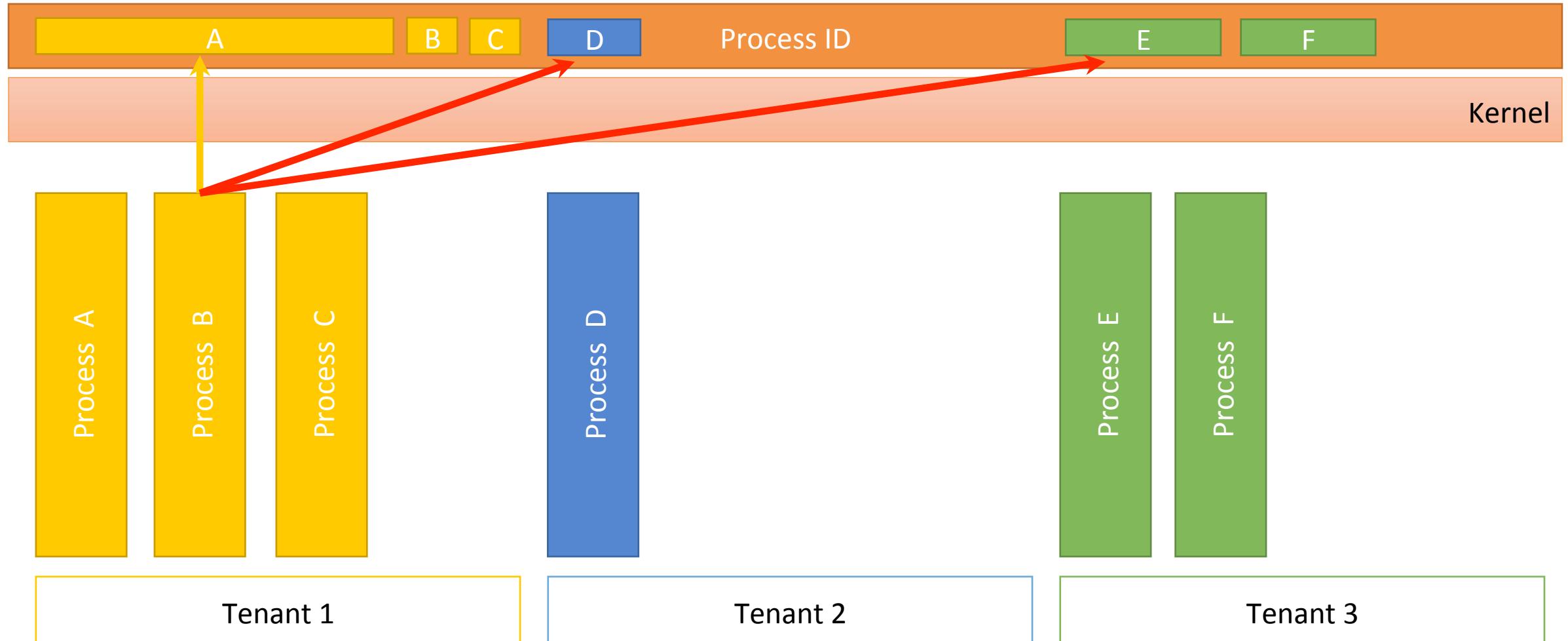
Container: Resource isolation



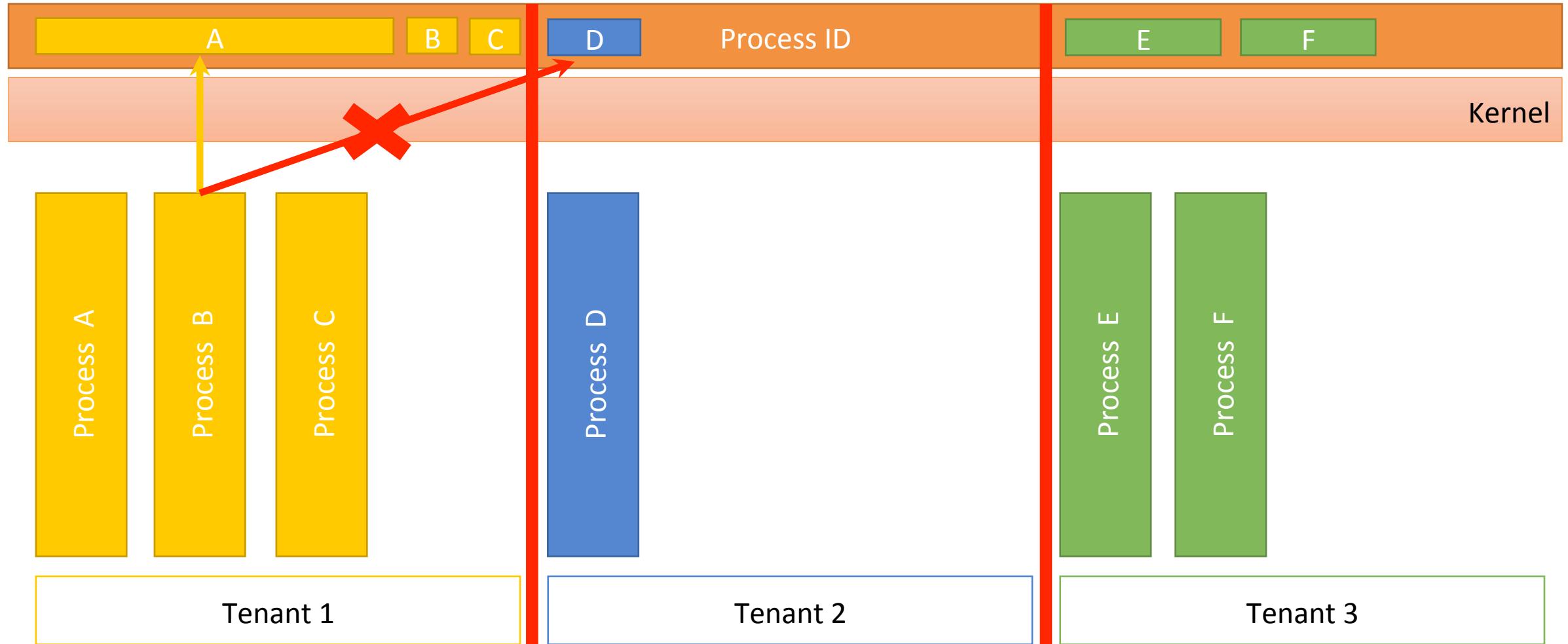
Container: Resource isolation



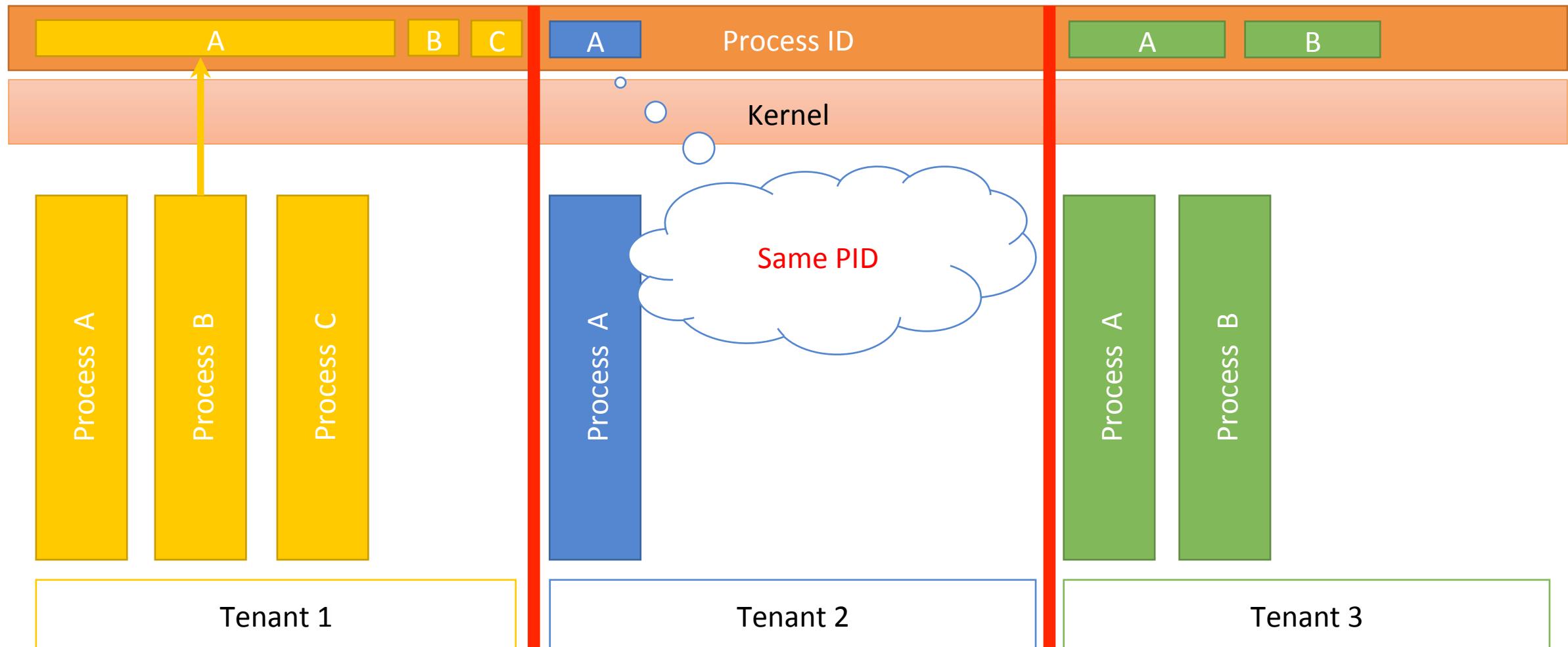
Container: Namespace isolation



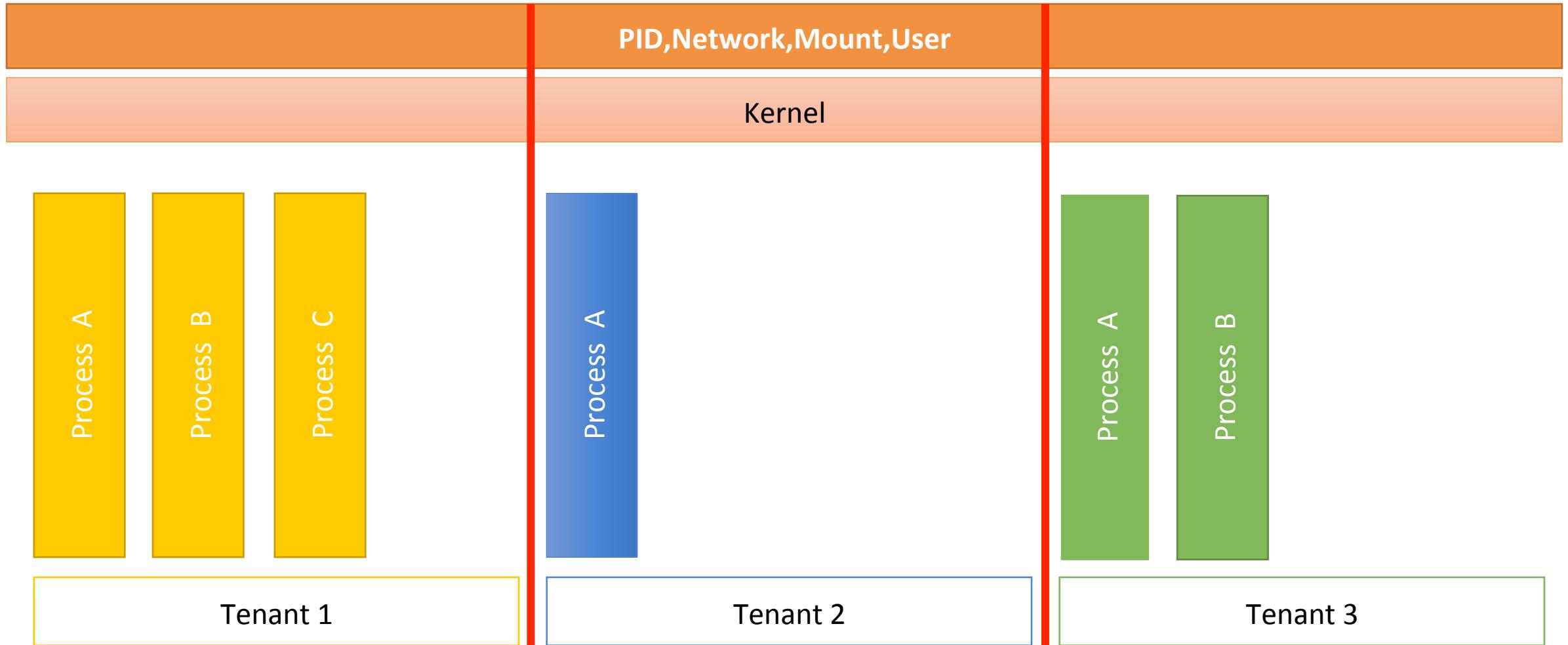
Container: Namespace isolation



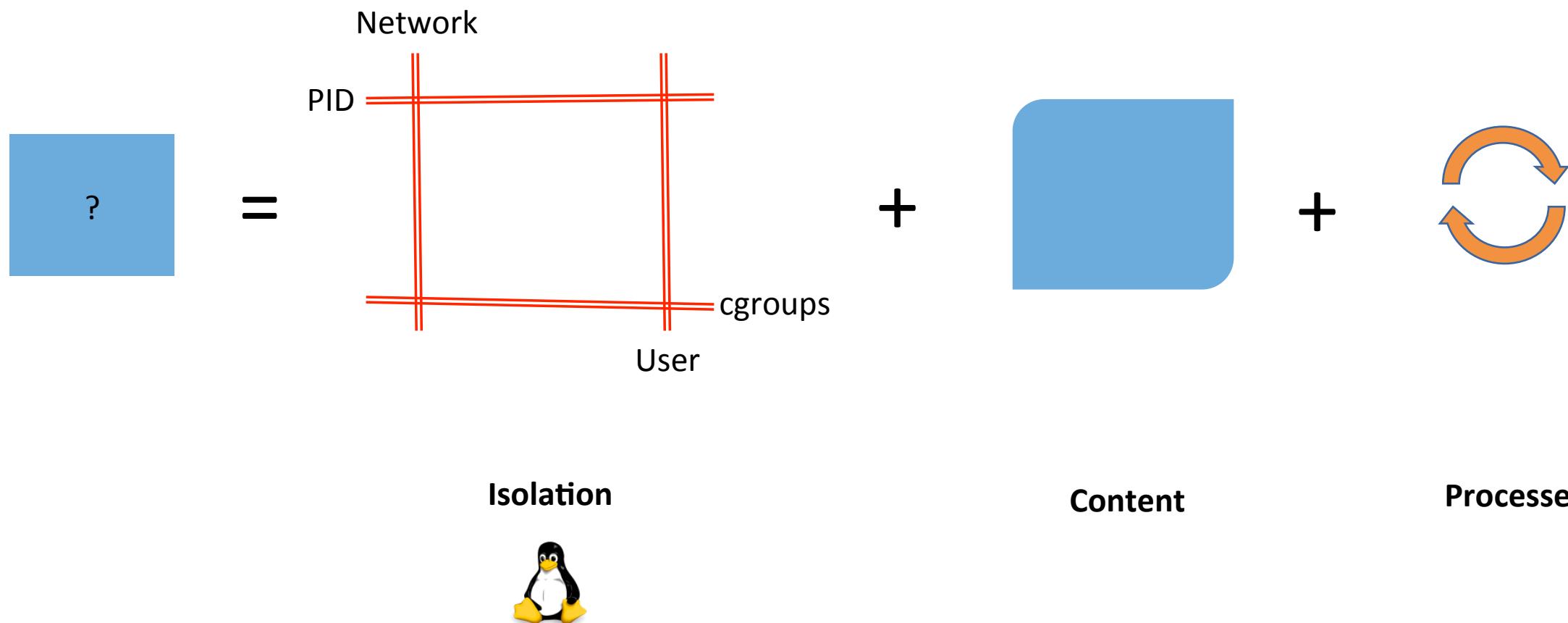
Container: Namespace isolation



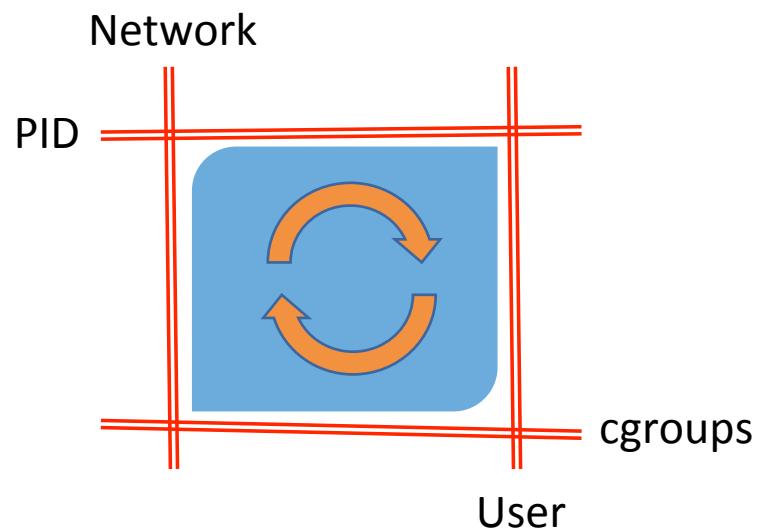
Container: Namespace isolation



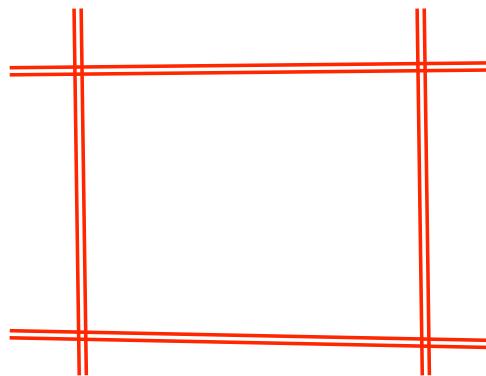
Container



Container



Container actions



Make me a container



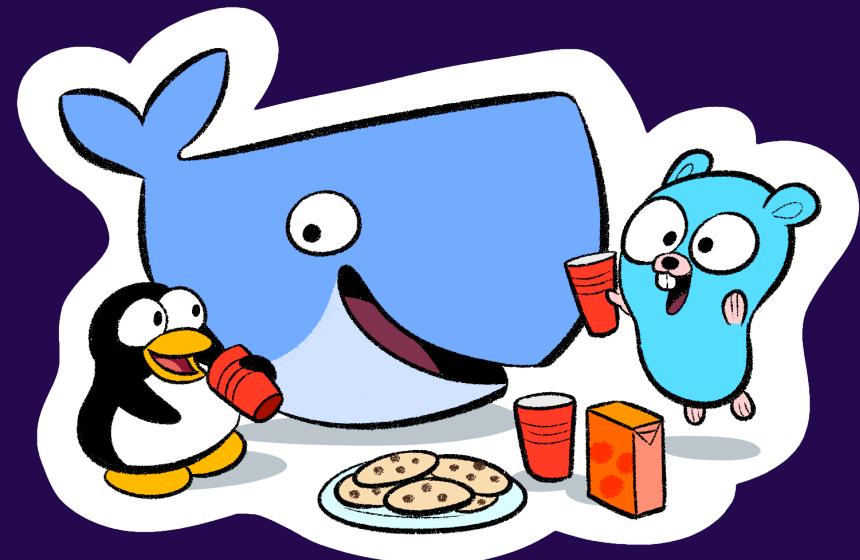
Put this in it



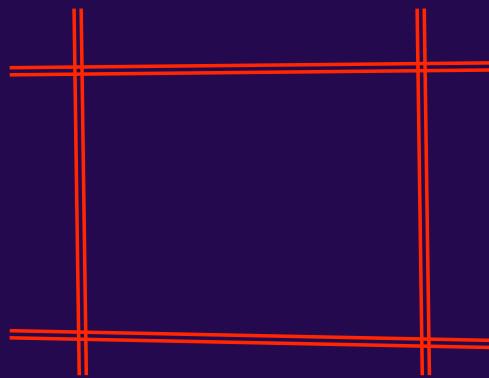
Run this for me

Docker

- “Build, Ship, Run” **Containers**
 - Dockerfile
 - Docker image
 - Docker Hub



Dockerfile



Make me a container



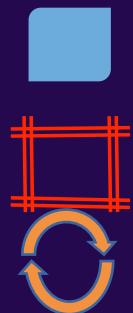
Put this in it



Run this for me

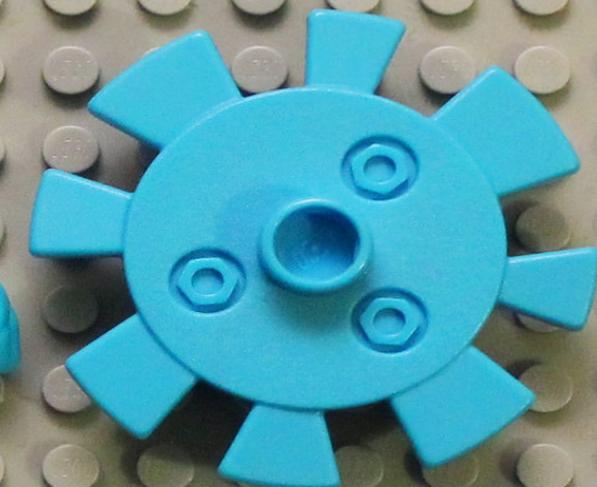
Dockerfile

- Example:



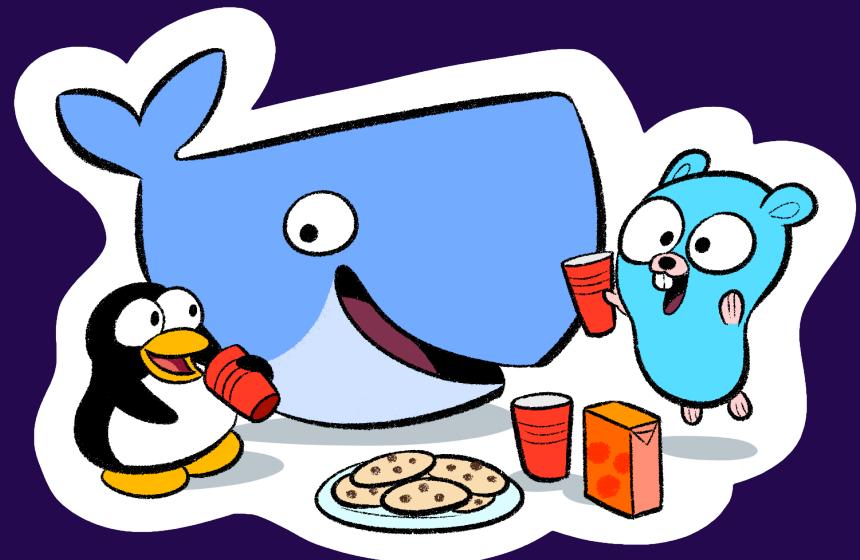
```
FROM debian:stable
RUN apt-get update && apt-get install -y --force-yes apache2
EXPOSE 80 443
VOLUME [ "/var/www", "/var/log/apache2", "/etc/apache2" ]
ENTRYPOINT [ "/usr/sbin/apache2ctl", "-D", "foreground" ]
```

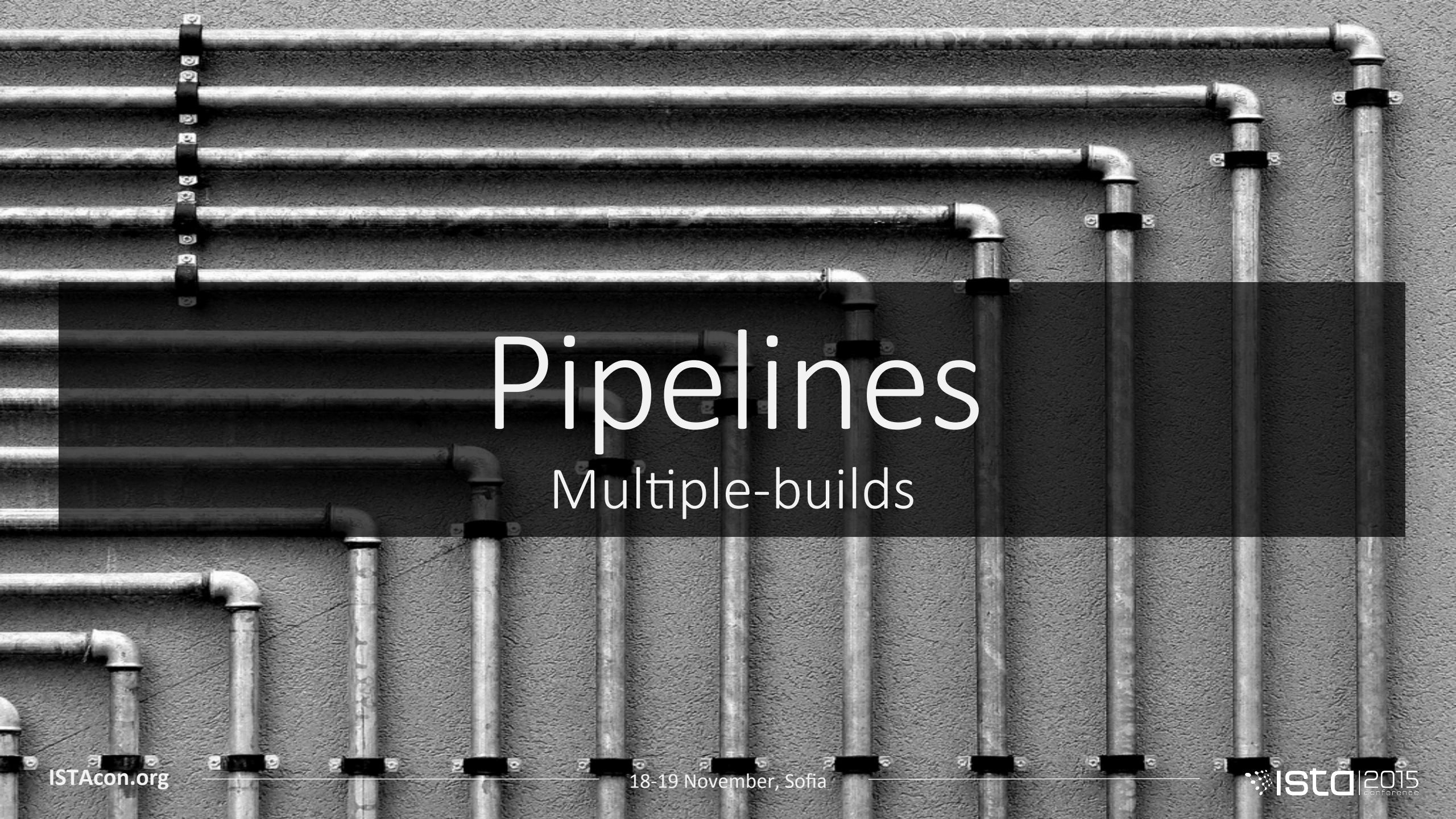
Demo



Containers: Pros & Cons

- Pros
 - Isolation
 - Reproducible environment
 - Easy to maintain
- Cons
 - Multi-platform
 - Discipline





Pipelines

Multiple-builds

Continuous Integration & Delivery

- Multiple
 - Environments
 - Products
 - Teams
- Final release



Popular solutions

- Build servers
 - Jenkins
 - Travis
 - ...
- Homegrown





Concourse

CI, Pipelines, Delivery

Concourse

- CI
 - Reproducible builds
 - Simple resources
 - Docker

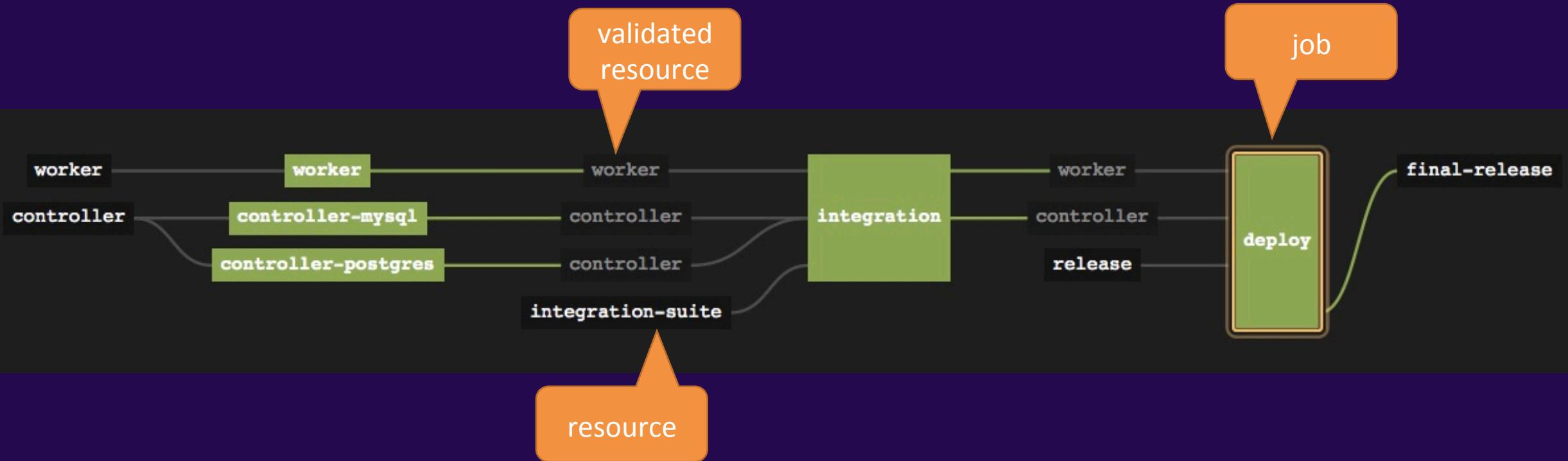


Concourse: Concepts

- Tasks
- Resources
- Jobs



Concourse: Pipeline



Concourse: Pipeline YML

resources:

- name: source

type: git

source:

uri: source.git

branch: master

jobs:

- name: build

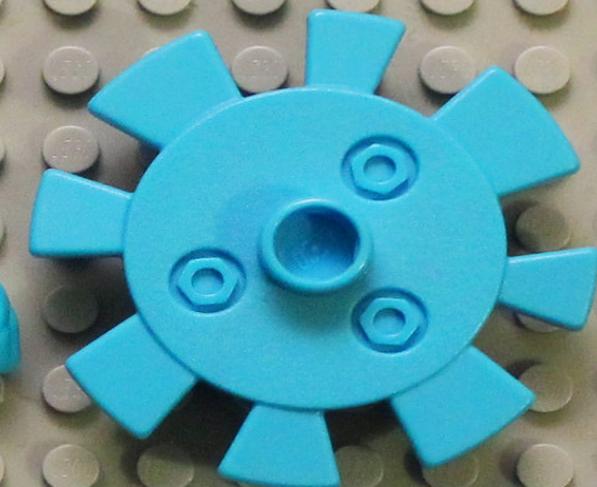
plan:

- get: source

- task: build

file: build.yml

Demo

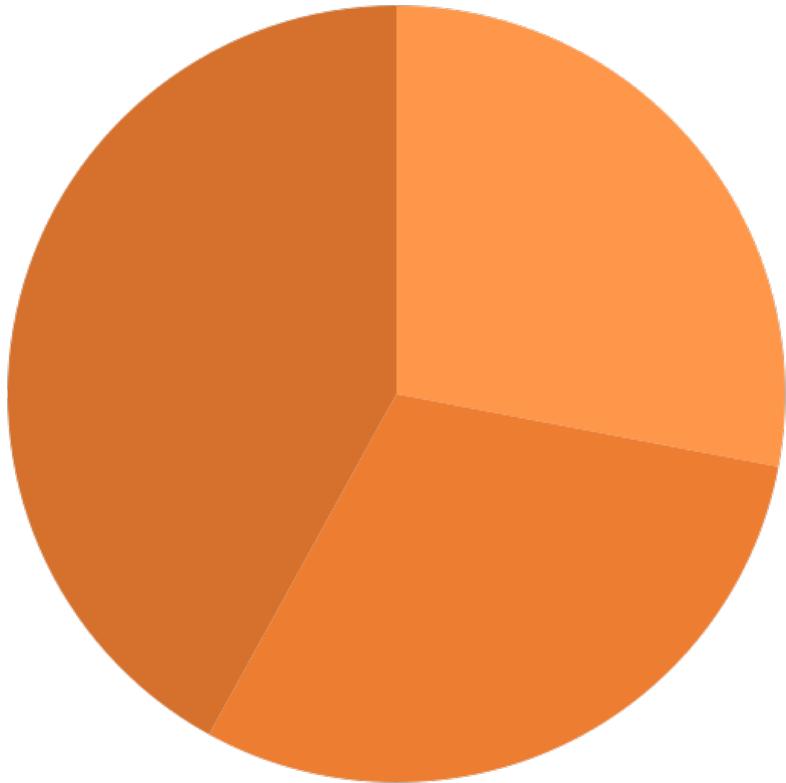


Concourse: Pros & Cons

- Pros
 - Reproducible environment
 - Native pipeline support
 - Release process modeling
- Cons
 - Maturity
 - Pipeline management
 - Scripting



Integer tincidunt libero a ex venenatis cursus. Vivamus accumsan congue tristique.

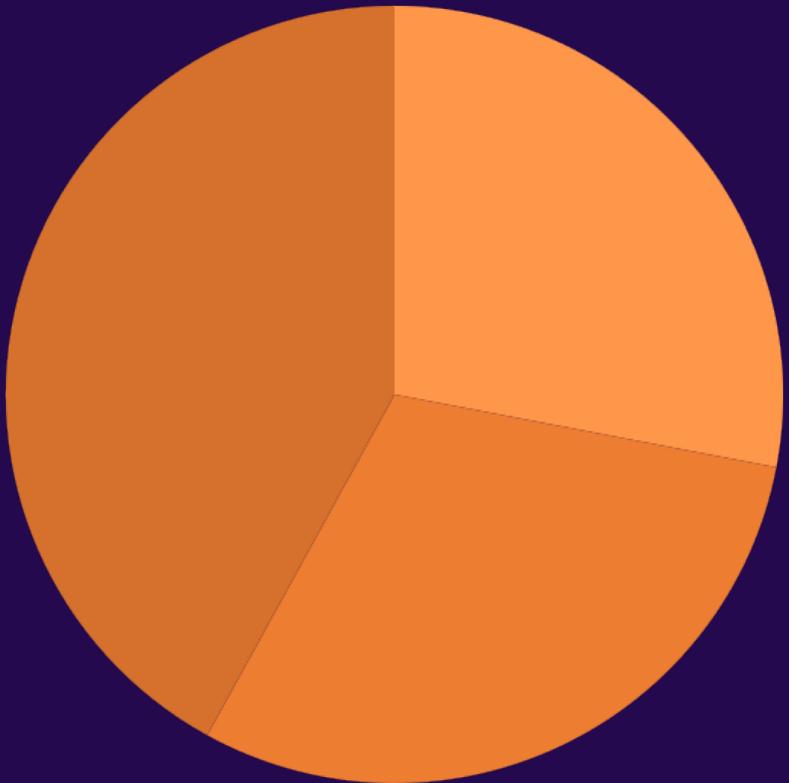


- Up to
- Six bullets
- For best results
- Up to
- Six bullets
- For best results

Major point without a picture

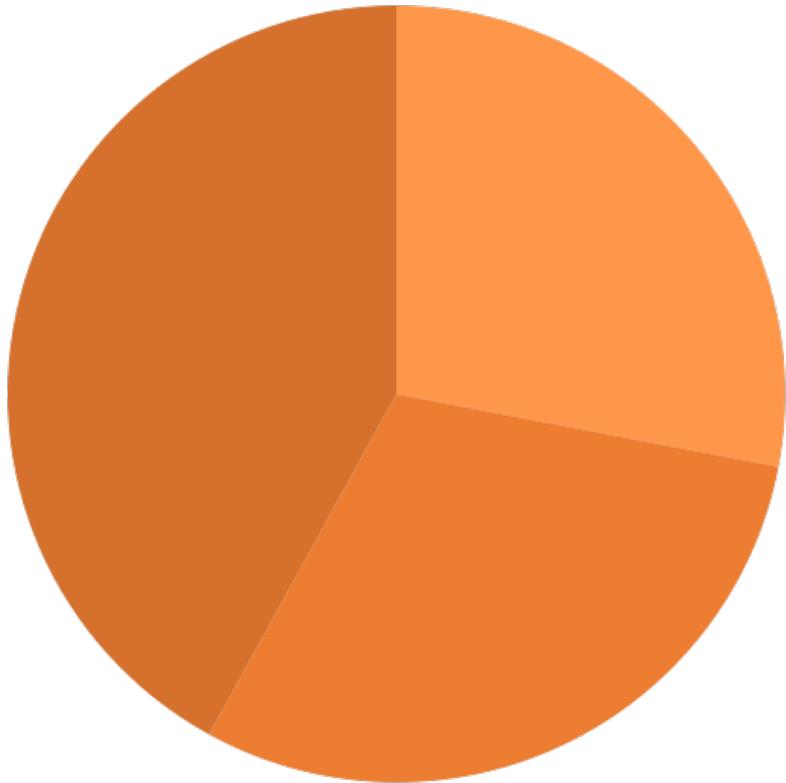
And its subtitle

Integer tincidunt libero a ex venenatis cursus. Vivamus accumsan congue tristique.



- Up to
- Six bullets
- For best results
- Up to
- Six bullets
- For best results

Integer tincidunt libero a ex venenatis cursus. Vivamus accumsan congue tristique.



- Up to
- Six bullets
- For best results
- Up to
- Six bullets
- For best results

”

Integer tincidunt libero a
ex venenatis cursus.

Vivamus accumsan congue
tristique.

”

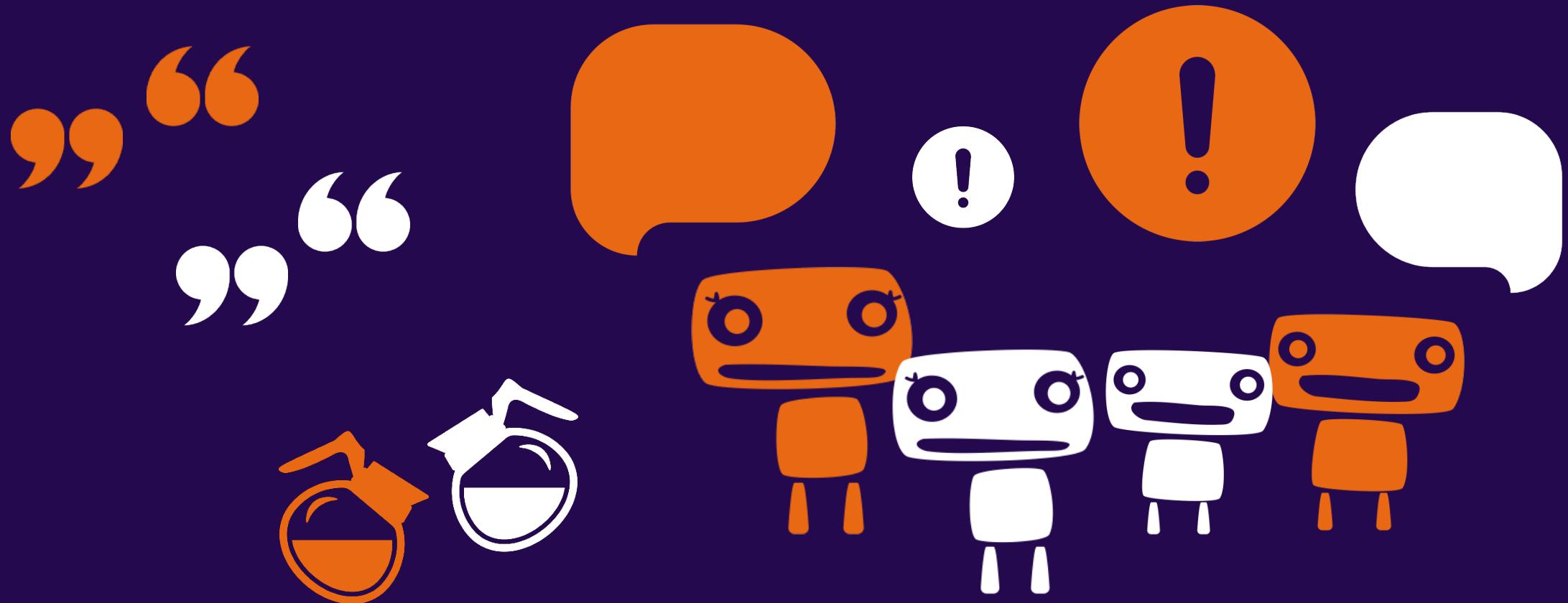
”

Integer tincidunt libero a
ex venenatis cursus.

Vivamus accumsan congue
tristique.

”

Some icons for use throughout the presentation



Thank you!



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georgi.sabev@sap.com