

Learning Layers

Scaling up Technologies for Informal Learning in SME Clusters

Layers Box

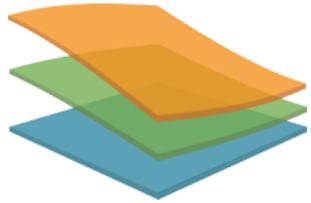
Private Cloud Made Easy

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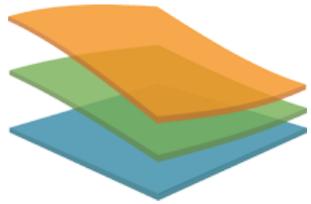


Public Clouds

- Is There a Safe Harbor?

- data is possibly at risk in public clouds
 - who owns your data?
 - how safely are passwords stored?
- data center location
 - is a data center in overseas really good for your latency?
- always-on connectivity
 - are we always online whenever we need the cloud?

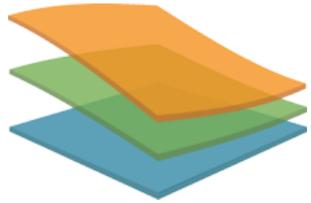




Layers Box

- ready-to-deploy, custom packaged private cloud infrastructure
 - industry-strength user management
 - installable Web apps
 - microservices with open APIs
 - flexible deployment options
- available as easy-to-use script!

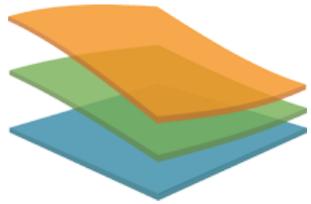




Package Managers

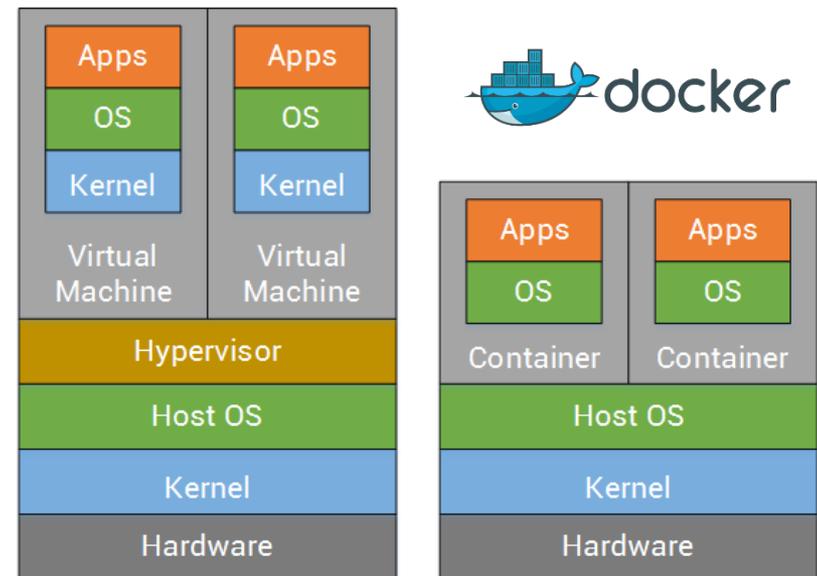
- Node.js
 - npm install
- JavaScript (frontend)
 - bower install
- Python
 - pip install



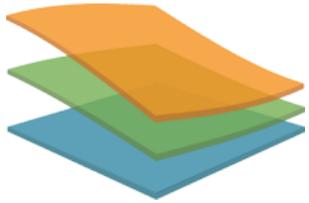


Docker Ecosystem

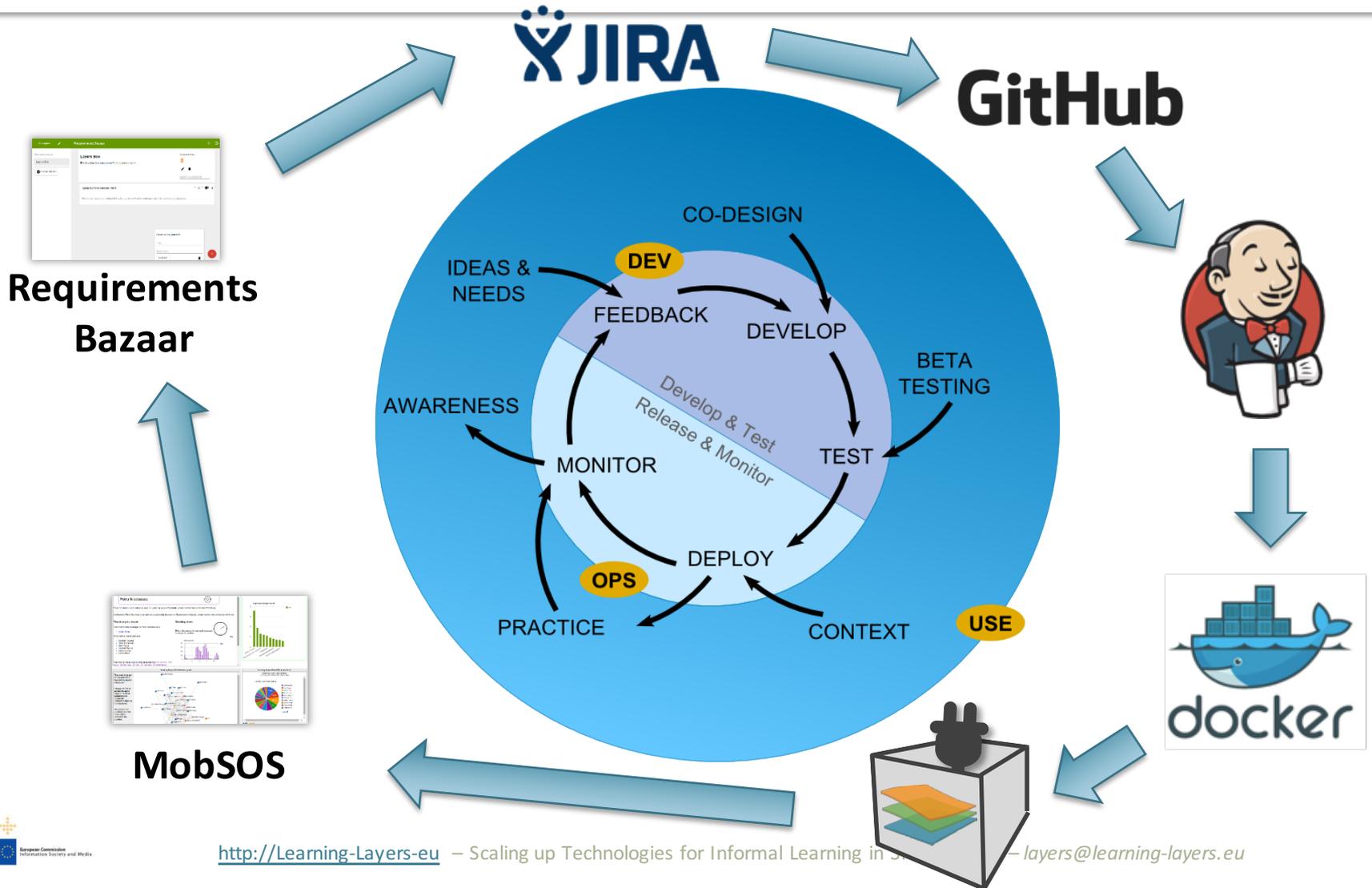
- virtualization based on Linux containers
- packaging applications and their dependencies into containers
- pre-packaged container images can be provided centrally, e.g. by Docker Hub
- extended composability by Docker Compose

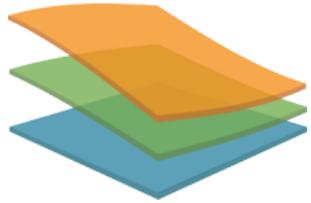


VM- vs. Container-based Virtualization



DevOpsUse Life Cycle

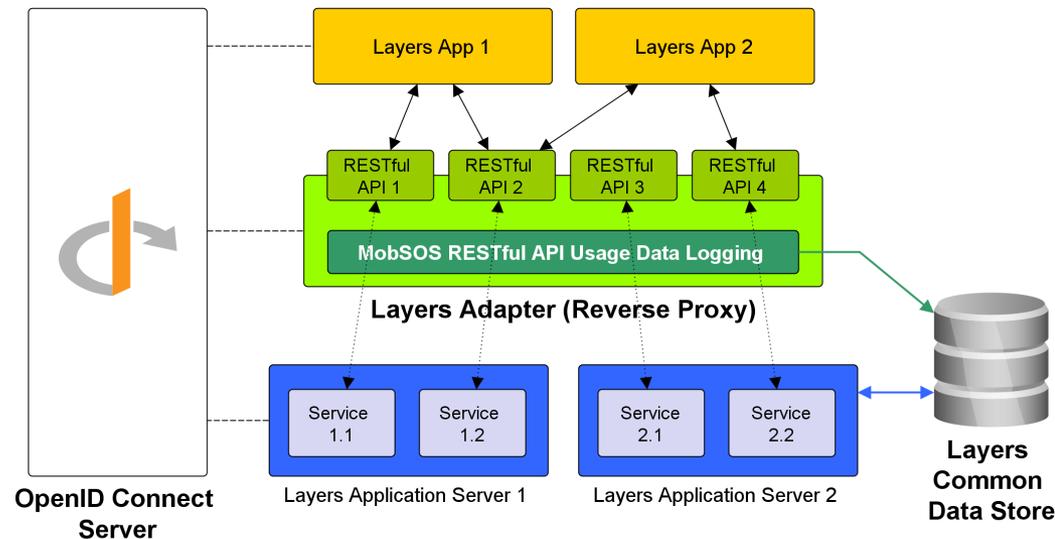




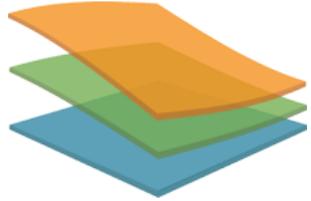
Layers Box Architecture - Layers Adapter

Nginx as reverse proxy for managing incoming API requests by distinct access point

- security: HTTPS encrypted communication
- analytics and privacy: monitoring and logging stays within the box



Conceptual Overview of Layers Adapter



Basic Setup

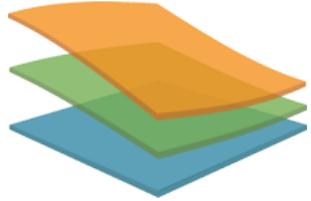
```
git clone https://github.com/learning-layers/LayersBox.git
```

```
layersbox init
```

```
layersbox start
```

```
layersbox install learning-layers/OpenLDAP
```

```
layersbox install learning-layers/OIDC
```



Example Configuration

openidconnect:

container_name: openidconnect

image: learninglayers/openidconnect:0.0.10

env_file:

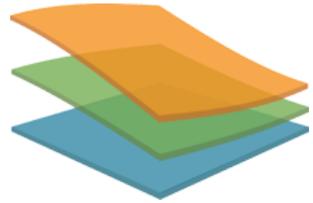
- common.env
- services/openidconnect/openidconnect.env
- services/openldap/LDAP.env

links:

- mysql
- openldap

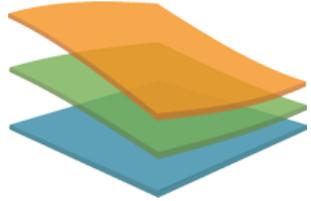
actions:

- create_databases: [openidconnect.env]



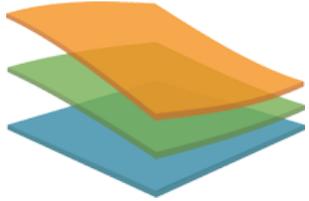
Automated Configuration with “Actions”

- Actions are defined in configuration file and the outputs are made available as environment variables
- “create_databases”
 - sets up a MySQL database and prefills it
- “create_oidcclients”
 - registers an OIDC client



Future Plans

- GUI
 - responsive Web frontend
- dependency management
 - automatically installing versioned dependencies
- better documentation
- whatever our community comes up with 😊



We'd Love to Hear Your Feedback!

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<https://requirements-bazaar.org/#/project/1/component/1>

<https://github.com/learning-layers/LayersBox>

<https://hub.docker.com/u/learninglayers/>



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