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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

Requirements Bazaar

MobSOS

http://Learning-Layers.eu – Scaling up Technologies for Informal Learning in SME Clusters – layers@learning-layers.eu
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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