Orchestrating applications with TOSCA and Docker

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Software deployment

The execution of all the activities that make a software system available to use.
Nowadays strictly related to the cloud infrastructure.
Need of a way to express all the **requirements** that the application needs to run.

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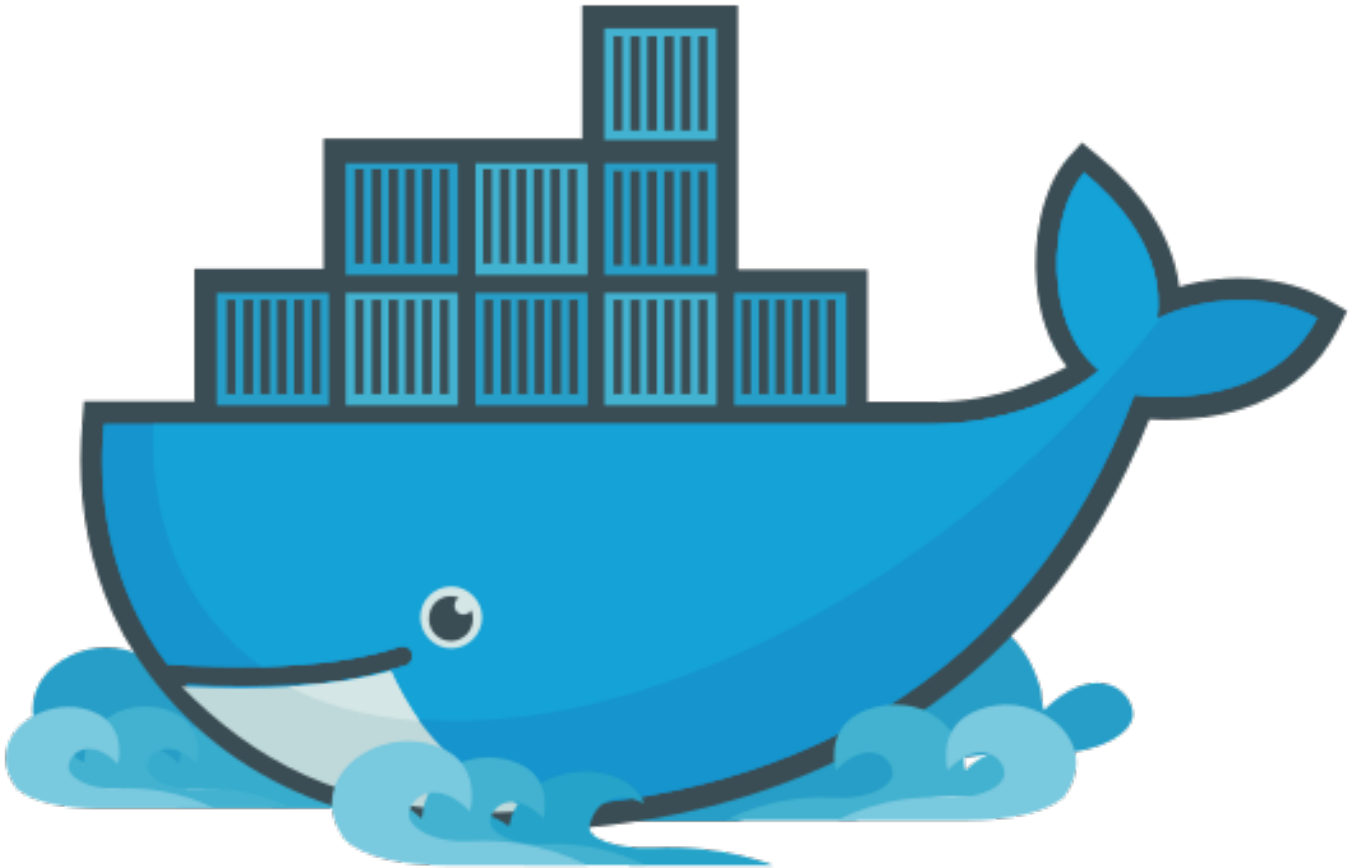
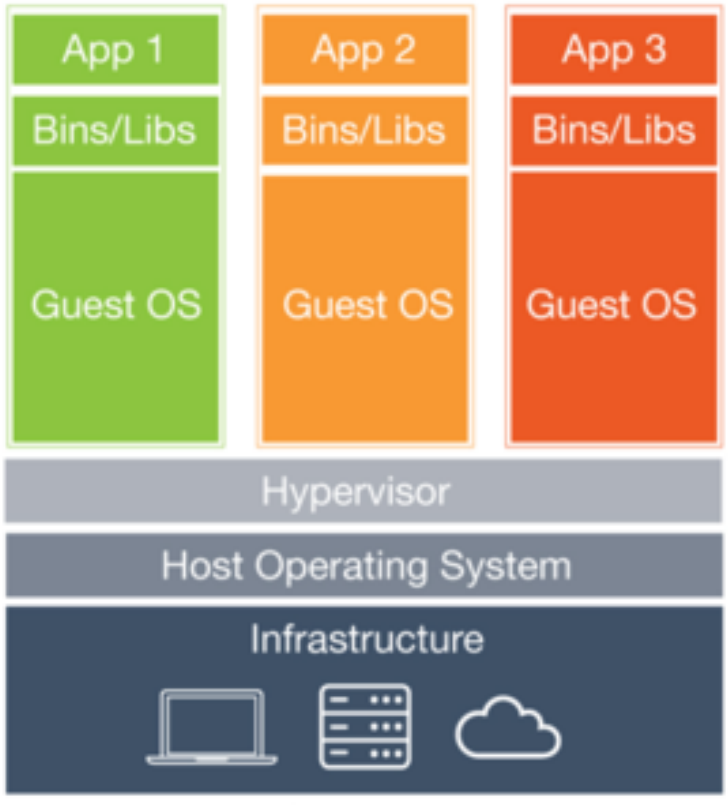
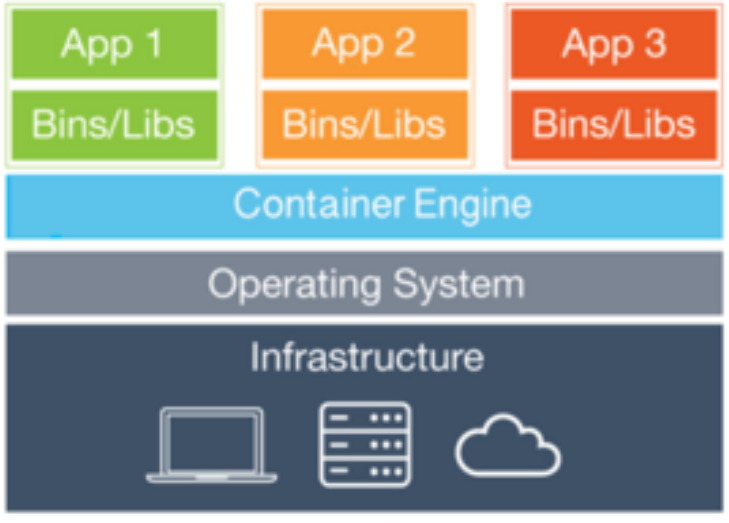
Docker



Docker: What?

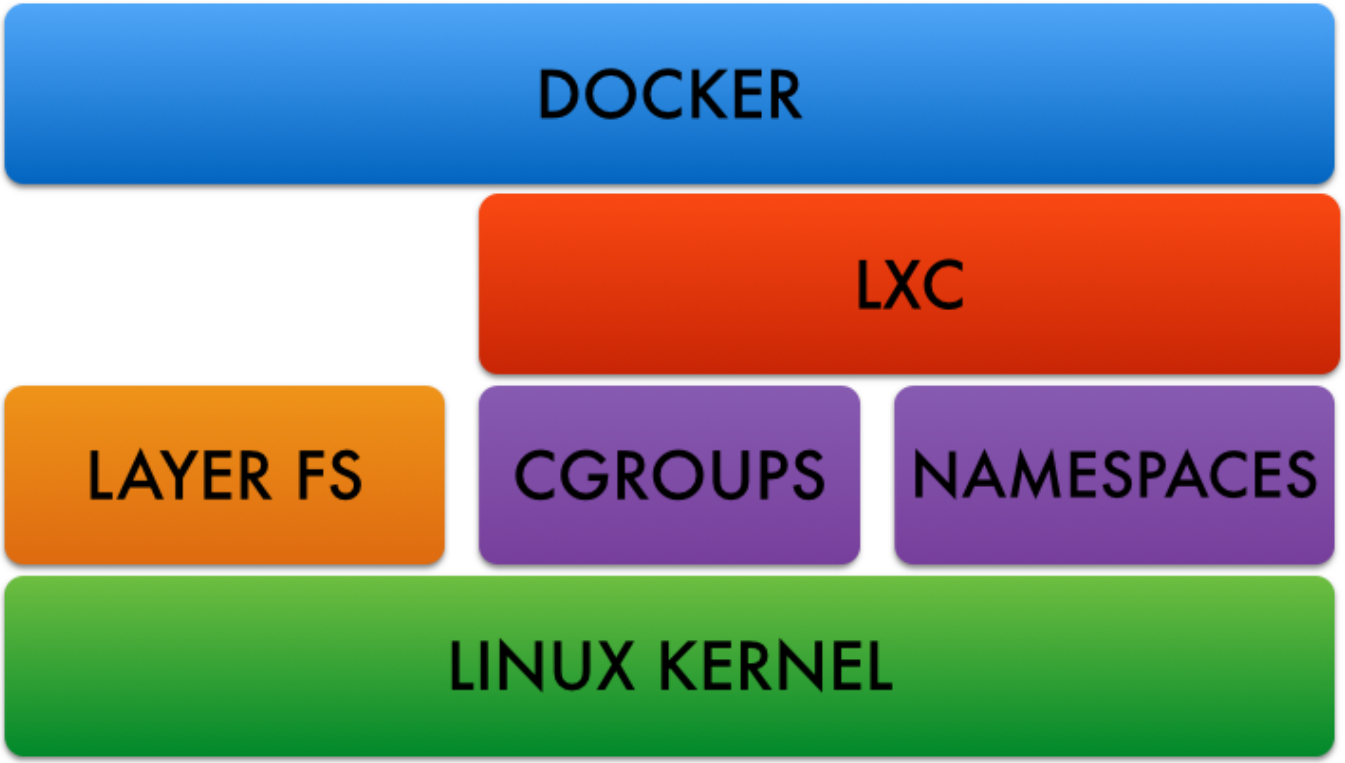


Hypervisor-based Virtualization



Container virtualization

Docker: Architecture



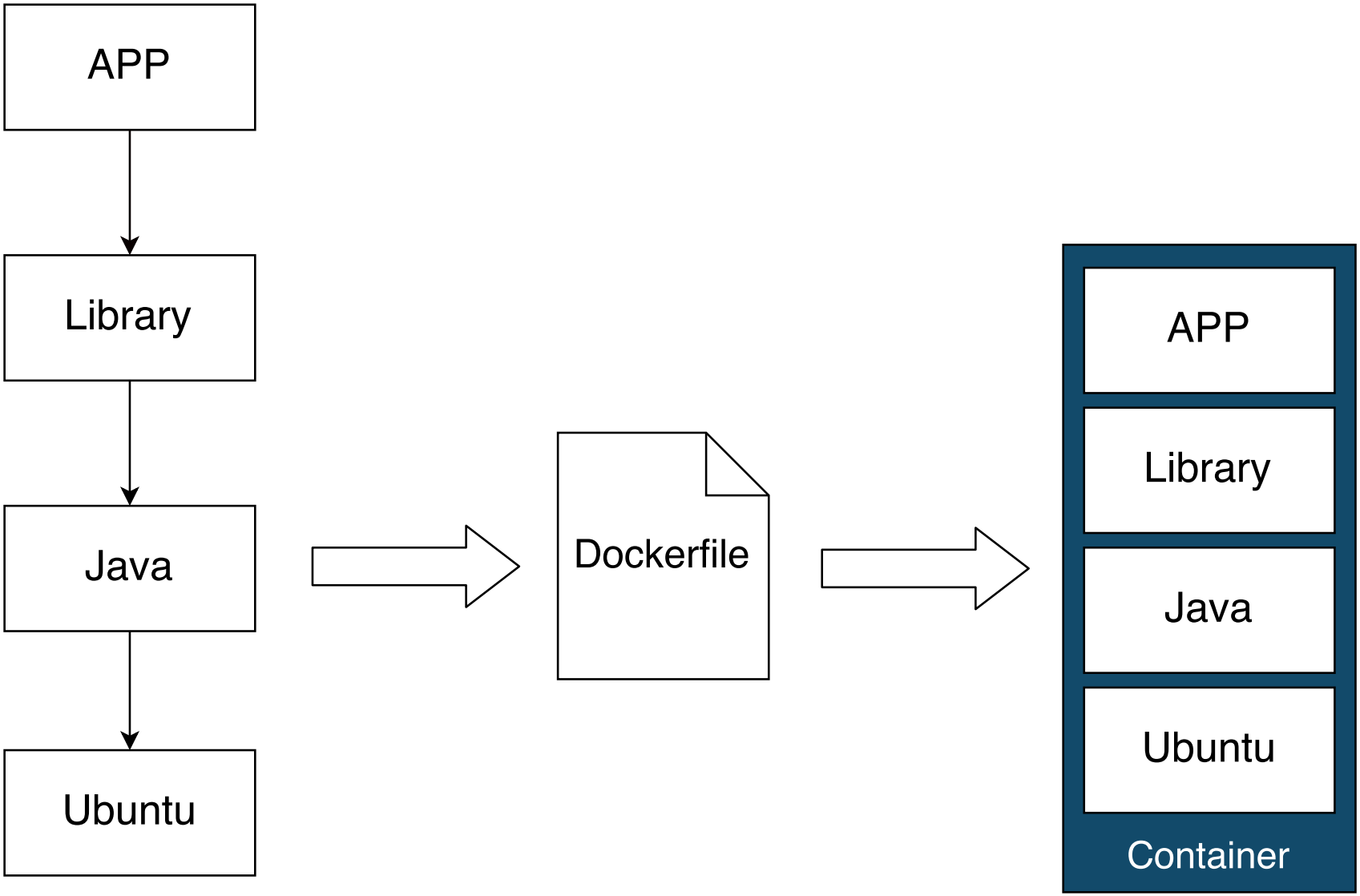
- LXC
- LAYER FS
- CGROUPS
- NAME SPACE
- LINUX KERNEL

Docker: main comcepts

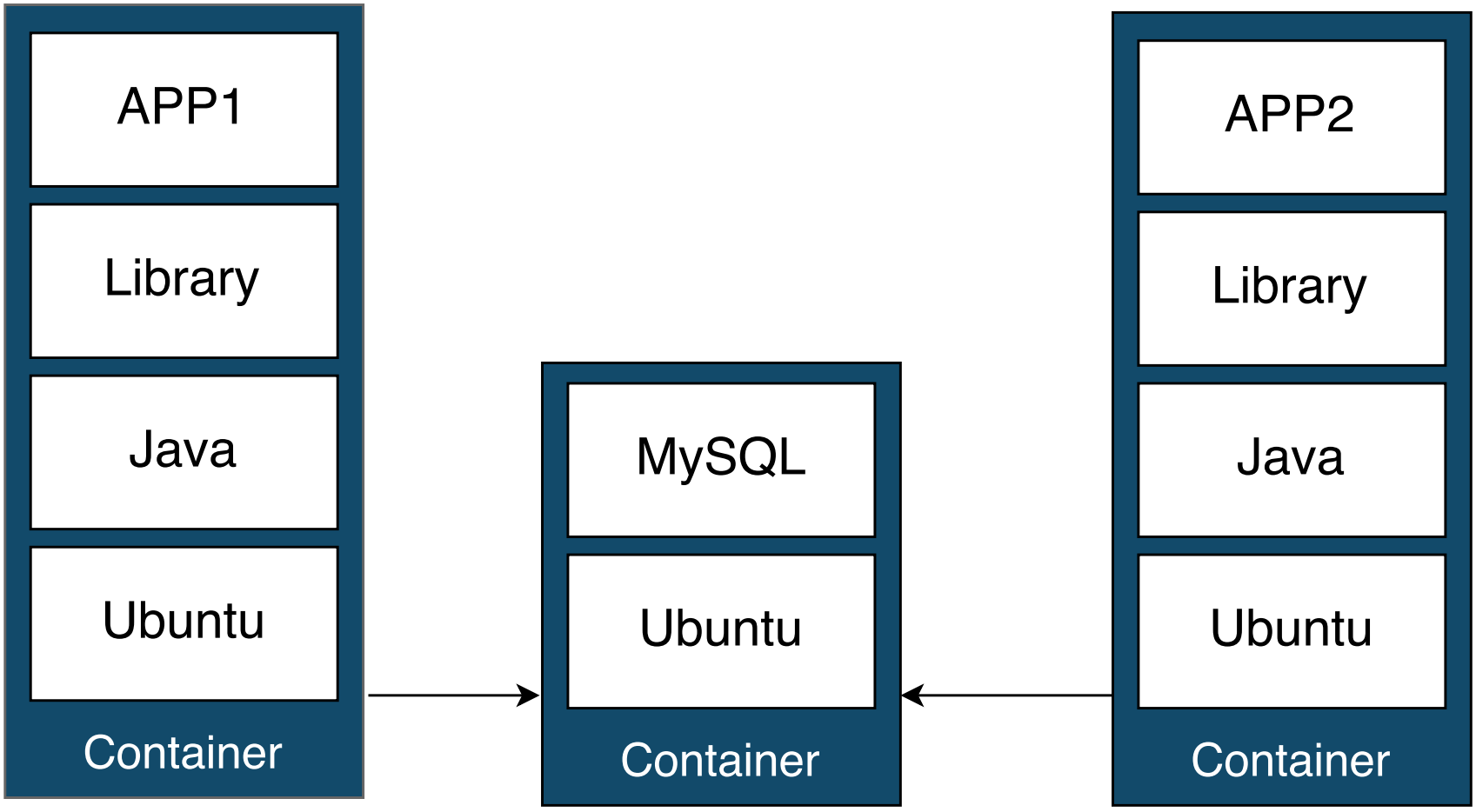
Main concept of the Docker platform

- **Dockerfile**, a scripts to generate an Image
- **Docker Image**, a LAYER FS archive whit all the data
- **Docker Container**, Running instance of a Docker Image
- **Docker Volume**, a persistent data storage
- **Docker Hub**, a Database of Docker Image open to comunity

Docker: for deploy application



Docker: multicontainer



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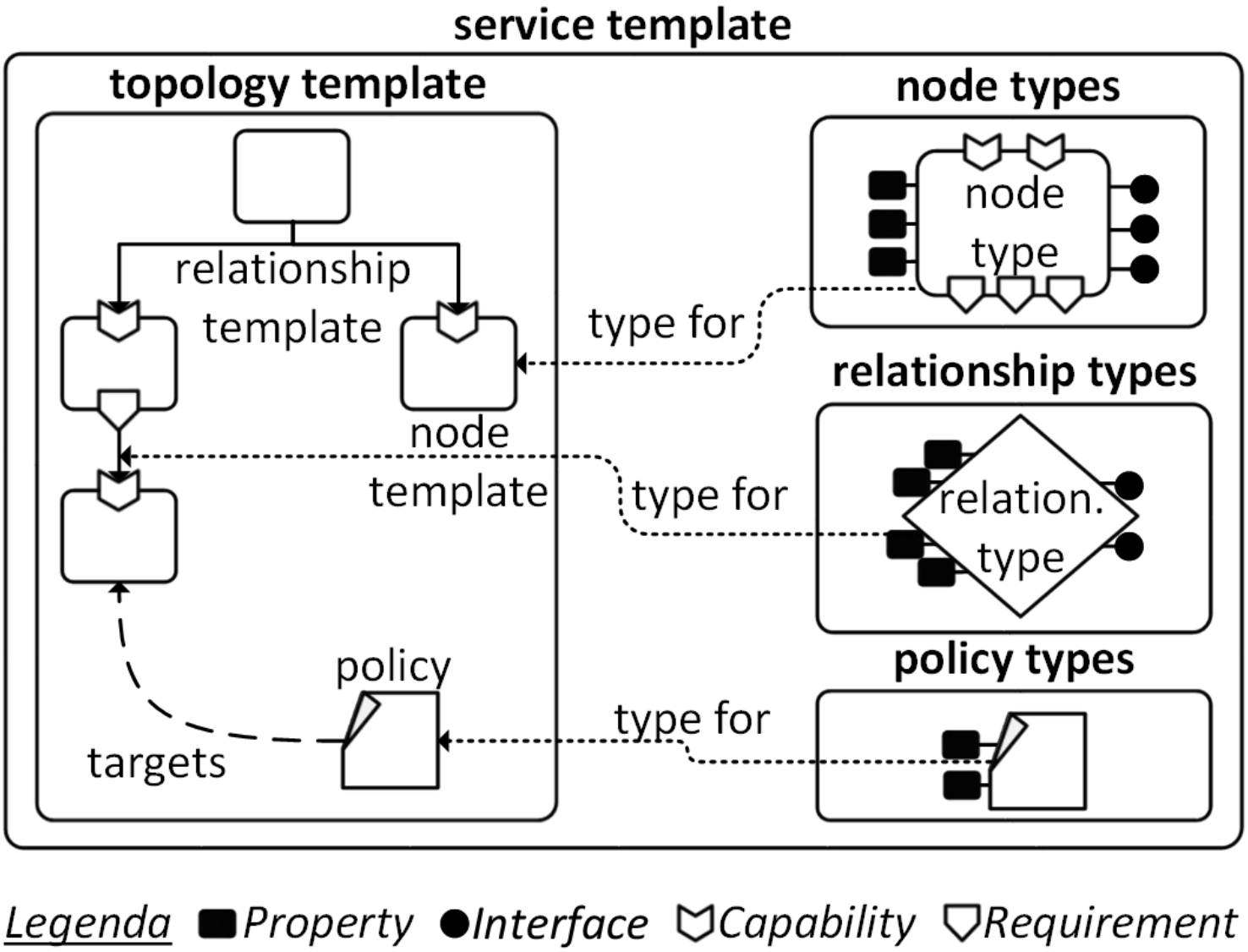
TOSCA: What?

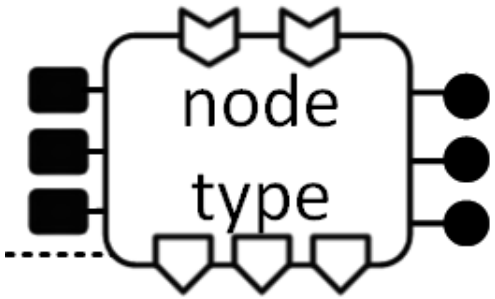
OASIS standard language to describe the topology of an application, with its components and relationships.

Describe every part of your application!

TOSCA: main concept



TOSCA: Node type



- **requirements**, what the node require
- **capabilities**, what the node offer
- **properties**, the properties of the node
- **interfaces**, the operation to implement
- **artifacts**, the data need to use the node

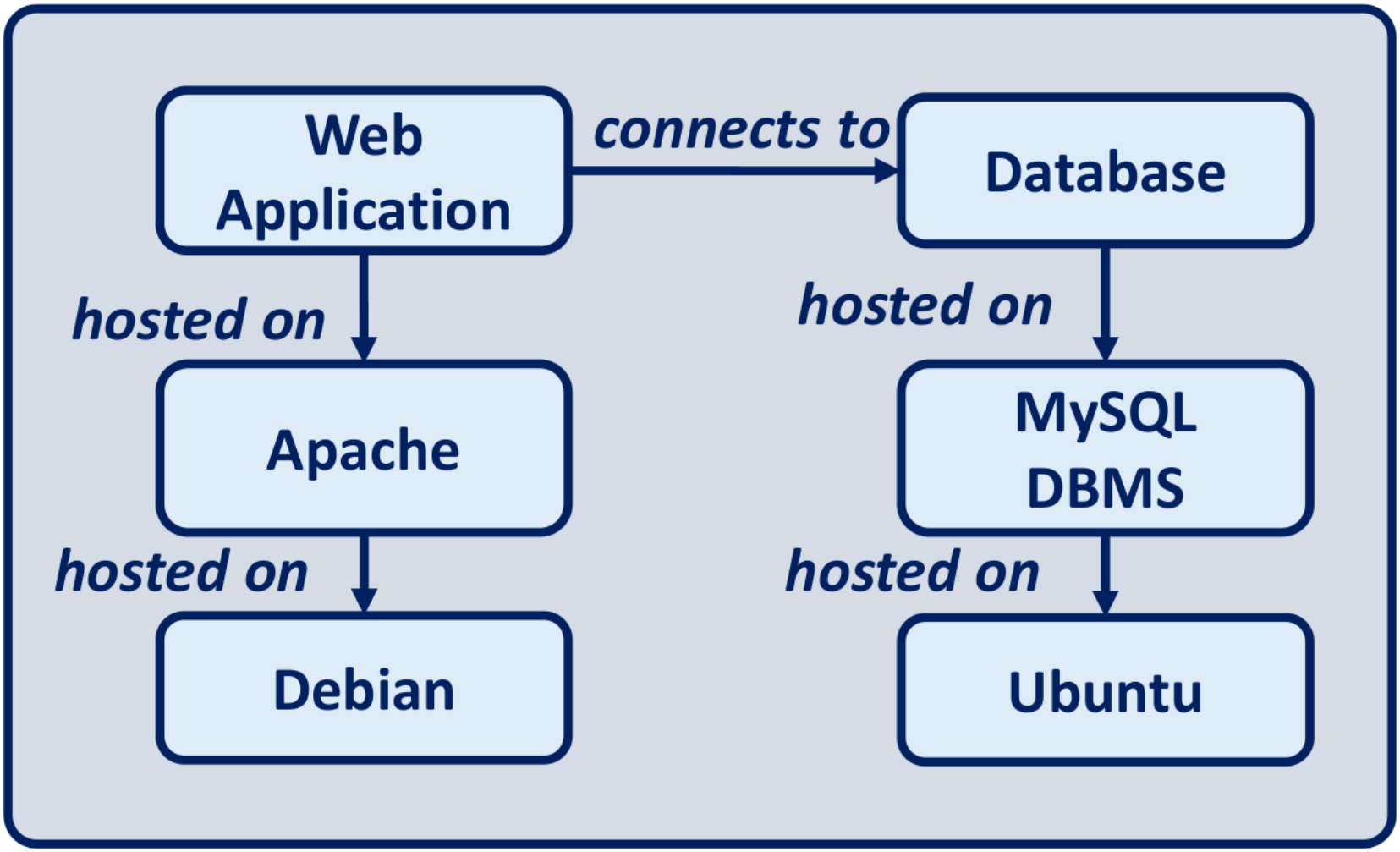
TOSCA main concepst

- the description use a YAML destription
- CSAR its an archive with the YAML description and all the artifacts

TOSCA: how it works

- create an archive (.CSAR) whit the description and artifacts
- send to acompatible infrastructure
- following the description and using the artifacts the application can deploy

TOSCA orchestration



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TosKer: how?

TosKer: DEMO

TosKer: main advantage

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Future works

Conclusions

Thank You

Q&A