

Container Standardization Introduction

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- Basic Knowledge
- Issues
- Goals of container standardization
- OCI Introduction
- Fujitsu Contribution
- Future Plans
- Q&A

- **Basic Knowledge**

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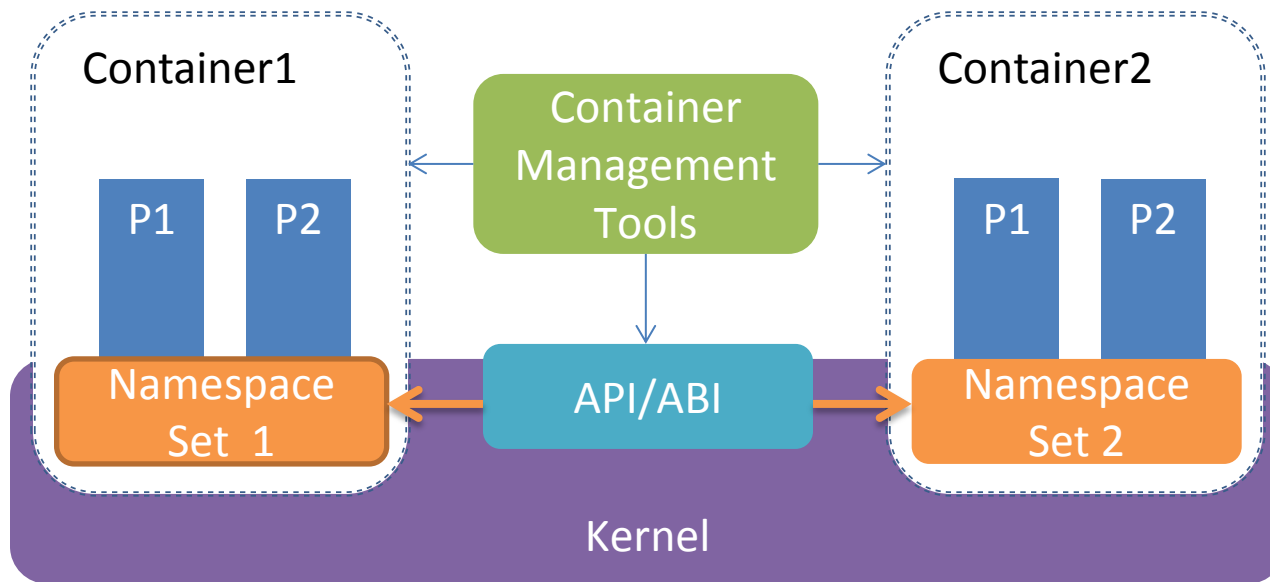
- Future Plans

- Q&A

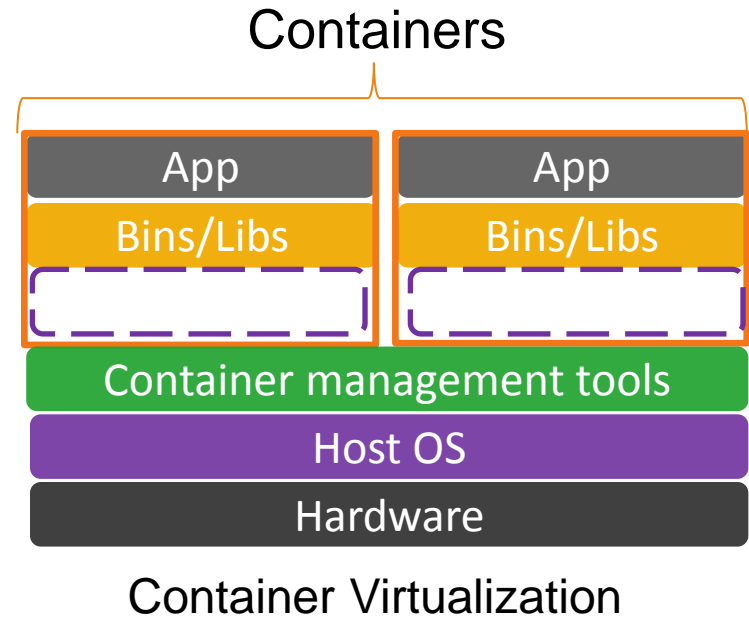
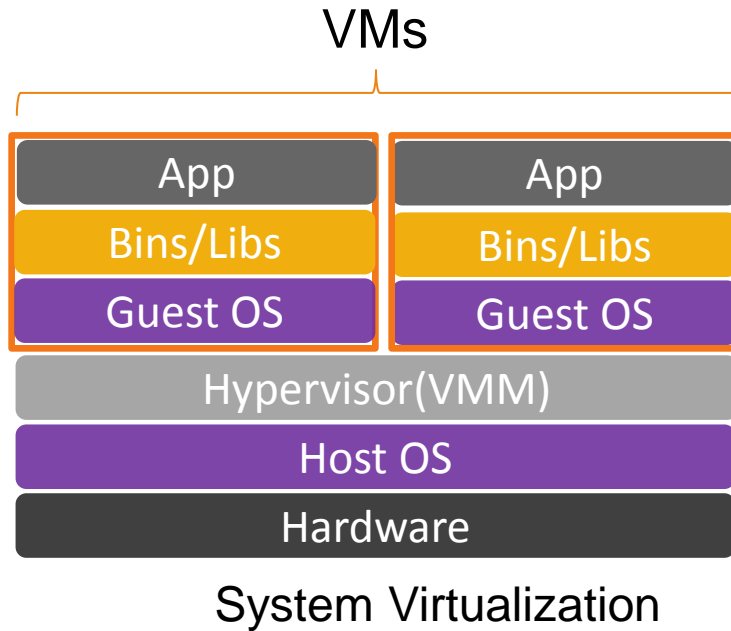
- What is Container
- Why Container
- Development of container technology

■ What is container

- Container: Operating system-level virtualization method for Linux

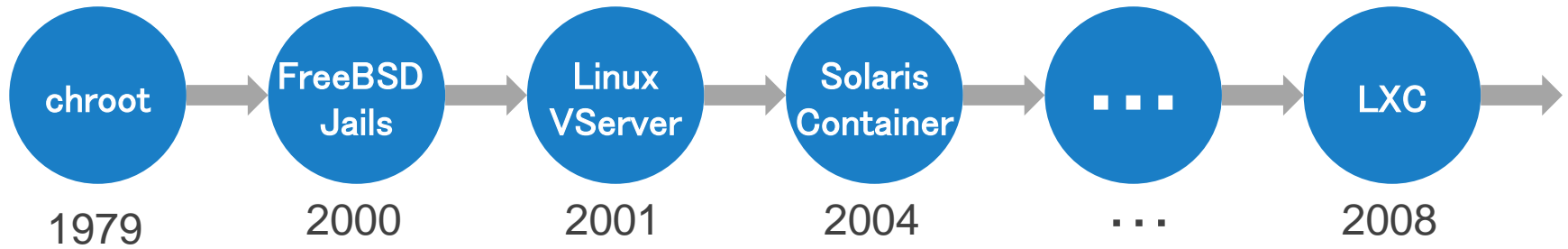


- Why Container
 - VM vs Container



■ Container History

- Container technology is not a new technology



■ Why grows so rapidly recently

- Portability
- Usability
- Agility

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- Container-based solutions grow rapidly
 - Almost all major IT vendors and cloud providers supply
 - More and more people try to use
- And, Popular Container Technologies
 - Docker
 - Rocket/rkt
 - OpenVZ/Odin
 - Hyper
 - ...
- But, no open industry standards exist
 - Almost everyone has their own standards
- So, container technology seems to be fragmented

fragmented



- Users hard to choose the best tools to build the best applications
 - No standards to evaluate
 - Not sure how to evaluate
 - ...
- Users locked into any technology vendor for the long run
 - Hard to fit difference
 - High cost to transfer applications
 - ...

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ORDER & GUIDE

- Make open industry standards for container
 - Unambiguous development direction
 - Portability issue
 - Promote development of container technology
- Help users to choose container-based solutions
 - Users can be guided by choosing the best tools to build the best applications they can
 - Users will not be locked into any technology vendor for the long run
 - Get high quality services

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■ What is OCI

- Open Container Initiative, launched on June 22nd 2015
- a lightweight, open governance structure (project), formed under the auspices of the Linux Foundation
- 47 members, almost all major of IT vendors and cloud providers

■ Mission of the OCI

- promote and promulgate a set of common, minimal, open standards and specifications around container technology

■ Duties of OCI

- Creating a formal specification for container image formats and runtime
- Accepting, maintaining and advancing the projects associated with these standards
- Harmonizing the above-referenced standard with other proposed standards

■ runtime-spec

- specifications for standards on Operating System process and application containers

■ image-spec

- creates and maintains the software shipping container image format spec

■ runc

- a CLI tool for spawning and running containers according to the OCI specification

■ ocitools

- a collection of tools for working with the OCI runtime specification.

All OCI projects at <https://github.com/opencontainers/>

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- **Participate in launching OCI**
 - a member of OCI
- **Actively involved in standards making**
 - make contribution to runtime-spec & image-spec
 - participate in OCI weekly meetings
- **Ever tried to help implement Test Tools**
 - OCT
 - oci2docker

■ OCI project ocitools: 29 commits

- Improve coverage of bundle & runtime tests
- Enhance functionality of runtime-spec generation
- Bug fix of code and document

■ OCI project runc:23 commits

- Enhance interacting with cgroup
- Enhance functionality based on runtime-spec
- Bug fix of code and document

■ Kernel (namespace + CGroup): 500+ commits

- Fix bugs of namespace and cgroup
- Enhance functionality of namespace and CGroup

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■ runtime-spec & image-spec

- Continue deeply involved in specs making


■ runc

- Interacting with cgroup V2
- Features based on runtime-spec
- Quality improve

■ ocitools

- Validation for Linux cgroups
- Functions of subcommand generate
- Readability of output
- Quality improve

Thank you!
Q&A



FUJITSU

shaping tomorrow with you