the History of Containers

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“Who controls the past controls the future. Who controls the present controls the past.”

George Orwell,
1984

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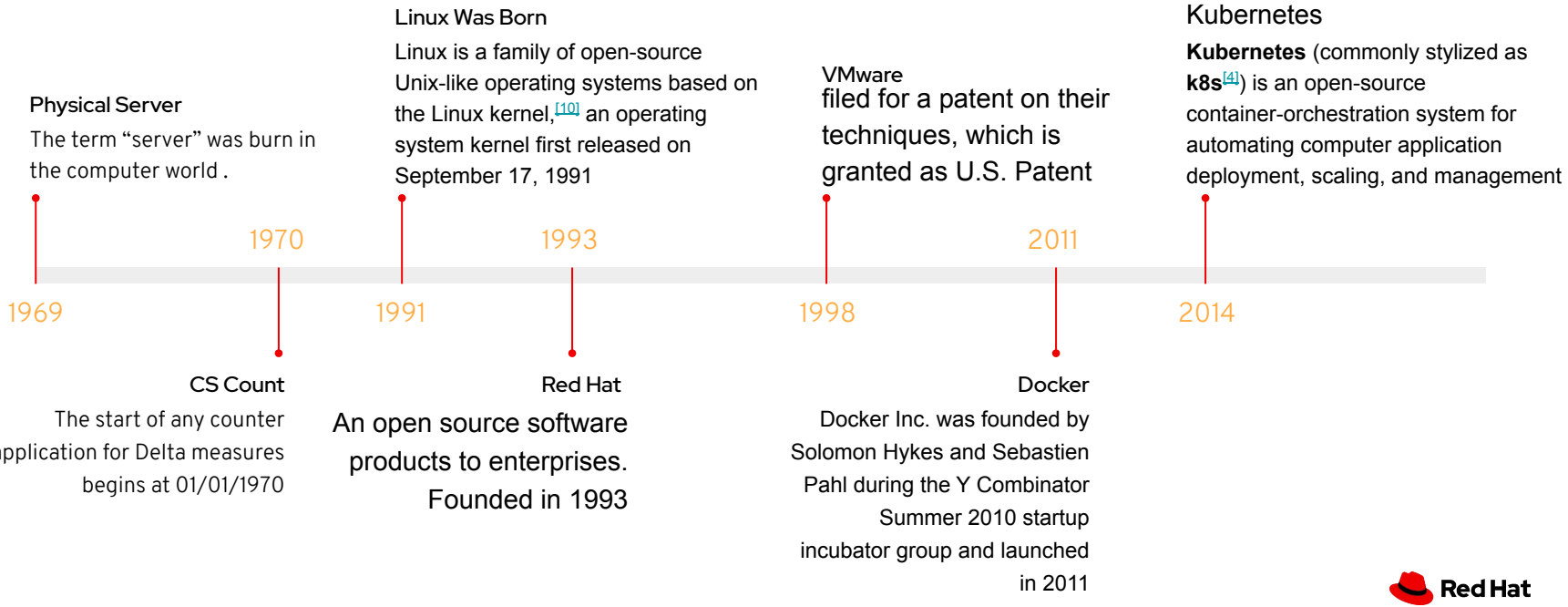
The Evolution of Platforms

From Physical to Container



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From Physical to Containers

Optional subheading

Each Physical Server had features by the Manufacturer vendor and OS had to adopt to new hardware technologies

Virtualization possibilities :

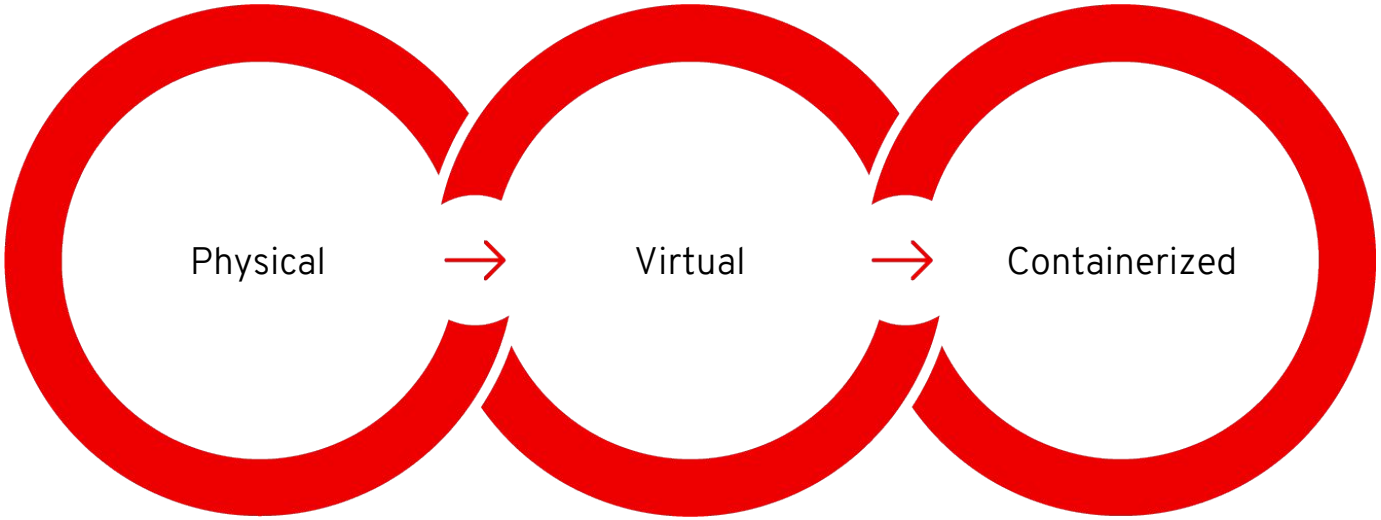
1. Running more than 1 OS on a Physical Server
2. Hardware Manufacture became Commodity

Containerize possibilities :

Completely different update process for the application and the OS

The Evolution of application

The core for application development shift



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Development (P.O.V) on a physical Server

Long time to produce

Very long time from design to production

Taking turns

With only a few available developers had to “wait in line”

Sync with the OS

The Operating System had to have the latest drivers and firmware

Conflicting libraries

Libraries that new application needed where not included due to Operating System conflict

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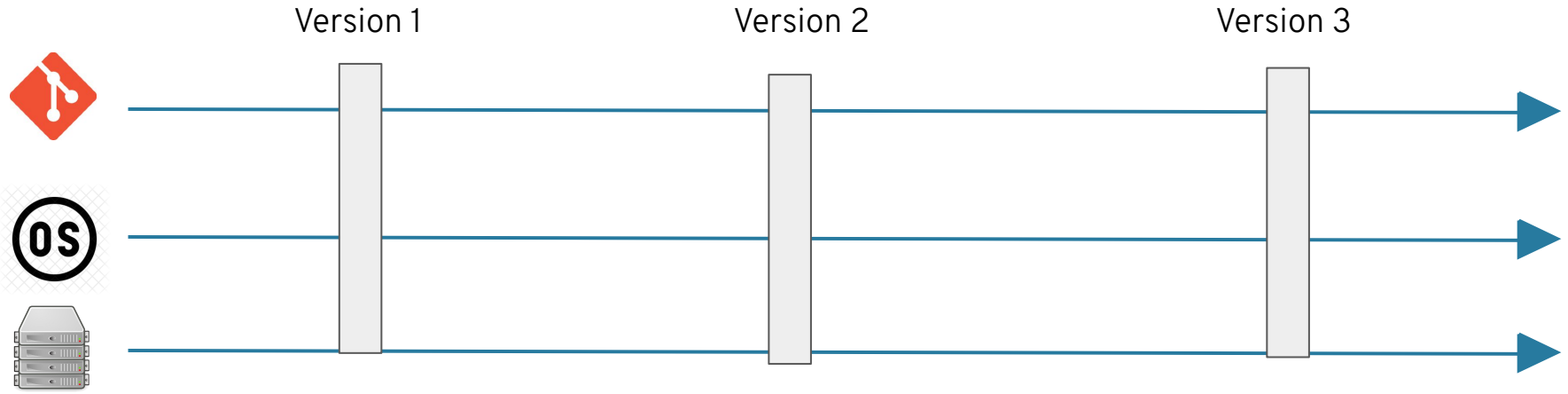
Development Timeline

Phase I	Phase II	Phase III	Phase IV	Phase V
Plan	Build	Release	deploy	Monitor
Planning on how the application should look like	Build the application with the selected Code	App lifecycle, storage lifecycle (backup, failure recovery)	Metrics, alerts, log processing and workload analysis	Horizontal/vertical scaling, auto config tuning, abnormal detection, scheduling tuning



Virtualization concept

In computing, **virtualization** (alternatively spelled *virtualisation*) refers to the act of creating a virtual (rather than actual) version of something, including virtual computer hardware platforms, storage devices, and computer network resources.

Virtualization began in the 1960s, as a method of logically dividing the system resources provided by mainframe computers between different applications. Since then, the meaning of the term has broadened

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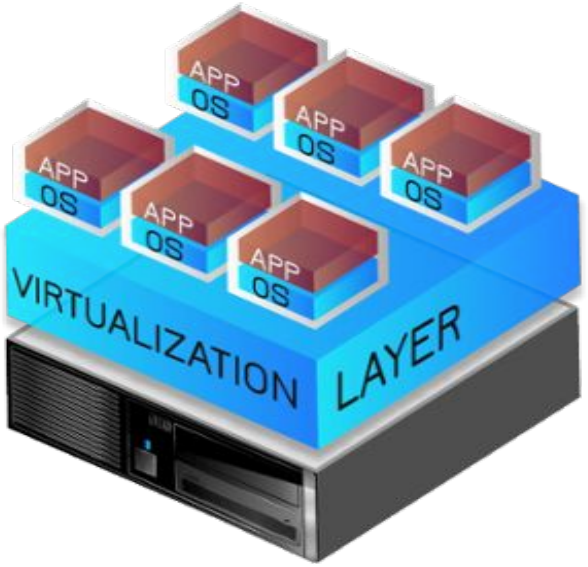
Developing on a Virtual Server (benefits)

1. More than 1 OS on a physical Server.
2. The Hardware drivers are commodity and so not relevant to the development process

Traditional Server Architecture



Virtualized Server Architecture

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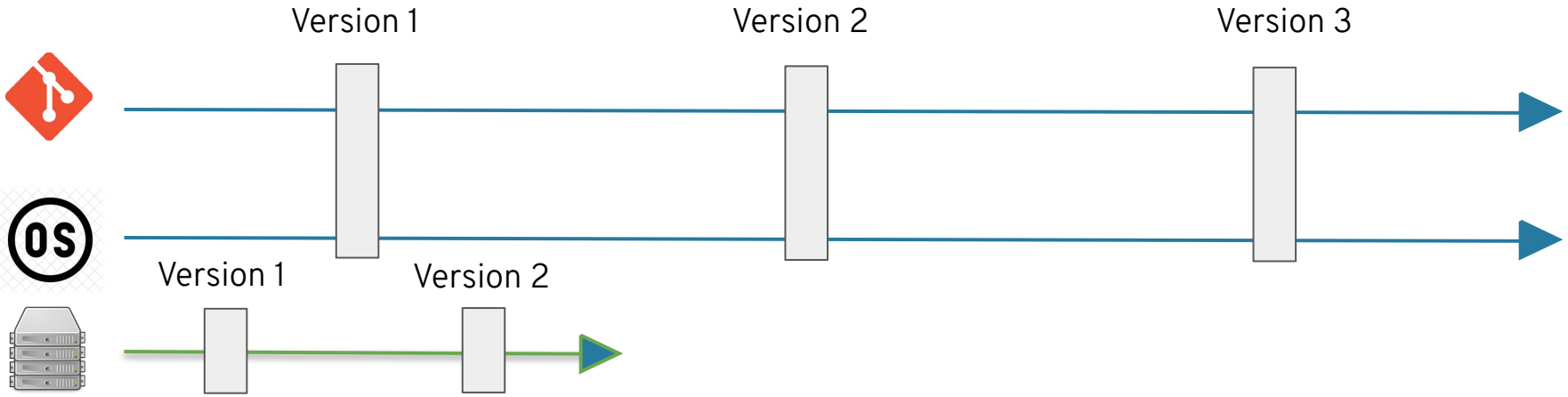

Container concept

A **container** is a class, a data structure or an abstract data type (ADT) whose instances are collections of other objects.

In other words, they store objects in an organized way that follows specific access rules.

The size of the container depends on the number of objects (elements) it contains.

Underlying (inherited) implementations of various container types may vary in size and complexity, and provide flexibility in choosing the right implementation for any given scenario.

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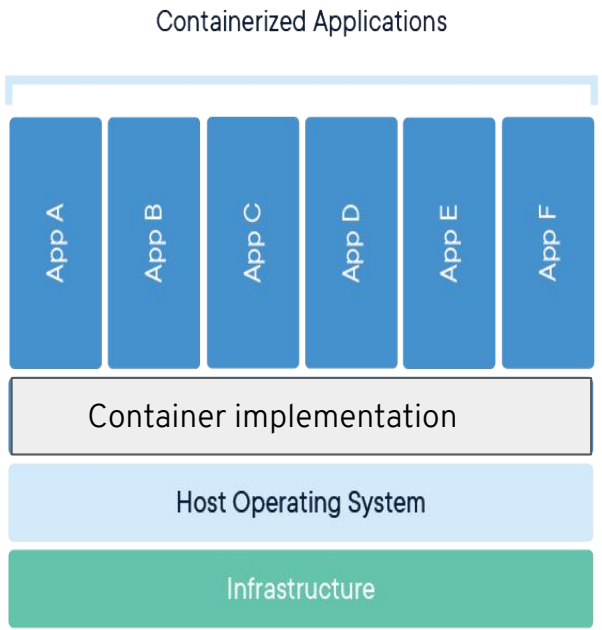
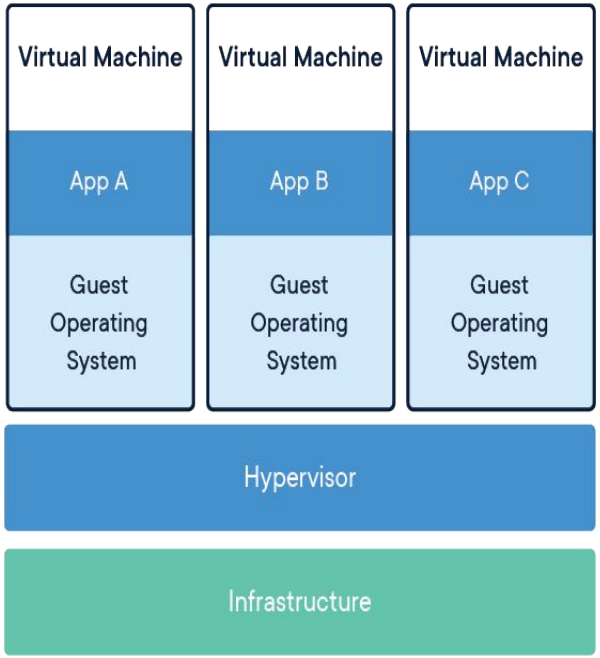
Developing on a Container (benefits)

1. Each app as their own sandbox and set of libraries and binaries
2. Minimal dependency in the Operating system
3. Dedicated life cycle





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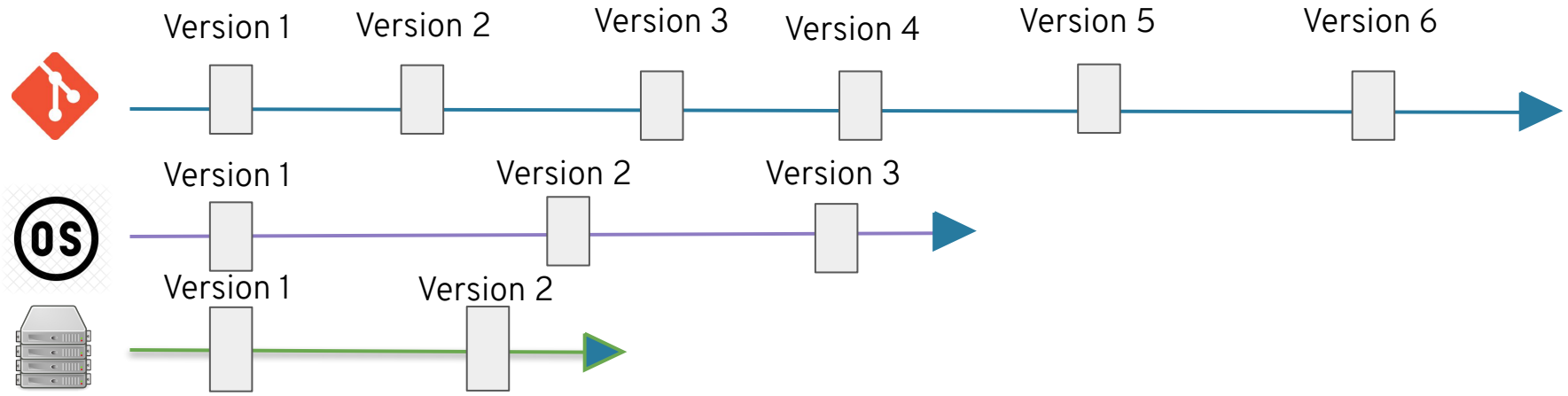
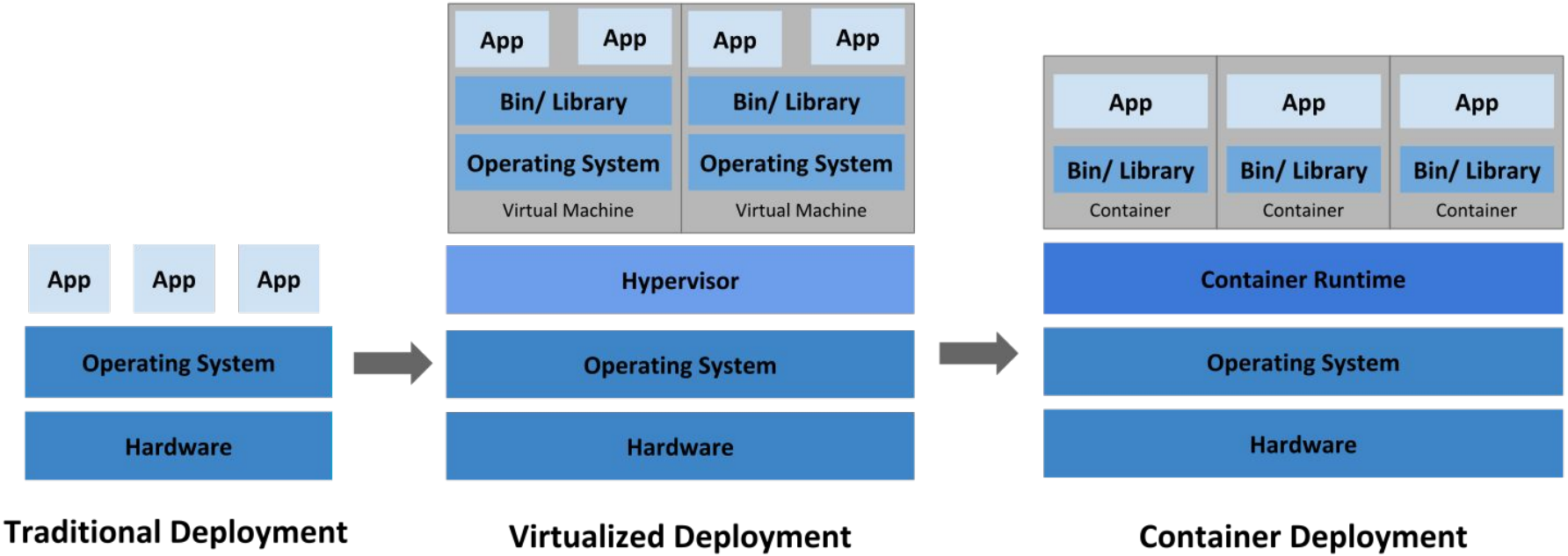


The Evolution of Containers



Begin Exercise 1

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