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**Hewlett Packard  
Enterprise**

# La nueva era del hipervisor

Red Hat OpenShift on HPE

**José Manuel Bermúdez**

FSI CTO & HPE Ambassador

10 de octubre 2024

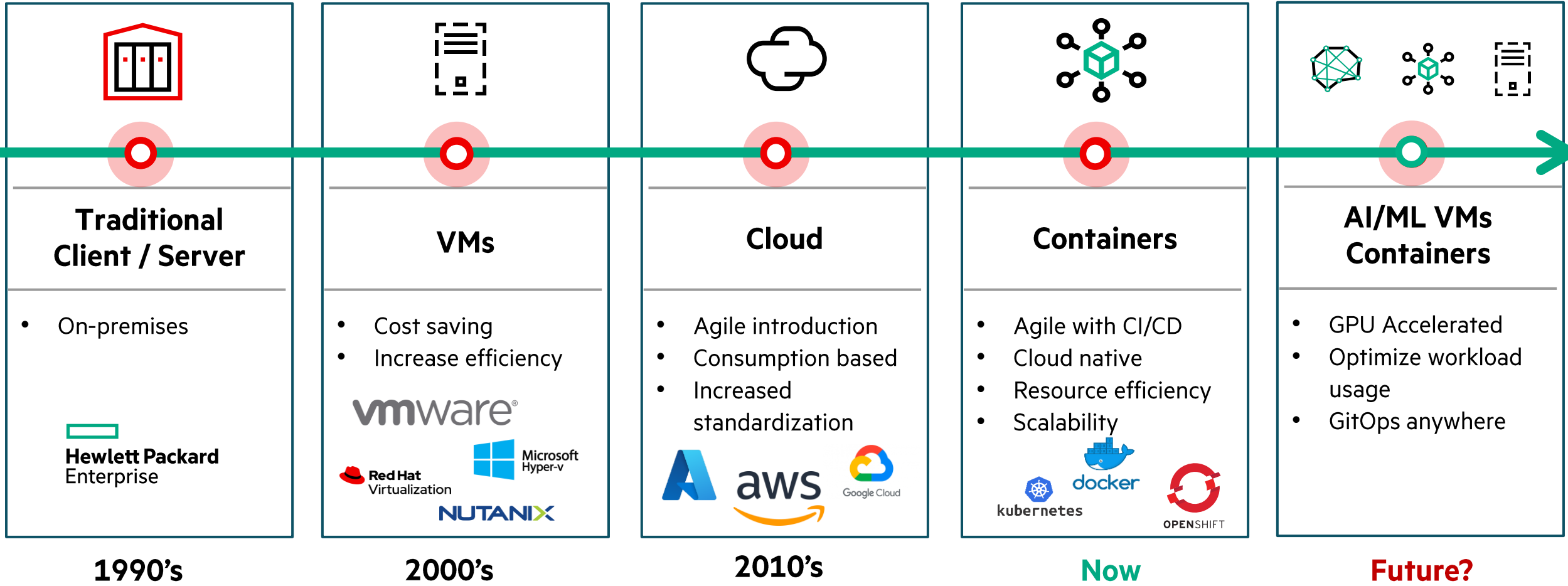


**Red Hat**

# **José Manuel Bermúdez**

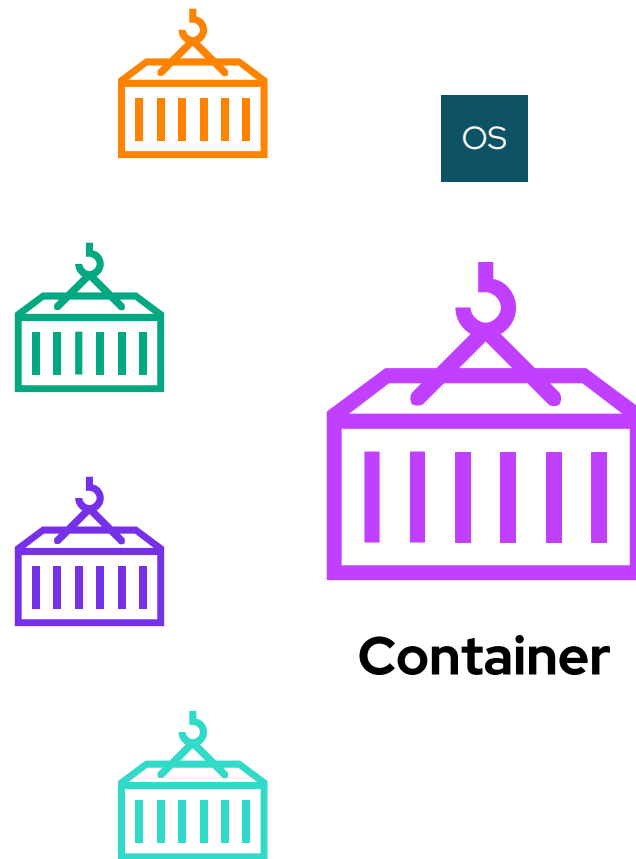
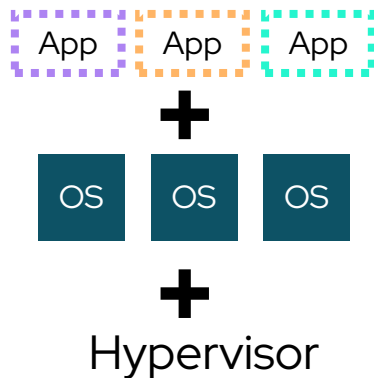
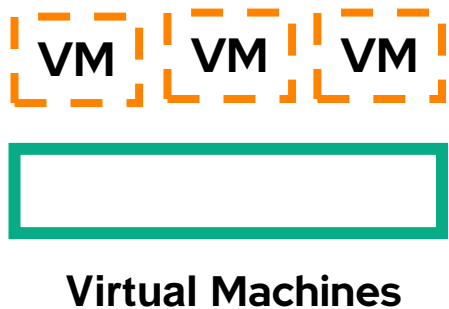
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Hewlett Packard Enterprise

# Technology Evolution



# Container

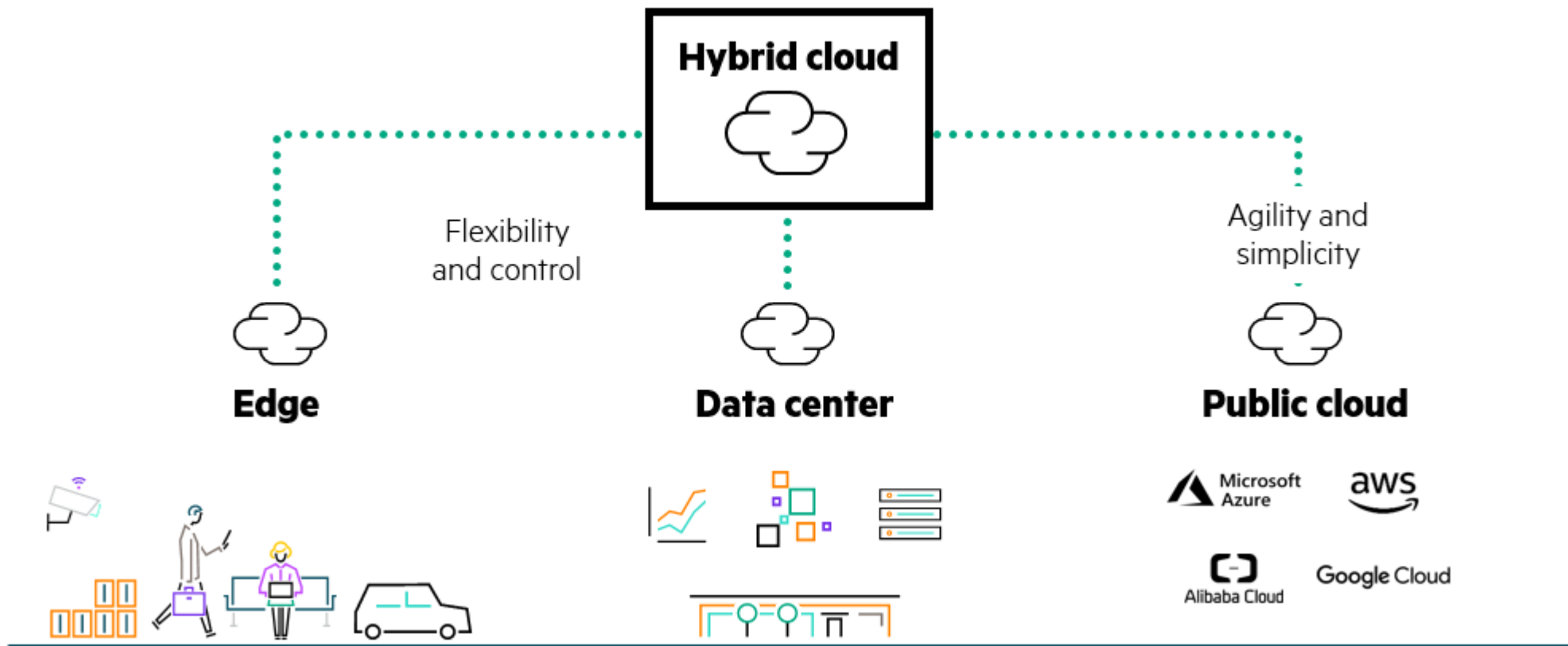
The workload format for the future



- Code
- Runtime
- Application
- Configuration files
- System tools
- System libraries
- laC
- GitOps

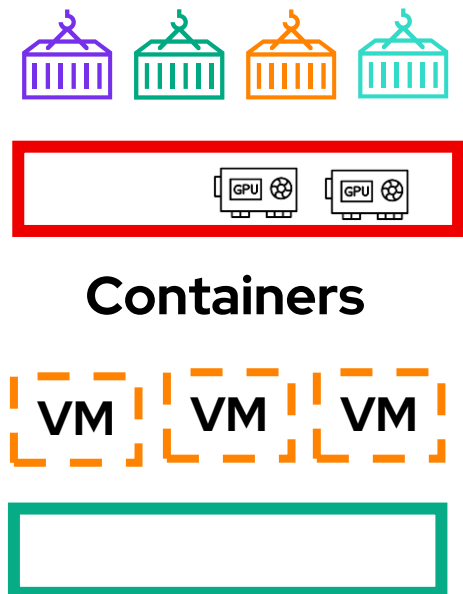
# The Hybrid Cloud paradigm

The 50% of applications run on premises and the other 50% on public clouds



# Kubernetes

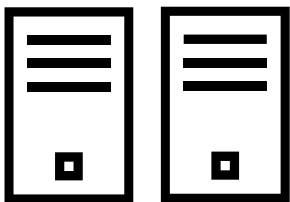
The hypervisor for the Hybrid Cloud paradigm



Containers

VM VM VM

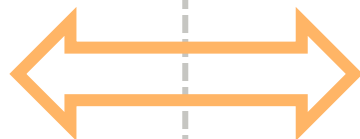
VMs



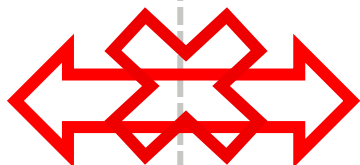
Physical server



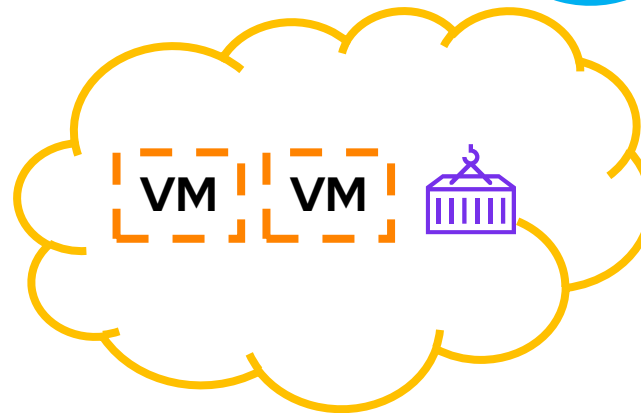
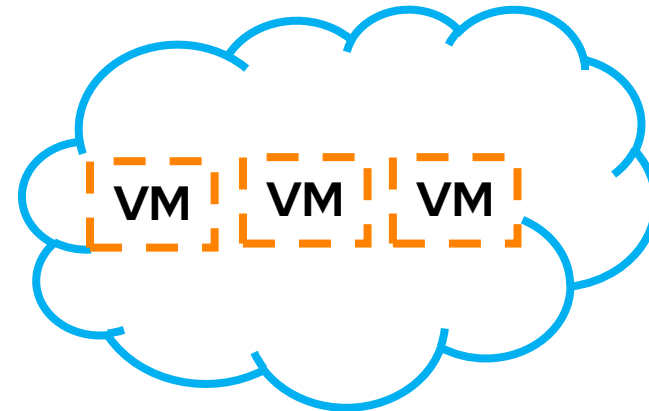
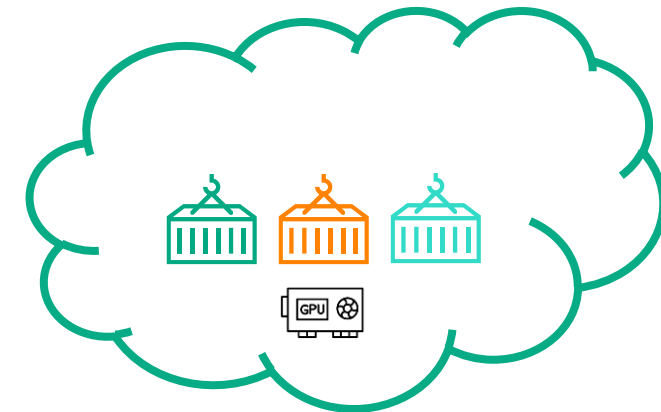
Transparent movement



Reformat



No Migration

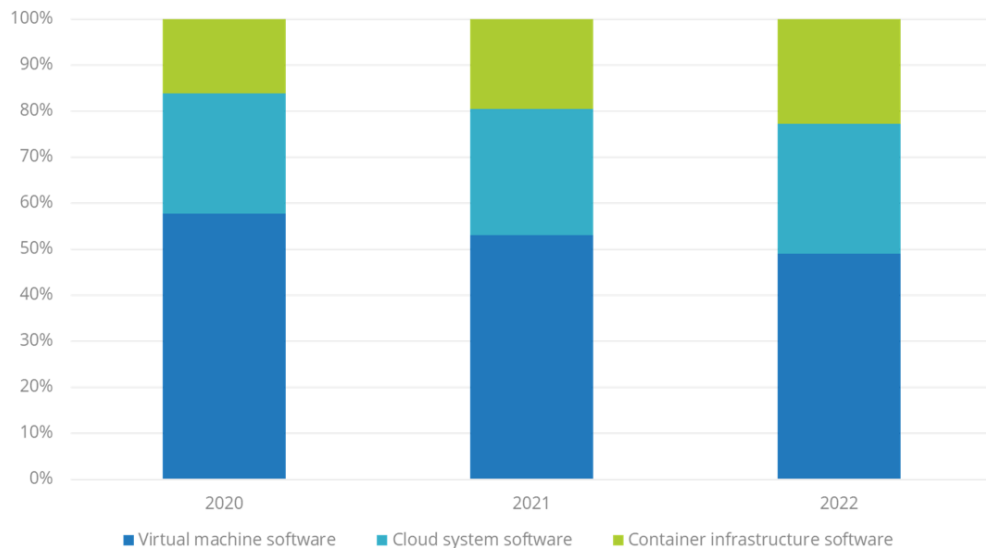


# Software Defined Compute Market share

## Containers - Virtual Machines - Hybrid Cloud

### Software Defined Compute share by technology

Worldwide Software Defined Compute Software share by technology segment



- Total 2022 market size of \$8.6 billion, a 12.8% growth from 2021
- VM technology based revenue continues to shift away from VMS and into CSS as customers embrace cloud operating models
- Container growth is not currently coming at the expense of VMS or CSS, but is a net add to the SDC market and the fastest growing segment.

Virtual machine software and cloud system software dominate the software defined compute market

Most cloud system software deployments use virtualization technologies inside

Use of containers is growing fast, but it remains primarily platform-centric (e.g. DevOps).



Source: IDC Software Tracker, May 2023

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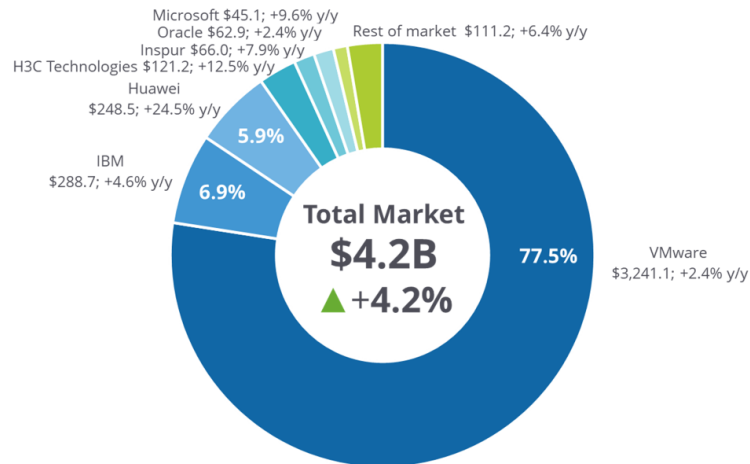
More than **70%** of workloads are running on virtualization environment.

# Platform Market share

## Containers - Virtual Machines - Hybrid Cloud

### Virtual Machine Software vendor shares

Worldwide Virtual Machine Software 2022 Share



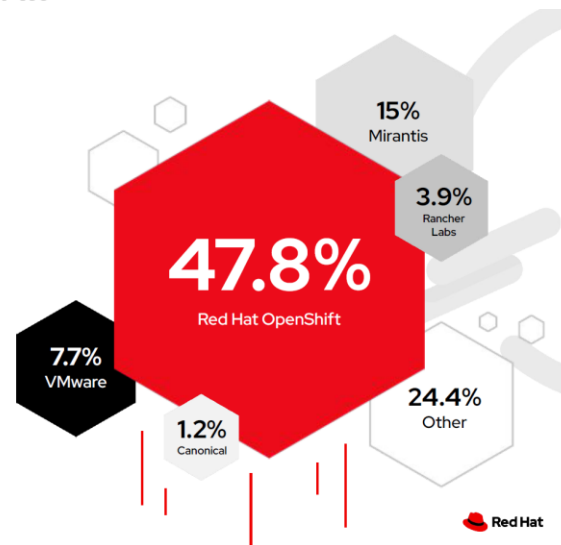
- The traditional virtualization software market is highly saturated and dominated by VMware.
- Market demand for VM technology is still strong, but customers are increasingly shifting to buying VM technology as part of cloud system software rather than standalone traditional virtualization software packages. Thus, revenue and growth has been flowing out of the VMS submarket and into the CSS



Source: Worldwide Virtual Machine Software Vendor Shares 2022: Transitioning to Mod

### Red Hat OpenShift

Container platform market share leader



VMware is the leading vendor for Virtualization

Red Hat OpenShift is the leading vendor in container platform





# Market truth

Container is the large part of the future substituting Virtual Machines

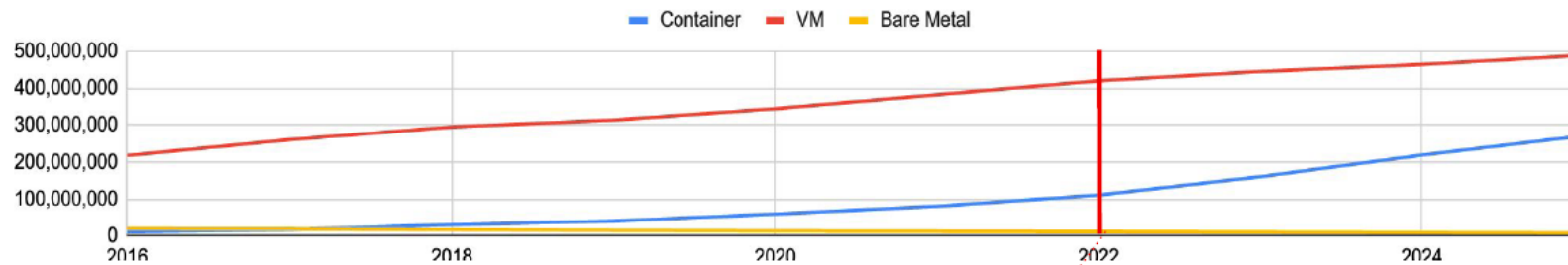


TABLE 1

Worldwide Logical Server Installed Base by Deployment Model, 2016-2025

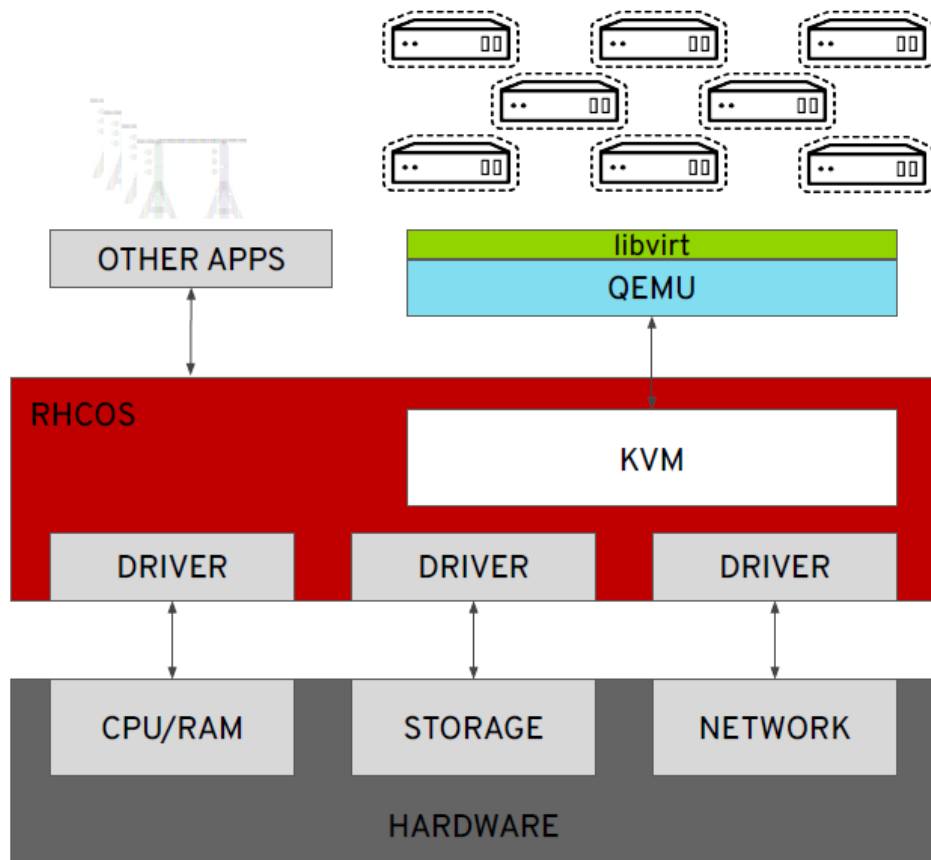
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2020 Share (%)	2020-2025 CAGR (%)	2025 Share (%)
Container	12,054,994	17,683,236	30,810,762	40,924,137	60,091,077	81,073,921	111,194,026	160,672,005	219,074,702	271,371,757	14.3	35.2	35.3
VM	217,937,272	260,576,298	295,418,804	314,288,592	344,828,680	382,427,313	419,793,325	444,798,078	463,826,066	488,819,455	82.3	7.2	63.6
Bare metal	20,174,672	19,422,243	17,625,739	15,658,089	14,144,561	13,299,270	12,282,859	10,988,549	9,859,273	8,701,385	3.4	-9.3	1.1

*“In 2024, Forrester predicts that 20% will begin their escape.”*

(customers from the VMware stack)

# So, what should I do with my legacy Virtual Machines?

What if I could run my legacy Virtual Machines inside a Container



Container is more efficient workload format


Kubernetes is the platform for the Hybrid Cloud paradigm

User are abandoning traditional Virtual Machine platforms

Red Hat Openshift Container Platform is the leader as container platform

**BUT**

The 70% of the workloads are still VMs



# So, what should I do with my legacy Virtual Machines?

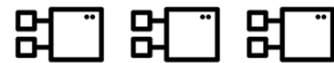
Red Hat OpenShift is one of the most mature platform for running VMs & Containers

Red Hat OpenShift – delivering consistency and flexibility

Traditional apps



Cloud-native apps



AI/ML, functions



Communities of innovation | ecosystems of solutions



Secure and automated infrastructure and operations



Physical



Virtual



Private cloud



Public cloud



Edge

Container is more efficient workload format

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**BUT**

The 70% of the workloads are still VMs



# And, where do I run my workloads?

What if I could take the advantage of cloud capabilities to my datacenter?

## Hewlett Packard Enterprise

### HPE GreenLake Cloud Platform

Native Red Hat OpenShift Tooling

Billing

Capacity Management

Consumption Analytics

Hardware Lifecycle Management



KubeVirt



OpenShift Virtualization

IaaS



Kubernetes



OpenShift Container Platform

CaaS/PaaS



Knative



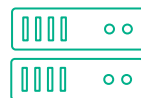
OpenShift Serverless

FaaS



GPU Operator AI Enterprise

AI/ML



HPE Proliant



HPE Aruba



HPE Alletra

Optimized Architecture  
Modularity and scalability

Support for VMs,  
Containers, Kubernetes,  
Functions, AI/ML

Managed cloud service  
experience

Sustainability

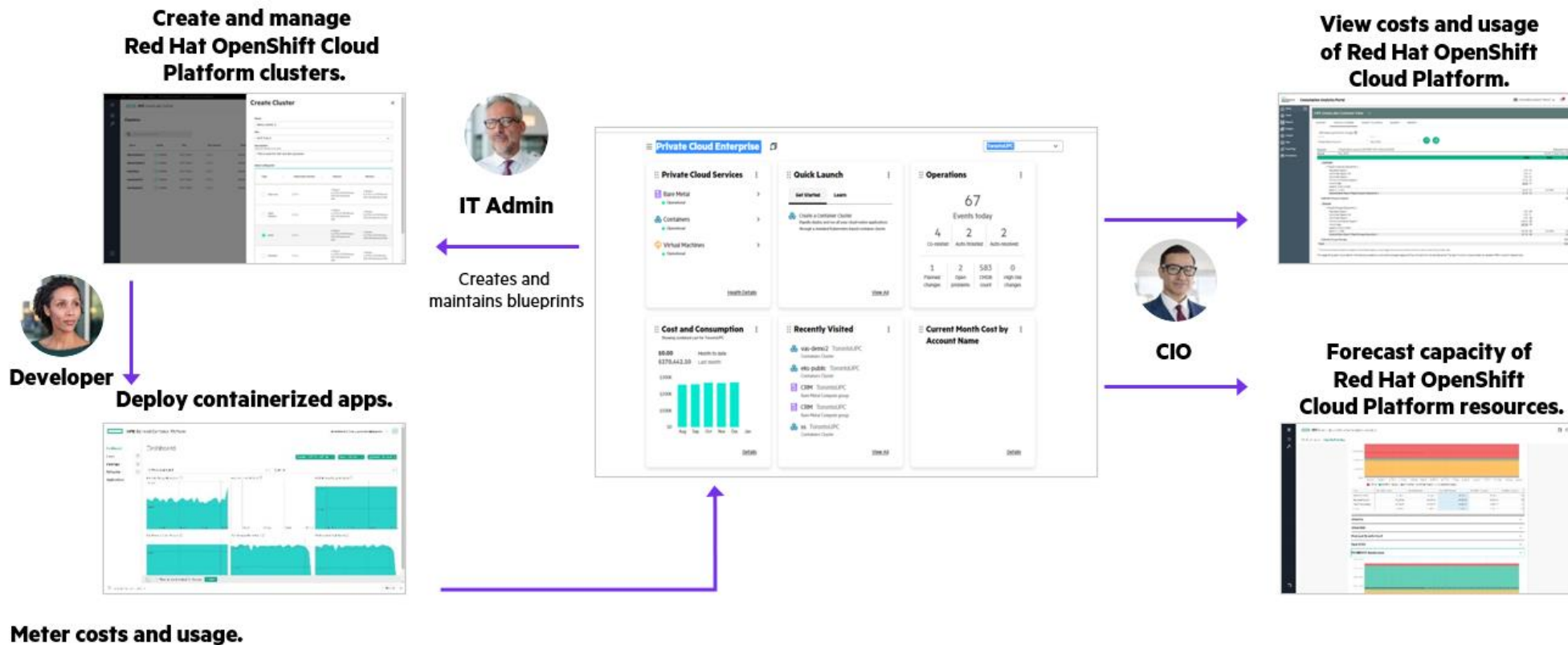
Cost transparency and  
predictability

Red Hat License in **Pay as  
you Go**



# And, where do I run my workloads?

Simplify and centralize the container, VMs & AI/ML lifecycle



# Red Hat Openshift Options on HPE


Custom-tailored experience

**Hewlett Packard Enterprise**

Experiences based on customers' requirements


HPE GreenLake Cloud Portfolio

Enabled by

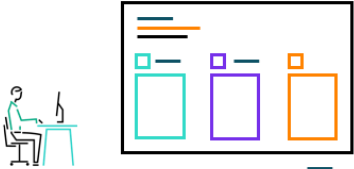


**Self-service cloud**

- “End-to-end fully managed” HPE cloud service with a self-service experience
- Highest level of HPE customer value and client IT operations
- Support for multiple applications/workloads
- Automated/API experience


 **Red Hat**  
OpenShift Container Platform  
Enterprise Linux

HPE GreenLake for Private Cloud Enterprise




**Shared ops model**

- Designed for established customer ISV environments
- Cloud experience for operating ISV tools on HPE GreenLake


 **Red Hat**  
OpenShift Container Platform

HPE GreenLake for Red Hat OpenShift (ISV-optimized cloud solutions)



**Flexible**

- Custom designed to meet client specifications (leverages reference architecture)
- Typically managed for the customer  
Longer client engagement and solution delivery timelines

 **Red Hat**  
Enterprise Linux  
OpenShift Container Platform  
Ansible

Custom ISV offerings

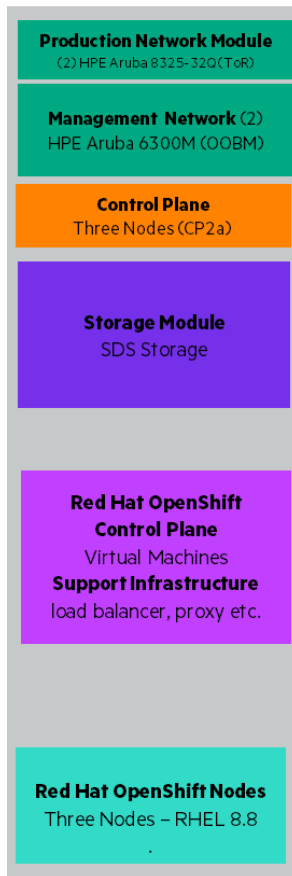
HPE standard cloud modules

HPE reference architecture

# Red Hat Openshift Options on HPE

Custom-tailored experience

**Hewlett Packard  
Enterprise**



- HPE Aruba Networking
- HPE Proliant DL360 Servers
- Storage option for HPE Alletra or ODF
- HPE CSI driver
- Support for GPUs
- Red Hat License in **Pay as you Go**



# But, how do I migrate my Virtual Machines?

Simple tool for migrating VMs at scale



## Migration tooling

- ▶ **Migration Toolkit for Virtualization (MTV)**
- ▶ Warm and parallel migration of VMs at scale
- ▶ VM Validation
- ▶ Network and Storage mapping
- ▶ Comes free with OpenShift Virtualization

**Create Migration Plan**

1 General  
2 **VM selection**  
Filter VMs  
Select VMs  
3 Storage mapping  
4 Network mapping  
5 Hooks  
6 Review

**Select VMs**

Select VMs for migration. The Migration analysis column shows the risk associated with migrating a VM as determined by Red Hat's Migration Analytic service. The Flags indicate the reason for that risk assessment.

	Migration analysis	VM name	Datacenter	Cluster	Host	Folder path
▶ <input type="checkbox"/>	⚠	VM1	datacenter1	cluster1	host1	folder1\folder2
▶ <input type="checkbox"/>	✅	VM2	datacenter1	cluster1	host1	folder1\folder2
▶ <input type="checkbox"/>	ℹ	VM3	datacenter1	cluster1	host1	folder1\folder2
▶ <input type="checkbox"/>	✅	VM4	datacenter1	cluster1	host1	folder1\folder2
▼ <input type="checkbox"/>	⚠	VM5	datacenter1	cluster1	host1	folder1\folder2

This VM is a **high risk** for migration because it violates the following rules:

- VM shares a disk with other VMs
- VM uses remote device management
- VM was harvested during a month without an "r" in it



# Red Hat Openshift Options on HPE

Custom-tailored experience

**#1**

More customers run  
Red Hat® Enterprise Linux®  
on HPE servers

**#1**

in global market share for  
paid Linux and x86

**20+**

years of collaboration  
and growth

**1K**

Linux professionals at HPE  
Global Services and Support  
for any environment

More than

**500**

Red Hat accreditations  
held by HPE staff

## Recognition

Red Hat Telco Ecosystem Award  
Winner Field Momentum Award

HPE Vertical Industry  
Momentum Partner of the Year  
2021 Award

**98%**

of all support calls resolved  
by HPE Pointnext Services



Red Hat  
**Summit**

**Connect**

**Thank you**



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