Its Cloudy & That’s Good

A Journey into the Cloud for App Developers

Yogi Rampuria
Advisory Platform Architect

August 2021

It’s Cloudy

&

That’s Good

Agenda

About Me

Journey into the Past

What Future has in Store (Cloud Native)

What Led to This Future

Sneak Peak

Q&A

About Me

Yogendra Rampuria (Yogi)

Programmer for Life

Platform Architect @ VMware

Working with FSI, Telco and Government client across South East Asia

Living in Singapore

Favorite Tech Topics: Dev Productivity, Cloud and Solution Engineering

Active in Local Meetups (Spring, Java, Kotlin, Kubernetes, GDG, etc.)

Panelist in K8s Office Hourse – European Edition (9PM SGT 3rd Wed of the month)

@yogendra | github.com/yogendra | linkedin.com/in/yogi

Cloud and Cloud Native

Running in Cloud != Cloud Native

Cloud

Infrastructure consumption model

Utility/Consumption based pricing

Infrastructure run by another organization

Faster Infrastructure Provisioning

May not lead to faster innovation

AWS, Google Cloud

Cloud Native

Application Architectural Pattern

Follows 12 or 15 Factor Application Model

Typically Associated with Microservices

Typically Delivered via Containers/Function Constructs

API First

Ideal for Agile software delivery

Spring Boot, PCF Apps, Functions

Emergence of Cloud Native Practices

Factors leading to Emergence of Cloud Native Practices. Fastest Time to Value is Paramount

Faster Time to Market

Growing API Economy

Growing Consumer Expectation

Growth of Tech

OSS

AI/ML Algorithms

Privacy and Security

Changing Legislations

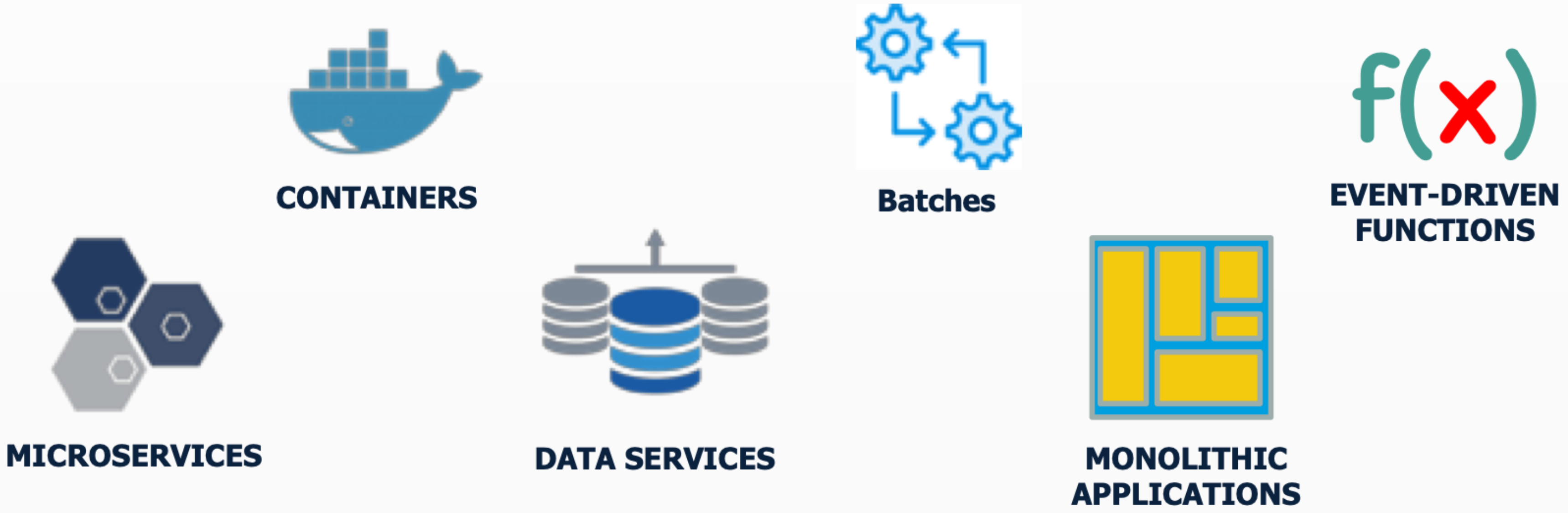
Geo-Political & Socio-Economic Landscape

Startups/ Challengers

Challenges in Enterprise Application Landscape

Challenges in Enterprise Application Landscape

Variety of Workload – VMs, Containers, Functions, COTS, Monoliths



CONTAINERS

Batches

EVENT-DRIVEN FUNCTIONS

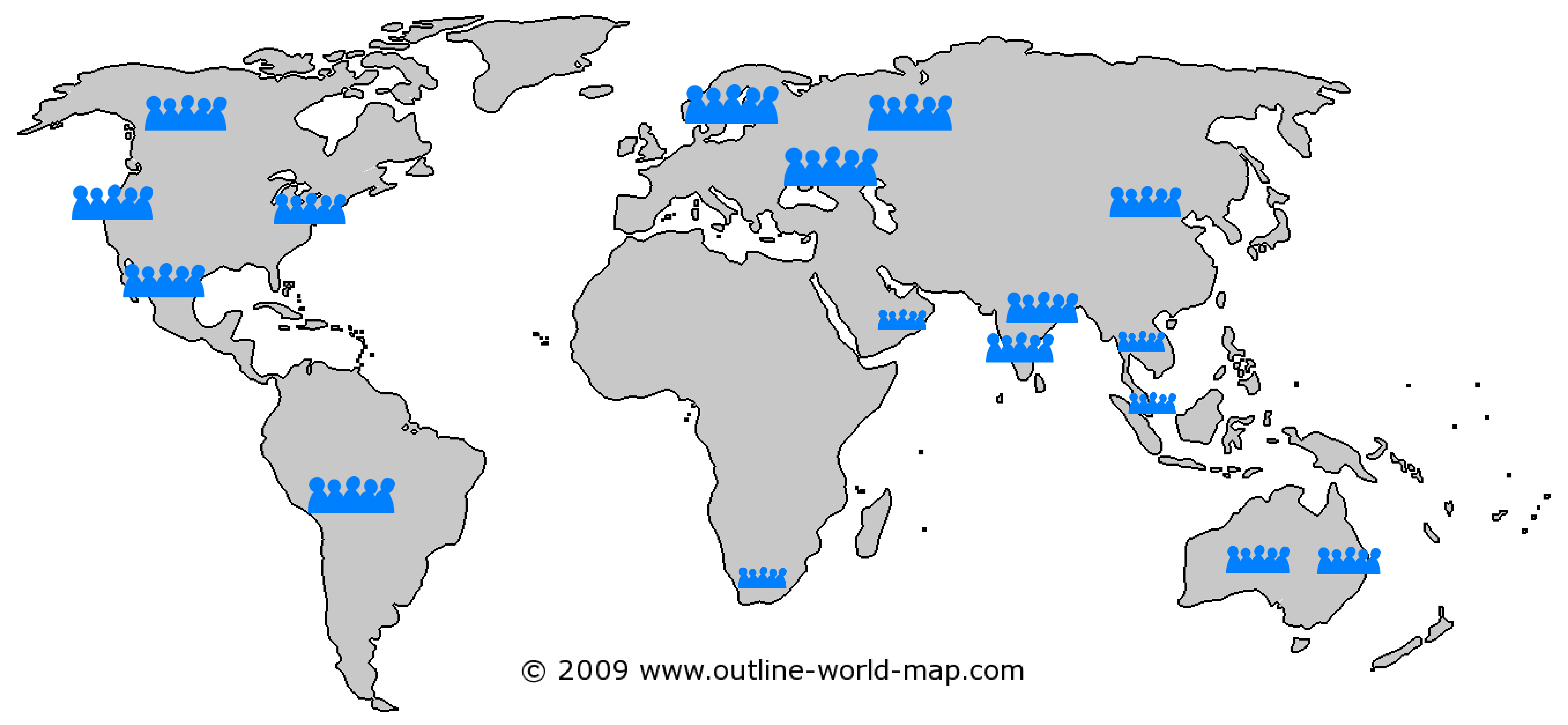
MICROSERVICES

DATA SERVICES

MONOLITHIC APPLICATIONS

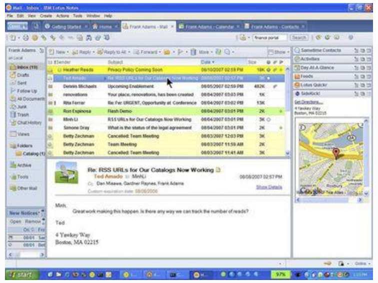
Challenges in Enterprise Application Landscape

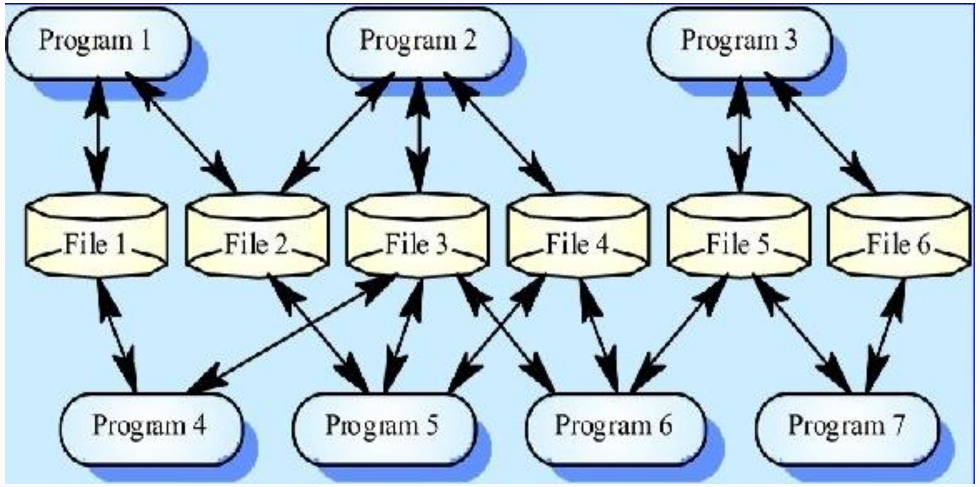
Many Teams, Large Teams, Long Running Project, Spread across the world

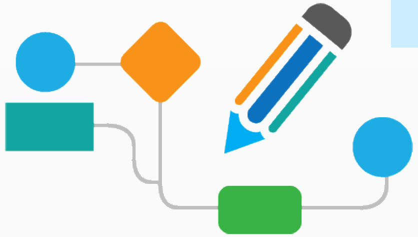


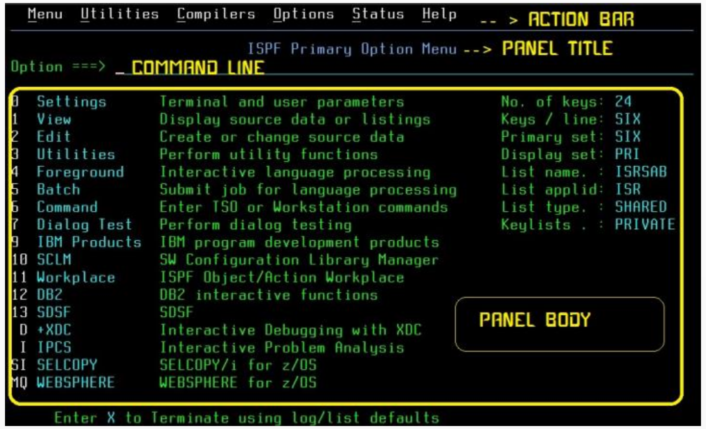
Challenges in Enterprise Application Landscape

Huge Heritage, Complex Processing









```
 Menu  Utilities  Compilers  Options  Status  Help   -- > ACTION BAR

                         ISPF Primary Option Menu --> PANEL TITLE
Option ===> _ COMMAND LINE

0  Settings       Terminal and user parameters          No. of keys: 24
1  View           Display source data or listings       Keys / line: SIX
2  Edit           Create or change source data          Primary set: SIX
3  Utilities      Perform utility functions             Display set: PRI
4  Foreground     Interactive language processing       List name. : ISRSAB
5  Batch          Submit job for language processing    List applid: ISR
6  Command        Enter TSO or Workstation commands     List type. : SHARED
7  Dialog Test    Perform dialog testing                Keylists . : PRIVATE
9  IBM Products   IBM program development products
10 SCLM           SW Configuration Library Manager
11 Workplace      ISPF Object/Action Workplace
12 DB2            DB2 interactive functions
13 SDSF           SDSF                                  PANEL BODY
 D +XDC           Interactive Debugging with XDC
 I IPCS           Interactive Problem Analysis
SI SELCOPY        SELCOPY/i for z/OS
MQ WEBSPHERE      WEBSPHERE for z/OS

    Enter X to Terminate using log/list defaults
```

Tackling Challenges in a Smarter Way

Building Things Right v/s Building Right Things

- Fail Fast
- Experiment a lot
- Avoid Analysis Paralysis
- Small Iteration
- Measure Everything

Avoid Vendor/Cloud Lock Ins

- Open Standards and Open Source

Best Code is The Code Never Written

- Do you need a web handler? Caching algorithm? Fancy Hashing function? Or User request router?
- Written code should be as close to business function

No / Low Code Almost Never Exists

“The Best Code is, the Code Never Written”

Runtime / Application Runtimes

What are they? Why are they useful? What does it offload from you (Devs)?

Lifecycle Management (Start, Stop, Scale)

Monitoring

- Log Aggregation
- Health Monitoring

Security

- Administrative RBAC
- Network Security
- Runtime Protection

Networking

- Routing
- Load Balancing

Build Support

- IDE Editor
- CI/CD

Service Discovery and Attachment

- Credential Management

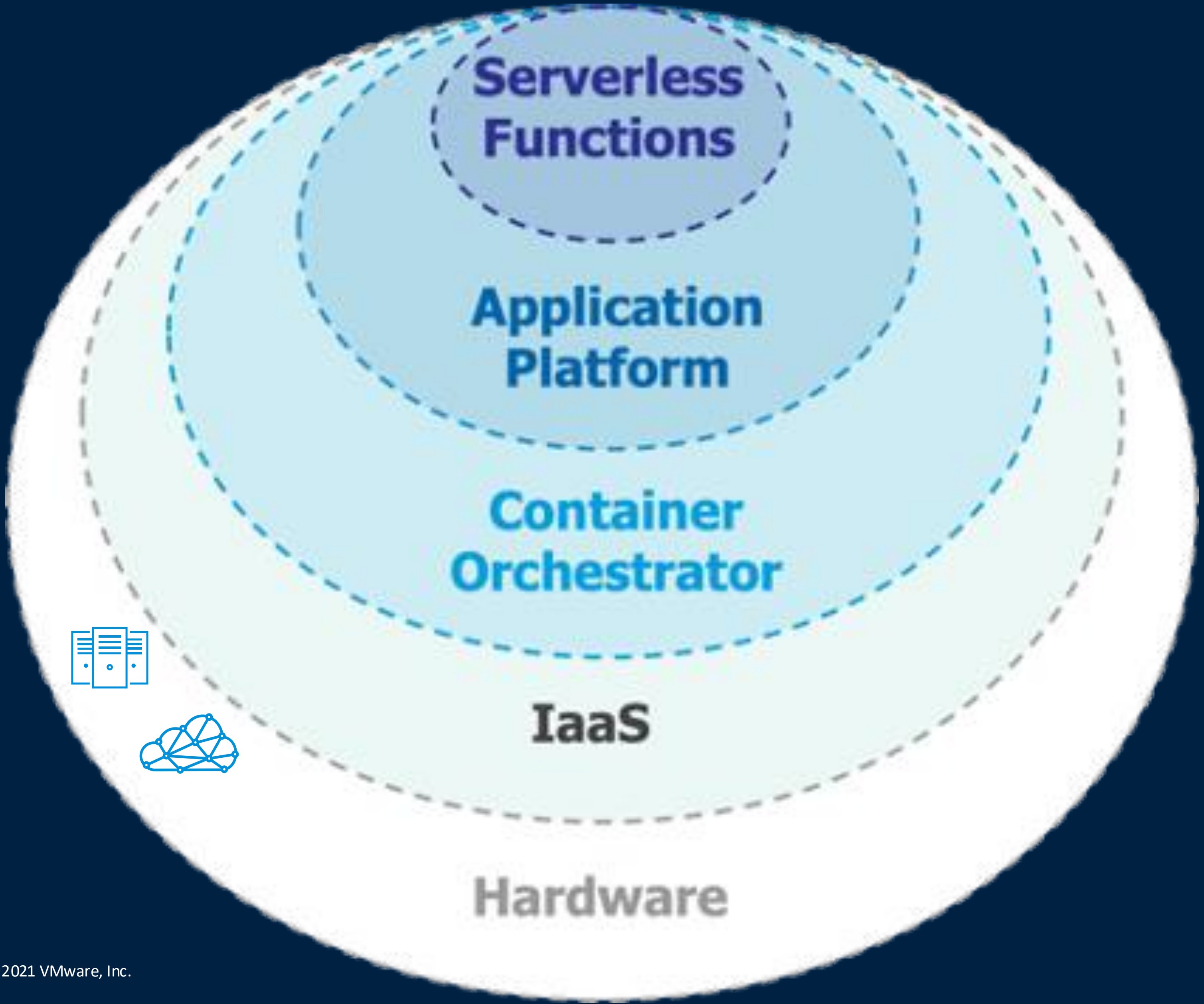
Governance

- Policy Enforcement
- Audit Reports
- Usage Reports
- Billing

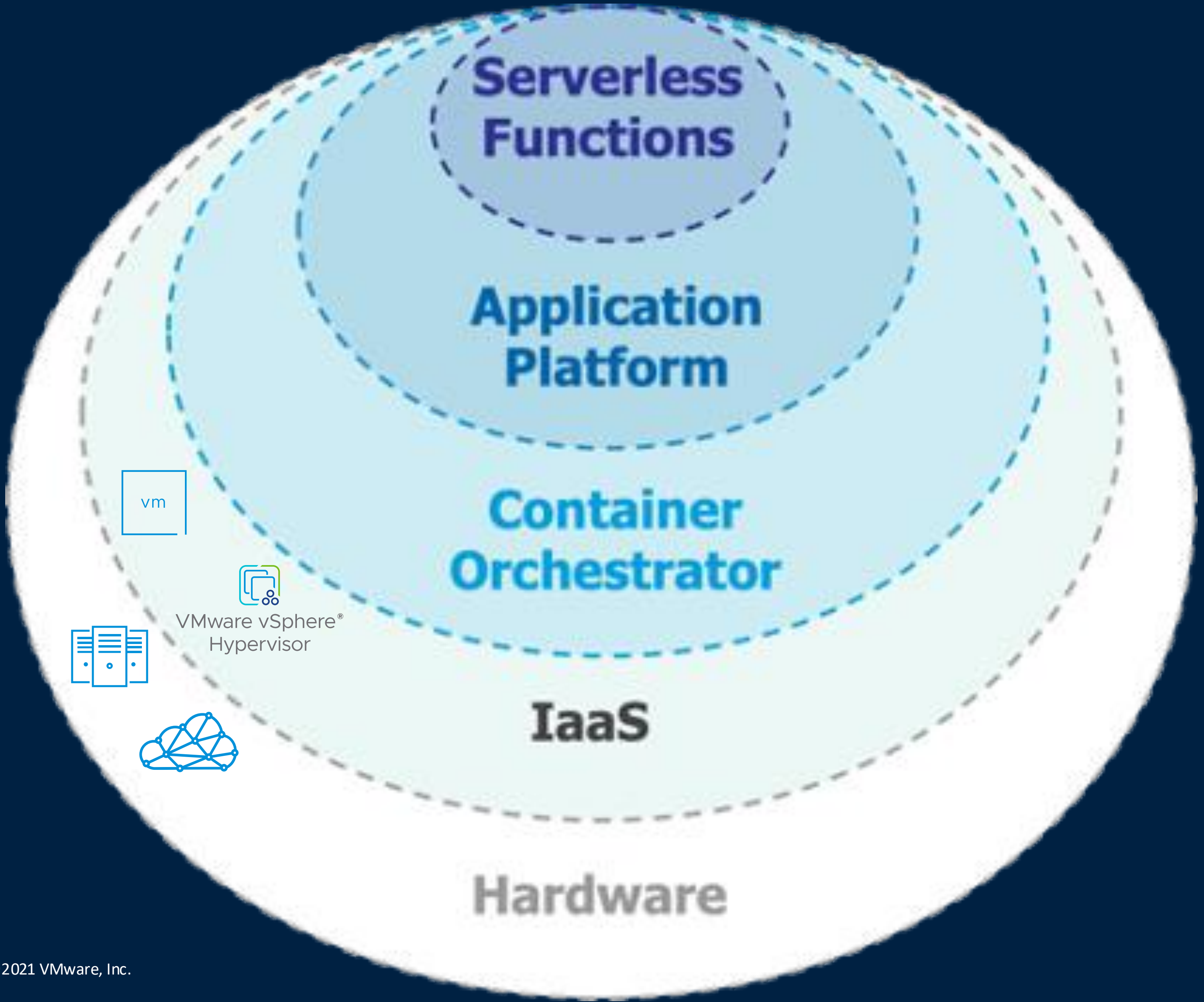
Automation & Integration

- CLI / API / Hooks

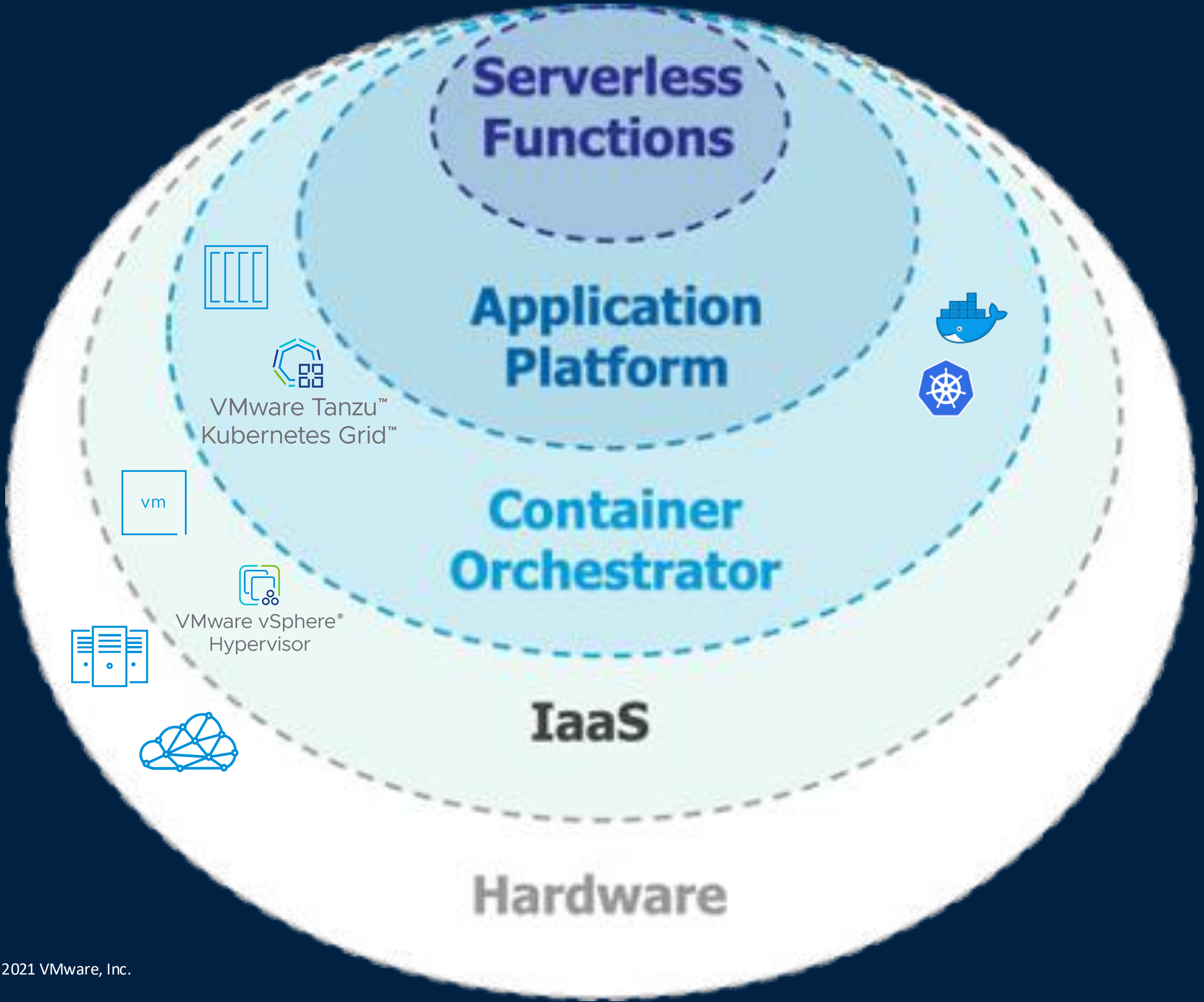
Types of Application Runtimes



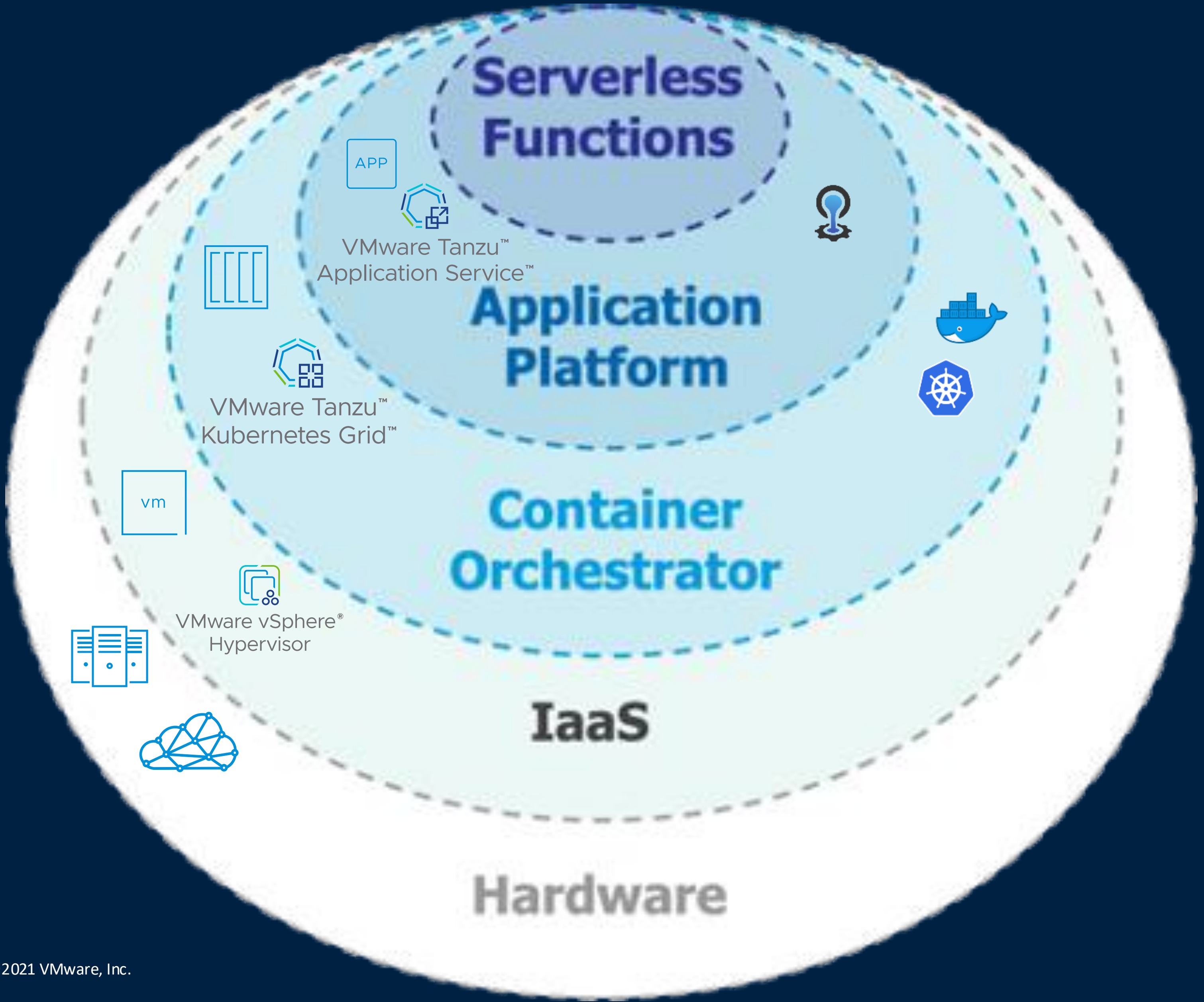
Types of Application Runtimes



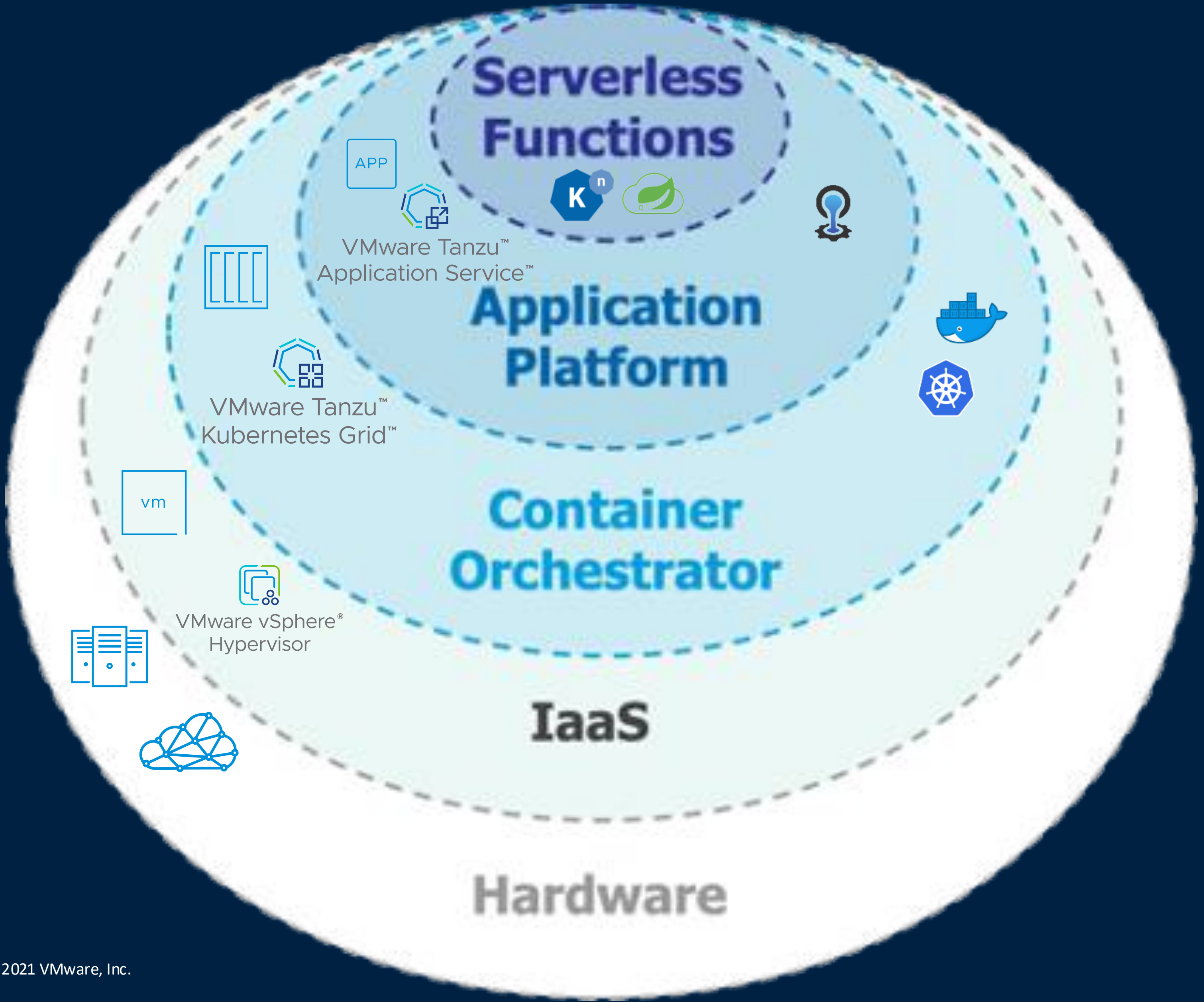
Types of Application Runtimes



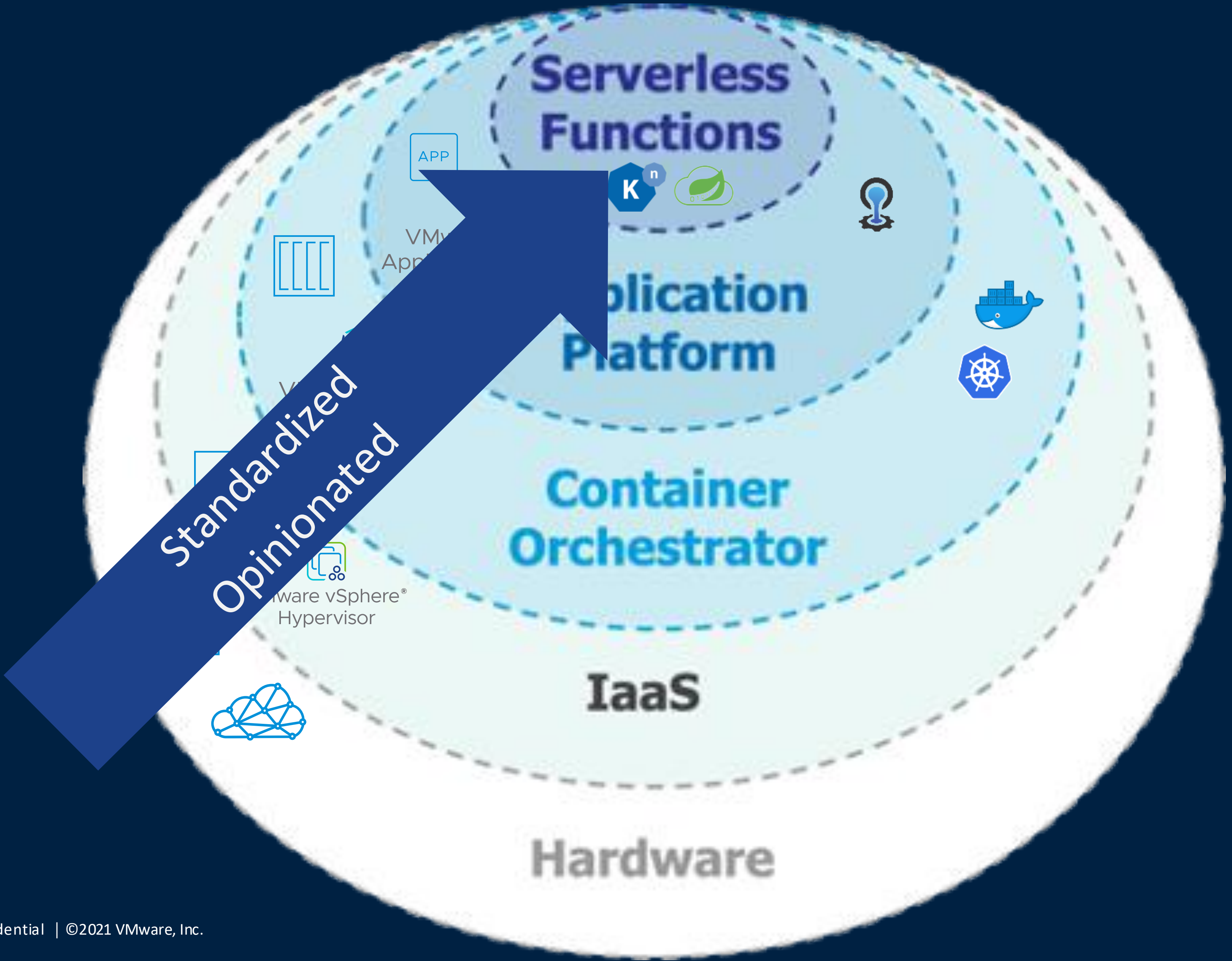
Types of Application Runtimes



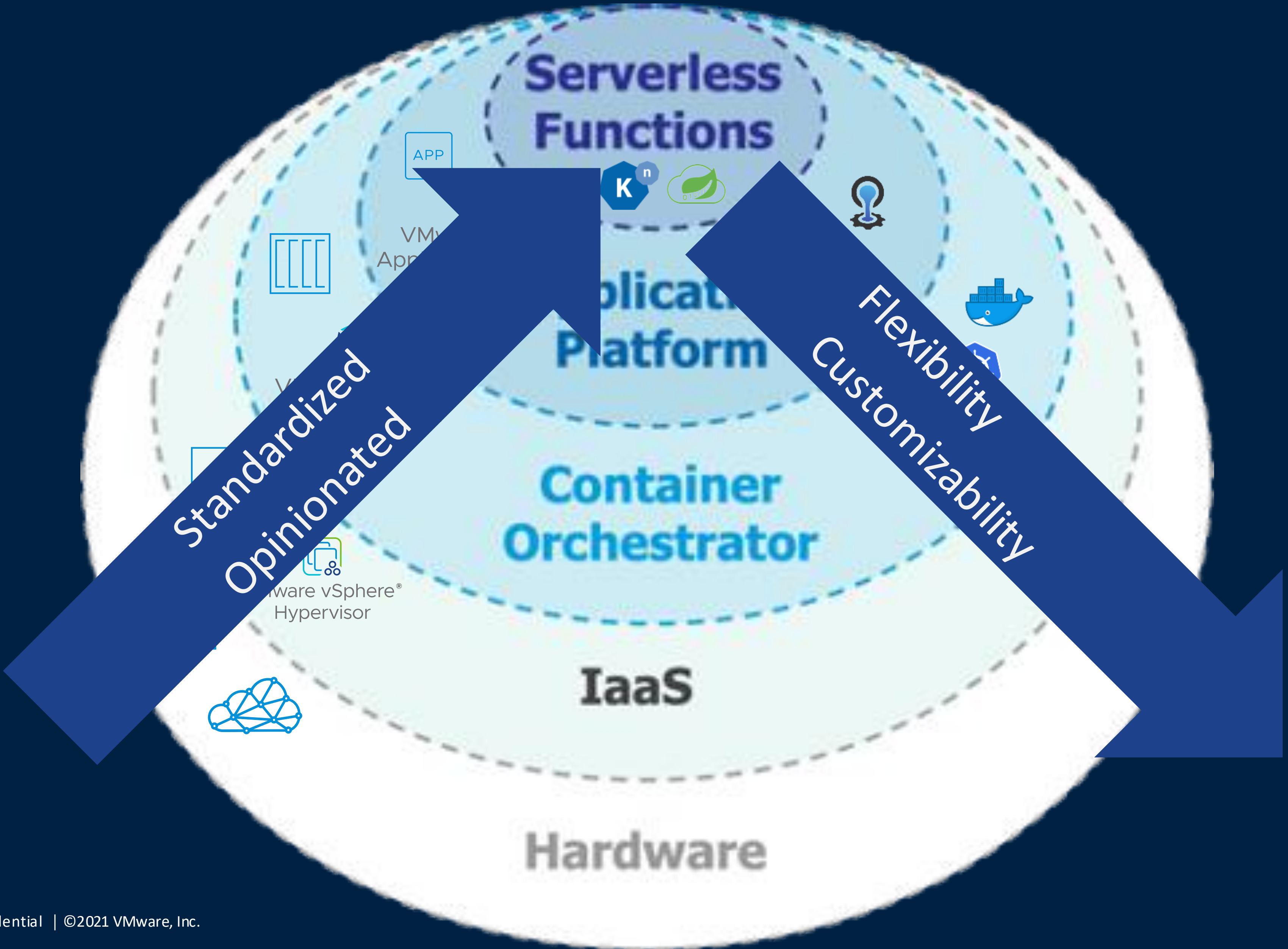
Types of Application Runtimes


Serverless Functions
APP
VMware Tanzu™ Application Service™
Application Platform
VMware Tanzu™ Kubernetes Grid™
Container Orchestrator
vm
VMware vSphere® Hypervisor
IaaS
Hardware

Types of Application Runtimes



Types of Application Runtimes



Demo 1
Run Apps on TAS (Cloudfoundry)

Demo 2
Run Apps on TKG (Kubernetes)

Demo 3
Run Apps on CNR (Knative)