

Cloud Pak for Applications

ADCB

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Only around
20%

of enterprise workloads have moved to the cloud.¹

94%

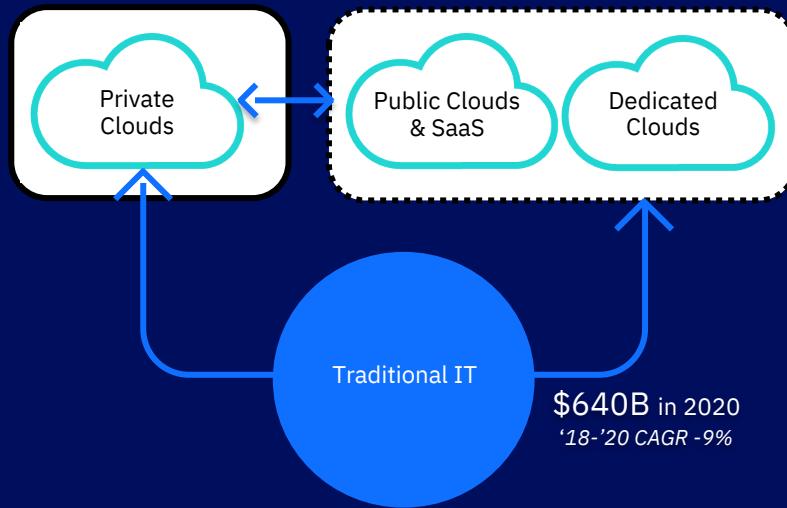
of enterprise customers are using multiple cloud environments (public and/or private)

67%

of enterprise customers are using more than one public cloud provider
(expected to remain constant or increase by 2022)

\$438B in 2020
'18-'20 CAGR 15%

\$609B in 2020
'18-'20 CAGR 18%



Why Containers and Kubernetes?

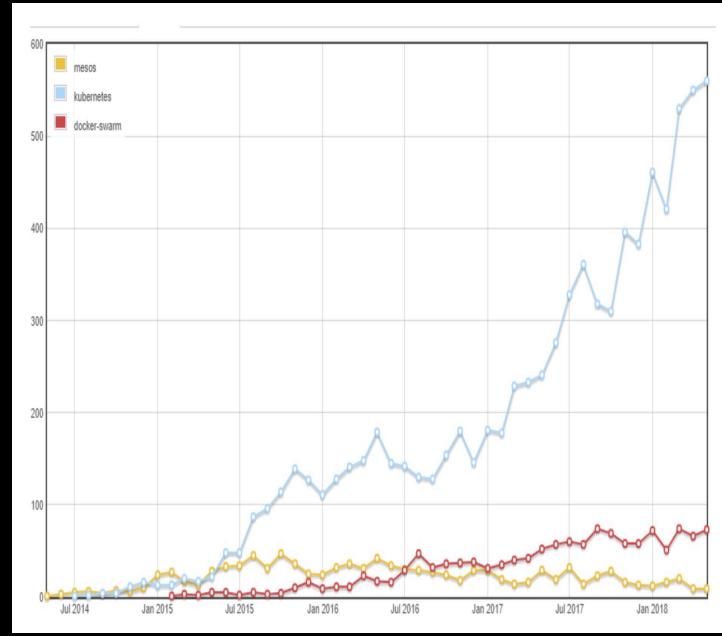
- Makes developers more productive
- Makes systems more resilient
- Makes resource more efficient
- Makes processes more automated

Provides

- Portability
- Scalability
- Modularity
- High Availability
- Open Source, Community
- Eco-system
- Efficient

- Immutability
- Reproducibility
- Manageability
- Microservices

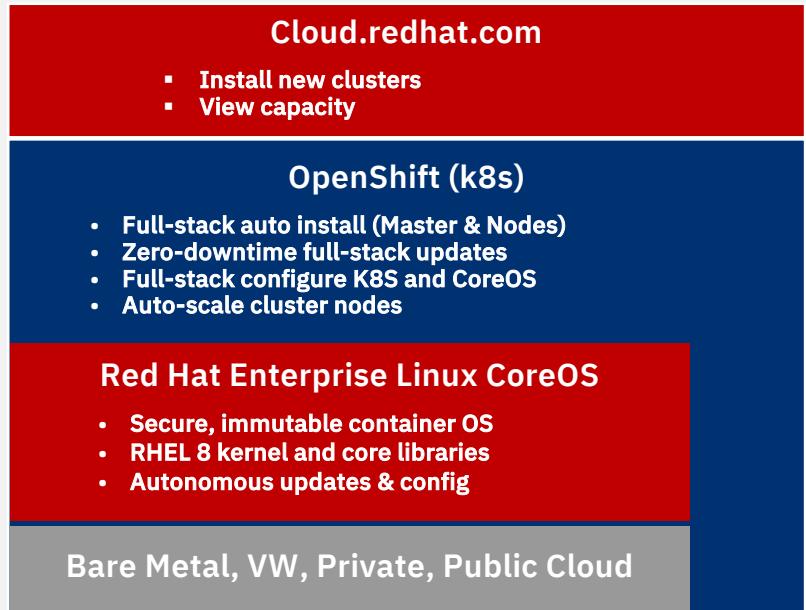
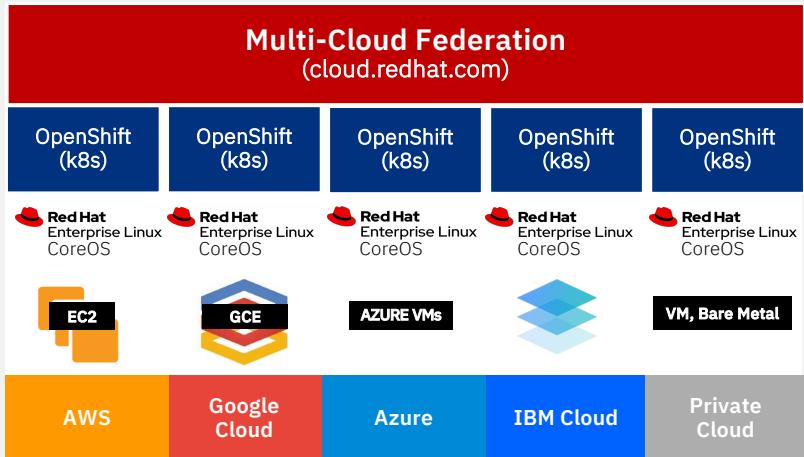
Enables



75% Reduction in operations expense
84% Increase in speed to market
60% Increase in number of projects IT Admins can handle

OpenShift

Multi-Cluster, Full Stack, Autonomous, Secure



Next Generation Hybrid Multicloud Platform

Services

Advise

Move

Build

Manage

Certified
Offerings

Cognitive Applications

Cloud Paks

Applications

Data

Integration

Automation

Multicloud
Management

Security

Foundation

Common Services

Open Hybrid
Multicloud
Platform

Multi-cluster Management

OpenShift

RHEL

Infrastructure



IBM Cloud



Azure



Google Cloud



Edge



Private



Systems

IBM certified software for Kubernetes

The largest catalog of enterprise-grade services to accelerate your Cloud journey

Upgrade & Rollback

- Consistent across all IBM Software built for Kubernetes

Enterprise Ready & Simple to Deploy

- Orchestrated by the product experts
- Integrated catalog experience
- Open standards packaging
- Secured by IAM

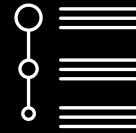


Operations



Packaging

Secure & Integrated



Management



Containers

Pre-integrated

- Logging (Debug)
- Monitoring (Alerting)
- Usage Metering
- License Management

Scanned for Vulnerabilities

- Extendable to Redhat Certified with RHEL/UBI base image

Cloud Paks – Enterprise-ready cloud software

A faster, more secure way to move your core business applications to any cloud through enterprise-ready containerized software solutions

IBM containerized software

Packaged with Open Source components, pre-integrated with the common operational services, and secure by design



Container platform and operational services

Logging, monitoring, security, identity access management



Complete yet simple

Application, data and AI services, fully modular and easy to consume

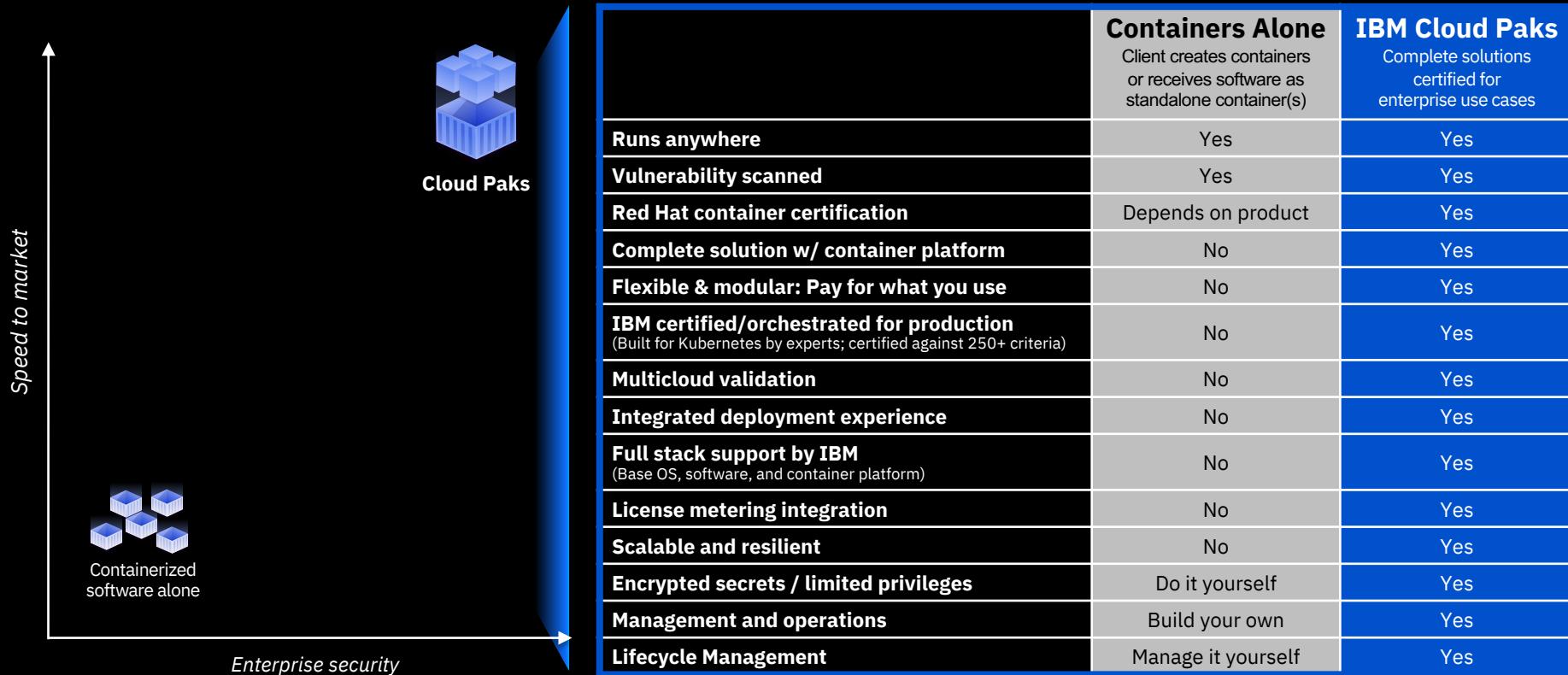
IBM certified

Full software stack support, and ongoing security, compliance and version compatibility

Run anywhere

On-premises, on private and public clouds, and in pre-integrated systems

Cloud Paks – IBM certified and production-ready



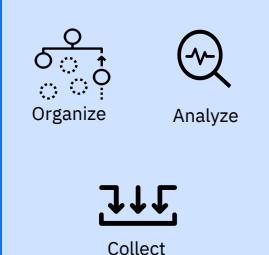
Cloud Paks – Pre-integrated for cloud use cases

Today, IBM offers clients the first six Cloud Paks...

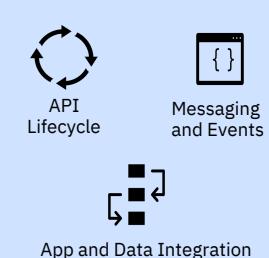
Cloud Pak for Applications



Cloud Pak for Data



Cloud Pak for Integration



Cloud Pak for Automation



Cloud Pak for Multicloud Management



Cloud Pak for Security



IBM public cloud



AWS



Microsoft Azure



Google Cloud



Private



IBM Z
IBM LinuxOne
IBM Power Systems

End points



Cloud Paks on IBM's public cloud

Integrated with IBM's public cloud, leveraging RedHat OpenShift on IBM Cloud

Cloud Pak for Applications

Cloud Pak for Data

Cloud Pak for Integration

Cloud Pak for Automation

Cloud Pak for Multicloud Management

Cloud Pak for Security



- Enterprise-proven managed Kubernetes service running 14k+ production clusters
- Most secure environment for containerized workloads with built-in container level security, isolation, bare metal support, and broad industry compliance (PCI, HIPPA, etc.)
- Built in load balancing and multi-zone availability for simplified management and resiliency
- Cloud Paks are certified and optimized for IBM's public cloud for accelerating moving your workloads to the cloud

What's preventing rapid Modernization today?

- **Skills**
Microservices,
containers/Kubernetes, open source, using
Cloud based services
- **“What code changes need to be made?”**
Effort to change, affinities with current
execution environment
- **Enterprise grade requirements**
Security, compliance, data
movement, scaling, integration,
management, analytics, “day 2 operations”
in a hybrid Cloud environment



“From 2018 to 2023

500 million

new logical apps will be
created, *equal to the number
built over the last 40 years.*”²

Why?

Application development is changing the face of business

App & Services Development and Deployment

- ★ *new tools/platforms*
- ★ *more developers*
- ★ *agile methods*

- Rapid productivity growth
- Optimizing business process efficiency
- New abilities to leverage important business data
- Keeping pace with the demands of a connected world

accelerating digital innovation volume and pace

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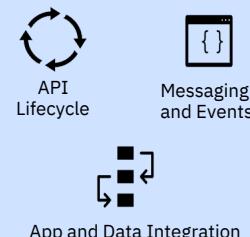
Cloud Pak for Applications



Cloud Pak for Data



Cloud Pak for Integration



Cloud Pak for Automation



Cloud Pak for Multicloud Management



Cloud Pak for Security



Container platform and operational services



IBM Cloud

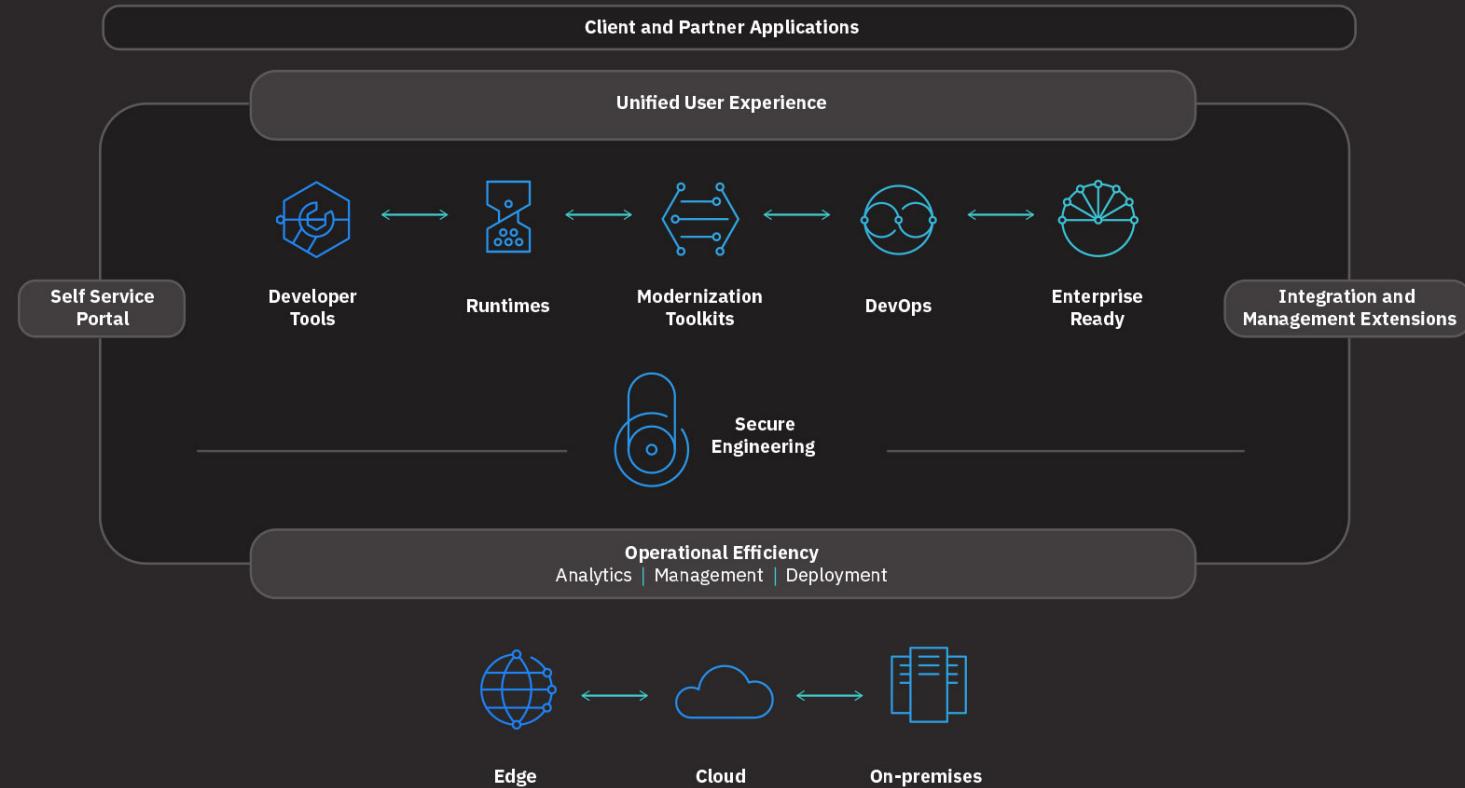
AWS

Microsoft Azure

Google Cloud



IBM Cloud Pak for Applications



Cloud Pak for Applications v4

Migrate to cloud at your own rate and pace with flexible licensing to mix and match your entitlements over time



Run existing apps

Protects customer investments: Continue to run existing apps – WebSphere, JBoss



Modernize existing apps

Refactor existing applications to containers on OpenShift



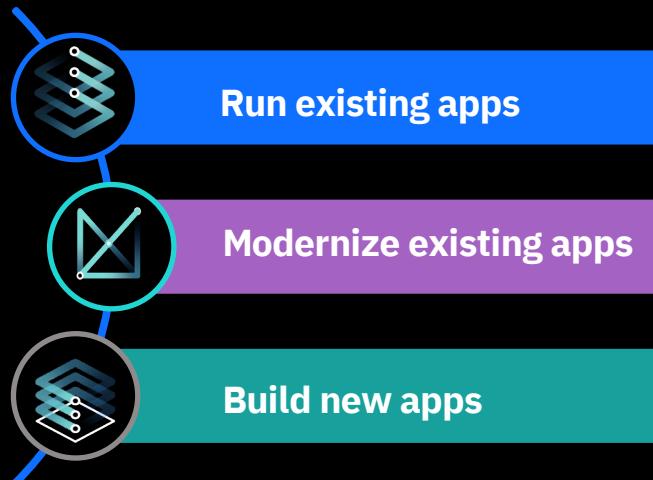
Build new apps

Develop and deploy new cloud native applications

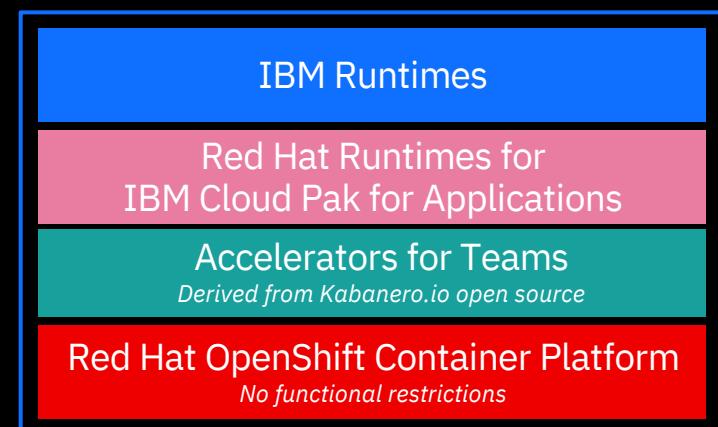
Cloud Pak for Applications – Strategic Value

The ultimate flexibility across open source, platform, runtimes, and tools all in 1 place!

- Build new cloud-native apps on the broadest range of supported runtimes - ***Ultimate choice***
- OpenShift Container Platform 4.2 for hybrid multi-cloud - ***Ultimate portability***
- “Right-size” and modernize between the various WAS editions - ***Ultimate flexibility***
- Empower teams to start quicker with centralized control and increased productivity - ***Ultimate control***



Ultimate open
source stack for
all workload
needs



Cloud Pak for Applications: what you need today, what you need tomorrow

Run existing apps

WebSphere Application Server

WebSphere ND | WebSphere Base | Liberty Core
Mobile Foundation

JBoss Enterprise Application Server



Modernize existing apps

IBM Modernization & Developer Tools

Included with all components

- Transformation Advisor
- WebSphere Migration Toolkit
- Enterprise Dev tools & extensions
for local IDE's

Supported when used with Cloud Pak for Applications, no charge

Build new Cloud Native apps

Red Hat Runtimes

- JBoss® EAP
- JBoss® Web Server
- Eclipse Vert.x
- Spring Boot
- Open Liberty
- Thorntail
- OpenJDK
- Node.js

IBM Runtimes

- WebSphere® (traditional)
- WebSphere Liberty
- Mobile Foundation
- Loopback & Express (Node.js)

Accelerators for Teams

Derived from kabanero.io open source

Equipping teams with content, tools, architectures and methods so they can focus on business problems from day 1

Red Hat OpenShift Container Platform

No functional restrictions

Perpetual and Term licensing options available, w/ unrestricted OpenShift

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IBM Cloud Transformation Advisor



Quickly evaluate on-premises Java EE applications and messaging infrastructure to accelerate deployment to private or public cloud

<http://ibm.biz/CloudTA>

IBM Cloud Transformation Advisor

Welcome to
IBM Cloud Transformation Advisor



We know that modernizing your existing middleware deployments can take you into unfamiliar territory. IBM Cloud Transformation Advisor will help you take your first steps toward getting you onto IBM Cloud and IBM Cloud Private.



Let's get started.

Add a new workspace



Introspects traditional WebSphere, IBM MQ, WebLogic and Tomcat deployments and determines complexity of modernization



Oracle
WebLogic

Included in IBM Cloud Private, IBM Cloud Pak for Apps, WebSphere 9.0.5.0, and in stand-alone Docker containers



Provides recommendations, detailed reports, artifacts and automates deployment for simple application modernization

Analysis Report

Potential issues, severity, possible solutions and estimate of resolution effort

Technology Report

Details on IBM platform support for technologies used in the app

Inventory Report

High-level inventory of application content and structure



Customized application configuration and deployment files

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IBM Mobile Foundation

A Platform for Modernizing and Developing Multi-channel Digital Apps

Rapid

Release new apps and app versions more quickly



- Digital App Builder for building apps rapidly
- Reduce time to build new applications or modernize current apps
- Release new apps and app versions more quickly

Intelligent

Simple for developers to incorporate AI and ML, creating powerful and insightful apps



- Secure CoreML model distribution without app updates
- Watson connectors
- Digital app studio (training)

Engaging

Engage users by providing personalized app experience



- A/B testing (Live update)
- Controlled feature release
- Push
- In app feedback
- Personalization

Trustworthy

Develop apps with security, governance and industry leading privacy standards



- Multi step authentication
- Encrypted offline JSON Store
- AppID integration
- Credential isolation
- Certificate pinning
- HIPAA Ready

Multi-Channel

Deploy apps across multiple channels at the highest level of production performance



- Multi Channel Analytics
- Multi Channel Notifications
- Encrypted offline storage
- Proven scalability for millions of devices

UrbanCode DevOps Add-on for IBM Cloud Pak for Applications

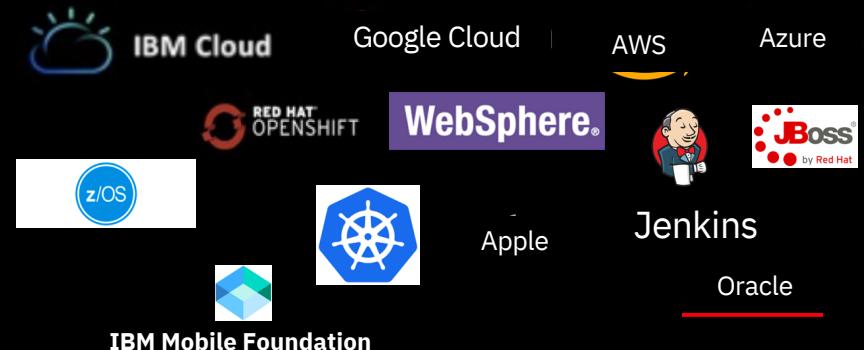
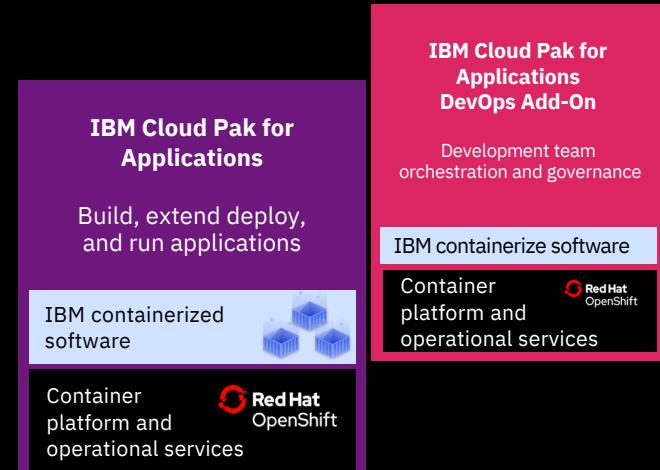
Orchestrate and Deploy Applications in microservice and hybrid architectures

Orchestrate across teams and pipelines of choice

- Coordinate across multiple services and tiers delivered by different tools and teams
- Orchestrates with Kabanero to coordinate cloud-native and traditional
- Measure time to market improvements resulting from application modernization

Deploy anything anywhere

- Works with traditional WebSphere
- Enable a consistent experience across cloud native, distributed, mobile and z/OS
- Automate deployments from simple to complex
- Enterprise scale: millions of deployments / year



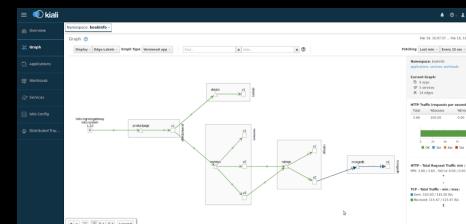
Cloud Pak for Applications v4

OpenShift v4.2

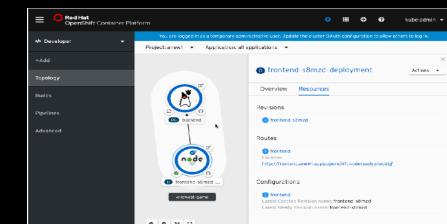
OpenShift v4.2 is included in Cloud Pak for Applications v4

(No functional restrictions OpenShift v4.2)

- OpenShift 4.0 introduced Operators
 - *Single-step installation for Kubernetes applications and services, plus automated, over-the-air updates and performance tuning with Kubernetes operators.*
- OpenShift 4.2 brings support for Service Mesh
 - *Increased resiliency and performance for your distributed applications built on Istio*
- OpenShift 4.2 introduces new Developer Console
 - *Developers have a streamlined Kubernetes experience, thanks to a dedicated developer perspective*



Support for Service Mesh



Improved Developer Console

Comparing Appsody as an open source project

Open Source

Provides a CLI and set of open source community sourced application stacks.

Community sourced stacks are typically based on Ubuntu or alpine base images.

The goal as an open source project is to provide a broad set of runtimes and frameworks for mass developer appeal.

IBM Cloud Pak for Applications

Supports the Appsody CLI as the developer CLI.

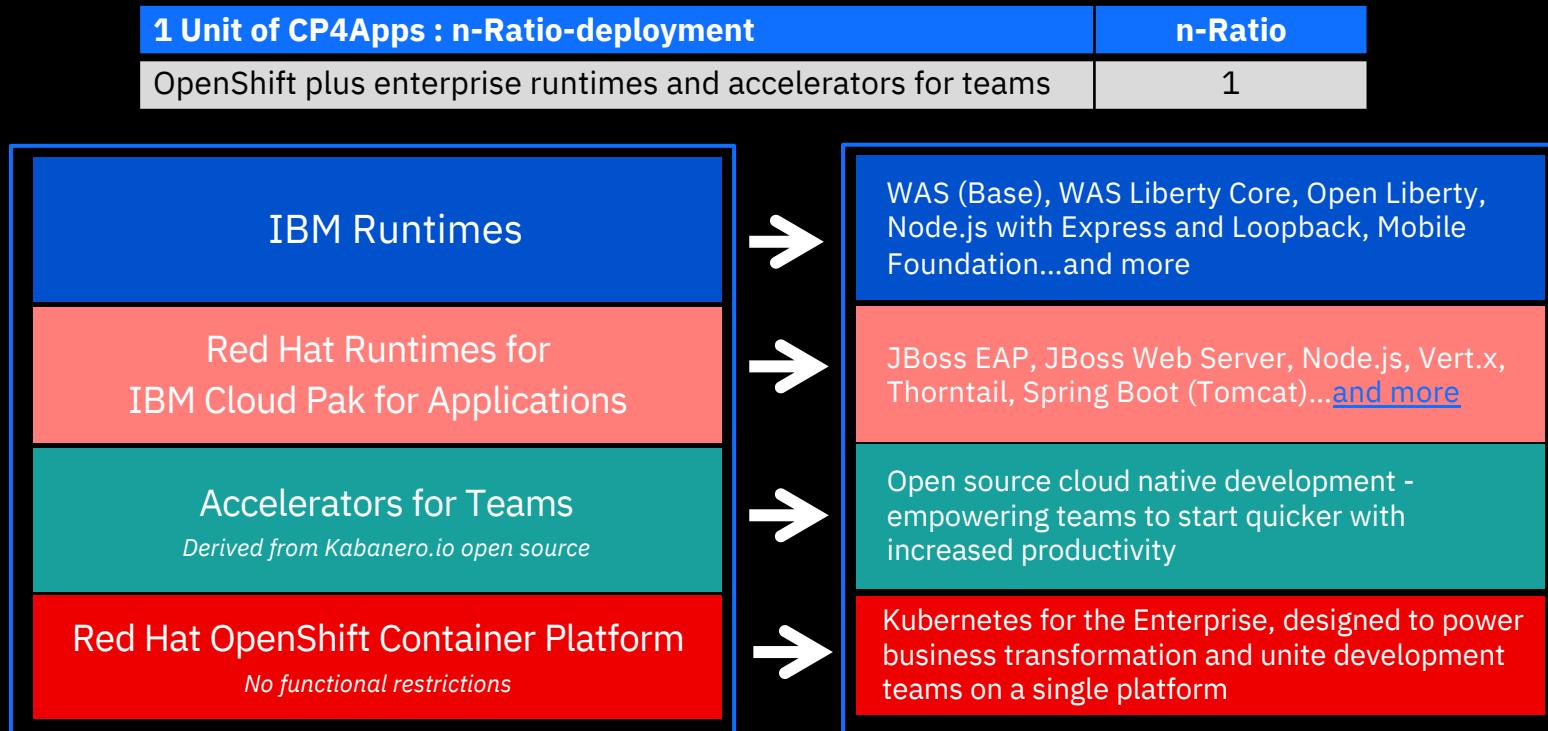
Provides separate Application Stacks based on UBI (Universal base image - RHEL) meeting ‘Certified container image’ standards, from a trusted source.

Provides Application Stacks aligned with our product.

Pre-built pipelines use the Appsody CLI and Appsody Operator for build and deploy tasks.

IBM Cloud Pak for Applications

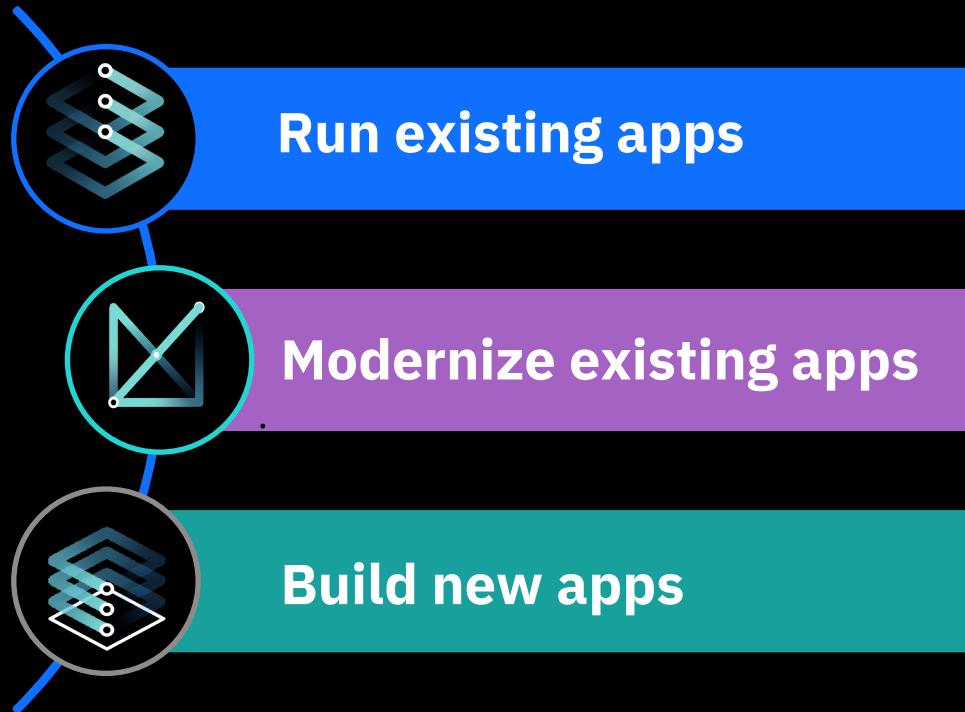
What is “OpenShift plus enterprise runtimes plus enterprise runtimes and accelerators for teams”?



Best combination of platform, runtimes, and tools for Cloud Native development

WHY Cloud Pak for Applications V4?

Flexibly rebalance entitlement over time: from what you need today, to what you need tomorrow



WebSphere Application Server

WebSphere ND
WebSphere Base
Liberty Core

*includes latest version, WAS 9.0.5



IBM Mobile Foundation



IBM Modernization & Developer Tools



**OpenShift v4.2 +
enterprise runtimes and
accelerators for teams**

Full OpenShift offering –
no functional restrictions

***Perpetual and Term options
available***

