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Red Hat Openshift Application Runtime RHOAR

New workloads for the JBoss EAP App Server with Openshift

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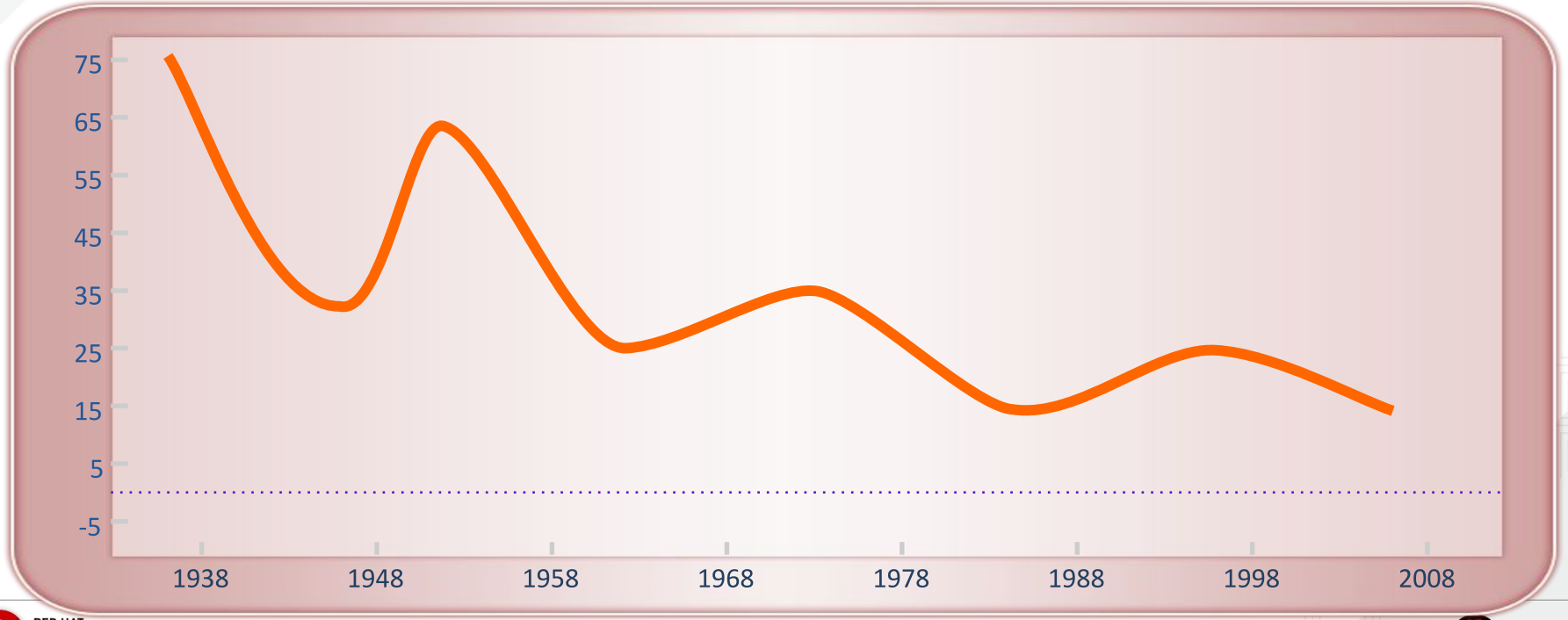
14.11.2017

WHY CHANGE?

BUSINESS SUCCESS IS FLEETING

Average company tenure in the S&P 500



By 2020, 75% of the applications purchase supporting digital business will be "build" not "buy".

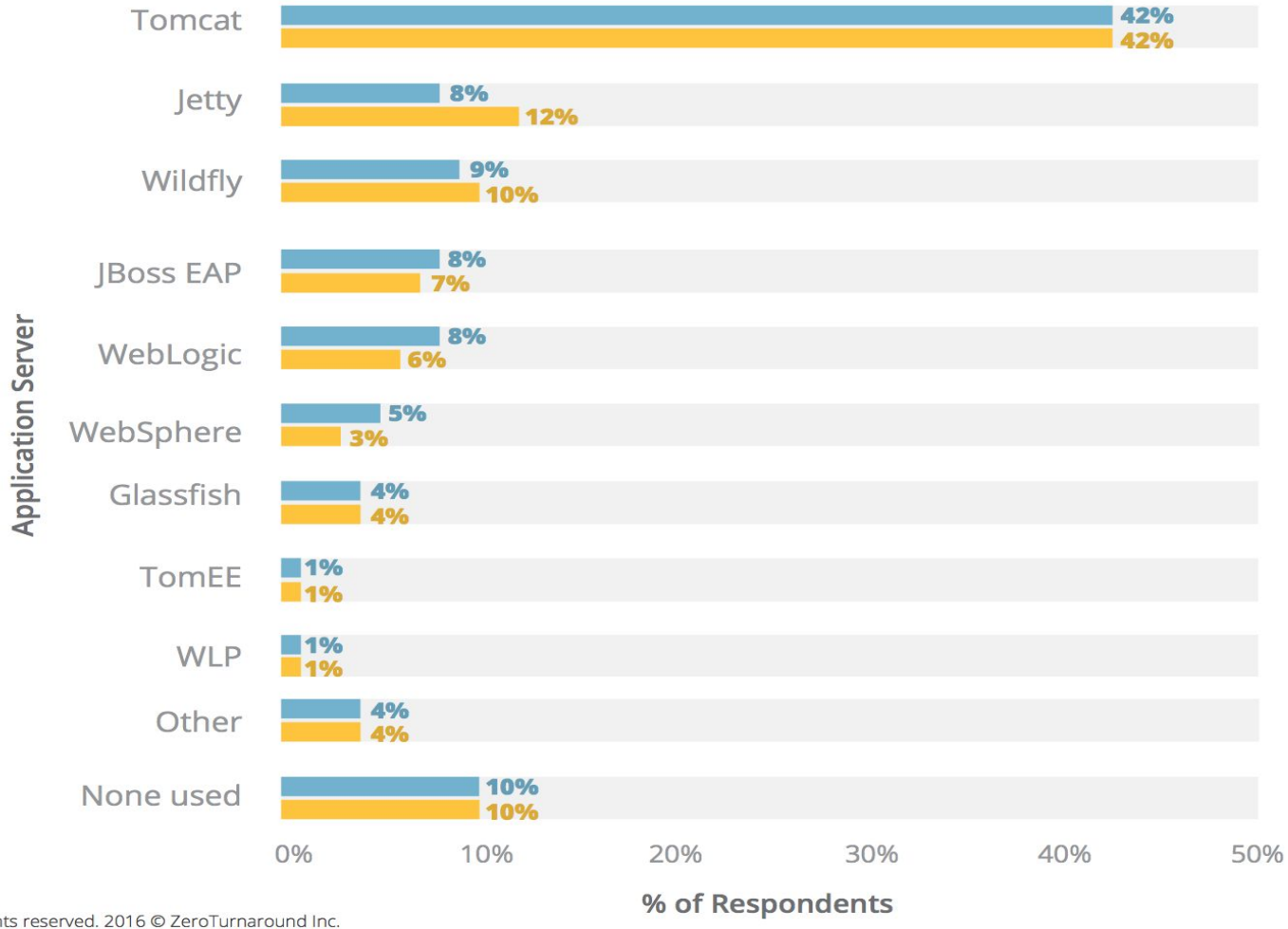
Gartner

```
if (software_eating_the_world)
{
application_development = vital (business_competency);
}
```

http://www.gartner.com/newsroom/id/3119717

Java EE only no more
Its time for RHOAR (Red Hat Openshift Application Runtimes)

Figure 1.13 Application Server Usage in Production and Development

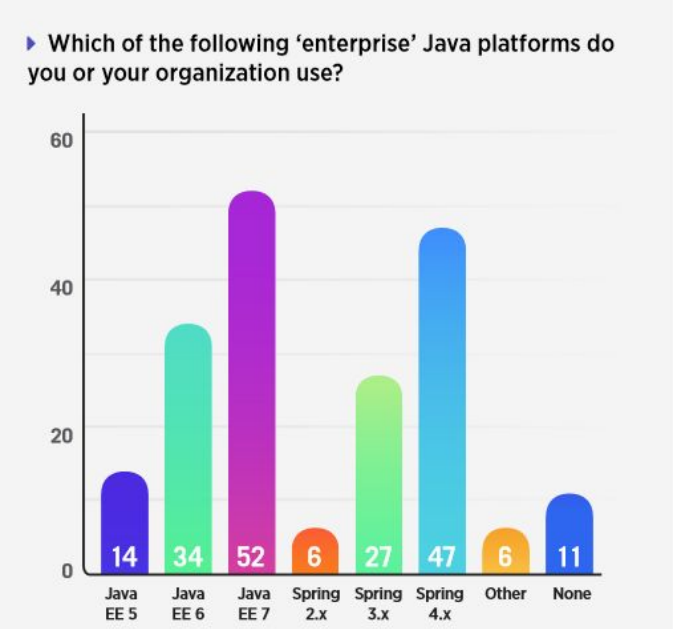


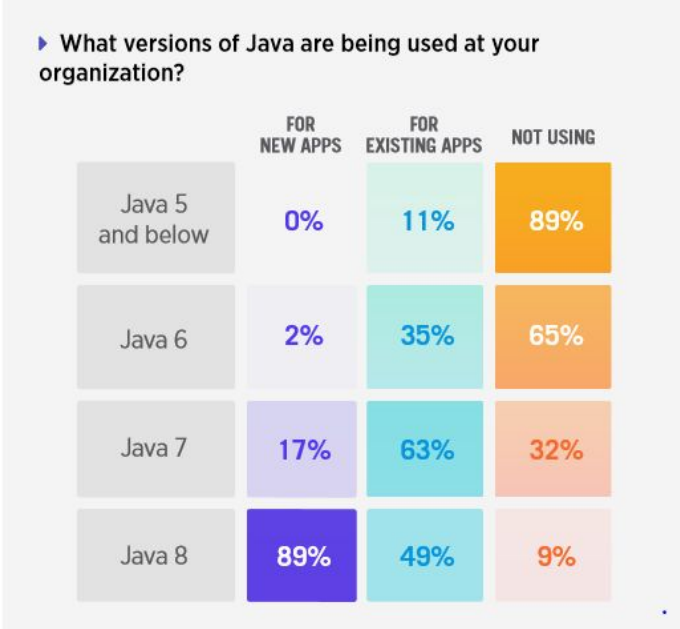
Tomcat 42% Dev
Wildfly and EAP 17% Dev

..all supported by Rhoar

REBEL LABS by ZERO TURNAROUND

Java and Spring market data





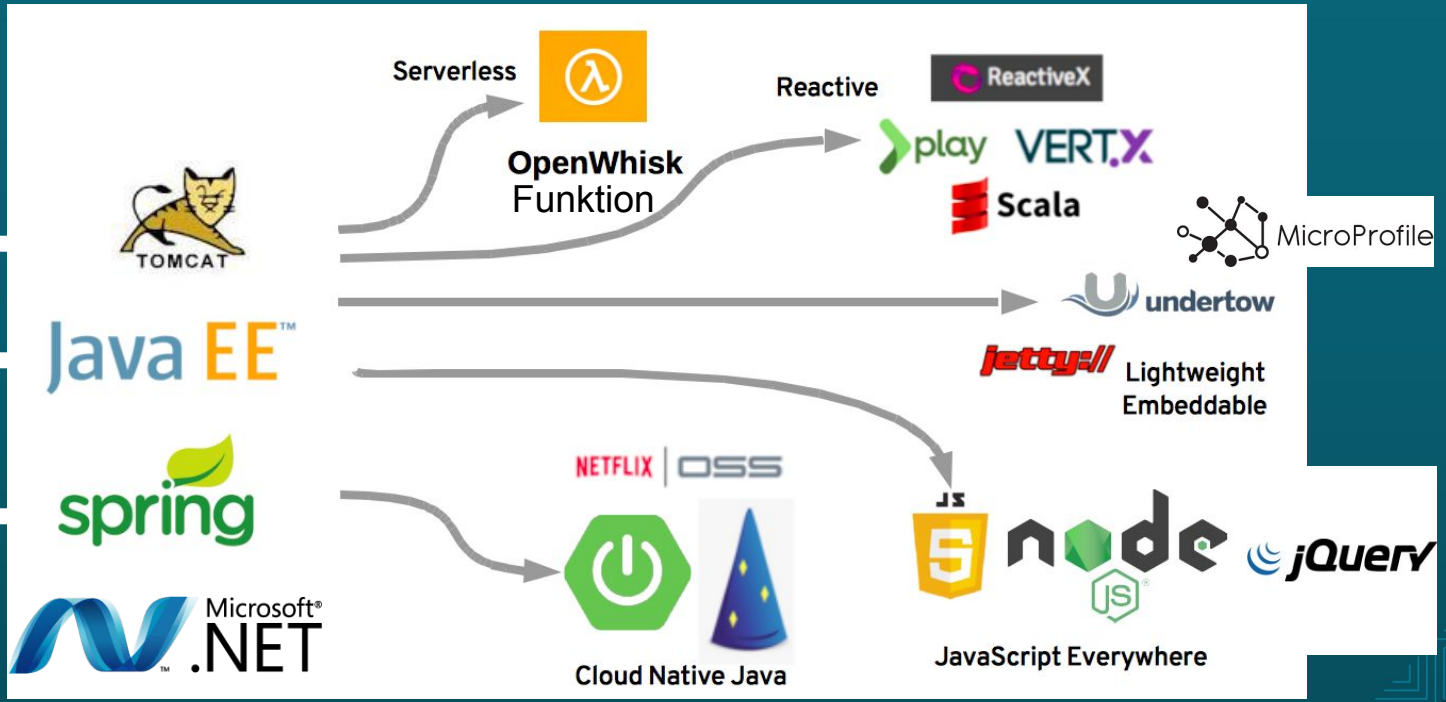
Key Observations:

- Spring 4.x adoption stagnated (47% in 2017 compared to 49% in 2016)
- Java EE 7 saw a 10% increase in usage, from 41% to 51%
- Mirroring a Spring 3.x decrease from 37% to 27% in the same amount of time.

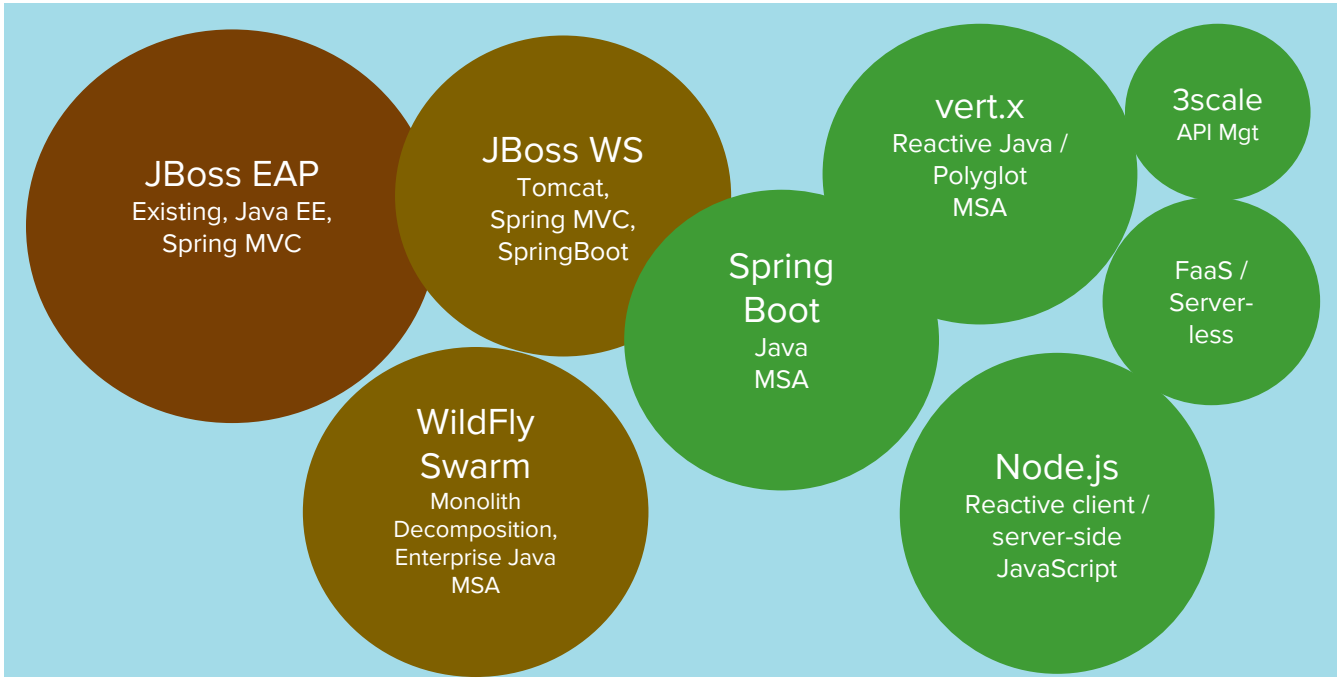
RHOAR Runtimes for existing and new workloads

WHERE DEVELOPERS ARE GOING

50% OF THE ENTERPRISE APP MARKET

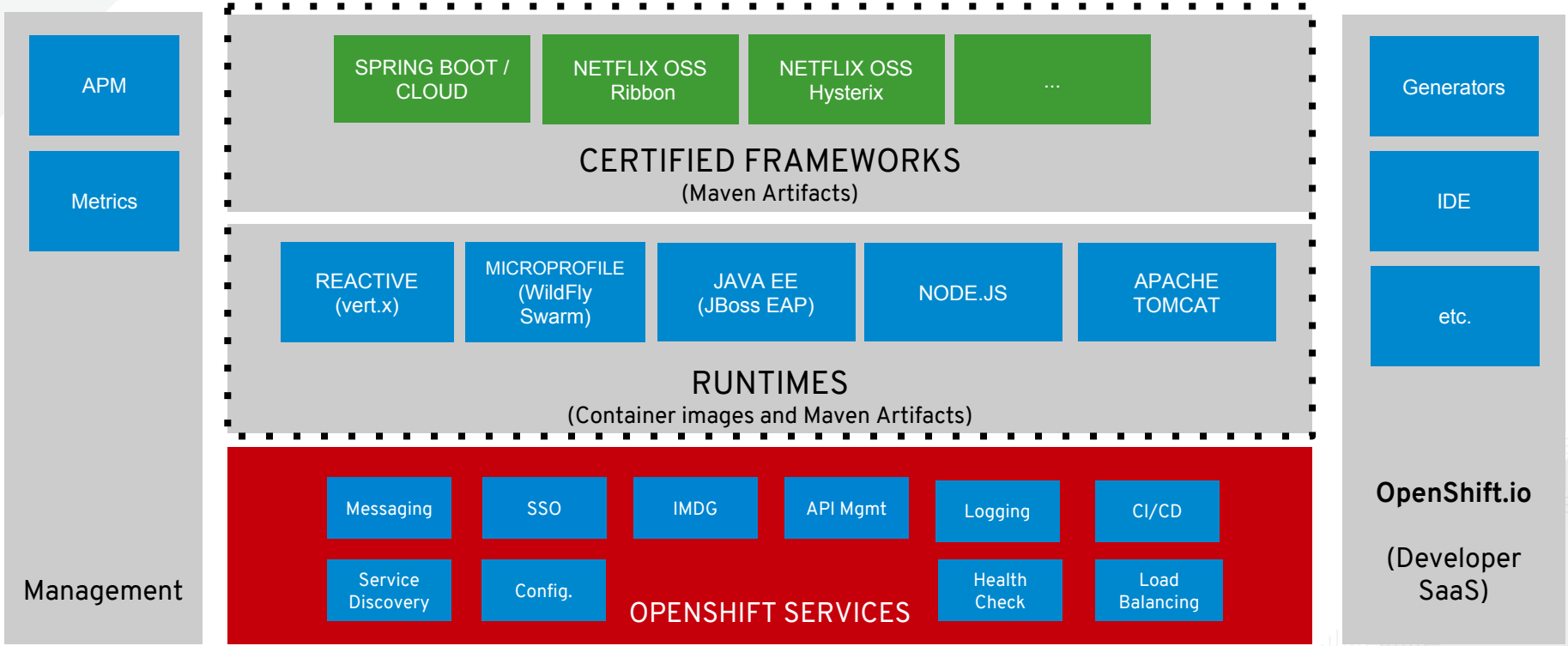


SUPPORTING YOU TODAY AND TOMORROW



Existing Applications ⟶ New Applications

RHOAR - Unified, Polycloud & Polytech Solution For Developing New Cloud Native Apps and Modernizing Existing Apps



RHOAR RUNTIMES USE CASES
Build and Deploy All Your Java or JavaScript Apps on OpenShift

Runtimes/ Framework	Development Target
JBoss EAP	Ideal for containerizing Java EE applications on OpenShift
SPRING	The Spring Framework is an application framework and inversion of control container for the Java platform.
WildFly Swarm	WildFly Swarm enables developers with right-size bootable Java MicroProfile to build microservices while leveraging Java EE expertise.
Vert.x	Create asynchronous, reactive applications for the JVM. Vert.x is great for building very responsive applications that require high concurrency and low latency.
Node.js (Tech preview)	Node.js enables developers to create reactive, event-driven, and non-blocking server-side JavaScript applications.
Tomcat	Red Hat supports the JBoss Web Server embedded Tomcat container for use with Spring Boot applications.

Spring Boot / Cloud

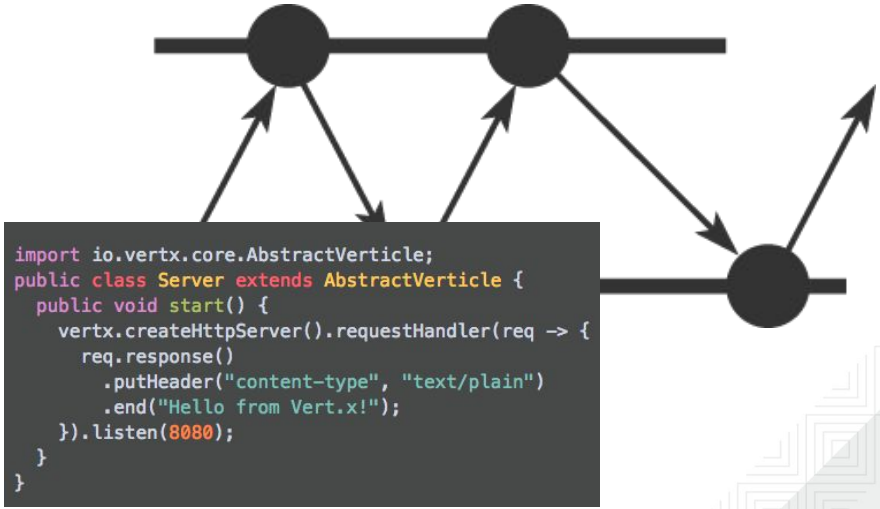
- Planned supported features (Q4 CY17)
  - Mavenized embedded Tomcat (JWS today, Undertow possible later)
  - Hibernate
  - Mavenized Apache CXF
  - Java S2I Image

- Planned support (Rhoar 1.0)
  - Fabric8 Maven plugin, Spring Cloud Kubernetes
  - Red Hat SSO integration and other xPaaS products/images
  - EFK logging

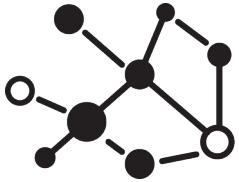
- Planned Certification (Rhoar 1.0)
  - Sprint Boot
  - Hystrix, Hystrix Dashboard
  - Ribbon

VERT.X

- Reactive Microservices Toolkit for the JVM
- Polyglot - **Java, JavaScript**, jRuby, Python, Groovy, Scala
- Distributed Event Bus for lightweight messaging
- Event Driven Non-Blocking I/O
- Ideal for high concurrency, low latency applications / services
- 2014 JAX Innovation Awards Winner



```
import io.vertx.core.AbstractVerticle;
public class Server extends AbstractVerticle {
  public void start() {
    vertx.createHttpServer().requestHandler(req -> {
      req.response()
        .putHeader("content-type", "text/plain")
        .end("Hello from Vert.x!");
    }).listen(8080);
  }
}
```



MicroProfile

Just enough Java EE for building and deploying RESTful microservices

Lightweight

Embeddable (fat-jar)

Modular and extensible

Built from Wildfly

Trusted & reliable

Microservices infrastructure: Teams that are building microservices need microcontainers to embed in their independently deployable components.
Open-source-embeddable platforms include Apache Tomcat, Caucho Resin, Eclipse Jetty and JBoss Undertow. Other vendors provide microservices runtime infrastructure and container management systems. Examples include Cloudsoft, Eventuate and Trifork.

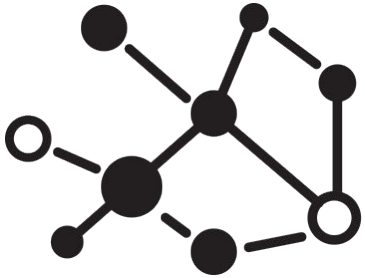
Market Guide for Application Platforms
Gartner, Nov-2016

Comparing Application Deployment: 2005 vs. 2015

June 8, 2015 by James Ward

2005 = Multi-App Containers / App Servers / Monolithic Apps
2015 = Microservices / Docker Containers / Containerless Apps

http://www.jamesward.com/2015/06/08/comparing-application-deployment-2005-vs-2015



MicroProfile

MicroProfile.io

Optimizing Enterprise Java
for a microservices architecture

- Announced at DevNation; now an Eclipse Foundation project
- Collaboration between **Red Hat**, **IBM**, **Tomitribe**, **Payara**, **Fujitsu**, **Hazelcast** and the Java EE community
- Focused on a **minimal standard** profile for Java **microservices**
- Five working implementations by **JavaOne 2016**
- **WildFly Swarm** is **Red Hat's** implementation

Node.js

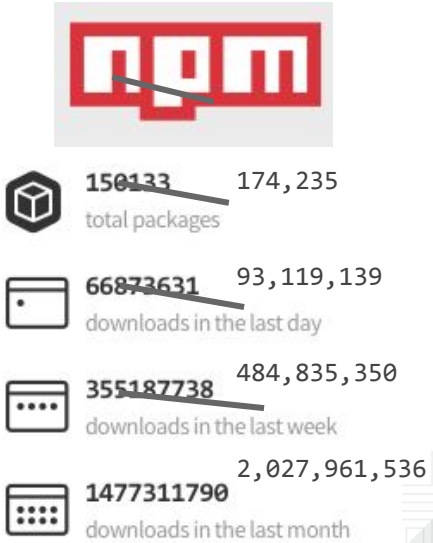
Large, vibrant Community

Benefits

- Everyone knows JavaScript
- Isomorphic JavaScript
- Developer Productivity
- Performance and scalability

Open Source

- moved from BDFL to Foundation
- Enterprise collaboration



Royal Bank of Scotland

Banking - EMEA

- Traditional Java EE shop
- €4m 3 year deal for approx 5000 cores of EAP Premium
- Big vert.x fan
  - Currently in use in at least two projects
  - Will add to “approved product list” for broader adoption once productized
- Dialing-down EAP subs. between now and 2018, dial-up vert.x, JWS or self-support
- Most of vert.x will be standalone (not OpenShift)
- Currently only using 3000 cores of EAP

Standard Chartered Bank

Banking - EMEA, APAC

- Progressive technology adopter
- MSA 1.0 on self-supported stack
  - Docker, SpringBoot, etc.
  - 80% Java, 20% node.js
- Now looking for supported stack
- Trying to unravel NetFlix OSS (leaky abstraction)

Why should I take RHOAR

- Containerized Future Platform
- Support for Spring, Tomcat, Node.js, EAP, Vertx
- Less Complexity - One Product many Runtimes
- Transformation from old to new world
- Light weight, Economic

RHOAR ROADMAP - preliminary

- Q4 2017 GA RELEASE
  - OSO / OSE Support
  - Spring Boot Tested & Certified
  - WildFly Swarm 7
  - Node.js (Tech Preview)
  - Vert.x 3.5
  - Red Hat SSO Tested

- BETA1 RELEASED (Sept)
  - Runtimes Only - public repo.
  - Limited customers
- BETA2 RELEASED (Oct)
  - Full Public BETA

- Priority features beyond GA :
  - Deeper Spring Cloud support
  - Node.js FULL support

GET STARTED @
developers.redhat.com/rhoar

Run online (Starter or Pro) or
Run locally (minishift)

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RHOAR PRICING PROPOSAL

1

RHOAR
WF Swarm+Vert.x+Node.js+Spring Boot

75%* of EAP on OpenShift price
New SKU on OpenShift

Market Target:
Cloud native development for Greenfield non-Java EE based Java and JavaScript applications.

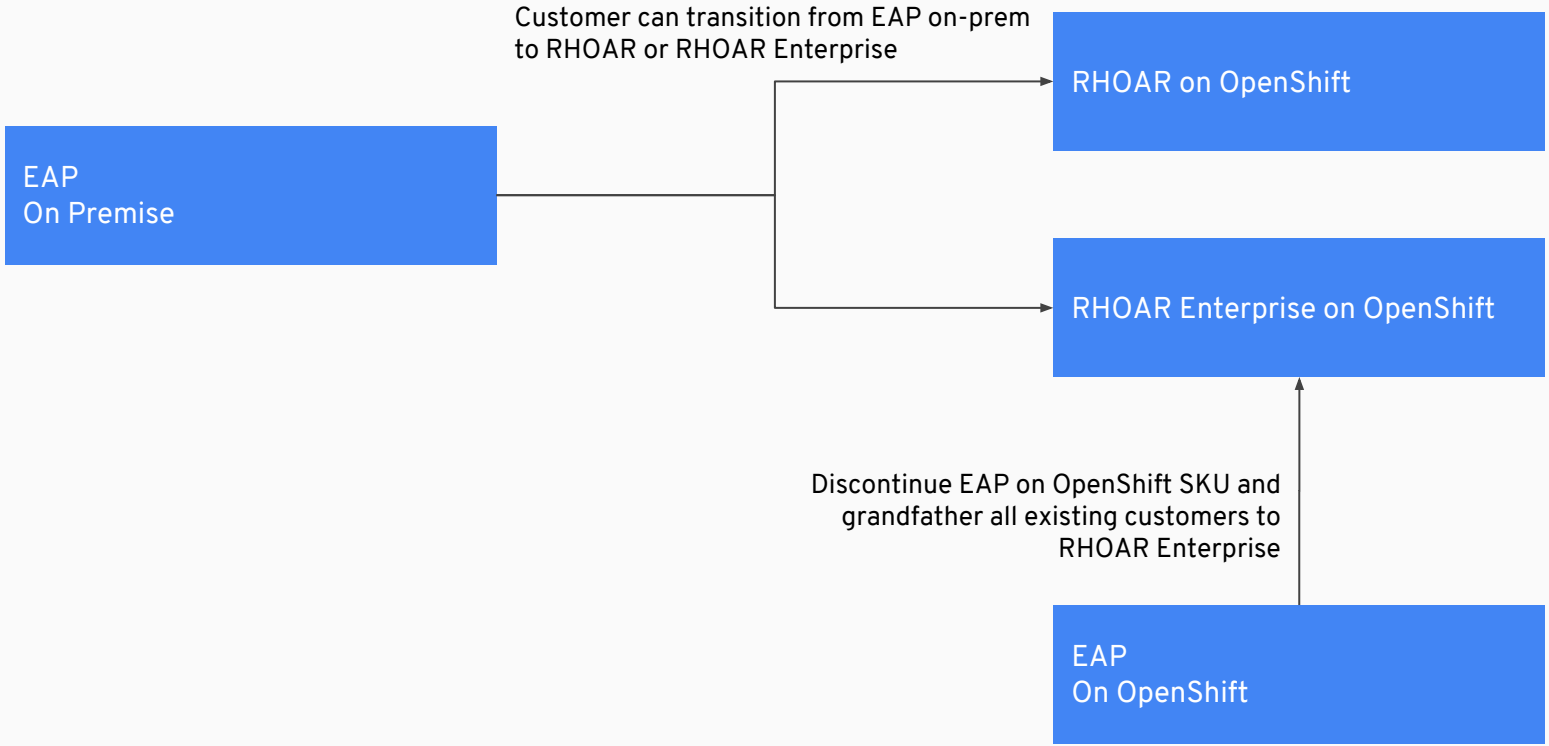
2

RHOAR Enterprise
EAP+WF Swarm+Vert.x+Node.js+Spring Boot

Same price as EAP on OpenShift
Replaces EAP on OpenShift SKU

Market Target:
Comprehensive cloud native development for both Brownfield and Greenfield Java, Java EE and JavaScript applications

RHOAR PRICING PROPOSAL



Node.js Foundation Members

Platinum






Gold


Silver









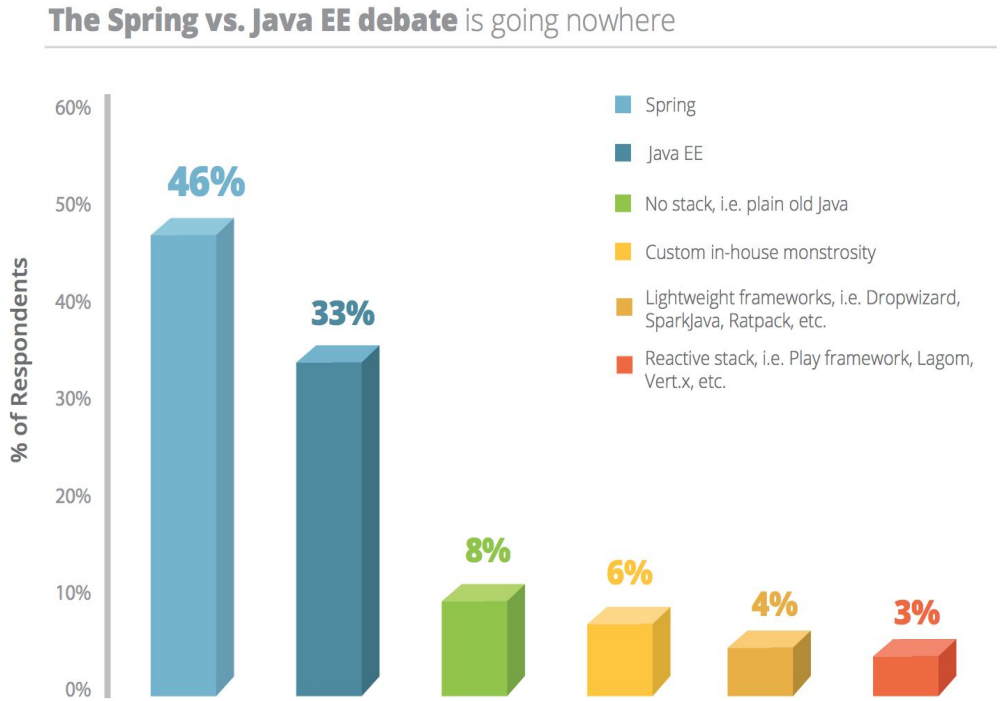







What is the most important application stack

RebelLabs 2017



- Java EE and Spring have 79%

- Reactive gaining traction

..all supported by RHOAR

INTRODUCING RHOAR

What is it?	Polycloud and polytech application development and modernization platform.
Polycloud	Ability to run on multiple cloud infrastructures and support hybrid options.
Polytech	Support for multiple runtimes, languages, frameworks, and architectures
Our Primary Strength	Provides a highly productive and prescriptive developer experience for creating cloud-native (new) AND cloud-enabled (existing) applications using microservices and containerization
Primary Competitor	Pivotal Cloud Foundry
Competitor Weakness	only offer costly and risky rip and replace, build everything again development option and no modernization ramp for existing applications
Our Primary Benefit	Enables organizations to deliver software driven transformation and innovation at the pace of business, without limiting the development, test, deployment and modernization preferences and options.