Build your game plan for enterprise Java 2020

Christina Wong
Principal Product Marketing Manager, Red Hat

Rich Sharples
Senior Director of Product Management, Red Hat

@richsharples
Agenda

- A short history of Java EE
- Business is changing
- Introducing JBoss EAP 7
- New drivers for application development
- The application server is dead
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- A short history of Java EE
- Business is changing
- Introducing JBoss EAP 7
- New drivers for application development
- The application server is dead; long live the cloud-native, polyglot, poly-architecture, multi-cloud application platform
A short history of Java EE
The Rise of Java EE

“This platform is an architecture for developing, deploying, and executing applications in a distributed environment. These applications require system-level services, such as transaction management, security, client connectivity, and database access. The J2EE platform provides these services, allowing you to focus on the business logic in your applications, not the system-level plumbing.”

J2EE 1.2 Specification, 1999

- Initially developed to stop Microsoft doing to the data-center what it had already done to the desktop
- True multi-tier enterprise platform (Web, Biz Logic, Data Access)
- True collaborative process (JCP) - Sun, IBM, Oracle, BEA, etc.
Java EE - a brief history
Java EE - a brief history
The Value of Java EE

- An **open standard** platform that enables vendors to compete on implementation, price, or business model
- A **collaborative standard and process** that is driven by many vendors and individual developers rather than a single vendor
- **Consistent and holistic** vision for all architectural tiers of the application
- A strong focus on **adherence** to the **standard** and **compatibility** between vendor implementations and versions of the specifications
## Java EE - Current State

<table>
<thead>
<tr>
<th>J2EE 1.2</th>
<th>J2EE 1.3</th>
<th>J2EE 1.4</th>
<th>Java EE 5</th>
<th>Java EE 6 (Web Profile)</th>
<th>Java EE 7</th>
<th>Java EE 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Released</td>
<td>1999</td>
<td>2001</td>
<td>2003</td>
<td>2006</td>
<td>2009</td>
<td>2013</td>
</tr>
<tr>
<td>Vendors</td>
<td>18</td>
<td>22</td>
<td>18</td>
<td>13</td>
<td>9 (10)</td>
<td>5</td>
</tr>
<tr>
<td>Pages in Spec.</td>
<td>140</td>
<td>174</td>
<td>246</td>
<td>222</td>
<td>236 (20)</td>
<td>286</td>
</tr>
<tr>
<td>Refd. Specs.</td>
<td>10</td>
<td>13</td>
<td>20</td>
<td>28</td>
<td>35 (6)</td>
<td>38</td>
</tr>
</tbody>
</table>
Java EE - Current State

Java EE 8 - 2017 ?
Java EE 8 - focus ?
Announced at DevNation on Monday
Collaboration between Red Hat, IBM, Tomitribe, Payara and the Java EE community
Focussed on a minimal standard profile for Java microservices
Working towards implementations by Java One 2016
WildFly Swarm will be Red Hat’s implementation
The world is changing
DIGITAL TRANSFORMATION
SOFTWARE IS THE DIFFERENCE

“The scope [of IT] has totally changed.”
“...you have to almost think about how do we [leverage IT] to help our customers...”

“Now, we really have to think more about the revenue side”

- Marcy Klevorn, CIO, Ford Motor Company
  Wall Street Journal, Feb. 21, 2016
SPEED = REVENUE
FUNDAMENTALLY DIFFERENT

ARCHITECTURE ↔ PROCESS ↔ PLATFORMS
ARCHITECTURE

API-centric

User-first

Microservices
PROCESS

DevOps

Agile

Citizen developers
PLATFORM

Cloud-based
Middleware services
Application lifecycle management
Mobile
Overview

- Full Java EE 7
- Enterprise performance
- Open source innovation
- Lightweight footprint
- Seconds to start up

- Optimized for cloud and containers
- Built to maximize developer productivity, minimize administrative work
- Flexible, comprehensive subscription
Benefits

- Reduce, reuse: Free up resources from maintenance
- Meet a diverse range of Java app requirements
- Build once, deploy anywhere - all with a single subscription
- DevOps integrated: Get apps out faster, and more frequently
- Reduce time and effort on maintenance, updates large scale deployments
What’s new?

- Java EE 7 certified
- Intuitive new web console
- New high performance web server - Undertow
- OpenShift container support
- Updated messaging subsystem based on Apache ActiveMQ Artemis
- Migration operations and interoperability (previous JBoss EAP to JBoss EAP 7)
- Graceful shutdown for minimally disruptive updates
- Management and monitoring via JBoss Operations Network 3
New drivers for application development
THE NEW ARCHITECTURE

API

asynchronous  
event-driven  
anti-fragile

scalable  
polyglot  
velocity

reactive  
agile

micro-services
APIs @ Red Hat

- Market-leading, full-stack API management platform
- Comprehensive coverage of API Economy use cases from API development through management
- API governance for mobile channels with Red Hat Mobile Application Platform
- OpenShift integration brings API management to containerized applications and microservices architectures
- Proven combination with Red Hat customers
The 3scale Platform

Control
- Security
- Key Management
- Rate Limiting
- Policy Enforcement
- App & User Management
- Provisioning

Flexibility
- Distributed
- Multi-Department
- Multi-Environment
- Highly Scalable
- Powerful APIs
- Webhooks

Visibility
- Analytics
- App Tracking
- User Tracking
- Traffic Alerts
- Engagement
- Developer Support

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Microservices - A Definition

“... is an approach to developing a single application as a suite of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource API. These services are built around business capabilities and independently deployable by fully automated deployment machinery. There is a bare minimum of centralized management of these services, which may be written in different programming languages and use different data storage technologies.”

- Martin Fowler

http://martinfowler.com/articles/microservices.html
## Microservices scorecard

<table>
<thead>
<tr>
<th>Service Isolation</th>
<th>Linux Containers / Docker</th>
<th>✔</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lightweight Interconnect</strong></td>
<td>Kubernetes: Services, Service Registry, HTTP, DNS</td>
<td>✔</td>
</tr>
</tbody>
</table>
| **Polyglot**                      | Language Choice (Java, Ruby, Node.js, ...)  
|                                   | Middleware Choice (EAP, Fuse, BRMS, JDG, A-MQ, ...) | ✔   |
| **Automation**                    | Automated Build & Provisioning with OpenShift and source-to-image, CDK | ✔   |
| **Centralized Management**        | OpenShift Administration Console  
|                                   | ● No pollution of application (not invasive)  
|                                   | ● Consolidated logging (EFK)  
|                                   | ● Drill-down into domain-specific management views | ✔   |
Welcome to the cloud-native, polyglot, poly-architecture future
Learning more at Red Hat Summit
Related Sessions

Modern management of Red Hat middleware with Red Hat management products
John Doyle, Thomas Heute

Getting your Java EE apps ready for the cloud with Red Hat JBoss EAP 7 and OpenShift by Red Hat
Christina Wong, Thomas Qvarnstrom

Orchestrating JBoss middleware with Ansible Tower
Marc Zottner, Patrick Steiner

Building Red Hat JBoss EAP microservices on OpenShift Enterprise by Red Hat
Babak Mozaffari

Java EE and NoSQL using JBoss EAP 7 and OpenShift Enterprise by Red Hat
Arun Gupta

From 6 weeks to 6 minutes! - Dienst Uitvoering Onderwijs’s migration to Red Hat
Jan-Taeke Schuilenga (DUO), Roeland van de Pol

Migration to Red Hat JBoss Middleware—easy, predictable, proven
Brad Davis, Tobias Hartwig

Modernizing your enterprise application architecture
John Clingan, Bruno Georges
Like a sports car, JBoss EAP 7 is fast, agile, lightweight, and secure.

To celebrate the JBoss EAP 7 launch, you can register to win the cash to buy the car!

Visit display at Moscone West lobby to learn how.
POWER UP and PARTY DOWN with Red Hat Mobile, Middleware and OpenShift.

Wednesday evening 9PM – 12AM

Pick up your invitation for the party that beats all parties at: Mobile, Middleware or OpenShift demo pods in the Red Hat Booth, Partner Pavilion
Questions ?