Make the Future Java

- Platform Completeness
- Modernization and Innovation
- Developer Productivity
- Open, Transparent Evolution
- Active Community Involvement
- Quality and Security

Java Strategy and Vision

Java SE

- **JDK 7:** adoption strong among ISVs, hosting providers, developers

- **JDK 8/9:** Lambda, JavaScript interop and JVM convergence in 8, Jigsaw in 9

- **JDK 9 and beyond:** generic language interop, GPU programming, enhancements for cloud

JavaFX/Client

- Rich UI for tools, desktop and embedded applications

- Integration with Swing/SWT/HTML5 content

- Enable App Stores and other bundled deployment models

- Move away from browser plugin over time

Java EE

- **Java EE 6:** Wide developer adoption; Available on all application servers

- **Java EE 7:** Target early 2013; Focus on HTML 5 and developer simplicity

- **Java EE 8:** Continued investment in Cloud capabilities and modularity

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Java Strategy and Vision

Java ME

- Move towards single platform JSR
- Subset of SE, merge ME/SE tool and API ecosystems
- Generic small footprint platform for small embedded devices
- Enable Java everywhere in "Internet of Things"

Java Card

- Expand to generic security platform any device
- Enable rich ecosystem of security applications
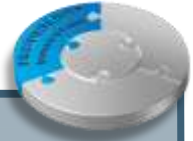- Use as foundation for security in "Internet of Things"

NetBeans

- Day one support for new Java ME, SE and EE releases
- Support emerging technologies such as HTML 5
- Complete end-to-end development experience for web, desktop and embedded

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Java Scorecard 2012

Java SE	• **Added OS X and Linux ARM** • **7 update release and more than 300 enhancements**
JavaFX	• **JavaFX 2.2 for Windows, OS X, and Linux** • **JavaFX 1.0 SceneBuilder for Windows and OS X** • **Open sourcing of JavaFX provides new opportunities for the community**
Java ME/ Embedded	• **Introduced Java Embedded Suite – middleware stack for embedded** • **Introduced Java ME Embedded for Java on microcontrollers** • **Java ME/SE alignment planned for ME/SE 8 in CY2013** • **Java ME 8 JSR submission being prepared in JCP**
Java EE	• **2 GlassFish releases** • **Java EE 7 specification plan re-calibrated and due in CY2013** • **Java EE 7 with HTML5 simplification**

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Java Scorecard 2012

OpenJDK	• **New projects: Penrose, OpenJFX, PowerPC/AIX ports, Sumatra GPU support** • **Governance updates: Andrew Haley elected, and Doug Lea reelected** • **68 new OpenJDK contributors, including CBOE, SUSE, Taobao and numerous accomplished individuals**
JCP	• **JCP.next: Greater transparency, Merge two ECs, Revised JSPA** • **Adopt a JSR program initiated by London Java Community and SouJava** • **21 JSRs started since JavaOne 2011**
JUGs	• **25% increase in JUGs worldwide (from 157 to 197)** • **20+ new JUGs added this year, and growing** • **36% increase in JUG visits (from 50 to 68)**

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Java Scorecard 2012

Oracle Leadership - Results

|	
Ongoing Investment	• **Continued growth of Oracle investment** • **4 regional JavaOne events with over 5,000 attendees**
Community Outreach	• **Launched Java Magazine: 120K subscribers in first 12 months** • **17% increase in Java Developers Days (from 46 to 54)** • **Evangelism outreach touched more than 500k developers WW**
Validation	• **17% increase in Java.net registered users (from 700K to 820K)** • **8% increase in active NetBeans users (1.1M to 1.22M)**

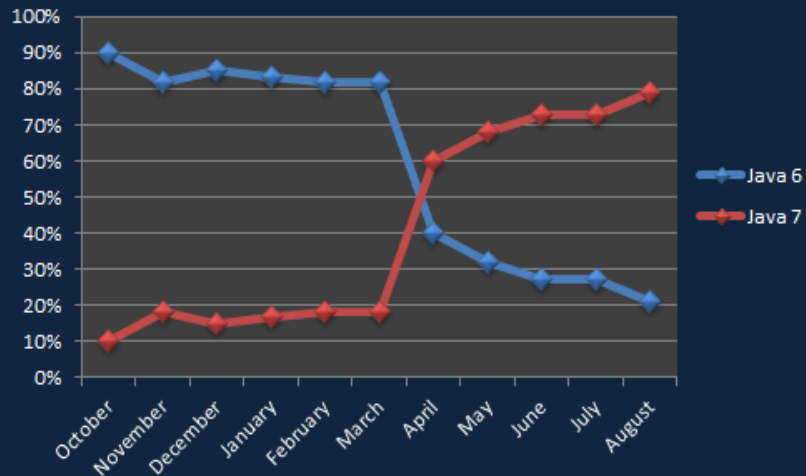JavaOne   ORACLE

The Java Platform
Java SE and JavaFX

Java SE 7 Uptake

Oracle JRE 7 Downloads
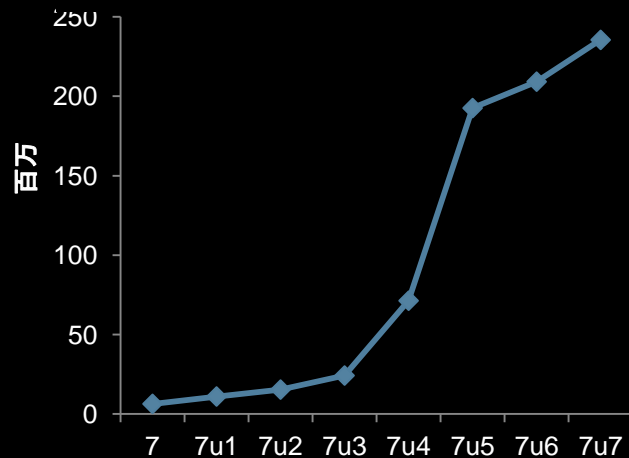
Java version market share by time period, Oct 2011 - Aug 2012

Source: Hosting statistics from Jelastic.com.

Java 7 on OS X and Linux/ARM
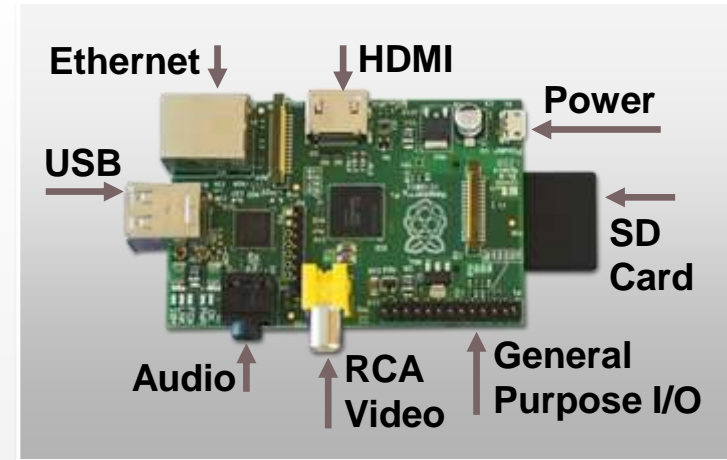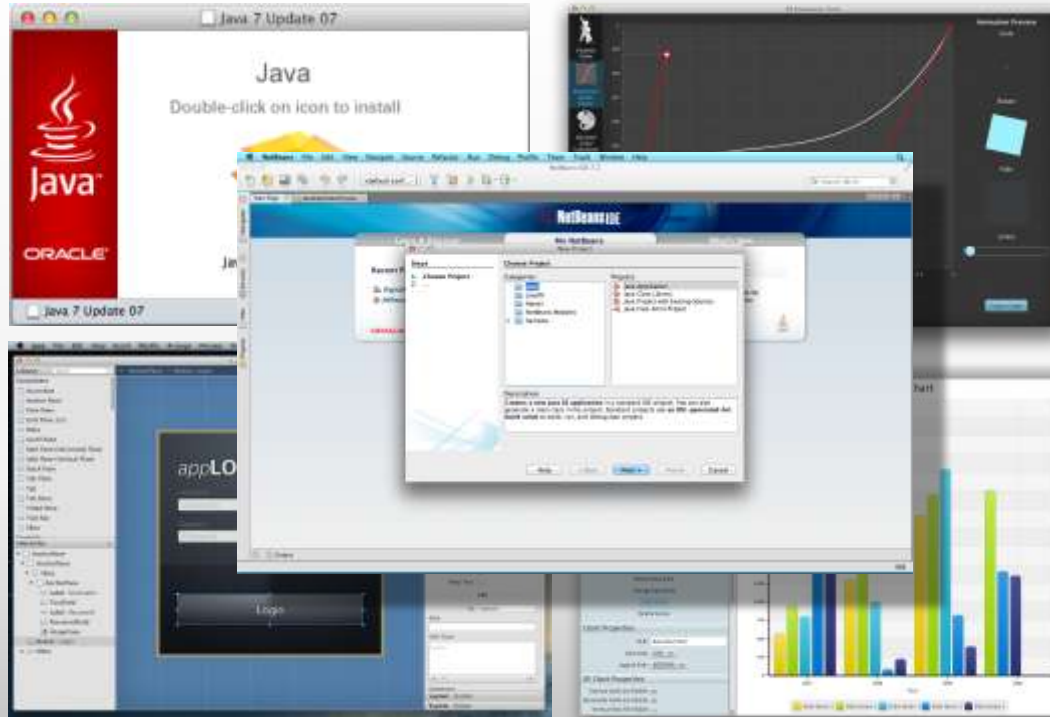

Ethernet HDMI
Power
USB
SD Card
Audio RCA Video General Purpose I/O

Image source: Boston Ltd., UK

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JDK 8

Innovation
- Lambda aka Closures
- Language Interop
- Nashorn
- JavaBean access

Core Libraries
- Bulk Data operations for Core Collections APIs
- Improvements in functionality
- Improved type inference

General Goodness
- JVM enhancements
- No PermGen limitations
- Performance Improvements

Java for Everyone
- Profiles for constrained devices
- JSR 310 - Date & Time APIs
- Non-Gregorian calendars
- Unicode 6.1
- ResourceBundle.
- BCP47 locale matching
- Globalization & Accessibility

Tools
- Compiler control & logging
- JSR 308 - Annotations on Java Type
- Native app bundling
- App Store Bundling tools

Client
- Deployment enhancements
- JavaFX 8
- Public UI Control API
- Java SE Embedded support
- Enhanced HTML5 support
- 3D shapes and attributes
- Printing

Security
- Profiles for constrained devices
- Limited doPrivilege
- NSA Suite B algorithm support
- SNI Server Side support
- DSA updated to FIPS186-3
- AEAD JSSE CipherSuites

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Project Nashorn

JavaFX Update

OpenJFX project created

Linux Developer Preview

JavaFX 2.1 for OS X

JavaFX 2.2 for Linux

Scene Builder 1.0

Dec 11   **Jan 12**   **Apr 12**   **Aug 12**

NetBeans 7.2 with FX 2.1 and Scene Builder integration

NetBeans 7.3 integrating FX WebView

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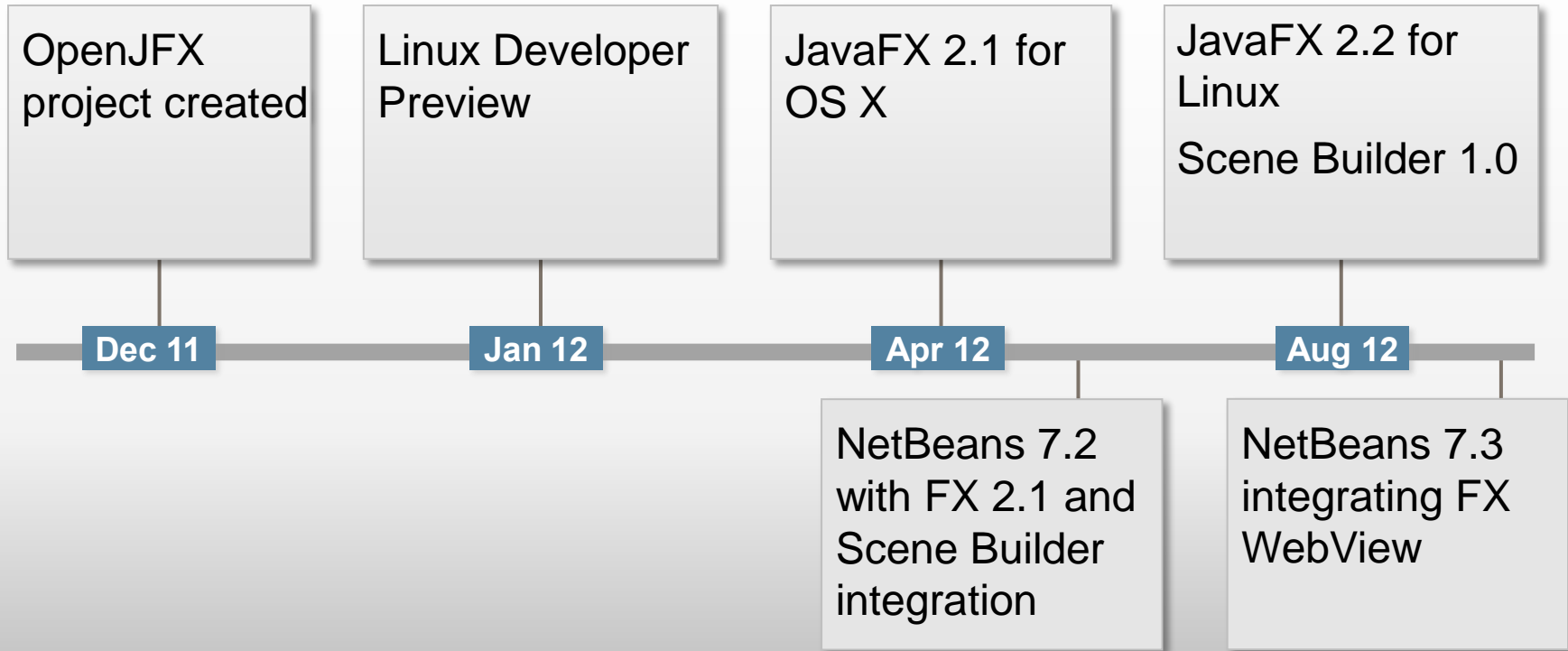
JavaFX 2.2 and Beyond
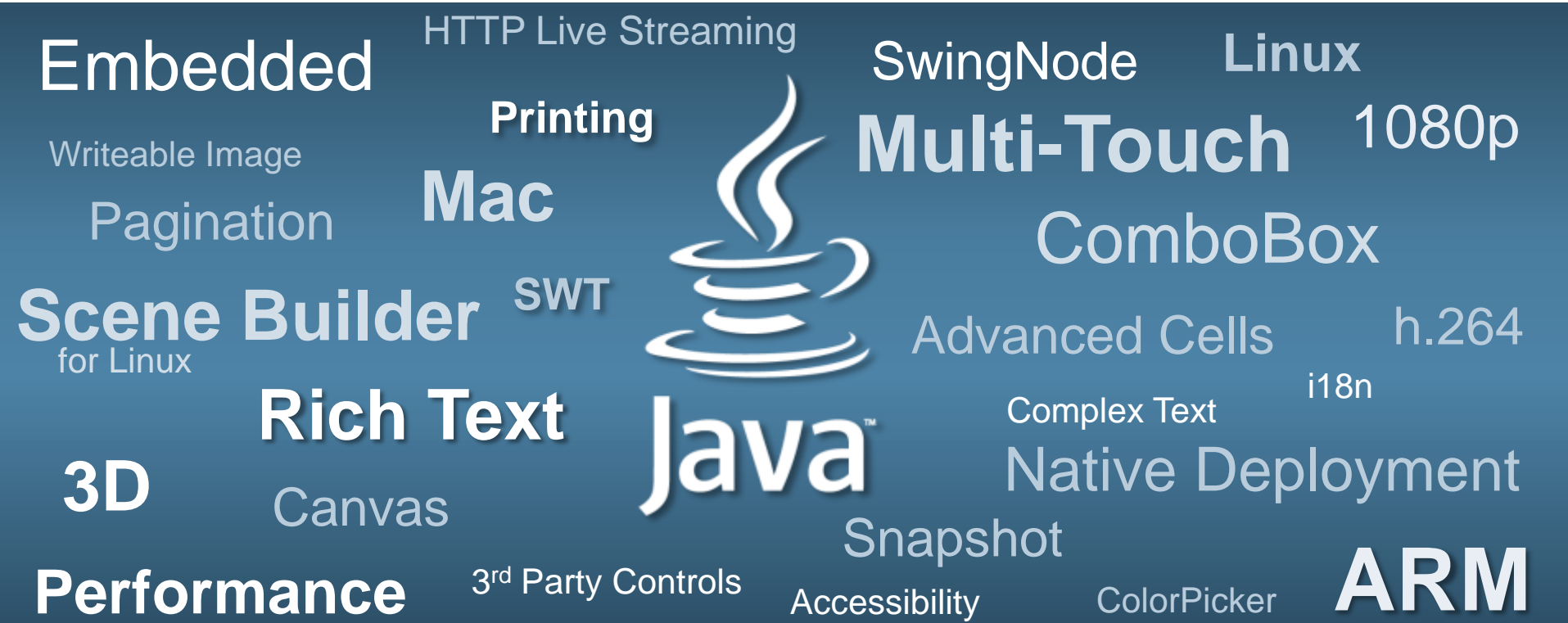
JavaFX Deployments

To Java SE 9 and Beyond!

Project Sumatra – Java for GPUs

Improved Integration with Native

Lang Enhancements

Cloud

OpenJFX

Resource Management

Self Tuning JVM

Optimizations

Generic Lang Interoperability

Multi-Tenancy Support

Ease of use

Modularity

Unified Type System

Ports: Power PC/AIX

Data Structure Optimizations

Penrose

Roadmap

Java SE

7u6
- JRE on Mac complete
- JavaFX 2.2 integration
- Linux ARM V6/V7
- JavaFX on Mac and Linux

Major Serviceability improvements
- Java Flight Recorder in JDK
- Native memory tracking
- Java Discovery Protocol
- App Stores Packaging tools
- Last Public Release of JDK 6

JDK 8
- Lambda
- Complete JVM Convergence
- JavaScript Interop
- JavaFX 8
  – Public UI Control API
  – Java SE Embedded support
  – Enhanced HTML5 support

JDK 9
- Jigsaw
- Interoperability
- Optimizations
- Cloud
- Ease of Use
- JavaFX JSR

2012 — **2013** — **2014** — **2015**

NetBeans IDE 7.2
- Support for JDK 7 on Mac
- Support for JavaFX on Mac and Linux

Scene Builder 1.0
- Windows and Mac

NetBeans IDE 7.3
- Scene Builder 1.1 support

Scene Builder 1.1
- Linux support

NetBeans IDE 8
- JDK 8 support
- Scene Builder 2.0 support

Scene Builder 2.0
- JavaFX 8 support
- Enhanced Java IDE support

NetBeans IDE 9
- JDK 9 support
- Scene Builder 3.0 support

SceneBuilder 3.0
- JavaFX 9 support

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Test Pilots Wanted

Java SE and JavaFX

- Feature complete for JDK 8 in January of 2013, developer preview in February

  - Schedule on http://openjdk.java.net/projects/jdk8

- JDK 8 builds with many features already available

  - Try out Lambda and check out JavaFX 8

  - Early access on http://jdk8.java.net/

- Jigsaw builds also available from Java.net

- Join OpenJFX and put your print on new JavaFX API

Java Embedded

Java Embedded

Multi-function Embedded Devices

Personal Devices

Communications

Industrial controls & Network Appliances

Smart Appliances & Consumer Electronics

Smart Energy & mHealth

Sensors & Micro controllers

Connected Vehicles

JavaOne
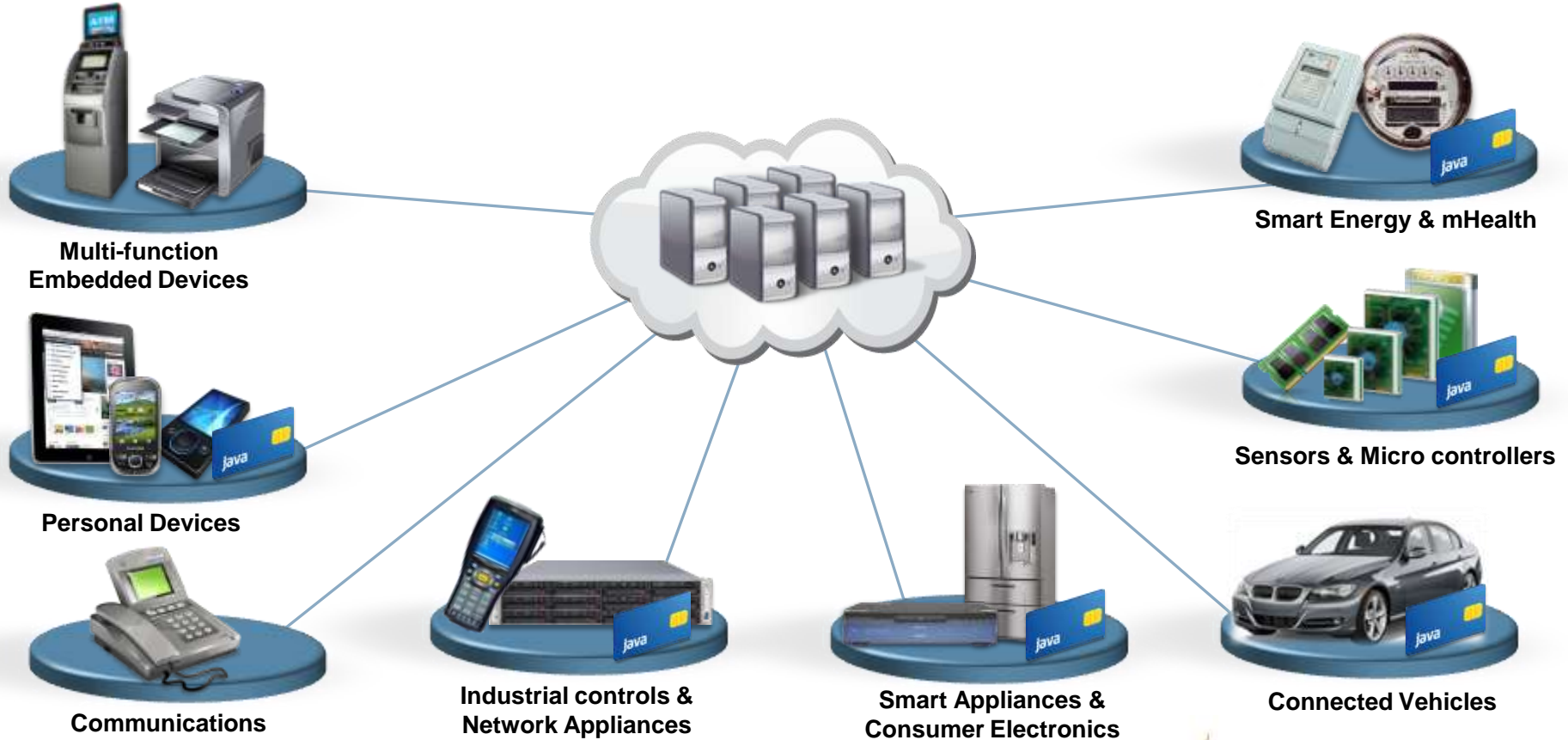
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Oracle Java Embedded Offering Today

Platform Footprint

SECURITY   **SMALL**   **MEDIUM**   **LARGE**

10MB-100MB

SE-E

1MB-10MB

OJEC

Java card

50KB-1MB

ME-E

Device CPU/ GPU/I-O

ARM 7   Cortex M   ARM9/11   MIPS32/Intel   Atom/ARM   CortexA/PPC

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New Embedded Releases
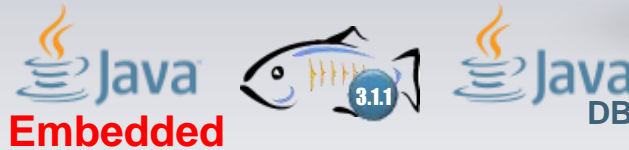

Java ME Embedded 3.2

Runtime for small embedded devices: Microcontroller class platforms

EDGE DEVICES

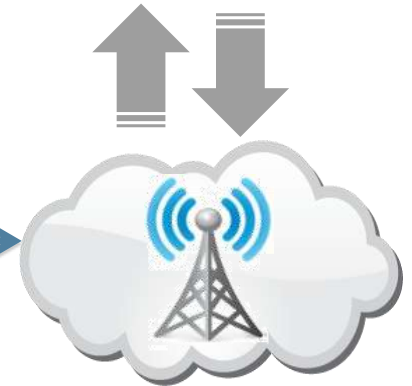**Java Embedded Suite 7.0**

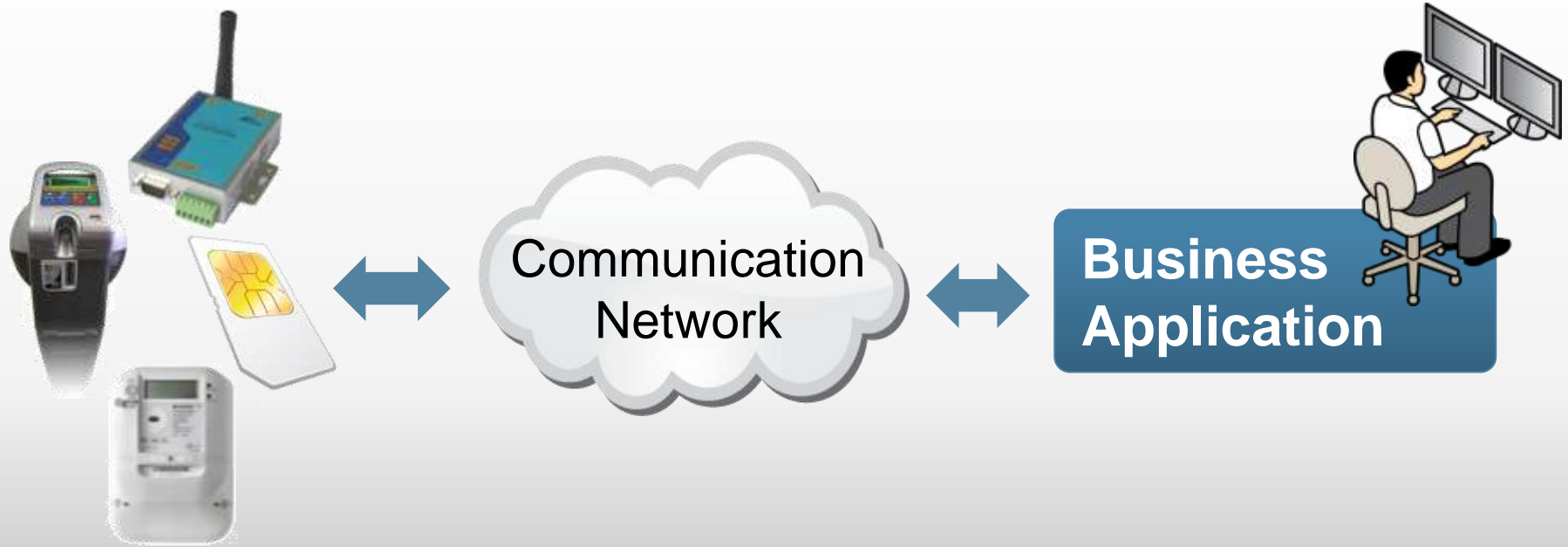Pre-integrated full featured Java Embedded Platform

Embedded

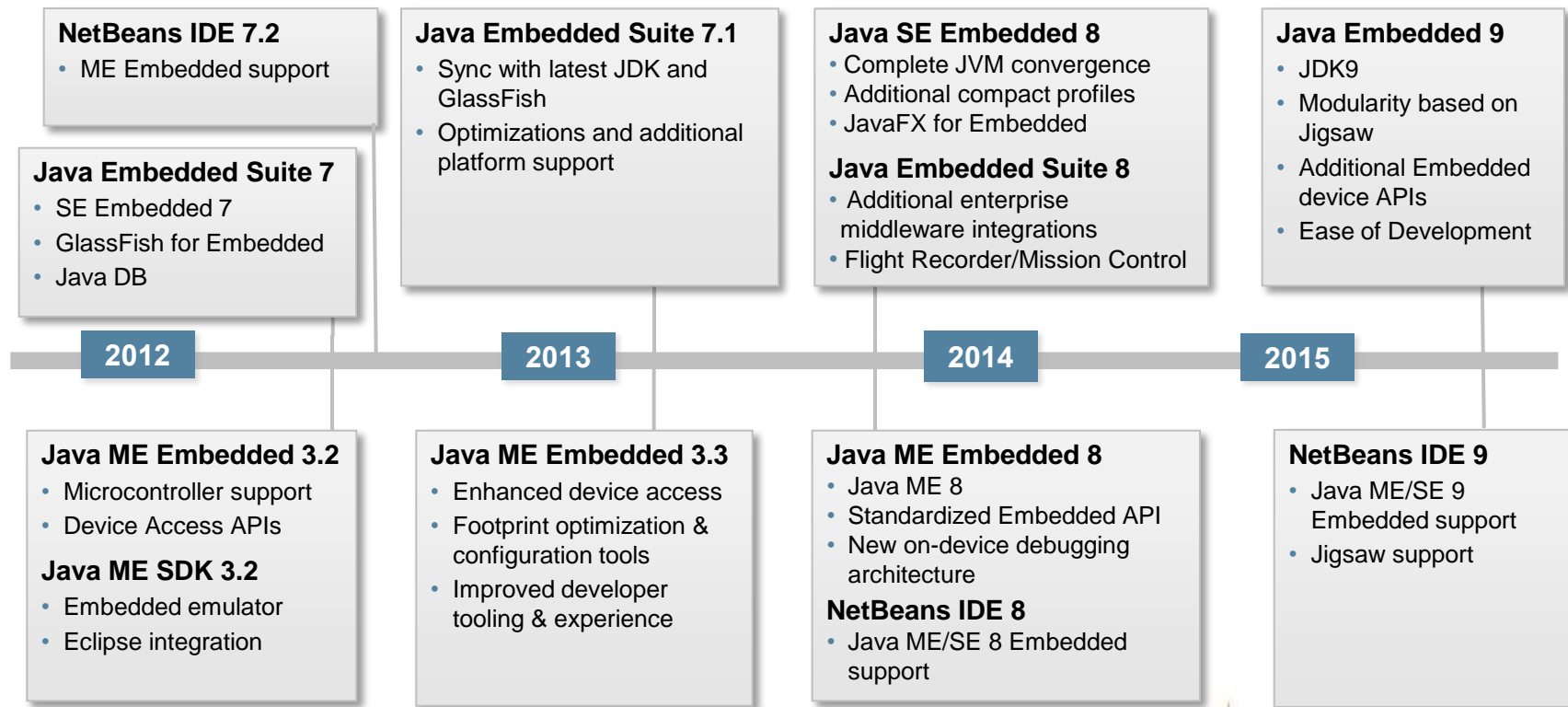**GATEWAYS/CONCENTRATORS**

Enterprise Data & Applications

Java Card

Building block for Embedded Security

Communication Network

Business Application

Roadmap

Embedded Java

NetBeans IDE 7.2
• ME Embedded support

Java Embedded Suite 7
• SE Embedded 7
• GlassFish for Embedded
• Java DB

Java Embedded Suite 7.1
• Sync with latest JDK and GlassFish
• Optimizations and additional platform support

Java SE Embedded 8
• Complete JVM convergence
• Additional compact profiles
• JavaFX for Embedded

Java Embedded Suite 8
• Additional enterprise middleware integrations
• Flight Recorder/Mission Control

Java Embedded 9
• JDK9
• Modularity based on Jigsaw
• Additional Embedded device APIs
• Ease of Development

2012　　　　**2013**　　　　**2014**　　　　**2015**

Java ME Embedded 3.2
• Microcontroller support
• Device Access APIs

Java ME SDK 3.2
• Embedded emulator
• Eclipse integration

Java ME Embedded 3.3
• Enhanced device access
• Footprint optimization & configuration tools
• Improved developer tooling & experience

Java ME Embedded 8
• Java ME 8
• Standardized Embedded API
• New on-device debugging architecture

NetBeans IDE 8
• Java ME/SE 8 Embedded support

NetBeans IDE 9
• Java ME/SE 9 Embedded support
• Jigsaw support

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Call to Action
Find out more about Embedded Java

- Download the latest releases and try Java Embedded
  - http://www.oracle.com/technetwork/java/embedded/downloads
- Join the Java Embedded community on Java.net
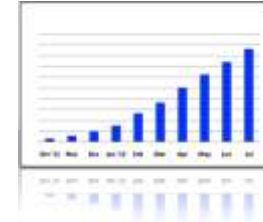
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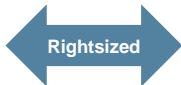# Java EE

Java EE Focus and Direction

Standard: For Developing Enterprise Applications

Productivity: For Enterprise Java Developers

Portability: Across vendors, across clouds

Extensibility: Embracing innovation

Rightsizing: Supporting modular design

Rightsized

Java EE Community

1 HUGE COMMUNITY

Java EE 7

14 active JSRs **19 spec leads** **32 companies** **201 experts**
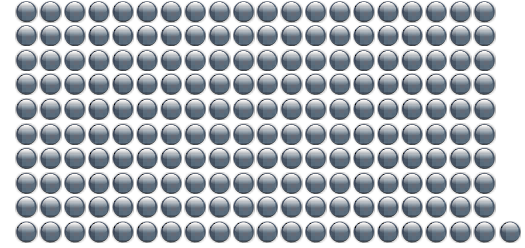
Java EE 7 — **23 active projects, active and transparent mailing lists**

GlassFish — **2 Releases shipped** — **51 promoted builds**

Java EE 6 Everywhere

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Java EE 7 for 2013

- **Scale to build dynamic HTML 5 Apps**
  - WebSockets, Servlet 3.1 NIO, Server Sent Events, JSON, REST

HTML 5

- **Continued Productivity Focus**
  - More API pruning, built on Java SE 7, broader uptake of Dependency Injection
  - And with Caching and Batch

```
@WebSocket(path="/echo")
public class EchoBean {
    @WebSocketMessage
    public String echo(String message) {
    return message + " (from your
server)";}
```

Java

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Feedback on Java EE 7

Java EE is **already 90% cloud ready** due to its focus on clear packaging, deployment and portability ...When it comes to the last 10% of unmet cloud needs, we are **clearly in a time of experimentation, nor a time of standardization...** Vendors innovate, collectively we standardize. We are not done innovating in this space.

David Blevins, Apache TomEE, Geronimo

Java EE 7 Cloud features likely to be delayed until 2015 – your view?

Right call. Cloud standardization is a bad move with the market changing so much

52%

…it is a **brave and honest decision** of the EG to realign Java EE 7 to the community needs and make a second try on Cloud and PaaS with the Java EE 8 Platform release scheduled for the spring of 2015…

Markus Eisele, Java EE Consultant
http://blog.eisele.net/

Speaking as a Java EE implementer, we (Red Hat) are **very much in support of this.** We've long advocated that we, the Java EE community **are not ready to standardize cloud yet,** and feel this is proven by OpenShift, our Java EE cloud offering, which is working well with Java EE 6.

Pete Muir, Redhat

Java EE Persistence for NoSQL

- No existing NoSQL standard yet
- EclipseLink NoSQL – JPA Style
  - MongoDB
  - Oracle NoSQL
  - Cassandra planned
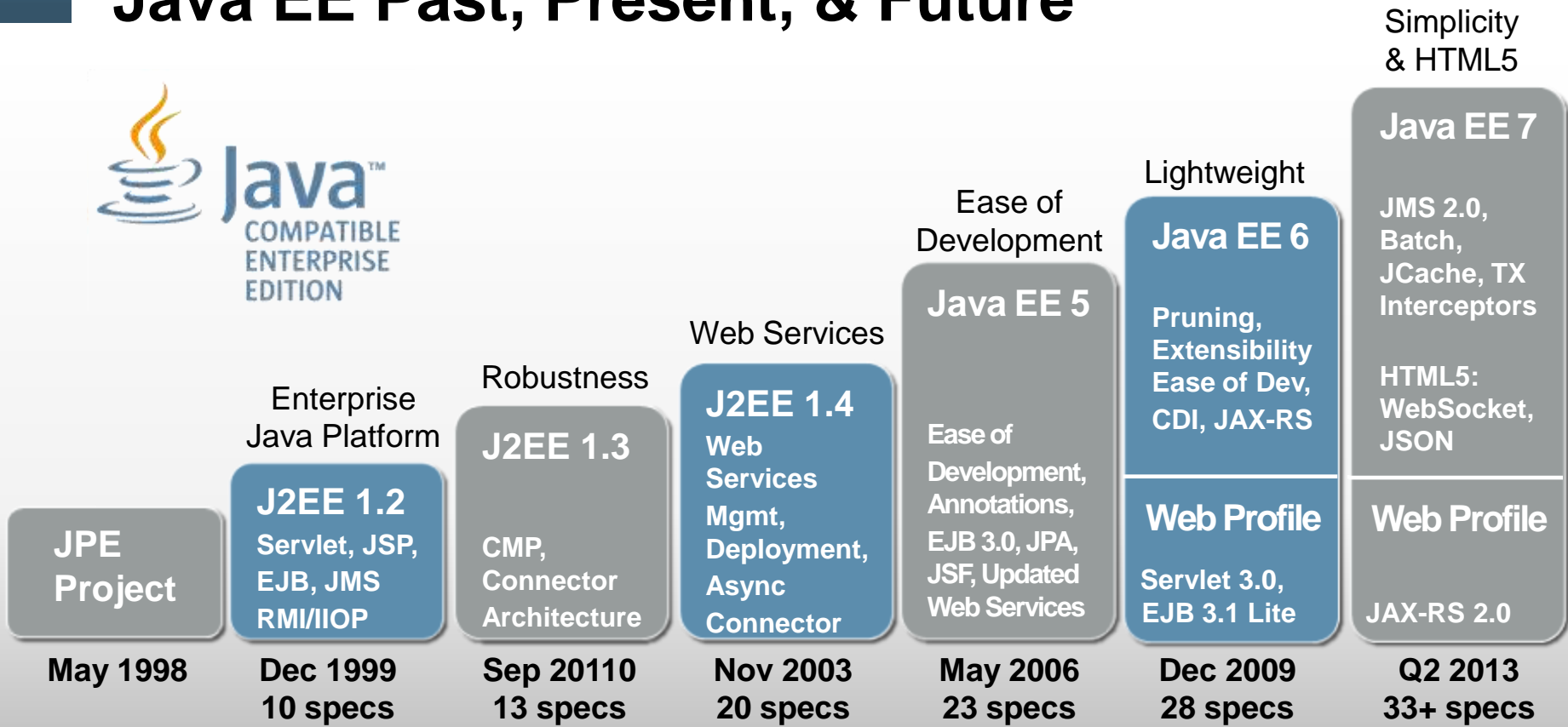 - And more coming
- Feedback wanted!

eclipse link

```
@Entity
@NoSql(dataFormat=MAPPED)
public class Order {

@Id
@Field(name="_id")
private String id;
```

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Java EE Past, Present, & Future

Simplicity & HTML5

Java EE 7

JMS 2.0, Batch, JCache, TX Interceptors

HTML5: WebSocket, JSON

Lightweight

Java EE 6

Pruning, Extensibility Ease of Dev, CDI, JAX-RS

Ease of Development

Java EE 5

Ease of Development, Annotations, EJB 3.0, JPA, JSF, Updated Web Services

Web Services

J2EE 1.4

Web Services Mgmt, Deployment, Async Connector

Robustness

J2EE 1.3

CMP, Connector Architecture

Enterprise Java Platform

J2EE 1.2

Servlet, JSP, EJB, JMS RMI/IIOP

JPE Project

Web Profile

Servlet 3.0, EJB 3.1 Lite

Web Profile

JAX-RS 2.0

| May 1998 | Dec 1999 10 specs | Sep 20110 13 specs | Nov 2003 20 specs | May 2006 23 specs | Dec 2009 28 specs | Q2 2013 33+ specs |

Java™ COMPATIBLE ENTERPRISE EDITION

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Java EE 8 and beyond

Standards-based cloud programming model

- Deliver cloud architecture

- Multi tenancy for SaaS applications

- Incremental delivery of JSRs

- Modularity based on Jigsaw (EE 9)

Storage
NoSQL
JSON-B
Concurrency
State Management
Java EE 7
Avatar
PaaS Enablement
Multi-tenancy

Java

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