#JavaDayKazan

ORACLE

# Java: эволюция неизбежна

Александр Белокрылов
@gigabel
@OracleSpb

# Make the Future Java

- Целостная платформа
- Модернизация и инновации
- Продуктивность разработчиков
- Прозрачное эволюционирование
- Вовлечение сообщества
- Качество и безопасность

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# Java стратегия развития

## Java SE

- **Переход на JDK 7:** ISV, хостинг провайдеры, разработчики
- **JDK 8/9:** Lambda, JavaScript, слияние JVM в 8, Jigsaw в 9
- **JDK 9 и дальше: G**eneric language interop, использование GPU, улучшения для облаков

## JavaFX/Client

- UI для инструментов, десктопных и встроенных приложений
- Интеграция с Swing/SWT/HTML5
- Работа с App Stores и другими моделями распространения
- Уход от плагина в будущем

## Java EE

- **Java EE 6:** Широкая распространенность; Поддерживается всеми AS
- **Java EE 7:** начало 2013; Фокус на HTML 5 упрощении разработки
- **Java EE 8:** облачность и модульность

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# Java стратегия развития

## Java ME

- Цель один JSR для платформы
- Подсистема SE, слияние ME/SE инструментария и API
- Низкие аппаратные требования для бюджетных встроенных систем
- Java в Internet of Things

## Java Card

- Платформа безопасности
- Enable rich ecosystem of security applications
- Фундамент системы безопасности Internet of Things

## NetBeans

- Поддержка новых релизов Java ME, SE и EE
- Поддержка развивающихся технологий HTML 5
- Полная поддержка end-to-end разработки для десктопа, веб и встроенных систем

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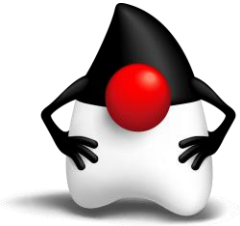
# Java SE



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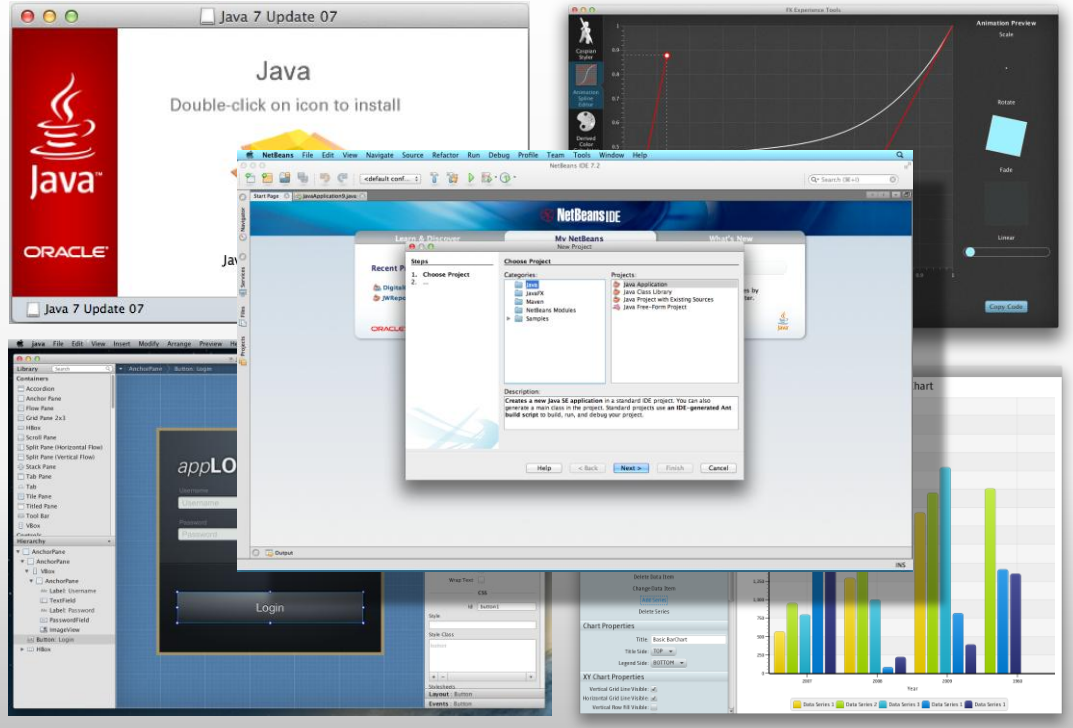
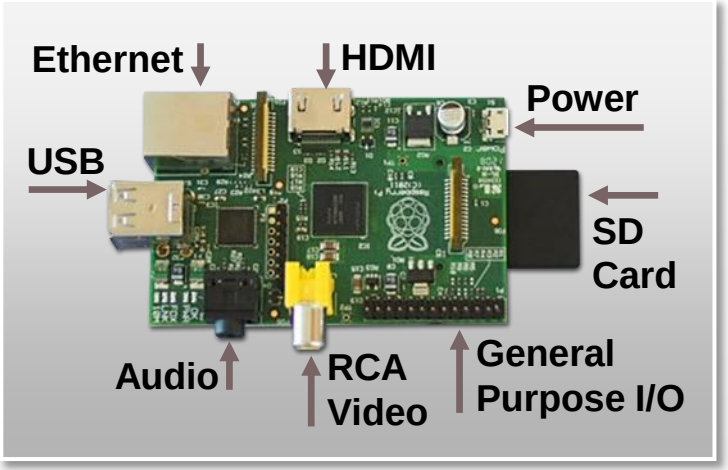
# Java 7 на OS X и Linux/ARM



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# JDK 8

Лямбды?

В *моей* Java?

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# Проект Nashorn

# JDK 8 – Type annotations

**Compile-time error**

```
int i = "Так не скомпилируется";
```

**Run-time error**

```
List<String> strings = new ArrayList<String>();
List<String> unmodifiable =
      Collections.unmodifiableList(strings);
unmodifiable.add("А так скомпилируется");
```

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# JDK 8 – Type annotations

**Method receivers**

```
public int size() @Readonly { ... }
```

**Generic type arguments**

```
Map<@NonNull String, @NonEmpty List<@Readonly
Document>> files;
```

**Arrays**

```
Document[][@Readonly] docs2 =
                      new Document[2] [@Readonly 12];
```

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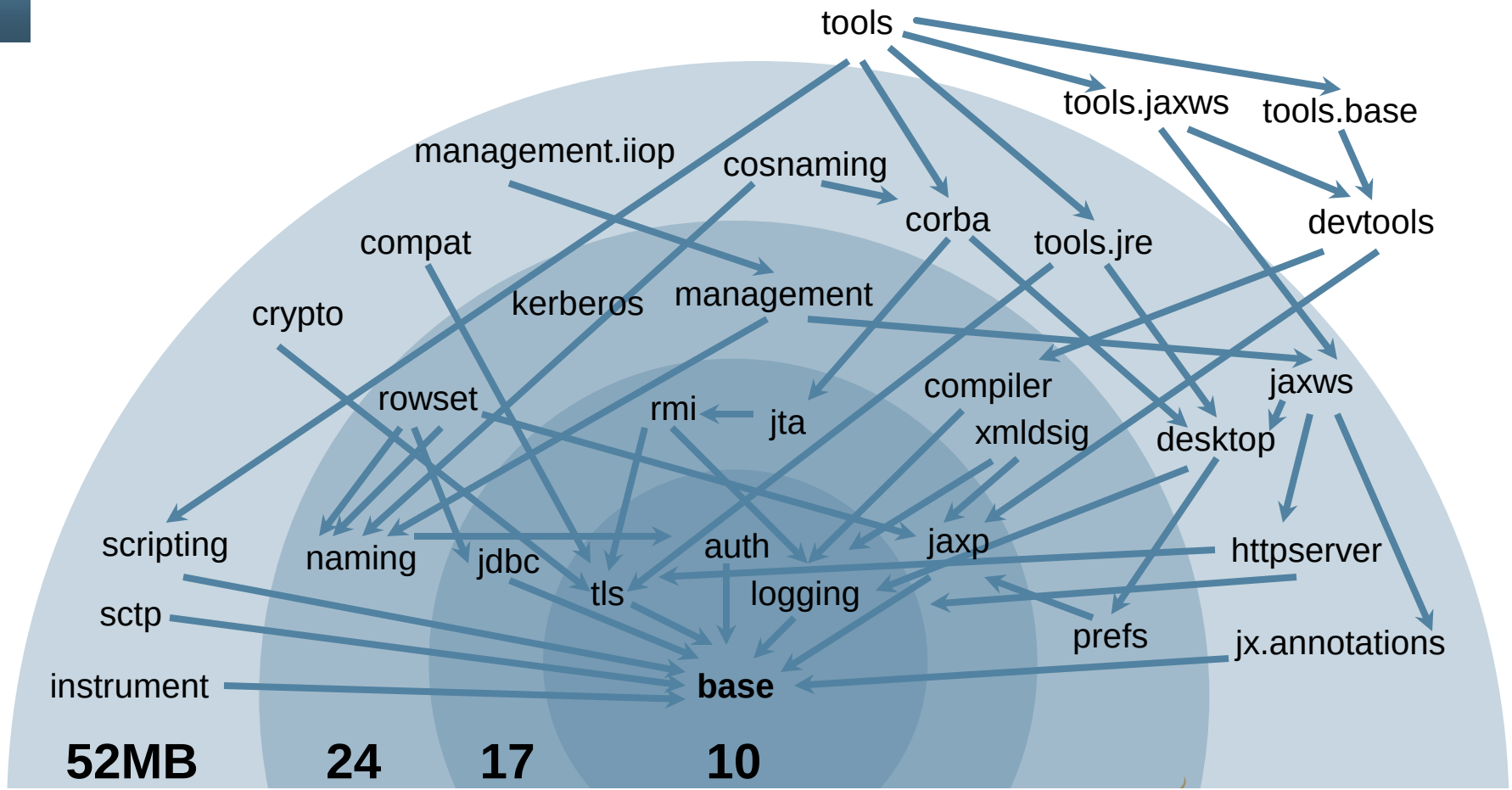
tools
tools.jaxws
tools.base
management.iiop
cosnaming
corba
tools.jre
devtools
compat
kerberos
management
crypto
compiler
jaxws
rowset
rmi
jta
xmldsig
desktop
scripting
naming
jdbc
auth
jaxp
httpserver
tls
logging
sctp
prefs
jx.annotations
instrument
base
52MB
24
17
10

# JDK 8 – Compact profiles

**compact1**
java.io
java.lang
java.math
java.net
java.nio
java.security
java.text
java.util
javax.crypto
javax.net
javax.security

**compact2**
java.rmi
java.sql
javax.rmi
javax.sql
javax.transaction
javax.xml
org.w3c.dom
org.xml.sax

**compact3**
java.lang.instrument
java.lang.management
java.util.prefs
javax.annotation.processing
javax.lang.model
javax.management
javax.naming
javax.script
javax.security.acl
javax.security.auth.kerberos
javax.security.sasl
javax.sql.rowset
javax.tools
javax.xml.crypto
org.ietf.jgss

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# JDK 8

## Innovation
- Lambda (замыкания)
- Language Interop
- Nashorn

## Core Libraries
- “Параллельные” коллекции Improvements in functionality
- Improved type inference

## General Goodness
- Улучшения в JVM
- No PermGen
- Производительность

## Java for Everyone
- Профайлы
- JSR 310 - Date & Time APIs
- Non-Gregorian calendars
- Unicode 6.1
- ResourceBundle
- BCP47 locale matching
- Globalization & Accessibility

## Tools
- Управление компилятором
- JSR 308 – аннотации Java-типов
- Нативные пакеты
- Инструменты для App Store

## Client
- Новые метод развертывания
- JavaFX 8
- Public UI Control API
- ПоддержкаJava SE Embedded
- Поддержка HTML5
- 3D формы и атрибуты
- Система печати

## Security
- Ограничение doPrivilege
- NSA Suite B algorithm support
- Поддержка SNI Server Side
- DSA обновление FIPS186-3
- AEAD JSSE CipherSuites

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# Java SE 9 и дальше!

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

Jigsaw

Unified Type System

Ports: Power PC/AIX

Data Structure Optimizations

Penrose

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# Нужны летчики-испытатели

## Java SE и JavaFX

- JDK 8 сборки уже доступны
  - Пробуйте Lambda и JavaFX 8
  - Для сильных духом http://jdk8.java.net/
- Сборки с Jigsaw также на Java.net

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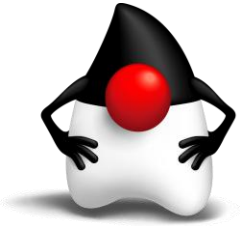
# JavaFX



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# JavaFX сегодня

FXML
Native Deployment
Linux
Charts
Writeable Image
OpenJFX
Multi-Touch
1080p
Pagination
Mac
HTML5
Web history
Charts
ComboBox
PixelWriter
Scene Builder
for Windows and Mac OS X
Swing integration
h.264
HTTP Live Streaming
GroovyFX
Windows
ScalaFX
Canvas
Java™
Hardware Accelerated Graphics
UI Controls
WebView
i18n
e(fx)clipse
ColorPicker
JavaScript-to-Java
SWT integration
IntelliJ

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# Новый метод развертывания приложений

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# Fun with Mac App Store and OpenJFX!

Store | Mac | iPod | iPhone | iPad | iTunes | Support

## Ensemble

### От Scott Kovatch

Откройте Mac App Store для покупки и загрузки приложений.

View in Mac App Store

**Бесплатно**

### Описание

Ensemble provides a gallery of over 100 sample applications that use a wide range of JavaFX features, such as graphics, UI controls, animation, charts, media and WebView. Source code for each sample and links to API documentation are also provided. Ensemble will provide developers with an interactive reference tool for what they

Веб-сайт Scott Kovatch ▸ «Ensemble» – поддержка ▸ ...Еще

### Снимки экрана

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# JavaFX Deployments

health CONNECT
ICT EXPERTISE THAT CARES

QuantCell RESEARCH

celer

navis®
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# OpenJFX!

OpenJDK

http://openjdk.java.net/projects/openjfx/

http://javafx-jira.kenai.com/secure/Dashboard.jspa

*JavaFX technology holds a lot of promise and developing it in an open-source manner only makes it more so. We would like to contribute to this project just like we contribute to OpenJDK.*

-- Deepak Bhole, Red Hat

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# JavaFX 8 и дальше

Embedded

Printing

Maven

Multi-Touch

UI Controls Public API

SwingNode

Scene Builder
for Linux

Advanced Cells

Rich Text

TreeTableView

3D

Complex characters

Snapshot

Accessibility

Performance

ARM

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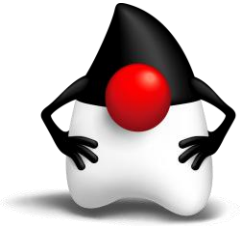
# Java ME & Embedded



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# Java Embedded – Java для встроенных систем

Multi-function Embedded Devices

Personal Devices

Communications

Industrial controls & Network Appliances

Smart Appliances & Consumer Electronics

Smart Energy & mHealth

Sensors & Micro controllers

Connected Vehicles

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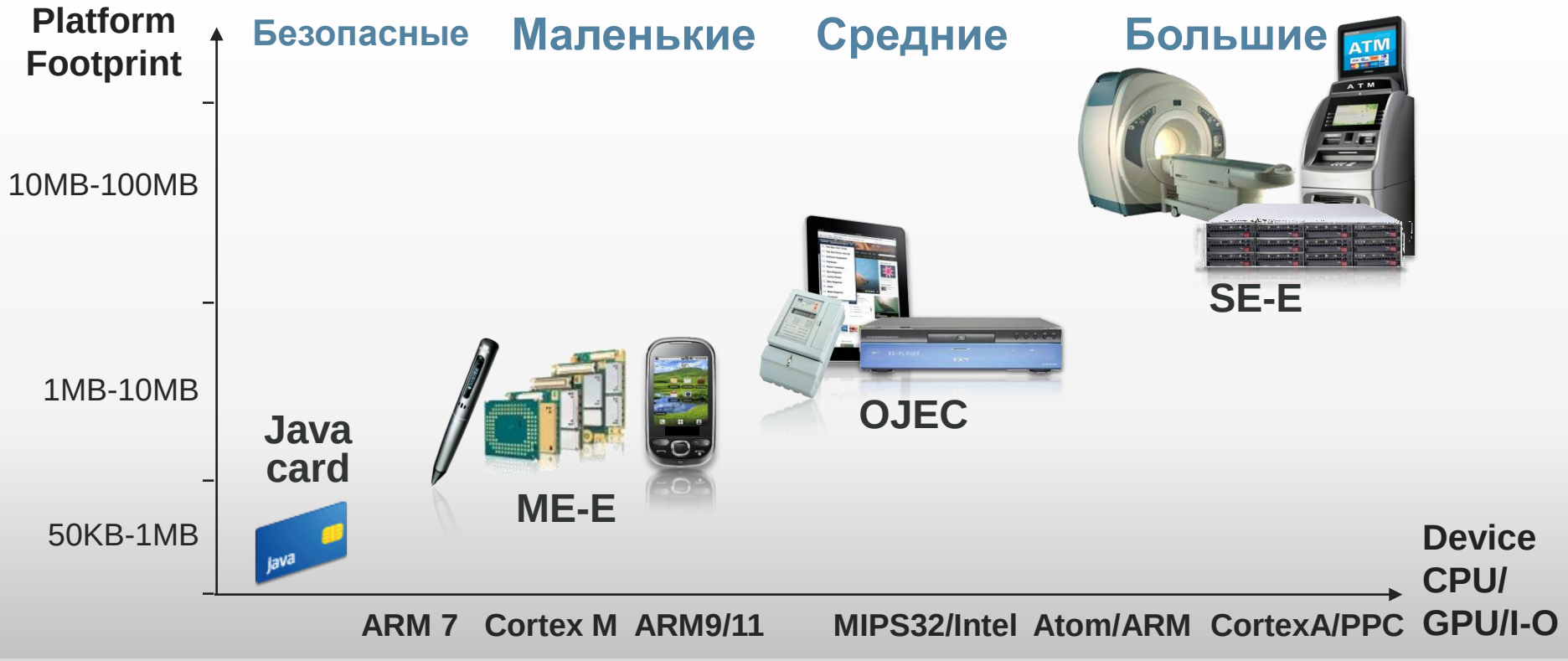
# Oracle Java Embedded Offering Today

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# New Embedded релизы

## Java ME Embedded 3.3

**Runtime: платформы на микроконтроллерах**

**Оконечные устройства**

## Java Embedded Suite 7.0

**Интегрированная Java платформа для встроенных систем**

Java Embedded 3.1.1 Java DB

**Концентраторы**

## Данные & Приложения

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# Java Card

## Основа для системы безопасностии Embedded

Communication Network

Business Application

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# Что делать?

## Узнайте больше о Java Embedded

- Доклад Артура Пилипенко
- Скачать и попробовать Java Embedded
  - http://www.oracle.com/technetwork/java/embedded/downloads
- Вступить в сообщество Java Embedded на  Java.net

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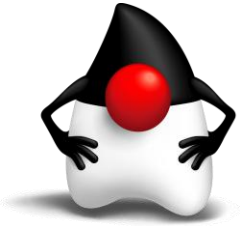
# Java EE



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# Java EE фокус и направление развития

**Стандарт:** для приложений

**Продуктивность:** для разработчиков

**Переносимость:** между вендорами

**Расширяемость**: выбираем лучшее

**Модульность**: модульная архитектура

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# Java EE сообщество

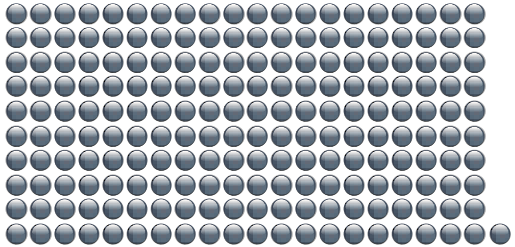
**Java EE 7**

## 1 сообщество

14 JSRs

19 spec leads

32 компании



201 эксперт

**Java EE 7**

23 активных проекта

**GlassFish**

84 билда

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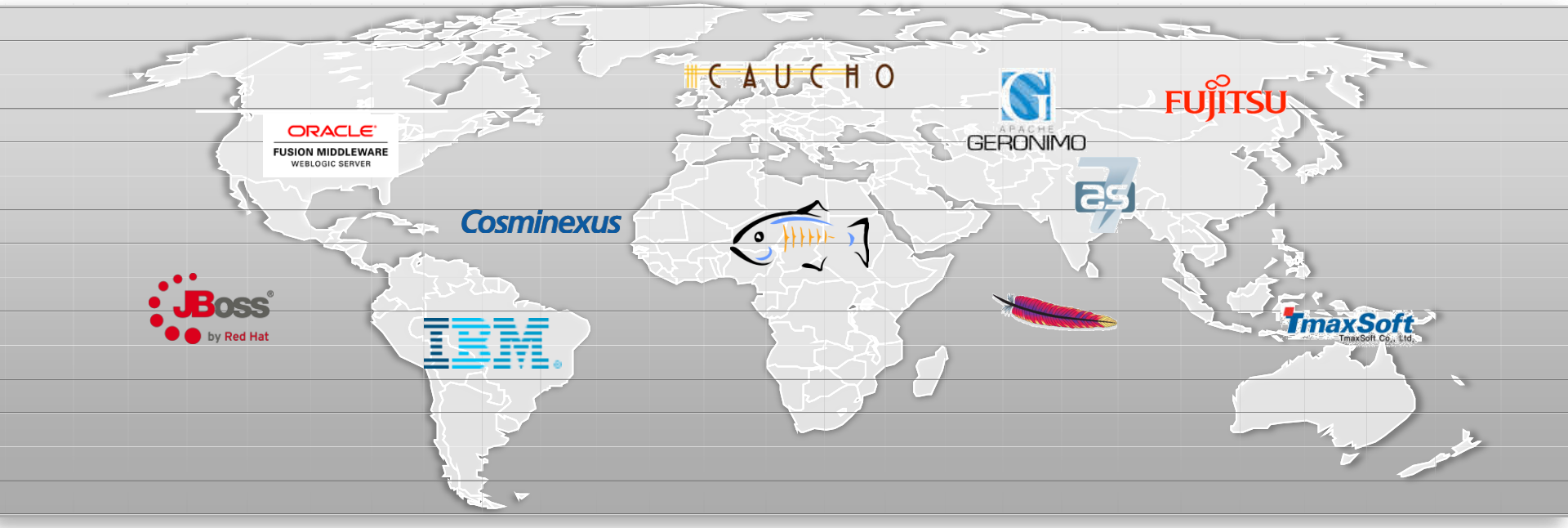
# Java EE 6 мировое господство

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# Люди говорят

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, not yet 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***

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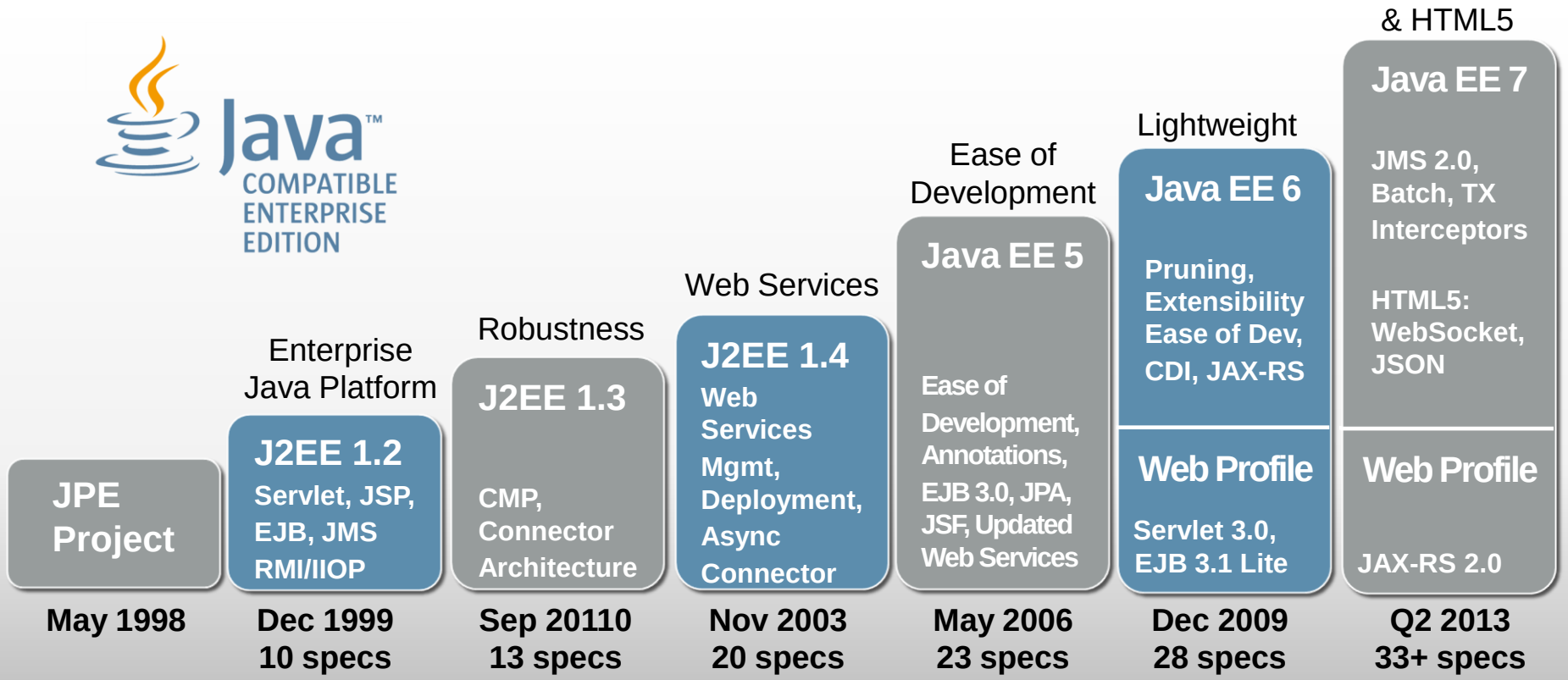
# Java EE прошлое, настоящее, будущее

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# Java EE 7 пересмотренный фокус

## Продуктивность и HTML5

- Продуктивность разработчиков
  - меньше Boilerplate
  - Больше функциональности
- HTML5
  - WebSocket
  - JSON
  - HTML5 Forms

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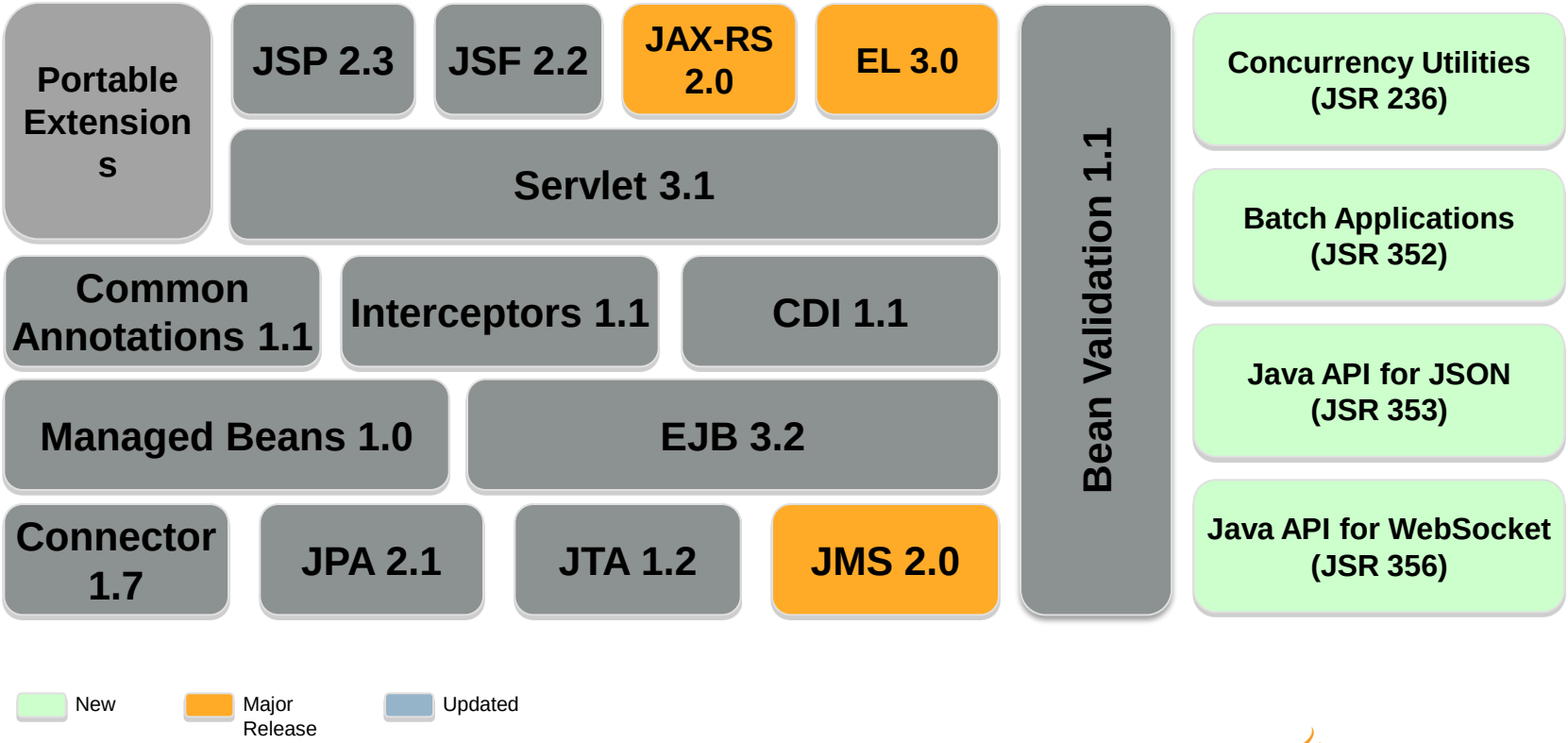
# Java EE 7 JSRs

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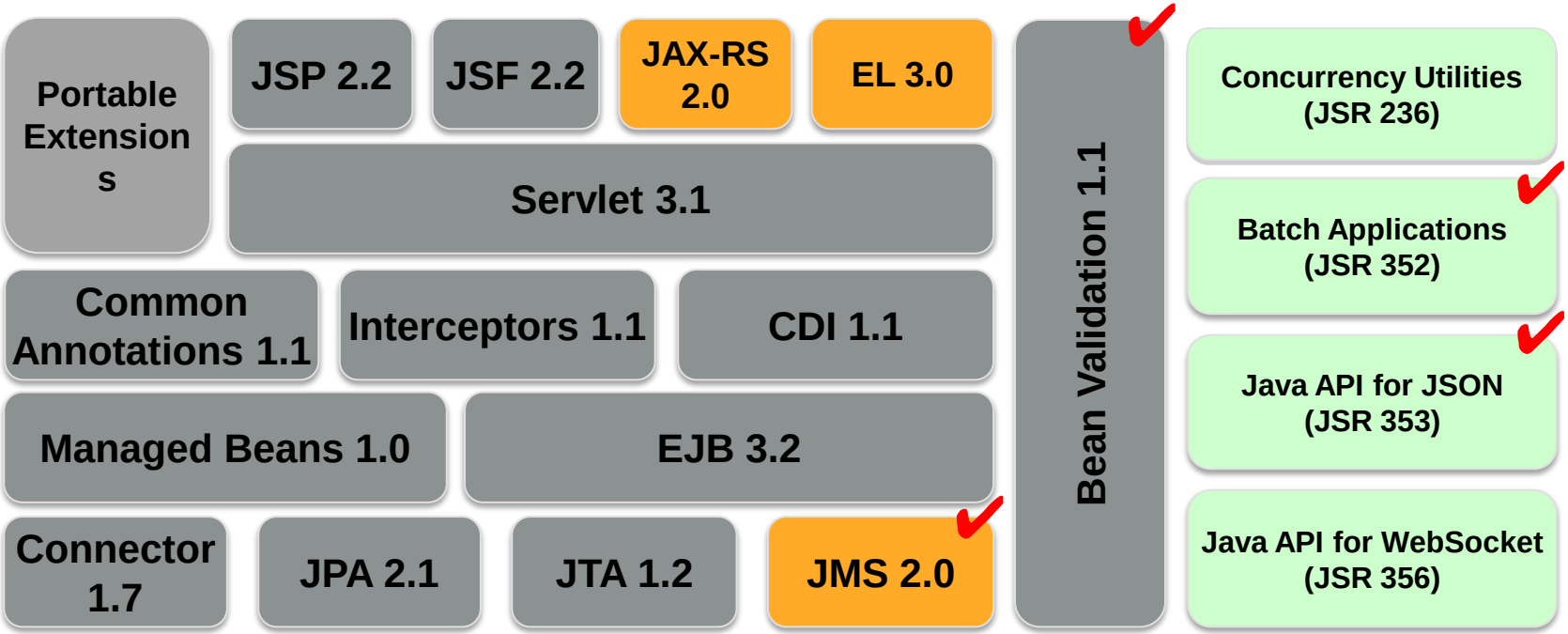
# Java EE 7 – статус спецификации




✔ Final

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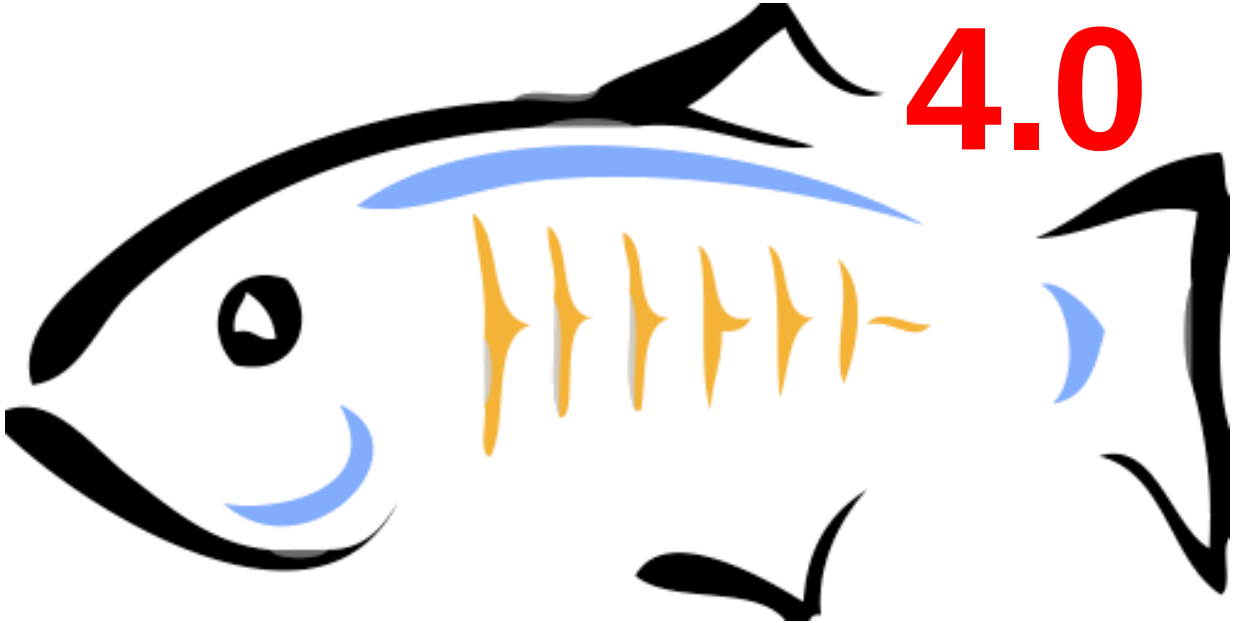
# Java EE 7 – текущая имплементация




download.java.net/glassfish/4.0/promoted/

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# Java EE Persistence для NoSQL

- NoSQL не стандартизирован
- EclipseLink NoSQL – JPA Style
  - MongoDB
  - Oracle NoSQL
  - Cassandra в планах
  - И много больше
- Нужны хорошие советы!

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

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

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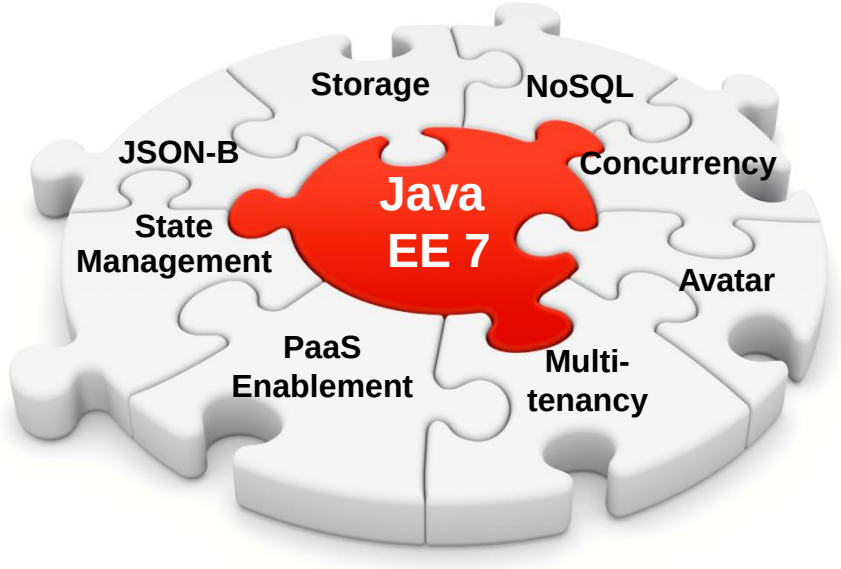
# Java EE 8 и дальше

## Стандартизированная программная модель для облачных сервисов

- Облачная архитектура
- Multi tenancy для SaaS приложений
- Последовательное внедрение JSRов
- Модульность с Jigsaw (SE 9)

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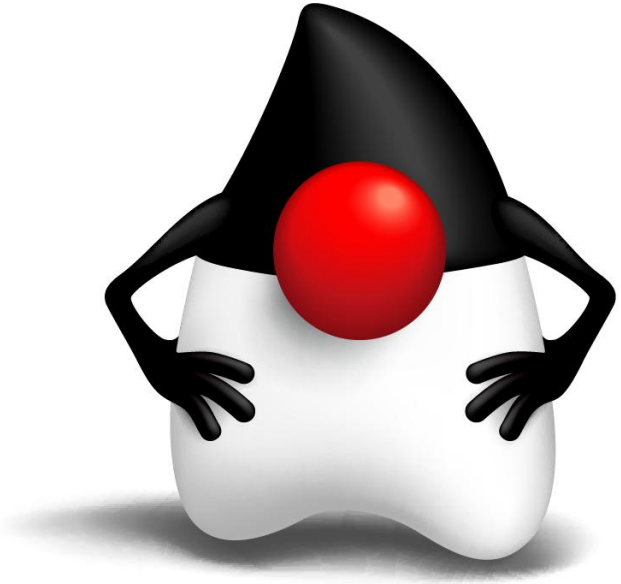

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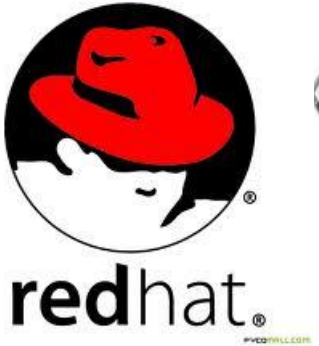

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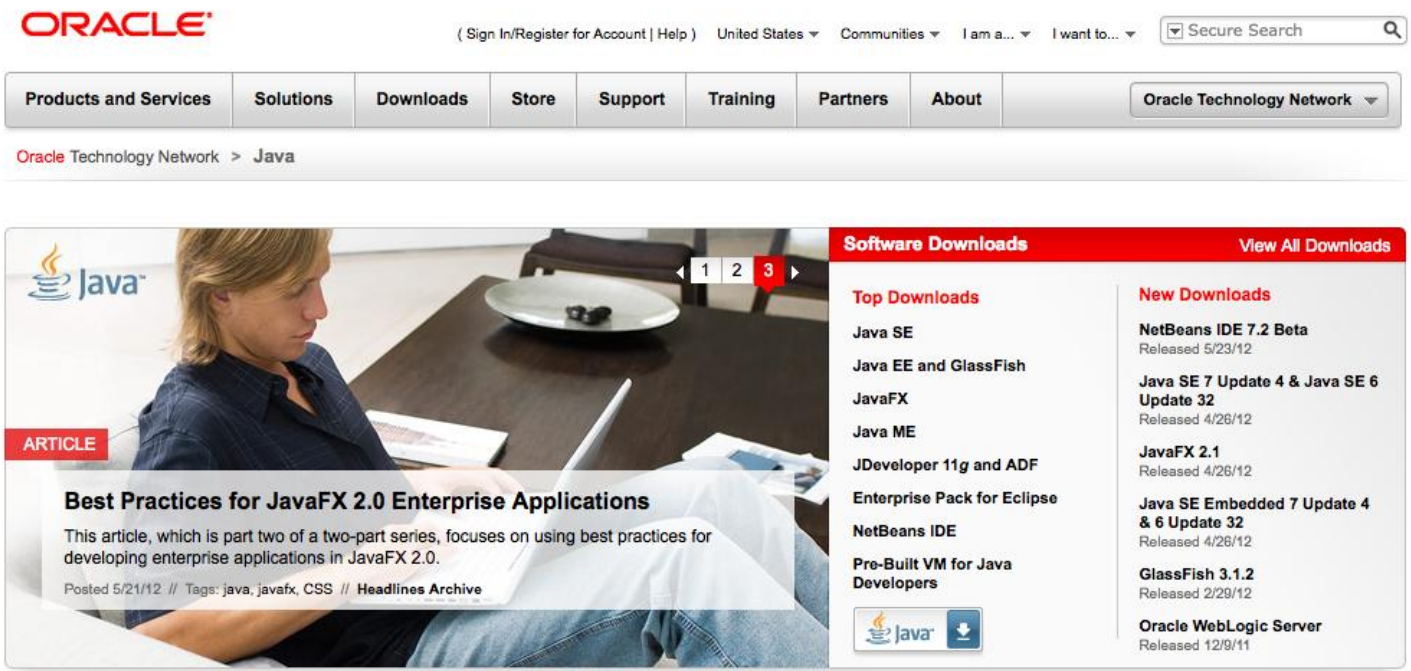
**23-24 апреля**
**Москва, Крокус Экспо**
oracle.com/javaone/ru-ru

# Community Resources

## Oracle Technology Network - Java




http://www.oracle.com/technetwork/java

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# Community Resources

## Java.net

Login | Join Now | Help

Java.net *The Source for Java Technology Collaboration*

Forums Blogs Projects People Search All

Home | Projects | Forums | People | Java User Groups | JCP | My Projects

**Get Involved**

- About Java.net
- Adopt a JSR
- Create a Project
- Java.net Enhancements

**Get Informed**

- Articles
- Blogs
- Events
- Java Magazine
- Oracle University

Java.net today | Communities | Java news

**Weblogs** All Blogs

**Want to become a JAVA master?**
TDD, BDD and Testing Best Practice for JAVA Developers course
by John Ferguson Smart

**Wildcards in the Wild**
Generics and wildcards have invaded Swing, and I got an error message from hell when decorating my perfectly working code with those pesky angle brackets. This blog a nifty and self-referential tip on how to fix such errors.
by Cay Horstmann

**Editor`s Blog**

**JUG News Highlights: CaJUG, JCertif 2012, Jax Innovation Awards, AdoptOpenJDK**

Some interesting announcements from the Java.net Java User Groups Community have been posted recently on the Java.net JUG-Leaders mailing list, related to upcoming JUG events, JUG activities, and more. In this blog, I highlight four recent announcements...

Duke's Choice Award 2012
LEARN MORE
Java

http://java.net

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## Community Resources

- JavaFX Community Home
- JavaFX Getting Started FAQ
- JavaFX Technologies Home
- JavaFX Developer Home
- Java/JavaFX Downloads
- Java SE 7 Preview Releases
- Java SE 8 Preview Releases
- JavaFX 2 API Docs
- JavaFX Documentation Home
- The OpenJFX Project
- The OpenJFX Project Wiki
- 3D Features for JavaFX 8
- OTN JavaFX Forum
- Self-Contained App Packaging
- Submit/Track JavaFX Issues
- JFXtras UI Controls
- 3rd Party Tools and Utilities
- Pro JavaFX 2 Book Resources
- ScalaFX for Pro JavaFX 2
- LinkedIn JavaFX Group
- Community Games Project
- Real World Use Cases
- JavaFX for Linux ARM
- JavaFX on YouTube/Java
- Submit to YouTube/Java

## JavaFX Sessions

- NightHacking Tour Stream
- JavaFX Conf Sessions @J1
- JavaFX BOF Sessions @J1
- JavaFX HOL Sessions @J1
- JavaFX Tutorial Sessions @J1
- JavaFX UGF Sessions @J1

JavaFX™ community

Community activity surrounding JavaFX has been steadily growing, with tweets, blog posts, and projects increasing in number. This JavaFX community site on Java.net is a place to highlight the efforts of the JavaFX community, share information, and point developers to JavaFX resources.

## Community News & Announcements

**Devoxx France 2013 approche: du 27 au 29 mars**
Feb 5, 2013

Devoxx France is a conference for Developers organized by the Paris JUG team in Paris, France. Come join us the Conference Center Marriott Paris Rive Gauche, same location as last year!
http://www.devoxx.com/display/FR13/Accueil

**Devoxx UK 2013 coming up on 26th and 27th of March**
Feb 5, 2013

Another week closer to Devoxx UK 2013 and the excitement just keeps growing! Don't forget to organise the two days off on the 26th and 27th of March to join the London Java Community and the merry Knights of Devoxx UK at the Business Design Center in London, UK.
http://www.devoxx.co.uk/

## JavaFX Videos

Managing Multiple Screens in JavaFX

Toni Epple's Latest Game Engine Short

## Latest Posts from the JavaFX Community

**JavaFX: Using the JavaFX Doclet with Maven** 2013-02-10 15:42
The Oracle JDK ships with a JavaFX Doclet for the Javadoc tool. This doclet provides special...

**JavaFX links of the week, February 11** 2013-02-10 11:53
Hi all. Welcome to another weeks worth of links. Enjoy More JavaFX source code was open sourced...

**Scalable Content with JavaFX and JFXtras** 2013-02-10 09:08
Learn how to use the new ScalableContentPane that's been recently added to the JFXtras...

**DataFX: ObservableExecutor Preview** 2013-02-09 03:16
Since December we are working on a new DataFX version. DataFX will provide a new low level API for...

**JavaFX Node紹介 No.1** 2013-02-08 23:58
第1回は、ボタン、チェックボックス、チョイスボックス、カラーピッカー、コンボボックスの5つを紹介します。I introduce 5 nodes, Button, CheckBox,...

**Managing Multiple Screens in JavaFX. (Part I)** 2013-02-08 22:16
One of the best things about my job is that it give me the opportunity to write code and play...

**JavaFX Node紹介 No.0** 2013-02-08 22:11
先日JavaFXのコミュニティに招待され、雑魚からも学ぶことはあるよと言われてやる気になったので、JavaFXのノードを紹介していこうと思います。一度記事を書いたんですが、...

**jrubyfx (0.9.2-java)** 2013-02-08 15:26

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## Community Resources

- Community Homepage
- Weblog
- Forums
- Embedded Device Catalogue

## Devices

- Rasberry Pi
- i.MX Community
- BeagleBoard
- SheevaPlug
- PandaBoard
- PlugComputer

## Events

- Jan 29-31, Distributech, San Diego
- Feb 5,6, Jfokus Embedded 2013, Stockholm
- Feb 25-28, Mobile World Congress, Barcelona
- Feb 26-28, Embedded World, Nuremberg
- Mar 3-7, HIMSS, New Orleans
- Mar 26-29, Design West, San Jose
- Mar 27-28, Cartes - Asia Word-Expo, Honk Kong

The Embedded Community is a gathering place that enables and empowers developers to collaborate and innovate, driving the evolution and adoption of the Java(™) Platform for embedded devices. Here you can be a part of a robust culture of developers and technology experts and find people with similar interests and goals.

## Community News & Announcements

**Java Magazine Jan/Feb 2012 Edition Focuses on Embedded**
Jan 28, 2013
Check out the **Jan/Feb 2013 edition of Java Magazine** - featuring a big focus on embedded:

Page 8: News: Hitachi SuperJ Framework, M2M Survey by Beecham
Page 20: Embedded Everywhere - Java and the Internet of Things
Page 26: Top 10 Reasons for Using Java in Embedded Apps
Page 31: Java Arrives on a $25 Board
Page 36: The Future of Money

**Building an SD Card Image For a Raspberry Pi Java Hands On Lab**
Jan 24, 2013
Simon Ritter has written up his experience on building a SD card image for the Raspberry Pi for the hands on lab that he did at Devoxx and will be

## Latest from our Bloggers

**Connect robot servo to RPi and use Java Embedded to program it (Part 3)**
It's Alive! My Raspberry Pi servo motor is alive with Java Embedded programming! See: See RPi... (Feb 7, 2013)

**Source Code for JavaFX Scoreboard Now Available** (Feb 6, 2013)
For the last few years, many of the JavaFX related blog posts found here have made reference to all...

**Connect robot servo to RPi and use Java Embedded to program it (Part 2)**
Now that you have the arm you want connected to the servo, you need to connect the servo to the... (Feb 6, 2013)

**Connecting Mobile Apps to an Oracle Backend** (Jan 31, 2013)
As smartphone and table usages continues to proliferate in business,

## Key Projects

- Jdtf
- Mobile 3D
- javatv-developers
- ocap-ri
- Lwuit
- Squawk
- Open Cable
- SPOTs - Small Java powered Wireless Transducer Devices
- Hdcookbook
- Compatability and Quality for JavaME

## Newest Projects

- Circuit Optimizer
- jCardSim
- licas - sophisticated j2me server

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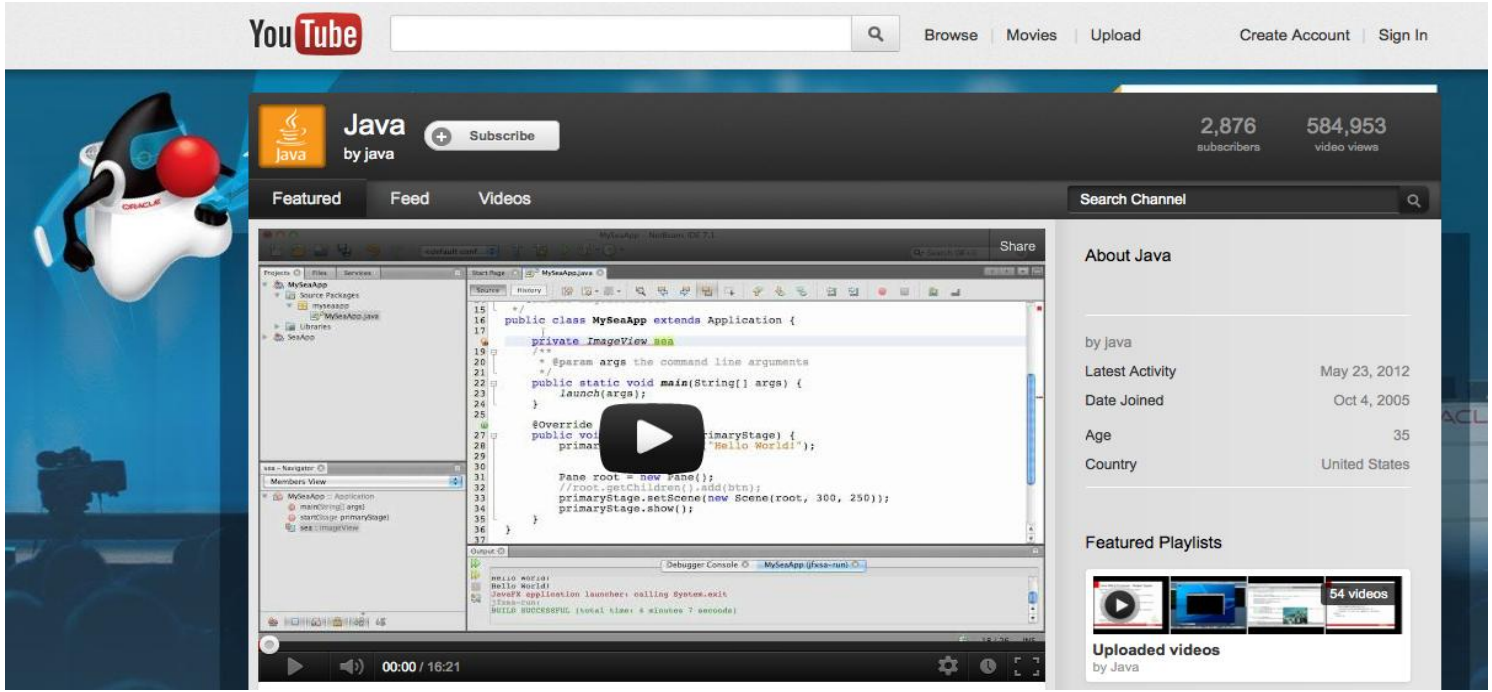
# Community Resources

## YouTube.com/Java




http://youtube.com/java

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# Community Resources

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