

JavaOne 2016

An Overview

Paul Webber
October 18, 2016

The Conference Sep 18 - 22

- Friday, Sep 16, Java Champion Summit at Oracle HQ
- Saturday, Sep 17, JavaOne4Kids, Moscone North
- Sunday, Sep 18, Sessions begin at 18 and the Keynote at 1:30, Moscone North
- Monday - Thursday, Sessions at Hilton Union Square and Parc 55
 - Community Keynote at Moscone West



Java Champion Summit



JC Summit Agenda

- Netbeans Update - Handed over to the Apache Foundation
<https://netbeans.org/community/apache-incubator.html>
- JDK 9 (mid 2017)
- Java EE 8 (end of 2017) and Java EE 9 (end of 2018)
- Cloud PaaS
- Oracle IaaS
- Oracle Cloud
- Java Community Process



JDK Enhancement Proposals (JEPs) for JDK 9

- Store Interned Strings in CDS Archives
- Improve Contended Locking
- Compact Strings
- Improve Secure Application Performance
- Leverage CPU Instructions for GHASH and RSA
- Tiered Attribution for javac
- Javadoc Search
- Marlin Graphics Renderer
- HiDPI Graphics on Windows and Linux
- Enable GTK 3 on Linux
- Update JavaFX/Media to Newer Version of GStreamer

Behind the scenes

- Module System
- The Modular JDK
- Modular Source Code
- Modular Run-Time Images
- Encapsulate Most Internal APIs
- jlink: The Java Linker
- Enhanced Deprecation
- Stack-Walking API
- Convenience Factory Methods for Collections
- Platform Logging API and Service
- jshell: The Java Shell (Read-Eval-Print Loop)
- Compile for Older Platform Versions
- Multi-Release JAR Files
- Platform-Specific Desktop Features
- TIFF Image I/O
- Multi-Resolution Images

New functionality

- Process API Updates
- Variable Handles
- Spin-Wait Hints
- Dynamic Linking of Language-Defined Object Models
- Enhanced Method Handles
- More Concurrency Updates
- Compiler Control

Specialized

- HTTP 2 Client
- Unicode 8.0
- UTF-8 Property Files
- Datagram Transport Layer Security (DTLS)
- OCSP Stapling for TLS
- TLS Application-Layer Protocol Negotiation Extension
- SHA-3 Hash Algorithms
- DRBG-Based SecureRandom Implementations
- Create PKCS12 Keystores by Default
- Merge Selected Xerces 2.11.0 Updates into JAXP
- XML Catalogs
- HarfBuzz Font-Layout Engine
- HTML5 Javadoc

New standards

- Parser API for Nashorn
- Prepare JavaFX UI Controls & CSS APIs for Modularization
- Modular Java Application Packaging
- New Version-String Scheme
- Reserved Stack Areas for Critical Sections
- Segmented Code Cache
- Indify String Concatenation
- Unified JVM Logging
- Unified GC Logging
- Make G1 the Default Garbage Collector
- Use CLDR Locale Data by Default
- Validate JVM Command-Line Flag Arguments
- Java-Level JVM Compiler Interface
- Disable SHA-1 Certificates
- Simplified Doclet API
- Deprecate the Applet API
- Process Import Statements Correctly
- Annotations Pipeline 2.0
- Elide Deprecation Warnings on Import Statements
- Milling Project Coin
- Filter Incoming Serialization Data

Housekeeping

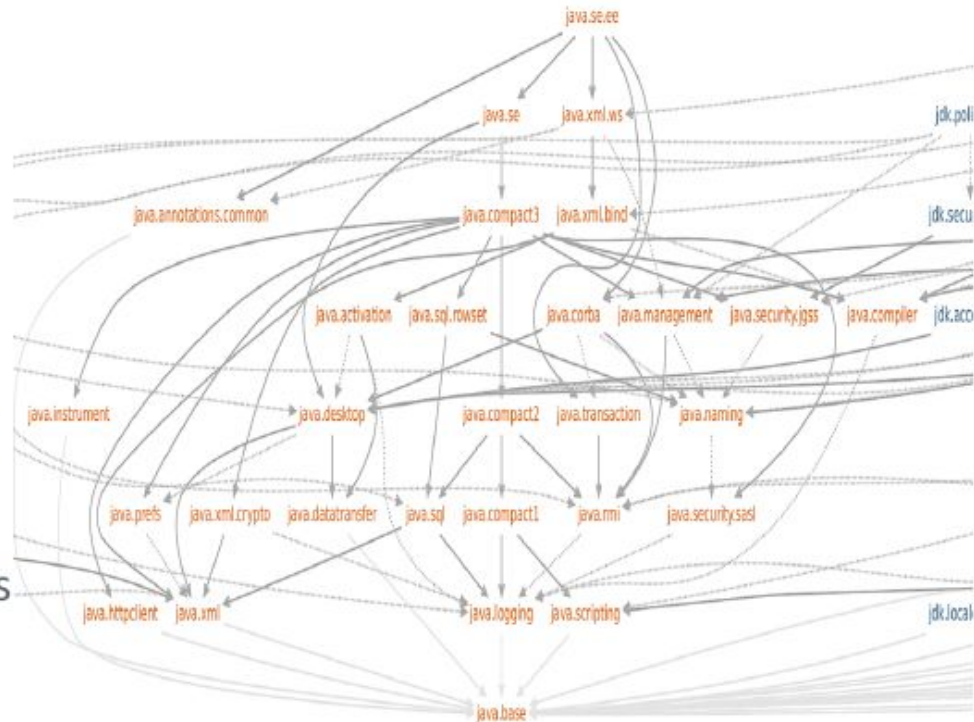
- Remove GC Combinations Deprecated in JDK 8
- Remove Launch-Time JRE Version Selection
- Remove the JVM TI hprof Agent
- Remove the jhat Tool

Gone

Project Jigsaw

Modularize the Java Platform

- JEP 261: Module System
- JEP 200: The Modular JDK
- JEP 201: Modular Source Code
- JEP 220: Modular Run-Time Images
- Plus
 - JEP 260: Encapsulate Most Internal APIs
 - JEP 282: jlink: The Java Linker



JEP 214: Remove GC Combinations Deprecated in JDK 8

hotspot / gc

- Remove the GC combinations that were previously deprecated in JDK 8 via JEP 173

DefNew + CMS : -XX:-UseParNewGC -XX:+UseConcMarkSweepGC

ParNew + SerialOld : -XX:+UseParNewGC

ParNew + iCMS : -Xincgc

ParNew + iCMS : -XX:+CMSIncrementalMode -XX:+UseConcMarkSweepGC

DefNew + iCMS : -XX:+CMSIncrementalMode -XX:+UseConcMarkSweepGC -XX:-UseParNewGC

CMS foreground : -XX:+UseCMSCompactAtFullCollection

CMS foreground : -XX:+CMSFullGCsBeforeCompaction

CMS foreground : -XX:+UseCMSCollectionPassing

More Info on JEPs

<http://openjdk.java.net/projects/jdk9/>

OpenJDK

OpenJDK FAQ
Installing
Contributing
Sponsoring
Developers' Guide

Mailing lists
IRC - Wiki
Bylaws - Census
Legal

JEP Process

search

Source code

Mercurial
Bundles (6)

Groups

(overview)
2D Graphics
Adoption
AWT
Build
Compiler
Conformance
Core Libraries
Governing Board
HotSpot
Internationalization
JMX
Members
Networking
NetBeans Projects
Porters
Quality
Security
Serviceability
Sound
Swing
Web

Projects

(overview)
Annotations Pipeline
2.0
Audio Engine

JDK 9

The goal of this Project is to produce an open-source reference implementation of the Java SE 9 Platform, to be defined by a forthcoming JSR in the Java Community Process.

The schedule and features of this release are proposed and tracked via the JEP Process, as amended by the JEP 2.0 proposal.

Schedule

2016/05/26	Feature Complete
2016/08/11	All Tests Run
2016/09/01	Rampdown Start
2016/10/20	Zero Bug Bounce
2016/12/01	Rampdown Phase 2
2017/01/26	Final Release Candidate
2017/03/23	General Availability

The milestone definitions are the same as those for JDK 8.

Status

We are past the Feature Complete milestone, but that does not mean that the feature set is frozen. If you own a JEP or a small enhancement that is not yet complete then you can request an extension via the FC extension-request process.

Features

JEPs targeted to JDK 9, so far

- 102: Process API Updates
- 110: HTTP 2 Client
- 143: Improve Contended Locking

Java EE 8 and 9

Technical Focus Areas Summary

Programming Model <ul style="list-style-type: none">▪ Extend for reactive programming▪ Unified event model▪ Event messaging API▪ JAX-RS, HTTP/2, Lambda, JSON-B, ...	Key Value/Doc Store <ul style="list-style-type: none">▪ Persistence and query interface for key value and document DB	Configuration <ul style="list-style-type: none">▪ Externalize configuration▪ Unified API for accessing configuration	Resiliency <ul style="list-style-type: none">▪ Extension to support client-side circuit breakers▪ Resilient commands▪ Standardize on client-side format for reporting health
Packaging <ul style="list-style-type: none">▪ Package applications, runtimes into services▪ Standalone immutable executable binary▪ Multi-artifact archives	Eventual Consistency <ul style="list-style-type: none">▪ Automatically event out changes to observed data structures	Multitenancy <ul style="list-style-type: none">▪ Increased density▪ Tenant-aware routing and deployment	Security <ul style="list-style-type: none">▪ Secret management▪ OAuth▪ OpenID
	Serverless <ul style="list-style-type: none">▪ New spec – interfaces, packaging format, manifest▪ Ephemeral instantiation	State <ul style="list-style-type: none">▪ API to store externalized state	

Java EE 7



Batch	Dependency Injection	JACC	JAXR	JSTL	Management
Bean Validation	Deployment	JASPIC	JMS	JTA	Servlet
CDI	EJB	JAX-RPC	JSF	JPA	Web Services
Common Annotations	EL	JAX-RS	JSON-P	JavaMail	Web Services Metadata
Concurrency EE	Interceptors	JAX-WS	JSP	Managed Beans	WebSocket
Connector	JSP Debugging	JAXB			

Java EE 8 (Revised Proposal, 2016)



Batch	Dependency Injection	JACC	JAXR	JSTL	Management
Bean Validation	Deployment	JASPIC	JMS	JTA	Servlet
CDI	EJB	JAX-RPC	JSF	JPA	Web Services
Common Annotations	EL	JAX-RS	JSON-P	JavaMail	Web Services Metadata
Concurrency EE	Interceptors	JAX-WS	JSP	Managed Beans	WebSocket
Connector	JSP Debugging	JAXB			
JSON-B	Security	Configuration	Health Check		

Java EE Roadmap

2016

Engage Java EE Community

- Feedback through Survey
- Launch Java EE Next JSRs

2017

Java EE 8

- Specs, RI, TCK complete
- Initial microservices support
- Define Java EE 9
- Early access implementation of Java EE 9

2018

Java EE 9

- Specs, RI, TCK complete
- Modular Java EE runtime
- Enhanced microservices support

Java EE - Summary

- 1 Java EE widely adopted in Cloud
- 2 New AppDev style for Cloud & Microservices
- 3 Embrace reactive programming model for distributed systems
- 4 Extend the benefits of standards and portability
- 5 Broad community support

Heather VanCura

Java Community Process (JCP) Program



- Director of the JCP Program Office
- Leader of Global Adopt-a-JSR Programs
- Open Source Fan
- Native Californian - from San Diego
- Personal Interests: Fun 😊

Bay Area, California - USA



Java Community Process (JCP) Program

- Share ideas and feedback, comment on list and public issue trackers.
- Read early versions of specifications and Javadocs.
- Try writing sample applications using early builds of reference implementation.
- Write or speak about the technology and encourage others to participate.
Translate into your native language.
- Evangelize the JSR -social media, blogging or lightning talks.
- Help with documentation.
- <https://jcp.org/en/jsr/stage?listBy=active>
- <https://jcp.org/en/home/index>
- <https://jcp.org/en/participation/membership>



Influencing the Future of Java

Our Adopt-A-JSR Story

Bob Paulin
President of the Chicago JUG

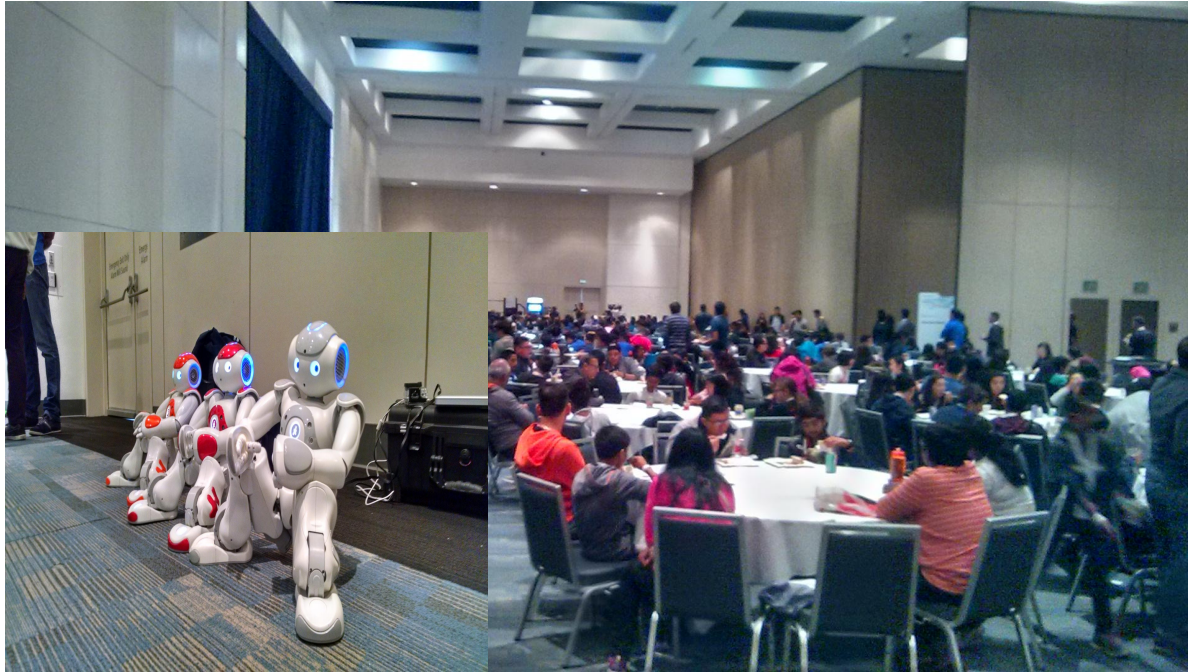
Mercedes Wyss
Board Member of the Guatemala JUG
Leader of the Guatemala JDuchess Chapter

Java Your (Next)



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JavaOne4Kids



SATURDAY, SEPTEMBER 17

SATURDAY, SEPTEMBER 17							
8:00 AM- 9:00 AM	Registration and Breakfast						
9:00 AM- 9:30 AM	Opening Comments						
	Room 301 Cap 50	Room 302 Cap 50	Room 303 Cap 50	Room 304 Cap 50	Room 305 Cap 100	Room 306 Cap 100	Room 307 Cap 50
9:45 AM -11:45 AM	Build Your Own Website Kevin Nilson (KID7770)	Defeat the Zombies with Java Cassandra Chin (KID7771)	Introduction to Arduino Pradeep Bhatler (KID7772)	HTML 5, JavaScript, and Game Development Anoop Trivedi (KID7773)	Make your own game with Greenfoot Neil Brown (KID7774)	Game Design From Scratch! G Venkat (KID7775)	Programming The Finch Robot in Greenfoot William McCabe (KID7776)
11:45 AM -12:45 PM	Lunch						
12:45 PM -2:45 PM	Introduction to Python Level 1 Peter Le (KID7777)	Bringing Robot online with Robo4j Framework Miroslav Kopecky & Nikhil Nanivadekar (KID7778)	Let's Play with a NAO Robot Daniel De Luca (KID7779)	Minecraft Modding using Forge 1.8 Aditya Gupta (KID7782)	Java for Elementary and Middle School Using BlueJ G Venkat (KID7781)	Use Watson to learn about your personality Sandhya Kapoor (KID7780)	Arcade William McCabe (KID7783)
2:45 PM -3:00 PM	Break						
3:00 PM -5:00 PM	How to send a secret message Breandan Considine & Nikhil Nanivadekar (KID7786)	Squash the Bugs! David Taieb (KID7787)	Star Wars: The Programmer Awakens Aditya Gupta (KID7788)	Programming The Finch Robot in Java Bruce Regittko (KID7789)	Beginner Android programming for fun and games Suyash Joshi (KID7790)	Exploring JavaScript Venkat Subramaniam (KID7791)	Arcade William McCabe (KID7783)

JavaOne - The Conference

Sessions and Tracks	Sunday	Monday	Tuesday	Wednesday	Thursday	Total
Core Java Platform	12	23	25	24	16	100
Emerging Languages	0	12	9	13	6	40
Java and Devices	3	11	11	9	5	39
Java, Big Data, and the Cloud	1	1	0	1	0	3
Java Clients and User Interfaces	0	14	15	12	3	44
Java, Cloud, and Server Side Development	3	33	28	27	17	108
Java Development Tools	5	23	24	17	11	80
Java, DevOps, and Methodologies	1	11	19	9	5	45
Total	25	128	131	112	63	459

444 Total Unique Sessions (439 last year)



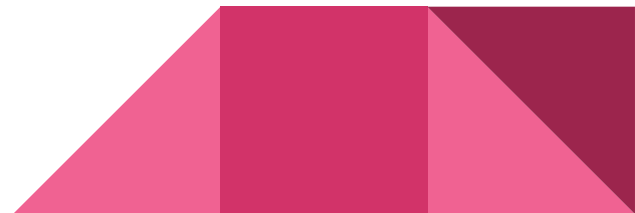
Resources

YouTube - 85 Videos - JavaOne 2016 Playlist:

<https://www.youtube.com/playlist?list=PLPlzp-E1msrYicmovyeuOAB04HxVPIhEA>

JavaOne Session List - search JavaOne 2016 - Session Catalog:

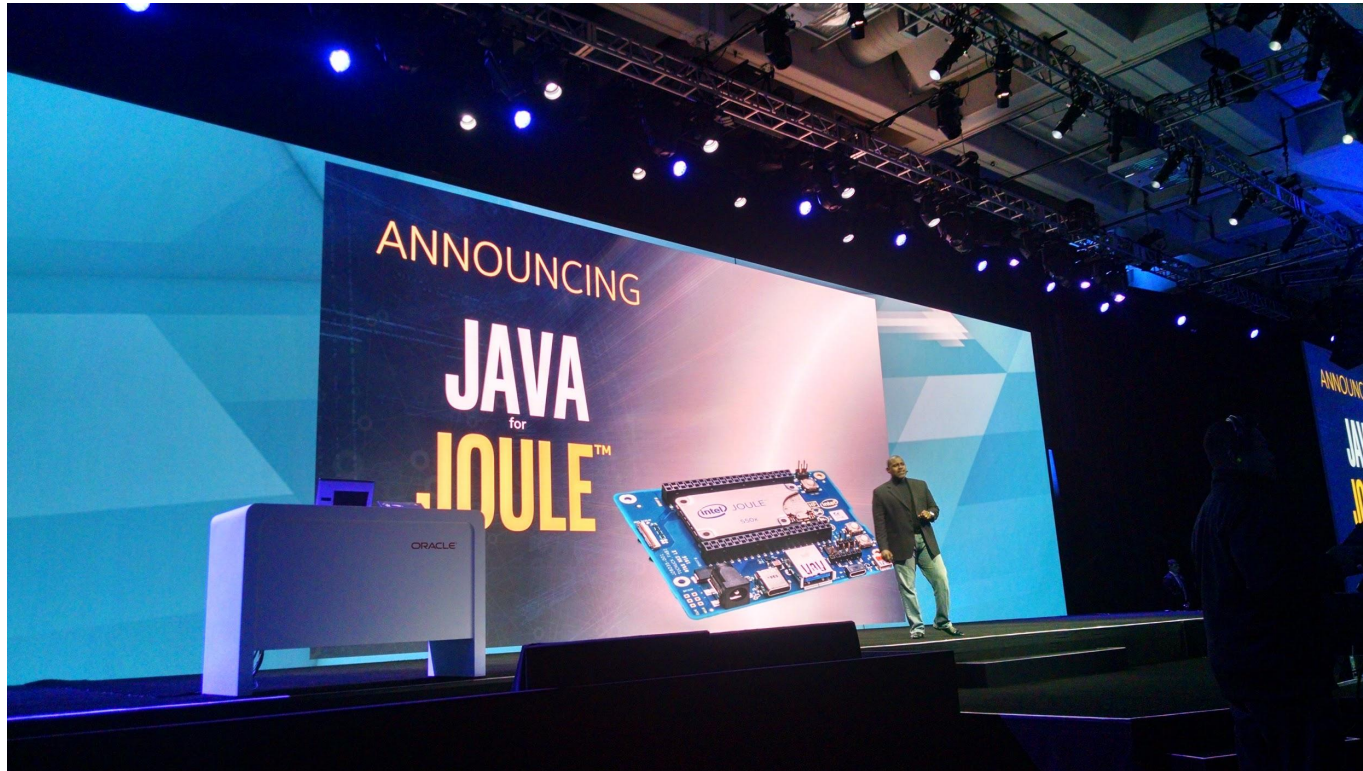
<https://oracle.rainfocus.com/scripts/catalog/oow16.jsp?event=javaone&search.event=javaone>



Sessions



Sessions



Sessions

Prepare for JDK 9

Alan Bateman
Java Platform Group, Oracle
September 2016



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Sessions

More Information

OpenJDK Project Jigsaw page, this has links to all the JEPs

<http://openjdk.java.net/projects/jigsaw/>
<mailto:jigsaw-dev@openjdk.java.net>

Early Access Builds

<https://jdk9.java.net/download>

Java Dependency Analysis Tool

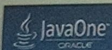
<https://wiki.openjdk.java.net/display/JDK8/Java+Dependency+Analysis+Tool>

JEP 223: New Version-String Scheme

<http://openjdk.java.net/jeps/223>

JEP 238: Multi-Release JAR files

<http://openjdk.java.net/jeps/238>



Sessions

PennState

5 JUnit 5

Features, Architecture, and Extensibility

Steve Moyer
Steve Seltzer
Niraja Ramesh

The Pennsylvania State University

JUnit 5: Features, Architecture, and Extensibility - <http://bit.ly/psu-junit5-j1>

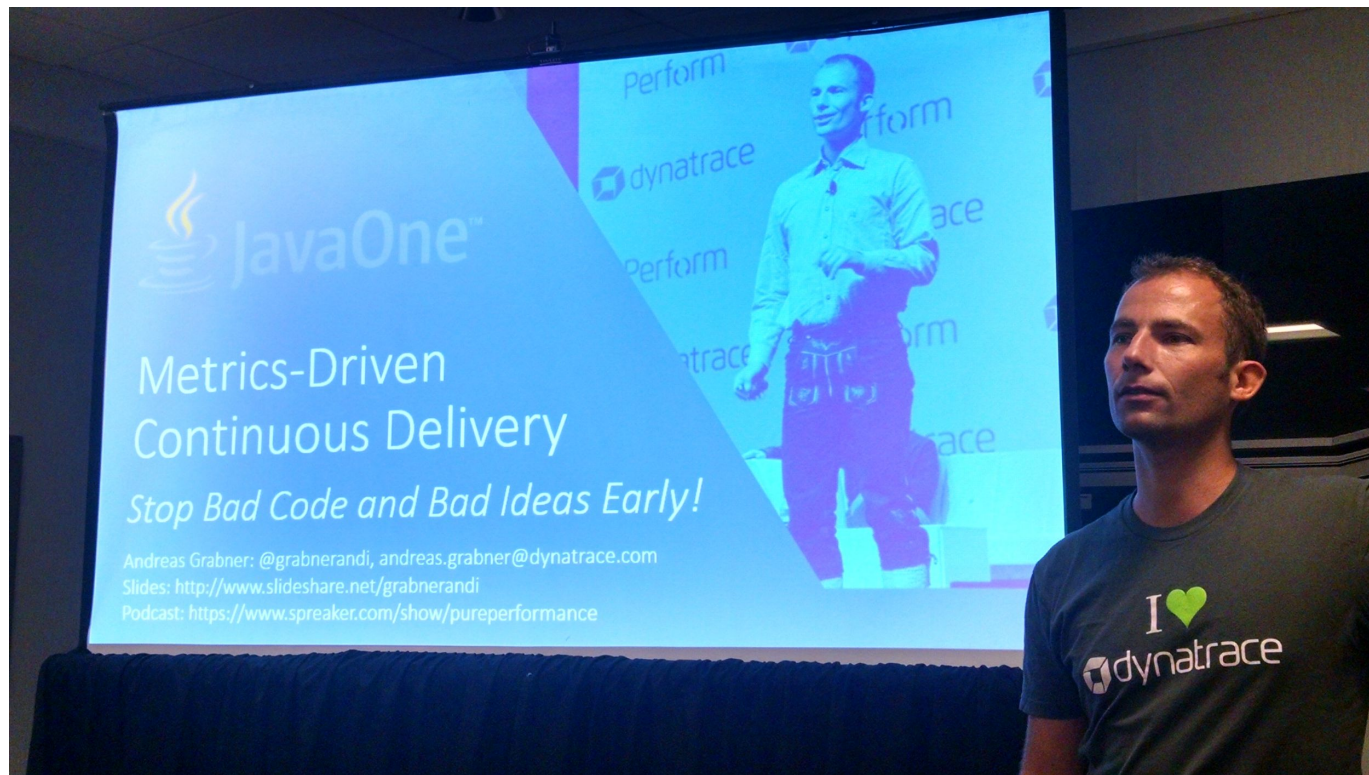
Sessions



How to Initiate Kids Into Java Programming

Félix Roberge
@felixroberge

Sessions



Sessions



Arun Gupta

Vinicius Senger

Tim Berglund

Theresa Nguyen

Ray Tsang

Stephen Chin

Roy van Rijn

Tori Wieldt

Bert Jan Schrijver

Siamak Ashrafi

Reza Rahman

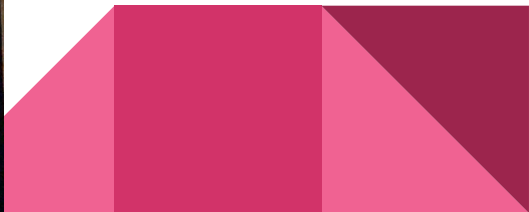
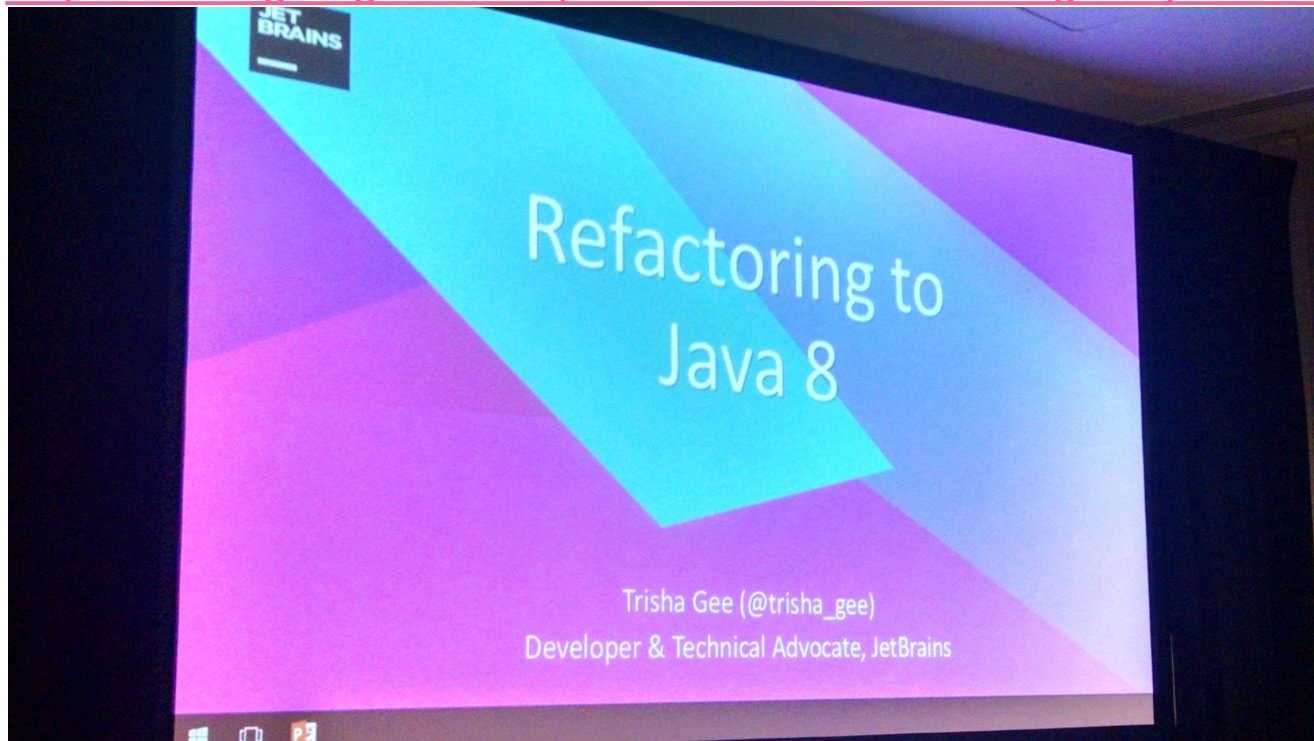


Sessions



Sessions

http://trishagee.github.io/presentation/refactoring_to_java_8/





Questions?

Thank You!

