JavaFX
for Desktop and Embedded

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Agenda

- JavaFX Status (technical, adoption)
- Open Source – OpenJFX
- New features targeted for JDK 8
JavaFX Today

Native Deployment

FXML
Writeable Image
Pagination
Scene Builder
for Windows and Mac OS X
GroovyFX
Canvas
WebView

Mac
Linux

Multi-Touch

HTML5

OpenJFX
ComboBox

Multi-Touch

1080p

Web history

HTTP Live Streaming

Mac

WebView

JavaScript-to-Java

ComboBox

PixelWriter

h.264

Eclipse

PixelWriter

h.264

Web history

GUI Controls

Charts

i18n

Java

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Java
JavaFX Adoption

- December survey results (~900 participants)
  - Are you developing JavaFX applications?
    - It’s already released: 14%
    - It’s currently in development: 43%

- Type of applications
  - Financial (e.g. trading platform), Transportation (e.g. train management system, freight management system, Air traffic control), GIS, ERP, Tools & utilities, Health management, Big data, Network analysis
Financial Trading Platform (Celer-Tech)
Train Management System
Freight Management System (Lynden)
Power Grid Management
Airtightness Compliance Tool (DooApp)
Load Testing Tool (SmartBear)
Retail Pharmacy Management
Clinic Management System (Anahata)
Video Management System

- Equipment status
- Router control
- Streaming video player
- Signal alarms
OpenJFX
Already open sourced

- UI Controls
- Scenegraph
  - Javafxpackager and launcher wrappers
  - JemmyFX
  - javafx-anim: animations, timelines
  - javafx-common: event delivery mechanism and other various core classes
  - javafx-sg-common: render tree interface
  - javafx-sg-prism: prism implementation of the render tree interface
  - javafx-geom: geometry and shapes implementation
OpenJFX
More Open Sourced

- pisces: java part of the Pisces rendering engine (used in software rendering pipeline)
- javafx-logging: logging support
- javafx-annotation-processor: build tool for generating builders
- Decora - An effects framework used by JavaFX
- decora-compiler - Name of the project we are open sourcing
- JSL - Name of the shader language in the decora-compiler project (ie. Java Shader Language)
OpenJFX
Soon to be open sourced

- Graphics: Prism, Glass, Quantum
- JavaFX prototypes for iOS and Android
- Most other components by end of February
- Some components may take longer (security audit)
Third party Projects


- e(fx)clipse: plugins for Eclipse and for OSGi
- DataFX: data source and cell factories for JavaFX UI controls
- RedFX: remote asynchronous communication, messaging & synchronization
- OpenDolphin: remoting solution
- JFX Flow, eFX, JRebirth: application development frameworks
- ScalaFX, GroovyFX: Scala and Groovy bindings for JavaFX
- JFXtras: UI controls and extensions for JavaFX
- Scenic View: scenegraph analyzer and editor
- JavaFX Gradle plugin
- Dex: visualization platform
- And more…
JavaFX Features – JDK 8 and beyond

- Java Platform Completeness – Parity with Swing
  - Rich Text, node orientation, printing, SwingNode

- RIA Platform Completeness
  - Public API for CSS structure, TreeTable, DatePicker, 3D, new default L&F

- WebView Enhancements

- Embedded support
  - Support for QVGA screens, non mouse traversal input, support for devices without HW acceleration
Rich Text
https://wikis.oracle.com/display/OpenJDK/Rich+Text

- Use Cases
  - text editor ● code editor ● mixed style Labels, buttons, cells ● headings ● descriptions ● large textual content ● etc

- Details
  - TextFlow, a new layout container
  - Text is just a node… so you can add effects, event handlers, and animations
  - You can also use CSS, FXML
Example

This is Arabic, green and magenta and the ligature survived!

Hello Bold Effect fancy underline fancy strikeout

Lets have embedded objects: then button click me finally an image
Public API for CSS structure
https://wikis.oracle.com/display/OpenJDK/CSS+API+to+support+custom+UI+Controls

- CSS styling is one of the key features for JavaFX
- CSS has been implemented exclusively in private API (com.sun.javafx.css package)
- Tools (e.g. Scene Builder) require
  - CSS public API
  - JavaFX to programmatically understanding a CSS document
  - JavaFX to programmatically understand how CSS applies to Nodes so it can customize the CSS/look from the tool.
TreeTableView
https://wikis.oracle.com/display/OpenJDK/TreeTableView

- Goal: reuse as many API, or API concepts, as possible from the TreeView and TableView controls API
DatePicker
http://javafx-jira.kenai.com/browse/RT-27480
3D
https://wikis.oracle.com/display/OpenJDK/3D+Features

- Movable Camera, 3D Geometry, and 3D Attributes
New Modern Theme: Modena

http://javafx-jira.kenai.com/browse/RT-27582
WebView Enhancements

- Nashorn JavaScript engine
  https://blogs.oracle.com/nashorn/entry/open_for_business

- WebSocket
  http://javafx-jira.kenai.com/browse/RT-14947

- Web Workers
  http://javafx-jira.kenai.com/browse/RT-9782
Embedded Support

- JavaFX to be included in Oracle’s implementation of
  - Java SE 8 (x86, x64, ARM)
  - Java SE Embedded 8 (ARM)

- Java SE Embedded 8 will include all JavaFX functionality, plus:
  - Support for QVGA screens
  - Non mouse traversal input
  - Virtual keyboard
  - Support for devices without hardware acceleration
Embedded Samples

Raspberry Pi, Google maps, JFXtras gauges
by @hansolo_

JavaOne Scheduler App
(Panda ES development board)
Resources

- JavaFX on OTN: javafx.com
- Documentation: docs.oracle.com/javafx
- Community page: javafxcommunity.com
- Blogs: fxexperience.com, blogs.oracle.com/javafx
- OpenJFX: http://openjdk.java.net/projects/openjfx/
Q&A