Experiences from building one of the world's most distributed RCP apps

... or how we got an Eclipse RCP app into the JDK

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Agenda

- Java Mission Control (JMC) History
- JMC, Eclipse and the JDK
- Problems solved
- DEMO
- Q&A
Why this talk?

- Sharing knowledge – From all of us
- Sharing knowledge – From all of you
- Not a JMC features talk – that one is in 45 minutes..
JAVA MISSION CONTROL
HISTORY
(Java) Mission Control History

- 2002 – JRockit-> BEA Systems, Console + Memleak + JRA = Mission Control
(Java) Mission Control History

- 2006 – JRockit Mission Control 2
  Eclipse + Buckminster
(Java) Mission Control History

- 2008 – BEA -> Oracle
- 2009 - 2010 – Flight Recorder (JFR)
  - ”Black box” profiling tool
(Java) Mission Control History

- 2010 – Sun -> Oracle
  - ”Merging” HotSpot and JRockit
- 2013 – JMC and JFR in the Oracle JDK (7u40)
JMC, ECLIPSE AND THE JDK
JMC, Eclipse and the JDK

- RCP
  - JDK/lib/missioncontrol
- Eclipse plug-ins
  - oracle.com/missioncontrol
- P2 update site for experimental plug-ins
- Built with Buckminster
- Windows, Linux, Mac
- Eclipse launcher - JDK/bin/jmc

- Localization – Japanese, Chinese
- Accessible
- Swing charts framework
- JavaFX
  - JOverflow plug-in
- Xtext
  - DTrace plug-in
- Custom GUI builder
  - Included in the JMC product
JMC, Eclipse and the JDK

Favorite extension points

- The usual suspects used by RCP apps
  - Editors
  - Commands
  - Menus
  - Preferences
  - Help
  - Views
  - Perspectives
  - Import/Export wizards

- `org.eclipse.pde.ui.templates`
- `org.eclipse.debug.ui.launchConfig...`

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Our own extension points, both for internal and external use

- Connection Descriptor
- JMX Protocols
- Console Trigger Actions
- Synthetic Mbean Attributes
- ...

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JMC, Eclipse and the JDK

Versions (you can never have too many ;)

jmc_5.3.0.123456 RCP - E3.8.2 JDK 8
jmc_5.3.0.123456 Support - E4.2, JDK 7u60
jmc_5.3.0.123456 E4.3 JDK 7u40+
Same version for all plug-ins, (E4.4)
manually updated

jmc.experimental.foo_1.1.12 Source code Java
jmc.experimental.bar_0.7.0 6?!
Into the JDK

Makefile is magic

OpenJDK

PRD, JEP, EFP, CCC, EPL
PROBLEMS SOLVED
Problems solved (or worked around)

Bundling in the JDK

- "How to bundle an Eclipse application inside a JDK"
  - Google? Vogella? Anyone?
  - `-vm ../../jre/bin/` solved one problem
Problems solved (or worked around)

Distribution

- Not really a problem
  - As part of JDK
    - Distribution infrastructure for free
    - No need to worry about a JRE being available
    - Time between releases not fun if you have ugly bugs
  - P2 update sites
    - Following the number of downloads with interest
    - Bad https certificate from Akamai problematic in E4
Problems solved (or worked around)

Install

- InstallShield
  - Doesn’t like long paths
    - lib/missioncontrol/plugins/org.eclipse.equinox.launcher.win32.win32.x86_64_1.1.200.v20130521-0416/
    - vs the previously longest path:
      - lib/visualvm/profiler/lib/deployed/jdk16/windows-amd64
Problems solved (or worked around)

Mac OS X

- First Mac app bundle in the JDK
  - `javaw $APP_PACKAGE/../../../jre/bin/

- Where is JMC?
  - `/usr/bin/jmc`?
  - Spotlight?
    - `/Library/Java/JavaVirtualMachines/jdk1.7.0_40.jdk/Contents/Home/lib/missioncontrol/Java Mission Control.app`

- SWT/Swing
  - Initialization bug fixed and contributed to JDK
Problems solved (or worked around)

Eclipse RCP

- jmc.ini – not so popular in JDK/bin
- Dropins for end user plug-ins – not in JDK/bin/dropins ...
  - Manual workaround for JMC 5.3
Problems solved (or worked around)

Eclipse RCP

- E4 performance
  - Still using E3.8.2, hoping for E4.4
  - Bug 416650
  - Bug 430829 (filed 2 hours ago)
Problems solved (or worked around)

Shared Install

- Standard case – C:\Program Files\Java, /Library/Java
- Caused us some problems, some of which were our own fault

Klara Ward @klaraward · Jun 5
Wishing I could teleport @aniefer or @prapicaul to Sweden for a few days. #p2
#trouble
Expand

Eclipse Community Forums

Home » Eclipse Projects » Equinox » RCP app can't see plug-ins installed in separate configuration area
Show: Today's Messages :: Unread Messages :: Show Polls :: Message Navigator
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Klara Ward
Messages: 3
Registered: July 2009

I have an RCP app (based on Eclipse 3.8.2)
which will be installed in c:\Program Files\..... by default on Windows.

So to be able to install plug-ins in my app, I need to set osgi.configuration.area to somewhere writable.
The problem is that when I install plug-ins, and restart my app, I can only see the newly installed features, but
I compared with an installation of Eclipse where I also installed my RCP app base plug-ins. Then I set osgi.config.
In this case, it worked fine, I can see the plug-ins, and they work as well.
Problems solved (or worked around)

Shared Install

- ... and combined with weird Babel fragments, got even worse
- Too late to fix for JMC 5.3
  - ”Fixed” on our experimental updatesite

Share install bundles.info

org.eclipse....
com.jrockit.mc...
org.eclipse......equinox.log.nl_ja
org.eclipse......supplement.nl_zh

User bundles.info after plug-in install

org.eclipse....
com.jrockit.mc...
com.jrockit.experimental.x...
DEMOS

(SIMILAR PRESENTATION FOR VIEW AT HTTP://VIMEO.COM/79377119)
What’s next

- In a couple of minutes - JMC features talk

- IDE integration
  - Flight Recorder launch config
  - Source code coloring from Flight Recorder data

- Rebuilding the launcher

- Better versioning
  - Support APIs

- Tycho

- E4
What's next

JFR Launch config

- Enable JFR: 
- Filename: Mission Control\flight_recording_jfr
- Name: My Recording
- Recording time: 1 min
- Delay: 0 ms
- Maximum size:
- Maximum age:
- Dump on exit: 
- Event settings: default - jul0-b43

Tips: See the Recording Wizard Help for more information.
Questions?

Psst - We’re Hiring!

The New Profiling Tools in the Oracle JDK!

15:00-15:35
Same room

Evaluate!

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