BND Eclipse RCP Product Export

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About Us

● Founded in 2010
● Located in Jena/Thuringia - Germany
● Consulting, Independent RnD, Development, Training
● Assisted Development on complex and distributed systems
● Wide Range of Industries like, Medical, Transportation, Traffic, Public Sector, Smart City and Industrial IoT
Why RCP Support for BND?

- PDE is in comparison hard to use
- Targetplatform is always an issue
- Tycho makes things easier, but doesn’t really help you at Development time
- Development of PDE has stagnated
  - e.g. Component annotations Version 1.6 not supported and no plans to do so
- <your PDE complaint here>
Why RCP Support for BND?
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BND:

- Easy to use
- Leads to better OSGi Code
- No Targetplattform
  - Supports all common Repositories like, Maven, OBR and P2
- Very aktive Community
- Always supports the latest OSGi Specifications
- Hot bundle deployment
Why RCP Support for BND?

- We promote the use of BND over PDE for a couple years
- A Lot of interest by the Community and especially the RCP Developers
- Most common question was: How can we export our product?
Acknowledgement

Thank you BRUKER DALTONIK GmbH for making this possible!
The Eclipse Start Process

Native Launcher (~3K LOC)
- Identifies the JRE to use
- Looks in the *.ini for the -startup jar
- Reflectively instantiates the Main-Class and calls the run method
The Eclipse Start Process

org.eclipse.equinox.launcher.Main (~3K LOC)
● Tries to identify the native lib in the library named in the .ini
● Initializes the JNIBridge
● Shows the splash screen
● Creates the ClassLoader
● Calls the EclipseStarter
The Eclipse Start Process

org.eclipse.core.runtime.adaptor.EclipseStarter (~1,5K LOC)

- Starts the Equinox Framework
- Installs the bundles
- Starts Bundles with the start policy lazy according to the set start levels
- Starts the Equinox Application/Product
- registers the SplashHandler and StartupMonitor as a Service
The BND Launcher

- EmbbededLauncher
  - Creates the ClassLoader out of the runpath
  - Starts the first found Main-Class

- Launcher
  - initializes the Framework
  - installs the bundles
  - starts all Bundles that are not set to lazy

- Overall ~2K LOC
Plain BND is capable of launching and exporting an Eclipse RCP
The BND Eclipse RCP Support

But it feels a bit like this:
The BND Eclipse RCP Support

- Resolving is messy
- Lazy Bundles need to be started manually
- The Equinox Applications need to be started manually
- No Splash Screen possible
- Equinox uses extended Framework properties, that are set by the EclipseStarter
- BND exports a self executing jar
The BND Eclipse RCP Support

Disclaimer

- Eclipse does a lot of steps outside of the Framework, that can be done from the inside
- We created no one-to-one product export honoring all the Eclipse oddities
- No support for a product definition file
- Provide an own Launcher that can be used by the native launcher
The BND Eclipse RCP Support

Before we get started

- Currently a gecko Project housed on gitlab
  https://gitlab.com/gecko.io/geckoBNDEquinox
  https://devel.data-in-motion.biz/repository/gecko/release/geckoBNDEquinox/index.xml

- Requires BND 4.4.0.SNAPSHOT

- At the moment our Eclipse Bundle Pool indexed as OBR
  - BND can not handle Bundles with Eclipse-Bundleshape: dir
Resolving?

Resolution Results

The required resources will be used to create the Run Bundles list. NOTE: The existing content of Run Bundles will be replaced!

Required Resources

1. de.bdal.coach.test.view 0.0.0 [file:/N:/tools/eclipse/play/bruker-test/bruker-test/de.bdal.coach.test.view/generated/de.bdal.coach.test.view.jar]
Show Us Something!
Next Steps

- Hopefully merge with BND
- Talks with Thomas Watson have started, to provide the needed Capabilities for the Native parts directly by Equinox
- Improved support for language specific Splash Screens
- Support for Deflated bundles
- Better Requirement Annotations
- Easier Feature and P2 Update Site build
- More templates (Workspace and Bundle)
- Tutorials and Documentation
Thanks for listening!

Resources:
Web: https://www.datainmotion.de
Blog: https://www.datainmotion.de/blog/
Git: https://gitlab.com/gecko.io/geckoBNDEquinox
Repos: https://devel.data-in-motion.biz/repository/gecko/release/geckoBNDEquinox/
        https://devel.data-in-motion.biz/nexus/repository/maven-releases/
EVALUATE THE SESSIONS

Sign in and vote using the conference app or eclipsecon.org

-1  0  +1