

# BND Eclipse RCP Product Export

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# About Us



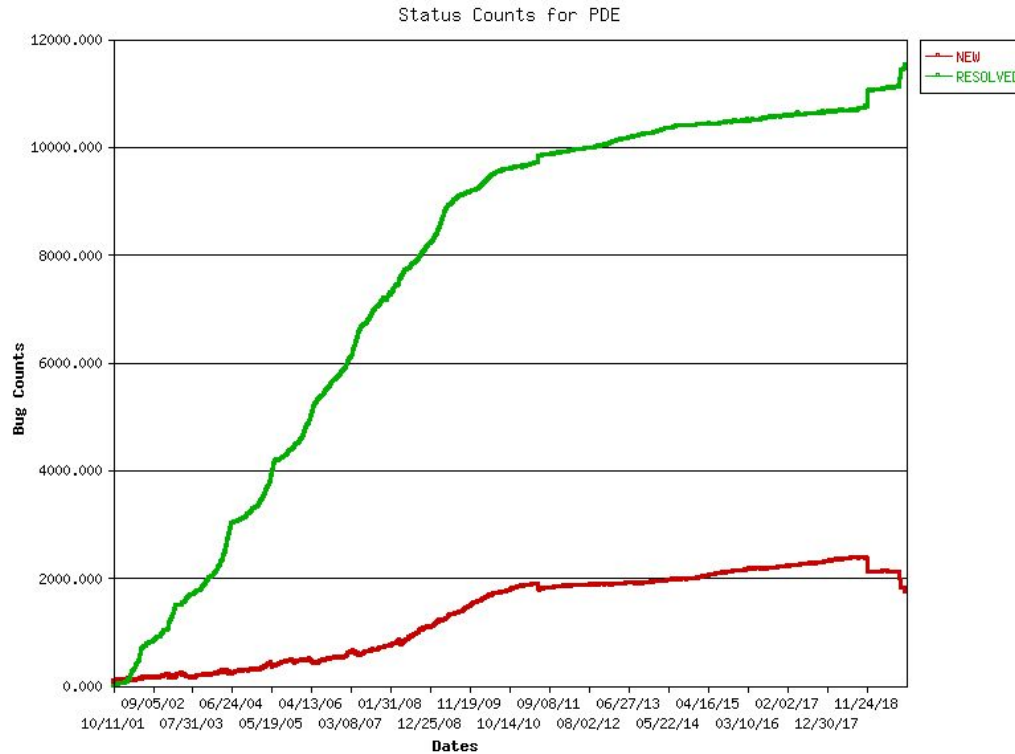
- Founded in 2010
- Located in Jena/Thuringia - Germany
- Consulting, Independent RnD, Development, Training
- Assisted Development on complex and distributed systems
- Wide Range of Industries like, Medical, Transportation, Traffic, Public Sector, Smart City and Industrial IoT

# 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?



# Why RCP Support for BND?



## 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

DATA  
IN MOTION



**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



- EmbeddedLauncher
  - 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

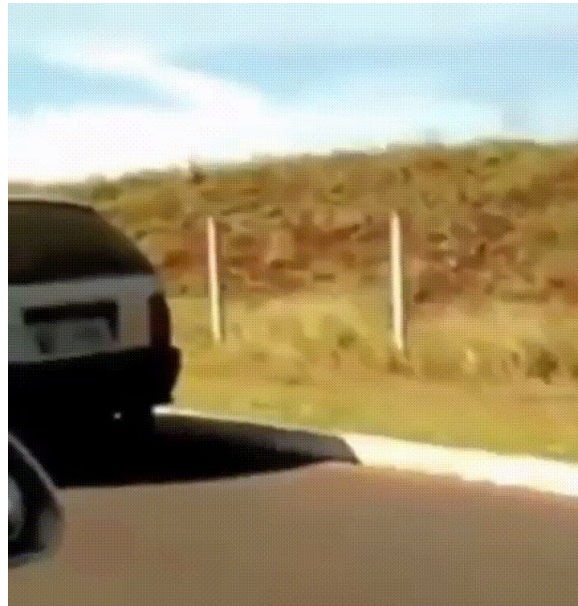
# The BND Eclipse RCP Support



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

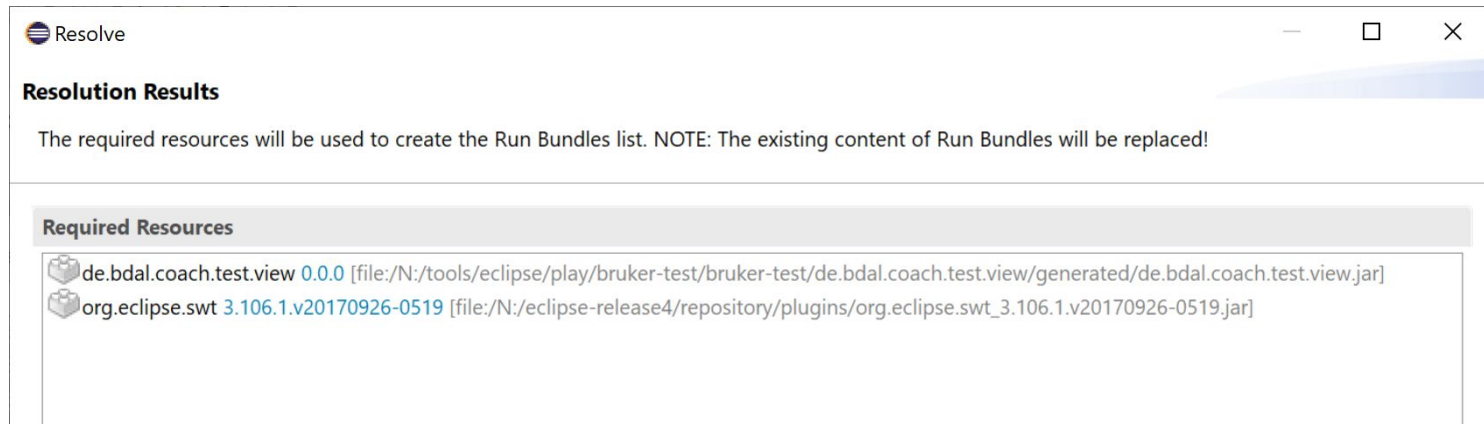


Before we get started

- 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  
<https://devel.data-in-motion.biz/repository/eclipse-2019-09/plugins/index.xml.gz>
  - BND can not handle Bundles with  
Eclipse-Bundleshape: dir



# Resolving?



The screenshot shows the Eclipse IDE's 'Resolve' dialog box. The title bar reads 'Resolve'. Below the title bar, the text 'Resolution Results' is displayed. A message states: 'The required resources will be used to create the Run Bundles list. NOTE: The existing content of Run Bundles will be replaced!'. Below this message, there is a section titled 'Required Resources' which lists two items:

- 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]
- org.eclipse.swt 3.106.1.v20170926-0519 [file:/N:/eclipse-release4/repository/plugins/org.eclipse.swt\_3.106.1.v20170926-0519.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/>

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