

NetBeans Platform

What is it?

How do I use it?

And why should I want to?

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<http://blogs.sun.com/geertjan>

Sun Microsystems

Source Talk Tage, 27 September, 2006



Agenda

- Introduction
- 1. Why?
- 2. What?
- 3. How?
- 4. When?
- Conclusion

http://www.onjava.com/pub/q/java_os_directory - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Driver Updates
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All Articles
Best Practices
Enterprise JavaBeans
Java and XML
Java Data Objects
Java EE (Enterprise)
Java IDE Tools
Java Media
Java SE (Standard)
Java Security
Java SysAdmin
JDO/JDBC/SQLJ
JSP and Servlets

Open Source Java Directory

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Title	Description	License	Update
ActiveMQ	ActiveMQ is a fast open source JMS 1.	The Apache Software License	Nov 26, 2005
Activity Manager	Activity Manager is a project management tool that is simple to use, lightweight, and very efficient and customizable.	BSD License (BSD)	Apr 4, 2005

What's New:

[GGZ-Java](#)

[JTrac](#)

[Dao-zero: implement your DAO interfaces](#)

[DualRpc easy bidirectional RPC for client to server](#)

Internet

http://www.onjava.com/pub/q/java_os_directory - Microsoft Internet Explorer

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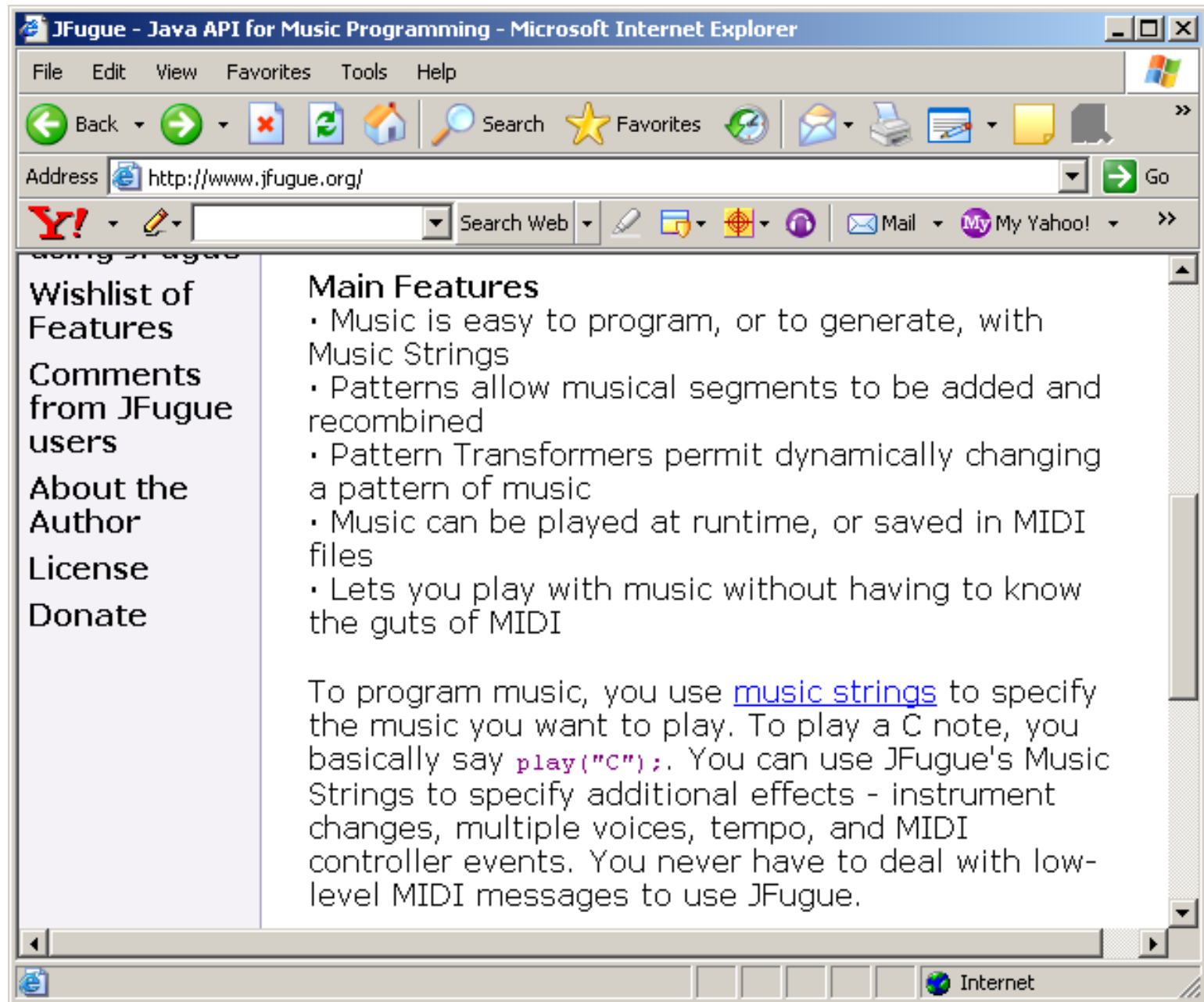
Address http://www.onjava.com/pub/q/java_os_directory#1 Go

Y! Search Web Mail

IBM Jikes	Jikes is a compiler that translates Java source files as defined in The Java Language Specification into the bytecoded instruction set and binary format defined in The Java Virtual Machine Specification.	IBM Public License	Sep 18, 2002
InfoSapient	InfoSapient is an Open Source, Common License 0.5, Java 1.2 and above, program for the easy expression, execution and maintenance of business rules within a company.	IBM Public License	Oct 8, 2002
iSQL	iSQL(IndependentSQL)-Viewer is a JDBC 2.0-compliant application that is designed to exploit JDBC Features for all compliant drivers.	Mozilla Public License (MPL)	Oct 8, 2002
iText	iText is a library that allows you to generate PDF files on the fly.	GNU Lesser General Public License (LGPL)	Feb 14, 2002
ITracker: Java Issue Tracking Software	ITracker is a Java J2EE issue tracking system designed to support multiple projects with independent user bases.	GNU General Public License (GPL)	Jun 5, 2002
JacORB	Java implementation of the OMG's CORBA standard.	GNU Lesser General Public License (LGPL)	Aug 6, 2002

Internet





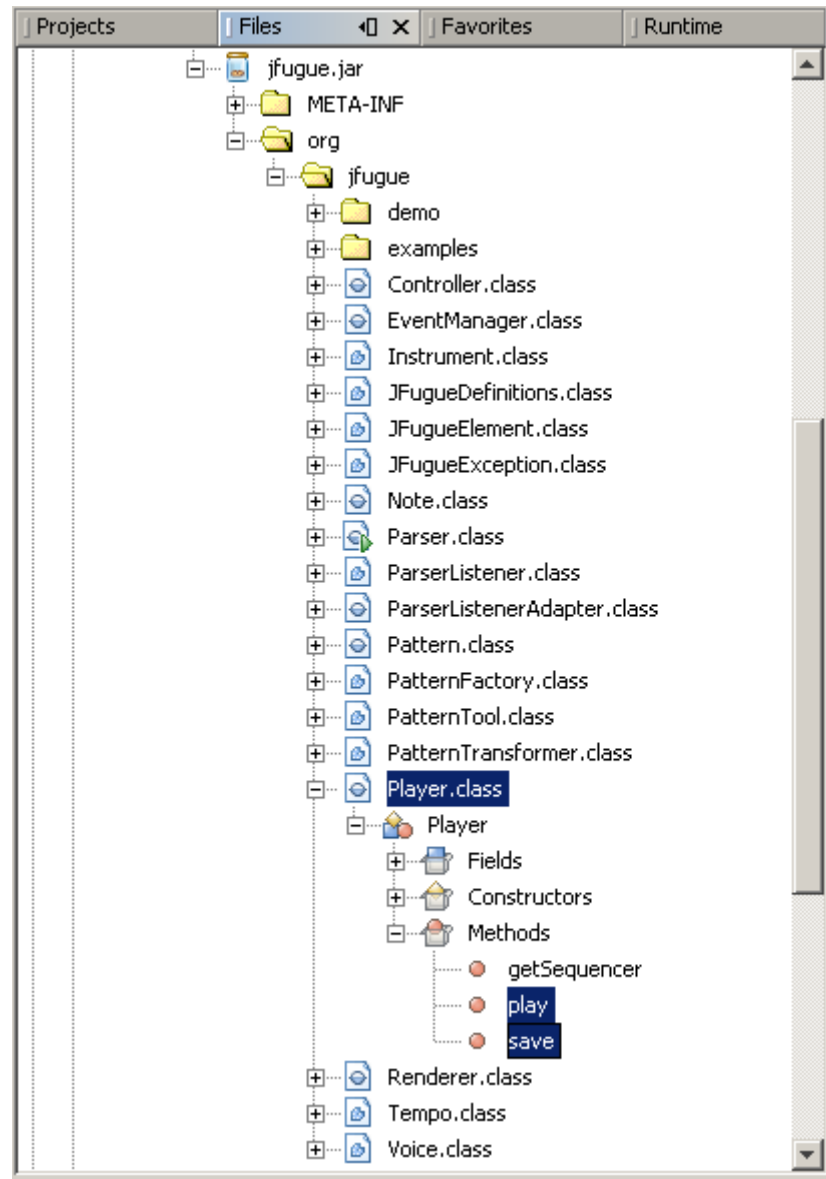
The screenshot shows a Microsoft Internet Explorer browser window titled "JFugue - Java API for Music Programming - Microsoft Internet Explorer". The address bar contains "http://www.jfugue.org/". The page content includes a sidebar with navigation links and a main section titled "Main Features" with a bulleted list and a paragraph of text.

Wishlist of Features
Comments from JFugue users
About the Author
License
Donate

Main Features

- Music is easy to program, or to generate, with Music Strings
- Patterns allow musical segments to be added and recombined
- Pattern Transformers permit dynamically changing a pattern of music
- Music can be played at runtime, or saved in MIDI files
- Lets you play with music without having to know the guts of MIDI

To program music, you use [music strings](#) to specify the music you want to play. To play a C note, you basically say `play("C");`. You can use JFugue's Music Strings to specify additional effects - instrument changes, multiple voices, tempo, and MIDI controller events. You never have to deal with low-level MIDI messages to use JFugue.



`play() :`

```
Player player = new Player();  
Pattern pattern = new Pattern(string);  
player.play(pattern);
```

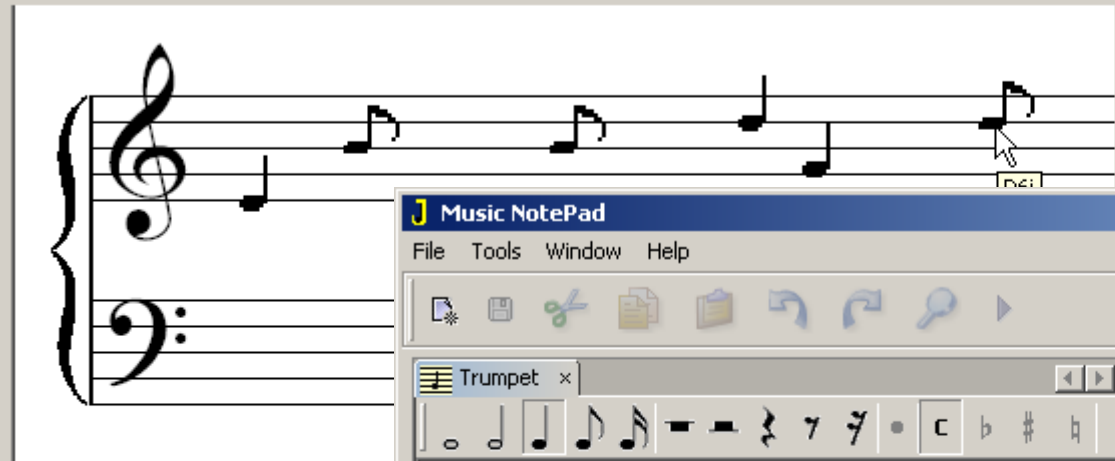
`save() :`

```
Player player = new Player();  
Pattern pattern = new Pattern(string);  
player.save(pattern, "Myfile.midi");
```

```
string = C5q D5q E5q C5q  
I[Cello] E5q F5q G5h  
I[Trumpet] G5i A5i G5i F5i  
E5q C5q I[Piano] C5q G4q  
C5h .C5q D5q E5q C5q  
I[Cello] E5q F5q G5h  
I[Trumpet] G5i A5i G5i F5i  
E5q C5q I[Piano] C5q G4q  
C5h C5q D5q E5q C5q  
I[Cello] E5q F5q G5h  
I[Trumpet] G5i A5i G5i F5i  
E5q C5q I[Piano] C5q G4q  
C5h
```

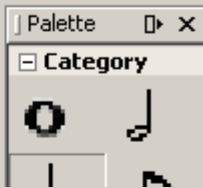
Music NotePad

File Tools Window Help



Palette


Category



Music NotePad

File Tools Window Help

Trumpet x



Instruments Window

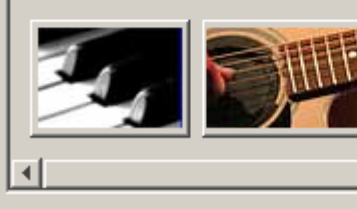
JFugue Com...

- Categories
 - Piano
 - Acoustic Grand
 - Bright Acoustic
 - Electric Grand
 - Honky-tonk Pie
 - Electric Piano 1
 - Electric Piano 2
 - Harpsichord
 - Clavi
 - Chromatic
 - Organ
 - Guitar
 - Bass
 - Strinns

E6q
Rq
G5s
E6s
I [ACOUSTIC_GRA
A5s
F6q
B5q
A5q
G6q
F6q
A5q
I [ACOUSTIC_GRA
D6q

D6q

Instruments

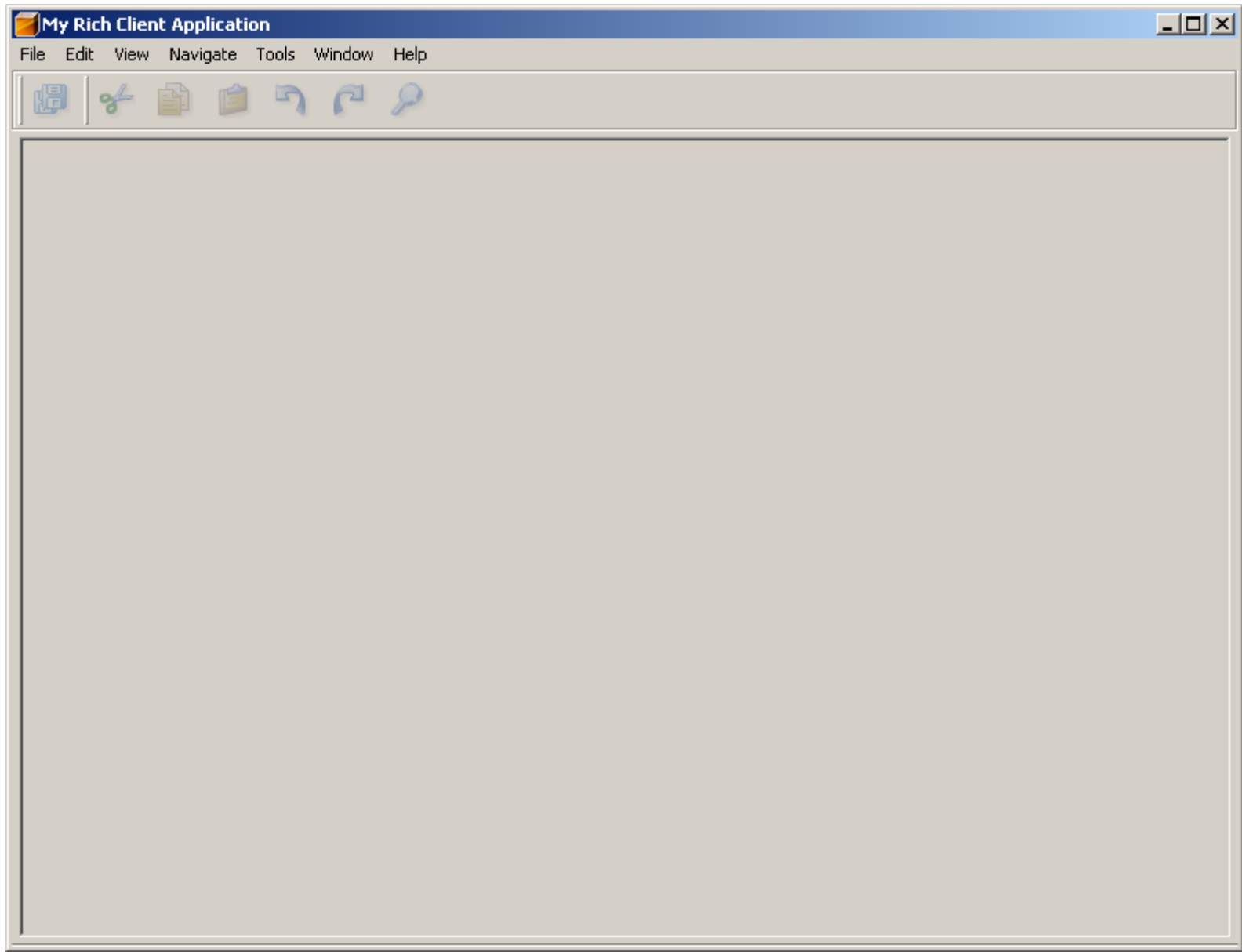


Successfully added Quarter Note at G5q

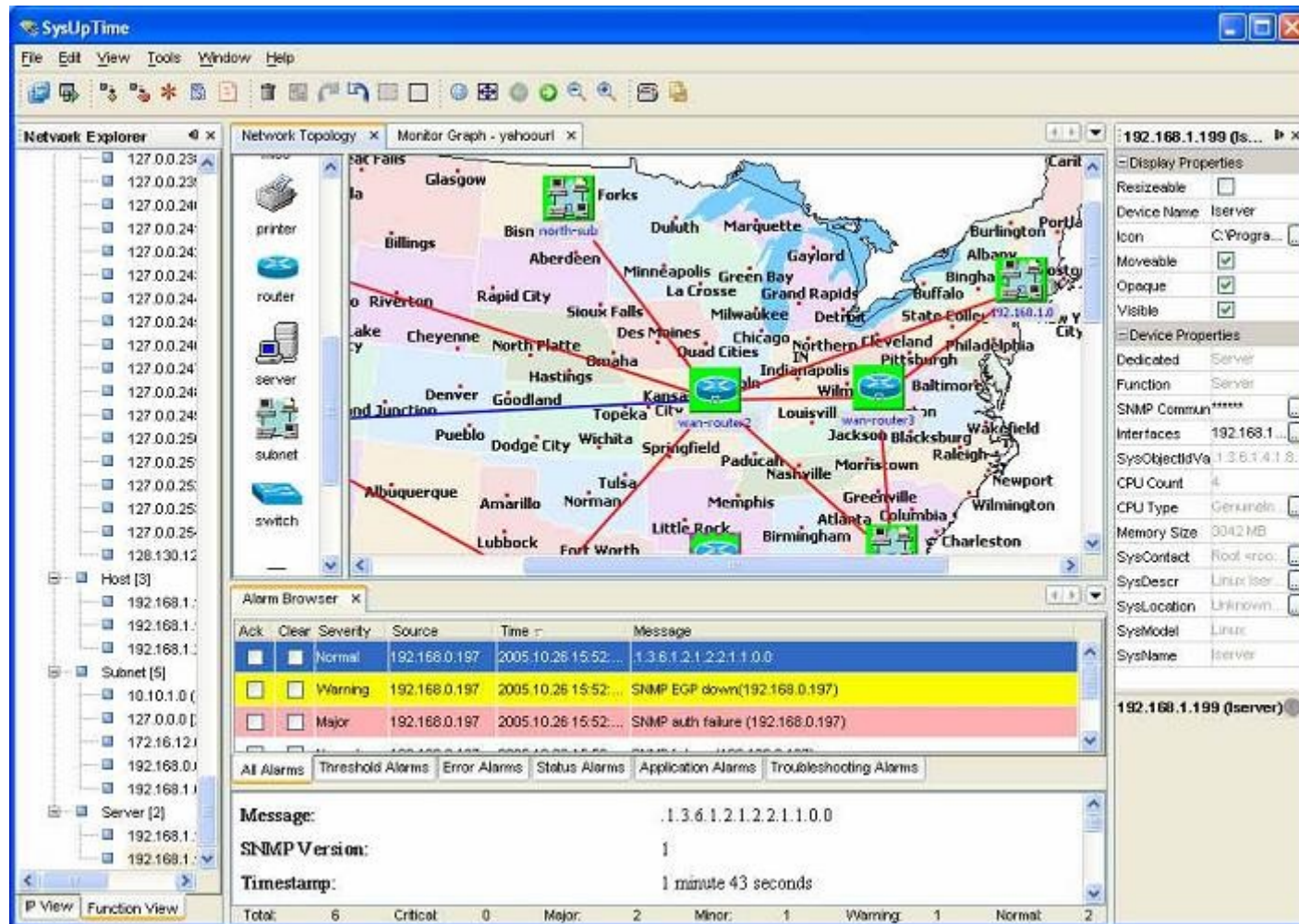
Demo!

Join the team!

<https://nbjfuguesupport.dev.java.net/>



SysUpTime: Network Management System



Alarm Browser

Ack	Clear	Severity	Source	Time	Message
<input type="checkbox"/>	<input type="checkbox"/>	Normal	192.168.0.197	2005.10.26 15:52:...	1.3.6.1.2.1.2.2.1.1.0.0
<input type="checkbox"/>	<input type="checkbox"/>	Warning	192.168.0.197	2005.10.26 15:52:...	SNMP EGP down(192.168.0.197)
<input type="checkbox"/>	<input type="checkbox"/>	Major	192.168.0.197	2005.10.26 15:52:...	SNMP auth failure (192.168.0.197)

Message: 1.3.6.1.2.1.2.2.1.1.0.0
SNMP Version: 1
Timestamp: 1 minute 43 seconds

Total: 6 Critical: 0 Major: 2 Minor: 1 Warning: 1 Normal: 2

Nokia NetAct: Mobile Network Manager

The screenshot displays the Nokia NetAct Mobile Network Manager interface. The top-left pane shows a topology view with a tree structure of network elements. The top-right pane shows a detailed view of a network element, 'SAXC WN0019'. The bottom-left pane shows a list of views, including '0.ALLSITES' and '0.Trial_Network'. The bottom-right pane shows an active alarm table with columns for Severity, Alarm Time, Alarming Object Name, Alarming, Event Number, Event Text, Acknowledged, Correlation, Troubled, and Acknowledged.

Severity	Alarm Time	Alarming Object Name	Alarming	Event Number	Event Text	Acknowledged	Correlation	Troubled	Acknowledged
Critical	2005-11-28 14:46:01.0	ET hh0mss01 to bm0...	PCM	2915	FAULT RATE MONITORING	caschmid			✓
Critical	2005-11-28 14:45:40.0	mr0sgn01	SGSG	32704	NARROWBAND SS7 BOARD ERROR	caschmid			✓
Critical	2005-11-28 14:07:27.0	M0147	WBTS	7750	FAILURE IN WCDMA BTS D&M CONNECTION	caschmid			✓
Critical	2005-11-28 13:37:04.0	SAXC2 - FY0033	AXC	61028	LDF on slot 5, port 2.	caschmid			✓
Critical	2005-11-28 13:27:45.0	G0160	AXC	61058	Node Synchronisation lost.	ARCASL			
Critical	2005-11-28 12:26:06.0	BT0181	AXC	9047	ALARMS FROM NETWORK ELEMENT NOT ARRIVING	omc			✓
Critical	2005-11-28 12:16:37.0	DE0044	AXC	9047	ALARMS FROM NETWORK ELEMENT NOT ARRIVING	ARCASL			
Critical	2005-11-28 12:14:39.0	DG0010	WBTS	7404	EXTERNAL AL 4	ARCASL			
Critical	2005-11-28 12:14:39.0	DG0010	WBTS	7403	EXTERNAL AL 3	ARCASL			
Critical	2005-11-28 12:14:39.0	DG0010	WBTS	7401	EXTERNAL AL 4	ARCASL			
Critical	2005-11-28 12:14:39.0	DG0010	WBTS	7402	EXTERNAL AL 2	ARCASL			
Critical	2005-11-28 11:45:39.0	LS0032	AXC	9047	ALARMS FROM NETWORK ELEMENT NOT ARRIVING	ARCASL			

SAXC2 - FY0033: LDF on slot 5, port 2.

Alarm 61028: LDF on slot 5, port 2.

Description Communication

Loss of frame. It is not possible to carry traffic on the interface referenced in the alarm text. All other transmission alarms related to this signal are suppressed.

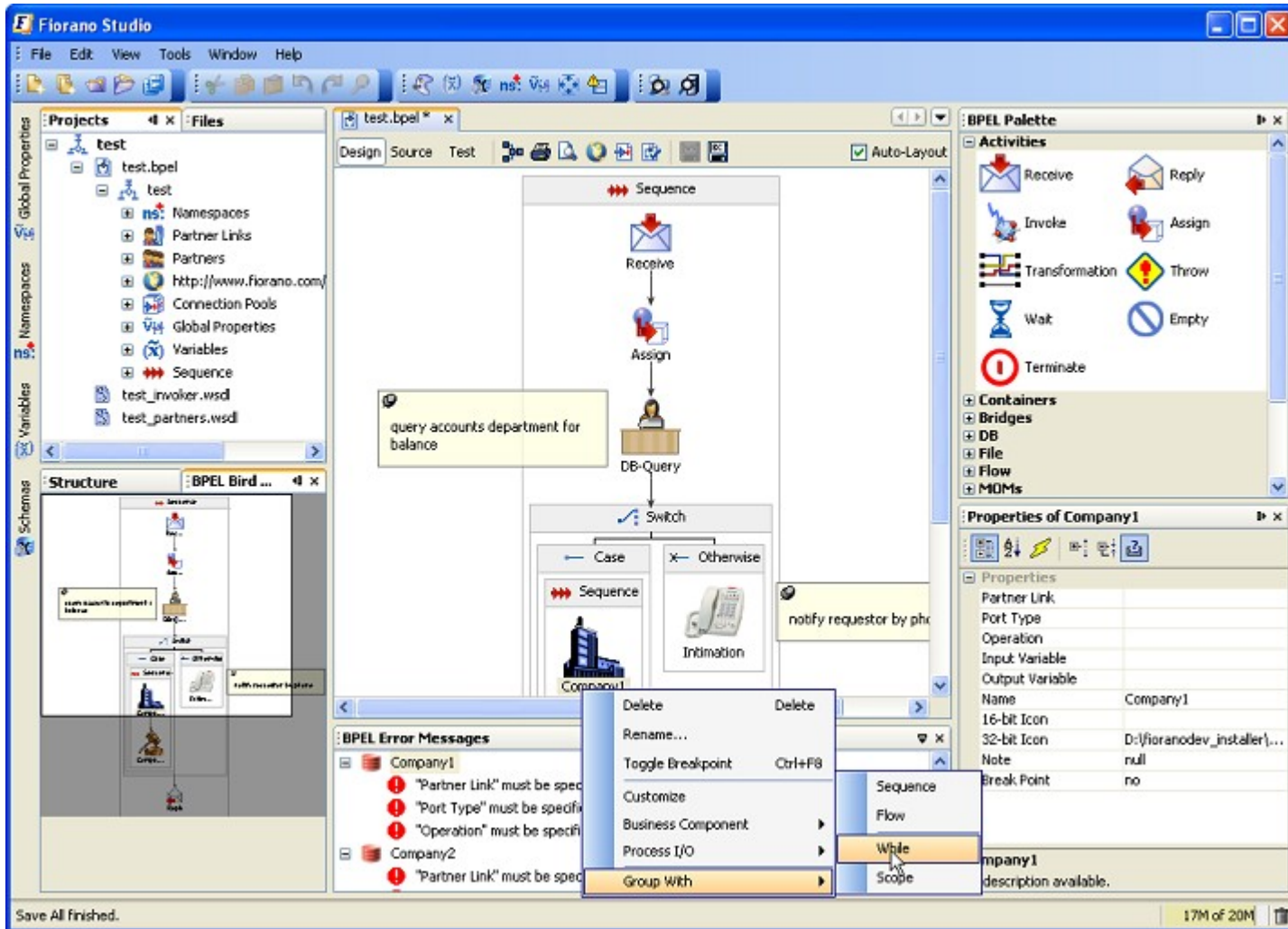
Possible impact on the connections over this interface:

- no calls are possible anymore
- loss of remote management access to other network elements in the RAN

Started Nov 28, 2005, 1:37:04 PM

Active: Sorting alarms only in local view

Fiorano Studio: Lego Blocks for SOA



The screenshot displays the Fiorano Studio IDE interface for editing a BPEL file named 'test.bpel'. The main workspace shows a workflow diagram with the following components:

- Sequence:** A container for the main process flow.
- Receive:** An activity that receives an incoming message.
- Assign:** An activity for assigning values to variables.
- DB-Query:** An activity for querying a database, with a tooltip that reads "query accounts department for balance".
- Switch:** A container for conditional execution, divided into:
 - Case:** Contains a sub-Sequence.
 - Otherwise:** Contains an 'Intimation' activity with a tooltip "notify requestor by phone".

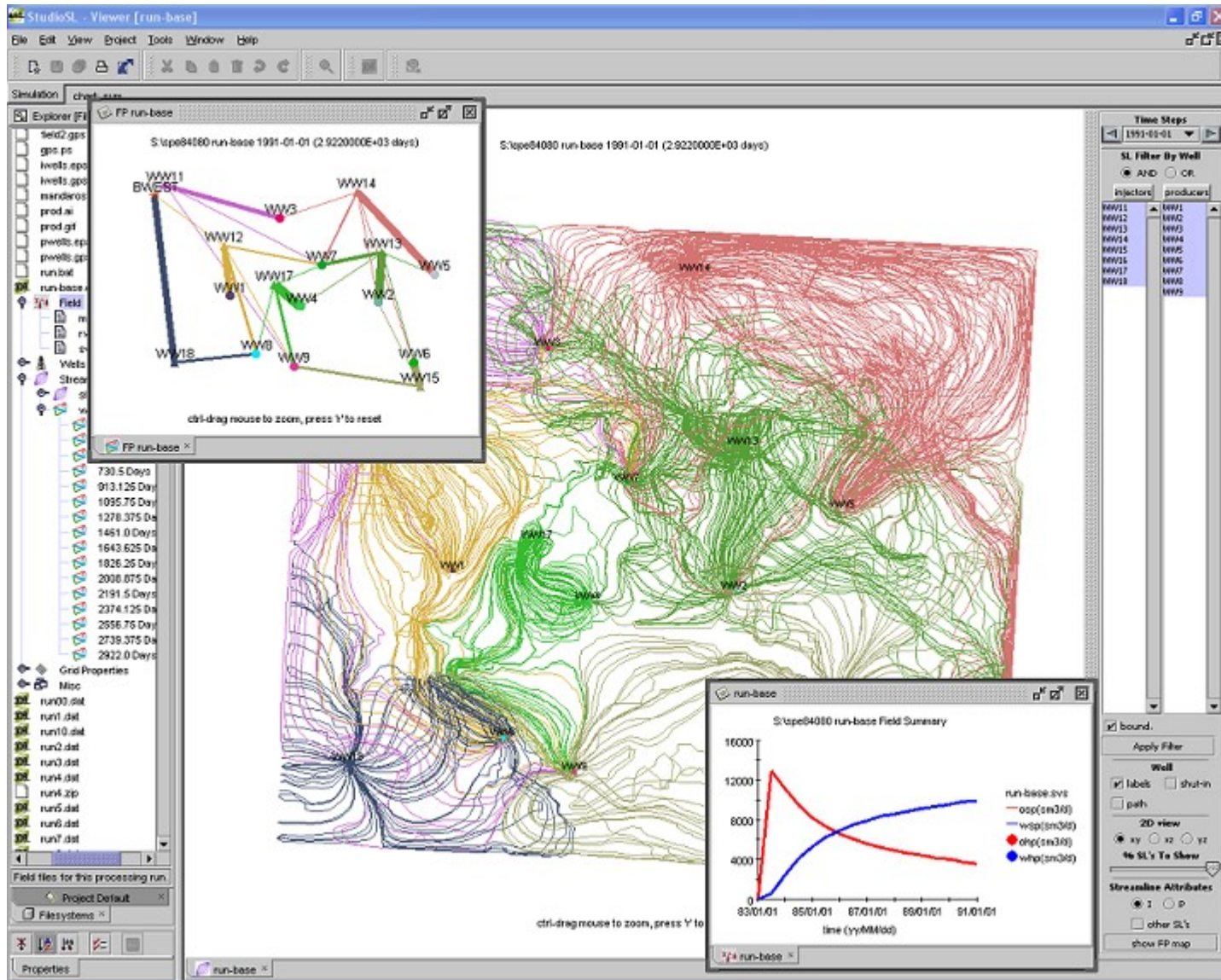
A context menu is open over the 'While' block in the 'Case' sub-Sequence. The menu options are:

- Delete
- Rename...
- Toggle Breakpoint (Ctrl+F8)
- Customize
- Business Component
- Process I/O
- Group With
- Sequence
- Flow
- While** (highlighted)
- Scope

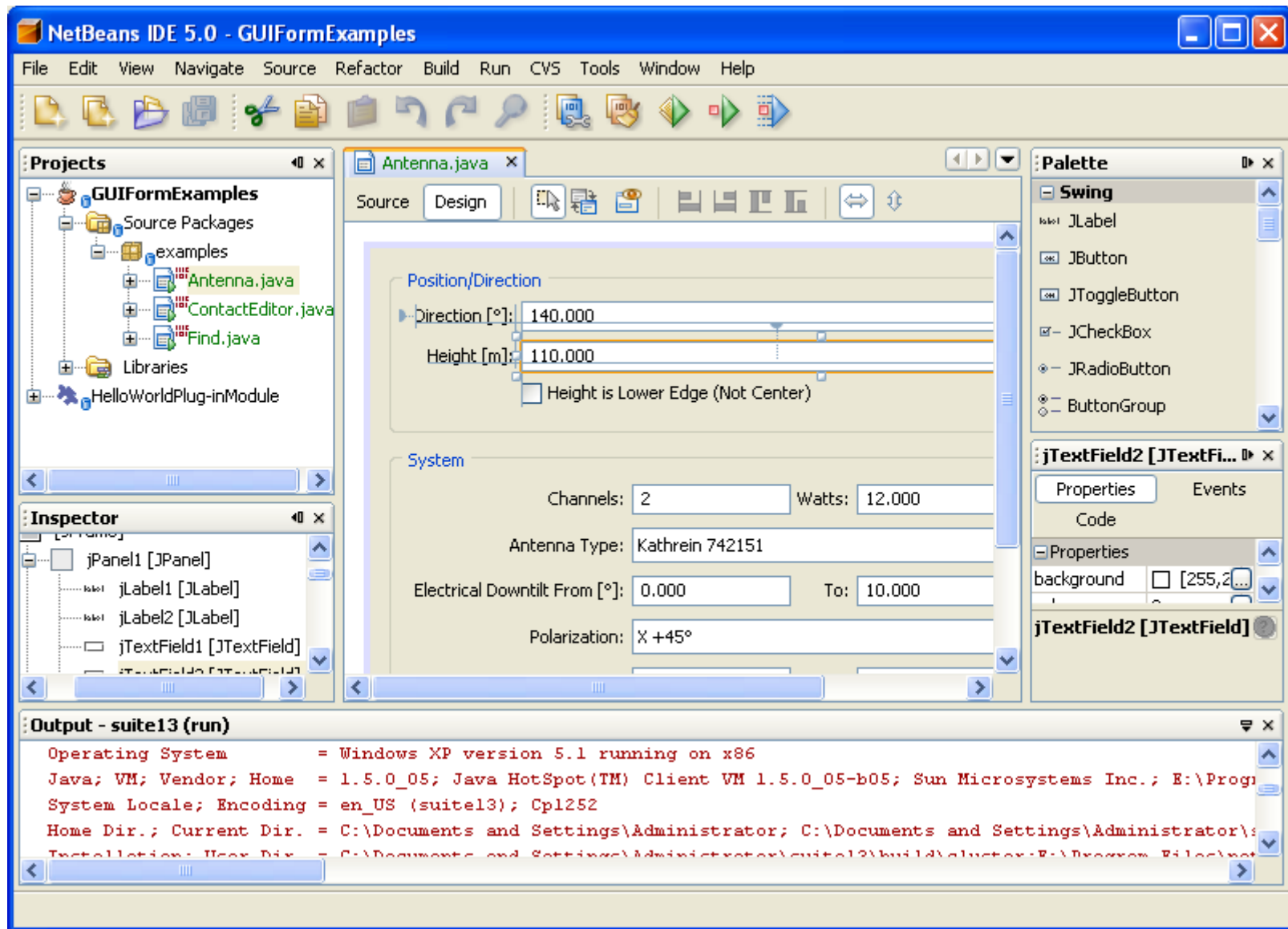
Other interface elements include:

- Projects/Files:** A tree view on the left showing the project structure.
- Structure:** A 'BPEL Bird' diagram showing the overall process flow.
- BP Error Messages:** A list of errors at the bottom left, such as "'Partner Link' must be specified".
- BP Palette:** A palette on the right containing various BPEL activities like Receive, Reply, Invoke, Assign, Transformation, Throw, Wait, Empty, and Terminate.
- Properties of Company1:** A table on the right showing properties for a specific company.

Streamsim IDE: Oil Flow Modeling



NetBeans IDE 5.0: Java Development



The screenshot displays the NetBeans IDE 5.0 interface for a Java GUI application. The main window is titled "NetBeans IDE 5.0 - GUIFormExamples". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Build, Run, CVS, Tools, Window, and Help. The toolbar contains various icons for file operations and development actions.

The **Projects** pane on the left shows a project named "GUIFormExamples" with a sub-package "examples" containing three Java files: "Antenna.java", "ContactEditor.java", and "Find.java". Below the projects are "Libraries" and a "HelloWorldPlug-inModule".

The **Inspector** pane at the bottom left shows the component hierarchy for the GUI, including "jPanel1 [JPanel]", "jLabel1 [JLabel]", "jLabel2 [JLabel]", and "jTextField1 [JTextField]".

The central editor shows the **Antenna.java** file in **Design** mode. The GUI form is titled "Position/Direction" and includes the following elements:

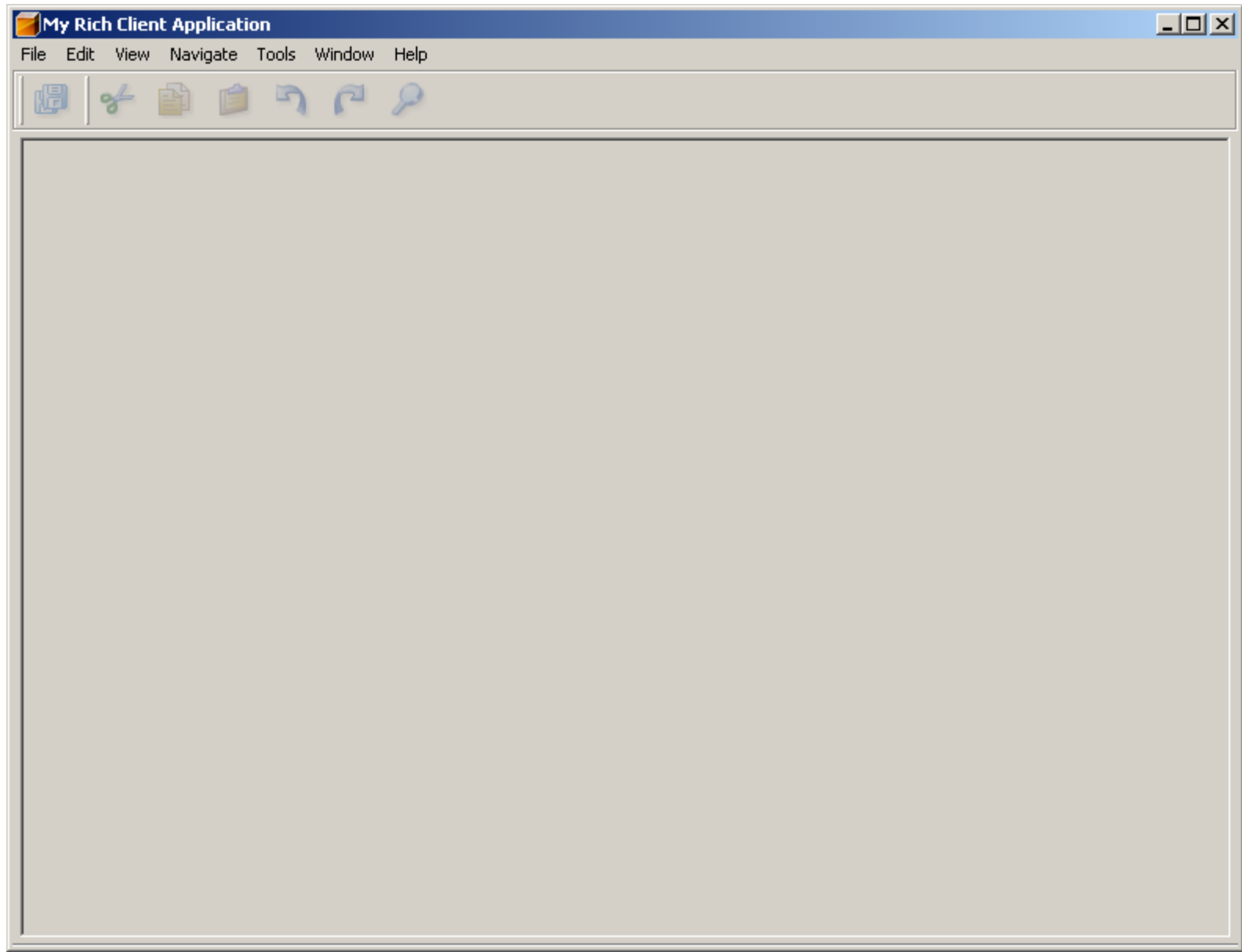
- Direction [°]:** A slider control set to 140.000.
- Height [m]:** A slider control set to 110.000.
- Height is Lower Edge (Not Center):** An unchecked checkbox.
- System** section:
 - Channels:** 2
 - Watts:** 12.000
 - Antenna Type:** Kathrein 742151
 - Electrical Downtilt From [°]:** 0.000
 - To:** 10.000
 - Polarization:** X +45°

The **Palette** on the right lists Swing components: JLabel, JButton, JToggleButton, JCheckBox, JRadioButton, and ButtonGroup. Below the palette, the **Properties** and **Events** tabs are visible for the selected component, showing a "background" property set to [255, 255, 255].

The **Output - suite13 (run)** pane at the bottom displays the following system information:

```

Operating System      = Windows XP version 5.1 running on x86
Java; VM; Vendor; Home = 1.5.0_05; Java HotSpot (TM) Client VM 1.5.0_05-b05; Sun Microsystems Inc.; E:\Program Files\Java\jre6\bin
System Locale; Encoding = en_US (suite13); Cp1252
Home Dir.; Current Dir. = C:\Documents and Settings\Administrator; C:\Documents and Settings\Administrator\My Recent Documents
Installation; User Dir. = C:\Documents and Settings\Administrator\suite13\build\classes; E:\Program Files\NetBeans\bin
  
```



How: Does NetBeans IDE Help?

Before NetBeans IDE 5.0:

- ◆ No specific user interface support in NetBeans IDE
- ◆ Little/no documentation

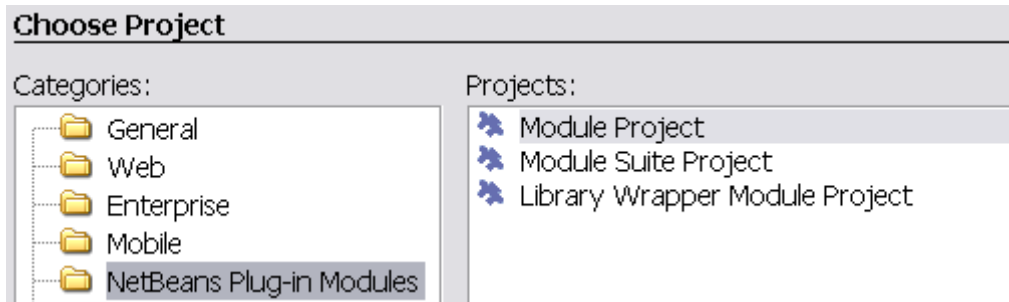
Since NetBeans IDE 5.0:

- ◆ Wizards
- ◆ Templates
- ◆ Specific enhancements/support for Platform Apps
- ◆ A lot of API documentation, tutorials, blogs, samples

How: What's the Process?

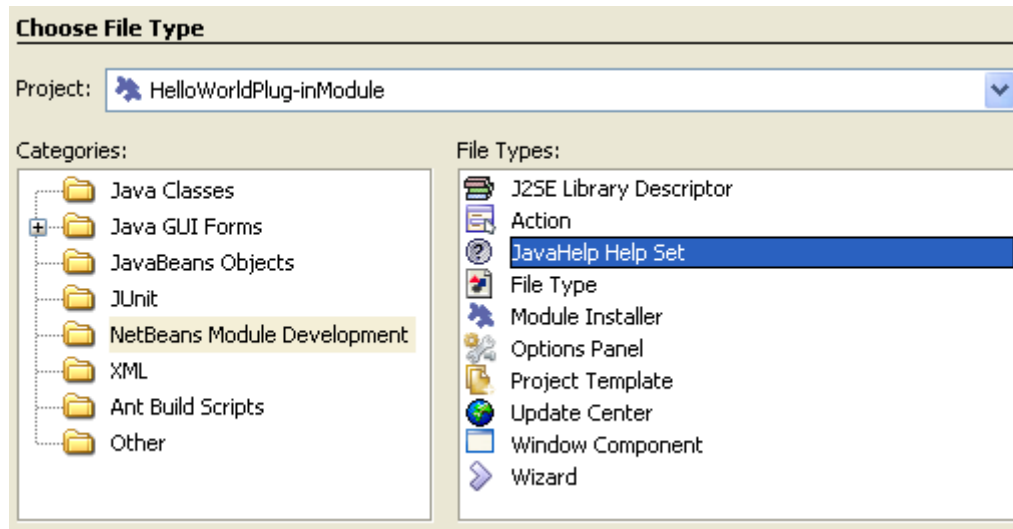
- 1) Project templates: Basic source structure
- 2) File templates: Skeleton API implementations
- 3) Getting further:
 - ◆ Matisse!
 - ◆ Highly Advanced Source Editor
 - ◆ NetBeans API Javadoc
 - ◆ Tutorials
- 4) Menu items: Build, install, test, and debug...
- 5) User interface support: Branding & Distribution

Step 1: Project Templates



- Module Suite Project
 - > Application structure.
- Module Project
 - > Wrap functionality.
- Library Wrapper Module Project
 - > Wrap external JAR files.

Step 2: NetBeans API Templates



- **Action wizard**
 - > menu items, pop-up menus, toolbar buttons, keyboard shortcuts
- **Window Component wizard**
 - > GUI custom components (Matisse!)

Step 2: NetBeans API Templates (Ct'd)

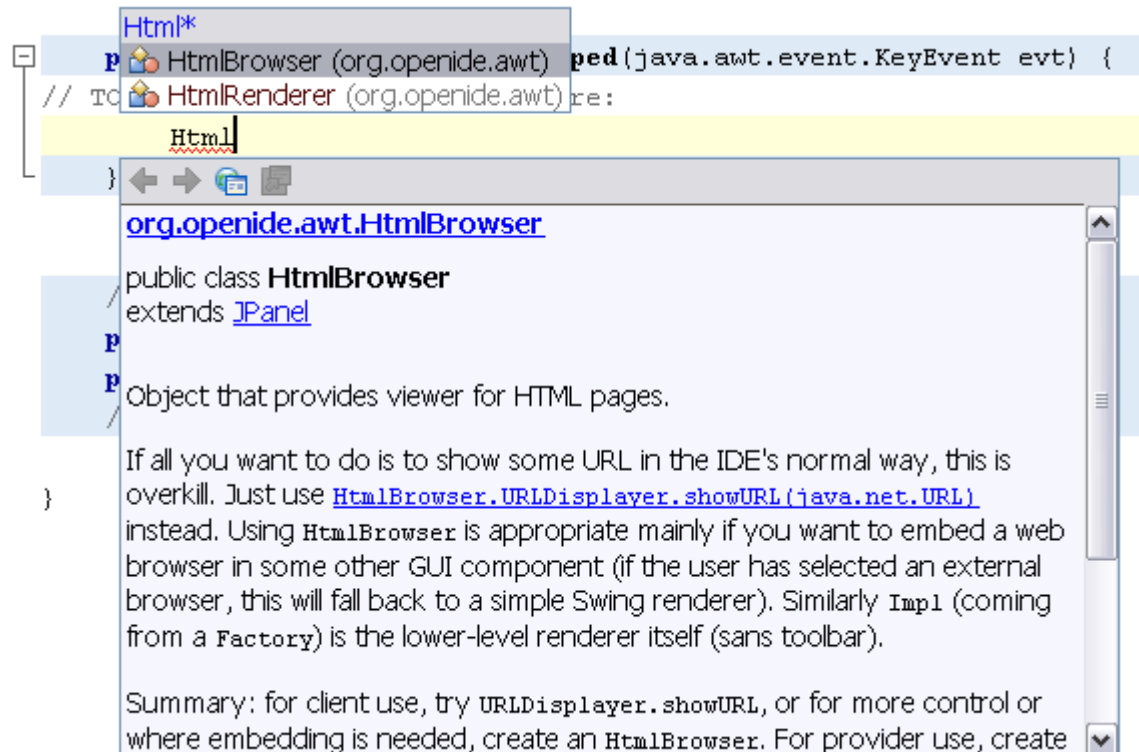
- File Type wizard
 - > recognizing new file types
- Wizard wizard
 - > wizard for generating wizard skeleton...
- Project Template wizard
 - > bundles samples and templates
- J2SE Library Descriptor wizard
 - > makes new JARs available to users in the IDE

Step 2: NetBeans API Templates (Ct'd)

- Options Panel wizard
 - > extend the Options window (give your users options)
- JavaHelp Help Set wizard
 - > wizard for setting up JavaHelp help set
- Update Center wizard
 - > support your distribution process
- Module Installer wizard
 - > *before* the application begins, initialization functions

Step 3: Develop the Application

- Get to know the NetBeans APIs
- Use the NetBeans Source Editor
- Read the NetBeans API Javadoc



```

Html*
public class HtmlBrowser (org.openide.awt) extends JPanel implements ActionListener {
    // TODO: implement HtmlRenderer (org.openide.awt)
}

```

org.openide.awt.HtmlBrowser

public class **HtmlBrowser**
 extends [JPanel](#)


Object that provides viewer for HTML pages.

If all you want to do is to show some URL in the IDE's normal way, this is overkill. Just use [HtmlBrowser.URLDisplayer.showURL\(java.net.URL\)](#) instead. Using **HtmlBrowser** is appropriate mainly if you want to embed a web browser in some other GUI component (if the user has selected an external browser, this will fall back to a simple Swing renderer). Similarly **Impl** (coming from a **Factory**) is the lower-level renderer itself (sans toolbar).

Summary: for client use, try [URLDisplayer.showURL](#), or for more control or where embedding is needed, create an **HtmlBrowser**. For provider use, create

Step 3: Develop the Application (Ct'd)

- <http://platform.netbeans.org/tutorials>
 - > Quick Start Guide
 - > FAQ
 - > Tutorials



netBeans.ORG

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platform

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- > [NetBeans API Javadoc](#)
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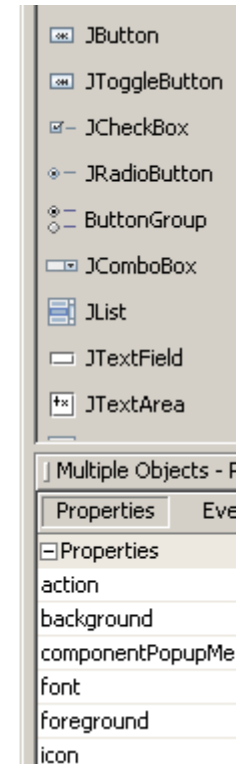
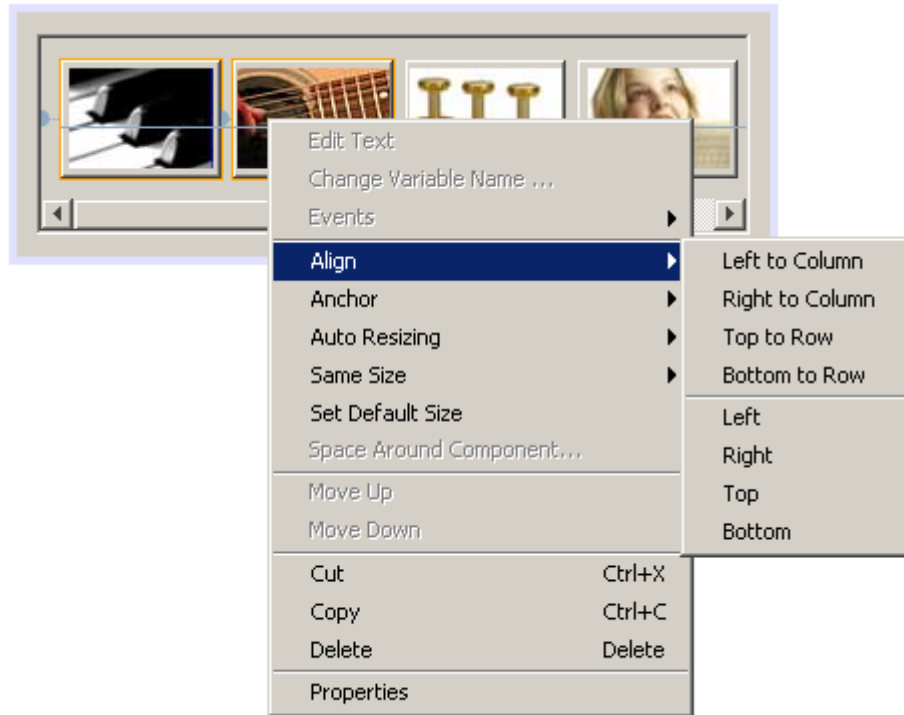
NetBeans Module (Plug-in) and Rich Client Application Development

Developers have been successfully writing NetBeans plug-in modules for years, but NetBeans IDE 5.0 makes the workload much lighter and the process a lot smoother. The IDE offers comprehensive GUI support for building IDE plug-in modules and rich client applications on the NetBeans Platform. Many wizards for extending the IDE and creating applications on top of the NetBeans Platform are provided. Using brand new templates in the New Project wizard and New File wizard, you can generate all the basic files and code you need. The Project Properties dialog box lets you configure API dependencies, manifest entries, and other project metadata. Code completion and other standard support provided by the IDE's Source Editor is available for plug-in modules too.

This site is home to everything you need—NetBeans API Javadoc, tutorials, and FAQ. You've come to the right place if you are a developer who wants to extend the NetBeans IDE or build rich client applications on top of the NetBeans Platform.

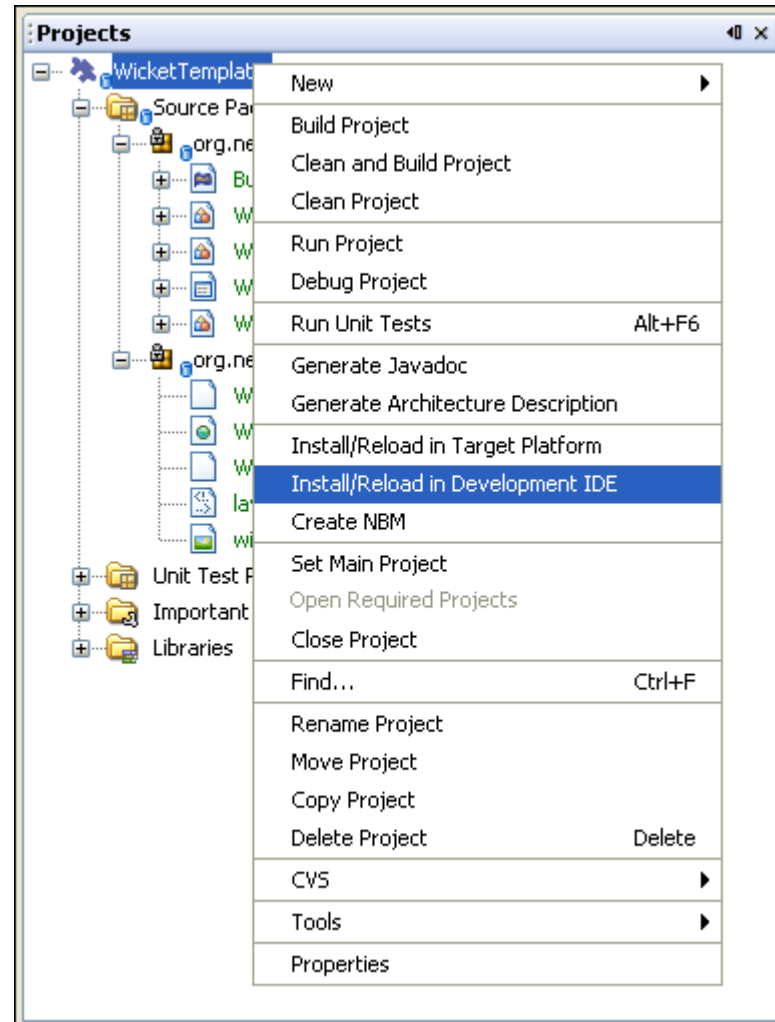
Step 3: Develop the Application (Ct'd)

- Matisse! Matisse! Matisse!

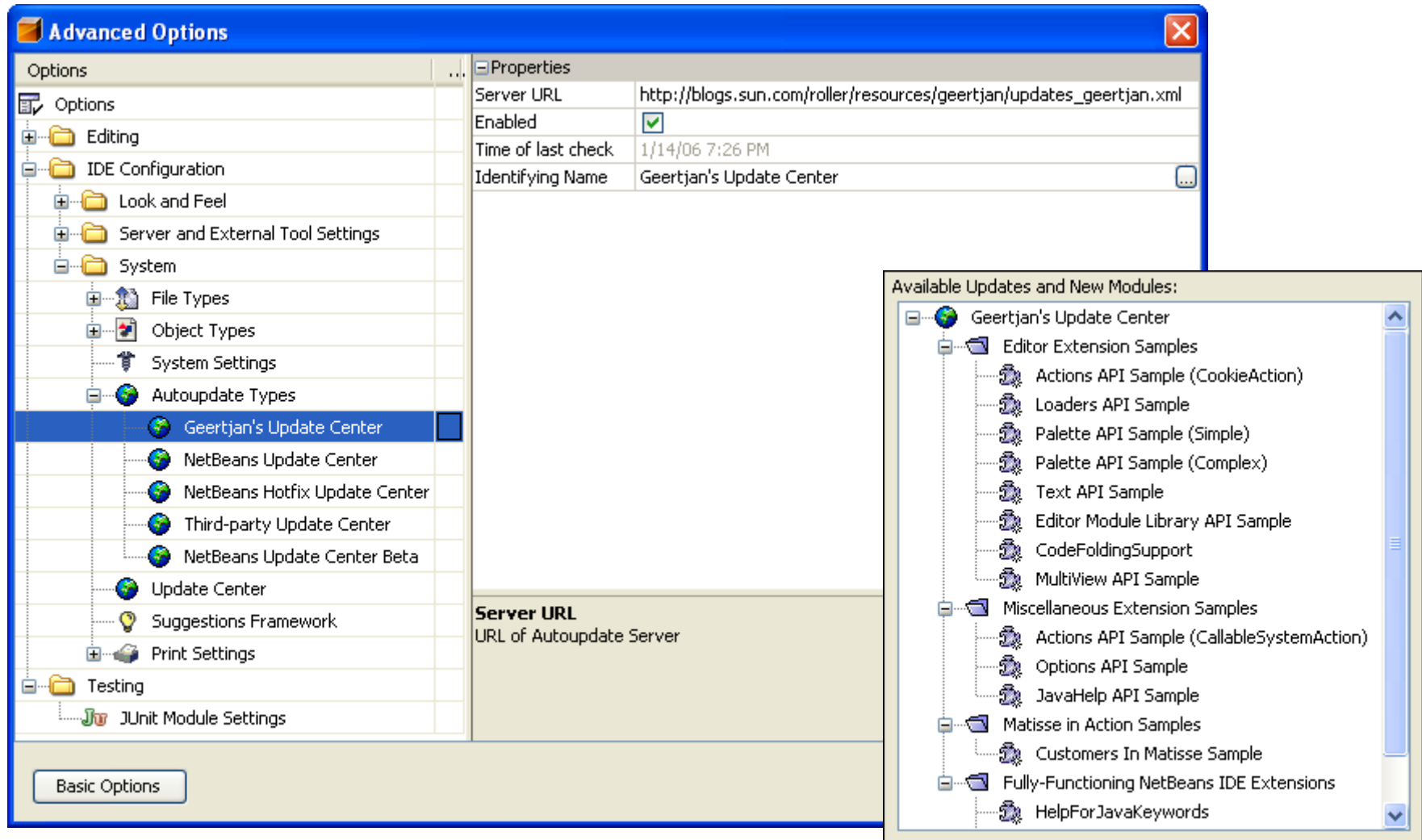


Step 4: Build, Deploy, Test, & Debug

- Build Project
- Run Project
- Debug Project
- Create NBM File
- Install Project
- etc...
- etc...



Step 5: Distribution...



The screenshot shows the NetBeans 'Advanced Options' dialog box. The 'Autoupdate Types' section is expanded, and 'Geertjan's Update Center' is selected. The 'Properties' pane on the right shows the following configuration:

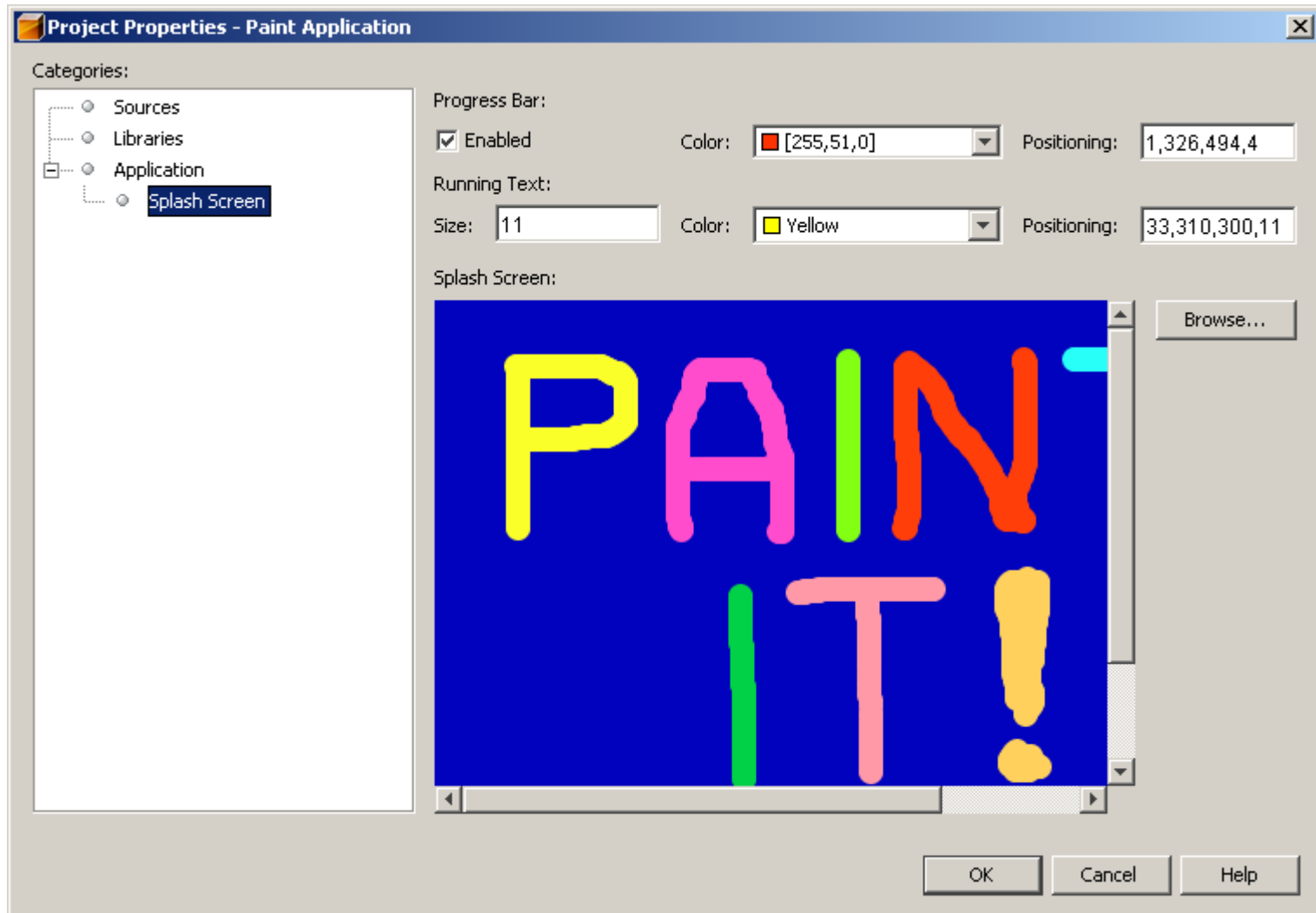
Server URL	http://blogs.sun.com/roller/resources/geertjan/updates_geertjan.xml
Enabled	<input checked="" type="checkbox"/>
Time of last check	1/14/06 7:26 PM
Identifying Name	Geertjan's Update Center

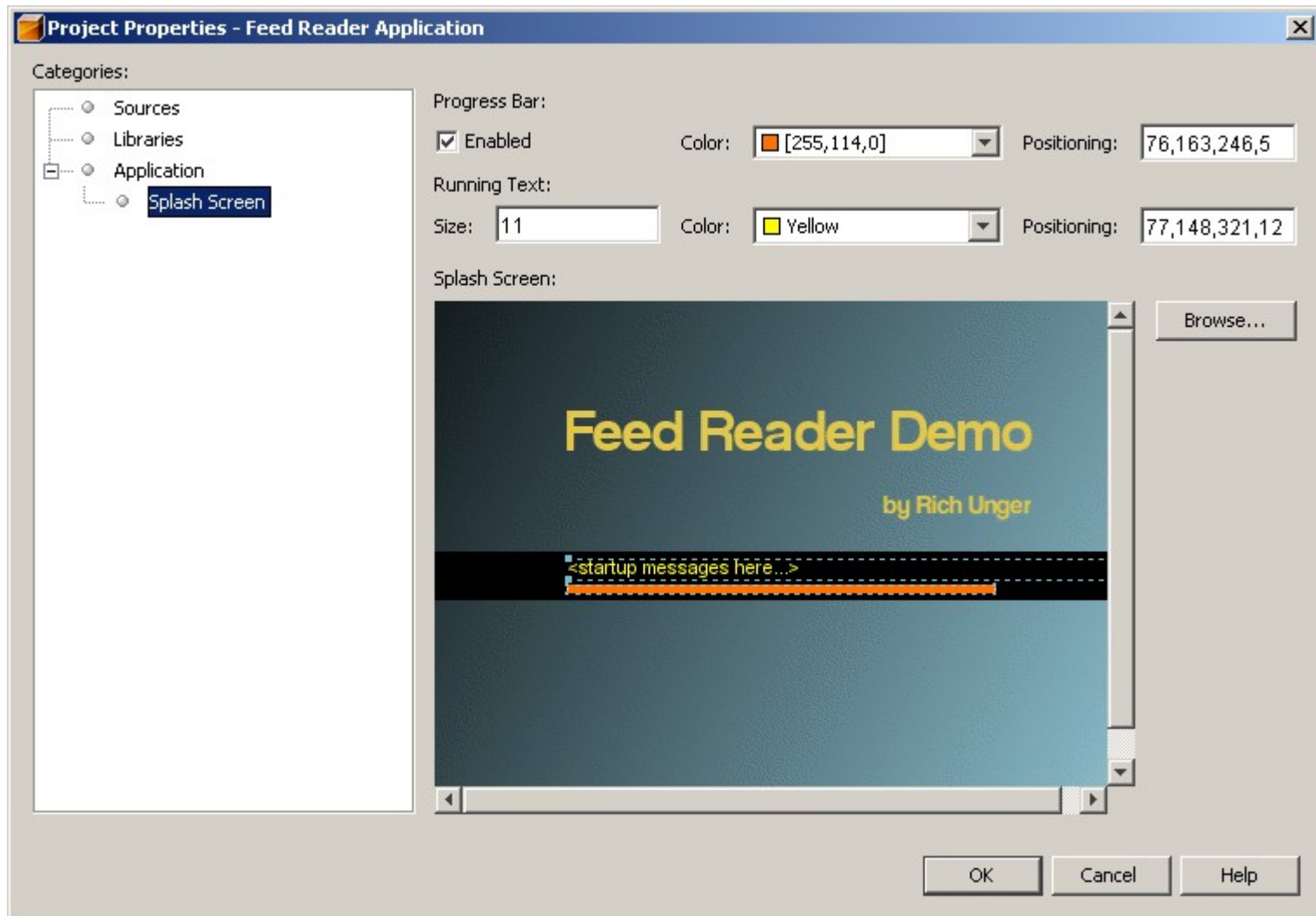
Below the 'Properties' pane, the 'Server URL' and 'URL of Autoupdate Server' fields are visible.

An inset window titled 'Available Updates and New Modules:' displays a tree view of the update center's contents:

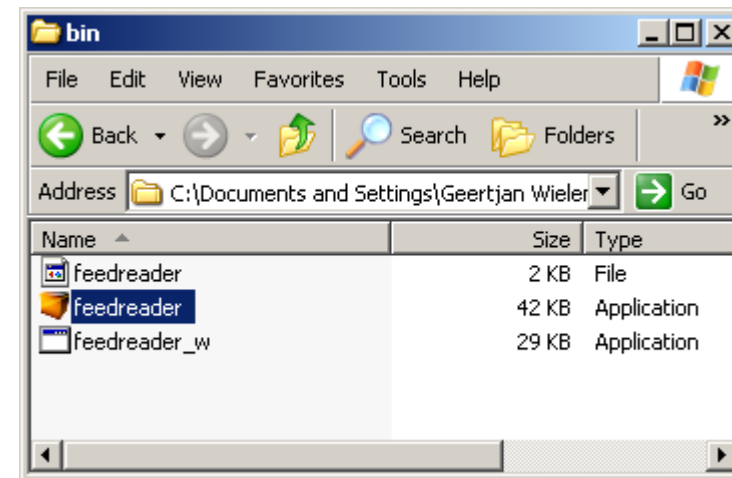
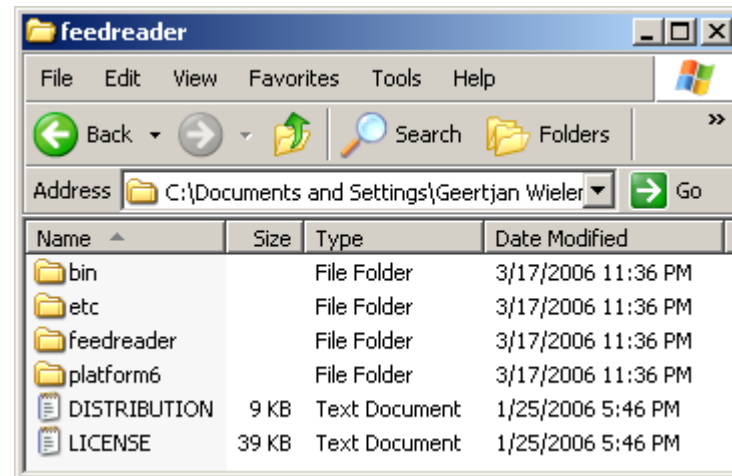
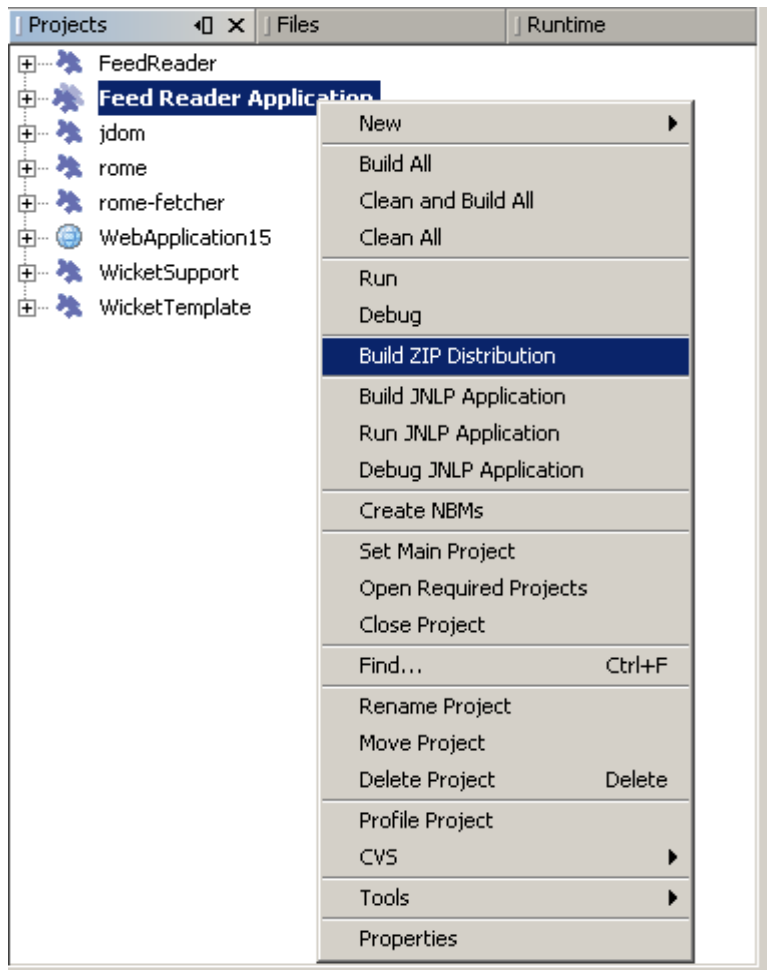
- Geertjan's Update Center
 - Editor Extension Samples
 - Actions API Sample (CookieAction)
 - Loaders API Sample
 - Palette API Sample (Simple)
 - Palette API Sample (Complex)
 - Text API Sample
 - Editor Module Library API Sample
 - CodeFoldingSupport
 - Multiview API Sample
 - Miscellaneous Extension Samples
 - Actions API Sample (CallableSystemAction)
 - Options API Sample
 - JavaHelp API Sample
 - Matisse in Action Samples
 - Customers In Matisse Sample
 - Fully-Functioning NetBeans IDE Extensions
 - HelpForJavaKeywords

...but first... branding...

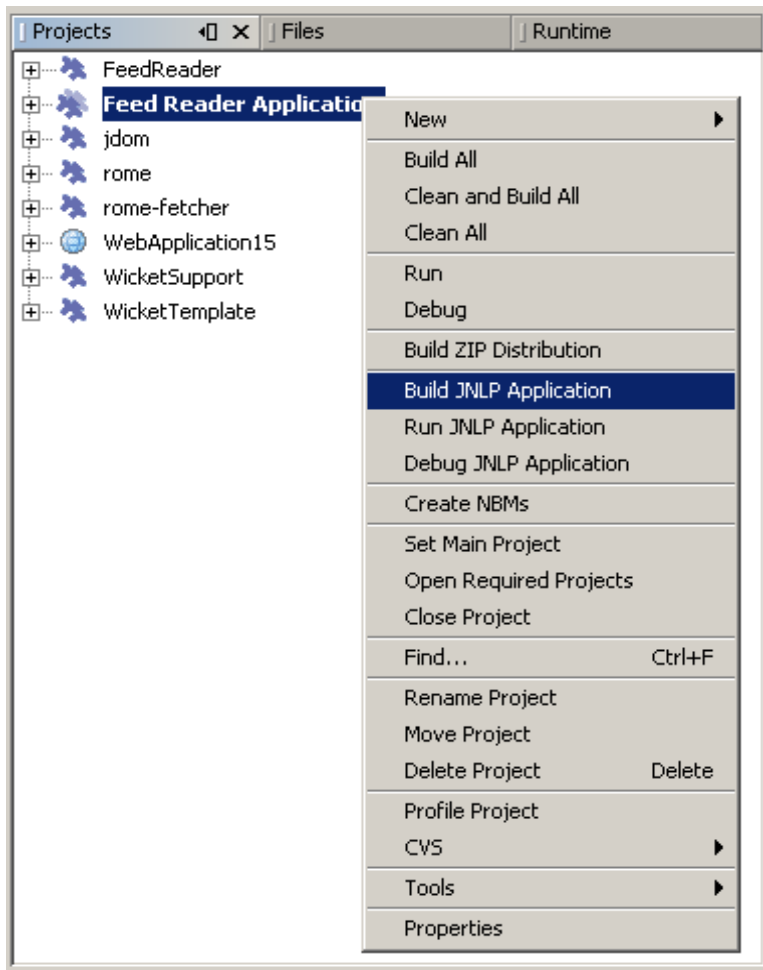




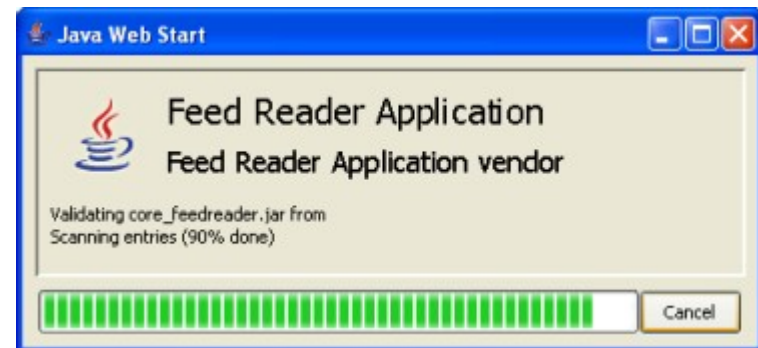
ZIP file generation (plus launcher)



...or a JNLP application!



- JNLP applications can be delivered and started over the web.
- With one menu item in the IDE, you can package your application as a JNLP application, for easy distribution to your end users.



Show me! Demo...

1. Create a rich-client application skeleton (the core).
2. Bundle the JFugue API.
3. Add module for functionality (with Matisse).
 - JTextArea
 - JButton: Play
 - JButton: Save
4. Call “Play” and “Save” methods in the JFugue API.
5. Create a distribution.

Summary

- Developing on the NetBeans Platform since 5.0
 - > Wizards and templates
 - > Matisse for intuitive GUI design
 - > NetBeans API JavaDoc
 - > Samples and Tutorials
- Need help?
 - > dev@openide.netbeans.org
 - > <http://blogs.sun.com/geertjan>

Questions & Answers



```
jdkhome="C:\Program Files\Java\jdk1.5.0_06"
```