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**POWER**  
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# Twelve Reasons To Use NetBeans™ Software—Episode 2

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TS-1387

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[java.sun.com/javaone/sf](http://java.sun.com/javaone/sf)

# Goals

Understand the new benefits and features the NetBeans™ IDE offers developers.

Learn how fast NetBeans technology is growing this past year and where it is going next.

# Agenda

What Is NetBeans Software?

Twelve Reasons to Use the NetBeans IDE

Summary and More Information

Q&A

# What Is NetBeans Software?

# What Is NetBeans Software?

- **NetBeans.org**
  - Open source since June 2000
  - 10 million downloads since 2000
    - 33% increase in the past year
  - Vibrant community: Over 70,000 mailing list subscribers
  - Runs on all platforms—no native code, 1.4 or higher
- **NetBeans IDE**
  - Full-featured Java™ IDE
  - Composed of plug-ins, extensible by plug-ins
- **NetBeans Platform**
  - Rich Client application framework

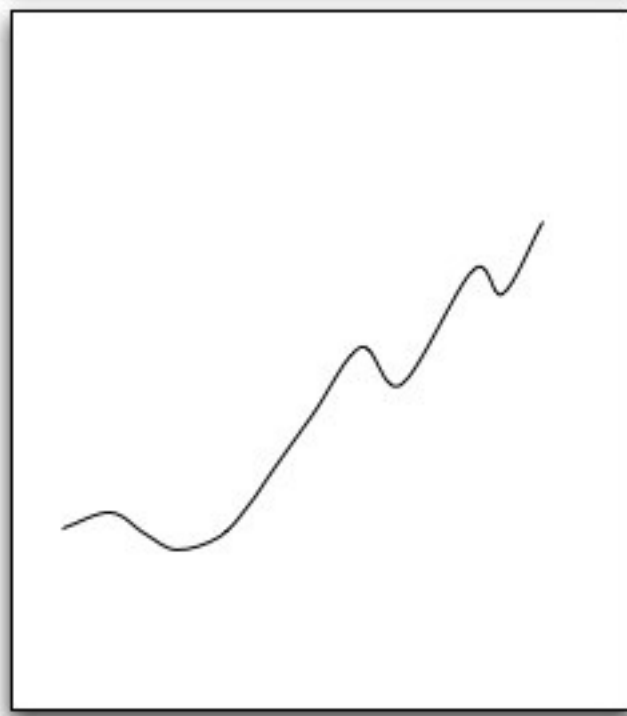
# What Is NetBeans Software?

- Free
- The basis for Sun Java Studio Creator and Sun Java Studio Enterprise (+ tools from other vendors)
- Open Source tool of the year
- Winner of two Codie Awards
  - Best Software Development Product
  - Best Open Source Product
- Works right out of the box—no searching for basic plug-ins
- NetBeans technology is growing very fast; how fast...?



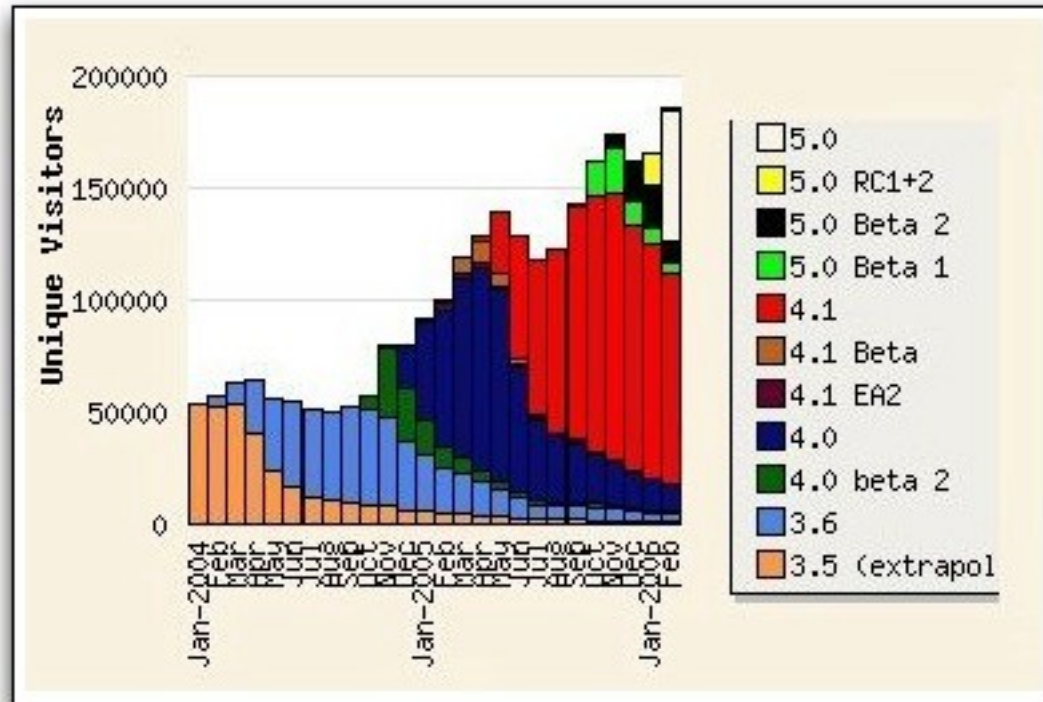
<http://www.netbeans.org>

# NetBeans Technology Growth— Very, Very Fast



**A Really Great Year**

# NetBeans Technology Growth— Very, Very Fast





# NetBeans Partners



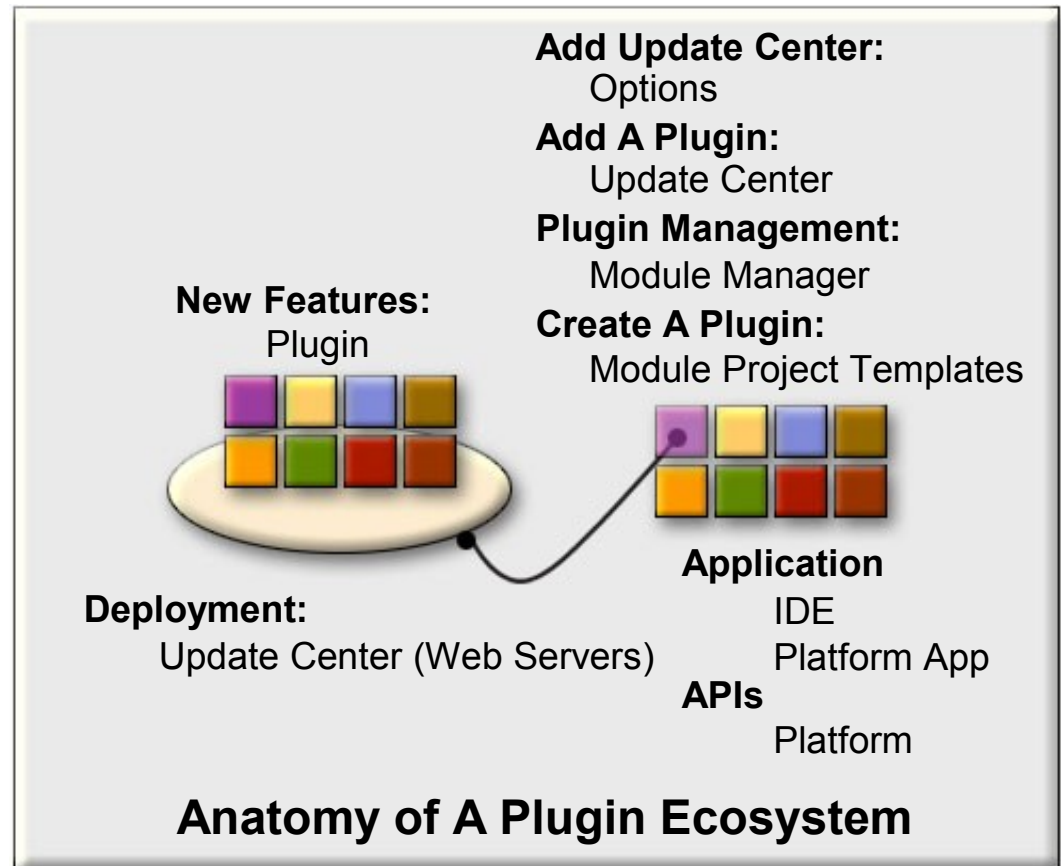
# 12 Reasons To Use NetBeans Software

# Reason 1: Out of the Box Experience

- Fast, Comprehensive IDE and Platform
- Full Support
  - Support for Java SE 1.4.2, 5.0 and 6.0 (in-work)
  - Support for J2EE™ 1.4.2 and Java EE 5.0
  - Full Sun Java System Developer Tools for Java, Mobile Edition Support
- Debugger, Profiler and VisualGC
- Import Facilities—code, Ant, Eclipse and JBuilder
- Plugin Ecosystem and Easy updates
- Future Features

# Reason 2: NetBeans Technology's Plugin Ecosystem

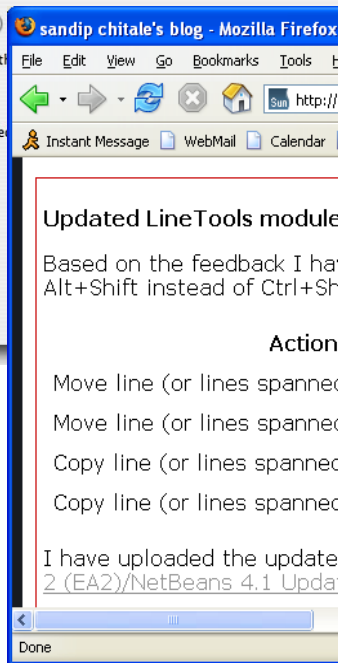
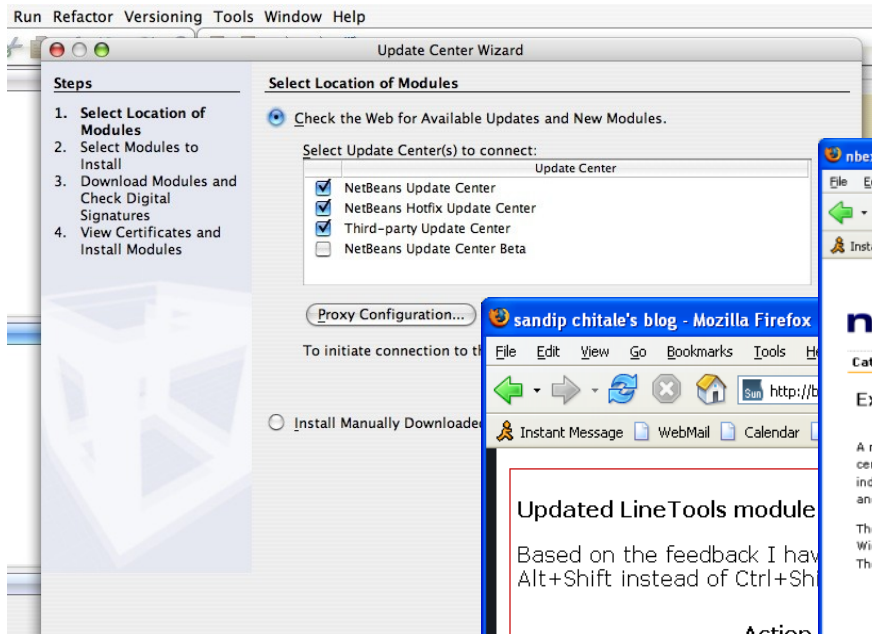
- NetBeans Technology Plugin Ecosystem is growing quickly
- NetBeans IDE 5.0 and 5.5 make it very easy to create a plugin
- Update Centers make for easy and transparent end user downloads of plugins



# Reason 2: Update Center

More and more plugins and more and more Update Centers

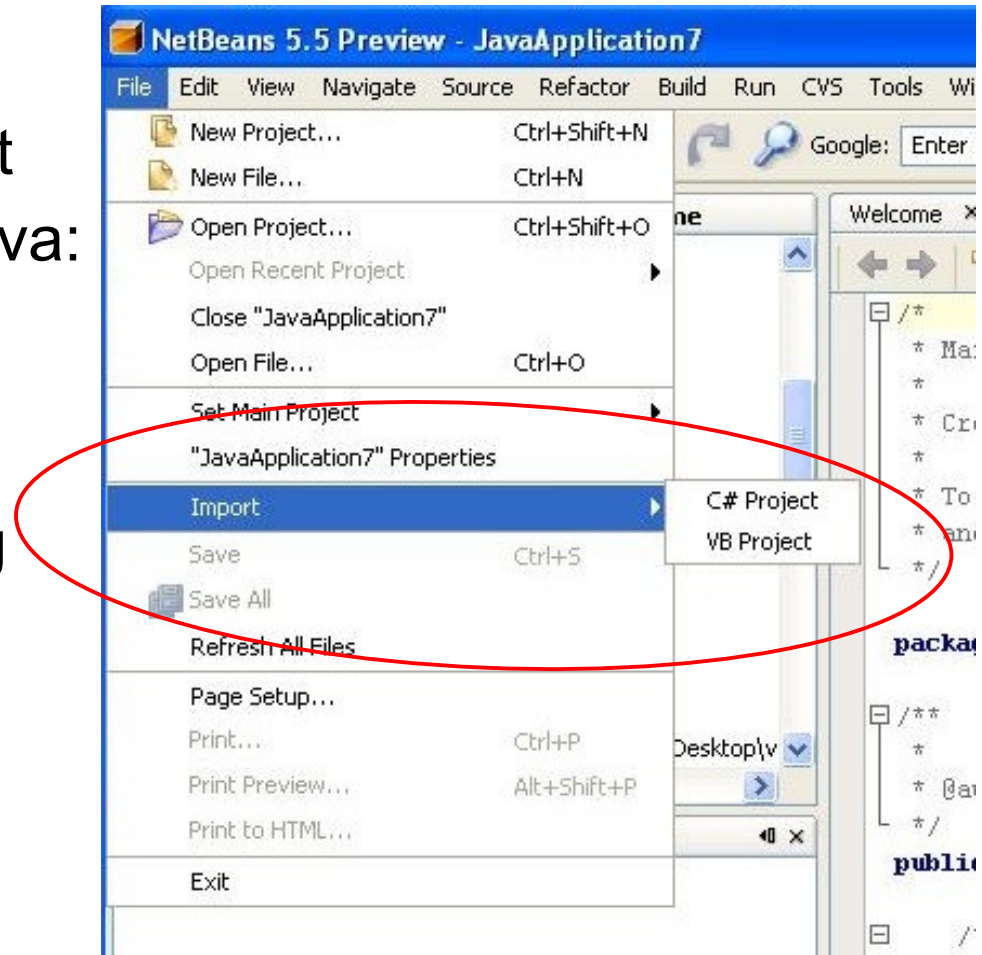
Like [NetBeans.org](http://NetBeans.org) and [nbextras.org](http://nbextras.org) and many personal Update Centers



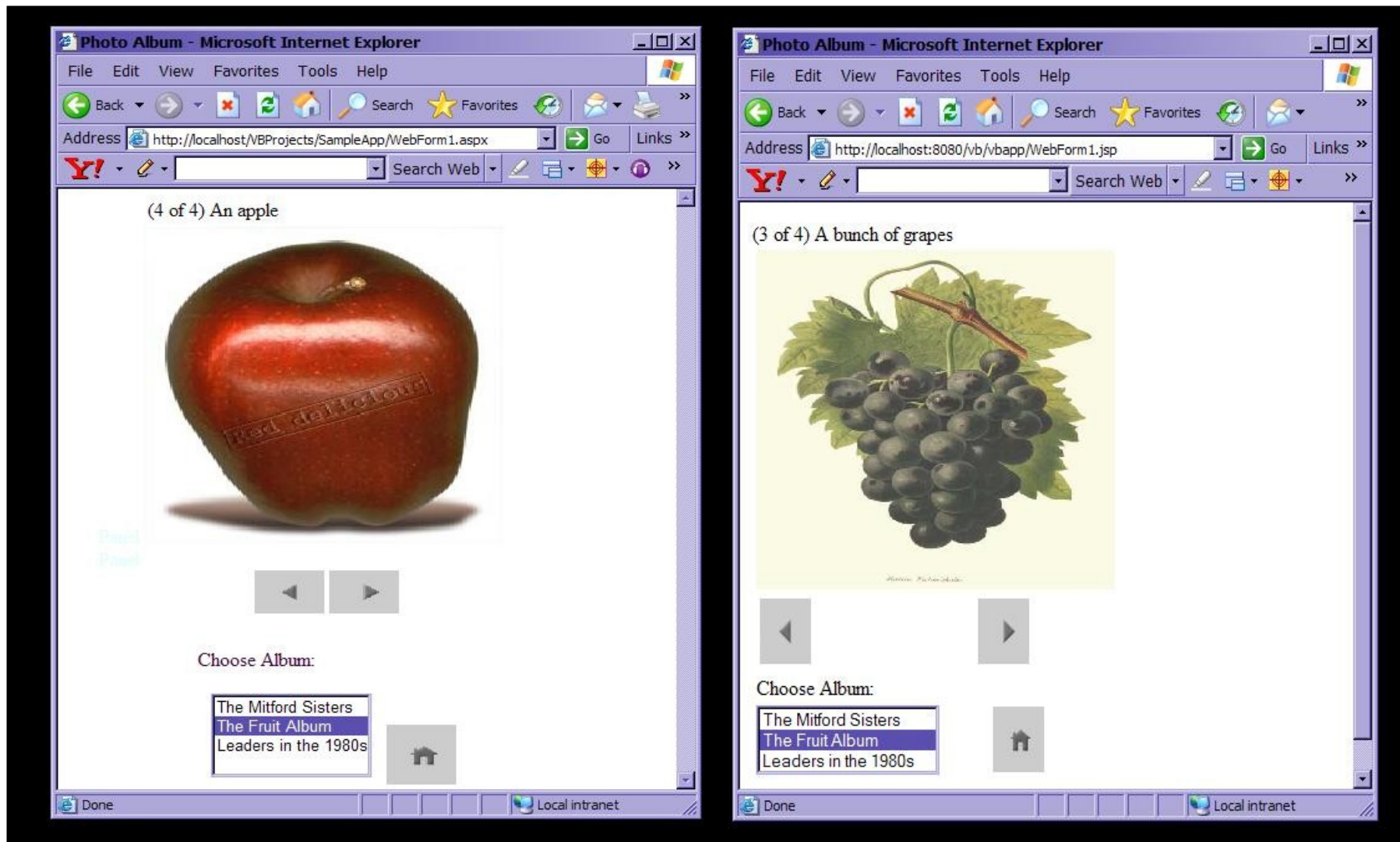
Also plugins are moving by email and web sites

# Reason 2 : NetBeans .NET Plugin

- NetBeans Plugin Project
- Currently converts to Java:
  - C#
  - VB.NET
- Plugin translates from .NET to Java using a translator that has two parts :
  - .NET language parsers (C# and VB)
  - .NET translation library

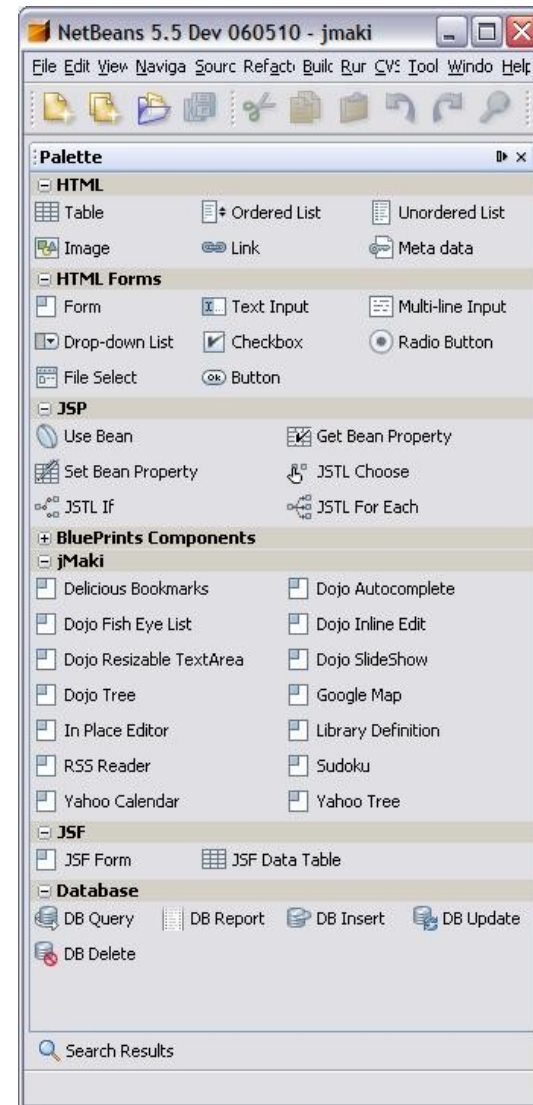


# Reason 2: NetBeans .NET Plugin



# Reason 2: AJAX with jMaki

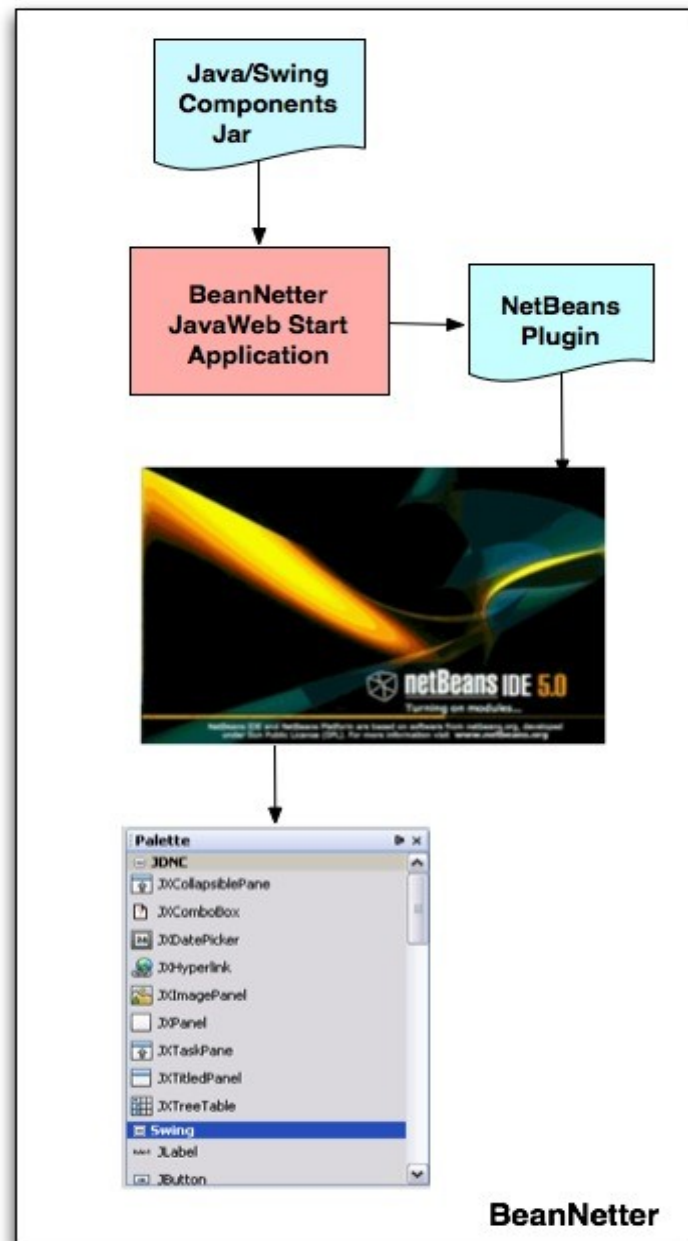
- AJAX style widgets sets
- <https://ajax.dev.java.net/>
- Deploy on Glassfish App server
- Support for JSP or JSF
- Offers
  - Dojo
  - Scriptaculos
  - Yahoo
  - And more





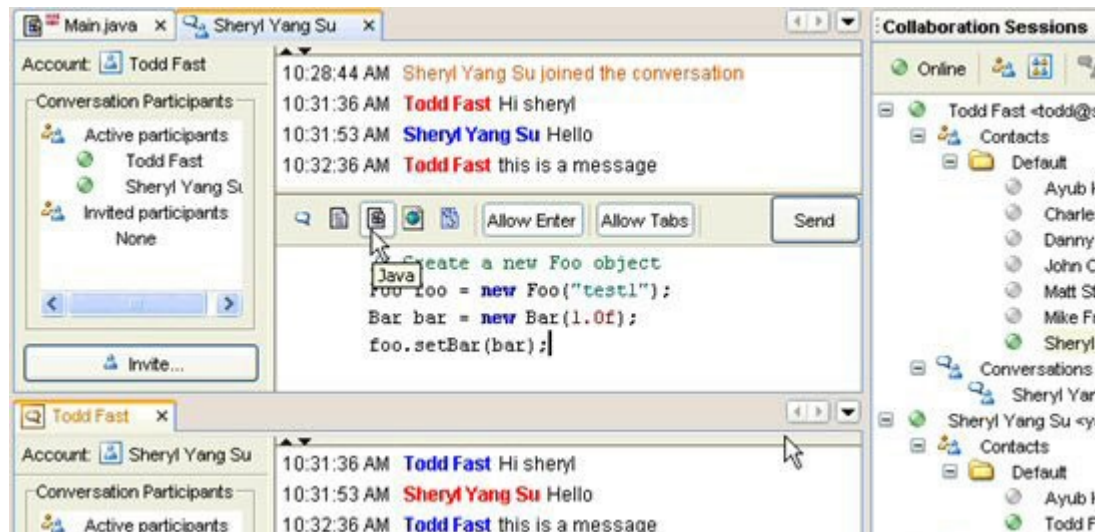
## Reason 2: BeanNetter

- JavaWeb Start (JNLP) app converts JavaBean into a NetBeans plugin
- Currently converts a jar file into a plugin (nbm) file
- Load the generated plugin into NetBeans via the Update Center (manual)
- New Swing components appear on the GUI Builder Component Palette



# Reason 3: Developer Collaboration

- NetBeans IDE has included code-aware collaboration tools for dispersed groups; get it from the Update Center
- Interactive instant messaging/VoIP tools
- Collaboration server at [share.java.net](http://share.java.net) or your server



# Reason 4: NetBeans Enterprise Pack 5.5 and Java EE 5 Support



- Support of Java EE 5
  - Includes Web modules and EJB™ 3.0 software
  - Supports Java Persistence API in web, EJB technology, and stand-alone J2SE™ based applications
  - Deploys to bundled Sun Java System Application Server 9 Beta
  - Generates Entity classes from existing database structures
  - Generates database tables from handwritten Entity classes
  - Entity Wizards for creating Entities and Persistence units
  - Wizards for creating full JavaServer™ Faces based apps or app fragments based on Entity classes
  - Code completion and documentation for all Java EE APIs

# Reason 4: NetBeans Enterprise Pack 5.5 and Java EE 5.0 Support



- Struts and/or JavaServer Faces based template\*
- Code completion in Struts and JavaServer Faces based tags\*
- Hibernate and Spring support

# Reason 4: NetBeans Enterprise Pack —UML Tools (Cont.)



- Full two-way, roundtrip engineering
- Markerless code
- Code Generation
- Requirements Gathering
- Predefined and Extensible Design Patterns
- Import Rational Rose
- UML 2.0 (1/6/2003 draft)
  - Class, Sequence Diagrams
  - Collaboration, Activity, Use Case Diagrams
  - Component, Deployment, State Diagrams

# Reason 4: UML Tools (Cont.)

The screenshot displays the NetBeans 5.5 Preview IDE with a UML Class Diagram open. The diagram shows a central **BankAccount** class with several associations to other classes: **Checking**, **Savings**, **History**, **Account**, and **NoAvailableFundsException**. The **BankAccount** class also has a self-association. The **Account** class is associated with **History**. The **NoAvailableFundsException** class is associated with **BankAccount**. The **Main** class is associated with **BankAccount**. The **Checking** and **Savings** classes are associated with **BankAccount**. The **History** class is associated with **BankAccount**. The **Account** class is associated with **BankAccount**. The **NoAvailableFundsException** class is associated with **BankAccount**. The **Main** class is associated with **BankAccount**.

The IDE interface includes the following panels:

- Projects:** Shows a tree view of the project structure, including **BankApp**, **TravelReservationService**, **UMLProject1**, and **Model**.
- Navigator:** Shows the current view of the selected element, currently displaying **<No View Available>**.
- Palette:** Lists various UML diagram elements such as **Class**, **Interface**, **Package**, **Collaboration Lifeline**, **Enumeration**, **Node**, **Datatype**, **Artifact**, **Aliased**, **Utility Class**, and **Actor**.
- Documentation:** Provides a rich text editor for documenting the diagram.
- New Diagram - Properties:** A dialog box for configuring the new diagram, showing fields for **Name**, **Alias**, **File Name**, **Layout Style** (set to **hierarchical**), **Diagram Kind** (set to **Class Diagram**), and **Documentation**.

# DEMO

UML Tools  
Reverse-Engineering UML from Code

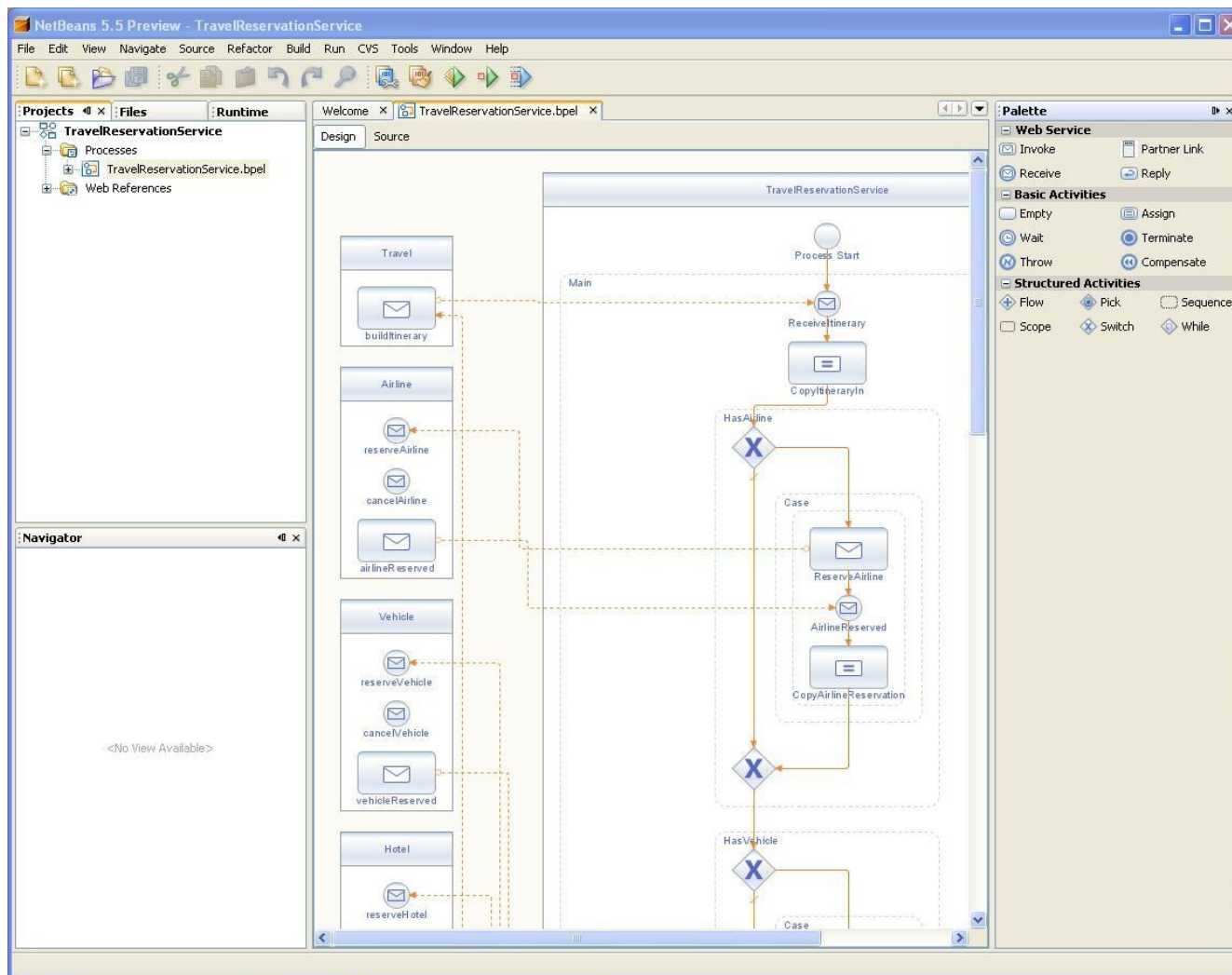
# Reason 4: NetBeans Enterprise Pack— Service-Oriented Architecture Tools



- XML Schema Tools
  - Visualize and Edit XML Schema
  - Visualize the relationship between schema elements
  - Schema Creation Wizards
- Web Services Orchestration
  - BPEL Processes—author, build, deploy and test
  - BPEL Engine integrated into Sun Java System Application Server 9
  - Creation of loosely coupled, service-based composite applications for SOA
  - Full two-way roundtrip designer
  - Full process debugging integrated into NetBeans Profiler



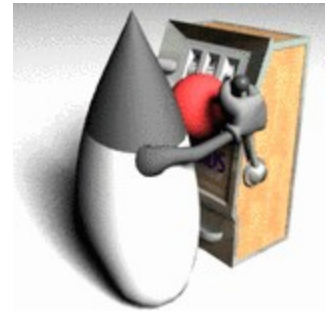
# Reason 4: Service-Oriented Architecture



# DEMO

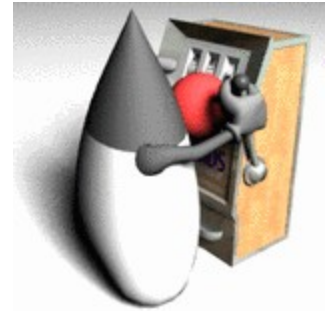
SOA BPEL

## Reason 5: Jackpot



- NetBeans Project (<http://jackpot.netbeans.org>)
  - Searching Java source code
  - Safely and correctly transforming patterns
  - Writing minimal changes back to source
- A technology for safely modifying Java source code using transformations and rules
- Relies on javac to provide a rich semantic model of Java source and to verify changes to it
- Can be extended with custom rule sets, audit operators and transformation classes
- Integrated into the NetBeans IDE via Project Jackpot modules

# Reason 5: Project Jackpot



- Uses:
  - As a source auditing tool:
    - Detect anti-patterns, like `lint`
    - “Software archeology”
  - For refactoring:
    - Safer than many current tools
  - For reengineering:
    - Migrate applications to new API, technologies
  - Even pretty printing!
- Don't miss the session on this:
  - TS-1278 Creating and Deploying Custom Jackpot Queries and Transformers

# DEMO

Jackpot

# Reason 6: Mobile Pack (Updated)

- Write, test, and debug Java ME MIDP applications
- Visual MID lets designer:
  - Build the GUI using drag and drop, screen flow design
  - Midlet template, testing, debugging
  - Easy configuration of device resources
- Drop in any 3rd-party emulator
- Solves the problem of device fragmentation
- Wireless Connection Wizard enables you to quickly create Java ME client/server applications
  - Wizards for creating Java ME client + J2EE based applications
- Easy internationalization support
- <http://www.netbeans.org/kb/41/quickstart-mobility.html>

## Reason 6: Mobile Pack for CDC

- CDC Support
  - Programming for Sony Ericsson's P990 and M600 mobile phones
  - Developing for the Nokia Series 80 Platform SDK
- Creating the Application Interface using the Project Matisse GUI Builder
- <http://www.netbeans.org/kb/50/quickstart-mobility-cdc.html>

# Reason 7: Great Educational Resources

- JEDI—<https://jedi.dev.java.net/>
- The BlueJ team is currently collaborating with the NetBeans team to create a new version of NetBeans, the **NetBeans IDE/BlueJ Edition**. <http://www.bluej.org>
- NetBeans—<http://edu.netbeans.org>
- Java Passion—<http://javapassion.org>
- JavaOne 2006 Hands On Labs
- Check out the NetBeans site
  - <http://www.netbeans.org/kb/50/index.html>
  - <http://www.netbeans.org/kb/50/flash.html>



## Reason 8: Profiler (Updated)

- Fast, low overhead profiling: dynamic bytecode instrumentation
- Attach to running Applications
- Monitor runtime behavior of apps: heap size, GC statistics, thread count, thread state
- Analyze performance: per-method CPU timings, Call tree, http Monitoring, Live data and Collected data, custom filter
- Monitor object creation, Memory leak detection
- Visual GC plugin
- Jconsole integration, Mbean template
- <http://profiler.netbeans.org/>

# DEMO

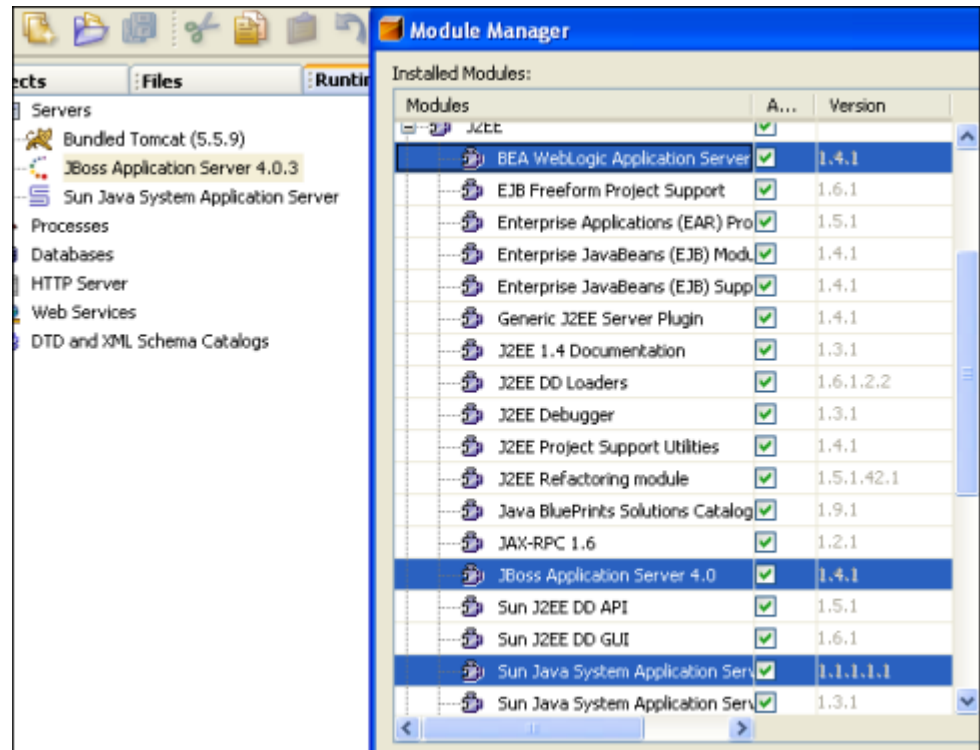
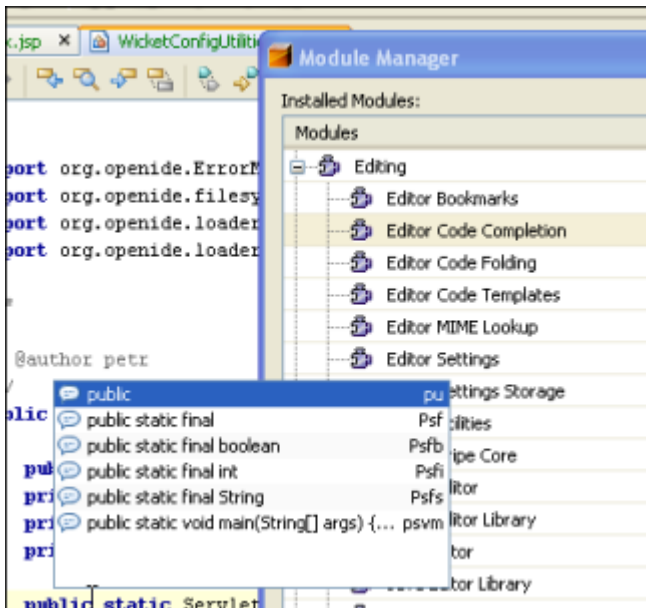
Profiler: Memory Leak Detection

# Reason 9: NetBeans Rich Client Platform (RCP) Technology

- Save years of development time
- Application runtime—generic desktop app
- Jump-starts development by handling:
  - User Interface Management—actions, menus, toolbars
  - Settings UI and storage
  - Data Presentation, editor, wizards
  - Configuration
  - Storage Management
- Lots of high profile adopters
- Deploy using Java Web Start software

# Reason 9: NetBeans RCP Technology

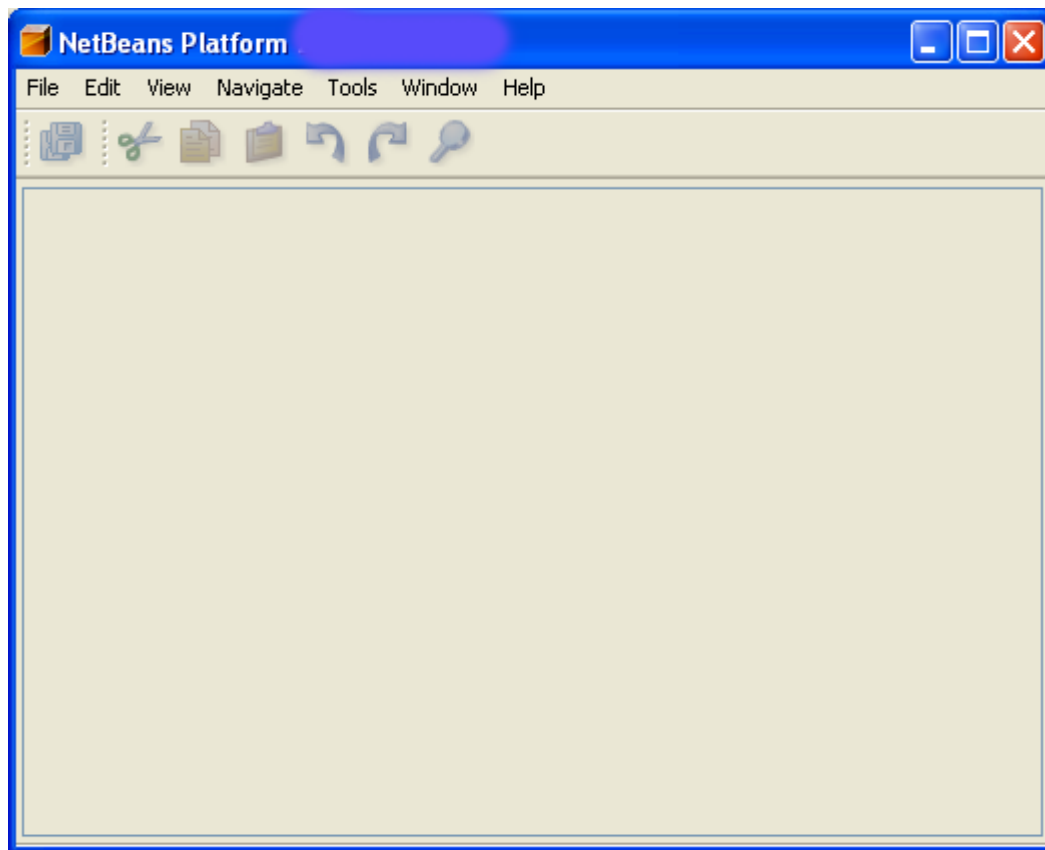
Secret: **Everything** in NetBeans IDE is provided by a plugin module!



If we remove **all** the NetBeans IDE's plugin modules...

# Reason 9: NetBeans RCP Technology

...we get the NetBeans Platform!



- Application framework for desktop applications
- Menus, toolbars, windowing system, other services—out of the box!
- “Rich-client applications”
- Saves (many) years of development time
- Used everywhere

# Reason 9: Lots of NetBeans Based Apps

The collage illustrates various applications built on the NetBeans platform:

- NetBeans IDE:** Shows a network topology diagram with nodes like WW11, WW12, WW13, WW14, WW15, WW16, WW17, WW18, WW19, WW20, WW21, WW22, WW23, WW24, WW25, WW26, WW27, WW28, WW29, WW30, WW31, WW32, WW33, WW34, WW35, WW36, WW37, WW38, WW39, WW40, WW41, WW42, WW43, WW44, WW45, WW46, WW47, WW48, WW49, WW50, WW51, WW52, WW53, WW54, WW55, WW56, WW57, WW58, WW59, WW60, WW61, WW62, WW63, WW64, WW65, WW66, WW67, WW68, WW69, WW70, WW71, WW72, WW73, WW74, WW75, WW76, WW77, WW78, WW79, WW80, WW81, WW82, WW83, WW84, WW85, WW86, WW87, WW88, WW89, WW90, WW91, WW92, WW93, WW94, WW95, WW96, WW97, WW98, WW99, WW100.
- Fiorano Studio:** Shows a BPEL process editor with a sequence of activities: Receive, Assign, DB-Query, Switch, and Intimation. The BPEL Palette includes Receive, Reply, Invoke, Assign, Transformation, Throw, Wait, Empty, and Terminate.
- SysUpTime:** Shows a network explorer with a list of IP addresses and a network topology map of the United States.
- Nokia Alarm Management Console:** Shows a list of network events and a detailed alarm description for "SAXC2 - FY0033: LOF on slot 5, port 2".

# Reason 10: Matisse GUI Builder

## The best 100% Java platform GUI Builder

- As easy as drawing on paper
- Easy Internationalization
- Intuitive Drag-and-drop GUI builder
  - Suggested guideline for new components to the relative position to other components, Support resizable form
  - Supports per-platform UI design guidelines
- Cross-platform layout support
- Extendable Component Pallets
  - Preloaded Java Foundation Classes (JFC/Swing) API components
  - Extendable with SwingX API
  - Import components from library, jar, projects
- Next-Generation Matisse is underway

# DEMO

Matisse GUI Builder



# Reason 11: Java Blueprints Revisited

- Import Java BluePrints Catalog Projects from java.net
  - Architecture and Solutions for real-life problems
    - Asynchronous JavaScript™ and XML (AJAX) technologies
    - Web tier with JavaServer Faces technology
    - Service-Oriented Architectures with Web Services
    - Business Tier with EJB specification, MDB
  - Use Offered Java BluePrint patterns by using the Java BluePrint Project Template
- Design and Embed Your own Best Practices
  - IT, SI and ISV Developers can share Enterprise Best Practices and Project Templates via Java BluePrints Catalog for use in development by replacing or extending
  - Platform developers can also leverage the Java BluePrints Catalog to assist end users with their applications

# Reason 12: App Server Support

- Application Server support via plugin
  - Project GlassFish Java EE 5 server
  - Sun Java System Application Server 8.1 and 8.2
  - JBoss
  - BEA WebLogic 9
  - IBM WebSphere 6
- Remote deployment

## Reason 13: Editor Enhancements

- Considerable overhaul of the editor with great performance and features; more work underway
- Lots of cool new features:
  - Code Completion
  - Editor Hints
  - Navigation
  - Source Tools
- Eclipse, Emacs and NetBeans Keybindings technology available

# DEMO

Editor Hints  
Code Completion  
Navigation  
Source Tools

# Reason 14: C and C++

- Sun Studio C/C++/Fortran is built on NetBeans
- NetBeans technology has added new support for C and C++ in NetBeans module itself so C/C++ developers can now start to use NetBeans IDE for development
- Lots of features: syntax highlighting, indentation, code completion, code folding, class viewer, etc.
- Project Types:
  - C/C++ Applications
  - C/C++ Dynamic Library
  - C/C++ Static Library
  - C/C++ Project with existing Makefile
- Module set is a combined effort of Sun Studio IDE team and NetBeans Core and Mobility teams

# Reason 15: Best Cost of Ownership

- NetBeans technology bundles complete Java platform—Java ME to Java SE to Java EE
- NetBeans technology bundles App Server
- NetBeans technology bundles Database
- NetBeans technology bundles Enterprise design tools
- Pure Java technology (no impure Java technology dependencies)
- Advanced Profiler offered
- Developer Collaboration tools and server free
- Philosophy—NetBeans technology; Out-of-Box Eclipse: Get it

# Summary of NetBeans: Swiss Army Knife



- Rich Client Platform and IDE
- Java EE (JSP, EJB,etc)
- Bundled servers
- Java SE (Swing libs,etc)
- Matisse GUI Builder
- Java ME (Mobility)
- BPEL and SOA
- Profiler
- Collaboration
- UML Modeling
- **And much more coming**

# Call for Actions!

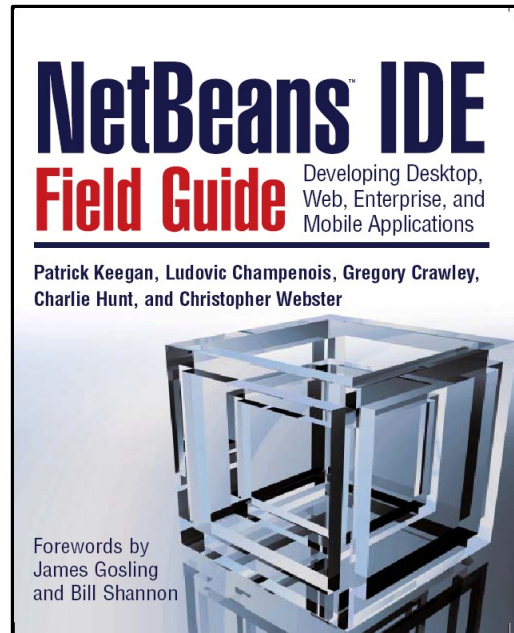
- Download NetBeans IDE
  - <http://www.netbeans.org/downloads/index.html>
- Tutorials, Guides, Articles
  - <http://www.netbeans.org/kb/>
- Participate on Forums and subscribe to mail list
  - <http://www.netbeans.org/servlets/Join>
  - [nbusers-subscribe@netbeans.org](mailto:nbusers-subscribe@netbeans.org)
- Start Importing and Migrating to NetBeans IDE
- Plug-in Module Catalogs
  - <http://www.netbeans.org/catalogue/>
- Join NetBeans Community Projects
  - <http://www.netbeans.org/community/projects>



# For More Information

- NetBeans.org Web site at
  - <http://netbeans.org/>
- Forums at
  - <http://www.netbeans.org/community/lists/top.html>
- Blogs at
  - <http://www.netbeans.org/about/press/blogs.html>
  - <http://www.planetnetbeans.org/>

# More Resources



**Version 2 now Available!**

By **Patrick Keegan, Ludovic Champenois,  
Gregory Crawley, Charlie Hunt,  
Christopher Webster**

Prentice Hall,  
Estimated Publication Date July 2005,  
336 pages, ISBN 0131876201

# 2006 JavaOne<sup>SM</sup> Conference

## Hands-On Labs

- NetBeans Enterprise Pack: UML modeling
- Building production quality GUI application using NetBeans 5.0 GUI Builder (Matisse)
- AJAX: riding the web app horse a little further
- NetBeans Enterprise Pack: BPEL
- Application Monitoring and management with NetBeans 5.0
- NetBeans 5.0: plugin development
- Mobile Applications: visualize it, build it and deploy it to many devices

# 2006 JavaOne Conference Sessions

- Java EE 5 Platform : Even Easier With Tools (TS 3361)
- MHP/OCAP Applications in a Nutshell (TS 4255)
- Creating Professional Swing UIs with Matisse GUI Builder (TS 4916)
- Best Practices for Building Optimized Wireless Solutions for Web Services (TS 1293)
- Good Morning, Buenos Dias, Dobry Den : Mobile Internationalization in Action (TS 4589)
- Creating and Deploying Custom Jackpot Queries and Transformations (TS 1278)
- Debugging Across Tiers: Advanced Techniques (TS 1878)
- Debugging and profiling J2EE/Java EE 5 platform-Based Application (TS 1549)

# 2006 JavaOne Conference

## Birds of a Feather (BOF)

- Building Development Tools on top of NetBeans (BOF 2496)
- Creating NetBeans Plug-ins for Integration with JavaServer Faces, Hibernate, Spring and EJB 3.0 Technologies (BOF 2340)
- Discovery and Dependency Injection Patterns in Modular Architectures (BOF 2559)
- Java Persistence API in the NetBeans IDE (BOF 2807)
- Memory Leaks in Java Technology-Based Applications: Different Tools for Different Types of Leaks (BOF 2417)
- Creating an IDE for Your Favorite Web Framework (BOF 2835)
- Use the Tools to Generate Mobile Business (BOF 2461)
- Experience Self-Organized and Ad-Hoc Collaborative Development with the NetBeans IDE (BOF 2031)

# Q&A

<code />



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Part of the Network for Business Success

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