

JDesktop Integration Components (JDIC): Desktop Integration for Java™ Desktop Applications

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Goal of the Talk

Learn how to use JDIC to integrate your Java application with the desktop, and what's exciting on JDIC

Agenda

- Introduction to JDIC
- Features
- Feature Inclusion in Mustang
- Status and Road Ahead
- Q&A

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Background

- There are gaps between what the Java platform supports and what the native desktop provides
- Many Java developers want to access desktop specific functionality in a portable way:
 - Embedding native browsers
 - Launching native viewers, browser and mail client
 - Integrating with the system tray
 - Manipulating file type associations
 - And much more ...

Possible Solutions

- Write native code - JNI
 - Non-portable, cumbersome to program
- Use native helpers
 - Need to develop helpers for each platform
 - Example: using a batch file with `System.exec()`
- Use JDIC APIs and facilities
 - Write portable Java code
 - Distribute JDIC library with your app!

What is JDIC?

Integrate Java apps with the native desktop

- An open source project at java.net
- Launched at JavaOne 2004
- Set of simple Java APIs and facilities to ease desktop/Java integration
 - Windows/Linux/Unix: supported
 - Mac OS X: partly supported
- A community for desktop/Java integration initiative
 - Requirement collection, idea incubation, etc

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JDIC Features

- Browser embedding
- Launching of desktop file viewers/editors, browser and mail client
- Manipulating file type associations
- Packaging JNLP applications as RPM/MSI/PKG packages
- Integrating with system tray
- **And various incubator projects**

Browser Component

- An AWT component embedding native browser:
 - Windows: Internet Explorer and Mozilla
 - Linux/Unix: Mozilla
 - Mac OS X: Safari
- Leverage full functionality of the native browser
- Support history navigation, event tracking
- Java to JavaScript bridge

Example: Use Browser Component

```
String htmlContent = "<html>"
    + "<head><title>Demo</title></head>"
    + "<body>JDIC Browser Demo</body>"
    + "</html>"

// Instantiate browser component
WebBrowser webBrowser = new WebBrowser();

// Render HTML content from memory
webBrowser.setContent(htmlContent);
try {
    // load resource from URL
    webBrowser.setURL(new URL("http://java.net"));
} catch {...}

Jframe frame = new Jframe("JDIC Browser Demo");
frame.add(webBrowser, BorderLayout.CENTER);
```

DEMO

JDIC Browser Component

<http://javadesktop.org/jdic/demo/Browser/browser.jnlp>

Desktop API

- Launch desktop applications
 - Launch the browser to display a URL
 - Launch the mail client to handle a *mailto* URL
 - Launch the associated application to open/edit/print a file

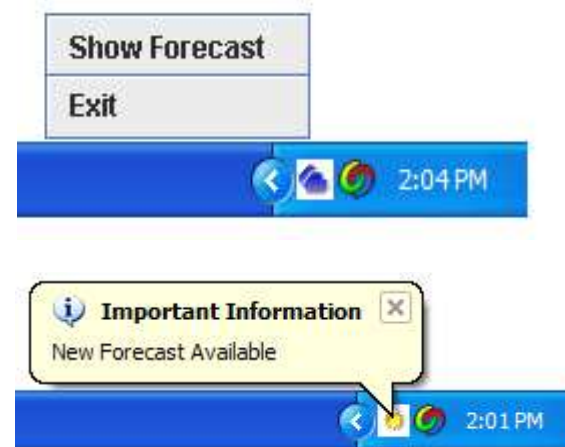
Example: Use Desktop API

```
try {
    // launch the default browser
    Desktop.browse(new URL("http://java.net"));
} catch (...){

try {
    // Open the registered Acrobat viewer
    Desktop.open(new File("D:\jdic_slides.pdf"));
} catch (DesktopException e) {
    e.printStackTrace();
}
```

Tray Icon API

- Integrate system tray with your application
 - Windows: System Tray Area
 - Unix: Notification Area
- Use Swing menus, with icons and all L&F
- Support:
 - animated icons
 - tooltips
 - balloon messages
- Provide listeners for actions



JDIC Incubator Projects

- Evolving features under development, but not part of the JDIC distribution
- Owned and managed by the project proposer(s)
- JDIC QA engineer engaged to ensure quality
- Possibly move to JDIC distribution when mature

List of Incubator Projects

- SaverBeans Screensaver SDK
 - Java screensaver development kit
 - SaverBeans Screensaver Pack project
 - <https://screensavers.dev.java.net/>
- Floating Dock Top-level Window
 - Java API to develop a floating dock top-level window
- Icon Service
 - Return a Java icon object from a native icon specification

List of Incubator Projects (cont.)

- SystemInfo
 - Provide the system or user session information
- FileUtil
 - File utility API, extending java.io.File class
- Misc
 - Simple APIs which don't fit in other JDIC projects
 - Alert API
 - Volume API
 - DockMenu API
 - Desktop background wallpaper API
 -

DEMO

Floating Dock Top-level Window API
(Incubator project)

<http://www.javadesktop.org/jdic/demo/incubator/floating-dock/FloatingDock-top.jnlp>

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JDIC Inclusion Into Mustang

- Tray Icon API
 - Integrated into Mustang b38
 - *java.awt.SystemTray*, *java.awt.TrayIcon*
- Desktop API
 - Will be integrated in a future Mustang build
- Worked closely with the Java SE team to review and revise the APIs and implementations
- Contributing to JDIC is rewarding!

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Since its Inception A Year Ago ...

- Over 150 observers/developers in the community
- Five incubator projects
- ~ 40,000 binary and source downloads
- Release 0.8.4 ~ 0.9, 0.9.1
- Top 10 most popular projects at java.net
 - <http://community.java.net/projects/top.csp>

Road Ahead

- Continue to fill the gaps between the Java platform and native desktop
- Explore desktop features missing in the Java platform
- Integrate useful JDIC features into Java SE
- Your Participation !

Get Involved!

Leverage a community around desktop/Java integration

- Send your requirements and feedback
- Contribute code, fixes, and ideas
- Bake your own desktop/Java integration API
 - Host incubator projects
- Share your experience if you have done similar work

Summary

- JDIC integrates your Java application with native desktop
- Easy to use
- Platform independent
- Open source
- Contribute your ideas and work today!

For More Information

- Visit JDIC pod (#1210) in the pavilion area
- JDIC website:
 - <https://jdic.dev.java.net>
 - Information about source, releases, forum, mailing list, examples, demos, incubator projects, etc
- JDIC blog:
 - <http://weblogs.java.net/blog/georgez>

Q&A

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Extra Slides

Products and Projects Using JDIC

- TradeFrame
 - <http://www.correltrade.com/>
- JADETray
 - <http://vader.ex.ac.uk/home/software/jadetray/>
- JFTP
 - <http://www.jmethods.com/products/jftp/>
- Xito
 - <http://xito.sourceforge.net/>

Products and Projects Using JDIC (cont.)

- NVoy RSS Ticker
 - <http://nvoy.sourceforge.net/>
- Columba Email Client
 - <http://columba.sourceforge.net/>
- JavaHelp
 - <http://java.sun.com/products/javahelp/>
- Visit “JDIC Feedback” page
 - <https://jdic.dev.java.net/feedback/index.html>