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JavaOne™

Mercurial Comes to the NetBeans™ IDE, Bringing the OpenJDK™ Code Base to the Party

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Understanding Mercurial Support in NetBeans

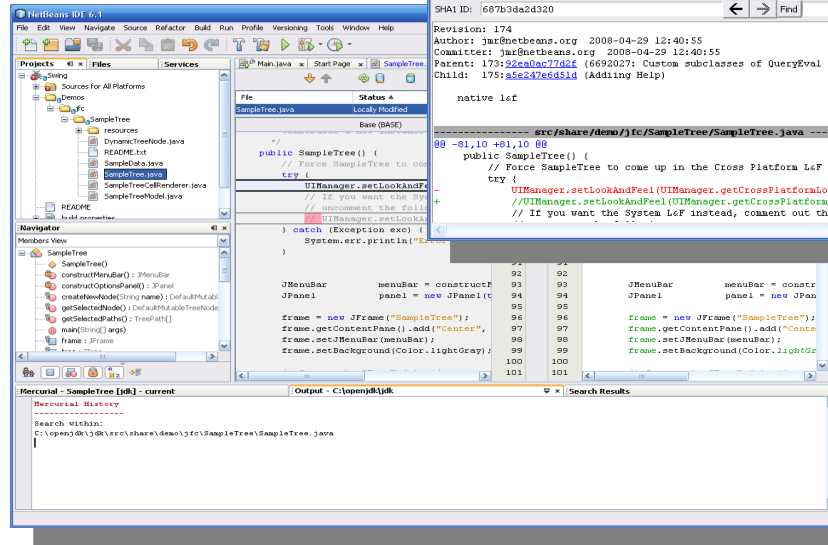
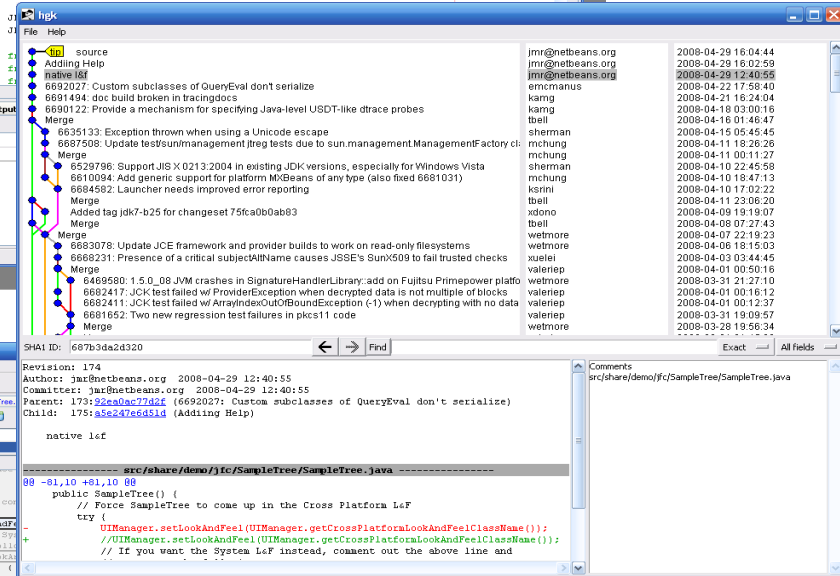
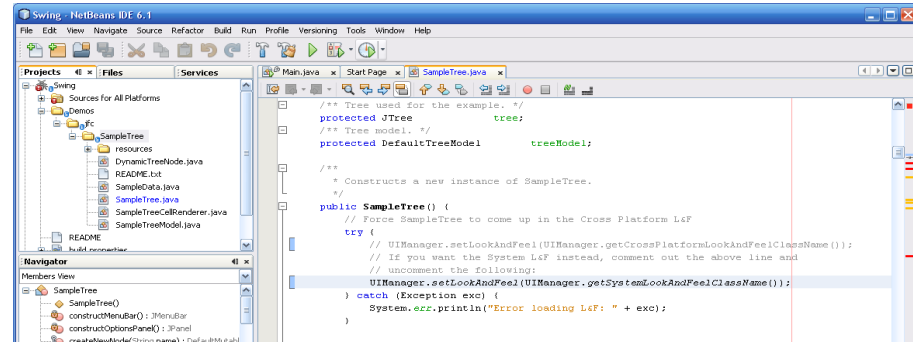
- And be able to use it in your Daily Workflow
- On Large OpenSource Projects



GOAL

Agenda

- Introduction
- Setup
 - Demo
- Workflow & View
 - Demo
- Workflow & Push
 - Demo
- Merge Conflicts
 - Demo
- Q&A



Introduction

➤ Mercurial

- Distributed revision control
 - Fast lightweight, targeted at large distributed development
- Strong community support 1.0 released

➤ NetBeans IDE 6.1

- New Version Control Framework: CVS, SubVersion, Mercurial ...

➤ Mercurial Repository

- Self contained, has its own history
- Each clone is a repository

➤ Workflow

- Clone shared repository, work locally, push changes back
- Pull changes from shared repository, merge locally

Mercurial

Advantages	Disadvantages
Small – 37k lines of code	Young System (Apr 2005)
Extensible – easy to extend	Can't Clone partial Repo
Fast – cheap local clones	Can't Clone for Time Period
Decentralized – offline ops	Massive renames Repo Size ++
Community – active	
Portable - python	



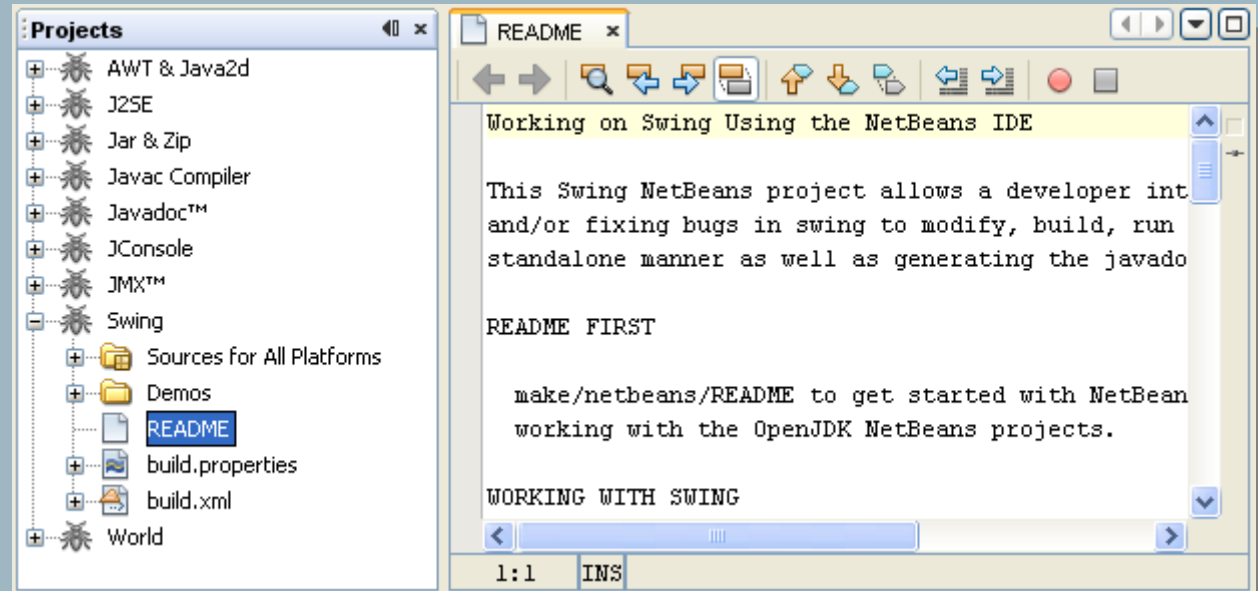
Setup

- > Install NetBeans 6.1
 - <http://netbeans.org>
- > Install Mercurial 1.0
 - <http://mercurial.berkwood.com>
- > Get Mercurial Forest Extension
 - \$hg clone <http://hg.akoha.org/hgforest/> forest
 - Setup Mercurial
 - Windows: <Hg Install Dir>\Mercurial.ini or Unix: <Hg Install Dir>/.hgrc
- > Get OpenJDK
 - \$hg fclone <http://hg.openjdk.java.net/jdk7/tl> openjdk

OpenJDK

```
[ui]
username = foo@bar.com
[extensions]
forest = <Path to Forest>\forest.py
```

Setup OpenJDK



DEMO



hgk

File Help

- tip source
- Adding Help
- native l&f
- 6692027: Custom subclasses of QueryEval don't serialize
- 6691494: doc build broken in tracingdocs
- 6690122: Provide a mechanism for specifying Java-level USDT-like dtrace probes
- Merge
- 6635133: Exception thrown when using a Unicode escape
- 6687508: Update test/sun/management/jtreg tests due to sun.management.ManagementFactory cl
- Merge
- 6529796: Support JIS X 0213:2004 in existing JDK versions, especially for Windows Vista
- 6610094: Add generic support for platform MXBeans of any type (also fixed 6681031)
- 6684582: Launcher needs improved error reporting
- Merge
- Added tag jdk7-b25 for changeset 75fca0b0ab83
- Merge
- Merge
- 6683078: Update JCE framework and provider builds to work on read-only filesystems
- 6668231: Presence of a critical subjectAltName causes JSSE's SunX509 to fail trusted checks
- Merge
- 6469580: 1.5.0_08 JVM crashes in SignatureHandlerLibrary::add on Fujitsu Primepower platfo
- 6682417: JCK test failed w/ ProviderException when decrypted data is not multiple of blocks
- 6682411: JCK test failed w/ ArrayIndexOutOfBoundsException (-1) when decrypting with no data
- 6681652: Two new regression test failures in pkcs11 code
- Merge

jmr@netbeans.org	2008-04-29 16:04:44
jmr@netbeans.org	2008-04-29 16:02:59
jmr@netbeans.org	2008-04-29 12:40:55
emcmanus	2008-04-22 17:58:40
kamg	2008-04-21 16:24:04
kamg	2008-04-18 03:00:16
tbell	2008-04-16 01:46:47
sherman	2008-04-15 05:45:45
mchung	2008-04-11 18:26:26
mchung	2008-04-11 00:11:27
sherman	2008-04-10 22:45:58
mchung	2008-04-10 18:47:13
ksrini	2008-04-10 17:02:22
tbell	2008-04-11 23:06:20
xdono	2008-04-09 19:19:07
tbell	2008-04-08 07:27:43
wetmore	2008-04-07 22:19:23
wetmore	2008-04-06 18:15:03
xuelei	2008-04-03 03:44:45
valeriep	2008-04-01 00:50:16
wetmore	2008-03-31 21:27:10
valeriep	2008-04-01 00:16:12
valeriep	2008-04-01 00:12:37
valeriep	2008-03-31 19:09:57
wetmore	2008-03-28 19:56:34

SHA1 ID: 687b3da2d320

Revision: 174
 Author: jmr@netbeans.org 2008-04-29 12:40:55
 Committer: jmr@netbeans.org 2008-04-29 12:40:55
 Parent: 173:92ea0ac77d2f (6692027: Custom subclasses of QueryEval don't serialize)
 Child: 175:a5e247e6d51d (Adding Help)

```

native l&f

----- src/share/demo/jfc/SampleTree/SampleTree.java -----
@@ -81,10 +81,10 @@
 public SampleTree() {
     // Force SampleTree to come up in the Cross Platform L&F
     try {
-        UIManager.setLookAndFeel(UIManager.getCrossPlatformLookAndFeelClassName());
+        UIManager.setLookAndFeel(UIManager.getCrossPlatformLookAndFeelClassName());
     }
     // If you want the System L&F instead, comment out the above line and
  
```

Comments
 src/share/demo/jfc/SampleTree/SampleTree.java

Repository View

- Displays the Repository Graph
 - Supported on OpenSolaris, Linux
 - and Windows
 - Port of gitk from GIT

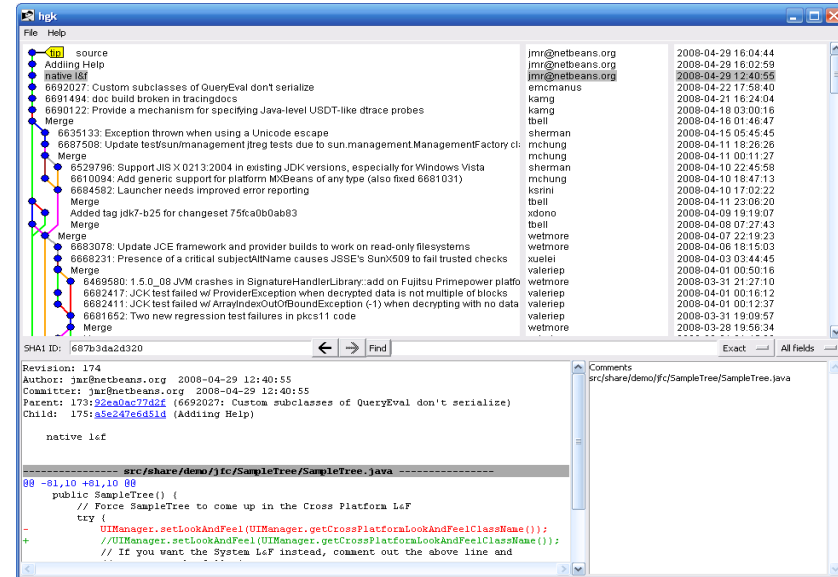
➤ Setup

- Windows:
 - ActiveTCL 8.5.2
<http://www.activestate.com/store/activetcl/download/>
 - hgk script
<http://hg.intevation.org/mercurial/crew/raw-file/b43db44cd047/contrib/hgk>
- Windows: <Hg Install Dir>\Mercurial.ini

```
[extensions]
hgext.hgk=
```

```
[hgk]
```

```
path=<Mercurial Install Dir>\hgk.tcl ← Windows only
```





Workflow and View OpenJDK

The screenshot shows the hgk application interface. On the left is a commit history graph with nodes and connecting lines. On the right is a list of recent changes with columns for author, date, and description. The main window displays the details of a selected commit (SHA1 ID: 607b3da2d320), including the author (jar@netbeans.org), committer (jar@netbeans.org), parent (175:a5e247e6851d), and child (175:a5e247e6851d). Below this, a code diff is shown for the file `src/share/demo/jfc/SampleTree/SampleTree.java`, with changes highlighted in red and green.

DEMO

Clone Repository

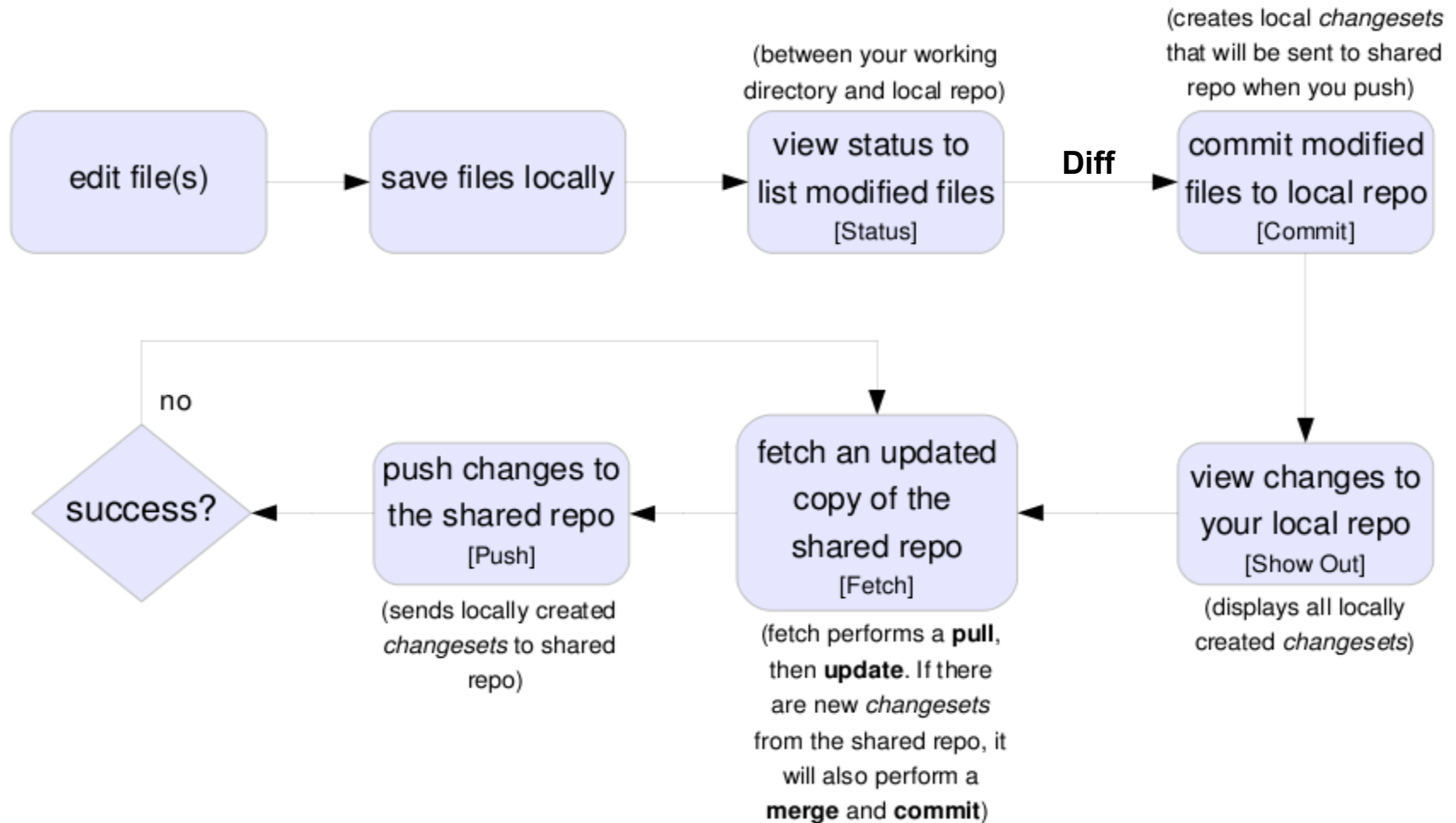
- Open Swing Project
- Clone jdk
 - You clone the Repository not the Project!!
- 16k+ files
 - Takes around 5 mins for local clone
 - Jdk Repository contains 9 NetBeans Projects

```

Mercurial
-----
Mercurial Clone
-----
resolving manifests
getting .hgignore
getting .hgtags
...
16661 files updated, 0 files merged, 0 files removed, 0 files unresolved
The number of output lines is greater than 500; see message log for complete output
INFO Clone From: Swing - C:\openjdk\jdk
INFO To:         Swing - C:\openjdk\jdk_clone0

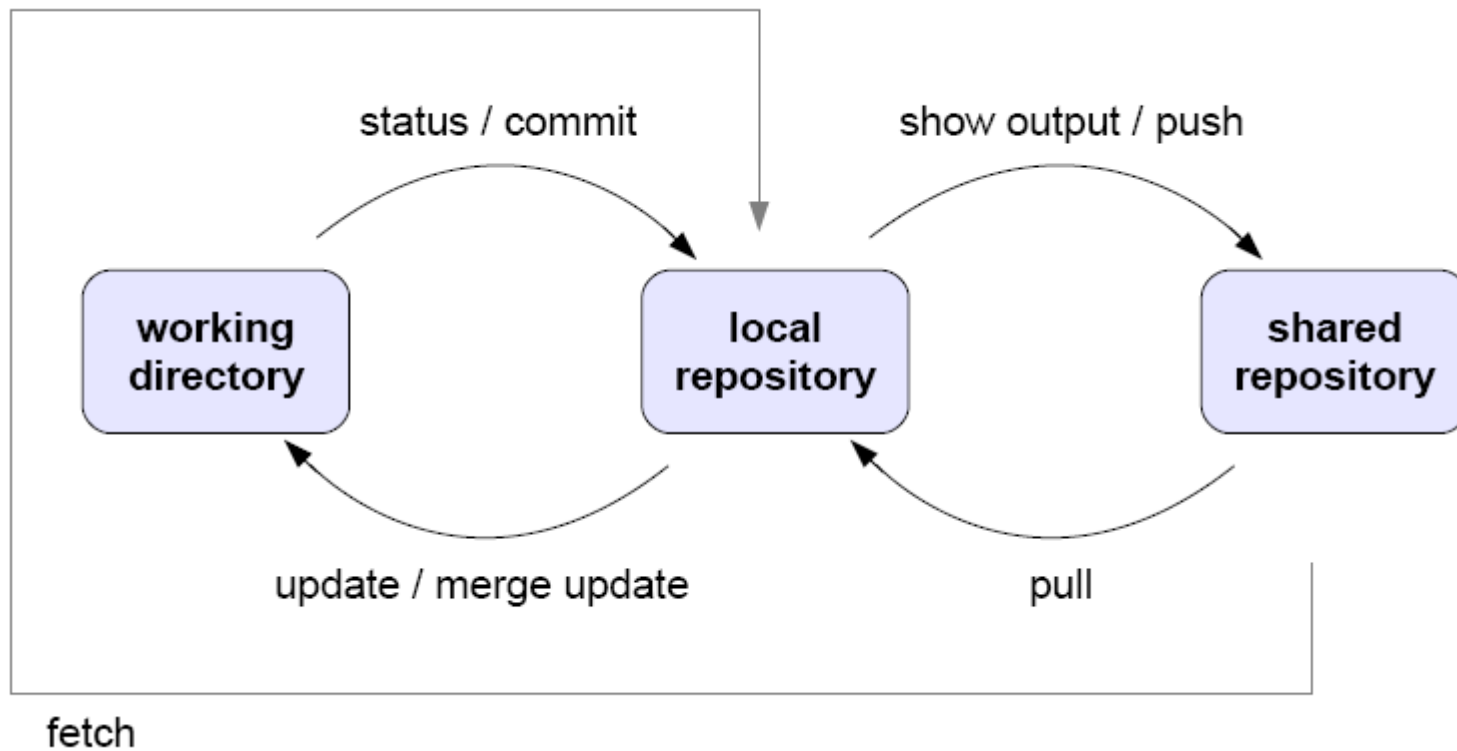
INFO: End of Clone
  
```

Hg Standard Workflow in NetBeans IDE



Relationships

➤ Repository Structure



WorkFlow and Push OpenJDK

DEMO

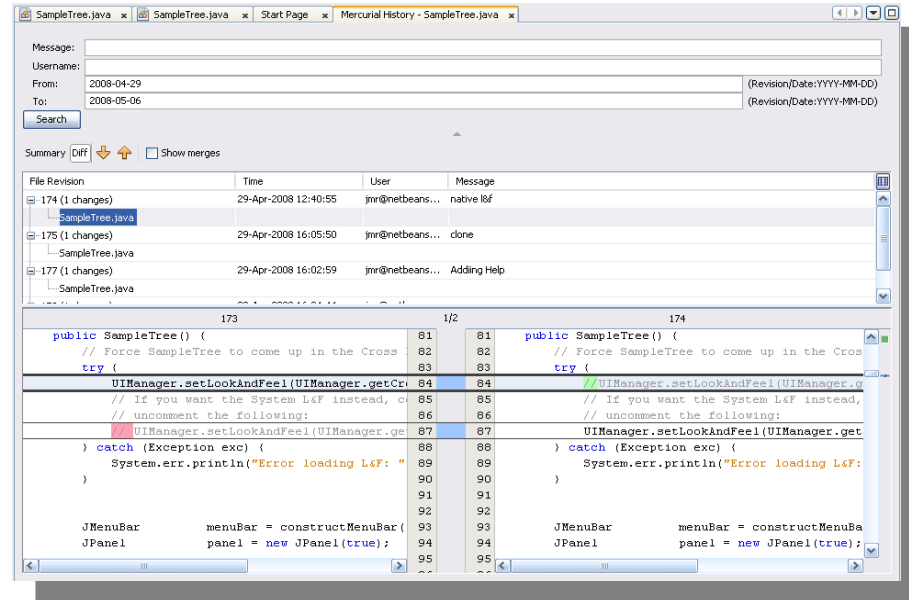
Repository Diff

➤ Built in Diff support

- 2 Way diff

➤ Merge

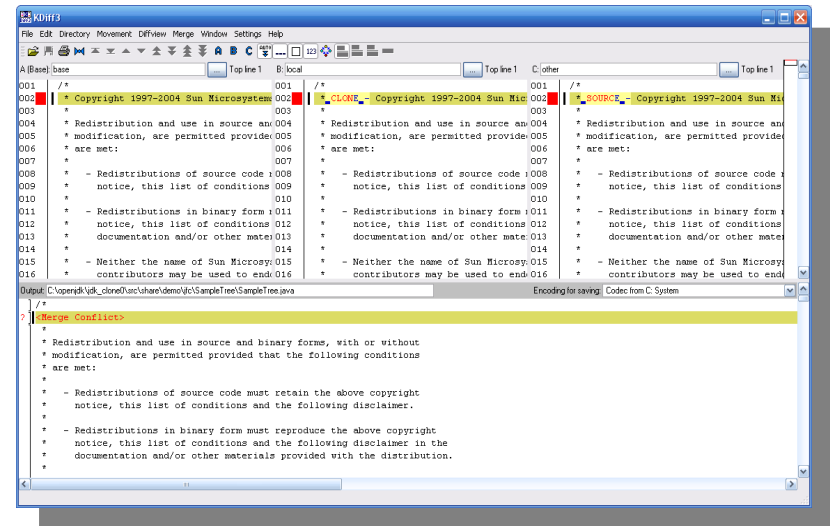
- Use Internal 2-Way Diff Or
- External Diff 3 Way Diff



➤ KDiff3

- Kdiff3
 - <http://kdiff3.sourceforge.net/>
- Win: <Hg Install Dir>\Mercurial.ini
- Unix: <Hg Install Dir>/.hgrc

```
[hgmerge]
interactive = kdiff3
noninteractive = diff3
```



Merge Conflicts

OpenJDK

DEMO

Using Team Repositories

- Set up a clone of Main Repository
 - Make sure it is OK
- Team members clone team this repo
 - Pull from it, push to it
 - If the team repo is broken, you know who to blame!
- When things are stable (clean build & tests)
 - Push to Main Repository
- OpenJDK
 - MASTER → Project Repositories [RO]
 - Gate Repos: Project Repositories [R/W] <-> Push/Pull Developers
 - Verify Gate Repos → sync to Project Repos [RO]

For More Information

- Mercurial Version Control in NetBeans
 - <http://wiki.netbeans.org/MercurialVersionControl>
 - Using Mercurial to work with NetBeans Sources in the IDE
 - <http://wiki.netbeans.org/HgNetBeansSources>
- NetBeans Mercurial Training Materials
 - <http://wiki.netbeans.org/HgTrainingMaterials>
 - Mercurial Book
 - <http://hgbook.red-bean.com/>
- Mercurial Home
 - <http://www.selenic.com/mercurial/wiki/>
- OpenJDK NetBeans Project Group
 - <http://openjdk.java.net/groups/nb-projects/>
 - <http://openjdk.java.net/guide/repositories.html>

THANK YOU



Q & A

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