

Collaborative R package development using <http://R-Forge.R-Project.org/>

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Outline

R-Forge: democratizing the R development model

Uploading code and a project web page using Subversion

Caveats and references

How do the R-Core developers manage their code?

Public web site

R-Core <http://www.r-project.org>

Email lists for user support

R-Core r-help@r-project.org

Bug tracking web site

R-Core <https://bugs.r-project.org>

Public Subversion access

R-Core <http://svn.r-project.org/R/trunk>

Developer Subversion access

R-Core <https://dev@svn.r-project.org/R/trunk>

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R-Forge <http://pkg.r-forge.r-project.org>

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R-Core <https://bugs.r-project.org>

R-Forge http://r-forge.r-project.org/tracker/?group_id=496

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R-Forge <svn://svn.r-forge.r-project.org/svnroot/pkg>

Developer Subversion access

R-Core <https://dev@svn.r-project.org/R/trunk>

R-Forge <svn+ssh://dev@svn.r-forge.r-project.org/svnroot/pkg>

R-Forge is like other code hosting services, and is tailored for R package developers

- ▶ Like GitHub, BitBucket, Google Code, SourceForge...
 - ▶ Web-based project administration of email lists, bug tracker, ...
 - ▶ Subversion for source code and website management.
 - ▶ Everything backed up, so you don't have to worry about it!
 - ▶ Access to your code from any internet-connected computer.
- ▶ But with features specific to R packages:
 - ▶ Daily checking and building/compilation of packages on the R-Forge server.
 - ▶ CRAN-style web repository from which you can download packages:

```
install.packages("inlinedocs",  
repos="http://R-Forge.R-Project.org")
```

The R-Forge Administration and Development Team

Source: R-Forge User's Manual SVN Revision 210, February 15, 2011

http://www.wu.ac.at/statmath/faculty_staff/faculty/khornik

<http://wi.wu-wien.ac.at/mis/pages/en/team>

<http://statmath.wu.ac.at/~theussl/>

<http://statmath.wu.ac.at/~zeileis/>



Kurt Hornik



David Meyer



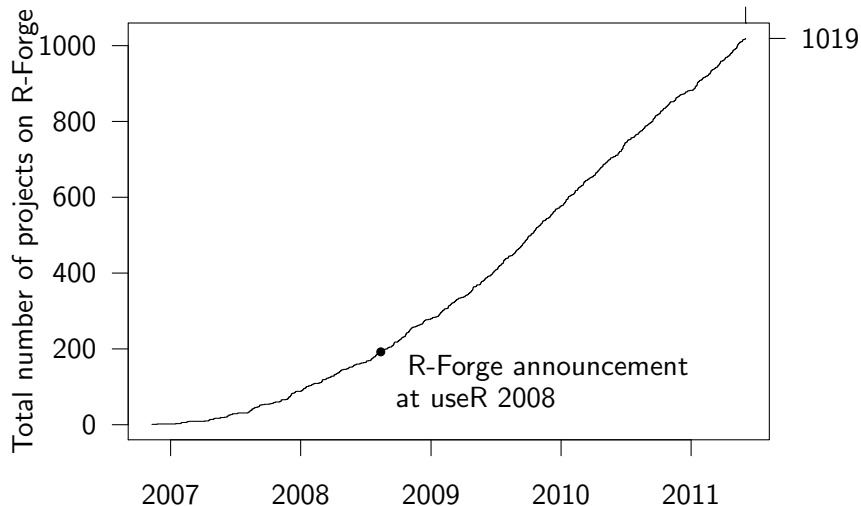
Stefan Theußl



Achim Zeileis

R-Forge is becoming the hub of R package development

2 June 2011



Source: R-Forge project web pages.

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Registering yourself and a project on R-Forge

- ▶ First create a free account:

`https://r-forge.r-project.org/account/register.php`

For example, **dev**

- ▶ Then ask for a new project:

`https://r-forge.r-project.org/register/projectinfo.php`

For example, **proj**

Checking out an R-Forge project onto your local computer

- ▶ Do this only once for each local computer.
- ▶ It will download a working copy to the `proj` directory.
- ▶ `svn checkout svn+ssh://dev@svn.r-forge.r-project.org/svnroot/proj`
- ▶ Or use the Windows GUI Subversion client: right click, TortoiseSVN, Checkout...
- ▶ This gives you
 - ▶ **proj**/pkg for an R package, built once per day.
 - ▶ **proj**/www for a PHP or HTML project web site, updated once per hour: <http://proj.r-forge.r-project.org>
 - ▶ You can add whatever other text files and folders you like.
 - ▶ Example: **proj**/tex for L^AT_EX articles or presentations.

Windows TortoiseSVN: icon overlays display the version control state, like `svn status`

<http://tortoisesvn.net/downloads.html>

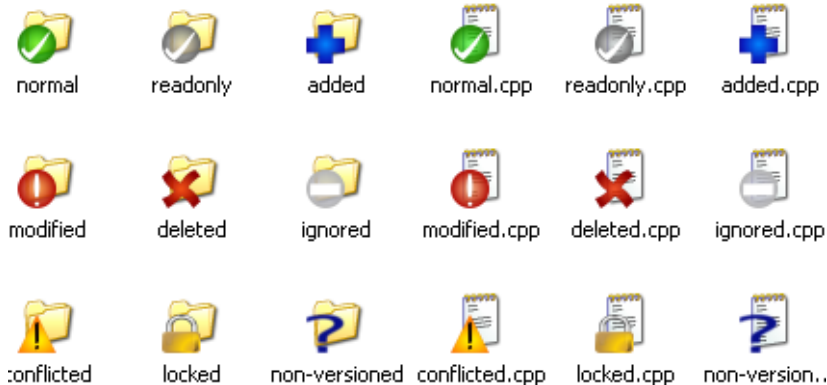


Image from

http://tortoisesvn.net/docs/release/TortoiseSVN_en/tsvn-dug.html

Daily Subversion commands with an R-Forge project

- ▶ `svn add file.R` to start tracking changes on `file.R`.
- ▶ `svn commit -m 'fixed the plotting bug'` to upload changes to the R-Forge server.
- ▶ `svn status` to list the files that have changed since the last commit.
- ▶ `svn diff` to show the lines which have changed since the last commit.
- ▶ `svn update` to download the most recent code from the R-Forge server.

Windows TortoiseSVN: clicking menu items performs Subversion commands

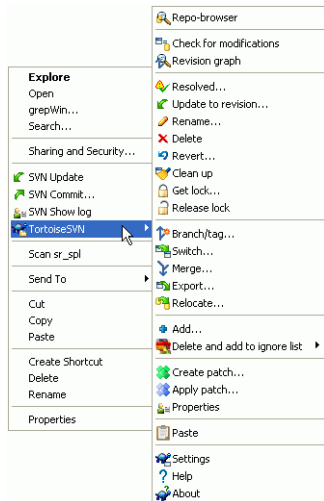
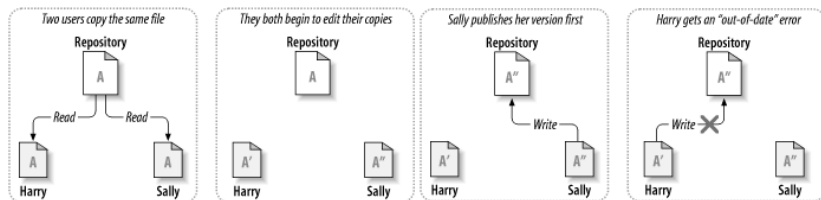


Image from

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Subversion allows multiple authors to simultaneously edit the same file



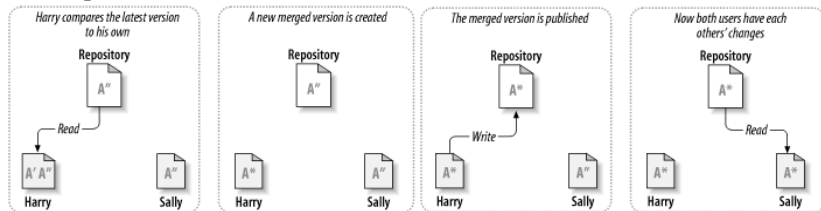
- ▶ `svn checkout` is performed once per client computer. It downloads the project code from the R-Forge server.
- ▶ `svn commit` is performed every time you want to upload changes to the server.

Images adapted from

<http://svnbook.red-bean.com/en/1.5/svn.basic.vsn-models.html>

Subversion automatically merges* changes from each author together

svn update



Second panel "A new merged version is created"

- ▶ **merGe G:** if Harry and Sally edited different parts of the file, then they are automatically merged into A^* .
- ▶ **Conflict C:** otherwise, Harry must manually decide how to combine the conflicting changes to form A^* .

Images adapted from

<http://svnbook.red-bean.com/en/1.5/svn.basic.vsn-models.html>

Most collaborative projects

Project	Developers
ctv	25
rmetrics	22
phyloc	22
phylobase	16
phylohelper	13
mlr	12
genabel	12
yuima	11
rsiena	11
flr	10
distr	10
blotter	10
sedar	9
diseasemapping	9
.	.
.	.

All projects

Developers	Number of projects
25	1
22	2
16	1
13	1
12	2
11	2
10	3
9	2
8	4
7	7
6	20
5	34
4	55
3	114
2	254
1	514

Source: R-Forge project web pages.

More infrequently used or complicated Subversion commands

- ▶ Infrequently used commands:
 - ▶ `svn cp`, `svn mv`, `svn mkdir` for versioned copying, moving, or making directories.
 - ▶ `svn up -r 35` to download code version 35 from the R-Forge server.
- ▶ `svn resolve` to manually resolve conflicts.
- ▶ Complicated, see the Subversion manual for details:
 - ▶ `svn merge` to revert back to a previous version of code, or merge with another branch.

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What R-Forge is NOT

NOT unlimited storage. There is currently no imposed limit on SVN repository size. However, if projects begin to abuse disk space, R-Forge will impose a limit. In particular, **do not put binary files in SVN.** Exception: very small or very infrequently updated files, like images for a project website.

NOT instantaneous package builds. When you check code into SVN, it is NOT immediately compiled on their server. In fact, the build and check process occurs only once per night.

Learning more about collaborative R package development

- ▶ <http://R-Forge.R-project.org>
 - ▶ 6 page introduction PDF: Stefan Theußl and Achim Zeileis. Collaborative software development using R-Forge. The R Journal, 1(1):9-14, May 2009.
 - ▶ 10 page user's manual PDF: detailed technical documentation.
 - ▶ Email R-Forge@R-Project.org
- ▶ Subversion – translations available!
 - ▶ Version Control with Subversion:
<http://svnbook.red-bean.com/>
 - ▶ Windows GUI documentation:
<http://tortoisesvn.net/support.html>
- ▶ Contact me directly: [toby.hocking AT inria.fr](mailto:toby.hocking@inria.fr),
<http://cbio.ensmp.fr/~thocking/>