Use R fifteen different ways: R front-ends in Quantian

Dirk Eddelbuettel
edd@debian.org

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Quantian (Eddelbuettel, 2003) has become one of the most comprehensive environments for quantitative and scientific computing. Within Quantian, the R language and programming environment has always had a central focus: Quantian provides not only R itself, but numerous add-ons, interfaces as well as essentially all packages from the CRAN and BioConductor repositories.

With release 0.7.9.2 of Quantian[1], the list of 'interfaces' (where the term is used in a fuzzy and encompassing way) has increased considerably. The paper will briefly discuss and summarize all of the interfaces to R that are now included and ready to be deployed immediately:

1. R can of course be used the traditional way from the command-line or shell as `R`;
2. R can be used via the cross-platform graphical user interface when started as `R --gui=Tk`;
3. R can be invoked as `R --gui=gnome` using the Gnome/Gtk GUI available on Unix platforms;
4. Emacs Speaks Statistics permits to launch R via the `M-x R` combination from within XEmacs;
5. The Rcmdr GUI by John Fox is available from R via `library(Rcmdr)`;
6. The Rpad web interface by Tom Short is available at `http://localhost/Rpad`[2] – and the smaller Rcgi package is also available as an alternative;
7. The award-winning Java Gui for R (JGR) can be launched from the command-line via `JGR`;
8. R is one of several mathematical languages that can be launched and used directly from Texmacs;
9. An early version of the Rkward GUI is also available from the command-line under its name;
10. The headless Rserve R network service is available via `R CMD Rserve`;
11. R can be invoked from Python using the Rpy module;
12. Similarly, RSPerl permits R to be driven from Perl[3] – and the other way around;
13. R can also be embedded into other applications: one such example is provided by the PI/R procedural R language for the PostgreSQL RDBMS;
14. rJava permits R to be used from Java programs;
15. SNOW provides a high-level interface to distributed statistical computing, and the underlying components Rmpi and Rpvm are also available directly.

Quantian 0.7.9.2 also contain 877 packages providing a complete collection of R code. This set comprises essentially all Unix-installable packages from CRAN, the complete BioConductor relase 1.7, a few Omegahat packages as well as packages from J. Lindsey and T. Yee.

Lastly, several related software projects such as Ggobi, Mondrian, Weka or GRASS are available as well to further complement Quantianfor particular scientific communities.

Time permitting, we plan to demonstrate each of the fifteen different user interfaces from a running Quantianinstallation.

References

Dirk Eddelbuettel. Quantian: A scientific computing environment. In *Proceedings of the 3rd International Workshop on Distributed Statistical Computing (DSC 2003)*, 2003. URL `http://www.ci.tuwien.ac.at/Conferences/DSC-2003/Proceedings/Eddelbuettel.pdf`. ISSN 1609-395X.

[1] This version should be released in early March 2006.

[2] An initial `/etc/init.d/apache start` is required.

[3] Environment variables have to be set. The first example can be started as `cd /usr/local/lib/R/site-library/RSPerl/examples; R_HOME=/usr/lib/R LD_LIBRARY_PATH=../libs/Perl perl -I../share/lib/perl/5.8.8 test.pl`.