

# Changes in R 1.8.1

by the R Core Team

## New features

- There is now a “Complex” S3 group generic (a side-effect of fixing up the corresponding S4 group generic).
- `help("regex")` now gives a description of the regular expressions used in R.
- The startup message now shows the R Foundation as copyright holder, and includes the R ISBN number and a pointer to the new `citation()` function.
- The `solve()` function now uses the ‘tol’ argument for all non-complex cases. The default tolerance for LINPACK is  $1e-7$ , as before. For LAPACK it currently is `.Machine$double.eps` but may be changed in later versions of R.
- `help.search()` now defaults to `agrep = FALSE` when `keyword=` is specified, since no one wants fuzzy matching of categories.

- Function `texi2dvi()` in package `tools` can be used to compile latex files from within R.
- Objects with formal S4 classes saved in pre-1.8 versions and loaded into the current version have incompatible class attributes (no package information). A new function, `fixPre1.8()` in package `methods`, will fix the class attributes. See the help for this function.
- `heatmap()` allows `Rowv/Colv = NA`, suppressing the corresponding dendrogram.
- An “antifeature”: Tcl 8.0 is now officially unsupported. In 1.8.0 it just didn’t work. This very old version lacks several features that are needed for the new version of the `tcltk` package. R will still build the `tcltk` package against Tcl 8.0 but the resulting package will not load.

The above lists only new features, see the ‘NEWS’ file in the R distribution or on the R homepage for a list of bug fixes.

# Changes on CRAN

by Kurt Hornik and Friedrich Leisch

## New contributed packages

**CDNmoney** Components of Canadian Monetary Aggregates with continuity adjustments. By Paul Gilbert.

**HI** Simulation from distributions supported by nested hyperplanes, using the algorithm described in Petris & Tardella, “A geometric approach to transdimensional Markov chain Monte Carlo”, *Canadian Journal of Statistics*, v.31, n.4, (2003). Also random direction multivariate Adaptive Rejection Metropolis Sampling. By Giovanni Petris and Luca Tardella.

**asypow** A set of routines written in the S language that calculate power and related quantities utilizing asymptotic likelihood ratio methods. S original by Barry W. Brown, James Lovato and Kathy Russel. R port by Kjetil Halvorsen.

**concord** Measures of concordance and reliability. By Jim Lemon.

**covRobust** The `cov.nnve()` function for robust covariance estimation by the nearest neighbor

variance estimation (NNVE) method of Wang and Raftery (2002, JASA). By Naisyin Wang and Adrian Raftery with contributions from Chris Fraley.

**digest** The `digest` package provides two functions for the creation of ‘hash’ digests of arbitrary R objects using the md5 and sha-1 algorithms permitting easy comparison of R language objects. The md5 algorithm by Ron Rivest is specified in RFC 1321. The SHA-1 algorithm is specified in FIPS-180-1. This package uses two small standalone C implementations (that were provided by Christophe Devine) of the md5 and sha-1 algorithms. Please note that this package is not meant to be used for cryptographic purposes for which more comprehensive (and widely tested) libraries such as OpenSSL should be used. By Dirk Eddelbuettel.

**fda** Analysis of functional data, that is data where the basic observation is a function of some sort—an area involving the generalization of the techniques of multivariate data analysis to functional data. By Jim Ramsay.

**fork** This library provides a simple wrapper around

the Unix process management API calls: `fork`, `wait`, `waitpid`, `kill`, and `_exit`. These commands allow construction of programs that utilize multiple concurrent processes. By Gregory R Warnes.

**labstatR** This package contains sets of functions defined in “Laboratorio di Statistica con R”, Iacus & Masarotto, MacGraw-Hill Italia, 2003. Function names and docs are in Italian as well. By Stefano M. Iacus and Guido Masarotto.

**lazy** By combining constant, linear, and quadratic local models, `lazy` estimates the value of an unknown multivariate function on the basis of a set of possibly noisy samples of the function itself. This implementation of lazy learning automatically adjusts the bandwidth on a query-by-query basis through a leave-one-out cross-validation. By Mauro Birattari and Gianluca Bontempi.

**ldDesign** R package for design of experiments for association studies for detection of linkage disequilibrium. Uses an existing deterministic power calculation for detection of linkage disequilibrium between a bi-allelic QTL and a bi-allelic marker, together with the Spiegelhalter and Smith Bayes factor to generate designs with power to detect effects with a given Bayes factor. By Rod Ball.

**lmm** Some improved procedures for linear mixed models. S original by Joseph L. Schafer, R port by Jing hua Zhao.

**magic** A variety of methods for creating magic squares of any order greater than 2, and various magic hypercubes. Includes sundry magic square amusements and is intended as a rebuttal to the often-heard comment “I thought R was just for statistics”. By Robin K. S. Hankin.

**mapproj** Converts latitude/longitude into projected coordinates. By Doug McIlroy. Packaged for R

by Ray Brownrigg and Thomas P Minka.

**pan** Multiple imputation for multivariate panel or clustered data. S original by Joseph L. Schafer, R port by Jing hua Zhao.

**pheno** Provides some easy-to-use functions for time series analyses of (plant-) phenological data sets. These functions mainly deal with the estimation of combined phenological time series and are usually wrappers for functions that are already implemented in other R packages adapted to the special structure of phenological data and the needs of phenologists. By Joerg Schaber.

**phyloarray** Software to process data from phylogenetic or identification microarrays. At present state, it is rather limited and focus was on a fast and easy way for calculating background values by interpolation and plotting melting curves. The functions for reading the data are similar to those used in package **sma** (statistical microarray analysis). By Kurt Sys.

**rgdal** Provides bindings to Frank Warmerdam’s Geospatial Data Abstraction Library (GDAL) ( $\geq 1.1.8$ ) - this version with new-style classes. The GDAL library is external to the package, and must be correctly installed first. By Timothy H. Keitt and Roger Bivand.

## Other changes

- Package **normix** was renamed to **nor1mix**.

*Kurt Hornik*  
Wirtschaftsuniversität Wien, Austria  
[Kurt.Hornik@R-project.org](mailto:Kurt.Hornik@R-project.org)

*Friedrich Leisch*  
Technische Universität Wien, Austria  
[Friedrich.Leisch@R-project.org](mailto:Friedrich.Leisch@R-project.org)