

Ersatz versions log

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This is a running list of the Ersatz versions, with the latest version first. You can check which version you are running by choosing Help>About in the Ersatz executable, or typing '=ErVersion()' in an Excel spreadsheet cell¹.

Ersatz version 1.35

February 2, 2017

A minor update: improvement in the user interface of the Conditional firing option.

Ersatz version 1.34

July 16, 2016

A minor update: a bug fix.

A bug surfaced in the Component functions in Excel 2013 and 2016 which made Excel crash. Resolved.

Ersatz version 1.33

April 6, 2015

A minor update: a bug fix.

The rank correlation functions (ErRankCorr, ErDirichletCorr, and ErMultinomialCorr) were not compatible with the Multiple runs option, and returned the same stream of correlated random numbers for each of the multiple runs. Resolved.

Ersatz version 1.32

February 26, 2015

A minor update: a bug fix.

A bug surfaced in Excel 2013 64 bit on Windows 8.1 which made Excel crash. Resolved.

Ersatz version 1.31

October 25, 2012

A minor update: an additional function and two bug fixes.

Additional function:

ErSortedArray

¹ Note that both reported versions should always be in sync. If not, something has gone wrong while updating Ersatz (e.g. you had Excel running while you were updating). See the User Guide section on Installation Issues for further guidance.

Please consult the *Ersatz Function Overview* about this function.

Bug fixes:

1. A bug in ErdataArray could make Excel crash. Resolved.
2. With more than one ErCondRetrieveArray function in a workbook, retrieved arrays could get mixed up. Resolved.

Ersatz version 1.3

August 15, 2012

A major update: support for 64-bit Excel is added.

Ersatz version 1.2

April 26, 2012

An important update, with additional distributions, functions, functionality, and some bug fixes.

Additional distributions:

1. Polya. Function name: ErPolya.
2. Four parameter, scaled Beta. Function name: ErBeta4.
3. Delaporte. Function name: ErDelaporte.
4. Correlated Dirichlet. Function names: ErDirichletCorr, ErDirichletCorrIn, ErDirichletCorrOut.
5. Correlated multinomial. Function names: ErMultinomialCorr, ErMultinomialCorrIn, ErMultinomialCorrOut.

Please consult the *Ersatz Function Overview* for details.

Additional functions:

1. ErData.
2. ErdataArray.
3. ErRundataArray.
4. ErStore.
5. ErRetrieve.
6. ErStoreArray.
7. ErRetrieveArray.
8. ErCondStoreArray.
9. ErCondRetrieveArray.

Please consult the *Ersatz Function Overview* about these functions.

Additional functionality:

1. The Ersatz Help menu now has an entry 'Example spreadsheets' which allows viewing and opening of the examples that come with the installation.
2. The Optimization after each iteration routine now has the option of running the optimization after the first iteration only.

Bug fixes:

1. The histogram would sometimes cause an error when an output variable with zero standard deviation was chosen. Resolved.
2. The scatter plot would throw an unintelligible error when no Ersatz input functions were present in the spreadsheet. It now gives an informative error message.
3. The correlation coefficient of the scatter plot would cause a 'division by zero' error when one of the variables had zero standard deviation. The correlation coefficient is now 'not available'.
4. In the Dirichlet function the parameters were incorrectly assumed to be integers, they are now reals.
5. The multinomial function in some circumstances would produce too much variability for categories with a small number. Resolved.

Ersatz version 1.13

March 5, 2011

A minor update, with some bug fixes.

1. The workshop version of Ersatz (only available on request) would sometimes crash Excel when the Multivariate sensitivity output was chosen. Resolved.
2. The ErRankCorCom functions would return 0 instead of the mean value during the stock taking of Ersatz functions that precedes each run. This could cause a fatal error message if you had an ErOutput function that used the ErRankCorCom function result such that a 0 value caused an error. Resolved.
3. The 'Execute macro before iteration' option sometimes would cause an error. Resolved.

Ersatz version 1.12

September 16, 2010

A minor update, with a bug fix.

Some installations of Excel crashed when starting up with the Ersatzdll.xll file as an active add-in. Resolved.

Ersatz version 1.11

January 31, 2010

A minor update, with some extensions of functionality and some bug fixes.

The complete list of changes:

1. The Distribution viewer has added a number of distributions, now a total of 26 distributions are available for exploration.
2. The Distribution viewer has an added message field to inform you when your typed-in parameter values are invalid (could not be converted to a number or are outside the defined range) or when these values raised a calculation error (usually because of overflow: a value in the calculation exceeded the defined range for that variable).

3. Sensitivity analysis was disabled when the Multiple run option was checked. With ErRunSenseInput functions defining the input variables of interest in your workbook, you can now do multivariate probabilistic sensitivity analysis on these input variables, see the *User Guide* on Multiple runs for details.
4. Bug fixes:
 - a. In the Distribution viewer sometimes a discrete distribution graph would be shifted one number to the right on the X-axis.
 - b. The Distribution viewer would throw all kinds of error messages for some distributions and parameter values. These messages are now intercepted, translated, and reported in the message field (see point 2 above).

Ersatz version 1.1

January 21, 2010

A major update, because of an important extension of the functionality: Ersatz now has four optimization algorithms build-in. In addition there is a minor bug fix.

The complete list of changes:

1. Optimization is added, with four different algorithms: two deterministic (Quasi-Newton and Down-hill Simplex) and two stochastic (Simulated Annealing and Cross-Entropy). There are two added functions (ErMinimize and ErMinimizeResult) to give access to the optimization algorithms, a large added section on optimization in the *User Guide*, and two additional example workbooks to illustrate their use.
2. Some of the functions that take Excel ranges as input (such as ErFixed and ErEmpirical) could not handle correctly an input range consisting of a single row. This bug was introduced in version 1.01, and has now been fixed.

Ersatz version 1.01

October 10, 2009

This is the first version of Ersatz without the 'beta' qualification, so the first 'official' release. It is also a major upgrade from version 1.0 (beta), although many of the changes are under the hood and users (in particular of Excel 2003 and earlier) should hardly notice.

The main change is that Ersatz now actively supports Excel 2007. The previous version relied on the backward compatibility of Excel 2007, but this version has a dual interface and, after querying which Excel version is running, presents the appropriate one. This required a major revision of the Ersatz plumbing, and my expectation is that an added benefit will be greater stability, in all supported versions of Excel.

Here is the complete list of changes:

1. Active support of Excel 2007 new features, in particular the 'big grid'. The issue that 2007 users could not run Excel macros from Ersatz has been resolved as well. However, multi-threaded recalculation will have to wait until version 2.0.
2. The Excel function wizard now displays help texts on the Ersatz functions and the parameters they take. If you do not know what the 'Excel function wizard' is, check it out in the Excel

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Help: it is really useful. Unfortunately, Excel does not support 'tool tips' for user defined (that is: not innate Excel) functions.

3. The documentation is now complete. In particular, the Ersatz User Guide has sections on Error messages, Trouble shooting, Known issues, and a Technical appendix with a detailed discussion of installation issues, among other things. This should be your first port of call if things go wrong (or seem to).
4. Some functions that take Excel ranges as a parameter (such as ErFixed) were limited to a maximum range size of 8192 cells. This limit has been lifted.
5. The Bernoulli distribution has been added (function name: ErBernoulli).