**What’s new in Crystal Ball 7**

**Extreme Speed**

With unprecedented speed in spreadsheet simulation and optimization, Crystal Ball 7 (version 7.1) quickly solves almost any problem where uncertainty and variability distort spreadsheet forecasts. Crystal Ball 7 extends the ability of the software with a dramatic increase in simulation speed - up to **100 times faster** than normal.

![Run Preferences](image)

From the Run Preferences menu, simply select the Extreme speed mode to run your simulations much faster than normal.

So fast, in fact, we put in a Demo speed mode, which runs simulations in “slow-motion” to make it easier to watch values change in spreadsheet cells and charts. Great for presentations or for teaching!

Normal and Demo speed are available in all three Crystal Ball Editions. Extreme Speed is available in the Professional and Premium Editions.

**Charting**

A new charting engine delivers amazing presentation-quality charts and reports. Charts also support 3D views and right-click menus.

![Forecast: Material 3 Reliability](image)
What’s new in Crystal Ball 7

Distribution Gallery

Distribution Gallery dialog, which now sports an Outlook-like interface, groups the distributions into folders called Categories. Categories are libraries of distributions.

The Distribution Gallery, by default, consists of 3 categories: All, Basic and Favorites. The All category comprises all 21 available Crystal Ball distributions. The Basic category comprises the 6 most commonly used distributions. The Favorites category is empty by default. This category is provided for you to store your favorite or most commonly used distributions, for quick reference.

User-Defined Categories and Distributions

You can also create your own categories, and populate them with Crystal Ball-provided distribution, or with user-defined (or pre-defined) distributions. In this example, you create a new category called Stress Parms, in which you save all the distributions that you want to use with your Helical Spring model.
What’s new in Crystal Ball 7

Categories can be populated directly from the Define Assumption dialog, or by copying a distribution from another category and then modifying it if needed. By saving your user-defined distributions, you can reuse them again in other models.

You can also modify the distribution's description, so that anyone reading it will know what its purpose is.

Publish and Subscribe

Expanding on the concept of one person defining a distribution once and using it many times, Crystal Ball 7 introduces the ability to publish many categories and subscribe to categories. Define a distribution once, publish it, and allow multiple people to subscribe and use it many times.
What’s new in Crystal Ball 7

Custom Distribution

It is now possible to link directly to data in the spreadsheet. There is also a new data grid to manipulate data from within the assumption editor.

Control Panel

The Control Panel is a new feature in Crystal Ball 7. It gives the user a direct interface to control simulations, instead of using the menu or toolbar.
What’s new in Crystal Ball 7

Reports
Select a pre-defined report or create your own custom report. Reports now include new statistics and more control over data and charts.

Preferences
- Chart preferences are now in their own, independent dialog.
- Expanded forecast preferences include preferences for the forecast window, precision, filter and auto-extract.
- New assumption preferences.
Extract Data

You can extract data from both forecasts and assumptions and extract multiple types of data.

Auto Extract

Crystal Ball 7 now includes an auto-extract feature that writes selected forecast information and statistics to an Excel worksheet after simulation.
Assumptions

The new assumption chart interface allows you to add marker lines to track specific values or statistics, and graphically view the generated random numbers. The randomly generated assumption values are now saved automatically as a run preference.

Forecasts

- Add the ability to fit distributions to forecasts during simulation.
- Include many different custom marker lines on forecasts (mean, median, standard deviations, base case, percentiles, etc.).
Sensitivity Analysis (sensitivity chart)

New charting capabilities and an enhanced data view.

Distribution Fitting

It is now possible to show distribution fitting while running a simulation. There is also an enhanced data view for quick access to fit statistics.
Overlay Chart

Fit distributions to all forecasts. View stats and percentiles for all forecasts. New charting including transparent and 3D viewing plus rotation.

Correlated Assumptions

Correlations have an enhanced data picker for adding assumptions. In addition, correlated assumptions can now span worksheets.
Choosing Objects

A new chooser allows you to easily pick which charts to show (assumptions, forecasts, overlay, trend and sensitivity), as well as select some or all of your assumption, forecast and decision variable cells from your spreadsheet. You can change the display from a Tree view to a List view.
Online help is enabled via the F1 key, Help buttons, and Help menus in charts. You can also access online help by choosing Help > Crystal Ball > Crystal Ball Help in the main menu bar in Excel.

Using the forecast chart

Crystal Ball creates a forecast chart for each forecast cell using frequency distributions to show the number of values that occur in a given interval.

Although Crystal Ball forecasts an entire range of results, the forecast chart only shows a display range by default, which excludes extreme values. The endpoints for this displayed range are shown on the left and right sides of the horizontal axis.

The trials, shown in the upper left, reflect the number of trials in the simulation. The number shown in the upper right indicates the number of trials that fall within the display range.

The forecast chart plots the frequency distribution based on bins or group intervals. As Crystal Ball generates the forecast values, the number of values in each group interval increases. The frequency counts for all group
Language compatibility

Crystal Ball 7 (version 7.1) is compatible with both English and non-English versions of Microsoft Windows and Office.

User Macros

The macro scheme is different in Crystal Ball 7. There is no longer a Macro “Preference tab”. Rather, Crystal Ball 7 searches for macros of a certain name and executes them accordingly. This new scheme gives users more flexibility in testing and maintaining run-time macros. You can also run Crystal Ball macros in protected spreadsheets by unlocking them via an encrypted Dev Kit call.

Save/ Restore Results

Save/Restore enables users to save parts of the simulation data for later retrieval. Results are no longer “attached” to the spreadsheet so it is possible to restore multiple results at the same time. This also makes it possible to share the results without having to share the underlying model.

New Probability Distributions

Crystal Ball 7 introduces new probability distributions:

- Student’s t
- Discrete Uniform
- Maximum and Minimum Extreme (created by splitting the Extreme distribution)
- Yes-No

The Beta and Hypergeometric distributions have parameter changes. Some custom distribution formats, such as five-column single values, are no longer supported. See the notes in the Custom Distribution section at the end of Appendix A of the Crystal Ball User Manual.

Distribution Parameters

- Enter cell references for parameters by directly clicking on the spreadsheet cell.
- Enter complete formulas for parameters in place of simple values.
- Change the shapes of probability distribution easily by using spinner controls to tweak the parameters.