

Crystal Ball Extreme Speed FAQs

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INTRODUCTION

Oracle® Crystal Ball Decision Optimizer, Fusion Edition contains a feature called Extreme Speed.

The following frequently asked questions about this helpful feature are discussed below:

1. What is Extreme Speed?
2. What are the benefits of Extreme Speed?
3. What is the technology behind Extreme Speed?
4. Why are simulations so much faster?
5. Are the simulation results the same?
6. What happens if my spreadsheet is not compatible?
7. What if I have a multi-workbook model?
8. Where can I learn more?

WHAT IS EXTREME SPEED?

Extreme Speed is available in Crystal Ball Decision Optimizer. If available to you, this speed setting is selected by default on the Speed tab of the Crystal Ball Run Preferences dialog. In Extreme speed, simulations run up to 100 times faster than in Normal speed. Another Speed setting, Demo speed, runs Crystal Ball in slow-motion so you can watch the values change in chart windows. Normal speed and Demo speed are available in all editions of Crystal Ball, starting with Crystal Ball 7.1.

If you have Crystal Ball Decision Optimizer with Extreme Speed, simulations and optimizations run up to 100 times faster.

WHAT ARE THE BENEFITS OF EXTREME SPEED?

When simulations run up to 100 times faster, you don't need to wait for simulation results or compromise on the number of trials you run. Running in Extreme speed makes it more practical to use the Crystal Ball tools that run multi-simulations, including Bootstrap, Decision Table, and 2D Simulation. You can also find optimal solutions with OptQuest in a reasonable length of time.

WHAT IS THE TECHNOLOGY BEHIND EXTREME SPEED?

Extreme Speed uses PSI Technology, a high-speed, Microsoft Excel-compatible Polymorphic Spreadsheet Interpreter for evaluating spreadsheet models at high

performance speeds. Frontline Systems developed this technology to create a spreadsheet recalculation engine for Microsoft's Internet Explorer web component. The same technology underlying the web component is used to power Extreme Speed simulations and optimizations in Crystal Ball.

WHY ARE SIMULATIONS SO MUCH FASTER?

In developing their recalculation engine, Frontline Systems incorporated a technique called "vectorization" to optimize performance of back-to-back recalculations of the same model. This technique is used to enhance the performance of Crystal Ball simulations anywhere from 10 to 100 times, depending on the size and structure of the model. Since simulation speed is greatly enhanced, OptQuest optimizations and other multi-simulation processes show similar gains in performance.

ARE THE SIMULATION RESULTS THE SAME?

The Extreme Speed recalculation engine supports nearly all of the 320 standard Excel functions including the financial, statistical, and engineering functions that are part of the Analysis Toolpak. During the development of Microsoft Office 2000, these functions were extensively tested against the same functions in Excel. There are still a few differences, incompatibilities, and workarounds to consider when developing models. These are described in the *Crystal Ball User Manual* and in online help.

WHAT HAPPENS IF MY SPREADSHEET IS NOT COMPATIBLE?

Crystal Ball immediately detects if your spreadsheet is compatible with Extreme speed and warns you of incompatibilities. If you choose, you can easily "downshift" and run the simulation in Normal speed using the standard Excel calculation engine, or you can change your spreadsheet model to correct the incompatibility. For details, see the *Crystal Ball User Manual* and online help.

WHAT IF I HAVE A MULTI-WORKBOOK MODEL?

Simulations on multiple workbooks can now run in Extreme speed. If you are running in Extreme speed and the workbook contains external references to cells in other closed workbooks, Crystal Ball obtains the current value from those workbooks. References to cells in other open workbooks are dynamically updated if those cells depend on one or more assumptions. If the external reference is part of a formula (not a simple external reference), this is not compatible with Extreme speed.

WHERE CAN I LEARN MORE?

For more information about running your models in Crystal Ball Decision Optimizer with Extreme Speed, see the Extreme Speed appendix of the *Crystal Ball User Manual* or search for Extreme Speed in the Crystal Ball online help.

Sophisticated vectorization technology enhances simulation and optimization speed while maintaining calculation accuracy and supporting nearly all standard Microsoft Excel functions, even in multi-workbook models.



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