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Mathcad® 15.0 M010

Important Installation and Usage Information

Directory of Online and CD-ROM Information

Platform Support	http://www.ptc.com/partners/hardware/current/support.htm
Mathcad Support Center	http://www.ptc.com/support/mathcad.htm
Knowledge Base	http://www.ptc.com/appserver/cs/search/search.jsp
Reference Documents	http://www.ptc.com/appserver/cs/doc/refdoc.jsp

PTC® Introduces

Mathcad 15.0 M010

PTC is pleased to present Mathcad 15.0 M010. This maintenance release builds on features introduced in Mathcad 15.0 F000. It makes adjustments for compatibility with newer versions of various PTC products, introduces a new feature, and provides a number of bug fixes. Many new features and functions are highlights of Mathcad 15.0:

Mathcad 15.0 M010 Features

Mathcad Prime 1.0 Converter Support

With both Mathcad 15.0 M010 and Mathcad 15.0 M005, when used in conjunction with Mathcad Prime 1.0, you can convert all previous Mathcad files to Mathcad Prime 1.0 MCDX format. To convert your previous Mathcad files to Mathcad Prime 1.0 format, you must have Mathcad Prime 1.0 installed.

Mathcad 15.0 F000 Features

Design of Experiments (DOE) Functions and Plot Types

With the DOE functions, you can construct design matrices, analyze and screen factors, develop statistical models, and perform Monte Carlo simulations.

The following functions were added: anova, block, boxbehnken, boxplot, boxwilson, doelabel, effects, foldover, fractalias, fractfact, fractresol, fractruns, fullfact, graphBoxplot, graphEffects, LogNormal, montecarlo, mtaguchi, multidfit, Normal, pareto, plackettburman, polyfit, polyfitc, polyfitstat, quickscreen, randomize, taguchi, Uniform, Weibull

You can now create 2D plot representations such as box plots, Pareto plots, and effect plots, which are often used during DOE processes.

Microsoft Excel 2007 Support

Various components that previously supported only Microsoft Excel 2003 .xls format can now handle Microsoft Excel 2007 .xlsx and .xlsm format.

- New READExcel and WRITEExcel functions to read and write data to and from Excel 2007 file format
- New READCSV and WRITECSV functions for access to data files in comma-separated value format

New Integrated Capabilities from Mathcad Partners

Mathcad 15.0 offers integrated capabilities and access to rich engineering and analytical toolsets provided by the following strategic Mathcad partners:

- Knovel®—Provides access to a web-based collection of Mathcad worksheets for engineering calculations from trusted reference works. Use Knovel Math to reduce the time it takes to find, solve, and document equations.
- Kornucopia®—Offers a broad collection of functions and interactive templates specifically designed to easily and quickly blend Experimental Data, Simulation Results (FEA and others), Analytical Calculations, and Analysis Algorithms into more accurate, reusable, well documented Mathcad worksheets.
- Truenumbers®—Register to download and install the Truenumbers application and plug-in. They allow you to turn Mathcad numbers into Truenumbers for use in Microsoft Office or on the Web.

To access these toolsets, click the Mathcad **Tools** menu.

Installing Mathcad 15.0 M010

For the most up-to-date installation information, see the *Mathcad 15.0 Administrator's Guide*. You can find the guide in the installation CD and on the **Reference Documents** page at <http://www.ptc.com/appserver/cs/doc/refdoc.jsp>.

Coexistence with Previous Versions

If you have Mathcad 15.0 F000 or Mathcad 15.0 M005 installed, PTC recommends that you upgrade to the latest version and not uninstall the prior one first. This method saves the user-defined settings. Previous versions of Mathcad are automatically removed from the system during the upgrade.

Mathcad 15.0 M010 cannot be installed on a workstation currently running Mathcad 14. Mathcad 14 must be uninstalled before installing Mathcad 15.0 M010. If you do not uninstall Mathcad 14, the Mathcad 15.0 M010 installation process backs-up your E-books, templates, and user-defined DLLs; removes Mathcad 14; and then installs Mathcad 15.0 M010.

You can however install Mathcad 15.0 M010 alongside Mathcad Prime 1.0 and Mathcad 11, 12, and 13. You do not need to uninstall these versions of Mathcad before you install Mathcad 15.0 M010, nor does installing Mathcad 15.0 M010 automatically remove these Mathcad installations.

Note: After Mathcad 14 is uninstalled, you should run a repair of Mathcad 11, 12, and 13 in that order if you have those versions installed.

Restoring Mathcad 14.0 and Mathcad 15.0 Customized Information

When you uninstall Mathcad 14.0 or Mathcad 15.0, your electronic books, user-defined DLLs, and any templates you have created are automatically backed up. To move the backed up files to the Mathcad 15.0 M010 installation directory, follow these steps:

1. Open the folder %AppData%\Mathcad\14\Installation Backup. For example, D:\Users\jsmith\AppData\Roaming\Mathsoft\Mathcad\14\Installation Backup. Verify that it contains the following subfolders: handbook, template and userefi.
2. Copy all template user-created files (*.mct) and subfolders from the Installation Backup\template folder to C:\Program Files (x86)\Mathcad\Mathcad 15\template\<language>. For example, for English, the folder is EN. You must paste the files according to any corresponding subfolders.
3. Copy all user-defined DLLs and subfolders from the Installation Backup\userefi folder to C:\Program Files (x86)\Mathcad\Mathcad 15\userefi. You must paste the files according to any corresponding subfolders.
4. To restore all your previously installed handbooks:
 - a. Open the folder %AppData%\Mathcad\14\Installation Backup\handbook. For example, the folder D:\Users\jsmith\AppData\Roaming\Mathsoft\Mathcad\14\Installation Backup\handbook contains the ROARKS.HBK and ROARKS folder.
 - b. Copy all *.hbk files and the corresponding E-books subfolders under the Handbook folder to C:\Program Files (x86)\Mathcad\Mathcad 15\handbook.

For example, the ROARKS.HBK and ROARKS subfolder under D:\Users\jsmith\AppData\Roaming\Mathsoft\Mathcad\14\Installation Backup\handbook folder must be copied to C:\Program Files\Mathcad\Mathcad 15\Handbook.

You should now be able to open your previous Mathcad E-books from **Help > E-books**.

Contact technical support if you want to point to those E-books in an alternative location.

Documentation

To access Mathcad documentation from the PTC website, you must have, or register for, a free PTC account at <http://www.ptc.com/appserver/common/account/basic.jsp>. Adobe Acrobat Reader is required to read PDF files. Download Acrobat Reader from <http://www.adobe.com/support/downloads/main.html>.

Licensing

Licensing options include commercial via a server or locked node, academic, and trial licenses.

Operating System Support

Operating System	Version
Microsoft Windows XP x32	Windows XP Professional SP2 and SP3 x32 Edition and Windows XP Home Edition SP2 and SP3, Internet Explorer 6.0 SP1 or later
Microsoft Windows XP x64	Windows XP Professional x64 Edition SP2 and SP3, Internet Explorer 6.0 SP1 or later
Microsoft Windows Vista	Windows Vista Ultimate, Windows Vista Business, and Vista Enterprise, Base OS (x32 and x64 editions) and Service Pack 1, Internet Explorer 7.0
Microsoft Windows 7	Windows 7 Home Premium Edition, Windows7 Professional Edition, and Windows 7 Ultimate Edition, Base OS (x32 or x64 editions), Internet Explorer 7.0 SP1 or later

System Requirements and Hardware Certification Information

The Mathcad installation process requires 1.75 GB hard disk space as follows:

- 350 MB on the drive to install the program
- 700 MB on the drive containing the %temp% folder
- 700 MB on the drive containing the %windir% folder

When the installation process is complete, the installer removes all data from the %temp% and %windir% temporary folders. Refer to the Technical Support Knowledge Base at <http://www.ptc.com/support/mathcad.htm> for more information.

Visit the **Platform Support** page for Mathcad 15.0 M010 for current system requirements and certified hardware configurations:

<http://www.ptc.com/partners/hardware/current/support.htm>

Interoperability

PTC Product	Interoperability with Mathcad 15.0 M010
Creo™ 1.0 Parametric	Asynchronously map Creo Parametric input and output parameters to associated Mathcad variables from within the Mathcad Analysis Feature interface within Creo Parametric.
Creo Elements/Pro™ 5.0 (formerly Pro/ENGINEER® Wildfire®)	Asynchronously map Creo Elements/Pro input and output parameters to associated Mathcad variables from within the Mathcad Analysis Feature interface within Creo Elements/Pro.
Windchill® Product Point®	Develop and manage your worksheets and required file associations. Use over-the-network storage systems and FTP sites to enable version control.
Windchill Workgroup Manager (Windchill PDMLink®, Pro/INTRALINK®, Windchill ProjectLink™)	Work directly from Mathcad with these products. For example, you can check in and checkout files to Windchill, and you can open and save your Windchill files from Mathcad. Maintain revisions and client-side viewables, and retain necessary file associations.

Note: Mathcad 15.0 M010 is recognized as Mathcad 14 by Windchill Product Point and Windchill Workgroup Manager.

Language Support

The Mathcad 15.0 M010 user interface, Online Help, Resource Center and documentation are localized into French, German, Italian, Spanish, Japanese, Korean, Simplified Chinese, and Traditional Chinese. The Mathcad 15.0 M010 user interface and the *Mathcad 15.0 User's Guide* are also localized into Russian. The Online Help, Resource Center, and other documentation are not available in Russian for Mathcad 15.0 M010.

Keyboard Shortcuts

The keyboard shortcuts for each language are linked from the main table of contents for **QuickSheets** and **Tutorials**, under the **Help** menu.

Notable Fixes for Mathcad 15.0

Customer-reported issues that were fixed with the Mathcad 15.0 release follow:

SPR Number	Description
Mathcad 15.0 M010	
1412775	Fixes a problem with symbolic calculation of a single line definition and evaluation combined with units.
1417879	Addresses a false error message that appears when symbolically evaluating $e/n!$ from $n=1$ to infinity.
1858746	Addresses a problem with an unchanging cursor during worksheet recalculation.
1893304, 2056070	Addresses a problem with a combination of an inline evaluation containing units and a symbolic evaluation that is followed by numerical evaluation.
1971427	Addresses a problem with the display of the Mathcad file icon when opening a file in some languages from a CAD application.
1971450	Addresses a problem with opening a file from Mathcad in some languages.
1990321, 1990338, 1990387, 1990725	Addresses a problem with missing information in the setup license agreement of the Excel add-in.
1992079	Fixes a problem with sending an unsaved Mathcad file.
1999572, 2073923	Fixes a problem with accessing handbooks that were downloaded for Mathcad 14.0 after upgrading to Mathcad 15.0.
2003017	Resolves a problem with missing search criteria in Windows XP after installing Mathcad 15.0.
2007304	Fixes a problem with assigning data to a variable using an Excel component and an existing Excel 2007 file.
2013054	Fixes a problem with <code>rref</code> function calculation.
2015172	Addresses a problem of an inaccurate message about Mathcad adapters and an inaccurate tooltip.
2031800	Fixes a problem with a duplicated PTC Places icon in the Open File dialog box.

2031831	Fixes a problem with WRITEEXCEL function where decimal numbers are converted to strings if Windows is set to use a decimal comma.
2035004	Fixes a problem with PDM actions that were missing in Mathcad.
2035612	Fixes a problem with adding a row to a matrix that was pasted from Excel 2007.
2045673	Addresses a problem with missing product code text boxes in some languages in the license wizard.
2046815	Addresses an installer issue for untranslated dialog boxes for some languages.
2050585	Fixes the problem with the installer deleting the user templates and DLLs while upgrading from Mathcad 15.0 F000 to Mathcad 15.0 M005.
2053486	Fixes a crash that occurs when opening Mathcad under a Windows account name with double-byte characters.
2055836	Addresses a problem with unavailable controls in the Overview and Quick Tour of Mathcad tutorial specifically in the Automation Example.
2062986	Fixes a problem of different results for <code>VHlookup</code> and <code>Vlookup</code> deprecated functions in Mathcad 15.0 and in Mathcad Prime 1.0.
2063201	Fixes a problem with density calculation for Chi-squared probability.
2067322	Fixes incorrect results returned by the <code>eigenvals</code> function for skew symmetric matrices.
207393	Addresses an issue of backing up and restoring Mathcad 14 E-books, templates, and user-defined DLLs after installing Mathcad 15 M010.
Mathcad 15.0 M005	
1863876, 1980262	Addresses the problem of a Mathcad process running after exiting a Mathcad session.
1998193	Fixes incorrect search results in a search of the Resource Center.
2012625, 2063227	Fixes the problem of illegal Anova function calculation.
2014092	Resolves a problem with opening a file containing an Excel component that cannot be loaded.

Mathcad 15.0 F000	
N/A	Resolves all reported compatibility issues with Windows 7.
1401398	Fixes the incorrect invlaplace transform result Mathcad returns for simple rational function.
1406906	Fixes a problem in automation involving setting the value of Greek letters.
1425866	Fixes specific incorrect results from inverse Laplace transform.
1454096	Resolves a problem borrowing the last license from a pool of Mathcad licenses.
1507803	Fixes a specific memory leak problem.
1611658	Enhances the eigenvals and eigenvec functions for handling special cases of real symmetric and Hermitian matrices.
1703193	Addresses a calculation problem that occurs when parsing or displaying a cross-product equation.
1734123	Extends the rref function to accept matrices of symbolic expressions, not just scalars.
1743813	Fixes a problem related to the export of data tables containing integers and strings from Mathcad to Excel.
1744290	Fixes a problem of incorrect result for symbolic definite integral involving the sin function.
1751901	Addresses a problem of incorrect result for the definite integral of $A \cdot \sin(2 \cdot \pi \cdot t / T)$ between 0 to $T/2$.
1773587	Fixes a performance problem related to embedding a Mathcad object in an Excel file.
1779509	Fixes a problem related to delete and insert elements on a matrix that is copied from Excel.
1779925	Fixes a problem with Print and Print Preview in specific situations involving the Microsoft Multilingual User Interface.
1792234	Corrects erroneous results when Mathcad multiplies uneven arrays by truncating the calculations.
1815545	Fixes a problem with silent installations of Mathcad under the Windows Vista operating system.
1841454	Resolves a problem related to saving a .mcd file as .xmcd.
1863876	Corrects a situation where mathcad.exe continued to run after exiting.

1905987	Fixes an incorrect result for a definite integral involving the sin function.
1906846	Addresses a symbolic solve issue that causes stack overflow memory problems.
1939524	Fixes a result from the inverse Laplace transform.

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