

PTC[®]

Mathcad[®] Prime[™] 2.0
Installation and Administration
Guide
December 2011

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About This Guide

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How to Read This Guide

The *Mathcad Prime 2.0 Installation and Administration Guide* is written primarily for the system administrator — the person responsible for installing and maintaining Mathcad and any FLEXnet Publisher administering Mathcad licenses. It assumes you have a basic familiarity with Windows and network administration.

For Mathcad installation, this Installation and Administration Guide targets the Windows platform. Dialog box titles, menu options, and other elements mentioned in this Guide reflect Windows navigation and object names.

For the System Administrator

The following sections contain important information for persons installing and administering Mathcad and FLEXnet Publisher:

Before You Install	An introduction to the concepts covered and terminology used in this manual.
Installing Mathcad	Instructions for performing an installation of Mathcad.
License Management	Instructions for installing and configuring a FLEXnet Publisher license server.

For the End User

End-users of Mathcad must refer to the Mathcad Help Center as their primary source of information, although the following sections of this guide may be of interest as well:

Before You Install	An introduction to the concepts covered and terminology used in this manual.
Borrowing Licenses	Instructions for borrowing a Mathcad license.

Other Sources of Information

You can refer to the following sources of information as you install, configure, and license Mathcad across your enterprise.

- Mathcad Customer Support Site—Contains information on obtaining and managing licenses as well as a searchable Knowledge Base.

<http://www.ptc.com/support/mathcad.htm>

- *Mathcad Prime 2.0 Read This First*—Contains last-minute changes to the product and documentation:

<http://www.ptc.com/appserver/cs/doc/refdoc.jsp>

- *Creo 1.0 Parametric, Direct, Simulate, and Layout Installation and Administration Guide*—Includes additional information about installing and using FLEXnet Publisher, including information on using FLEXnet Publisher on platforms other than Windows.

<http://www.ptc.com/appserver/cs/doc/refdoc.jsp>

Technical Support

Contact PTC Technical Support if you encounter problems using the software. Contact information for PTC Technical Support is available on the PTC Customer Support Site.

<http://www.ptc.com/support/>

You must have a Service Contract Number (SCN) to receive technical support. If you do not have an SCN, contact PTC using the instructions in the *PTC Customer Service Guide* under Contacting Technical Support.

http://www.ptc.com/support/cs_guide/cs_guide.pdf

Comments

We welcome your suggestions and comments on our documentation. Please submit your feedback to mathcad-documentation@ptc.com.

When you submit feedback, remember to include the version number and name of the documentation piece with your comments.

Before You Install

What You Receive

- *Read This First*—Notifies you of any changes you must make, such as machine settings and recommended operating system patches.
- *Mathcad DVD*—Contains the installation program for Mathcad. This package contains the Mathcad program and associated Help Center.
- *Mathcad Prime 2.0 Installation and Administration Guide*—Provides information on license management, installation of software, and software maintenance.

Types of Installations

- Graphical—Use the PTC.Setup installation utility to graphically install Mathcad resources. You can select between **Typical** installation and **Custom** installation.
- Silent—Use a customized installation package (MSI) to drive the installation automatically.

Order of Installation

You can elect to perform either the Mathcad installation or the FLEXnet Publisher installation first. In addition, you can specify a license file or server as part of a silent installation.

System Requirements

- Pentium-compatible 2xP4 2.4GHz or later
- Windows XP Home SP3 or Professional Edition SP3, Windows XP Professional x64 Edition SP2, Windows Vista x32 or x64 Edition, Windows 7 x32 or x64 Edition; Windows XP SP3, XP-x64 SP2, Vista, or Windows 7 recommended
- Windows Installer 3.0 or later
- Microsoft .NET Framework[®] 4.0 Client Profile
- Microsoft .NET Framework[®] 4.0 Extended
- 512 MB of RAM
- 1.6 GB of hard disk space (400 MB for Mathcad with one language installed, 250 MB for prerequisites, 1.2 GB temporary space during installation)
- DVD drive (not required for silent installations) and Internet connection (required for license acquisition)
- SVGA or later graphics card, 1024 x 768, 32-bit color monitor
- Keyboard and mouse or compatible pointing device
- Internet Explorer 6.0 and Adobe Reader 5.0 or later are required for full functionality of the Help system.

Download the software from Microsoft or Adobe, respectively:

<http://www.microsoft.com/windows/products/winfamily/ie/default.msp>

<http://www.adobe.com/products/acrobat/>

Note

The 64-bit version of Mathcad runs as a native 64-bit application. This version utilizes more than 4 GB of memory.

Coexistence and Upgrade

Mathcad Prime 2.0 can be installed side-by-side with any previous versions of Mathcad. For installing Mathcad Prime 1.0 and Mathcad Prime 2.0 side-by-side, the following limitations apply:

- You must install the products in an ascending order (Mathcad Prime 1.0, and then Mathcad Prime 2.0).
- If you have both Mathcad Prime 1.0 and Mathcad Prime 2.0 installed on your computer, by default Mathcad files open with the latest version. If you want files to open in Mathcad Prime 1.0, you must set file association manually. Right-click a file, select **Open with**, and then click the desired program from the shortcut menu.
- Mathcad Prime 1.0 integrations with Windchill Workgroup Manager, Windchill Product Point, Pro/ENGINEER, Creo Elements/Pro, and Creo Parametric will no longer work.
- If you previously registered Mathcad Prime 1.0 with Windchill Workgroup Manager (using the Application Management utility), you must repeat the procedure and register Mathcad Prime 2.0.
- If you have several versions of Mathcad Prime installed on your computer and you would like to remove some, you must uninstall all of them in descending order, and then install only the ones you want in ascending order.
- After installing Mathcad Prime 2.0, you can only use the Mathcad Prime 2.0 **XMCD, MCD Converter** to convert legacy Mathcad worksheets into Mathcad Prime 2.0.

Note

You must uninstall older versions of Mathcad Prime 2.0 (Alpha) before installing Mathcad Prime 2.0.

XMCD, MCD File Conversion

To convert Mathcad `xmcd` or `mcd` files to Mathcad Prime 2.0 `mcdx` format, you must have Mathcad 15.0 M010 or higher installed. Otherwise, the converter will not function properly. You can download Mathcad 15.0 M010 from <http://www.ptc.com>.

The installation of Mathcad 15.0 M010 requires uninstalling any previous versions of Mathcad 14.0 or Mathcad 15.0 from your computer. If you wish to reinstall Mathcad 14.0 at a later date you will need to back up your license file (`license.dat`) from `be C:\Program Files\Mathcad\Mathcad 14\licenses`, outside of the Mathcad installation folder, to ensure that it is not deleted. If you use a license server, you do not have to back up your license file.

License Management

To serve floating licenses and registered-user licenses, you must use FLEXnet Publisher 10.8.6.2 or later. FLEXnet Publisher 10.8.6.2 for Windows is available for download at <http://free-dl.ptc.com/install/setup.exe>. You must be logged in to your PTC account to view the page.

Note

You can also use the FLEXnet Publisher executable for Linux, Solaris, or 64-bit Windows provided with other PTC products. You cannot use a FLEXnet Publisher executable provided by another vendor, as it does not include PTC's vendor daemon.

Under regular usage, license administration places little load on your server or network. The FLEXnet Publisher license daemon and PTC vendor daemon both require approximately 3 MB of memory when running. Additionally, aside from license check-out and check-in, and periodic heartbeats sent out to verify the continued presence of the license server, Mathcad generates no network traffic to the FLEXnet Publisher when running. However, as more workstations access the license server, network traffic may become an issue, and your log file will grow more quickly.

To use Mathcad, you need the appropriate license file. Mathcad is sold with either floating, locked, or registered-user licenses.

- Floating licenses can be used by any workstation on your network.
- Locked licenses can only be used on specified workstations.
- Trial licenses can be used by any workstations on your network, and will expire after 30 days.
- Registered-users are administered from a license server, but always allocated to a particular workstation, regardless of whether the workstation is running Mathcad at the time.

If, and only if, your installation is active on Maintenance Support, you are entitled to home-use licenses. For more information refer to the PTC Maintenance Support Policies on the Customer Support Site.

To request a license, know the CPU ID of the computer to which you intend to assign the license. In most cases, the CPU ID will be the MAC address of the active network adapter. For more information on types of licenses and the CPU ID, see [Obtaining a License on page 25](#).

Licenses must be renewed on a yearly basis on the PTC Customer Support site, or by contacting your local support office.

Note

For more information on License Management refer to [License Management on page 23](#).

Vendor Daemon

In addition to a license file, FLEXnet Publisher also requires a vendor daemon to properly serve Mathcad licenses. This vendor daemon actually dispenses a license to your machine when you start Mathcad. Without it, Mathcad cannot check out a license at start up.

The vendor daemon is provided as part of the FLEXnet Publisher installation.

Setting Language Default

To run the installation utility and Mathcad in a language other than English, select the required language during installation.

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Installing Mathcad

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Using PTC.Setup for Installation

You install Mathcad and its software components, including PTC License Server, using PTC.Setup. PTC.Setup is a graphical installation utility with Help. Click **Next** to start the installation. Select the product resources you want and proceed to the next screen. Use **Back** to return to previous screens to make changes. To exit the installation utility, click **Cancel**.

Note

When you begin an installation by clicking on the required component, an error message is displayed if the required security privileges are not satisfied.

Selecting Product Features

In all the screens other than the PTC.Setup product selection screen, click  before each of the product components to choose the following commands from the list:

- Install this feature—Install the component.
- Do not install this feature—Do not install the component.  changes to  if a component is not installed.
- Install all sub-features—If a product component has subcomponents, you can install them by selecting this option. The icon  changes to  to indicate that the components will be installed.

Starting PTC.Setup

If PTC.Setup does not start automatically, use one of the following procedures:

- Start Windows Explorer, browse to the folder that contains the installation program, and double-click `setup.exe`.
- At an MS-DOS prompt, type the following command:

```
<cdrom>:\setup.exe
```

- From the task bar, select **Start ▶ Run**, and enter the following command:

```
<cdrom>:\setup.exe
```

Before You Proceed

Before installing Mathcad, make sure that all of the required system components are installed.

If all of the required system components have been installed, proceed to install Mathcad.

Note

- Only persons with administrative privileges can install Mathcad onto a workstation. If you lack administrator privileges for the workstation onto which you are installing, or are not sure you have administrator privileges, contact your system administrator.
- Mathcad Prime 2.0 cannot be installed from an encrypted folder. You must unencrypt the installation folder in order for installation to proceed.

Installing a Trial Version of Mathcad

This section provides step-by-step instructions on how to install a trial version of Mathcad, including setting Windows preferences and optional configuration.

1. Start the installation utility.
2. Click **Next**. The **Accept License Agreement** dialog box opens.
3. Accept the License Agreement and click **Next**. The **Select Product to be Installed** dialog box opens.
4. Click **Mathcad PrimΣ 2.0**. The **Mathcad License Type** dialog box opens.
5. Click **Trial/New License**.

Note

To run the software as a trial you must obtain a license from the PTC Web site.

6. Click **Next**. The **Mathcad Installation Type** dialog box opens.
7. Click one of the following options to select the installation type:
 - **Typical**—Installs all the application resources in the language of the installer. If you select this option, proceed to [Finalizing the Installation on page 18](#).
 - **Custom**—Installs only the selected application resources and languages.
8. In the **Define Installation Components** dialog box, keep the default installation folder, or click  to specify a different folder. In the **Features to Install** list, select the resources and languages to install.
9. Click **Next**. The **Special Options** dialog box opens.
10. If you wish to configure Mathcad to access the Help Center on a local web server, click **External Help** and type the URL in which the Help Center is deployed.

Note

The URL must conform to the format:

`http://server-name[:port-number]/MathcadPrimeHelp`

Refer to [Installing Help Center on a Web Server on page 19](#) for more information.

11. Click **Next**. The **Windows Preferences** dialog box opens.

Setting Windows Preferences

1. In the **Windows Preferences** dialog box, click one or more of the following locations to create a shortcut to Mathcad:
 - **Desktop**
 - **Start Menu**
 - **Quick Launch**
2. Click **Next**.

Finalizing the Installation

1. Click **Install**. If the installation is silent, an MSI file is created when you click **Install**.
2. When the installation is complete, click **Exit**.

Note

You can register Mathcad for use with Windchill Workgroup Manager.

Installing an Enterprise Version of Mathcad

This section provides step-by-step instructions on how to install an enterprise version of Mathcad, including specifying licenses, setting Windows preferences and optional configuration.

1. Start the installation utility.
2. Click **Next**. The **Accept License Agreement** dialog box opens.
3. Accept the License Agreement and click **Next**. The **Select Product to be Installed** dialog box opens.
4. Click **Mathcad PrimΣ**. The **Mathcad License Type** dialog box opens.
5. Click **FLEXnet Publisher/License File** and **Next**. The **Mathcad Installation Type** dialog box opens.
6. Click one of the following installation types:

-
- **Typical**—Installs all the application resources in the language of the installer. Proceed to [Specifying Licenses on page 17](#).
 - **Custom**—Installs only the selected application resources and languages.
 - **Create silent installation package**—Generates a customized installation package for future installation.
7. After selecting custom installation or silent installation, proceed to define installation components.

Defining Installation Components

1. Click **Next**. The **Define Installation Components** dialog box opens.
2. Keep the default installation folder, or click  to specify a different folder. In the **Features to Install** list, select from the following resources and languages:
 - **Mathcad**—Installs Mathcad in the selected language.
 - **Local Help**—Installs the Help on your computer.
3. Click **Next**. The **Special Options** dialog box opens.
4. If you wish to configure Mathcad to access the Help Center on a local web server, click **External Help** and type the URL in which the Help Center is deployed.

Note

The URL must conform to the format:

`http://server-name[:port-number]/MathcadPrimeHelp`

Refer to [Installing Help Center on a Web Server on page 19](#) for more information.

5. Click **Next**. The **FLEXnet Publisher License Servers** dialog box opens.

Specifying Licenses

PTC.Setup accesses your license information either on a remote license server or on your computer.

1. In the FLEXnet Publisher license servers screen, click **Add**. The **Specify License Server** dialog box opens.
2. Click one of the following options:
 - **Single license server**—Specifies a single server for the licenses.
 - **Triad license server (fault tolerant)**—Specifies a triad configuration of three triad partners.
 - **Locked license file (no server running)**—Specify the path to the license file in the license file path box or browse to the required license file.

Note

*For a single and triad license server, type the server hostname and port number and click **OK**.*

3. If you are performing a Typical installation, click **Next** and proceed to [Finalizing the Installation on page 18](#). Otherwise, click **Next** to set your Windows preferences.

Setting Windows Preferences

1. In the **Windows Preferences** dialog box, click one or more of the following locations to create a shortcut to Mathcad:
 - **Desktop**
 - **Start Menu**
 - **Quick Launch**
2. Click **Next**.

Finalizing the Installation

1. Click **Install**. If the installation is silent, an MSI file is created when you click **Install**.
2. When the installation is complete, click **Exit**.

Silently Installing Mathcad

The Mathcad installation utility allows you to save your installation settings and create a customized installation package (MSI) for future installations. With this option you predefine installation variables normally set by users during installation. Use silent installations to standardize the deployment of Mathcad across your enterprise without the need for user input.

Note

All prerequisite software must be installed before performing a silent installation.

Creating and Executing a Silent Installation Package

1. Start the installation utility.
2. Click **Next**. The **Accept License Agreement** dialog box opens.
3. Accept the License Agreement and click **Next**. The **Select Product to be Installed** dialog box opens.
4. Click **Mathcad PrimΣ**. The **Mathcad License Type** dialog box opens.
5. Click **FLEXnet Publisher/License File** and **Next**. The **Mathcad Installation Type** dialog box opens.

-
6. Click **Create silent installation package**.
 7. Customize your installation settings (according to Custom installation described in [Installing an Enterprise Version of Mathcad on page 16](#)) and exit the installation utility. The silent installation package is created in the specified installation folder. By default the package is created in C:\Program Files\Mathcad\Mathcad Prime 2.0\Uninstall.

Note

The installation instructions are also found in the README_MSI file that is generated in the installation package folder.

8. Confirm that the workstation satisfies the system requirements. This includes the installation of prerequisite software.
9. Copy the contents of the customized installation package folder created in Step 7 to a shared network folder (for example, H:\silent).
10. Open the folder created in Step 7.
11. Double-click the MathcadPrimeSetup.vbs file to start the installation. You can also run the installation using the following command line:

```
msiexec.exe /qb /I "H:\silent\PrimeWixInstaller.msi"  
INSTALLDIR="C:\Program Files\Mathcad\Mathcad Prime  
2.0"
```

The customized installation takes several minutes and quits without notification.

Installing Help Center on a Web Server

You can install Help Center on any servlet container, application server, or Web server that supports the JSP 2.0 and Servlet 2.4 standards. For Tomcat and Jetty servlet containers, place Help Center in the document root directory. If you use Websphere, you can use its interface to install Help Center.

Note

You must have an instance of Help Center at the product installation path or at a custom location to install Help Center on a Web server.

To install Help Center on a Web server, follow these steps:

1. Browse to the Help Center installation folder:
<mathcad_prime_install_path>\Help
2. Double-click the web_deploy.bat batch file. Specify the path of the document root directory of the servlet container. For example, for Tomcat servlet container, specify the <servlet_document_root>\webapps as the path.

The `web_deploy.bat` batch file performs the following data copy operations:

- Copies Web configuration data placed in the `web_deploy` folder at the Help Center installation location to the `MathcadPrimeHelp` folder in the document root directory of the servlet container.
- Copies the Help Center data from the Help Center installation location to the `MathcadPrimeHelp` folder in the document root directory of the servlet container.

Note

If a `MathcadPrimeHelp` folder exists in the document root directory of the servlet container, you are prompted to remove, move, or rename the existing `MathcadPrimeHelp` folder and then rerun the batch file.

3. Configure your Web server to distribute Help Center from the `<servlet_document_root>\MathcadPrimeHelp` folder. For example, for a Web server with Tomcat servlet container configured on port number 8080, specify the following URL in a browser window to access Help Center:
`http://<server_name>:8080/MathcadPrimeHelp/index.jspx`

Running Mathcad and Mathcad Help Center in Other Languages

You can run Mathcad Prime 2.0 and Mathcad Prime 2.0 Help Center in the following languages: English, French, German, Italian, Spanish, Japanese, Korean, Simplified Chinese, Traditional Chinese, and Russian.

Running Mathcad in Other Languages

This section provides information about running Mathcad in a language different from your operating system locale.

1. Click the Windows Start button and then click **Run**. The **Run** dialog box opens.
2. In the **Open** box, type `"C:\Program Files\Mathcad\Mathcad Prime 2.0\MathcadPrime.exe" /culture:en-US`. In this example, C is the drive where Mathcad Prime 2.0 is installed, and en-US is the desired language and locale.

You can use the following abbreviations for other languages:

Language	Command Argument
English	en-US

Language	Command Argument
French	fr-FR
German	de-DE
Italian	it-IT
Japanese	ja-JP
Korean	ko-KR
Russian	ru-RU
Spanish	es-ES
Simplified Chinese	zh-CN
Traditional Chinese	zh-TW

Running Mathcad Help Center in Other Languages

This section provides information about running Mathcad Help Center in a language different from your operating system locale.

1. Click F1 to open Mathcad Help Center.
2. Open the **Configuration** tab and select **Language**.

Note

*The **Language** option is available only if Mathcad Help Center was installed with several languages. If you installed Mathcad Help Center in a single language, to view different languages, you must uninstall Mathcad or Mathcad Help Center (if Help was installed separately) and reinstall it with the required languages selected.*

3. Select the desired language.
4. Select one of the following:
 - To apply the settings to the current help center session click **Submit**.
 - To apply the settings to future help center sessions, click **Save Configuration Settings** and click **Submit**.

3

License Management

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About License Management

When launched, Mathcad searches for an available license. If available, this license is allocated to the workstation, and Mathcad opens. If a license is not available, Mathcad opens in read-only mode. Mathcad licenses types are as follows:

- A floating license (server)—For administering floating licenses only from a license server. Licenses are allocated to workstations from a common pool, on a first-come-first-serve basis.
- A locked license (workstation)—For use on a workstation, without a license server. Locked licenses must be reallocated from one workstation to another through the PTC Customer Support Web site.
- A registered-user license (server)—For administering locked licenses from a server, rather than individual workstations. Registered-user licenses are allocated to workstations with an options file, provided by the FLEXnet Publisher installer. For instructions on how to edit the options file, see [Editing the Options File on page 31](#).
- A home-use license (workstation)—Granted as a maintenance entitlement (in the quantities indicated below) for active maintenance accounts. Home-use licenses are term licenses, set to expire at the end of the current maintenance period. If you renew your maintenance contract, you are able to reissue your home-use licenses.

Home-use licenses are restricted to the same users accessing the purchased licenses and must be installed on personal computers not located or used in the workplace. Home-use licenses are not allowed to be used in the workplace by additional users. Permitted users can perform commercial and production work with home-use licenses on their personal computers.

Mathcad Professional

- Individual—1 license
- Floating—2 licenses
- Global—2 licenses

Mathcad Education

- Student Edition—0 licenses
- Professor Edition—1 license
- University Edition—1 home-use per every 10 licenses

Pro/ENGINEER and Creo Elements/Pro Packages

- There is no home use for any Mathcad licenses sold within a package
- A trial license—For a 30-day trial without a license server

Mathcad requires the use of a license server for floating and registered-user licenses. Locked license files and trial license files reside on the workstation, and they do not require a license server.

If you have server-based licenses and want to run Mathcad while disconnected from your network — for example, on a laptop while out of the office — temporarily borrow a license from the server. This borrowed license is stored on the workstation, so Mathcad does not need to access the license server at startup. For instructions on how to borrow licenses, see [Borrowing Licenses on page 36](#).

Note

If you have a locked or home-use license file, you do not need to install and configure FLEXnet Publisher. Save your license file to the `License` folder of the Mathcad installation on the appropriate workstation.

Obtaining a License

This section provides step-by-step instructions on how to obtain a license.

Obtaining a Trial License

1. Start Mathcad.
2. Click **License Status**. The **Mathcad Prime 2.0** dialog box opens to the **License** tab.

Alternatively, click the Mathcad button , and then click **Mathcad Options**. In the **Mathcad Prime 2.0** dialog box, click the **License** tab.

3. Click **Get Trial License**. A license file is generated via the internet and is automatically downloaded to your computer.
4. Click **Close**.

Obtaining a Node-Locked License

1. Start Mathcad.
2. Click **License Status**. The **Mathcad Prime 2.0** dialog box opens to the **License** tab.

Alternatively, click the Mathcad button , and then click **Mathcad Options**. In the **Mathcad Prime 2.0** dialog box, click the **License** tab.

3. Click **Get License**. The **Mathcad License Wizard** opens.
4. In the **Welcome** screen, read the welcome message and click **Next**. The **Login** screen appears.

-
5. If you have a PTC.COM user account, type in your user name and password and click **Next**.

If you do not have a user account, click **I am new to PTC.COM and want to create an account**. [Create a new account](#) and then return to the **Mathcad License Wizard**.

6. In the **Provide Information** screen, type the product code that you received in your PTC Fulfillment Confirmation letter.
7. Verify the Host ID.
8. Select the relevant license options:
 - **I am requesting a Home Use license**—Retrieves your home-use license that expires at the end of the maintenance term. If you do not select this option, you are requesting your primary license.
 - **I am upgrading from a Single User**—Retrieves a Single User Upgrade license based on your having a prior version of Mathcad. Type the prior version product code in the spaces provided.
9. In the **Acquire License** screen, select the products needing licenses, and click **Acquire License**.

The Mathcad License Wizard retrieves your license file and configures it for use with the versions that you selected. When the configuration is complete, the licensed versions are listed.

10. Click **Exit**.

Obtaining a Floating or Registered-User License File

To obtain your license files, use your PTC user account to log on to the PTC Customer Support site at <http://www.ptc.com/support/mathcad.htm>. If you do not have a PTC user account, follow the instructions on the Web site to create one. After you log in, click the **Licensing** tab and then click **Configure New Software**. Enter the Sales Order Number from your Fulfillment Confirmation letter to process your request. You must provide the CPU ID for each server in your request.

To determine the CPU ID for a server:

1. Type `ipconfig /all` at a command prompt, and then press Enter.
2. Find the 12-digit number labeled “Physical Address,” in the form XX-XX-XX-XX-XX-XX. Enter this number as the CPU ID.

Note

The CPU ID or MAC address identifies the active network adapter on a workstation. Mathcad attempts to match the CPU ID in a locked or home-use license file against all detected MAC addresses at startup. As long as any available address matches, Mathcad starts.

After you complete your request, your licenses arrive by email as attachment files. To use your licenses, save the license file to your server, as a *.dat file. Then, install FLEXnet Publisher.

If you intend to serve licenses from multiple servers, see [Using Multiple License Servers on page 32](#) before you obtain your license files.

Using the License Service

This section provides information on how to install and use the license service.

Installing the License Service

The FLEXnet Publisher installer is available for download at <http://free-dl.ptc.com/install/setup.exe>. Perform the installation to a server on your network accessible by Mathcad users. Otherwise, Mathcad cannot obtain a license from the server.

Note

Obtain a license file before you install FLEXnet Publisher, as the installer validates your license file.

To install the license service:

1. Download the installation package and extract it to a folder on your computer.
2. Open the folder that contains the installation package and double-click the setup.exe file.
3. In the **Select Product to be Installed** dialog box, click **PTC License Server**. The **Define Installation Components** dialog box opens.
4. Keep the default installation location, or specify a new location by clicking the folder button to the right of the **Destination Folder** list, then specifying the location of your license in the **License File** box. You can instead click the folder next to the text box to browse to the license file.

Do not specify a license file containing licenses from both PTC and other software vendors. The installer considers combined licenses to be invalid.

Note

When the license service (*lmgrd.exe*) runs, it uses *C:\FLEXlm* to store temp files related to the licensing services. To avoid possible errors, do not install to this folder.

- To configure the license service to start automatically when you reboot the server, click **FLEXnet Server Options** and then click **Start on Reboot**. Use the **Command Line Arguments** box to specify any desired startup parameters. For information on the allowed parameters, click **Command Line Arguments** to open the *FLEXnet Publisher Licensing End User Guide*.
- Click **Install**. You can click **Cancel** to stop the installation, if necessary. If installation fails, check the log file *ptcsetup.log*, in the *temp* folder.
- When installation completes, the License Service starts automatically. Click **Exit** to end installation.

License Service Utilities

PTC provides a suite of utilities with its FLEXnet Publisher installation, located in the *bin* folder:

<i>lmtools</i>	Launches the FLEXnet Publisher utility LMTOOLS, similar to the shortcut icon created in Start ► Programs ► PTC ► PTC License Server ► PTC License Server Tools . Functionality includes customer configuration of the license service, starting and stopping the <i>lmgrd</i> license server(s), server and licensing status, as well as diagnostic tools.
<i>lmutil</i>	Provides optional arguments to check the server and licensing status. Refer to the <i>FLEXnet Publisher Licensing End User Guide</i> .
<i>ptcflush</i>	Releases licenses. This may be necessary if there are network problems.
<i>ptchostid</i>	Returns the Host ID, with required formatting, used for license requests.
<i>ptcsetup</i>	Allows you to reconfigure an existing installation. Use <i>ptcsetup</i> for modifications or reconfigurations only. It cannot install FLEXnet Publisher.
<i>ptcshutdown</i>	Shuts down a license server process for administrative maintenance of the license server. On Windows systems, you can also use LMTOOLS to stop a license server process. See License Administration Tools in the <i>FLEXnet Publisher Licensing End User Guide</i> .
<i>ptcstartserver</i>	Starts a license server process. On Windows systems, you can also use LMTOOLS to start a license server process.

ptcstatus	Displays information on server status and the current usage and availability of licenses.
-----------	---

Using the License Service Utilities

The FLEXnet Publisher installer automatically configures the license server. No additional configuration is required to begin serving Mathcad licenses. However, as your needs change, you may need to perform maintenance or configuration tasks on the FLEXnet Publisher. PTC provides a set of utilities in the `bin` folder of your FLEXnet Publisher installation for this purpose.

Note

If your organization already uses FLEXnet Publisher or FLEXlm to meter another application, read [Licensing Both Mathcad and Other Applications on page 32](#) before proceeding.

Changing Your License File

If you receive a new license file, run the `ptcsetup` utility (`ptcsetup.bat`). When prompted, specify the new license file. The utility stops the current license server process, replaces the existing license file with the new one, and restarts the license server. This utility does not reinstall FLEXnet Publisher.

Checking the HOSTID of A Computer

To check the HOSTID of a computer, run the `ptchostid` utility (`ptchostid.bat`). This utility determines the HOSTID for a computer and returns it in the desired format. Use this HOSTID when you request a license file.

Releasing Licenses

If you experience network disruptions, you may need to reclaim all licenses on the server and then allow users to reobtain them. To reclaim any licenses in-use, run the `ptcflush` utility (`ptcflush.bat`). You can run `ptcflush` only once every twelve minutes.

For a list of arguments allowed by `ptcflush`, run the utility from a command prompt. Values for all of the arguments can be obtained with the `ptcstatus` utility.

Stopping and Restarting the License Server Process

Occasionally, you may need to stop the license server process for administrative maintenance. To do so, run the `ptcshutdown` utility (`ptcshutdown.bat`). After you have completed the maintenance operation, you can restart the license server process with the `ptcstartserver` utility (`ptcstartserver.bat`).

Checking the Status of Your Licenses

To check the number of floating or registered-user licenses in use, run the `ptcstatus` utility (`ptcstatus.bat`). You can execute this utility in either normal or verbose mode (`ptcstatus -v`). Verbose mode provides additional information about your licenses, such as their version number and expiration date.

If you require more detailed information about the status of your licenses or license server, you can perform a status enquiry using the PTC License Server tools (`lmtools.exe`):

1. Start the PTC License Server tools from **Programs ► PTC ► PTC License Server** in the **Start** menu.
2. On the **Service/License File** tab, select **FLEXlm server for PTC**.
3. Click **Perform Status Enquiry**, located on the **Server Status** tab. If the service has been configured properly, you should see a status report that shows:
 - License server name.
 - Port number used by the license service.
 - License file in use.
 - Status of the server and the PTC vendor daemon.
 - Number of licenses in use and their assigned workstation. The report indicates borrowed licenses with the word *linger*, followed by the length of the borrowing period in seconds and in parentheses after the workstation information.
4. If the status report is incorrect, verify that the server has been configured properly. On the **Config Services** tab:
 - Click **FLEXlm server for PTC** in the **Service Name** list.
 - Confirm the path to the licensing service daemon (`lmgrd.exe`, located in the `i486_nt\obj` folder of your FLEXnet Publisher installation).
 - Confirm the path to the license file (`license.dat`, located in the `licensing` folder of your FLEXnet Publisher installation). If this information is incorrect, run the `ptcsetup` utility to point the license service to the proper license file.
 - Confirm the path to the log file used by the PTC license management service. The default is `ptclmgrd.log` in the `licensing` folder of your FLEXnet Publisher installation. If your license server hosts multiple services, you should create an individual log for each service.
 - Verify that **Use Services** is selected.
 - Double-check that paths to files are absolute and include the name of the file.

Editing the Options File

With the options file created, you can tailor the installation to your particular environment. The default options file contains two lines:

```
REPORTLOG +"C:\Program Files\FLEXnet Publisher\licensing\ptcreport.log"  
TIMEOUTALL 7200
```

If you purchased a 5-seat floating Mathcad license, you can edit the options file to add the lines:

```
INCLUDE MATHCAD HOST Eng1  
INCLUDE MATHCAD HOST Eng2  
INCLUDE MATHCAD HOST Eng3  
INCLUDE MATHCAD HOST Eng4  
INCLUDE MATHCAD HOST Eng5
```

MATHCAD is the metered application and Eng1, Eng2, ... are the specific workstations allowed to use Mathcad.

Supported FLEXnet Publisher Keywords

The vendor daemon used by Mathcad supports the full set of FLEXnet Publisher options file keywords. The following keywords may prove useful in administering licenses:

- **BORROW_LOWWATER**—Specifies the number of licenses that cannot be borrowed.
- **DEBUGLOG**—The log file used by the vendor daemon for debug information.
- **EXCLUDE**—Prevents access to the specified feature.
- **EXCLUDE_BORROW**—Prevents the borrowing of a license for the specified feature.
- **EXCLUDEALL**—Prevents access to all features served by the vendor daemon.
- **GROUP**—Defines a group of users for use with any options.
- **HOST_GROUP**—Defines a group of hosts for use with any options.
- **INCLUDE**—Allows use of the specified feature, if a valid license is available.
- **INCLUDE_BORROW**—Allows a user to borrow licenses.
- **INCLUDEALL**—Allows a user to use all features served by the vendor daemon.
- **MAX**—Limits usage for a particular feature or group, prioritizing usage among users.
- **NOLOG**—Turns off logging of certain items in the debug log file.
- **REPORTLOG**—Specifies the report log file to be written. This file can be read by `SAMreport`, available from Flexera Software.

-
- RESERVE—Reserves licenses for the specified feature for the specified user or group.
 - TIMEOUTALL—Allows the server to reclaim inactive licenses after a specified number of seconds.

More information on using these and other keywords is available in the FLEXnet Publisher documentation.

Customizing a Registered-user License

If you purchased a registered-user license, you are bound by the license agreement to restrict Mathcad usage to the proper number of workstations. One way to do this is with the RESERVE keyword:

```
RESERVE 1 MATHCAD HOST Eng1
```

This would reserve one Mathcad license exclusively for the workstation Eng1. You can also create a group of user names or host names, using the GROUP or HOST_GROUP keywords.

Licensing Both Mathcad and Other Applications

If you are already serving licenses for other applications with FLEXlm or FLEXnet Publisher for Windows, you can manage licenses for all your applications from one server. Install FLEXnet Publisher. After installation completes, FLEXnet Publisher displays all licenses served from the server. When configuring FLEXnet Publisher to meter Mathcad, make sure the Mathcad license service is selected on the **Config Services** tab.

Tip

To prevent name conflicts between Mathcad license files and those for other applications, save your Mathcad license files to a folder named “Mathcad” within your existing license folder.

Note

Do not merge your Mathcad license with licenses of other software vendors into a combined license file for use on the same license server. Although the server can handle combined license files, license files from PTC use a vendor-specific HOSTID. The HOSTID makes PTC license files incompatible with license files using a FLEXnet Publisher HOSTID.

Using Multiple License Servers

FLEXnet Publisher supports the usage of multiple servers to administer licenses. With Mathcad, you can use load-balancing or triad servers. However, you must provide information on your server set up when requesting licenses for use in multiple-server environments.

With load-balancing, you can split your licenses between any number of servers anywhere on your network. Triad servers are three servers located on the same subnet and physically close to each other. Proximity reduces the chance for delays due to network traffic. The servers must exchange periodic heartbeats with each other. As long as the FLEXnet Publisher service is running on two of the servers, it achieves quorum and administers licenses.

When generating either type of license, you must provide information for each server that will be administering licenses. In addition, when attempting to load-balance your licenses, you must specify how many licenses are allocated to each server.

To administer licenses on a load-balanced system:

1. Request license files for each server using the PTC Customer Support site. Allocate the desired number of licenses to each server.
2. Install FLEXnet Publisher on each license server. When prompted for the license file, use the file that corresponds to that server.
3. When you install Mathcad, point each installation to the proper license server. If you install Mathcad silently, create a version of `SilentInstall.bat` customized for each license server.

You can instead configure each workstation to query each server in a predetermined order, until Mathcad obtains a license. See [Configuring Workstations to Query Multiple Servers on page 33](#).

To administer licenses on a triad server:

1. Request your license file, following the instructions in [Obtaining a Trial License File on page 25](#). Provide information for each server in the triad and designate which server will act as the “master.”
2. When your license files arrive, copy them to the appropriate server. Edit the license file before you install each of the license servers, specifying the hostname of each of the triad partners. If this is not done, the license files will be different on each of the three triad partners and the license server will not start.
3. Install FLEXnet Publisher on each triad server.
4. When prompted for a server name during Mathcad installation (or editing `SilentInstall.bat`), use the same server you designated as “master” in step 1.

Configuring Workstations to Query Multiple Servers

On each workstation, define an environment variable (using either the `set` or `setenv` commands or the System control panel) called `LM_LICENSE_FILE`, listing the servers in the order they should be queried. For example:

```
7788@Server1;7788@Server2[; ...], or  
7788@Server2;7788@Server1[; ...].
```

`Server1` and `Server2` are your license servers, and `7788` is the port the server uses to administer Mathcad licenses. The port specified in `LM_LICENSE_FILE` must be the same one listed in your license file.

Each workstation queries servers in the order listed when checking out a license. If a server is unavailable, the workstation queries the next server on the list until it either checks out a license or runs out of servers.

If you are serving licenses for multiple applications from the same server, you can use the environment variable `[VENDOR]_LICENSE_FILE` instead of `LM_LICENSE_FILE`. By doing so, you can specify exactly which servers each application should query, rather than forcing each application to query each server, regardless of whether that server has the appropriate license. For example, if you wanted to use two servers to serve licenses for another application but only one of those servers would serve Mathcad licenses, you would set the following two environment variables:

```
PTC_LICENSE_FILE=7788@Server1  
[OTHERAPP]_LICENSE_FILE=27000@Server1;27000@Server2
```

This prevents Mathcad from querying `Server2` for a license, since `Server2` has no Mathcad licenses.

Tip

When using `[VENDOR]_LICENSE_FILE`, remember that FLEXnet Publisher checks `LM_LICENSE_FILE` before checking `[VENDOR]_LICENSE_FILE`. If you use both variables, `LM_LICENSE_FILE` should only list servers with licenses for all metered applications. Querying extraneous servers listed in `LM_LICENSE_FILE` slows Mathcad down at startup.

Troubleshooting Your FLEXnet Publisher Installation

The following issues are common with installing, configuring, and running FLEXnet Publisher. If your problem is not listed, consult the Knowledge Base on the PTC Support site.

If you want to point Mathcad at a different license server or file, click the Mathcad Button, and then click **Mathcad Options**. Click the **Licensing** tab and then click **Update License**. Supply the name of the new license server or location of the new license file to use.

License server machine is down or not running (-96, 7)

Causes: The license server or file name was most likely misspelled when specified or has changed, or the registry key containing this information is corrupt. Mathcad waits for a license until the request times out and returns this error.

Solution: Enter the correctly spelled license server or file name. Restart Mathcad without using the license switch.

Cannot write data to license server (-17, 13)

Causes: The FLEXnet Publisher is not accessible.

Solution: Confirm that the server is running and available by pinging it from the workstation, and confirm that the server can ping the workstation as well. If necessary, check that hostnames are resolving properly on your network with the Windows utility `nslookup.exe`. Verify that the server name is correct in the license file and that the host names are correct in any options file. Check that the port number specified in the license file (or any environment variable) corresponds to the server port used by FLEXnet Publisher.

Cannot connect to license server (-15, 570)

Causes: The license server process (`lmgrd.exe`) is stopped or disabled, or you are using the wrong license file for the Mathcad service.

Solution: Check the **Config Services** tab for the license server process (indicated by the name specified in step 4 of [Using the License Service Utilities on page 29](#)). If necessary, reenable or restart the service. If the service is running, verify that it is using the license file supplied by PTC.

You may also have multiple license server processes running on the server. Consolidate all services under one license server process, or move the Mathcad license service to another server.

Desired vendor daemon is down (-97, 121)

Causes: The vendor daemon is missing or in the wrong location, or you made a change to a Cadence license dongle on the Mathcad server metering.

Solution: Check that the vendor daemon is located in the same folder as the FLEXnet Publisher daemon, `lmgrd.exe`; if it is not, find the file on the server and move it to this folder. If you made a change to a Cadence license dongle, reboot the server.

Note

This error may also occur if the FLEXnet Publisher daemon cannot create its temporary folder (`C:\FLEX1m`), or any of the files within it.

Invalid host (-9)

Causes: The volume serial number in your single-user license file is incorrect.

Solution: Request a replacement license file.

USER/HOST on EXCLUDE list for feature (-38, 147)

Causes: Comment lines in the options file (`ptc.opt`) are erroneously being interpreted as commands.

Solution: Delete the comment lines.

User based license has no specified users (-84)

Causes: The options file is missing, the hostname in the options file is not set properly, or you have more allowed users than licenses for a particular feature.

Solution: Confirm that the options file is in the same folder as your license file and that the hostname is set to the Mathcad server metering.

If you have more allowed users than available licenses, either delete the appropriate number of INCLUDE lines in the options file, or contact PTC or your distributor to purchase extra licenses.

Unable to obtain a license on Windows XP

Causes: Mathcad was unable to locate the FLEXnet Publisher. If you are running Mathcad on Windows XP, you may have a firewall enabled, which is interfering with communication to and from the server.

Solution: Disable the firewall, or allow an exception for the Mathcad executable (`mathcad.exe`). If this does not resolve the issue, see License server machine is down or not running (-96, 7) for additional guidance.

Borrowing Licenses

If you normally access a FLEXnet Publisher for a license when you run Mathcad but occasionally need to use Mathcad without network access, you can borrow a license from the server for use while disconnected from the network. The maximum borrowing period is 10 days.

Note

A license can only be borrowed from within Mathcad.

-
1. To borrow a license, use your FLEXlm floating license to open Mathcad.
 2. Click the Mathcad Button , and then click **Mathcad Options**. The **Mathcad Options** dialog box opens.
 3. Click the **Licensing** tab and then click **Borrow**.

Borrowed licenses are checked out from the available pool until they expire, regardless of whether the workstation using the borrowed license is running Mathcad. If you have a pool of 25 floating licenses and borrow one, the workstations on your network can only use the remaining 24 licenses until the borrowed license returns to the pool.

Note

Borrowing a registered-user license also reduces the overall number of licenses. However, since the license is already allocated to the workstation, it does not reduce the number of licenses available to other users.

Mathcad automatically selects the maximum borrowing period. To borrow a license for a shorter duration, select a different return date. Click **OK** to borrow the license.

Borrowed licenses appear in the status report with the text (linger: xxxxxx) appended to the end, where the six-digit number xxxxxx indicates the duration of the borrowing period in seconds. To generate a status report, read the section [Using the License Service Utilities on page 29](#).

Transferring a License File to Another Server or Workstation

To transfer a license file to another computer, you must deallocate a current license, then request the license file for the new computer. To do so, use the **Reconfigure Software Licenses** option available at the PTC Customer Support Web site at <https://www.ptc.com/appserver/lm/rsl/reconfig.jsp>.