CAMWorks
A Geometric Product

CAMWorks (X) Connect

User Guide

- **Introduction**
- **Installation**
- **Activation**
- **How to use**
- **Tutorial**

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CAMWorks (X) Connect

November 01, 2013

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User Manual

- Introduction
- Installation
- Activation
- How to use CAMWorks (X) Connect Utility
- Tutorial

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1. Introduction to CAMWorks (X) Connect

What is CAMWorks (X) Connect?

CAMWorks (X) Connect is an optional utility which enables CAMWorks users to generate multiple toolpaths without locking up their local computer's processing power. This utility allows you to continue interacting with CAMWorks smoothly while it works hard in the background.

Currently, this utility is available only for Multiaxis Mill operations and enables large toolpath processing jobs to be processed faster.

How does it work?

CAMWorks (X) Connect requires you to be connected to the Internet. It bundles together the data required for multiaxis toolpath generation and runs the task on our servers with faster processors and more memory. Only the required data is transmitted to and fro using secure channels.

Is CAMWorks (X) Connect easy to use?

CAMWorks (X) Connect is easy to use. Additional training is not required. All users can access the utility transparently through CAMWorks. The results of execution using CAMWorks (X) Connect utility are displayed in the CAMWorks interface. The CAMWorks (X) Connect utility is present as a system tray program as a tray icon with an easy-to-use context menu.

What are the benefits of using CAMWorks (X) Connect service?

Most often it takes significant time to compute 4 axis and 5 axis toolpaths. When this has to be done multiple times, by changing parameters to get the best possible toolpath, the total required time may stack up. CAMWorks (X) Connect helps solve this problem by allowing you to execute multiple toolpath generation tasks simultaneously. Since this gets executed on our servers it leaves your computer free to perform other tasks. Better toolpaths get generated in relatively lesser time – overall.

Subscribing to CAMWorks (X) Connect

CAMWorks users who wish to generate multiaxis toolpaths using the CAMWorks (X) Connect service mandatorily need the licenses of *4X Mill* and/or *5X Mill* license in order to use this service. You will have to purchase CPU time for subscribing to the (X) Connect service. The CPU time can be purchased online or from your CAMWorks Value-Added Reseller (VAR).

Pre-requisites for installing & running CAMWorks (X) Connect

i. **Windows OS:** Windows Vista and above
ii. **Compatible CAMWorks Version:** CAMWorks 2011, 2012, 2013 and 2014.
iii. **CAMWorks Licensing Module:** *4X Mill* and *5X Mill* License Module
iv. **Internet Connection**
v. **Software Framework:** Microsoft.Net 4.0
vi. **Hard disk space required for installation:** 12 MB

Special Features of this Manual

This manual is designed to be as informative and systematic as possible. It begins with providing instructions on how to install the CAMWorks (X) Connect utility on your system followed by the procedure for buying CPU time to activate of the utility. Next, all the nuances about using the utility are explained and finally, a tutorial is given to illustrate how to use the utility.

Technical Support

This manual has been designed to be as informative as possible. In case you still face problems related to installation, activation or use, write back to us at:

support@camworks.com

CAMWorks (X) Connect Tutorial

A tutorial is provided at the end of this manual to help you understand how to use CAMWorks (X) Connect.
To jump to the CAMWorks (X) Connect tutorial, click here.

2. Installing CAMWorks (X) Connect Utility

Installation Procedure

Step 1: Download the CAMWorks (X) Connect Client

Download the CAMWorks (X) Connect utility from:

http://www.camworks.com/xconnect/

The CAMWorks (X) Connect Homepage

Click here to download the installer

Step 2: Ensure that your system meets the pre-requisites

Ensure that the pre-requisites for installing and running the CAMWorks (X) Connect utility are met.

Step 3: Run the CAMWorks (X) Client Installer

i. Ideally, the CAMWorks application should be closed while installing the CAMWorks (X) Connect utility.

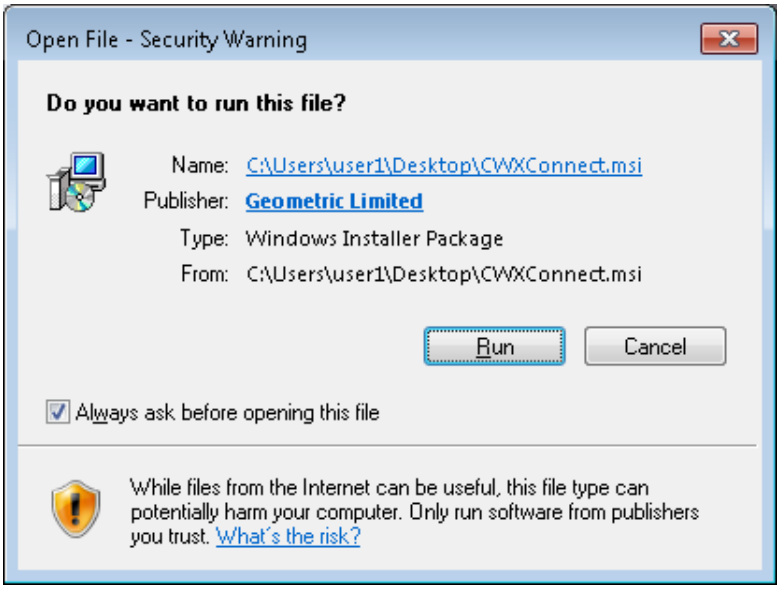
If the CAMWorks application is running, then:

a) Ensure that no Multiaxis Mill toolpath is currently being generated.

b) If a previous version of the CAMWorks (X) Connect utility is currently in use (indicated by the presence of the CAMWorks (X) Connect icon in the system tray), close the utility by selecting *Exit* from the RMB context menu of the CAMWorks (X) Connect icon in the system tray.

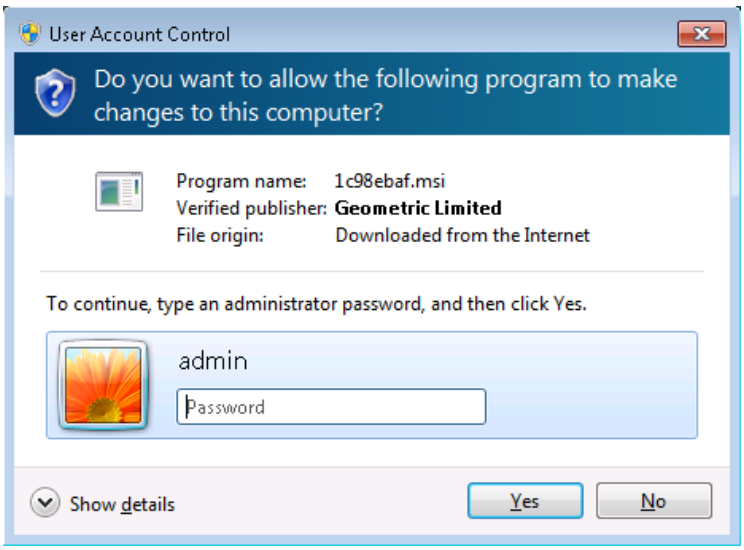
ii. Double-click on the downloaded **CAMWorks (X) Connect Client installer** *CAMWorksXConnect.msi* to begin the installation.

iii. The **Security Warning** message associated with opening a Setup file is displayed. You may click on the Publisher's name *Geometric Limited* in order to verify the credentials. Click *Run* to begin the setup.



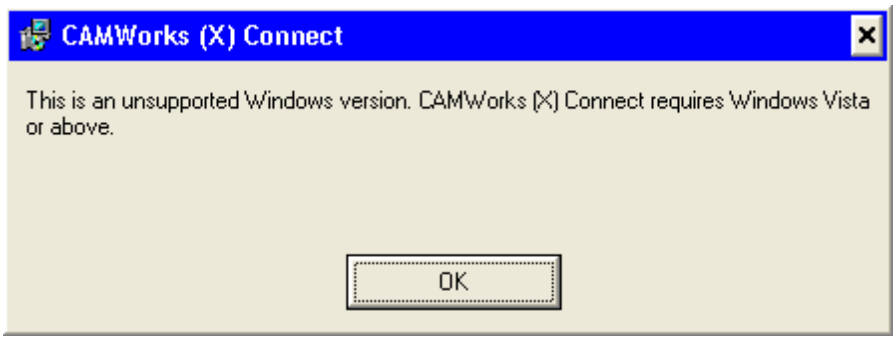
Security Warning Message displayed when you open the CAMWorks (X) Connect Installer executable file

iv. Before you proceed with the installation process, ensure that you have administrator privileges; else, Windows may prompt you to enter the administrator password in order to proceed with the installation.



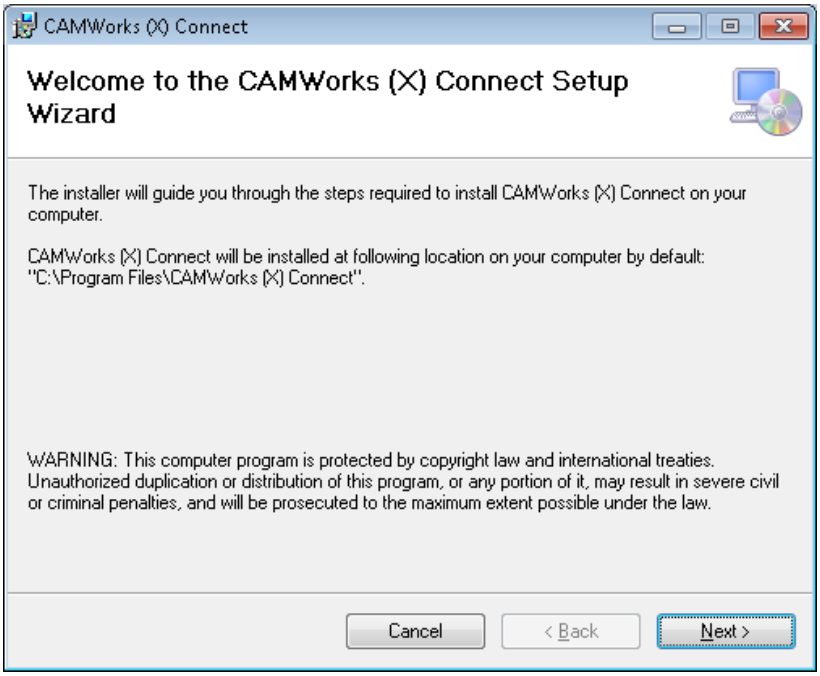
Administrator Level access is required to install the CAMWorks (X) Connect utility

v. The CAMWorks (X) Connect Utility is only supported on Windows OS versions of **Windows Vista and above**. *(Windows XP OS is not supported.)* If you try installing the utility on an unsupported Windows OS version, the following error message will be displayed and the installation process will be terminated:



Error Message displayed when user tries to install CAMWorks (X) Connect utility on an unsupported Windows OS version

vi. If CAMWorks (X) Connect utility is not found installed on your system, the Setup Wizard displays the Welcome dialog. By default, CAMWorks (X) Connect will always be installed in "Program Files" folder of your computer. This **default location** is displayed in the Welcome dialog. Click *Next* to proceed with the installation.

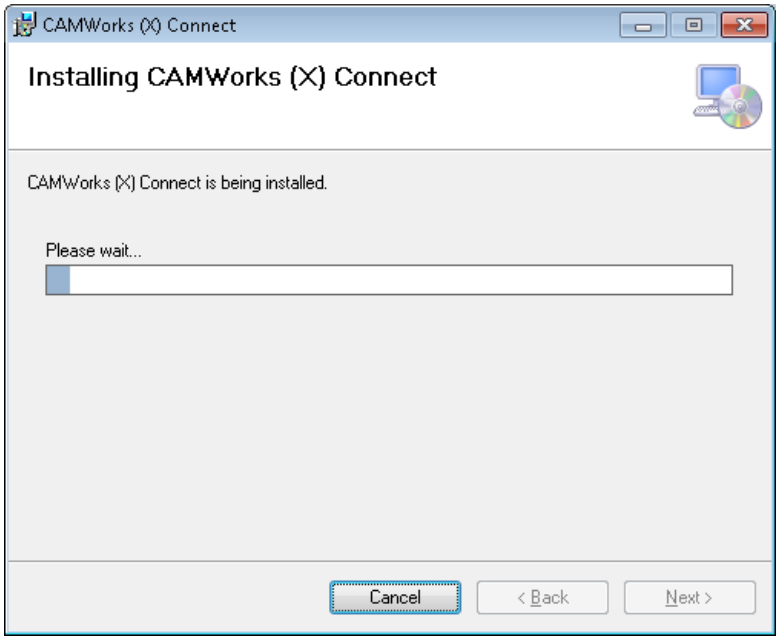


CAMWorks (X) Connect Setup Wizard

vii. The Setup Wizard then displays the ***End Users License Agreement***. If you accept the terms, select *I agree* and click ***Next*** to proceed.

viii. The Setup Wizard will now prompt you to **confirm the installation** of CAMWorks (X) Connect on your computer. Click ***Back*** to make any changes to the installation settings, if required. Click ***Next*** to begin the installation process.

ix. The installation process will begin. You can click the ***Cancel*** button at any point of time during the entire installation process to terminate the installation. A progress bar indicates the progress of the installation.

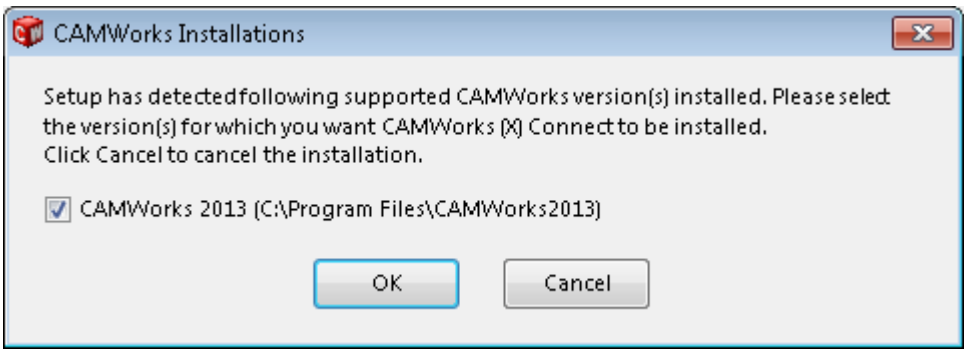


Click 'Cancel' at any point during the installation process to terminate the installation

x. Before the installation is complete, the Setup Wizard will detect the CAMWorks versions installed on your system which are compatible with the version of the CAMWorks (X) Connect utility currently being installed. A pop-up message listing the compatible versions of CAMWorks will be displayed. The Setup will prompt you to select the CAMWorks versions from this list for which you want the CAMWorks (X) Connect utility to be installed. All the listed versions are selected by default. Uncheck the versions for which you do not wish to install the utility and then click the *OK* button within the message.

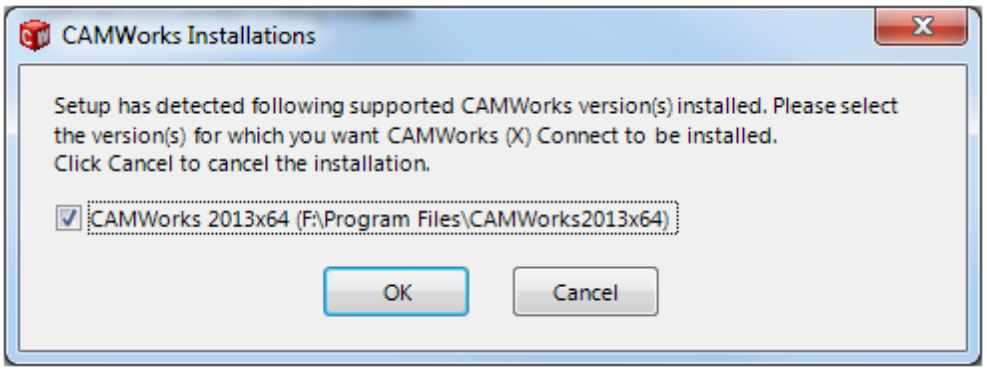
For example:

- If you have a compatible CAMWorks version (CAMWorks 2011, 2012, 2013 or 2014) already installed on a 32-bit system, the pop-up message may resemble the message shown below:



Select/Unselect the CAMWorks versions for which the CAMWorks (X) Connect utility is to be installed

- If you have a compatible CAMWorks version (CAMWorks 2011, 2012, 2013 or 2014) already installed on a 64-bit system, the pop-up message may resemble the message shown below:



Select/Unselect the CAMWorks versions for which the CAMWorks (X) Connect utility is to be installed

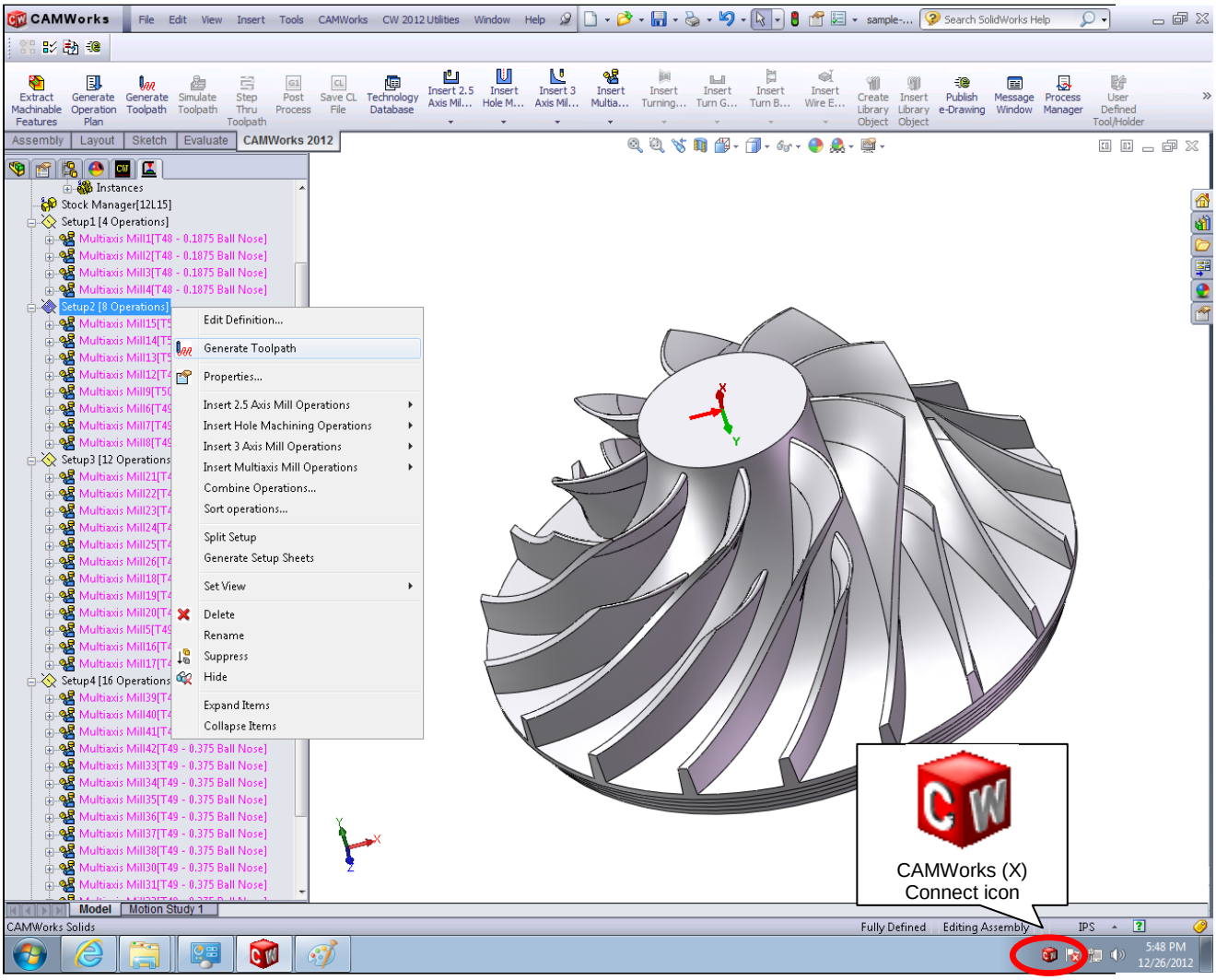
xi. After the selection of the CAMWorks version(s) to be supported, the Setup Wizard will indicate that the installation is complete. Click ***Close*** to finish the installation.

Verifying the successful installation of CAMWorks (X) Connect Utility

The CAMWorks (X) Connect utility is launched when a multiaxis mill toolpath is generated for the first time in a CAMWorks session.

1. Load SolidWorks/ CAMWorks Solids with CAMWorks as an active add-in on your computer system. (Ensure that the CAMWorks version that you load is one for which CAMWorks (X) connect is installed.) Either open a solid part/assembly containing Multiaxis Mill operations or define Multiaxis mill operation for a solid part/assembly.
2. In the CAMWorks operation tree, right-click on a Multiaxis Mill operation and select *Generate Toolpath* from the RMB menu. You can also execute the *Generate Toolpath* command from the Command Manager or CAMWorks menu.
3. Once the *Generate Toolpath* command is executed, the CAMWorks (X) Connect utility icon is displayed in the system tray.

The presence of this icon in the system tray indicates that the utility was successfully installed.



CAMWorks (X) Connect icon in System Tray

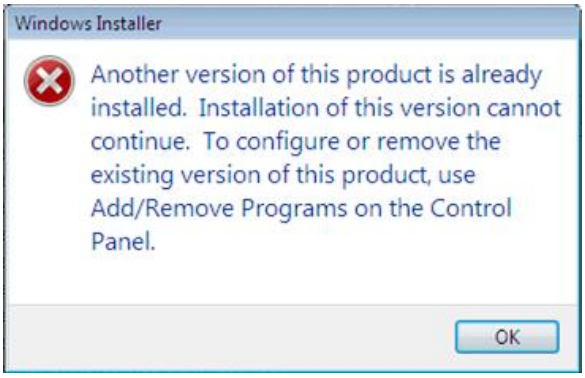
Upgrading/Repairing the CAMWorks (X) Connect utility

Upgrades of the CAMWorks (X) Connect utility are available made available from time to time. In rare cases, the installation files associated with the utility might get corrupted/ deleted accidentally and will thus require repairing. Such scenarios will require you to install/repair the CAMWorks (X) Connect Utility installation.

If you try to install the CAMWorks (X) Connect utility when the same or another version of this utility is already installed on your system, then one of the following scenarios will take place:

a) If an **older version** of the CAMWorks (X) Connect utility is already installed on your system, then the existing version will be automatically updated.

b) If a **newer version** of the CAMWorks (X) Connect utility is already installed on your system, then a message will be displayed indicating that another version of the product is already installed on your computer. Click *OK* to close the message.



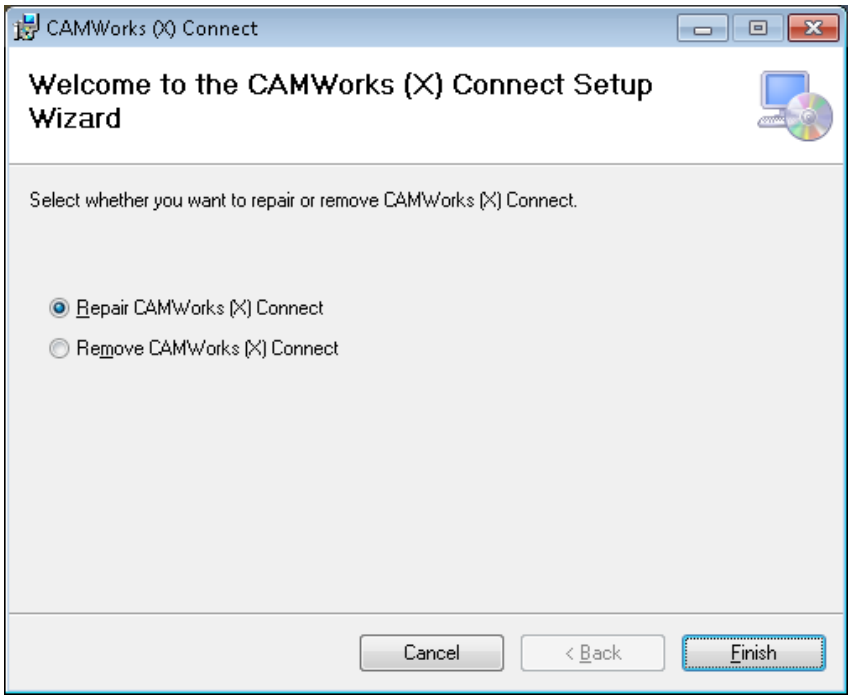
Message displayed when another version of CAMWorks (X) Connect utility is already installed on your system

c) If the **same version** of the utility is already installed on your system when you run the installer, then the Setup Wizard will prompt you select an action - To either **Repair** or **Remove** the existing (X) Connect Utility installed on your system.

➔ Select Repair in order to **repair/replace** the installation files.

➔ Select Remove in order to **uninstall** the CAMWorks (X) Connect Utility.

➔ After selecting the desired action, click **Finish**.



The Setup Wizard screen displayed when the current version of CAMWorks (X) Connect utility is already installed on your system

3. Viewing your Account Balance

Account Balance for CAMWorks (X) Connect

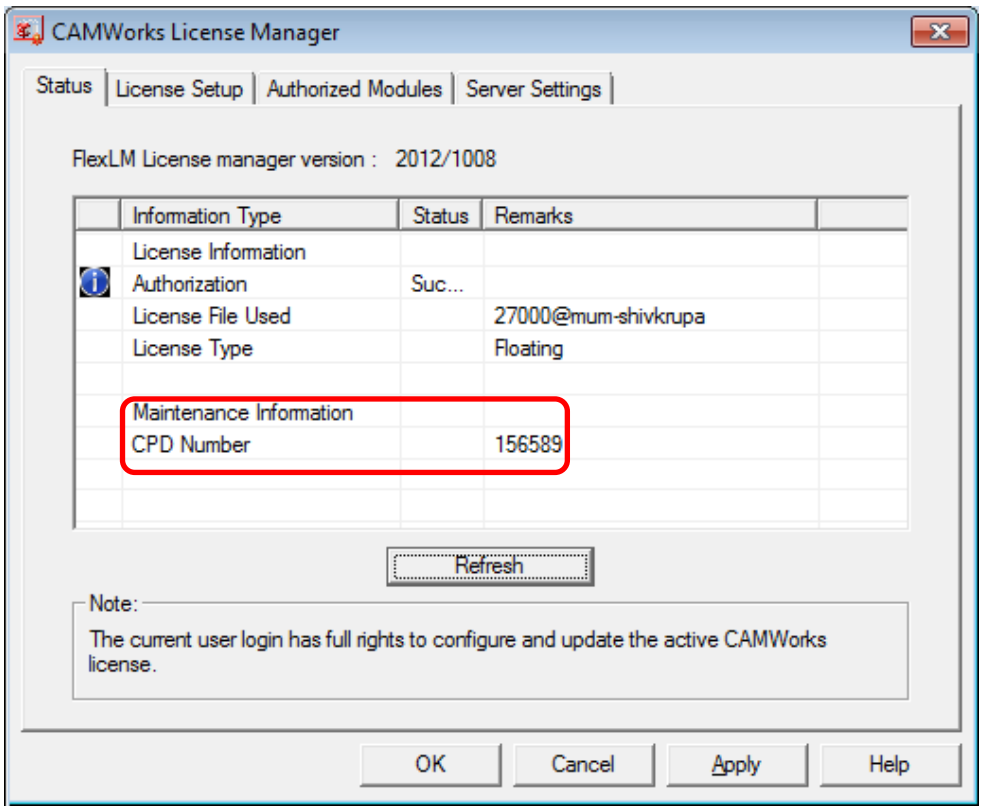
You need to purchase CPU time to use the CAMWorks (X) Connect service. This purchased CPU time will be displayed as your Account Balance within the CAMWorks (X) Connect utility when you right-click on the tray icon. Whenever you use the CAMWorks (X) Connect service, the processing time used will be deducted from the Account Balance on successful completion of the toolpath processing job.
You can either purchase the CPU time online or purchase it from your CAMWorks Reseller.

User ID (CPD)

When you purchase your CAMWorks license, a unique CPD **(Copy Protection Device)** number is assigned to you. This unique CPD number serves as your User ID for the purpose of authentication whenever you use the CAMWorks (X) Connect service.
In case you are unsure about your CPD number, you can view it using one of the following methods:

i. **CAMWorks License Manager:**

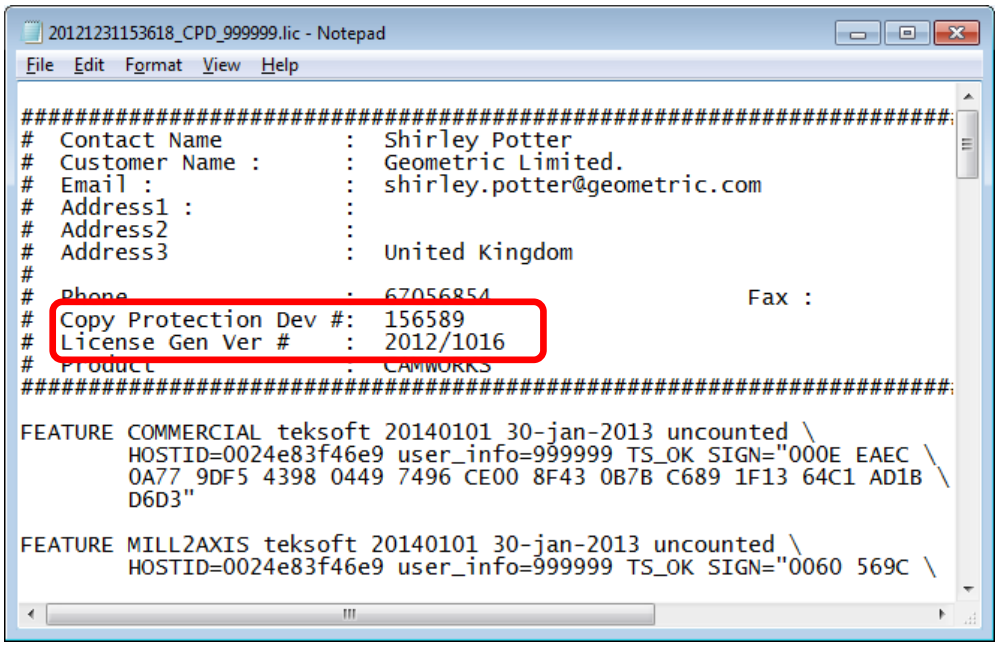
- In the Windows Start menu, select *All Programs>>CAMWorks License Manager>>CW License Manager*.
  This will open the CAMWorks License Manager dialog.
- Click on the *Status* tab of the CAMWorks License Manager dialog. Your CPD number is displayed under *Maintenance Information*.



CPD number in Status tab of CAMWorks License Manager Dialog

ii. CAMWorks License File

Open the CAMWorks License File provided to you by your CAMWorks Reseller. The Copy Protection Device (CPD) number is provided in the License Information section at the beginning of the file.



CPD number displayed in CAMWorks License File

Authenticating users

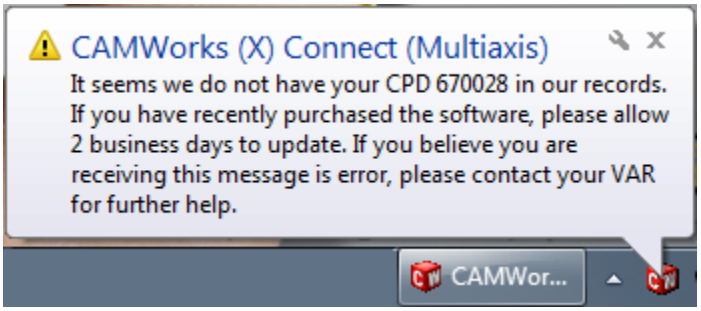
Complimentary/Commercial use of CAMWorks (X) Connect service is available only to valid users. Each user is uniquely identified by their **CPD (Copy Protection Device) number.** When you purchase CPU time to use this service, your user credentials will be automatically validated using your **CPD number**. Once validated, CPU time will be added to your CAMWorks (X) Connect Account Balance.

Please note that every time you use the CAMWorks (X) Connect service, your CPD number will be validated.

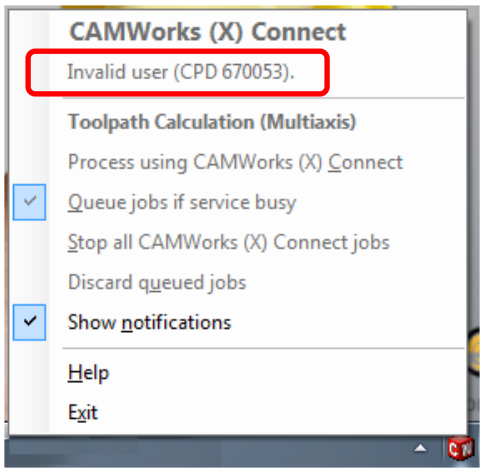
Unsuccessful Authentication of CPD number

In case your CPD number cannot be validated, an error message will be displayed in the Balloon Notification of CAMWorks (X) Connect utility.

If user authentication has been unsuccessful, then when you click on the right-click on the (X) Connect utility icon in the system tray, all the menu options in the RMB context menu will be disabled. Consequently, the (X) Connect service will be unavailable.



Error Message Displayed when CPD is not authenticated



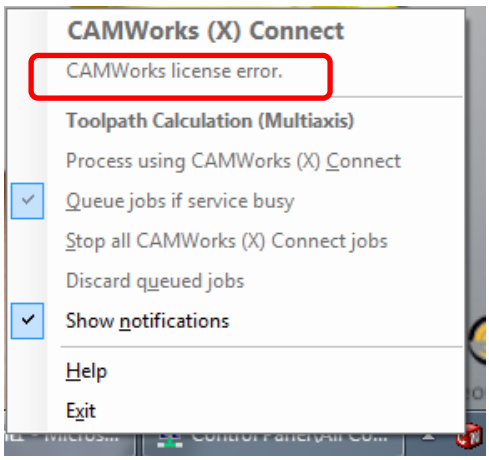
If user authentication is unsuccessful, all menu options in the Context menu will be disabled

Validating the CAMWorks License

To use the CAMWorks (X) connect service, you need the CAMWorks *4X Mill* and/or *5X Mill* license. These are CAMWorks licenses required for working with multiaxis toolpaths. (They can be procured from your CAMWorks Reseller). In addition to validating your CPD number, a valid *4X Mill* and/or *5X Mill* license too is required.

When you submit a multiaxis toolpath processing job to the CAMWorks (X) Connect service for processing, the service will validate your CPD number followed by your *4X Mill* and/or *5X Mill* licenses. In case the license is absent, invalid or has expired, then validation will be unsuccessful.

If the license authentication fails, then when you click on the right-click on the CAMWorks (X) Connect utility icon in the system tray, all the menu options in the RMB context menu will be disabled. Consequently, the CAMWorks (X) Connect service will be unavailable.

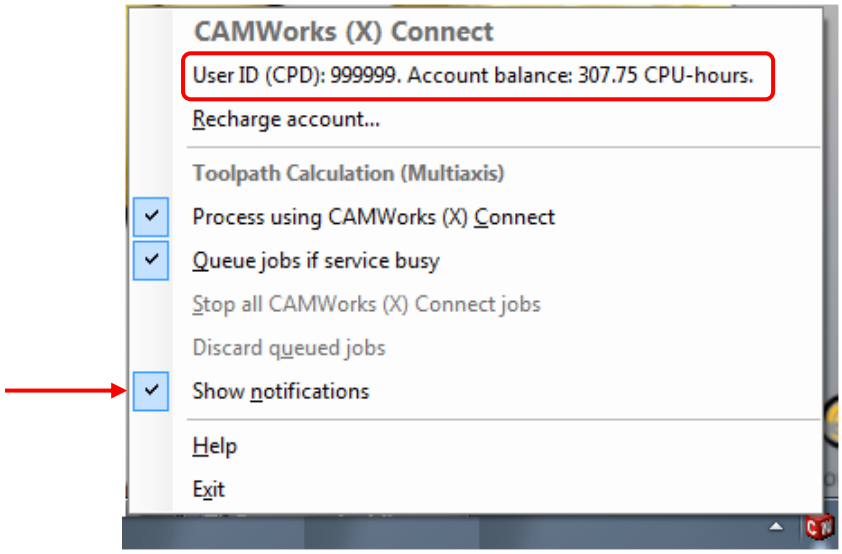


If license validation is unsuccessful, all menu options in the Context menu will be disabled

In the case of unsuccessful authentication of your CPD number or non-delivery of CPU time in your account balance, either contact your CAMWorks Reseller or write back to us at: support@camworks.com.

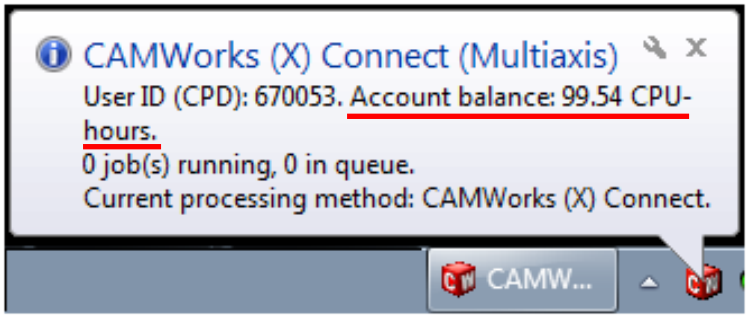
Viewing Account Balance

To view your *Account Balance* of available CPU time, right-click on the CAMWorks (X) Connect icon in the system tray. The *Account Balance* is displayed next to the User ID (CPD) at the top of the RMB context menu.



Account Balance displayed in the RMB Context menu when you right-click CAMWorks (X) Connect icon in system tray

The Balloon Text notifications for the (X) Connect utility is disabled by default. To view the Balloon Text notifications, enable the *Show Notifications* option in the RMB context menu of this utility. The *Account Balance* (number of CPU hours available) will be displayed in the balloon notification when you click on the CAMWorks (X) Connect icon in the system tray.



Account Balance displayed within the Balloon Notification when you click CAMWorks (X) Connect icon in system tray

The CPU Time consumption and its impact on Account Balance

Every time you use the CAMWorks (X) Connect utility, CPU time will be deducted from your *Account Balance*. The time deducted is depends on:

- Size of uploads and downloads
- CPU usage

CPU time is deducted from your Account Balance only on successful completion of toolpath generation on the CAMWorks (X) Connect Servers using the CAMWorks (X) Connect utility.

Low Balance

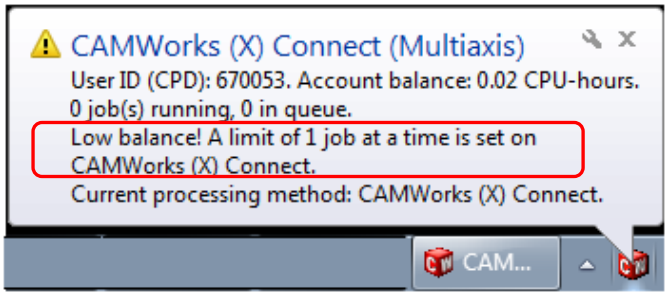
Minimum level of Balance

A minimum *Account balance* is required in order to continue submitting multiaxis toolpath generation jobs to CAMWorks (X) Connect servers. The minimum *Available balance* required depends on the number of jobs submitted.

CAMWorks (X) Connect utility regularly checks your *Account balance* and displays warning messages about low level of balance when it falls to/below the minimum required balance.

Restrictions on Toolpath Generation Jobs submitted to the CAMWorks (X) Connect

If the Account balance falls below the minimum stipulated balance, then the number of toolpath generation jobs you can submit to the CAMWorks (X) Connect utility for processing will be restricted. You will not be able to submit more than a pre-defined number of toolpath generation jobs at a given time. If you try to submit more toolpath generation jobs than the number allowed, then CAMWorks (X) Connect Utility will display a warning message indicating that Account Balance is low.

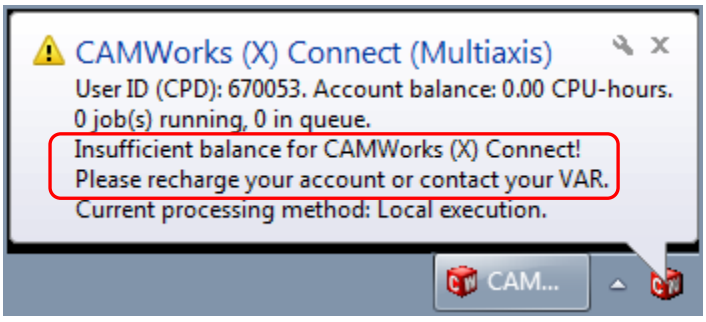


Warning message of Low Balance displayed within the Balloon Notification when Account Balance is low

Insufficient Balance

The CAMWorks (X) Connect Utility places a restriction on the number of toolpath generation jobs you can submit once the *Account balance* falls below the minimum level. Once such a toolpath generation job is completed, the *Account balance* may fall to a level which is insufficient to process any toolpath generation job.

When the *Account balance* falls to such a level, the CAMWorks (X) Connect utility displays a message in the balloon text about insufficient balance.

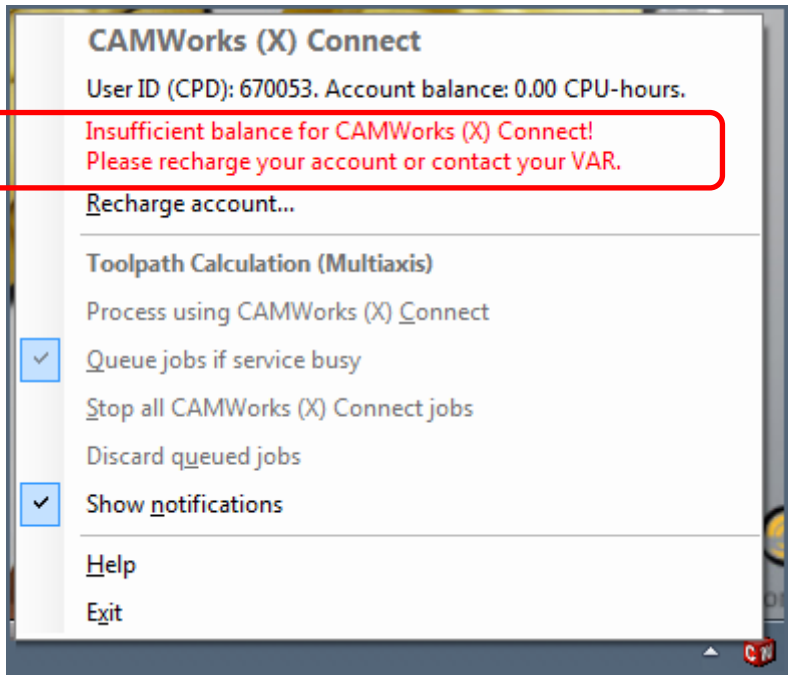


Warning message of Low Balance displayed within the Balloon Notification when Account Balance is low

New jobs, which will not be processed by the CAMWorks (X) Connect utility unless the Account Balance is restored above the minimum level.

Impact of Insufficient Account Balance

If the *Account Balance* is insufficient, then the option to process toolpath generation jobs using CAMWorks (X) Connect service will be disabled. This is indicated by the all the menu options (except the *Recharge Account* option) in the RMB context menu of the utility being disabled. The utility will display a warning message indicating insufficient balance to process toolpath generation jobs whenever you try to submit new toolpath generation jobs.



Warning message on Insufficient Balance

No new toolpath generation jobs can be submitted to CAMWorks (X) Connect utility as long as the *Account Balance* is insufficient. All toolpath generation jobs will be processed locally till the *Account Balance* is increased by purchasing CPU time. Once the Account balance is restored to above the minimum level, all the menu items in the RMB context menu will be enabled once again, thereby enabling option to process toolpath generation jobs using CAMWorks (X) Connect service.

Example:

If the *Account Balance* is 0.20 CPU hours and the toolpath generation job submitted to CAMWorks (X) Connect consumes 0.30 CPU hours; then the *Account balance* after the job is completed will be -0.1 CPU hours.

This Account Balance is insufficient to process any toolpath generation job using the CAMWorks (X) Connect utility. The CAMWorks (X) Connect utility's balloon text will display a message about insufficient Account balance. All menu items in the RMB context menu except *Recharge account* will be disabled.

Recharging the Account Balance

Recharging Account Balance Online

To recharge your Account Balance, right-click on the CAMWorks (X) Connect utility's tray icon and select *Recharge account* from the RMB context menu. This action opens the

CAMWorks (X) Connect webpage for purchasing CPU time. Use this webpage to make an online purchase of the CPU Time.

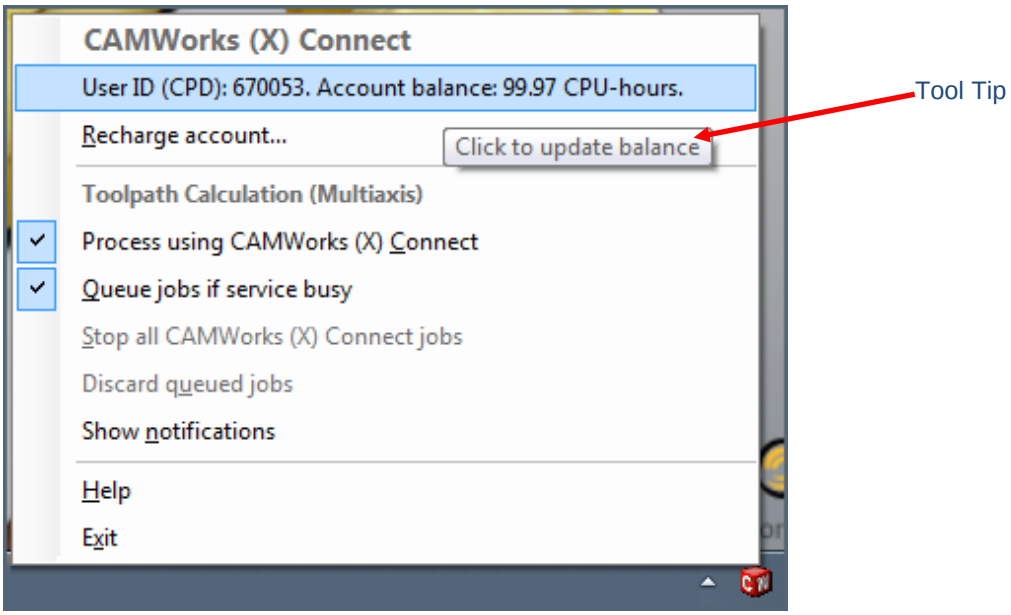
Recharging Account Balance Offline

Alternatively, you can contact your CAMWorks Reseller (VAR) in order to recharge your Account Balance offline. Your CAMWorks Reseller will recharge your Account Balance for you and inform you about the recharge.

Viewing the Account balance after buying CPU time

The CAMWorks (X) Connect utility checks your latest Account Balance every few seconds and updates the display of Account Balance accordingly. If you recharge your account when the CAMWorks (X) Connect utility is active in the system tray, there is a possibility that the *Account Balance* displayed still reflects the old balance for a few seconds or minutes.

To view your new Account Balance, right-click on the CAMWorks (X) Connect utility in the system tray to open the context menu. Observe that a tooltip *Click to update balance* is displayed when you mouseover *Account balance*. Click on the *Available balance* menu item to view the updated Account balance.



Click on the menu item 'Account balance' to view the updated Account Balance

4. How to use CAMWorks (X) Connect Utility

Currently, the CAMWorks (X) Connect utility supports toolpath processing only for multiaxis (4-axis and 5-axis) operations.

Generating Toolpaths for Multiaxis Operations

Toolpath generation for Multiaxis operations requires heavier use of your local system's processing power. With the CAMWorks (X) Connect utility, you can now choose whether toolpaths for multiaxis operations are to be processed on the local machine or by CAMWorks (X) Connect utility using CAMWorks (X) Connect servers.

This chapter gives in-depth detail on how to use the CAMWorks (X) Connect utility.
Before proceeding, ensure that you install CAMWorks (X) Connect utility and have adequate Account Balance (to use the facility).

Launching CAMWorks (X) Connect Utility

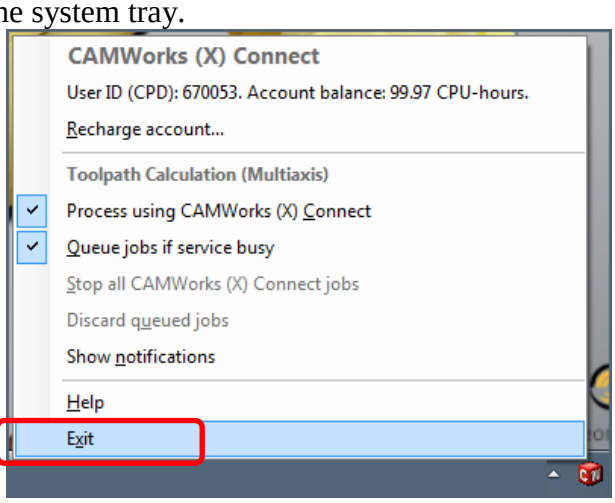
The CAMWorks (X) Connect utility is launched when a multiaxis mill toolpath is generated for the first time during a CAMWorks session. The presence of this utility's icon in the system tray indicates that it is active.

Once launched, the utility will continue to remain active in the system tray as long as CAMWorks is active and will automatically close when you close the CAMWorks session.

If you manually exit the utility during an active session of CAMWorks, it will be relaunched again when the next multiaxis toolpath is generated.

Exiting CAMWorks (X) Connect Utility

The CAMWorks (X) Connect utility automatically closes when the CAMWorks session is closed. You can also close the utility by selecting *Exit* in the RMB menu of the CAMWorks (X) Connect utility in the system tray.



Exit option in the RMB menu of CAMWorks (X) Connect utility

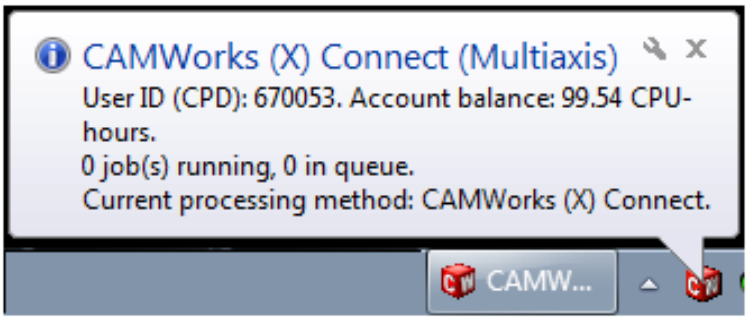
The CAMWorks (X) Connect utility icon in system tray

When the CAMWorks (X) Connect utility is launched, its icon becomes visible in the system tray.

Balloon Text information of CAMWorks (X) Connect Utility

By default, the Balloon Text notification feature for the (X) Connect utility is disabled. However, you can view the current notification any time by clicking on the CAMWworks (X) Connect tray icon. To enable Balloon Text notifications, enable the *Show Notifications* option in the RMB context menu of the utility. When the Balloon Text notification feature is enabled, the balloon text notifications will be displayed whenever trigger events occur.

Use the *Close* button to close the balloon text information.

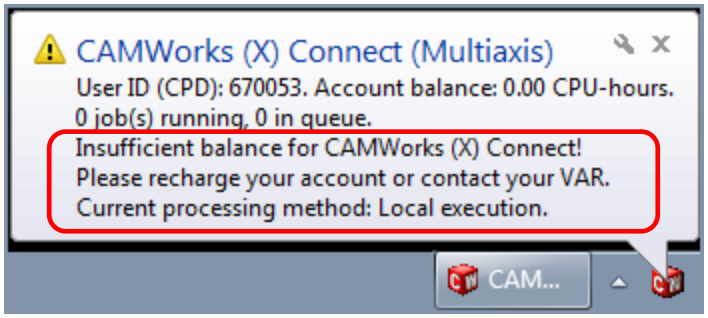


Balloon text information of CAMWorks (X) Connect Utility

The following information is displayed in the balloon text:

- **Utility name:** The name of the utility viz. *CAMWorks (X) Connect (Multiaxis)*
- **User ID (CPD):** The unique CPD (Copy Protection Device) number assigned to you by your CAMWorks reseller. This ID is used to uniquely identify users on the CAMWorks (X) Connect utility. For more details, read: User ID (CPD).
- **Account Balance:** Indicates your current Account Balance. It indicates the processing time you can avail on the CAMWorks (X) Connect servers. Account Balance is specified in decimal number format indicating hours of processing time available. For example, if you buy 600minutes worth of CPU time, then the *Account balance* will be displayed as 10.00 CPU hours. If the Account balance is zero or negative, then a message will be displayed beneath the Account Balance stating: *'Insufficient balance for CAMWorks (X) Connect! Please recharge your account or contact your CAMWorks reseller.'*
- **Job(s) running:** Indicates the number of toolpath generation jobs currently being processed by the CAMWorks (X) Connect utility on the CAMWorks (X) Connect servers. The number of jobs running does not include any multiaxis toolpaths generated locally. For example, if 5 multiaxis toolpaths are currently being generated on CAMWorks (X) Connect servers and 4 are being generated locally, then the message displayed in the balloon text will be: *'5 job(s) running'*.
- **Jobs in queue:** Indicates the number of toolpath generation jobs currently queued for processing on the CAMWorks (X) Connect servers. For example, if 4 multiaxis toolpaths are currently being processed on remotely by the CAMWorks (X) Connect utility and, 3 are in queue, then the message displayed in the balloon text will be: *'4 job(s) running, 3 in queue'*.

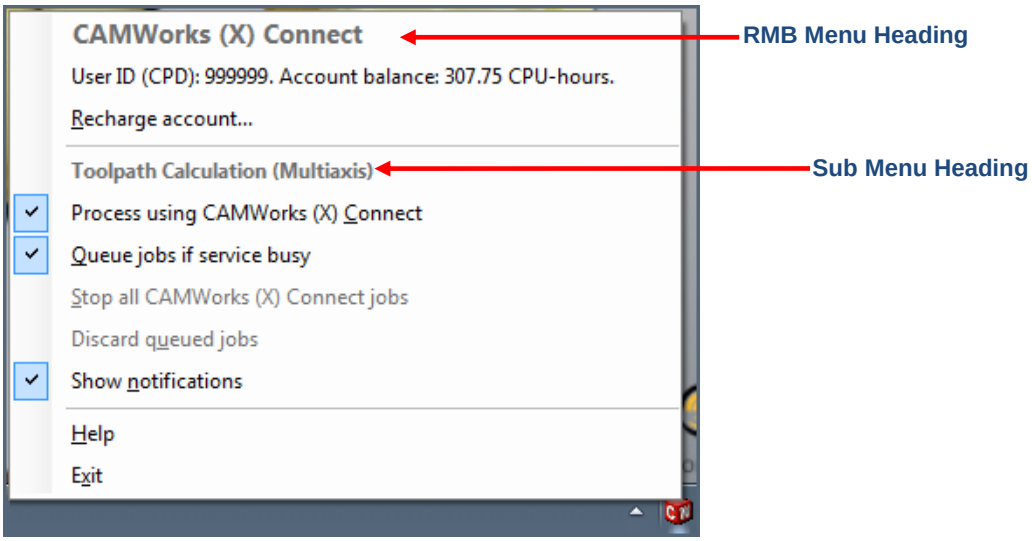
- **Current processing method:** Indicates the settings for the current processing method for multiaxis toolpaths. If the multiaxis toolpaths are being processed on the CAMWorks (X) Connect servers, then the Current Processing method will be displayed as *CAMWorks (X) Connect*. When processed locally, the Current processing method will be displayed as *Local execution*. The processing method can be changed in the CAMWorks (X) Connect dialog or in the RMB context menu of the utility.
- **Service status:** The service status message is displayed only when the utility fails to run successfully. An exclamation mark ⚠ at the top left of the balloon text indicates failure to process toolpath jobs on the CAMWorks (X) Connect servers. The status message indicates the cause of error. Note that when toolpath jobs cannot be processed on the CAMWorks (X) Connect servers, they will be processed locally.



Status message in Balloon text when toolpath processing due to inadequate Account Balance

RMB context menu of CAMWorks (X) Connect Utility

An RMB context menu is displayed when you right-mouse click on the utility icon in the system tray.



RMB context menu of CAMWorks (X) Connect Utility

The following menu options are available in the RMB context menu:

- **User ID (CPD):** Your User ID (CPD) is displayed at the top of the RMB context menu (view-only)
- **Account Balance:** Your *Account balance* is displayed at the top of the RMB context menu (view-only) next to User ID (CPD). For more details, read the section: *Account Balance*.
- **Recharge account:** Use this menu option to buy CPU time online.
- **Process using CAMWorks (X) Connect:** If this option is checked, then all multiaxis toolpaths will be processed by the CAMWorks (X) Connect service using CAMWorks (X) Connect servers. When unchecked, multiaxis toolpaths will be locally processed on the local machine. For more details, read the section: Setting toolpath processing location using RMB menu of utility.
- **Queue jobs if service busy:** Jobs can be optionally queued. When this option is checked, then toolpath jobs submitted for processing on CAMWorks (X) Connect servers will be queued if the (X) Connect service is busy. When unchecked, toolpath jobs submitted to CAMWorks (X) Connect that cannot be processed (owing to the servers being busy) will be processed locally.
- **Stop all CAMWorks (X) Connect jobs:** This menu option is active only when one or more toolpath generation jobs are being processed by the CAMWorks (X) Connect utility. When this menu command is executed, it immediately stops the processing of all toolpath generation jobs which are currently being processed by the utility.
- **Discard queued jobs:** This menu option is active only when one or more toolpath generation jobs are queued for processing on the CAMWorks (X) Connect servers. When this menu option is executed, all queued toolpath processing jobs will be discarded. These discarded job(s) will neither be processed on the local computer nor on the CAMWorks (X) Connect servers.
- **Show Notifications:** The *Show Notifications* menu option is unchecked by default. When unchecked, no balloon text notifications will be displayed automatically when the (X) Connect utility is launched. However, you can view the current notification any time by clicking on the CAMWorks (X) Connect tray icon.
- **Help:** Opens the *CAMWorks (X) Connect User Manual* document.

- **Exit:** Select this menu item to exit the utility. For more details, read the section: Exiting CAMWorks (X) Connect utility.

The CAMWorks (X) Connect (Multiaxis) Dialog

The *CAMWorks (X) Connect (Multiaxis) Mill* dialog allows you set the toolpath processing location (*Local execution* or *CAMWorks (X) Connect*) for multiaxis toolpaths. It also has a reminder option that reminds you to set the toolpath processing location at regular intervals.

Viewing the CAMWorks (X) Connect (Multiaxis) Dialog

The *CAMWorks (X) Connect (Multiaxis)* dialog is displayed in the following cases:

i. When the CAMWorks (X) Connect utility is launched.

ii. When the time interval between two successively generated multiaxis toolpaths exceeds the *Time of inactivity* set by the user within the dialog.

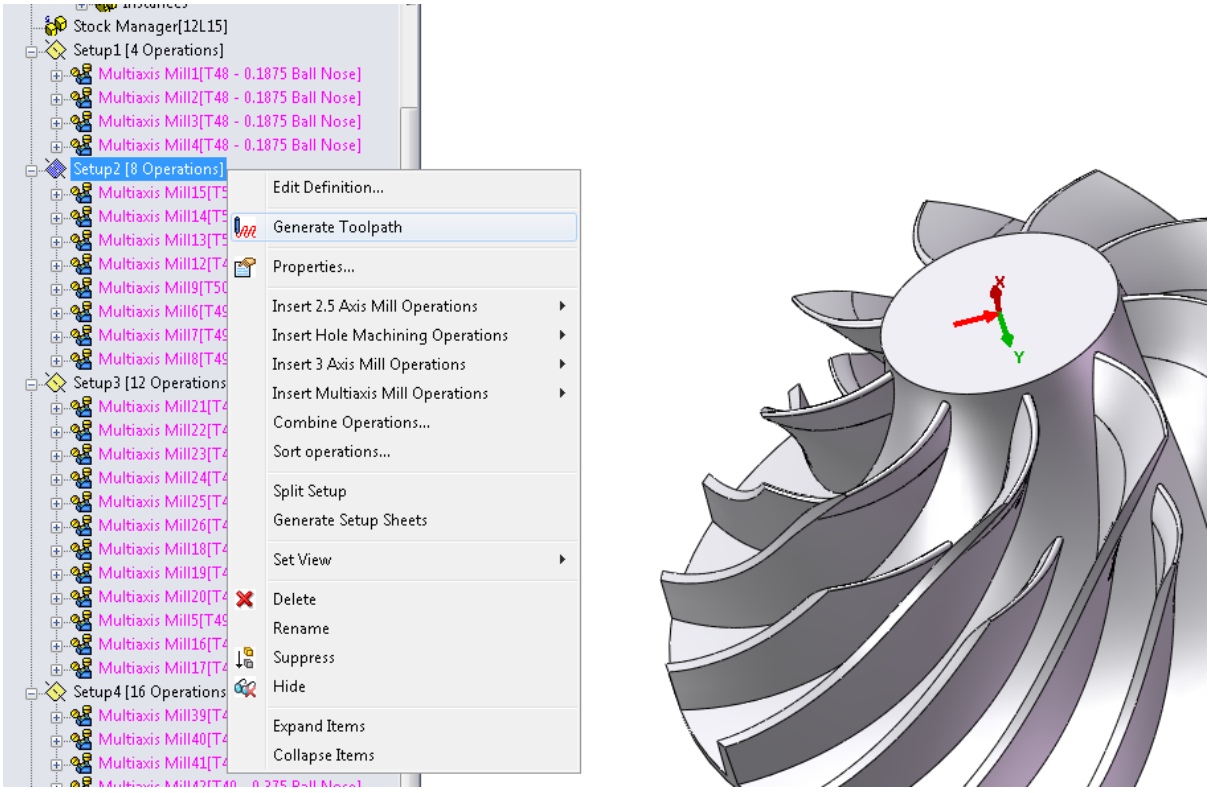
Setting Toolpath Processing Location using CAMWorks (X) Connect (Multiaxis) dialog

When the *CAMWorks (X) Connect* utility is launched, the preferred location of toolpath processing (*Local execution* or *CAMWorks (X) Connect*) for processing of multiaxis toolpath generation jobs can be set using *CAMWorks (X) Connect (Multiaxis)* dialog. This dialog is also displayed at regular intervals based on the reminder time set within the dialog.

The following steps illustrate how to set the preferred location for processing multiaxis toolpaths using the *CAMWorks (X) Connect (Multiaxis)* dialog:

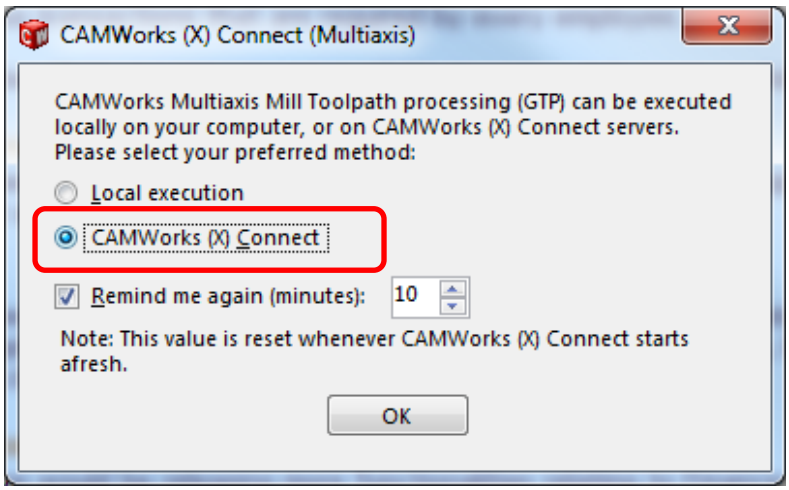
i. Begin a new CAMWorks session. Open a part/assembly containing Multiaxis operations for which toolpaths are to be generated.

ii. RMB on the desired Setup/Multiaxis operation and select *Generate Toolpath* from the RMB context menu.



The Generate Toolpath command on the RMB menu of an operation in the CAMWorks Operation tree

iii. The *CAMWorks (X) Connect (Multiaxis)* dialog will be displayed. This dialog prompts you to select the location for multiaxis toolpath processing.



The CAMWorks (X) Connect Dialog

- Select *Local execution* to process toolpaths locally. (This is the default option.)
- Select *CAMWorks (X) Connect Service* to process multiaxis toolpaths using the CAMWorks (X) Connect Service.

iv. Either enter the time or use the spin control buttons to increase/decrease the time for the preferred location reminder pop-up. For more details, read: Preferred Location Reminder

v. Click *OK* after selecting the toolpath processing location.

- If you have selected *Local execution* as the preferred location, then the CAMWorks (X) Connect Utility will be launched and its icon will be visible in the system tray but the toolpath(s) will be generated using your local system resources.
- If you have selected *CAMWorks (X) Connect* as the preferred location, then the CAMWorks (X) Connect Utility will be launched and its icon will be visible in the system tray. The toolpath generation activity will be processed on CAMWorks (X) Connect servers using the CAMWorks (X) Connect utility.

vi. Once the preferred location settings are made and the dialog is closed, the current settings and be viewed and changed in the RMB menu of the CAMWorks (X) Connect utility in the system tray.

vii. The CAMWorks (X) Connect utility retains the settings changed/modified in the *CAMWorks (X) Connect (Multiaxis)* dialog for all future sessions of CAMWorks.

Every time the CAMWorks (X) Connect utility is started afresh by executing a *Generate Toolpath* command for any multiaxis operation, the CAMWorks (X) Connect dialog will be displayed and will prompt you to select the preferred toolpath processing location.

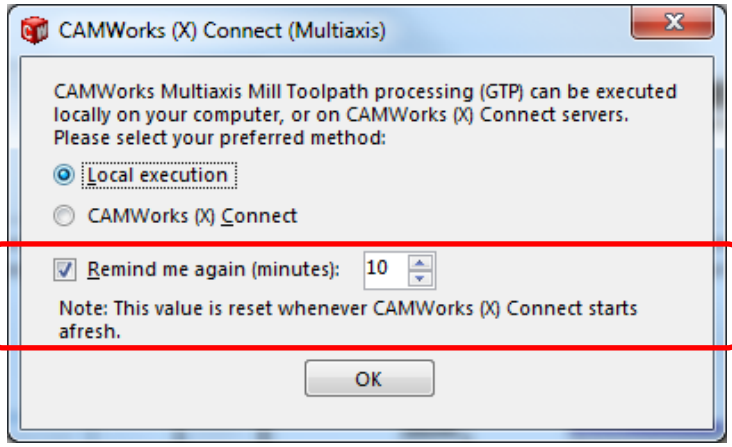
Preferred Location Reminder

Need for Preferred Location Reminder

The *CAMWorks (X) Connect (Multiaxis)* dialog allows you to set the preferred location [*Local execution* or *CAMWorks (X) Connect*] for multiaxis toolpath processing. The CAMWorks (X) Connect utility being a paid service, inadvertently scheduling the preferred location to CAMWorks (X) Connect will cost money. Hence, a reminder option is provided in the *CAMWorks (X) Connect (Multiaxis)* dialog to ensure that you review your preferred location settings at regular intervals.

Preferred Location Reminder Settings

➔ In the *CAMWorks (X) Connect (Multiaxis)* dialog, there is an option which reminds you to set your preferred location for toolpath processing of multiaxis operations at regular intervals.



Option for setting reminder in the CAMWorks (X) Connect Dialog

- To change the default reminder time, you can directly enter the time in the field provided in the *Remind me again after ___ minutes of inactivity* option. Alternatively, you can or use the spin control button to increase/decrease the default time given in the field.
- After assigning the preferred location and reminder settings, click *OK* to activate the new settings.

➔ If you do not wish to be reminded about setting the preferred location for toolpath processing at regular intervals, uncheck the checkbox ☑ next to *Remind me again after ____ minutes of inactivity*. This will ensure that the above dialog is not displayed as long as that CAMWorks (X) Connect utility is active in the system tray.

Reminder option based on Time of Inactivity

Time of inactivity:

The time of inactivity is the approximate time interval between the start points (of processing time) of two successively generated multiaxis toolpaths.

Reminder option:

If you use the reminder option provided in the *CAMWorks (X) Connect (Multiaxis)* dialog, then the dialog will be displayed again (to let you review your preferred location settings) based on the time of inactivity. The dialog is displayed again when the following two conditions are fulfilled simultaneously:

i. The time *(in minutes)* entered in the Reminder option field has been exceeded

ii. Another multiaxis toolpath generation job has been executed

Illustrative example: Consider the following 4 multiaxis toolpath generation jobs to be executed during a CAMWorks session:

Job #	Time to Process	Time Start point	Time End Point	Dialog Displayed
1.	25 seconds	12.00.00 p.m.	12.00.25 p.m.	Yes
2.	30 seconds	12.05.30 p.m.	12.06.00 p.m.	No
3.	20 seconds	12.15.31 p.m.	12.15.51 p.m.	Yes
4.	10 seconds	12.56.00 p.m.	12.56.10 p.m.	Yes

➔ Job#1 is the first multiaxis toolpath generation job in this CAMWorks session. This will launch the CAMWorks (X) Connect utility. The *CAMWorks (X) Connect* dialog is always displayed when the utility is launched. Hence, when the Job#1 is executed, the *CAMWorks (X) Connect (Multiaxis)* dialog will be displayed. In this dialog, the reminder time is set to 10 minutes and the preferred location is set to *Local computer*.

➔ When Job#2 is executed, the interval between the time start points of Job#2 and Job#1 is 5 minutes 30 seconds. This is less than the reminder time entered in the dialog. Hence, the dialog will not be displayed.

➔ When Job#3 is executed, the interval between the time start points of Job#3 and Job#2 is 10 minutes 1 second while that between their time end points is 9 minutes 51 seconds. The reminder time takes into consideration the interval between the start points. Since it is more than 10 minutes, the dialog will be displayed.

➔ When Job#4 is executed, the interval between the time start points and end points of Job#4 and Job#3 is more than 40 minutes. This is more than the reminder time entered in the dialog. Hence, the dialog will be displayed.

Setting Toolpath Processing Location using RMB menu of utility

The *CAMWorks (X) Connect (Multiaxis)* dialog is always displayed when the CAMWorks (X) Connect utility is launched. Once the settings for toolpath processing location is made in this dialog and the dialog is closed, these settings can be viewed/changed at any point of time as long as the CAMWorks (X) Connect utility is active in the system tray.

➔ To view the current processing method for multiaxis toolpaths, click on the CAMWorks (X) Connect utility icon in the system tray.

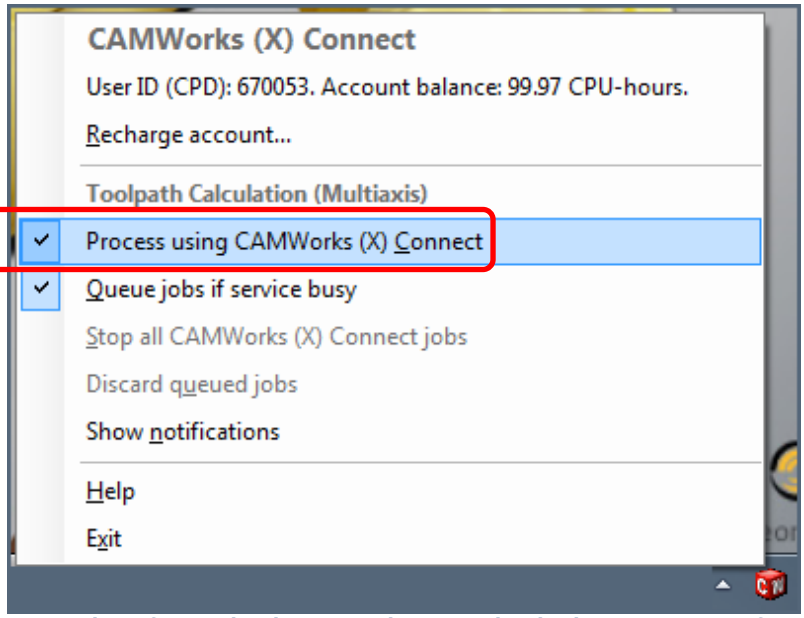
➔ To view/change the current processing method for multiaxis toolpaths, use the RMB menu of the utility.

Changing the Toolpath Processing Method using the RMB menu of the utility

To change the current multiaxis toolpath processing location, following are the steps:

i. RMB on the CAMWorks (X) Connect utility icon in the system tray.

- A check against the menu option *Process using CAMWorks (X) Connect* indicates that all multiaxis toolpaths are currently processed using the CAMWorks (X) Connect utility.
- If unchecked, it indicates that the all multiaxis toolpath processing jobs are executed locally.



Settings for Toolpath Processing Location in the RMB menu of CAMWorks (X) Connect utility

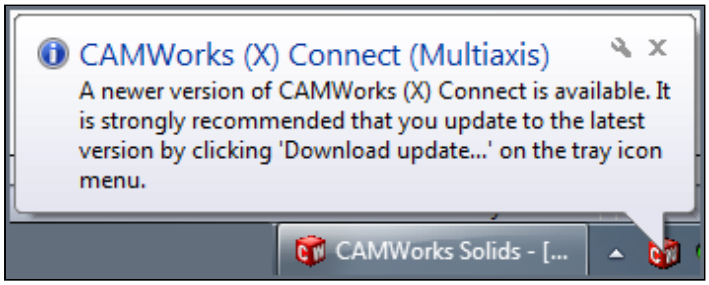
Uploading and Downloading data

Processing toolpaths using CAMWorks (X) Connect utility involves transfer of CAMWorks data to and from the CAMWorks (X) Connect servers.

The entire solid model data or CAMWorks data is never sent over to CAMWorks (X) Connect servers. Only **tessellated data**, covering the relevant portion of the model is transferred to and from the CAMWorks (X) Connect servers using secure channels (https).

Updating the CAMWorks (X) Connect Utility

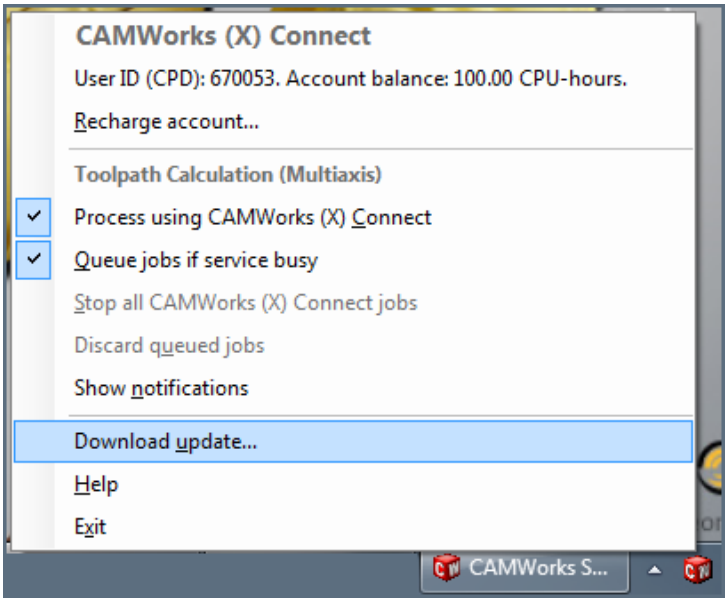
Upgraded or enhanced versions of the CAMWorks (X) Connect Utility will be made available from time to time. Whenever an updated version is available, a balloon notification will display over the CAMWorks (X) Connect tray icon indicating availability.



Balloon Text Notification when an update of the (X) Connect utility is available

Installing the Update

To upgrade the CAMWorks (X) Connect utility to the latest version, right-click on the (X) connect utility tray icon and select *Download Update* from the context menu. This action downloads the installer of the latest version of CAMWorks (X) Connect.



Click on 'Download update' to download the latest version of (X) connect

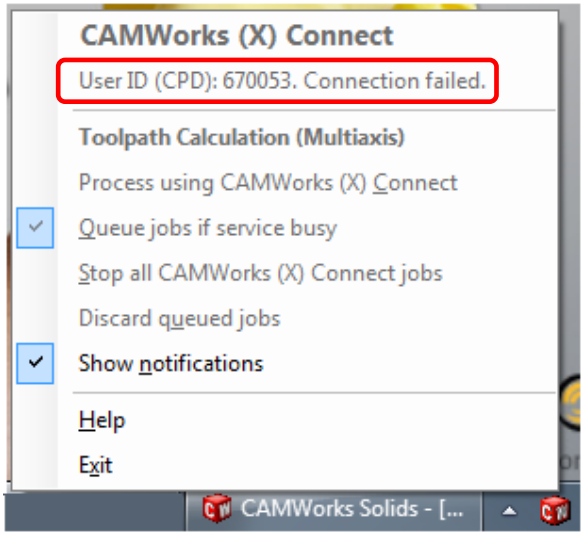
When you run this installer, your current version of the CAMWorks (X) Connect utility will be automatically updated.

Troubleshoot: Unavailability of the CAMWorks (X) Connect Service

Unavailability of Internet Connection

An Internet Connection is essential to use the CAMWorks (X) Connect service. If your Internet Connection becomes unavailable due to some reason, the CAMWorks (X) Connect service will remain unavailable. The toolpaths will be processed locally as long as the service remains unavailable.

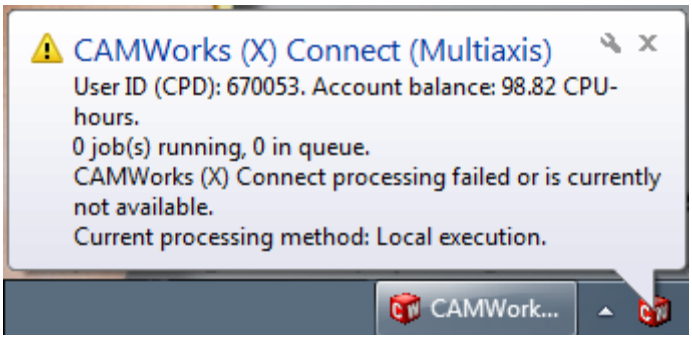
Once your Internet connection is restored, you need to exit and restart the CAMWorks (X) Connect utility in order to use the CAMWorks (X) Connect service.



'Connection Failed' message displayed when Internet Connection is unavailable

Unavailability of the (X) Connect Service

In the rare case that the CAMWorks (X) Connect servers are down or temporarily unavailable for processing toolpath jobs, then the CAMWorks (X) Connect service will be temporarily unavailable. The service will be restored as soon as the CAMWorks (X) Connect servers become available. A balloon text notification will be displayed over the utility's tray icon indicating unavailability of the CAMWorks (X) Connect service. The toolpaths will be processed locally as long as the service remains unavailable.



Balloon Text Notification indicating unavailability of the CAMWorks (X) Connect Service

5. Tutorial

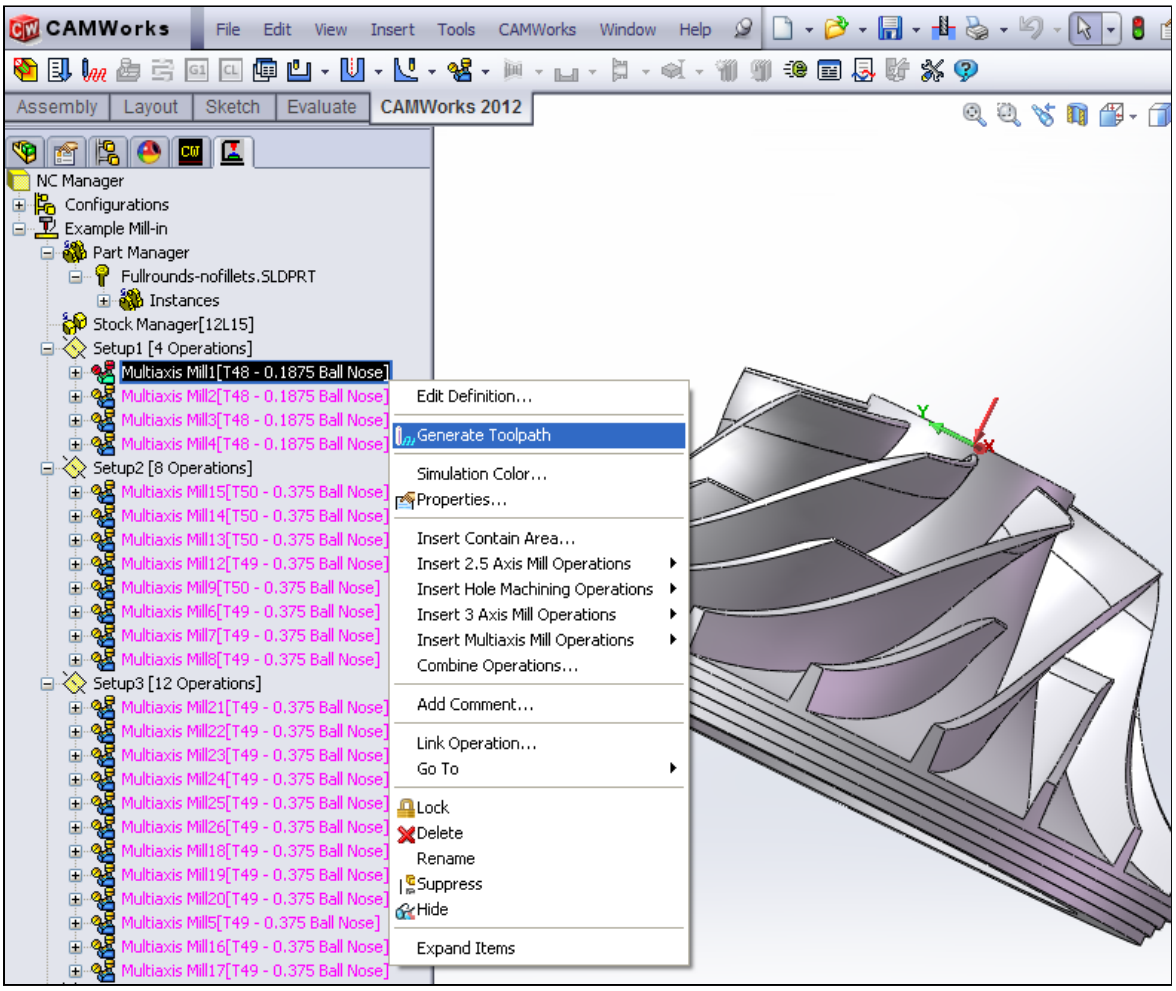
The following tutorial serves as a quick reference on how to use the CAMWorks (X) Connect utility.

Step 1: Execute Generate Toolpath command for Multiaxis operations

i. Open a CAMWorks session within SolidWorks/ CAMWorks Solids.

ii. Open a solid part/assembly containing multiaxis operations.

iii. In the CAMWorks Operation tree, RMB on the desired setup/ multiaxis mill operation for which toolpath(s) are to be generated and execute the *Generate Toolpath* command from the context menu. Alternatively, you execute the *Generate Toolpath* command from the CAMWorks Command Manager or CAMWorks menu.

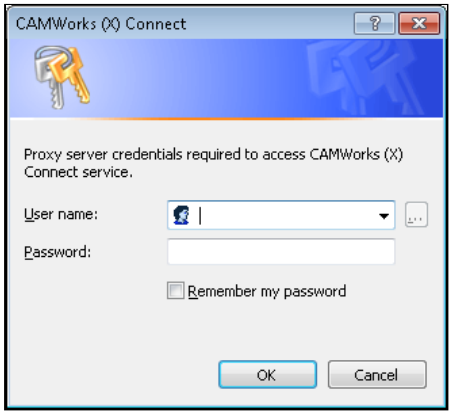


Executing 'Generate Toolpath' command

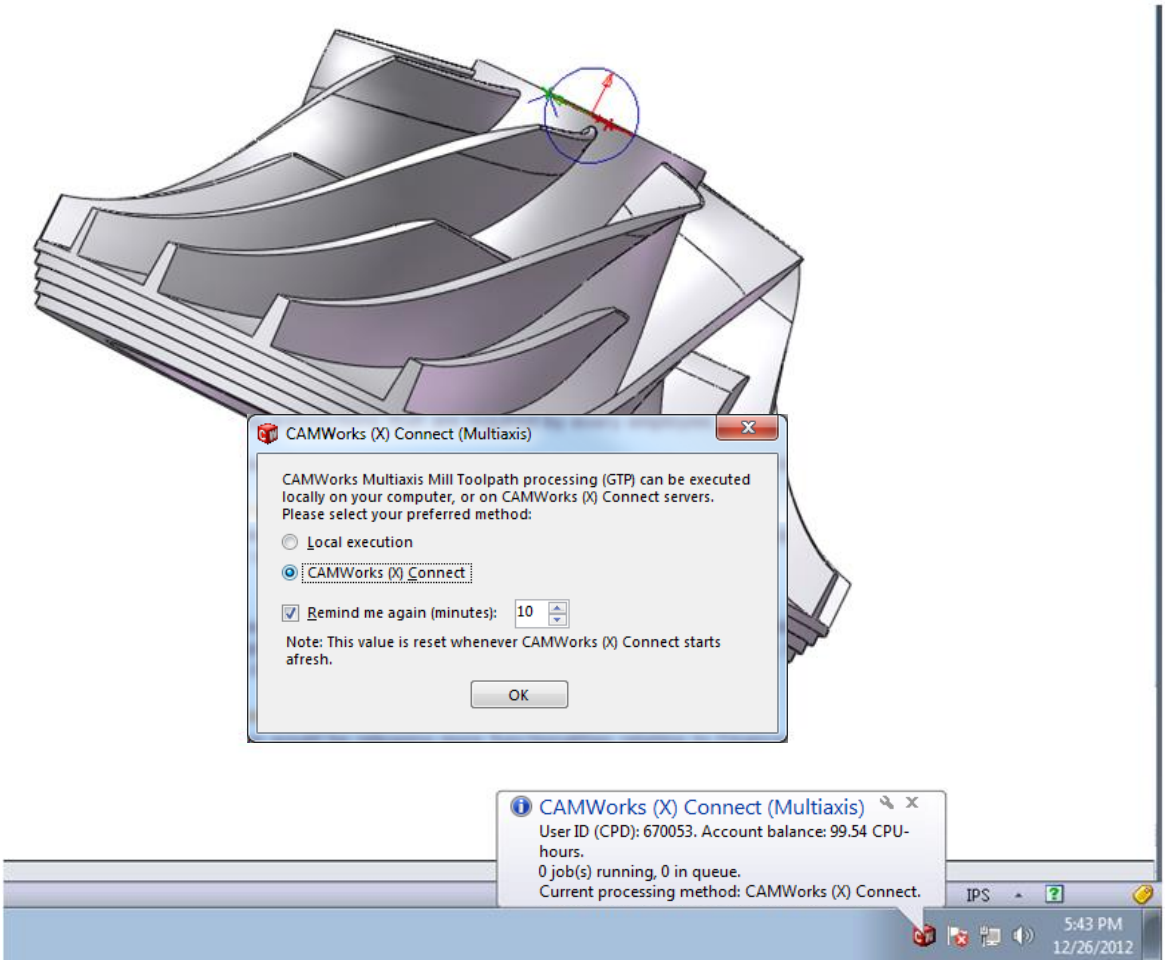
Step 2: Launching CAMWorks (X) Connect Utility

When the *Generate Toolpath* command is executed for multiaxis operation(s), the CAMWorks Process Manager dialog is activated and displays all the corresponding Multiaxis toolpaths to be generated. The CAMWorks (X) Connect utility is launched. Its icon becomes visible in the system tray. Right-click on the utility tray icon and enable the *Show Notifications* menu option.

➔ If a proxy server is configured for accessing the internet, then the CAMWorks (X) Connect utility might display a login dialog. Enter the login details to establish the internet connection.



➔ If Account balance is above the minimum required level, then CAMWorks (X) Connect dialog is displayed. This dialog prompts you to select the toolpath processing location.



Launching CAMWorks (X) Connect utility in the system tray

➔ If *Account balance* is insufficient, then the balloon text over the utility icon displays a warning message about insufficient balance. Toolpath processing by the utility using CAMWorks (X) Connect servers can be executed only after you recharge your account by purchasing CPU time and thereby increase the *Account balance* above the minimum level.

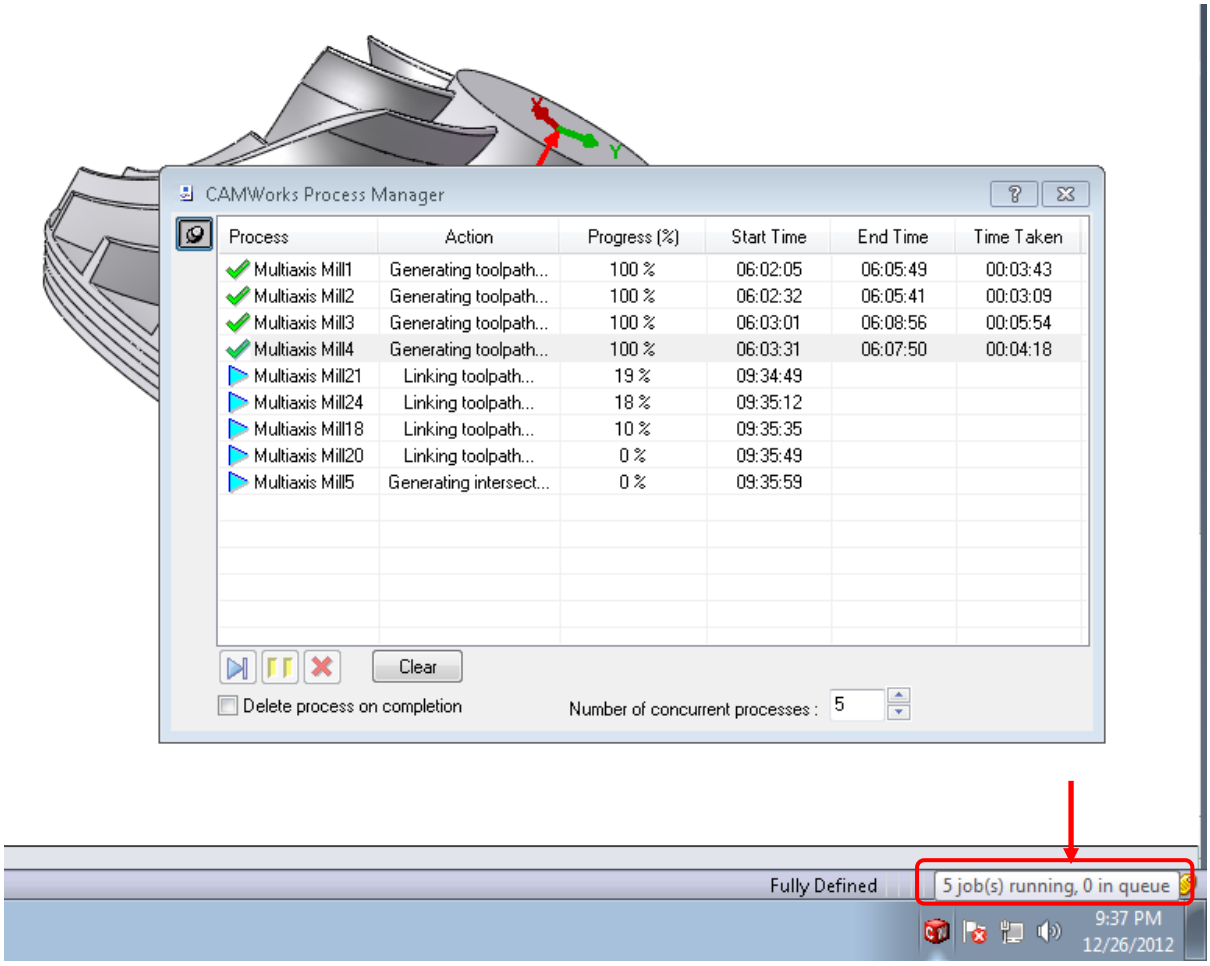
Step 3: Setting preferred location for processing toolpaths

To process multiaxis axis toolpaths using this utility, set the preferred location to *Using CAMWorks (X) Connect Service)* in the CAMWorks (X) Connect dialog. Click *OK* to close this dialog and to execute the toolpath generation job(s).

Step 4: Processing toolpaths using CAMWorks (X) Connect Servers

With preferred location set to CAMWorks (X) Connect, the utility will execute the toolpath generation job(s) on CAMWorks (X) Connect servers. All multiaxis toolpaths generated will henceforth be generated on CAMWorks (X) Connect servers as long as the utility is active in the system tray. The progress of the toolpath processing of all the multiaxis toolpath processing jobs is indicated in the *CAMWorks Process Manager*.

If you mouseover the CAMWorks (X) Connect Utility icon in the system tray while toolpath jobs are being processed on the CAMWorks (X) Connect servers, then the tooltip displayed indicates the number of jobs currently being processed and currently in queue.

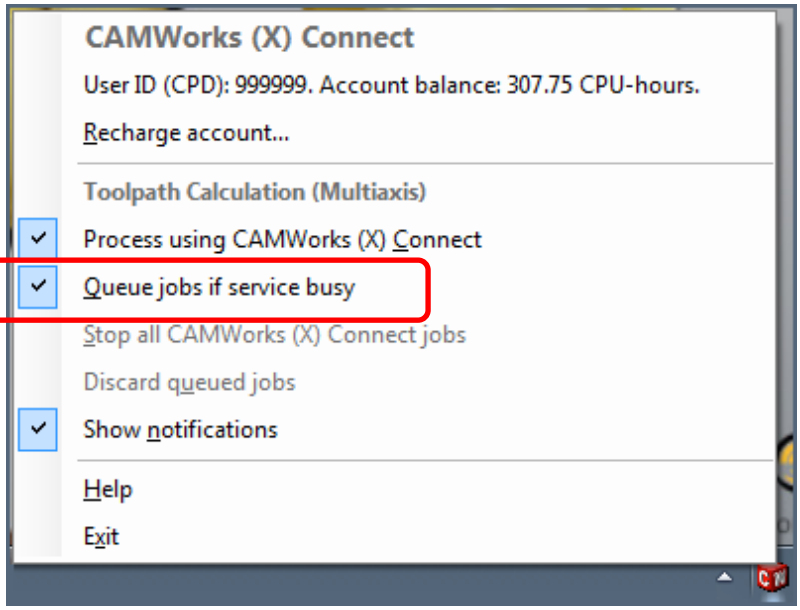


Mouseover the CAMWorks (X) Connect icon in the system tray to view current status of jobs being processed

If you selected the *Reminder* option in the CAMWorks (X) Connect dialog, then the CAMWorks (X) Connect dialog will be displayed when the time gap between two successively generated multiaxis toolpaths exceeds the time of inactivity set in the *Reminder* option.

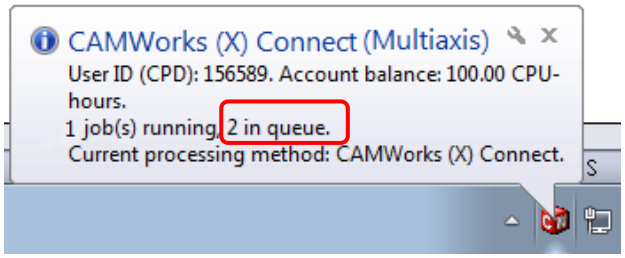
Step 5: Queuing toolpaths for processing by the utility

RMB on the CAMWorks (X) Connect icon and check the menu option *Queue jobs if service busy*.



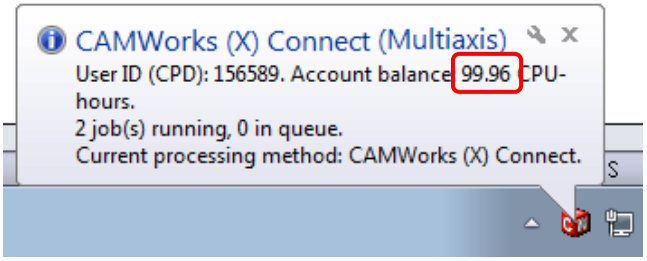
Queuing toolpaths for processing using CAMWorks (X) Connect

Execute the next set of toolpath generation jobs. Click on the CAMWorks (X) Connect icon while the toolpaths are being processed using this utility. The balloon text will indicate the number of toolpath processing jobs being executed by the utility and the number of jobs in queue (in case the utility is busy processing other jobs).



Queued Jobs are indicated in the balloon text

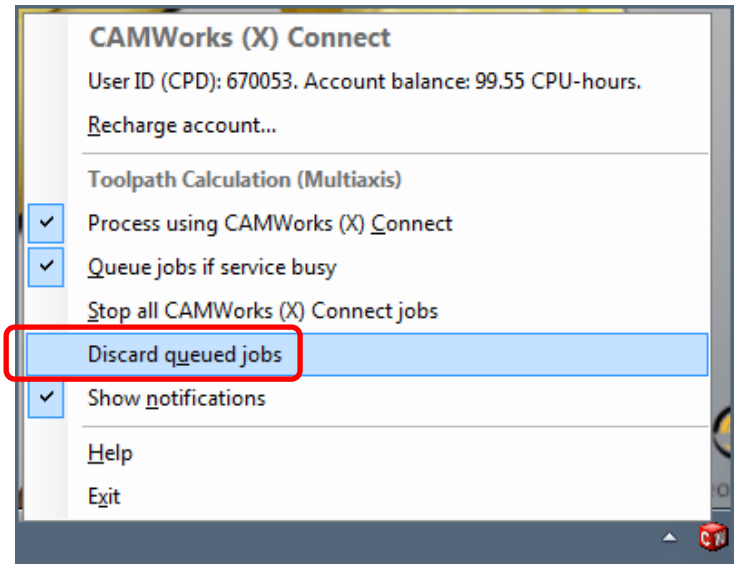
Click on the CAMWorks (X) Connect utility icon after the jobs are executed. View the *Account balance*. Observe that this balance has decreased.



Account balance reduces every time a toolpath is successfully processed using CAMWorks (X) Connect utility

Step 6: Discarding queued jobs

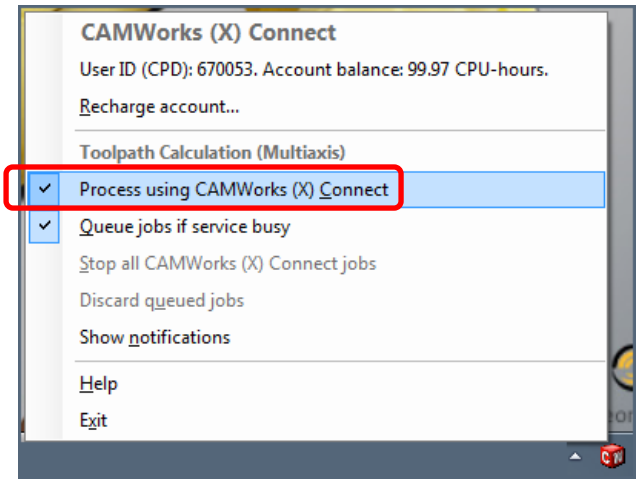
If the CAMWorks (X) Connect utility is busy and you have a number of jobs in queue, you can choose to discard the jobs in queue. To do so, RMB on the CAMWorks (X) Connect icon and execute the menu item *Discard queued jobs*.



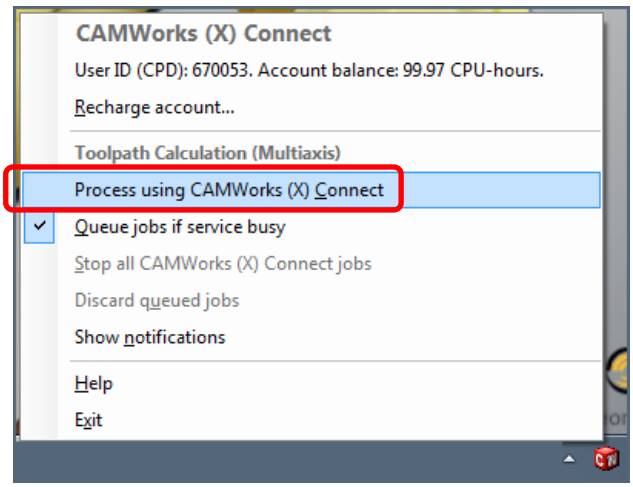
Select the 'Discard queued jobs' menu item to terminate the jobs in queue

Step 7: Changing Toolpath processing location

Suppose that the next set of toolpath(s) is to be processed locally instead of being processed using CAMWorks (X) Connect. To do so, you need to change the toolpath processing location. RMB on the CAMWorks (X) Connect utility icon in the system tray and uncheck the menu option *Process using CAMWorks (X) Connect* in the context menu.



Check to process the toolpaths using CAMWorks (X) Connect utility

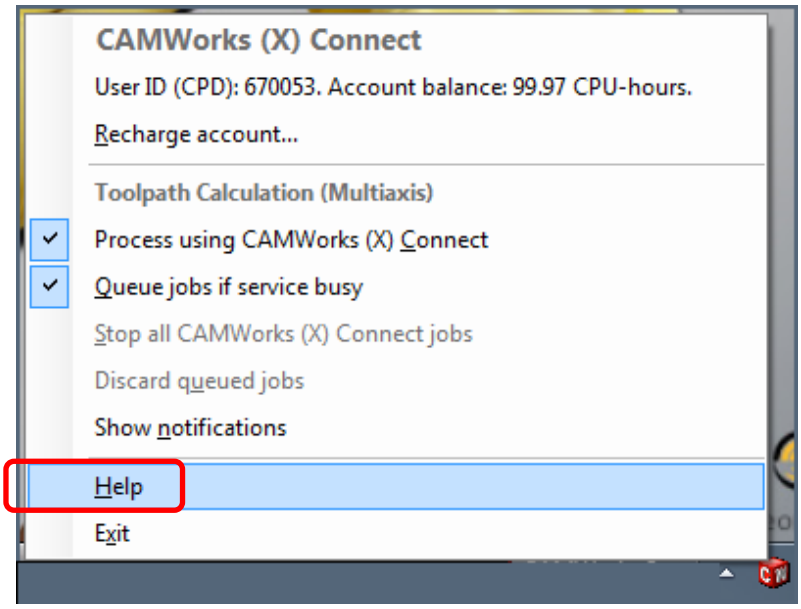


Uncheck to process the toolpaths using local resources

After changing the toolpath processing location, execute the *Generate Toolpath* command for the multiaxis operations. The toolpaths will now be generated locally until you change the processing location once again.

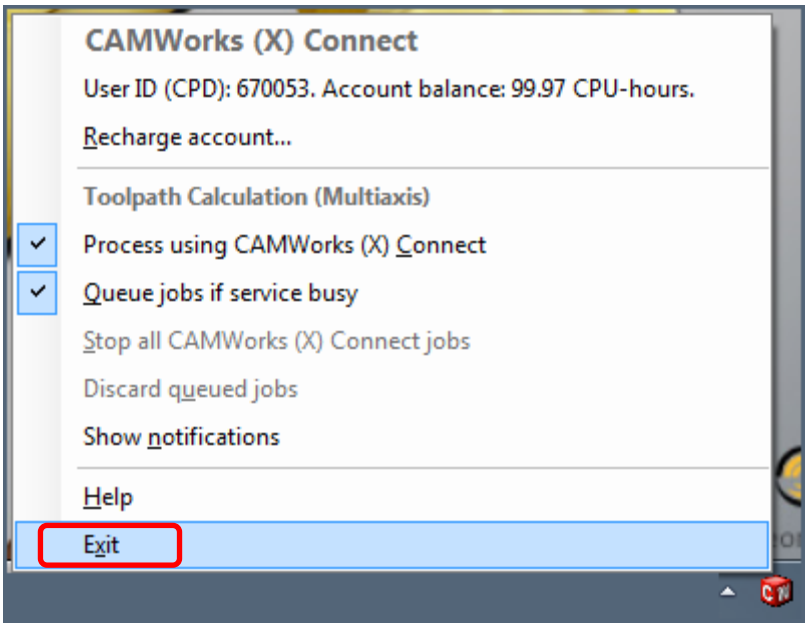
Step 8: Accessing Help

A user manual (PDF format) is provided to help you to acquaint yourself with using the CAMWorks (X) Connect Utility. To access the Help document, RMB on the CAMWorks (X) Connect utility icon in the system tray and select *Help* from the context menu. After the document is displayed, select the desired Help topic from the listed bookmarks on the left or Table of Contents to view the corresponding Help.



Accessing Help in the RMB menu of CAMWorks (X) Connect utility

Step 9: Exiting the CAMWorks (X) Connect utility



Exit option in the RMB menu of CAMWorks (X) Connect utility

To exit the CAMWorks (X) Connect utility, RMB on the CAMWorks (X) Connect utility icon in the system tray and select *Exit* from the context menu.