CTC CIM Suites Installation and Configuration Guide

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Civil Express Tools Overview

The Civil Express Tools products from CAD Technology Center, Inc. offer utilities for enhancing the productivity of users of Civil 3D® software from Autodesk®. Civil 3D users launch these tools from within the Civil 3D software.

These tools are available in suite packages, and typically each of the suites contains both free tools and paid tools. Although written to function correctly with the international community in mind wherever possible, Civil Express Tools products are currently only tested on English USA versions of Civil 3D running on English USA versions of Windows.

The single setup programs for each suite will install the tools for all versions of Civil 3D supported. For example, CTC CIM Project Suite 2021 will install tools for Civil 3D 2021, Civil 3D 2020, Civil 3D 2019, Civil 3D 2018 and Civil 3D 2017.

The installation and configuration of these suites is fairly straightforward. This guide will explain how the installation works, how to set up a network floating license server and how to change the configuration on the Civil 3D workstations after the suite has already been installed.

General Security Requirements Summary

The installation programs must be run by someone who is logged in with administrative privileges on the computer to which the software is being installed.

Civil 3D Workstations

In accordance with Autodesk standards for add-ins, during the installation the user does not get to choose where the suites will be installed on their local hard drives.

The Civil Express Tools suites will always get installed to folders like the following, as applicable:

%ProgramFiles%Autodesk\ApplicationPlugins\CTCCIMProjectSuite2023.bundle
%ProgramFiles%Autodesk\ApplicationPlugins\CTCCIMProjectSuite2022.bundle
%ProgramFiles%Autodesk\ApplicationPlugins\CTCCIMProjectSuite2021.bundle
%ProgramFiles%Autodesk\ApplicationPlugins\CTCCIMProjectSuite2020.bundle
%ProgramFiles%Autodesk\ApplicationPlugins\CTCCIMProjectSuite2019.bundle

The following folder will also contain files needed by the Civil Express Tools suites:

%ProgramData%\CTC

IMPORTANT: The workstation setup program will create and permission all of the folders as needed during the install, giving “Authenticated Users” the ability to modify files within them.

The user must also be able to read from, and write to, their own personal default Temp folder, as Civil Express Tools components occasionally need to create temporary files in this folder, which are typically deleted when no longer needed. By default Windows allows the user to read from and write to their own personal temporary folder.

Network Floating License Servers

At a minimum, the servers on which CTC network floating license software is installed must have firewall TCP ports **5052** and **5053** open in order for the workstations to be able to successfully check-out and check-in network floating licenses. TCP port 5054 must also be open if it is desirable to remotely access the web application that is used for monitoring and managing license usage.

Upgrading a CTC Suite

When upgrading to a new version, typically uninstalling an old version is NOT required. Running the latest setup is all that is usually needed.

General Licensing Information

Some of the tools provided are free, and some require licensing. The licensed tools are available for a 14 day free trial.

Unless the licensing is pre-configured during installation (see below), the first time a user launches one of the tools that require licensing they will see the *Product and License Information* dialog:

Timed Trial Licensing

"Timed Trial" licenses allow the user to use the software without any special licensing for a limited time, typically 14 days. The software will generally be fully functional during the timed trial.

NOTE: Timed Trial licensing is not supported on virtual machines. If this software is installed on a virtual machine, either network licensing or cloud shared licensing will need to be used instead.

Standalone – Locked Licensing

"Standalone – Locked" licenses activate a license over the Internet one time and locks it to the computer. Once activated on a computer, the software can be used by any user that logs in. This license can also be "Unregistered" from this computer using the Product and License Information screen, which will return the license over the Internet and allow it to be registered again on another computer. The button for that looks like this:

IMPORTANT: If your organization has chosen to use standalone (node-locked) licensing, **YOU** are responsible for tracking and managing on which computers the software has been registered. To have that process be automatically managed requires using network floating licenses or cloud shared licenses instead, which are discussed below.

Uninstalling the software from a computer **DOES NOT** unregister a standalone license that has been activated on that computer. Licenses must be unregistered from within the software using the license management tools provided, via the Product and License Information screen.

IMPORTANT: If the computer on which a standalone license has been registered will be having any of the following hardware changed, you must first unregister the license, then make the hardware change, then re-register the license:

- Hard drive
- Processor
- Network card

Failing to unregister the license before changing the hardware can result in the permanent loss of the license activation.

IMPORTANT: Users of CTC software that are using node-locked licensing may experience their license failing if they are using an external Ethernet adapter ("dongle") and that adapter is sometimes present and sometimes not present. For example, if they are wired into their work network using the external Ethernet adapter (or something like a docking station) when they activate their license, then they remove that adapter and go traveling, their CTC node-locked licenses will correctly see this as a hardware change and may become invalid. However, if they plug the dongle back in (whether or not it's wired to any network) the license should begin working correctly again.

In summary, if the user has an external Ethernet adapter, they may need to have it with them and plugged in to their computer for their CTC node-locked licenses to work correctly.

NOTE: Standalone-Locked licensing will probably not successfully register or unregister on the Civil 3D workstation if a proxy server is used in the network environment to access the Internet. Network or Cloud Shared licensing may need to be used instead, otherwise bypassing proxy server authentication when accessing http://www.ctcsoftware.com may also work.

NOTE: Standalone-Locked licensing is not supported on virtual machines. If this software is installed on a virtual machine, either network floating licensing or cloud shared will need to be used instead. Standalone licenses can also not be registered or unregistered remotely (e.g. using Remote Desktop, or perhaps running in a Terminal Services or Citrix-type environment).

Network Floating Licensing

Network floating licenses allow multiple users to share licenses. For example, if you have 20 users but only a maximum of 5 of those 20 need to use the software at the same time, you may choose to purchase only 5 network licenses.

To facilitate this, the *CTC Network License Server* software needs to be installed on a computer on your network to manage the licenses. That computer becomes the license server computer.

When the Civil 3D user is running an add-in tool that uses network floating licenses, they must have a network connection to the license server and the software will automatically 'check out' a license from the license server when the tool starts up. When the user shuts down the tool, the license is automatically returned ('checked in') to the license server.

Only the maximum number of licenses purchased for a software product can be checked out at the same time. When one extra user tries to run the software, they are informed that no floating licenses are available and they will have to try to run the software again later after another user has closed all the paid tools for a product (suite) and the other user's license is then checked back into the license server.

Licenses acquired for a version of a CTC product will be available for users of that version of the product as well as for users of older versions of the product. For example, if there are 10 floating licenses for "CIM Project Suite 2023" then users running "CIM Project Suite" in Civil 3D 2023 or in any older version of Civil 3D can all get licenses from that pool of 10. This can make it easier to determine how many total licenses are needed.

A user never uses up more than one license for a product while on a single computer. For example, if the user has Civil 3D 2023 running and starts a tool that checks out a license for "CIM Project Suite" from the license server, and while that tool is running they start up another Civil 3D session – even for a different version of Civil 3D – and launch another tool from the same suite, <u>only 1 license will be considered in use by that user.</u> The license is not returned to the server until all instances of the tools from that suite have been shut down for all instances of Civil 3D that are running on that computer.

If, however, the user leaves the tool running which has checked out a license and they go to another computer and start up another licensed tool for the same product, then another license will be checked out on that second computer, and the user will be consuming two licenses. So licenses are specific to the *combination* of user, computer and CTC product.

A user may "borrow" a license from the server for a fixed number of days. When a license is borrowed, it is temporarily locked to the computer of the user that borrowed the license. This allows that user to use the software when not connected to the company network, which can be useful, for example, if they are leaving to go on a business trip. However, it also temporarily removes one of the available floating licenses for all the remaining users in the office to share.

The license will automatically be available again on the license server even if the user who borrowed it doesn't connect to the license server after the period in which it was borrowed comes to an end. The license will stop working on their computer after the period in which it was borrowed comes to an end, even if they don't connect to the license server.

IMPORTANT: A borrowed license CAN NOT be forcibly returned to the license server. It will be automatically available on the license server when the borrow time has expired, or when the user who borrowed it connects to the license server and manually returns the borrowed license from their computer early.

IMPORTANT: Using network floating licenses on a remote workstation which is using a software VPN connection to the company network is NOT recommended. This typically includes workstations that need to start up VPN client software in order to connect to the company network. Because software VPN connections are generally less reliable, the quality of maintaining the license after starting the software is in jeopardy and cannot be ensured. If the remote workstation is to use network floating licenses, then a hardware VPN connection is strongly recommended. If a hardware VPN connection is not available, the best practice is for the remote workstation to use a borrowed a license instead.

Network Floating License Server Location

The *Product and License Information* dialog requires you to enter the computer name (or TCP/IP address) of the license server computer on your network. Installing the license server software is discussed in a later section.

The user guide that comes with the suite contains a section called *License Activation and Management* which discusses how the licensing works for the user, including going into more detail about the use of the *Product and License Information* dialog, and doing things like borrowing licenses and returning them early.

Cloud Shared Licensing

Like network floating licensing, cloud shared licensing allows multiple users to share licenses. For example, if you have 20 users but only a maximum of 5 of those 20 need to use the software at the same time, you may choose to purchase only 5 cloud shared licenses.

However, *unlike* network floating licensing, cloud shared licensing does not require you to select and install software on a server in your network to be a license server, nor does it require you to get a license file from CTC for that server. Further, it requires your users only have any kind of Internet connection, rather than having a connection to your internal network (e.g. over VPN) as they would in order to access your CTC license server on your network for network floating licensing. This can be particularly useful for remote users who do not need to be connected to your network sometimes in order to do their work.

The first time a user tries to use a cloud shared license, they may be asked to login to CTC's cloud. They may not be asked to login if they are already logged in from another tool, such as CTC's HIVE product.

Only the maximum number of licenses purchased for a software product can be checked out at the same time. When one extra user tries to run the software, they are informed that no licenses are available, and they will have to try to run the software again later after another user has closed all the tools for a product (suite) and the other user's license is then checked back into the cloud license server.

A user never uses up more than one license for a product while on a single computer. For example, if the user has Civil 3D 2023 running and starts a premium tool that checks out a license for "CIM Project Suite" from the license server, and

while that tool is running they start up another Civil 3D session – even for a different version of Civil 3D – and launch another premium tool from the same suite, only 1 license will be considered in use by that user. The license is not returned to the server until all instances of the tools from that suite have been shut down for all instances of Civil 3D that are running on that computer.

If, however, the user leaves the tool running which has checked out a license and they go to another computer and start up another licensed tool for the same product, then another license will be checked out on that second computer, and the user will be consuming two licenses. So licenses are specific to the *combination* of user, computer and CTC product.

A user may "borrow" a license from the CTC cloud server for a fixed number of days. When a license is borrowed, it is temporarily locked to the computer of the user that borrowed the license. This allows that user to use the software when not connected to the Internet, which can be useful, for example, if they are leaving to go on a business trip. However, it also temporarily removes one of the available floating licenses for all the remaining users to share.

The license will automatically be available again on the CTC cloud server even if the user who borrowed it doesn't connect to the CTC cloud server after the period in which it was borrowed comes to an end. The license will also stop working on their computer after the period in which it was borrowed comes to an end, even if they don't connect to the license server.

IMPORTANT: A borrowed license CAN NOT be forcibly returned to the CTC cloud server. It will be automatically available on the CTC cloud server when the borrow time has expired, or when the user who borrowed it connects to the CTC cloud server and manually returns the borrowed license from their computer early.

CTC provides the license management in CTC's cloud, and you can manage your license usage from the CTC portal. For example, you control who is allowed to use each product (suite), you can see who is currently using licenses, and you can even revoke a non-borrowed license from a user. This can be useful if another user urgently needs a license. You can also see who has borrowed a license, and when that borrowed license will expire. This is explained in the next section.

Managing Cloud Shared Licenses

CTC Products can be managed in the CTC Software portal (https://ctcsoftware.com/portal/licensing). All of the licenses owned by the organization will be listed under the 'Licensing' tab. A minimum role of either **Organization Admin** or **License Admin** must be assigned to anyone who will be managing licenses for the organization.

NOTE: Licenses will not be available to any of the organization users until they have been "assigned" in the portal. This does not include free tools in the product. Free tools will be always available, regardless of licensing.

Users must configure their product on their workstation to use Cloud Shared Licensing before the licenses will be available to them. This can be done using the "Product and License Information" dialog, or by using configuration files (discussed below).

In the above example, this organization owns 5 seats of CIM Project Suite and 2 seats of CIM Manager Suite. This means that at any given time, a maximum of 5 users can run a licensed tool from CIM Project Suite simultaneously, regardless of how many users have been assigned beyond the count purchased. Likewise, only two can use CIM Manager Suite licensed tools at the same time.

This means that if 10 users have been assigned a CIM Project Suite license, only 5 users can use licensed tools in the product at the same time. If a 6th simultaneous user attempts to use a licensed tool in CIM Project Suite, they will be alerted that no license is available at that time.

Assigning Licenses to Groups and Users

Licenses can be assigned directly to a user account, or to a group. Assigning to groups may be a much easier to manage which users have access to which licenses.

Begin by expanding one of the product rows and clicking on 'Assign Licenses:'

The Group and User selection form will present assignments that may have already been made in the list below the selector. This can also be used to remove assignments by clicking on the trashcan icon.

The first tab presents group assignments. The second tab presents user assignments. To add to the list of assignments, click in the selector and choose items from the selection list.

Hint: type the first few characters of a name to filter the list.

To remove a group or user during the add process from the temporary list, click the X on the right of the "pill."

Once satisfied with the selections, click the SAVE button to update the assignments.

Revoking a License

It may be necessary to temporarily force a checked out license that is currently in use on a workstation back into the pool. This can be used to ensure that a license is available to a user whose task may be urgent.

NOTE: Revoking a license will be effective immediately. The user will no longer be able to continue using paid tools until a license becomes available again. They will get a message telling them they no longer have a license. While they will not be able to continue doing useful things with the software, it should allow them to save their work, such as any settings they may have changed.

Expand the product row for the CTC suite to see the list of cloud licenses in use.

Find the user in question and click the trashcan icon.

Cloud Shared Licensing Workstation Usage

If your organization has set up access to cloud shared licensing, all that is needed to use the tools is to configure it and log in using a CTC Software user account.

Configuring the workstation tools can be done either by using a configuration file (discussed below) or by using the *Product and License Information* screen. This screen will appear the first time a paid tool is used, or can be accessed from within a tool using the Suite Licensing menu choice.

On the *Product and License Information* screen, select the *Cloud Shared* button.

Switching to Cloud Shared will prompt to log in to CTC Software (if not already logged in using another of the CTC tools) Once successfully logged in, the tool will connect to the online licensing engine, verify the user account has been allocated a license and return a success message.

Borrowing a License

If a license is needed in anticipation of being disconnected from the Internet, borrowing a license can ensure that the CTC tools are available for use.

NOTE: This only applies to CTC tools, a license may need to be borrowed for the Autodesk platform they are running on as well.

Begin by opening the *Product and License Information* screen. From here, click the 'Borrow…' button to the right of the Cloud Shared choice to begin the process of choosing the length of time to borrow a Cloud Shared license.

The date selector should appear showing the date and length of time allow by the organization administrator.

Confirm the date selection and click 'Borrow License.' A success message should appear.

Return a Borrowed License

To return the license early, in the *Product and License Information* screen, find the 'Return Early…' button on the *Cloud Shared* line and click it.

A prompt will appear confirming that the license should be returned.

Click the Yes button, then you should see:

The license status should now show a 'not borrowed' message.

General Licensing Notes

The user guide that comes with each suite contains a section called *License Activation and Management* which discusses how the licensing works from the user's perspective, including going into more detail about the use of the *Product and License Information* dialog, and how to do things like borrowing licenses and returning them early.

The section below called "Controlling Licensing Settings" explains in detail how license configuration settings are stored in a file on the workstations, and how they can be modified after the suite has previously been configured for licensing.

The CTC Express Tools suite system allows the client workstations to be installed and also configured for licensing silently, using a variety of methods, including command-line parameters provided to the MSI installer packages.

This is explained in detail later in this document, in the section called *Custom Installation (Using Command-Line Parameters)*

Network Floating License Server Installation

Network Floating License Server Overview

In order to support a floating network license environment, at least one computer must be configured as a license server. It is strongly recommended to set up the floating license server on a computer that uses a server-class Windows operating system, but the license server software can be successfully configured on a computer that uses a workstation-class operating system, such as Windows 7.

Both 32- and 64-bit versions of the license server software are available:

- CTCLicenseServerSetup_32-bit.msi
- CTCLicenseServerSetup_64-bit.msi

These setups must be run by someone with administrative privileges on the license server computer. When either of these setups is run, a Windows service will be configured for serving licenses. This service also includes a web application which can be used for managing licenses, such as for seeing how many licenses of a suite are currently in use.

The web server software for the web application is embedded into the windows service, and does **not** require Internet Information Services to be installed, nor should it conflict with other web server software.

IMPORTANT: At a minimum, firewall TCP ports **5052** and **5053** on the server computer *and on the Civil 3D workstations* must be open for the license server service to communicate with the workstations. To access the web application for managing licenses from another computer, firewall TCP port 5054 must also be open.

Network Floating License Server Installation Process

When the setup is launched, this introductory screen is displayed:

Clicking on the “Next” button will display the software license agreement screen:

After reading and agreeing to the SLA, clicking the "Next" button will display the confirmation screen:

If User Account Control is turned on, you may need to explicitly confirm that you want to install the software.

During the installation, a screen like this showing the installation progress will be visible:

Once this screen completes and the installation is successful, two screens will appear.

First:

Just click the “Finish” button on this screen.

Second:

This screen contains very important information that needs to be provided to your CTC representative so that a license file can be generated for this license server computer.

The license file to be provided by CTC will contain information required for this computer to properly serve the licenses for the products that have been purchased.

You may wish to use the "Copy This Information to the Clipboard" button so that it can more easily and accurately be sent to your CTC representative, who can then use this information to generate a license file for this computer.

The "Open Folder…" button will launch Windows Explorer and open the folder into which the license file must be placed. This also happens to be the folder where the Windows service was installed.

The "Visit this license server's management site" link will open the default web browser on this computer to the web site that allows managing the floating licenses. This will be discussed in greater detail in a later section of this document.

This dialog may be closed before the license file is received, because (as will be discussed in the next section) a shortcut is provided to make it easy to get back to this information at any time.

Once the installation is complete, if you visit the Services list in the Server Manager tool, you should see that the CTC Network License Server Windows service has been installed and started automatically:

If for any reason the CTC Network License Server service doesn't appear in the list, scripts can be found in the installation folder for "installing" or "uninstalling" the Windows service itself. Running the installation script may provide more information about why the setup program could not add the service to the services list.

Network Floating License Server Tools

After installing the floating license server software, the following tools are available from the Start menu:

The "CTC License Server Information Viewer" Start Menu button launches the same dialog that was seen at the end of the setup:

The "CTC License Server Web Manager" button on the Start menu launches the web application that is used for managing licenses, and is discussed in the next section.

The other two commands can be used to easily stop or start the CTC Network License Server Windows service.

CTC Network Floating License Server Web Application

Accessing the License Server Web Application

A web browser-based interface exists for managing licenses on the License Server. This can easily be accessed using the "CTC License Server Web Manager" icon that is added to the Start menu during the installation of the license server software.

The address of this web site will be: http://<server name>:5054

or, if you are logged into the server already: http://localhost:5054

The CTC network floating licensing engine is based on the Reprise License Manager, which is also what drives the web application. When opened, the initial screen looks like this:

In this document only a limited set of the most commonly used features available in this management tool will be explored. For full documentation on this licensing engine, click on the "**RLM Manual…**" button near the bottom of the navigation buttons on the left.

First Time Usage

The first button, “Status” will likely be the starting point most of the time.

When initially installed, <u>and before a license file from CTC is copied to the installation folder</u>, clicking the “Status” button shows a screen like this:

Note that it says “No ISV servers running” near the bottom of the main information area. CTC is an “ISV” for this licensing engine. The CTC ISV server cannot run until the license file generated by CTC is installed on the server.

Once the license file is received from CTC, it needs to be placed in the installation folder. The easiest way to get to the installation folder is to use the Start menu to run the “License Server Information Viewer” program, and then click on the “Open Folder…” button, which will open Windows Explorer to the correct folder.

This folder will usually be: **C:\Program Files\CAD Technology Center\CTC Network License Server (64-bit)**

(or ending in “32-bit” if installed on a computer that is running a 32-bit operating system)

Once a new or updated license file from CTC has been copied to the installation folder on the license server, click the “Reread/Restart Servers” button on the left, then click the “REREAD/RESTART” button in the middle of the screen:

Viewing Purchased and Available Licenses

Once the CTC license file has been copied to the installation folder and read into the license manager, if the “Status” button is clicked, the “ctc_inc” ISV Server will appear at the bottom of the screen:

When the “ctc_inc” button is clicked in the “Server Status” column, the information about purchased licenses and their statuses is displayed. The columns of most interest are highlighted here:

License pool status

Product	Pool	Ver	Expires	count	soft lim	inuse	res	timeout	share	transactions	Show License Usage
bimproj	1	2015	permanent	10	10	0	0	0	User&Host	0	usage...
bimmgr	2	2015	permanent	10	10	0	0	0	User&Host	0	usage...
superdoor	3	2015	permanent	10	10	0	0	0	User&Host	0	usage...

In this example there are 10 floating licenses purchased for each of the suite products for 2015, and no users happen to be using any of them (none are “inuse”).

NOTE: Users with versions of these products running on older versions of Autodesk software, for example BIM Manager Suite™ running in 2013, will also be able to draw licenses from this same pool for the 2015 version of the product. So only the total number of licenses needed by all users up to the version licensed (“Ver” column) needs to be known and taken into consideration when determining how many licenses are needed.

Viewing Licenses that are Currently In Use

As seen in the previous image, the list of licenses purchased and in use can be seen on the status screen.

If, for example, a user starts up a tool in the suite, we might see the following in this status list:

Product	Pool	Ver	Expires	count	soft lim	inuse	res	timeout	share	transactions	Show License Usage
bimproj	1	2015	permanent	10	10	1	0	0	User&Host	2	usage...
bimmgr	2	2015	permanent	10	10	0	0	0	User&Host	0	usage...
superdoor	3	2015	permanent	10	10	0	0	0	User&Host	0	usage...

Notice that one license is now in use. By clicking on the associated "usage…" button, we can see who is using that license:

License status for ISV ctc_inc

Product	Pool	Ver	user	host	PID	req ver	# lic	# res	Out time
bimproj	1	2015	david	ctcltmn	13996	2015	1	0	07/01 09:01

The "user" is the user's login name, the "host" is the name of the computer they are using.

The CTC license files that are generated define things such that **regardless of how many licensed tools in the suite are running at the same time by a single user on one computer, even in different versions of Autodesk software simultaneously, only <u>one</u> network license is considered "in use" by the server.**

For example, the user could have the window open for two licensed tools in the suite, and open another licensed tool in the suite at the same time.

In that case, we would still see this on the License Pool Status screen:

Product	Pool	Ver	Expires	count	soft lim	inuse	res	timeout	share	transactions	Show License Usage
bimproj	1	2015	permanent	10	10	1	0	0	User&Host	2	usage...
bimmgr	2	2015	permanent	10	10	0	0	0	User&Host	0	usage...
superdoor	3	2015	permanent	10	10	0	0	0	User&Host	0	usage...

But on the usage screen we would see three entries for this user, like this:

Product	Pool	Ver	user	host	PID	req ver	# lic	# res	Out time
bimproj	1	2015	david	ctcltmn	13996	2015	1	0	07/01 09:05
bimproj	1	2015	david	ctcltmn	13996	2015	1	0	07/01 09:06
bimproj	1	2015	david	ctcltmn	13996	2015	1	0	07/01 09:06

So even though only one license is considered "in use," there are three instances of that single license running on the workstation at the same time.

When the last tool is shut down, the license is returned to the pool for another user to be able to use.

In the case where a user is borrowing a license, the status screen looks like this:

License pool status

Product	Pool	Ver	Expires	count	soft lim	inuse	res	roam	timeout	share	transactions	Show License Usage
bimproj	1	2015	permanent	10	10	1	0	1	0	User&Host		usage...
bimmgr	2	2015	permanent	10	10	0	0	0	0	User&Host	0	usage...
superdoor	3	2015	permanent	10	10	0	0	0	0	User&Host	0	usage...

When clicking on the "usage" button, the next screen looks like this:

Product	Pool	Ver	user	host	PID	req ver	# lic	# res	Out time	In (hold) time
bimproj	1	2015	david	ctcltmn	13996	2015	1	0	07/01 09:17	07/12 00:00

In this example, the user has borrowed a license until midnight on July 12th. That is to say, the license is borrowed **through the end of the day on July 11th**. As soon as the clock ticks over to July 12th, the server will report the license as having been returned to the server and the workstation will no longer use the borrowed license and must contact the server again to get a regular floating license the next time the software is to be used.

Viewing License Usage History

Although turned off by default in the RLM licensing engine, the logging of detailed license usage over time is available in the engine. Please see this article for more details:

http://www.reprisesoftware.com/blog/2011/03/how-to-produce-rlm-report-logs/

Using the Options File to do things like Reserve Licenses

The licensing engine allows you to do things like reserve licenses for one or more users. This allows scenarios where 5 licenses are purchased but 1 is kept in reserve for a specific user, who is always allowed to get one license. However, this reduces to 4 the number of licenses that are available for everyone else.

Other rules can be set up to do things like *prevent* one or more specific users from being able to get a license.

A default options file (ctc_inc.opt) is provided when the server software is installed. It can be edited manually using a text editor such as Notepad, or it can be edited from within the web user interface.

IMPORTANT: Whenever the options file is edited, the license information for the "ctc_inc" ISV must be re-read for it to take effect. An example of this is shown below.

IMPORTANT: For full documentation on all of the options file settings available, please visit: http://www.reprisesoftware.com/RLM_Enduser.html and click on "The ISV Options File" in the table of contents.

To edit the options file in the web user interface, click on the "Status" button on the left, and then click on the "ctc_inc" button in the OPTIONS column:

This is what the editor looks like with the default Options file:

Although the RESERVE lines are commented out by default, this example shows how to reserve a license for 1 user for the CTC BIM Project Suite product, and for two users for the CTC BIM Manager Suite product.

If these two items are uncommented (the "#" is removed from the front of their lines), then the "Update Options" button is clicked, and then back on the general status screen **the ctc_inc ISV license is re-read**:

When clicking on the "Server Status" button:

The status now shows:

Product	Pool	Ver	Expires	count	soft lim	inuse	res	imeout	share	transactions	Show License Usage
bimproj	1	2015	permanent	9	10	0	1	0	User&Host	18	usage...
bimmgr	2	2015	permanent	8	10	0	2	0	User&Host	0	usage...
superdoor	3	2015	permanent	10	10	0	0	0	User&Host	0	usage...

The “count” column shows the number of licenses available to float, and the “res” column shows the number of licenses that are reserved for specific users.

Civil 3D Workstation Installation

To perform an installation of a Civil Express Tools suite, first download the setup program zip file from https://www.ctcsoftware.com/**.** Once the download is complete, unzip the files.

Standard Installation Using the Setup Program

A standard installation simply involves running the interactive setup program, accepting all of the default values, and then starting up Civil 3D.

Double-click the installation "msi" file to begin the installation process. In this example we will install CTC CIM Project Suite, but the process is the same for all suites. First, you should see a screen that looks something like this:

This is a standard welcome screen. Click the "Next" button to proceed.

The next screen should look something like this:

This is the license agreement screen. In order to be able to move forward with the installation, you must read the software license agreement and then click the "I accept the terms in the license agreement" option. You will then be allowed to click the "Next" button, which needs to be done to proceed with the installation.

The next screen should look something like this:

This is the standard confirmation screen. It provides one last chance to cancel this process without anything being installed. Click the "Next" button to proceed. The screen during the actual installation should look like this:

Note: If a user is logged in who is not a system administrator and attempts an installation, the installer may prompt them for administrative credentials to allow the installation to continue.

A file called CTCInstallLog.txt can be found in the installation folder once the setup completes. Checking that log can be useful when verifying something like a silent installation (discussed below).

When the installation is complete, the final screen should look like this:

Click the “Finish” button to complete the installation process.

If the checkbox option is selected, this document will be displayed.

Custom Installation (Using Command-Line Parameters)

Silent Installation

VERY IMPORTANT: Just as when running the setup interactively, when running it silently it must be run with elevated privileges ("as Administrator").

The msi installers for the Civil 3D workstations support performing silent installations. A silent installation does not show any dialogs on the screen during the install.

This is accomplished by using the command-line parameter: /q

So an example command to install CIM Project Suite for Civil 3D 2023 (and older) silently would be:

msiexec /i CTCCIMProjectSuite2023.msi /q

IMPORTANT: By choosing to do a silent installation, you are automatically agreeing to the software license agreement.

Automatically Activating a Standalone Locked License

If you are installing a licensed suite that locks the license to the computer on which it is being installed, you may automatically activate that license with setup command-line parameters.

IMPORTANT: If your organization has chosen to use standalone (node-locked) licensing, **YOU** are responsible for tracking and managing on which computers the software has been registered. Uninstalling the software from a computer **DOES NOT** unregister a license that has been activated on that computer. Licenses must be unregistered from within the software using the license management tools provided, e.g. via the Product and License Information screen.

If the license isn't activated during the installation process this way, the first user on the computer who launches one of the suite tools which requires a license will be prompted to enter the licensing information needed.

The following command-line parameters are supported for automatically activating a node-locked license:

name	The "registered user" name to which the software is licensed. Typically this is the company name.
sn	The serial number for this license

These values are provided in an email message when the software is purchased.

Here is an example command line for silently installing CIM Project Suite 2023 and automatically activating it:

msiexec /i CTCCIMProjectSuite2023.msi /q name="A & B Consulting" sn=DEAE5FFC8C96A909D2B8

IMPORTANT:

- Node-locked license activation command-line parameters should only be provided on the first install of the suite on a computer. When updating the software to a newer suite version, the node-locked license will remain unchanged, so **do not provide activation values when installing updates.**
- Both of the values for these parameters are case-sensitive, and must **exactly** match the values provided by CTC
- The *name* parameter value must always be enclosed in double quotes
- There should be no spaces around the equals (=) symbols
- Setting these values will automatically configure the suite for "Standalone – Node Locked" licensing

- Successfully activating a node-locked license requires an Internet connection
- The workstation must be able to connect with the server at **http://www.ctcsoftware.com**
- Activation may not succeed if something like a proxy server is between the workstation and the Internet

The results of a node-locked activation can be found in the "CTCInstallLog.txt" file, which will be located in the installation folder.

For example, a successful activation looks like this:

01/30/2022 06:39:34.063 PM Automatic license activation was successful (or previously activated).

Whereas an unsuccessful activation might look like this:

01/30/2022 06:32:25.354 PM Automatic license activation returned an exit code of: -532459699

IMPORTANT: Uninstalling the software **DOES NOT** "unregister" the license and return it to your CTC license pool. Unregistering a license can only be done manually in the software using the Product and License Information screen. The button to unregister the license looks like this:

Automatically Referencing a Network Floating License Server

If you are installing a licensed suite that will be using network floating licenses, you may pre-configure the suite to reference your license server(s) with setup command-line parameters.

The following command-line parameter is supported for automatically referencing a floating license server:

floatinglicserver The license server name

Here is an example command line for silently installing CIM Project Suite 2023 and instructing it to use the license server computer with the name MyServer:

msiexec /i CTCCIMProjectSuite2023.msi /q floatinglicserver=MyServer

Selecting Cloud Shared Licensing

If you want to pre-configure the software to use cloud shared licensing, the following command-line parameter can be used:

cloudsharedlicensing=true

For example:

msiexec /i CTCCIMProjectSuite2023Setup.msi /q cloudsharedlicensing=true

Detecting the Version of the Suite Installed

A text file called "SuiteVersion.txt" with only the Suite version (e.g. "23.0.0") in it can be found in the installation folder. For example:

C:\ProgramData\Autodesk\ApplicationPlugins\CTCCIMProjectSuite2023.bundle\Contents\SuiteVersion.txt

For example, the contents of this file may be useful for checking in a script to see whether an update is appropriate to deploy, or whether it’s already been installed on this computer.

The installed suite version can also be seen in the "About" dialog for any of the tools, which simply gets the value to display from this file.

Digitally Signed Code (Autodesk 2017 or Later Products)

As of the 2017 versions of Autodesk products, Autodesk is strongly encouraging add-in developers to have their code be digitally signed. Digitally signing add-ins means the code being run was verified as published by the stated author, and that the code has not been tampered with since it was published.

In other words, it sets up a level of trust that the code running is exactly as published, and that the identity of the publisher has been verified.

If add-ins are not digitally signed, when the Autodesk 2017 (or later) product starts up, the end user is prompted as to whether or not they want to allow the add-in from an unknown publisher to be loaded.

The user can tell it to always load this add-in, but they would have to do that for each unsigned add-in they install the first time they launch the Autodesk product after the add-in has been installed.

For example, a dialog looks like this:

IMPORTANT: All CTC Express Tools add-ins ARE digitally signed as of the 2017 releases. The 2017 and later MSI setup programs from CTC will automatically install the CTC digital certificate file into the Windows Trusted Publishers certificates section for the computer.

So when a CTC MSI setup is used to install the add-ins, *all users on that computer will never be prompted to allow the add-ins to load.* The Autodesk product (e.g. Revit, Civil 3D) will simply start up as normal, with the CTC add-ins available for immediate use.

However, if the CTC add-ins are deployed using another method, such as if embedded in an Autodesk deployment, the CTC certificate will NOT automatically get installed into Windows, and the user will be prompted to allow the CTC add-in to load the first time they launch the Autodesk product.

The CTC digital certificate file can be found in the suite's installed "Contents" folder for the highest version of the Autodesk product supported. For example, for CIM Project Suite 2023, the CTC digital certificate file can be found in this location:

C:\ProgramData\Autodesk\ApplicationPlugins\CTCCIMProjectSuite2023.bundle\Contents\CTCCodeSigningCertificate.cer

This file can be added to the Trusted Publisher's store in any normal manner, for example via Group Policy.

CTC Certificate Installer Utility

CTC also provides a small utility to add the CTC Certificate to Windows, which can be used for non-MSI deployments. This program is called **CTCCertificateInstaller.exe** and, like the certificate file itself, is located in the suite's installed "Contents" folder for the highest version of the Autodesk product supported. For example, for CIM Project Suite 2023 the CTC Certificate Installer program can be found in this location:

C:\ProgramData\Autodesk\ApplicationPlugins\CTCCIMProjectSuite2023.bundle\Contents\CTCCertificateInstaller.exe

IMPORTANT: For this program to work, the CTCCodeSigningCertificate.cer certificate file must be in the same folder as this program.

In order for this program to install the certificate such that it will work for all users who login to the computer, it must be run with the highest privileges (e.g. "As Administrator"). If it is not run "As Administrator" it will only install the certificate for the currently logged in user.

When run as a regular user, a window appears when complete showing this:

In this case, when the current user starts up the Autodesk product(s), no messages from Autodesk will interrupt the startup process for any CTC products. However, if another user logs into this machine, they will see the dialog asking what to do with the signed add-in that was found, as seen above.

When run "As Administrator", a window appears when complete showing this:

In this case, regardless of who logs into the computer, the Autodesk product for the add-ins will open smoothly, without asking the user what to do.

The CTCCertificateInstaller.exe program supports the following command-line parameters:

/Q – quiet. In quiet mode, no dialog window is ever displayed.

/L – Log file location. If a log file is specified, the results seen in the example dialogs above will be written to a new text file specified, overwriting any previous file that may have been there previously.

Example:

CTCCertificateInstaller.exe /Q /L “C:\My Folder\My Cert Installer Log File.txt”

(The /Q and /L may be lowercase)

Post-Installation Configuration

Once installed, you can change how a Suite installation behaves.

Silently Activating a Node-Locked License After Installation

A tool is installed to allow node-lock license activation to be done using a command-line approach, allowing it to be done silently. This tool is called **Licutil.exe**, located in the folder **%ProgramData%\CTC\CommonCivil3D** and it supports the following command-line parameters:

-name	The name to which the software is licensed. Typically this is the company name.
-sn	The serial number for this license
-pid	The numeric Program ID for this suite version

The Name and Serial Number values are typically provided to you in an email message when you purchase the software. You will need to contact CTC technical support to get the Program ID number for the specific version of the suite.

Example:

Licutil.exe -pid=100 -name="A & B Consulting" -sn=DEAE5FFC8C96A909D2B8

IMPORTANT:

- This program must be executed from its folder for it to find necessary dependencies
- The values for the *name* and *sn* parameters are case-sensitive and must exactly match the values provided by CTC
- The *name* parameter value must always be enclosed in double quotes
- There should be no spaces around the equals (=) symbols
- **The 'pid' value must come from CTC technical support**
- Successfully activating a node-locked license requires an Internet connection
- The workstation must be able to connect with the server at **http://www.ctcsoftware.com**
- Activation may not succeed if something like a proxy server is between the workstation and the Internet
- There is no log created to report success or failure when using this approach

Controlling Licensing Settings

On the workstation, the suites store license configuration information in simple text files. These are located in this folder:

%ProgramData%\CTC\Licensing

On most recent operating systems, this is the folder: **C:\ProgramData\CTC\Licensing**

These files have names such as:

CTC CIM Project Suite License Settings.txt

Here is an example of what one of these files looks like:

```
# Instructions:
#
#  - Any line that begins with a pound sign (#) is a comment line and will be ignored.
#
#  - It may be worth considering permissioning this file so regular users cannot edit it.
#
#  - Values must be of the format:  Name=Value    (with no spaces around the equals sign)
#
#  - This is the master list of the different license types that may be available for this suite:
#
# ------------------------------------------
# Trial
# NodeLocked
# NetworkFloating
# CloudShared
# ------------------------------------------
#
# The LicenseServerPaths value is used for network floating licenses.  It can specify one or more
# license servers to use for acquiring a network floating license.
#
# The default TCP port is 5053.

LicenseType=NetworkFloating
LicenseServerPaths=MyLicenseServerName
```

Note: Regular users without special privileges can typically change files in this folder. For a truly secure environment, it may be desirable to change the permissions on this file so regular users cannot edit it and save those changes themselves.

Civil 3D Workstation Uninstallation

Using Apps & features

This is the preferred method for removing the suites from the workstations.

Select: Apps

Search for: ctc

Select the product and click the Uninstall button.

On the confirmation dialog that will appear, click the “Uninstall” button to begin the uninstallation process.

Using Control Panel

For older operating systems, this is typically found under “Add/Remove Programs.” For newer operating systems, it is usually listed under “Uninstall a program” –

Once on the “Uninstall or change a program” screen, click on the CTC add-in name that should be removed, then click on the “Uninstall” button on the toolbar:

You will be asked to confirm that you want to uninstall the product. Click the “Yes” button:

Once the uninstaller completes, the program will be uninstalled and it will be removed from the list of programs seen above.

Silent Uninstallation Using a Command

IMPORTANT: Just as when running the setup interactively, when running it silently it must be run with elevated privileges ("as Administrator").

You can give a command like the following to uninstall the software from a workstation:

msiexec /x "CTCCIMProjectSuite2023.msi" /q

This could be executed from a script or possibly pushed out via a group policy.

IMPORTANT: The original msi file used to install the software must be in the current working directory when this command is executed.