

**GENIUS TOOLS**<sup>®</sup> 

# Startup TOOLS

Release 7.0.1.0

## Release information

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# 1 Important information

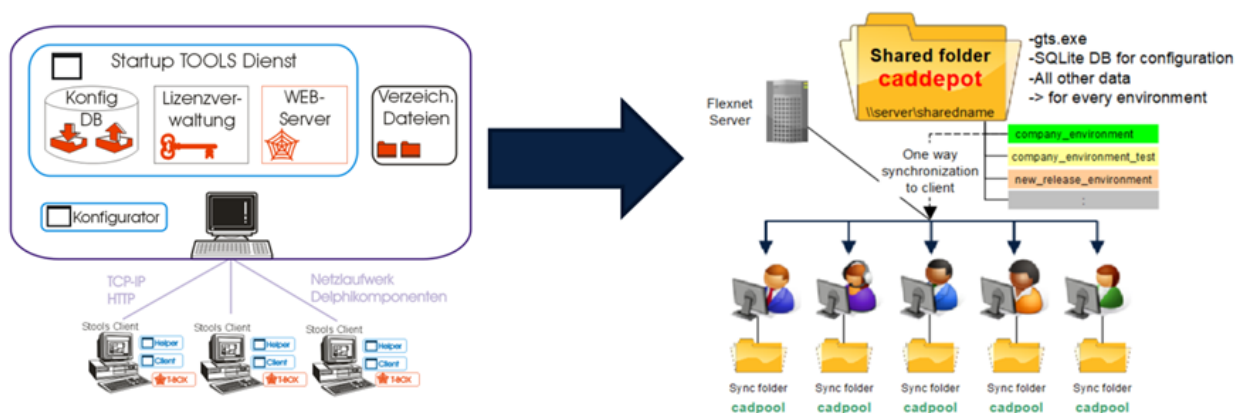
**Warning:** This document also contains separate release information sections on GENIUS TOOLS Starter and GENIUS TOOLS for Creo. Please take care to read the *Important information* sections for both products.

When updating the Startup TOOLS from an older version than Release 6.0, a migration process is necessary. There is a fundamental change in the software architecture. As of Release 6.0, the Startup TOOLS include the product GENIUS TOOLS Starter as configuration solution. The conversion results in additional effort in the update planning and execution.

**Please note:** Please refer to the document *Startup TOOLS Migration to version 6.pdf* for information on the impact of the new version.

The most important changes in philosophy are:

- Conversion from network drive to synchronization
- License conversion to standard technology FLEXNET



*New architecture without network drive: Everything is synchronized locally.*

## Advantages of the new Startup TOOLS 6.0

- Any number of Startup TOOLS releases and versions can be used in parallel in different operating environments.
- Operating environments can also be created as production, test, development or other environments.
- All relevant data is stored locally and is synchronized with the server. This has the following advantages:
  - Fastest possible Creo Parametric start.

- Business units with slow network connection can be included without parallel installations (e. g. at distributed locations).
- Convenient offline operation.
- Standard licensing via FLEXNET, licenses can be borrowed.
- Simple message system from administrator to user.
- Additional PTC desktop applications can be launched.

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**Tip:** The migration / update process can be performed in parallel. This means that the previous Startup TOOLS installation can still be used!

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## Updating to Startup TOOLS 7.0

- The set up requires .NET Framework 4.8.
- There is a new service for synchronizing data from the caddepot directory (of the administration computer) to the cadpool directory (of the user computer). It allows for faster data synchronization. If you plan to use the new service you need to install it on the computer with the caddepot.

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**Warning:** Use GENIUS TOOLS Environment Administrator for updating software in the operating environment but note that you have to update data in the configuration and data directories manually. When transferring files from the installdpot to the operating environment check for each file whether it affects the operating environment. Check specifically any changes in the resource folder `.\configuration\gt_resource_folder` when updating GENIUS TOOLS for Creo.

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## Functions depending on license type

Starting with Startup TOOLS 6.0.1, the product functionality depends on the type of license you are using. Find the list of functions that are limited to subscription licenses in the chapters "Important Information " in GENIUS TOOLS Starter and GENIUS TOOLS for Creo respectively.

## 2 Hardware and software requirements

GENIUS TOOLS Starter works on all computers that fulfill the requirements for Creo 4.0 to Creo 7.0.

	<b>GENIUS TOOLS Starter</b>	
<b>Version</b>	<b>6.0</b>	<b>7.0</b>
Operating system	64-bit only Windows 10 / 8.1 / 7	
.NET Framework	4.6.2 Delivered with Windows 10 - 1607 (+8.1; +7) (May have to be installed separately on WIN7/8.1)	4.8 Delivered with Windows 10 - 1903 (+8.1; +7) (May have to be installed separately on WIN7/8.1)
Minimum screen resolution	X=1280 Y=1024	
Flexnet	INNEO Licence Manager 1.0 M050 (Flexnet) and later	
Caddepot directory (Central storage location with UNC access)	circa 1 to 5 GB for each operating environment	
Cadpool directory (Storage location on the application computer)	Sufficient storage space to set up at least one operating environment	
Data synchronization using GENIUS TOOLS Starter Service	-	Windows computer where the Caddepot directory is located and where a service can be installed.
Operating satellites using GENIUS TOOLS Starter Service		Communication port for REST API on main server. Standard: 8092 Satellites need the same

	GENIUS TOOLS Starter	
		storage space as the main server.

## Supported desktop applications

### 1. Programs starting with project configuration

- Creo 2.0-7.0
  - Parametric
  - Simulate
  - Direct
  - Layout
  - Options Modeler

### 2. If installed, these programs will start automatically (autostart):

- Creo Illustrate
- Creo Schematics
- Mathcad Prime
- Creo Elements/Direct
- KeyShot
- Geomagic Design X

## Caddepot

Read access: All users need read access to the Caddepot for synchronization to work.

Write access: For some functions users need write access to individual directories of an operating environment in the Caddepot.

- GENIUS TOOLS Starter App feedback on the last synchronization  
... \serveronly\SyncResults\
- Central user configuration files  
... \userdata
- Common databases for GENIUS TOOLS for Creo name generation (has to be configured manually)  
... \serveronly\gt\_numgen

Warning: This functionality cannot be used offline.

## Cadpool

Read / write access: The user needs full write access to the local Cadpool for synchronization to work.

## Client computers

Write access: Write access needs to be granted to the following Creo installation directories

- if more than the standard key (e.g. *parametric.psf*) or the synchronization of the start key is wanted: to the directory that contains Creo startkeys,
- if the files *config.sup*, *config.pro*, *creo\_parametric\_admin\_customization.ui* need to be adapted: to the directory *..\CommonFiles\text*

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**Please note:** If Creo is installed into the Windows default program directory, you should not make any changes with GENIUS TOOLS Starter App. Install Creo into another directory, for example *C:\ptc*.

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## 3 GENIUS TOOLS Starter

GENIUS TOOLS Starter is the new configuration component of the Startup TOOLS for version 6.0 and later.

GENIUS TOOLS Starter is a separate software that can start local applications such as Creo Parametric using a central configuration, as well as synchronize data to the local computer.

You do not have to install GENIUS TOOLS Starter on the application computers. The clients only have to provide storage for the synchronized copies.

The local GENIUS TOOLS Starter App will update automatically from the central Caddepot directory.

The combination of a local application with a centrally-managed configuration is called a project. Whether a project is visible to a user is determined by the client setup as well as user permissions in GENIUS TOOLS Starter.

### Example project contents

- Creo release
- Startkey
- *config.pro*
- \*.iu
- Batch files
- Additional applications
- Files
- Drawing frames, symbols, UDF

All projects and data are managed within a operating environment. A operating environment corresponds to an individual Startup TOOLS installation from a prior version. You can now use any number of operating environments in parallel, for example to have a test and production environment.

### GENIUS TOOLS Starter package

- GENIUS TOOLS Starter App. The GENIUS TOOLS Starter App is the interface for the user, who can start the projects configured by the administrator.
- GENIUS TOOLS Project Configurator. GENIUS TOOLS Project Configurator is the tool for the administrator for configuring projects that the user can then start using the GENIUS TOOLS Starter App.

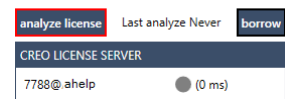
- GENIUS TOOLS Environment Administrator. GENIUS TOOLS Environment Administrator is the tool for the administrator to manage operating environments.

## 3.1 Important information

### GENIUS TOOLS Starter App: Query on the availability of licenses and license servers has changed (new feature in version 7.0.1.0)

The license analysis no longer takes place automatically when GENIUS TOOLS Starter App is opened or updated. Only after clicking the *Analyze License* button in the Licenses tab will up-to-date information on the accessibility of Creo license servers be displayed together with information on all available licenses and extensions for the selected project. (See Free column). Also, the time passed since the last analysis is shown.

Info Licenses Config



The Analyze License function can be disabled by the administrator. Read more in [New features in version 7.0.1.0](#).<sup>14</sup>

### Different functionality depending on license type

Starting with version 6.0.1, perpetual licenses and subscription licenses come with different product functionality. The following functions will only be available with a subscription license.

The following functions are available with a subscription license for GENIUS TOOLS Starter.

Release	Function / module	Description
6.0.1.0	Dynamic access to Windows user management with LDAP/Active Directory (lightweight directory access protocol)	Creates access to Windows user management and enables live queries so that user assignment is always up-to-date. Users thus do not have to be created and maintained manually. ⇒ Less maintenance work
6.0.1.0	Configuring units	Adds a group element ("unit") that can easily reflect complex configurations such as for company sites and units. ⇒ Easier configuration for companies with many sites

		and/ or units ⇒ Allows for a reduction of projects
6.0.1.0	Access to directory "users"	Adds a group element ("users") that can easily reflect complex configurations for many users. ⇒ Less maintenance work
7.0.0.0	Selecting Creo startkey when starting a project	Provides a project with a choice from several Creo startkeys (start command that opens Creo with a defined license package). Users can start a project with a default startkey or select another one when opening a project in GENIUS TOOLS Starter App. ⇒ Allows the reduction of projects
7.0.0.0	Apps projects	Creates projects that run on any other program. Assigning a project directory and batch files is possible. ⇒ GENIUS TOOLS Starter App can be made the central access point for users.
7.0.1.0	Operating satellites in GENIUS TOOLS Starter Service	Enables the connection of satellite servers to a main server and their automatic synchronization. ⇒ Faster connection of user computers to a synchronized satellite server ⇒ Reducing queries from network to main server

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**Warning:** If you are using mixed licenses (perpetual and subscription) and configure functionality that is limited to subscription licenses, the projects in GENIUS TOOLS Starter App will no longer start if there is no subscription license available.

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## Environment variables for use in mapkeys (new feature in version 6.0.2.0)

Starting with version 6.0.2.0 variables in configuration files are resolved. This means mapkeys that use environment variables with path specifications do not function anymore.

We therefore introduced new variants of environment variables to which escape characters are added. This prevents the variables from being erroneously resolved in

mapkeys and so their use can be continued in mapkeys and elsewhere. The new variables have the suffix *\_ESCAPED*:

- GTS\_DATA\_ESCAPED
- GTS\_ROOT\_DIR\_ESCAPED
- GTS\_SERVER\_DIR\_ESCAPED
- GTS\_SERVERONLY\_DIR\_ESCAPED
- GTS\_PLOT\_CONFIG\_DIR\_ESCAPED
- GTS\_TRAIL\_DIR\_ESCAPED
- GTS\_USER\_CONFIG\_DIR\_ESCAPED
- GTS\_UNIT\_DIR\_ESCAPED

## Changes to the configuration concept starting with version 6.0.1.0

In Version 6.0.1.0 the way configuration files determine project settings has changed.

### Configuration changes for all license types

All files that were previously used from the `..\configuration\projects` directory now have to be placed in the `..\configuration\standard` directory. This affects batch files (*start/stop\*.bat*), Creo configuration files (*config\_\*.pro/sup; \*.ui*), and GENIUS TOOLS for Creo configuration files (*\*.cfg*).

All files under `..\configuration\projects` will be copied to `..\configuration\standard` when you update from version 6.0.0 or migrate from a 20xx version. The entry in the *gt\_main.cfg* under `..\apps\gtfc\conf` will be set to *gt\_conf\_unit=%GTS\_ROOT\_DIR%\configuration\standard*.

**Please note:** Remember to check the *gt\_main.cfg* after the update if you are not using a default installation.

**Warning:** Check your batch files for references to the directory `..\configuration\projects` and change them to `..\configuration\standard`.

The directory structure of an operating environment will contain the following new directories.

Directory	Comment
<code>..\configuration\standard</code>	Purpose and content match the previous <code>..\configuration\projects</code> directory.
<code>..\configuration\units</code>	Can contain a subdirectory for each unit that houses additional batch and

configuration files.

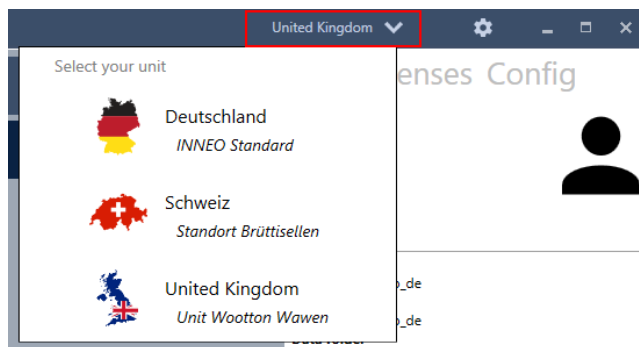
..\configuration\users

Can contain a subdirectory for each user (the directory name is the Windows user name) that houses additional batch and configuration files.

### Configuration using units for subscription licenses

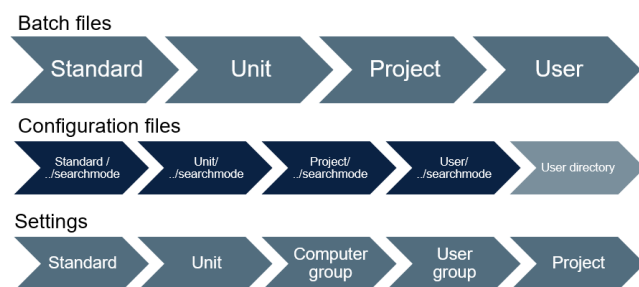
If you are using a subscription license, you can configure two additional layers for batch files and Creo configuration files: Units and Users. In larger installations, this makes it easier to configure different settings for different locations or business units.

A unit can be used to represent different concepts such as geographical or team assignment. If a user has access to multiple units, they can select their unit in the GENIUS TOOLS Starter App.



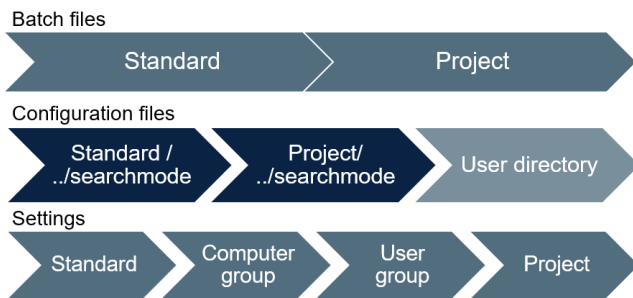
*Unit selection*

The following figure shows a schematic representation of the new configuration concept.



*Configuration concept from 6.0.1*

For reference, this is a schematic representation of the previous concept.



*Configuration concept 6.0.0*

## 3.2 New features in version 7.0.1.0

### GENIUS TOOLS Starter Service: Working with satellites


With GENIUS TOOLS Starter 7.0.1.0 the data synchronization of GENIUS TOOLS Starter Service can be operated with satellites. The status of one or more working environments of a central main server is mirrored on a satellite.

Locations that have a slow connection to the main server can access a more accessible satellite instead. This significantly reduces the time needed for data synchronization.

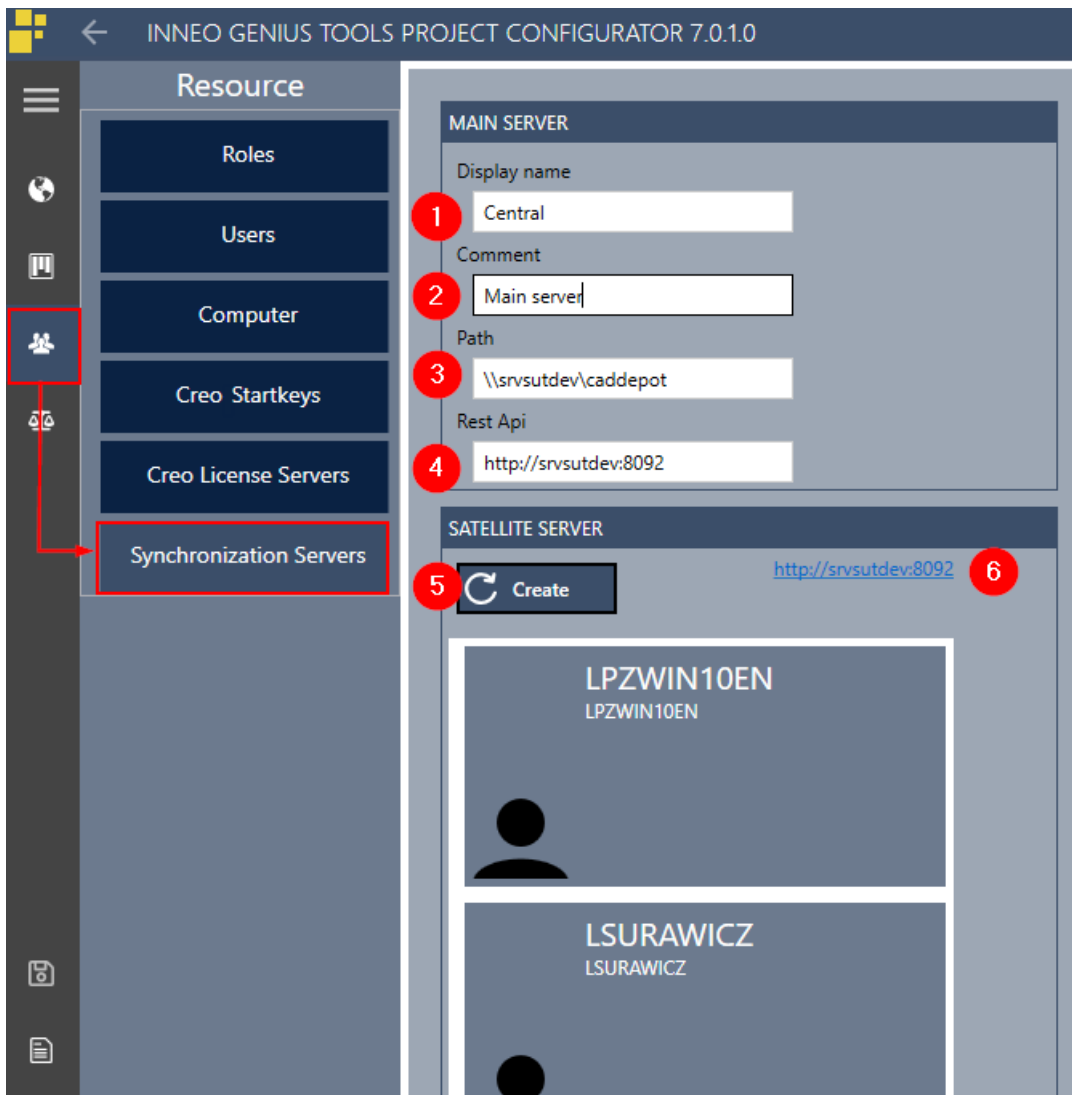
GENIUS TOOLS Starter App automatically determines which satellite or main server responds fastest based on the ping runtime. This is then used for synchronization.

Read the document *GENIUS TOOLS Starter Installation.pdf* > chapter GENIUS TOOLS Starter Service for information on how to set up satellites.

### GENIUS TOOLS Project Configurator: New resource synchronization servers


In the *Resources* page  you can add synchronization servers that have been installed by using GENIUS TOOL Starter Service. (See above paragraph.)

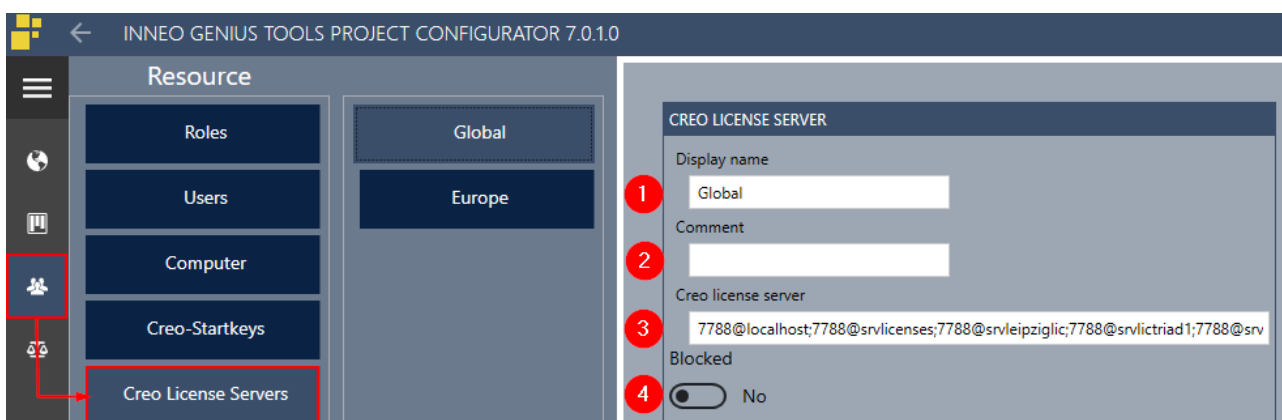
Fields 1-3 (Display, Comment, Path) show the information entered in the GENIUS TOOLS Environment Administrator. The Web URL (4) is taken from the configuration file you created for GENIUS TOOLS Starter Service. The action *Create* (5) connects GENIUS TOOLS Starter to GENIUS TOOLS Starter Service and displays all current satellites.



Linking satellites to GENIUS TOOLS Starter

## GENIUS TOOLS Project Configurator: New resource Creo license servers

In the *Resources* page  you can group one or several license servers as one resource which you can then assign to a project, unit or group.

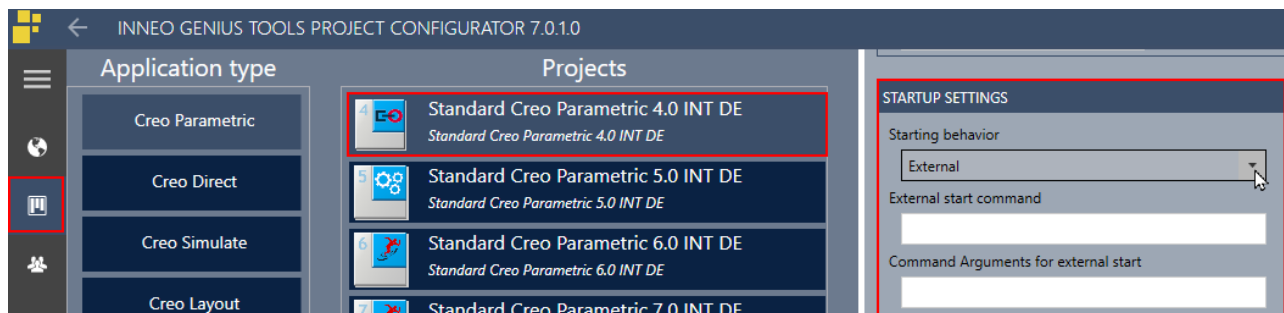


Managing Creo license servers in Resources

## GENIUS TOOLS Project Configurator: Open projects with external application

GENIUS TOOLS Starter offers the possibility to open a Creo project with a user-defined command. You can use this option, for example, to link Creo projects with SAP (SAP Engineering Control Center interface to PTC Creo).

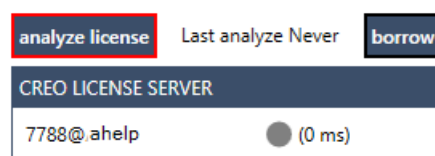
To use other applications that start a Creo project, change the start behavior of the project from Creo to External. (*GENIUS TOOLS Project Configurator > Projects > Creo tab > Startup behavior*)



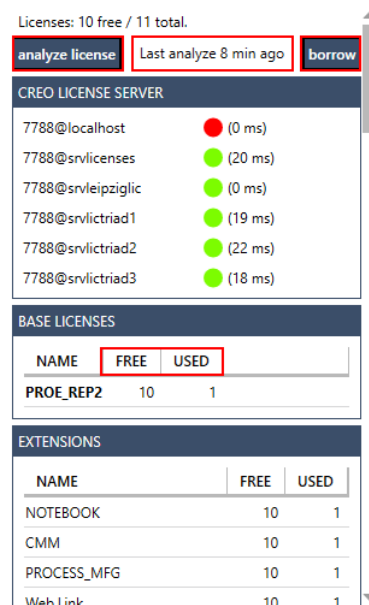
## GENIUS TOOLS Starter App: Query on the availability of licenses and license servers has changed

The license analysis no longer takes place automatically when the GENIUS TOOLS Starter App is opened or updated. Only by clicking the *Analyze License* button will information on the accessibility of Creo license servers be listed as well as all available licenses and extensions for the selected project. (See Free column). Also, the time passed since the last analysis is shown.

### Info Licenses Config



### Info Licenses Config



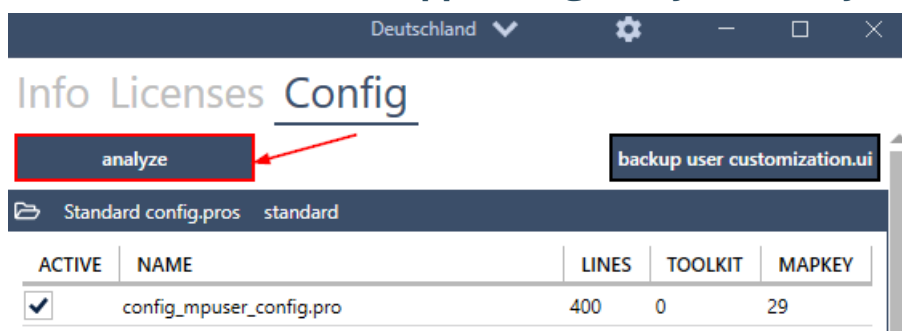


## GENIUS TOOLS Starter App: Disabling Analyze License function

The *Analyze License* function can be disabled by the administrator. This will also delete details of the required license servers in the Licenses tab.

The display of Creo license server can be hidden together with the *Analyze License* function (1) in GENIUS TOOLS Project Configurator under *Access Rights > Function Access > Select: Access Group > Section: Function Access > Can see licenses*. Make sure that the option *Show Licenses in Configuration > Creo Settings > Tab: Application > Section: Licenses* is also set to Yes.

## GENIUS TOOLS Starter App Config Analyzer: analyze configuration files

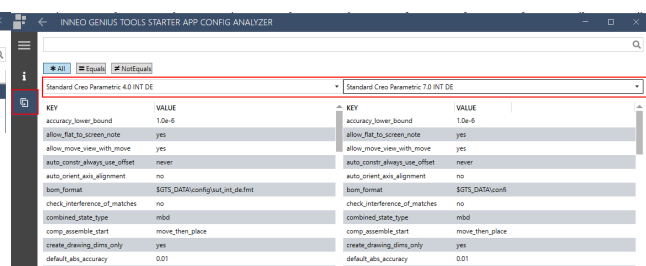


On the left of the Config tab the button analyze (1) opens GENIUS TOOLS Starter App Config Analyzer. In the *Project Information* dialog this tool lists all configuration and batch files that are need for a project as well as their locations. You can click on a file and edit it directly in the editor of the analyzer tool.

The dialog *Compare Projects* allows you to directly compare the configuration settings of two projects.



*Project Information dialog*



*Compare Projects dialog*

## 4 GENIUS TOOLS for Creo

The following section contains information on news in GENIUS TOOLS for Creo.

### 4.1 Important information

#### License-dependent functions

Starting with GENIUS TOOLS for Creo 6.0.1, the product functionality depends on the type of license you are using.

The following functions are limited to subscription licenses for either GENIUS TOOLS Library or GENIUS TOOLS Parameter.

Release	Function / module	Description
6.0.1.0	CS Assembler	Automatically adds a number of components to an assembly by deploying a coordinate system (CS). ⇒ Efficient construction of assemblies
7.0.0.0	Load Save Converter	Converts Creo objects from previous Creo-, Wildfire- or Pro/ENGINEER versions to the currently used version. ⇒ Using models from older Creo versions
7.0.0.0	Inspect Revision	Stores all versions of inspection symbols on a drawing. Easily creates an overview of a revision history. (DIN 6770) ⇒ Revision history of inspection symbols
7.0.0.0	Open base model	Opens geometric base models that are reference sources for features with one click in the context menu of a feature. ⇒ Efficient construction of models
7.0.0.0	Select surfaces by color	Surfaces of the same color can be selected with one click and be colored or otherwise modified thereafter. ⇒ Efficient construction of models

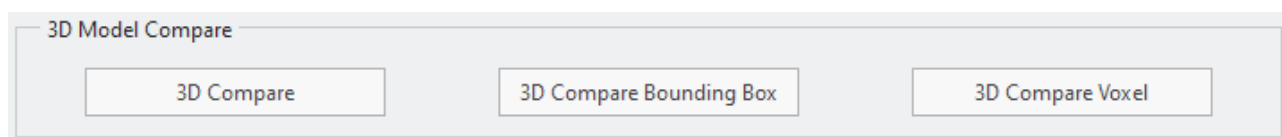
7.0.0.0	Extend relations	<p>Adds functions to model relations that define parameters for models and – in Creo 7.0 – also for bodies.</p> <p>GT_UpdateBodyParamMaterial(): Body parameter retrieves material parameter</p> <p>GT_CalculateBodyBoundingBox(): Body parameter retrieves bounding box values</p> <p>GT_CalculateBoundingBox(): Model parameter retrieves bounding box values</p> <p>⇒ Efficient construction of models</p>
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## 4.2 New features in version 7.0.1.0

### 4.2.1 GENIUS TOOLS Library

#### 3D Search

If the selected library contains 3D-indexed objects, the section *3D Model Compare* for searching for 3D-like objects appears in the dialog box of the Advanced Search.



*Section "3D Model Comparison" in the Advanced Search dialog*


The search buttons correspond to the search operators *mdl3d*, *mdl3d\_bb* or *mdl3d\_vo* which you can alternatively enter directly in the search field.

Objects are indexed in GENIUS TOOLS Library Editor in the *Batch Mode* dialog.

### 4.2.2 GENIUS TOOLS Utilities

#### Select surfaces by color: Select quilts

The function *Select Surfaces by Color* now also allows you to select colored quilts. Selected quilts are highlighted in the model and can thus easily be recolored or be otherwise

modified. The button  for GENIUS TOOLS Select Surfaces by Color is available in part mode in the segment UTILITIES in GENIUS TOOLS ribbon menu.

**Please note:** GENIUS TOOLS Select Surfaces by Color is only available with subscription licenses for GENIUS TOOLS for Creo.

## CS Assembler: Component coordinate system can be defined in XML file

A target coordinate system, which is needed to add parts to an assembly, can in addition to the component parameters *CLASSIFICATION* and *SUBTYPE* now also be identified by an entry in the XML file that contains the assembling instructions. The name of the coordinate systems has to be given to the attribute *ics\_name* in the XML file.

This provides several possibilities to find a coordinate system. The combinations of attributes which are allowed are:

`classification` and `subtype`

`classification` and `ics_name`

Do not simultaneously use `classification`, `subtype` and `ics_name`.

## Extend relations


There are two new functions which extend relations.

### 3. GT\_DoubleToString

Function rounds parameter values according to IEEE 754 and converts the received numbers into strings.

### 4. GT\_Round

Function rounds parameter values commercially and converts the received numbers into strings.

The functions are listed in the *Insert Function* dialog which opens with the functions button  in Creo's menu ribbon *Tools > Relation* in part and assembly mode.

## 4.2.3 Java Script Editor

### New function: PostLoadFromFile

The function `PostLoadFromFile` will be automatically executed after loading a value table (CSV/XML).

```
function PostLoadFromFile() {
...
}
```

It is executed after the function `PostLoad`, if `PostLoad` defined.

## 4.3 Configuration options

The following configuration options have been added, changed or deleted since version 6.0.2.

### 4.3.1 New configuration options (7.0.1.0)

#### GENIUS TOOLS Inspect

**gti\_excel\_export\_file**

Defines the default name of an exported report file. You can use the GENIUS TOOLS for Creo variables. (For example: ""=%PART\_NO%\_%CAD\_REVISION%\_%CAD\_CREATED\_ON%"")

**gti\_excel\_export\_path**

Defines the default path for saving reports.

#### GENIUS TOOLS Inspect Revision

**gt\_start\_inspect\_revision**

Defines whether GENIUS TOOLS Inspect Revision can be started by users (1) or not (0).  
Standard: 1

**gti\_revision\_excel\_export\_file**

Defines the default name of an exported report file. You can use the GENIUS TOOLS for Creo variables. (For example: ""=%PART\_NO%\_%CAD\_REVISION%\_%CAD\_CREATED\_ON%"")

**gti\_revision\_excel\_export\_path**

Defines the default path for saving reports.

#### GENIUS TOOLS Library

**gtl\_editor\_use\_black\_on\_white\_for\_screenshots**

Defines, whether preview images in the batch mode will be created with the system colors "Black on White" (1) – i. e. the images will have a white background – or with the current color settings (0).

## 4.4 Copyright

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