



# Tekla Structures 2016

## Multi-user mode

April 2016

©2016 Trimble Solutions Corporation



# Contents

<b>1</b>	<b>Multi-user mode in Tekla Structures .....</b>	<b>5</b>
<b>2</b>	<b>Overview of the multi-user system .....</b>	<b>6</b>
2.1	Tekla Structures multi-user server .....	6
<b>3</b>	<b>When to use multi-user mode.....</b>	<b>8</b>
3.1	Convert a multi-user model to a single-user model.....	9
3.2	Convert a single-user model to a multi-user model.....	9
3.3	Change the server of a multi-user model.....	10
<b>4</b>	<b>How multi-user works .....</b>	<b>11</b>
4.1	Locks for models in multi-user mode.....	12
4.2	Saving in multi-user mode .....	12
4.3	Autosaving in multi-user mode.....	13
4.4	<b>Model history in multi-user mode.....</b>	<b>14</b>
	Collect model history in multi-user mode.....	14
	View model history in multi-user mode.....	15
	Save model revision comments in multi-user mode.....	15
4.5	<b>Shutting down the model in multi-user mode .....</b>	<b>16</b>
4.6	<b>Copy multi-user models.....</b>	<b>16</b>
4.7	<b>Display active multi-users.....</b>	<b>17</b>
4.8	<b>Clear locks on the multi-user server.....</b>	<b>17</b>
4.9	<b>Error messages in multi-user mode .....</b>	<b>18</b>
4.10	<b>Recommendations for multi-user setup.....</b>	<b>19</b>
4.11	<b>Remove inconsistencies from a multi-user database.....</b>	<b>20</b>
<b>5</b>	<b>Modeling in multi-user mode .....</b>	<b>21</b>
5.1	Numbering setup in multi-user mode .....	25
5.2	Synchronize numbering with the master model.....	26
<b>6</b>	<b>Drawings in multi-user mode.....</b>	<b>27</b>
6.1	Guidelines for multi-user drawings.....	28
6.2	Locks for drawings in multi-user mode.....	29
6.3	Delete unnecessary drawing files in multi-user mode .....	29
<b>7</b>	<b>Access rights in multi-user mode .....</b>	<b>30</b>
7.1	Change access rights in privileges.inp.....	31

<b>7.2</b>	<b>Options in privileges.inp .....</b>	<b>32</b>
<b>7.3</b>	<b>Use the user-defined attribute Locked to lock objects .....</b>	<b>33</b>
<b>7.4</b>	<b>Use privileges.inp to control access to lock and unlock objects .....</b>	<b>34</b>
<b>7.5</b>	<b>Use privileges.inp to control access to numbering.....</b>	<b>34</b>
<b>7.6</b>	<b>Use privileges.inp to control access to save standard files.....</b>	<b>35</b>
<b>8</b>	<b>Disclaimer.....</b>	<b>36</b>



# 1 Multi-user mode in Tekla Structures

You can work on Tekla Structures models in either single-user or multi-user mode. Multi-user mode allows several users to access the same model at the same time. Several users can work on the same project and be aware of the others' progress. This eliminates the need for copying and merging models.

---

**NOTE** Tekla Structures multi-user mode only runs on TCP/IP-based networks.

---

## See also

[When to use multi-user mode \(page 8\)](#)

[Overview of the multi-user system \(page 6\)](#)

[How multi-user works \(page 11\)](#)

[Saving in multi-user mode \(page 12\)](#)

[Autosaving in multi-user mode \(page 13\)](#)

[Shutting down the model in multi-user mode \(page 16\)](#)

[Copy multi-user models \(page 16\)](#)

[Error messages in multi-user mode \(page 18\)](#)

[Recommendations for multi-user setup \(page 19\)](#)

# 2 Overview of the multi-user system

A Tekla Structures multi-user system runs on a TCP/IP network and consists of:

- A server computer running the multi-user server
- A file server computer containing the master model
- Client computers running Tekla Structures

## 2.1 Tekla Structures multi-user server

Tekla Structures multi-user server runs as a service that is started automatically when you start the computer. You do not need to log in to the service.

Tekla Structures multi-user server performs the following main tasks:

- Distributes ID numbers for new objects
- Locks the model when somebody saves or numbers the model
- Identifies client computers
- Keeps track of active multi-users
- Gives numbers for general arrangement drawings and multidrawings
- Displays warnings if another user has already edited or is currently editing drawings or the same model object

To optimize the performance of a multi-user system, run as few other programs as possible on the Tekla Structures multi-user server. This ensures that it processes network requests for object ID numbers efficiently.

### Server shutdown

Users should save their working models to the master model before the Tekla Structures multi-user server is stopped. If the service is stopped before saving

the working models, for example because the server computer needs a restart, simply restart the service and have users save their working models to the master model.

**See also**

[How multi-user works \(page 11\)](#)

# 3 When to use multi-user mode

You can use Tekla Structures in either single-user or multi-user mode. In single-user mode, only one user can work on a model at one time. When modeling a large project, multi-user mode allows many users to work on a model simultaneously.

## Advantages

- No duplicate models to control, track or store
- Using only one model reduces on site errors
- Erection plans based on a single master model
- Bolt and material lists generated from a single master model
- Ability to share the workload of large projects among many users
- Ability to collect model history (see XS\_COLLECT\_MODEL\_HISTORY)

## Other issues to consider

As with all projects, you need to plan your multi-user project carefully. Some issues to consider are:

- Only one user can save to the master model at a time
- Use a numbering plan. When working with multi-user models, always use the option **Synchronize with master model (save-numbering-save)** in the **Numbering setup** dialog box to prevent saving conflicts.
- Schedule numbering sessions appropriately (it can take some time to number larger models)
- If possible, assign distinct areas of the model to each user to avoid conflicts that may happen when several users are working in the same area.
- You should never use a mix of single-user and multi-user setups on one project. Saving a multi-user model in single-user mode deletes changes by other users working on the model, and can also corrupt the model. See [Saving in multi-user mode \(page 12\)](#) to find out how saving works in multi-user mode.



### 3.1 Convert a multi-user model to a single-user model

You can convert a multi-user model to a single-user model and open it in the single-user mode.

To	Do this
Convert a current, open model	On the <b>File</b> menu, click <b>Sharing --&gt; Convert to single-user model</b> . The current model is converted to a single-user model.
Convert some other than the current model	<ol style="list-style-type: none"><li>1. On the <b>File</b> menu, click <b>Open</b>.</li><li>2. Select the multi-user model to be converted from the list of models, and in the <b>Convert to single-user model</b> box click <b>Convert and open</b>.</li></ol>

#### See also

[Convert a single-user model to a multi-user model \(page 9\)](#)

### 3.2 Convert a single-user model to a multi-user model

You can convert a single-user model to a multi-user model and open it in the multi-user mode.

To	Do this
Convert a current, open model	<ol style="list-style-type: none"><li>1. On the <b>File</b> menu, click <b>Sharing --&gt; Convert to multi-user model</b>.</li><li>2. Enter the multi-user server name or select the name from the list in the <b>Convert</b> dialog box.</li><li>3. Click <b>Convert to multi-user model</b>. The current model is converted to a multi-user model.</li></ol>
Convert some other than the current model	<ol style="list-style-type: none"><li>1. On the <b>File</b> menu, click <b>Open</b>.</li><li>2. Select the single-user model to be converted from the list of models, and in the <b>Convert to multi-user model</b> box enter the server name.</li></ol>

To	Do this
	3. Click <b>Convert and open</b> .

**See also**

[Convert a multi-user model to a single-user model \(page 9\)](#)

### 3.3 Change the server of a multi-user model

You can change the Tekla Structures server of a multi-user model.

1. On the **File** menu, click **Sharing --> Change server**.
2. Enter the new server name or select it from the list.
3. Click **OK**.

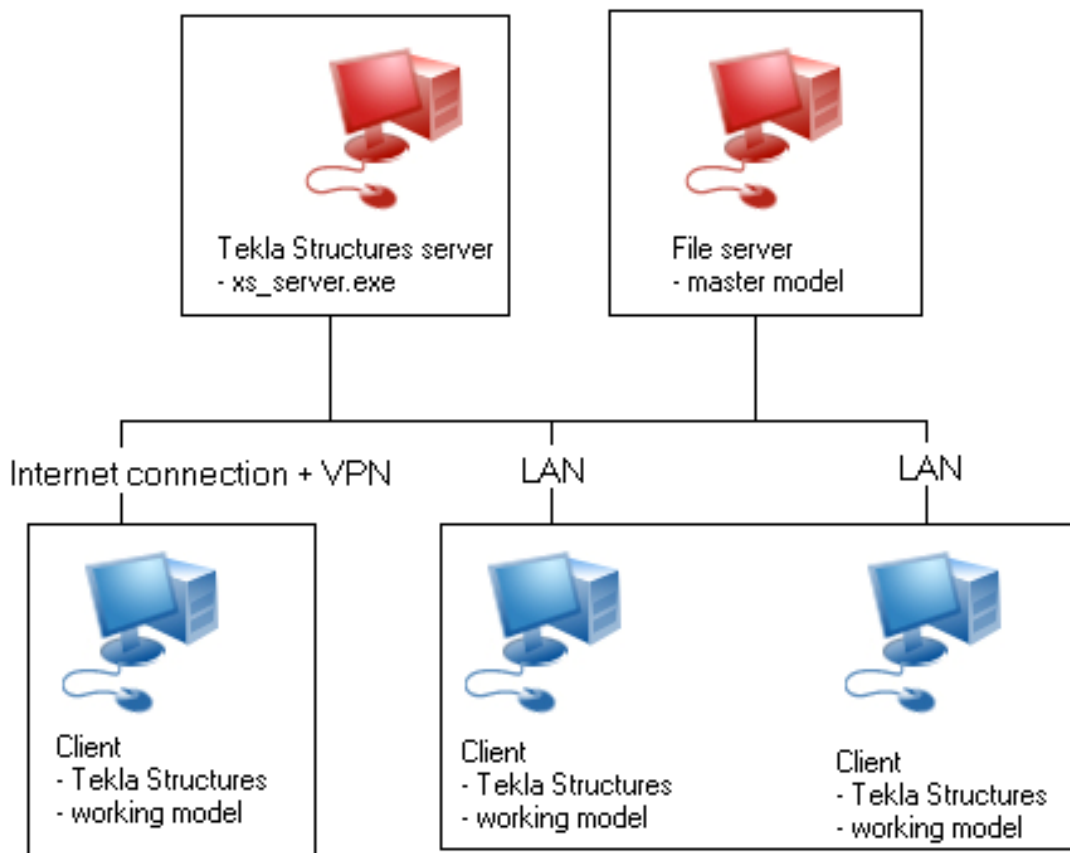
If the connection to the new server cannot be established, the old connection is restored.

---

**NOTE** The file `.This_is_multiuser_model` located in the model folder defines whether the model is a multi-user or a single-user model. The file includes also the name of the server. You can open the file using any standard text editor.

---

# 4 How multi-user works



The multi-user model consists of a single *master model*. Each user can access this model and open their own local view of the model. This local view is called a *working model*. The above image shows one possible configuration of the multi-user system.

Any changes a user makes to his working model are local and are not visible to other users until he saves the working model to the master model.

The multi-user system can contain several *client computers*, where users work on their working models. The master model can be located anywhere on the network, including any of the client computers.

When you open a multi-user model on a client computer, Tekla Structures makes a copy of the master model and saves it locally on the client computer (a working model).

When you click **Save** to save your working model back to the master model, Tekla Structures:

1. Takes a new copy of the master model and compares your working model with it.
2. Saves the changes in your working model to the copy of the master model (locally).
3. Saves this copy back to the master model. (When other users save their working models, they can now see your changes.)
4. Takes a new copy of the master model and saves it locally as your working model. (You can see your own changes and those uploaded by other users.)

The multi-user model is locked during opening, saving and numbering. When one of the users performs any of these operations, other users cannot perform them during that time.

## 4.1 Locks for models in multi-user mode

To preserve the integrity of the multi-user model, Tekla Structures locks the master model when a user:

- Opens the multi-user model
- Saves a working model to the master model
- Runs numbering

When you try to save the model that is locked, Tekla Structures gives you an option to queue for saving until the model is unlocked. Tekla Structures keeps on retrying saving every 15 seconds until the operation is completed or until you cancel the operation.

### See also

[Saving in multi-user mode \(page 12\)](#)

## 4.2 Saving in multi-user mode

Tekla Structures preserves the integrity of the model, even if more than one user modifies the same model objects. If two users modify the same object, then save to the master model, the master model will only contain the

changes of the user who most recently saved their working model to the master model.

---

**TIP** To avoid potential save conflicts, have users work on different areas of the model.

---

Tekla Structures creates connections to the right parts, even if the part is moved by another user.

Note that if you use the **Save as** command to save the model, the model history is not copied with the saved model.

### Speeding up the saving process

The following advice may help in speeding up the saving process:

- Check your network connection speed, because it can slow down the saving process significantly.
- Close down all the views of the model before saving.
- Set the advanced options `XS_PROJECT` and `XS_FIRM` so that they point to a local drive and move most of the system files there. If there are many system files in the network drive, saving may become slower than when using system files located on your own hard drive. Each user should use the same files to ensure similar outcome.
- Delete any hidden reference models which you do not need anymore.

### See also

[How multi-user works \(page 11\)](#)

## 4.3 Autosaving in multi-user mode

Autosave only saves the working model, not the master model. Other users do not see the modifications you make after an **Autosave**. In multi-user mode, this makes **Autosave** much faster than the **Save** command. **Save** updates the master model.

By default, Tekla Structures saves the **Autosave** files in the master model folder with the filename `<model>.db1_<user>`. If several people are using the same username, conflicts will occur.

To avoid conflicts and problems caused by the network traffic, store the **Autosave** files locally, not in the model folder that is located on a network drive. Set the advanced option `XS_AUTOSAVE_DIRECTORY` to `XS_AUTOSAVE_DIRECTORY=%XS_RUNPATH%\autosave`. By saving autosave files locally you make sure that if there are problems in the network traffic, you are still able to save your own work.

1. On the **File** menu, click **Settings --> Options**, and in the **General** settings define the **Autosave** intervals for operations performed in the drawing and the model.
2. Periodically autosave the model manually.  
To do so, create a shortcut for the **Autosave** command. Click **File menu --> Settings** and in the **Customize** area select **Keyboard shortcuts**.

---

**NOTE** Remember to save regularly to the master model by clicking **Save**.

---

#### **See also**

[Error messages in multi-user mode \(page 18\)](#)

[Copy multi-user models \(page 16\)](#)

[How multi-user works \(page 11\)](#)

## **4.4 Model history in multi-user mode**

Tekla Structures collects *model history* on the actions that have taken place in the multi-user model by different users.

Model history shows when the model has been changed, how the model has changed, who has made the changes, and the model revision comments. Model history is collected only in multi-user models.

#### **See also**

[Collect model history in multi-user mode \(page 14\)](#)

[View model history in multi-user mode \(page 15\)](#)

[Save model revision comments in multi-user mode \(page 15\)](#)

### **Collect model history in multi-user mode**


1. On the **File** menu, click **Settings --> Advanced options**.
2. Go to the **Speed and Accuracy** tab.
3. Set `XS_COLLECT_MODEL_HISTORY` to `TRUE`.
4. Set `XS_CLEAR_MODEL_HISTORY` to `FALSE`.
5. Optional: Go to the **Multi-user** tab.  
Set `XS_SAVE_WITH_COMMENT` to `TRUE`.  
This enables the saving of model revision comments.

## See also

[Save model revision comments in multi-user mode \(page 15\)](#)

## View model history in multi-user mode

To view model history, do one of the following:

- On the ribbon, click  and select an object in the model.  
The model history is shown in the **Inquire Object** dialog box.
- Create a model history report.
  1. On the **Drawings & reports** tab, click **Reports**.
  2. Select a report template that shows model history from the list. The name of the report template may vary in different environments.  
In the **Default** environment, the report template is called **Q\_Model\_History\_Report**.
  3. Click **Create from all** to create a report on all the objects in a model, or select one or more objects in the model and click **Create from selected** to create a report from the selected objects.

## Save model revision comments in multi-user mode

You can save model revision comments when working with multi-user models. This means that all objects which have been changed during the last save interval include the revision information in them. You can use this information in filtering and reports. You can also use it to examine which users have modified the objects.

- The **Owner** is the user, who has added the object into the model.
- **History** shows when the model has been changed, how the model has changed, who has made the changes, and the model revision comments.

Preconditions

Set the advanced option `XS_SAVE_WITH_COMMENT` to `TRUE` in **File menu --> Settings --> Advanced options --> Multi-user**.

Set the advanced option `XS_COLLECT_MODEL_HISTORY` to `TRUE` in **File menu --> Settings --> Advanced options --> Speed and Accuracy**.

1. When you have set the advanced options mentioned above to `TRUE`, Tekla Structures displays the **Model revision comments** dialog box when you are saving the model. Enter the desired revision comment and code in the **Model revision comment** and **Model revision code** boxes.

2. Click **OK**.

Tekla Structures applies the values of this dialog box to parts that were changed after the last save. When you inquire objects, you can see the model revision information in the **Inquire Object** dialog box. You can use this information also for selection and view filtering.

## 4.5 Shutting down the model in multi-user mode

Do not shut down the computer containing the master model while other users are working on their working models. They will not be able to save their changes to the master model.

If this does happen, to avoid losing any changes, follow the steps below:

1. Keep the working model(s) open on the client computer(s).
2. Restart the computer containing the master model.
3. Open the master model on the computer containing it and autosave the model.
4. Click **Save** on the client computers to save the working models to the master model.

### See also

[Saving in multi-user mode \(page 12\)](#)

[Autosaving in multi-user mode \(page 13\)](#)

## 4.6 Copy multi-user models

1. Have all users save and close their working models.
2. On the **File** menu, click **Open**.
3. From the list of models, select the multi-user model and go to the **Convert to single-user model** box and click **Convert and open**.
4. Use **Save as** to make a copy of the model.
5. Exit Tekla Structures and re-open the model in multi-user mode to continue working on it.



## 4.7 Display active multi-users

You can display information on users working on the same server.

To display active multi-users, click **File menu** --> **Sharing** --> **Active multi-users**.

The **Active Multi-Users** dialog box displays the following information:

Option	Description
<b>Locked</b>	The time when the model was locked.
<b>Model name</b>	The name of the model.
<b>User</b>	Users that are currently working on models on the server.
<b>Latest login</b>	The time when the users have logged in.
<b>Latest access to server</b>	The time when the users have last accessed the server.
<b>Editing drawings</b>	The drawings that are currently being edited.
<b>Edited drawings</b>	The drawings that have been edited and saved to the server.

---

**TIP** The **Active Multi-Users** dialog box is refreshed every 30 seconds. You can refresh it immediately by clicking **Refresh**.

---

## 4.8 Clear locks on the multi-user server

You can clear the locks of objects from other users on the multi-user server.

Before a user can clear locks, you need to define the `AllowMultiuserKick` action in the `privileges.inp` file and give full permissions to the user who you want to be able to clear locks.

In the following example, only user `jsmith` has full permissions to clear locks:

```
action:AllowMultiuserKick everyone none
action:AllowMultiuserKick jsmith full
```

1. On the **File** menu, click **Sharing** --> **Active multi-users**.
2. Right-click a user whose locks you want to clear and select **Clear locks**.

All the locks that the user has on objects are removed. This means that if an application error has occurred on the user's computer, the locks on locked objects can be cleared.

## See also

[Locks for drawings in multi-user mode \(page 28\)](#)

[Options in privileges.inp \(page 32\)](#)

## 4.9 Error messages in multi-user mode

Error message	Problem	Solution
<b>Database write conflicts detected</b>	More than one user has changed an object.	Check the <code>conflict.log</code> . It lists the ID numbers of the objects that more than one user has changed. This is not usually a critical problem. No need to use the <b>Check database</b> tool. See also <a href="#">Saving in multi-user mode (page 12)</a>
<b>Could not save model. Possible reasons are:</b> <b>- disk is full or write protected</b> <b>- locked .tmp -file(s) exists in the model directory</b>	You tried to save a multi-user model to a computer or folder that you could not access.	<ul style="list-style-type: none"><li>• Check that you have permission to write to the model folder.</li><li>• Check that there is enough disk space to save the model.</li><li>• Restart the computer where you want to save the model. Try to save the model again.</li><li>• Delete the <code>.tmp</code> files from the model directory.</li></ul>
<b>Database locked cannot open model</b>	Computer stopped responding while saving the model, which locks the model.	To unlock the model, the user whose operating system stopped responding should open the model in multi-user mode and save it.
<b>Cannot read autosaved model as a normal model in the multi-use mode</b>	The opening of a multi-user Autosave file has been prevented in single-user mode to	Do not rename or move Autosave files. Do not open the Autosave file of a single-user model in

Error message	Problem	Solution
	prevent the reading of wrong file types.	multi-user mode or vice versa.

## 4.10 Recommendations for multi-user setup

Here are some recommendations on how to optimize your multi-user setup. For more information, see [Hardware recommendations](#).

### Server computer

The Tekla Structures server does not have a high workload and can be run on a relatively low specification computer. You do not need a commercial network file server. Its main task is to process network requests for object ID numbers. See [Tekla Structures multi-user server \(page 6\)](#) for more information.

### Client computer

Have as much RAM as possible (4 Gb or more). This speeds up saving in multi-user mode. See [Saving in multi-user mode \(page 12\)](#) to find out more about the multi-user save process.

We also recommend using a fast multi-core processor, particularly for computers where you run numbering.

LVD (**L**ow **V**oltage **D**ifferential) drives speed up the saving and opening of models).

### Network

Ensure that the TCP/IP protocols are set correctly:

- Each PC on the same network has a unique ID number
- Each PC on the same network has an identical Subnet mask

---

**TIP** To find the IP address of a computer, enter `ipconfig` at the DOS prompt.

---

**NOTE** Some network operating systems may block user history data, which means that for example the **Inquire Object** dialog box does not show user names.

---

### Model dump

Always import model dumps in single-user mode. After the import you are prompted to save and re-open the model. Re-open the model as a multi-user model, and continue your work. For more information, see [Convert a multi-user model to a single-user model \(page 9\)](#).

## 4.11 Remove inconsistencies from a multi-user database

To preserve the integrity of your multi-user model, you need to remove any inconsistencies from the multi-user database at regular intervals, for example once a day. This may also fix assemblies with no main part and drawings of unknown (**U**) type.

We recommend you to check the multi-user database in single-user mode.

1. Have all other users exit the multi-user model.
2. Save your model to receive the modifications of other users.
3. Exit the model.
4. Open the model in single-user mode.
5. On the **File** menu, click **Diagnose & Repair** and in the **Model** area, click **Repair**.
6. Save the model.
7. Exit the model.

# 5 Modeling in multi-user mode

Before you start a project, assign each user an area of the model. To prevent potential save conflicts, you need to avoid having more than one user working on the same, or adjacent model objects. See also [Saving in multi-user mode \(page 12\)](#).

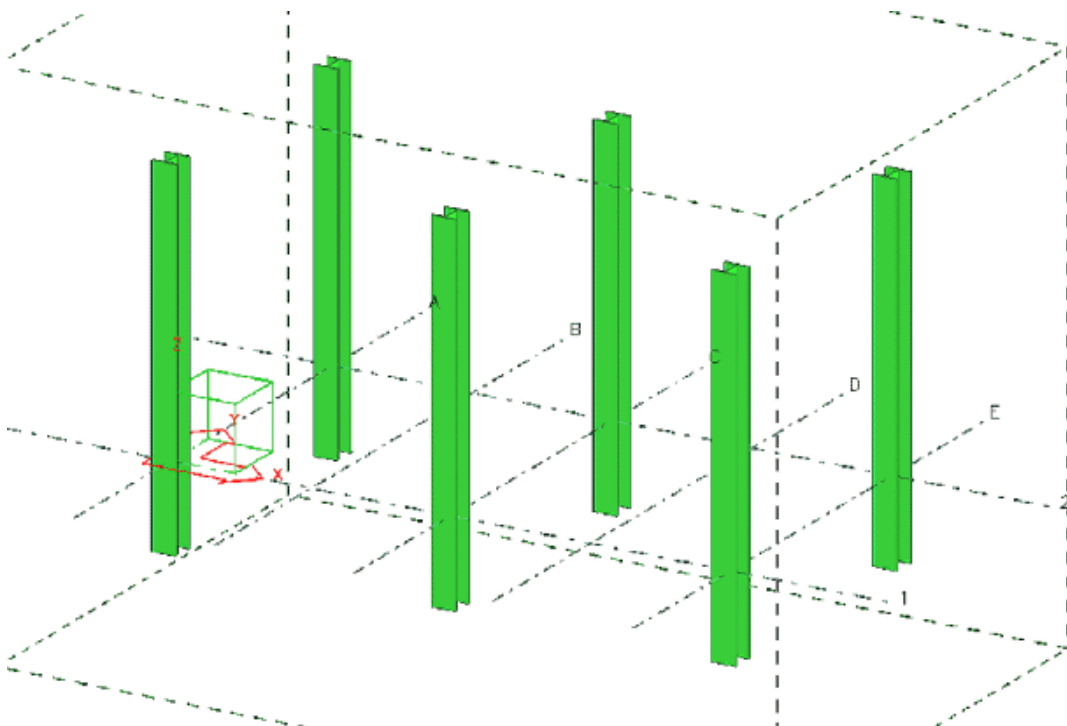
## Example

If three users are to model a project, User #1 could model columns, User #2 the 1st floor beams, and User #3 the 2nd floor beams.

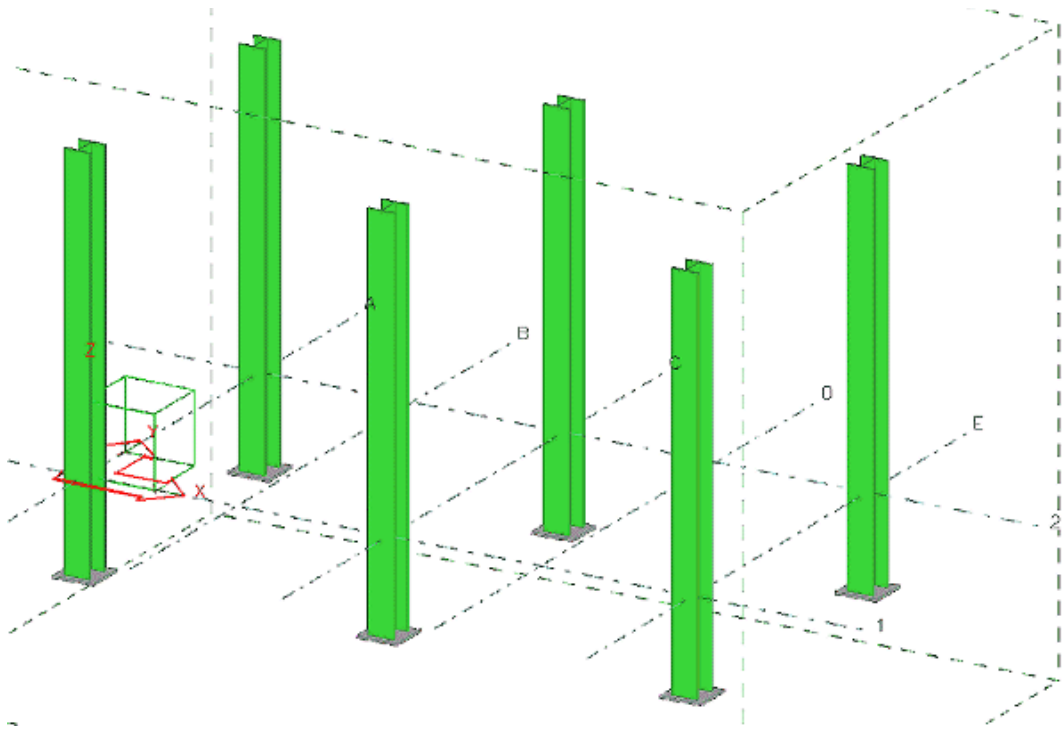
In the following example, three users are working on the same model. You can see how modeling and saving works in practice.

The master model contains columns and grids, as you can see here.

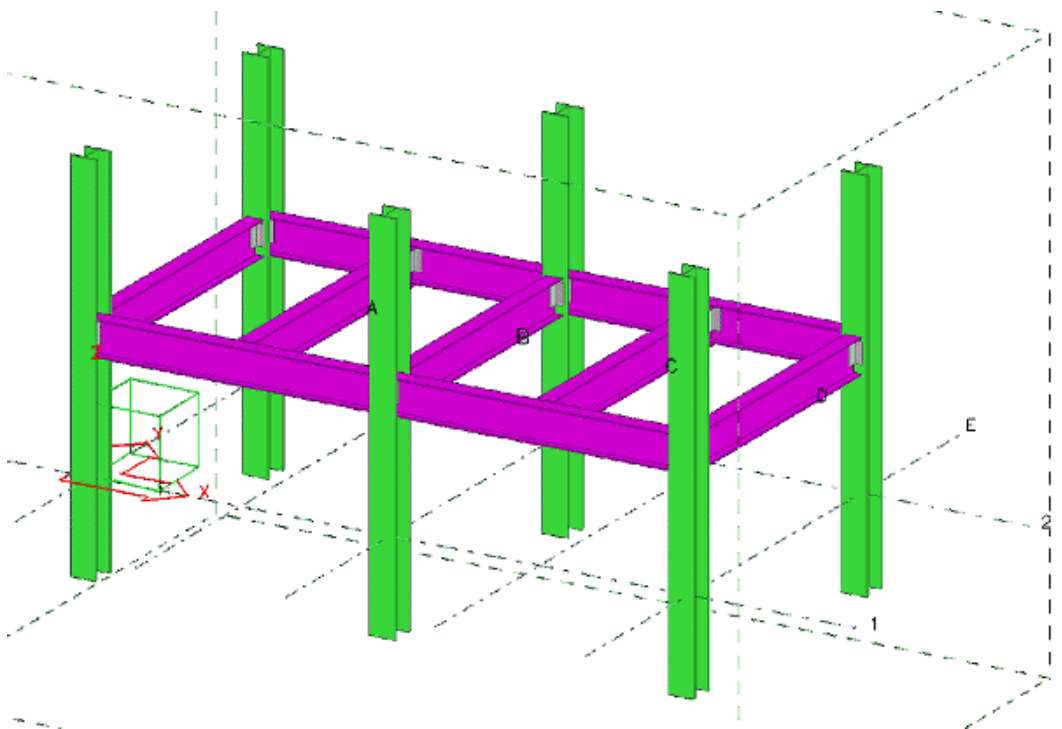
Each user opens the model in multi-user mode. All users are now working on working models, locally.



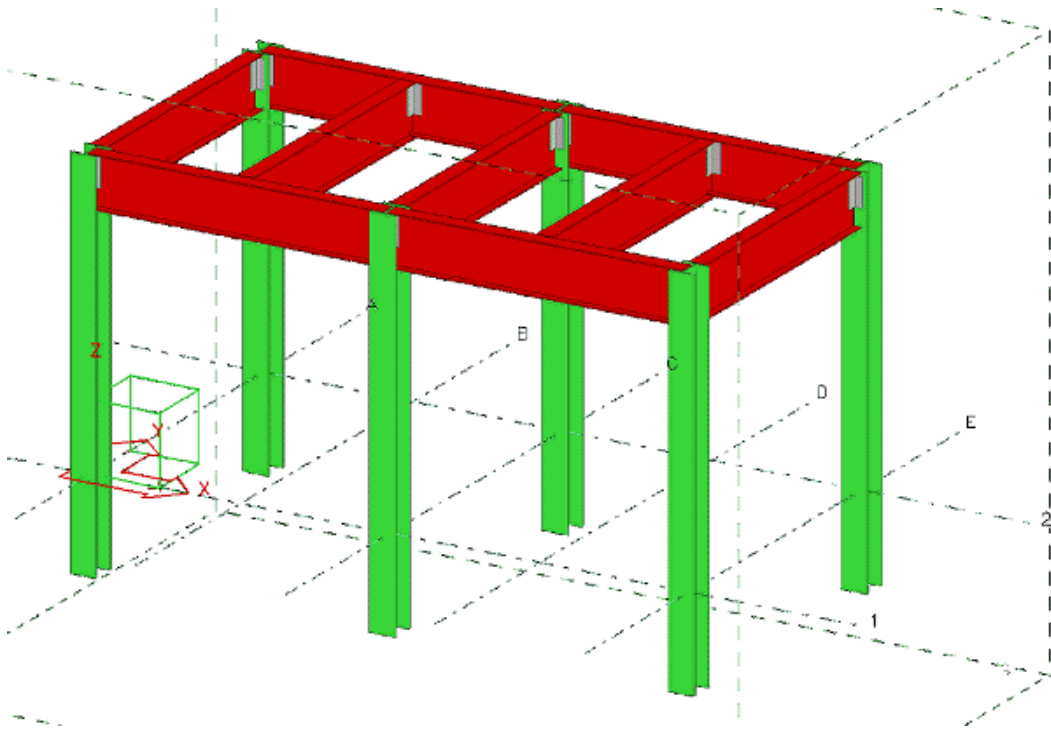
On the working models:  
User #1 adds base plates to the columns:



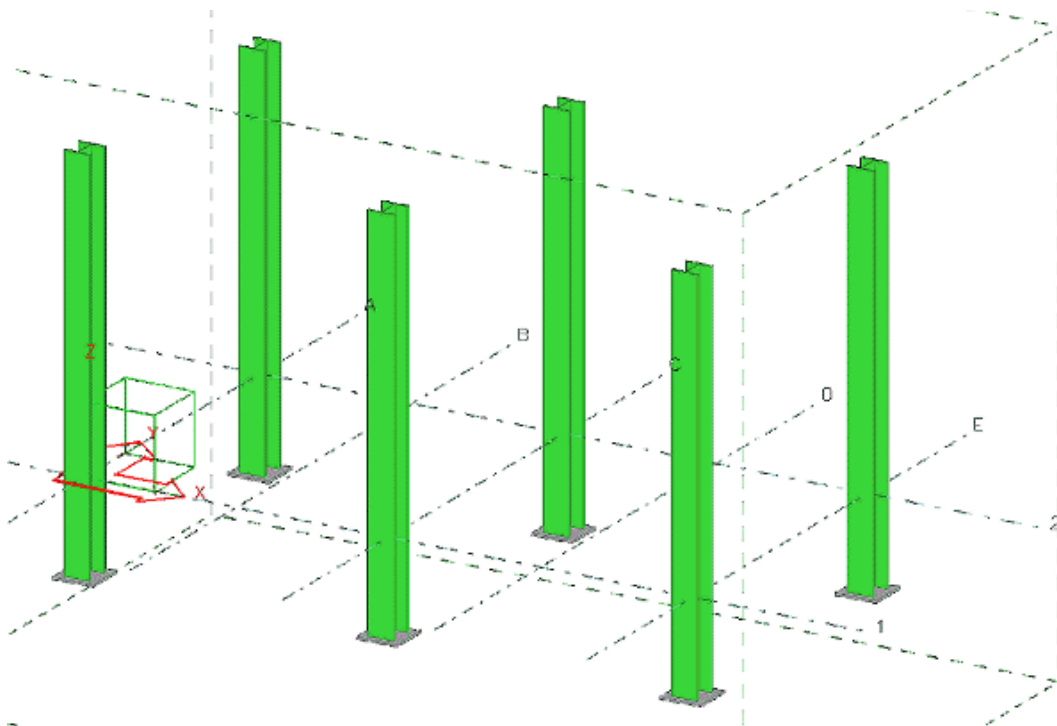
User #2 adds and connects the 1st floor steel beams:



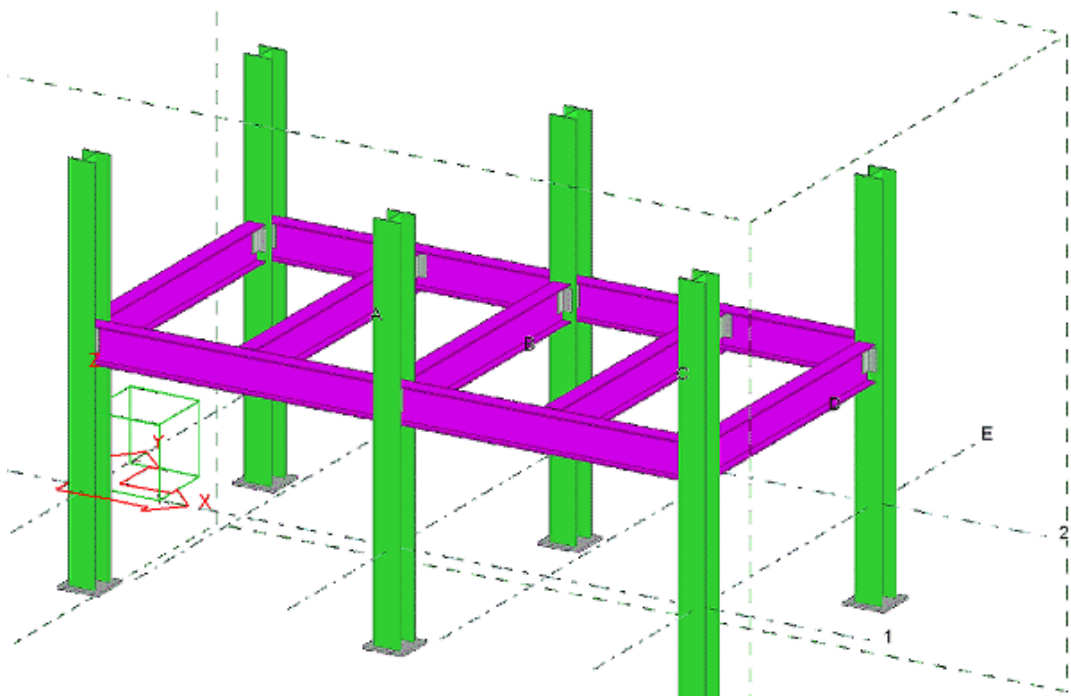
User #3 adds and connects the 2nd floor steel beams:



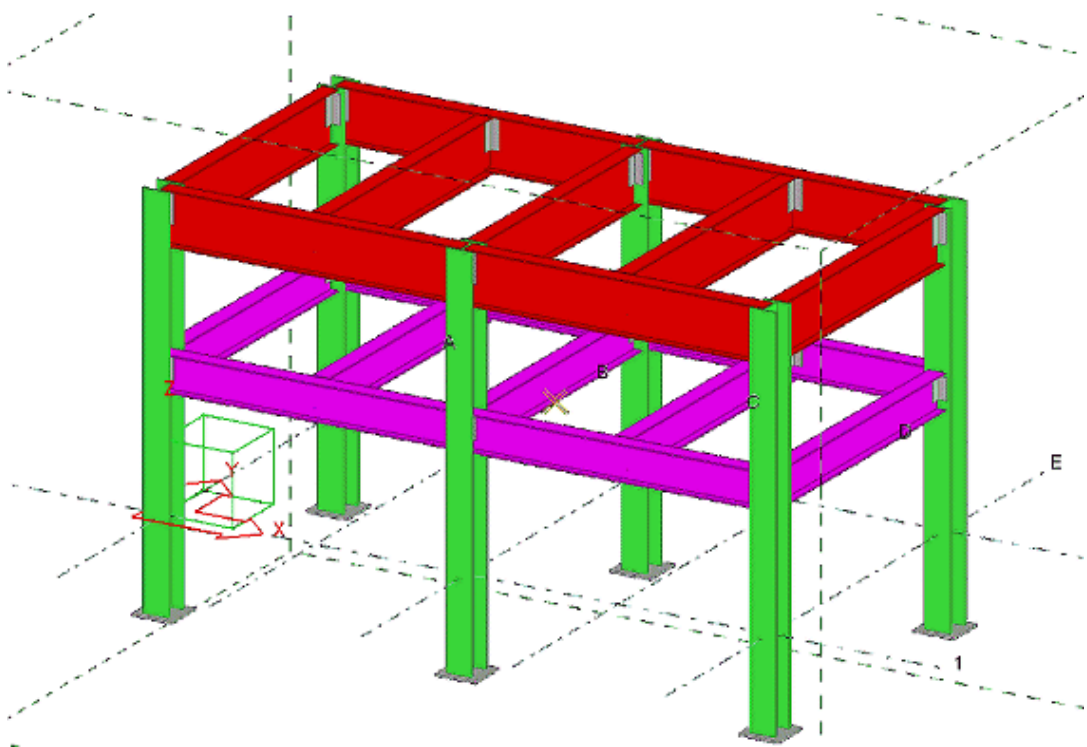
User #1 clicks **Save** to save to the master model. His working model now shows the base plates he added and looks like this:



User #2 clicks **Save** to save to the master model. His working model now shows his 1st floor framing and User #1's base plates:



User #3 clicks **Save** to save to the master model. His working model now shows all three users's work:



To see the updated master model, Users #1 and #2 need to save to the master model again to update their working models.



## See also

[Numbering setup in multi-user mode \(page 25\)](#)

[Synchronize numbering with the master model \(page 26\)](#)

## 5.1 Numbering setup in multi-user mode

Define the numbering settings as follows:

1. On the **Drawings & reports** tab, click **Numbering --> Numbering settings**.
2. In the **Numbering setup** dialog box, select the **Synchronize with master model (save-numbering-save)** check box.

When you select this check box, you can cancel the numbering before the last save is made. This is useful, for example, if you want to check the numbering results and you find something that you still want to change.

---

**NOTE** When working with multi-user models, use this option always to prevent saving conflicts.

---

3. Modify the other properties as required.
4. Click **OK**.

Tekla Structures will now save the model before and after you number all parts or modified parts.

When you click **Numbering --> Number modified objects** on the **Drawings & reports** tab to run numbering, Tekla Structures displays a list that shows the numbering progress. When the numbering is finished, the changed numbering results are highlighted in the list. When you select an item on the list, Tekla Structures highlights the corresponding object(s) in the model. If you keep the **F** key pressed when you select the item, Tekla Structures fits the work area of the current view around the objects.

If the numbering results are correct, click **Save numbers** to make the second save. To cancel the numbering before the second save, click **Cancel**. If you cancel the numbering, the model is returned to the state before numbering and standard files are read to all dialogs.

To review the numbering results further, click **Stop timer**.

To change the time frame in which Tekla Structures makes the second save, use the advanced option `XS_NUMBERING_RESULTS_DIALOG_DISPLAY_TIME`.

---

**NOTE** We recommend that you run the **Diagnose & Repair Numbering: All** command in **File menu --> Diagnose & Repair** to remove any numbering inconsistencies from the multi-user database at regular intervals, for example once a day.

---

## See also

[Use privileges.inp to control access to numbering \(page 34\)](#)

## 5.2 Synchronize numbering with the master model

If you need to include numbering information from areas in the model that have been modeled by other users:

1. Ask all users to save their working models. This updates the master model.
2. Number the model. Make sure that the **Synchronize with master model (save-numbering-save)** check box is selected in the **Numbering setup** dialog box (see [Numbering setup in multi-user mode \(page 25\)](#)). This updates your working model to the master model, numbers the master model, and then saves the numbered master model for all users to access.

---

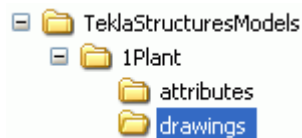
**NOTE** If you create drawings and/or reports after numbering, you need to save the master model again to make them visible to other users.

---

# 6 Drawings in multi-user mode

The multi-user environment is very useful when several users are simultaneously editing drawings.

Tekla Structures saves each drawing in a unique file. These drawing files are located in the drawing folder in the master model folder.



The file is in the format D0000123456.dg. The dg files are part of the model, so you can only open them using Tekla Structures.

dg files contain the locations of views, details of any editing done to the drawing, and the positions of dimensions, part marks, and text. The dg filename does not contain any reference to assembly, part, or multidrawing numbers.

If two users open and save the same drawing in their working models, then save their changes to the master model, one set of changes will be lost. The master model will only contain the changes of the user who most recently saved their working model to the master model. See [Saving in multi-user mode \(page 12\)](#).

The Tekla Structures multi-user server assigns the general arrangement drawing numbers automatically. This means that each drawing gets the first free number available. If users A and B both create a general arrangement drawing at the same time, they are automatically assigned different numbers. The same applies to multidrawing numbers.

## See also

[Guidelines for multi-user drawings \(page 27\)](#)

[Locks for drawings in multi-user mode \(page 28\)](#)

## 6.1 Guidelines for multi-user drawings

You may find the following guidelines useful when you edit or check drawings:

Action	Recommendation
Saving drawings	Periodically save your working model to the master model (every 5–10 drawings).
Editing drawings	<ul style="list-style-type: none"><li>• Assign each user a different range of drawings to edit.</li><li>• Lock finalized drawings.</li><li>• If Tekla Structures displays the message <b>Database write conflicts detected</b> and a drawing ID number, two or more users have opened and saved the same drawing. See <a href="#">Drawings in multi-user mode (page 27)</a>.</li></ul>
Checking drawings	Only check locked drawings.
Printing drawings	<p>Make sure that no-one else is working with the same drawing. If you print a drawing while someone else is editing it and then save the model, the other user's changes will be lost, even though you have not opened, modified, or saved the drawing.</p> <p>You can disable the print date by using the advanced option <code>XS_DISABLE_DRAWING_PLOT_DATE</code>.</p>
Creating general arrangement drawings	Create a set of empty general arrangement drawings in the beginning of the project, and assign a certain range of these ready-created empty drawings to each user (for example, GA1 to GA10 to User A, GA11-GA20 to User B and so on). This prevents overlapping general arrangement drawing numbers in the project.

### See also

[Delete unnecessary drawing files in multi-user mode \(page 29\)](#)

## 6.2 Locks for drawings in multi-user mode

When you are about to open a drawing, Tekla Structures displays a notification on the status of the drawing. The options are:

- Someone is already editing it.
- Someone has already edited it (drawing has been saved to their computer, but not yet to the server).
- The drawing has already been saved and there is a newer version available on the server.

---

**NOTE** Locks for drawings are only used when a drawing is edited manually, not for example when drawings are automatically edited through cloning.

---

### See also

[Clear locks on the multi-user server \(page 17\)](#)

## 6.3 Delete unnecessary drawing files in multi-user mode

Every time you update a drawing, Tekla Structures creates a new drawing (.dgn) file in the `drawings` sub-folder of the model. After that, the previous drawing file is not used.

You can delete the unnecessary drawing files in multi-user mode. Use the advanced option `XS_DELETE_UNNECESSARY_DG_FILES` to have the unnecessary drawing files deleted automatically when the last user exits the model and saves the model.

By default all unnecessary drawing files are deleted automatically after seven days. Use the advanced option `XS_DELETE_UNNECESSARY_DG_FILES_SAFETY_PERIOD` to define the time frame after which unnecessary drawing files are deleted.

# 7 Access rights in multi-user mode

You can control access rights using privileges.

By modifying the `privileges.inp` file you can control:

- access to modify user-defined attributes
- access to modify object properties. This is done by locking and unlocking objects.
- access to modify numbering settings
- access to remove users on multi-user server
- access to save standard files

You can prevent your model and drawings being accidentally modified by using the **Locked** user-defined attribute (UDA) or drawing locks. Using the **Locked** UDA and privileges together you can even restrict some users or organizations from modifying your model.

For example, you can limit access to the model so that a checker can only change status attributes. Or you could prevent certain users from changing the user-defined attributes used for approval or manufacturing and erection status.

## See also

[Use the user-defined attribute Locked to lock objects \(page 33\)](#)

[Options in privileges.inp \(page 32\)](#)

[Use privileges.inp to control access to lock and unlock objects \(page 34\)](#)

[Use privileges.inp to control access to numbering \(page 34\)](#)

[Clear locks on the multi-user server \(page 17\)](#)

[Use privileges.inp to control access to save standard files \(page 35\)](#)

## 7.1 Change access rights in privileges.inp

You can control access rights in a model by using privileges. You can control the privileges with the `privileges.inp` file.

How the privileges work:

- The `privileges.inp` file serves as a user interface for updating the privileges in a model.
- The privileges are loaded from the `privileges.inp` file and stored in the model.
- The privileges are loaded from the `privileges.inp` file only if the current user is allowed to do so.
- If there is no `privileges.inp` file or if it cannot be loaded, then the privileges that are already stored in the model (if any) are used.
- If you do not set any privileges, all users have full rights.
- Tekla Structures checks the privilege defaults in the `privileges.inp` file when you create a model, and each time you open a model.
- Tekla Structures searches for the file first in the current model folder, then in the folder defined for the advanced option `XS_INP`.

---

**NOTE** Only the person who created the model, or anyone from the same organization, can modify the privileges of the model via the `privileges.inp` file.

---

To change the access rights:

1. Close the model.
2. Open the `privileges.inp` file in any text editor.
3. Change the desired settings and save the file.
4. Re-open the model.

### Example

Below is an example of the `privileges.inp` file. The slash (/) or backslash (\) separates the user name from the organization (<organization>/<user>). If no user name is entered, it means anyone in the company. Each row contains three columns, separated by tabs.

If you want to give the privileges only to one user or only to some users, you first have to exclude everyone and then include the users who you want to give the privileges.

Note that the organization and the user names are case sensitive. For example, `COMPANYA` is not the same as `companyA`.

## privileges.inp

```
attribute:APPROVED_BY    COMPANYA/           full
attribute:APPROVED_BY    COMPANYB/james     view
attribute:APPROVED_BY    everyone            none
attribute:STATUS         COMPANYB/           full
attribute:STATUS         COMPANYA/           view
attribute:STATUS         everyone            none
```

For more information about the options in the `privileges.inp` file, see [Options in privileges.inp \(page 32\)](#).

## 7.2 Options in privileges.inp

You can control user privileges by using the `privileges.inp` file.

The `privileges.inp` file is located in `.. \ProgramData\Tekla Structures\<version>\environments\common\inp` folder.

The available options are explained below.

Column	Option	Description
protected user-defined attribute	attribute: name	Affects the protected user-defined attribute "name". Check the exact spelling of the name in the <code>objects.inp</code> .
OR		
action	action: name	Affects the action "name". The available actions: <ul style="list-style-type: none"><li>PartnumbersOptions: Controls access to numbering settings. Limitation: only full/none</li><li>PerformNumbering: Controls access to performing numbering.</li><li>AllowMultiuserKick: Controls access to removing users from a multi-user model. Limitation: only full/none</li><li>SaveStandard: Controls access to saving standard files. Limitations: only standard</li></ul>



Column	Option	Description
		<ul style="list-style-type: none"> <li>DrawingWatermark: Controls access to adding watermarks for printed drawings.</li> </ul>
user	everyone	All users
	domain/	Affects all users within the network domain "domain".
	domain/nn	Affects the user "nn" in the network domain "domain".
	nn	Affects the user "nn".
rights	full	User can change the user-defined attribute.
	view	User can view the user-defined attribute, but not change it. This option appears dimmed to the user.
	none	The user-defined attribute is hidden from the user.

### See also

[Change access rights in privileges.inp \(page 31\)](#)

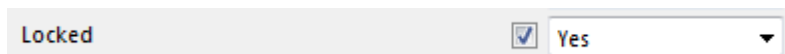
[Use privileges.inp to control access to numbering \(page 34\)](#)

## 7.3 Use the user-defined attribute Locked to lock objects

To protect objects from being accidentally modified, you can use the **Locked** user-defined attribute (UDA).

You can use it for:

- parts (separately for beams, columns etc.)
- bolts
- welds
- specific drawing types
- project properties
- phase properties



The **Locked** user-defined attribute (UDA) has two values, **Yes** and **No**. When set to **Yes**, the object is locked and you cannot modify its properties. You can only change the object's user-defined attributes that do not affect numbering.

If you try to modify a locked object, Tekla Structures displays the following warning message:

"There are locked objects, see report. The operation could not be performed."

To add the **Locked** UDA to the Tekla Structures user interface, you need to add the following line in the object's section in the `objects.inp` file:

```
objects.inp
attribute("OBJECT_LOCKED", "Locked:", option,"%s", none, none, "0.0", "0.0")
{
value("No", 1)
value("Yes", 0)
}
```

---

**NOTE** Make sure that numbering is up-to-date before you lock objects.

---

## 7.4 Use `privileges.inp` to control access to lock and unlock objects

To prevent a user from locking and unlocking objects, set their access to the user-defined attribute **Locked** (`OBJECT_LOCKED`) to `none` in the `privileges.inp` file.

In this example, `privileges.inp` gives the users "man" and "man2" full rights to lock and unlock objects, but hides that attribute from everybody else:

```
privileges.inp
attribute:OBJECT_LOCKED everyone none
attribute:OBJECT_LOCKED man full
attribute:OBJECT_LOCKED man2 full
```

---

**NOTE** To protect other user-defined attributes, you need to list them in the `privileges.inp`.

---

### See also

[Change access rights in `privileges.inp` \(page 31\)](#)

[Use the user-defined attribute `Locked` to lock objects \(page 33\)](#)

## 7.5 Use `privileges.inp` to control access to numbering

To prevent unauthorized users from modifying the numbering settings, restrict their access to the numbering properties in the `privileges.inp` file.

---

**NOTE** Users can still run numbering even if they have no privilege to modify the numbering settings.

---

If a user who has no privilege to modify properties in the **Numbering Setup** dialog box tries to access the dialog box, Tekla Structures displays a warning message which states that the user does not have the required privilege.

### Example

Only `admin` can modify the properties in the **Numbering Setup** dialog box:

```
privileges.inp
```

```
action:PartnumbersOptions    everyone    none
action:PartnumbersOptions    ORGANIZATION\admin    full
```

### See also

[Change access rights in privileges.inp \(page 31\)](#)

## 7.6 Use privileges.inp to control access to save standard files

To control users' access to save standard files, restrict their access in the `privileges.inp` file.

### Example

Only `admin` has rights to save standard files in network domain `ORGANIZATION`:

```
privileges.inp
```

```
action:SaveStandard    everyone    none
action:SaveStandard    ORGANIZATION\admin    full
```

### See also

[Change access rights in privileges.inp \(page 31\)](#)

# 8

## Disclaimer

© 2016 Trimble Solutions Corporation and its licensors. All rights reserved.

This Software Manual has been developed for use with the referenced Software. Use of the Software, and use of this Software Manual are governed by a License Agreement. Among other provisions, the License Agreement sets certain warranties for the Software and this Manual, disclaims other warranties, limits recoverable damages, defines permitted uses of the Software, and determines whether you are an authorized user of the Software. All information set forth in this manual is provided with the warranty set forth in the License Agreement. Please refer to the License Agreement for important obligations and applicable limitations and restrictions on your rights. Trimble does not guarantee that the text is free of technical inaccuracies or typographical errors. Trimble reserves the right to make changes and additions to this manual due to changes in the software or otherwise.

In addition, this Software Manual is protected by copyright law and by international treaties. Unauthorized reproduction, display, modification, or distribution of this Manual, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the full extent permitted by law.

Tekla, Tekla Structures, Tekla BIMsight, BIMsight, Tekla Civil, Tedds, Solve, Fastrak and Orion are either registered trademarks or trademarks of Trimble Solutions Corporation in the European Union, the United States, and/or other countries. More about Trimble Solutions trademarks: <http://www.tekla.com/tekla-trademarks>. Trimble is a registered trademark or trademark of Trimble Navigation Limited in the European Union, in the United States and/or other countries. More about Trimble trademarks: <http://www.trimble.com/trademarks.aspx>. Other product and company names mentioned in this Manual are or may be trademarks of their respective owners. By referring to a third-party product or brand, Trimble does not intend to suggest an affiliation with or endorsement by such third party and disclaims any such affiliation or endorsement, except where otherwise expressly stated.

Portions of this software:

D-Cubed 2D DCM © 2010 Siemens Industry Software Limited. All rights reserved.

EPM toolkit © 1995-2004 EPM Technology a.s., Oslo, Norway. All rights reserved.

Open CASCADE Technology © 2001-2014 Open CASCADE SA. All rights reserved.

FLY SDK - CAD SDK © 2012 VisualIntegrity™. All rights reserved.

Teigha © 2003-2014 Open Design Alliance. All rights reserved.

PolyBoolean C++ Library © 2001-2012 Complex A5 Co. Ltd. All rights reserved.

FlexNet Copyright © 2014 Flexera Software LLC. All Rights Reserved.

This product contains proprietary and confidential technology, information and creative works owned by Flexera Software LLC and its licensors, if any. Any use, copying, publication, distribution, display, modification, or transmission of such technology in whole or in part in any form or by any means without the prior express written permission of Flexera Software LLC is strictly prohibited. Except where expressly provided by Flexera Software LLC in writing, possession of this technology shall not be construed to confer any license or rights under any Flexera Software LLC intellectual property rights, whether by estoppel, implication, or otherwise.

To see the third party licenses, go to Tekla Structures, click **File menu --> Help --> About Tekla Structures** and then click the **3rd party licenses** option.

The elements of the software described in this Manual are protected by several patents and possibly pending patent applications in the United States and/or other countries. For more information go to page <http://www.tekla.com/tekla-patents>.



# Index

<b>A</b>	
access rights.....	30
changing.....	31
<b>C</b>	
checking multi-user databases.....	20
collecting	
model history.....	14
converting multi-user model.....	9
converting single-user model.....	9
copying	
multi-user models.....	16
<b>D</b>	
deleting	
unnecessary drawing files.....	29
drawing files.....	27
deleting unnecessary.....	29
<b>E</b>	
error messages	
in multi-user mode.....	18
<b>M</b>	
master models.....	11
saving.....	21
model history.....	14
collecting.....	14
viewing.....	15
multi-user models	
copying.....	16
shutting down.....	16
multi-user mode	
active multi-users.....	16
autosave.....	13
changing the server of a multi-user model.....	10
checking databases.....	20
clearing locks.....	17
error messages.....	18
locking models.....	12
locks for drawings.....	28
numbering.....	25,26
overview.....	5
recommendations.....	19
saving in.....	12,21
saving model revision comments.....	15
switching between single-user and multi- user modes.....	9
when to use.....	8
multi-user system.....	6
<b>N</b>	
numbering	
controlling access to numbering setup	34
in multi-user mode.....	25,26
<b>P</b>	
permissions.....	30
privileges.....	30
access to save standard files.....	35
privileges.inp.....	32
changing access rights.....	31
<b>R</b>	
revision	
saving model revision comments.....	15

## S

saving	
in multi-user mode.....	12,21
master models.....	21
shutting down multi-user models.....	16
single-user mode	
switching between single-user and multi-user modes.....	9
single-user vs multi-user.....	8
standard files	
privileges.....	35

## T

Tekla Structures server.....	6
------------------------------	---

## V

viewing	
model history.....	15

## W

working models.....	11
---------------------	----