Tekla Structures 2016

Installation

April 2016

Contents

1 Tekla Structures installation

Tekla Structures installation software and environments are available for download in Tekla Downloads. Before you can start using Tekla Structures, you need to install the Tekla Structures software and the needed environments on your computer, and in addition, install and set up a Tekla Structures license server and activate your Tekla Structures license. Tekla Structures uses the FlexNet Publisher License Management (FlexNet) licensing system.

The Tekla Structures software installation file is a full main or intermediate version package. Tekla Structures installation always includes the Blank project environment that includes only generic content, such as parametric profiles and undefined materials. Other Tekla Structures environments are available as separate installation files. The licenses you can use and their activation IDs are listed in an entitlement certificate you receive via e-mail.

You can install the Tekla Structures license server on the same computer as the Tekla Structures software and environments. The license server can also be installed on a separate server computer if there are many Tekla Structures users and many Tekla Structures licenses in the company.

The FlexNet licensing system is not used with Tekla Structures Learning Edition, and FlexNet licensing instructions do not apply. For more information about Tekla Structures Learning Edition, see Tekla Campus.

Centralized installation

Tekla Structures can be installed across the company network using centralized installation (page 20). Installing Tekla Structures centrally across the company network saves time in a large company as the installation is done silently in the background for each user.

Using Tekla Structures with application and desktop virtualization

Tekla Structures can be used with the Citrix application and desktop virtualization (page 21). Tekla Structures is installed on a server or on a virtual machine running on the server. Using Tekla Structures from the server ensures that all users in a project are using the same project environment set-up.

Version updates: Service packs and progress releases

Version updates (page 12) are published to complement a main or intermediate version of Tekla Structures. Version updates are available in Tekla Downloads. The updates contain new features, improvements and fixes to existing features.

Service packs are available to all customers with a valid maintenance agreement. We recommend that all users install the latest service pack.

Progress releases are available to specific user groups. Progress releases are installed on top of a main or intermediate version, or on top of a service pack.

Borrowing licenses with License Borrow Tool

If you want to work offline and do not have the Tekla Structures license server on your computer, you can borrow an activated license from the license server using the Tekla Structures License Borrow Tool. The borrowed license is transferred from the license server to your computer. It is not available for other users during the borrowing. The installer for Tekla Structures License Borrow Tool is available in Tekla Downloads.

Multi-user server

Multi-user mode allows several users to access the same model simultaneously. Multi-user mode is suitable for local teams with projects where the team members do not necessarily have an Internet connection. In the multi-user mode a server computer runs the multi-user server, a file server computer contains the multi-user master model and client computers run Tekla Structures. The Tekla Structures multi-user server installer is available in Tekla Downloads.

Using the multi-user server requires your company to have more than one Tekla Structures license.

Tekla Model Sharing also allows several users to access the same model simultaneously. With Tekla Model Sharing a global team can work efficiently within one model regardless of the team location and time zone. The model data is shared and synchronized over the Internet, and stored to a cloud-based Tekla Model Sharing service. It is also possible to work offline. Tekla Model Sharing requires a license.

Extensions

Extensions are applications that have been made using the Tekla Open API or custom components. Extensions are not part of the Tekla Structures product release. Extensions for Tekla Structures are available in Tekla Warehouse.

You can import the Tekla Structures extensions that have the `.tsep` file extension to the **Applications & components** catalog in Tekla Structures. The extensions are installed when you restart Tekla Structures. Tekla Structures extensions that have the `.msi` file extension have to be installed separately by running the installation file.

Tekla User Assistance

Tekla User Assistance collects all help and support material to one place. By default, all help content is online. You can access Tekla Structures help material in Tekla User Assistance by pressing the F1 button in Tekla Structures. You can also use the help offline. Offline help installation packages are available in Tekla Downloads.

See also

Tekla Structures installation prerequisites (page 5)

Tekla Structures installation folders (page 6)

Install Tekla Structures (page 9)

1.1 Tekla Structures installation prerequisites

Installing Tekla Structures requires one of the following operating systems: Windows 10, Windows 8.1, Windows 8, and Windows 7 SP1.

The Tekla Structures installer is available as a 64-bit version.

Tekla Structures needs the following redistributable packages that are automatically installed during the Tekla Structures software installation if they, or newer versions of the packages, do not exist on your computer:

- Microsoft .NET 4.5.1
- Microsoft Visual C++ 2010 Redistributable (x64) 10.0.40219
- Microsoft Visual C++ 2010 Redistributable (x86) 10.0.40219
- Microsoft Visual C++ 2013 Redistributable (x64) 12.0.21005
- Microsoft Visual C++ 2013 Redistributable (x86) 12.0.21005

In addition, the following installers are automatically installed during the Tekla Structures software installation:

- TSEP File Dispatcher
- Tekla Warehouse Service
- Tekla Warehouse Content

The Tekla Structures installer contains Tekla Warehouse Content and Tekla Warehouse Service as prerequisite installers. They are not mandatory before the actual Tekla Structures software installation but they need to be installed to get the Tekla Warehouse functionality working properly.

Recommended hardware is described in Tekla Structures 2016 Hardware Recommendations.

See also

Install Tekla Structures (page 9)

Tekla Structures service packs and progress releases (page 12)

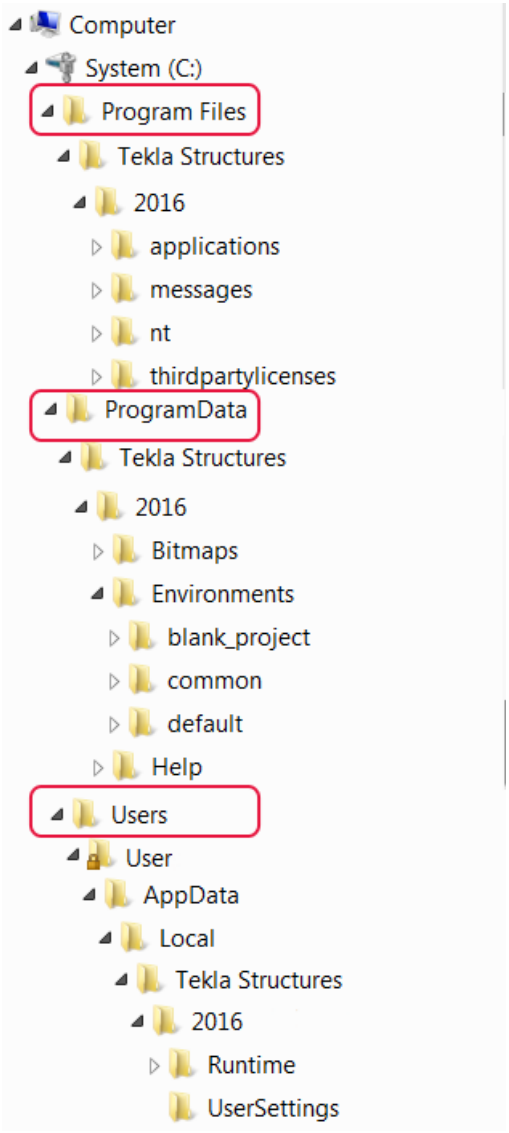
1.2 Tekla Structures installation folders

Install Tekla Structures to an empty folder to ensure you get all the files that are included in the installation package.

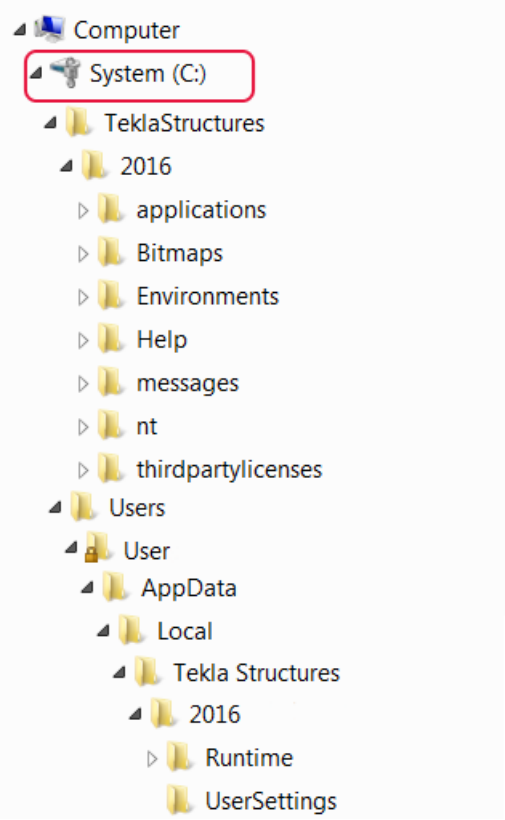
You can select the Tekla Structures software installation folder in the software installation wizard. By default, the software is installed under `\Program Files`.

The location of the environment installation folder depends on where you have installed the software. You cannot select the installation folder for the environments in the installation wizard. By default, the environments are installed in `\ProgramData\Tekla Structures\<version>\environments`. The default location is used when the software is installed under `\Program Files`.

The image below shows the default installation folder structure under `\Program Files` and `\Program Data`. User settings are stored under `\Users`.



The image below shows the installation folder structure under `C:\`. If you install Tekla Structures software under `C:\`, the environments are also installed and the user settings stored under `C:\`.



When you have installed the software and the environments, you can check the installation paths in Windows **Control Panel**.

See also

Install Tekla Structures (page 9)

Tekla Structures service packs and progress releases (page 12)

2 Install Tekla Structures

To use Tekla Structures, you need to install the Tekla Structures software and the needed Tekla Structures environments. You need to have at least one environment installed. Tekla Structures installation always includes the Blank project environment.

You also need to have the Tekla Structures license server installed, either on your own computer or on another computer, and you need to activate your Tekla Structures license.

NOTE You need to be logged in with administrator rights to install the Tekla Structures software on your computer.

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1. Install the Tekla Structures software:
   a. Download the installation file from Tekla Downloads to your computer.
   b. Double-click the installation file to run the installation.
   c. Follow the steps in the installation wizard to complete the installation.

      You can select the installation folder and the model folder.
2. Install the Tekla Structures environments:

   Note that the location of the environment installation folder depends on where you have installed the software. You cannot select the environment installation folder in the installation wizard.
   a. Download the environment installation files from Tekla Downloads to your computer.

      You need to install at least one environment.
   b. Double-click the installation file to run the installation.
   c. Follow the steps in the installation wizard to complete the installation.

See also

Tekla Structures installation prerequisites (page 5)

Tekla Structures installation folders (page 6)

Add an environment to Tekla Structures (page 10)

Tekla Structures settings in Windows registry (page 10)

2.1 Add an environment to Tekla Structures

You can add as many environments as you want to a Tekla Structures version you are already using. You need to have at least one environment installed to use Tekla Structures.

The latest environment installation files are in Tekla Downloads. If you are using a service pack or a progress release, ensure that you have the latest environment installation file when adding an environment to the service pack or progress release.

1. Download the environment installation file from Tekla Downloads to your computer.
2. Double-click the installation file to run the installation.
3. Follow the steps in the installation wizard to complete the installation.

   Note that the location of the environment installation folder depends on where you have installed the software. You cannot select the environment installation folder in the installation wizard.

See also

Install Tekla Structures (page 9)

Install a Tekla Structures service pack or progress release (page 13)

2.2 Tekla Structures settings in Windows registry

Windows registry is a hierarchical database that stores configuration settings and options in Microsoft Windows operating systems. Registry settings are used during a Tekla Structures session and during a Tekla Structures installation.

WARNING Do not change the registry settings. Changing the settings can cause the operating system to fail. It is possible to view the registry settings using the Registry Editor.

User settings

Some of the Tekla Structures user settings, for example, general options, and dialog box locations and sizes are stored in the registry. The settings are saved in a registry key named after the Tekla Structures version number in the registry branch `HKEY_CURRENT_USER\Software\Tekla\Structures\<VERSION>`.

Tekla Structures uses the hardcoded default settings when opened for the first time after the installation. If you change a setting during a Tekla Structures session, Tekla Structures saves the change during the session, or when you exit Tekla Structures. When you open the same version of Tekla Structures again, the changed setting is used.

When upgrading to a newer Tekla Structures version, you can use the Migration Wizard tool to copy the settings you have changed.

Installation settings

The Tekla Structures installation saves information to the `HKEY_LOCAL_MACHINE\SOFTWARE\Tekla\Structures\<VERSION>` registry key.

See also

Tekla Structures installation (page 3)

3 Tekla Structures service packs and progress releases

Tekla Structures service packs and progress releases are update versions for the main and intermediate Tekla Structures versions. To use a service pack or a progress release, you must have the related main or intermediate version of Tekla Structures installed.

Note that you do not need to install all the service packs or progress releases of a certain Tekla Structures version. For example, you can install the service pack 2 version without installing the service pack 1 version. The service pack and progress release installation packages include only the changed files.

- Service packs include improvements and fixes to existing features. We recommend that all users install the latest service pack.

  You can install any service pack on top of the related main or intermediate version. Note that you cannot install an earlier service pack on top of a newer service pack, for example, service pack 1 on top of service pack 2.

  You cannot install a service pack on top of a progress release. When a new service pack is released, a new progress release is also released to offer the fixes in the service pack to progress release users.

- Progress releases include features and fixes for a specific user group, such as offshore structures detailers. Progress release users test these features and fixes before they are released to all users in the next main or intermediate version. Progress releases also include the fixes of the service pack that is released at the same time.

  You can install any progress release on top of the related main or intermediate version. Note that you cannot install an earlier progress release on top of a newer progress release, for example, progress release 1 on top of progress release 2.

  You can install a progress release on top of a service pack. If you install a progress release on top of a service pack, the progress release must be newer than the service pack, or a version that was released at the same time as the service pack.

- You need to install the latest environments to ensure that the environments work correctly in the service pack or progress release. We recommend that you update all the environments you are using.

See also

Install a Tekla Structures service pack or progress release (page 13)

Install an earlier Tekla Structures service pack or progress release (page 13)

3.1 Install a Tekla Structures service pack or progress release

You can install a service pack or a progress release to update main and intermediate Tekla Structures versions. Service packs and progress releases can contain new features, and improvements and fixes to existing features.

1. Ensure that you have the latest related main or intermediate version of Tekla Structures installed. If you do not have it, you must install it first.
2. Download the service pack or progress release software installation file from Tekla Downloads to your computer.
   a. Double-click the installation file to run the installation.
   b. Follow the steps in the installation wizard to complete the installation.

      You cannot select the installation folder in the installation wizard.
3. Download the needed environment installation files from Tekla Downloads to your computer.

   You do not need to remove any environments. Installing a newer version of an environment automatically upgrades the older version of that environment.
   a. Double-click the installation file to run the installation.
   b. Follow the steps in the installation wizard to complete the installation.

See also

Tekla Structures service packs and progress releases (page 12)

Install Tekla Structures (page 9)

3.2 Install an earlier Tekla Structures service pack or progress release

We recommend that you use the latest Tekla Structures service pack or progress release. In certain situations, you may need to take an earlier Tekla Structures service pack or progress release into use even though you are already using a newer service pack or progress release.

1. Uninstall the service pack or progress release software you are now using in Windows **Control Panel**.
2. Uninstall the related main or intermediate version software in Windows **Control Panel**.
3. Uninstall the related environments in Windows **Control Panel**.
4. Download the software installation file of the main or intermediate version from Tekla Downloads.
   a. Double-click the installation file to run the installation.
   b. Follow the steps in the installation wizard to complete the installation.

      You can select the installation folder and the model folder.
5. Download the software installation file of the service pack or progress release from Tekla Downloads.
   a. Double-click the installation file to run the installation.
   b. Follow the steps in the installation wizard to complete the installation.

      You cannot select the installation folder in the installation wizard.
6. Download the environment installation files related to the service pack or progress release that you have installed.

   The latest environments are in Tekla Downloads. You need to install at least one environment.
   a. Double-click the installation file to run the installation.
   b. Follow the steps in the installation wizard to complete the installation.

See also

Tekla Structures service packs and progress releases (page 12)

Tekla Structures installation folders (page 6)

4 Tekla Structures upgrade to a new version

You can have many Tekla Structures versions on your computer. When you install and start using a new main or intermediate version, you do not need to uninstall the older versions. Note however, that you can have only one service pack or progress release related to a certain Tekla Structures version on your computer.

NOTE We recommend that you complete any models you are already working on using your current version of Tekla Structures. Once you save a model in the new version, you cannot open it in the previous versions anymore.

In the new Tekla Structures version, you can use the information you have customized in the previous version. We strongly recommend that you create project and firm folders, and store the files you customize in these folders. Tekla Structures does not replace the files in project and firm folders when you install a new version. If you do not use project and firm folders, you need to transfer the customized information to the new version manually.

You can use the Migration Wizard tool to copy some of the personal settings to the new version. You can skip the copying if you do not want to copy the settings, or if you want to copy the settings from some other Tekla Structures version than suggested in Migration Wizard.

See also

Copy personal settings to a new Tekla Structures version (page 15)

Transfer customized information to a new Tekla Structures version (page 16)

4.1 Copy personal settings to a new Tekla Structures version

You can copy your personal settings from an older Tekla Structures version to a newer Tekla Structures version using the Migration Wizard tool. Migration

Wizard opens automatically when you start a new version of Tekla Structures for the first time.

Migration Wizard shows the version number from which the settings are copied and the version number to which the settings are copied. You can select which settings are copied.

1. Start the new Tekla Structures version.
2. In Migration Wizard, click **Next** to start copying the settings.
3. Select the settings you want to copy and click **Next**.

   You can copy user settings and registry settings.
4. Check that you have selected the correct settings.
5. Click **Copy**.

NOTE If you want to copy the settings later, you can start Migration Wizard manually by double-clicking the `MigrationWizard.exe` in the `\Tekla Structures \<version>\nt\bin\applications\Tekla\Migrations` folder. You can select the version from which the settings are copied and the version to which the settings are copied.

See also

Tekla Structures upgrade to a new version (page 15)

4.2 Transfer customized information to a new Tekla Structures version

You can transfer customized information from a previous Tekla Structures version to the new Tekla Structures version.

1. If you have used project and firm folders to store customized files in a model using a previous Tekla Structures version, go to **File menu** --> **Settings** --> **Advanced Options** and check that the `XS_FIRM`, `XS_PROJECT` and `XS_COMPANY_SETTINGS_DIRECTORY` advanced options point to the folders where the customized files are located.
2. If you have not used project and firm folders to store customized files, you need to transfer the customized files manually to the new Tekla Structures version to use the information. Check at least the following:
   - Advanced options
   - Files related to templates, reports and drawings
   - Catalog files: profile catalog, material catalog, bolt catalog, bolt assembly catalog, rebar shape catalog
   - Conversion files

- Extensions

  You need to re-install extensions for the new Tekla Structures version.
- NC export settings
- Printer catalog settings
- User-defined attributes
- Saved model object properties

You can copy some information automatically to the new version using the Migration Wizard (page 15) tool.

See also

Tekla Structures upgrade to a new version (page 15)

5 Uninstall Tekla Structures

Uninstall the Tekla Structures software and environments in the Windows **Control Panel**.

1. Go to the Windows **Control Panel**.
2. Uninstall the Tekla Structures software.
3. Uninstall the Tekla Structures environments related to the software version.
4. If needed, delete the additional files or extensions related to Tekla Structures manually from the installation folders.

When you uninstall an environment of a Tekla Structures software version you are still using, the uninstalled environment is not shown in the Tekla Structures setup dialog box anymore.

See also

Tekla Structures installation folders (page 6)

6 Install Tekla Structures multi-user server as a service

The Tekla Structures multi-user server installer installs the multi-user server as a service. When you have installed the server, the service is always available and it is automatically started when the server computer is started. There is no need to log in and no need to start the server manually every time you start your computer. Tekla Structures multi-user server allows many users to work on the same model simultaneously.

We recommend that you use the latest multi-user server version available regardless of the Tekla Structures version that you use.

1. Download the multi-user server software installation file from Tekla Downloads.
2. Double-click the installation file to run the installation.
3. Follow the steps in the installation wizard to complete the installation.

   The server is by default installed to:

   - `c:\Program Files\Tekla Structures Multiuser Server` in a 32-bit operating system
   - `c:\Program Files (x86)\Tekla Structures Multiuser Server` in a 64-bit operating system

   You cannot change the installation path during the installation.

   The multi-user server uses TCP/IP port `1238`.

The installation log is written to the `xs_server.log` file that is available in `c:\ProgramData\TeklaStructuresServer`.

See also

Tekla Structures installation (page 3)

7 Centralized installation of Tekla Structures

Installing Tekla Structures centrally across the company network saves time in a large company when there are many Tekla Structures users.

Centralized installation allows you to run the Tekla Structures installation silently in the background so that the users do not see the installation wizard dialog boxes. For more information, see Centralized distribution of Tekla Structures 2016.

See also

Tekla Structures installation (page 3)

8 Using Tekla Structures with application and desktop virtualization

Using Tekla Structures with the Citrix application and desktop virtualization is a flexible and safe way to quickly add users to Tekla Structures projects without locally installing Tekla Structures and copying project data to a user's computer. Citrix application and desktop virtualization products are products of Citrix Systems, Inc.

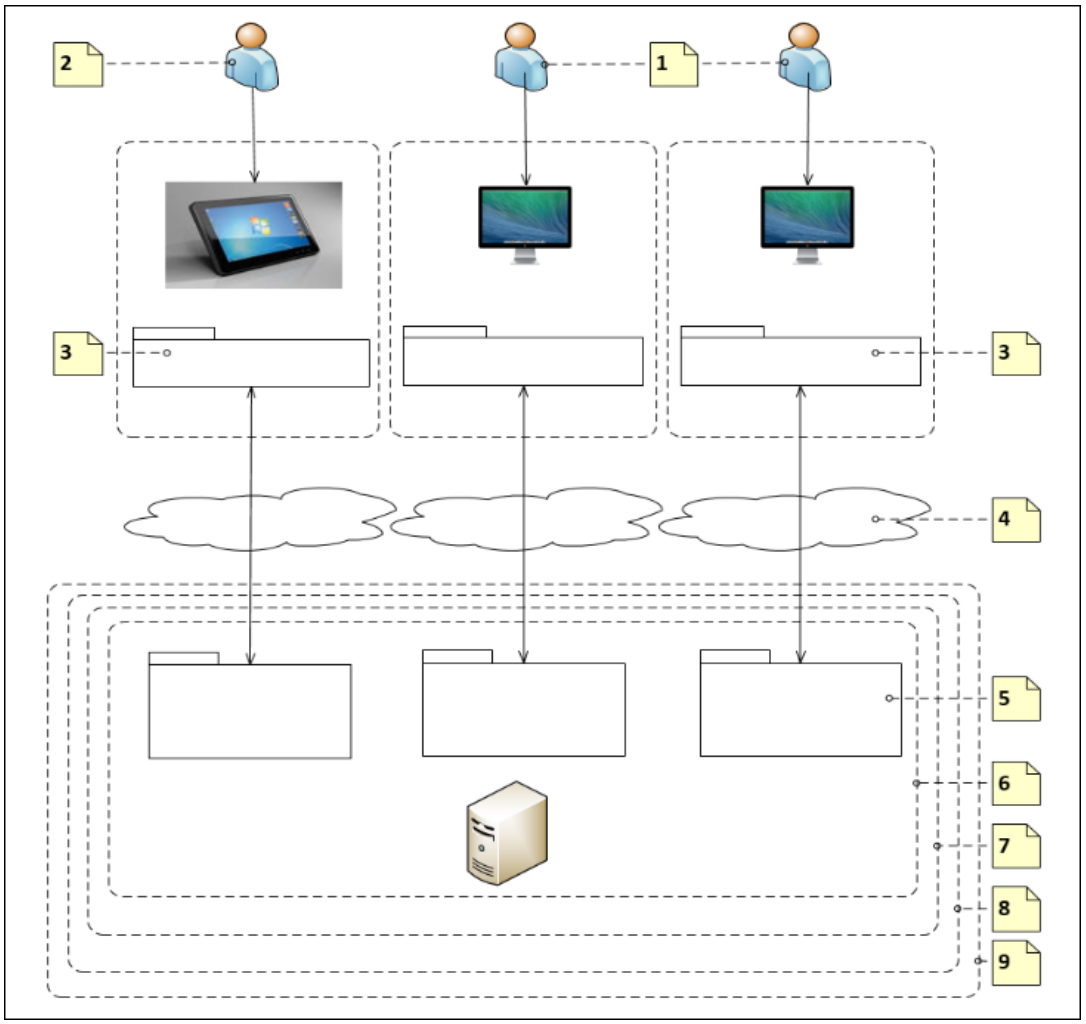
Using Tekla Structures from a centralized location ensures that all users in the project are using the same project environment set-up. Streaming applications from the server enables the use of Tekla Structures on client computers, tablets and smartphones that have different hardware and software configurations. The project data is protected as everything is stored only on the server.

The key components for using Tekla Structures with the Citrix application and desktop virtualization are:

- Windows server
  - Virtualization solution, such as Citrix XenServer or VMware vSphere
  - Citrix application virtualization or Citrix desktop virtualization solution installed
  - The server is typically set up by the company's IT department.
- User groups, in other words, delivery groups defined on the server
  - Delivery groups are set up by the administrator of the virtualization environment.
- Access rights for delivery groups defined on the server
  - Access rights are set up by the administrator.
- Citrix Receiver installed on client computers
  - The Citrix Receiver is typically delivered through an Internet browser.

- Tekla Structures installed on the server or on the virtual machine running on the server
  - High-end Windows server that can serve multiple concurrent users
- Fast access to project files
- Connection to Tekla Structures license server as each Tekla Structures user needs a valid Tekla Structures license

The image below shows the main concepts in Tekla Structures virtualization.



1	Desktop user
2	Tablet or smartphone user
3	Citrix thin client
4	Secure display data connection over the Internet
5	Tekla Structures instances running on a virtual machine
6	Virtual Windows server OS
7	Virtualization platform (hypervisor layer)

8	Server hardware
9	Data center hosted by the user organization, Trimble, Amazon, or by a third party

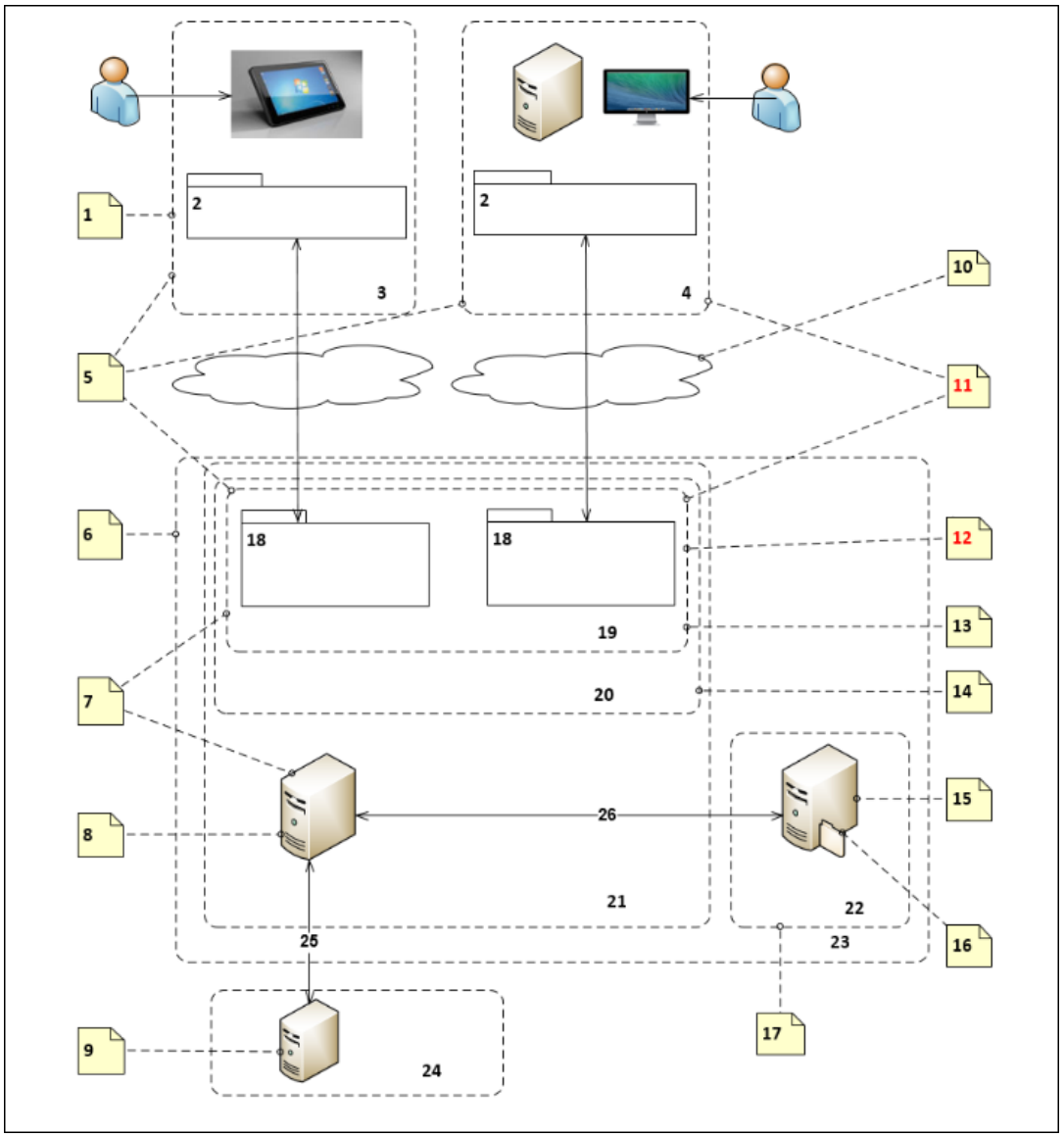
9 Prerequisites for using Tekla Structures in a virtual environment

Citrix virtualization is set up either on a physical server or on a virtual server. Users and user groups are added, and access rights are defined with Citrix Studio for accessing computing resources on the server.

Recommended hardware is described in Tekla Structures 2016 Hardware Recommendations.

For detailed instructions on installing and setting up XenApp and XenDesktop, see the Citrix documentation.

The image below shows the main components in Tekla Structures virtualization.



1	Citrix XenApp 7.6
2	Thin client application: Citrix XenApp client or Citrix XenDesktop desktop viewer
3	Tablet / Phone user
4	Desktop user
5	Multiple concurrent clients may share one virtual machine instance
6	Data center hosted by the user organization, Trimble, or by a third party
7	A graphics processing unit (GPU) can be dedicated for each virtual machine instance with 0.5 GB to 2 GB of graphics memory, depending on the usage.
8	High-end computer: • Fast graphics card, such as NVIDIA GRID K2

	• 8 GB to16 GB of main memory for each user, depending on the usage • Good CPUs, such as Intel Xeon E5-2680 • Windows Server 2012 R2 OS
9	Local, enterprise or cloud license server. Each `TeklaStructures.exe` running on the virtual machine needs a valid license.
10	Network bandwidth, 1 Mbps or more
11	Accessing files from the client's local file system may be very slow and should be avoided.
12	Never use the local disk of the virtual server for saving model folders.
13	Citrix XenDesktop 7.6
14	VMware vSphere 6.0 hypervisor
15	File server
16	Normal Windows file system permission handling on the file server
17	Project data including environments should be stored on another (server) machine in the data center or file system inside the company network.
18	Desktop application: Tekla Structures
19	Virtual machine instance
20	Hypervisor
21	Windows server machine hosting the virtual machines
22	Network-attached storage (NAS)
23	Data center
24	License server (on premises or hosted outside the data center)
25	Get license
26	Read/write project files. Fast disk access is needed.

10 Set up the virtual environment for Tekla Structures

You need to set up the server, define delivery groups, install the Tekla Structures software and environments on the server, and Tekla Structures users need to install the Citrix Receiver on their computers.

1. Set up the server.

   High-end computer with a fast graphics card, such as NVIDIA GRID K2 for serving multiple concurrent users. There needs to be enough main memory for each user depending on the size and level of detail of the projects they are working on. The server computer needs to have a good CPU and it should be running the Windows Server 2012 R2 operating system.

   For detailed instructions on installing and setting up XenApp and XenDesktop, see the Citrix documentation.

2. Install Tekla Structures (page 9) software and the needed environments on the server.

   NOTE Storing models on the virtual computer local disk may cause access problems. Use a dedicated file server for models, and remember to select the correct network location for the model folder during the Tekla Structures installation.

   Tekla Structures environment settings are the same for all users that use the same virtual computer. In the same manner as with normal desktop installations, you still have to make sure that the environments on different virtual machines are the same or matching.

   We strongly recommend that you use standard Tekla Structures environments and amend them with company or project-specific settings (on the network file server).

3. Install the Citrix Receiver on the Tekla Structures client computer:

   We recommend that you use the Citrix Receiver web user interface.

   a. Open the Citrix Receiver web user interface in your web browser.

      Use the `https` address provided by your company's administrators.

   b. Install the Citrix Receiver client software by following the steps in the installation wizard. Do not create an account, or login in the installation wizard, but finish the installation and return to the web user interface.

   c. After the installation, return to the Citrix Receiver web user interface and log in with the credentials provided by your company's administrators.

   d. Select the desired virtual desktop. If the virtual desktop does not start automatically, run the downloaded Citrix (`.ica`) file.

   You can now start using Tekla Structures on the virtual desktop, in the same manner as if it was installed on your own computer.

   - When you use the virtual desktop for the first time, you can give read and write access to your local files in the file access dialog box.
   - Note that referencing local files from your computer directly in Tekla Structures is not recommended. If you need to access those files in Tekla Structures, you should copy them to a shared network location first.
   - Note that model folders are not copied to the client computers.

   The Citrix Receiver client is updated frequently. Always install the latest client when the web user interface suggests you to do so.

11 Disclaimer

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Index

I

V