Installation and Licensing

Administrator's Guide

3D **VS**
VIEWSTATION

K KISTERS

KISTERS

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1.1.1   Installation of the Desktop Version

Coming soon.

1.1.2   Contact

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
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1.2 VisShare

This chapter contains the these topics:

1.2.1 Installation and Licensing

VisShare is licensed with the WebViewer included.

1.2.1.1 Admin Post Installation Guide

First Steps

After the installation is completed, you will find the installed VisShare directory in the given path and four running services:

Service Name	Description / Details
Kisters Nginx Service	The Nginx proxy to upgrade to SSL (optional) and to route the traffic to the correct ports for the application ▪ Port 3000 for the backend REST API ▪ Port 80 for the VisShare client ▪ Port 8080 for the WebViewer client (Websocket support needed)
Kisters VisShare Service	The service to provide the VisShare server and frontend ▪ Needs DB access ▪ Needs mail server access ▪ Needs model repository access
Kisters VisShare WebViewer Service	The service to provide the WebViewer server and frontend ▪ Needs model repository access
Kisters VisShare Converter Service	The automated conversion of files uploaded to the VisShare system ▪ Needs model repository access

If any of these services do not run, you can expect an error. To ensure a smooth behavior for the end user, you should set these services to restart on service failure and on server restart (you can do this via the Windows Services properties).

A common approach is to change the model repository from the default path (inside the VisShare installation folder).

To do this, there are a few settings that need to be updated to point to the new location:

File Name	Description / Details
VisShare/server/data sources.json	Change the entry root in the filestorage section to the new location
VisShare/server/config/settings.json	Change the settings DriveName and WVDriveName to the new location
VisShare_WebViewer/CRendererInstance.ini	Change the setting ModelRepository to the new location

Debugging

If you encounter any errors, there are multiple directories to look for log files:

Location	Description / Details
VisShare root	The setup logs into this file, here you can find any errors that occured on the initial installation
VisShare_Webviewer/logs	The WebViewer logs into the subdirectories below this path ▪ /server ▪ Daily log for the WebViewer server ▪ /instance ▪ One log file per instance
VisShare/server/middleware/log	▪ The VisShare server logs into this directory ▪ One log file per service start
VisShare_Nginx	See the official Nginx documentation for further troubleshooting
VisShare_Converter service	▪ /Log ▪ One log file per service start

Security Considerations

This chapter will cover some security considerations you should keep in mind.

Service Account Rights

We recommend to run the services mentioned above with special service accounts. You should restrict access to the model repository and to the VisShare folder only to this service account, so that other users on the systems can't read the model or configuration files (there are clear text access informations in the configuration files).

Model Repository

To emphasize the last recommendation, the model repository should always be secured against access from non-permitted users/services/applications. If the model repository is located outside of the VisShare server system, you may need to implement a new service account on the VisShare machine, that has access to the remote model repository and set this account for the VisShare services.

VisShare User Access

The VisShare user access is layered in multiple access controls. The default installation tries to use the highest security regarding the user access limitation.

Access control can be managed by following layers:

1. Registration

User accounts on the VisShare can be created via registration (email + password). It is possible to define the way, registrations can be done via settings:

Registration Method	Description / Details
LDAPOnly	With this setting active, registrations are disabled and only valid LDAP users can enter the VisShare

Registration Method	Description / Details
InviteOnly	With this setting active, registrations can only be triggered by valid VisShare users via an email invitation to new user accounts
AdminCreationOnly	With this setting active, registrations are disabled and only administrators can create new user accounts

2. Access to the VisShare itself

The VisShare is by default only accessible with a valid login (email + password) from a confirmed user mail (a newly registered user must click on a confirmation link send to this email).

New user accounts can be further restricted by following settings:

Restriction Level	Description / Details
AdminVerification	Accounts need to be verified by an admin before they can start working on the VisShare
AllowGuests	Non-verified accounts are allowed to access public and showcase projects

There are two ways to bypass the login, the first (and recommended) is by accessing file links that were created by VisShare users and the other way would be to enable the RemotePublic flag.

This will allow the access to public projects via the link `<server-url>/remote-public/<ID-of-the-public-project>`. This setting should only be set to true if there really is a need for this kind of access.

3. User pools

The next layer of user access (or user separation) are the user pools. Administrators are allowed to create these and map user accounts to them.

User accounts are only allowed to see (e.g. during the mapping of users to a new project) other users that are in one of their user pools and a project must be mapped to a user pool to enforce a separation of users per project.

User pools do not limit the access to the projects or files, this must be done on project level itself, they are solely used to limit the visible users for normal accounts.

4. Project access

The project access should be seen as the main feature to limit the access to the important data (the files). These access rules are applied at the project level and will be inherited down to all files and folders inside the project.

Projects can be set to one of the following types:

Type	Description / Details
Public	Every user can see this project and has write access
Showcase	Every user can see this project but write access must be permitted by project administrators
Restricted	Only users with at least read access can see this project and write access must be permitted by project administrators

Additionally, every project has different kinds of user roles for the users that can access the project:

Role	Description / Details
Project admins	▪ Project admins are allowed to add users to the project and give them rights ▪ By default, the project creator is a project admin and the owner of the project
Write access	▪ These users can see, view, upload, paste, copy and delete files and folders ▪ These users can download files and folders ▪ These users can save files from the WebViewer sessions into the project
Read only access	These users can only see and view files and folders

5. Account roles

There are three roles a user account can have:

Role	Description / Details
Guest (if enabled)	Has only access to public and showcase projects
Normal user	▪ Has access to public and showcase projects ▪ Can create new projects ▪ Has access to projects that permitted this account to access
Admins	▪ Same access as normal users ▪ Can create and assign user pools ▪ Can change the VisShare theming ▪ Can/must verify new users (if enabled) ▪ Can create, delete and block (=unverify) users ▪ Can confirm emails (if needed) **Note**: Cannot access all projects (same rules apply as for normal users)

There are additional settings to limit features (such as the download) on the VisShare, please refer to the Admin Settings Documentation ⌐11┐ for a complete list.

CSP and Other HTTP Header

It is recommended to set some HTTP header to improve the security.

These headers need to be set either on the Proxy Server or in the `index.html` (installation folder/www):

The Proxy headers have not much impact on the execution of the VisShare service and are therefore implemented in the default Nginx configuration. If a different proxy is used, it is recommended to enable at least the following headers in the proxy configuration:

▪ Content-Security-Policy: `"frame-ancestors 'self';"`
▪ Access-Control-Allow-Origin: `<VisShare FQN>`

The headers set in the client index.html may have some impact on the execution of the VisShare service and are therefore only described here and should be tested further before deploying them to the live installation.

Moreover, a dynamic hash has to be generated for every release version. This header can be taken from the browser development tools after loading the VisShare in the browser (it will be logged as a missing hash in the console tab).

Following header should be written in a meta tag in the `index.html`:

▪ Content-Security-Policy:
  ▪ default-src: 'none'
  ▪ style-src: 'self' 'unsafe-inline'
  ▪ script-src: <version depending SHA hash>
  ▪ img-src: 'self' data:
  ▪ font-src 'self'
  ▪ script-src-elem: 'self' <version depending SHA hash>
  ▪ object-src: 'none'

- connect-src: 'self'
- form-action: 'self'
- base-uri: 'self'
- worker-src: blob:
- block-all-mixed-content

For example like this:

```
<meta http-equiv="Content-Security-Policy" content="
    default-src 'none';
    style-src 'self' 'unsafe-inline';
    script-src 'sha256-
X+U5Sd/3bd4dCP/omuUcZqp4zoblo0iOYTy3KKqhH2I=';
    img-src 'self' data:;
    font-src 'self';
    script-src-elem 'self' 'sha256-
RtvwbtYK3Z0+zSLo7typSexHqOElemnq3IuFC/AjvsM=';
    object-src 'none';
    connect-src 'self';
    form-action 'self';
    base-uri 'self';
    worker-src blob:;
    block-all-mixed-content;"
>
```

1.2.1.2   Admin Settings Documentation

These settings can be set through various configuration files in the VisShare repository:

File	Description
server/config/settings.json	The file contains settings regarding the VisShare server configurations that are written to the DB
server/datasources.json	The file contains the connection information for the DB, file storage, and mail server
client/assets/settings/settings.js	The file contains settings to customize the VisShare user interface

Server-Side Settings.json

The `settings.json` file is written once with the configuration defined during the setup. This file should reside with a trailing underscore (`settings.json_`) inside the directory, and removing the underscore will write the content of this file to the database the next time the VisShare service is restarted. This will also reapply the underscore after success.

Name	Description	Default value
DriveName	The path to the WebViewer file storage (as seen from the VisShare service)	/VisShare_Models/ (inside VisShare installation repository)

Name	Description	Default value
WVDriveName	The path to the WebViewer file storage (as seen from the WebViewer service)	/VisShare_Models/
LDAPUrl	URL to the LDAP server	none
LDAPBaseDN	The BaseDN to start the LDAP bind	none
LDAPBindDN	The additional search for the LDAP bind	none
UseLDAP	A flag whether LDAP is used	false
LDAPOnly	A flag that allows logins only via LDAP (no local users)	false
AdminVerification	A flag that determines if users have to be verified by an admin before they can enter the VisShare	true
AllowGuests	A flag that determines if guests are allowed if `AdminVerification` is enabled (a guest is a limited role)	true
RemotePublic	A flag that determines if public projects are reachable without logins	false
SendingMail	The mail address that is used to send mails	Set from the setup
SendMailsOnConfirm	A flag that determines if mails are send to specific email addresses if a new user is confirmed through the users mail	false
ConfirmMailRecipients	An array containing the receiving addresses (comma-separated) for the confirmed users	none
Convert	A flag that determines if uploaded files are converted to 3DVS	true
DeleteNative	A flag that determines if the native uploaded files are deleted after the conversion to 3DVS	false
SingleSession	A flag that determines if a user can only start 1 session (view 1 file). If set, attempting to open a second session will throw an error before the WebViewer session is initialized	false
UseTenants	A flag that determines if user pools are used	true
InviteOnly	A flag that determines if new users can only registered if they are invited by existing users	false
AdminCreationOnly	A flag that determines if new users can only be created by admins (no registration at all)	false
AdminVerificationLDAP	A flag that determines if even LDAP users must be verified by an admin first	false
AllowDownloads	A flag that determines if downloads are allowed in general	false

Name	Description	Default value
OnlyAdminProjects	A flag that determines if projects can only be created by admins	false
IgnoreOnConvert	A list containing file extensions that shouldn't be converted on upload. These files are flagged in the UI and aren't opened in the WebViewer and instead throw an error on click	empty
AllowIgnoredFileType Download	A list containing file extensions as a subset of the IgnoreOnConvert settings. These files are downloaded by clicking them (instead of throwing an error) **Note**: This can be used to view "browser native" files like PDF in the browser itself (through the download) instead of viewing them in a WebViewer session	empty
UserCount	LIC setting that limits the number of registered users on the VisShare (to further reduce the license value if needed)	0 (that means disabled)
SessionsPerUser	LIC setting that limits the sessions a user can open (to further reduce the license value if needed)	0 (that means disabled)
RemoteSessionCount	LIC setting that limits the session amount that can be opened remotely (through remote public projects, to further reduce the license value if needed)	0 (that means disabled)
LinkSessionCount	LIC setting that limits the session amount that can be opened remotely (through remote links, to further reduce the license value if needed)	0 (that means disabled)

Undocumented Settings

Note: These settings should not be changed by the admin without our guidance:

Name	Description	Default value
ServerUrl	The full URL of the server	Set from setup
WebViewerBackendUrl	The WebSocket URL for VisShare <> WebViewer backend connection Note: Should be local to prevent attacks from the outside.	ws://localhost:9999
WebViewerClientUrl	The full URL for the WebViewer front end HTTP calls	<ServerUrl from setup>/visshare_web viewer
WebViewerClientWeb SocketUrl	The WebSocket URL for the WebViewer client	ws(s)://<ServerUrl from setup without http(s) >/visshare_webviewe r/ws
ConfirmationUrl	The URL a new user is presented in the confirmation request mail	Set from setup (= ServerUrl)

Name	Description	Default value
ConfirmationRedirect Url	The URL used in automated mails to redirect to the VisShare pages	Set from setup (= ServerUrl)
KASKey	A key shared between the VisShare backend application and the KAS converter service that authenticates jobs	vs-kas-key
KASTimeout	A timeout for jobs, after exceeding this duration jobs are removed	600000
UseAdvancedRegister	A flag that indicates that a special page with additional registration data is asked from a new user before completing the registration **Note**: Used for the internal VisShare to get more customer informations	false
AdvancedRegisterMail	The recipient mails for the customer data collected on the advanced register page (comma-separated)	empty
Color1	Main color setting (should be changed through the application)	#d67c1c
Color2	Secondary color setting (should be changed through the application)	#ffc662
Color3	Tertiary color setting (should be changed through the application)	#fcd797
Banner	The name of the banner svg (should be changed through the application)	Kisters_banner.svg
Logo	The name of the logo svg (should be changed through the application)	Kisters_logo.svg

Server-Side datasources.json

The datasource file contains the connection parameters for the DB and the SMTP server as well as the filestorage location. The initial configuration is done through the setup. VisShare reads this file on every service start, so no renaming needs to be done but a service restart is mandatory to apply changes.

The PostgreSQL section covers the database connection. While the VisShare uses the URL parameter for the connection, the other parameters can/should be adapted too for a better overview.

The filestorage section covers the location of the filestorage, here only the root parameter should be changed if the location needs to be changed. The initial repository is the default `VisShare/VisShare_Models` directory.

Note: Always change the drive settings from the `settings.json` (see above) and the WebViewer renderer (`CRendererInstance.ini`) ModelRepo configurations accordingly to this root repository. The KAS converter service gets the path from the VisShare, there is no change needed.

The email section covers the SMTP server connection parameters. This heavily depends on the SMTP server VisShare should connect to and even the parameters may change from case to case. The default configuration should cover the "most basic" SMTP server demands, for additional information see the nodemailer documentation (the loopback framework uses Nodemailer as its mailing module): https://nodemailer.com/

Client-Side settings.js

This file contains settings for the user interface and behavior of the VisShare application. Changes can be made on the fly without restarting the service, but note that the browser cache may be cleared to see the changes.

Name	Description	Default value
VSShareBackendUrl	The URL for the API HTTP calls	Set during setup to the VisShare server URL
UseAdvancedRegister	A flag that determines if the client should reroute to the advanced register page after the registration request	false
AdminCreationOnly	If set, hide the register button	false
VisShareDisclaimerUrl	The URL to the VisShare disclaimer	https://viewer.kisters.de/en/legal-information-disclaimers.html
VisShareImprintUrl	The URL to the VisShare imprint	https://viewer.kisters.de/en/imprint.html
ShowTermsAfterRegister	If set, a new user is presented the terms and condition page after registration	false
HidePrivate	If set, hides the whole private section (private project, shared files, shared with me)	false
HideMailLinks	If set, hides the options to send share links	false
HidePasswordReset	If set, hides the password change and forgot password options	false
HideResendMail	If set, hides the resend mail option	false
OnlyAdminProjectTypeChanges	If set, only VisShare admins can see the context menu option to change the project type to showcase/public	false

Additional Customization/Configuration

There are a few additional files that can be changed by the admin to further customize the application:

Path	Description
Client-Side	
client/assets/info-pages/info-page-auth.html	The information page that is displayed on clicking the question mark icon by a logged and confirmed in user
client/assets/info-pages/info-page-guest.html	The information page that is displayed on clicking the question mark icon by a guest or not logged in user
Server-Side Mail Templates	
server/views/account-creation.html	The mail template send to users on account creation by an admin

Path	Description
server/views/advanced-register-mail.html	The mail template send to the recipients of the advanced registration data
server/views/invite-mail.html	The mail template send to a mail address that was invited by a VisShare user
server/views/password-reset.html	The mail template send to a user that requested a password reset
server/views/share-mail.html	The mail template send to a mail address if an automated mail should be send on the creation of a share link
server/views/user-confirmed.html	The mail template send to the recipients of mails if a new user verified its account through the mail
server/views/verify.ejs	The mail template send to new users asking them to verify their account
Service Scripts that are executed on service start if the trailing underscore is removed - The content will be processed on server start and the file then be emptied and renamed	
server/config/adminCreation.json	This script creates an admin account on startup with given login mail and password
server/config/projectDefaultsManagement.json	This script is used to provide a default project owner and default projects admin; this file has no "underscore logic" as it is read and written to the application runtime memory on every service start ▪ `ProjectDefaultOwnerEmail` ▪ ONE owner that is used for all projects instead of the project creator itself ▪ `ProjectDefaultAdminEmails` ▪ Multiple (comma-separated mails) admins that are added to every project that is created
server/config/syncCreation.json	This scripts creates a new projects and applies a synchronization to it, by passing following parameters: ▪ `Directory` ▪ The path to the repository that is used for the synchronization ▪ `OwnerMail` ▪ The email (= login name) of the owner the project should be created underneath ▪ `CreateBackup` ▪ A flag whether the sync should run with the backup option ▪ `ProjectName` ▪ The name the project is initialized with ▪ `UserPoolId` ▪ The ID of the user pool that should be mapped to this project
server/config/syncDeletion.json	This scripts deletes synchronizations by passing the path of the sync directory in a comma-separated list

LDAP Connection

The last file that is intended to be altered by the user is the LDAP connection file (`server/scripts/ldapAuth.js`).

This file holds the JS code to connect to a LDAP server via the `ldap.js` module and an administrator has to change the connect method so that the VisShare can bind a user with a email/password authentication against this LDAP server. The default code in this file can be used as an example code snippet how such a connection may be established, but changes are very likely to be made.

The parameters for the connect call that are filled in dynamically and can be used by the admin to code against the LDAP server are:

- `email`
  - The login mail provided by the user during the login
- `password`
  - The password provided by the user during the login
- `serverURL`
  - The LDAP server URL provided through the DB settings
- `baseDN`
  - The base DN provided through the DB settings
- `bindDN`
  - The additional search parameters for the LDAP bind provided through the DB settings
- callback(error, response)
  - This method should be invoked after the LDAP bind has been done
    - On succes: call with the positive authentication response from the LDAP -> cb(undefined, response);
    - On error: call with error response from the LDAP -> cb(error, undefined);

1.2.2   System Requirements

3DViewStation VisShare

Minimal system requirements
Windows 10 (1607) (x64) / Server 2016 (1607) (x64) or better
Processor with SSE 4 support
> 4 GB RAM[1]
3 GB hard drive space (does not include space for models)
Dedicated graphics card with DirectX 11 or better[1]
• CPU rendering is possible (2D only)[1] • Virtual machine allowed

[1] Hardware recommendations depend heavily on the models being visualized.

To determine a proper average RAM / VRAM (main memory, GPU memory) consumption, it is necessary to load several representative models (small, medium, large) into the 3DViewStation WebViewer or Desktop and note the corresponding average values.

Evaluating RAM / VRAM consumption using the Process Explorer:
- Download the Process Explorer software (https://learn.microsoft.com/en-us/sysinternals/downloads/process-explorer)
- Load the 3DVS test file(s) into the 3DViewStation WebViewer or Desktop

- Open the Process Explorer
  - Locate `CRendererInstance.exe` (or `3DViewStation.exe`) in the Process Explorer **PROCESS** list
  - Right-click on `CRendererInstance.exe` (or `3DViewStation.exe`) and select **PROPERTIES…** from the context menu
  - Select the **PERFORMANCE** tab and get the value of **VIRTUAL MEMORY** > **PRIVATE BYTES**
  - Select the **GPU GRAPH** tab and get the value of **DEDICATED GPU MEMORY**

Example, with 20 parallel sessions:

- The test file is approximately 65 MB (as 3DVS) on hard drive.
  - Consumed RAM is 625 MB (Private Bytes)
  - Consumed VRAM is 307 MB (Dedicated GPU Memory)

Multiplied with 20 concurrent sessions:

- RAM: 625 MB × 20 = 12.500 MB ➜ 16 GB
- VRAM: 307 MB × 20 = 6.140 MB ➜ 8 GB

Assuming a maximum of 20 parallel sessions, a server with at least 16 GB of RAM and a graphics card with at least 8 GB of VRAM is sufficient.

Load sharing between multiple servers or servers with multiple graphics cards is possible.

License server

Minimal system requirements
Windows 10 (x64) / Server 2016 (x64) or better[2]
200 MB hard drive space
Virtual machine allowed

[2] The requirements for the license service are fulfilled with the requirements of the operating system.

1.3   WebViewer

This chapter contains the these topics:

1.3.1   Installation and Configuration of WebViewer

This chapter contains these topics:

1.3.1.1   Installation of WebViewer

WebViewer - a simple tutorial and demo for loading sample files on localhost (HTTP port 80):

This localhost mode is for demonstration purposes only - not for production systems!

- Extract the package to a directory of your choice on a local drive (by running the WebViewer setup or by extracting the package ZIP file)
- Place your `WebViewer.lic` license file in the same directory
- Place your models (`.3DVS` or native CAD files) in the models subfolder.
- Start `ViewStationWeb.exe` and go to `http://localhost/` in your browser

- Select a model file to load in the upper left corner **START** > **OPEN**

Optional:

- If you want to reference a different model folder: Edit `CRendererInstance.ini` > `ModelRepository`
- If port 80 is not available on your system (`ViewStationWeb.exe` closes after startup), you need to edit the configuration files
- To start the WebViewer client from machines other than your local host, you must use and modify the configuration files
- Define your system address in variable `g_sWebSocketAdress` in `..\WebViewer\www\custom\overrides.js`
- The setup will install all redistributable setups from `..\WebViewer\redist`

To set up a productive WebViewer instance, run the setup to extract the contents of the package to a directory of your choice on a local drive and read the chapters <u>Customizations</u> 19 and <u>Installing WebViewer as a Windows Service</u> 19.

For SSL offloading (HTTPS and WSS - Web socket secure), set up a reverse proxy in front of WebViewer such as NGINX, Apache or IIS. Your certificate for SSL will be managed there. You can run more than one instance of WebViewer by duplicating the WebViewer directory, configuring different ports, and installing a separate Windows service for each instance.

To update WebViewer installations, copy or backup your modified configuration files `ViewStationWeb.ini` and `CRendererInstance.ini`, license `webviewer.lic` and customizations in `..\WebViewer\www\custom\overrides.js`.

1.3.1.2   Installing WebViewer as a Windows Service

The WebViewer can be installed as a Windows service (the recommended mode for productive systems) using the batch file `Install_WebViewer_Service.bat`. The full paths in this file must be adjusted beforehand. Administrator privileges are required to run the batch file.

You can also install `ViewStationWeb.exe` as a service by using Windows PowerShell.

After installing the service please check the account running the WebViewer as service (**WINDOWS SERVICE** > **PROPERTIES** (of WebViewer service)> **LOG ON** tab > **LOGON AS**).

The service should run under an account that is allowed to start the HTTP/Web socket server on defined ports, write to defined logging paths, and read your model repository. Please change the **WINDOWS SERVICE** > **PROPERTIES** (of WebViewer service) > **RECOVERY** tab to **RESTART THE SERVICE** on every failure.

1.3.1.3   Customizations

To enable customization, remove the `_` underscore from the sample configuration file names `ViewStationWeb.ini_` and `CRendererInstance.ini_`.

Set your `ClientPort` and `LogPath` in `ViewStationWeb.ini`

Set your `ModelRepository` root path and `LogPath` in `CRendererInstance.ini`

There is a sample `CRendererInstance.ini_` showing how to modify all paths

Edit your server address by modifying this variable `g_sWebSocketAdress` (remove the comment at the beginning of the line `//`) in `..\WebViewer\www\custom\overrides.js` (or optionally in `..\WebViewer\www\index.html` or other sample code files), see same examples below.

```
g_sWebSocketAdress = "ws://<your servers name or IP>/ws
g_sWebSocketAdress = "ws://wvserver/ws
g_sWebSocketAdress = "ws://192.168.0.10/ws
g_sWebSocketAdress = "ws://<your servers name fully
qualified>/ws
g_sWebSocketAdress = "ws://wv.domain.com>/ws
g_sWebSocketAdress = "wss://vsweb.kisters.de/ws
```

All lines starting with `;` in configuration files are comment lines and are not read by the WebViewer. Please make sure that all lines you change do not start with `;`.

After setting the `ModelRepository` variable, the server only allows files to be loaded from the defined repository or subdirectories by passing a relative file path.

By default, the sample model folder (subfolder of the WebViewer base directory) is set, which contains a number of demo models. If you want to change the model folder, you have to change the path: `ModelRepository=C:\WebViewer\models`

The main service `ViewStationWeb.exe` starts a websocket server and a simple HTTP server on a specified port.

Without `ViewStationWeb.ini`, the WebViewer runs on port 80, using `localhost` as the host name for the client connection.

For security reasons, SSL off-loading and WSS (Web socket secure), we recommend running a proxy in front of the WebViewer server in production environments. In this case you have to overwrite `g_sWebSocketAdress` with the proxy routed address (e.g. `g_sWebSocketAdress = "wss://vsweb.kisters.de/ws"`).

For more information and a sample configuration for NGINX or Apache HTTP Server as a reverse proxy, see `..\WebViewer\ssl\`.

It is possible to customize the ribbon interface. There are some sample files in the `..\WebViewer\www\custom` folder.

The `userdefined.js` provides a template for defining a new ribbon group with the corresponding buttons. The ribbon.js defines the visibility of ribbon groups and panes. It is possible to hide an entire ribbon group or individual buttons. If all ribbon groups are set to false, the ribbon disappears completely.

1.3.1.4 Session Based Security, Authentication and Session Control

`doc\KISTERS_3DViewStation_WebViewer_Backendmode_Documentation.html`

1.3.2 Contact

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Licenses

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+49 2408 9385 -520

1.4 KAS

This chapter contains the these topics:

- Installation of the KISTERS Automation Server 21

1.4.1   Installation of the KISTERS Automation Server

The KISTERS Automation Server (KAS) can be installed separately or is included in the installation of our other products (Desktop, WebViewer, VisShare).

1.5   VR

This chapter contains the these topics:

1.5.1   VR Hardware

Connect your VR headset as described in the manufacturer's manual and ensure its functionality.

Hints:

- **Inside-Out-Tracking**: Ensure adequate lighting of the room when using a camera-based tracking system.
- **Lighthouse-Tracking**: The individual tracking stations need visual contact to each other for synchronization. If this is not possible, synchronize them as described in the manufacturer's manual.

1.5.2   SteamVR

- Install the Steam client (SteamSetup.exe)
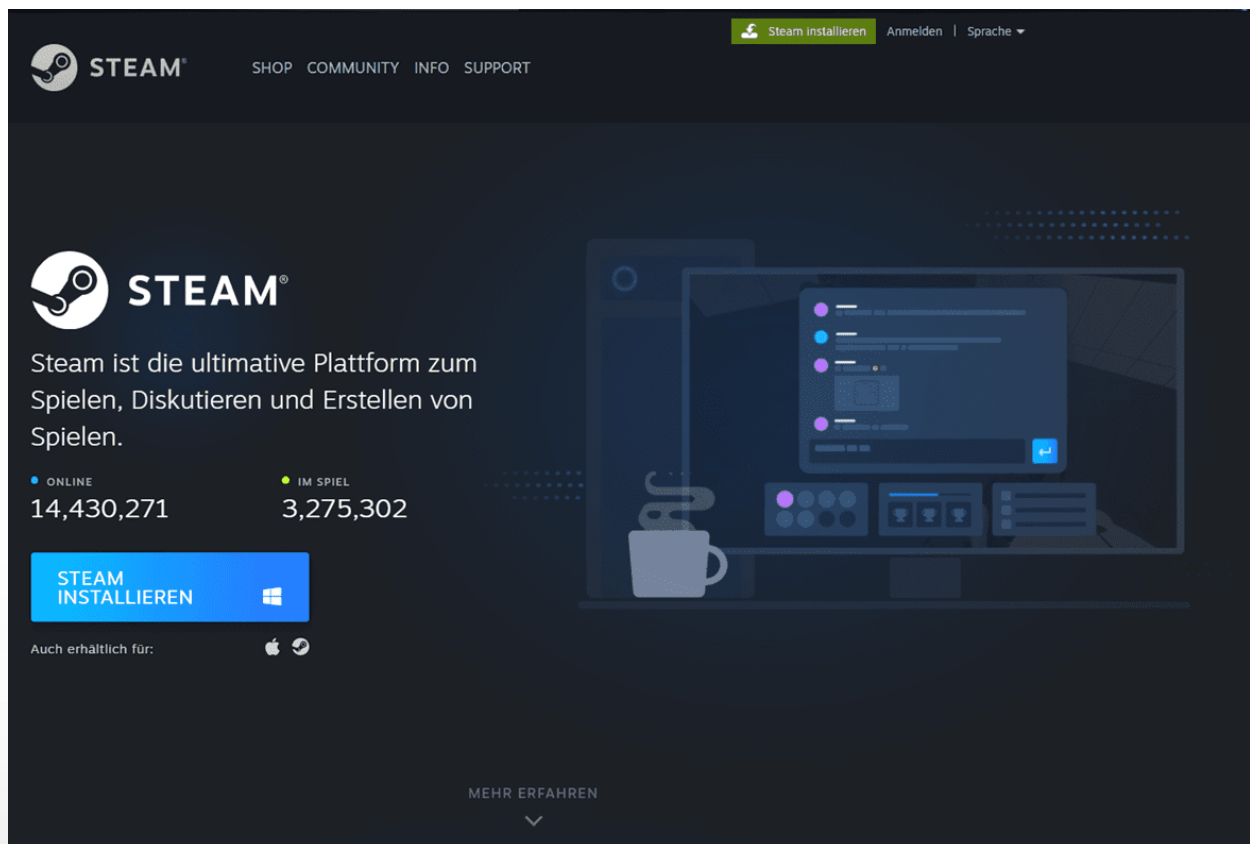
- Start the Steam Store Client, register and log in.
- Install **SteamVR** from the Steam Store.
- Only when using Windows Mixed Reality hardware, additionally install **Windows Mixed Reality for SteamVR**.

1.5.3   Installation

You need a license to start the VR edition. If you have not received one, please contact our sales department 6.

You can download the KISTERS 3DViewStation Setup via the download link included with the license delivery or request it via the registration form on our website. Extract the downloaded zip archive and start the installation.

Follow the instructions and select the option **3DVIEWSTATION DESKTOP INSTALLATION PACKAGE**.

If you have any questions about licensing, please read the following chapter.
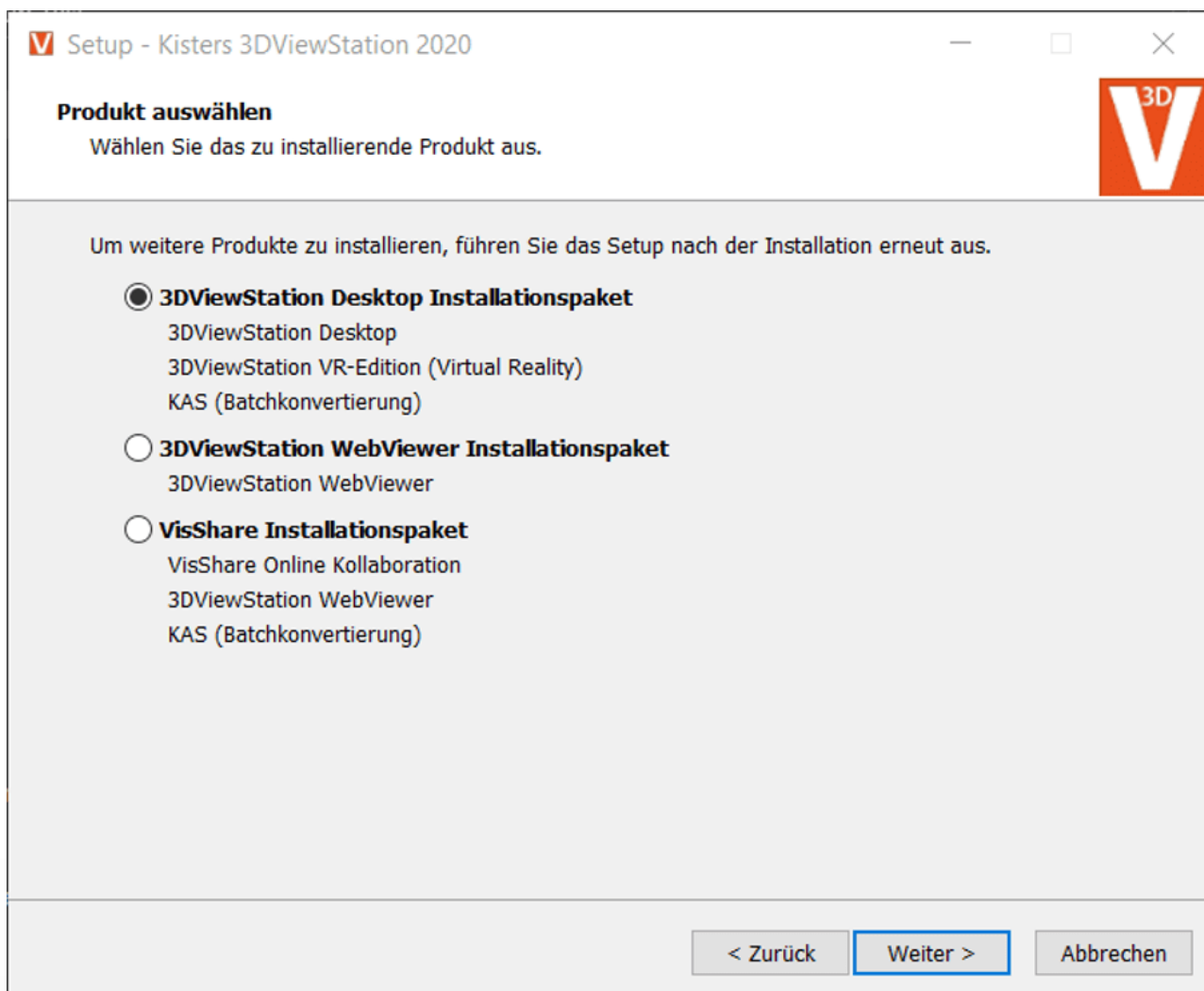
1.5.4   Troubleshooting

If problems occur, the log file provides information on the cause of the problem. You can open the directory of the log files directly from the 3DViewStation. To do this, click **USER**in the **HELP** tab in the **FOLDER** area. The directory `C:\Users\<username>\Documents\Kisters\ViewStation` is opened. In this folder you will find the subfolder **LOGS** with the log files of the logged-in user.

Log file of the VR-Edition:

`3DVSVR_DATE_TIME.log`

Log file of the desktop version:

`3DViewStation_DATE_TIME.log`

Problem 1: General causes

In general, the firmware of the VR hardware, Windows, graphics card and main board drivers, the SteamVR interfaces (SteamVR/WMR) should be up to date.

Problem 2: VR-Edition does not start

a) Log: Unable to load license 3DVS-VR.lic
    Solution: No valid license was found. Make sure that the correct license for this workstation is stored in the correct directory. Please read the chapter Licensing and Demo Licenses.
b) Log: License invalid
    Solution: The license has been damaged or tampered with. Please unpack the zip-archive delivered by us and reinstall the license. Please read the chapter Licensing and Demo Licenses.
    The license is not for this workstation. Please check if the MAC address in the license belongs to this workstation.
c) Log: Unable to init VR runtime: VR system shutting down (119)
    Solution: Steam was not started. Please start Steam.
d) Log: Unable to init VR runtime: Hmd Not Found (108)
    Solution: Hardware (headset) was not started. Please connect and start the Hardware (headset).

Problem 3: Poor performance / low frame rate (FPS)

Power saving mode Windows:

Especially mobile devices (laptops) should be connected to the power supply, other-wise the performance can be reduced.

Therefore, please also check in the Windows 10 info window (action window in the taskbar) as well as in the Windows power saving options of the control panel whether the computer is running in energy-saving mode.

Graphics card driver and power saving mode:

Please check if your graphics card drivers are up to date. Then set the operating mode to Performance in the software of your graphics card.

Select the correct graphics card:

If you have more than one graphics card, for example an integrated one on the CPU and a dedicated graphics card with better performance, please check that the correct card is selected in the settings (`Current.xml` or `CurrentVR.xml`). The graphics card currently used by the VR-Edition is also displayed in the title of the Desktop Client (see screenshot in chapter Opening a CAD model in VR).

Here is a way to proceed:

- Start the 3DViewStation Desktop.
- Go to the settings (bottom left).
- Enter the term "Display adapter" in the search field.
- Set the graphics card with the highest performance.
- Save the settings using the small floppy disk symbol.
    If you have not created separate settings for VR (`CurrentVR.xml`), the graphics card is now activated and you can exit 3DViewStation Desktop. However, if you are using a `CurrentVR.xml`, this setting must still be transferred.
- Open the **HELP** tab and activate the **USER** button.
- Open the **SETTINGS** folder and the included `Current.xml` (desktop settings) with an editor like Notepad++.
- Look for the line `<GraphicsAdapterToUse>0</GraphicsAdapterToUse>` and remember the value – here 0.
- Open the file `CurrentVR.xml` and store the same value here in the matching location (`<GraphicsAdapterToUse>`).

- Save the change.
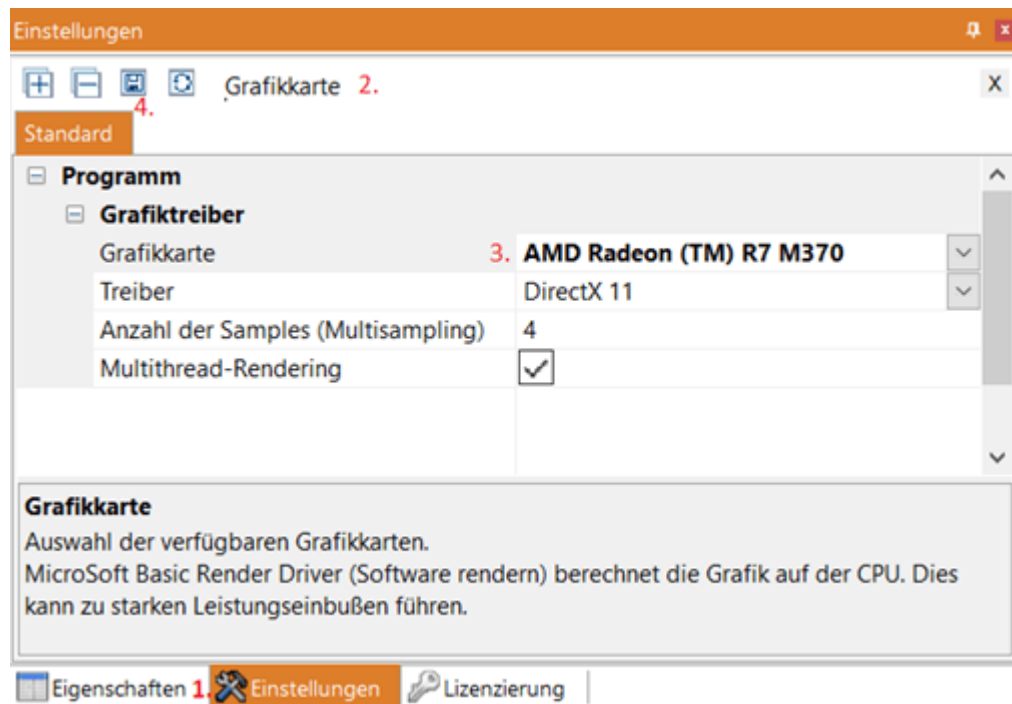
Problem 4: Poor tracking

Please check your hardware installation as described in chapter VR Hardware.

Chapter II:

Licensing

2   Licensing

Documentation of 3DVS Licensing

2.1   Online-Demo

You can test our WebViewer online. Click on the following link:

https://viewer.kisters.de/en/products/3dviewstation-webviewer-version.html

2.2   Node Locked Licensing (Activation)

Node-locked licenses are tied to the hardware of a specific PC.

Compared to file-based licensing, license activation has the advantage that the user or system administrator can independently deactivate the license and thus unbind a specific computer in order to use that license on another PC.

Note: The license must be deactivated before changing PCs or changing an activated system. Otherwise this activation will expire and will no longer be available to you.

This chapter contains these topics:

2.2.1   Activation During Installation
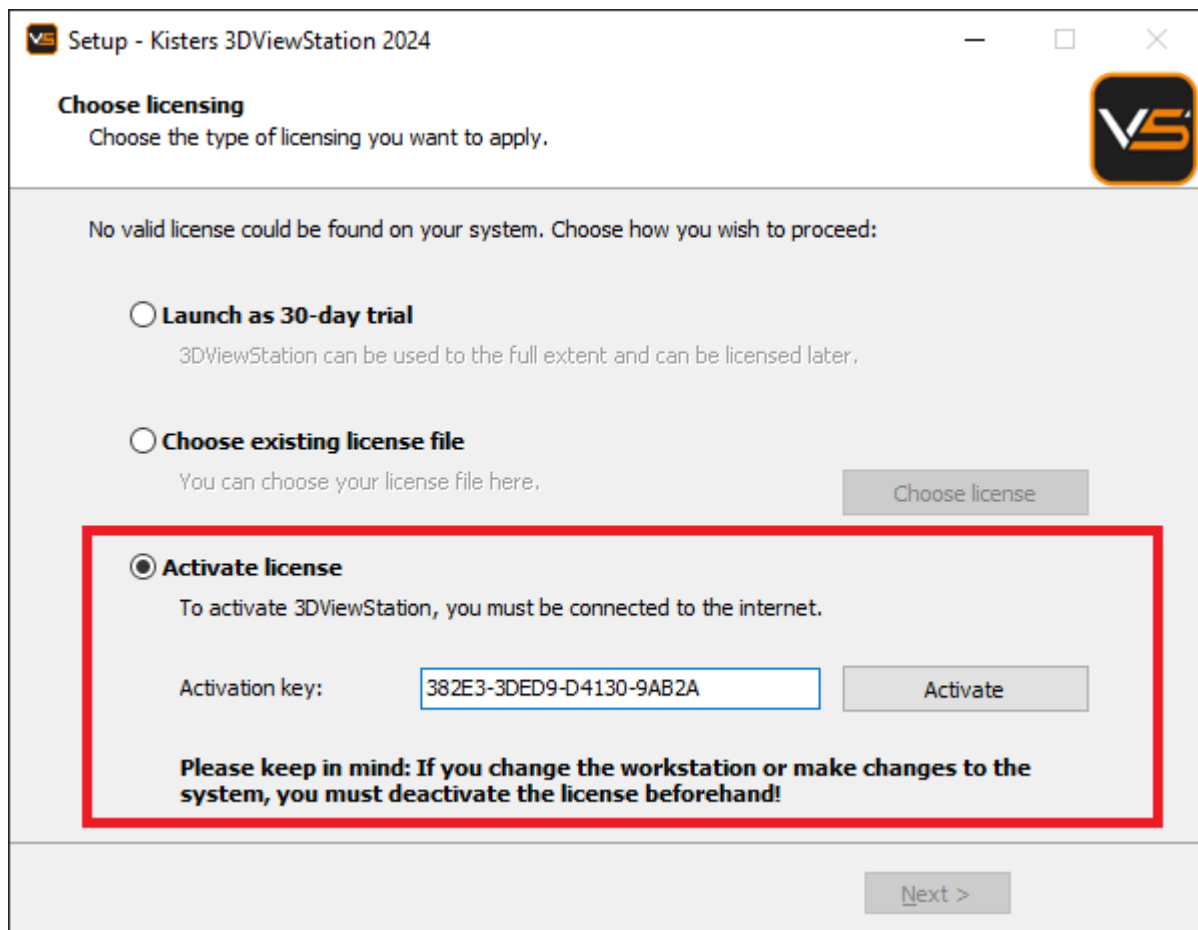
Activation

If no valid license is found on your system, you will be prompted to select a license type at the end of the installation process.

- Select **ACTIVATE LICENSE** and enter your activation key.
- Click [**ACTIVATE**].

In case of an update, the license will also be updated automatically, as long as it is running under maintenance and our activation center is reachable.

If the activation is not successful, the VS Activator 30 opens with additional information. Please refer to the Troubleshooting 33 chapter for help.

Note: The license is now bound to this system! If you want to make changes to this system, such as installing new hardware or changing the host name, you must deactivate the license first. Otherwise, this activation will expire and will no longer be available to you.

Deactivation

The license can be disabled during the uninstall process. You can find the uninstaller in the installation directory.
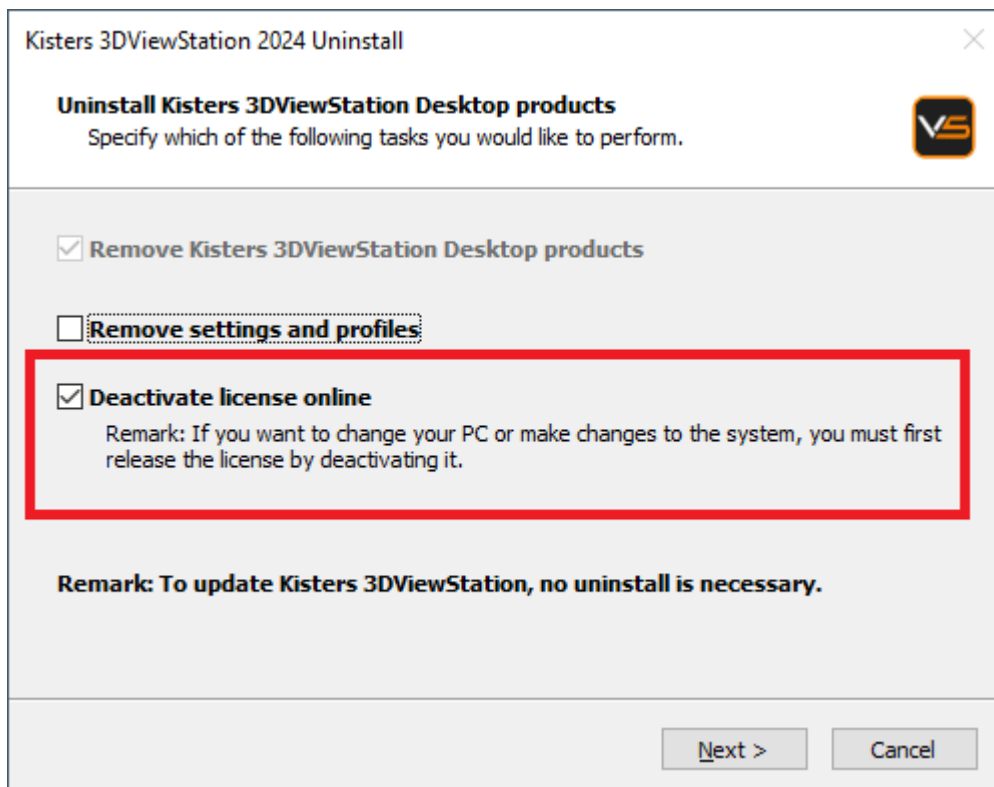
2.2.2   Activation of an Installed KISTERS 3DViewStation

An already installed 3DViewStation can be activated via the **LICENSING PANE** (visible in the lower left corner by default). If this pane is hidden, you can activate it via the tab **VIEW** > **SHOW PANES** > **LICENSING**.

Activation

- In the tree view of the **LICENSING PANE**, expand the **LICENSE ACTIVATION** branch.
- Enter your Activation key.
- Click [**ACTIVATE KEY**].
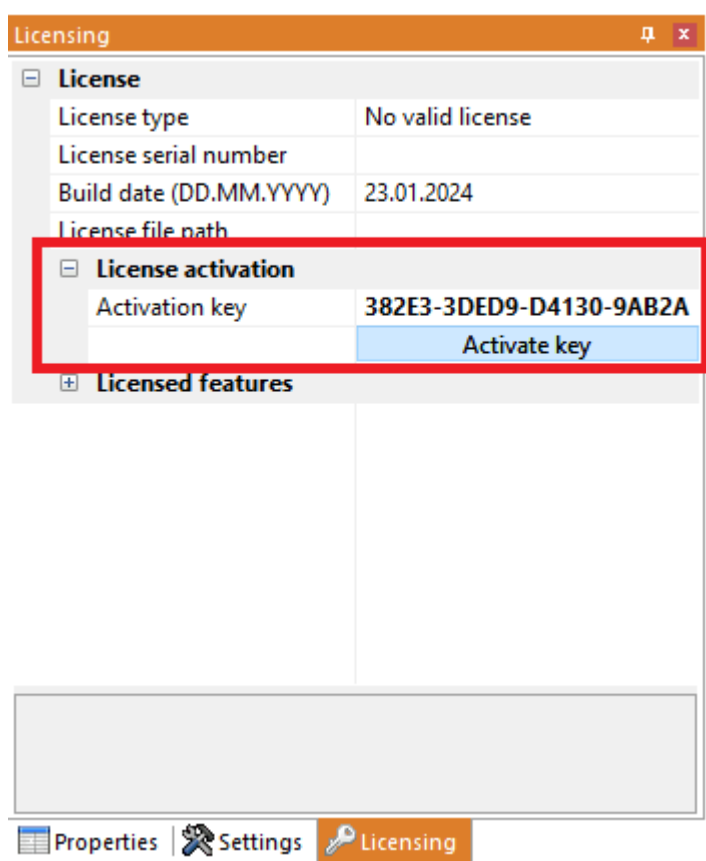
On success, you will be prompted to restart 3DViewStation, click Yes. If any errors occur, see [Troubleshooting](33).

Update license

To update your license file, navigate to the **LICENSING** pane and click **DOWNLOAD LICENSE**.

Deactivation

To deactivate your license key, go to the pane **LICENSING** > **LICENSE ACTIVATION** and click [**DEACTIVATE KEY**]. If errors occur, see [Troubleshooting](33).
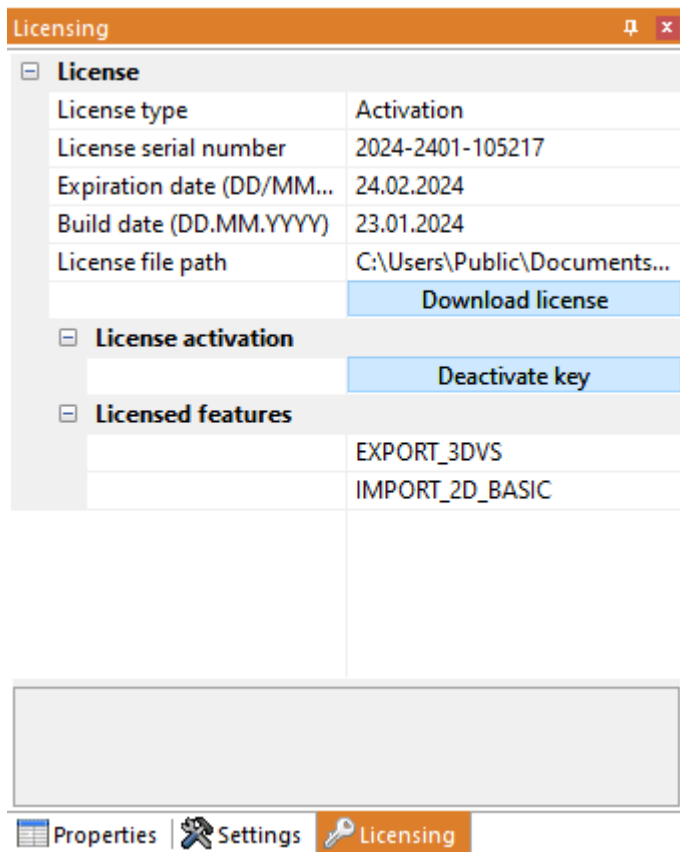
2.2.3   Activation with VS Activator

The VS Activator is installed with each 3DViewStation product:

- For the desktop version and for the WebViewer, it is located in the `<.../Tools>` sub-directory of the installation folder.
- For VisShare it is located in the `<.../VisShare_WebViewer/Tools>` sub-directory of the installation folder.

Activation

- Open VS Activator by double-clicking `VSActivator.exe`.
- Enter your activation key in the input field. Optionally, enter a comment to identify your activation after the fact; you cannot edit it afterwards.
  In the log message window, you can see if the activation was successful. If errors occur, see <u>Troubleshooting</u> 33 .
  In case of success, the license file is automatically downloaded and can be found by clicking **OPEN LICENSE FOLDER**.
- Close the VS Activator.
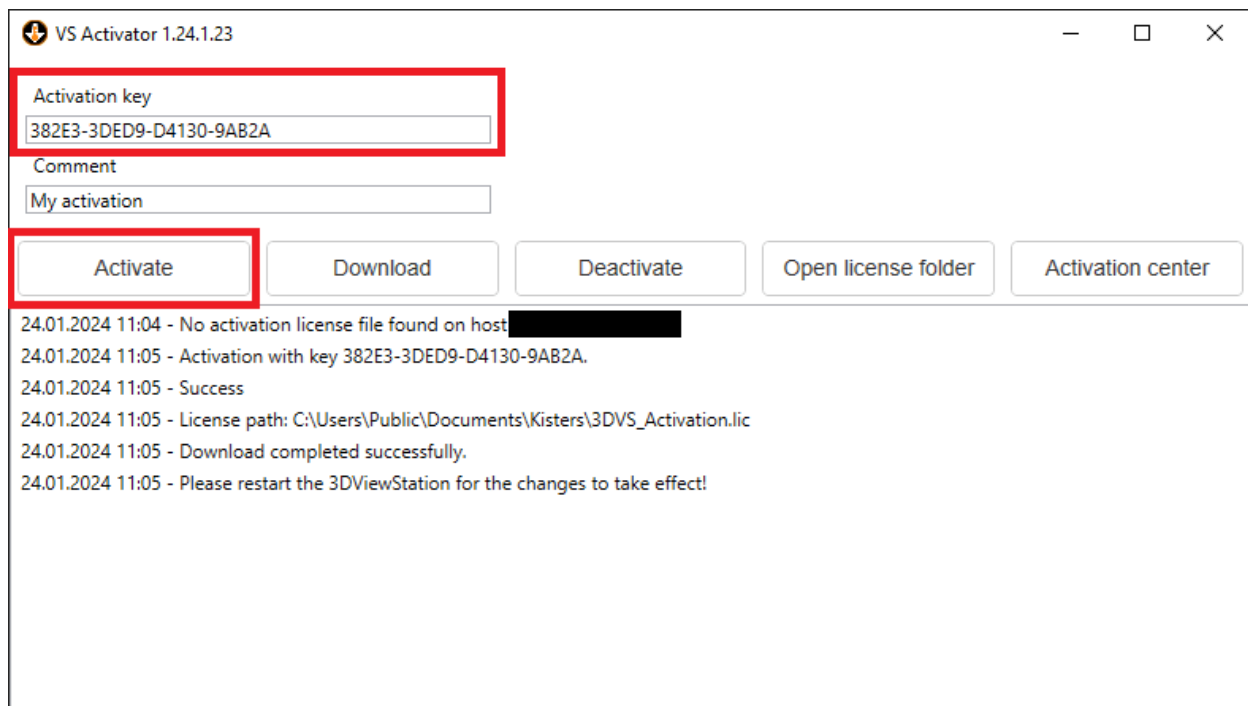
Download

Use the **DOWNLOAD** button to receive your updated license file.

Deactivation

- Open VS Activator by double-clicking `VSActivator.exe`.
- Your activated license is automatically loaded into VS Activator.
- Click the [**DEACTIVATE**] button.
- Close the VS Activator.

Note: WebViewer, VisShare and KAS cannot be deactivated. Please contact us ⌐6⌐ if you need to move the installation to a new host system.

Activation Center

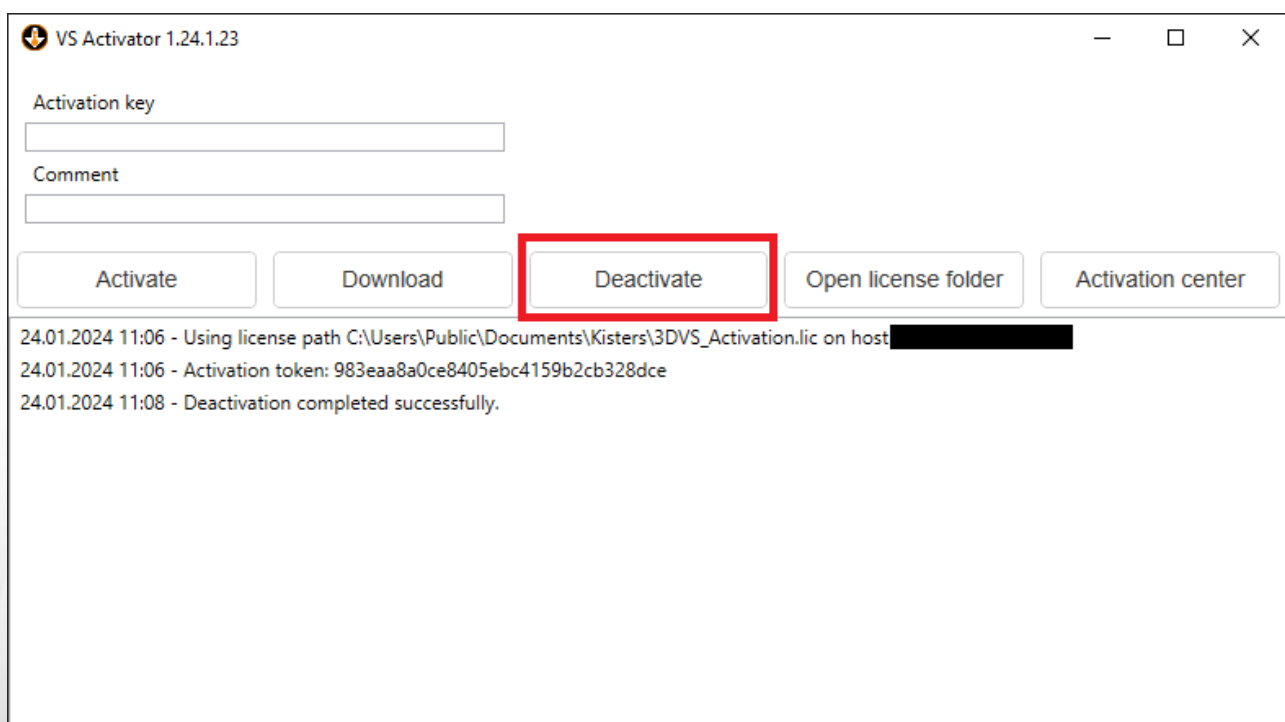Clicking on the [**ACTIVATION CENTER**] button will open a browser window with an overview page of your activated machines 32 . An activation key must be entered to see the corresponding machines.

2.2.4   Update 3DViewStation Desktop

No prior uninstallation or deactivation is required to update 3DViewStation. The license will be updated automatically as long as it is under maintenance and our activation center is reachable.

Select **EXPRESS INSTALLATION (RECOMMENDED)** to update your 3DViewStation installation. If you have multiple concurrent installations, use the **CUSTOM INSTALLATION** option to specify the installation directory to update.

2.2.5   Update 3DViewStation WebViewer

Updating 3DViewStation WebViewer does not require prior uninstallation or deactivation.

Follow the steps below to update your 3DViewStation WebViewer:

- Stop the 3DViewStation WebViewer process in the Windows Task Manager.
- Launch Setup.
- In the Setup dialog box, select the installation path for the 3DViewStation WebViewer you want to update.
- Restart the 3DViewStation WebViewer process in the Windows Task Manager.

The license will remain in the 3DViewStation WebViewer installation path in case of an update, and you can restart the 3DViewStation WebViewer process in the Windows Task Manager.

2.2.6   Deactivation

Note: For each activation, you get two deactivations per maintenance period.

There are several ways to deactivate a 3DViewStation:

- Deactivation with Uninstall 27
- Deactivation using VS Activator 31
- Deactivation from within 3DViewStation Desktop 29

2.2.7   Overview of Activated Computers

You can find out which computers are activated in your organization by going to the following URL: https://license.viewstation.de/Activate

Enter your activation key in the **KEY** input field on the page. The list view of **ACTIVATED MACHINES** updates automatically when a key is entered.

You can filter the list of machines or download it as a CSV file.

2.2.8   Troubleshooting

"My license is not working or does not have all the features I purchased. What should I do?"

Try to download your license again and restart 3DViewStation. If this does not help, please contact us 6 .

Possible error messages you may receive:

"There are no more activations available"

Your license activations have been used up. Either deactivate another machine first or <u>contact us</u>⌐6⌐ to order more activations.

"There are no more deactivations available"

Your license deactivations have been used up. Wait until your next maintenance renewal or <u>contact us</u>⌐6⌐ to order additional deactivations.

"Failed to connect to license.viewstation.de for activation"

This error message will open a browser window where you can perform your activation and download your license.

If you don't see the Activation Center in your browser window, please check your Internet connection.

"The download of the activation license failed"

The automatic download was probably blocked by your proxy settings. You can download the license file in the appearing browser window instead.

"Failed to connect to license.viewstation.de for deactivation"

Please check if you have an Internet connection. If you are still having trouble properly deactivating the license, please contact our customer support 6 .

"The license (de-)activation failed"

The license (de)activation failed for an unexpected reason. Please check the log messages for more information and contact our customer support 6 . If you are using 3DViewStation Desktop, you can generate helpful support information via **HELP** > **SUPPORT** > **SYSTEM INFORMATION**.

2.3   Network Licensing (Floating)

Floating licenses are tied only to the hardware of the server running the license manager. Each client connects to the license manager to request licenses. It will be denied if there are no more licenses available.

The advantage of this licensing method is that the license is not tied to a user's hardware. Thus, multiple users can share a license as long as they close 3DViewStation after using it.

2.3.1   VS License Manager

> The **ViewStation License Manager (VSLM)** is our new alternative to the LM-X License Manager. **As of Q2/2025, this will become the only license manager.**
>
> **Please plan your update accordingly.**

You can download the 3DViewStation and the VS License Manager from our homepage (https://viewer.kisters.de/downloads.html).

The installation instructions are divided into these chapters:

- License Server Installation 35
- Server Configuration 36
- Privilege Rules Configuration 39
- License Monitor 44
- Troubleshooting 46

2.3.1.1   License Server Installation

Windows

To install the VS License Manager, follow these steps:

- Download the VS License Manager ZIP archive.
- Move the contents of the ZIP archive to a directory of your choice, for example, `C:\Kisters\VSLM`.
- Copy the `VSLM.lic` license file you received by e-mail to the directory of your choice next to `VSLM.exe`.
- To run the VS License Manager, double-click `VSLM.exe` with administrator privileges. This opens a console with a log of all VS License Manager events. Closing the console stops VS License Manager.
- If you see error messages that mention ports, open the required local ports in the Windows Firewall. The default values are 6200 and 6280. The protocol is TCP. If you are using a third-party firewall, you can ignore these messages. Check the ports accordingly.
- Configure the VS License Manager as needed, see Server Configuration 36 . For example, set an Admin Password 37 for the License Monitor.
- Remove the underscore from `_ServerConfig.json` to activate the configuration file.
- Restart the VS License Manager for the new configuration to take effect.

Run as Windows Service

- To install and run the VS License Manager as a Windows service, run `windows_service_install.bat` with administrator privileges. This will configure the service to start automatically after a system restart.
- After updating `VSLM.lic` or `ServerConfig.json`, run `windows_service_restart.bat` with administrator privileges to apply the changes to the VS License Manager service.
- To remove the Windows service, run `windows_service_uninstall.bat` with administrative privileges.

Note: If you are using the VS License Manager with a 3DViewStation WebViewer on the same host system, you must add it as a dependency to the 3DViewStation WebViewer Windows service. This will ensure a correct startup sequence when the system is restarted.

Linux

To install the VS License Manager, follow these steps:

- [Download](#) the VS License Manager ZIP archive.
- Move the ZIP archive to a directory of your choice, e.g. `/kisters` and unzip the archive.
- Copy the license file `VSLM.lic` into the chosen directory.
- Execute VSLM via the command `./VSLM` to simply run the VS License Manager. This opens a console with an output of all events on the VS License Manager. Closing the console stops the VS License Manager.
- Check if you have to open the required local ports in the firewall. Standard values are 6200 and 6280. The protocol is TCP.
- Configure the VS License Manager as needed; see [Server Configuration](#) 36. For example, set an [Admin Password](#) 37 for the License Monitor.
- Restart the VS License Manager to apply the new configuration.

Run as daemon

- To install and run the VS License Manager as a daemon, run the bash script `linux_deamon_install.sh` with administrator privileges. This will configure the daemon to start automatically after a system reboot.

```
sudo bash linux_deamon_install.sh
```

- After updating `VSLM.lic` or `ServerConfig.json`, run `linux_deamon_restart.sh` with administrator privileges to apply the changes to the VS License Manager daemon.

```
sudo bash linux_deamon_restart.sh
```

- To remove the daemon, run `linux_deamon_uninstall.sh` with administrator privileges.

```
sudo bash linux_deamon_update.sh
```

Note: The file `vslm.service` which is created during installation as daemon uses only a minimum configuration. You can edit and extend the configuration as needed or set up the daemon manually based on the steps in the supplied scripts.

2.3.1.2   Server Configuration

The behavior of the VS License Manager can be configured using a JSON file. In addition to general server settings, usage privileges and access permissions to features can also be regulated. To change the configuration, simply edit the `ServerConfig.json` file using a text editor as described below.

> ⚠ Restart the VS License Manager for the changes to take effect.

Note: If special characters are used in file paths or usernames, the encoding of the JSON file must be UTF-8.

General Settings

Ports

The communication between the VS License Manager and the 3DViewStation clients uses the TCP network protocol. The `TCP_PORT` setting defines the port used:

```
"TCP_PORT": 6200,
```

The License Monitor ⌐44⌐, the web interface of the VS License Manager, can be accessed via a web browser: `<License Server Address>:<HTTP_PORT>`. The `HTTP_PORT` setting determines the HTTP port used:

```
"HTTP_PORT": 6280,
```

Note:
- The specified local ports must be opened in the server's firewall for the VS License Manager to function properly. The required protocol is TCP for both ports.
- If you are using ports other than the default, please let us know so we can keep your license up to date. To do so, send an email to orders-viewer@kisters.de with your server name, the TCP port you are using, and the serial number of your license.
- If you want to disable the License Monitor for any reason, you can do so by setting the HTTP port to zero: `"HTTP_PORT": 0`

Passwords

To access the Admin view of the License Monitor (including logs, configuration overview, and checkout history), a password must be configured:

```
"ADMIN_PASSWORD": "SuperUser123",
```

Note: The password is sent in base64 encoding only, so please choose a unique password that will be used only for the VS License Manager.

Optionally, it is possible to configure a main password. With this setting enabled, even the basic License Monitor will prompt for a password before displaying any information:

```
"MAIN_PASSWORD": "",
```

Logging

The location of the VS License Manager log files can be changed using the `LOG_PATH` parameter. The path can be absolute or relative with a leading "`./`":

```
"LOG_PATH": "./Logs",
```

The log format can be specified with the eponymous parameter:

```
"LOG_FORMAT": "NORMAL",
```

The alternative log format to `NORMAL` is `RESTRICTED`, which suppresses writing usernames, host names and IP addresses to the log file and displaying them in the License Monitor. For support cases, it is possible to convert recent log files from normal to restricted format using a button in the License Monitor.

It is possible to configure the number of days before old log files are removed:

```
"LOG_ARCHIVE_COUNT": 90,
```

The default is 90 files, which is equivalent to 90 days or 3 months. If you never want log files to be removed, set the value to zero.

Advanced Settings

High Availability Licensing (HAL)

To ensure fail-safe licensing (e.g. server failure or updates), it is possible to set up redundant servers that can all serve the same licenses and features. The server addresses are defined like the value `LicenseServerAddress` in the client license `3DVS.lic`:

```
"HAL_SERVERS": "6200@server01;6200@server02;6200@server03",
```

The order of the servers defines the priority of availability, so the first server should be the main server with the highest availability. If one server goes down, the next server in the list will take over as long as the other server is unavailable. The Borrow functionality is only available on the main server and will be unavailable during the downtime of the main server. Our HAL configuration supports two or more servers, the default is three.

Note:
- The list must be the same for all server configurations and client licenses. Otherwise, undefined behavior occurs.
- Please inform us about changes in your HAL configuration to keep your license up to date. To do this, send an email to orders-viewer@kisters.de with your server names, selected ports, the serial number of your license.

Client overview columns (User and Admin)

This setting allows you to customise the columns in the **CLIENT OVERVIEW** of the License Monitor. You can hide data you do not need. You can also change the order of the columns to suit your preferences. The configuration can be done separately for User View and Admin View. The format to use is as follows:

```
"CLIENT_OVERVIEW_COLUMNS_USER":
"SESSION_INFO;USERNAME;FEATURES_FLOATING;FEATURES_BORROWED;BORRO
W_TIME",
"CLIENT_OVERVIEW_COLUMNS_ADMIN":
"SESSION_INFO;USERNAME;HOSTNAME;IP_ADDRESS;FEATURES_FLOATING;FEA
TURES_BORROWED;BORROW_TIME",
```

Note: The **CLIENT OVERVIEW** will not be displayed at all if this list of columns is cleared and left empty.

Internet Protocol Version

The VS License Manager supports both versions of the Internet Protocol (IPv4 or IPv6). Which one is preferred can be defined here:

```
"IP_VERSION": "IPv4",
```

History Settings

The history data (maximum usage and denials) is updated frequently, but only every eight hours by default to reduce server load. This can be changed in the preferences:

```
"HISTORY_UPDATE_HOURS": 8,
```

Similar to the log file archive cleanup, it is possible to automatically remove old history data. This includes only real-time data, which occupies most of the history data space. This setting is disabled by default:

```
"HISTORY_ARCHIVE_COUNT": 0,
```

Heartbeats and Timeout

To ensure a continuous network connection from the clients to the server, VS License Manager uses heartbeats. The following settings are for troubleshooting network traffic and server load issues only.

- Use `HEARTBEAT_SECONDS` to configure how often heartbeats are sent from clients. The default is 2 minutes and 20 seconds.
- `TIMEOUT_SECONDS` allows you to configure when a client should timeout after the last heartbeat has been successfully received. The default is 5 minutes.
- Use `HEARTBEAT_CONTROL_SECONDS` to configure how often the server checks for expired client heartbeats. The default is 3 seconds. If you have a large number of clients, this value can be increased slightly to reduce server load.

In the configuration file, these values will look like the following:

```
"HEARTBEAT_SECONDS": 140,
"TIMEOUT_SECONDS": 300,
"HEARTBEAT_CONTROL_SECONDS": 3,
```

2.3.1.3   Privilege Rules Configuration

The VS License Manager's usage privileges can be configured by editing and saving the `ServerConfig.json` file. This includes allowing, denying, restricting, and reserving checkout and borrowing of features for specific users.

> ⊘ Restart the VS License Manager for the changes to take effect.

When to use which privilege rule?

- If you want most of your users to be able to use all features and only a few to be restricted, use Deny Rules 42.
- If you want to allow a few privileged users to use certain features and restrict most of your users, use Allow Rules 40.
- If you want to control the number of features available to different user groups, use Limit Rules 43 and Reserve Rules 44.

How to specify users?

In each rule, users can be specified as usernames, host names, or IP addresses (IPv4 or IPv6, see setting IP_VERSION 38) and must be separated by a semicolon:

```
"USERS": "UserOne;UserTwo;UserThree;..."
```

If the list becomes large, or if the same list is used in multiple privilege rules, it is useful to define `GROUPS` at the end of the configuration file. The format for `MEMBERS` is the same as for `USERS`. Curly braces {…} define a group within the group list […], separated by commas.

```
"GROUPS": [
    {
        "NAME": "Group 1",
        "MEMBERS": "UserOne;UserTwo;UserThree;...;UserN"
    },
    {
        "NAME": "Group 2",
        "MEMBERS": "Host01;Host02;Host03;...;HostX"
    }
]
```

You can now specify users as follows:

```
"USERS": "Group 1;Group 2"
```

Linking a group within a group is supported.

Note:

- When restricting many host names or IP addresses, you can use wildcards like "`4.3.2.*`" or "`PC*`" or IP ranges such as "`4.3.2.10-50`". Usage examples can be found below.
- On Windows, you can use your local groups. If you have a local group `"My Users"` that contains a list of domain users or a domain user group, you can use it like a user or group name in the configuration file by simply prefixing it with `'&'`: `"USERS" : "&My Users"`. Usage examples can be found below.
- The default `ServerConfig.json` contains two empty presets per rule, which can be edited or removed and are ignored by the VS License Manager.

Important syntax rules:

- The server configuration file uses standard JSON syntax.
- Square brackets `[...]` define the list of privilege rules for a privilege setting, separated by commas.
- Curly braces `{...}` define a single privilege rule, separated by commas.
- Multiple key-value pairs within a privilege rule must also be separated by commas.
- All users, features, and serial numbers must be separated by a semicolon.
- You can use the following examples as templates.

Allow Rules

The `ALLOW_CHECKOUTS` and `ALLOW_BORROWS` allow rules restrict the use of features to all but the specified users. So if you have privileged users, use these settings. They consist of the following keywords:

- `USERS`: required, list of usernames or host names, IP addresses or group names
- `FEATURES`: optional, list of the features to be restricted
- `SERIALNUMBERS`: optional, the affected licenses / serial numbers (only needed if using multiple licenses on one VS License Manager)
- `COMMENT`: optional, use it to add comments or explanations to a rule (will be ignored during parsing)

Note: The optional `FEATURES` and `SERIALNUMBERS` keywords can be removed, left blank, or set to '`*`' if not used. The rule will then apply to all `FEATURES` / `SERIALNUMBERS` loaded by the VS License Manager.

Examples

A rule that allows functionality features only for selected users would look like this:

```
"ALLOW_CHECKOUTS": [
    {
        "FEATURES":
"FUNCTIONALITY_ADVANCED_ANALYSIS;FUNCTIONALITY_TECHDOC",
        "USERS": "Some user; Some other user; Another user"
    }
],
```

To allow general use of the floating license for selected users only, set `FEATURES` to `"*"` or remove the value entirely:

```
"ALLOW_CHECKOUTS": [
    {
        "FEATURES": "*",
        "USERS": "Some user; Some other user; Another user"
    }
],
```

Allowing borrowing of `EXPORT_ALL` only for the `MEMBERS` defined in a `GROUP` with the `NAME` "Borrow Users" would look like this:

```
"ALLOW_BORROWS": [
    {
        "FEATURES": "EXPORT_ALL",
        "USERS": "Borrow Users"
    }
],

...

"GROUPS" : [
    {
        "NAME": "Borrow Users",
        "MEMBERS": "Some user; Some other user; Another user"
    }
]
```

The same rule, but restricting the borrowing of all features for all users except the members of the defined group:

```
"ALLOW_BORROWS": [
    {
"FEATURES": "*",
        "USERS": "Borrow Users"
    }
],
```

Multiple allow rules are separated by commas:

```
"ALLOW_CHECKOUTS": [
    {
        "FEATURES":
"FUNCTIONALITY_ADVANCED_ANALYSIS;FUNCTIONALITY_TECHDOC",
        "USERS": "Functionality Users"
    },
    {
        "FEATURES": "KAS",
        "USERS": "KAS Users"
    }
],
```

Allowing a feature only for a specific windows user group using the prefix `&` would look like this:

```
"ALLOW_CHECKOUTS": [
    {
        "FEATURES": "EXPORT_ALL",
        "USERS": "&WindowsGroup"
    }
],
```

Allowing a feature for a specific hostname pattern would look like the following. This would allow all PC's with names like PC001 and PC456 or WS12CAD and WS34CAD.

```
"ALLOW_CHECKOUTS": [
    {
        "FEATURES": "EXPORT_ALL",
        "USERS": "PC*;WS*CAD"
    }
],
```

Allowing one of the multiple licenses only for a specific IP domain would look like this:

```
"ALLOW_CHECKOUTS": [
    {
        "SERIALNUMBERS": "2024-0101-123456",
        "USERS": "4.3.2.*"
    }
],
```

Allowing a license only for a specific IP range would look like this:

```
"ALLOW_CHECKOUTS": [
    {
        "COMMENT": "A specific IP range",
        "USERS": "4.3.2.10-50"
    }
],
```

Deny Rules

The `DENY_CHECKOUTS` and `DENY_BORROWS` deny rules restrict the use of features to the specified users, so most users will still be able to use them. The syntax and keywords are the same as for allow rules.

Examples

A rule that denies features to selected users would look like this:

```
"DENY_CHECKOUTS": [
    {
        "FEATURES":
"FUNCTIONALITY_ADVANCED_ANALYSIS;FUNCTIONALITY_TECHDOC",
        "USERS": "Some user; Some other user; Another user"
    }
],
```

A rule that denies the borrowing of `EXPORT_ALL` for the `MEMBERS` defined in a `GROUP` with the `NAME` "`Borrowing denied`" would look like this:

```
"DENY_BORROWS": [
    {
        "FEATURES": "EXPORT_ALL",
        "USERS": "Borrow denied"
    }
],

...
```

```
"GROUPS" : [
    {
        "NAME": "Borrow denied",
        "MEMBERS": "Some user; Some other user; Another user"
    }
]
```

To disable borrowing of a feature for all users, set `USERS` to `"*"` or remove the value entirely:

```
"DENY_BORROWS": [
    {
        "FEATURES": "EXPORT_ALL",
"USERS": "*"
    }
],
```

To completely disable borrowing, set both `FEATURES` and `USERS` to `"*"`:

```
"DENY_BORROWS": [
    {
        "FEATURES": "*",
        "USERS": "*"
    }
],
```

Note:
- At the same time, checkout rules also restrict borrowing actions, but borrowing rules do not affect checkout actions.
- Deny rules override all allow rules. If a user is listed in both an allow rule and a deny rule for the same license and feature, the deny rule is applied and the allow rule is ignored.

Limit Rules

The `LIMIT_CHECKOUT` and `LIMIT_BORROW` limit rules are useful for controlling the number of features that should be available to different user groups. They are also used to limit the borrowing duration of features. Their syntax is based on the allow and deny rules, with additional keywords:
- `COUNT`: The number of features that should be available to the specified `USERS`.
- `EXCEPT_USERS`: It is possible to add exceptions to a limit rule. So if you have privileged users within a larger group that you want to restrict, add them here.

Only for `LIMIT_BORROW`:
- `HOURS`: The maximum number of hours the specified features can be borrowed.
- `USERS` can be optional for this rule type. If it is removed or left blank, the borrowing limit is applied to all users.

Examples

Restrict the use of a feature within a group of users:

```
"LIMIT_CHECKOUTS": [
    {
        "FEATURES": "IMPORT_ALL",
        "USERS": "User 1; User 2; User 3; ... ; User 30",
        "COUNT": 15
    }
],
```

Restrict the borrowing period of any feature to one week for all users, except for a privileged user who is allowed to borrow for three months. This is achieved by setting the default value to one week first, and then overwriting this value for the privileged user in a second rule **that follows the first rule**:

```
"LIMIT_BORROWS": [
    {
        "HOURS": 168
    },
    {
        "USERS": "Privileged User",
        "HOURS": 2160
    }
],
```

Reserve Rules

The reserve rule `RESERVE_CHECKOUTS`, unlike the <u>limit rules</u> [43], can be used to ensure that a certain number of features are always available to certain users. The syntax is the same as for <u>allow rules</u> [40], with the addition of the `COUNT` keyword.

Examples

Reserve a feature for three privileged hosts:

```
"RESERVE_CHECKOUTS": [
    {
        "FEATURES": "IMPORT_2D_ADVANCED",
        "USERS": "HostX;HostY;HostZ",
        "COUNT": 3
    }
],
```

2.3.1.4   License Monitor

The license monitor, the web interface of the VS License Manager, can be accessed via a web browser: `<address of the license server>:<HTTP_PORT>`, for example `127.0.0.1:6280`. It displays license information, the availability and usage of features, and the connected clients. License monitoring is automatically updated every 60 seconds. This ensures that it is always up to date.

With the configured Admin password [37] it is possible to access an extended version of the License Monitor with the latest log messages, the configuration settings and a section to visualize the checkout history in charts. These tabs do not reload automatically.

If required, access to the basic License Monitor can be completely restricted by setting a main password [37].

Checkout History

The VS License Manager records how many features are used over time and which users have accessed them. In addition to a real-time view of current feature usage, the system offers several preconfigured charts, including:

- Hourly usage for the last 24 hours
- Daily usage for the last 30 days
- Monthly usage for the last 12 months
- Daily denied users for the last 30 days

Click [**OPEN DEFAULT CHARTS**] to display the charts mentioned above.

In addition, you can create custom charts for individual time ranges. To do this, click [**OPEN CUSTOM CHARTS**]. The data can be grouped by hour, day, week or month to evaluate maximum feature usage values.
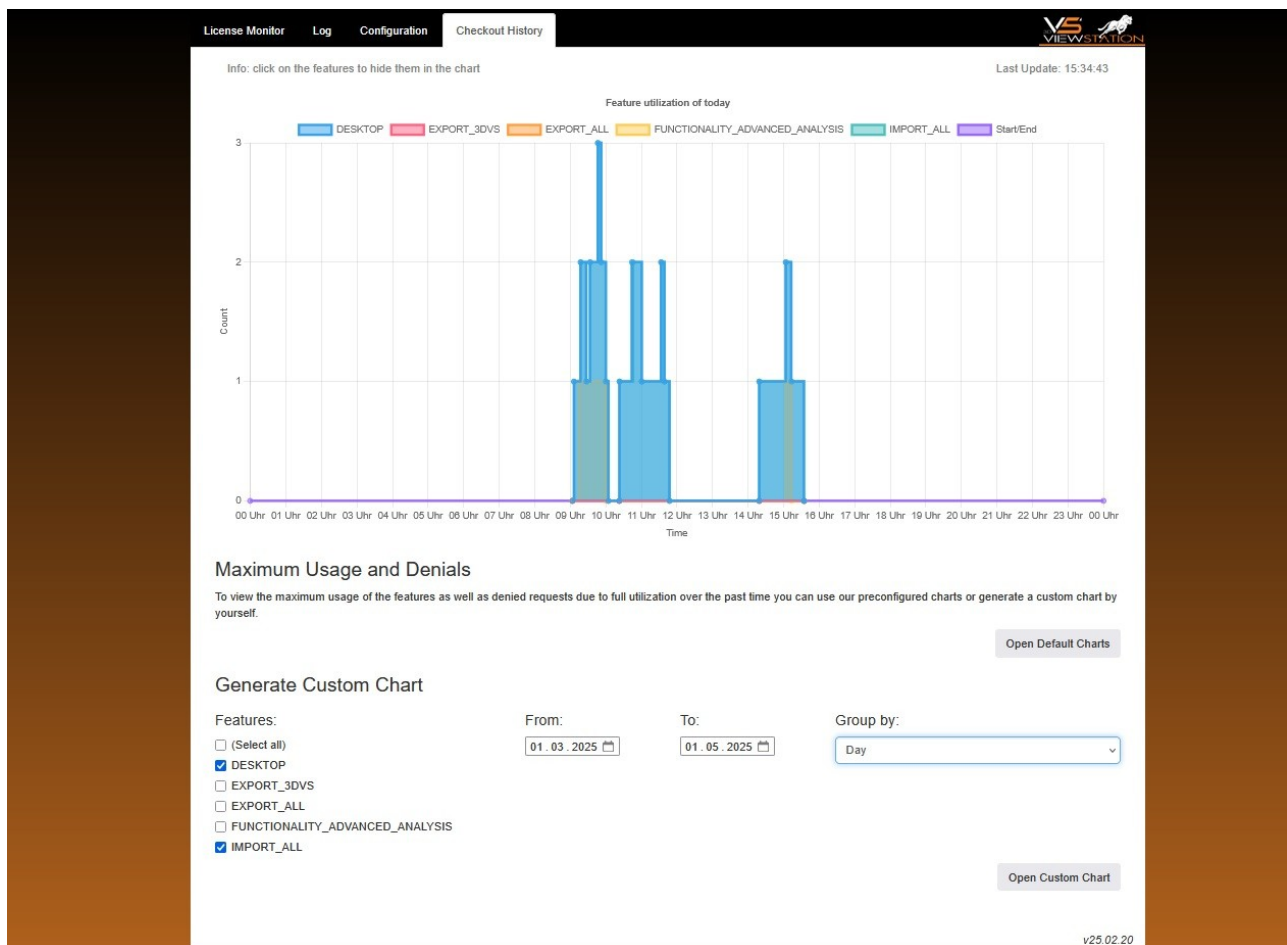
Usage data is stored in the installation directory under `/data/History/`. The data is stored in CSV format and can be easily used for further analysis. The columns are `time` (seconds since 01.01.1970), `count`, `feature`, `category` and `errorcode`.

Example

```
1746136800,3,DESKTOP,DailyMax,0
1746136800,0,EXPORT_3DVS,DailyMax,0
1746136800,0,EXPORT_ALL,DailyMax,0
1746136800,1,FUNCTIONALITY_ADVANCED_ANALYSIS,DailyMax,0
1746136800,3,IMPORT_ALL,DailyMax,0
```

2.3.1.5   Troubleshooting

"No allow rule found in windows firewall for tcp <port>, license checkout might not be accessible"

- Check that you have allowed the configured ports in your firewall 37.
- If you are using a third-party firewall (or no firewall at all), you can ignore this message. We can only check this successfully, if the Windows firewall is active.

"Network error 995 on TCP connect: The I/O operation has been aborted because of either a thread exit or an application request."

This error occurs when the 3DViewStation cannot reach the License Manager. Another indicator here is the 3-second timeout on the client, visible in the timestamps in the log files.

Possible reasons can be:

- Check the network connection on the PC running the 3DViewStation. A VPN connection may be required.
- The License Manager is not running.
- The required ports on the server running the License Manager are not opened.
- The `3DVS.lic` contains the hostname, which can not be resolved. Try the IP address instead.

"TCP error on read: End of file (error code 2)" and "Server received an invalid message by x.x.x.x (Message: …)"

These two errors can occur if a program other than the 3DViewStation sends messages to the server running the License Manager on the configured port (default 6200).

Another reason can be a 3DViewStation with an old floating license which is communicating over the x-formation interface and therefore sending other messages than expected by the new License Manager. To check the version, open the `3DVS.lic` in a text editor. If the value of "Floating" is 1, contact your administrator.

2.3.2   X-Formation LM-X (discontinued)

Please consider updating your LM-X License Manager to the <u>VS License Manager</u> ⌐35⌐ as LM-X will no longer be supported **as of Q2/2025**.

The installation instructions are divided into these chapters:

- <u>License Server Installation and Licensing</u> ⌐47⌐
- <u>Client License Server Communication</u> ⌐48⌐
- <u>License Monitoring</u> ⌐49⌐
- <u>Troubleshooting</u> ⌐50⌐

2.3.2.1   License Server Installation and Licensing

To install the license server, proceed as follows:

- Download the ZIP archive **LICENSE SERVER 64 BIT** from the Downloads chapter (More Downloads section) and unzip it.
- Execute the included setup and follow the installation instructions (e.g. `lmx-enduser-tools_v4.9.1_win64_x64.msi`).
- Select the enclosed `liblmxvendor.dll` and install the license server as a service. **Do not** start the license server after installation, as the license must be added first.
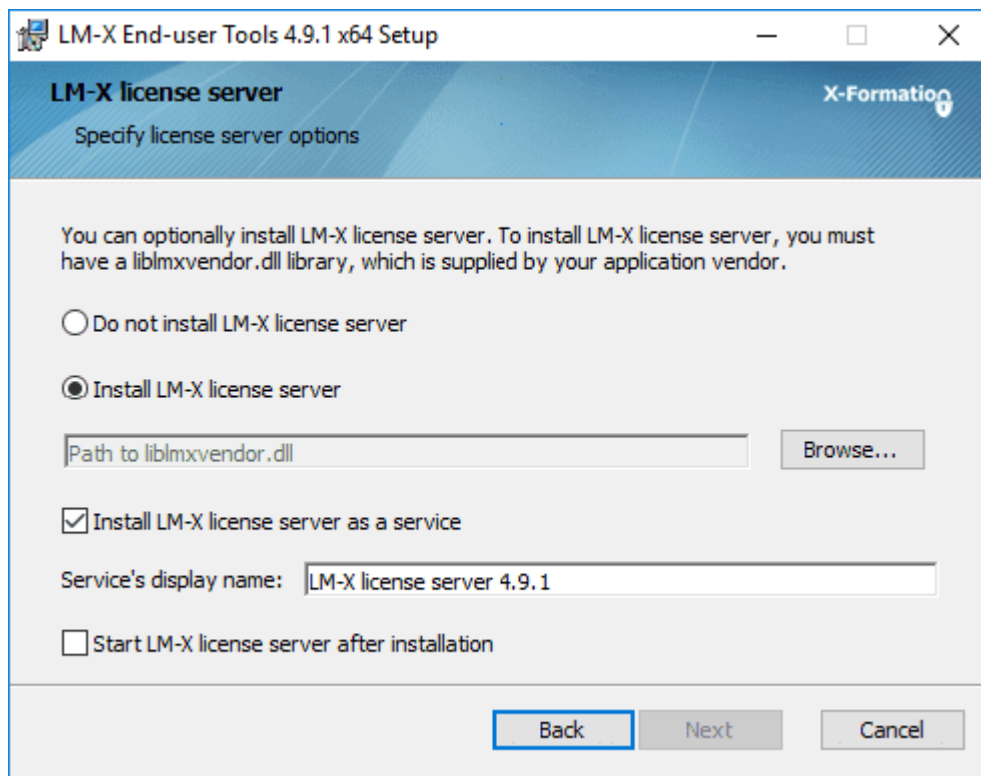
- After completing the installation, place the `Network.lic` file in the LM-X program directory before starting the LM-X license server service. For example `C:\Program Files\X-Formation\LM-X End-user Tools`. **Do not put old licenses or the client license (3DVS.lic) in this directory!**
- If the above steps have been completed successfully, start the license server service.
- The license server service can be uninstalled from the Windows system control.
- Note: The license server can be maintained remotely. The access password can be changed in the server configuration file `lmx-serv.cfg`. This can be found in the installation directory. Search for `REMOTE_ACCESS_PASSWORD`.

Note on updating the license server software and license

If licenses have been borrowed via the calendar function of the 3DViewStation client, a parallel update in exceptional cases may result in the license not being actively returned by the user before the expiry of the loan period. **The license is available again on the server after the expiry of the loan period.**

- The license can be replaced without stopping the service. Afterwards the service has to be restarted.
- A new license software can be installed parallel in a new directory according to the above instructions. Stop the old license service and then start the new service. We recommend that you uninstall the old service.

2.3.2.2   Client License Server Communication

The communication between 3DViewStation client and license server takes place via port 6200. You can change this by changing the port on the server side in the `lmx-serv.cfg` and on the client side in the license file `3DVS.lic`. If you suspect communication problems, please refer to the chapter Troubleshooting / FAQ.

Changing the port on the server:

- The server configuration file `lmx-serv.cfg` can be found in the installation directory, e.g. `C:\Programs\X-Formation\LM-X End-user`.
- Search for the line `TCP_LISTEN_PORT = 6200` and change the port 6200 to a available port of your choice.
- Save the configuration file and restart the server service for the changes to take effect.

Changing the port and the server names on the client:

Please check the red marked line in `3DVS.lic`. With this entry the 3DViewStation can find your license server.

Extract from 3DVS.lic:

...

~LicenseServerAddress=6200@server_name

...

- The entry must begin with a tilde "~".
- If necessary, change the port according to your server configuration file `lmx-serv.cfg`.
- Enter your server name or the IP address of the server after the "@".
- Avoid changes in other lines of the license file.
- Please inform us of any changes so that we can take them into account for the next license delivery.

### 2.3.2.3   License Monitoring

Our license monitoring application is described here. You can still use LMX's application, but it is no longer actively supported by us. Some features of LMX's application are no longer active (e.g. retrieving licenses).

Licenses that are in use are returned to the license server as soon as 3DViewStation is closed.

If a license is no longer available, you can use the Network License Monitor to find out which workstations currently occupy a license.

The Network License Monitor is part of the standard installation. You can also download the application later in the Downloads section (Optional Downloads).

- Click the **LICENSE MONITOR** button to start the Network in the licensing pane under License server.
  Alternatively, you can run the Network License Monitor from the installation folder: `..\Tools\NetworkLicenseMonitor\NetworkLicenseMonitor.exe`
- When starting the Network License Monitor for the first time, enter the server path (Port@Servername) and confirm it with [**UPDATE**]. This information can be found directly under the License Monitoring button.
  Now the **FEATURES** tab lists all the features of your license, how many of them are in use, and how many of them have been borrowed.
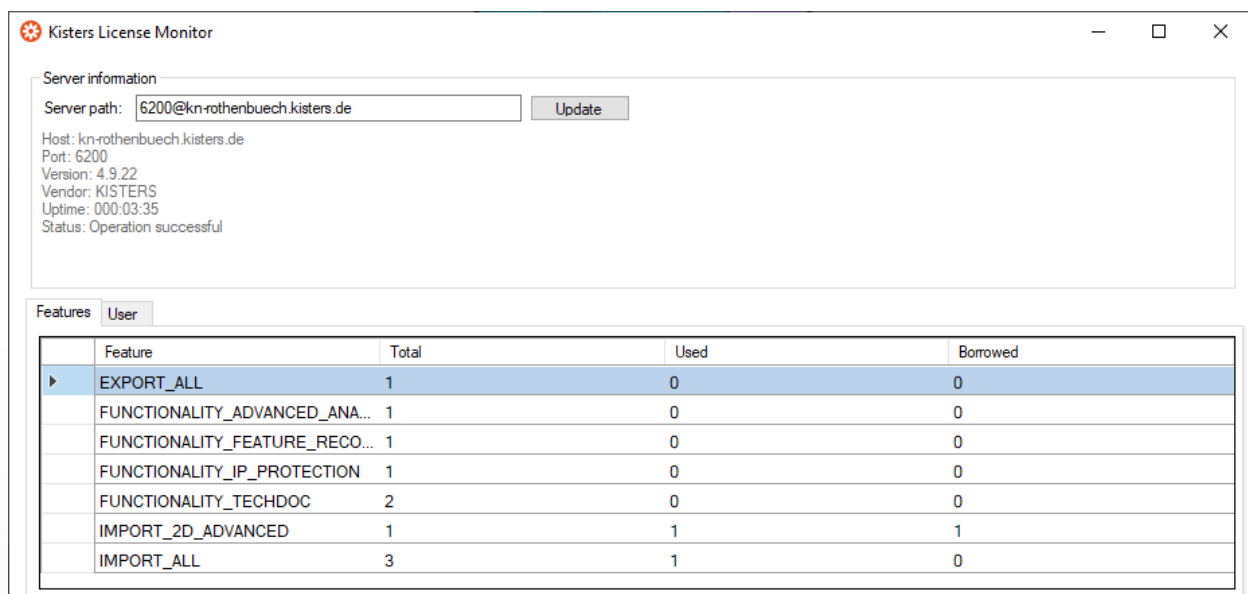
The **USER** tab contains a list of information such as the corresponding computer name (**HOST**), IP address (**IP**) and status (**LICENSE STATE**). The status (**LICENSE STATE**) indicates whether a license is currently in temporary use (checked out) or has been borrowed for a certain period of time (borrowed). The **BORROW EXPIRATION** column contains the date from which this license feature will be available again.
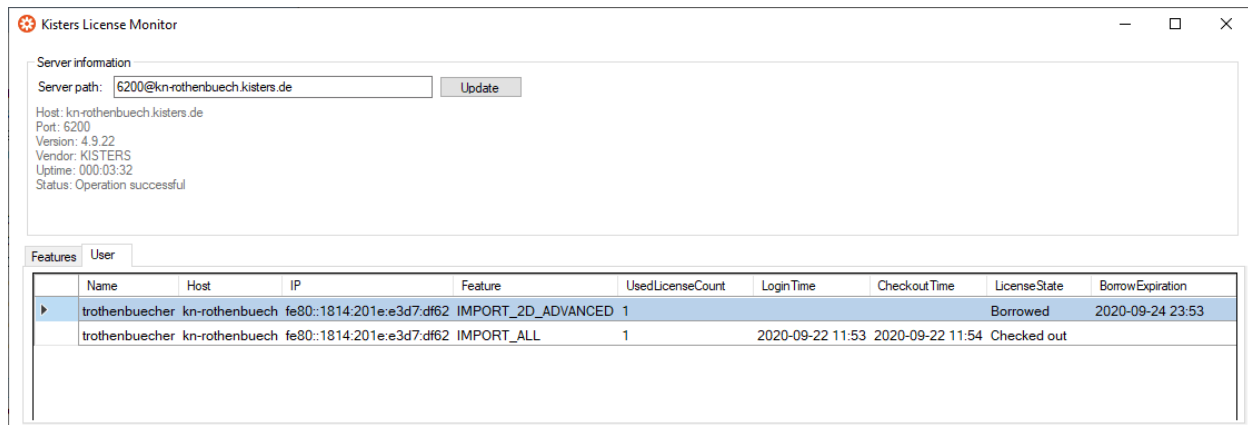
2.3.2.4   Troubleshooting

If problems occur, the log files on the server and client provide information about the cause of the problem:

- The server log file `lmx-serv.log` can be found directly in the installation directory.
- You can open the client log file directly from the 3DViewStation. To do this, click **USER** in the **HELP** tab in the **FOLDER** area. The directory `%userprofile%\Documents\Kisters\ViewStation` is opened. In this folder you will find the subfolder **LOGS** with the files of the logged-in user.

Problem 1: Unable to connect to license server

It is not possible to open models because communication with the license server is not possible.

Causes and solution:

1) The license server service was not started

Please start the license server service.

2) Communication blocked

Please make sure that the license server is reachable. Communication uses port 6200. If the firewall of the server blocks this port, you will find the entries in the server log:

- WARNING: Windows firewall blocks TCP port 6200.
- WARNING: Communication to license server might not work properly.
- WARNING: Windows firewall blocks UDP port 6200.
- WARNING: Automatic server discovery might not work properly.

To use a different port, please enter it in the `lmx-serv.cfg` file for the server and in the `3DVS.lic` file of the clients (See also chapter License server installation and licensing).

Note: If further LMX license server installations are available for non-KISTER products, they must communicate on a different port.

3) Invalid server license

The entry **WARNING: NO LICENSES TO SERVE** in the server log, means there is a licensing problem. The following error messages provide detailed information:

A. **No further error message:**
    No server license `Network.lic` has been stored.
B. **WARNING: .\3DVS.lic: License file is using unknown/invalid syntax**
    The client license `3DVS.lic` has been stored, please replace it with the server license `Network.lic` or delete `3DVS.lic` if you have stored both licenses in the folder.
C. **WARNING: .\ Network.lic: License file is using unknown/invalid syntax**
    The license has been damaged or modified. Please unpack them again from the ZIP archive we sent you.
D. **WARNING: Feature [Lizenz-Feature-Name] is ignored: (Err: 10) HostID does not match license**
    This is not the licensed server and the license is therefore invalid. Please use the correct server or contact our orders department (see ch. Contact) to request a license server change.

E.   **WARNING: Feature [Lizenz-Feature-Name] is ignored: (Err: 8) Invalid license key**
Possibly an incompatible liblmxvendor.dll from an older installation was used during the installation. Please replace the liblmxvendor.dll in the installation directory with the one from the downloaded archive `Kisters_LM-X_License_Server_x64.zip`. The license server service must then be restarted.

4) The client tries to reach the wrong license server.

In case of a license server change, the licenses(`3DVS.lic`) must be updated on the clients, since the license server and port are stored in these. Some clients may not have been updated. Please check server address and port in the license for the affected clients. You may also change this information on your own without invalidating the license. We recommend that you inform us of the changes so that you will receive the correct licenses directly in the future.

5) Changes to the server, configuration or license

Changes have been made to the server. For example, a new server license or configuration has been deposited, but the server service has not been restarted. Please restart the service for the changes to take effect.

6) Wrong license server service started

If there are several installations, Windows may have started an older service after restarting the system. Please quit this service and start the latest version. We recommend that you uninstall the older installations using the Windows Control Panel.

Problem 2: No features to borrow.

This message appears on the client when the license server service has been successfully installed and started, but does not have a valid license. The server is reachable and responds to the client's license request, but cannot provide the client with any license features "No features to borrow".

Please store the latest 3DVS_Server.lic in the installation directory of the license server and restart the service.

Problem 3: Importer cannot be initialized (importer name)! Missing Microsoft Redistributables.

When starting the 3DViewStation Desktop, one or more corresponding error messages appear. As a result, some formats can no longer be opened. Our importers require certain Microsoft Redistributables. You can download these individually from Microsoft or from us as a package (see chapter Download).

Note: During installation, Setup automatically checks and updates the Microsoft redistributables, unless this has been actively prevented by the corresponding parameter during software distribution.

Problem 4: Runtime error: SWbemObjectSet: Invalid class

During the installation process of the 3DViewStation, a corresponding error message appears, which means that the setup cannot be performed correctly. The reason for this is an error in the Windows Management Instrumentation (WMI). To eliminate this error, it is necessary to

- re-register the Performance Libraries,
- check the WMI database for consistency
- and reset the WMI repository.

Note: When carrying out the following steps, technical problems cannot be ruled out, so you should make a data backup of the PC before starting the procedure.

Steps towards a solution:

Start the Windows command prompt (`cmd.exe`) and carry out the following steps:

- Disable autostart of the WMI:

```
sc config winmgmt start= disabled
```

- Stop the WMI service:

```
net stop winmgmt
```

- Re-register the Performance Libraries:

```
winmgmt /resyncperf
```

- Check the WMI repository for consistency:

```
winmgmt /salvagerepository
```

- Reset the WMI Repostory:

```
winmgmt /resetrepository
```

- Restore the autostart setting of the WMI service:

```
sc config winmgmt start= auto
```

- Finally, run the 3DViewStation setup again.

2.3.3   Migration from LM-X to VSLM

> (!) The **ViewStation License Manager (VSLM)** is our new alternative to the LM-X License Manager. **As of Q2/2025, this will become the only license manager.**
>
> **Please plan your update accordingly.**

The benefits of VSLM

- After the initial roll-out, client licenses don't need to be updated, e.g. when maintenance is renewed.
- Our own free license monitoring [44].
- Local Windows groups are now supported to configure user rights.

To-do for migration

- Requires 3DViewStation version 2023.7.197 or later.
- Requires new license files (please contact orders-viewer@kisters.de)
- Install the new VS License Manager with a new license file on your server. Make sure you use a different port than LM-X.
- Roll out the new client license files.
- Uninstall the LM-X License Manager.
- If you are using Groups and User Permissions [39], you will need to convert the configuration to our new format. If you need help, please contact our customer support.

Chapter III:

Software Distribution

3   Software Distribution

Documentation of 3DVS Software Distribution

3.1   About Software Distribution

As an administrator, you can install, license [54] and configure [58] the 3DViewStation on many computers with just a few commands.

3.2   Installation and Licensing

The KISTERS 3DViewStation Setup offers you the possibility for unattended installation, uninstallation and licensing.

Installation and Licensing

The path to the setup must be specified. If you do not use any of the optional parameters beyond that, the installation will be performed with the same basic settings as for the interactive installation. The optional parameters are explained in the table below:

Parameters	Remark	Default
`/VERY SILENT`	Suppresses the display of general installation instructions on the target computer. However, any error messages and queries are displayed.	Off
`/SUPP RESSM SGBOX ES`	Only used in combination with the `/VERYSILENT` parameter. Additionally suppresses the display of queries and error messages.	Off
`/NORE START`	Prevents a possibly necessary reboot of the target computer if, for example, the Microsoft redistributables have been updated.	Off

Paramet ers	Remark	Default
`/INST ALLPA TH=`	Installation path on the target computer. If this is not specified, the setup will attempt to install to the Windows directory `%ProgramFiles%\Kisters\ViewStation`.	`% ProgramFi les% \Kisters\ ViewStati on`
`/LICE NSEPA TH=`	Specify the location (source) of the license file via a UNC path. The setup will copy the license to the Public User folder (destination). Mounted drives are not supported.	-
`/PROD UCT=`	Specifies which product to install: ▪ `desktop` ▪ `webviewer` ▪ `visshare` ▪ `kas`	`desktop`
`/LOG =`	Creates a log file under the specified path with the specified name and file extension. If a file with the specified name already exists, it will be overwritten. If the file cannot be created, then setup will abort with an error message.	Installation directory
`/LANG =`	All supported languages are installed, so that the user can change them later. This parameter is only taken into account when starting the 3DViewStation for the first time and when resetting to factory settings. If an update of the 3DViewStation is performed, the user's language setting will not be overwritten. ▪ `english` ▪ `german` ▪ `french` ▪ `spanish` ▪ `italian` ▪ `japanese` ▪ `korean` ▪ `chinese`	`english`
`/TASK S=`	If `/TASKS` is not executed or no task parameter is given, the same basic settings as in the interactive setup are used. Multiple tasks can be listed in a comma-separated list.	
	▪ `notasks` — Overwrites the default settings and does not execute a task.	-
	▪ `desktop icon` — Creates a desktop shortcut for the 3DViewStation Desktop application.	On
	▪ `startme nuicon` — Creates start menu items for the 3DViewStation Desktop application.	On
	▪ `desktop iconvr` — Creates a desktop shortcut for the 3DViewStaion VR application.	On
	▪ `startme nuiconv r` — Creates start menu items for the 3DViewStation VR application.	On
	▪ `samples` — Installs sample models.	On
	▪ `profile s` — Installs sample profiles to quickly change settings	On

Paramet ers		Remark	Default
	■ `factory reset`	Resets the 3DViewStation to default settings.	Off
	■ `noteamv iewer`	Prevents the installation or update of TeamViewerQS for user support. Not recommended!	Off
	■ `noredis t`	Prevents the installation or update of required redistributables. Not recommended!	Off
	■ `enabled umps`	Enables Windows to create a memory image in case of critical errors of the 3DViewStation. This dump can then be provided to our support to quickly find bugs.	On
	■ `launcha fterset up`	Starts the 3DViewStation automatically after installation.	Off

With the following call you can install and license the 3DViewStation unattended:

```
"Setup_3DViewStation.exe" "/VERYSILENT" "/SUPPRESSMSGBOXES"
"/NORESTART" "/INSTALLPATH=C:\Program Files\KISTERS\ViewStation"
"/LICENSEPATH=<Full path to the license file>" "/LANG=german"
"/TASKS=desktopicon,startmenuicon,samples,profiles,enabledumps"
```

Uninstall

The path to the uninstaller must be specified. In addition, if you do not use any of the optional parameters, the uninstallation will be performed with the same basic settings as the interactive uninstallation. The optional parameters are explained in the table below:

| Paramet ers	Remark	Default
`/VERY SILEN T`	Suppresses any display or query on the target computer.	Off
`/SUPPR ESSMSG BOXES`	Only used in combination with the `/VERYSILENT` parameter. Additionally suppresses the display of queries and error messages.	Off
`/NORES TART`	Prevents a possibly necessary reboot of the target computer.	Off
`/LOG=`	Creates a log file under the specified path with the specified name and file extension. At the end of the log you can check if the deactivation and uninstallation was successful. If a file with the specified name already exists, it will be overwritten. If the file cannot be created, then setup will abort with an error message.	Off
`/TASKS =`	If `/TASKS` is not called or no task parameter is given, the same basic settings as for interactive uninstallation are used. Multiple tasks can be listed in a comma-separated list.	-

K KISTERS

Paramet ers	Remark		Default
	▪ RemoveU serSett ings	Removes the settings and all profiles of the user.	Off
	▪ KeepLic ense	The PC is not deactivated. It therefore remains activated for a new installation.	Off

The following sample call allows you to uninstall 3DViewStation unattended:

```
"Uninstall\unins000.exe" "/VERYSILENT" "/SUPPRESSMSGBOXES"
"/NORESTART" "/Tasks=RemoveUserSettings" "/log=<Full path to the
log>"
```

3.3   Manual 3DViewStation Licensing

Just drag & drop the `3DVS.lic` license file onto the opened 3DViewStation.
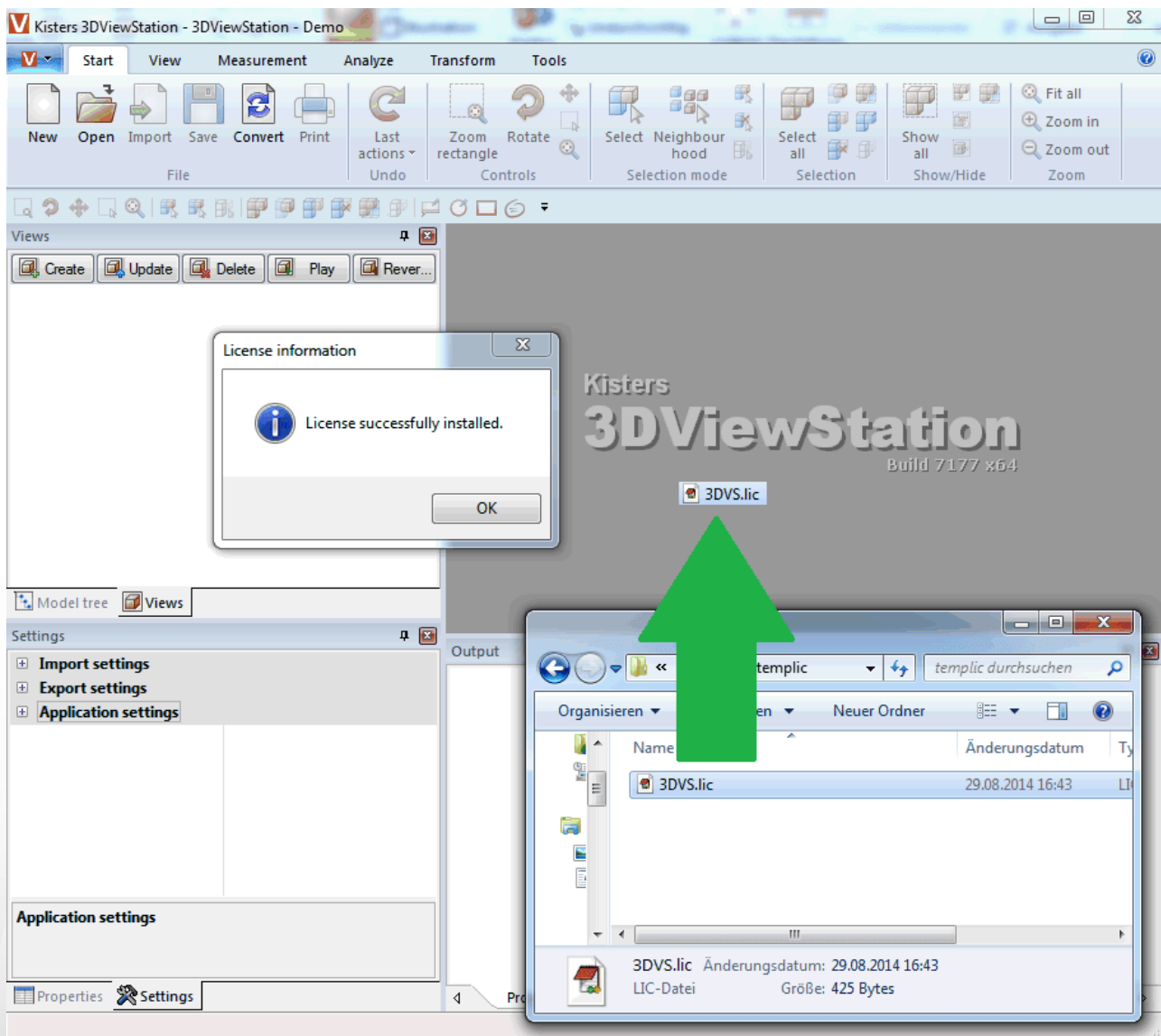
3.4   Settings and Profiles

All settings and profiles are stored in the XML-format and have the same structure. This means that you can define settings and profiles in the 3DViewStation interactively or by editing these XML settings files. All XML- files can therefore be renamed and distributed according to function. All XML files can contain all or only some of the settings.

The following XML files are available:

- `Current.xml`
- `<Profile name>.xml`
- `Overrides.xml`
- `Default.xml`

Current.xml – Default settings and active Scene

- After the first start of the 3DViewStation, the file `Current.xml` is created in the user folder `%userprofile% \Documents\Kisters\ViewStation\Settings`. This initially contains all factory settings. The `Current.xml` file defines the settings with which the 3DViewStation starts or the next model (scene) is loaded. Changes made by the user in the **SETTINGS** > **DEFAULT** tab are written to the `Current.xml` file when the settings are saved [🖫].
- Changes made by the user in the **SETTINGS** > **ACTIVE SCENE** tab only apply to the currently visible (active) scene and are only temporary. However, they can be transferred to the default settings by clicking on the save icon.

<Profile name>.xml – User profile

- If a profile is saved when no scene is open, all default settings are saved. However, if an active scene is available, the settings of the Active Scene including the settings that are not specific to the scene (e.g. import and export) are saved in the profile.
- Profiles are stored in the user folder `%userprofile% \Documents\Kisters\ViewStation\Settings\Profiles`.
- Profiles can also be stored in the `<installation directory>/Settings/Profiles` folder, in which the user may not have write permissions. The profiles as well as the resources (materials, templates, etc.) from the installation directory are displayed to the user in the user interface of the 3DViewStation as a conglomerate with the profiles and resources from the respective user folder.
- Write-protected profiles are marked with a closed lock in the profile window.

Overrides.xml – Defined startup stettings

- The settings defined in the `Overrides.xml` are written to the `Current.xml` file of the user at each start. For example, updates can be permanently deactivated.
- The `Overrides.xml` must be stored in the `<installation directory>/Settings`. There you will find an example with explanation that deactivates the updater. All you have to do is rename the `_Overrides.xml` to `Overrides.xml`.

Default.xml – Defined factory settings

- Contrary to `Overrides.xml`, the `Default.xml` is only considered if no `Current.xml` is available. This is the case the first time the 3DViewStation is started or by resetting to the factory settings.
- If the 3DViewStation is started, the `Current.xml` will not be created from our settings, but from the settings stored in the `Default.xml`. This enables you to define your own factory settings.
- The `Default.xml` must be stored in the `<installation directory>/Settings`.

Chapter IV:

Contact

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