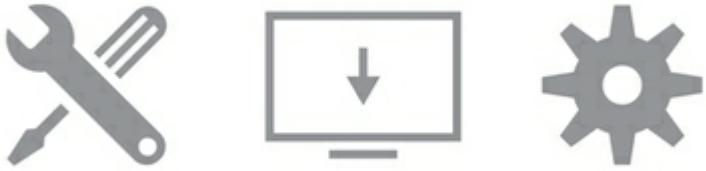
Systems
FAST



Terra 4D

Release 2.9

Installation Guide

extend your view
TERRA 4D


TE-RRA

Contents

1 Introduction

This document describes the installation of the Terra 4D software. This includes the necessary 3rd party software and optional the demo installation.

Configuring and using the software is not in focus and is described in the User Guide.

1.1 About Terra 4D

extend your view TERRA 4D

Terra 4D is a geo-referenced security and safety management software.

Terra 4D is applied to protect people, property and critical infrastructure assets.

Terra 4D converges all your security cameras, sensors, subsystems, data sources and operating procedures into a single unified and comprehensive platform.

Terra 4D integrates multiple security and safety applications and controls them through an intuitive user interface, providing for greater overview and quicker response.

Terra 4D allows the presentation of various data sources in a layered 3D geographical visualization.

With Terra 4D, you

- monitor all security-relevant activities in real time, indoor and outdoor
- manage intruder alarm, fire detection, production control, building management and other systems
- access live and recorded sensor and subsystem data
- replay all data including video in time-synchronized fashion
- coordinate security interventions and staff

With Terra 4D, you will

- improve overall security
- reduce risk
- increase efficiency

1.2 About this User Guide

Symbols and Styles

In this Installation Guide, the following symbols and text styles are used.

- Elements of the user interface, like buttons and input fields, are shown in **bold** characters.
- System messages, directories and files are shown in *italics*.
- Emphasized text is underlined.
- Cross-references and links are blue and underlined.

Content

Printable manual and online help feature the same content.

Online Help

Use the navigation tree to browse the contents of this help system.

By clicking at the **Help** icon in the programs user interface, the online help system will come up with the topic related to the current screen or function.

Feedback

Please do not hesitate to contact FAST Systems GmbH for feedback on this Installation Guide. See the appendix for contact information.

2 Installation

In this chapter the prerequisites and installation of Terra 4D is described. Follow the instructions to get a fully working software.

2.1 Prerequisites

Regard the prerequisites to get a fully working installation of Terra 4D.

To get more and up-to-date Information that can be important for selecting a hardware, or to get tips on installations and configuration, including from Third-party subsystems, you can visit our Wiki: Terra 4D Wiki

2.1.1 Requirements to use Terra 4D

To get a fully functional running Terra 4D experience, the used computer and driver have to fulfill the following requirements.

2.1.1.1 Hardware Requirements

A hardware has to fulfill the following requirements:

- CPU: Quad Core or better
- Graphics: Nvidia graphics (Nvidia GeForce Model >= GT440 with >= 1 GB RAM)
- RAM: >= 4 GB RAM (8GB RAM recommended)
- HDD/SSD: >= 60 GB free disk space (SSD recommended)
- OS: Windows 8.1/10
  32/64 bit (64 bit recommended)

Some graphics cards or graphics drivers are known to cause problems. Because of this the following graphic cards or drivers are not supported by Terra 4D:

- Windows Standard VGA driver
- Intel GMA 3150
- Mobile Intel 945GM
- Intel HD Graphics 3000
- Intel G33/G31
- Intel Q965/Q963 - GMA 3000
- Intel HD Graphics 4400 with older drivers than 10.18.10.3277 (update to the latest driver)

2.1.1.2 OpenGL Requirements

The driver for the graphic card have to fulfill these OpenGL requirements:

- Minimum OpenGL Version 3.3 Core Profile
- Minimum OpenGL Shading language support 1.3

2.1.1.3 Virtual Machine Requirements

If you want to install Terra 4D in a virtual machine, follow this requirements to fulfill the OpenGL Requirements.

- **Oracle VirtualBox:**
  - Version 5 or higher
  - Guest Additions must be installed with “experimental WDDM Direct3D video driver”
  - “3D acceleration” must be enabled
- **VMWare**:
  - Version 12.x or higher
  - Machine hardware version must be 12 or higher
  - VMware Guest Tools must be installed
  - “Accelerate 3D graphics” must be enabled

2.1.1.4 Remote Desktop

Windows Remote Desktop is not supported. If you want to work remote on a Terra 4D server or client, we recommend to use *AnyDesk* or *Teamviewer* instead.

2.1.1.5 Input Devices

Terra 4D supports the following additional input devices:

- Generic Joystick
- 3Dconnexion SpaceMouse Enterprise
- 3Dconnexion CadMouse
- 3Dconnexion SpaceMouse Pro Wireless
- 3Dconnexion SpaceMouse Wireless
- 3Dconnexion SpaceMouse Pro
- 3Dconnexion SpacePilot Pro
- 3Dconnexion SpaceExplorer
- 3Dconnexion SpaceNavigator
- 3Dconnexion SpaceNavigator for Notebooks
- 3Dconnexion SpaceTraveler
- 3Dconnexion SpacePilot
- 3Dconnexion SpaceBall 5000
- 3Dconnexion SpaceMouse Plus
- 3Dconnexion SpaceMouse Classic
- Contour ShuttleExpress
- Contour ShuttlePro
- Contour ShuttleProV2

2.1.2 Software combinations to avoid with Terra4D

Some software combinations with Terra 4D may cause problems with the execution of Terra 4D. This can go up to the crash of Viewer, Configurator or Server.

In order to allow unlimited use of Terra 4D, we recommend not to use this software as long as Terra 4D is running. The best way to do this would be to uninstall the listed programs. This applies to the following programs:

- AMD Gaminng Evolved
- NVidia Geforce Experience
- PlaysTV

2.1.3 Nvidia Optimus Technology

Some laptops come with a combination of Intel and Nvidia graphic cards. It is called Nvidia Optimus Technology (http://www.nvidia.com/object/optimus_technology.html). To achieve best 3D performance this should be turned off in BIOS (see the computer manual for further information).

2.1.4 Download from FAST Protect Ftp-Server

Before the installation can start, data needs to be downloaded from FAST FTP server. We recommend using a ftp download client like *Filezilla* (https://filezilla-project.org/index.php) or *Total Commander* (http://www.ghisler.com/download.htm). Installers for both programs are part of the 3rd party software section on FAST ftp server too (see below).

There are about 40GB of data to be downloaded for a fully featured demo set up. So please make sure there is a fast and stable internet connection before you start. If you download the data to the same partition as you do the installation, you will need 100GB free disk space.

The details of the FAST Protect ftp server:

FTP server	server05.storage.hosteurope.de
FTP username	ftp10612138-public
Password	fastprotect
URL with FTP	ftp://ftp10612138-public:fastprotect@server05.storage.hosteurope.de

Note: all following directories are relative to the ftp directory.

Please download the following packages from FAST Protect ftp server. Put all downloads in one directory on the local hard-disk keeping a similar directory structure:

- 3rd party software, download directory: `versions/3rdparty.v2_7/*.*`
- Program installer, download file: `versions/v2_9/terra4d-installer-<BUILDNUMBER>.msi`

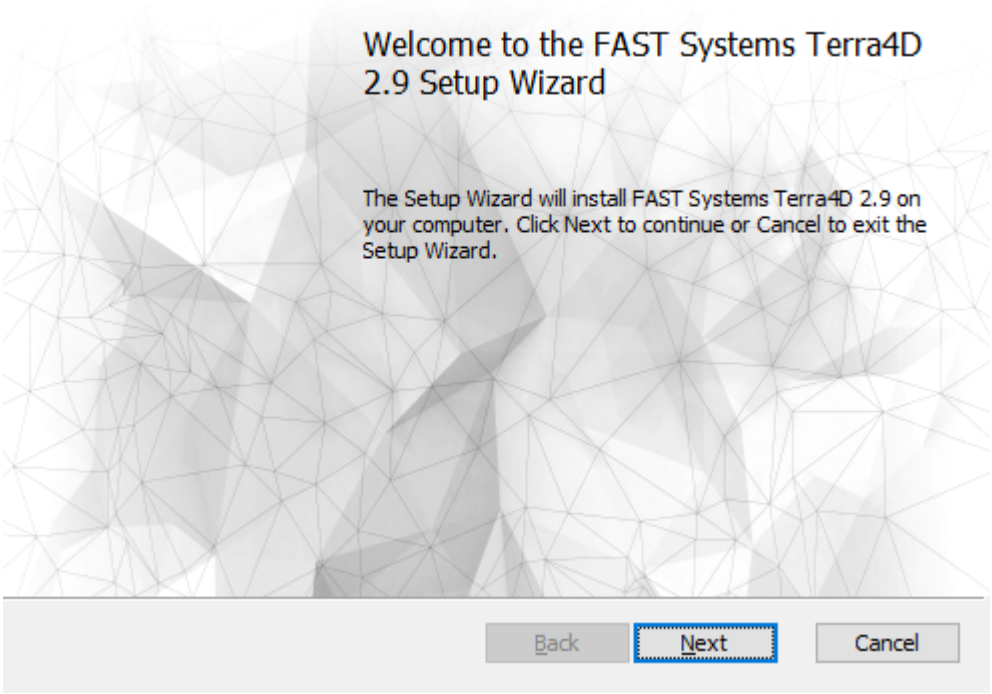
Optional Installation

- Helpful tools, download directory: `tools/*.*`

Demo Installation files

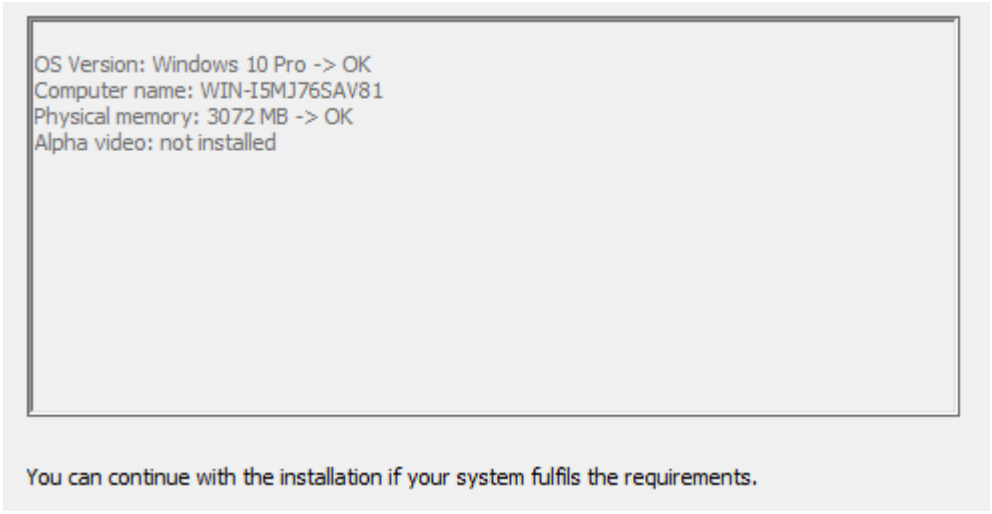
- Demo data installer, download file: `versions/demoCfg/demoData_v2_9/terra4d-demoData-v2_9_r<Release>.exe`
- GIS ortho and elevation data, download directory: `models/demo_orthos_dems/*.*`
- GIS ortho and elevation data for the "*Camp*" and "*Munich Suspect*" demo: `models/MucAirport_BernCamp/*`
- GIS building data, download directory: `models/demo_buildings/*.*`
- Video clips, download directories: `versions/democlips/*.*` and `versions/democlips_optional/*.*`

2.2 Terra 4D Program Installer

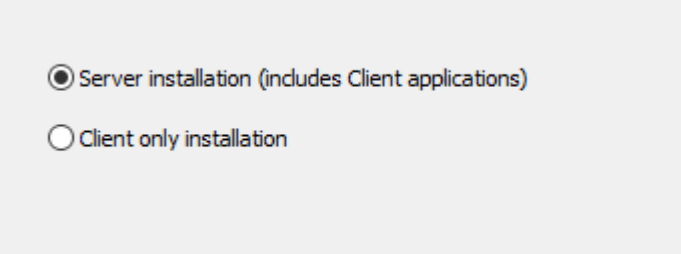


The program installer is mandatory and installs the required binary files to run a Terra 4D software package.Please execute `terra4d-installer-<BUILDNUMBER>.msi` and follow the instructions given by the installer. Default parameters should be used if nothing else is stated in the instructions given here.

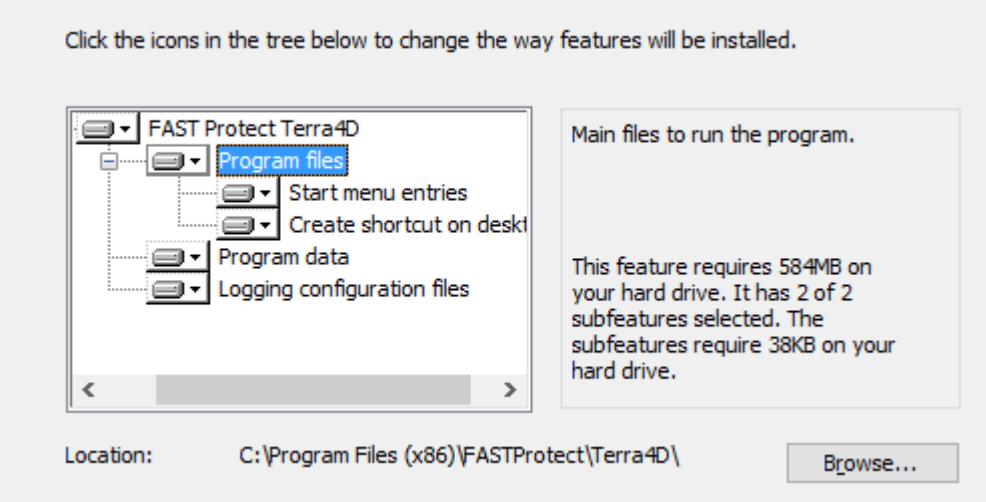
- After carefully reading and accepting the license agreement, check the system requirements. If the system doesn't fulfills them, the installation will not go on.



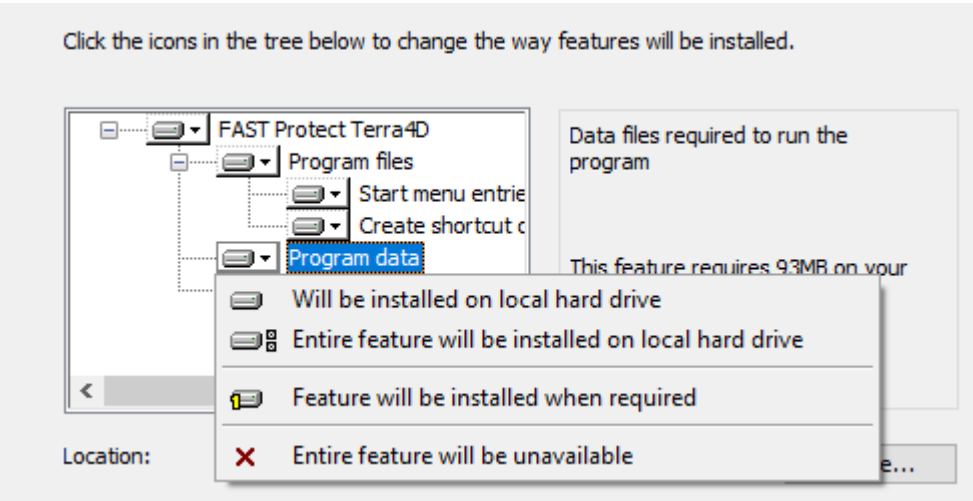
- Select *Server installation* to use on a server or when aiming for an all-in-one system installation, e.g. for demonstration purposes. In this case client and server applications will run on the same system and network connection is not required.
  Select *Client only Installation* if the machine is to be used as a client or monitor.



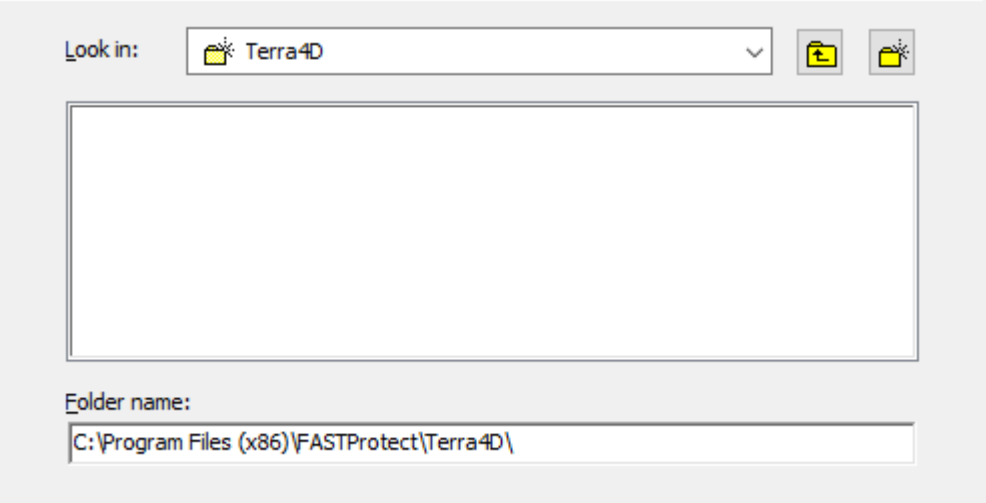
- Select which components you want to install. The default is to install all components.



- To change an option, click on the small hard disk symbol.



- Install into a directory of your choice or just into the default directory ("`C:\Program Files (x86)\FASTProtect\Terra4D`").
  To open the dialog, click on the name of the feature, etc *Program Files*

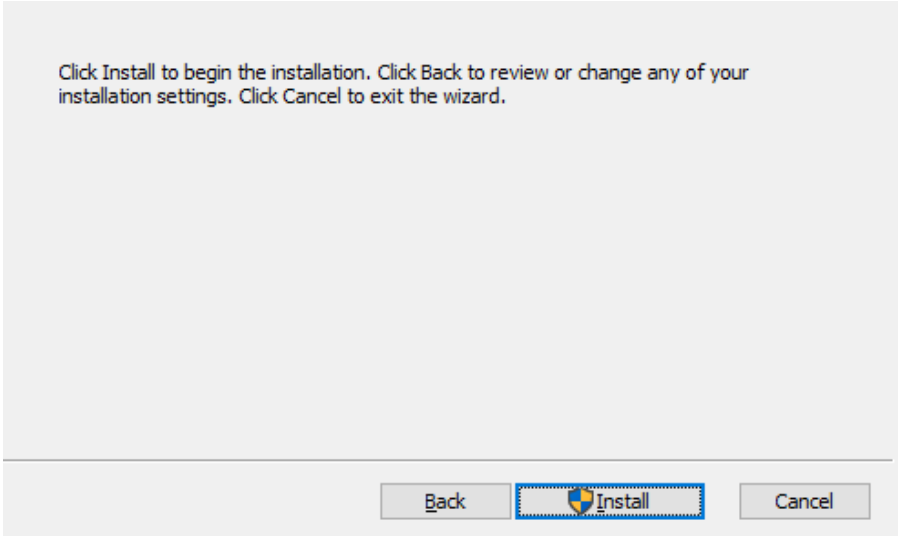


Note: If you want to use another folder for program or data, it is possible that you can't see the path (e.g. *ProgramData*) because Windows hides it by default. Then there are 2 possibilities:

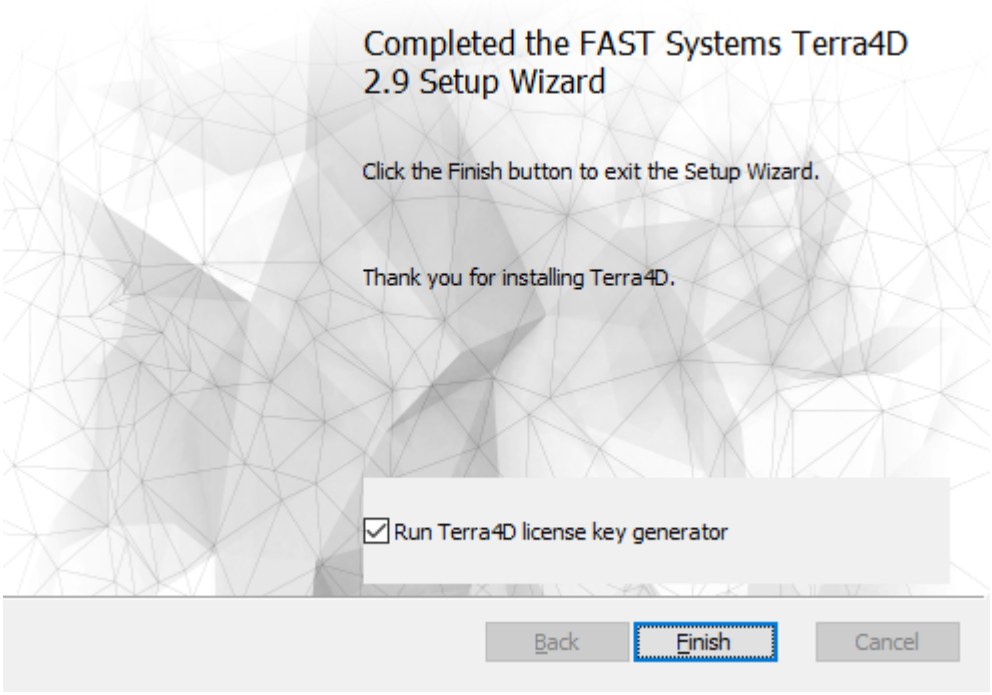
- Type the corresponding environment variable (Windows defines them for the most important pathes, e.g. `%ProgramData%` or `%TEMP%`) in the address line of a Windows explorer window (works for actual session) or
- Set the option "*Show hidden files, folders, and drives*" in a Windows explorer window (you find it at **Organize - Folder and search options** - tab **View - Hidden files and folders**), now you see them every time.

- The data destination folder is also the place where the terrain data (3D model data) are stored. Those data can require a lot of HDD space, so the partition used here should have enough capacity.

- Click **Install** to start the installation.



- To generate a license file after the installation was done, ensure the option *"Run Terra4D license key generator"* is selected before clicking on *Finish.*



If you make the first demonstration installation of Terra 4D, do not start the system at the end of installation process because first more data need to be installed.
If you want to use the computer as client, you have to set first the server data at the Terra 4D Setup program.

2.3 Terra 4D Demo Installer (optional)

Note: It is necessary to install the Terra 4D software before installing the demo software.

Note: All following directories are relative to the Terra 4D data directory selected at the program installer.

For demonstrations the Terra 4D software provides the option to play back video from files like live cameras and to generate objects based on stored track files. Live cameras and live sensors can be added to enhance the demo feature set.

Note: To access live cameras over internet, e.g. live cameras at the FAST building, instal OpenVPN first.

The demo data installer is optional and should be used on demo systems only. It installs an example configuration based on demo files (video clips, object tracks) and configures cameras and other devices located at demo sites (e.g. demo PTZ camera installations).

Before starting the demo data installer please make sure the Terra 4D server is NOT running (see also Start the applications)!

Please execute `terra4d-demoData-v2_9_r<Release>.exe` and follow the instructions given by the installer. The installer will look for an existing Terra 4D installation and installs the data into already configured directories. Defaults parameters should be used.

In the demo data directory (typically `c:\ProgramData\FASTProtect\Terra4D\demo\`) sample video clips and tracking files can be found.

Copy all files from download directory democlips (`democlips/*.*` and `democlips_optional/*.*`) into your Terra 4D demo directory.

Note: When you have problems to see the FAST Meetingroom indoor camera videos over VPN after finishing the installation, please follow the instructions in No Meetingroom Videos over VPN

2.3.1 GIS Data Extraction (optional)

This will install high resolution GIS data for selected cities and areas including 3D Buildings of selected cities. Please make sure to have enough storage space available.

Note: Run the Demo Installer before extracting the model.

Upgrade of older versions

If there is already a Terra 4D demo installation on the target system which is of version 2.4 or older please follow the instructions of this chapter.

The format of GIS data has changed from version 2.4 to version 2.5. That's why the old GIS data can be deleted and new GIS data need to be downloaded and extracted. To delete old GIS data please go to the layers folder (see also Setup Advanced). There is a folder named "terrain" inside the layers folder (typically: "`c:\ProgramData\FASTProtect\Terra4D\layers\terrain`"). This folder can be deleted to release about 40GB of disk space.

Deleting of the old terrain folder can take a few hours

Extraction of downloaded GIS data

Please execute the self extracting containers and select the layers folder (typically `c:\ProgramData\FASTProtect\Terra4D\layers\`) as target directory:

- for installation of GIS ortho and elevation data: `DEMO_orthos_dems.exe`
- for installation of GIS 3D building data: `DEMO_buildings.exe`
- for installation of GIS data around the army camp: `Aiport+Bern2.exe`

Depending on model size and details extraction of GIS data can take a few hours

2.3.2 OpenVPN (optional)

Required for live cameras access over a VPN network (e.g. to use cameras in Friedrichshafen in a demonstration). Do the following steps to install the software:

- Execute `openvpn-install-2.3.18-i002-x86_64.exe`,
  follow the instructions and keep the installation directory in mind
- Go to the directory the software was installed and copy the OpenVPN configuration files provided by FAST into the subdirectory config

- Typically this results in a structure like:
  `c:\Program Files\OpenVPN\config\fastdemoNN.fastprotect.net\`
- Create a shortcut on desktop by copying the file `OpenVPN GUI FAST FN.lnk` from your OpenVPN download directory. Right click the shortcut on your desktop and open properties to adjust directories in there (especially Program Files path (no x86) and filename (without version))

OpenVPN must start before the software Terra 4D to be used. On a working system it is recommended to copy a link in the autostart folder.

2.3.3 VLC 32-Bit (optional)

For demo installations and for ONVIF cameras which send a H.264-video stream, install the VLC in 32-bit. Because Terra 4D is a 32-bit application, the 64-bit variant of VLC is not supported.

- Please go to the Videolan Home page and select the 32-bit variant to download.
- Click on the installer and follow the instructions.
- Add the installation directory to the path environment variable of windows: **My Computer→Properties→Advanced System Settings→Environment Variables:**
  Click Edit to edit the path variable and add the VLC path, typically add at the end:
  `;C:\Program Files (x86)\VideoLAN\VLC`

2.3.4 Remote Access (optional)

To get the best support by FAST Systems GmbH, please use a remote desktop software. For further information, visit our WiKi

2.4 License File

Terra 4D installer will create a key file which represents the hardware of your demo PC. Please go to Terra 4D data directory subdirectory `licenses` to get the file `license.p7b` and send it to your FAST contact person via e-mail. A license file will be returned containing the software license keys for your system. This license file needs to be copied to the licenses directory to be able to run Terra 4D software.

There is also the possibility to run the key generator manually by executing the application `bin\terra3d-keygen.exe` as an administrator from your program installation directory.

Withoud ordering a license key the Terra 4D server will stop after one hour and have to restart to work on.

3 Setup

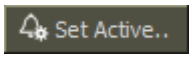
With the help of the Setup application the software's installation directories could be altered, switch between different version setups, change the logging parameters and get useful information about the systems running environment.

Scope

Selects the source of the configuration. Default should be [*Automatic*]. The file path points to the currently used configuration file.

Configuration set

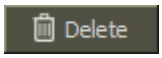
For each Terra 4D version an unlimited number of configuration sets can be used. Using different configuration sets might be useful if running different scenarios. For each version only one configuration in actually active and therefore used by that version.

After selecting the desired configuration to be used, press the 

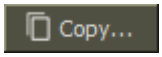
button to activate the selected configuration for using by the Terra 4D at the next start up time.

The 

button will create a new configuration with a new name.

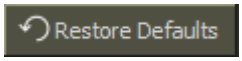
The 

button will delete the selected configuration.

The 

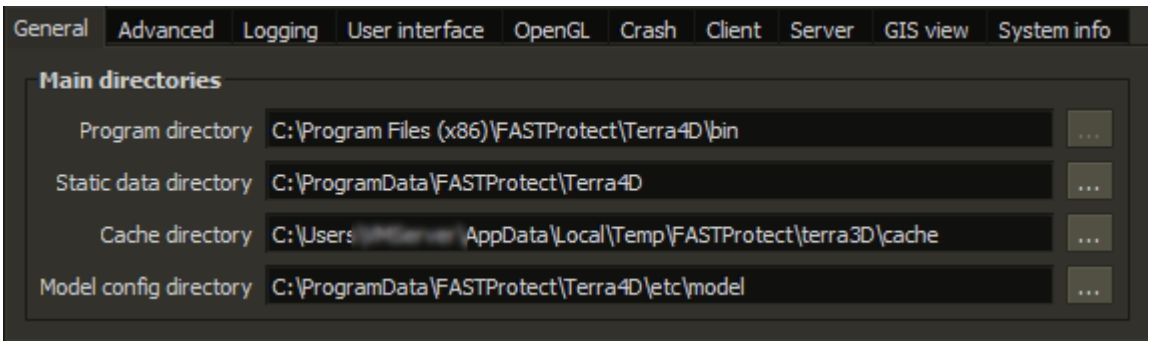
button will copy the selected configuration into a new one with a different name.

Restore to default

Pressing 

the button opens a confirmation dialog to check which tab pages should be reset to their defaults.

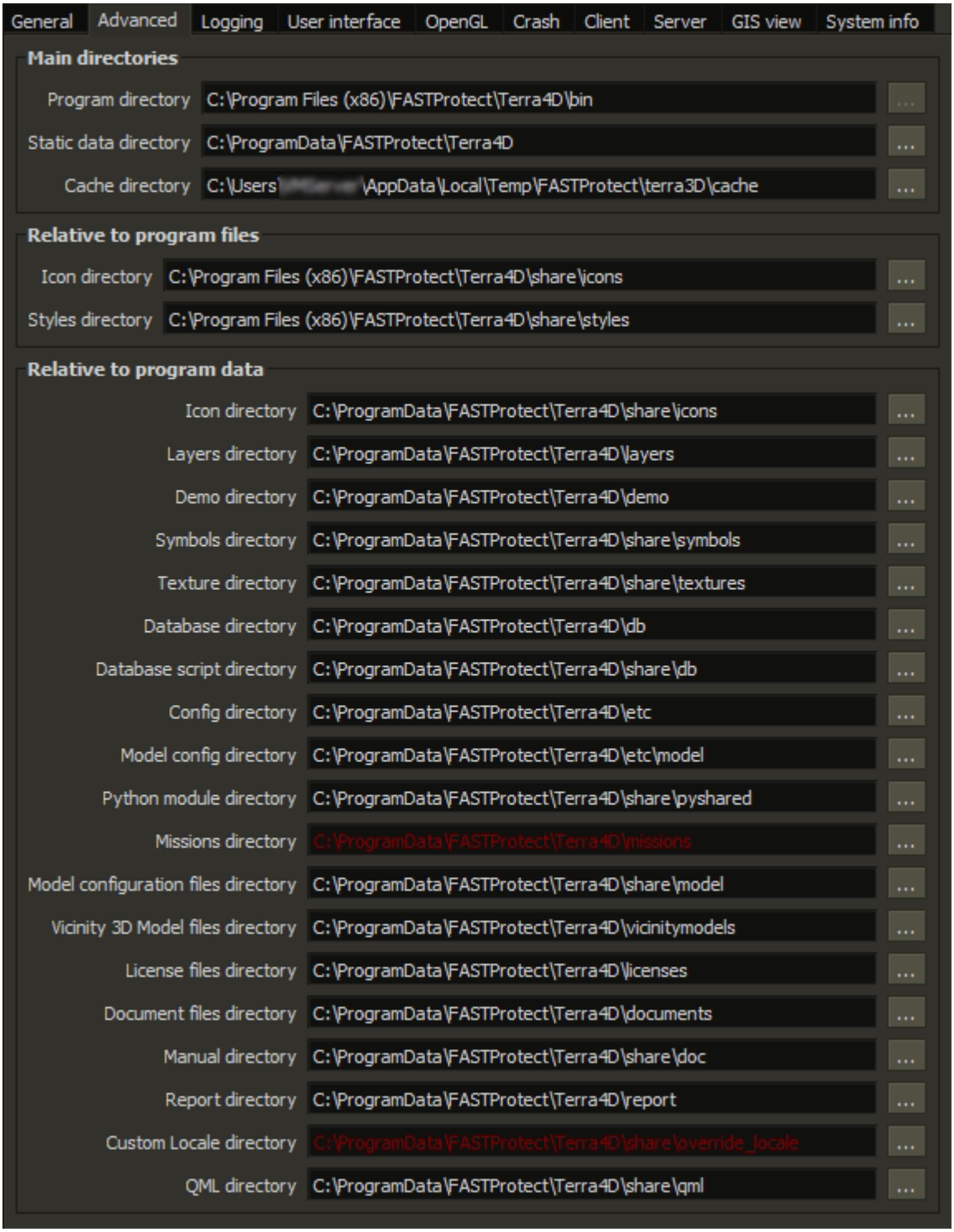
3.1 General



In the general settings the main directories can be setup.

Name	Kind	Default Value	Comment
Program directory	Text	[not editable]	The directory of Terra 4D executable files
Data directory	Text		The base directory where Terra 4D stores all its data files
Cache directory	Text	User *temp* directory	The directory where Terra 4D stores temporary caching files like e.g. terrain data *Must be writable to the current OS user.*
Model config directory	Text	<Data>\etc\model	The directory where Terra 4D stores the configuration files.

3.2 Advanced



In the advanced settings the main directories can be setup as well as the advanced program data directories. The tool-tip on each directory will show the absolute path of the shown relative path. An unresolved (non-existing, or wrong) path is shown in ***red*** color, an existing path is shown in ***black*** color.

Main directories

Name	Kind	Default Value	Comment
Program directory	Text	[not editable]	The directory of Terra 4D executable files.
Static data directory	Text		The base directory where Terra 4D stores all its data files.
Cache directory	Text	User *temp* directory	The directory where Terra 4D stores temporary caching files like e.g. terrain data.

Directories relative to program files [Program directory]

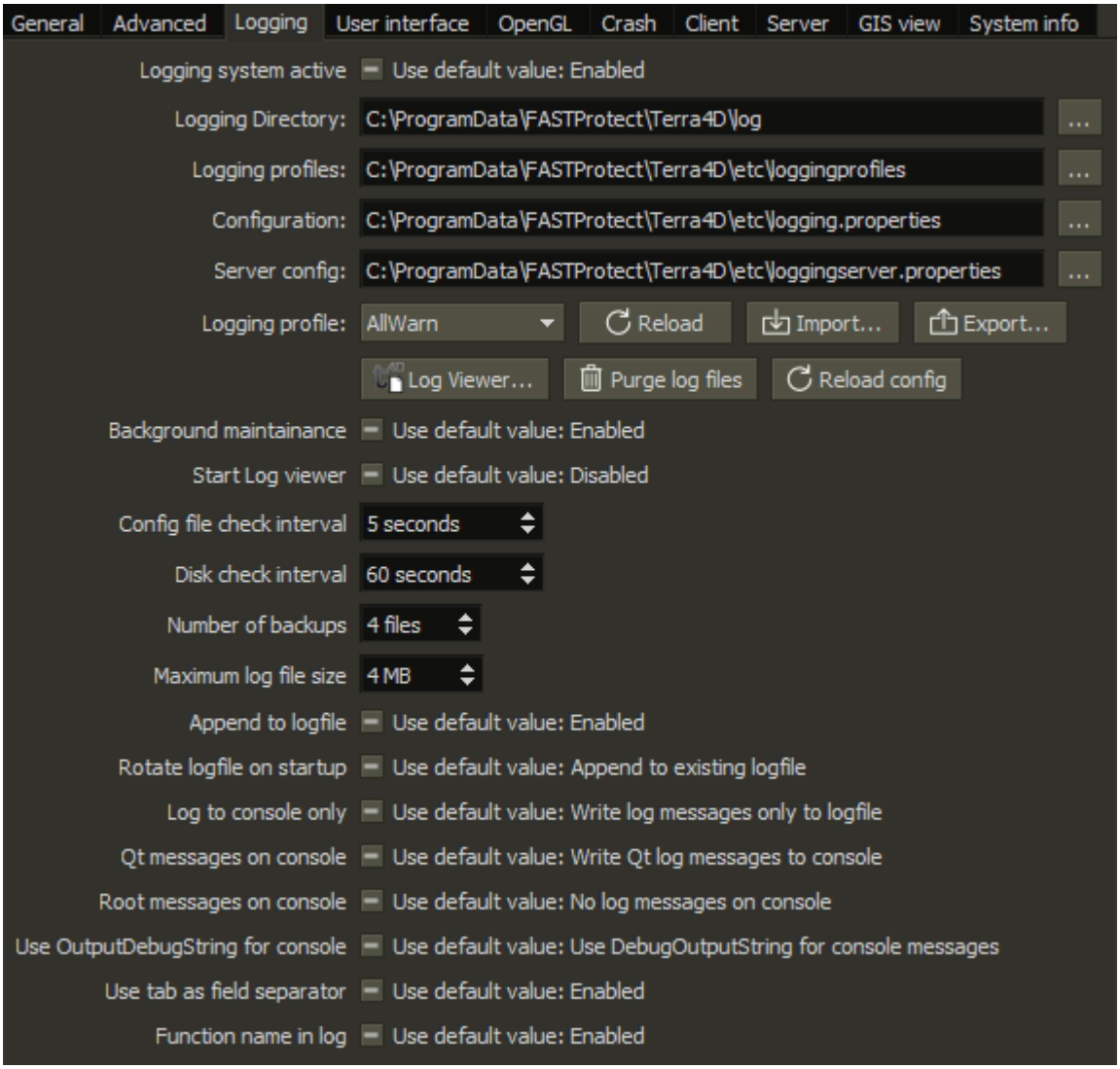
Name	Kind	Default Value	Comment
Icon directory	Text		The directory of Terra 4D program icon files.
Styles directory	Text		The directory of Terra 4D style (skinning) files.

Directories relative to program data [Data directory]

Name	Kind	Default Value	Comment
Icon directory	Text		The directory of Terra 4D data icon files.
Layers directory	Text		The directory of Terra 4D layers files.
Demo directory	Text		The directory of Terra 4D demonstration files. These are e.g. video files for file based demo cameras.
Symbols directory	Text		The directory of Terra 4D symbols files.
Texture directory	Text		The directory of Terra 4D texture files.
Database directory	Text		The directory of Terra 4D database files.
Database script directory	Text		The directory of Terra 4D script database files.
Config directory	Text		The directory of Terra 4D model and logging profiles directories.
Model config directory	Text		The directory of Terra 4D configuration files.
Python module directory	Text		The directory of Terra 4D python module files.
Missons directory	Text		The directory of Terra 4D mission files.

Name	Kind	Default Value	Comment
Model configuration files directory	Text		The directory of Terra 4D model configuration files.
Vicinity 3D Model files directory	Text		The directory of Terra 4D vicinity 3D model files.
License files directory	Text		The directory of Terra 4D license files.
Document files directory	Text		The directory of Terra 4D document files.
Manual directory	Text		The directory of Terra 4D help document files.
Report directory	Text		The directory of Terra 4D report templates.
Custom Locale directory	Text		The directory of Terra 4D localization files.
QML directory	Text		The directory of Terra 4D QML scripts.

3.3 Logging

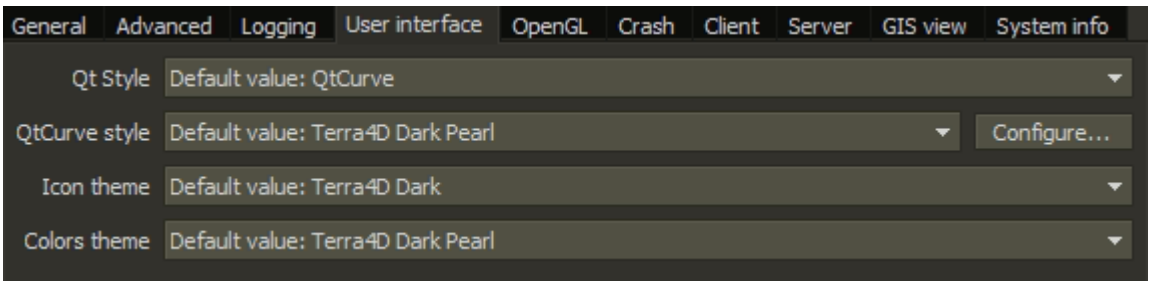


The Terra 4D own logging capabilities to track down any issue that might come up within the Terra 4D software.

The logging is essential to support issue tracking.

In normal cases leave the defaults as they come, only change them in direct contact with a supporter from FAST Systems GmbH

3.4 User Interface



The user interface for Terra 4D can be customized. The style of the user interface, the icon theme and the color scheme can be selected. The configuration of the user interface is per machine.

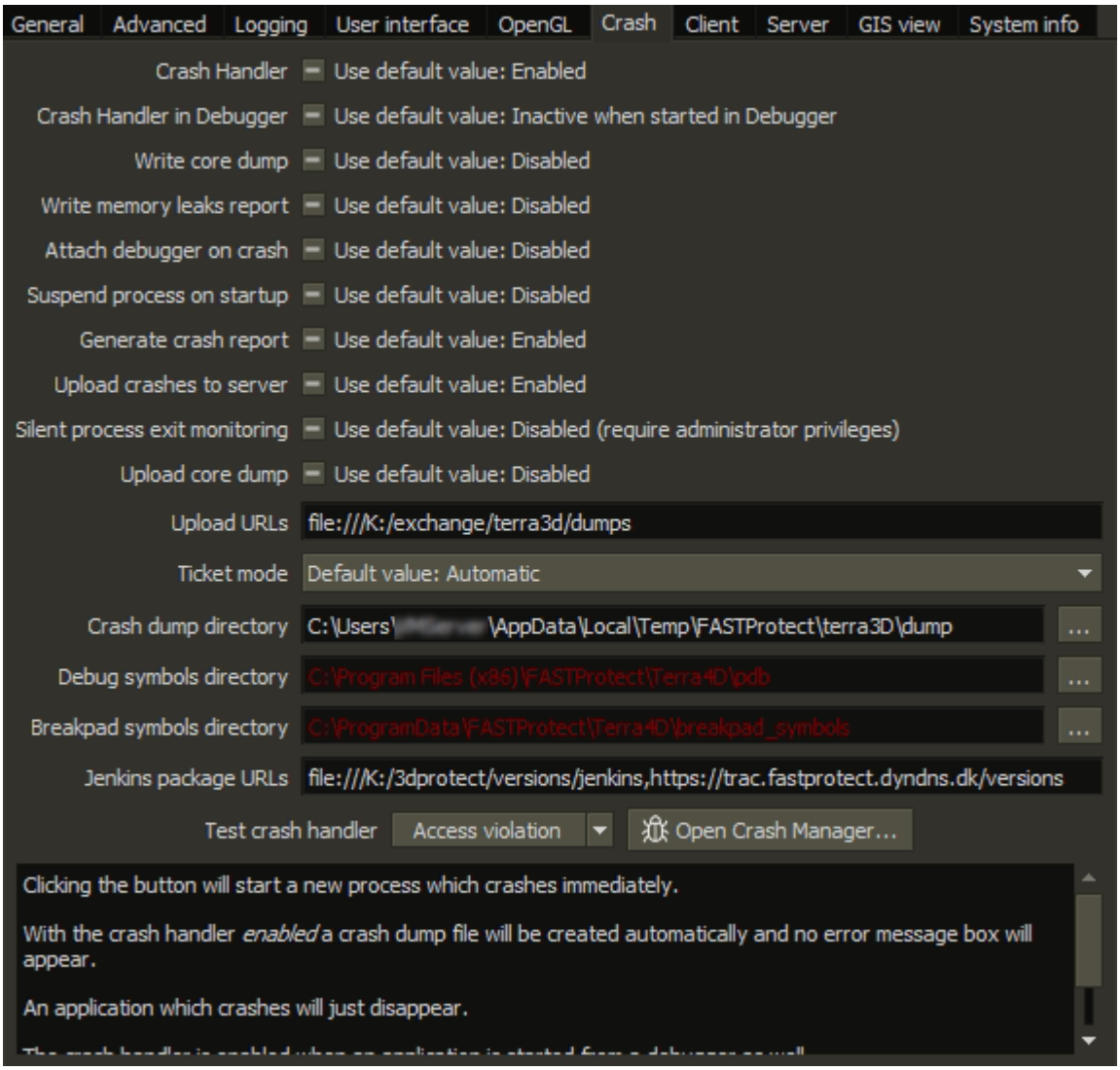
3.5 OpenGL


General
Advanced
Logging
User interface
OpenGL
Crash
Client
Server
GIS view
System info
OpenGL settings
Check-boxes which are grayed out are using the default setting. To override the setting either check or uncheck the box.
WARNING:
These settings are for experts only. Do not change any of these settings unless you know what you are doing.
Use OpenGL hardware
Use default value: Enabled
OpenGL driver
Default value: Native (recommended)
Uses the native OpenGL driver supplied by the graphics card manufacturer.
OpenGL version
Default value: Automatic
Recommended
OpenGL Profile
Default value: Automatic
Disable OpenGL checks
Use default value: Verify OpenGL functionality
Disable shaders
Use default value: Use GLSL shaders
Enable OpenGL debug log
Use default value: Disabled
Use pixel buffer for calculations
Use default value: Enabled
Pixel buffer size
Default value: 4096x4096
Pixel buffer color depth
Default value: 24 bits
Enable Quad-Buffer Stereo support
Use default value: Disabled
Use pixel buffer for hardware detection
Use default value: Disabled
Use blacklisted OpenGL implementation
Use default value: Disabled
Force OpenGL2 for video view
Use default value: Use OpenGL 3.x or newer
Disable OpenGL for video view
Use default value: Use OpenGL
Enable 2D/3D calculation only
Use default value: Disabled
Allow Remote Desktop
Use default value: Disabled
Use hidden window
Use default value: Enabled
Enable touch support
Use default value: Disabled
Show Debug HUD
Use default value: Disabled
Terrain Engine Driver
Default value: REX (recommended)
Terrain Engine Debug
Use default value: Disabled
Tile size of height fields
17
RTT Picker Buffer size
Default value: Automatic
Show OpenGL hardware blacklist...
OSG
WARNING:
These settings are for experts only. Do not change any of these settings unless you know what you are doing. Custom settings might cause system instability.
Library dir:
C:\Program Files (x86)\FASTProtect\Terra4D\bin
Data dir:
C:\ProgramData\FASTProtect\Terra4D

Settings for 3D/OpenGL. These settings should not be touched unless told by the FAST developer team.

CAUTION: Changes made on this tab might result in bad performance or 3D/OpenGL malfunction. Some settings can be used to workaround certain GPU related issues or to improve the 3D performance. The default settings are suitable for most machines.

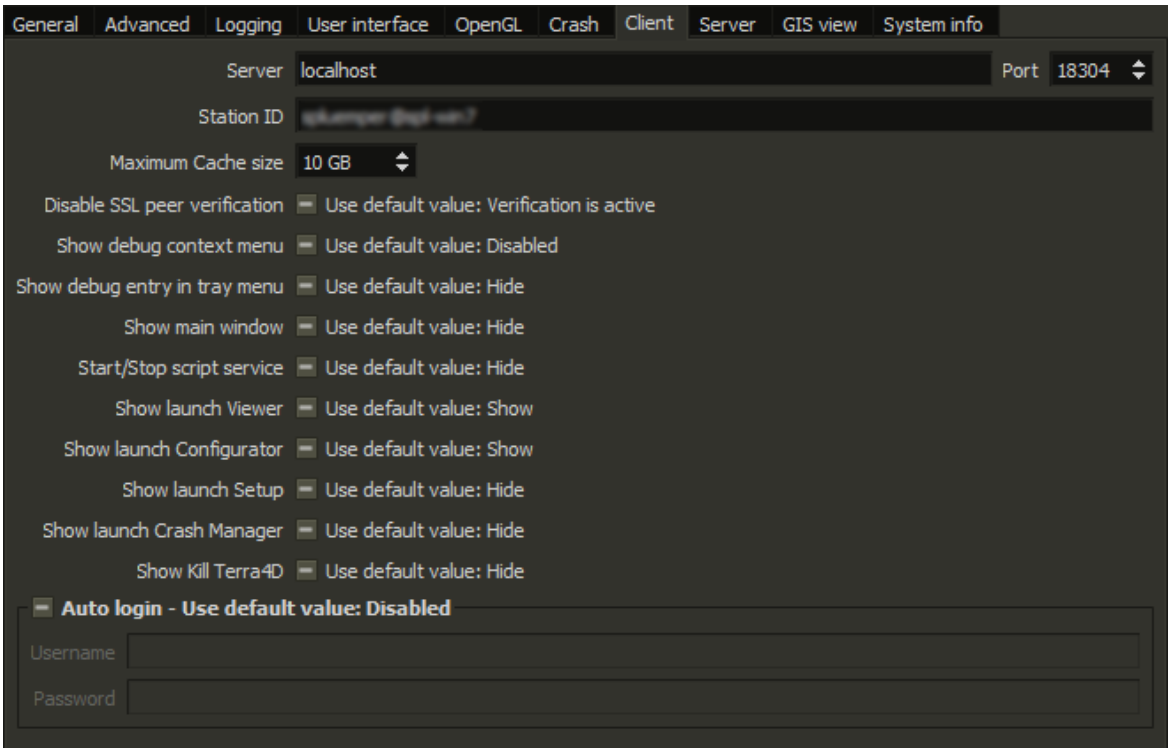
3.6 Crash



Configures the actions when a Terra 4D application terminates unexpectedly. The directories can be altered, all other settings should be left at their default values.

Name	Kind	Default Value	Comment
Crash dump directory	Text		The directory to store Terra 4D crash dump files (*.dmp files). *Must be writable to the current OS user.*
Debug symbols directory	Text		Only required for debugging purposes.
'Breakpad' symbols directory	Text		Only required for debugging purposes.

3.7 Client



Configures the client for a Terra 4D installation.

Client Settings

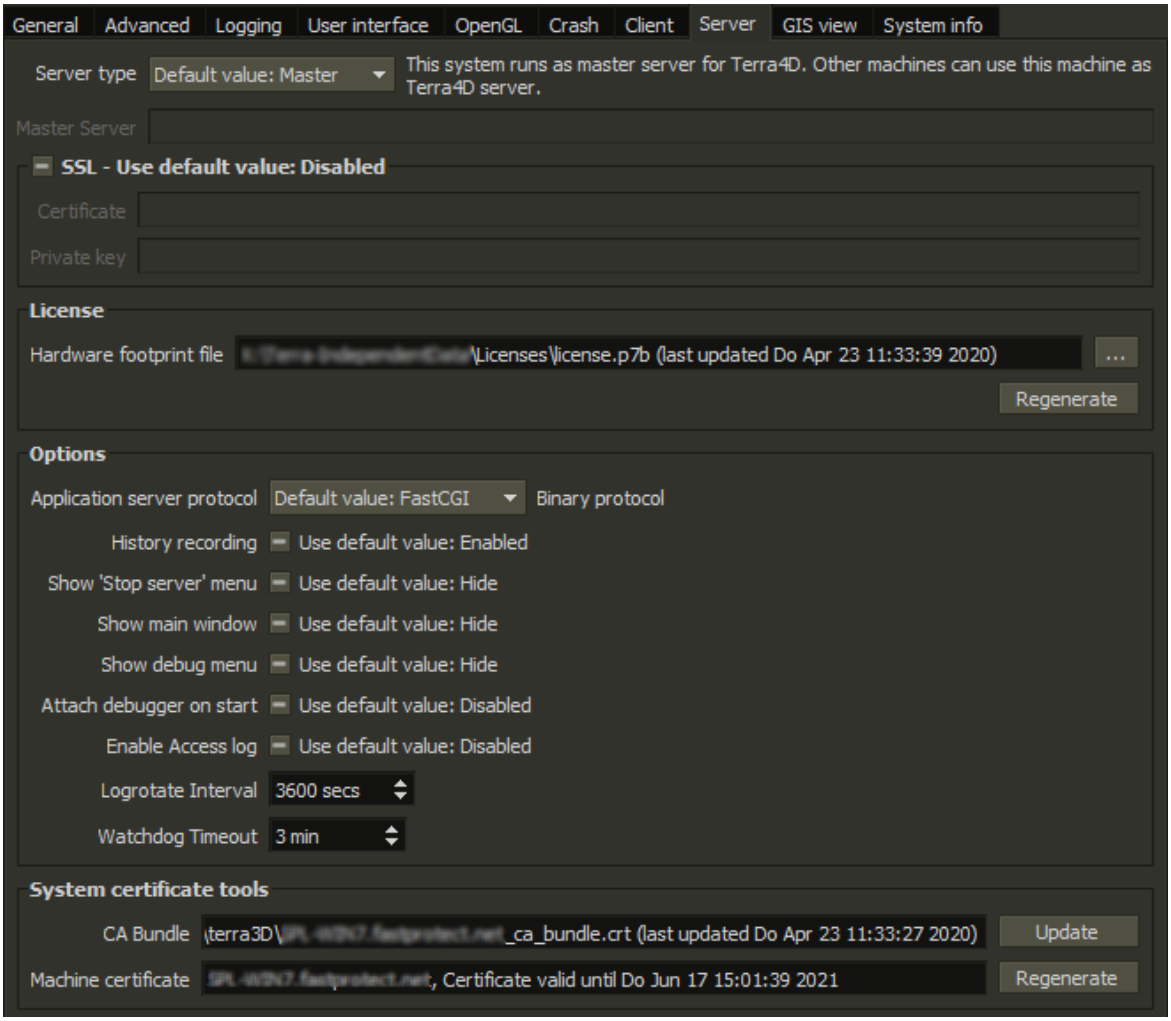
Name	Kind	Default Value	Comment
Server	Text	localhost	DNS name or IP address of the server Terra 4D machine. Note: If you have a Master and a Backup server, insert both here, separated by ","
Port	Number	18304	TCP port for the Terra 4D server. *Do not change*

Station ID	Text	[automatically generated]	Unique ID
Maximum Cache size	Number	10 GB	*Maximum size of cache.*
Show debug context menu	Checkbox	Hide	*Use default*
Show debut entry in tray menu	Checkbox	Hide	*Use default*
Show main window	Checkbox	Hide	*Use default*
Start/Stop script service	Checkbox	Hide	*Use default*
Show launch Viewer	Checkbox	Show	*Use default*
Show launch Configurator	Checkbox	Show	*Use default*
Show launch setup	Checkbox	Hide	*Use default*
Show launch Crash Manager	Checkbox	Hide	*Use default*
Show Kill Terra4D	Checkbox	Hide	*Use default*

Auto login

Name	Kind	Default Value	Comment
Auto login	Checkbox	Unset	If enabled, enter "Username" and "Password" to login to Terra 4D automatically.

3.8 Server



Configures the Server for a Terra 4D installation.

Server Settings

Name	Kind	Default Value	Comment
Server type	Drop down list	Master	Defines the role of this machine: **Client only** (use also when configured as monitor) **Master** (use also at standalone machines) **Backup** **Acquisition** (used to collect sensor datas) **Backup Acquisition**
Master Server	Text		Name here the master if this machine is not

SSL

Name	Kind	Default Value	Comment
SSL	Checkbox	Disabled	When enabled, enter Certificate and Private key to use SSL to connect to the Terra 4D server.

License

Name	Kind	Default Value	Comment
Hardware footprint file	Text	Directory to P7B file	*Use default*

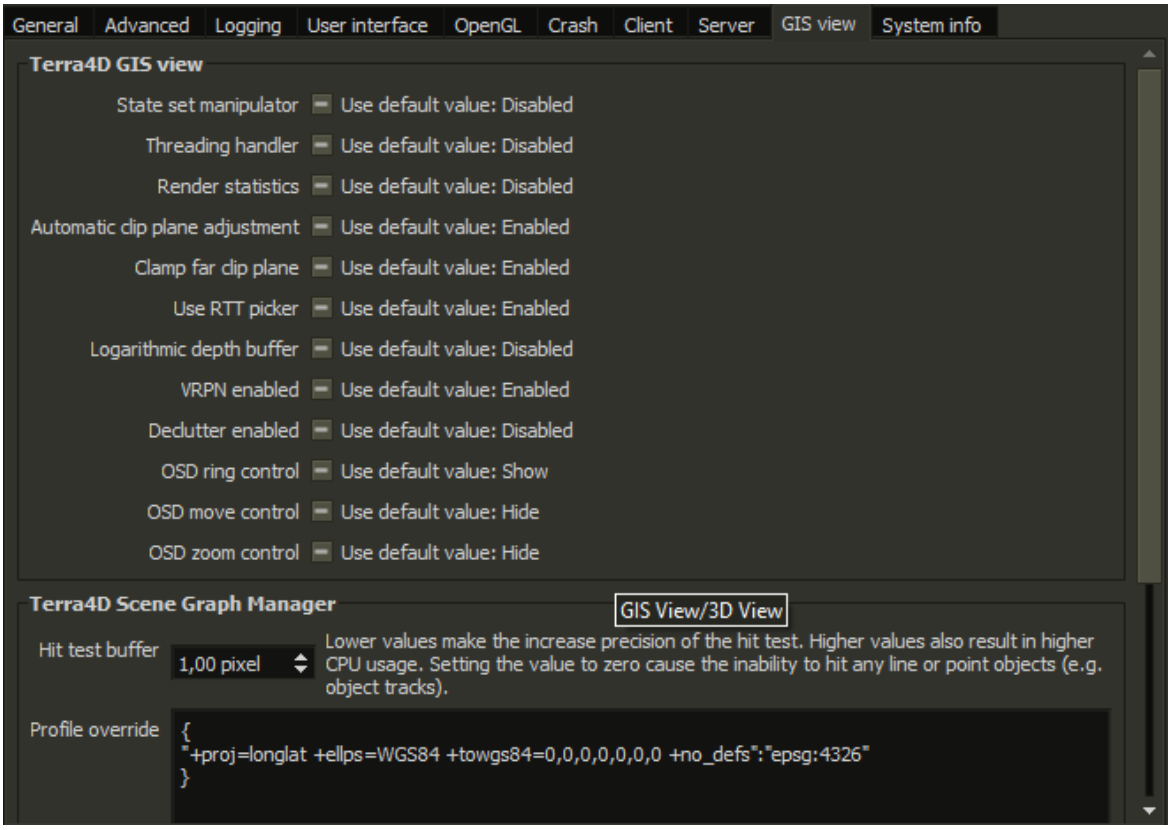
Options

Name	Kind	Default Value	Comment
Applicaton server protocol	Drop down list	FastCGI	*Use default*
History recording	Checkbox	Enabled	*Use default*
Show 'Stop server' menu	Checkbox	Hide	*Use default*
Show main window	Checkbox	Hide	*Use default*
Show debug menu	Checkbox	Disabled	*Use default*
Attach debugger on start	Checkbox	Disabled	*Use default*
Enable Access log	Checkbox	Disabled	*Use default*
Logrotate Interval	Seconds	3600 secs	*Use default*
Watchdog Timeout	Minutes	3 min	*Use default*

System Certificate Tools

Name	Kind	Default Value	Comment
Update	Button		Update the certificate for Terra4D.
Regenerate	Button		Generate a new machine certificate.

3.9 GIS View

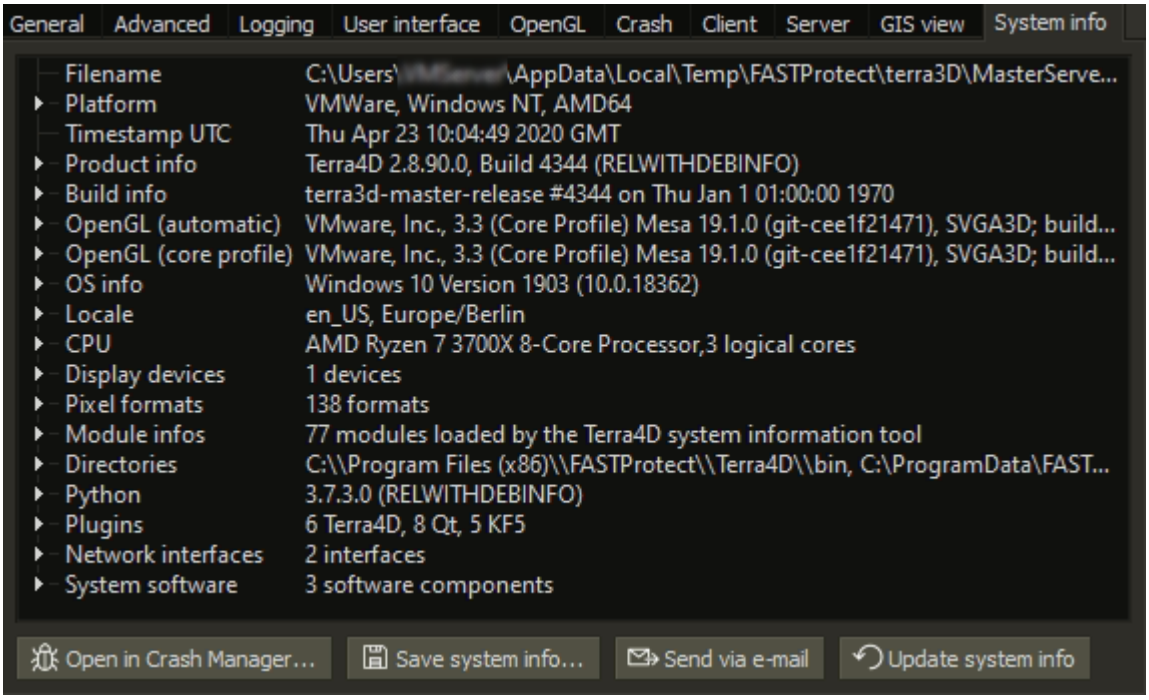


Special settings for modifying the Terra 4D GIS view.

Changing these settings might result in bad performance or unwanted behavioral changes.

In normal cases leave the defaults as they come, only change them in direct contact with a supporter from FAST Systems GmbH

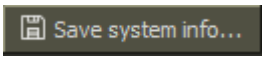
3.10 System Info



This tab shows system and software information. Some entries which are considered wrong or incorrect are listed in red, good entries in green and all others in white.

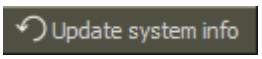
Buttons

Open the system information report in the Terra 4D Crash Manager.



Saves the report as system information report file on your disk. This file can then be sent to the Terra 4D support team in case you need help to resolve any issues with the software.

Sends the system information report to Terra 4D development team via e-mail. No further user interaction is required and no mail application needs to be installed. The system information can helper the development team to further improve the software to optimize for specific systems and use-cases.



Updates the system information within the report. This is usually done automatically when the system detects that the system information is not up-to-date, but it can be triggered manually in case some information is missing.

4 Start the Applications

After the installation of Terra 4D on a server, the Server application has been added to the *Windows autostart* folder so it will be automatically started when *Windows* starts. On a demo or Client system the Server will start when starting the Viewer or Configurator application.

Note: If the current PC is to be configured as a monitor (see the section in the Configurator manual), the "terra3d-monitor.exe" application from the Terra 4D program directory must be entered in the Windows autostart folder.

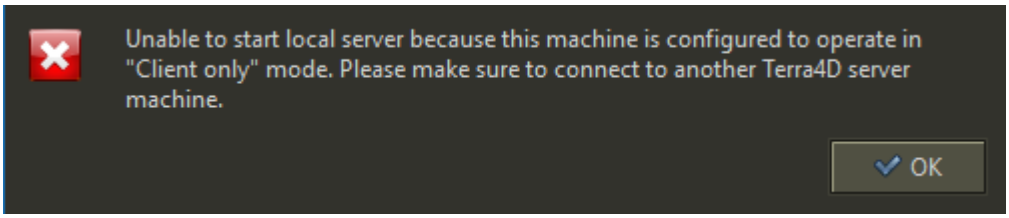
To allow the user to control the Server operation a tray icon is available in *Windows Taskbar*.

There are the following possible states for the server icon:

- Server running: 
- Server loading 
- Server warning 
- Server error 

If there is no icon visible when the server is not running. In that case the Server can be started via the link in the program group of *Windows*.

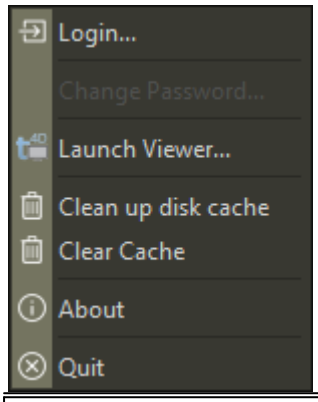
When the Terra 4D is configured to operate in "Client only" mode, but no other Terra 4D is set the following error message appears on start-up.



To fix this issue start the Setup application either configure another Terra 4D server to connect to or change the "Server type" setting to "Master".

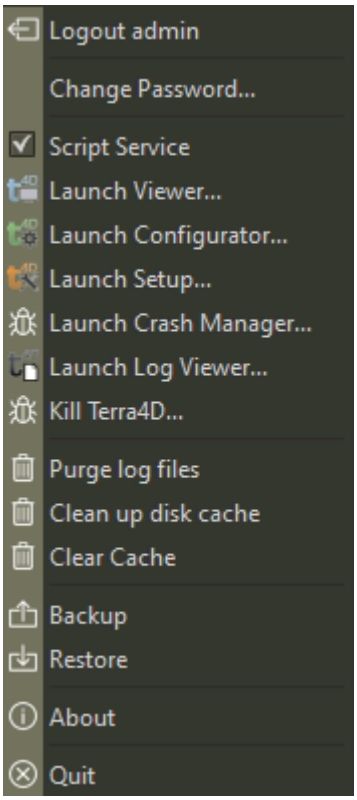
4.1 Control the Applications

A right mouse button click on the server tray icon opens the server context menu. After start up and before logging in the context menu contains:



• **Login...**	Opens the **Login Dialog**.
• **Launch Viewer...**	Launch the Viewer.
• **Clean up disk cache**	Run disk cache maintenance which basically clears obsolete and old data from cache
• **Clear Cache**	Clear the internal cache to force the software to reload the data. This can take some time so please wait for the cache to be cleared (a tool-tip info pops up) before continuing.
• **About**	Shows version information about Terra 4D.
• **Quit**	Stops the Server. Running applications will be terminated.

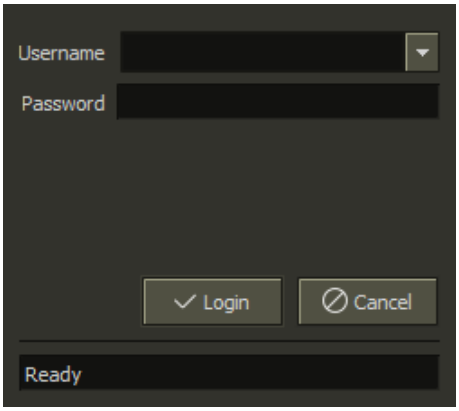
After you have logged in, the context menu changes to this (depending on the rights and some settings, only parts of it are displayed):



Context menu entry	Needed User Rights and Settings	Description
• **Logout <user name>**		Log out the current user.
• **Change Password...**		Opens the dialog where you can change your password.
• **Script Service**	Setting "Start/Stop script service" in Terra 4D Setup	Start/Stop the scripting service. Note that no Terra 4D script can be executed if service is stopped.
• **Launch Viewer...**	Setting "Show Launch Viewer" in Terra 4D Setup	Start the Viewer.
• **Launch Configurator...**	• Administrator or user right "Configure devices" or "Configure users" • Setting "Show Launch Configurator" in Terra 4D Setup	Start the Configurator.
• **Launch Setup...**	Setting "Show Launch Setup" in Terra 4D Setup	Start the Terra 4D Setup
• **Launch Crash Manager...**	Setting "Show Launch Crash Manager" in Terra 4D Setup	Start the Configurator.
• **Launch Log Viewer...**	Administrator or user right "Configure devices"	Opens the logging viewer. This is a support tool and needs a supporter from FAST Systems GmbH to use.

• **Kill Terra 4D...**	Setting "Show Kill Terra 4D" in Terra 4D Setup	Kill Terra 4D processes.
• **Purge log files**	Administrator or user right "Configure devices"	Purge the log files (normally not necessary).
• **Clean up disk cache**		
• **Clear Cache**		Clear the internal cache to force the software to reload the data. This can take some time so please wait for the cache to be cleared (a tool-tip info pops up) before continuing.
• **Backup**	Administrator	Save the configuration to a backup directory selected by the user.
• **Restore**	Administrator	Restores the saved configuration (select a backup directory).
• **About**		Shows version information about Terra 4D.
• **Quit**		Stops the Server.

4.1.1 Login Dialog



Insert the login credentials here.

- **Username** At first start, this field is empty. At later starts the previously used user is visible. Click at the arrow at the right side to see all user names which were entered before.

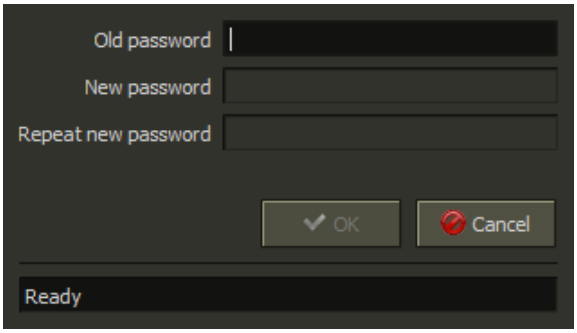
  If the Terra 4D Demo Installer wasn't executed, the system creates a administrator user "*admin*" with the login password "*Terra4D*". We recommend to change the password immediately after login with the Terra 4D Client context menu item Change Password
- **Password** Enter the valid password here.

Click at **Login** to use the inserted credentials, or **Cancel** to abort and close the window.

The bottom line is the state message, *Ready* means, that there is an established connection to the server.

If the credential data are invalid, an info box appears and after confirmation, the *Login Dialog* needs to be opened again.

4.1.2 Change Password



- **Old password** Enter the current password as identity confirmation. Only if the valid password is entered here, the field **New Password** becomes editable.
- **New Password** Enter a new password. Insert at least one character to enable the **Repeat new password** field.
- **Repeat new Password** Re-enter the new password to avoid typing errors. Only if you inserted the same word the **OK** button will be enabled.

To accept the new password, click at **OK** and after an info box window, the Login Dialog opens.

Click at Cancel to abort the dialog.

5 Viewer & Configurator

Viewer or Configurator applications can be started from Terra 4D program group in *Windows* start menu or via the shortcut on the desktop.

Using the application is not in the focus of this document, therefore use the separate manuals.

6 Known Issues

This chapter describes known issues and if possible provides solutions or work around's.

6.1 Graphics driver issues

If you experience OpenGL or graphics related crashes when running Terra 4D. Here are a few hints to get the software running:

- Make sure your hardware meets the requirements listed in Hardware Requirements. If you're running on a virtual machine please check the requirements for virtual machines.
- Make sure you installed the latest version of the device drivers for your graphics card. Same applies for the graphics driver of the integrated graphics processor (e.g. Intel).
- Try to disable NVIDIA Optimus or AMD Hybrid Graphics in your BIOS/UEFI setup.
- By default the Terra 4D software uses the dedicated graphics card for the best performance. In case of a malfunctioning graphics driver it might be possible to run Terra 4D on the integrated graphics processor instead.
  - Start the NVIDIA Control Panel
  - Select "3D settings", "Manage 3D settings"
  - In the combo box "Preferred graphics processor", select "Integrated graphics"
  - Restart the Terra 4D software
- GIS view and video views show nothing (or remain black/white) when no monitor is connected to the machine while connecting via TeamViewer or AnyDesk to the machine. The graphics driver tries to saves energy when no monitor is connected. Possible workarounds:
  - Keep a monitor connected to the graphics card.
  - Connect a HDMI-to-VGA adapter or DisplayPort-to-VGA adapter to the graphics card. Tests have shown that some adapters work, but not all adapters work for this purpose. The following adapter has been tested and is known to work for this purpose:
    - Incutex HDMI zu VGA Adapter

6.2 Text Scaling on Windows 8.1 and higher

At the newer version than Windows 7, Microsoft reacts at the increasing number of monitors with very high resolution by increasing the scaling of text and icons. To avoid some strange behavior mainly in the visualization of the software applications of Terra 4D you should set the scaling to 100%.

- Do a right click at the desktop

Windows 8.1:

- Select **Personalize**
- Click at **Desktop** (left side at the bottom)

Windows 10:

- Select **Display Settings**
- Move the slider below *Change the size of text, apps and other items* to left *(100%)*

6.3 Message "Another instance of loggingserver running"

At Windows 8 and higher, sometimes when starting a Terra 4D application an info box pops up saying that another instance of loggingserver is already running:

To overcome that issue shut down Terra 4D Server, go to Windows Temp folder (normally "`C:\Windows\Temp`") and delete the file "`terra3d-loggingserver.pid`".

6.4 No Meetingroom Videos over VPN

If you problems to watch the videos in the FAST Meetingroom, please check in the Configurator if the subsystem "Milestone" has the status "Ok". If not, please try to fix this issue first, e.g. check that OpenVPN was started before Terra 4D and that the network connection is established.

If subsystem "Milestone" is "Ok", the network may not be able to resolve the name of the Milestone Server correctly. Since the server name (in this case "Milestone PC") is mandatory after a first contact by the SDK of Milestone used in Terra 4D, you have to do the add the following line to your "`hosts`" file in the directory "`Windows\System32\drivers\etc\`":

```
192.168.214.156 Milestone-PC
```

After a restart of Terra 4D the videos should now be displayed, otherwise do not hesitate to contact FAST Systems GmbH.

7 Appendix

The appendix contains some additional information.

7.1 Imprint and Addresses

Imprint

Publication ID: FT-IG-HEP-200724
Publication Date: 2021-07-14

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