

**TOOLBOX II Version 5.0**  
**Installation Manual**



## Hint

Please observe Notes and Warnings for your own safety.

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### Disclaimer of Liability

Although we have carefully checked the contents of this publication for conformity with the hardware and software described, we cannot guarantee complete conformity since errors cannot be excluded. The information provided in this manual is checked at regular intervals and any corrections that might become necessary are included in the next releases. Any suggestions for improvement are welcome.

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**Table of Contents**

**1 Contents of the consignment ..... 4**

**2 Preconditions ..... 4**

    2.1 Installation ..... 4

    2.2 Software ..... 5

    2.3 Virtualization ..... 6

    2.4 Hardware ..... 7

**3 Installation ..... 8**

**4 Adding or Removing TOOLBOX II Features ..... 10**

**5 Update ..... 11**

    5.1 Backup and restore of engineering data ..... 11

    5.2 Remove a TOOLBOX II version 4.x inclusive database ..... 12

**6 Remove a TOOLBOX II version 5.0 ..... 12**

**7 Create a database backup ..... 13**

**8 Compatibility ..... 13**

    8.1 TOOLBOX II versions ..... 13

    8.2 Antivirus scan ..... 13

**9 Configuration - server / client ..... 14**

    9.1 Configuration TOOLBOX II server ..... 14

    9.2 Configuration TOOLBOX II client ..... 16

**10 Web-Engineering ..... 17**

**11 Security ..... 18**

# 1 Contents of the consignment

**Included in contents of the consignment:**

- 1 License Certificate
- 1 DVD TOOLBOX II version 5.0 for 32bit operating system
- 1 DVD TOOLBOX II version 5.0 for 64bit operating system
- 1 Booklet (License Agreement)
- 1 Booklet (Installation manual)

**Optionally included in contents of the consignment:**

- USB dongle for CAEx plus (PLC für SICAM 1703)
- USB dongle for CAEx II (PLC für SK 1703 and Ax 1703)

**Hint**

The installation notes in this document contain important information required to install TOOLBOX II. Read these notes **before** installing the software.

1 DVD for 32bit operating system and 1 DVD for 64bit operating system is included in contents of consignment. Choose the adequate DVD for the installation.

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## 2 Preconditions

### 2.1 Installation

For the installation of the TOOLBOX II, the following preconditions are required:

- DVD or BluRay-Drive
- Windows Administrator permissions  
(Read and Write permissions on the file system and the Windows Registry)
- No other or prior TOOLBOX II has to be installed when installing TOOLBOX II Version 5.0 (see *chapter 3, Installation*)
- NTFS file system
- A C:\-drive must exist
- Minimum 5 GB of free hard disk memory
- Minimum 2 GB installed main memory

**Hint**

- Microsoft Visual C++ 2008 SP1 Redistributable Package (x86) (automatically installed)
  - Windows Installer 4.5 (automatically installed)
-

## 2.2 Software

For the operation of the TOOLBOX II, the following operating systems are supported:

Configuration	Operating system	32 Bit	64 Bit	CAEx II
<b>TOOLBOX II Local and Server</b>	Windows XP Professional (from SP 2)	x		x
	Windows Vista Business (from SP 2)	x	x	
	Windows Vista Enterprise (from SP 2)	x	x	
	Windows Vista Ultimate (from SP 2)	x	x	
	Windows 7 Professional	x	x	
	Windows 7 Enterprise	x	x	
	Windows 7 Ultimate	x	x	
	Windows Server 2003 (from SP 2)	x		x
	Windows 2008 Server (R1) Standard (from SP 2)	x	x	
	Windows 2008 Server (R1) Enterprise (from SP 2)	x	x	
	Windows 2008 Server (R1) Datacenter (from SP 2)	x	x	
	Windows 2008 Server (R2) Standard		x	
	Windows 2008 Server (R2) Enterprise		x	
	Windows 2008 Server (R2) Datacenter		x	
<b>TOOLBOX II Web Server</b>	Windows Server 2003 (from SP 2) with TS	x		x
	Windows 2008 Server (R1) Standard with TS (from SP 2)	x	x	
	Windows 2008 Server (R1) Enterprise with TS (from SP 2)	x	x	
	Windows 2008 Server (R1) Datacenter with TS (from SP 2)	x	x	
	Windows 2008 Server (R2) Standard with RDS		x	
	Windows 2008 Server (R2) Enterprise with RDS		x	
	Windows 2008 Server (R2) Datacenter with RDS		x	
	SP = Service Pack TS = Terminal Server Mode RDS = Remote Desktop Services			

Required service pack and all current updates of Microsoft have to be installed.

For the use of TOOLBOX II the following preconditions are required:

- **User permissions of the group "User"** under Microsoft Windows
- Installed TCP/IP
- Required Windows Regional Options:
  - 'Dot' for decimal separating character and 'comma' for the thousands separating character must be different.
  - No 'single inverted comma' may be used as separating character.
- Use of Windows Fonts in normal size (96 DPI)
- Microsoft Internet Explorer from Version 6.0
- To play online help movies and read related documentation these applications are required:
  - Installed current Microsoft Windows Mediaplayer ([www.microsoft.com](http://www.microsoft.com))
  - Installed current Adobe Acrobat Reader ([www.adobe.com](http://www.adobe.com))



**Hint**

The toolset CAEx II can be installed only under Windows XP and Windows Server 2003, because all other operating systems do not support DOS full screen mode (see table above).

Current information to CAEx II for operation in MS Windows 7:

- TOOLBOX II online help, see *chapter „CAEx II | Operation of CAEx II in MS Windows 7“*
- Siemens Homepage <http://www.energy.siemens.com> under *Automation, Controls, Protection & Electrical | Automation, Controls & Protection for Power Transmission and Distribution | Substation Automation | TOOLBOX II* in area Downloads (TBII\_CAEXII\_WIN7\_BHG\_ENG.pdf).
- The installation manual TBII\_CAEXII\_WIN7\_BHB\_ENG.pdf is located in root directory of the installation DVD.

## 2.3 Virtualization

The TOOLBOX II version 5.0 can be virtualized with the following host/guest configuration in an environment of VMware Inc. ([www.vmware.com](http://www.vmware.com)).

virtual configuration	host operating system	guest operating system and TOOLBOX II license
<b>TOOLBOX II local</b>	Windows XP Professional (from SP 3) 32 bit  or  Windows 7 Professional 32/64 bit	Windows XP Professional (from SP 3) 32 bit  Windows 7 Professional 32/64 bit  TBII_EMII TBII_OPMII (optionally) TBII_PSRII (optionally) TBII_CAEx_plus (optionally) TBII_LIVEUPDATE (optionally)  <b>TBII_CAExII</b> <b>(optionally only with Windows XP Professional)</b> <b>see hint CAEx II above!</b>
<b>TOOLBOX II server</b>	VMware ESX 4.1 64 bit	Windows 2008 Server (R2) 64 bit  TBII_EMII TBII_SERVER_x_User TBII_LIVEUPDATE (optionally)
<b>TOOLBOX II web sever</b>	VMware ESX 4.1 64 bit	Windows 2008 Server (R2) with RDS 64 bit  TBII_EM II TBII_OPMII TBII_PSRII TBII_SERVER_x_User TBII_WEB_x_User TBII_WEB_CAEx_plus (optionally) TBII_LIVEUPDATE (optionally)



**Hint**

The minimum requirements for the operation of the VMware Guest with regard to processor capacity (performance), main memory and hard disc memory are like in the table hardware requirements in *chapter 2.4, Hardware* described.

## 2.4 Hardware

The hardware requirements differ depending on the operation of the TOOLBOX II. Thereby it is to distinguish, whether the TOOLBOX II is operated on a local PC or on a client/server configuration.

In addition, it should be pointed out, that with the memory configuration of the PC, the memory requirements and also the hard disk space of the operating system and all applications running parallel to the TOOLBOX II (e.g. Microsoft Access, Microsoft Word, Microsoft Outlook etc.) and/or memory usage of onboard graphic adapters have to be considered.

System	RAM (main memory)	Disk (GB)	CPU	
PC	2 GB	40	Core 2 Duo 2,0 GHz	} minimum requirement
Notebook	4 GB	160	Core i5 2 x 2,4 GHz	
Workstation	8 GB	320	Core i5 4 x 3,1 GHz	} recommended requirement
Server	16 GB	2 x 250 (RAID)	XEON 4 x 2,6 GHz	



### Hint

#### CAEx plus (PLC for SICAM 1703)

For CAEx plus a dongle for USB is required. Therefore a free USB slot is necessary.



### Hint

#### CAEx II (PLC for SK 1703 und Ax 1703)

For the operation of CAEx II, a PC with EGA graphics resolution is absolutely necessary. Whether CAEx II operates fault-free on a PC can be checked with a test program. This test program is located on the Siemens Homepage <http://www.energy.siemens.com> under *Automation, Controls, Protection & Electrical | Automation, Controls & Protection for Power Transmission and Distribution | Substation Automation | TOOLBOX II* in area downloads.

For CAEx II a dongle for USB is required. Therefore a free USB slot is necessary.

## 3 Installation

For the installation of TOOLBOX II Version 5.0 **Windows Administrator permissions** are required and no other TOOLBOX II version has to be installed on host.



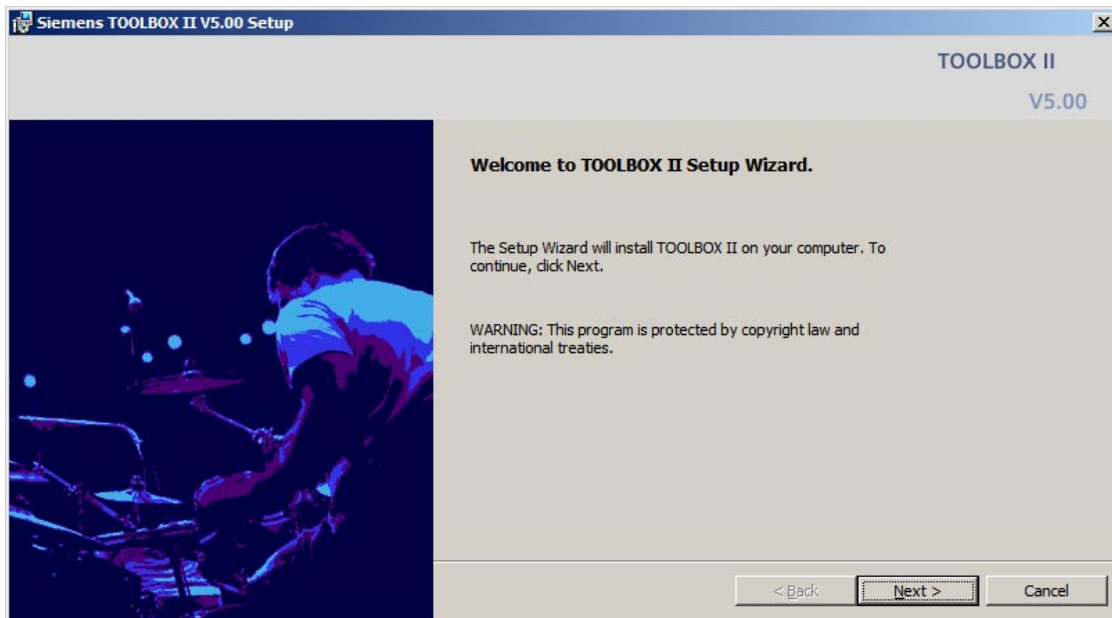
### Hint

A detailed description of all preconditions can be found in *chapter 2, Preconditions*.

To change from an older TOOLBOX II version (3.11 or/and 4.x) to TOOLBOX II version 5.0 see *chapter 5, Update*.

Insert the TOOLBOX II Installation-DVD in the drive (32 or 64 bit for used operating system, see *chapter 2.2, Software*). The TOOLBOX II setup program will guide you through the installation. The installation installer starts automatically after inserting the TOOLBOX II DVD. If you have disabled this function on your computer, start the setup program with the MS Windows Explorer by double-clicking on the SETUP.EXE in the root directory of your DVD drive.

Follow the instructions on the screen in order to install the TOOLBOX II.

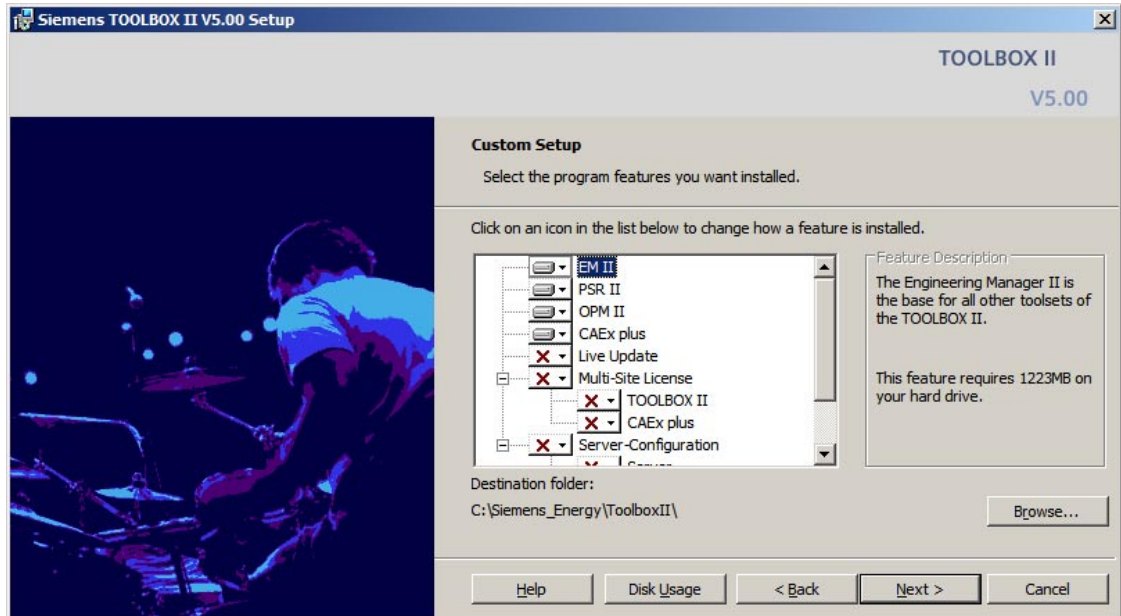


Read and accept all license conditions of installation wizard and enter user name and organization.



You can choose between the following two types of installation:

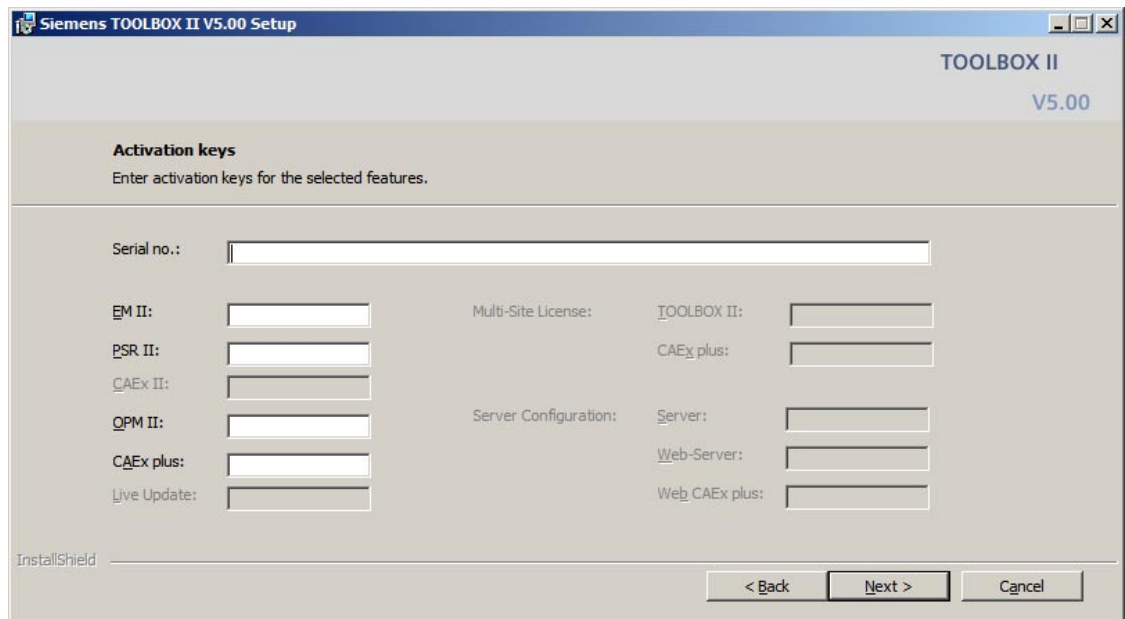
- **Standard**  
Installation of a local TOOLBOX II with the packages EM II, PSR II, OPM II and CAEx plus.
- **User-defined**  
Select the packages and tools to be installed (EM II, PSR II, OPM II, CAEx plus, CAEx II, Live Update). Select a multi-site license and/or a server-configuration for the installation optionally.



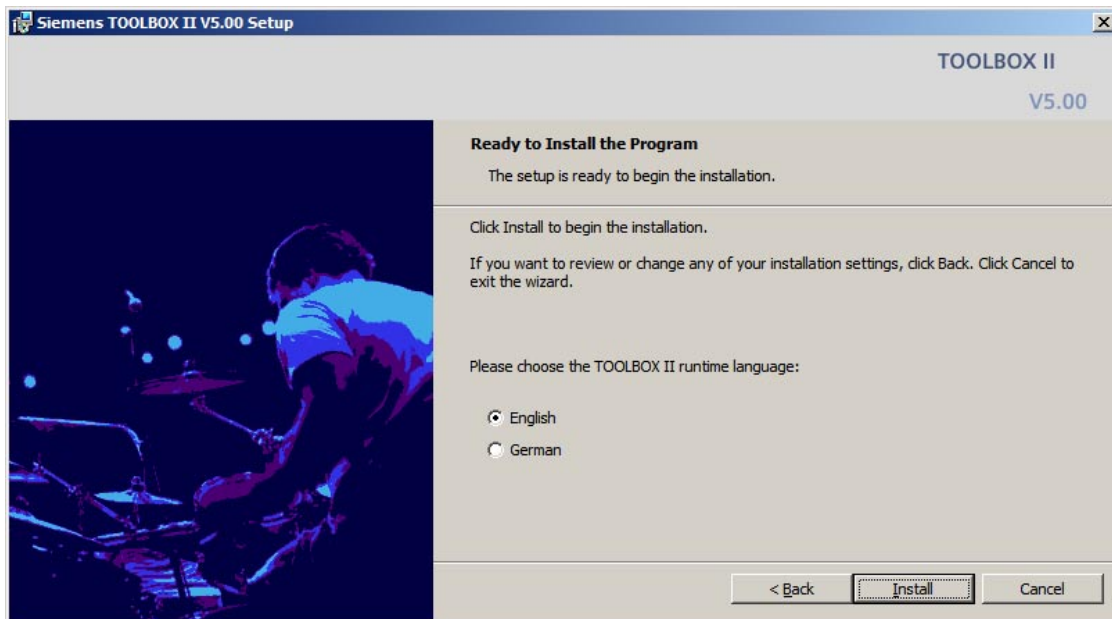
**Hint**

CAEx II can be installed only in Microsoft Windows XP and Microsoft Windows 2003 Server (see chapter 2.2, Software).

In the following dialog, please enter the necessary activation keys.



Please choose a language to install TOOLBOX II. All desktop Icons are installed in this language and cannot be changed later. During working with TOOLBOX II the current language can be changed with the toolset TOOLBOX II preset to another language (german or english).



Click **Install** to start the installation. Depending on the installed components, a reboot of the system might be required and will be initiated by the setup.

Start TOOLBOX II from the Start menu. Choose Start > Siemens Energy > TOOLBOX II and the adequate tool.

## 4 Adding or Removing TOOLBOX II Features

You have the possibility of subsequently adding or removing individual tools (e.g. CAEx plus). To do this, choose the following method:



### Hint

Adding or Removing of TOOLBOX II features is only possible with Windows Administrator permissions. The local data base has to be preset.

1. Select in control panel the entry program and functions (Windows 7) and/or software (Windows XP). Select the entry **TOOLBOX II** and click on the button or pop up menu **CHANGE**.
2. Choose in the following dialog the option **CHANGE** and click on **NEXT**
3. Activate or deactivate individual tools and click on **NEXT**
4. Enter the necessary activation key and click on **NEXT**

The TOOLBOX II Installation executes the changes performed.

## 5 Update



### Hint

A direct update of an installed TOOLBOX II version to TOOLBOX II version 5.0 is **not** possible. This chapter describes only an update of TOOLBOX II version 4.x. Engineering data of TOOLBOX II version 3.11 Service Pack 6 has to be imported in TOOLBOX II version 4.x at first.

The following steps are necessary to update from an older TOOLBOX II version to TOOLBOX II version 5.0:

1. **Backup all engineering data with Data Distribution Center**  
(see *chapter 5.1, Backup and restore of engineering data*)
2. **Remove installed TOOLBOX II 4.x version inclusive database**  
(see *chapter 5.2, Remove a TOOLBOX II version 4.x inclusive database*).
3. **Installation of TOOLBOX II version 5.0**  
(see *chapter 3, Installation*)
4. **Restore of engineering data with Data Distribution Center**  
(see *chapter 5.1, Backup and restore of engineering data*)

### 5.1 Backup and restore of engineering data



### Hint

Please do not forget to backup all engineering data with **Data Distribution Center** before updating TOOLBOX II.

To backup engineering data these two possibilities exist:

- Backup all engineering data per customer with standard function "**Export**" of Data Distribution Center in menu "Action" (\*.001 file)
- Backup all engineering data of the whole database with special function "**Export engineering data**" of Data Distribution Center (see menu "Tools").

These function is only available in TOOLBOX II version 4.10 SP3 Hotfix 14 and stores all engineering data of current TOOLBOX II (local database) to an existing empty directory.

Hint: Hotfix is located in root directory of installation DVD (4\_10\_0003\_14.EXE).

In TOOLBOX II version 5.0 a new function "**Import engineering data**" is available in Data Distribution Center. After an new installation of TOOLBOX II version 4.10 please use this function to restore all engineering data saved as described above.



### Hint

- Before restoring there have to be no engineering data in the data base.
- The local data base has to be preset.
- Do not export or import engineering data in a remote desktop session.
- Windows Administrator permissions are required.

## 5.2 Remove a TOOLBOX II version 4.x inclusive database



### Hint

Before removing it is recommended to create a backup of the installation pc and/or the whole data base of the consisting TOOLBOX II Version 4.x (see *chapter 7, Create a database backup*).

All TOOLBOX II data are removed unrecoverable.

The directory C:\SAT inclusive all sub directories is also removed completely.

The following steps are necessary to remove TOOLBOX II version 4.x inclusive database.

1. Click on the Windows **START-Symbol** and then in the context menu on **SETTINGS** and **CONTROL PANEL**.
2. Click on the symbol **ADD OR REMOVE PROGRAMS**, select the entry TOOLBOX II and click on the button or context menu **CHANGE**.
3. Mark **REMOVE** and click on **NEXT**.
4. Confirm the inquiry to delete the local database with **YES** and click on **NEXT**.
5. Confirm the additional security inquiry to remove the entire TOOLBOX II and the local database with **YES** and click on **NEXT**.
6. The removal of the TOOLBOX II with the deletion of the local database is started with the button **REMOVE**.

## 6 Remove a TOOLBOX II version 5.0



### Hint

Please do not forget to backup all engineering data with **Data Distribution Center** before updating TOOLBOX II.

The following steps are necessary to remove TOOLBOX II version 5.0.

1. Click on the Windows **START-Symbol** and then in the context menu on **SETTINGS** and **CONTROL PANEL**.
2. Select in control panel - according Windows version - the entry to uninstall programs, select the entry **TOOLBOX II** and click on the button or context menu **CHANGE**.
3. Mark **REMOVE** and click on **NEXT**.
4. Confirm the additional security inquiry to remove the entire TOOLBOX II and the local database with **YES** and click on **NEXT**.
5. The removal of the TOOLBOX II with the deletion of the local database is started with the button **REMOVE**.

## 7 Create a database backup

Use to back up the whole database the command **TBIIDDBACKUP** with a backup directory (from TOOLBOX II version 4.x). Start the command **TBIIDDBACKUP** with DOS Command Prompt in the root directory of TOOLBOX II Installation DVD.

Example: `TBIIDDBACKUP D:\TBII_DB_BACKUP`



### Hint

Restore of a database

For restoring a database backup please contact the Siemens E D E A Customer Support Center

Tel.: +49 180/524 70 00

Fax: +49 180/524 24 71

[E-Mail: support.energy@siemens.com](mailto:support.energy@siemens.com)

[www.siemens.com/energy-support](http://www.siemens.com/energy-support)

## 8 Compatibility

### 8.1 TOOLBOX II versions

The engineering and consequently the acquisition and modeling of the plant data represent high value capital goods.

From this consideration it naturally follows, that existing engineering data of the existing TOOLBOX II version 4.x (backup/export files) can continue to be used and can be imported into the new TOOLBOX II version 5.0.

Backup/Export-Files, that have been created with version 5.0 cannot be imported into earlier versions (< TOOLBOX II version 5.0).



### Hinweis

When importing backups of earlier versions (< TOOLBOX II version 5.0) existing function diagram data of CAEx plus are automatically converted to the new version of TOOLBOX II version 5.0.

Depending on the scope of the engineering data, this procedure can take some time.

### 8.2 Antivirus scan

The TOOLBOX II is compatible with most antivirus programs.

We recommend **Trend Micro Office Scan**.

## 9 Configuration - server / client

It is possible to operate a TOOLBOX II Installation as server (database). Thereby the following conditions must be fulfilled on the server and client.

### 9.1 Configuration TOOLBOX II server

The following preconditions are necessary on the server:

#### 1. Version of the TOOLBOX II Installation

Ensure, that the same TOOLBOX II Version is installed on the server and client.

#### 2. Network connection from the server via TCP/IP to the clients

Verify the network connection with the following DOS-command:

**PING** <Hostname of the client > | <IP-Address> e.g. PING 192.168.1.11

#### Note:

You determine the hostname on the client with the DOS-command **HOSTNAME** or the IP-Address with the DOS-command **IPCONFIG**.

#### 3. ORACLE configuration:

With a standard installation, the correct Oracle configuration is set automatically during the installation.

The database is stored in installation path (<TOOLBOX\_II\_INSTALLDIR\>).

In the directory of the TOOLBOX II installation drive

<TOOLBOX\_II\_INSTALLDIR>\DB\ORA11R2\_CL\NETWORK\ADMIN among other things there is the file **LISTENER.ORA**.

With problems, ensure that in this configuration file for ORACLE the hostname of the server is entered correctly. You can open and edit this file with the Windows **NOTEPAD**.

#### LISTENER.ORA

```

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP) (HOST = <HOSTNAME> oder <IP-Adresse>) (PORT = 1522))
    )
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = IPC) (KEY = TBII))
    )
  )

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = TBII)
      (ORACLE_HOME = <TOOLBOX_II_INSTALLDIR>\DB\ORANT>)
      (SID_NAME = TBII)
    )
  )

```

#### 4. Drive for CAEx II engineering data

Create a directory \TBIIDATA and enable this for other users in the network under the name 'TBIIDATA' (network resource). Assign the network resource 'TBIIDATA' a free drive letter.

**Note:**

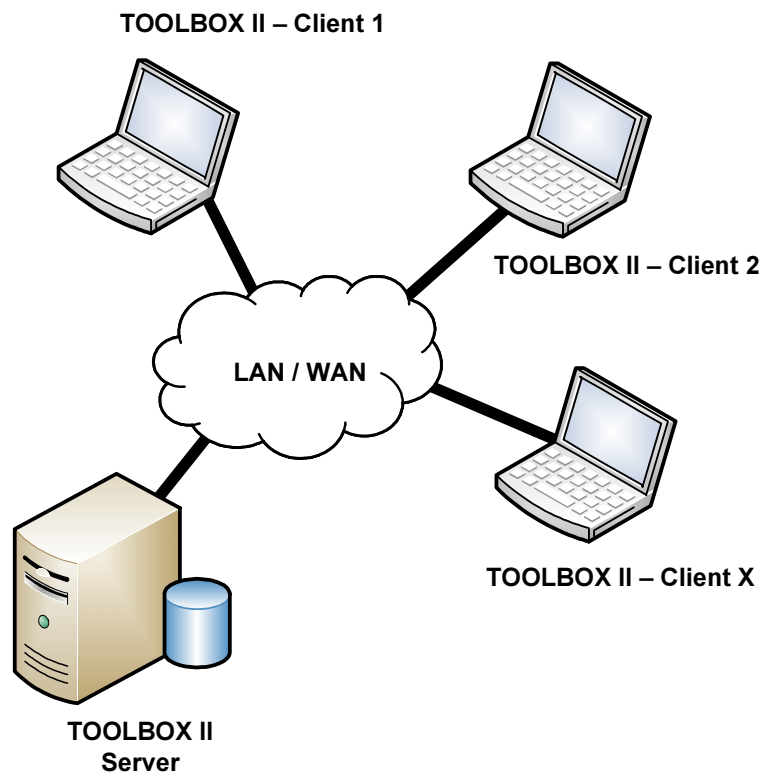
You need this drive for plant data that are not stored in the database (CAEx II).

In the customers and system technique wizard, this drive letter must be specified as CAEx II drive (changes are possible in the plant management).

#### 5. Security Settings (Firewall)

Ensure, that with firewall installed and activated, the server does not block the **Oracle PORT 1522**, so that the access to the server database can take place.

Ensure, that by enabling network resources on the server, the **TCP-Ports 139 and 445** are not blocked.



**Hint**

A simple TOOLBOX II client / server operation (1 client and 1 server) can also be realized without server-license.

## 9.2 Configuration TOOLBOX II client

The user must preset the server database on the TOOLBOX II client in the tool presets TOOLBOX II.

| PRESETS TOOLBOX II | DATABASE | OPERATION ON SERVER

The following preconditions are necessary on the client:

### 1. Version of the TOOLBOX II installation

Ensure, that the same TOOLBOX II version is installed on the server and client.

### 2. Network connection from the client via TCP/IP to the server

Verify the network connection with the following DOS-command:

**PING** <Hostname of the server > | <IP-Address> e.g. PING 192.168.1.11

#### Note:

You determine the hostname on the server with the DOS-command **HOSTNAME** or the IP-Address with the DOS-command **IPCONFIG**.

### 3. ORACLE database connection from client to server

Verify the Oracle database connection from the client to the server with the following DOS-command:

**TNSPING** <Name of the database-server > | <IP-Address> e.g. TNSPING 192.168.1.11 or TNSPING TBII

With problems, check the file TNSNAMES.ORA described in the following point.

### 4. ORACLE configuration on the client

The database is stored in installation path (<\TOOLBOX\_II\_INSTALLDIR\>).

In the directory of the TOOLBOX II installation drive

<\TOOLBOX\_II\_INSTALLDIR\>\DB\ORA11R2\_CL\NETWORK\ADMIN, among other things there is the file **TNSNAMES.ORA**.

Replace the entry **COMPUTERNAME\_SERVER** with the hostname or the IP-address of the Server. You can open and edit this file with Windows **NOTEPAD**.

#### TNSNAMES.ORA

```

TBII.NETWORK =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = <COMPUTERNAME_SERVER>) (PORT = 1522))
    )
    (CONNECT_DATA =
      (SID = TBII)
    )
  )

```

### 5. Drive for CAEx II engineering data

In the customers and system technique wizard, as CAEx II drive, that drive letter must be specified which is linked with the enabling of the engineering data on the server (changes are possible in the plant management).



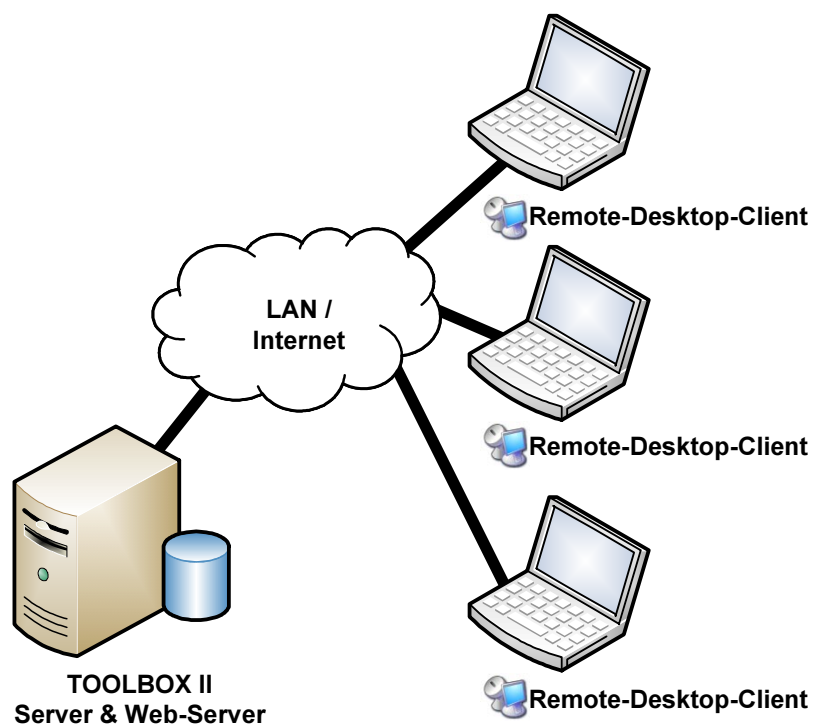
## 10 Web-Engineering

It is possible to operate the TOOLBOX II with the Remote-Desktop-Connection. Thereby the remote desktop clients work with a central terminal-server, on which the TOOLBOX II is installed.

On the client, no TOOLBOX II installation is necessary. The function can be used from Microsoft standard application **Remote-Desktop-Connection** (All Programs | Accessories | Communications).

As server, a Windows server with **Remote Desktop Services (Windows 7)** or **Terminal Server Mode (Windows XP)** has to be installed (see supported operating systems *chapter 2.2, Software*).

On this server a TOOLBOX II installation is then performed with additional server and web-server license. A detailed description of the configuration of the web-server and the client can be found in the **Online Help** (*chapter web.engineering*).



### Hint

**Web-Engineering with CAEx plus** requires in addition a special CAEx plus web-server license. This also includes a special CAEx plus web dongle.

# 11 Security

In the following chapter, all necessary security settings - TCP Ports – are described for the operation of the TOOLBOX II in combination with a **Software-Firewall** or **Hardware-Firewall** respectively.

The following scenarios are to distinguish:

- TOOLBOX II client / server - Operation
- Communication TOOLBOX II – 250 SCALA
- Remote operation of a TOOLBOX II computer with SICAM 1703 and Ax 1703 automation units
- TOOLBOX II web-server with web CAEx plus dongle
- File enabling

Firewall Configuration	Port	Direction	Source-IP (optional)	Target-IP
<b>TB II – peer server</b>	TCP 1521 TCP 1522 ab TB II 4.0	incoming	TB II client	TB II peer server
<b>TB II – 250 (PV-Transfer)</b>	TCP 1721	incoming	TB II client	250 SCALA PC
<b>TB II – 250 (start OPM from 250)</b>	TCP 2131	incoming outgoing	TB II client	250 SCALA PC
<b>TB II – 1703</b>	TCP 2001 e.g. ET0x Ethernet Interface	incoming	TB II client	SICAM 1703 Ax 1703
<b>File Sharing</b>	TCP 139 TCP 445	incoming	TB II client	TB II server
<b>TB II (web) server with CAEx plus web dongle</b>	TCP 3047 UDP 3047	incoming outgoing	TB II client	TB II (web) server
<b>Parameter loader TM 1703 mic</b>	20000	incoming outgoing	TB II client	TM 1703 mic
<b>Firmware loader TM 1703 mic</b>	20001	Incoming outgoing	PC client	TM 1703 mic

A detailed description of the configuration of the server and the client can be found in the **Online Help** (*chapter General – Security Settings*).

Current information can be found on our homepage <http://www.energy.siemens.com> under *Automation, Controls, Protection & Electrical | Automation, Controls & Protection for Power Transmission and Distribution | Substation Automation | TOOLBOX II* in area downloads.