



# SOFT-CLOCK

System Requirements Version 4.2. (Updated: 28.02.2017)

## **Introduction**

A SOFT-CLOCK installation in your company can neither be carried out in a standardized fashion, nor can general guidelines for the technical requirements be defined. This document only provides general technical information.

The hardware specifications for the server and client mentioned here takes into account that, apart from SOFT-CLOCK, further applications may be used on the corresponding systems. The requirements described were therefore defined with regards to stability and performance.

The following installation options are explained:

- Client-Server Installation Option (Local Network)
- Terminalserver/Citrix Installation Option

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## 1 Client-Server Installation Option (Local Network)

The SOFT-CLOCK modules must either be connected to the server via a UNC path or via a drive link. Communication with the database server is done via ODBC.

### 1.1 Database Server

#### 1.1.1 Microsoft SQL Database Server


The following Microsoft SQL versions can be used:

- 2012
- 2012 R2
- 2014
- 2016

The **Microsoft SQL Express Edition** is a database system from Microsoft that allows free usage for any purpose without needing a license or contract.

If you want to install SOFT-CLOCK on a SQL Standard 2012 or higher database server, it must be installed and configured by the installation date.

If a 2012, 2012 R2, 2014, or 2016 Express Edition database server installation is desired, this can be done by soft-nrg Development GmbH during the SOFT-CLOCK installation.

 If there are one or more Microsoft SQL Server 7 or MSDE 1.0 instances on the provided server that are not related to SOFT-CLOCK, no further installation of SOFT-SOLUTIONS can be performed using Microsoft SQL Express Server 2012, 2012 R2, 2014, or 2016. In this case, the existing instances must first be migrated to MSSQL Server 2012 or later. This migration will **not** be performed by soft-nrg Development GmbH.

SOFT-CLOCK databases are case-sensitive. Therefore, you may need to create your own MSSQL instance that supports this.

## 1.1.2 Operating System Requirements

SOFT-CLOCK with a database server currently supports usage on the following server operating systems:

### Server Compatibility list (Operating System and Database Server)

- Windows 2008 Server R2 (64-Bit)
  - MSSQL 2012
  - MSSQL 2012 R2
  
- Windows SBS 2011 Standard/Essential
  - MSSQL 2012
  - MSSQL 2012 R2
  
- Windows 2012 Server (64-Bit)
  - MSSQL 2012
  - MSSQL 2012 R2
  - MSSQL 2014
  - MSSQL 2016
  
- Windows 2012 Server R2 (64-Bit)
  - MSSQL 2012
  - MSSQL 2012 R2
  - MSSQL 2014
  - MSSQL 2016

Service packs/patches and Internet Explorer are to be kept up to date.

### 1.1.3 Hardware Requirements

SOFT-CLOCK requires the following hardware requirements for your database server:

- Database System
  - MSSQL 2012 (32-/64-Bit)
  - MSSQL 2012 R2 (32-/64-Bit)
  - MSSQL 2014 (32-/64-Bit)
  - MSSQL 2016 (64-Bit)
  
- Processor
  - current industry standard processor technology for business servers
  
- Memory (RAM)
  - at least 2 GB of free memory and an additional 2 GB of memory is necessary for each additional branch with its own instance/database with approx. 20 concurrent users
  
- Hard Disc Space
  - at least 10 GB free hard drive space (current industry standard RAID technology is recommended)
  - additionally, at least 10 GB for each additional instance/database
  
- Network Adapter
  - at least 1 GBit/s

### 1.2 Client

The following operating systems are currently supported:

- Windows Operating System
  - 7 Professional, Enterprise, Ultimate (32-/64-Bit\*)
  - 8.1 (32-/64-Bit\*)
  - 10 Professional, Enterprise, Enterprise LTSP (32-/64-Bit\*)
- Processor
  - current industry standard processor technology for business workstations
- Memory (RAM)
  - depends on the operating system, but at least 2 GB
- Hard Disc Space
  - at least 10 GB of free disk space
- Network Adapter
  - at least 1 GBit/s
- Screen Resolution
  - 1280x1024 or higher with at least 16 colors
  - Windows default display settings (the application's display is optimized for the Windows default display options for DPI, text and elements)
- Browser
  - Current version of Chrome, Firefox, or Internet Explorer

Service packs/patches and Internet Explorer are to be kept up to date.



For Windows, operating systems with an active firewall, problems may occur unless they have been specially configured.

*\* In 64-bit environments, SOFT-SOLUTIONS runs in 32-bit mode. The 32-bit ODBC driver must be used and configured.*

## 1.3 Connecting Branches

In principle, a branch can be connected to the database server via a data transmission line. For this purpose, however, **sufficient bandwidth** has to be made available. The necessary stability can be provided by a **standard fixed connection ("dedicated line")** with sufficient bandwidth.

VPN connections via DSL without using a terminal server are **not** supported by soft-nrg Development GmbH.

The connection via a standard fixed connection is **not** recommended.



## 2 Terminal Server/Citrix Installation Option

### 2.1 Windows Terminal Server Installation Option

The following terminal server operating systems are currently supported:

- Windows Terminal Server Options
  - 2008 (32-/64-Bit)
  - 2008 R2 (64-Bit)
  - 2012 (64-Bit)
  - 2012 R2 (64-Bit)
  
- Processor
  - current industry standard processor technology for business servers
  - approx. one processor core for 10 users

Example: 4 processor cores for 40 users (40 Users/10 Users per core = 4 cores).
  
- Memory (RAM)
  - approx. 100 MB per user, but at least 2 GB

Example: 4 GB of memory for 40 users. An additional 2 GB of free memory should be used for the operating system. This results in a total of 6 GB of memory.
  
- Hard Disc Space
  - at least 3 GB of free disk space
  
- Network Adapter
  - at least 1 GBit/s
  
- Printer
  - configured for terminal server usage
  
- Remote Desktop Client
  - installed on the workstations
  
- Connecting Branches
  - depending on the number of workstations
  - RDP protocol approx. 40 Kbit/s per client
  - ICA protocol approx. 14.4 Kbit/s per client



Depending on the number of user accesses, the following rule of thumb applies when dimensioning the terminal server:

For each user, the terminal server should have about 100 MB of additional memory, as well as at least 500 MB of hard disk space. The more users working on the terminal server, the faster the processor speed should be. No more than 10 users are recommended per processor core.

The available hardware will be statistically distributed over the number of users, whereby the terminal server will allocate its resources dynamically. This means that if a user needs more resources than another, they will be dynamically assigned to them.

For performance reasons, the terminal server should not use the same hardware as the database server, but instead should be similar to how a normal client would access. For the database server, the same technical prerequisites as described in Section **1 Client-Server Installation Option (Local Network)** apply.

## 2.2 Citrix Terminal Server Installation Option

SOFT-CLOCK can also be operated on terminal servers connected via Citrix. The usage of Citrix requires additional licensing.

The minimum requirements for this option are the same as described in Section **2.1 Windows Terminal Server Installation Option**.

## 3 File System

The NTFS file system must be used for all Windows systems.

## 4 Barcode Scanner

The bar codes supported by SOFT-CLOCK have the font **Code 39 Extended** or **Code 39 Full ASCII**. These fonts must be supported by your barcode scanner.

The following settings must be set when configuring:

- German character set/keyboard
- No Check Digit
- No prefix
- No suffix
- Font **Code 39 Extended** or **Code 39 Full ASCII**

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Ensure that the devices where the software is to be installed (e.g., client, server) are technically compatible with the above system requirements before performing the installation. In the case of a service provision by soft-nrg Development GmbH, an error that occurs during the installations due to a technical incompatibility, will not release you from your obligation to pay the agreed upon installments for the installation.

**I/We will fulfill and acknowledge the system requirements detailed above.**

yes                      no

Comments/Notes

Date

Signature

Please sign and fax the form back to us. If you would rather send us the form via e-mail, please enter your full name in the signature field (system requirements confirmed electronically are valid in this case, even without a handwritten signature).



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