



**Technical  
Information & Integration  
Manager**

**System recommendations**

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## 1 Introduction

TIM is a so called client/server application. That means that some parts of the software are running on a server (Microsoft SQL database, TIM-Administration, central background services, ...) and the TIM clients will get access via client software to that data or rather to the results of the central background services.

Basically there are 3 different scenarios that can be realized (we are happy to help with the decision):

### 1. Client based installation

In this variant instead of an extra server a normal PC (which meets the hardware requirements) is used to install and use all TIM components. This scenario is useful, for example, to create a separate, low-cost test environment, but it is not really useful for productive use, as this installation is limited to 1 user.

### 2. Identical database and application server

In this variant, the central database and the central TIM programs are installed on **one** virtual or physical server. The TIM clients access this central database and use the central TIM software. Only the TIM client software is installed on the user's PCs. This variant is the most common installation variant, since only 1 server must be administered.

### 3. Different database and application server

In this variant, the database server (for the database) and the application server (for the central TIM programs) are installed on 2 separate virtual or physical servers. This version increases security in operation, but requires an increased IT administration.

## 2 Hardware requirements

### 2.1 Database server

The database server (can also be virtualized) should run with Windows Server 2012 R2 (recommended Windows Server 2016)) and have at least 32 GB of RAM. The size of the main memory depends in particular on the number of users, because it should always be possible for the server to keep the data of the users in the main memory in order to optimize the database queries.

## Installed software

1. Microsoft SQL Server, Version 12 or higher<sup>1</sup>
2. Microsoft Reporting Services<sup>2</sup>

The needed disk space depends on the number of projects, the complexity of the items, and the number of drawings. SSD hard drives are recommended. In general, the following guidelines apply:

- ca. 0,5 MB / Floor or wall elements
- ca. 1,0 MB / Precast part elements
- ca. 1,0 MB / element drawing<sup>3</sup>

## 2.2 Application server

If the application server is a separate server it has no specific hardware requirements. The operating system should also be Windows Server 2012 R2 (recommended Windows Server 2016)). The server should have at least 16 GB of main memory.

## 2.3 Client

The following technical requirements apply to the TIM client:

	Minimum setup	Recommended
<b>Operating system</b>	Windows 7 Service Pack 1, 64-bit	>= Windows 8.1, 64-bit
<b>Graphics card</b>	Integrated graphics card supporting DirectX 11	Dedicated 1 GB graphics card supporting DirectX 11
<b>RAM</b>	4 GB	12 GB
<b>Processor</b>	Intel i5 or an equivalent model	Intel i7 or an equivalent model

## 2.4 Backup

A backup system for the database as well as for the directory where the element drawings and other external files are stored is highly recommended.

## 2.5 Network

The TIM clients are directly connected via LAN-connection (Gigabit-network) with the database server and the folder for external files.

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<sup>1</sup> You can also use free MS SQL Express (make sure you use a version that allows you to install Reporting Services, for example Microsoft SQL Server 2014 Express (64-bit) **with Advanced Services**) for a local installation (for example, on a separate test system).

<sup>2</sup> Microsoft Reporting Services are part of the Microsoft SQL installation and can be installed as an option during the installation process or afterwards.

<sup>3</sup> They can be saved on a separate file server as well.