

tick@lab (rX)

System Requirements

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Content

General	3
Architecture & Environments	3
Database Server	4
Software Requirements	4
Hardware Recommendations	4
Application Server	5
Software Requirements	5
Hardware Recommendations	5
Client	6
Network environment & additional Information	6
Bandwidth	6
Protocols	6
Additional Hardware Recommendations	6
Cage Card Printing	6

General

This document covers the technical system requirements for the installation and the operation of **tick@lab** and **tick@lab rX** (embedded Oracle license included).

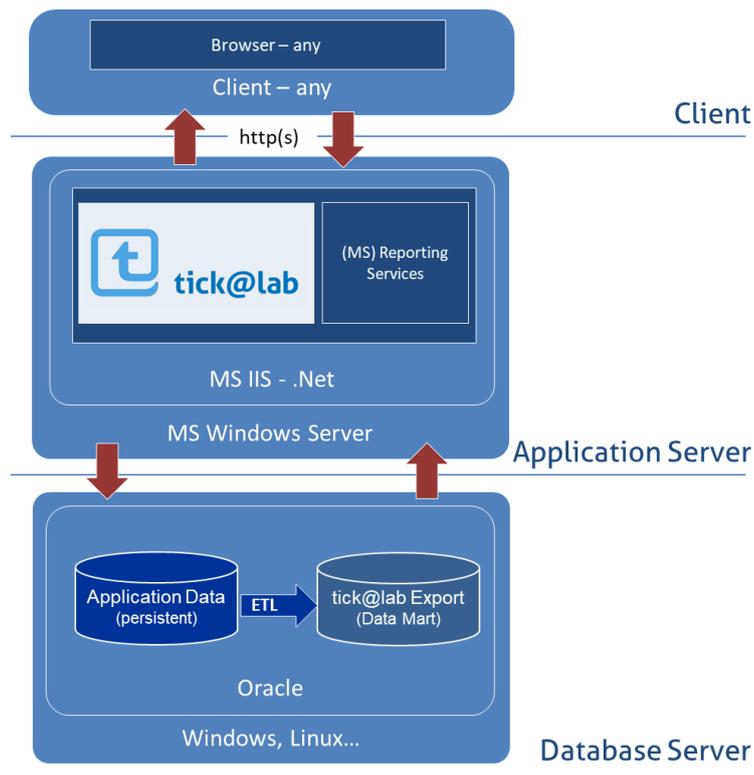
If not indicated differently, software specifications (e.g., operating system or database) are concrete requirements for the proper installation and operation of tick@lab.

Hardware specifications are recommendations only.

In any case the guidelines of the specific hard-/software manufacturer should be considered.

Architecture & Environments

The following picture illustrates the main components of the architecture:



a-tune recommends to use separate servers for Database and Application as well as for Production and Non-Production environments.

Other constellations are technically possible but should be verified with a-tune technical Support.

All tick@lab Editions may be installed and operated on virtual environments as far as supported by the selected Operating Systems and Database Management System.

The recommendations regarding server hardware dimensions given below are for Production Environments supporting up to a maximum of 500 named users with an assumed level of concurrency of 10%.

For the test environment, the specifications for memory and CPU can be reduced accordingly.

Database Server **Software Requirements**

Supported Database Versions:

- Oracle 12c (12.1.0.2)
- Oracle 19c - 19.12.0.0.0

Any Database Edition Standard TWO or higher may be used. Please consider potential licensing restrictions of the selected edition. For tick@lab rX, the following restrictions apply:

- tick@lab rX M Edition
This Edition may be used with a maximum of 2 CPU Sockets with a maximum number of 16 Threads at any time.
- tick@lab rX XL Edition
No restrictions

The Database can be installed on any of the supported Operating Systems by Oracle.

On each Database Instance, two Database Schemas, one for the Application Data, one for the tick@lab Export Datamart, are required.

Hardware Recommendations

a-tune recommends the following specifications:

- Memory: 16 GB RAM
- Processor: 2x QuadCore CPU
- Storage:
 - Hard Disk with 100 GB (Operating System/Software)
 - Hard Disk with 100 GB (Oracle with data files and FRA)
 - Initial database size: 2 GB
 - Typical annual growth: 1-2 GB

Application Server Software Requirements

tick@lab requires the following components for the Application Server:

- Windows Server

Supported Versions:

- Windows 2016
- Windows 2019
- Windows 2022

- Internet Information Server (IIS) activated

Respective version as provided with the OS

- ASP.NET State Service is running and scheduled for automatic start
- Print Spooler is started and at least one printer is available (i.e. "Microsoft XPS Document Writer")
- Microsoft .Net Framework

- MS .Net 4.8

- Oracle Client

Note: required by SQL Server Reporting Services only

- Oracle Client 12.1.0.2 (12.1.0.2 ODAC Release 4)
- Oracle Client 19.3 (12.2.0.7.0)

- Microsoft Reporting Services (minimum Standard Edition)

PLEASE NOTE: Alternative products may be used for reporting and data analysis. Please contact a-tune support for further details.

- Microsoft Reporting Services 2019
- Microsoft Reporting Services 2017
- Microsoft Reporting Services 2016 with SP2

PLEASE NOTE: The Report Builder Tool provided with the Microsoft Reporting Services requires Oracle Client 32-bit on the client machine.

Hardware Recommendations

a-tune recommends the following specifications:

- Memory: 16 GB RAM
- Processor: 2x QuadCore CPU
- Storage:
 - Hard Disk with 100 GB (Operating System/Software)

Client

Generally, tick@lab can be used with any kind of web browser available (Edge, Edge Chromium, Chrome, Firefox, Safari 10.0...).

On the client-side tick@lab exclusively uses Java-Script, CSS and HTML.

Furthermore, a PDF reader is recommended.

Network environment & additional Information

Bandwidth

a-tune recommends a 100 Mbit or higher network connection between the web server and the database.

For user access (web browser), a slow network connection (e.g. DSL, mobile) may be used.

Protocols

- TCP/IP with services for name resolution (DNS) activated. Furthermore, the OS manufacturer's guidelines regarding addressing, name resolution and general network setup should be followed.
- No firewall should be set up between Application Server and Database Server. If this cannot be achieved, please contact a-tune support for deeper analysis and appropriate configuration.
- Clients are connecting through TCP port 80 by default. Other ports can be employed depending on the configuration of the web server.
- Firewalls, SSL/TLS or other security technologies can be applied for further securing of the client/server communication.

Additional Hardware Recommendations

Cage Card Printing

No technical restrictions, any printer able to print from PDF can be used.

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