dormakaba

MATRIX PRO – System requirements

Status: December 2020
Version 3.7 or later

General PC requirements

(single-user web server application)

1) Server (MATRIX installation PC)

PC

Computer or server on which MATRIX is installed

Computer or server compatible with MS Windows in terms of hardware and software

Operating systems

- Windows 8.1 Pro (64-Bit)
- Windows 10 Pro (64-Bit)   (1)
- Windows Server 2012 (R2)   (2)
- Windows Server 2016   (2)
- Windows Server 2019 Standard   (2)

Please note:
- in each case including the current service pack!
- Windows 8.1 und newer: In order to avoid an uncontrolled termination of MATRIX, the "Fast Startup" must be deactivated.

(1) evolo Programmer Service: no support for Version 1507 (2015) and 1511 (2017)

(2) It is not possible to use the client software modules (Desktop Reader Manager, evolo Programmer Service, XS Manager) directly on server operating systems. These modules are installed on the client computer, where the corresponding functionality is to be used.

CPU(x86-64) / main memory

Intel-Core-i5-Series or higher, Intel Xeon (or comparable)

- Processor with at least 4 cores and min. 3 GHz
- Up to 1,000 persons   min. 8 GB (only for MATRIX without OS and other software)
- Up to 5,000 persons   min. 16 GB (only for MATRIX without OS and other software)
- From 5,000 persons on   min. 32 GB (only for MATRIX without OS and other software)

For MS SQL Server (not Express) on a separate server

- Up to 5,000 persons   min. 8 GB (only for DB without OS and other software)
- From 5,000 persons   min. 16 GB (only for DB without OS and other software)

Note: In addition to the number of persons, the system load depends strongly on the concrete use of various options.

Databases

- H2 (Internal database up to 1,000 persons)
- MS SQL Server Express 2014 (free license)
- MS SQL Server 2014 (see appendix for license handling)
- MS SQL Server Express 2016 (free license)
- MS SQL Server 2016 (see appendix for license handling)
- MS SQL Server Express 2017 (free license; bundled on DVD, default)
- MS SQL Server 2017 (see appendix for license handling)
- MS SQL Server 2019 (see appendix for license handling)
- ORACLE 18c (MATRIX license option)

Please note:

- MS SQL Server (Express) only with current service pack!
- System requirements MS SQL Server (or Express) must be fulfilled.
- The database size is limited to max. 10 GB with MS SQL Server Express. A maximum of 1 GB RAM and 1 processor (4 cores) is used even with computers having greater capacities.
- ORACLE: The customer must provide an ORACLE user account with its own schema and DBA and CONNECT rights on an existing ORACLE database.

Recommendation:

- For 5,000 persons or more MS SQL Server Standard Edition or higher.

Workflow option or Web booking (via MATRIX GUI)
If one of this option is in use, the minimum requirements are:
- Main memory min. 16 GB (only for MATRIX without OS and other software)
- Databases: MS SQL Server Express or MS SQL Server

Hard disk size
Application including database installation: 6 GB available hard disk space, plus capacity for storing data (e.g. 10 GB with MS SQL Server Express).

Network protocol and hardware
TCP/IP, Ethernet
Port for communication with web browsers or external devices must be open.

Interface
USB (only for license dongle, no need for dongle-free solution)

MATRIX OPC-Server
Operating System: Windows 10 Professional (64-Bit)

Notes regarding security
The infrastructure of the network operator has a great influence on the additional security. We strongly recommend to restricting access to the MATRIX server as much as possible. For example, in the case of very high security requirements, MATRIX should only be available in a protected internal network. If MATRIX should be available on the public network (e.g. self-service with a mobile device), the operator has to provide additional security activities such as security access with a VPN (Virtual Private Network).

Backup
It is recommended to take backups at regular intervals (e.g. backup to the server or to an external hard disk or tape streamer).

Webserver (Installation with MATRIX)
The Apache Tomcat Webserver is included in the MATRIX-installation (no need of separate installation). An own instance is used and registered as MATRIX Tomcat service.

Mobile geolocation (Module Time)
For geolocation an SSL connection to the webserver is required. A certificate of a trusted CA is needed.

Note about dongle-free license in server clusters
The dongle-free license concept is based on various hardware parameters and other factors. If these change, manual relicensing must be done.

SSL Certificate Provider
To obtain an SSL certificate for secure encryption, a Certificate Signing Request (CSR) must be submitted to a certificate provider. Any SSL certificate provider will assist the applicant in creating the CSR. The certificate must be in PKCS12 or JKS format.
The CSR is the preliminary stage of an SSL certificate and is required to apply for an SSL certificate from a certificate provider. To generate a CSR, you must create a key pair for your server consisting of a private key and the CSR. The CSR contains information about the applicant and the domain to be encrypted as well as the public key. The private key remains with you and must not be published. The certificate is later inseparably linked to the private key. Therefore, it should be well stored and additionally secured e.g. on an external data medium.

2) Client (browser client)

Client for operating MATRIX with the browser

PC

Any PC suitable for Mozilla Firefox (version 75 or later), Google Chrome (version 81 or later) or Microsoft Edge based on Chromium (version 81 or later).

Interfaces

Optionally USB for Desktop Reader

Screen

- Minimum resolution 1366 x 768, Full-HD 1920 x 1080 recommended
- Alarm monitor minimum resolution 1600 x 900, Full-HD 1920 x 1080 recommended

PDF files

To display generated PDF files, a PDF reader is required

3) Notes on third-party devices for use with MATRIX

Encoding and Printing badges with third-party device
The badge encoding and printing function is supported by the following MAGiCARD printers
- MAGiCARD 300 with Omnikey 5122 encoding unit
- MAGiCARD 600 with Omnikey 5122 encoding unit
- MAGiCARD Rio Pro 360 with Omnikey 5122 encoding unit
- MAGiCARD ULTIMA with Omnikey 5122 encoding unit

The test was carried out with "MAGiCARD ULTIMA with Omnikey 5122 coding unit".

Forms with signature
A signature pad from signotec can be used for signing forms. Supported are:
- signotec Sigma
- signotec Sigma Lite

The installation of the "Websocket Pad Server" from Signotec on the client is necessary.

Number plate recognition
A camera from nedap can be used for licence plate recognition. Supported is:
- nedap ANPR Lumo

Access with QR code (e.g. for parking space) and comfort search in visitor management
The access with QR Code reader or the search function with QR Code in the visitor management system was tested with the following readers:
- QR-Code Reader connected with Access Manager 92 00 (with 90 10) or 92 30 Wiegand
  - YK EP3000
  - nedap NVITE
- Desktop QR-Code Reader (USB)
  - Gryphon I GPS4400 2D

Access with long range antenna
Deister antennas are supported for access with long-range detection:
- Deister Long range Antenna TSU 200 with RS485 Interface and converter

Please note:

- Connected either to 92 30 Wiegand or 90 10 converter
- Long range badges and firmware must match

Appendix: Microsoft SQL Server license handling

In addition to the MS SQL Server license, so-called CALs (Client Access Licenses) are needed. The number of client access licenses required for the MS SQL Server database depends on the number of users able to access MATRIX.

Each MATRIX user needs a "User CAL" or a "Device CAL". The number of simultaneous accesses is irrelevant! A "Per Processor" license is another possibility. With this model, the CPUs are licensed and Device CALs or User CALs for the SQL server are no longer required. The question of the number of users required in order to make this model worthwhile is an economic issue which is to be decided based on the costs involved for licenses.

Additional information about the Microsoft license model:

CAL:

Client Access License, the Microsoft license model includes the "User CAL" and the "Device CAL" as well as the "Per Processor" license. With the server products offered in the server/CAL license model, you can normally choose between user-based or device-based licensing for the CALs. Device CAL and User CAL are the same price. You can choose whether you want to use Device CALs or User CALs. There is also the "Per Processor" license for cases where programs perform the access and the user or the device cannot be precisely determined.

Device CAL:

Allows a device to access or use the server software. The device can be used by any user.

User CAL:

In addition to a device-based client access license (CAL) Microsoft offers client access licenses that are licensed for a user and not linked to a device. The user can use any device.

Per Processor:

Processor licenses can be used in any Internet, extranet or intranet scenario. A processor license includes access for an unlimited number of users and devices who access or use the server software via the company's LAN or WAN or from outside the firewall. Processor licenses are available in the Enterprise and Standard Editions of the server products.