**Accellence Technologies GmbH**

**Universal Video Management System**

vimacc System Documentation

System Requirements

## Legal Notice

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# List of Abbreviations

| | |
|---|---|
| ASCII | American Standard Code for Information Interchange |
| AAC | Advanced Audio Coding |
| AES | Advanced Encryption Standard |
| CA | Certificate Authority or Certification Authority |
| CCTV | Closed Circuit Television |
| DB | Data Base |
| DCOM | Distributed Component Object Model |
| DVR | Digital Video Recorder |
| IP | Internet Protocol |
| iSCSI | Internet Small Computer System Interface |
| GUI | Graphical User Interface |
| GOP | Group of Pictures |
| HID | Human Interface Device |
| LDAP | Lightweight Directory Access Protocol |
| MMI | Man Machine Interface |
| NAS | Network Attached Storage (Fibre Channel, iSCSI, …) |
| NFR | Non-functional Requirement |
| NTP | Network Time Protocol |
| NVR | Network Video Recorder |
| OPC | OLE for Process Control |
| RFC | Request for Comments |
| RTSP | RealTime Streaming Protocol |
| PTZ | Pan Tilt Zoom |
| PKCS | Public Key Cryptography Standards |
| PKI | Public Key Infrastructure |
| SAN | Storage Area Network (CIFS, NFS, SMB etc.) |
| SAS | Serial Attached SCSI |
| SDP | Session Description Protocol (see RFC 4566) |
| SHA | Secure Hash Algorithm |
| SQL | Structured Query Language |
| SRTP | Secure Real-Time Transport Protocol |
| SSD | Solid State Drive |
| SSL | Secure Sockets Layer |
| SW | Software |
| TCP | Transmission Control Protocol |
| UDP | User Datagram Protocol |

# 1  Introduction

## 1.1  Document Purpose

This document is part of the system documentation of the **vimacc**® video management system from Accellence Technologies GmbH.

All documents are part of the software's comprehensive technical specifications.

## 1.2  Documentation Structure

The **vimacc**® system documentation comprises several documents dealing with different sub-aspects.

The following documents are available by default:

- **vimacc**® System Documentation: Introduction
  Overview of the general features and respective fields of application.

- **vimacc**® System Documentation: Features and Characteristics
  Detailed description of technical performance parameters and features/characteristics.

- **vimacc**® System Documentation: Interfaces
  Description of external interfaces, e.g. to connect to higher level management systems.

- **vimacc**® System Documentation: System Requirements
  Information on minimum requirements for hardware and operating system.

- **vimacc**® System Documentation: System Design
  Conditions to be met when planning a video system and assistance with dimensioning of the complete system.

- **vimacc**® System Documentation: List of Image Sources
  List of available image sources (cameras, encoders), drivers and other connectable peripherals.

- **vimacc**® System Documentation: Architecture
  Detailed overview of the architecture.

In addition, software version specific User Guides, an Administrator Guide and a Maintenance Guide will be provided.

# 2 Hardware

The hardware requirements for running the **vimacc** software depend on several project-specific factors and thus cannot be generally specified. The simultaneously decoding and displaying of video images of several cameras in top quality and at high resolution in particular determines the hardware to be used, such as the processor and the working memory size. Please note that even certain settings of a video source like GOP size directly influence the working memory size required by a receiver to decode and play back the video.

All data mentioned here refer to minimum requirements and have to be adjusted to actual project requirements (→ *vimacc System Documentation: System Design*). The number of video streams that can be simultaneously decoded and smoothly played back on a certain hardware can only be determined approximately, taken into account all project-specific technical constraints. In particular, the processor employed is of vital importance for the overall system performance. In general, **vimacc** can be operated with all common CPUs (from Intel Atom to i7). However, high performance requirements can be fulfilled with powerful processors only.

In addition, the **vimacc** software components (streaming server, workstation/player or display server) actually installed on the respective computers have to be taken into account  as different responsibilities may require different hardware for running the software components.

# 2.1   Client Computer

The minimum requirements for a client system (**vimacc** Workstation, **vimacc** Player, **vimacc** DisplayServer ) mainly depend on image materials (image size, frame rate etc.) used and motion intensity of the image scene.

The CPU requires a decoding performance of H.26x. Guide values to be assumed: 1 Core >= 3 GHz for simultaneously played 1080p videos. In general, rendering is performed by the graphics card and does hardly require any additional CPU resources.

| Hardware Component | Performance Characteristics |
|---|---|
| System architecture | IBM compatible PC<br>Intel x86 architecture |
| Processor | Intel compatible CPU supporting the SSE2 instruction set<br><br>e.g. Intel Atom/i3/i5/i7/i9 > 3 GHz |
| Working memory | Min. 4 GB, depending on project requirements |
| Hard disk | SSD/SATA, min. 128 GB |
| Graphics card | NVIDIA NVS product line<br>(or similar)<br>Memory > 512 MB,<br>recommended >= 1 GB |
| Network adapter | 100 Mbps (1 GBit/s recommended) |
| USB interface | For installation and/or export functions as well as for the Crypto dongle in case of stream encryption |
| Optional DVD drive | For installation and/or export functions |

**Table 2.1: Hardware requirements for vimacc client computer**

## 2.2   Streaming Server

The minimum requirements for the **vimacc** streaming server depend on the data throughput between the network interfaces and the memory system and thus also depend on the image material used and the motion intensity of the image scene.

Here, CPU performance requirements are rather low.

| Hardware Component | Performance Characteristics |
|---|---|
| System architecture | IBM compatible PC<br>Intel x86 architecture |
| Processor | Intel compatible CPU supporting the SSE2 instruction set<br><br>e.g. Intel Xeon |
| Working memory | Min. 16 GB, system dependent |
| Hard disk | SSD/SATA, min. 128 GB<br>for system and vimacc |
| Graphics card | Standard graphics card |
| Network adapter | Min. 1 GBit/s |
| USB interface | For licencing **vimacc** via USB hardware dongle |
| Optional DVD drive | For installation |
| Video data storage | RAID system (0,1, 5, 6, 10), depending on system requirements |

**Table 2.2: Hardware requirements for vimacc streaming server computer**

# 3  Operating Systems

**vimacc** software runs on Windows PCs and, as of Version 2.2, on Linux PCs.

We recommend installing the software on a 64 bit system as those systems are able to process larger working memory amounts more efficiently than 32 bit operation systems. When using a 32 bit system, only up to 4 GB working memory can be directly addressed which limits the number of videos played back at the same time. (→ *vimacc System Documentation: System Design*).

The following table contains the operating systems supported by the **vimacc** software components.

## 3.1  Windows

| Operating System | Supported Version |
|---|---|
| Windows XP | SP3, 32/64 bit on request |
| Windows 7 | 64 bit<br>32 bit (existing systems and on request only) |
| Windows 8.1 | 64 bit |
| Windows 10 | 64 bit, LTSC possible |
| Windows Server 2003 | 64 bit (existing systems only) |
| Windows Server 2008 | R2 64 bit |
| Windows Server 2012 | R2 64 bit |
| Windows Server 2016 | 64 bit |
| Windows Server 2019 | 64 bit |

**Table 3.1: Supported Windows operating systems for vimacc (12/2019)**

# 3.2   Linux

| Operating System | Supported Version |
|---|---|
| Open Suse 11.2 / 11.3 | 64 bit (existing systems only) |
| Redhat Enterprise Linux 5 | 64 bit (existing systems only) |
| Redhat Enterprise Linux 7 | 64 bit |
| Redhat Enterprise Linux 8 | 64 bit, vimacc 2.2.7x as of Q2/2020 |
| CentOS 7 | 64 bit |
| CentOS 8 | 64 bit, vimacc 2.2.7x as of Q2/2020 |
| SUSE Linux Enterprise 12.x | 64 bit |
| SUSE Linux Enterprise 15 | 64 bit, vimacc 2.2.7x as of Q2/2020 |
| Open Suse LEAP 42.x | 64 bit |
| Open SUSE LEAP 15 | 64 bit, vimacc 2.2.7x as of Q2/2020 |
| SIEMENS Industrial OS 2.0 | scheduled Q4/2020 |

**Table 3.2: Supported Linux operating systems for vimacc (01/2020)**

**Note:**
Certain hardware driver versions and incompatible third party products may cause problems when playing videos.

# 4 Windows

## 4.1 Installation

**vimacc** software can be installed on PCs running the Windows operating systems mentioned in chapter 3 (64 or 32 bit). **vimacc** comes with an installation program containing all **vimacc** software components. A setup wizard (see Figure 4.1) guides the user through the installation process. Depending on the target PC, the user may simply need to select the required software components (see Figure 4.2 and Figure 4.3).

Further information can be found in the User, Administrator and Maintenance Guides.



**Figure 4.1:** *Welcome* **screen of the vimacc installation program**

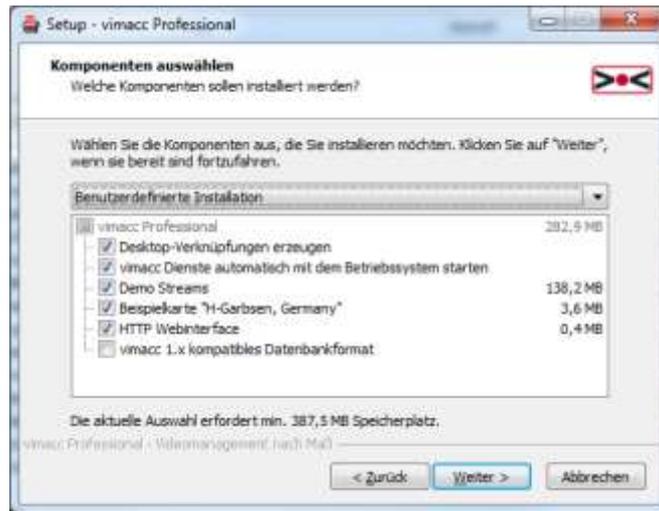Selection options depend on the **vimacc** edition.

**Figure 4.2: Selection of the vimacc Professional software components**

For **vimacc** Enterprise, selection of the software components for distributing the processes should be conducted in line with the load distribution of the single software components.
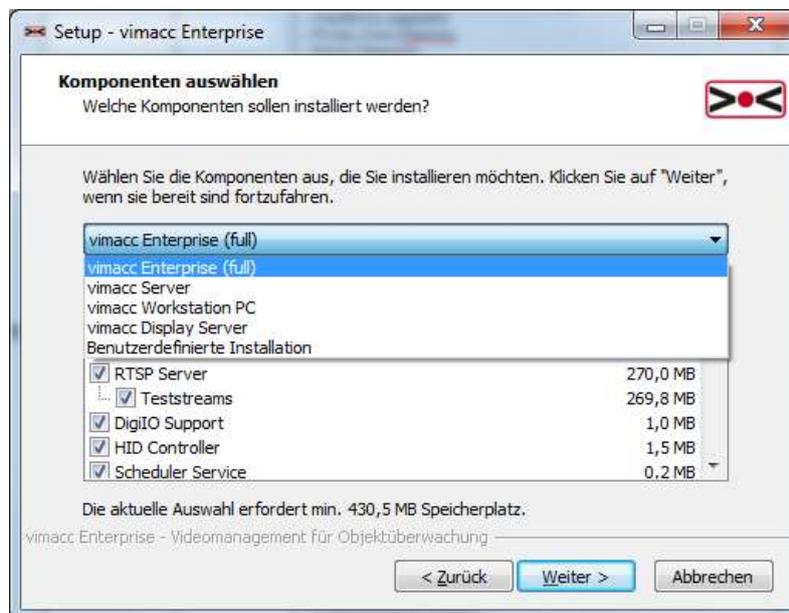


**Figure 4.3:  vimacc Enterprise software component selection**

# 4.2   File Structure on Target System

After installation, program and configuration files are stored according to the following directory structure:


Installation directory                 (`<installpath>`)
    ↳ Program directory            (`\bin`)
    ↳ Configuration directory      (`\config`)
    ↳ Data directory               (`\data`)
    ↳ Log directory                (`\log`)

Optional:
    ↳ Webserver directory          (`\www`)
        ↳ XAMP directory           (`\xampplite>`)

# 5  Linux

## 5.1   Installation

When installing the **vimacc** software on a Linux system, *RPM* installation packages are used instead of a single installation program. The installation packages contain all management data required to copy the respective program files to the right location, to provide all libraries required in the right version, and to remove files of a program.

Each **vimacc** software component comes with an RPM package which has to be installed to the target computer of the **vimacc** system using either the *rpm* command or the RPM package manager of the respective Linux distribution. When selecting the software components to be installed on a PC process distribution has to be taken into account here as well.

## 5.2   Target System File Structure

After installation, program and configuration files are stored according to the following directory structure:

Installation directory               (`<installpath>`)
    ↳ Program directory          (`\bin`)
    ↳ Configuration directory    (`\etc`)
    ↳ Data directory             (`\data`)
    ↳ Log directory              (`\log`)

## 5.3   Compatibility Notes

When the NVIDIA graphics card is used, the graphics driver of the *nouveau* project (see `/NOUVEAU/`  ) should be used as well.
If you have any questions with regards to incompatibilities while planning your system infrastructure contact Accellence Technologies Support.

# 6 Support / Hotline

Do you have any questions about **vimacc**®?

Send an email to

**support@accellence.de**

OR

Call our hotline        **+49 (0)511 277 2490**

Our staff is happy to help you from 09:00 AM to 5:00 PM on business days.

# 7 Referenced Documents

`/NOUVEAU/`              Nouveau graphics driver
                         http://nouveau.freedesktop.org/wiki/

# 8 Figures

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