

# MultiCash<sup>®</sup> 3.23

## Technical Information

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## 1 Preliminary notes

MultiCash is a standard software for Electronic Banking, which many banks provide to their customers for the collection of account information and the processing of payment orders.

The system supports a broad range of formats for the usage in national and international payment transactions. The system can be kept always current by the simple over-installation of sub-modules and can be flexibly supplemented with further formats.

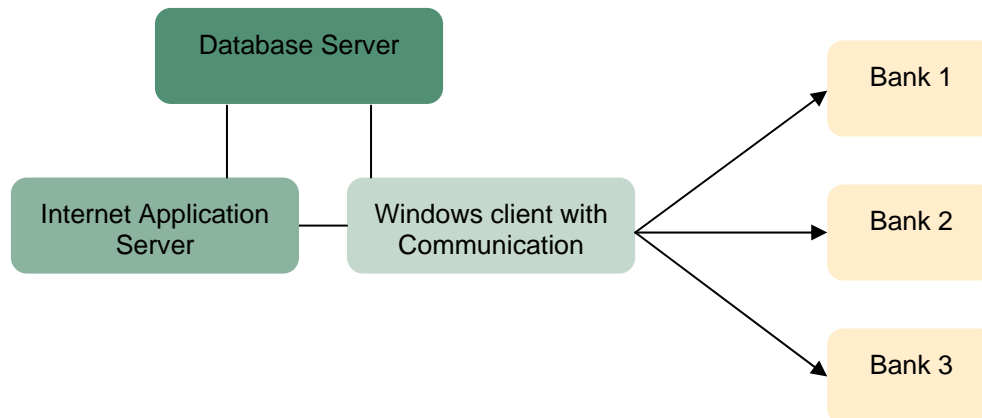
MultiCash supports several national and international communication procedures and is also modularly extensible in this respect (with supplementary modules if need be).

The system is conceived as Windows application, but can be equipped in the variant MultiCash WebEdition with a HTML user interface, whereby only a internet browser is needed on the individual workstations.

This document describes the system requirements and recommendations for the operation. It is addressed primarily to persons responsible for the IT, who have to define, to setup and to operate an environment aligned with the respective needs.

## 2 System components

The whole system consists of several components which can be operated on a machine or distributed using several systems in the network. This is the structure in the overview:



### 2.1 Database Server ZBase32

The database enables the access of all processes to the databases required for the operation of the system. For this reason, it must always be ready-to-operate before another component can be started.

By default, all Omikron systems are delivered with the ZBase32 database system. This database engine should be operated on the file server, since thus the best throughput is achieved due to the local access to the tables. The operation can be made as application or "Windows service".

### 2.2 Windows client

On all workstations in the network which have access to the MultiCash resource, the Windows client saved there can be started, representing the central user interface of the system. In this application, all functions of the system can be used in the dialog.

The Windows client also executes the communication to the banks on the basis of the parameters stored in the administration program. It is possible to define only defined Clients as communication server and to trigger there Comms. jobs from any computers in the network.

At present, the following communication processes can be supported:

- EBICS for Germany/Switzerland and France (additional modules)
- EPFT/MCFT for Germany and international use using the X.25 transport process via PAD, ISDN, Modem, TCP/IP
- BCS-FTAM for Germany (additional module) using the X.25 transport process using PAD and ISDN
- BCS-FTP for Germany (additional module) using the TCP/IP transport process
- HBCI for Germany (additional module) using the TCP/IP transport process
- HBCI+ / FinTS for Germany (additional module) using the TCP/IP transport process
- ETEBAC3 for France (additional module) using the X.25 transport process via PAD and ISDN

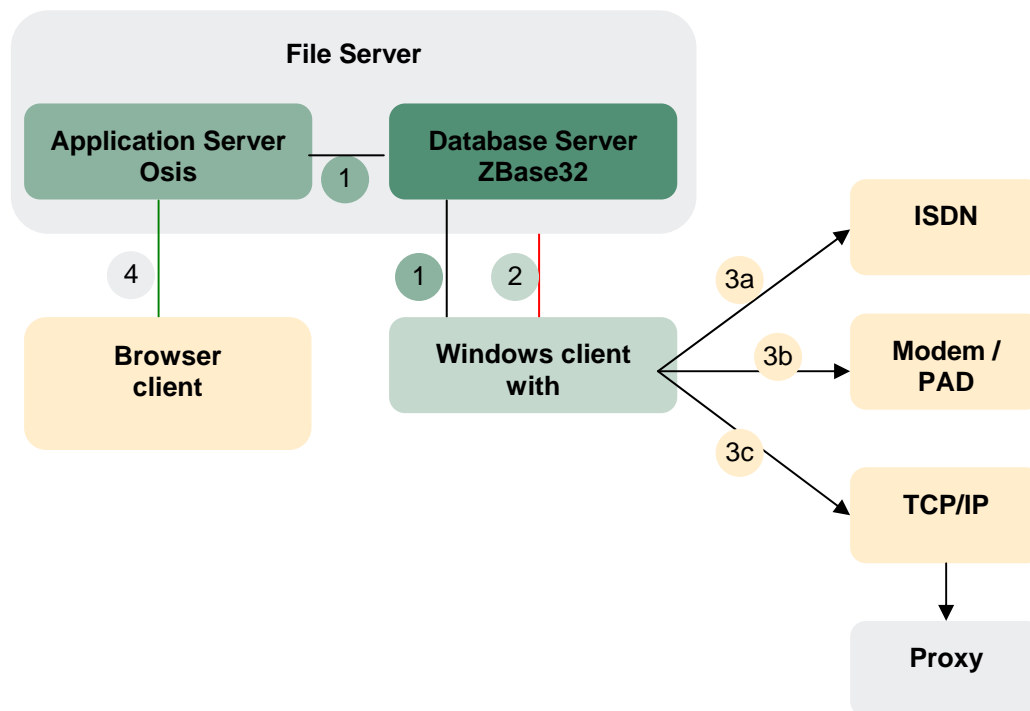
Others upon request.

## **2.3 Internet-Server Osis**

The Internet application server Osis („Omikron Systemhaus Internet Server“ optional additional module File Manager) makes a browser interface available via which authorized users can access all required information on the communication jobs using the Internet technology (http/HTML) and can generate an Electronic Signature.

### 3 Configuration

This chapter describes the technical interfaces and protocols between the different system components:



#### 3.1 Database accesses

- 1 The database accesses are made via TCP/IP using the following parameters:

Port	Explanation	Number
Port database	Port for the communication of the database ZBase32 with all other elements.	The database sets two TCP listener for the transmission and the backward channel. The connection is always established from the application to the database (default: 4711/4712, configurable).

The operation of the database engine on the file server is the optimal solution. If this is not possible, the database also requires file access to the file server resource.

#### 3.2 File accesses in the network

- 2 If the individual components are operated on different PCs, the file access to a central resource is required for the described components. The same applies to the data exchange with the connected accounting systems.

Port	Explanation	Number
Ports for the common file access (file log on operation system level)	Ports for the communication of the network server (file server) with the administration program, the communication server and the third-party systems with which data shall be exchanged.	e. g.: SMB = three ports: 137, 138, 139 or diverted ports

### 3.3 Communication

Depending on the communication processes used, the following transport protocols can be supported:

- 3a **ISDN:** The standardized ISDN interface CAPI 2.0 is used. Depending on the Comms. process used, the following protocols are used in the ISDN-B channel:
- |            |   |
|------------|---|
| EPFT/MCFT: | T70NL                                       |
| FTAM:      | X.25 in the B channel according to ISO 8208 |
| ETEBAC3:   | X.25 in the B channel according to ISO 8208 |
- 3b **Modem/X.25 using PAD:** Here an asynchronous connection is built up using a commercial AT modem.
- 3c **TCP/IP:** Standard IP access via dial connection using Comms. network or directly using network card.  
Used Ports:  
MCFT: Ports according to the definition by the bank (see bank parameter file)  
EBICS: 443  
BCS-FTP: 20/21 or according to the definition by the bank.

### 3.4 Web interface

- 4 The MultiCash WebEdition package supports the access using the web interface via http or https (default port 80 or 443, configurable), optionally also with client certificates. For the secure access (also from the internet) a gateway process for the use in the DMZ is supported.

More information can be found in the technical information for the MultiCash WebEdition.

## 4 System requirements

### 4.1 Hardware

#### 4.1.1 Server

For operation of all components on the PC a standard system with the following performance parameters is recommended **at least**:

- 1 GHz CPU
- 1 GB RAM (depending on the operating system, the optimum would be 2 GB)
- Standard HDD (at least 100 MB free space, depending on the number of installed modules and the amount of data to be administered)
- Screen resolution 1.024x768

Remark: In small network environments with up to 5 users also a computer with client performance features can be used as server to run the mere Windows network solution. However it is to be assured that sufficient RAM is available in order to prevent a permanent swap to the non removable disk.

For a satisfying operation within the professional range you should provide the following capability characteristics:

- Quadcore CPU
- 4 GB RAM
- RAID 10 HDD sub-system with battery backup unit

#### 4.1.2 Client

For operation of all components on the PC a standard system with **at least** the following performance parameters is required:

- 500 MHz CPU
- 512 MB RAM (depending on the operating system, the optimum would be 256 MB)
- Standard HDD
- Screen resolution 1.024x768

Printing device (inkjet - or laser printer) with Windows printer driver (or compatible printer drivers), which are provided as standard for the printing device by the Windows operating system.

For a satisfying operation within the professional range you should provide the following capability characteristics:

- 2 GHz CPU
- 1 GB RAM
- Standard HDD

#### 4.1.3 Communication

As a function of used transport protocol the following hardware components are recommended:

**ISDN:**

- AVM Fritz!
- AVM B1 PCI V4.0 (also with AVM Network Distributed ISDN for Windows 2000)
- Eicon Diehl Diva Server 2M PCI ( 2 Kanal )

Of course other ISDN adapters can be used, if they use the standardized ISDN interface CAPI 2.0.

Depending on the Comms. procedure used following protocols in the ISDN B channel must be supported correctly:

- EPFT/MCFT: T70NL
- FTAM: X.25 in the B channel according to ISO 8208
- ETEBAC: X.25 in the B channel according to ISO 8208

**TCP/IP:**

No special recommendation.

**Modem:**

No special recommendation. Good experiences were made with modems from US Robotics.

#### 4.1.4 Network

Network in Ethernet topology with 100 Mbit band width is recommended. Networks with 10 Mbit band width are not suitable.

## 4.2 Software

Please also note our statement on software acceptance in the following chapter.

### 4.2.1 Operating system - Server

At the moment at least Windows 2003 is required (other operating systems are listed in the notes for the set-up programs of each application) The NTFS file system is recommended.

Remark: In small network environments with up to 5 users, a Client operating system can also be used as server for the operation of a pure Windows network solution. We point you explicitly to the fact that in this case no synchronization of the hard disk accesses is executed between server and client which can lead to problems in heavy usage situations. Windows XP Home Edition is not suitable as server for the network use.

If you intend to use this software under Windows 2008, please check the following areas, in which fundamental changes have been made compared to Windows 2003 (in particular the points 1, 3 and 5):

1. User account control (User Access Control)  
Here a special procedure can be necessary for the installation and during operation (similar to Windows Vista) (see documentation "System Administrators Quick Reference")
2. Network and release centre  
A wrong configuration of the network can result in a situation where the database starts as expected, but no client can access it.
3. Services  
The standard access rights for the services has been changed. This may be a factor to consider.
4. Windows Firewall with enhanced security  
Enhancements have been implemented for the firewall which could lead to problems if default settings are changed.
5. Modifications in the terminal server services  
Enhancements of terminal services as REMOTEAPPS. This functionality is similar to a Citrix installation, which leads to changed requirements for the configuration.

### 4.2.2 Operating system - Clients

Windows clients:

The client systems are designed to operate with Windows XP and higher. Please consider the installation notes in the documentation "System Administrators Quick Reference". For the use of the HTML display function for payments files we recommend Internet Explorer starting from version 6.5.

When using Novell-Clients, problems can occur. In such cases, please contact your Omikron Partner BEFORE the installation.

Web interface:

For the use of the Web interface we recommend Microsoft Internet Explorer starting from version 8. For the use of the components for the Electronic Signature in the Web interface a Windows system is mandatory.

## 4.3 Acceptance Policy

### 4.3.1 General acceptance

Our general policy is that each new version of Omikron software is accepted for those 32-bit operating systems which are within Microsoft's "Mainstream Support" at the time the application is created. **Each of these is listed in the documentation of the setup program (Readme.txt).**

This acceptance means that the software release in question has successfully passed the complete quality management process in this environment without any problems and that our support teams can correctly configure these systems and can analyze and rectify any problems that may occur.

Therefore we can declare a general acceptance of our software only for environments,

- a) which are permanently available in the test laboratories,
- b) for which the staff of the support team have been sufficiently trained,
- c) under which the acceptance tests of the software have been made.

For operation with the operating systems indicated in the readme files of the software releases, there is currently a **general acceptance** for

- local installations on stand-alone computers
- network installations
- certain, pre-defined cluster environments (indicated specially for the software packages in question)

#### Remark:

Generally, the Omikron software also can be used under older operating systems. In this case, however, we cannot guarantee support covered by the software maintenance agreement, since we ourselves do not get free support from Microsoft for these operating systems.

Older Omikron software can be used in principle even under newer operating systems which were not yet on the market when the Omikron software was accepted. In this case, there is also no guarantee of support, since the requirements of a future operating system version cannot be foreseen.

Please understand that we cannot analyze and solve problems that may occur within the framework of the maintenance agreement if Omikron software is used under older or newer operating systems. Of course we are very willing and ready to analyze any problems against costs.

### 4.3.2 Special environments

Increasingly, special environments are in use, which require special knowledge on behalf of the user and which cannot be the subject of a general acceptance due to the variety of possible products, versions, variants and configuration options. In such cases, we can only offer a specialized support.

This means that our software will generally work in such environments, but that the proper operations have only been verified in the described standard configurations. Proper operation cannot be guaranteed for every conceivable constellation and no general configuration recommendations can be given.

In these cases, we recommend that the user accepts the system in his constellation himself. We can provide consultancy and specialized support - on-site if required. But in these cases support is not free, but subject to a special proposal in each case.

Currently, specialized support of this kind is provided for the following environments:

#### 4.3.2.1 Windows 64-Bit versions

This software is currently implemented as a 32-Bit-Multi-Thread application. The 64-Bit-operating systems support such software automatically and the available package has also been tested successfully under the 64-Bit variants of the operating system, which are mentioned in the README.TXT.

It is important to note here that the drivers of all required peripheral devices are available in 64-Bit versions (in particular drivers for chipcard readers).

Web interface: The use of the components for the Electronic Signature in the Web interface strictly requires Microsoft Internet Explorer starting from version 6.5 32-Bit. Thereby it is insignificant whether the Internet Explorer is used as 32-Bit application under a 32- or a 64-Bit operating system.

#### 4.3.2.2 Terminal server

Use of terminal server technology is generally supported in software mode. The administrative mode has not been accepted by Microsoft for applications !

The operability has been verified with Microsoft Terminal servers 2003 and 2008 using the Remote Desktop Protocol (RDP)

For Windows Terminal servers 2008, the new functions REMOTEAPPS and WEBACCESS have also been tested successfully.

Due to the complexity and the range of configuration options, we provide and recommend specialized training in this area.

#### 4.3.2.3 Virtual environments

In general, virtual environments are transparent for applications, so that it is possible to use such technology, provided the environment is correctly configured and equipped with sufficient resources according to the hardware recommendation of the program package.

The operability of this software has been checked with VMware. The following general remarks can be made:

- a) The "VMware Server" variant is **not** suitable for use in production, since it does not provide the necessary stability in heavy usage situations. For this, the "ESX Server" variant must be used.
- b) Sufficient resources must be defined and reserved for the virtual PC of the Omikron system, since otherwise it cannot be guaranteed that the resources are reliably available.

#### **4.3.2.4 Microsoft cluster**

The server processes of this program package are implemented as Windows services, which can be monitored and controlled by the operating system itself or by transparently working cluster systems.

The Microsoft cluster is a system of this category. For implementation projects in such environments, please refer to your support team, so that individual support agreements can be made, if necessary.