

MultiCash[®] V5

Technical Information

Version 6 / September 2024

Omikron Systemhaus GmbH & Co. KG
Von-Hünefeld-Str. 55
D-50829 Cologne (Germany)

Tel.: +49 (0)221 -59 56 99 -0
Fax: +49 (0)221 -59 56 99 -7

info@omikron.de
www.omikron.de

TI-MCC-MultiCash_V4_Technical_Information-GB.doc

TABLE OF CONTENTS:

1	PRELIMINARY NOTES.....	3
2	SYSTEM COMPONENTS	4
2.1	Database Server ZBase	5
2.2	Windows client.....	5
2.3	Internet Application Server	5
3	CONFIGURATION	6
3.1	Database accesses	6
3.2	Communication	6
3.3	Web interface.....	6
4	SYSTEM REQUIREMENTS	7
4.1	Hardware	7
4.1.1	Server.....	7
4.1.2	Client	7
4.1.3	Communication	8
4.1.4	Network	8
4.2	Software	9
4.2.1	Operating system - Server	9
4.2.2	Operating system - Clients.....	9
4.2.3	Required Applications / Infrastructure-Components	9
4.3	Acceptance Policy	10
4.3.1	General acceptance.....	10
4.3.2	Special environments.....	10
4.3.2.1	Terminal server	11
4.3.2.2	Virtual environments	11
4.3.2.3	Microsoft cluster	11
5	APPENDIX	12
5.1	External Communication Addresses	12
5.2	Security Advice	12

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.

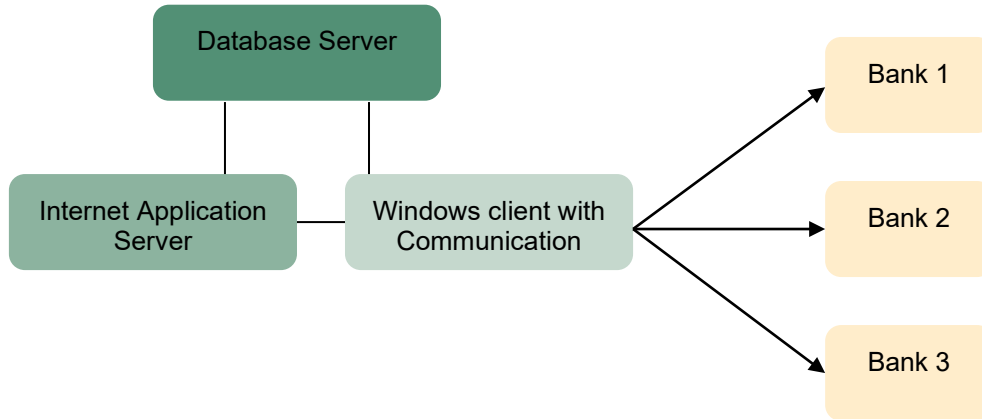
MultiCash supports several national and international communication procedures and is also modularly extensible in this respect (with supplementary modules if need be).

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.

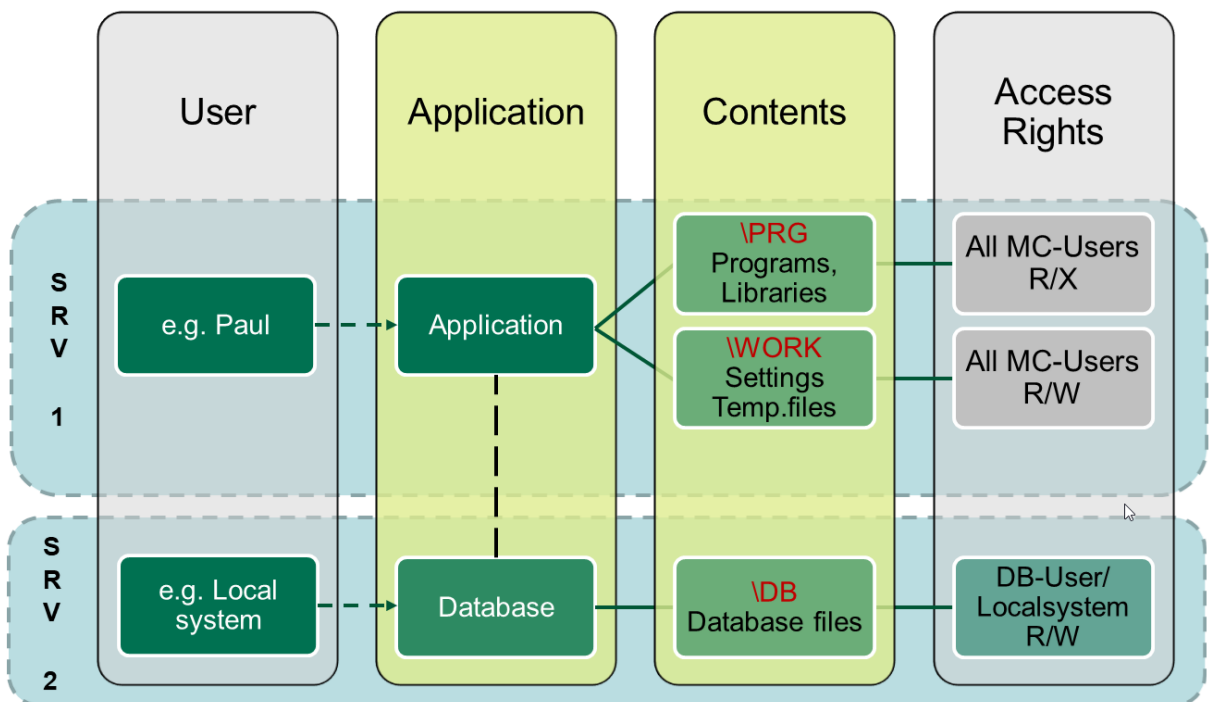
This document describes the system requirements and recommendations for the operation. It is addressed primarily to persons responsible for the IT, who must define, to setup and to operate an environment aligned with the respective needs.

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:



Installation options and access rights:



2.1 Database Server ZBase

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, this system is delivered with the database system ZBase (ZBase32.exe or ZBase64.exe). For optimal performance this database engine should be operated on the file server. The operation can be configured as application or "Windows service" (recommended for server environments).

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)
- MCFT for Germany and international use using the TCP/IP transport process
- FTP(s) 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

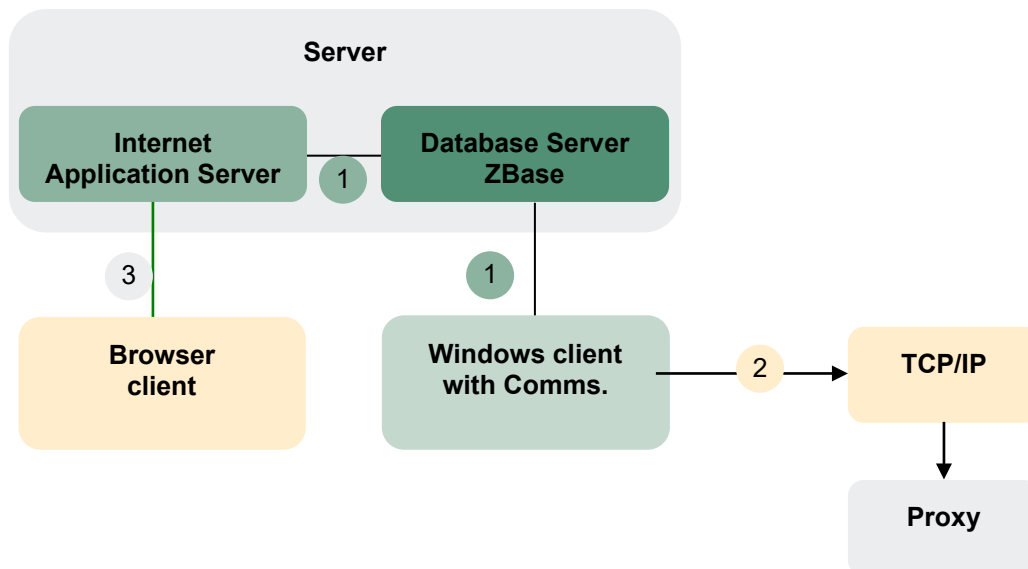
Others upon request.

2.3 Internet Application Server

With the optional add-on module „MultiCash Web Edition“ the system can be enhanced by a browser-based user interface for access by means of internet technology (http/HTML).

3 Configuration

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



3.1 Database accesses

- 1 The database sets two TCP listeners for the transmission and the return channel (default ports: 4711/4712, configurable). The connection is always established from the application to the database.

The operation of the database engine on the file server is the recommended solution. If this is not possible, the database also requires file access to the file server resource. However, this may cause a significant performance reduction.

3.2 Communication

Depending on the communication processes used, the TCP/IP transport protocol with the following ports is used:

- 2
 - MCFT: Ports according to the definition by the bank (see bank parameter file)
 - EBICS / HBCI / HBCI+ / FinTS: 443
 - FTP(s): 20/21 or according to the definition by the bank.

3.3 Web interface

- 3 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**:

- Dual Core CPU
- 4 GB RAM
- Standard HDD (at least 1 GB free space, depending on the number of installed modules and the amount of data to be administered)

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
- 8 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:

- Dual Core CPU
- 2 GB RAM
- Standard HDD
- Resolution: Min 1280 x 800 pixels and 15" Display (correlates approx. 100 pixels per Inch (ppi))

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:

- Dual Core CPU
- 4 GB RAM
- Standard HDD
- Resolution: 1920 x 1080 pixels (Full HD) and 24" display (correlates approx. 92 ppi)

We recommend not to run MultiCash on systems with more than 140 ppi.

4.1.3 Communication

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

TCP/IP:

No special recommendation.

4.1.4 Network

The system is designed as LAN application with central storage of all application components. For satisfying processing a network environment in Ethernet technology with at least 100 Mbit bandwidth is necessary.

Networks with 10 Mbit bandwidth are not suitable. WAN environments with segmented topology may lead to unsatisfying performance, too. In those cases we recommend to use the web user interface.

4.2 Software

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

4.2.1 Operating system - Server

For satisfying processing a current server operating system is required (please see chapter 4.3.1). 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.

If you intend to use this software, please check the following areas:

1. 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.
2. Services
The standard access rights for the services has been changed. This may be a factor to consider.
3. Windows Firewall with enhanced security
Enhancements have been implemented for the firewall which could lead to problems if default settings are changed.
4. 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:

For satisfying processing a current client operation system is required (please see chapter 4.3.1).

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

Web interface:

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

4.2.3 Required Applications / Infrastructure-Components

1. PDF-Viewer (e.g. Acrobat Reader)
 2. .Net-Framework for specific Modules
 3. local printer driver (server)
- >Also a PDF printer / XPS Document Writer can be used here.

4.3 Acceptance Policy

4.3.1 General acceptance

Our general policy is that each new version of Omikron software is accepted for those 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 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 Windows 2012 using the Remote Desktop Protocol (RDP)

For Windows Terminal servers, the 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.

4.3.2.2 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.

4.3.2.3 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.

5 Appendix

5.1 External Communication Addresses

In addition to the addresses of bank connections, the integrated update services use the following external addresses:

Nr.	Zweck	Adresse
1.	Updates bank directories and rules Omikron	https://update.multicash.de
2.	Software updates Omikron	https://SoftwareDistribution.multicash.de
3.	Currency Rates ECB (European Central Bank)	https://www.ecb.europa.eu

5.2 Security Advice

For secure processing we strongly recommend the protection of all machines running the software according to standard IT security recommendations, e.g. [BSI - IT-Grundschutz - BSI IT-Grundschutz-Compendium Edition 2019](#)

The most important measures based on this rulebook are:

SYS.2.1.A2 Separation of Roles

SYS.2.1.A15 Secure Installation and Configuration of Clients

SYS.2.1.A16 Deactivation and Removal of Unnecessary Components and IDs

SYS.2.1.A33 Application Whitelisting (CIA)