Requirements

Way4 Main Technical Requirements

03.53.30

18.08.2021

Contents

The following notation can be used in the document:

- Field labels in screen forms are shown in *italics.*
- Key combinations are shown in angular brackets, for example, <Ctrl>+<F3>.
- Names of screen form buttons and tabs are shown in square brackets, for example, [Approve].
- Sequences for selecting user menu items or context menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: Database => Change password.
- Variables that differ for each local instance, such as directory and file names, as well as file paths are shown in angular brackets, as in <OWS_HOME>.

Warnings and information are marked as follows:

> ⚠️ Warnings about potentially hazardous situations or actions.

> ℹ️ Messages with information about important features, additional options, or the best use of certain system functions.

1   WAY4 architecture
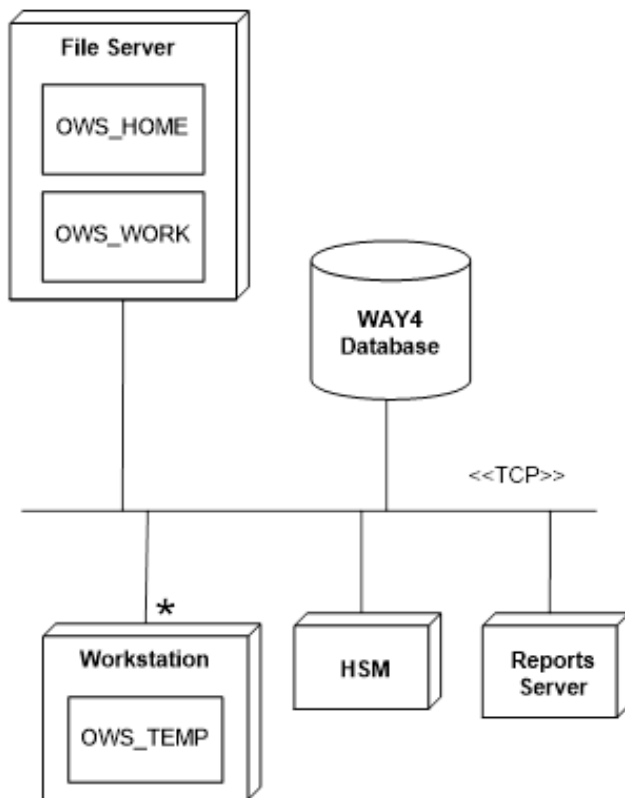
The figure shows WAY4 architecture

Fig. WAY4 architecture

2   Hardware requirements

These requirements are general; they may be revised after analysis during a WAY4 implementation project or server upgrade. These requirements correspond to a standard configuration for 100,000 cards.

2.1   Database server

System architecture	Unix platform, compatible with Oracle Database, with an external disk array
Processor	2 or more, expandable
RAM	2 GB or more, expandable
Disk subsystem	2 internal disks of at least 146 GB External disk array 500 GB, RAID-10, 1000 IOPS or higher
Backup device	Any device that allows regular copying of data volumes corresponding to the disk subsystem size
Software	Hardware must be certified for Oracle Database and the Unix platform
LAN	2 network interfaces, 1000Base-TX Ethernet
Other equipment	DVD ROM drive (writable)
Quantity	2 sets of hardware or a cluster configuration

2.2   Encryption hardware

Technical requirements for encryption hardware are provided in the document "Data Preparation and Key Management Subsystem Main Technical Requirements".

2.3   Workstations

System architecture	Intel PC
Processor	1 CPU Intel 2.0 GHz or higher
RAM	2 GB or more
Disk subsystem	146 GB hard disk
LAN	100Base-TX Ethernet
Other equipment	Monitor, keyboard, mouse
Quantity	The number of workstations is determined by the number of employees

2.4   File server

System architecture	Intel PC
Processor	2 CPU Intel 2.0 GHz or higher
RAM	4GB
Disk subsystem	146 GB SAS, RAID 10
LAN	1000Base-TX Ethernet
Other equipment	Monitor, keyboard, mouse
Quantity	2

When Microsoft Remote Desktop Services is used, hardware requirements are determined by the requirements for this Microsoft product. Accordingly, processor RAM requirements are added for each remote session of the DB Manager application:

- 15 sessions per 1 CPU core
- 64 MB of RAM are added for one user session

2.5   Report server

System architecture	Unix platform, compatible with Oracle Reports Server
Processor	2 or more, expandable
RAM	4 GB or more, expandable
Software	Hardware must be certified for Oracle Reports and the Unix platform
LAN	1000Base-TX Ethernet
Quantity	1

3   Software Requirements

3.1   Database server (standard solution)

> ⚠️ OpenWay hereby confirms that Way4 is compatible to work with the Oracle system of the correpsonding release. Subject to a valid agreement on the provision of the corresponding services and on its conditions, technical support for Way4 systems operated in combination with the specified release of the Oracle system is provided in full only as long as Oracle or its partners provide your company with technical support services for the specified Oracle system release, but in any case no longer than in accordance with the terms of your current contract with OpenWay. The duration of Oracle support services (release life cycle) and related conditions are determined by Oracle. If your company does not have technical support for the specified release of the Oracle system, OpenWay may not be able to fully fulfill its contractual obligations for the technical support of Way4.

Unix operating system (depending on the hardware platform)

Oracle Database Enterprise Edition with "bronze" support, including the following options:

- Oracle Database components: Oracle JVM, Oracle XML DB (installed automatically for Oracle 12c), Oracle Text (required for WAY4 Web)
- Oracle Partitioning
- Oracle Advanced Security Option (recommended for PCI-DSS compliance).
- Oracle Diagnostic Pack.

Supported versions of Oracle Database:

- Oracle 12c 12.1.0.2 with mandatory installation of the latest PSU (Patch Set Update) and patch 21068213 (ORA-04043). This Oracle DBMS version is supported for WAY4 Cards version 03.44 and later with or without Oracle Real Application Cluster (Oracle RAC).
- Oracle 12c 12.2.0.1 with mandatory installation of the latest PSU, patches 25971286 (ORA-04036), 27539876 and 24850493 (Doc ID 2463589.1). This Oracle DBMS version is supported for WAY4 Cards version 03.45 and later without Oracle RAC.
- Oracle 19c with mandatory installation of the latest PSU.

> ⓘ Before updating the DB server to Oracle 19c and using the Housekeeping product, it is necessary to check the sizes of tablespace data files in the *TableSpace Parameters* field of the "Tablespace Group" form (OpenWay → Housekeeping → Configuration → Tablespace Group). The minimum supported data file size is 12 MB for tablespaces with a block size of 32 KB and 7 MB for tablespaces with a block size of 8 KB.
> The Housekeeping product is optional (not included in the basic delivery) and is supplied according to an additional agreement with OpenWay.

For WAY4 Cards version 03.50 and higher, the Oracle Multitenant option is supported with limitation of "Lazy Sys" use:

- For the WAY4 Cards component installed in a pluggable database to be updated in "Lazy Sys" mode, set the parameter NONCDB_COMPATIBLE=true in the database. If the parameter is enabled, only one pluggable database is allowed.
- The sys.ows_administer_user procedure is installed with an additional parameter in which the name of the pluggable database is specified. For more information, see the document "Way4 Upgrade".

Software for backup. Oracle Data Guard or other solution for database backup.

3.2 Database server (economy solution)

The specification must be approved by OpenWay employees.

Unix operating system (depending on the hardware platform)

Oracle Database Standard Edition 2 with "bronze" support, including the following options:

- Oracle Database components: Oracle JVM, Oracle XML DB (installed automatically for Oracle 12c), Oracle Text (required for WAY4 Web)

The following limitations are applicable:

- Oracle Partitioning is not available. WAY4 is installed without partitioning.
- Oracle Advanced Security/TDE is not available. Disk partitions must be encrypted.
- Online rebuild of indexes is not available. WAY4 will be upgraded without online rebuild of indexes.
- Online redefinition of tables is not available. WAY4 Redefinition tool cannot be used.

Supported versions of Oracle Database:

- Oracle 12c 12.2.0.1 with mandatory installation of the latest PSU, patches 25971286 (ORA-04036), 27539876 and 24850493 (Doc ID 2463589.1).
- Oracle 19c with mandatory installation of the latest PSU.

Software for backup.

3.3   Workstations

The following versions of Microsoft Windows are supported:

- Windows 8
- Windows 8.1
- Windows 10
- Windows Server 2012 and Windows Server 2012 R2
- Windows Server 2016
- Windows Server 2019

Oracle JDK (for the number of the required version and description of installation, see the document "Java Commercial Updates for Way4").

Network client for the file server.

Microsoft .NET Framework 4.5 and higher.

Use of Microsoft Software Restriction Policies to set up policies for running DB Manager and WAY4 Manager. For a detailed description of standard WAY4 directories and access privileges for these directories, see the documents "DB Manager User Management" and "WAY4™ User Management".

Oracle Client for the corresponding version of Windows, including ODBC Driver. Supported versions: 12.1, 12.2, 18.3 and 19.3 (for Oracle Database 12c 12.1, Oracle Database 12c 12.2 and Oracle Database 19c).

When using a 64-bit operating system:

- Install the 32-bit version of Oracle Client, otherwise it will not be possible to use ODBC.
- The ODBC source on a 64-bit operating system is configured by running C:\Windows\SysWOW64\odbcad32.exe (32-bit version of the ODBC Administrator tool), and not from "Control Panel".

In the Oracle ODBC Data Source configuration on the "Workarounds" tab, select the checkbox for "Bind TIMESTAMP as DATE". Otherwise, some SQL requests from DB Manager that include date conditions may be executed slowly.

We recommend creating a dedicated report server for generating reports (see "Report server").

3.4   File server

File server supporting SMB, for example, Windows Server (2012 R2, 2016, 2019), Linux Red Hat AS/ES 6/7 with a configured SMB server and others.

The file server must support long filenames and long directory names.

3.5   Report server

Unix operating system (depending on the hardware platform)

Oracle Reports Services 12 as a components of Oracle Fusion Middleware 12g version 12.2.1.2 or later.

4 Personnel requirements

Personnel requirements for working with WAY4 are shown below. The final section of this document shows OpenWay requirements for the period of the system's installation, testing and certification.

4.1 Customer personnel requirements

For WAY4 installed at a bank or processing center to operate correctly, a minimum number of customer employees with certain skills and practical experience is required.

The customer determines the exact number and qualifications of employees, depending on issuing and acquiring volumes. However, to work with WAY4, the following personnel are strongly recommended.

The following general guidelines should be considered when planning for personnel to work with WAY4.

- Employees who work with WAY4 must have the appropriate level of education and relevant practical experience.
- All personnel who work with WAY4 must have completed the appropriate training and certification testing before being granted access to practical work with the system.
- The moral and psychological qualities of each employee should be meticulously examined to prevent possible fraud.
- It is desirable that all employees speak fluent English. All managers and employees engaged in settling accounts and dispute resolution must have good English writing skills.
- Comprehensive training and certification of security personnel, accountants, and hardware and software and telecommunications engineers is mandatory.

4.2 Personnel requirements during installation and upgrade

The following bank employees responsible for installing and upgrading WAY4 must be available during the entire period for installing, upgrading and testing the system:

5 Environmental requirements

WAY4 environmental requirements are shown below.

5.1 Environmental requirements

Environmental requirements (personnel, equipment and premises) that are required for normal operation of WAY4 installed at a bank:

- Database server and communication server
- Computer for plastic card production, with a printer for printing PIN mailers, embosser
- System administrator
- Operators
- Equipment and personnel for voice authorization
- Premises for testing ATMs

The following guidelines must be observed when preparing the premises for installation of WAY4:

- The installation area must be sufficient for the unobstructed movement of hardware and personnel and unobstructed access to all hardware.
- All premises should be located close to each other to ensure ease of communication and prevent security breaches.
- When security restrictions are established for certain premises, the security requirements of international payment systems must be strictly observed.
- All premises must be air-conditioned to prevent overheating of the hardware and to ensure comfortable working conditions.
- Electronic locks must be used for all premises. Premises with card production equipment and servers require special security locks.
- All premises must have the necessary furniture.

5.2 Environmental requirements for the installation period

All environmental requirements must have been met before WAY4 installation begins, including conditions for OpenWay personnel involved in the system's installation.

Computer networks must have been set up before installing the system.