



OPTIMAL SYSTEMS
A KYOCERA GROUP COMPANY

System Requirements

enaio®

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OPTIMAL SYSTEMS GmbH

Cicerostraße 26

D-10709 Berlin

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enaio® System Requirements

The following overview lists the minimum system requirements for the operation of enaio®.

The systems listed have been tested in the listed versions together with this release in the OPTIMAL SYSTEMS release tests and their compatibility has been ensured.

enaio® uses standardized interfaces and integration technologies, meaning that enaio® also works with a wide range of older or more recent versions of the systems listed and with other unlisted systems. OPTIMAL SYSTEMS does not guarantee compatibility for systems not listed in the system requirements and performs its services subject to restrictions (in particular, no damage repair) in accordance with the prevailing maintenance contracts. In addition, OPTIMAL SYSTEMS guarantees compatibility with a listed system up until the date that the manufacturer guarantees regular (for example, not extended, expanded, individually agreed) support.

Moreover, the minimum system requirements describe the minimum and exclusive system equipment needed for a productive enaio® system to provide adequate operational performance. This information is a set of non-binding guidelines. OPTIMAL SYSTEMS can only give a guarantee for a specific system environment on the basis of a customized hardware constellation. Likewise, it can be possible to still have full operational capability of the test systems, demo systems, or systems with only partially used functionality if the minimum system requirements are not reached. Please also note the recommendations on [system sizing](#). Please also note that updates to enaio® can cause the minimum system requirements to be increased.

Virtualization

enaio® can be operated in a virtualized environment as long as it meets the minimum hardware and software requirements. For issues that cannot be reproduced in a native environment with sufficient processing, storage, and disk resources, you need to work with the virtual environment provider to resolve them.

When operating enaio® in a virtualized environment, it is recommended that the resource requirements of all virtual machines are also physically covered by the host. Multiple allocation and the associated overutilization of the host can have a negative impact on system performance if too many virtual machines are heavily used at the same time. The operating unit must find the right settings for resource allocation.

Antivirus Protection

Antivirus applications protect the company's network from external attacks and malware. At the same time, antivirus protection systems influence the performance of applications with frequent access to the file system.

We therefore highly recommend that virus scanners do not scan the enaio® Work and Cache areas. These areas in the file system are exclusively written and read by enaio®.

International Character Sets

enaio® is tested and released for use on Windows operating systems with the Western European code page (Windows code page 1252-Western European) in the release test.

enaio® can be used with code pages other than 1252 and is supported by OPTIMAL SYSTEMS in accordance with the maintenance contracts and, in particular, guarantees bug fixing if the system has been tested and approved by the customer before going live. The code page used must be used on all computers involved in data processing in connection with enaio®, particularly user computers, enaio® server, and database servers. Use in infrastructures with different code pages is not supported.

Note: The option: 'Beta: Use Unicode UTF-8 for worldwide language support' in Windows 10 Regional Options can lead to display errors.

Databases

enaio® requires a relational database instance to store and manage index data and documents. We highly recommend providing enaio® with an exclusive database to ensure performance. Access by third-party programs to the data structures and data managed by enaio®, particularly extending the database to include other database objects (tables, views, etc.) and manipulating existing database objects (tables, indexes, etc.) is not permitted.

The system prerequisites for the individual manufacturers must be observed for operation of the relevant database system.

Note: • A database user with the 'db_owner' role is required.

- The same sorting mechanisms must be configured for relational operators and sort operators. They are entered in the NLS_SORT/NLS_COMP values for Oracle databases. This sorting should generally be configured in binary mode.

The following databases are supported:

DBMS	Version	ODBC driver
Microsoft SQL Server	2014 (32- and 64-bit)	SQL Server (default driver of the operating system)
	2016 (64-bit)	SQL Server (default driver of the operating system)
	2017 (64-bit)	SQL Server (default driver of the operating system)
	2019 (64-bit)	SQL Server (default driver of the operating system)
	2022 (64-bit)	SQL Server (default driver of the operating system)
	Note: • If you are using Microsoft SQL Server in a Unicode installation, you must use the sort order 'Latin1_General_100_CI_AS_WS' for the database; for an Ansi installation, you must use 'Latin1_General_CI_AS'.	

DBMS	Version	ODBC driver
Oracle DB Server	19c (32- and 64-bit)	19.19 (Oracle) – 32- and 64-bit
<p>Note: • The following registry entry must be added to the <code>DataBase</code> key for Oracle databases with native Oracle ODBC driver:</p> <p>String: <code>AlternativeODBC</code> / value: 1</p> <p>• Unicode character sets are not supported for Oracle databases. If Unicode character sets are used, we cannot guarantee proper functionality of the system. For example, the following character sets can be used: <code>WEMSWIN1252</code> or <code>WE8ISO8859P15</code>.</p>		

enaio® requires a high-performance network connection for the database. The database memory should be dimensioned in such a way that all database indexes can be stored there. At least 4 GB of memory and two exclusive processor cores are recommended.

As a general guideline, it takes about 1 GB of memory per one million saved objects in order to have rapid access to the indexes.

The settings for configuration and installation of the respective virtualization software must be observed when virtualizing the database.

enaio® server

enaio® server must be run on a Windows server operating system. For this reason, you need to take into consideration licenses for the operating system. The same system requirements apply to load balancing scenarios. It is assumed for all operating systems that necessary security patches provided by the manufacturer are promptly installed. For installations at distributed locations, recommend checking and measuring the data throughput and latency of the network, in particular between the application server and RDBMS in order to verify its suitability in project scenarios.

Operating Systems

The following operating systems (including the service pack level) are supported by enaio®:

Operating system	Version	Service pack
Windows Server 2016	Standard Edition 64-bit	
Windows Server 2019	Standard Edition 64-bit Datacenter 64-bit	
Windows Server 2022	Datacenter 64-bit Standard 64-bit	
Windows Server 2025	Datacenter 64-bit Standard 64-bit	

enaio® supports server operating systems from the Long Term Servicing Channel (LTSC). Server operating systems from Microsoft's Semi-annual Channel are not supported for use with enaio®. Operating systems that are no longer supported by Microsoft are not supported. The Core versions of the Microsoft server are not supported.

Other Components

The following components have to be installed and must work properly to ensure secure and correct operation of enaio® server:

Component	Parameter/value	Comment
Connection to database	Local or via high-speed network (1 Gbit)	Please make sure there is enough memory available for local database operation.
Connection to storage media	Local or via high-speed network (1 Gbit) for work, cache, and archive media.	
Storage media	Latency period <=60 ms	
Data backup	A backup of the Work area and the database has to be executed on a regular basis.	
Network connection for client applications	At least 100 Mbps	

Hardware Requirements

enaio® can be configured in many ways and covers an extremely wide field of application from small to very large systems.

The listed requirements are the minimum for the minimum and exclusive system equipment needed for a productive enaio® system to provide adequate operational performance for approximately 50 users in an average office scenario with average data processing.

Updates to enaio® may result in the minimum system requirements being increased. Keep this in mind when planning the sizing of the system.

This information is a set of non-binding guidelines. OPTIMAL SYSTEMS can only give a guarantee for a specific system environment on the basis of a customized system concept, which we absolutely recommend. Please also note the recommendations on [system sizing](#).

Likewise, it can be possible to still have full operational capability of the test systems and demo systems if the minimum system requirements are not reached.

The requirements are based on the assumption that the corresponding resources (memory, processor cores) are solely used by the relevant services, that is, they are not used by the operating system and other components that are installed on the hardware unit. If different services are operated on a shared hardware platform, the relevant values must be totaled (memory/storage, processor cores).

Parameter	Value	Comment
enaio® server	Exclusive memory: 8 GB Processor cores: 2	Address space up to 4 GB is available
enaio® appconnector	Exclusive memory: see below Processor cores: 2 Storage: 100 GB	
'Search' and 'Index' services	Exclusive memory: see below Processor cores: 2 Storage: 200 GB Operating system environment: 64-bit	

Parameter	Value	Comment
enaio® documentviewer / enaio® rendition- plus	Exclusive memory: see below Processor cores: 4 Online cache: >100 GB; see comment	About 1 MB of storage is necessary for each document (8 pages). For example, 100 GB of storage are required if 100,000 documents are to be cached.
enaio® gateway	Exclusive memory: see below Processor cores: 2 to 4 Storage: 100 GB	
enaio® service- manager	Exclusive memory: see below Processor cores: 4 Data storage: >100 GB	
'ocr' service	Exclusive processor core (s): 1 to 4	1 processor core is supported by the integrated ABBYY FineReader Engine by default. 1 to 4 can be connected through acquisition of additional licenses. OCR throughput is approximately 6 to 10 seconds per processor core.

Parameter	Value	Comment
elasticsearch	Exclusive memory: see below Processor cores: 2 to 4 Storage: 400 GB Operating system environment: 64-bit	As for indexing, fast internal memory is important for this server. We recommend having storage with 25% of the size required for all text documents to be indexed in the system.

The enaio® services setup installs an Apache Tomcat and a JAVA JDK for each service. Separate product requirements apply for both. HTTP ports are reserved by the enaio® services setup and must not be used by other applications. The setup determines and assigns available shutdown ports.

All services have to be configured as follows in each installed instance:

Service	Description	Memory	Port
enaio® documentviewer / enaio® rendition-plus	Document display and conversion component	1024 MB	8070
enaio® appconnector	REST service	1024 MB	8060
enaio® gateway	Central proxy and authentication function	256 MB	80
'license' service	Manages preconfigured licenses and controls the assignment to clients	128 MB	7371
EMS service 'mailstorage'	Creating e-mails	384 MB	7361
'extraction' service	Extracts XMP and meta data from files	256 MB	7211

Service	Description	Memory	Port
'ocr' service	OCR in conjunction with ABBYY FineReader	512 MB	7241
'search' service	Microservice for the full-text search	2048 MB	8040
'index' service	Microservice for full-text indexing	2048 MB	8045
'discovery' service	Services registry	128 MB	7261
'admin' service	Microservice for service administration	128 MB	7273
'argus' service	Microservice for service monitoring	128 MB	7281
'dms' service	Microservice for document management	4096 MB	7981 – 7989
'office365-client' service	Microservice for the Office 365 integration	1024 MB	8099
'office365-dashlet' service	Microservice for the Office 365 integration	256 MB	8091
'repositorymanager' service	Microservice for the SAP® connection	1024 MB	8010
'repositorymanager-archivelink' service	Microservice for the SAP® ArchiveLink connection	512 MB	8092
'repositorymanager-ilm' service	Microservice for the SAP® ILM connection	512 MB	8094
'archive' service	Microservice for connecting to storage systems	768 MB	7530
'consistencycheck' service	Microservice for periodically checking the full-text index	2048 MB	8047
'migration' service	Microservice for migrating the index in projects	2048 MB	8048

Service	Description	Memory	Port
'msteams-client' service	Microservice for the connection to Microsoft Teams	1024 MB	7111
'msteams-actions' service	Microservice for the connection to Microsoft Teams	1024 MB	7112
'osweb' service	Microservice for the webclient backend	1024 MB	7900
'restdashlet' service	Microservice for integrating dashlets	256 MB	8282
'massmtp' service	Microservice for enaio® mail-archive-service	512 MB	8110
'masmailbox' service	Microservice for enaio® mail-archive-service	512 MB	8120
'masstorage' service	Microservice for enaio® mail-archive-service	512 MB	8130
'data-transfer' service	Microservice for enaio® data-transfer-ng and enaio® template-editor	1024 MB	7333
'users' service	Microservice for user administration	512 MB	7990 to 7999
'classify-pro' service	Microservice that transfers documents and data between enaio® and Insiders Cloud to extract metadata using AI.	512 MB	7580

An Elasticsearch service with version 7.17.8 is installed for full-text indexing. This is configured as follows:

- Memory: 2048 MB/port: 8041

Office documents are only shown in enaio® documentviewer in high quality if Microsoft Office (2016, 2019, 2021, Office 365 – on-premises, 32-bit or 64-bit) has been installed with enaio® rendition-plus on the computer. enaio® documentviewer does not need Microsoft Office to work.

Ghostscript must be installed to generate TIFF files from the PDF format.

Due to license requirements, Ghostscript must be installed separately.

Note: For security reasons, you need Ghostscript version 10.05.0 or later.

Services and User Account Control

- The Windows service user must be a local administrator in Windows.
- If the Windows service user is 'local system', then network shares cannot be accessed and further restrictions by Windows are to be expected.
- The user account control cannot be set to the maximum level; otherwise, the enaio@components cannot work.

Windows cannot determine at maximum level whether a service or process is running.

Client Workstations

Administration, scanning, and user workstations are part of client workstations.

Operating Systems

Note: Operating systems that no longer receive extended maintenance from Microsoft are not supported. **Windows 8.1** has not been in [extended maintenance](#) at Microsoft since January 2023 and is therefore no longer supported.

Name	Version	Service pack	Comment
Windows 10	Pro, Enterprise 32- and 64-bit		
Windows 11	Home and Pro, Enterprise and Education 64-bit		
Citrix Virtual Apps and Desktops	2203 LTSR	≤ CU1	A sufficient number of GDI handles and sufficient memory are required for client operation. Statements regarding the compatibility of rollout packages cannot be made here.

enaio® supports client operating systems from the Semi-annual Channel. Client operating systems from Microsoft's Long Term Servicing Branch are not supported for use with enaio®.

Hardware Requirements

The system requirements for the operating system and any third-party components need to also be taken into account for the hardware equipment.

Parameter	Value	Comment
Screen resolution	1280 x 1024 pixel (min.)	
Memory	2 GB exclusively, 256 MB available	
Local hard disk storage	At least 2 GB available	For cache
Network connection	At least 100 Mbps	
Processor	Processor or SOC with 1 GHz or faster	
Peripherals	Mouse and keyboard	
Card reader and signature cards	In accordance with the recommendations by D-TRUST, FP/Sign	For electronic signatures

Client Components

Software components for client workstations

Component	Parameter	Value	Comment
Browser	Edge Chromium	Latest version	JavaScript must be enabled and cookies permitted in the Internet settings.
	Firefox	Latest version	JavaScript must be enabled and cookies permitted in the Internet settings.
	Chrome	Latest version	JavaScript must be enabled and cookies permitted in the Internet settings.
	Safari	Latest version	JavaScript must be enabled and cookies permitted in the Internet settings.
Microsoft Office versions for enaio® Office Add-In NG	Word, Excel, PowerPoint	2016, 2019, 2021, 2024, Office 365 ClickToRun (local)	For Microsoft Office 2016, 2019, 2021, 2024, Office 365 ClickToRun (local), the 64-bit version is also supported. Only the fully locally installed versions are supported (particular attention needed in the case of Office 365).

Component	Parameter	Value	Comment
Microsoft Outlook for enaio® Outlook Add-In NG	Microsoft Outlook	2016, 2019, 2021, 2024, Office 365 ClickToRun (local), Office 365	For Microsoft Outlook 2016, 2019, 2021, 2024, and Office 365, the 64-bit version is also supported. The enaio® Outlook Add-In NG is supported in conjunction with Microsoft Exchange, IMAP, and POP3 mailboxes. Only the fully locally installed versions are supported (particular attention needed in the case of Office 365). The 'New Outlook for Windows' is not supported.
Microsoft Outlook for enaio® search NG	Microsoft Outlook	2016, 2019, 2021, 2024, Office 365 ClickToRun (local)	Only the fully locally installed versions are supported (particular attention needed in the case of Office 365). The 'New Outlook for Windows' is not supported.
Novell/Micro Focus GroupWise for enaio® GroupWise Add-On NG	Novell/Micro Focus GroupWise	18.4.2, 18.5.0	

Component	Parameter	Value	Comment
Microsoft Exchange for enaio® exchange	Microsoft Exchange	2016, 2019	For Microsoft Exchange 2016 and 2019, the 64-bit version is also supported.
Kofax VRS	Kofax Engine	5.2	For enaio® capture Note: enaio® client Unicode only supports TWAIN for scanning.
Windows Media Player			For use with M modules (multimedia files)
Softerra LDAP browser		4.5	LDAP-S components for XSLT directory synchronization

Mobile Applications

enaio® mobile for Smartphones and Tablets

enaio® mobile is supported on the following mobile platforms:

Operating system	Version
iOS	<p>iOS version:</p> <ul style="list-style-type: none">• Minimum: version 17• Recommended: latest iOS version
Android	<p>Android version:</p> <ul style="list-style-type: none">• Minimum: version 13 (API Level 33)• Recommended: latest Android version

enaio® app for Smartphones and Tablets

enaio® app is supported on the following mobile platforms:

Operating system	Version
iOS	<p>iOS version:</p> <ul style="list-style-type: none">• Minimum: version 12
Android	<p>Android version:</p> <ul style="list-style-type: none">• Minimum: version 4.0.3 (API Level 15) <p>Note: The Android version will no longer be available in the Google Play Store starting in November 2023. Contact Product Management.</p>
Windows	<p>Windows version:</p> <ul style="list-style-type: none">• Minimum: version 10



OPTIMAL SYSTEMS
A KYOCERA GROUP COMPANY

Head office

Cicerostraße 26

10709 Berlin

Telefon: +49 30 895708-0

kontakt@optimal-systems.de