

Introduction

The following overview gives the minimum system requirements to operate the enaio® Enterprise Content Management system.

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

enaio® uses standardized interfaces and integration technologies so it can work with many older or newer versions of the systems listed and with systems other than those listed. 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 (e.g. not extended, expanded, individually agreed) support.

Moreover, the minimum system requirements describe the 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. Equally, not reaching the minimum system requirements while still having full operational capability with test systems, demo systems or systems with only partially used functionality can be possible.

Databases

enaio® requires a relational database instance to store and manage index data and documents. To ensure performance, we highly recommend supplying enaio® with an exclusive database. Access by third-party programs to the data structures and data managed by enaio®, particularly extending the database to include other database objects (tables and views etc.) and manipulating existing database objects (tables and indexes etc.) is not permitted. For operation of the relevant database system, the system prerequisites for the individual manufacturers must be observed.

A database user with the role 'db_owner' is required.

The following databases are supported:

DBMS	Version	Operating system DB server	ODBC driver	Comment
Microsoft SQL Server	2012 (32 and 64 bit)	Windows 2008 R2 64 bit	6.02.9200.16384 (Microsoft SQL Server) 2011.110.2100.60 (Microsoft SQL Native Client 11.0)	
	2012 (32 and 64 bit)	Windows 2012 64 bit	6.02.9200.16384 (Microsoft SQL Server) 2011.110.2100.60 (Microsoft SQL Native Client 11.0)	
	2014 (32 and 64 bit)	Windows 2012 64 bit	6.02.9200.16384 (Microsoft SQL Server) 2014.120.2000.08 (Microsoft SQL Native Client 11.0)	
	2016 (32 and 64 bit)	Windows 2016 64 bit	2015.130.811.168 (MS ODBC Driver 13 for SQL Server) 10.00.14393.00 - SQL Server	
	2017 (32 and 64 bit)	Windows 2016 64 bit	2015.130.811.168 (MS ODBC Driver 13 for SQL Server) 10.00.14393.00 - SQL Server	
	2017 (32 and 64 bit)	Windows 2019 64 bit	2015.130.811.168 (MS ODBC Driver 13 for SQL Server) 10.00.14393.00 - SQL Server	
Oracle DB Server	12c R2		12.2.0.1 (Oracle) – 32 bit	

Unicode character sets are not supported for operating Oracle databases. If Unicode character sets are used, we cannot guarantee correct functionality of the system. For example, WEMSWIN1252 or WE8ISO8859P15 can be used as character sets.

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

As a general guideline, about 1 GB of memory is required for 1 million saved objects in order to have instant access to the indexes.

If the database is virtualized, the settings for configuration and installation of the relevant virtualization software must be observed.

Application Server

The enaio® application server must be run on a Windows server operating system. Therefore, licenses for the operating system may have to be considered. 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 disparate locations, it is recommended to check and measure 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	Comment
Windows Server 2008	Standard Edition 32 bit	2	
Windows Server 2008	Standard Edition 64 bit	2	
Windows Server 2008 R2	Standard Edition 64 bit	1	
Windows Server 2012	Standard Edition 64 bit		
Windows server 2012 R2	Standard Edition 64 bit		
Windows Server 2016	Standard Edition 64 bit		
Windows Server 2019	Standard Edition 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®.

Additional Components

To ensure secure and correct operation of the application server, the following components have to be installed and must work properly:

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.	See Storage Guide.
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 Mbit	

Hardware Requirements

As an Enterprise Content Management system, enaio® is highly configurable and covers an extremely wide field of application from small to very large systems.

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

Equally, not reaching the minimum system requirements while still having full operational capability with test systems, demo systems or systems with only partially used functionality can be possible.

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

Parameters	Value	Comment
enaio® server	Excl. working memory: 2 GB Processor cores: 2	Address space up to 4 GB is available (64 bit)
Web server for enaio® webclient	Excl. memory: see below Processor cores: 2 Storage: 100 GB	
enaio® appconnector	Excl. memory: see below Processor cores: 2 Storage: 100 GB	
Services 'index' / 'search'	Excl. memory: see below Processor cores: 2 Storage: 200 GB Operating system environment: 64 bit	
enaio® documentviewer/ enaio® renditionplus	Excl. 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, if 100,000 documents are to be cached, 100 GB of storage are required.
enaio® gateway	Excl. memory: see below Storage: 100 GB	
enaio® service-manager	Excl. memory: see below Processor cores: 4 Data storage: > 100 GB	
Service 'ocr'	Excl. Processor core: 1 – 4	1 processor core from the integrated ABBYY FineReader Engine is supported as standard. 1-4 are connectable through other licenses. OCR throughput is approx. 6-10 secs per processor core.
Elasticsearch	Excl. memory: see below Processor cores: 2-4 Storage: 400 GB Operating system environment: 64 bit	As for the index, fast internal memory is important for this server. Storage is recommended to have 25% of the size required for all text documents to be indexed in the enaio® system. During an update, the VTX database doubles in size.

For each service the enaio® setup installs an Apache Tomcat and a JAVA JDK. Distinct 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	HTTP port
enaio® documentviewer and enaio® renditionplus	Document display and conversion component	1024 MB	8070
enaio® appconnector	REST service and enaio® detailsviewer	1024 MB	8060
enaio® webservice	API web service interface service	512 MB	8050
enaio® gateway	Central proxy and authentication function	256 MB	80
enaio® webclient	Web server for enaio® webclient	1024 MB	The port is defined during the installation.
Service 'license'	Manages preconfigured licenses and controls the assignment to clients	128 MB	7371
Service 'mailstorage'	Archives e-mails in connection with the MS Outlook NG Add-In	384 MB	7361
Service 'extraction'	Extracts XMP and meta data from files	256 MB	7211
Service 'ocr'	OCR only in connection with ABBYY FineReader	512 MB	7241
Service 'search'	Microservice for the full-text search	2048 MB	8040
Service 'discovery'	Services registry	64 MB	7261
Service 'admin'	Monitor for service monitoring	64 MB	7273
Service 'messaging'	internal message service	512 MB	7311
Service 'index'	Microservice for the full text indexing	2048 MB	8045

For the operation of enaio® fulltext an Elasticsearch service, version 6.2.4 is installed. This is configured as follows:

Service	Description	Memory	HTTP port
Elasticsearch	Full text database for enaio® fulltext	2048 MB	8041

The enaio® microservices 9.0 can only be run in 64-bit environments. An update of earlier versions in 32-bit environments is not performed by the setup. This also applies to the update of the enaio® fulltext.

Office documents are only displayed in high quality with enaio® documentviewer if Microsoft Office has been installed on the computer with enaio® renditionplus. The following versions of Microsoft Office can be used: Microsoft Office 2010 (32-bit), Microsoft Office 2013 (32-bit), Microsoft Office 2016 (32-bit). In principle, enaio® documentviewer can also be used without Microsoft Office. For TIFF creation from files in PDF format Ghostscript version 8.6 or later (32 bit) has to be installed additionally.

Client Workstations

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

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Operating Systems

Name	Version	Service pack	Comment
Windows 7	Professional, Enterprise 32 and 64 bit	SP 1	<p>Basically, enaio® components are 32 bit versions. Product components by enaio® integrating into applications of the operating system (e.g., enaio® filesystem plugin) do not work in 64 bit versions of these programs.</p> <p>In order to install the enaio® printer driver in silent mode on Window 7 SP1 and Windows patch KB2921916 are required. Without KB2921916, a Windows dialog appears at installation.</p>
Windows 8.1	Standard, Professional, Enterprise 32 and 64 bit		<p>Basically, enaio® components are 32 bit versions. Product components by enaio® integrating into applications of the operating system (e.g., enaio® filesystem plugin) do not work in 64 bit versions of these programs.</p>
Windows 10	Pro, Enterprise 32 und 64 Bit		<p>Basically, enaio® components are 32 bit versions. Product components by enaio® integrating into applications of the operating system (e.g., enaio® filesystem plugin) do not work in 64 bit versions of these programs.</p>
Citrix XenApp for Windows	7.15 LTRS		<p>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.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>enaio® webclient as a desktop application is not approved for use with Citrix.</p> </div>

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

Parameters	Value	Comment
Screen resolution	At least 1280 x 1024 pixel	
Memory	At least 1 GB, 256 MB available	
Local hard disk storage	At least 1 GB available	For cache
Network connection	At least 100 Mbit/s	
Processor	Pentium 4 or higher	
Peripherals	Mouse and keyboard	
Card reader and signature cards	According to recommendations, SecSigner (SecCommerce AG) or MDOC Autosigner (Mentana Claimsoft AG)	For electronic signatures

Additional Software Components

Component	Parameters	Value	Comment
Browser	Edge	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.
	Java script	Version 2.0 or later	
MS Office versions for enaio® office-utilities	MS Office	2010, 2013, 2016	For MS Office 2010, 2013, and 2016, the 64 bit version is also supported. ClickToRun installations are not supported.
MS Office versions for enaio® Office add-in NG	Word, Excel, PowerPoint	2010, 2013, 2016, 2019, Office 365 ClickToRun (local)	For MS Office 2010, 2013, 2016, 2019, 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).
Adobe Acrobat versions for enaio® Acrobat Utilities	Adobe Acrobat	Adobe Acrobat pro 2017	
MS Outlook for enaio® Outlook add-in	Microsoft Outlook	2010, 2013, 2016	For MS Outlook 2010, 2013, and 2016, the 64 bit version is also supported.

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			The MS Outlook add-ins are only supported in conjunction with MS Exchange.
MS Outlook for enaio® Outlook add-in NG	Microsoft Outlook	2010, 2013, 2016, 2019, Office 365 ClickToRun (local)	For MS Outlook 2016, the 64-bit version is also supported. The enaio® Outlook NG add-in is supported in conjunction with MS Exchange, IMAP, and POP3 mailboxes. Only the fully locally installed versions are supported (particular attention needed in the case of Office 365).
MS Outlook for enaio® search	Microsoft Outlook	2010, 2013, 2016, 2019, Office 365 ClickToRun (local)	Only the fully locally installed versions are supported (particular attention needed in the case of Office 365).
Novell / Micro Focus GroupWise for enaio® GroupWise NG add-in	Novell / Micro Focus GroupWise	2012.0.0.0, 14.0.0 27.03.2014 build number 115243, Groupwise 2018	
MS Exchange for enaio® Exchange	Microsoft Exchange	2010, 2013, 2016, 2019	For MS Exchange 2010, 2013, and 2016, the 64-bit version is also supported.
Kofax VRS	Kofax Engine	4.50 to 5.1	
Windows Media Player			For use of M modules (multimedia files)

Mobile Applications

enaio® mobile for smartphones and tablets

enaio® mobile is supported on the following mobile platforms:

Operating system	Version
iOS	iOS 11 or later At least 2 GB of working memory (Hardware results from iOS version)
Android	Minimum requirements: Version 5.1.1 or later Working memory: 2 GB Recommended requirement Version 8.0 or later Working memory: 4 GB

enaio® app for smartphones and tablets

enaio® app is supported on the following mobile platforms:

Operating system	Version
iOS	Version 7.1 or later
Android	Version 4.0.3 (API Level 15) or later
Windows	Version 10 or later

Information on unsupported Systems and Versions

Systems and old versions of systems are no longer supported with version 9.0. Please consult the document "enaio® end-of-life – Discontinuations – Lifecycles."

Virtualization

enaio® can be operated in a virtualized environment as long as it meets the minimum hardware and software requirements. For issues that can not 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. Operating enaio® in a virtualized environment with shared CPU and storage resources is not supported.

Antivirus Protection

Antivirus applications protect the company's network from external attacks and malware. At the same time, virus scanners 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 of the file system are written and read only by enaio®.

International Character Sets

enaio® is tested and released for use on Windows operating systems with the West European code page (Windows code page 1252-West 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 particularly 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 server. Use in infrastructures with different code pages is not supported.