

Software Product Information

Fabasoft Folio 2020 Update Rollup 5

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1 Fabasoft Folio

Fabasoft Folio implements the uniform, reliable and controlled management of all digital content in the enterprise.

Gartner Inc. placed Fabasoft in the "Magic Quadrant" for Enterprise Content Management in October 2009. This is one of the most important global market studies for ECM software. Fabasoft is consequently among the top global players for Enterprise Content Management. According to Gartner, Fabasoft Folio is a cutting-edge software product characterized by an outstanding and comprehensive set of ECM capabilities:

- Certificated auditing acceptability, Compliance and Information Governance. Fabasoft is certificated by ISO 27001 and SAS 70 Type II.
- Quality, Usability and Style. The American analysts "CMS Watch" describes in the "CMS Watch ECM Report 2010" the Fabasoft Folio Web 2.0 User Interface as one of the best currently available.
- Agility in product development and client projects. For many years Fabasoft has been emphasizing the agile project management method "Scrum". Quarterly product releases in highest possible product quality ("Zero Known Defects") guarantee additional customer value.
- Secure investment due to consistent platform independence and openness. Fabasoft Folio supports Microsoft Windows Platforms as well as Open Source Platforms. The open, platform independent Service Oriented Architecture provides easy and efficient integration into existing system landscapes via web services.
- Time and money saving introduction in an organization by using "Software as a Service". Fabasoft controls Fabasoft Folio via the European Fabasoft electronic data processing centers.

1.1 Product Editions

The product capabilities are bundled by product editions.

1.1.1 Fabasoft Folio Enterprise

Fabasoft Folio Enterprise provides for reliable capturing and storage of all digital business records. The product features informal collective cooperation and furthers the implementation of agile business processes with workflow.

The explosive increase of electronic business information is only manageable with appropriate tools such as Fabasoft Folio Enterprise. Capturing all digital business records is the prerequisite and the foundation for the implementation of agile business processes. Agility means informal collective cooperation. Agility also means using workflow for routine tasks and for formal corporate processes.

1.1.2 Fabasoft Folio Compliance

Fabasoft Folio Compliance provides for the implementation and traceable completion of concrete corporate compliance requirements. Compliance Management means establishing conformity with legal requirements, trade- and industry-specific norms and standards as well as internal guidelines. Fabasoft Folio Compliance supports Compliance Management through the management of policies and the establishment of concrete compliance requirements. Revision-safe archiving solutions (e.g. EMC Centera) for audit-proof archiving of business records are incorporated in the product, thereby creating the basis for digital audits.

1.1.3 Fabasoft Folio Governance

Fabasoft Folio Governance provides for the uniform, proper and safe capture and archiving of all digital business records.

Fabasoft Folio bundles business records into files and business cases. Unmistakable business codes make sure nothing goes astray. Fabasoft Folio takes over the cumbersome tasks such as the proper capture and archiving of business records.

1.2 Provided Product Services

Provided product services and product characteristics of Fabasoft Folio are defined in this Software Product Information (SPI). This SPI's structure is based on the standard ISO/IEC 10746. This standard describes a generally applicable Reference Model of Open Distributed Processing (RM-ODP). The essential product characteristics are defined by four different viewpoints:

Viewpoint	ISO/IEC 10746 Viewpoint	Description
User benefits	Enterprise Viewpoint	Defines product services for user purposes through application areas and Use Cases.
Interfaces and Development	Computational Viewpoint	Defines the product's software architecture and the interfaces for application development.
Reference Architecture and Installation	Engineering Viewpoint	Defines reference architecture and system requirements for the product installation.

The product only supports features defined in this document.

1.3 Scope of Supply

The product's scope of supply includes:

Product Component	Short Description	Language
Product software	Installable product software.	German, English
Software Product Information (SPI)	Document defining the product characteristics.	German, English
User documentation	Documentation for users.	German, English
Whitepapers	Technical Whitepapers for product installation.	German, English

2 Product Services for User Purposes

2.1 Web Browser User Interface

2.1.1 Working in the Web Browser User Interface

Web 2.0 (AJAX) Technologies for Usability and Style

The web browser user interface of the product leverages Web 2.0 (AJAX) technology which provides better usability and style for the user.

Web Browser as a Familiar User Interface

The user interface of the product is provided in a web browser for all target user groups. Users who are familiar with a web browser interface will very soon familiarize themselves to the Fabasoft Folio's user interface.

Navigation via Breadcrumbs

With the breadcrumb function Fabasoft Folio provides an elegant navigation tool, making it easier for the user to navigate around.

Breadcrumbs are a navigation aid, which displays the path to the current object. This type of navigation improves the orientation within deeply branched trees. Several items on the path can be directly accessed by clicking on them.

By clicking the arrow icon, all elements of the path are listed in a navigation list, even those which are not displayed in the horizontal list due to shortage of space.

Enterprise Content Accessible at Any Time, From Anywhere, and With Different Devices

Fabasoft Folio does not require any client installation; the user interface is provided as a "Thin Client" in the Web Browser. The cutting-edge web architecture of the product ensures that the digital content of the enterprise can be accessed at any time, from anywhere, with different user devices.

Thumbnail View

Fabasoft Folio provides an elegant content preview based on thumbnails. This can be used to browse through a list of business objects by looking at the content preview.

Multilingual User Interface

The product has a multilingual user interface and allows users to work with the product in different languages within one installation without closing and re-opening the application. The product is available out-of-the-box in fifteen languages (Bulgarian, Croatian, Czech, English, French, German, Hungarian, Italian, Portuguese, Romanian, Russian, Slovenian, Slovak, Serbian, and Spanish).

One Universal User Interface for All Application Areas

The product provides one universal user interface for all application areas: there are no separate clients for particular application areas.

The Electronic Desk as the Standard User Interface

The electronic desk is the standard user interface for a user, providing the look and feel of a Microsoft Windows explorer which is a familiar working environment for many users. Instead of directories and data sets the electronic desk displays hierarchical structured business objects. The content of the selected business object is displayed in the list view.

Flexible and Quick Definition of Columns in the List View

Columns in the list view can be defined quickly by a user via graphic symbols in the column title. Columns can be added, removed or moved in position. The column selection list is context sensitive, based on the type of business object selected in the list view.

List View Sorting With Combined Columns

Columns can be sorted by clicking on the column title. Combined column sorting is also supported.

List View Grouping

Columns can be grouped by clicking on the column title. Groups of list entries can be expanded and collapsed.

Editable Columns in a List View

Property columns can be edited directly in a list view. This allows for the quick editing of business object properties without opening a form.

Drag-and-Drop Support in the Web Browser

The product supports drag-and-drop in the web browser user interface. This is particularly useful for importing content into the product.

Keyboard Based User Interaction

Fabasoft Folio supports user interaction with the keyboard.

Accessibility

Accessibility is a basic concept of Fabasoft Folio. To enable working with assistive technologies like screen readers or screen magnifiers Fabasoft Folio follows following standards:

- Accessible Rich Internet Applications (WAI-ARIA) 1.0
- Web Content Accessibility Guidelines (WCAG) 2.0, ISO/IEC 40500:2012, Conformity Level AA
- ISO 9241-171:2008 Guidance on software accessibility

Following screen readers are recommended for the use with Fabasoft Folio:

- Microsoft Windows
 - NVDA (NonVisual Desktop Access) with Mozilla Firefox
 - JAWS 2018 with Microsoft Internet Explorer
- Apple iPhone/iPad
 - VoiceOver (Fabasoft Folio App)
- Android
 - TalkBack (Fabasoft Folio App)

Note: VoiceOver and TalkBack provide only a restricted support for WAI-ARIA. Consequently, the Fabasoft Folio web browser user interface cannot be used with these screen readers.

Accessibility Exceptions

The following functionality is restricted or not accessible:

- BPMN Editor
- Document View
- Content of Widgets

- New Events in Teamrooms
- Adjusting Images
- Adjusting Screenshots (Support Button)
- Menus in List Cells
- Manual Sorting of Lists

You can find more information about the restrictions and alternatives in the user help in the chapter "Accessibility Exceptions".

Use Cases for Working in the Web Browser

- How to Start the Fabasoft Folio Web Client
- How to Exit the Fabasoft Folio Web Client
- Portal Header
- Navigation Bar
- Menu Bar
- Tree View
- Detail View
- How to Work With Buttons
- How to Work With Shortcuts
- Customizing the Fabasoft Folio Web Client
- Optimizing the Web Browser Configuration
- Displaying the Account Activity

2.1.2 Web Folder Access

Mounting Fabasoft Folio as a Network Drive on the Desktop

Fabasoft Folio can be mounted as a Web Folder network drive on the desktop. This allows for the access of business objects in a Windows explorer without using the Fabasoft Folio web browser client.

Use Cases for Web Folder Access

- Creating an object
- Deleting an object
- Copying an object
- Editing an object

2.1.3 Working with Objects

Uniform Business Object Model

The product implements a business object model which covers all the application areas and the complete functionality of the product, thereby ensuring a uniform and integrated product appearance and avoiding a conglomerate of diverse applications which need to be glued together.

Uniform Working Paradigm Based on Business Objects

Any type of information which can be processed by the product is represented by a business object. Handling business information is therefore based on the same working paradigm: creating, reading, editing and deleting business objects.

Business Objects From Units of Higher Business Semantics

A business object encapsulates structured and unstructured information and forms a unit of higher business value. Examples: Contracts, Invoices, Business Files, Users, Organizations.

Transactional Model for Consistency and Actuality

The product's transactional model ensures that each edit access for a business object is executed in the course of a transaction. Thereby each business object holds consistent and up-to-date information at all times.

Object Pointer Concept for Multi-Referencing of Business Objects

The object pointer concept of the product allows users to have multiple references to a particular object on other user desks by means of object pointers. All the object pointers of a particular business object reference the same business object which is physically persisted only once on a server. A new object pointer can be created, for instance, via searching business objects, or by sending a business object via e-mail to other users.

Navigating a Network of Interlinked Business Objects

Object pointers can be stored as business object property values (as a single object pointer value or as a list of object pointers). This allows navigation in a network of interlinked business objects.

Use Cases for Working With Objects

- Creating an Object
- Deleting an Object
- Using the Wastebasket
- Copying an Object
- Pasting a Duplicate
- Pasting an Original
- Cutting/Dragging an Object
- Duplicating an Object
- Removing an Object
- Locating the Object Position
- Working Together with Objects
- Launching the Property Editor
- Editing Properties Directly
- View as PDF
- Display Properties
- Editing Common Properties
- Comparing Properties
- Renaming an Object
- Opening an Object
- Reading a Document

- Showing the History
- Navigating in an Object

2.1.4 Executing Use Cases

Uniform Use Case Model

A use case is defined as a sequence of use case steps which are executed by a user of a certain target user group in order to achieve a certain business result in the course of a business activity. Each use case step can involve different product functions. The whole product functionality is defined by means of use cases. Use Cases which belong together are arranged in application areas (e.g. "Document Management").

Use Centric View of Product Functionality

The use case model puts the user (the human person) and his specific business role in the center for defining product functionality.

Differentiation of Product Use for User Target Groups

The use case model differentiates product usage for separately defined target user groups. This provides optimized product support for different business roles. The product in particular defines target user groups for users, for managers, for records administrators, for product administrators and for external auditors.

Use Cases for Enrichment of Business Semantics

The use case model enriches product functionality with business semantics in the context of the business tasks of the target user groups.

2.1.5 Security and Access Control

Mapping of the Concrete Organizational Structure

Fabasoft Folio allows for showing the client's concrete organizational structure by user, user groups and user roles. This provides the possibility of setting access rights for a specific organizational structure.

Updating the Organizational Structure via Directory Services

The client's organizational structure can be constructed and regularly updated through a directory service (e.g. Microsoft Active Directory or LDAP) in Fabasoft Folio.

Secure Authentication via Operating System Technologies

Any product access happens authenticated. The authentication is carried out by the operating system technologies (e.g. Kerberos) via a defined user-identity (e.g. a Microsoft Windows Active Directory Account) instead of being carried out in Fabasoft Folio directly.

Product Access for Registered Users Only

Any product access in Fabasoft Folio is related to a user by the authenticated user identity and is executed in the specific user's context.

Flexible Access Control via Assigning User Roles

A user role is a position a user can have in a certain group (organization unit), e.g. "head of the department II/A". A user can have several user roles or one user role can be assigned to several different users. Each use case is executed in a certain user role. The user role specifies which

business documents the user has access to. If an administrator changes the user role it directly affects the user's access rights. Administering user roles is a simple and effective possibility to follow changes in organizational structure and access rights.

Representations

By changing to a representative user role, a user works substituting his colleague with the representative's access rights. Every work step the user takes in his role as a representative is tagged as a representative action.

Administrating Access Control via ACLs

Each business object defines its access rights via referencing an ACL. The ACL defines the access rights affecting the business objects and the access rights for a specific user role referred by the ACLs. As business objects are only referring to ACLs, access rights can be edited without every single business object has to be changed.

Use Cases for Security and Access Control

- Editing Access Rights
- Establishing a Substitution
- Substituting
- Terminating a Substitution

2.2 Enterprise Content Management

Enterprise Content Management means safe capturing and administering for all digital documents in an organization.

2.2.1 Storing Documents

Uniform Content Repository

Fabasoft Folio provides a uniform content repository for content of different type and origin. Content is persisted in the form of business objects in the content repository.

Saving Storage via Content Addressed Storage (CAS)

The product provides a "content addressed storage" mechanism which determines the storage address of any content via a computed content hash. This concept ensures that content is saved physically only once, even if it is imported repeatedly to the content repository. If, for example, an email is sent to twenty users in copy, and subsequently saved by all recipients, the email is actually saved physically in the product only once. This saves storage capacity.

Importing Content of Different Type and Origin

Fabasoft Folio allows for the importing of content of different type and origin to the product's content repository. Each imported content item is stored in a business object.

Importing Content via the Fabasoft Folio Printer Driver

Fabasoft Folio supports the import of digital content from third party applications by printing it via the product's printer driver.

Import Content via "Save As" in a Web Folder

Via "Save As" documents from third party applications can be saved in a Fabasoft Folio web directory. The document is now stored in Fabasoft Folio.

Mass Import of Digital Content

Fabasoft Folio allows the mass import of digital content. This can be performed in the background (batch mode) based on import rules.

Content Conversion to PDF or PDF/A (PDF Rendering)

Fabasoft Folio provides content conversion services which in particular allow for the conversion of different content formats to the final format PDF or PDF/A.

Content Viewing

Fabasoft Folio enables content viewing based primarily on the final content format PDF. This allows any user to view digital content with a PDF viewer. PDF content can also be displayed in a thumbnail view.

Use Cases for Storing Documents

- Importing a File
- Scanning and Editing a Paper Document on the Device
- Mass Scanning of Paper Documents
- Performing an OCR Conversion
- Importing an E-Mail from Microsoft Outlook
- Importing and Exporting Contacts
- Importing and Exporting Events
- Exporting an Object
- Exporting an Image
- Folio Folder
- Open With Windows Explorer or Nautilus

2.2.2 Document Management

Uniform Management for Documents of Varying Type and Source

The product's business object model allows for the encapsulation of documents of different types and sources in business objects and describes them by business object properties. Examples: "Word Objects", "Excel Objects", "LibreOffice Text Documents", "LibreOffice Tables".

Standardized Indexing of Documents

A document is persisted as a business object. Such a business object has predefined properties for document indexing. The property set can be extended on a project basis.

Scalable Storage of Documents

The product's scalable architecture and the fact that documents are not persisted in relational databases allows for the efficient storage of both very small and very large documents (e.g. with more than one gigabyte size per document), and the efficient storage of a small amount, but also a very large amount of documents (e.g. hundreds of millions of documents).

Tight Integration with Productivity Tools

Document editing is performed via the integrated productivity tools, e.g. Microsoft Word or LibreOffice.

Document Version Control

Each document is a business object and thereby supports the functionality of business object versions.

Implicit Check-out and Check-in

The product does not require an explicit check-out or check-in for editing and saving a document. A user performs a document lock and check-out with just one double-click in the web browser user interface.

Setting a Permanent Lock

The product supports the setting of a permanent lock for a document (business object).

Final Format Conversion to PDF

Document content is converted to the final format PDF as soon as it no longer requires editing. Converting content to PDF has significant advantages: PDF is a standard format for content archiving; opening the content only requires a PDF tool - not even the productivity tool which was used for creating the content - and PDF content format has less storage demand than native content file format.

Final Format Conversion to PDF/A

Fabasoft Folio allows for the conversion of a document content to PDF/A. This final format is a suitable basis for long-term archiving of digital content.

Compound Documents

A business object in Fabasoft Folio comprises metadata, content and relations to other business objects. For example, a folder has a relation to the business objects which are contained in that folder. Another example of such a compound object is an email. This type has metadata (TO, CC, ...), a content (the body) and attachments. But these attachments are discrete objects, that eventually can be referenced individually or have relations to other objects. When a user looks at an email or opens it (for example with Microsoft Outlook), it appears as a single entity.

Additionally, the product supports the packing of a compound document in a container (for instance a "zip" file), extracting it for editing and packing it away again in a container to persist it in the content repository. For instance, AutoCAD® (<http://www.autodesk.de>) engineering drawings can be handled in such a way. The extracted compound document consists of a list of different files that build the engineering drawing and are loaded into the AutoCAD designer application. AutoCAD references and links are valid within the extracted container.

WebDAV Links

The product provides access to all documents and objects via the standard protocol WebDAV (Web-based Distributed Authoring and Versioning). This allows for the creation of compound documents by adding standardized WebDAV links to other documents and/or business objects within a document, as long as the productivity application for editing the document additionally supports WebDAV. On Microsoft Windows it is also possible to map a particular Fabasoft Folio WebDAV folder to a file system drive letter. In such cases links between documents can also be established using ordinary filenames. This option can be used for applications which do not support the WebDAV protocol.

Hyperlinks

Fabasoft Folio business object information is also accessible via a unique hyperlink based on the business object's address. This address is globally unique through a naming scheme based on the Fabasoft Folio Domain ID which is provided with the software license.

Document Folder Hierarchies

The product supports the creation of folder hierarchies where each folder can hold a list of business objects. The electronic desk provides an explorer-type navigation system of folder hierarchies.

Folder Content Preview

The document folder content preview allows for the viewing of the content of folders without the burden of opening each one separately.

Re-usable Text Modules

Fabasoft Folio supports the creation and maintenance of text modules as business objects which can be inserted into electronic documents from within the productivity tools (e.g. Microsoft Word or LibreOffice).

Document Properties

Fabasoft Folio supports the insertion of business object properties as fields in an electronic document from within the productivity tools (e.g. Microsoft Word or LibreOffice).

Updating Metadata via Fields

Fabasoft Folio supports the updating of the metadata of business objects by simply changing the content of a document field from within Microsoft Word.

Mail Merges

Fabasoft Folio supports the production of mail merges by merging letter templates with addressee information.

Note: If you use mail merges with active macros, you have to ensure that the mail merge functionality of Fabasoft Folio is not affected by the macros.

Re-usable Templates

The product handles templates as separate business objects; a template therefore has the full capability of a business object, e.g. it can encapsulate template content of different types and sources, it comes under ACL access rights management and it supports versions.

Any Existing Business Object Can be a Template

The product supports the use of any existing business object as a template, for instance documents, folders or case files (with a predefined structure).

Arrange Templates in Template Categories

Templates can be arranged in template categories for easier handling.

Edit and Release Process

Editing templates can be separated from approval and release of templates in terms of a formal edit and release process (based on workflow).

Mail Merge

Fabasoft Folio provides functionality for mail merge.

Content Printing

Fabasoft Folio supports the printing of content primarily via the final format PDF, and has capabilities for printer management.

Use Cases for Document Management

- Editing a Content Object
- Temporarily Storing a Content Object
- Printing a Content Object
- Encrypting or Decrypting a Content Object
- Assigning Addressees to a Content Object
- Pasting DocProperties
- Project Archive
- Managing Template Collections
- Creating a Template Collection
- Creating and Editing a Template
- Creating an Object Using a Template
- Categorizing a Template Collection
- Adding a Template to the Favorites List
- Deleting a Template from the Favorites List

2.2.3 SAP Content Archiving

SAP Content Archiving

Archiving SAP content in the product's content repository ensures that ERP content is added to the product's corporate content repository and can be managed in a systematic way based on an organization's compliance and governance policies.

SAP Integration Certification

The product holds an SAP Integration Certification which ensures that SAP content can be archived in the product's content repository.

Use Cases for SAP-Archiving

- Filing incoming documents
- Filing outgoing documents
- Filing printing lists
- Filing archive files

2.2.4 Scanning and Document Imaging

Scanning on the ClientDevice

Scanning on the client device is supported through any third-party scanning product that allows scanning to a local directory. By mounting Fabasoft Folio as a Web Folder on the client device, scanned documents can be transferred to Fabasoft Folio by simply saving the scan document to

the mounted disk drive. Standard indexing will be performed automatically. Additional indexing can be done in the Fabasoft Folio client.

Use Cases for Scanning and Document Imaging

- Scanning and Editing a Paper Document on the Device

2.2.5 Search

Metadata Search

Fabasoft Folio provides metadata search capabilities for which the search capabilities of the underlying relational database systems are leveraged.

Fabasoft Folio Hit List Presentation

Hit lists are presented as lists of business objects within Fabasoft Folio. Each hit can be accessed directly within the hit list.

Using a Thesaurus Taxonomy for Searching

Fabasoft Folio allows for the creation and maintenance of an ISO 2788 thesaurus, and the ability to attach keywords to business objects. These keywords can be used in a taxonomy based metadata search.

Full Text Search with Fabasoft Mindbreeze Enterprise

Fabasoft Folio integrates Fabasoft Mindbreeze Enterprise as the powerful search engine with sophisticated full text search capabilities. A user performs a full text search in the Fabasoft Folio user interface. The search query is executed via the Fabasoft Mindbreeze Enterprise integration.

Search Cancelling

A user defines in the search settings what the maximum number of search hits and the maximum time period for a search should be. If these settings are exceeded by a search query, it is cancelled automatically.

Simple Search

Fabasoft Folio integrates Fabasoft Mindbreeze Enterprise for performing simple searches in the web browser user interface. In such cases the user enters a search phrase which is used to execute a full text search in both structured metadata and full text.

Use Cases for Searching

- Searching for Objects
- Limiting Search Criteria Using Options from the Menu
- Limiting Search Criteria Using Wildcards
- Using the Hit Collection
- Creating a Search Form
- Making Search Form Available
- Using a Search Form
- Establishing Search Options
- Performing a Quick Search in the Search Field
- Performing a Quick Search in Object Pointer Properties

- Performing a Full Text Search
- Performing Data Research

2.2.6 Versioning

Save Versions for Any Type of Business Object

The product supports the saving of versions of any type of business object, not just for documents. For instance, versions can be saved for Document, Case File, User, Group or ACL business objects as well.

One Version Comprises the Whole Status of a Business Object

A version comprises the whole status of a business object, not just the document content. All the values of the structured and unstructured business object properties are persisted in a version.

Time Shift for a Business Object

By setting a version of a business object a time-shift is performed. The business object shows all its property values according to the object status at the time when the selected version was saved.

Time Shift Navigation for Business Object Networks

When a version of a business object is set and an object pointer is opened for that business object, the referenced business object will automatically be displayed with the version that fits best fits the timeline of the set version. This allows for time shift navigation across a network of business objects.

Release Versions

The product supports the setting of a release version for each business object. If a user reads a business object with a release version, he will always see the release version of the business object, even if other users have already changed the business object. This allows for the provision of a consistent release view for certain business objects which are subject to further changes (e.g. contract documents).

Use Cases for Versioning

- Reading a Version
- Using the Current Version
- Saving a Version
- Restoring a Version
- Deleting a Version
- Purging Versions
- Releasing a Version
- Displaying Modifications to Content
- Displaying Modifications to Properties

2.2.7 Digital Asset Management

Managing Digital Assets

Fabasoft Folio allows you to store and manage any digital content. When dealing with digital asset management, the focus is put on images, audio and video files.

Depending on the web browser contents can be imported or exported using drag and drop or copy and paste. To import large amounts of data stored in file systems or databases, Fabasoft Folio COLD is recommended.

Digital assets can be searched, versioned, archived and protected from unauthorized access.

Metadata of Digital Assets

In addition to the standard metadata such as *Name*, *Created on/at* or *Last Changed on/at* metadata is extracted from the content based on the file type. The metadata can be used for research purposes. For example, the Exif properties of images or the number of pages and words of Word documents are extracted. Audio files can provide a lot of metadata, especially the album cover that can be used in the different Folio views.

In addition, you can categorize and provide terms for digital assets.

Examining of Digital Assets

Images and videos can be examined efficiently by using various views (e.g. Details, Thumbnails, Preview and Carousel). For the efficient view of large image files an own content is generated and displayed. The available metadata provides a powerful way to filter and search for digital assets.

Playing Audio and Video Files

Audio and video files can be played directly in the web browser, if the web browser supports the corresponding format. Since Fabasoft Folio allows converting audio and video files, a large variety of formats can be played.

Converting Digital Assets

The Fabasoft Folio Conversion Services allow converting digital assets form one format to another. Typical target formats of digital assets are OGG, OGV, MPG, WEBM, PDF, PNG or JPG.

Automated Use of Digital Assets

For the listing, import, export and conversion of digital assets web service interfaces based on WebDAV, SOAP, JSON and CMIS are provided.

Working With Images

You can resize and crop images directly in the web browser. For the use of images outside of Fabasoft Folio (e.g. for presentations) export possibilities in different formats and sizes are available (configurable).

2.2.8 Synchronization

Synchronize Business Objects to the Folio Folder

Business objects (contents) that are defined to be synchronized are copied to the local file system when synchronizing. Users can use these business objects locally without a network connection.

When synchronizing, changes to files on the local computer will be transferred to Fabasoft Folio.

Note: The Folio Folder is part of the Fabasoft Folio Client and is only available on Microsoft Windows.

Use Cases for Offline Working

- Context Menu of the Notification Symbol
- Symbols for Visualizing the Status

- Resolving Conflicts
- Configuration in Fabasoft Folio

2.3 Collaboration

The combination of informal collaboration of the collective and proper management of user generated content accelerates the value of user generated content for an organization.

2.3.1 Teamroom

The Teamroom allows informal inter-departmental cooperation. For the management of the team a separate area in the Teamroom is available. The easy access rights concept allows sharing documents within the team without any problems.

In the Teamroom not all object types can be stored. These are, for example, business objects that are intended for formal collaboration with an own access rights concept.

Use Cases for Teamroom

- Creating a Teamroom
- Assigning Access Rights
- Inviting Team Members to Work Together
- Accepting and Refusing Invitations
- Changing the Teamroom Assignment
- Setting the Publishing State
- Setting the Security Level
- Defining a Logo
- Defining a Theme
- Changing the Owner of a Teamroom
- Sending an E-Mail to the Team
- Transfer a Teamroom
- Retract a Teamroom
- Publish a Teamroom
- Creating a Newsfeed
- Creating Newsfeed Entries
- Setting the Publishing State

2.3.2 Fabasoft Folio Portlet

Fabasoft Folio provides a JSR-168 compliant portlet that allows integrating Fabasoft Folio applications into a website. Thus, collaboration with customers and partners via the World Wide Web is possible.

2.3.3 RSS Feeds

It is possible to define an RSS feed on any object in Fabasoft Folio, not just on generic folders, but also on specialized containers like work lists or projects. After selecting one entry you can subscribe to that feed with an RSS reader like your browser or Microsoft Outlook.

Use Cases for RSS Feeds

- Predefined Objects
- Subscribe to Any Objects
- Unsubscribe an Object
- Subscribe to Events

2.3.4 Contact Management

Managing External Contacts

Fabasoft Folio supports the management of personal and organizational contacts as business objects.

Integration With Directory Services

Fabasoft Folio integrates with third party directory services, e.g. Microsoft Active Directory or LDAP directory services, to synchronize contact data.

Synchronizing contacts with Microsoft Outlook

Contacts in Fabasoft Folio can be synchronized with the contacts in Microsoft Outlook in both directions.

Use Cases for Contact Management

- Enter an Organization
- Enter an Own Organization
- Enter a Person in a Role
- Display Communication With Person/Organization
- Create an Addressee List for Bulk Mailings

2.4 Agile Business Processes

Agility means flexibility in business processes and Fabasoft stands for agility. Fabasoft Folio supports agility through ad-hoc workflow. A user combines predefined process elements to an ad-hoc workflow or Fabasoft Folio predefined workflow processes using the graphical editor. Agile project management is becoming increasingly common, as concrete project results are achieved already at early stages of the project.

2.4.1 Work List

The work list on a user's desk contains the list of workflow activities assigned to that particular user (name based), to one of the groups he belongs to, or to one of his user roles.

Work Items of a Workflow Activity

A workflow activity comprises a list of work items as a checklist to complete. Mandatory work items must be executed before the activity can be completed.

Business Object Referencing

Each workflow activity in a business process can reference one or several different business objects by means of the product's object pointer concept. This ensures that only references are moved across the organization and business documents and/or data do not need to be copied.

Group and Role Based Workflow Distribution

Workflow activities are primarily distributed in an organization based on groups and user roles. If several users are in the same group or have the same user role assigned, each of them will have all the workflow activities in the work list which were assigned to this particular group or user role (e.g. to a "Professional Services" group or a "Project Manager Professional Services" user role). If one of these users begins to work on such an activity it disappears from all the other users' work lists.

Metrics Based Workload Distribution

The product implements a metric for workload distribution which allows for the distribution of workflow activities to work lists depending on the current workload in the organization.

Use Cases for Work Lists

- Starting an Activity in the Work List
- Executing a Working Step for an Activity
- Suspending an Activity
- Reactivating a Suspended Activity
- Accepting an Activity as Substitute
- Delegating an Activity
- Prescribing an Activity (With or Without Template)
- Defining an Escalation

2.4.2 Signatures

By signing business objects the user identifies on-going work processes as completed.

Different Signature Types

The product includes different predefined signing types, e.g. "Approval". Formal signature types require the user's password for completion.

Saving Signatures in a Business Object's Metadata

When a user signs a business object, a version of the business object is saved. Signature type, user name, date and user role in the act of signing is saved in the business object's metadata.

Saving a Version after Signing a Business Object

After signing a business object Fabasoft Folio saves a version of the status of the business object at the time the signature was applied.

Use Cases for Signatures

- Obtain Approval for a Business Object
- Approve a Business Object
- Refuse Approval of a Business Object

2.4.3 Ad-hoc Workflow

Users can prescribe ad-hoc workflow activities to other groups, user roles and/or users. In this case a user in the course of a business process determines the next workflow activity. The sequence of workflow activities is persisted to track an ad-hoc workflow across an organization.

Graphical Editor for Ad-hoc Workflow

A user combines predefined process elements to an ad-hoc workflow using the graphical editor for ad-hoc workflow.

Parallel Workflow Activities

Parallel workflow activities can be assigned to different users at the same time. Parallel workflow activities have to be completed by all users, before the workflow continues. Parallel Routing reduces process execution time significantly.

2.4.4 Predefined Processes

A predefined workflow process consists of a sequence of serial and/or parallel workflow activities. Conditions and loops are used to determine workflow execution.

Workflow Management Coalition Reference Model

The product implements a workflow model which is aligned with the reference model of the workflow management coalition (<http://www.wfmc.org>).

Graphical Process Builder

The modeling of a predefined workflow is done with the graphical process builder of Fabasoft Folio. It supports the combination of predefined process elements - e.g. condition elements ("IF", "CASE") and loop elements ("REPEAT") and predefined workflow activities - to a structured workflow.

Separating Workflow Definition From Workflow Execution

Each time a new workflow is initiated using a predefined workflow, a separate process instance is created. This ensures that the process execution is separated from the process definition.

Sub Processes

The graphical process builder supports the concept of sub processes which can be modeled separately and can be inserted into a predefined workflow process.

2.4.5 Predefined BPMN Processes

The support of BPMN 2.0 (Business Process Model and Notation) allows you to model business processes and benefit from the advantages of a platform-independent notation. The created process diagrams can be directly used as a basis for automating your business processes.

In the graphical BPMN editor, besides the modeling of the process, for example Folio users and activity definitions can be assigned to BPMN elements, in order to be able to execute the process directly with the Fabasoft Folio Workflow Engine.

The BPMN editor is subdivided in three areas. The left pane contains the BPMN elements that can be dragged and dropped on the middle design pane. The right pane (folded by default) shows properties for the element that is selected in the design pane. The right pane is also used to assign Folio objects for process execution purposes.

2.4.6 Workflow Connectors

The product provides workflow connectors to integrate Fabasoft Folio workflows with workflow engines of third party suppliers.

Web Service Integration (SOA)

The synchronization with workflow engines of third party suppliers is based on Web Services (Service Oriented Architecture), e.g. Microsoft BizTalk or SAP workflow.

2.4.7 Process Folder

The process folder allows you to file processes in a structured way and link them with documents, participants and outputs. The processes can be viewed and analyzed from different angles.

The process folder is structured in following four areas:

- Processes
A modeled business process can reference subprocesses, documents, participants and outputs.
- Documents
The documents that are needed in the process.
- Participants
A participant represents an area of responsibility within a process.
- Outputs
An output defines a result of a process. Outputs can be structured with help of output groups.

2.4.8 Portal Based E-Forms

E-Forms and E-Services

Fabasoft Folio in conjunction with Fabasoft app.ducx allows for the definition of electronic forms and publishes them either directly to a web browser or to a portal like Liferay Portal. Forms can be combined to create a full-featured application which allows for a close interaction with business objects in Fabasoft Folio.

2.5 Compliance Management

Compliance Management means establishing conformity with legal requirements, trade- and industry-specific norms and standards as well as internal policies.

Fabasoft Folio Compliance supports Compliance Management through the management of policies and the establishment of concrete compliance requirements. Revision-safe archiving solutions (e.g. EMC Centera) for audit-proof archiving of business records are incorporated in the product, thereby creating the basis for digital audits.

The functionalities, described in chapter "Compliance Management" are only available in Fabasoft Folio Compliance.

2.5.1 Compliance Management

Policy Management

Policies are established and maintained as business objects in Fabasoft Folio. Hence, the entire performance range for business objects is also available for the management of policies.

Business Objects in Fabasoft Folio

Since the term “document” can be interpreted in a variety of different ways - it can mean a single sheet of paper or an entire file - Fabasoft Folio prefers to use the term “business object” instead. Fabasoft Folio differentiates between the following types of business object: records, cases, documents and content. Documents, in Fabasoft Folio, include incomings and outgoing. Each business object is used for a specific purpose:

- **Contents**
Contents are electronic documents that already exist in Fabasoft Folio as objects and are edited using an editing tool that is usually external. Hence, these might be Word objects, Excel objects, e-mail objects or scanned images in the form of TIFF objects.
Note: Microsoft Word documents stored in the file system become contents (for instance, a Word object) when imported to Fabasoft Folio. Similarly, e-mail messages in Microsoft Outlook only represent content once they have been imported to Fabasoft Folio as e-mail objects.
- **Documents**
Documents are “envelopes” for content. In addition to the list of content, they contain metadata (for instance, date of receipt or addressees), which, for the purpose of record administration, must be stored in addition to the content.
- **Incomings**
Incomings are special documents containing content that has been sent by partners.
- **Outgoings**
Outgoings are special documents containing content that is potentially sent to partners.
- **Cases**
A case bundles the incomings and outgoing of a procedure with a time frame that is typically restricted (for example, a project or a campaign). A case is therefore a folder of documents with the same context (i.e., case).
- **Records**
A record bundles cases, incomings and outgoing of a procedure with a typically long time frame. A record is therefore a folder of documents and cases with the same context (i.e., the record).

Business Objects: Recorded versus Without Commitment

Against the background of “compliance”, Fabasoft Folio differentiates between recorded business objects and business objects without commitment. Recorded business objects are those with an external effect the content of which has been confirmed by an employee (for example, through approval). Business objects without commitment are unconfirmed and only have an internal effect.

If a business object is recorded, a (recorded) version of the business object is automatically generated. Recorded business objects cannot be deleted, only cancelled before the end of the retention period. Business objects without commitment can, in principle, be deleted.

The transition between recorded and without commitment is usually implicitly defined in the course of particular use cases, for instance, if the business object is approved or sent to a customer.

Processing States of Business Objects

In Fabasoft Folio, business objects (records, cases, documents and content) can adopt the states "In process", "Cancelled", "Suspended" and "Closed". Each of these states is linked to a particular ACL, which expresses the meaning of the respective state in the form of access rights.

Use Cases for Compliance Management

- Delete a Business Object
- Suspend a Business Object
- Close a Business Object
- Cancel a Business Object
- Set the State of a Business Object to In Process
- Define Save Rules for a Business Object
- Managing Content
- Create a New Document
- Allocate a Unique Document Number
- Display a Document (Overview)
- Edit Main Content of a Document
- Edit Contents of a Document
- Edit a Document's Metadata
- Search for a Document
- Delete a Document
- Cancel a Document
- Revoke Cancellation of a Document
- Re-Register a Document
- Move a Document
- Version a Document
- Create Recorded Version of a Document
- Load Recorded Content of a Document
- Record Physical Content for a Document
- Lend /Take Back a Document
- Record an Incoming
- Register Incomings for Cases/Records
- Create an Outgoing
- Define Mail Dispatch Type
- Select Addressee for an Outgoing
- Select Addressee List for an Outgoing
- Define the Contents to be Sent for an Outgoing
- Send an Outgoing via SMTP
- Test Send an Outgoing via SMTP
- Create Personalized Fair Copies
- Send an Outgoing as Mail Merge

- Display a Fair Copy (Overview)
- Send a Fair Copy via Microsoft Outlook (Interactive)
- Create a New Case
- Edit a Case
- Create Relationships Between Cases
- Re-register a Case
- Cancel a Case
- Revoke Cancellation of a Case
- Close a Case
- Version a Case
- Lend/Take Back a Case
- Create a New Record
- Edit a Record
- Define Relationships Between Records and Other Business Objects
- Cancel a Record
- Revoke Cancellation of a Record
- Close a Record
- Version a Record
- Lend/Take Back a Record
- Structure a Record or Case
- Approval Process for Incoming Invoices
- Creating a Legal Hold
- Applying a Legal Hold
- Removing a Legal Hold

2.5.2 Audit-Proof Archiving

Integration of Audit-proof Archives

Fabasoft Folio supports the integration of revision-safe archives via the Fabasoft "iArchive" interface. This enables the transfer of digital records from Fabasoft Folio into audit-proof archive.

Transparent Access to Archived Records

There is no change in the user interface reflecting the access to archived content.

Reducing Storage Costs

Moving high volume content from the content repository to an online archive will result in a significant reduction of storage costs because content repository storage is more expensive than online archive storage.

Streamlining Production Systems

Moving high volume content from the content repository to an online archive will also streamline a production system. For instance, backup routines will be completed faster if content is moved from the content repository of the production system to an online archive.

Rules Based Archiving of Business Objects

Fabasoft Folio allows for the archiving of business objects to an online archive based on configurable rules which can be based on business requirements.

Integration of the Third Party Product EMC Centera

Fabasoft Folio out-of-the box integrates the third party product EMC Centera.

Integration of the Third Party Product NetApp SnapLock

Fabasoft Folio out-of-the box integrates the third party product NetApp SnapLock.

Integration of Third Party Archive Products via Directory Volumes

Fabasoft Folio allows integration with any online archive product that can be mounted as a directory volume in the underlying operating system of a supported server operating system.

Interface for Integrating Online Archives

Fabasoft Folio provides a standard "iArchive" interface for integrating other online archives, for instance on a per project basis.

Use Cases for Audit-Proof Archiving

- Archive Contents
- Archive Contents and Versions
- Archive a Business Object Completely
- Archive a Version
- Archive a Copy of a Version
- Load a Business Object From the Archive
- Unload an Archived Business Object
- Restore an Archived Business Object
- Search for a Business Object in the Archive

Note: This use case is only supported in combination with Fabasoft Mindbreeze Enterprise.

2.6 Governance

Fabasoft Folio Governance provides for the uniform, proper and safe capture and archiving of all digital business records. The functionalities, described in this chapter are only available in Fabasoft Folio Governance.

The "Classification Scheme" supports the management of business records in Fabasoft Folio Governance. They are not only ready at hand at all times but also meet compliance requirements, regardless of whether they are legal or in-house standards.

The files and records in the classification scheme are given a classification code, are unchangeable, traceable and thus approved for digital audits.

Fabasoft is ISO 27001 certified and has passed the PriceWaterhouseCoopers examination for SAS 70 Type II as well as for revision-safe archiving.

Classification Scheme

A classification scheme is used to build a hierarchical structure of all business records and files.

Class

A class contains files, sub-files and records.

File and Sub-File

A file contains sub-files and records.

Record

A record contains business content, which has been captured and needs to be preserved.

Capturing Business Documents as Records

Business content which has significant value for the enterprise needs to be captured and preserved as business records.

Use Cases for Classification Scheme

- Create a classification scheme
- Define disposition schedules
- Create a class
- Create a file
- Create a sub-file
- Import records
- Capture documents in a file
- Relocate a record
- Assign legal hold
- Assign a disposition schedule
- Close a sub-file
- Reopen a sub-file
- Close a file
- Reopen a file
- Close a class
- Reopen a class

2.7 Enterprise Search

The integration of Fabasoft Mindbreeze Enterprise offers a full text search in objects and objects with content. The installation and explicit configuration of Fabasoft Mindbreeze Enterprise, the configuration of filter service objects and index service objects and their integration in the Fabasoft Folio COO Stores and Fabasoft Folio MMC Stores, which have to be indicated, are required. Searching for text sequences in object pointer properties of type "Content" is available based on the functionality of Fabasoft Mindbreeze Enterprise. Additionally full text search is supported in properties, if configured correspondingly. The usage of full text search can be turned on or off for a Fabasoft Folio Domain in general.

The Fabasoft Integration for Fabasoft Mindbreeze Enterprise contains:

- The installation of the libraries, which are required for the integration and the call of the setup routines for the integration in Fabasoft Mindbreeze Enterprise.
- Object classes for the configuration of the filter service objects and the index service objects as well as configuration objects for the definition of the object classes, which have to be indicated.

- The sending of stored objects with content to Fabasoft Mindbreeze Enterprise for the purpose of indexing. Indexing means that an index is created that saves the positions of words in a text. This procedure enables a very fast search.
- The sending of properties from objects from specified object classes to Fabasoft Mindbreeze Enterprise for the purpose of indexing. The properties that have to be indicated can be defined in the configuration object of Fabasoft Mindbreeze Enterprise. The configuration object is sent to the index server, when indicating.
- The sending of objects and objects with content, which have been stored in the archive by using Fabasoft iArchive, to Fabasoft Mindbreeze Enterprise for the purpose of indexing.
- The full text search in the indicated objects and objects with content using the Fabasoft Mindbreeze Enterprise services.

Use Cases for “Enterprise Search”

- Search in objects with content
- Performing a quick search

3 Interfaces and Development

3.1 Software Architecture

The product defines a four layer software architecture.

Use Cases: Presentation

The presentation layer exists in two different forms:

1. Via a web client, which is used in a supported web browser at the client’s workplace by internal users for executing defined Use Cases.
2. Via e-service applications, which are used via a portal like the open source portal Liferay Portal by external users on the Internet.

Use Cases: Business Logic

The layer of the application logic, which executes defined Use Cases as Application Server on the web server.

Open Standards Object Backbone

The layer, in which production data is saved secure and persistently according to open, platform independent standards (Persistence).

Reference Architecture

The Reference Architecture layer, in which the product is installed and operated. See also “Reference Architecture and Installation”.

3.1.1 Open Source Software Libraries

The product uses open source software libraries. You can find the corresponding copyright comments and terms of license on the product DVD in the directory <DVD drive>\Additions\Open Source Licenses.

3.2 Composite Content Applications with Fabasoft app.ducx

Fabasoft app.ducx allows partners and customers to develop content based vertical applications (Composite Content Applications), for example to manage insurance claims or personnel files. These applications utilize all the advantages of Fabasoft Folio like scalability and platform independence. Fabasoft app.ducx fully integrates with Eclipse, a professional, freely available and platform independent development environment for Microsoft Windows and Linux.

3.3 Extensions With Forms

Besides the classical extension of the object model, it is also possible to add additional metadata to objects without programming knowledge based on a graphical form editor.

3.4 Fabasoft app.test

Fabasoft app.test is a non-stop use case based test environment for Composite Content Applications based on Fabasoft Folio. Tests that have been recorded can be run in parallel on different operating systems. Fabasoft app.test is part of the Fabasoft DUCX family and therefore enables numerous applications such as Fabasoft Folio, Fabasoft Mindbreeze Enterprise and E-Services to be integrated via Liferay Portal. By implementing and running the tests on various platforms, the functionality can be tested in various environments. Thanks to Fabasoft app.test, it can be confirmed in just a few steps automatically that Composite Content Applications are working reliably on all supported platforms.

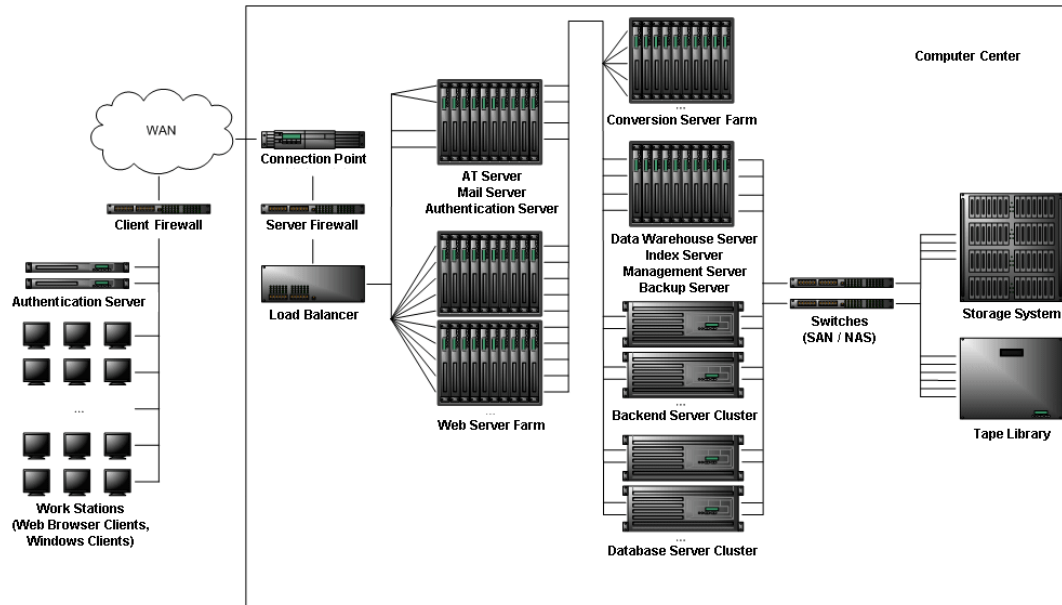
3.5 Web Service Interfaces

The product specifies interface calls on the basis of SOAP and XML. So it is possible to implement solutions, which import incomings for example.

4 Installation and Handling

4.1 Fabasoft Reference Architecture

The Fabasoft reference architecture shows the exemplified infrastructure of a web based Fabasoft Folio installation:



4.1.1 Terminology

The terms of the reference architecture are explained in this chapter.

- Client
Device or PC with graphical user interface.
- Client firewall
The client firewall is designed to protect the client LAN from the corporate network.
- Corporate network
A corporate network contains the whole network of a company.
- Connection point
The connection point represents the handover point for the application and the location for service level measurements.
- Server firewall
The server firewall is designed to protect the data center from the connection point.
- Load balancer, content switch
The load balancer distributes requests from the user to the web server farm and thus to the Fabasoft Folio Web Services.
- DMZ firewall
A DMZ firewall separates the portal server farm from data center.
- Portal server farm
A portal server farm handles incoming HTTP requests from the Internet.
- Internet firewall
An Internet firewall separates the portal server farm from the Internet.
- AT servers (Automated Tasks)
AT servers run Fabasoft Folio AT Services for executing automated tasks in the context of a user without requiring user interaction.
- Mail server
A mail server is responsible for sending e-mails in the background without any user interaction. On the mail server a SMTP mail server third-party product is installed.

- **Web server farm**
The Web server farm consists of servers running Fabasoft Folio Web Services (business logic for applications and generation of on-screen representation).
- **Conversion server farm**
The conversion server farm consists of servers running Fabasoft Folio Conversion Services (format conversion of documents).
- **Frontend LAN**
The frontend LAN connects the load balancer to the web server farm.
- **Backend LAN**
The backend LAN connects the web server with the backend server clusters and the conversion servers, plus the backend server cluster with the database server clusters. The backend LAN also connects the servers for basic services with the other servers.
- **Backend server cluster**
The backend server cluster manages the persistence of business objects using Fabasoft Folio COO Services for structured data (in relational databases) and Fabasoft Folio MMC Services for unstructured data (documents, graphics, multimedia files in the file system).
- **Database server cluster**
Relational database systems running on the database server cluster stores structured data in a database for each Fabasoft Folio COO Service.
- **Storage area network (SAN)**
The SAN connects the backend cluster (saving documents in the file system) and the database cluster (saving database files) with the storage system.
- **Storage system**
The (enterprise) storage system represents a highly available array of hard disks (capacity in the terabyte range).
- **Tape library**
The tape library (tape robot) makes use of fast and reliable tape drives for saving data.

4.2 Fabasoft Folio Tenants

Fabasoft Folio Tenants allow a logical division of a Fabasoft Folio Domain, for example, to separate individual companies of a corporate group.

- With tenant-specific configurations, the behavior of the individual tenants can be customized.
- Tenants can be considered in the Fabasoft Folio permission system (ACLs). Thus, objects can be easily protected against access by users who only have roles for another tenant. However, it is also possible to grant a user access to objects of different tenants.

In order to use the functionality of Fabasoft Folio Tenants a multi-tenant license is required.

4.3 Conditions of Use

- All statements contained in this software product information concerning the intended use and conditions of operation of the program are understood as information only on principle. To ensure and guarantee the intended use and conditions of operation in everyday use of the program, expert training by specially qualified staff is recommended in any case.

- Performance and reaction time of Fabasoft software products significantly depend on the used infrastructure. For layout, configuration and sizing of the infrastructure we refer to the information, recommendations and specifications of the particular manufacturers.
- Without a suitable infrastructure for online backups a consistent backup of Fabasoft Folio resources is only possible within dedicated backup time slots (planned downtime). In both cases functionality for backup, restore and disaster recovery has to be implemented according to a separately defined concept.
- This program is intended for customary commercial use. This does not include usage that demands special requirements (like controlling of vehicles, machines and facilities, real-time applications).

4.4 Supported Platforms (Microsoft Windows Environment)

4.4.1 Fabasoft Folio Management

If Fabasoft Folio Services have been installed on Microsoft Windows, for administering the Fabasoft Folio Services by means of Fabasoft Folio Server Management the following third-party products are supported.

Operating System	Architecture
Microsoft Windows 10 Enterprise	x64
Microsoft Windows Server 2016 Standard	x64
Microsoft Windows Server 2019 Standard	x64

4.4.2 Fabasoft Folio Backend Services

In General

- The Fabasoft Folio Backend Services are supported and tested with the reference system environments for database services according to the configurations listed below.
- Cluster operation of the system environments supported by Fabasoft Folio Backend Services is supported.
- When using an Oracle database:
 - The version of Oracle Database must correspond exactly to the version of the used and supported Oracle Instant Client.
 - Oracle Database can also be operated on system environments (operating systems) that do not correspond to the reference system environments listed below, if this is supported by Oracle.

Fabasoft Folio Backend Services

Operating System	Architecture
------------------	--------------

Microsoft Windows Server 2016 Standard or Microsoft Windows Server 2019 Standard	x64
Microsoft Windows Data Access Component (when using Microsoft SQL Server)	
Microsoft Windows Data Access Component (WDAC) (part of Microsoft Windows Server)	
Oracle Instant Client (when using Oracle Database)	
Oracle Database 19c (from 19.3.0.0.0) Instant Client for Windows (x64)	
Software Requirements (all products)	
Microsoft .NET Framework 4.8	
AdoptOpenJDK OpenJDK 8 Update 282 (JRE, HotSpot)	

Database Services

Operating System	Architecture
Microsoft Windows Server 2016 Standard	64 bit (x64)
Database	
Microsoft SQL Server 2016 Enterprise SP2	64 bit (x64)

Operating System	Architecture
Microsoft Windows Server 2019 Standard	x64
Database	
Microsoft SQL Server 2017 Enterprise	x64

Operating System	Architecture
Red Hat Enterprise Linux 7.9 (x64)	x64
Database	
Oracle Database 19c Enterprise Edition (from 19.3.0.0.0) for Linux x86-64 with RAC	x64

4.4.3 Fabasoft Folio Web Services

Operating System	Architecture
Microsoft Windows Server 2016 Standard or Microsoft Windows Server 2019 Standard	x64

Software Requirements (all products)
Microsoft .NET Framework 4.8
AdoptOpenJDK OpenJDK 8 Update 282 (JRE, HotSpot)

4.4.4 Fabasoft Folio Conversion Services

The prerequisites for Fabasoft Folio Web Services as well as the following additional requirements have to be considered for the operation of a Fabasoft Folio Web Service as a Fabasoft Folio Conversion Service.

Software Requirements
Conversion of Microsoft Office documents: Microsoft Office 2016 (x64) or Microsoft Office 2019 (x64)
Adobe Acrobat DC Pro (x86) or Ghostscript 9.26 (x64)
Conversion of LibreOffice documents: LibreOffice 6.2.8 (x86) Note: Conversion of Microsoft Office documents with LibreOffice is not supported.
Conversion of videos: FFmpeg 4.2 (x64)
Conversion of CAD files (DWG, DXF): QCAD 3.23 (x64)
Extracting meta data: ExifTool 11.01 (x64)

4.4.5 Fabasoft Folio AT Services

Operating System	Architecture
Microsoft Windows Server 2016 Standard or Microsoft Windows Server 2019 Standard	x64

Software Requirements
Microsoft .NET Framework 4.8
AdoptOpenJDK OpenJDK 8 Update 282 (JRE, HotSpot)
Conversion of videos: FFmpeg 4.2 (x64)

4.4.6 Fabasoft iArchiveLink Services

Operating System	Architecture
Microsoft Windows Server 2016 Standard or Microsoft Windows Server 2019 Standard	x64

Software Requirements
Microsoft .NET Framework 4.8
AdoptOpenJDK OpenJDK 8 Update 282 (JRE, HotSpot)
SAP ERP Central Component (ECC) 6.0 EHP7
SAP Content Server HTTP Interface 4.7
Microsoft Visual C++ Redistributable 2019 and SAP GUI for Windows 7.40 (Fabasoft Folio Web Client with supported Microsoft Windows operating system)

4.4.7 Fabasoft iArchive

Applications and Software Requirements
Integration for EMC Centera
EMC ² Centera with CentraStar v4.2.0
Integration for NetApp SnapLock
NetApp SnapLock with Data ONTAP 7G

Note: For the integration for EMC² Centera, the Centera SDK Version 3.3 is used. According to the EMC Support Matrix also versions can be used, mentioned in this matrix and supported from this SDK. But these versions are not tested explicitly.

4.4.8 Fabasoft Folio Web Client

Operating System	Architecture
Microsoft Windows 10 Enterprise or Microsoft Windows 10 Enterprise 2019 LTSC Note: Microsoft Windows 10 Enterprise (1909) has been tested explicitly.	x86 or x64

Supported Devices
Device A
Microsoft Windows 10 Enterprise or Microsoft Windows 10 Enterprise 2019 LTSC
Microsoft Internet Explorer 11.0 (x86 or x64; "Protected Mode" and "Enhanced Protected Mode" are not supported; as desktop program) or Microsoft Edge 88.0 (x86 or x64; as desktop program) or Mozilla Firefox 85.0 (x86 or x64; as desktop program) or Google Chrome 88.0 (x86 or x64; as desktop program)

The following optional third-party products (each x86 architecture) are supported. Microsoft Office is also supported with x64 architecture.

Applications and Software Requirements
Display of PDF contents
Adobe Acrobat Reader DC
Integration for Autodesk AutoCAD
Microsoft .NET Framework 4.8 Autodesk AutoCAD 2013 SP1.1 or Autodesk AutoCAD 2016
Integration for HCL Notes
HCL Notes 11.0
Integration for LibreOffice
LibreOffice 6.2.8
Integration for Microsoft Editor
Microsoft Editor (version corresponding to supported operating system)
Integration for Microsoft Office
Microsoft Excel 2016
Microsoft Outlook 2016
Microsoft PowerPoint 2016
Microsoft Word 2016 with adaptation of Microsoft Knowledge Base Article - 825765
Microsoft Excel 2019
Microsoft Outlook 2019
Microsoft PowerPoint 2019
Microsoft Word 2019 with adaptation of Microsoft Knowledge Base Article - 825765
Microsoft Excel 365 (Desktop Version)
Microsoft Outlook 365 (Desktop Version)
Microsoft PowerPoint 365 (Desktop Version)
Microsoft Word 365 (Desktop Version) with adaptation of Microsoft Knowledge Base Article - 825765

Integration for Microsoft Project
Microsoft Project Professional 2016
Microsoft Project Professional 2019
Integration for Microsoft Visio
Microsoft Visio Professional 2016
Microsoft Visio Professional 2019
Integration for Mozilla Thunderbird
Mozilla Thunderbird 68.2
Integration for CalDAV
Mozilla Thunderbird 68.2 with Mozilla Lightning 68.0
Integration for Novell GroupWise
Novell GroupWise 2014
Folio Folder
Local file system: NTFS 3.1 Note: Each Folio Folder is assigned to exactly one user and device. Therefore, it is not supported that several users synchronize in the same Folio Folder or that one user synchronizes from several devices in the same Folio Folder.

Digital Signature
Supported Certificates
PKCS#12
PKCS#7 (Soft Certificate)

4.4.8.1 Limits

- A maximum of 10000 entries should be stored in an object list.
- The import of files in the attribute editor is carried out in a single transaction (also if several objects are selected and contents are sequentially imported in these objects via „Edit

Properties“). The overall size of the imported data in Base64 coding has to be smaller than the configured maximum size of the request limit.

4.4.9 Fabasoft Integration for Mindbreeze

Please note the specifications of Mindbreeze regarding system requirements.

Software Requirements
Fabasoft Mindbreeze Enterprise 2020 or Mindbreeze InSpire 2020

Note: For the integration, the Mindbreeze SDK 2020 is used. According to the Mindbreeze software product information, also versions can be used, that are supported by this SDK. But these versions were not explicitly tested.

4.4.10 Fabasoft Integration for Fabasoft app.telemetry

Please note the specifications of Fabasoft app.telemetry regarding system requirements.

Software Requirements
Fabasoft app.telemetry 2020

Note: For the integration, the Fabasoft app.telemetry SDK 2020 is used. According to the Fabasoft app.telemetry software product information, also Fabasoft app.telemetry versions can be used, that are supported by this SDK. But these versions were not tested explicitly.

4.4.11 Support of Full-Text Search

Software Requirements
Full-Text Search in Contents
Fabasoft Mindbreeze Enterprise 2020 or Mindbreeze InSpire 2020
Full-Text Search in Meta Data
Microsoft SQL Server 2016 Enterprise SP2 or Microsoft SQL Server 2017 Enterprise or Oracle Database 19c Enterprise Edition (from 19.3.0.0.0) for Linux x86-64 with RAC or Fabasoft Mindbreeze Enterprise 2020 or Mindbreeze InSpire 2020

4.4.12 Fabasoft E-Services

Fabasoft E-Services support following portal server system environments:

Additionally to the listed reference system environments portal servers are supported that support JSR 168 compliant portlets as well as the Java servlet 2.4 specification (or higher if backwards compatible to version 2.4).

Reference System Environment
Liferay Portal CE 7.2.1 GA2
Apache Tomcat 9.0.17
AdoptOpenJDK OpenJDK 8 Update 282 (JRE, HotSpot)

Fabasoft E-Services support following client system environments:

Microsoft Windows Operating Systems
Microsoft Internet Explorer 11.0
Microsoft Edge 88.0
Mozilla Firefox 85.0
Google Chrome 88.0
Linux Operating Systems
Mozilla Firefox 85.0
Apple macOS
Mozilla Firefox 85.0
Apple Safari 14.0
Google Chrome 88.0

4.5 Supported Platforms (Linux Environment)

4.5.1 Fabasoft Folio Management

Fabasoft Folio Web Management

If Fabasoft Folio Services have been installed on Linux, for administering the Fabasoft Folio Services by means of Fabasoft Folio Web Management the following third-party products are supported.

Software Requirements
Microsoft Internet Explorer 11.0
Mozilla Firefox 68.2 ESR

Fabasoft Folio Server Management

If Fabasoft Folio Services have been installed on Linux, for administering the Fabasoft Folio Services by means of Fabasoft Folio Server Management the following third-party products are supported.

Operating System	Architecture
Microsoft Windows 10 Enterprise	x64
Microsoft Windows Server 2016 Standard	x64
Microsoft Windows Server 2019 Standard	x64

4.5.2 Fabasoft Folio Backend Services

In General

- The Fabasoft Folio Backend Services are supported and tested with the reference system environments for database services according to the configurations listed below.
- When using an Oracle database:
 - The version of Oracle Database must correspond exactly to the version of the used and supported Oracle Instant Client.
 - Oracle Database can also be operated on system environments (operating systems) that do not correspond to the reference system environments listed below, if this is supported by Oracle.

Fabasoft Folio Backend Services

Operating System	Architecture
Red Hat Enterprise Linux 7.9 (x64) or Community ENTenterprise Operating System 7.9 (x64) Note: Oracle Database is not supported when using Community ENTenterprise Operating System.	x64
Oracle Instant Client (when using Oracle Database)	
Oracle Database 19c (from 19.3.0.0.0) Instant Client for Linux x86-64	
Software Requirements	

OpenJDK 8 (JRE, headless, included in the supported operating system)

Database Services

Operating System	Architecture
Red Hat Enterprise Linux 7.9 (x64)	x64
Database	
Oracle Database 19c Enterprise Edition (from 19.3.0.0.0) for Linux x86-64 with RAC	x64

Operating System	Architecture
Red Hat Enterprise Linux 7.9 (x64)	x64
Database	
PostgreSQL 11.11	x64

Operating System	Architecture
Community ENTerprise Operating System 7.9 (x64)	x64
Database	
PostgreSQL 11.11	x64

4.5.3 Fabasoft Folio Web Services

Operating System	Architecture
Red Hat Enterprise Linux 7.9 (x64) or Community ENTerprise Operating System 7.9 (x64)	x64

Software Requirements
OpenJDK 8 (JRE, headless, included in the supported operating system)

4.5.4 Fabasoft Folio Conversion Services

The prerequisites for Fabasoft Folio Web Services as well as the following additional requirements have to be considered for the operation of a Fabasoft Folio Web Service as a Fabasoft Folio Conversion Service.

Software Requirements
Ghostscript 9.26 (x64)
Conversion of LibreOffice documents: LibreOffice 6.2.8 (x64) Note: Conversion of Microsoft Office documents with LibreOffice is not supported.
Conversion of videos: FFmpeg 4.2 (x64)
Conversion of CAD files (DWG, DXF): QCAD 3.23 (x64)
Extracting meta data: ExifTool 12.00 (x64)

4.5.5 Fabasoft Folio AT Services

Operating System	Architecture
Red Hat Enterprise Linux 7.9 (x64) or Community ENTerprise Operating System 7.9 (x64)	x64

Software Requirements
OpenJDK 8 (JRE, headless, included in the supported operating system)
Conversion of videos: FFmpeg 4.2 (x64)

4.5.6 Fabasoft iArchiveLink Services

Operating System	Architecture
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Red Hat Enterprise Linux 7.9 (x64) or Community ENTerprise Operating System 7.9 (x64)	x64
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Software Requirements
OpenJDK 8 (JRE, headless, included in the supported operating system)
SAP ERP Central Component (ECC) 6.0 EHP7
SAP Content Server HTTP Interface 4.7
Microsoft Visual C++ Redistributable 2019 and SAP GUI for Windows 7.40 (Fabasoft Folio Web Client with supported Microsoft Windows operating system)

4.5.7 Fabasoft iArchive

Applications and Software Requirements
Integration for EMC Centera
EMC ² Centera with CentraStar v4.2.0
Integration for NetApp SnapLock
NetApp SnapLock with Data ONTAP 7G

Note: For the integration for EMC² Centera, the Centera SDK Version 3.3 is used. According to the EMC Support Matrix also versions can be used, mentioned in this matrix and supported from this SDK. But these versions are not tested explicitly.

4.5.8 Fabasoft Folio Web Client

Operating System	Architecture
Ubuntu 18.04 (with Xorg window system)	x64

Supported Devices
Device B

Ubuntu 18.04
Mozilla Firefox 85.0 (x64)

The following optional third-party products are supported.

Applications and Software Requirements
Display of PDF contents
Document Viewer (version corresponding to supported operating system)
Integration for Mozilla Thunderbird
Mozilla Thunderbird 68.2
Integration for CalDAV
Mozilla Thunderbird 68.2 with Mozilla Lightning 68.0
Integration for LibreOffice
LibreOffice 6.2.8 Note: Document comparison is not supported.

4.5.8.1 Limits

- A maximum of 10000 entries should be stored in an object list.
- The import of files in the attribute editor is carried out in a single transaction (also if several objects are selected and contents are sequentially imported in these objects via „Edit Properties“). The overall size of the imported data in Base64 coding has to be smaller than the configured maximum size of the request limit.

4.5.9 Fabasoft Integration for Mindbreeze

Please note the specifications of Mindbreeze regarding system requirements.

Software Requirements
Fabasoft Mindbreeze Enterprise 2020 or Mindbreeze InSpire 2020

Note: For the integration, the Mindbreeze SDK 2020 is used. According to the Mindbreeze software product information, also versions can be used, that are supported by this SDK. But these versions were not explicitly tested.

4.5.10 Fabasoft Integration for Fabasoft app.telemetry

Software Requirements

Fabasoft app.telemetry 2020

Note: For the integration, the Fabasoft app.telemetry SDK 2020 is used. According to the Fabasoft app.telemetry software product information, also Fabasoft app.telemetry versions can be used, that are supported by this SDK. But these versions were not tested explicitly.

4.5.11 Support of Full-Text Search

Software Requirements

Full-Text Search in Contents

Fabasoft Mindbreeze Enterprise 2020
or
Mindbreeze InSpire 2020

Full-Text Search in Meta Data

Oracle Database 19c Enterprise Edition (from 19.3.0.0.0) for Linux x86-64 with RAC
or
Fabasoft Mindbreeze Enterprise 2020
or
Mindbreeze InSpire 2020

4.5.12 Fabasoft E-Services

Fabasoft E-Services support following portal server system environments:

Additionally to the listed reference system environments portal server are supported that support JSR 168 compliant portlets as well as the Java servlet 2.4 specification (or higher if backwards compatible to version 2.4).

Reference System Environment

Liferay Portal CE 7.2.1 GA2

Apache Tomcat 9.0.17

OpenJDK 8 (JRE, headless, included in the supported operating system)

Fabasoft E-Services support following client system environments:

Microsoft Windows Operating Systems

Microsoft Internet Explorer 11.0
Microsoft Edge 88.0
Mozilla Firefox 85.0
Google Chrome 88.0
Linux Operating Systems
Mozilla Firefox 85.0
Apple macOS
Mozilla Firefox 85.0
Apple Safari 14.0
Google Chrome 88.0

4.6 Supported Platforms (Apple macOS Environment)

4.6.1 Fabasoft Folio Web Client

Operating System	Architecture
Apple macOS 10.15	x64

Supported Devices
Device C
Apple macOS 10.15
Apple Safari 14.0 (x64) or Mozilla Firefox 85.0 (x64) or Google Chrome 88.0 (x64)

The following optional third-party products are supported.

Applications and Software Requirements

Display of PDF contents
Adobe Acrobat Reader DC
Integration for Apple iWork
Apple Pages 8.2
Apple Numbers 6.2
Apple Keynote 9.2
Integration for CalDAV
Apple Calendar 11.0
Integration for LibreOffice
LibreOffice 6.2.8 Note: Mail merge and document comparison is not supported.
Integration for Microsoft Office for Mac
Microsoft Excel 2019 for Mac
Microsoft Outlook 2019 for Mac
Microsoft PowerPoint 2019 for Mac
Microsoft Word 2019 for Mac Note: Mail merge is not supported.
Folio Folder
Local file system: HFS+ or APFS Note: Each Folio Folder is assigned to exactly one user and device. Therefore it is not supported that several users synchronize in the same Folio Folder or that one user synchronizes from several devices in the same Folio Folder.

4.7 Supported Platforms (Mobile Devices)

4.7.1 Fabasoft Folio Web Client on Mobile Devices

Supported Devices
Tablets/Phones with iPadOS/iOS 14.4 Apple Safari (version corresponding to the supported operating system)

Tablets/Phones with Android 10.0 Google Chrome 88.0 (setting: mobile version)
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Following use cases are supported on the mentioned mobile devices:

- Read and edit meta data of objects
- Read contents

4.7.2 Fabasoft Folio App

The Fabasoft Folio App 6.0.0 (Android) or 6.1.1 (iOS) can be used with the Folio versions from 2020 to 2016. The full functionality of the app is available with the current Folio version.

Supported Devices
Tablets/Phones with iPadOS/iOS 14.4
Tablets/Phones with Android 10.0

4.8 Additional Conditions

- The minimum hardware and software requirements for any future versions of this product may differ from the requirements of this version.
- A certain version of a third-party product integrated into any Fabasoft software product is supported by Fabasoft as long as the software product itself is supported by the third-party itself. For instance a particular version of an integrated Microsoft software product is only supported by Fabasoft until the date on which the Microsoft “Extended Support Phase” for this product version ends.
- Third-party products that are required or supported by Fabasoft products, proper licensing and installation of them, necessary tests for product release as well as corresponding manufacturer support are not included in the scope of supply and services and therefore they are not subject to warranty of Fabasoft regarding functionality, mode of operation or features. Fabasoft is not responsible for errors or malfunction, which are caused by third-party software products and/or products that are not included in the scope of supply and services.
- Fabasoft software products are only supported and tested on the mentioned reference system environments. In addition to the third-party product editions listed in the reference system environments the editions listed in chapter “Supported Editions of Third-Party Products” are supported but not tested.
- The values for CPU, available RAM and free disk space are minimum requirements for a demo installation.
- Fabasoft Folio Services are supported and tested on VMware vSphere 6.7 and KVM (based on the supported CentOS version).
- The installation of Fabasoft Folio Services of different versions on a single computer is not supported.
- A mixed environment of different versions of Fabasoft Folio Services and Fabasoft Folio client components is not supported.

- A mixed environment of Fabasoft Folio Services on operating systems from different vendors (Microsoft Windows, Red Hat Linux or Community ENTerprise Operating System) is not supported.
Fabasoft Folio Conversion Services are an exception. These have to run on Microsoft Windows or Linux corresponding to the document formats used and the third-party products necessary for it.
- Fabasoft Folio defines an SELinux policy (for RHEL and CentOS) that provides access controls on operating system resources for Fabasoft Folio Services. The rules defined for a standard installation may need to be extended accordingly for project-specific use cases and configurations.
- When using Fabasoft Folio Services (x64), OpenJDK has to be installed in a 64 bit version, too.
- A conversion from PDF to PDF/A generates PDF/A-3b compatible documents.
- A conversion to PDF/A with Microsoft Office or LibreOffice Writer generates PDF/A compatible documents corresponding to the third-party product.
- A conversion with Adobe Acrobat can either only generate PDF documents or only generate PDF/A documents.
- Only watched folders are supported for the conversion with Adobe Acrobat.
- Opening documents via Citrix Virtual Apps and Desktops 7 1903 is supported as long as all applications are running on the server (incl. Fabasoft Folio Client, Explorer, web browser etc.) or all applications are running on the client.
- Editing of Microsoft Office documents with LibreOffice and editing LibreOffice documents with Microsoft Office is not supported.
- The contact synchronization requires Microsoft Outlook 2016 or 2019 and a supported Microsoft Internet Explorer.
- Drag and drop functionality is only partially available for Mozilla Firefox, Google Chrome and Apple Safari.
- Video and audio files are not playable on all supported web browsers depending on the format.
- The BPMN editor provides only a read-only mode on mobile devices.
- The Fabasoft Folio client components are only supported on operating systems for which they were developed. If a client component is provided for multiple operating systems, the functionality may vary depending on the operating system.

4.8.1 Supported Editions of Third-Party Products

Following editions of third-party products are supported. Explicitly tested are only those editions that are listed in the reference system environments.

- The third-party product Microsoft Windows Server 2016 is supported in the following editions: Essentials and Standard. The Datacenter edition is only supported in projects (the following values for CPU, available RAM and free disk space do not apply for Datacenter Edition).
- The third-party product Microsoft Windows Server 2019 is supported in the following editions: Essentials and Standard. The Datacenter edition is only supported in projects (the following values for CPU, available RAM and free disk space do not apply for Datacenter Edition).
- The third-party product Microsoft SQL Server 2016 SP2 is supported in the following editions: Standard and Enterprise.

- The third-party product Microsoft SQL Server 2017 is supported in the following editions: Standard and Enterprise.
- The third-party product Microsoft Windows 10 is supported in the following editions: Pro and Enterprise.
- The third-party product Red Hat Enterprise Linux 7.9 (x64) is additionally supported in the following edition: Advanced Platform.

4.8.2 Authentication Possibilities

Microsoft Windows System Environment

Following authentication possibilities are provided for Fabasoft Folio Web Services:

- Kerberos (Microsoft Active Directory)
- LDAP
- Project-specific authentication (`REMOTE_USER` server variable)
Note: Use cases that require password verification are not supported with project-specific authentication (e.g. electronic signature).
- SAML 2.0
 When using this authentication method third-party products have to transfer the cookies for each request to the web server. Therefore the access via WebDAV is not supported. This authentication method implements the "SAML Web Browser SSO Profile". "SAML AuthnRequest responses" must be signed, encryption is not supported.
 The following SAML identity providers are supported:
 - Shibboleth IdP 3.3.3 (<http://shibboleth.net/>)
- OAuth 2.0 Draft 25, Bearer Tokens Draft 18
 "Refresh Tokens" are not supported.

Linux System Environment

Following authentication possibilities are provided for Fabasoft Folio Web Services:

- Kerberos (Microsoft Active Directory or MIT Key Distribution Center)
- LDAP
- Project-specific authentication (`REMOTE_USER` server variable)
Note: Use cases that require password verification are not supported with project-specific authentication (e.g. electronic signature).
- SAML 2.0
 When using this authentication method third-party products have to transfer the cookies for each request to the web server. Therefore the access via WebDAV is not supported. This authentication method implements the "SAML Web Browser SSO Profile". "SAML AuthnRequest responses" must be signed, encryption is not supported.
 The following SAML identity providers are supported:
 - Shibboleth IdP 3.3.3 (<http://shibboleth.net/>)
- OAuth 2.0 Draft 25, Bearer Tokens Draft 18
 "Refresh Tokens" are not supported.

4.8.3 Minimum Requirements

Fabasoftware Folio Services

Architecture	CPU	RAM	Disk Space
x64	2,0 GHz	4 GB	5 GB

Fabasoftware Clients

Architecture	CPU	RAM	Disk Space
x64	1,6 GHz	1 GB	100 MB

4.8.4 Limits

Server Limits

- A Fabasoftware Folio Domain or tenant can consist of a maximum of 255 Fabasoftware Folio COO Stores.
- A Fabasoftware Folio Backend Service can run a maximum of 10000 client connections at the same time.
- A maximum of 2500 hits can be displayed at once in the Fabasoftware Folio search GUI.
- A maximum of 16 million objects can be created in a Fabasoftware Folio Store.
- A maximum of 65534 tenants can be created in a Fabasoftware Folio Domain.
- A maximum of 120 worker-threads can be created in a Fabasoftware Folio Backend Service.

The specified limits can be reduced by operating system limitations.

Fabasoftware Folio Kernel Limits

- A Fabasoftware Folio Kernel can run a maximum of 1000 service connections at the same time.
- A Fabasoftware Folio Kernel can process a maximum of 1000 open connections.
- In one process a maximum of one Fabasoftware Folio Kernel can run.
- A Fabasoftware Folio Kernel can run a maximum of 1024 threads.
- A Fabasoftware Folio Kernel can connect directly to a maximum of one Fabasoftware Folio Domain.

The specified limits can be reduced by operating system limitations.

Recommended Limits

- A maximum of 10000 entries should be stored in an object list.

4.9 Application Performance Management

With Fabasoftware app.telemetry a powerful tool for effective Application-Service-Level-Management and optimization of resources is provided.

Fabasoftware app.telemetry collects detailed performance data from data flows and response time behavior (performance) for distributed software applications and facilitates the analysis of these

data in the context of the respective operating steps (use cases). Fabasoft app.telemetry reproduces a user enquiry through servers and locations and collects detailed information about each involved application (service). Such information is, e.g., the execution time, the retention time within a service or item (query) and the duration of a database query. Thereby Fabasoft app.telemetry details the respective system path. This enables the service team to immediately identify critical points in terms of time.

Fabasoft app.telemetry also provides users with the unique possibility to report unsatisfactory system queries directly by using the *Direct User Feedback-Button*. The most recent queries are then automatically summarized and made available for immediate analysis.

Fabasoft app.telemetry raises the level of corporate efficiency through immediate identification of bottlenecks in the IT systems. Particularly complex and service-oriented architectures profit from the Fabasoft app.telemetry targeted identification of performance and resource bottlenecks, as they can be rapidly isolated and repaired.

The software also provides a complete overview of all performed queries. Data such as the query execution time are prepared jointly with application specific information and are available immediately for an analysis of the overall situation.

Fabasoft app.telemetry also performs classic system management functions. The software monitors cluster resources or services as well as observes SNMP (Simple Network Management Protocol) - values, performance data or availability checks. The product is also ideally integrated into a virtual environment with the support of a VMware ESX server.

Fabasoft app.telemetry SDK

Fabasoft app.telemetry SDK (Software Development Kit) provides a simple and quick-to-use interface for applications. It enables software developers to easily integrate their applications into the Fabasoft app.telemetry. Based on the Application Response Measurement Standards (ARM), information can also be easily transmitted from applications to Fabasoft app.telemetry.