



M-Files 2015.1
User Guide

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1. Introduction to M-Files

Congratulations on your purchase of M-Files® Dynamic Content Management software!

M-Files® enterprise content management software helps you easily store, organize and access all kinds of documents and information. Our revolutionary approach organizes content based on what something is (and what it relates to) instead of where it's been stored. Eliminating the traditional folder-based method ensures that you have instant access to all of your content via search or dynamic views. It's simple, dynamic, and flexible. From managing a wide variety of content to ensuring regulatory compliance, M-Files has you covered.

Access your information anywhere: M-Files can be deployed on-premise, in the cloud, or a hybrid of both.

Thank you for choosing M-Files and welcome to a new chapter in productivity!

 Video: [M-Files Overview](#)

M-Files Components

Your M-Files software includes the following components:

- *M-Files Setup*: Use this to install M-Files.
- *M-Files Desktop*: The most commonly used component that displays content in various views and is tightly integrated into Windows.
- *M-Files Desktop Settings*: Use this component to connect your client computer to document vaults on the M-Files Server, and to edit other local settings.
- *M-Files Server*: This component manages the centralized saving and sharing of content.
- *M-Files Admin*: A tool used by your company's information systems administrator for adjusting M-Files Server settings, managing the document vault, and modifying the vault structure.
- *Show Status*: With this component, you can monitor file transfer status. This is useful if you are using M-Files over a slow connection and need to view the transfer progress.
- *M-Files Web*: In addition to using the M-Files Desktop, you can access M-Files by using a web browser.
- *Automatic Updates*: Automatically keep your M-Files software up to date.

M-Files also includes an ActiveX/COM API as well as the M-Files Web Service API that allows programmatic access to M-Files through a REST like interface. The M-Files API and its documentation are included within the installation of the M-Files software, and the M-Files Web Service API is documented at: www.m-files.com/mfws.

About using M-Files documentation

Assuming you are reading the web help version of the user guide, you can access this help documentation anytime M-Files is active by pressing *F1* on your keyboard. Opening M-Files Help via *F1* adds the advantage of directly accessing a topic that is related to what you are doing.

You can also open the documentation via the M-Files icon on the Windows notification area, as well as via numerous help buttons in the M-Files user interface.

In addition, the user guide is available as a PDF version. You can download it by clicking the PDF icon in the upper right corner of the web help documentation.

1.1. M-Files Terminology

The following table describes daily M-Files terminology.

M-Files software	The M-Files document management software consists of the following components: <i>M-Files Desktop</i> , <i>M-Files Admin</i> , <i>M-Files Desktop Settings</i> , <i>Show Status</i> and <i>M-Files Server</i> . You can also use M-Files with a web browser or a mobile device.
File vs. document	An example of a file is a memo created using <i>Microsoft Word</i> and saved on the C:\ drive. The file becomes a document only after you have associated metadata with it. When you have implemented M-Files and start transferring existing files to M-Files, you add metadata to the files to make them documents. In addition to documents, an M-Files vault can also store other types of objects, such as customers, assignments, or project data.
Multi-file documents	A multi-file document is a special M-Files document type that can contain more than one file. The files share one set of metadata. Typical uses include linking of an electronic document with its signed and scanned counterpart, an email and all its attachments, or any such case where files need to be linked together and treated as one unit.
Temporary local file	For example, Microsoft Word creates temporary files during the work. These are so-called <i>temporary local files</i> . Some programs cannot remove these temporary files, and they remain as temporary local files in M-Files. As temporary local files have no associated metadata, they are not saved on the server. The temporary local files can be converted to documents, refer to Convert to Document on page 89, and removed, refer to Clear Local Cache on page 111.
Metadata	<i>Metadata</i> consists of information about the document's properties, such as the parties of a contract or the recipient of a letter. Metadata is used to, for example, search for and organize documents.
Document / object permissions	Each document can be assigned <i>permissions</i> to specify the access rights of a <i>user</i> or <i>user group</i> . The permissions can be either allowed or denied separately. One user can have <i>allowed</i> or <i>denied</i> permissions in two different ways: the permissions have been specified for that particular user, or the user belongs to a user group for which the permissions have been specified. If no permissions have been specified for a user, the user cannot view the document or access it in any way. If certain permissions have been allowed, the user can perform the procedures determined by these permissions.
Vault	A <i>vault</i> is a centralized storage location for documents and other objects. Its physical location is on the server running M-Files Server. Regardless of the physical location, all users see the document vault as a directory on their local computer's M-Files drive. This means that using a document vault is similar to using a local hard drive.
View	<i>Views</i> are locations in which the documents and other objects are listed based on the metadata they contain.
Virtual folder	The objects and documents in the views include virtual folders (property folders). Virtual folders enable sorting documents in the view into categories.
Traditional folder	You can also create <i>traditional folders</i> in M-Files. These do not have the additional properties provided by views. Traditional folders compare, for example, to C:\ folders and can be used for importing files to M-Files.

Client	A <i>client</i> is the regular M-Files user's computer and the software installed on it. The regular user performs operations like creating documents and exploring the document vault.
Object type	By defining <i>object types</i> , you can create different types of objects. <i>Document</i> is one of such object types, one that every vault contains. In addition, the M-Files administrator can create other object types for the vault, such as <i>customer</i> , <i>contact</i> , and <i>project</i> . This way, you can use M-Files to, for example, store the company's customer and project databases.
Object	The term <i>object</i> refers to instances of various object types – that is, individual objects created using object types. For example, one contact person in the document vault is an object. Most functions are identical for documents and for other objects. This manual often represents operations as being performed on documents, but the same operations are available for, e.g., document sets and other objects. An individual document can therefore also be thought of as an object.
Document collection	<i>Document collections</i> are collections of individual documents in the document vault. Each collection member document has its own metadata. In addition, the document collection has a collective set of metadata independently of member documents (cf. multi-file document). Each document in the collection can still be accessed as an individual document but also through the document collection.
Relationships	You can also define the <i>relationships</i> between objects. Using relationships you can, for example, indicate that two documents are related. Relationships enable easy tracking of all documents related to an issue.
Template	You can use another object as a template for creating a new object. When you select a template from the list, the metadata card adjusts itself to the specifications of the template object. You can edit and add metadata. Specify an object as a template by setting its <i>Is template</i> property to Yes.
Workflow	The M-Files Workflow feature enables modeling object lifecycles according to real world processes. The workflow is grouped into states that correspond to the working stages of the document or other object. The M-Files administrator can easily define workflows to meet company requirements. For more information about workflows, refer to Workflows on page 237.
Server	M-Files Server runs on the server. Clients connect to the server and retrieve data so that the contents of the document can be viewed on the clients. The server is the physical location of the document vault.

2. System Overview

An M-Files system is composed of 1) a server computer (or multiple servers) running the *M-Files Server* component and containing the document vault or vaults, and of 2) *M-Files clients* used for displaying and editing the vault-stored information via the end-users' computers or mobile devices.

▶ Video: [Technical Structure](#)

You can access document vaults 1) by installing [M-Files Desktop](#) on page 38 on your desktop or laptop, 2) via any web browser ([M-Files Web](#) on page 12), or 3) with the [M-Files mobile apps](#) on page 13 for iOS, Android and Windows Phone devices.

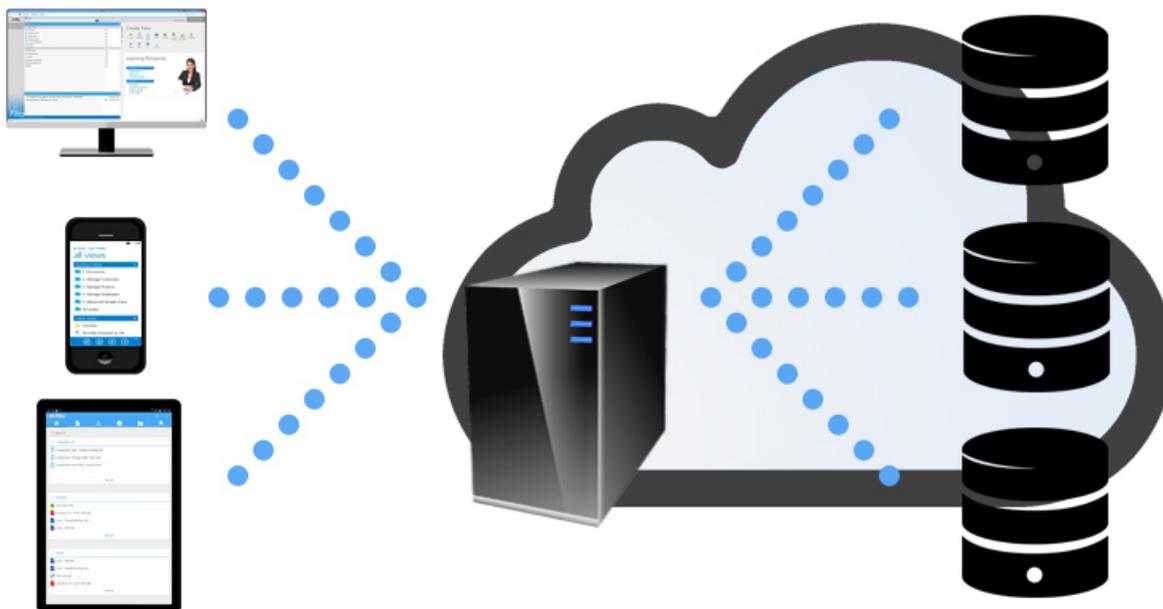


Figure 1: M-Files clients (on the left) are used for accessing M-Files Server (in the center), which manages the document vaults (on the right).

The image above offers a high-level description of the M-Files system: the clients (M-Files Desktop, M-Files Web, or any of the M-Files mobile applications) on the left are used for accessing the server computer (center of the image), which in turn manages one or more document vaults (on the right). Alternatively, M-Files Server and the document vaults may be located on a cloud-based server (see [Deployment Options for M-Files Server](#) on page 10).

You can edit server settings and the document vault structure with [M-Files Admin](#) on page 144. With [M-Files Desktop Settings](#) on page 24, you can add, remove and edit vault connections. For more information about using M-Files Web and the mobile applications, see the topics [M-Files Web](#) on page 12 and [Mobile Apps](#) on page 13.

The M-Files server can be set up on-premises, in the cloud, or as a hybrid deployment, the latter combining the advantages of on-premises and cloud-based systems. Refer to [Deployment Options for M-Files Server](#) on page 10 for more information.

2.1. Deployment Options for M-Files Server

M-Files offers several server deployment options, giving you the flexibility to leverage M-Files based on the model that best suits your organization's business needs and budget. Below is a short description of each server

deployment option. Contact M-Files sales at sales@m-files.com if you need more information and advice on finding the best solution for your organization.

You will be able to use any of the clients (M-Files Desktop, M-Files Web, and/or M-Files Mobile) for vault connections regardless of the server deployment solution that you decide is best suited for your organization.

On-premises server

An on-premises server deployment is best suited for organizations that have already invested in existing servers and systems, or are required to use an on-premises solution deployed behind the organization's own firewall for regulatory reasons.

Using on-premises servers for M-Files document vaults does not, however, mean that they could not be securely accessed from outside (or inside) the company network. The vaults in the organization's private network can be accessed via [M-Files Web](#) on page 12, [M-Files mobile applications](#) on page 13, or M-Files Desktop (via a VPN connection or by using a [pre-shared key](#) on page 15) regardless of your location.

Cloud server

Document and enterprise content management via a cloud-based server deployment provides software as service (SaaS) flexibility associated with licensing and scalability (such as the ability to easily expand storage, or to modify the number of user licenses as necessary) without significant capital investment and incremental resources to support it. In addition, cloud-based solutions offer inherent remote access to company documents, and flexible monthly billing. Powered by the Windows Azure cloud platform, M-Files Cloud Vault delivers additional redundancy and automated third-party backup that offers greater protection against data loss or theft.

Please note that using a cloud-based deployment also enables you to use all the client options for connecting to your document vaults.

Cloud Vault Subscription Management Portal

The M-Files [Cloud Vault Subscription Management Portal](#) allows end user administrators to manage their subscriptions online.

The portal enables the following functions:

- Adding new licenses and removing existing licenses.
- Adding new user accounts and removing existing ones.
- Changing user details and license types.
- Downloading M-Files installers.

Hybrid server

With an M-Files hybrid deployment, organizations can both leverage their existing on-premises technology investments and take advantage of an award-winning document and enterprise content management solution running in the public cloud or a private cloud, as needed.

Furthermore, M-Files Cloud Vault can be seamlessly integrated with existing on-premises systems like an ERP or CRM, such as SAP or Microsoft Dynamics GP and AX. Conversely, an on-premises deployment of M-Files can be easily integrated into existing cloud-based business applications, such as Salesforce, Microsoft Dynamics Online or NetSuite.

The same client options (M-Files Desktop, M-Files Web, or any of the M-Files mobile applications) are equally available for organization's using a hybrid server deployment.

2.2. M-Files Web

You can access M-Files vaults also via the M-Files Web browser interface. M-Files Web is an ideal client for users that use the system less frequently. For optimal user experience, we recommend installing the M-Files Desktop client.

▶ Video: [M Files Web](#)

Ask your system administrator for the address of M-Files Web in your organization. Or if you are looking for instructions on how to set up the M-Files Web connection in your organization, please refer to [Enabling Web and Mobile Access](#) on page 153.

- **Note:** M-Files Web is, by default, installed and configured to run on the same computer with M-Files Server, providing access to the vaults on this server. If you need to set M-Files Web to use M-Files Server located on another computer, refer to the document [How to Configure M-Files Web Access on a Separate Server Computer](#).

For additional security, M-Files can be configured to require a pre-shared key in addition to the user's username and password. This provides an additional level of security without requiring users to open a VPN connection for accessing M-Files. For more information, see [Accessing M-Files Vaults without VPN](#) on page 15. In case your organization is using federated identity management, see [Using Federated Authentication with M-Files](#).

Logging in to M-Files Web

1. Navigate in your web browser to the M-Files Web address provided by your system administrator or an M-Files consultant.

✍ Let's say the name of your vault is *Sales Tracker*. In that case, the address can be, for example, <https://sales-tracker.cloudvault.m-files.com> for cloud-based deployments, or <http://sales-tracker.mydoimain.com> for on-premises vaults. Within your corporate network, the connection protocol might be *HTTP* instead of *HTTPS*.

2. Input your login credentials or select **Log in with current Windows credentials**.
3. If you have access to several vaults, select the vault you want to connect to.

i If you have access to only one vault, you will be connected automatically.

You should now be logged in and you should see the M-Files home screen.

M-Files Web User Interface

M-Files Web enables you to use all the basic M-Files functions, including electronic signatures for workflow state transitions (see [Electronic Signature](#) on page 253).

The user interface is also highly similar to that of M-Files Desktop. Refer to the [Using M-Files Desktop](#) on page 38 section for more details about the user interface components.

The screenshot displays the M-Files Web interface. On the left, a navigation pane lists various actions like 'New', 'Assignment', 'Customer', 'Document', etc. The main area shows a table of files with columns for Name, Size, Date Modified, and Score. The file 'Employment Agreement / Kimberley Miller.doc' is selected. On the right, a preview pane shows the document's metadata, including Class (Employment Agreement), Document date (22/06/2011), Employee (Kimberley Miller), and Effective through (22/06/2012).

Name	Size	Date Modified	Score
Sales Invoice Template.xls	33.5 KB	09/06/2011 07:26	1840
Sales Invoice 313 - CBH International.xls	34.0 KB	09/06/2011 07:31	1802
Sales Invoice 312 - CBH International.xls	34.0 KB	09/06/2011 07:31	1802
Sales Invoice 251 - Davis & Cobb, Attorneys at Law.xls	34.0 KB	09/06/2011 07:29	1802
Sales Invoice 250 - Davis & Cobb, Attorneys at Law.xls	34.0 KB	09/06/2011 07:30	1802
Sales Invoice 240 - A&A Consulting (AEC).xls	34.0 KB	09/06/2011 07:29	1802
Sales Invoice 239 - City of Chicago (Planning and Developme	34.0 KB	09/06/2011 07:28	1802
Sales Invoice 236 - A&A Consulting (AEC).xls	34.0 KB	09/06/2011 07:27	1802
Letter Template for Word.doc	32.0 KB	09/06/2011 07:22	1726
Tennessee Land Surveyors Price List 2006.xls	19.0 KB	09/07/2007 17:03	1714
Employment Agreement / Kimberley Miller.doc	35.0 KB	22/06/2011 18:52	1704
Travel Expenses.xls	19.0 KB	09/07/2007 16:53	1637
Proof of Employment, Laura Foster.doc	33.0 KB	09/07/2007 17:02	1608
Job Application, Tina Cordwell.doc	33.0 KB	23/06/2010 15:30	1604
Job Application, Paula McEnroe.doc	33.0 KB	23/06/2010 15:27	1604
Job Application, Jim Red.doc	33.0 KB	23/06/2010 15:30	1604
Invoice #777 - UPS.pdf	5.35 KB	23/06/2010 15:02	1604
Invoice #2304 - CBC.pdf	5.35 KB	10/06/2008 19:38	1602
Invoice AB887-23-22A.pdf	5.35 KB	23/06/2010 14:53	1460
Invoice A-112-3.pdf	5.35 KB	23/06/2010 14:52	1460
Invoice #656 - UPP Consulting.pdf	5.35 KB	23/06/2010 14:46	1460
Invoice #101 - ESTT.pdf	5.35 KB	23/06/2010 14:42	1460

Figure 2: M-Files Web for M-Files 2015.

2.3. Mobile Apps

M-Files is also available as a mobile application for iOS, Android and Windows Phone devices. The mobile applications enable you to, for example, gain access to all vault content and mark your assignments as complete on the go, as well as to create and share new objects with your mobile device.

You can download the latest version of the mobile applications from your application store:

- [M-Files for iOS](#) (iPhone and iPad)
- [M-Files for Android](#) (phones and tablets)
- [M-Files for Windows Phone](#)

For a description of functional differences between the mobile applications, see the Knowledge Base article [M-Files Mobile Apps Feature Comparison](#).

For additional security, M-Files can be configured to require a pre-shared key in addition to the user's username and password. This provides an additional level of security without requiring users to open a VPN connection for accessing M-Files. For more information, see [Accessing M-Files Vaults without VPN](#) on page 15).

▶ Video: [M-Files Mobile](#)

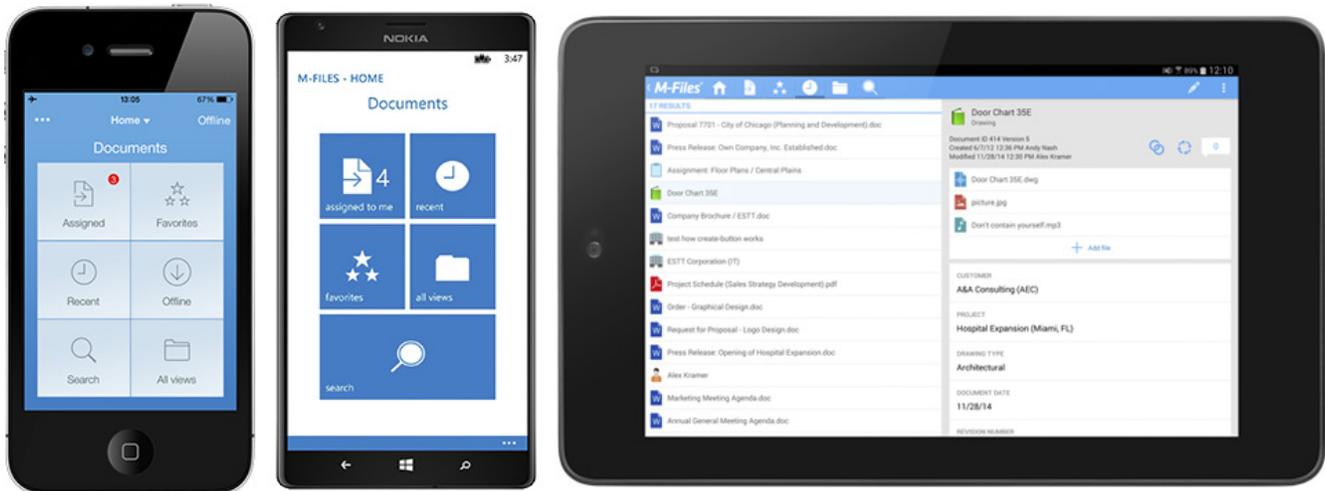


Figure 3: The M-Files mobile apps.

Application language

M-Files mobile applications use your device's language settings to determine the user interface language.

Enabling the use of mobile apps for on-premises vaults

In order for you to access your organization's on-premises vault(s) via a mobile device, M-Files Web must be enabled and configured. M-Files Web acts as the connection point for the native mobile apps by providing the M-Files Web Service REST API services. For more information about M-Files Web settings, refer to [Enabling Web and Mobile Access](#) on page 153.

In cloud-based deployments, you can always use mobile apps without any special configuration.

Logging in to M-Files Mobile

1. Ask your vault administrator or an M-Files consultant for the login details of the document vault.
2. On the login screen, input the server address and your username and password.

 Let's say the name of your vault is *Sales Tracker*. In that case, the address can be, for example, <https://sales-tracker.cloudvault.m-files.com> for cloud-based deployments, or <http://sales-tracker.mydomain.com> for on-premises vaults. Within your corporate network, the connection protocol might be *HTTP* instead of *HTTPS*.

-  For cloud vaults hosted in the M-Files cloud, M-Files recognizes the server address even if you only enter the *sales-tracker* part. Although, to be absolutely sure that the correct protocol and address is used, it is always recommended to use the full server address.

3. Tap **Log in**.
4. If you have access to several vaults, select the vault you want to connect to.
 -  If you have access to only one vault, you will be connected automatically.

You should now be logged in and you should see the M-Files home screen.

Adding vault connections with links

Administrators can create links for facilitating the end users' vault connection process. The end user only has to open the link with their mobile device and input their username and password. After a successful connection, the vault connection information is saved to the user's device.

For more details and an example, refer to the document [M-Files URL Properties](#).

2.4. M-Files and Virus Scanning

M-Files is compatible with all commonly used virus scanning products.

It is, however, important to ensure that the virus scanners on the end users' computers do not perform scheduled scanning for the virtual M-Files drive (the M: drive by default). A scheduled scan for the M-Files drive would load all the content from the M-Files server to the user's client and unnecessarily strain both the network and the server.

Additionally, for best performance, you may wish to disable any real-time scanning for the virtual M-Files drive (the M: drive by default) and the M-Files installation folder ("C:\Program Files\M-Files" by default). Excluding these locations from real-time scans can help prevent unnecessary system load and possible conflicts between M-Files and the anti-virus software.

Excluding the M-Files drive and installation folder from virus scanning

To exclude the M-Files drive and the installation folder from virus scanning, you should add their paths to the appropriate exclusion lists or exceptions lists in the anti-virus software. For example with Symantec Endpoint Protection Manager (SEPM), this would be done via an *exceptions policy* as described in the Symantec knowledge base article [Create Centralized Exceptions Policies in Endpoint Protection Manager 12.1](#). Other commonly used anti-virus software products may use terminology such as "excluded items list", "exclude objects", or "exclude from scanning".

There are typically separate exclusion lists for scheduled scanning and real-time scanning.

Excluding the M-Files Client process from virus scanning

If your anti-virus software supports excluding processes by name, it is usually a good idea to exclude the *MFClient.exe* process from any real-time scanning. By default, the path to *MFClient.exe* is "C:\Program Files\M-Files\<version>\Bin\x64\MFClient.exe" on 64-bit systems and "C:\Program Files\M-Files\<version>\Bin\x86\MFClient.exe" on 32-bit systems. With SEPM, for instance, this can be done by following the instructions in the Symantec knowledge base article [How to create an application exception in the Symantec Endpoint Protection Manager](#).

Excluding the *MFClient.exe* process from real-time scanning can help improve performance by preventing the virus scanner from scanning the same files twice: once when the application opens the file and another time when *MFClient.exe* performs an internal *open* operation on the same file.

2.5. Accessing M-Files Vaults without VPN

Organizations have traditionally relied on Virtual Private Network (VPN) technology to secure access to corporate resources (such as M-Files vaults) from outside the private network of the organization. M-Files versions 10.2 and later enable you to provide secure access to the M-Files system without the downsides of the traditional VPN-based approach.

The security of this approach is based on encrypting all network traffic between client devices and the server with HTTPS (SSL/TLS) and on using a pre-shared key as an additional "shared secret" in authentication to ensure that only authorized devices can attempt to connect to the system.

-  **Note:** Cloud-based servers, M-Files Web, and the mobile applications use the HTTPS protocol by default, but for pre-shared keys to work on desktop clients connecting to an on-premises server, "RPC

over HTTP with SSL" communication between the server and the desktop clients needs to be enabled. For more information, refer to the document [Enabling RPC over HTTPS connections to M-Files Server](#).

Together, the HTTPS encryption and the use of a pre-shared key as a second factor in authentication provide similar security as VPN but without the complexity and compatibility challenges of VPN. However, it needs to be noted that the approach is not identical to VPN from the security point of view, and that each organization needs to determine if granting access to M-Files vaults without VPN is appropriate considering the organization's business needs and security requirements.

For more information about using pre-shared keys for secure M-Files access, please refer to [Securing Access to M-Files Vaults with a Pre-Shared Key](#).

2.6. HTTPS Connections to M-Files Server

The communication between M-Files Server and the M-Files clients can be accomplished by using various connection protocols. Cloud-based servers (as well as the M-Files Web client and the M-Files mobile applications) only accept communication via the HTTPS protocol, whereas the default way for M-Files Desktop to communicate with an on-premises M-Files server is to use the Remote Procedure Call (RPC) protocol (TCP/IP, port 2266). Since this mode of communication does not require any additional configuration steps, it is usually the preferred way of communicating inside the organization's internal network.

In some situations, however, it is preferable to enable M-Files Desktop to communicate with M-Files Server via the HTTPS protocol instead of RPC. This is especially useful if clients are connecting from outside the company's internal network. HTTPS connections are always encrypted and are typically not blocked in hotel networks or other public networks.

For instructions on how to enable "RPC over HTTP with SSL" communication between M-Files Desktop and M-Files Server, refer to the document [Enabling RPC over HTTPS connections to M-Files Server](#). With the configuration described in the document, all traffic from M-Files Desktop is encrypted and tunneled through TCP port 443.

Once the "RPC over HTTP with SSL" connections have been enabled on the server, end users will be able to use the HTTPS protocol while adding or editing a document vault connection in [M-Files Desktop Settings](#) on page 25.

2.7. M-Files and Federated Authentication

Traditionally, the need to verify user identity has been met by using software-specific credentials or Windows credentials. Federated authentication offers organizations the possibility to use an authentication system that is completely external to M-Files. In many cases, having a centralized repository for all the M-Files user credentials completely *outside* the M-Files system can be very useful. Federated identity management also enables single sign-on, and provides the opportunity for the users to utilize their existing credentials.

For more information about using federated authentication with M-Files, see the article [Using Federated Authentication with M-Files](#).

2.8. Language Versions of the M-Files Software

M-Files software is currently available in the following languages:

- Albanian
- Arabic
- Bulgarian
- Chinese (Simplified/PRC)
- Chinese (Traditional/Taiwan)
- Hebrew
- Hungarian
- Italian
- Japanese
- Norwegian

- Croatian
- Czech
- Danish
- Dutch
- English
- Estonian
- Finnish
- French
- German
- Greek
- Polish
- Portuguese (Brazil)
- Romanian
- Russian
- Slovenian
- Spanish
- Swedish
- Turkish
- Vietnamese

You may change the language of the software and the document vault (metadata structure) while the software is running. Even if, for example, a Finnish version of M-Files has been installed on the computer, you can easily switch to the English version without reinstalling the software. This is a significant benefit when shared computers are used.

-  **Note:** Only when 1) the software installation language, 2) the vault language, and 3) the Windows display language are the same, all the M-Files functions and the metadata structure of the document vault are displayed in the language in question. For more information, see [Languages and Translations](#) on page 184.

3. Installation and Implementation of the Software

This chapter includes the following sections:

- System requirements for installing and using the software.
- Installing and distributing the software automatically (concurrently for several computers).
- Installing the software with *M-Files Setup* (for one computer).
- Creating a document vault and its users with M-Files Admin.
- Implementing the document vault with M-Files Desktop Settings.
- Updating the M-Files software.

If you already have the M-Files software installed on your computer, you can move to [Exploring the Document Vault](#) on page 38.

3.1. System Requirements

For a more detailed account of M-Files technical details, refer to the [M-Files Technical Data Sheet](#).

Operating system

M-Files is compatible with both 32-bit and 64-bit Microsoft Windows operating systems. The 32-bit and 64-bit systems have separate installation programs.

The M-Files software can be installed on computers running one of the following operating systems:

- Windows 10
- Windows 8 and 8.1
- Windows 7
- Windows Vista
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2
- Windows Server 2008

The operating system version can be either Workstation or Server.

 **Note:** M-Files Desktop/Client 10.x and newer only work in Windows versions 8, 7 and Vista. Windows XP users can use M-Files 10.0 Server with 9.0 Client. M-Files 10.0 Client also requires Internet Explorer 9 or newer.

 **Note:** It is not recommended to install M-Files Server on a computer that is also used as a Microsoft domain controller.

Mac and Linux users can access M-Files via [M-Files Web](#) on page 12.

Space requirements

For the M-Files Desktop installation, ensure that the target computer has at least 200 MB of free space. Ensure that the target computer also has at least 1 GB of free space if it is to run the M-Files Server installation. The space required by the document vault depends on the number and size of the documents and other objects to be stored.

 **Note:** M-Files 2015 includes significant improvements to the vault database structure. This means that – especially with large document vaults – the update process might take substantially longer than usual.

It is also recommended to ensure that the server computer has at least twice the amount of free space required by the metadata database file (*fdb* file for Firebird and *mdf* file for MS SQL Server databases). The database structure is updated automatically by the M-Files installer.

Microsoft SQL Server requirements

The following Microsoft SQL Server features need to be enabled if you wish to use Microsoft SQL Server as the M-Files database engine:

Instance features

- Database Engine Services
- Reporting Services, Native Mode (if reporting is used)

Shared features

- Management Tools, Basic
- Management Tools, Complete (if reporting is used)

Citrix XenApp

M-Files is compatible with the Citrix XenApp environment. Using M-Files via XenApp may, however, require special configurations. For more information, see [M-Files and Citrix XenApp](#).

3.2. Installing the Software

This topic guides you through a single M-Files installation. Please note that M-Files can also be distributed and installed on several computers at once. This is especially useful for large organizations. If you need help in using Active Directory group policies in distributing M-Files, refer to [How to deploy M-Files Client software using GPO](#) and/or contact [M-Files Consulting Services](#).

For advanced installation options, such as customizing the installation package to automatically configure client or server connections, disable automatic checking for software updates or change the M-Files Desktop drive letter, refer to the document [M-Files Setup: Advanced User's Guide](#).

While the M-Files installation is in progress, you might want to see information about [M-Files and Virus Scanning](#) on page 15.

For a single install, please follow these steps:

1. Quit all other applications running on your computer and double-click the *M-Files Setup* icon. The *M-Files Installation Wizard* welcome screen appears.
2. Click **Next**.
3. Read and accept the end-user license agreement to be able to continue.
4. Click **Next**.
5. Select the software components to be installed.
 - You can install M-Files for *evaluation* or perform the *normal installation*. If you are a regular M-Files user, you only need to install M-Files Desktop. In this case, *M-Files Server* has been installed on your organization's local area network, and the M-Files system administrator has the *M-Files Server Tools* (M-Files Admin) installed. After the normal installation, you will not have the Demo Vault on your computer (unless you have received it during a previous evaluation installation), but you can connect to the document vault on your server with M-Files Desktop Settings.
 - The evaluation installation includes all the software components as well as the *Demo Vault*, which you can start exploring immediately after installation. You can open the *Guided Tour* from *Start > Programs > M-Files > Documentation* to continue exploring the software.
6. Continue the installation by clicking **Next**.
7. Specify the installation location and click **Next**.

8. If you do not want to change anything, click **Next** to start the installation.
9. Select whether or not you would like to see the *Guided Tour* and click **Finish** to complete the installation process.

The M-Files software has now been installed on your computer. The following sections of this chapter describe tasks that normally follow the installation. If you have performed an evaluation installation, you can continue familiarizing yourself with the software by using the *Guided Tour* via the Windows Programs menu.

3.3. Creating a Document Vault and a User

If you are an M-Files Desktop user, you can move to [M-Files Desktop Settings](#) on page 24.

This is a general description for creating a document vault and its user(s) with M-Files Admin. You can find a more detailed description in the chapter [M-Files Admin](#) on page 144.

- Note:** If you chose the evaluation installation option when installing M-Files Server, two vaults are automatically deployed. The "Sample Vault" contains a reference metadata structure and views for some common information management processes and sample files to help you to easily evaluate the search. The "My Vault" contains the same metadata structure and views as the "Sample Vault", but does not contain the sample content. You can use the structure of "My Vault" as a foundation for your purposes instead of creating a new vault from scratch. You can also [restore](#) on page 166 the sample structure from the M-Files Server installation folder ("C:\Program Files\M-Files\<version>\Server\sample\My Vault.mfb" by default).

You can open M-Files Admin from your Windows start menu. The user interface consists of the left-side tree view for navigation, and of a content section on the right. Most of the content windows also include a task pane for the most common operations.

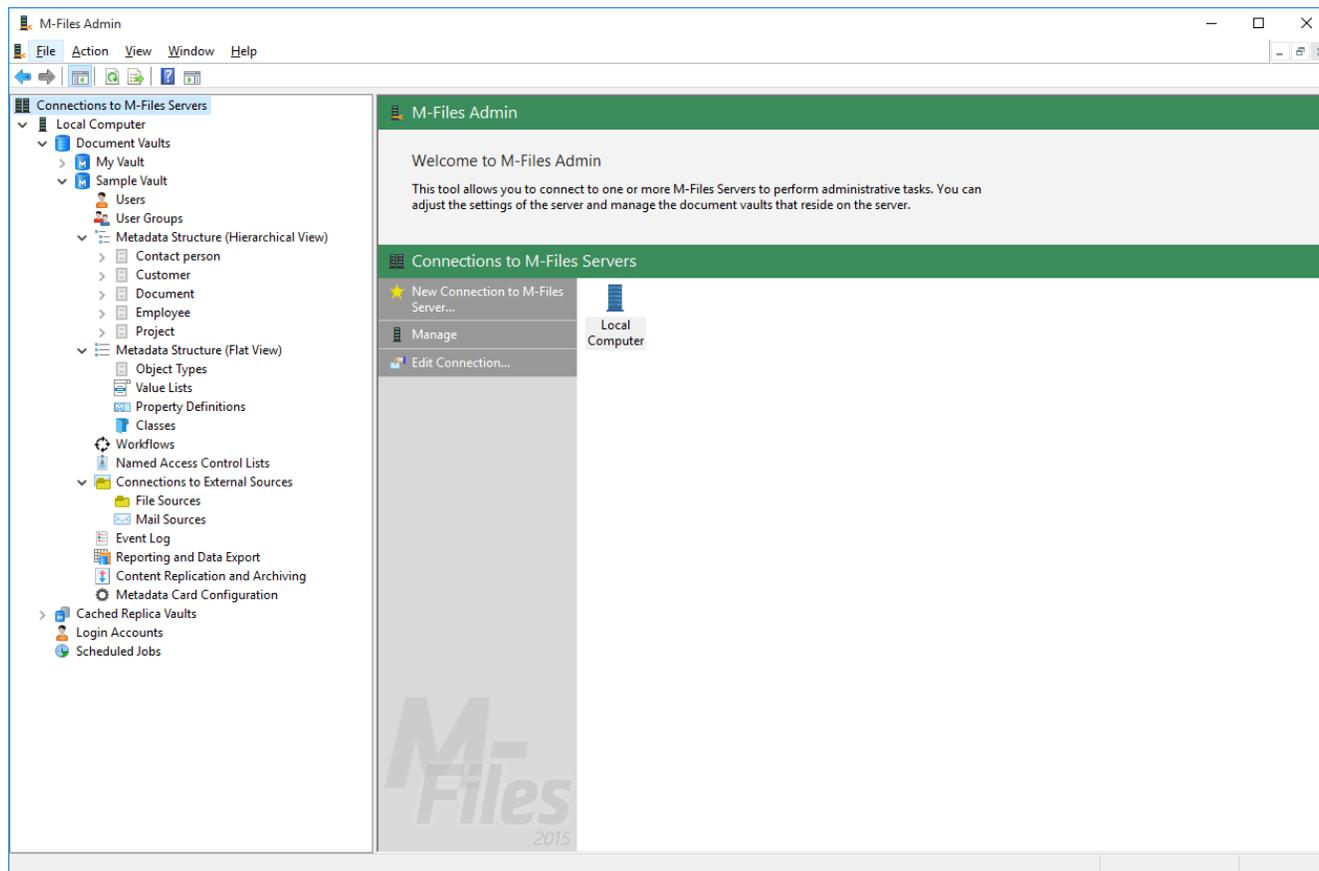


Figure 4: The main window of the M-Files Admin.

New Document Vault

You can create a new document vault by highlighting *Document Vaults* in the left-side tree structure of the M-Files Admin and selecting the **New Document Vault** function from the *Action* menu.

▶ Video: [New Document Vault](#)

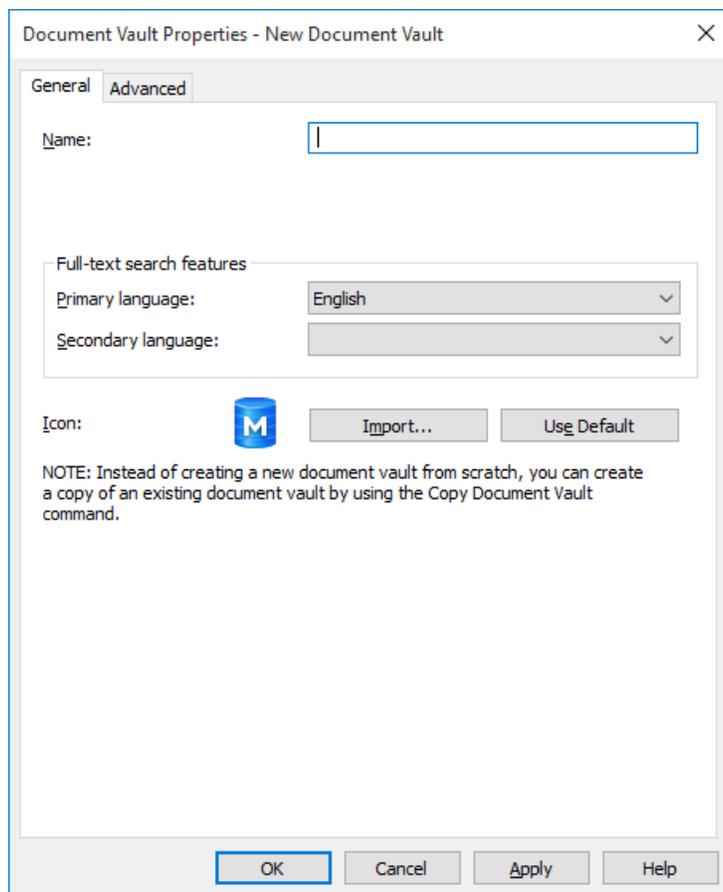


Figure 5: Document Vault Properties.

When creating a new document vault, you need to assign a name for the vault. You also need to determine the language to be used in full-text searches. The selection affects, for example, the way inflected forms of words are dealt with in searches. If the document vault contains material in several languages, it is recommended to select the search language that is used most.

New document vaults appear in the M-Files Admin tree structure under the *Document Vaults* folder. For more information, refer to [Document Vault Overview](#) on page 160.

You can also change the icon for an individual vault by selecting **Import...** and choosing an icon from the list.

Creating a Document Vault

Install M-Files Server and M-Files Admin and open a connection to M-Files Server.

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. Highlight **Document Vaults** in the left-side tree view.
4. Click **New Document Vault...** on the task pane.

The **New Document Vault** dialog is opened.

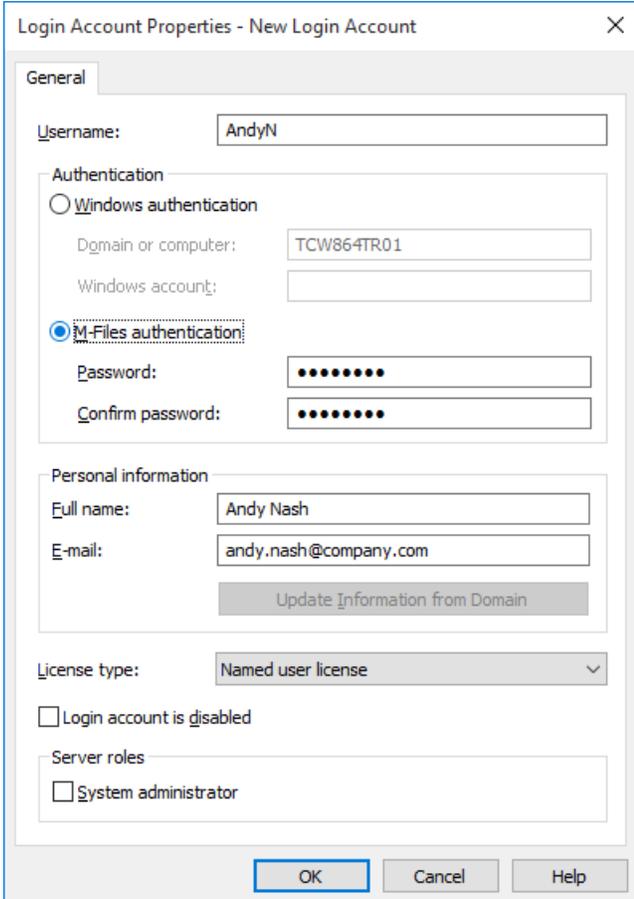
5. Enter a name for the document vault.
6. Select a primary and a secondary language from the dropdown menus to set the languages for full-text search features.
7. Optional: Click **Import...** to change the vault icon.
8. Optional: Change the *advanced settings* on page 161 on the **Advanced** tab.
9. Click **OK** once you're done.

You should now have created the document vault and it should appear on the left-side tree view of M-Files Admin under **Document Vaults**.

New Login Account

The document vault has users who must first authenticate themselves from the point of view of the M-Files Server. Before creating the users, login accounts must be created for the M-Files Server. These login accounts are then added to document vaults as users. The same server login can be added to several document vaults.

 Video: [New Login Account](#)



The screenshot shows the "Login Account Properties - New Login Account" dialog box. It has a "General" tab and the following fields and options:

- Username:** AndyN
- Authentication:**
 - Windows authentication
 - Dgmain or computer: TCW864TR01
 - Windows account: [empty]
 - M-Files authentication:
 - Password: [masked with dots]
 - Confirm password: [masked with dots]
- Personal information:**
 - Full name: Andy Nash
 - E-mail: andy.nash@company.com
 - Update Information from Domain [button]
- License type:** Named user license [dropdown]
- Login account is disabled
- Server roles:**
 - System administrator

Buttons at the bottom: OK, Cancel, Help.

Figure 6: The "Login Account Properties" window.

From the **New Login Account** dialog, you can assign a *name*, *authentication method*, and *password* for the login account. You can also specify the type of license acquired for the login account. If you are using M-Files for an evaluation period, you can select *No license*.

▶ Video: [Authentication Methods](#)

For more information about authentication and server roles, refer to [Login Accounts](#) on page 174. License management is described in more detail in [License Management](#) on page 148.

You can also import Windows login accounts to M-Files. For more information, refer to [Import Login Accounts](#) on page 176.

Creating a Login Account

Install M-Files Server and M-Files Admin and open a connection to M-Files Server.

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. Highlight **Login Accounts** in the left-side tree view.
4. Click **New Login Account...** on the task pane.
 - The **New Login Account** dialog is opened.
5. Enter a username.
6. Select an authentication method by clicking the appropriate radio button and enter authentication details in the fields below the selected authentication method.
7. Enter an email address and a full name in the personal information fields.
 - i** If you are using Windows authentication, you can click **Update Information from Domain** to retrieve personal information from the domain's directory service.
8. Select a license from the **License type** drop-down menu to set an appropriate license for the login account.
9. Optional: Check the **Login account is disabled** check box if you want to disable the login account for the time being.
10. Optional: Check the **System administrator** check box if you want to assign a system administrator role for the login account. This role entitles the user to make any changes on the server level, including *changing the server logins and creating and deleting document vaults*.
11. Click **OK** once you are done.

You should now have a new login account and it should appear in the **Login Accounts** list when you highlight **Login Accounts** in the left-side tree view in M-Files Admin.

New User

You can create a new user by highlighting *Users* in the left-side tree structure of the M-Files Admin and selecting *New User* from the *Action* menu.

Select the users for the document vault and define their permissions. For more information, refer to [Users](#) on page 198.

You can also import domain users to M-Files. For more information, refer to [Import Users](#) on page 202.

Creating a User

Install M-Files Server and M-Files Admin and open a connection to M-Files Server.

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight **Users**.
5. Click **New User...** on the task pane.
 - The **New User** dialog is opened.
6. Select a login account for the user from the **Login account** dropdown menu or select **New login account...** from the same dropdown menu to create a new login account for the user.
 - The **Full name** field is updated with the full name information of the selected login account.
7. Optional: Set additional settings by checking or unchecking the checkboxes on the **General** tab.
 -  For more information, refer to [New User](#) on page 198.
8. Optional: On the **Permissions** tab, specify the users or user groups who may see this user.
 - a) On the **Users and user groups** list, highlight the user or the user group for which you wish to set the permissions for seeing this user.
 -  If the desired user or user group is not on the list, click **Add...** to add the user or user group to the **Users and user groups** list.
 - b) Check either the **Allow** or **Deny** checkbox to modify the permissions of the selected user.
9. Click **OK** once you are done.

A new user is created and it is visible in the **Users** list.

3.4. M-Files Desktop Settings

Start M-Files Desktop Settings in order to set up the document vault that you want to access. Organizations normally use only one document vault, but there can be more than one in some cases.

-  **Note:** Before you start setting up your client, consult your organization's M-Files system administrator to ensure that M-Files Server and the document vault have been installed on your local area network.

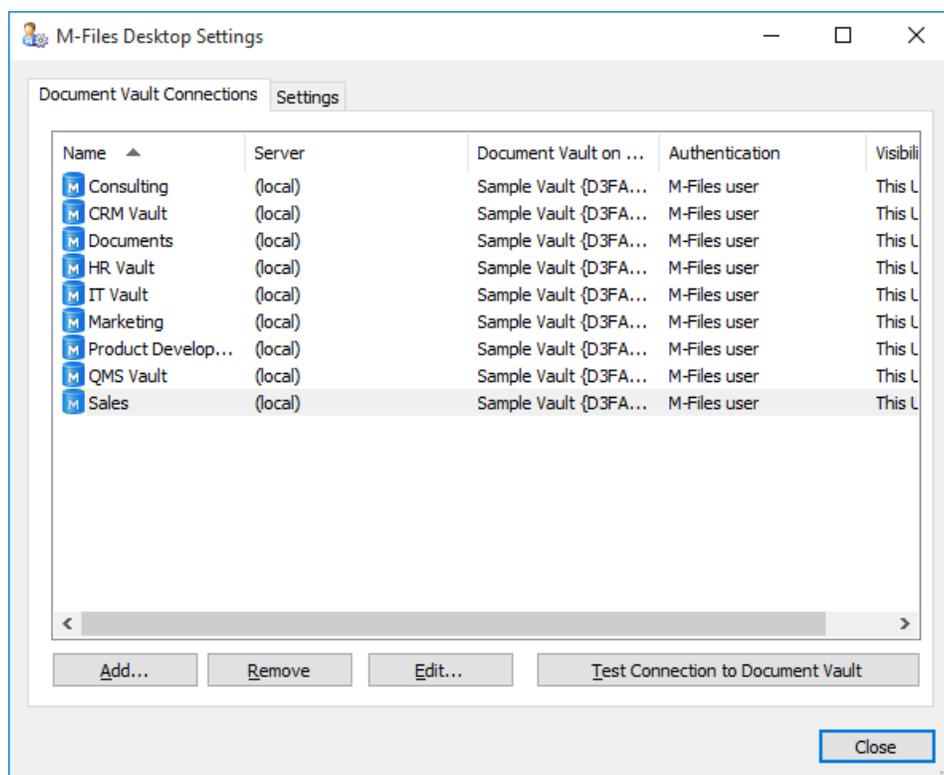


Figure 7: The M-Files Desktop Settings main window.

In M-Files Desktop Settings, the *Document Vault Connections* tab is displayed by default. Here you can add, remove, edit, and test your vault connections. The *Settings* tab lets you modify certain user- and computer-specific behavior, such as disabling the automatic check-in prompt or changing the M-Files drive letter.

▶ Video: [Desktop Settings](#)

Adding a Document Vault Connection

You can start adding a new document vault connection by clicking **Add...** in the M-Files Desktop Settings main window.

▶ Video: [New Vault Connections](#)

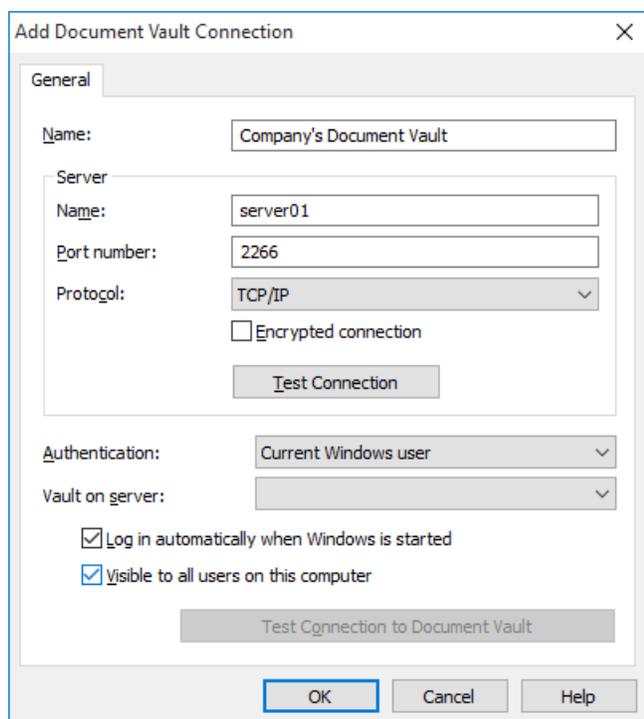


Figure 8: The Add Document Vault Connection dialog.

In order to establish the connection, you first need to specify a few properties.

Name

Begin by assigning a name to the document vault connection. The name can be anything, but it is a good idea to make it descriptive. The name will be displayed on the M:\ drive as a directory containing the contents of the document vault.

Server / Name

Enter the network name or IP address of the server on which M-Files Server has been installed and that contains the document vault.

Server / Port number

The server was specified in the previous field, and in this field you specify the port to connect to on the server. Enter the server port number to connect to. M-Files uses port 2266 by default for TCP/IP protocol.

Server / Protocol

Define the protocol to be used for the network connection. The available protocols are *TCP/IP*, *SPX*, *Local Procedure Call (LPC)* and *HTTPS*. *TCP/IP* is usually used for connecting to a document vault located on a different computer.

Encrypted connection

Enable this option to secure the communication between M-Files Desktop and M-Files Server. RPC encryption does not require Internet Information Services or any other additional components and is often the simplest way to achieve encryption of network communication between M-Files Desktop and M-Files Server in the organization's internal network.

The option is available for the TCP/IP protocol only. If the protocol is HTTPS, the connection is always encrypted at the HTTPS protocol level. For connections from outside the organization's internal network, HTTPS or VPN should still be used, as RPC communication to the default TCP port, 2266, is often blocked by firewalls.

Note: For RPC encryption to work, the user as well as the computer must be able to authenticate to the server computer. In practice, this requires that the client computer belongs to the Windows domain and that the user is a domain user.

For more information on encrypted connections and for instructions on how to configure the server to require encrypted connections, refer to [Protecting Data in Transit with Encryption in M-Files](#).

It is also possible to use [pre-shared keys](#) on page 15 in combination with HTTPS for securing a VPN-less access from outside the organization's private network.

Server / Test Connection

You can use this button to check that the server connection works correctly.

Authentication

Specify the method the document vault is to use for authenticating the user. The authentication options are *Current Windows user*, *Specific Windows user*, and *M-Files user*.

The user is always authenticated on M-Files Server when logging in to the document vault, for example. M-Files Server is capable of checking the login accounts and passwords of all M-Files users. This is the M-Files authentication method. When Windows authentication is used, M-Files Server has the passwords checked by the domain server.

With Windows authentication, users log in to the database with same information that they use to log in to the local computer or the organization domain. If the organization uses a domain, using the domain logins and passwords is the quickest and easiest authentication method. This means that new passwords and logins are not needed, which makes this a rather user-friendly method.

Differences between the various authentication methods

Current Windows user	When you have logged in to the local computer, you can use the same information to log in to M-Files Server. This is the <i>Current Windows user</i> authentication method.
Specific Windows user	A <i>Specific Windows user</i> will always be prompted for the login, domain, and password, i.e., the user does not necessarily log in to M-Files Server with the same information that was used to log in to the local computer.
M-Files user	The M-Files authentication method allows the user to log in to M-Files only. If the organization does not have a Windows domain or the user is not to have access to it, it is a good idea to use <i>M-Files authentication</i> for the document vault.

Vault on server

When there are several document vaults on the server, you can use this field to specify the document vault to connect to.

Log in automatically when Windows is started

You can choose to establish the connection to the document vault whenever Windows is started. This is a useful option if you are going to use the document vault daily. For more information, refer to [Login Accounts](#) on page 174.

Visible to all users on this computer

In Windows, there can be several users who each have their own user-specific settings. It is possible to provide user-specific access to M-Files document vaults. If you want the document vault to be visible to all users on this computer that have been defined in the operating system, check this box.

Test Connection to Document Vault

After specifying the contents of the above fields, you can check whether you can successfully connect to the document vault. If the connection works, the server has responded to the connection test.

User-specific Settings

To get here, click the **User-specific Settings** button on the *Settings* tab of M-Files Desktop Settings.

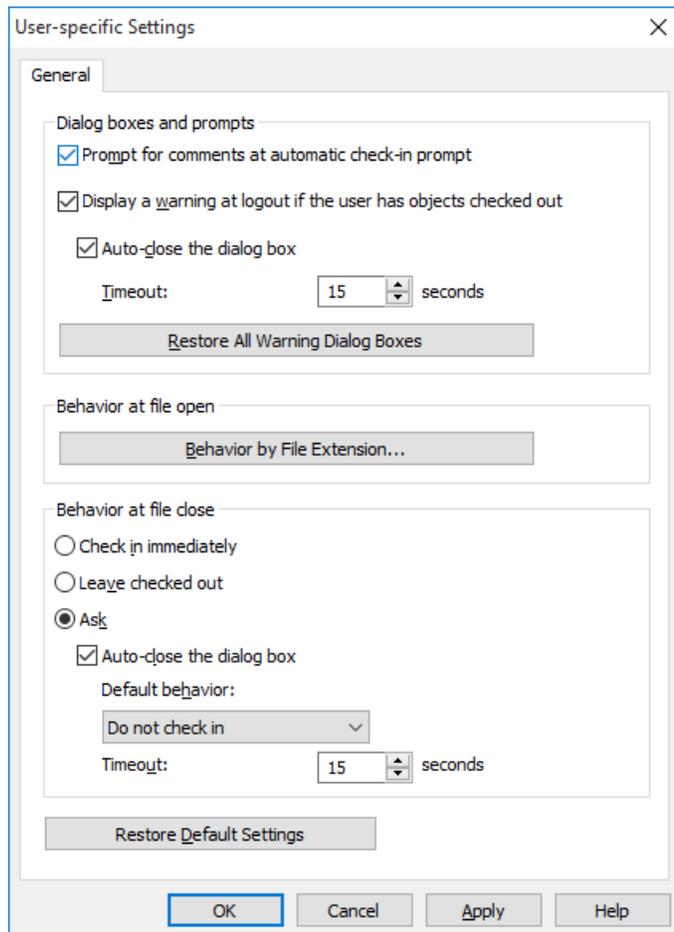


Figure 9: The user-specific settings are specific to Windows users per workstation.

Dialog boxes and prompts

You can define comments to be asked of the user upon each check-in. If the *Check in immediately* option has been selected for file closure, comments are not requested.

By default, a warning is always displayed when the user logs out if the user has objects checked out. Dialog boxes are also closed after a default timeout.

Behavior at file open

You can define for each file extension type whether the specific file format is always opened in *Check Out* or *Open as read-only* state. You can also specify for each extension type that, upon opening each file, the software asks the state in which the file is to be opened.

Behavior at file close

You can define which actions are performed on the file upon closing it. The definition applies to all file formats. By default, the user will be asked what they wish to do to the file upon closing it. If the user does not change the default procedure (*Do not check in*), the dialog will be automatically closed after a chosen time and the document will remain checked out.

Computer-specific Drive and Cache Settings

To get here, click the **Computer-specific Settings** button on the *Settings* tab of M-Files Desktop Settings.

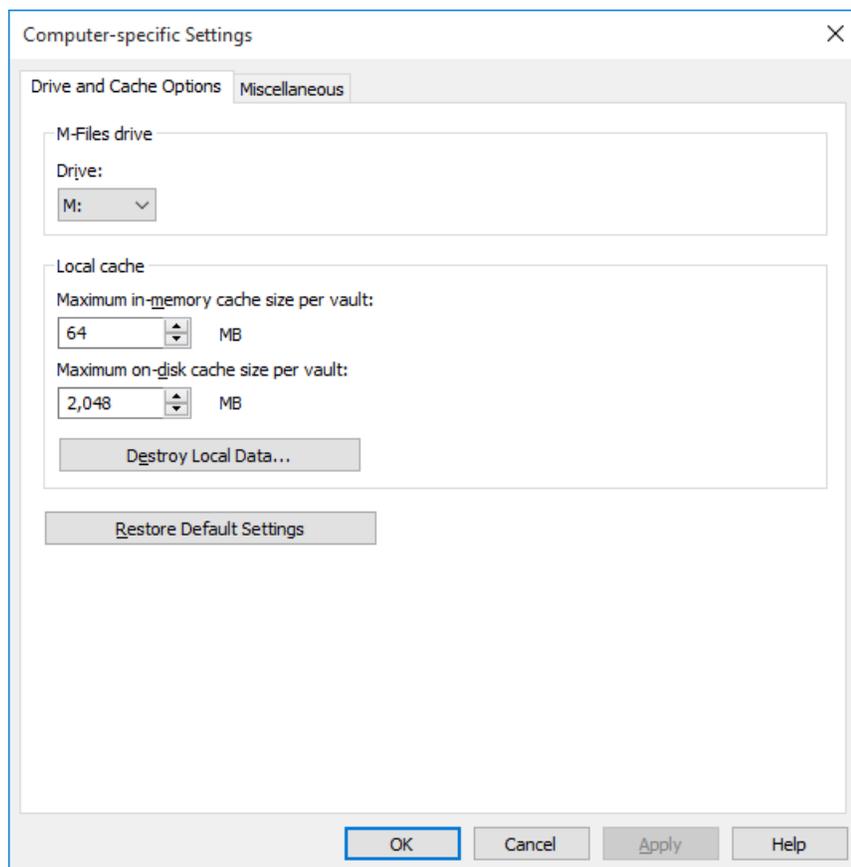


Figure 10: Drive and Cache options of M-Files Desktop.

Drive

Select the drive letter for the M-Files drive. The default drive is M:\.

Local cache

When using M-Files, the documents are retrieved from the server to the computer's local hard drive. The local cache makes M-Files significantly faster to use over slow connections.

Maximum in-memory cache size per vault

Here you can specify the amount of the computer's main memory that the document cache is allowed to take up.

Maximum on-disk cache size per vault

Here you can specify the amount of the computer's disk space that the document cache is allowed to take up.

Destroy Local Data

M-Files saves information about the documents locally in the computer's cache. The data remains on the server, but the cache makes M-Files faster to use. Local files take up space on the computer's hard drive and for this reason, it may sometimes be necessary to destroy local data. This function can be used to destroy local cache information about the documents by user and by document vault.

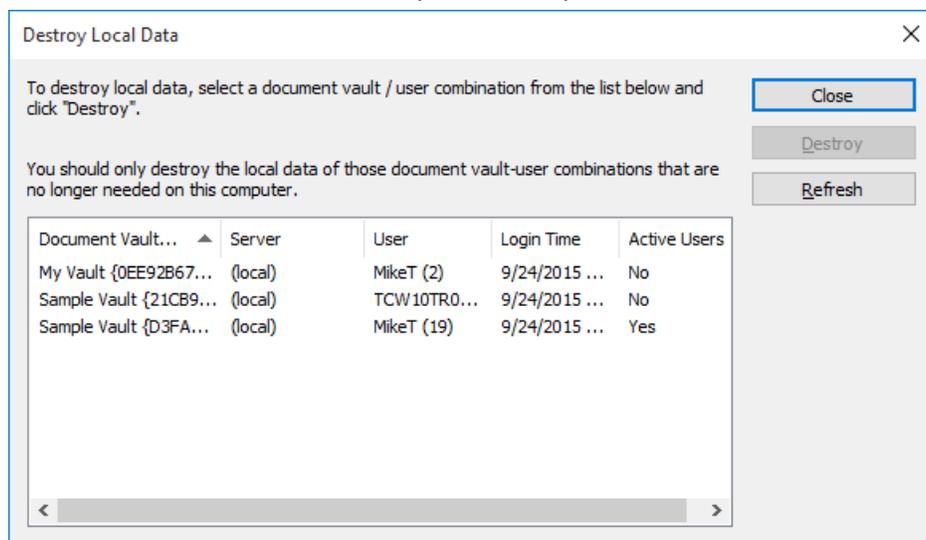


Figure 11: The local vault/user combinations are listed in the Destroy Local Data window.

Other Computer-specific Settings

To get here, click the **Computer-specific Settings** button on the *Settings* tab of M-Files Desktop Settings and select the *Miscellaneous* tab.

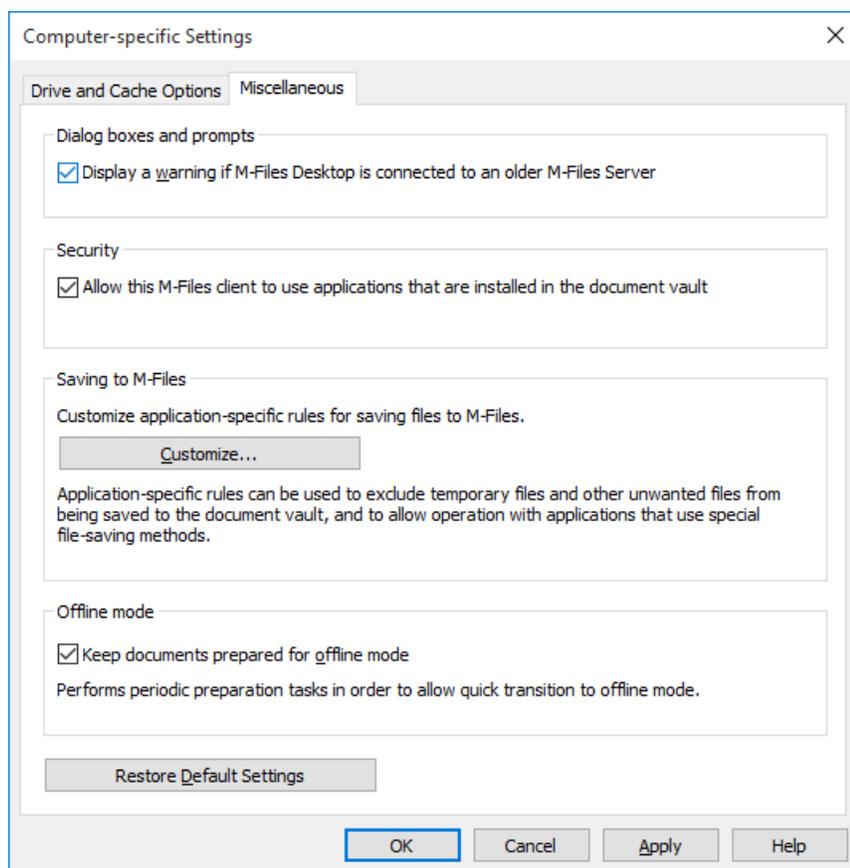


Figure 12: The Miscellaneous tab contains different computer-specific settings.

Dialog boxes and prompts, Security

The default settings are:

- *Display a warning if M-Files Desktop is connected to an older M-Files server.*
- *Allow this M-Files client to use applications that are installed in the document vault.*

Saving to M-Files

You can customize application-specific rules for saving files to M-Files. Application-specific rules can be used to, for example, exclude temporary files and other unwanted files from being saved to the document vault. Rules can also be used to allow operation with applications that use special file saving methods. The rules guarantee that, for instance, a metadata card of new files is displayed if automatic identification is not functioning.

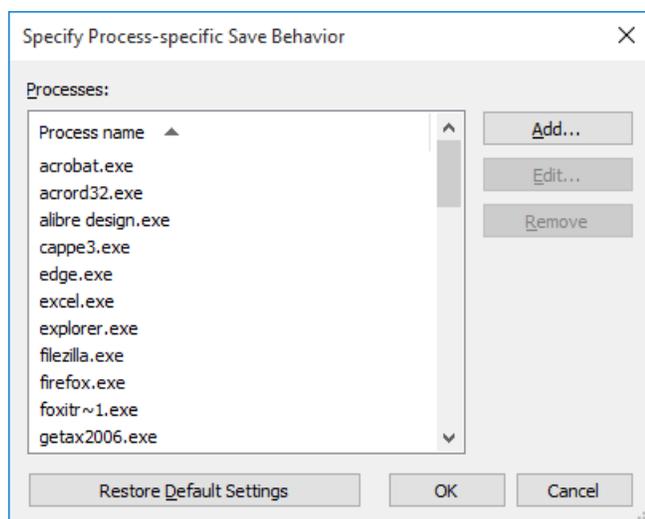


Figure 13: Add and edit process-specific saving behavior.

Add a new behavior by selecting **Customize... > Add...**

Saving to M-Files: General

General settings can be used to disable the default setting *Detect file save operations from standard file dialog boxes*.

You can also define process-specific file formats that are always accepted or never accepted for saving in M-Files. Use of an asterisk (*) defines that the process-specific setting is valid for all file formats.

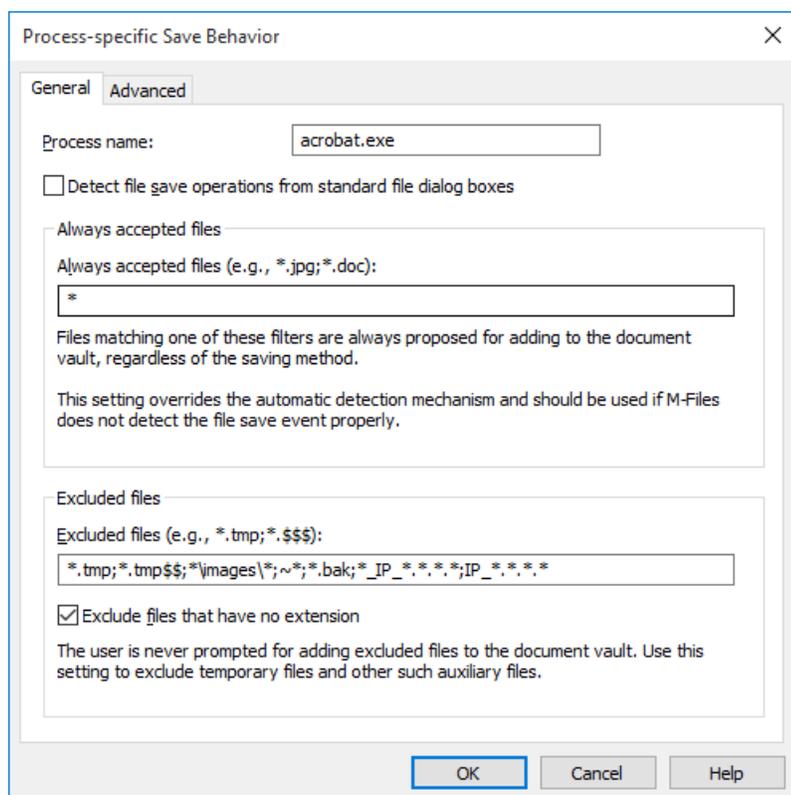


Figure 14: General process-specific settings.

Saving to M-Files: Advanced

In the advanced settings, you can disable the default setting *Detect file closing and apply user-specific check-in behavior*.

You can also define process-specific file formats that will be immediately checked-in when the new file with the extension in question has been saved and the metadata card has been completed.

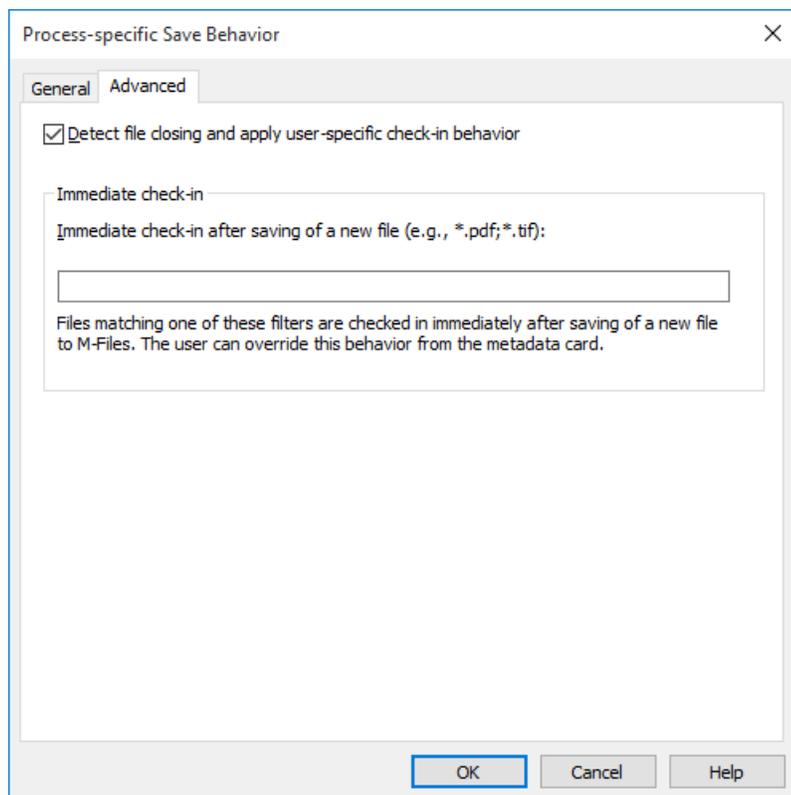


Figure 15: Advanced process-specific settings.

Offline mode

By default, the documents are kept ready for the offline state. If the workstation is never used offline, the documents need not be ready for the offline state. The selection can also be removed if the offline state is seldom used or seems to cause additional load for the machine.

Export Vault Connections and Settings

Document vault connections and settings can be exported to a Windows registry file.

By sharing and enabling the exported registry file on other computers, you will be able to use common M-Files configuration data on several computers.

The export options can be found on the *Settings* tab of the *M-Files Desktop Settings* component.

3.5. Installing M-Files Upgrades

The M-Files installer automatically detects the previous versions of the software and can migrate the settings from the old to the new version. Hence, do not uninstall any previous versions of M-Files before upgrading.

Perform the following tasks to upgrade M-Files with a higher version:

1. Execute the M-Files installer for the new version.
2. Select the "Simple upgrade" option.

With the "Simple upgrade" option selected, the setup automatically installs the same components that were installed in the earlier M-Files version. The setup installs the new version and transfers the M-Files settings along with all local data from the earlier version to the new version. Finally, the setup uninstalls the earlier version.

- **Note:** In case you are upgrading from a version that is older than M-Files 2015, please note that the new installation includes significant improvements to the vault database structure. This means that – especially with large document vaults – the upgrade process might take substantially longer than usual. It is also recommended to ensure that the server computer has at least twice the amount of free space required by the metadata database file (.fdb file for Firebird and .mdf file for MS SQL Server databases). The database structure is upgraded automatically by the M-Files installer.
- **Note:** Property group and dynamic property configuration for M-Files 10.2 and M-Files 2015 has been replaced with more versatile configuration options in M-Files 2015.1. See the document [Configuring the Metadata Card](#) for more details.

Installation preconditions

All versions

- M-Files Client/Desktop cannot be used with an installation of M-Files Server that is two versions older.
- Replication servers must be on the same minor release level with the main server (e.g. 10.1.x and 10.1.x).
- M-Files Admin and M-Files Server must have the same minor release level (e.g. 10.1.x and 10.1.x).

- **Note:** M-Files Desktop is not compatible with Windows XP from the M-Files version 10.0 onwards. See [Upgrade Instructions for Organizations Using Windows XP](#) on page 36 for more information.

Versions 8.0 and earlier

- The version of M-Files Server cannot be newer than that of M-Files Client/Desktop.
 - For instance, M-Files Client versions 8.0 and earlier are not compatible with M-Files Server 9.0, 10.x or M-Files 2015, whereas M-Files Client 9.0 is.

You can use the following table to verify M-Files Server–Client/Desktop compatibility.

	M-Files Client 8.0	M-Files Client 9.0	M-Files Client 10.x	M-Files Desktop 2015 and 2015.1
M-Files Server 8.0	Compatible	Compatible	Not compatible	Not compatible
M-Files Server 9.0	Not compatible	Compatible	Compatible	Not compatible
M-Files Server 10.x	Not compatible	Compatible	Compatible	Compatible
M-Files Server 2015	Not compatible	Compatible	Compatible	Compatible
M-Files Server 2015.1	Not compatible	Compatible	Compatible	Compatible

- **Note:** To verify compatibility with M-Files API and replication, see [M-Files version compatibility regarding API and Replication](#).

Supported installation order

M-Files Client/Desktop is compatible with newer M-Files Server versions from version 9.0 onwards. In other words, if your organization is using M-Files 9.0 or later, upgrading to a newer version can be done either by

first installing the new M-Files Server version or by first upgrading M-Files Client/Desktop for the end users – the choice is yours. If your organization requires new M-Files Server features to be taken into use as fast as possible, M-Files Server can, and should, be upgraded first.

 **Note:** Some of the new properties of the higher M-Files version are not available until both the M-Files Client/Desktop and M-Files Server have been upgraded to the new version.

M-Files 8.0 and earlier

For M-Files versions 8.0 and earlier, upgrading the M-Files system to a higher version should be performed in the following order:

1. Upgrade all workstations, i.e. M-Files Client installations.
2. Upgrade the server and possible replica servers.

This installation order should be followed because the one level higher M-Files Client version is compatible with the earlier M-Files Server version. M-Files can thus be normally used with the new M-Files Client/Desktop installations even though the M-Files Server is of an earlier version. If you upgrade M-Files Server first, the document vaults can no longer be used with earlier M-Files Client versions.

Example: An organization is upgrading from M-Files 8.0 to M-Files 9.0. The administrators ensure that M-Files Client is upgraded on all computers within one week. During this week, some of the users begin using the new version before others, meaning that the old and the new versions are in simultaneous use during the transition period. Once all M-Files Client software has been upgraded, the administrators upgrade M-Files Server, enabling all of the new properties of the higher version.

Please see the table further above for ensuring M-Files Server–Client/Desktop compatibility.

Preparing for the server upgrade

Before installing the upgrade on M-Files Server, make sure that your server fulfills the hardware and software requirements of the new version (see [M-Files Technical Data Sheet](#)).

The administrator should also ensure that recent backups of the document vaults are available. The backups may be useful should an unexpected fault situation occur during the server upgrade.

In the event of a fault situation, contact M-Files customer support immediately. Do not attempt to rectify the fault, as solving the fault situation is usually much easier if no additional actions have been performed.

Service Releases

Service releases are smaller M-Files software upgrades that share the same main version number (for example "10.0"), followed by the four-digit version ID for the service release. For instance, versions 10.0.3911.85 and 10.0.3911.92 are service releases for M-Files 10.0 (10.0.3911.3). Usually, the service releases do not contain any new properties, but rather are released if faults requiring repair are detected in the software, or if compatibility with higher versions of other software requires changes to M-Files.

Service release versions are fully compatible between each other and can be installed in whichever order. In other words, whether the service release is installed first on the workstations and then on the server, or vice versa, makes no difference.

Automatic Updates

Automatic Updates is a program that keeps your M-Files software up to date. If there is a newer version of M-Files available, it will be downloaded to your computer and you will be notified about it. Thanks to Automatic Updates, your M-Files installation will always be up to date.

You can open the automatic updates control panel via your Windows start menu or the M-Files icon in your Windows notification area. If you wish to disable automatic updates, you can do so by unselecting the *Check for*

updates automatically checkbox on the *Settings* tab. You can check for updates manually by clicking the **Check now** button on the *Installation* tab.

Upgrading the M-Files OCR Module for Versions M-Files 2015 and Later

M-Files Server versions for M-Files 2015 and later do not support the OCR module of the M-Files versions prior to M-Files 2015, so you might need to upgrade this module after upgrading the server software. See [Instructions for enabling the M-Files OCR Module](#) for detailed instructions.

Centralized Deployment via Group Policy

You can use the Windows Group Policy feature to automatically distribute M-Files to client computers. Alternatively, you may use any other centralized deployment mechanism that you are familiar with. You can also customize the behavior of the M-Files setup program. For further information on these options, refer to [M-Files Setup: Advanced User's Guide](#).

Automatic permissions

When you are upgrading the vault to version 8.0 or higher from a vault that has been created with M-Files 7.0 or earlier, and want to take the extended metadata-driven automatic permissions into use, these settings must be activated manually for each vault. You can find this function in the advanced settings of the vault properties via M-Files Admin. If you have assigned automatic permissions to values in earlier versions of M-Files, it is strongly recommended to check that the permissions are still working as desired after activating them.

Upgrade Instructions for Organizations Using Windows XP

M-Files Desktop is not compatible with Windows XP computers from the M-Files version 10.0 onwards. Organizations with both Windows XP and newer Windows client computers (Vista/7/8/8.1) are suggested to leave the 9.0 Client version on XP computers and upgrade Windows Vista/7/8/8.1 clients to the newest version.

The only compatibility issue in the mixed environment with M-Files 9.0 and newer clients is that inserted properties added with the newer client versions to MS Office and AutoCAD files cannot be resolved on M-Files Client 9.0. This compatibility issue may cause issues with metadata structure replication as well.

When using the *Insert Property* feature with M-Files Client 10.x, M-Files Desktop 2015, and newer client versions, the reference to the property value is made by using the property GUID. In M-Files 9.0, the references are made by using the property ID.

To resolve the issue on these mixed environments, the newer client versions can be enforced to make references to property definitions using the property ID. This configuration can be done by adding the following registry settings on each client computer with M-Files 10.x or later installed:

Force the compatibility setting to all vaults (MS Office)	
Key	HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<<version>\Client\MFOfficeAddin
Name	UseIDBasedPropertyReferences
Type	DWORD
Value	1 (default = 0)

Force the compatibility setting to all vaults (AutoCAD)	
Key	HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<<version>\Client\MFAutoCADAddin
Name	UseIDBasedPropertyReferences
Type	DWORD

Force the compatibility setting to all vaults (AutoCAD)	
Value	1 (default = 0)

Force the compatibility setting to a specific vault (MS Office)	
Key	HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<>version>\Client\MFOfficeAddin\Vaults\<>Vault GUID>
Name	UseIDBasedPropertyReferences
Type	DWORD
Value	1 (default = 0)

Force the compatibility setting to a specific vault (AutoCAD)	
Key	HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<>version>\Client\MFAutoCADAddin\Vaults\<>Vault GUID>
Name	UseIDBasedPropertyReferences
Type	DWORD
Value	1 (default = 0)

 **Note:** Vault-specific settings have precedence over the client-specific settings.

Installation sequence

1. Deploy the registry settings described above on all the Windows Vista/7/8 client computers.
2. Upgrade M-Files Client/Desktop on Windows Vista/7/8 workstations to the newest version.
3. Upgrade M-Files Server to its newest version.

4. Exploring the Document Vault

At this stage, the following steps should have been completed:

- *M-Files Server* has been installed in your organization.
- Your organization's M-Files system administrator has created a [document vault](#) on page 21, [login accounts](#) on page 22 and [users](#) on page 23.
- The document vault has been set up on your computer with [M-Files Desktop Settings](#) on page 25.

You should now be able to start using your M-Files vault by clicking the icon on your desktop, by using the Windows Start menu, or via the virtual M-Files drive (as seen below). *Explore M-Files* can also be opened via the M-Files icon on the Windows task bar's notification area.

Note: The virtual M-Files drive does not, in fact, take up any space from your actual hard drive. Windows requires drives to report their capacity and the amount of free space available in Windows Explorer. The default reported size of the M-Files drive is 1 terabyte, and the amount of reported free space is 90 percent.

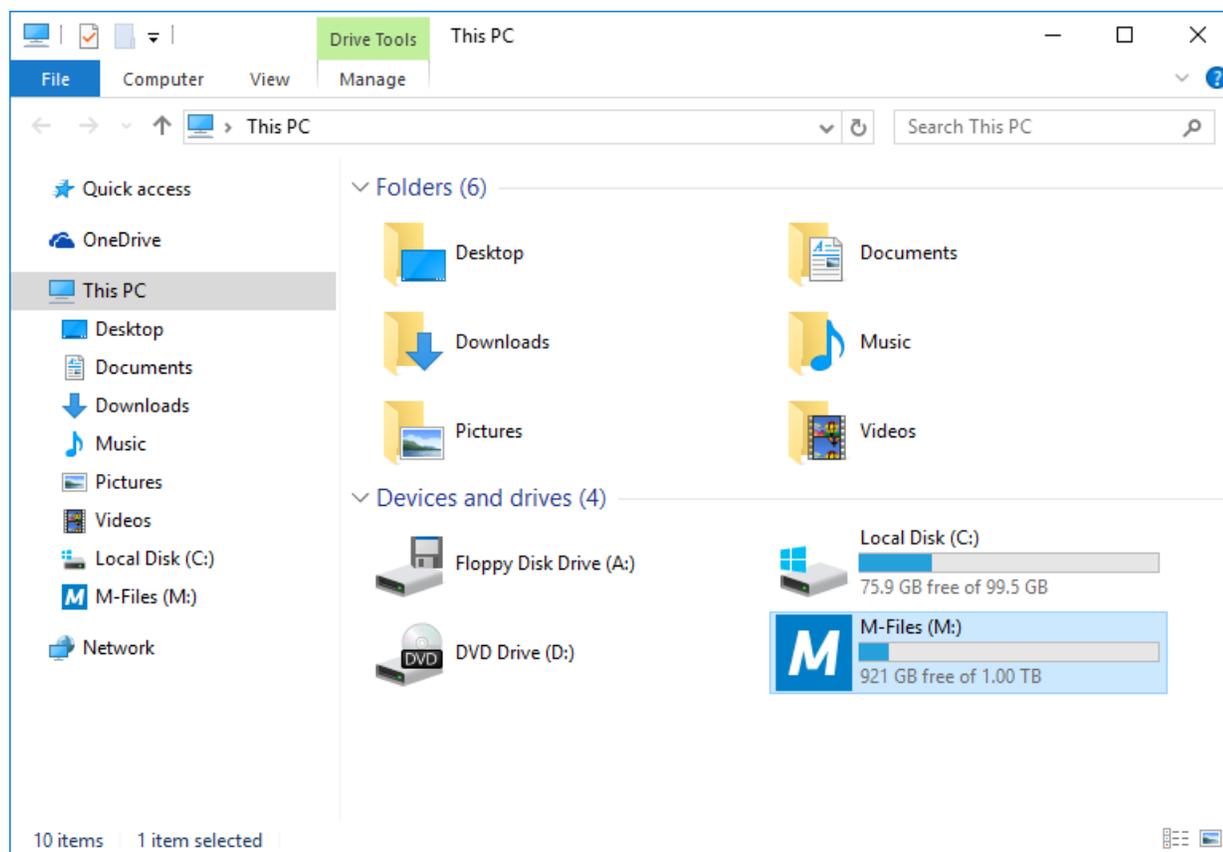


Figure 16: The virtual M-Files drive in File Explorer.

4.1. Using M-Files Desktop

For instructions on installing M-Files Desktop, refer to [Installing the Software](#) on page 19.

Once M-Files Desktop has been installed and your vault connections are set up via [M-Files Desktop Settings](#) on page 24, you should be able to see all the vault connections on your M-Files drive (for instance via the File Explorer).

Logging in

You can log in by double-clicking the vault. If you want to log in to the document vault as a different user than the default one, select the *Log In As* function from the document vault context menu. Unless you have already logged in during Windows login, the system prompts for your credentials upon opening the vault.

Note: M-Files can be configured to use single sign-on (SSO) with various solutions for federated authentication. Using SSO promotes productivity by reducing password fatigue and time spent on re-entering login credentials. For more information, refer to [Using Federated Authentication with M-Files](#).

Explore M-Files user interface

The *Explore M-Files* user interface is composed of four main components: the task area, listing area, right pane and search bar.

▶ Video: [M Files User Interface](#)

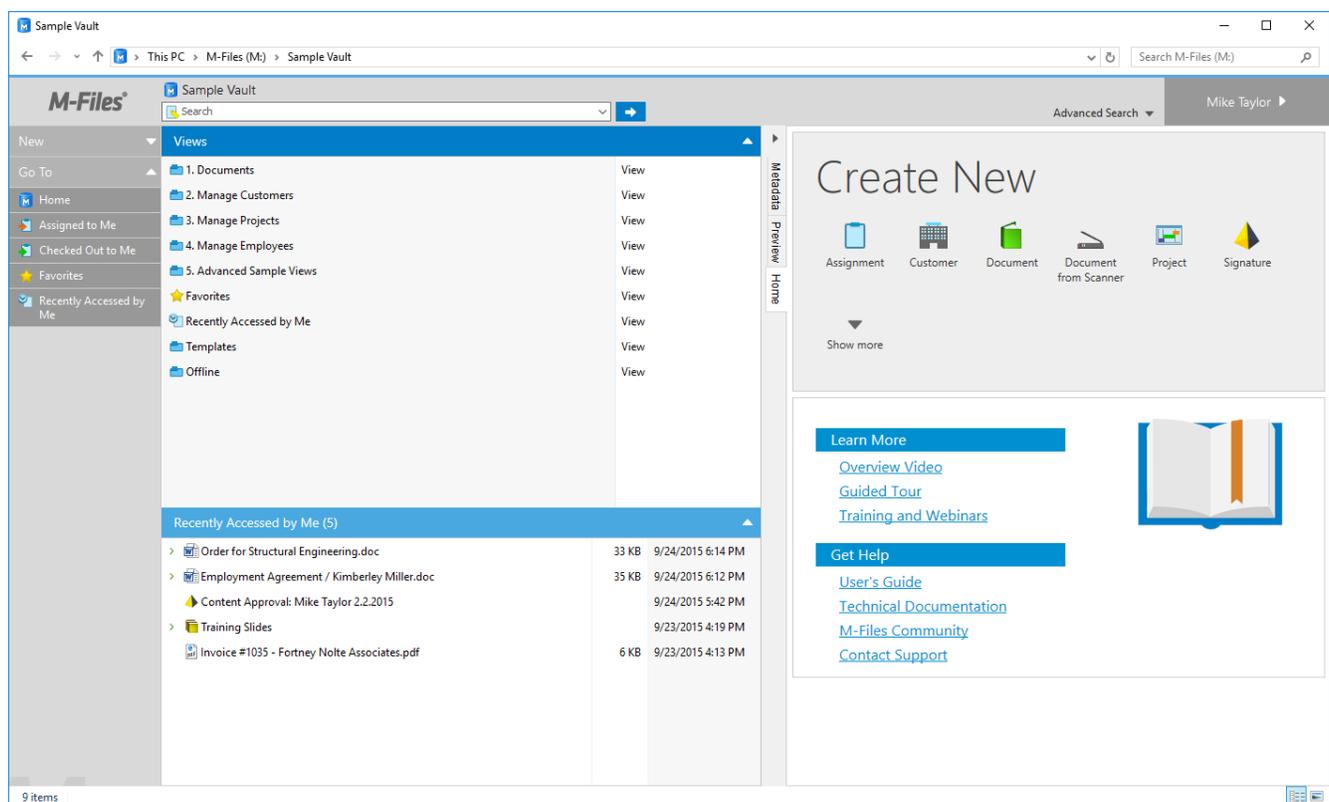


Figure 17: The M-Files home view.

Task area

The task area is located on the left side of the window. By default, it contains options for creating new objects (*New*) as well as a *Go To* section for quickly navigating to useful views, such as the *Favorites* and *Recently Accessed by Me*.

Listing area

The listing area in the center normally contains views and objects. The area functions very similarly to the one in File Explorer. In *Explore M-Files*, however, users can expand/collapse objects to view and hide, for instance, the content of an M-Files multi-file document.

If the listing exceeds the number of objects to be displayed in a single listing, the option **Show more results** is shown in the grouping title. By clicking this option, you can enter the [paginated view](#) on page 42.

Tip: You can quickly browse objects in the listing with your keyboard. Just select your preferred tab for the right pane (for instance the *Preview* tab), and start browsing with the up and down arrow keys.

Note: Some of the item names in the listing view may be displayed in gray text. This means that the full item path is too long for Windows (more than 259 characters) and that parts of it should be renamed to make the content function properly.

Right pane

When no object has been selected in the home view, the right side of the window displays quick access to creating new objects along with the *Learning Resources* section. When an object is selected, the right side of the window displays the metadata and preview panes (see *Metadata Card* on page 42) by default, but can also contain customized content and be modified according to individual needs.

Search

The search functions are located on top of the user interface. For more information on the functionality of the search bar, refer to *Search Functions* on page 112.

Right above the search word field, there is a breadcrumb indicator displaying the vault and the view that you are currently in. The breadcrumb can be, for instance, *Sample Vault > Document > By Customer > A&A Consulting*.

The top right corner of the interface displays the name of the user logged into the vault. Clicking this area opens a menu for logging out of the vault, using M-Files in offline mode, as well as for opening settings for notifications, languages, your M-Files password and substitute users.

The screenshot shows the M-Files Desktop user interface. At the top, there is a search bar and a breadcrumb indicator. The main area is divided into three sections:

- Left Pane (Task Area):** Contains a list of file types (New, View and Modify, State Transition, etc.) and a list of files. The selected file is "Project Agreement - ESTT Corporation (IT) (11/2004)".
- Center Pane (Metadata Card):** Displays detailed information for the selected file, including:
 - Document ID: 475 Version 1
 - Created: 8/6/2012 11:38 PM by Andy Nash
 - Last modified: 8/6/2012 11:44 PM by Andy Nash
 - Class: Contract or Agreement
 - Customer: ESTT Corporation (IT)
 - Agreement title: Project Agreement - ESTT Corpor...
 - Agreement type: Project Agreement
 - Owner: Jonathan Lockhart
 - Document date: 11/10/2004
 - Effective through: 10/31/2009
 - Project: Redesign of ESTT Marketing Materie
 - Contact person: Sandra Williams
 - Keywords: ...
 - Description: ...
- Right Pane (Preview):** Displays a preview of the document content, which appears to be a legal document titled "Quality Consultation". The text includes sections like "ETIAM ULTRICES VULPULATE LIGULA CRAS SODALES" and "Donec libero sapien, pulvinar a, varius commodo, lacinia et, nisl. Fusce congue, lectus non bibendum elementum, libero velit laoreet nibb, sit amet porttitor enim nulla in lacus."

Figure 18: An overall view of the M-Files user interface with the metadata positioned at the bottom and the preview on the right side.

The M-Files Desktop user interface can be customized according to various user requirements. For example, users can change the position of the metadata card on the user interface.

Task Area

The left side of the user interface (task area) contains a number of context-sensitive shortcuts:

Under the *New* title, you can find quick links for creating new objects by object type.

Under the *View and Modify* title, you can select object-specific operations, such as *Check in/out* or *Make Copy*, to be performed. You can add new shortcuts to the list by right-clicking an empty space on the task area and selecting a shortcut from the *Commands* list.

The *Go To* title lists a number of pre-defined links to the most commonly used views, such as *Favorites* and *Checked Out to Me*.

In addition, you can add new shortcuts under the *Go To* section yourself. To add a shortcut to the selected view or virtual folder, right-click on it and select *Add Shortcut to Task Area*. To add an object to the list, select the object, open the menu bar with the *Alt* key on your keyboard, and select **Operations > Add Shortcut to Task Area**.

You can rename, delete, and organize shortcuts on the task area using the right mouse button.

You can also define *common task area settings*, although this requires you to at least *Manage common views and notification rules*. At the same time, you can also delete *users' custom task area settings* to immediately activate the common settings. Alternatively, the common settings can be activated by restoring the common default settings. The user can also restore the *M-Files software default settings*.

You can open and close the quick links below each title by clicking the arrowheads in the title.

Favorites

In addition to *My Views* and task area shortcuts, you can add documents and other objects to favorites. Favorites are user-specific.

You can add objects to favorites and remove them via the *Operations* menu, the context menu, or via the object's metadata card.

 **Note:** You cannot delete favorites with the *Delete* function.

You can conveniently access your favorites via the quick link in the task area.

Shortcuts for changing the workflow state

You can change the workflow state directly via the quick links in the task area. The various workflow states are available for selection under the *Move into State* title. You can move the object to the desired state simply by clicking the state. If you wish, you can add a comment about the state change at this point.

 **Note:** The *Move into State* title and the various workflow states are displayed in the task area only if the object has an associated workflow for whose state changes the user has the required permissions.

You can also change the state by clicking the workflow name or state control in the metadata card.

Listing Area

Grouping views on the main level

The main-level views have been grouped into *My Views*, *Common Views* and *Other Views*. In addition, traditional folders are in a separate group. This makes it easier for the user to distinguish among these different views and navigate to *My Views*. Also, the regular user often does not have the permission for editing common views, so grouping common views separately clarifies the distinction between common views and the user's own views.

It is also possible to display predefined views, such as *Favorites*, *Assigned to Me* or *Recently Accessed by Me*, at the bottom of the listing view.

Related objects listed below the main object

Objects related to a particular object can easily be browsed directly from the view or from the search result by means of the expand/collapse arrow buttons. M-Files shows all related objects below the main object. This allows you to easily browse, for example, documents and contact persons related to the project, directly from the listing view.

Grouping titles

Related objects are automatically grouped by object type or by property definition. This allows you to find the desired document or other object quickly and easily. For example, if you are looking for contact persons related to the project, you can find them easily under the grouping title *Contact persons*.

Sorting by columns

You can change the sort order the objects in the listing area by clicking a specific column heading in the listing area. The objects can be sorted, for example, alphabetically, in the order of relevance or by date. Clicking the column heading once more changes the sort order from ascending to descending, or vice versa. By holding down the *CTRL* key and clicking another column heading, you can select secondary, tertiary and further sortings orders. You can add more columns to the listing area by right-clicking on the column heading area and selecting **Choose Columns...** from the context menu.

 Video: [Column Settings](#)

Listing pagination

If the listing exceeds the total number of objects allowed to be displayed in a single listing, the option **Show more results** is shown in the grouping title. By clicking this option, you can enter the paginated view.

The paginated listing displays the range and total number of objects matching your search criteria or view filter, as well as the commands **Previous** and **Next**.

You can change the number results shown per page via the *Display Mode* options:

1. Open either the context-menu for an empty area in the listing view, or the menu bar by pressing *Alt* on your keyboard.
2. Select **Display Mode** from the list (or **View > Display Mode** via the menu bar).
3. Select **Objects per Group**.
4. Select any of the options in the list.

Metadata Card

By default, the metadata card and the preview pane are positioned on the right side of the user interface. The size of the right pane can be adjusted according to different user needs and preferences.

The screenshot shows the M-Files interface with a document list on the left and a metadata card on the right. The document list has columns for Name, Size, Date Modified, and Score. The selected document is 'Project Schedule (Sales Strategy Development).pdf' with a size of 9 KB, date modified 6/8/2011 11:08 AM, and a score of 2152. The metadata card on the right displays the document name, ID (297), version (4), and creation/modification dates. It also shows a class (Agenda) and various properties like Name or title, Event date, Document date, Meeting type, Project (Sales Strategy Development), Keywords (project plan), and Description. At the bottom of the metadata card, there are permission and workflow controls.

Figure 19: Metadata card on the right side of the user interface.

The metadata card comprises the following elements (from top to bottom):

- Title area
- Option ribbon
- Property listing
- Permission/workflow controls

The title area displays the name, type, ID and the M-Files version of the object, as well as information on the creation and modification dates.

The option ribbon enables various object and metadata card related actions. These actions are presented in more detail further below.

The property listing area displays all the object's properties, property groups, as well the option for adding new properties. See [Properties](#) on page 70 for instructions on adding and editing properties.

- Note:** M-Files can be configured to use dynamic properties as well as property groupings. Dynamic properties enable administrators to define "trigger" properties that, when set, automatically generate additional properties to the metadata card. Property groupings can be used to group properties together on the metadata card in order to better organize the metadata cards of objects that contain a large number of properties. See [Metadata Card Configuration](#) on page 302 for more information.

The ribbon below the properties area enables you to modify the permission settings of the object, as well as to assign and change workflows and workflow states. For further information, see [Permissions](#) on page 71 and [Workflow](#) on page 99.

Metadata card option ribbon

There are four icons in the ribbon below the title of the object, a flag, a star, a cogwheel and an arrowhead.

With the flag icon, you can mark the object as *followed* or *unfollowed*. When the object is marked as *followed*, you get an email notification when the object is modified.

Clicking the star icon toggles the inclusion of the object in your *Favorites* view.

The cogwheel icon opens a list of options, including the options for changing the metadata card location and detaching the metadata card into a new window (*Pop Out the Metadata Card*).

By clicking the arrowhead, you can toggle the compact view of the metadata card on or off.

The screenshot shows a metadata card for a document titled "Project Schedule (Sales Strategy Development)". The card is displayed in a compact view. The metadata fields are as follows:

Field	Value
Class*	Agenda
Name or title*	Project Schedule (Sales Strategy Development)
Event date	---
Document date	---
Meeting type	---
Project	Sales Strategy Development ↗
Keywords	project plan
Description	---

Below the metadata fields, there is a link to [Add property](#). The card is titled "Document ID 297 Version 4" and includes creation and modification dates: "Created 7/6/2007 3:10 PM Tina Smith" and "Last modified 6/8/2011 11:08 AM Andy Nash". A blue ribbon at the top contains icons for flags, stars, settings (cogwheel), and an arrowhead. A dropdown menu is open from the cogwheel icon, showing options: "Toggle Metadata Card Location" and "Pop Out the Metadata Card". The left sidebar has "Metadata" and "Preview" tabs. The bottom of the card shows a lock icon and the text "Full control for all internal users".

Figure 20: The options ribbon on the metadata card.

"Follow this object" functionality

When the functionality *Follow this object* or *Follow this document* is active, M-Files sends you an email message when the object or document is modified.

These changes are:

- The metadata or the file content of the followed object is modified.
- The followed object is deleted or destroyed.
- The metadata or file content of an object or a document related to the followed object is changed. For instance, a document related to a project is modified.
- A document or an object related to the followed object is created, deleted or destroyed.

 **Note:** The person who modified the object will not receive a notification.

Positioning the metadata card

In some cases, such as when working with views that show multiple columns in the listings, or when working with a smaller screen, it makes more sense to show the metadata card in the bottom pane. You can change the position of the metadata card to the bottom pane by opening the context menu in the *listing view* on page 41 and selecting **Display Mode > Show Metadata in Bottom Pane**. Alternatively, you can do this by clicking the **Settings** icon (the cogwheel) on the metadata card and selecting *Toggle Metadata Card Location*, or by opening the context menu of the *Metadata* tab. You can also hide the right pane altogether by clicking the arrowhead above the topmost tab.

Comments view

The comments view can be accessed by selecting the *Comments* icon on the metadata card. This view presents all the comments related to the object in chronological order, as well as the option to add new comments.

Note: Comments retain their permission settings. This means that they are visible only to the users defined in the permission settings that were in use when the comment was added.

Selecting the *Properties* icon from the comments view brings you back to the properties view.

Preview

You can activate the preview by opening the *Preview* tab of the right pane. If the pane is not enabled, you can display it by opening the context menu in the listing view and selecting **Display Mode > Show Right Pane**.

You can also use the metadata card in a separate window by using the *Pop Out* control located in the **Settings** menu (the cogwheel icon) of the metadata card. This functionality allows you to view and edit several metadata cards in parallel and also to view the document metadata and the preview window side-by-side.

Once the metadata card has been detached from its default position, it can be operated as any normal window in the user interface.

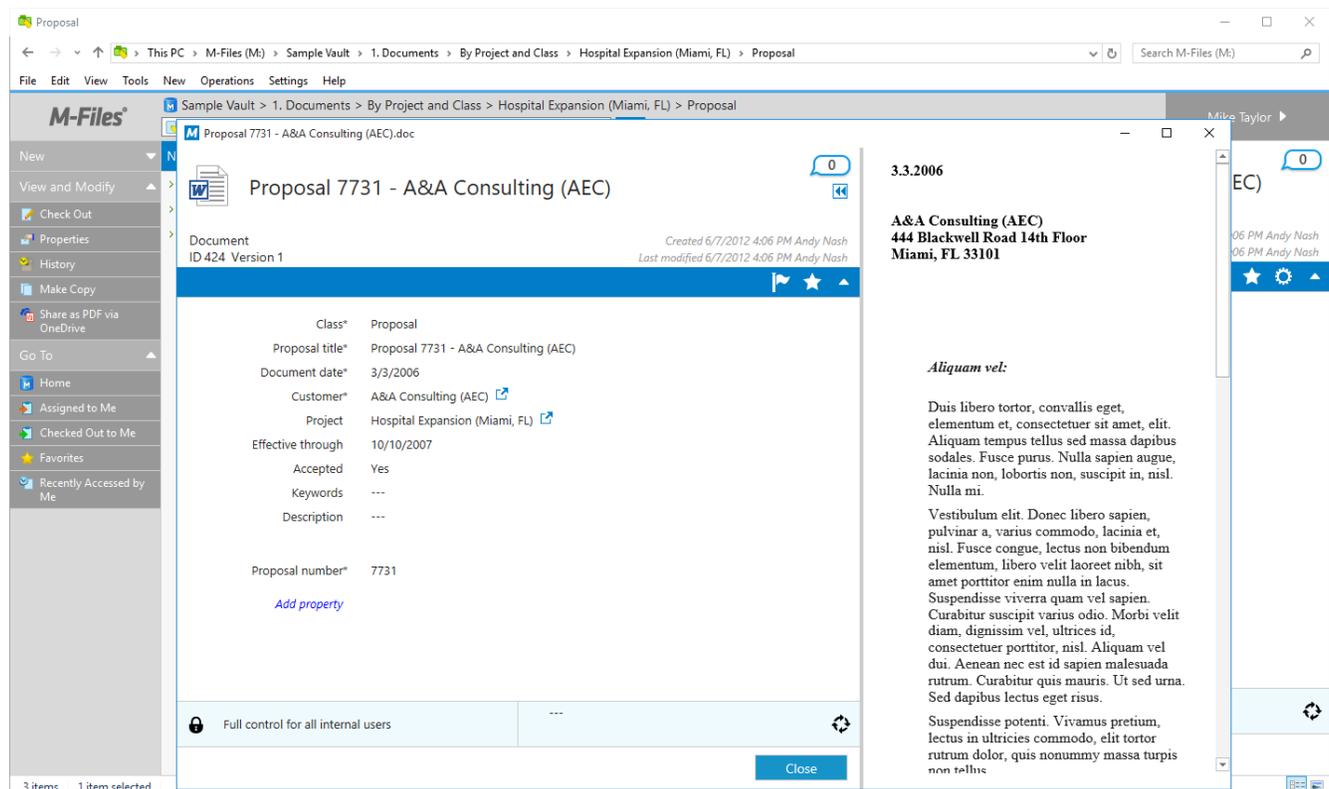


Figure 21: Metadata card in detached mode with document preview.

In the preview mode, you can easily browse and copy document content. You can preview for instance Word, Excel, PowerPoint, PDF, and AutoCAD files. The preview is possible if the software supporting the relevant file format has been installed on your computer. For example, preview for Microsoft Office files requires Microsoft Office 2007 or higher, and preview of PDF files requires Adobe Reader 8 or higher.

 **Tip:** When you are transferring files to M-Files, the preview function makes it easier to fill in the metadata.

Contents of the following types of files can be viewed in the **Preview** tab:

- Email files (eml, eml, msg)
- HTML and web archive files (htm, html, mht, mhtml)
- Image files (tif, tiff, jpg, jpeg, bmp, gif, png)
- Microsoft Excel files (xlsx, xlsx, xlt, xltm, xlsb, xls, xlt)
- Microsoft PowerPoint files (pptx, pptm, ppsx, ppsm, potx, potm, ppt, pps, pot)
- Microsoft Word files (docx, docm, dotx, dotm, doc, dot)
- OpenDocument files (odt, ott, ods, odp)
- PDF files
- RTF files
- Text files (txt)
- Visio Drawings (vsd, vdx, vss, vsx, vst, vtx, vdw)

Efficient Use of the Metadata Card

The metadata card can be fully operated with your mouse (except for typing in values, of course), but there are also several ways for you to optimize the process of filling in the metadata by using your keyboard. The aim of this chapter is to make you even more proficient in using the metadata card, which is essentially one of the key components of the M-Files user interface.

Firstly, you can use the *Tab* key to move from one property field to the next. You can also go back to the previous field by pressing *Shift + Tab*.

You can add and remove fields via the toolbar shown above the active field by using your mouse, but it might be faster to use the keyboard shortcuts: use *Ctrl + I* to add a new field, *Ctrl + D* to delete the selected field, or *Ctrl + N* to add a new value to the value list.

As a recap, here are the shortcuts in a table:

Keyboard Shortcut	Description
Tab	Move to the next property field.
Shift + Tab	Move to the previous property field.
Ctrl + I	Insert a new value field for a property.
Ctrl + D	Delete the selected property field.
Ctrl + N	Add a new value to the value list and set it as the property value.

4.2. M-Files Shortcuts

These keyboard shortcuts can be used when the listing area is active:

Quick Search	Ctrl+F	Refer to Quick Search on page 113.
--------------	--------	--

New Document	Ctrl+N	Refer to New Document on page 69.
--------------	--------	---

These shortcuts are available when an object has been selected on the listing area:

Check Out	Ctrl+O	Refer to Check Out on page 90.
Check In	Ctrl+I	Refer to Check In on page 93.
Check in with comments	Ctrl+Shift+I	Refer to Check In on page 93.
Relationships	Ctrl+L	Refer to Relationships on page 96.
Collection members	Ctrl+Shift+L	Refer to Collection Members on page 98.
Comments	Ctrl+M	Refer to Comments on page 99.
Subobjects	Ctrl+J	Refer to Subobjects on page 98.
History	Ctrl+H	Refer to History on page 94.

For the available shortcuts while editing the metadata card, see [Efficient Use of the Metadata Card](#) on page 46.

4.3. Creating a Document

You can create documents just like before, and [save them directly to the M-Files drive](#) on page 50.

You can also create a document using the **New Document** function in the M-Files task menu (or by pressing *Ctrl+N* in the M-Files user interface). The new document creation wizard helps you select the right template and class for the new document. Templates can also be searched by typing a search term. The search will display all templates and file formats that match to the search criteria, and highlight the results.

 Video: [Creating Documents](#)

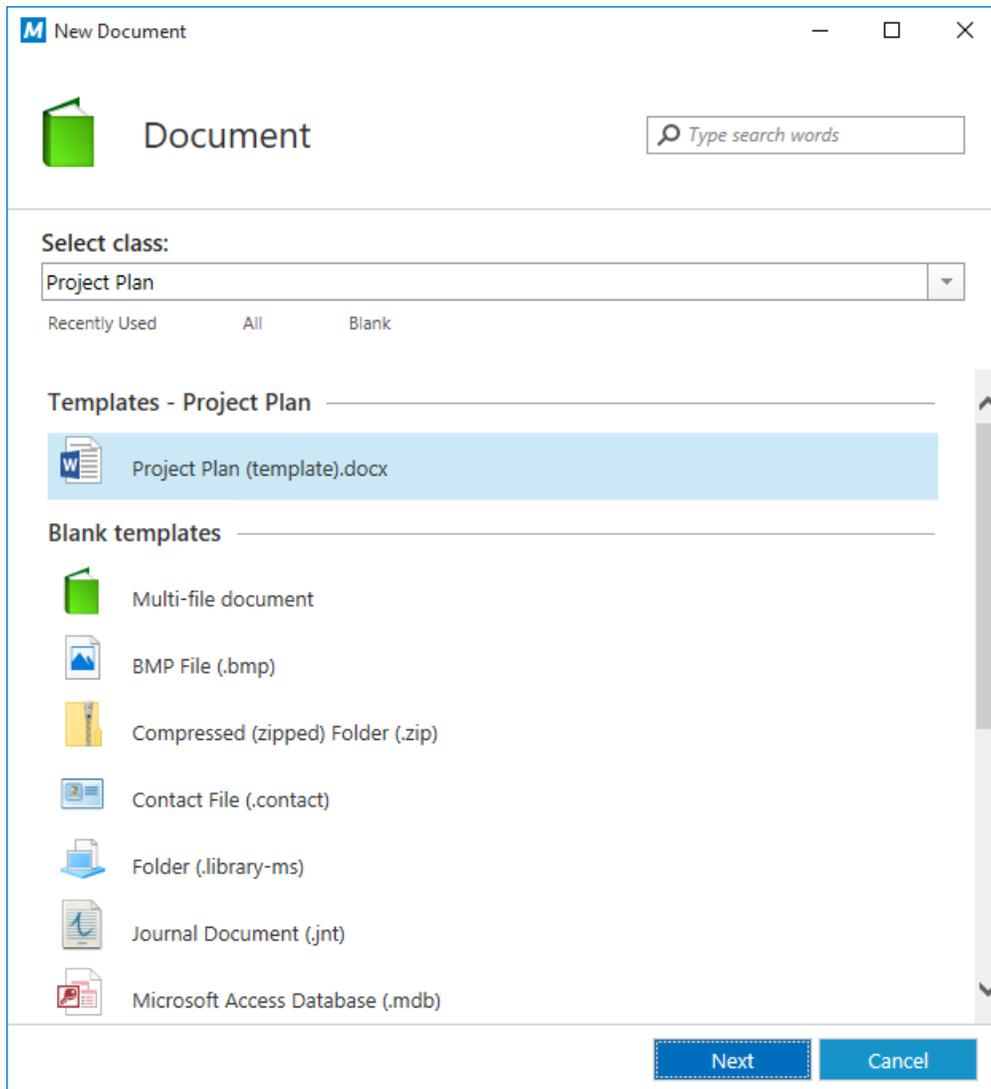


Figure 22: The new document creation wizard.

Selecting *All* displays all templates and file formats that are defined for the vault in question. The *Recently Used* option shows all the templates you have recently accessed. Recently used templates are also shown by default when you open the template selection wizard. The *Blank* option shows all the file formats that can be selected for a new document.

These predefined options are followed by a list of classes that can also be used for the template selection. Selecting a class displays the templates that are available for that class.

After you have selected a template or a blank document, a metadata card for the new document opens and you can start editing the properties. Properties marked with an asterisk (*) are mandatory.

 **Tip:** You can use keyboard shortcuts while editing the metadata. See [Efficient Use of the Metadata Card](#) on page 46.

New Document

New Price List Items for Q4

Text Document (.txt)

Class*	Price List
Name or title*	New Price List Items for Q4
Product or service	TR-02654A
Keywords	price list q4 new items
Description	---
Department	Marketing
Accepted	No

[Add property](#)

Full control for all internal users

Open for editing
 Check in immediately

Create Cancel

Figure 23: The metadata card of a new document.

Selecting **Create** saves the document and adds the object to the vault. Selecting *Open for editing* makes sure that the document is checked out to you for editing until you manually check it in, and opens the new file in a suitable application for editing. If you have selected *Check in immediately*, the document will be available for others right away. Selecting **Cancel** discards all the changes and closes the dialog.

When you create a document in some other application, you fill in the metadata card only when you save the document in the document vault on the M-Files drive.

Tip: When filling in the metadata card, you can specify the [permissions](#) on page 71 for the document in the *Permissions* field. This way, you can specify who can view, open, or edit the document.

Example: A New M-Files Document

1. Open M-Files Desktop and navigate to a vault.
 - i** By default, your active M-Files vault connections are located in Windows Explorer under the M-drive.
2. Select **New > Document** via the task pane on the left side of the user interface.
 - The **New Document** wizard should be opened.

3. Either:

- a. Enter a search term to the search field and select a template based on the search results.
or
- b. Select a class from the **Select class** drop-down menu and then a template belonging to the selected class.
or
- c. Select a template via the **Recently Used**, **All**, or **Blank** quick lists.

4. Click Next.

- A **New Document** dialog should be opened.

5. Enter a name for the document.**6. At minimum, enter values to the mandatory metadata fields (marked with an asterisk).**

- i** You may want to add additional metadata fields by clicking the **Add property** command below the last metadata property on the list.

7. Define permissions for your document.

- i** For more information on setting document permissions, see [Permissions](#) on page 71.

8. Select a workflow and a workflow state for the document.

- i** For more information about workflows, see [Workflows](#) on page 237.

9. Either:

- a. Select **Open for editing** if you want to modify the content before making the document public.
or
- b. Select **Check in immediately** if you are planning on adding the content later on, or having someone else add it.

10. Select Create.

Your newly created document has been added to the vault. If you chose **Check in immediately** in the ninth step, the document is also visible to others, according to your permission settings.

4.4. Saving in M-Files

When using M-Files, you no longer save documents in a single folder but on the M-Files drive, which can be found on your computer like a hard drive. You do not need to specify any other location than the document vault, as M-Files locates the document in the correct views on the basis of the metadata you define in the metadata card.

 Video: [Saving Documents](#)

You can save the documents directly to M-Files from the applications that you use. The new save location is the document vault.

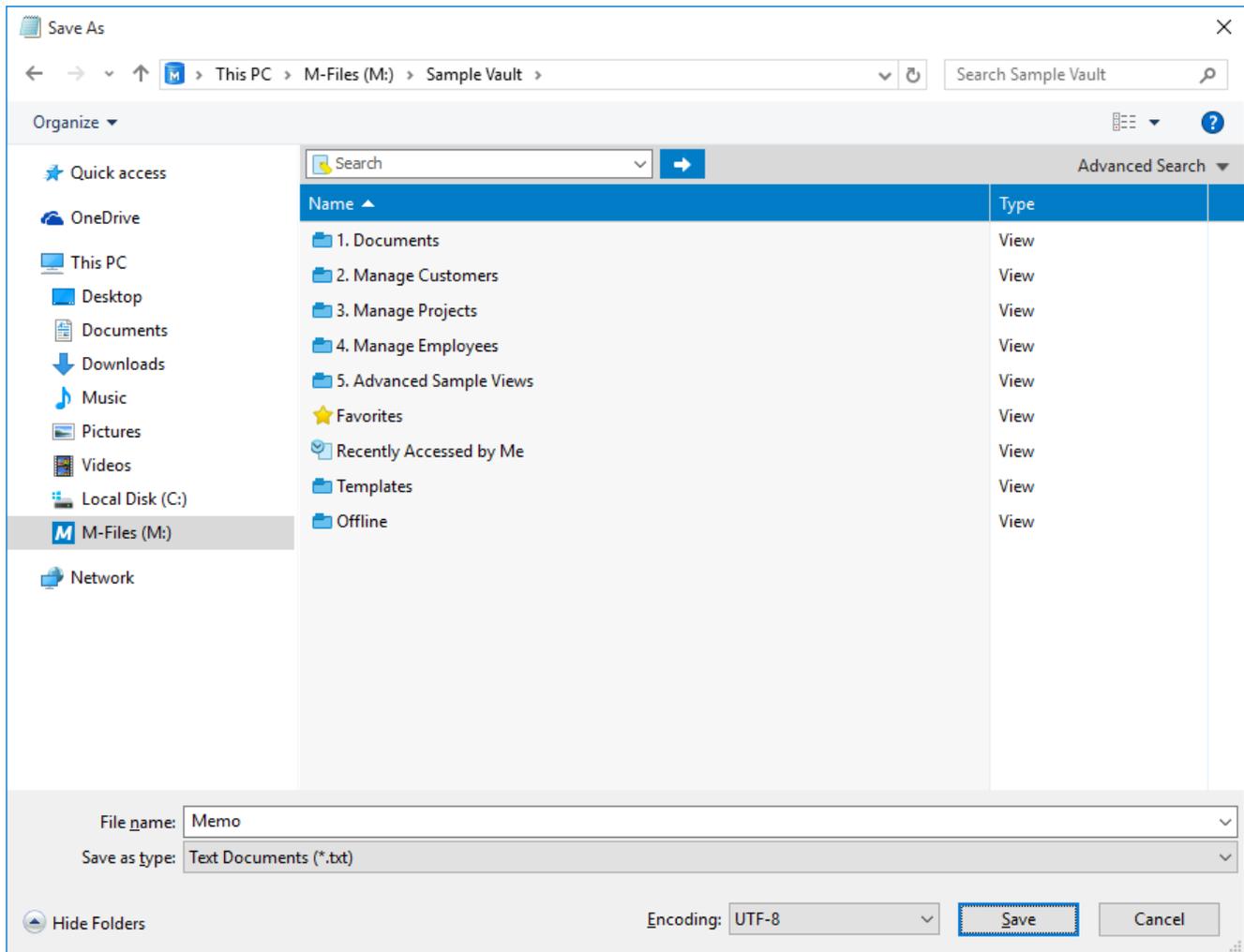


Figure 24: Saving a document to a document vault.

Tip: On the left side of the **Save As** dialog, there is a quick link to M-Files.

Below are some examples of how you can save your work directly from an application to M-Files. The first example applies to virtually every desktop application. The second example applies to Office products (Office 2007 and newer).

Example: Saving a PowerPoint Presentation to M-Files

1. Open PowerPoint and create a new presentation or open an existing one.
2. Once your presentation is ready, select **File > Save As > Computer > Browse**.
 - The **Save As** dialog is opened.
3. On the left pane of the **Save As** dialog...
 - a. Click the **Computer** location and on the right pane, double-click **M-Files**.
 - or
 - b. Click the arrow next to **Computer** to expand the location and click **M-Files**.
4. Double-click the vault where you want to save your presentation.

5. Enter a file name for your presentation in the **File name** field.
6. Click **Save**.
 - ☑ The **New Document** dialog is opened.
7. Select an appropriate class for your presentation from the **Class** drop-down menu.
8. Optional: Enter other optional property values.
 - ℹ Click **Add property** to add additional properties.
9. Click **Create**.

Your presentation is saved to M-Files.

Example: Saving a PowerPoint Presentation to M-Files by Using the M-Files Tab

1. Open PowerPoint and create a new presentation or open an existing one.
2. Once your presentation is ready, select the **M-Files** tab on the PowerPoint ribbon.
3. Click **Save to M-Files**.
4. In the drop-down menu that opens, click the vault where you want to save your presentation.
 - ☑ The **New Document** dialog is opened.
5. Select an appropriate class for your presentation from the **Class** drop-down menu.
6. Optional: Enter other optional property values.
 - ℹ Click **Add property** to add additional properties.
7. Click **Create**.

Your presentation is saved to M-Files.

4.5. Checking In a Document

Even when you have saved and closed a document, it will remain *checked out* to you until you *check it in*. Select the document you have created and check the document in by selecting the *Check In* function from the task area. This enables others to edit the document.

- 📘 **Tip:** You can simultaneously check in all documents that you have checked out from the *Checked Out to Me* view. The shortcut for checking in a document is *Ctrl+I*.

4.6. Deleting a Document

If you want to delete a document, right-click the document and select **Delete** from the context menu. The document is not lost permanently, but it becomes *deleted* and can still be found by performing a detailed search (see *Deleted* under [Status](#) on page 120).

Please note, however, that you can see deleted documents only if you have the appropriate permissions. If you have the system administrator permissions, *full control of vault* or the right to *see and read all objects (including deleted ones)*, you can use a view that shows all the deleted documents. Refer to [New View](#) on page 76 and [Undelete](#) on page 102.

-  **Tip:** If you want to remove a document permanently, right-click a deleted document and select **Destroy**. Alternatively, when you are deleting a document, you can activate the *Destroy permanently* checkbox.

4.7. Creating and Completing Assignments

Assignments transfer information and responsibility for task execution to the correct person. The assignment function can be used, for instance, to request a colleague to look over a proposal before it is sent to the customer.

Assignments can be included in a workflow, or they can be independent. For more information on automatic assignments included in workflows, refer to [Workflows](#) on page 237.

To submit a new assignment, create a new *Assignment* object. Because assignments are objects, you can define the same assignment for several objects. Or, inversely, add several different objects to the same assignment. For example, you can assign several drafts to a colleague for inspection with a single assignment.

Because the assignments are separate objects they have their own version history and permissions. For this reason, the document and assignment included in it can have separate permissions. Thus, only a user who has reading rights to the document can mark the assignment completed. The user does not have to have rights to edit the document. Users with a read-only license to M-Files can also mark the assignment completed.

 Video: [Assignments](#)

You have three ways to create an assignment:

- Create an assignment and add objects to it either by dragging and dropping or by using the *Add File* function from the context menu.
- Highlight one or more documents and select *Assignment* from the *New* menu.
- Create an assignment without adding an object to it and define the entire task in the description field of the assignment.

The screenshot shows a window titled "New Assignment" with a close button and a notification bubble containing the number "0". Below the title bar is a blue header with a folder icon and the text "Price List Review for Q4/2014". Underneath is a section titled "Assignment" with a blue background bar. The main content area contains a metadata card with the following fields:

Class*	Assignment
Name or title*	Price List Review for Q4/2014
Assignment description	Review the price list item with product management.
Assigned to*	Mike Taylor ✓
Deadline	12/31/2014

Below the metadata card is a blue link labeled "Add property". At the bottom of the window, there is a toolbar with a lock icon and the text "Full control for all internal users", a separator "...", a refresh icon, a checked checkbox for "Check in immediately", and two buttons: "Create" and "Cancel".

Figure 25: The metadata card for a new assignment.

Assignment description

Add a free-form description of the task. The assignment notice by email displays the description to the person to whom the task was assigned.

Assigned to

Select the persons you wish to assign the task to. You can add more users by clicking the plus button (+) on the toolbar. Whenever an assignment is a separate object, all persons to whom the task was assigned must mark the assignment as complete before it is switched to the "complete" state.

Deadline

If desired, you can select a deadline for the assignment. The user gets an automatic reminder if he has not marked the assignment as completed when the deadline is approaching. The reminder will be sent using a common notification rule which can be deleted by the administrator.

The deadline can also be useful for creating views. The administrator or user can create a view to display objects whose deadline is approaching. For more information about views, refer to [New View](#) on page 76.

Monitored by

You can use the *Monitored by* field to define the users you wish to notify every time a task is marked as complete. The person submitting the assignment is automatically defined as a task monitor as soon as the object is saved for the first time. Once the property has been automatically or manually added to the metadata card, you can change or add more monitors by clicking the plus button (+) on the toolbar.

Mark as complete icon

You can mark the assignment complete by clicking the exclamation mark icon next to the *Assigned to* field.

Creating a New Assignment for an Existing Document

1. In M-Files, locate the document for which you want to create a new assignment.
2. Right-click the document and select **New > Assignment...** from the context menu.
3. In the **Name or title** field, enter a descriptive title for the assignment.
4. In the **Assignment description** field, enter a detailed description of the assignment to ensure that the assignee is properly informed about the details of the assignment.
5. From the **Assigned to** drop-down menu, select the person to whom this assignment is assigned to.
6. Optional: In the **Deadline** field, select a deadline date by which the assignment must be completed.
7. Optional: Via the workflow controls at the bottom of the **New Assignment** dialog, select a workflow for the assignment.
8. Click **Create** to create the assignment.

The new assignment appears in the **Assigned to Me** view of the assignee and they are informed by e-mail about the new assignment.

Creating a New Assignment for a New Document

1. In M-Files, select **New > Assignment** in the task area.
2. In the **Name or title** field, enter a descriptive title for the assignment.
3. In the **Assignment description** field, enter a detailed description of the assignment to ensure that the assignee is properly informed about the details of the assignment.
4. From the **Assigned to** drop-down menu, select the person to whom this assignment is assigned to.
5. Optional: In the **Deadline** field, select a deadline date by which the assignment must be completed.
6. Optional: Via the workflow controls at the bottom of the **New Assignment** dialog, select a workflow for the assignment.
7. Click **Create** to create the assignment.
8. Once the new assignment has been created, right-click the assignment in the listing area and select **Add File** and choose a suitable file format for the new file.
9. Rename the new file accordingly.
10. Optional: Double-click the newly added file to edit it.

The new assignment appears in the **Assigned to Me** view of the assignee and they are informed by e-mail about the new assignment.

Completing an Assignment

Once you have been given an assignment, you have to complete the tasks associated with the assignment and mark the assignment complete to indicate that you, the task assignee, have completed the assignment given to you.

1. In M-Files, locate and highlight the assignment that has been assigned to you.
 - i** You can find all the assignments assigned to you in the **Assigned to Me** view.
2. Complete all the tasks required in the assignment.
3. Mark the assignment complete by doing one of the following:
 - a. On the metadata card, click the ✓ (Mark complete) icon next to your name in the **Assigned to** field.
or
 - b. In the task area, select **View and Modify > Mark Complete**.
or
 - c. Right-click the assignment and select **Workflow > Mark Complete**.
4. Optional: Depending on the workflow settings of the assignment, you may still need to add an electronic signature to authorize the assignment completion.

The assignment is completed and it is removed from the **Assigned to Me** view.

Completing an Approval Assignment

Once you have been given an approval assignment, you have to complete the tasks associated with the assignment and mark the assignment either approved or rejected to indicate that you, the task assignee, either approve or reject the target of the assignment. You could mark an assignment rejected, for instance, if you consider the target document to be unpublishable.

1. In M-Files, locate and highlight the assignment that has been assigned to you.
 - i** You can find all the assignments assigned to you in the **Assigned to Me** view.
2. Complete all the tasks required in the assignment.
3. Mark the assignment either approved or rejected by doing one of the following:
 - a. On the metadata card, click either the ✓ or X icon next to your name in the **Assigned to** field.
or
 - b. In the task area, select **View and Modify > Mark Approved/Rejected**.
or
 - c. Right-click the assignment and select **Workflow > Mark Approved/Rejected**.
4. Optional: Depending on the workflow settings of the assignment, you may still need to add an electronic signature to authorize the operation.

The assignment is completed and it is removed from the **Assigned to Me** view. The user defined in the *Monitored by* property gets a notification e-mail of the approval or rejection.

4.8. Creating Other Objects

Besides documents, you can also create other objects like customers and projects. You can thus use M-Files to manage, for instance, your customer database by adding and editing customer objects in the document vault. Similar to documents, objects such as customers and projects have a metadata card, but they can exist without any files. They are also deleted and edited the same way as documents.

▶ Video: [Creating New Objects](#)

When you start creating a new object other than a document, the first thing you will see is the metadata card.

The screenshot shows a window titled "New Customer" with a "PRG Essentials" icon and name. Below the name is a "Customer" header. The main area contains a metadata card with the following fields:

Class*	Customer
Customer name*	PRG Essentials
Address (line 1)	322 Ocean Drive
Address (line 2)	---
City	Melbourne
State/province	Florida
ZIP/postal code	32947
Country	USA
Telephone number	(321) 403-1791
Web site	www.prg-essentials.com

Below the fields is a link: [Add property](#). At the bottom, there is a section with a lock icon and the text "Full control for all internal users", a refresh icon, and a "Check in immediately" checkbox which is checked. To the right of the checkbox are "Create" and "Cancel" buttons.

Figure 26: The metadata card for a new customer.

After you have entered the values for the mandatory fields (marked with an asterisk), the object can be saved by selecting **Create**. Selecting **Cancel** deletes the newly created object.

The *Check in immediately* option is selected by default to ensure that the new object is saved to the repository immediately after selecting **Create**. You can leave the object checked out to you if you plan to add additional metadata to it before saving the information to the vault.

Object types are defined using the M-Files Admin tool. For more information, refer to [Object Types](#) on page 204.

Example: Creating a New Customer

You must have a connection to a vault containing the customer object type.

1. Either:
 - a. Right-click on an empty space in the listing area and select **New > Customer...**
 - or
 - b. Click **New** on the left-side task pane, and then click **Customer**.
 - or
 - c. Press Alt to open the menu bar and select **New > Customer...**
- The **New Customer** dialog is opened.
2. In the **Customer name** field, enter the customer's name.
3. Optional: Enter other customer details in the available fields.
 - Click **Add property** to add additional customer properties.
4. Click **Create** once you are done.

A new customer object is added to M-Files.

4.9. Transferring Existing Files to M-Files

Transferring files to M-Files is very easy. Files can be transferred by dragging and dropping or by copying files or folders to the M-Files document vault.

If you transfer one file only, M-Files asks you to fill in a metadata card for the file, which makes the file a document. It is very important to understand the difference between a file and a document. An M-Files document consists of zero or more *document files* and *metadata*.

For instance, when transferring a folder with subfolders or several individual files at a time, M-Files is able to preserve the old folder structure. If you wish the folder structure to be preserved, the contents transferred are organized into *traditional folders* created in the document vault by M-Files. You can fill in the document property data while transferring or later on. For more information, refer to [Import Files and Folders](#) on page 87.

You can also use existing files directly from their original locations. This way, the additional properties provided by M-Files (such as version management) are available for these files, while they can still be used externally to M-Files. You can add metadata to the documents later on as necessary. For more information, refer to [External File Sources](#) on page 265.

Different databases can also be used and imported into M-Files. For example, the data in the customer database can be added to the M-Files metadata structure. This way the information does not have to be copied from one location to another. For more information, refer to [Object Types](#) on page 204 and [Value Lists](#) on page 211.

When you add metadata to documents imported to M-Files, these documents are displayed both in traditional folders and in M-Files dynamic views.

-  **Tip:** If you are transferring several individual files with the same metadata, such as the same customer, remember to ensure that the metadata you specify the first time will be used by default for the next files. You can do this when filling in the metadata card by checking the *Use these values as defaults for the next document* box (see the image below).

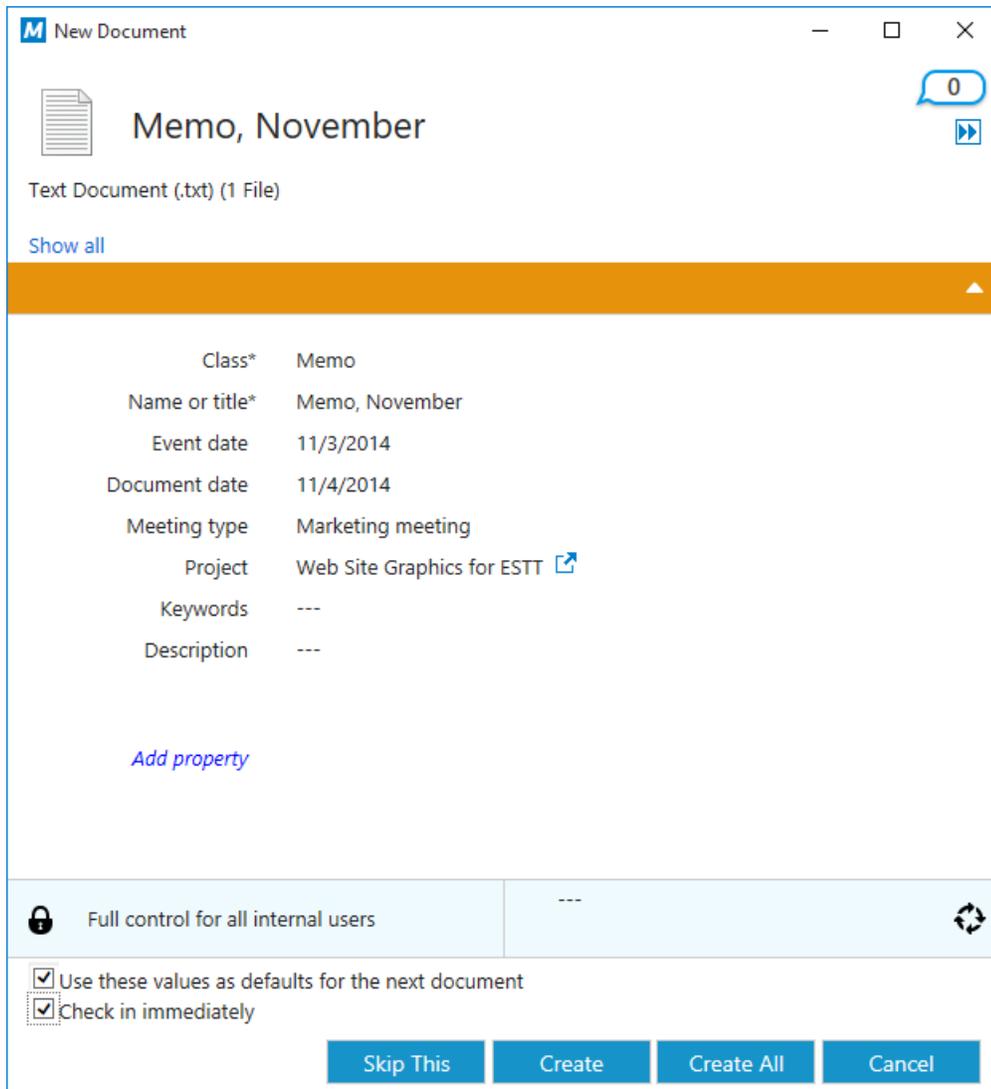


Figure 27: New Document window for a multi-file transfer.

Tip: With the **Skip This** button, you can choose not to transfer a certain file. This is useful if you are transferring a large number of files and notice that you do not want to transfer one of the files after all.

Transferring Files to M-Files by Dragging and Dropping

1. Locate a file you need to transfer in File Explorer.
2. Select the file and drag and drop it to M-Files, onto an empty space in the listing area.
 - The **New Document** dialog is opened.
3. Select an appropriate class for the file from the **Class** drop-down menu.
4. Enter other optional property values.
 - i** Click **Add property** to add additional properties.
5. Click **Create**.

Transferring Files to M-Files by Copying and Pasting

1. Locate a file you need to transfer in File Explorer.
2. Right-click the file and select **Copy**.
3. Switch over to the M-Files window, right-click on an empty space in the listing area and select **Paste**.
 - ✓ The **New Document** dialog is opened.
4. Select an appropriate class for the file from the **Class** drop-down menu.
5. Enter other optional property values.
 - i Click **Add property** to add additional properties.
6. Click **Create**.

Transferring Folders to M-Files by Using the Import Files and Folders Dialog

1. In M-Files, press **ALT** to open the menu bar.
2. Select **New > Import Files and Folders...**
3. Click ... to select the folder you want to import.
4. Select:
 - a. **Do not preserve old folder structure** to discard the folder structure of the folder you are importing.
or
 - b. **Preserve old folder structure** to preserve the folder structure of the folder you are importing. You need to select a folder in M-Files for the content to be imported. You can create a new folder by clicking **New Folder**.
5. Optional: Uncheck the **Prompt for metadata** check box if you do not want to add metadata for the content you are importing.
6. Click **OK**.

If you checked the **Prompt for metadata** check box, do the steps from 7 to 9 for every file you are importing.
7. In the **New Document** dialog, select an appropriate class for the file from the **Class** drop-down menu.
8. Enter other optional property values.
 - i Click **Add property** to add additional properties.
9. Click **Create**.

The folder is imported to M-Files. If you chose the **Preserve old folder structure** option, the imported folder appears as a new traditional folder in M-Files.

4.10. Annotations and Redlining

With M-Files versions 10.1 and later, it is possible to add various comments and stamps, as well as to draw arrows, boxes and other shapes to your documents. The feature supports most common file types, including Microsoft Word, Excel, PowerPoint and Visio documents, email files, RTF files, HTML and web archive files as well as OpenDocument files and PDF documents.

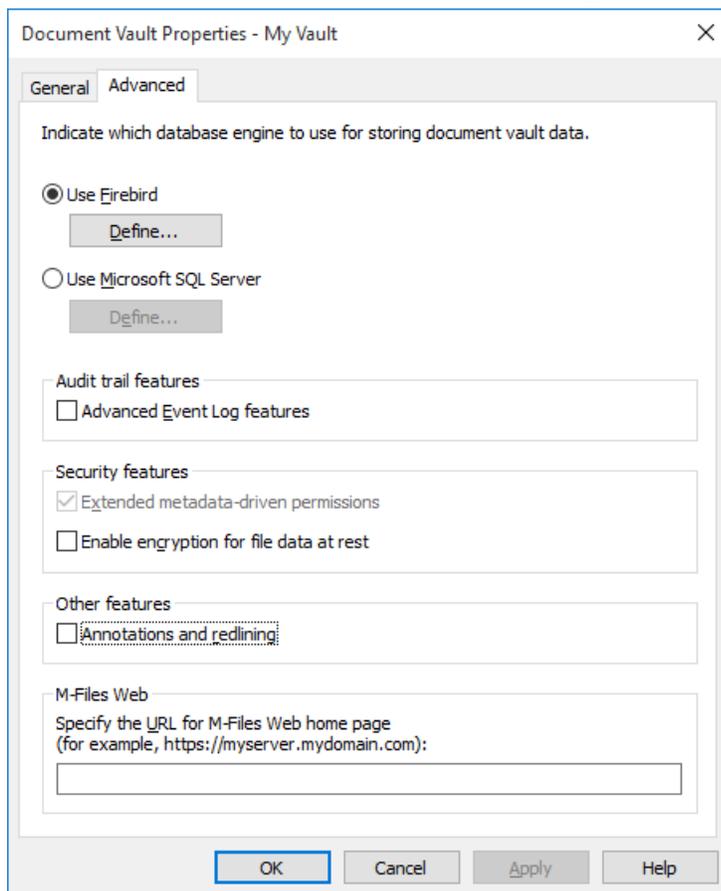
-  **Note:** The annotations are not added to the documents themselves, but rather as detachable layers that can also be hidden if need be.

Activating the feature

The feature needs to be enabled via M-Files Admin. The options is vault-specific.

To enable the feature:

1. Open M-Files Admin.
2. Open the context menu of your document vault and select **Properties**.
3. Open the *Advanced* tab.
4. Enable the checkbox for *Annotations and redlining*.



5. Select **Yes** in the confirmation dialog.
6. Select **OK** and close M-Files Admin.

The feature should be activated as soon as you have restarted your *Explore M-Files* instance.

 Video: [Activating Annotations](#)

Annotation objects

Your annotations are saved as separate *Annotation* objects under the main document. M-Files automatically creates these objects every time you start creating new annotations. Annotation objects contain an XFDF file (XML Forms Data Format) that basically tells M-Files the type, form, and location of your annotations.

Creating and editing annotations

Please see the topic [Using Annotations](#) on page 62 for instructions on adding and editing annotations.

Supported file formats

This feature supports the following file formats:

- Email files (eml, emlX, msg)
- HTML and web archive files (htm, html, mht, mhtml)
- Image files (tif, tiff, jpg, jpeg, bmp, gif, png)
- Microsoft Excel files (xlsx, xlsm, xltx, xltm, xlsb, xls, xlt)
- Microsoft PowerPoint files (pptx, pptm, ppsx, ppsm, potx, potm, ppt, pps, pot)
- Microsoft Word files (docx, docm, dotx, dotm, doc, dot)
- OpenDocument files (odt, ott, ods, odp)
- PDF files
- RTF files
- Text files (txt)
- Visio Drawings (vsd, vdx, vss, vsx, vst, vtx, vdw)

Using Annotations

The annotation options are shown in the Alt menu and in the task pane on the left-hand side of the *Explore M-Files* user interface.

 Video: [Annotations](#)

Enabling annotations in the user interface

To make sure that annotations are enabled in your user interface:

1. Open *Explore M-Files* and access your vault.
2. Press the Alt key on your keyboard.
3. Open the *View* menu.
4. Enable the *Show Annotations* option.

Creating a new annotation object

To start creating new annotations to a document:

1. Select a document in suitable format (for instance, a *.doc* or *.pdf*).
2. Make sure the *Preview* tab (not, for example, the *Metadata* tab) is selected in the right pane.
3. Select the *New Annotations* command via the task pane on the left-hand side of the user interface.

This should create a new *Annotation* object under your document, visible via the listing view, and open the annotation toolbar in the preview window.

 **Note:** The task pane displays the *New Annotations* option only for documents that do not yet have any annotations. If you want to create another annotation object, you can do so by pressing the Alt key and

selecting **New > Annotation...** from the menu. It is, however, recommended to have only one annotation object for each document.

Adding annotations

The annotation toolbar includes a number of different ways for you to highlight parts of the document.

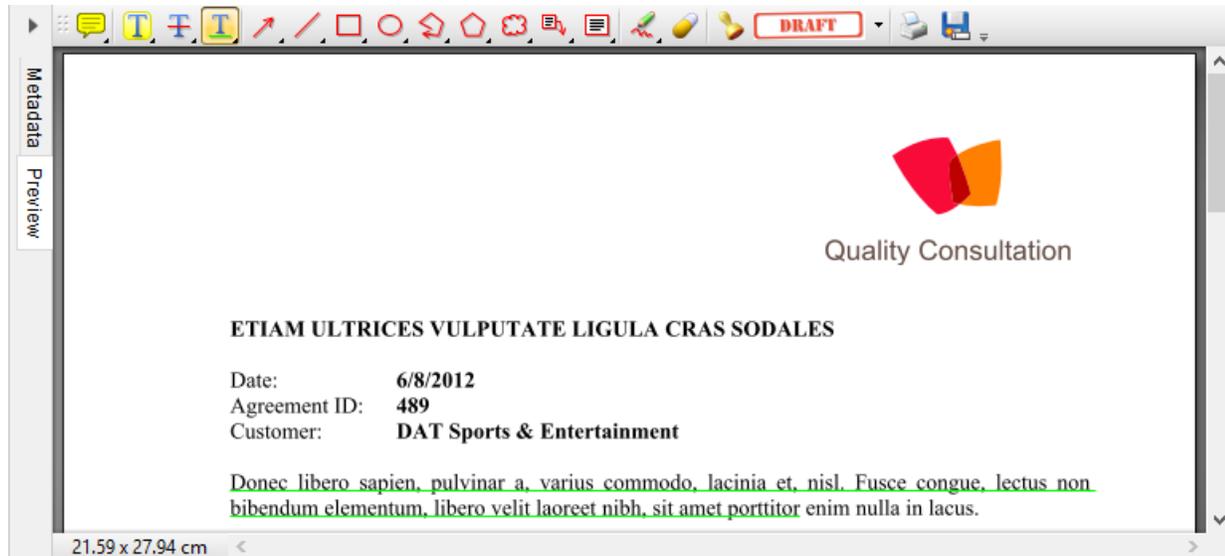


Figure 28: The annotation toolbar in the preview window.

You can add comments as well as text emphasis in the form of text highlighting, strikethrough text and text underlines. You can also add arrows, lines, rectangles and various other shapes for emphasis, including text boxes. In addition to these elements, there is a pencil tool coupled with an eraser in case you make a mistake. Finally, you can add various built-in stamps, such as "Draft", "Approved" or "Final".

Saving and printing annotated documents

The toolbar also displays icons for printing and saving. You can use these functions to print the annotated document or to save a copy to people with no access to your document vault. Saving a copy is also a convenient way for embedding all the annotations to a single PDF file.

Saving annotations

Once you have finished making annotations, you can save your changes by selecting the *Save Annotations* option via the task pane. Alternatively, you can select another document, which triggers M-Files to ask if you want to check in the annotated document. The modifications are saved once the document has been checked in.

Editing annotations

To edit previously added annotation objects:

1. Select the annotated document or the annotation object.
2. Make sure the *Preview* tab is active.
3. Select *Edit Annotations* via the task pane.

This should open the annotation toolbar in the preview window.

Showing and hiding annotations

When you have an annotated document selected, the task pane should display the options to display or hide the annotations.

To hide the annotations, select the *Hide Annotations* option via the task pane. Alternatively, select the *Show Annotations* if they are not visible.

4.11. Version History

Whenever you reserve a document or an object by checking it out, a new version of the object is created.

M-Files offers the possibility to return to the previous, unchanged version via the object's *version history* even after you have saved the changes to your document, closed it and checked it in. This is done by highlighting the object and selecting **History** from the task area. Version history is stored for all objects.

 **Tip:** You can restore a previous version of the document by using the *Roll Back* function of the *History* dialog. Versions can be labeled easily by using the *Add Label to This Version* function.

4.12. Using Views

Your day-to-day use of M-Files will mainly involve the *Explore M-Files* component. *Explore M-Files* is primarily used to browse views in which documents and other objects have been grouped according to the desired criteria, such as a project or a customer, based on the metadata contained in the objects.

For example, all documents for which the *Project* metadata has been specified can be grouped by project. The documents and other objects related to the same project will then be displayed in the project's virtual directory. For more information on configuring views and grouping levels, refer to [New View](#) on page 76.

 Video: [Views Overview](#)

4.13. Finding Documents and Other Objects

The most efficient way of finding your documents and other objects is to use the M-Files search functions. This is especially useful when you remember only a single detail about the document or object, such as the creation date or the user who created the document.

Quick search

With the *quick search* function (at the top of the M-Files user interface), you can search for certain words associated with the object.

Advanced search

The *advanced search* allows you to define more search criteria related to the status and properties of the object. For example, if you want to view the documents that a certain user has checked out during the last month, this is easier to do by performing an advanced search than by creating a new view.

 **Tip:** The more search criteria you use in the advanced search, the more likely you are to find the exact document or object you want.

Display the most relevant result first

The following information is of primary importance for providing search results:

- When was this document or other object **created**?

- When and how many times was the document or other object **edited**?
- When and how many times was it **processed**?

By using this information, the you will find relevant data on **the organization's newest and most commonly used documents** or other objects. If several years have passed since the creation of the document and the document has not been updated for a long time, the document is perhaps not considered very relevant for the user and it is not included among the first search results.

In addition to the information related to document handling mentioned above, the occurrence of the search string in metadata and/or file contents influences the order of the search results.

An item's location among the search results is influenced by the search string appearing in the following:

1. The name or title of the document or other object
2. Other metadata than the name or title of the document or other object
3. File contents

The name is of special importance because the document or object name often contains essential information about the content. Additionally, M-Files ignores certain metadata that tend to decrease the relevance of the search results. Full-text search in files is influenced by, for example, the length of the file in such a way that the shorter document is given more importance than the long one when the two have the same number of matches for the search string. In any case, the order of the search results is always more dependent on metadata than file content.

 **Note:** The set of search results is naturally influenced by the search criteria, which may include search of the metadata, full-text search, or both.

Search result definitions can be modified via the Windows registry settings.

For more information, see [Search Functions](#) on page 112.

4.14. Show Status

In M-Files, the documents are kept on the M-Files server, and they are transferred to the caches of M-Files users' computers to make the use of M-Files as fast as possible.

With the *Show Status* component, you can monitor the file transfers from the server to your computer and find out how long it will take to download a document. This tool is particularly useful if you are using M-Files over a slow connection. In regular local area network use, documents are usually transferred so quickly that there is no time to check the status information.

File transfer

The *Status* column indicates whether the file has been transferred or is being transferred. The status is indicated as a percentage. You can stop the transfer by highlighting the document and clicking **Stop**.

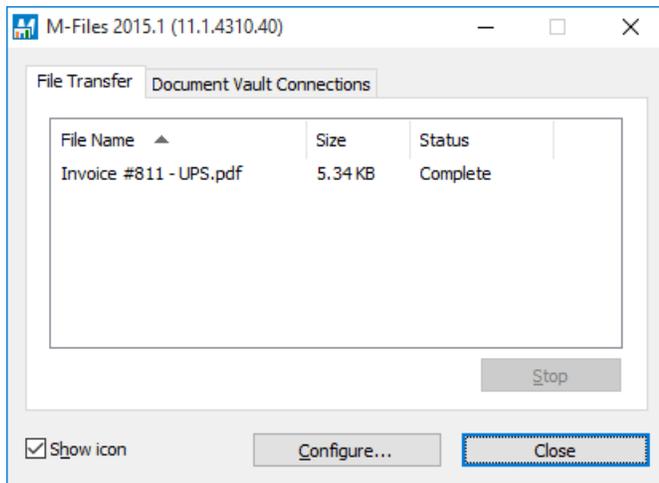


Figure 29: The "File Transfer" tab of the "Show Status" component.

The **Configure...** button opens M-Files Desktop Settings. For more information, refer to [M-Files Desktop Settings](#) on page 24.

Document vault connections

On the *Document Vault Connections* tab, you can see which document vault connections are available and whether the vault is online.

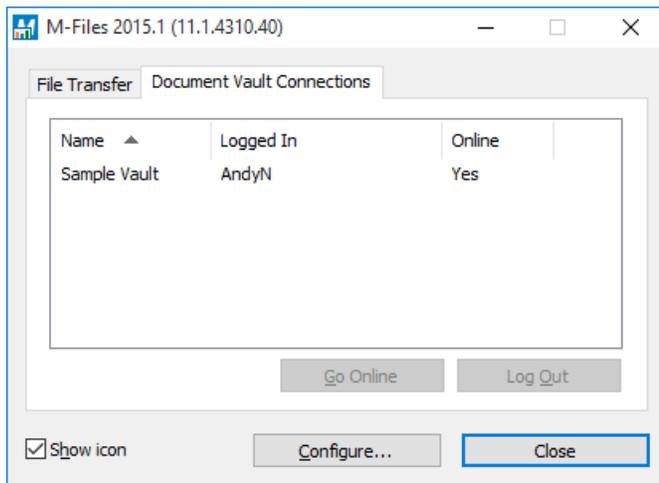


Figure 30: The "Document Vault Connections" tab of the "Show Status" component.

Go Online, Go Offline

These functions allow you to switch between the *Offline* and *Online* modes. The function of the button changes according to the current status. For more information, refer to [Go Offline](#) on page 106 and [Go Online](#) on page 107.

Log Out, Log In

If you are *logged in* to a document vault, you can use the **Log Out** button to *log out* and quit *Explore M-Files*. The function of the button changes according to your current status.

4.15. Office and AutoCAD Functions

Documents stored in M-Files can be edited in external software in the same way as any document stored on your computer. M-Files also offers access to its functions in the Microsoft Office and AutoCAD software.

Utilizing M-Files with Microsoft Office and AutoCAD software is easy:

- Documents can be opened from and stored into M-Files directly.
- The M-Files menu offers quick and easy access to M-Files functions.
- Document metadata can be edited directly in Microsoft Office and AutoCAD.
- Document metadata stored in M-Files can be partially included in document contents.
- E-mail messages and attachments can be saved to M-Files in various file formats.
- Saving of e-mail messages can also be automated, meaning that the messages are automatically saved with their metadata by means of Outlook rules and M-Files features.
- Contact persons and customers can be automatically associated with e-mail messages.

For more information about using these M-Files functions, refer to [M-Files Functions in Microsoft Office and AutoCAD](#) on page 134.

5. Basic Functions in M-Files Desktop

This chapter describes the basic functions in M-Files Desktop via the menus *View*, *New*, *Operations* and *Settings*. The M-Files functions can be accessed either via the Windows menu bar activated by pressing the *Alt* key on your keyboard, from the task area or via the context menus activated with the right mouse button. You can choose the method that suits you best.

5.1. "View" Menu

This topic presents the options available via the *View* menu.

Clean View, Hide View and Unhide Views

Clean View is a function that a user logged in to the document vault can perform for any view. It is used for removing temporary local files and all empty folders automatically.

Some views of the *Demo Vault* cannot be removed, but they can be hidden. A regular user cannot remove views that have been created in the M-Files Admin. In such cases, you can highlight the view on the listing area and use the context menu function *Hide View*. To unhide views, open the *Unhide Views* dialog under the *View* menu or in the context menu for the listing area.

 **Tip:** You can create a view showing all the deleted objects if you have any of the following permissions: *full control of vault*, *permission to see all objects*, or *permission to see deleted objects*. Just create a view with the filter *Deleted = Yes*. See also [Status](#) on page 120.

Display Mode

With the **Display Mode** options you can:

- Choose whether you want objects to be displayed as icons or as a details list.
- Move the metadata card from the right side of the user interface to the bottom, and vice versa.
- Turn the Windows Explorer navigation pane on and off.
- Change the right pane and the bottom pane to be displayed in the minimized mode, or turn them off completely.
- Choose whether M-Files annotations are shown or not.
- Enable or disable object type based object grouping as well as view and folder grouping.
- Choose between a normal and a compact layout for the user interface.

Save as common display settings

M-Files allows you to save the display settings of a function as *common display settings*. To use this function, you need administrative rights to the relevant vault. The function saves the display settings common to users view-specifically. You can choose whether the function is to be applied for all users or only those users who have not yet modified their own display settings.

With the function, you can, for example, define specific columns to be displayed for all users.

Reset display settings to default

By using this function, you can reset modified display setting values to the defaults set by the system administrator. Alternatively, you can reset the display settings to the M-Files software defaults.

Binding a report to the view

You can bind the report for example to the view *Sales by customer* or *Proposals by salesperson*. With the *Reports* function in the *View* menu, you can bind the report to the view and specify its location. If you want this setting to apply for all users, select the option *Common to all users* in the view settings. In order to define a common view, however, you need the permissions for managing the document vault's common views.

For more information on reports, see [Reporting and Data Export](#) on page 280.

5.2. "New" Menu

This section offers a brief description of the *New* menu's functions.

New Annotation

Selecting **New > Annotation...** creates a new annotation object for the document. This opens the *Preview* tab of the document, including the annotation toolbar above the document preview.

For more information about using annotations, see the topics [Annotations and Redlining](#) on page 61 and [Using Annotations](#) on page 62.

New Document

The *New Document* function is one way of creating new documents in M-Files. M-Files document consists of two components: zero or more files and the metadata. A single Word file is not a document by itself, but becomes one when metadata is added. Selecting a document class automatically provides the document with certain properties that have been specified for the *class* in question via M-Files Admin.

For a basic description on document creation in M-Files, refer to [Creating a Document](#) on page 47.

Class

The *Class* field is used to categorize the document as part of a certain predefined class. This mostly affects what metadata is specified for the document or object. For more information about classes, refer to [Classes](#) on page 232.

Use Template

You can create a new document by using a predefined template. When you select a template in the new document creation wizard, the metadata card is populated with the data contained in the template. You can also edit and add metadata. The new document contains the contents of the template.

Examples of useful templates include *Proposal template*, *Order template* and *PowerPoint presentation template*.

To specify a document or other object as a template, add the property *Is template* and set it to *Yes*. Templates are class-specific, but you can specify the template to affect several classes by adding the *Additional Classes* property for the object.

-  **Note:** When you want to save a document as a document template to be used in M-Files, save the document as a Microsoft Office document – i.e. in the format *.doc(x)*, *.ppt(x)*, *.xls(x)* or similar. Do not use the template formats offered by Microsoft Office applications (for instance the Word template, *.dotx*).

 Video: [Document Templates](#)

For more information, refer to [New Class](#) on page 233, as well as to [Automatic Values](#) on page 222 for information on using document templates with automatic values.

Single-File and Multi-File Documents

In M-Files, you can create *multi-file* or *single-file documents*.

▶ Video: [Multi-File Documents](#)

A multi-file document usually contains several files, i.e. files that together with the metadata constitute one multi-file document. You can view the contents of a multi-file document by double-clicking it. In other words, a multi-file document is a fixed entity that contains several document files. For example, it is a good idea to include a proposal and its attachment in the same multi-file document.

You can later convert a single-file document to a multi-file document and vice versa. For more information, refer to [Convert to Single-file Document](#) on page 102.

Name	Size	Date Modified	Score ▼
▲ Documents (3)			
Employment Agreement Template.doc	35 KB	6/22/2011 9:23 PM	82335
▶ Employment Agreement / Alex Kramer		6/22/2011 9:23 PM	81924
Editable version.doc	35 KB	6/22/2011 9:23 PM	
Signed copy.pdf	8 KB	6/10/2008 6:59 PM	
> Employees (1)			
> Employment Agreement / Kimberley Miller.doc	35 KB	6/22/2011 9:22 PM	81704

Figure 31: Multi-file document and single-file Word documents in the listing view.

File Extension

The file extension of a new document is predefined by the template chosen in the new document creation wizard (see [Creating a Document](#) on page 47).

Tip: If you want to see all the available file extensions and create a blank document, select the category *Blank* in the wizard.

Properties

You can edit the metadata directly by modifying the property values in the metadata card. In addition to being able to directly edit property values, you can add or remove properties, change workflow-related information and modify permissions of the selected item(s).

Clicking on a property on the metadata card activates the edit mode (indicated by the orange ribbon), which displays the *Save* and *Discard* options at the bottom of the page. Clicking the **Save** button saves the changes, creates a new version of the object and returns the metadata card to view mode. Selecting **Discard** returns the metadata card to view mode without saving any modifications.

M-Files fills in the *Created* and *Added by* fields automatically on the basis of the computer login and the time stamp data. M-Files is also able to fill in other fields, depending on where you save the document. The *Name* or *Title* field must be filled in, as the title constitutes the name displayed in various lists. An asterisk (*) next to a field indicates that filling in the field is compulsory for you to be able to create the object.

A toolbar is displayed for properties that can have additional functionalities. Only the functions available for the chosen property are displayed.

Owner*	Andy Nash	
Document date*	6/8/2012	
Effective through	6/8/2012	
Customer*	<input type="text"/>	
Contact person	---	

Figure 32: The five functions of the toolbar: Add field, Remove Field, Refresh, Add value and Edit.

You can use the + and - icons to add or remove fields in a multi-select property. This enables you to link a document to multiple properties, such as a number of various projects.

The *Refresh* icon updates the values of a property based on a value list. Additionally, you can create more values to a property by selecting the *Add value* icon. With the *Edit* icon you can open a dialog for modifying the chosen value.

Tip: You can use keyboard shortcuts while editing the metadata. See [Efficient Use of the Metadata Card](#) on page 46.

You can easily add metadata fields to the metadata card by clicking the *Add property* label at the end of the property list. If you want to create new properties, open the [M-Files Admin](#) on page 107 and refer to [Property Definitions](#) on page 219.

Permissions

To open the permissions dialog, click the permissions area at the bottom of the metadata card.

▶ Video: [Permissions](#)

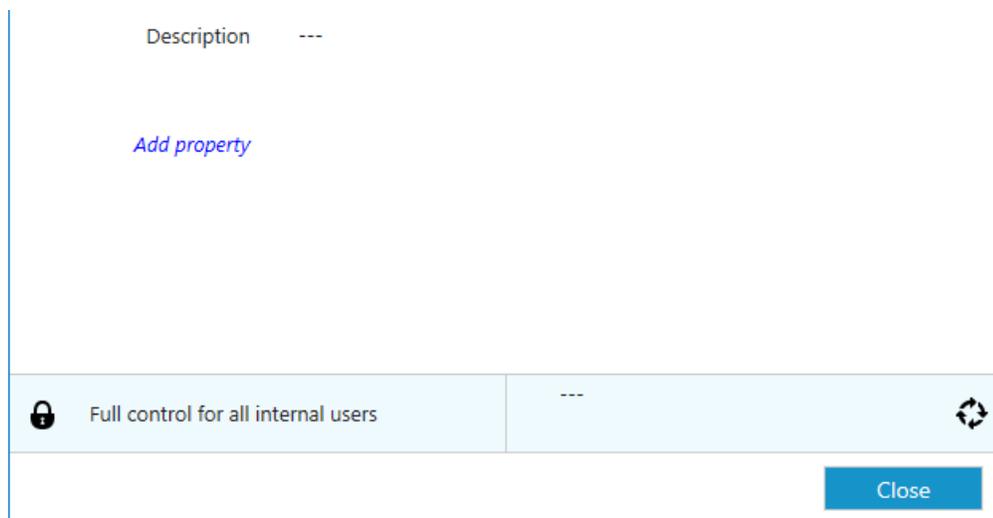


Figure 33: The permissions area is displayed at the bottom of a metadata card.

You can quickly select the document permissions from the pull-down menu in the *Permissions* dialog. These predefined permissions, or named access control lists, can be modified with the M-Files Admin (refer to [Named Access Control Lists](#) on page 262). An access control list consists of various user groups or users and definitions of their permissions.

Editing permissions

You can edit the permissions by first clicking the *Permissions* area on the metadata card and the clicking the **Edit...** button in the *Permissions* dialog.

When you want to edit the permissions, first deselect the *Use named access control list* checkbox. By clicking the **Add...** button, you can display all users, user groups, and pseudo-users registered in M-Files and edit the permissions for each of them. With the **Remove** button, you can remove users, user groups, and pseudo-users from the access control list. If you want to edit this user list, open M-Files Admin and refer to [Users](#) on page 198 or [User Groups](#) on page 202.

Also refer to the specification of pseudo-users in [Pseudo-users](#) on page 74.

Multilevel permission system

You can view and modify the permissions of the object via the permissions area at the bottom of the metadata card. The options available are *All*, *Change permissions*, *Remove*, *Edit*, and *Read*. You can allow a permission by selecting *Allow* and deny it by selecting *Deny*.

A user with *Read* permissions is allowed to open the files contained by the object, as well as to view its properties. The user cannot check out the document, and is thus not able to make any changes to it. If the user does not have *Read* permissions to the document, it will not be visible to the user in views or search results.

Edit permissions enable users to freely edit the document. These permissions automatically include *Read* permission and *Edit* permissions. *Edit* permissions do not encompass any deletion rights.

Remove permissions allow users to delete the document but not [destroy](#) on page 182 it altogether. Deletion rights do not encompass any other rights.

The right to *Change permissions* determines whether the user is allowed to change the permissions for the document in question. These permissions do not include any other permissions, and they can be used independently of the other permissions.

 **Note:** Users with the right to *Change permissions* enable them to specify any other permission for themselves.

Example

Denied permissions always take precedence over allowed permissions. This means, for instance, the following: *User A* is a member of *user group B*. *User group B* has the *Edit* permission for *document C*. *User A*, on the other hand, does not have *Edit* permissions for *document C*. Even though *user A* has *Edit* permissions for *document C* by means of *user group B*, *user A* cannot modify the document, because it has been separately denied from *user A*.

Selected permissions

The document or object may have its own permissions, and the object may also have different automatic permissions via its properties. Any given permissions must be granted by all these settings in order to be effective.

On the *Permissions* tab for the object, the user can check the permissions that influence the final permissions of the object. In order for any specific permission, such as read or edit access, to be granted for a specific user, all of the permissions in effect, at all levels, must allow it simultaneously.

For more information on internal restrictions to permissions and valid permissions, refer to [Effective Permissions](#) on page 73.

Source

The "Source" column indicates the source from which the object has received a given permission. In the example, the object has automatic permissions granted via the project (*Project name [Project]*), and the object's own permissions (*This object*). Both of them restrict the final permissions of the object.

Description

The "Description" column provides descriptive text for the permission. Note: If you have created an automatic permission by value, value list, or object type and named it, the name is displayed in this column.

Active

If the users have been allowed to bypass the automatic permissions when they are specifying automatic permissions for the relevant value, value list, or object type, the user can deactivate the automatic permissions granted via the value by deselecting the permission in question. Then the permission is not active anymore and it does not influence the object's final permissions.

Details

You can enter the Permissions dialog box either via the ... icon or *Details* icon. Use the *Add* and *Remove* buttons to add or remove users.

Effective Permissions

For more information on internal restrictions to permissions and valid permissions, refer to [Effective Permissions](#) on page 73.

Effective Permissions

An object may have various permissions of its own, as well as automatic permissions. All these permissions restrict the use of the object when the extended automatic permissions have been activated. In order for specific access rights, such as read or edit permissions, to be granted to a certain user, all settings must allow it simultaneously. That is, any given permission must be granted by all active settings in order for it to be effective.

Example 1: Automatic permissions for objects via any project

The access that was specified for the object itself may cover full control of the document for all users while the automatic permissions via a project may restrict the use of the document in such a way that full control is granted to project managers only and all other users have read-only access.

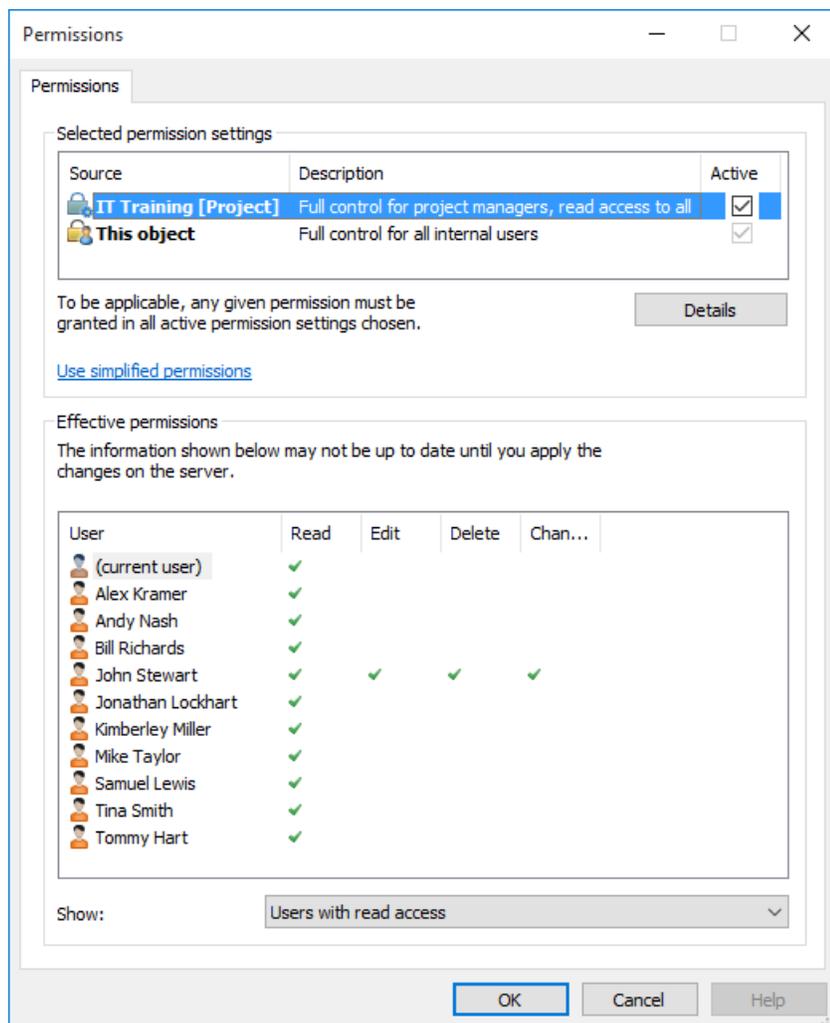


Figure 34: Automatic permissions via a project may restrict the object's permissions.

 **Tip:** You can quickly check the effective permissions by user and access right via the table shown in the *Permissions* dialog.

Example 2: Internal restrictions to permissions

- The permission settings of the object allow full control for all users.
- Via its class, the object has been granted permissions that give full control to management and read-only access to all other users.
- Via its safety class property, the object has been granted permissions that give full control to management and edit rights to the HR department.

Since any given right must be allowed by all of these settings in order to be valid, the settings mentioned above restrict each other in such a way that the following permissions are ultimately valid:

- Full control for the management.
- Read-only access to the HR department.
- No rights at all for other users.

The final restrictions are always determined by the strictest settings. As explained further above, all settings must allow the permissions simultaneously in order for them to be effective.

Changing the final permissions of the document or other the object

Because all permissions restrict the use of the objects, changes to final access rights can be made in different ways. In the client software, you can change access rights as follows:

You can change the object's own permissions from the *Permissions* dialog. If the object has permissions granted via properties, the *Details* button is displayed on the *Permissions* tab. The button can be used to change the object's own permissions (activate *This object* first).

If deactivation of the automatic permissions is allowed, you can deactivate the automatic permissions by property.

You can change the object's properties via which automatic permissions were granted to the object (if allowed).

If you cannot change the permissions or properties associated with the object itself and the automatic permissions granted via them, you should contact the administrator for changes of access rights.

Pseudo-users

Instead of just adding users or user groups to the permissions of an object, you can also add so-called pseudo-users, or *users from metadata*, as well.

You can specify pseudo-users directly for the object and use these automatic pseudo-users for automatic permissions and named access control lists. Pseudo-users that are specified via properties can also be used in workflows when you want to specify people for tasks, send a notification to users, or define permissions for different states.

You can specify pseudo-users via only those properties that are based on a *Users* or *User groups* value list.

 Video: [Dynamic Access Control Entries](#)

Example: You can specify that the project manager for a certain project always has access to an object if this project is indicated in the object's metadata. Then the project manager information is automatically delivered to the object with the project and, on the basis of automatic permissions, the user is granted project manager access rights to the object. In case the project manager is changed, the project manager information can easily be changed for the project. This information is transferred to the documents or other objects, so updating their project manager information separately is not necessary.

You can also perform multilevel user definitions via properties. For example, you can define the project manager via the related project property (see the image below). This way, the project manager information is kept up to date constantly, as it is associated with the project instead of each separate document. You can specify access for these pseudo-users by object or utilize them when defining automatic permissions.

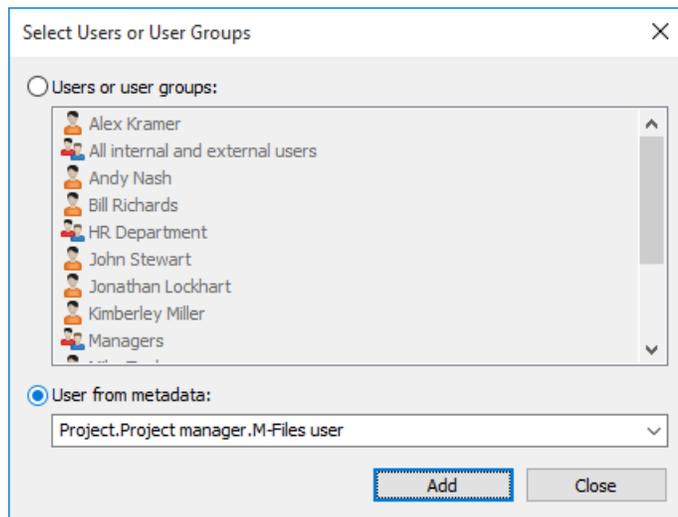


Figure 35: Select "User from metadata" when you want to specify pseudo-users.

You can specify automatic permissions and utilize the pseudo-user definitions in, for example, the "contract of employment" class, which grants specific rights automatically to, for instance, an employee's supervisor. In this case, the supervisor is automatically found with the employee information and the supervisor is granted the appropriate rights. If the employee's supervisor changes, these rights are automatically granted to the new supervisor.

For more information on automatic permissions, see [Automatic Permissions](#) on page 215.

New Document Collection

A document collection is a set of interrelated documents. The difference from a multi-file document is that each member of a document collection is independent and has its own metadata. In addition, the document collection has a collective set of metadata that is independent of the member documents. By contrast, in a multi-file document, all document files share the document's properties.

To create a document collection in M-Files, use the *New Document Collection* function. First select a class and then fill in the collection's shared metadata. Now you can include members in the collection using the *Members* function.

Example of a document collection: A company is preparing a new marketing authorization application. A marketing authorization application consists of the following separate documents: cover letter, general product description, technical product specification, statement by the safety authorities, and the company's financial statement. Because the company wants to utilize the application's member documents in other document collections and as separate documents, it makes sense to create a document collection for the application.

▶ Video: [Document Collections](#)

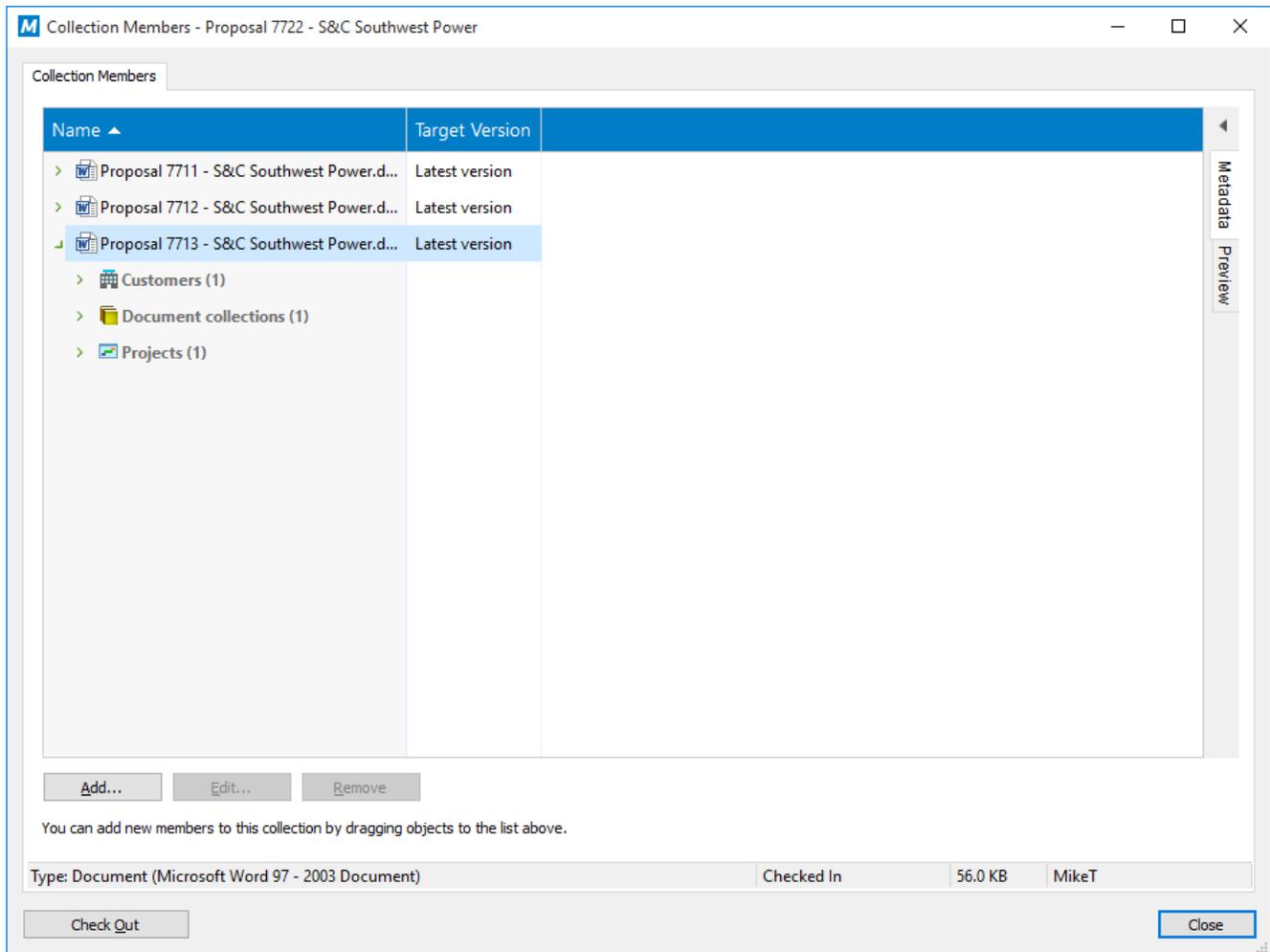


Figure 36: The "Collection Members" dialog.

Add, Edit, Remove

Use the buttons along the bottom of the dialog to add, edit, and remove collection members. To add several objects at once, you can drag and drop members from the listing view.

Note: You can edit and remove documents only by first checking out the document collection.

Latest version, Specific version

When you add a relationship, M-Files prompts for the desired behavior regarding the version of the added document. You can set the relationship to always apply to the latest version or to the current version. In the latter case, further editing of the document will not be reflected in the document inside the document collection.

New Object

Besides documents, you can also create other objects defined by the system administrator. In the *New* menu, select an object type (such as *Customer*). For more information on creating an object other than a document, refer to [Creating Other Objects](#) on page 57.

New View

In M-Files, documents and other objects can be categorized into different views according to their metadata. The creation of views is largely based on specifying the metadata used to searching and categorizing documents.

▶ Video: [New Views](#)

Views allow you to save frequently used searches and define grouping levels. For information about searching for documents, refer to [Search Functions](#) on page 112.

There are two phases in determining a view:

1. Specify a *filter* to ensure that the view only displays objects you want to see. Specifying filters is similar to performing searches.
2. Determine the folder structure of the objects. This is useful when you have a large number of objects and you want to group them into different levels according to specific *properties*.

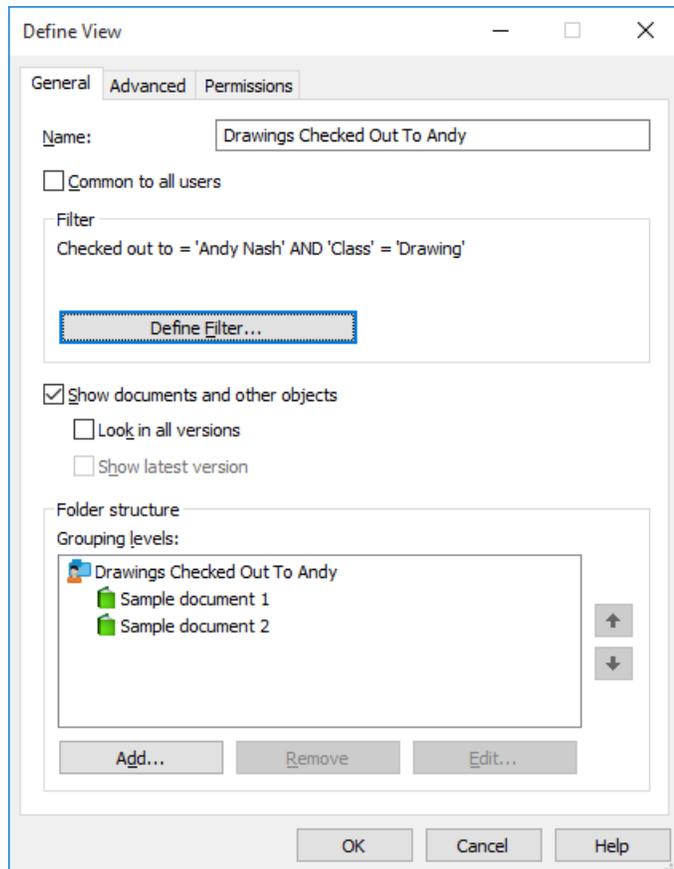


Figure 37: The "Define View" window.

In the example shown above, the documents must be checked out to the user Andy Nash, they must not have been deleted, and they must be of the type *Drawing* or *Model*. No properties have been added to the display hierarchy in this window, so all documents that meet the criteria are displayed in the same folder.

Name

Start by assigning a name to the view. The name should be as descriptive of the contents of the view as possible, so that users can deduce from the name of the view what kind of objects it contains.

Common to all users

Normally, views are created for personal use only. If you wish, you can define the view to be a common view visible to a desired user group. In order to define a common view, you need the document vault permission for managing the common document vault's common views.

You should carefully consider which views are needed by all M-Files users. For instance, the *Documents by Projects* view is often necessary. The users of the client software can hide unnecessary views from their own computers, and the administrator can restrict the visibility of the views by setting appropriate permissions. The views also can be assembled in groups (*view bundles*) from which, for example, the views used by the sales department are easy to find.

Show documents and other objects

By default, the view shows documents and objects according to the filter settings and folder structure. This option can be deselected if, for instance, new views are created under the current view. Note: When creating a new view inside the current view, the conditions of the upper view remain simultaneously valid. In other words, the sub-view results only include objects that also meet the conditions of the upper view.

Look in all versions

If you leave the *Look in all versions* box unchecked, the view will only list those objects whose latest version meets the specified criteria.

If you check the box, the filtered search will be performed on all versions of each document. Only the newest version meeting the criteria will be displayed. For example, if TinaS has modified versions 1 and 2 of a document, and AndyN has updated the document to version 3, search criterion *Last Modified By = TinaS* will return version 2 of the document.

Show latest version

If the option *Show latest version* is on, M-Files will show the newest version of each returned object instead of showing the old version that actually matched the search conditions.

Example: Creating a New View for French Customers

1. In M-Files, press **ALT** to open the menu bar.
2. Select **New > View...**
 - The **Define View** dialog is opened.
3. In the **Name** field, enter the name `French customers`.
 - i** The name will appear in the listing area under **My Views**.
4. Optional: Check the **Common to all users** check box if you want to define a common view.
5. Click **Define Filter...** to specify the conditions that objects must meet to be shown in this view.
 - The **Define Filter** dialog is opened.

Define Filter

Specify the conditions that objects must meet in order to be shown in this view.

Object type: =
 Object ID: =
 Checked out: Yes
 Checked out to: =
 Checked out between: 9/24/2015 - 9/24/2015
 Object flags: None
 Deleted: No

Reset Filter OK Cancel

6. On the **Status** tab, check the **Object type** check box, select the = operator from the adjacent drop-down menu, and select the *Customer* from the rightmost dropdown menu.
7. On the **Properties** tab, click **Add Condition** and add the following condition:
 - a) From the **Property** drop-down menu, select **Country**.
 - b) Select = from the **Operator** drop-down menu.
 - c) From the **Value** drop-down menu, select **France**.
8. Click **OK** to close the **Define Filter** dialog and to return to the **Define View** dialog.
9. Check the **Show documents and other objects** check box.
10. Click **OK** to finish creating the view.

The view you have just defined appears in the listing area under **My Views** and it contains all the objects and documents that meet the conditions that you have specified in the filter settings of your view.

Define Filter

When defining a filter for the view, you specify the conditions according to which the objects are to be listed in the view. You can define criteria for the view on the *Status*, *Properties*, *Files* and *Permissions* tabs.

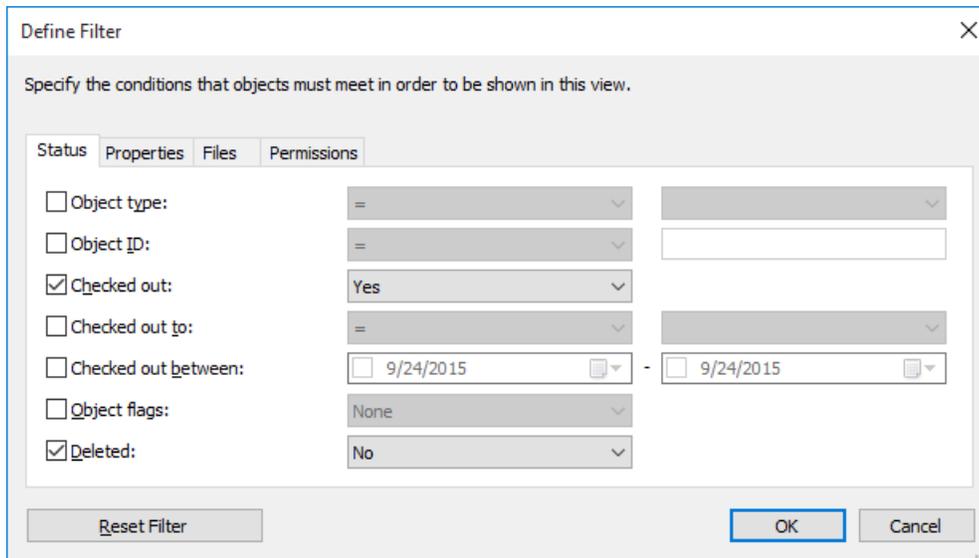


Figure 38: The "Define Filter" dialog.

Status, Properties, Files, Permissions

Refer to [Filter Settings](#) on page 120 under [Search Functions](#) on page 112.

Grouping Levels

Use the **Add...** button in the *Define View* dialog to start adding a new grouping level to your view.

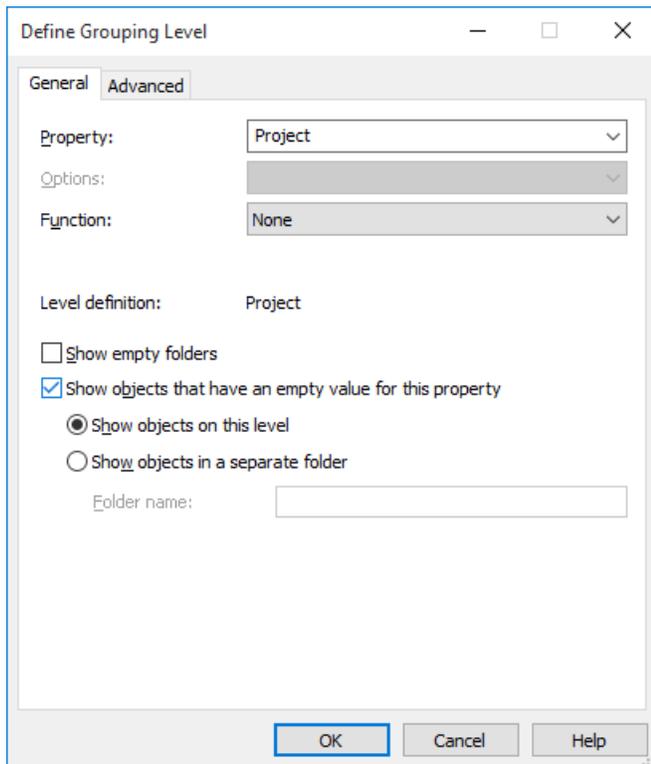


Figure 39: The "Define Grouping Level" window.

Property

When creating a new view that contains documents or other objects, you can use predefined properties to group documents. For example, to create a view that shows folders for all customers, select the property *Customer'* from the pull-down menu. You can modify this list with M-Files Admin. For more information on this, refer to [Property Definitions](#) on page 219.

Options

When working with properties based on value lists, use *Options* to select whether the folder for a certain value should also display documents for which one of the value's subitems or parent items is selected. For more information on hierarchical value lists, refer to [Value Lists](#) on page 211.

Function

You can use *Function* to specify how M-Files should treat properties like dates and timestamps, such as grouping them into months or years. Other data types can be grouped by first letters or letter ranges.

Show empty folders

By deselecting *Show empty folders*, folders with no contents will not be displayed in the grouping level.

Show objects that have an empty value for this property

To display objects of empty value with respect to this property in the grouping level, select this option. You can then specify whether the objects are displayed as a list in this level or in a separate folder.

Indirect views

Views can also be created by means of property relationships: the object itself does not have to include all of the properties defined for the grouping level in order to be included in the filtered view. Instead, the properties may be properties of other objects that have a relationship with the object in question (such as project or customer properties).

For example, *viewing documents by Country, Customer, and Project* is possible by means of indirect views, even if not all of these properties have been defined for the actual document. It is sufficient that the document be associated with the project, the project be associated with the customer, and a country be specified for the customer.

▶ Video: [Indirect Views](#)

You can easily specify these indirect views by clicking the plus-sign buttons in the property list and then selecting the property of a related object according to which you wish to create and group the internal structure of the view. In the example, first *Project* has been selected from the property list as the highest grouping level, then the project's property *Customer* was chosen, and finally the project customer's property *Country* was chosen, resulting in the property "*Project.Customer.Country*" with the periods. This way, the document has been linked all the way to the country information, which enables the creation of an indirect view by country. After this, the internal structure of the view has been defined to be distributed by customer, and by project on the last level (see the figure).

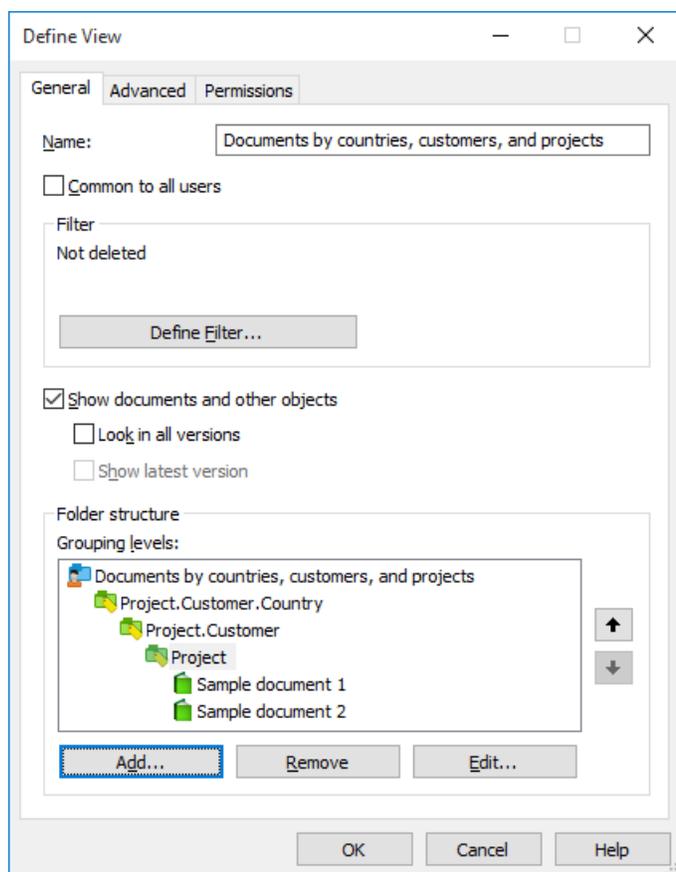


Figure 40: Creating an indirect view.

Grouping Level Advanced Options

Filter

When defining a filter for the level, you specify the conditions for including folders in the grouping level. For more information on defining the conditions, refer to [Filter Settings](#) on page 120. You can also utilize indirectness in specifying filter settings (for more information, refer to [Advanced Search](#) on page 116).

User-specific folder selection in a view

In the advanced settings for the view grouping level, you can specify whether the user is to be shown all virtual folders belonging to the level or whether the user may select the folders to be used. Folder selection is useful when the view or virtual folder includes a large number of subfolders (more than 500). By means of folder selection, the user can easily select the folders to be modified. The use of folder selection is significantly quicker than, for example, grouping by first letter when the number of objects is large (more than 10,000).

For example, if the view has been defined *By Customer* or *By Project* and the company has thousands of customers or projects, user-specific folder selection makes it easier for users to perform their daily tasks in the required customer or project folders. In this case, the user employs the *Select Folder* function to select only the folders that should be used.

If the retrieval of the subfolder listing is slow, try each algorithm in order to determine which is fastest for this type of search.

Folder limitation can be used if the grouping level is specified on the basis of a property that utilizes a value list.

Note: The setting is specific to each grouping level.

For common views, folder limitation can be specified by a user with at least the right to manage common views.

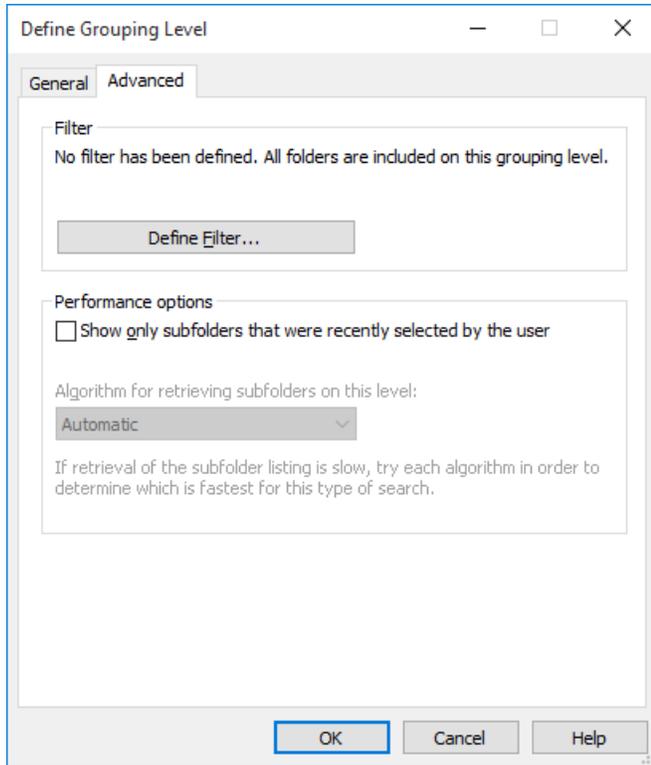


Figure 41: The advanced options for a grouping level.

Group By and Add Grouping Level

In the M-Files Desktop user interface, you can also add grouping levels by using the *Group By* or *Add Grouping Level* functions under the [View menu](#) on page 68. For instance in the *All Documents* view, it is possible to group the objects by their first letter or group projects by customers. You can remove and add new levels according to your needs.

View Advanced Settings

You can create a subview in a virtual folder of a certain view, for instance *By Project* > *Example Project* > *Recently Modified* (see [Creating a View in a Folder](#) on page 84).

When you create a new view in a virtual folder, you can determine whether the view is also displayed in other folders on the same level.

- Note:** If the same level contains views and folders, views created in the folders will not be created in the views of the same level. The selection applies only to the folders of the level.

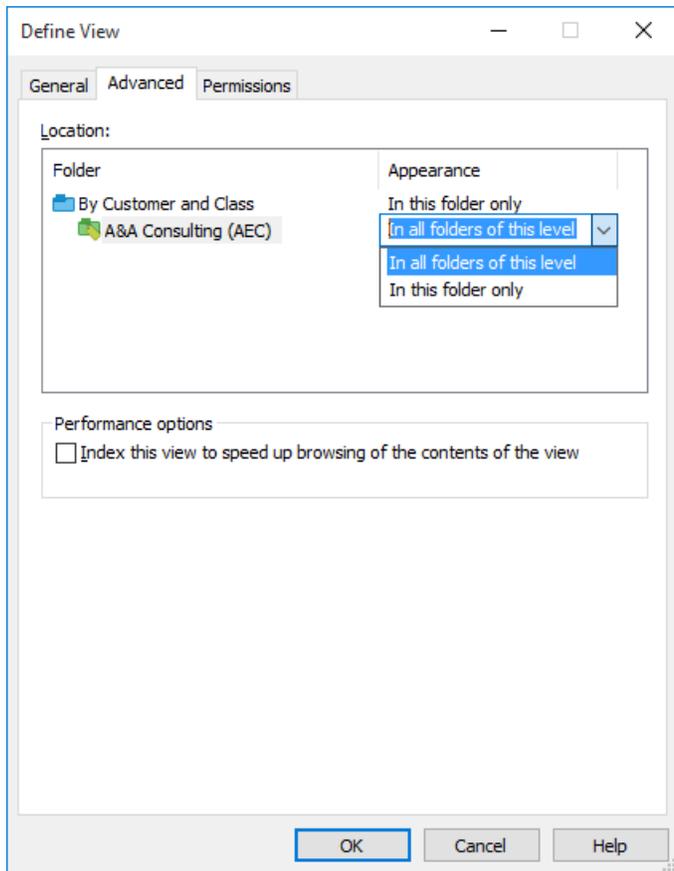


Figure 42: The advanced options for an M-Files view.

To display your view in all the other folders of the same level, select the *In all folders of this level* option. In the above example, the newly created view would be visible in all the virtual folders under the view *By Customer and Class*.

Indexing the view

Indexing of the view can be used to speed up the use of certain important views in a large document vault, if the filter criteria for the view sufficiently filter the group of objects. Indexing of the view is recommended only if the view does not include many objects (for instance, 10,000 objects in a vault with a total of 1,000,000 objects) and if the view is used daily and is working slowly.

Indexing of views should be used sparingly and only for views that benefit significantly from it, since each indexed view in the vault slightly slows down the creation and editing of documents and other objects.

View-specific indexing can be activated by a user with at least the right to manage common views.

Permissions

Define the users who will be able see this view. This tab is visible only when you are defining common views.

Creating a View in a Folder

New views can also be created in virtual folders. Open the virtual folder where you want to create a new view. Select *New View* and define the settings. For example, you can create a *Proposals that expire this week* view in the *Proposals* folder.

▶ Video: [Virtual Folders](#)

-  **Note:** When creating a new view in a folder, the parent view and folder conditions are valid at the same time. This means that the new view only accepts objects that also meet the conditions of the parent view and folder.

Customizing a Folder as a View

Virtual folders can also be converted into views via the *Customize* tab of the virtual folder *Properties* dialog, or by right-clicking a virtual folder and selecting **Customize Folder**.

After the customization, you can modify the display settings of the new view and create grouping levels in the same way as for other views. Then, for example, in the *Memo* view, which has been customized from the *Memo* folder, you can group documents according to meeting types.

Because views can be created in folders, and folders can be converted to views, views and virtual folders may be available parallel in the listing area. Views can therefore contain folders as well as views, and folders can contain views as well as folders.

A folder that has been customized as a view can be restored as a folder by clicking the right mouse button on top of it and by then selecting *Remove Folder Customization*. The same option can also be found via the [menu bar](#) on page 68: **Operations > Remove Folder Customization**.

New Offline Filter

Navigate to the *Offline* view (accessed via *Other Views* of the home screen). In this view, you can define filters ensuring that all important objects are accessible even without a network connection.

Example: You can define all the documents of a certain project to always be available – even when no network connection is available. Just start creating a new filter, press the **Define filter...** button and add your project as a property filter.

To remove the offline filter, select *Remove* from the filter context menu.

Example: Creating an Offline Filter for a Project

1. On the M-Files home screen, navigate to **Other Views > Offline**.
2. Press **Alt** to open the menu bar.
3. Select **New > Offline Filter**.
 - The **Offline Filter Properties** dialog is opened.
4. In the **Name** field, enter a name for your offline filter.
 -  The name will appear in the listing area under **Other Views > Offline**.
5. Click **Define Filter...** to specify the conditions that objects must meet to be shown in this view.
 - The **Define Filter** dialog is opened.

6. On the **Properties** tab, click **Add Condition** and add the following condition:
 - a) From the **Property** drop-down menu, select **Project**.
 - b) Select **=** from the **Operator** drop-down menu.
 - c) From the **Value** drop-down menu, select a desired project.
7. Click **OK** to close the **Define Filter** dialog and to return to the **Offline Filter Properties** dialog.
8. If unchecked, check the **Show documents and other objects** check box.
9. Click **OK** to finish creating the offline filter.

The offline filter you have created appears under **Other Views > Offline**. Every document and object in this view can be accessed even when the connection to M-Files Server is unavailable.

New Traditional Folder

To create a new traditional folder, select *New > Traditional Folder* from the context menu at the first level of the document vault or in an existing traditional folder. For more information about traditional folders, refer to [M-Files Terminology](#) on page 7 and [Import Files and Folders](#) on page 87.

Add File

The *Add File* function is used for creating new document files for a *multi-file document*.

It should be noted, however, that a multi-file document in M-Files does not equal to a folder in Windows. A multi-file document is a single document that contains zero or more document files and one common set of metadata. A document file is a fixed component of a multi-file document. For example, a contract scanned from a paper copy can be a multi-file document and its pages can be the document files.

-  **Note:** Use the *Import File...* function to add an existing file to the multi-file document. Alternatively, you can drag and drop a file on top of a multi-file document.

Check out the multi-file document to which you want the new document file to belong, and select an extension for the new document file. In this case, any metadata for the new file does not need to be filled in as the document file is part of an entity.

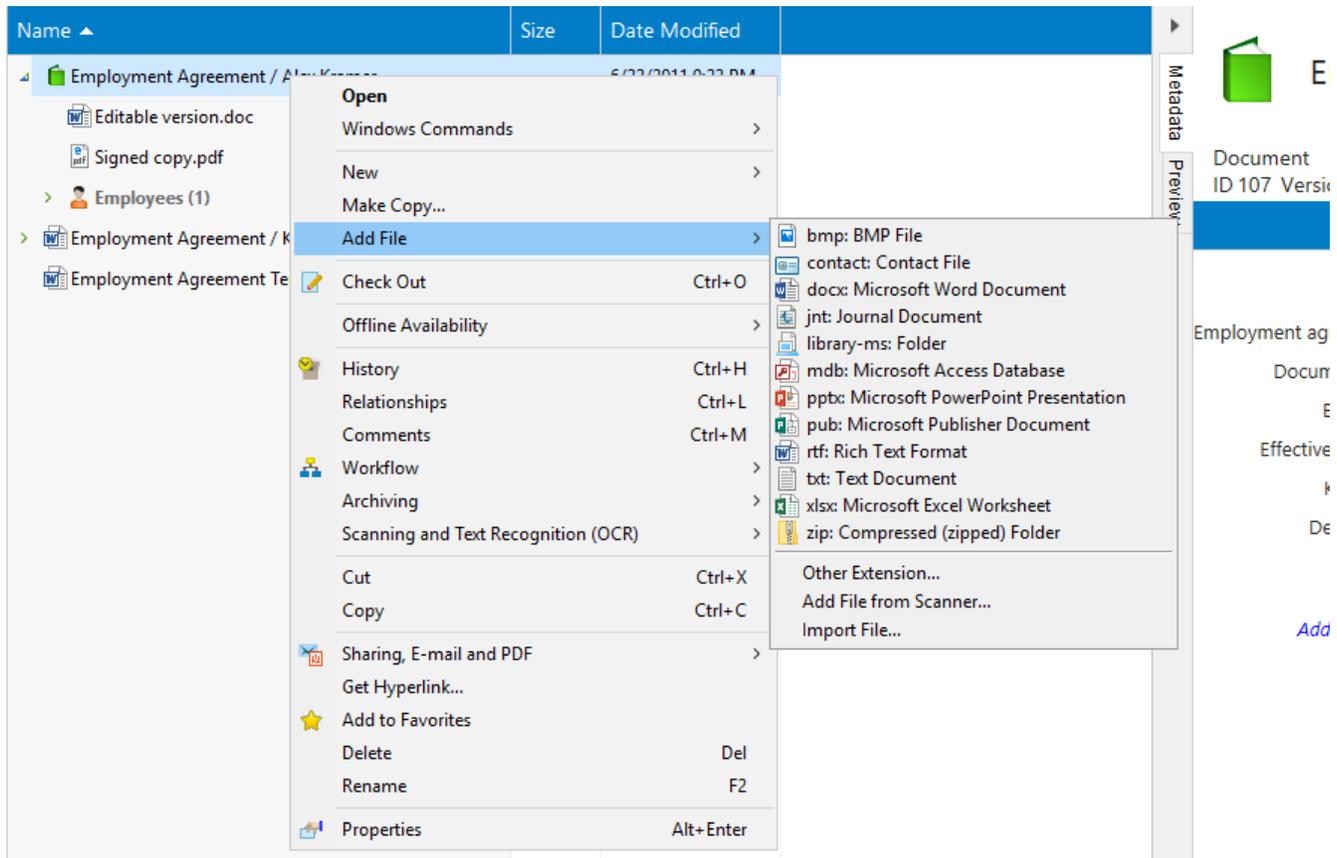


Figure 43: The "Add File" function.

Import Files and Folders

Import Files and Folders allows you to easily import even large numbers of files to M-Files. Selecting this function (*New > Import Files and Folders...* from the menu bar) opens a dialog box where you can specify which files and folders are to be imported and how they should be organized.

- Note:** You can also drag and drop files straight to M-Files Desktop. After dropping the file(s), M-Files reacts as you would be creating a new object or new objects (see [Creating a Document](#) on page 47).

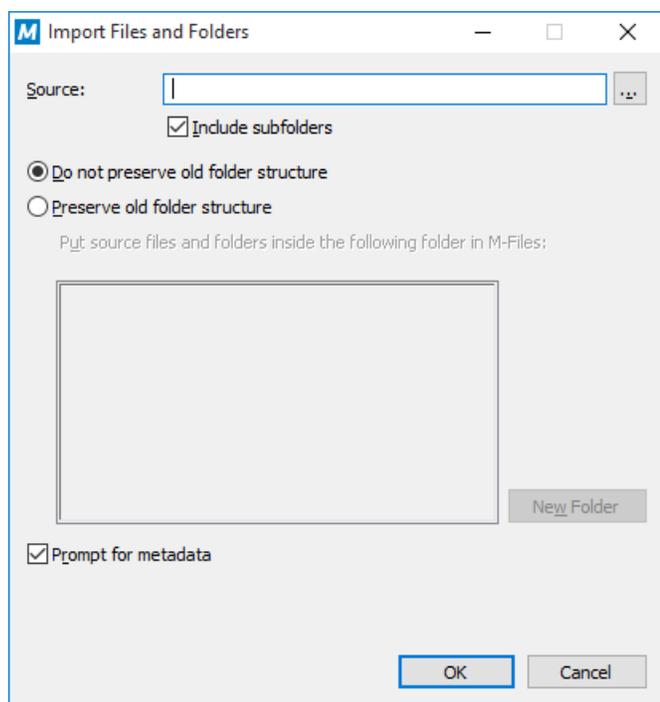


Figure 44: The "Import Files and Folders" dialog.

Source

Select the source from which you wish to import files or folders to M-Files.

Include subfolders

If you wish to also import the subfolders and their contents from the selected source, activate *Include subfolders*.

Do not preserve old folder structure

If you wish to transfer the files to M-Files without preserving the folder structure, select *Do not preserve old folder structure*. The imported documents will now appear, as usual, in M-Files views sorted by their metadata.

Preserve old folder structure

When you select *Preserve old folder structure*, you can continue to use the old folder structure also in M-Files. Select the traditional folder where you wish to import the files or folders. To create a new traditional folder, click **New Folder**. M-Files will now preserve the folder structure of the files and folders that are transferred. You can explore the structure by going to the traditional folder where you imported the material. The imported documents appear both in traditional folders and in M-Files view folders sorted by their metadata.

Prompt for metadata

If you wish to enter metadata for the documents when transferring them, select *Prompt for metadata*. For example, if you are transferring memos to M-Files, select the document class *Memo* in the metadata card, then select *OK to all*. All imported documents will now be classified as *Memos*.

If you leave this box unchecked, all imported files will be assigned to the document class *Unclassified Document*. This way, you may add document metadata later on.

Permissions

Specify permissions for the imported files and folders. The *Permissions* field is visible only if no other properties are defined for the documents. Otherwise, permissions are defined on the metadata card.

Transferring Folders to M-Files by Using the Import Files and Folders Dialog

1. In M-Files, press **ALT** to open the menu bar.
2. Select **New > Import Files and Folders...**
3. Click ... to select the folder you want to import.
4. Select:
 - a. **Do not preserve old folder structure** to discard the folder structure of the folder you are importing.

or

 - b. **Preserve old folder structure** to preserve the folder structure of the folder you are importing. You need to select a folder in M-Files for the content to be imported. You can create a new folder by clicking **New Folder**.
5. Optional: Uncheck the **Prompt for metadata** check box if you do not want to add metadata for the content you are importing.

6. Click **OK**.

If you checked the **Prompt for metadata** check box, do the steps from 7 to 9 for every file you are importing.

7. In the **New Document** dialog, select an appropriate class for the file from the **Class** drop-down menu.
8. Enter other optional property values.
 1. Click **Add property** to add additional properties.

9. Click **Create**.

The folder is imported to M-Files. If you chose the **Preserve old folder structure** option, the imported folder appears as a new traditional folder in M-Files.

Convert to Document

If documents are imported to M-Files in some unusual manner, such as by using a command prompt, M-Files indicates these temporary local files with a grayed-out icon. If you want to convert a temporary local file into a regular M-Files document, choose the temporary local file and select the *Convert to Document* function.

5.3. "Operations" Menu

This section describes the functions under the *Operations* menu.

Make Copy

To copy an object in the document vault, use the *Make Copy...* function. This function creates an entirely new object using the metadata and contents of the source object. The version history is not copied to the new object.

Check Out

Checking an object out for editing is an M-Files function that prevents the concurrent editing of an object. A checked out object can be viewed by other users (is read-only while checked out).

▶ Video: [Editing Documents](#)

When you are opening a document that has not yet been checked out, the following message is displayed:

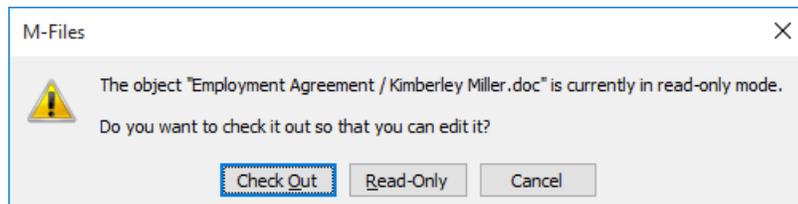


Figure 45: The check out message.

When you check out a document, a small check mark appears on the document icon to indicate that it has been checked out to you. A red sign indicates that the document has been checked out to someone else, in which case you are only able to open it in the read-only mode.



Figure 46: An object checked out to someone else and an object checked out to you.

Functions without checkout

You can add files to and remove files from a multi-file document without checking it out for editing. You can also rename and replace files without checking them out.

Check Out for Co-authoring

M-Files also allows for co-authoring, meaning that several users can edit the same document simultaneously. Even a person without an M-Files account can participate in the co-authoring process. This type of co-authoring is possible via the [Microsoft OneDrive](#) service.

▶ Video: [Co-Authoring](#)

By modifying the registry settings, co-authoring can be enabled for SharePoint as well. In this case, sharing is performed via SharePoint instead of OneDrive.

Checking out for co-authoring and check-in to M-Files

When you want to share the file for editing in OneDrive, use the *Check Out for Co-authoring* function. If you want to share a file in a multi-file document for co-authoring, use the *Begin Co-authoring* function. If you already have checked out a single-file document, you can start co-authoring from this state with the *Begin Co-authoring* function.

When the file is uploaded to OneDrive for co-authoring, it becomes available to several people.

M-Files displays the following message:

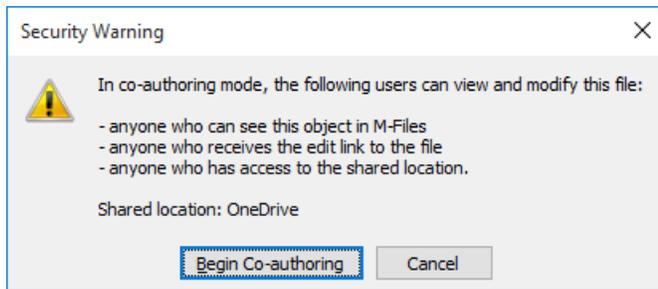


Figure 47: Individual users and user-specific rights cannot be individualized in co-authoring.

M-Files then directs you to enter your Windows Live ID. When you move to OneDrive, you will be presented with verification questions. You can proceed by answering *Yes* to these. You get a message when the file is ready to be shared via OneDrive and you can send the OneDrive link to other users. Please note that anyone with the link can view and modify the file.

When you perform the *Send Link* function, M-Files automatically creates an e-mail message that includes the filename and a link to the file in OneDrive.

After making the necessary changes, or if for some other reason you do not want to keep the file in co-authoring mode anymore, return from co-authoring mode so that other M-Files users can check it out for editing in M-Files or OneDrive.

The M-Files user who checks the document out for co-authoring must be the one who checks it in. Other M-Files users cannot check the document in from co-authoring. This M-Files user is responsible for the changes made in the document: the changes made from co-authoring mode are logged against the M-Files user who checked the document out for co-authoring and checked in the new version of the document in M-Files.

You can reject the changes made in co-authoring mode with the *Undo Checkout* function during check-in.

After checking in of the document in M-Files, it is no longer available in OneDrive. If you want to share the document in co-authoring mode again, check the file out for co-authoring and send a new OneDrive link to the file.

Editing in co-authoring mode

When you have received a link to a file that is in co-authoring mode, you can edit it normally in, for example, Word or PowerPoint.

With the co-authoring mode, you can edit mainly Office files in Microsoft Office 2010 (or later) or by using Office Web Apps. More than one user can, for example, edit the same Word file at the same time in Microsoft Office. A PowerPoint presentation can be edited by several users simultaneously in Microsoft Office's PowerPoint 2010 (or later).

The M-Files functions (for instance adding metadata to the content) are not available during editing in OneDrive.

M-Files users can also take part in co-authoring with the OneDrive link or directly from M-Files. When the object is checked out for co-authoring in M-Files, other M-Files users can also edit it via co-authoring mode in OneDrive or open its latest version in read-only state.

Editing an Office Document in the Co-Authoring Mode

You need to have a Microsoft account for co-authoring Office documents. If you do not have one, you can create the account the first time you check out an object for co-authoring.

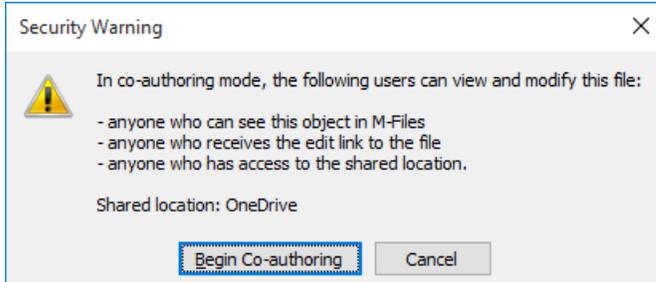
1. Locate the object you want to make available for co-authoring in M-Files.
2. Either:

a. Right-click the object and select **Check Out for Co-authoring** from the context menu.

or

b. Right-click the object and select **Begin Co-authoring** from the context menu if the file is part of a multi-file document or if it is already checked out to you.

✓ The **Security Warning** dialog is opened.



3. Click **Begin Co-authoring** in the **Security Warning** dialog.

4. Optional: If you are not yet logged in to OneDrive, enter your Microsoft account credentials in the login dialog and click **Sign in**, and when M-Files asks for your permission to access your information and to access and edit your OneDrive, click **Yes**.

5. In the **Co-authoring** dialog, click **Send Link** to send the shared object link to co-authoring participants via your mail client.

❗ You can also right-click the object you have checked out for co-authoring and select **Send Co-authoring Link...** whenever you want to share the co-authoring link to someone.

❗ Please note that anyone with the link can view and modify the file.

6. Double-click the object in the listing area to begin co-authoring.

✓ The document is opened in a web browser in Office Online.

7. Click **Edit in Browser** in the upper right corner to begin editing in the co-authoring mode.

❗ M-Files functions (such as adding metadata to the content) are not available during co-authoring.

8. Optional: Click **Open in Word** (or **Open in Excel** or **Open in PowerPoint**) above the Office ribbon to begin co-authoring in the desktop application.

9. Save your changes if you are using the desktop application.

❗ Office Online automatically saves your document when you make changes to it.

10. Close the document.

11. Right-click the object in M-Files, and select **End Co-authoring** from the context menu.

12. Finally, right-click the object again and select **Check In** to check in the changes.

❗ The user who checks out the document for co-authoring must be the one who also checks it in. This M-Files user is responsible for the changes made in the document. The changes made during co-authoring are attributed to the user who checked out the document for co-authoring and checked in the new version.

- ❗ You can reject the changes made in co-authoring by right-clicking the object and selecting **Undo Checkout** from the context menu.

The changes made by you and anyone else during co-authoring are saved to M-Files. After checking in the document, it is no longer available in OneDrive. If you want to share the document for co-authoring again, check out the file for co-authoring and send a new OneDrive link to the file.

Participating in Co-Authoring

When a document has been checked for co-authoring, there are two ways you can take part in co-authoring the document.

1. Either:
 - a. If you receive a link to a co-authored document, click the link to open the document in the co-authoring mode.
 - or
 - b. Locate the co-authored document in M-Files and double-click it to open it in the co-authoring mode (a co-authored document is marked with a red cloud on top of its icon) and click **Edit (Co-authoring)** in the **Co-authoring** dialog.
2. Click **Edit in Browser** in the upper right corner to begin editing in the co-authoring mode.
3. Optional: Click **Open in Word** (or **Open in Excel** or **Open in PowerPoint**) above the Office ribbon to begin co-authoring in the desktop application.
4. Save your changes if you are using the desktop application.
 - ❗ Office Online automatically saves your document when you make changes to it.
5. Close the document.

The changes you made to the document are saved to M-Files once the user who started the co-authoring has ended the co-authoring and checked in the document.

Check In

When you have edited and saved a document and are no longer using it, you should save the changes on the server with the **Check In** function. After this, other users will be available to check the document out and edit it. The easiest way to see all documents checked out to you is to open the *Checked Out to Me* view, which can be found in every document vault.

Check in with comments

You can easily comment on changes you made when checking in an object. The *Check In with Comments* option opens a text box for entering a free-form description of the changes you made. The comments are displayed in the *Comments* view of the object's metadata card.

- 📌 **Note:** Comments retain their permission settings. This means that they are visible only to the users defined in the permission settings that were in use when the comment was added.

Undo Checkout

With the **Undo Checkout** function, you can undo checking a document out without saving the changes on the server. In this case, you will lose all changes you made to the document during the checkout. This function is

useful when you have checked a document out, made changes and saved the document, but do not want the changes to take effect. In other words, you want to restore the document to how it was before you checked it out.

If the document has never been checked in, it is deleted when the *Undo Checkout* function is used.

Properties

This function opens the object's metadata card in a detached window.

Offline Availability

You can mark objects to be available in the offline mode. See also [New Offline Filter](#) on page 85.

Mark for Offline Availability

You can use the *Mark for Offline Availability* function to specify the documents and other objects to be available without a network connection. The selected documents will be shown in the *Offline* view.

You can select individual objects, a group of objects, view entities, or virtual folders to be available offline. If you select a view or virtual directory to be available offline, M-Files creates a new offline filter corresponding to the view in question. This way, all new objects conforming to the filter conditions will automatically be available offline according to the filter settings. You can also edit the offline filter you have created. For more information about off-line filters, refer to [New Offline Filter](#) on page 85.

You can move between the offline and online modes by using the **Go Online** and **Go Offline** functions. For more information, refer to [Go Offline](#) on page 106 and [Go Online](#) on page 107.

Remove Offline Availability

You change an object so that it is no longer available offline by using the *Remove Offline Availability* function.

History

One of the many advantages of M-Files is the fact that the earlier versions of objects are retained. You can go back in the object history according to the times the object has been checked out and checked back in.

 Video: [Version History](#)

When you create a document and check it in, the first version of the document is saved on the server. When you later check out the document and open it, make changes, save the document and check it back in, the second version of the document is saved on the server. You can later return to either of these two versions.

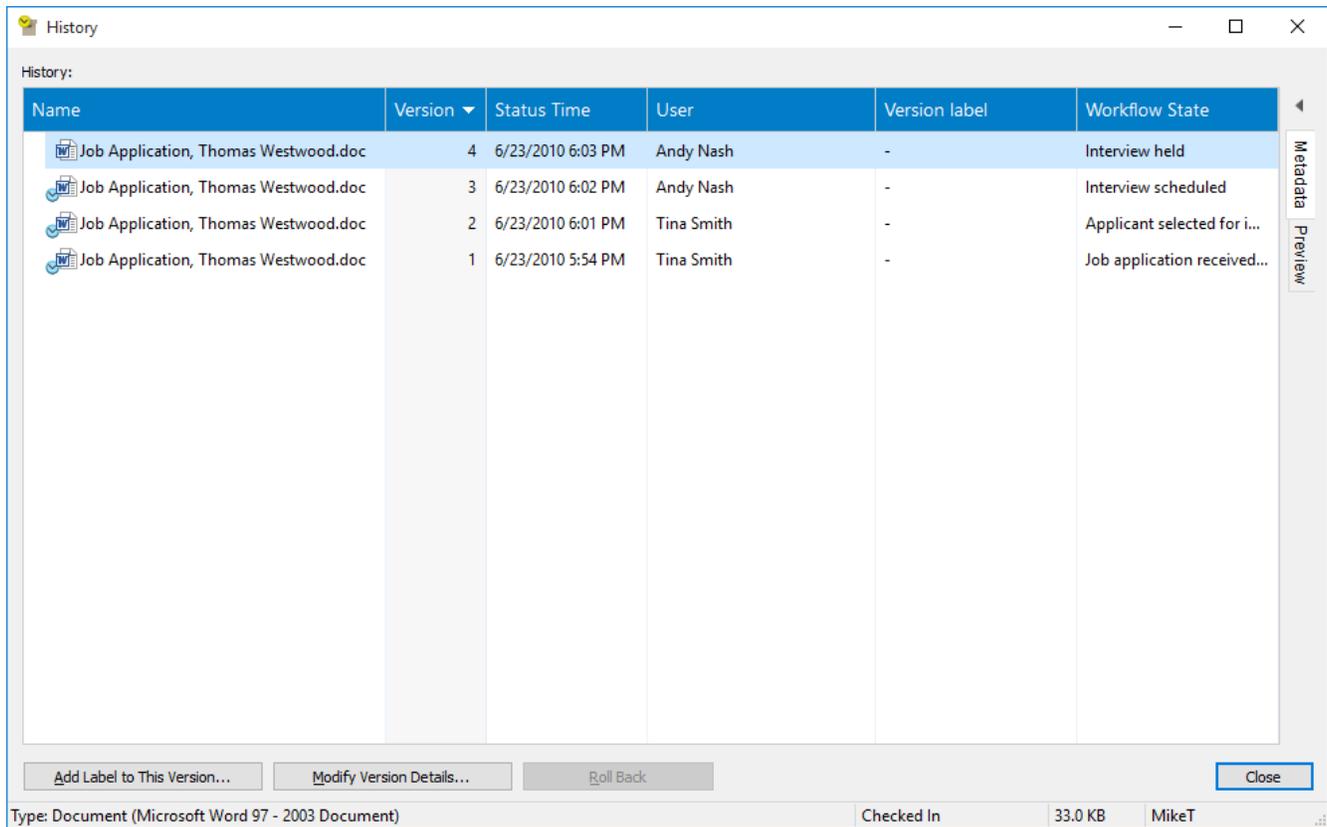


Figure 48: The "History" window.

Add label to this version

You can assign a label to a document version. The label will be displayed under Version Label in the History window. To assign a label, click **Add Label to This Version** and select a label from the pull-down menu. You can also add a new version label to the list by clicking the small arrow by the field and selecting the *Add New Value to List* function. As a default, no labels are assigned to any version.

Clear this label from the other versions of the object

If you want the selected label to be cleared from the other versions, check the *Clear this version label from the other versions of the object* box. This is useful if you want only one version of a contract to be labeled as approved.

Modify version details

The *Modify Version Details* function allows you to assign one or more version labels to the document version and to add a free-form comment that will be displayed in the History window. These comments are also displayed in the comments view of the object's metadata card and in the comment history of the *Comments* function (see [Comments](#) on page 99).

Roll back

As a default, the different versions of an object are listed from the oldest to the newest on the basis of their creation date. You can restore old versions of documents with the *Roll Back* function.

The function creates a new version of the document with the contents of the old version while preserving any intermediate versions. This function is useful when you have made and saved changes in a document but do not want them to take effect. You can use the *Roll Back* function only when the document is not checked out.

Version History and Permissions

To be able to access a previous version of an object, the user needs to have access rights to the version in question as well as to the latest checked in version.

▶ Video: [Version History and Permissions](#)

Relationships

You can define relationships between objects in order to link interrelated documents. For instance, an offer could contain an offer document and a related price list along with a company brochure. Each object can be updated separately and they have separate version histories. The objects do not need to be copied unnecessarily.

You can access the **Relationships** dialog either via the context menu of an object or by selecting an object, then pressing the *Alt* key on your keyboard, and selecting **Operations > Relationships**.

Note: You need to have the object checked out to make any modifications to its relationships.

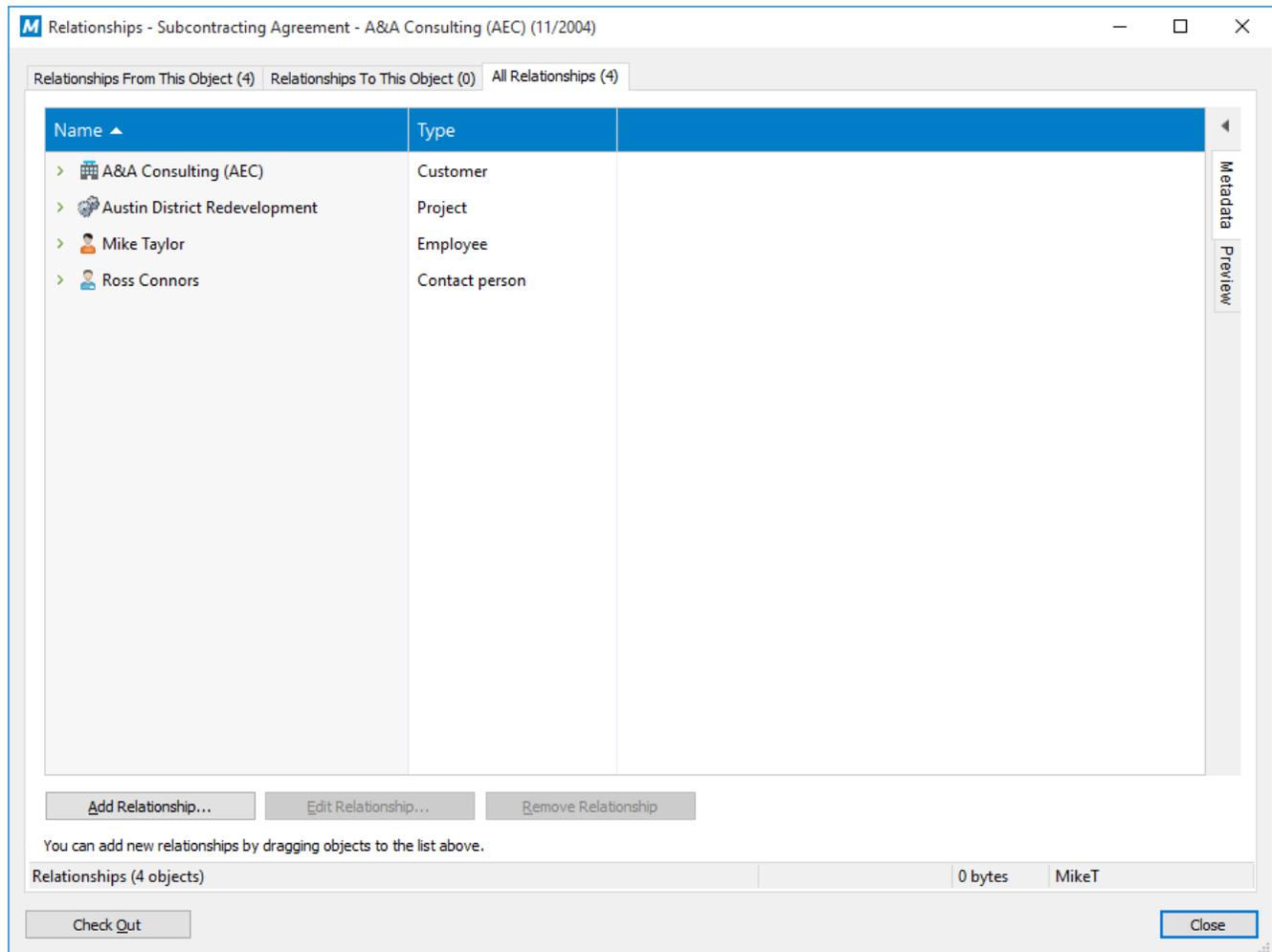


Figure 49: The "Relationships" dialog.

By using relationships, you can define metadata connections between objects, just as via the metadata card. For example, you can link a customer with an object. The customer then also appears in the object's metadata. Likewise, the relationships entered via the metadata card will appear in the *Relationships* window.

The dialog window contains three tabs representing the relationships *from* and relationships *to* the object, as well as one for *all relationships*.

 **Tip:** You can utilize the properties of a related object in creating indirect views and searches or in defining filter settings (see *Indirect searches* under [Advanced Search](#) on page 116).

Add Relationship, Edit Relationship, Remove Relationship

Use the buttons along the bottom of the dialog to add, edit, and remove relationships. To add several objects at once, you can drag and drop objects from other windows.

Latest version, Specific version

When you add a relationship, M-Files prompts for the desired behavior regarding the version of the added object. You can set the relationship to always apply to the latest version or to the current version.

Adding a Relationship Between Two Objects

1. In M-Files, locate and highlight the object from which you want to add a relationship to another object.
2. Either:
 - a. Press ALT to display the menu bar and select **Operations > Relationships**.
 - or
 - b. Right-click the object and select **Relationships**.
3. Either on the **Relationships From This Object** or **All Relationships** tab, click the **Add Relationship...** button.
4. In the **Select Target Object** window, locate the object to which you want to add a relationship from this object and click **Open**.
5. Select either:
 - a. **Latest version** if you want the relationship to always point to the latest version of the object.
 - or
 - b. **Specific version** if you want to add a relationship to the current version of the object, so that if the object is updated, the relationship still points to the object version that was the latest version of the object when the relationship was created.
6. Click **OK** to create the relationship.

The objects between which you have added the relationship should now have relationship links to each other. When you expand either of the objects in the listing area, you should see the linked object under the node representing the type of the referenced object, for instance **Documents** or **Customers**.

Relationships Between Objects in Separate Vaults

Relationships can also be created between objects residing in different vaults. Then the objects are not exported from a vault to another but the relationship is created by referring to an object in another vault, that is, a link is created to the original object.

You can create a relationship by dragging an object from one vault to another or by using the *Relationships* function in the same way as when adding a relationship to an object in the same vault.

In addition, you can replace a file with a file in another vault as if the two files were in the same vault.

Shortcuts

The related object in another vault is displayed as a shortcut in the target vault. When you double-click this object, M-Files shows the object in the original vault in the same way as when M-Files shortcuts are used.

In the target vault, you can see the basic properties of the related object (shortcut) and information for the original vault, but the actual changes and opening of the object are performed in the original vault. You must have permissions for the original vault and original object if you want to view and edit the related object in the original vault.

You can rename the shortcut in the target vault if so desired; this change does not change the name of the original object in the source vault and does not cause any conflicts between vaults.

Shortcut permissions

The shortcuts have their own permissions. The default setting is the target vault's default permission for new objects set by object type.

Shortcuts created through synchronization

When data is synchronized between vaults, for such purposes as archiving or publishing, shortcuts are created in certain cases through metadata of the imported objects. For example, if a document related to a certain project is imported to the target vault but the project is not imported, M-Files creates a shortcut for the project in the target vault. Then this shortcut is a link to an object in the other vault. The requirement is that the *Project* property definition be associable between the source and target vaults. The metadata definitions themselves must always be associable so that their related objects and values can be displayed or imported as shortcuts.

Requirements

M-Files automatically creates a relationship to objects that have a built-in object type (for instance, *Document* or *Document collection*). If the object type of the object is created by the user (*Customer*, *Project*, etc.), you should ensure that the metadata definitions of the object types can be matched between vaults.

Collection Members

The "Collection Members" function opens a dialog for viewing and editing document collection members. For more information about document collections and editing them, refer to [New Document Collection](#) on page 75.

Subobjects

Objects can also have subobjects. For example, a customer object may have a contact person as a subobject. The system administrator can define object types and relationships between them via M-Files Admin.

The *Ctrl+J* shortcut displays the object's subobjects and allows you to edit and remove them if necessary. This function enables, for instance, adding a new contact person directly by finding the desired customer from the document vault and using the *Subobjects* function to create a new contact person.

Browsing Relationships

Objects frequently have relationships with other objects. For example, a document is often attached to a project or a customer. Relationships are defined separately for each object. For more information, refer to [Relationships](#) on page 96.

The objects related to the current object can be viewed by right-clicking the object and selecting **Subobjects** (or the name of the subobject if the object has only one subobject specified), if relationships between object types have been specified in M-Files Admin (disabled by default). For more information, refer to [New Object Type](#) on page 204.

Related objects are always shown in the listing view (search result or view), regardless of whether relationships between the object types have been specified in M-Files Admin. This allows you to easily browse, for example, documents and contact persons related to the project, directly from the listing view. You can also move from one object to another by using relationships. For example, you can move from a document to the related object, from a project to the customer, or from a customer to the contact.

Comments

You can attach free-form comments to objects in the document vault with the *Comments* function. Saved comments are saved and displayed in the comment history.

-  **Note:** Comments retain their permission settings. This means that they are visible only to the users defined in the permission settings that were in use when the comment was added.

The *Comments* function can be accessed by right-clicking an object and selecting *Comments* from the context menu or via the metadata card.

Also refer to *Check in with comments* under [Check In](#) on page 93.

Workflow

Each document has a lifecycle, during which it is processed and edited. During the lifecycle, the contributors may change and different persons may be responsible for different decisions. However, it is important that every person participating in the process is aware of their own areas of responsibility and the working stage.

The M-Files workflows enable modeling document lifecycles according to real world processes. The workflows are grouped into states that represent the working stages of the document or other object.

Workflows can be created and modified via the M-Files Admin. For more information about workflows, refer to [Workflows](#) on page 237 under [Document Vault Administration](#) on page 181.

Workflows and workflow state transitions can be selected in M-Files Desktop via the workflow controls at the bottom of the metadata card.

Change state

The *Change state* function enables you to select a state transition for the object, thus moving it to a new workflow state. If a workflow has been defined for the object, you can also change its state with the state transition name commands directly in the context menu. By using the *Change state* function, you can also add comments to the object while you are moving the object to a new workflow state.

Electronic signatures

If an electronic signature has been defined for the state transition, you must give your authentication data (user ID and password) and log in in order to perform a state transition. In order for the state to change, the object must be checked in. Transitions requiring a signature can only be performed one object at a time.

The electronic signature does not refer to an electronic "fingerprint"; it always requires entering the user identification and logging in. For more information, see [Electronic Signature](#) on page 253.

Scanning and Text Recognition (OCR)

Paper documents can be added to M-Files by using a network scanner or a local scanner. For more information on network scanning, refer to [Scanner Sources](#) on page 273. When using local scanning, the scanner must be directly connected to the computer that is used to add the scanned file to M-Files. The scanning functions are located under the **Operations** menu.

-  **Note:** Scanner integration in M-Files Desktop uses the TWAIN and WIA technologies. Only scanners that can be equipped with a TWAIN or WIA driver are supported.

-  **Note:** The text recognition functionality requires the *M-Files OCR module*, an M-Files add-on product available for an extra fee. It can be activated with a license code. You also need to have installed the necessary files for the OCR module. Refer to [Enabling the M-Files OCR Module](#) for more information.

Adding Documents from the Scanner

1. In M-Files, press ALT to display the menu bar and select **Operations > Scanning and Text Recognition (OCR) > Add Document from Scanner...**

-  Alternatively, you can right-click an empty space in the listing area and select **Scanning and Text Recognition (OCR) > Add Document from Scanner...** from the context menu.

2. Optional: If the **Select Source** dialog appears, select your scanner from the list and click **Select**.
3. Scan your document using the scanner application.

- When the scanning is complete, the **Scanner Job** dialog appears.

4. Select one of the following options:

Select the option...

Scanning done

Scan more pages to the current document

Scan another document

If you...

do not want to scan additional documents.

want to scan another document and combine it with the previously scanned document.

want to scan another document and do not wish to combine it with the previously scanned document.

5. Optional: If the **Conversion to Searchable PDF** dialog appears, select **Convert** if you want to convert the scanned document into a searchable PDF. Otherwise, click **Skip Conversion**.
6. When the **New Document** dialog appears, fill in the metadata and click **Create** once you are done.

The scanned document or documents are added to M-Files.

Adding Documents from the Scanner to a Multi-File Document

1. In M-Files, locate the multi-file document for which you want to add a file from the scanner.
2. Right-click the multi-file document and select **Add File > Add File From Scanner...** from the context menu.
3. Optional: If the **Select Source** dialog appears, select your scanner from the list and click **Select**.
4. Scan your document using the scanner application.

- When the scanning is complete, the **Scanner Job** dialog appears.

5. Select one of the following options:

Select the option...

Scanning done

Scan more pages to the current document

Scan another document

If you...

do not want to scan additional documents.

want to scan another document and combine it with the previously scanned document.

want to scan another document and do not wish to combine it with the previously scanned document.

6. Optional: If the **Conversion to Searchable PDF** dialog appears, select **Convert** if you want to convert the scanned document into a searchable PDF. Otherwise, click **Skip Conversion**.

The scanned document or documents are added to the multi-file document.

-  **Note:** The multi-file document only has one set of metadata and separate files belonging to the multi-file do not have any separate metadata.

Replacing a Document with a Document from the Scanner

1. In M-Files, locate and highlight the document that you want to replace with a document from the scanner.

-  Single-file documents and documents in a multi-file document can be replaced with a document from the scanner.

2. Press ALT to display the menu bar and select **Operations > Scanning and Text Recognition (OCR) > Replace with File from Scanner...**

-  Alternatively, you can right-click the document and select **Scanning and Text Recognition (OCR) > Replace with File from Scanner...**

3. Optional: If the **Select Source** dialog appears, select your scanner from the list and click **Select**.

4. Scan your document using the scanner application.

- When the scanning is complete, the **Scanner Job** dialog appears.

5. Select one of the following options:

Select the option...

If you...

Scanning done

do not want to scan additional documents.

Scan more pages to the current document

want to scan another document and combine it with the previously scanned document.

Scan another document

want to scan another document and do not wish to combine it with the previously scanned document.

6. Optional: If the **Conversion to Searchable PDF** dialog appears, select **Convert** if you want to convert the scanned document into a searchable PDF. Otherwise, click **Skip Conversion**.

The existing document in M-Files is replaced with the document from the scanner.

Text Recognition (OCR) and Searchable PDFs

If the M-Files OCR module is enabled, M-Files suggests that the scanned file can be converted to a searchable PDF by text recognition once the scanning is completed. You can activate the text recognition or ignore it. You can also define advanced settings for the text recognition.

You can also convert an image file to a searchable PDF. The text recognition is performed on the image file in order to enable full-text searching across the file. After the conversion, you can find, for example, a contract document converted from an image by performing a search using the names of the contracting parties or any other text included in the original image file.

M-Files also automatically suggests the text recognition if you drag an image file to M-Files, provided that you have the M-Files OCR module installed.

Text recognition can be performed on the following file formats: TIFF, JPEG, BMP, PNG, and PDF. TIFF files using an alpha channel or JPEG compression are not supported. For more information, see [Searchable PDF](#) on page 272.

-  **Note:** If the text recognition is performed on an image file which was not saved and returned to M-Files, the file will only be saved as a PDF. Otherwise, the original image file can be found in the document version history.

Importing and Converting an Image File to a Searchable PDF

1. Drag and drop an image file to M-Files.
2. Once the **Conversion to Searchable PDF** dialog appears, click **Convert**.
 - i** By clicking **Advanced** in the **Conversion to Searchable PDF** dialog, you can improve the quality of the text recognition by selecting primary and secondary language options to match the language used in the image.
3. Once the conversion is complete, the **New Document** dialog appears. Finish importing the image by filling in the metadata and clicking **Create**.

Converting an Existing Image File in M-Files to a Searchable PDF

1. In M-Files, locate and highlight the image file that you want to convert to a searchable PDF.
2. Right-click the file and select **Scanning and Text Recognition (OCR) > Convert to Searchable PDF...** from the context menu.
 - i** Alternatively, you can press ALT to display the menu bar and select **Operations > Scanning and Text Recognition (OCR) > Convert to Searchable PDF...**
3. When the **Conversion to Searchable PDF** dialog appears, click **Convert** to convert the image file.

The image file is converted into a searchable PDF and any textual content in the image can be found using the search functions of M-Files.

Archiving

When documents are no longer actively needed in the document vault, they can be archived. For example, the system administrator can store all documents marked for archiving by users in a separate archive file, from which they can also be restored to active use.

Mark for archiving

With the *Mark for Archiving* function, you can specify documents to be archived. The archiving, which is performed in M-Files Admin, moves the marked documents from the document vault to a separate archive file. For more information, refer to [Content Replication and Archiving](#) on page 285.

Clear archiving marker

You can remove a document's archive definition by using the *Clear Archive Marker* function.

Undelete

The *Undelete* function can be used to restore deleted objects. First find the deleted item either from the *Deleted* view or with the detailed search, and then select *Undelete* from the item's context menu.

You can see deleted objects only if you have *full control of the document vault, permission to see all objects or permission to see deleted objects*.

 Video: [Delete, Undelete, Destroy](#)

Convert to Single-file Document

You can convert a multi-file document to a regular single-file document by selecting *Convert to Single-file Document* from the item context menu. This can be done only if the original multi-file document contains exactly one document file.

Convert to Multi-file Document

You can convert a single-file document to a multi-file document with the *Convert to Multi-file Document* function. Multiple files can be included in the new multi-file document.

Replace with File

You can use the *Replace with File* function to select another document or file whose contents (data in the file) are to replace the contents of the document file selected earlier.

The first version of the replaced document file will nevertheless be kept, as M-Files made a new version of the document when it was checked out. The metadata remains unchanged, so the function affects the data in the file only. You can view the versions by using the *History* function (see [History](#) on page 94).

Get Hyperlink

M-Files users may have document vault connections with different names, and each user may have different views. M-Files provides a function to create shortcuts that are not affected by these factors. Such links might be used for instance in e-mail messages with references to the organization's documents.

Select the *Get Hyperlink* function from the object's context menu. The dialog offers four different ways to share your link.

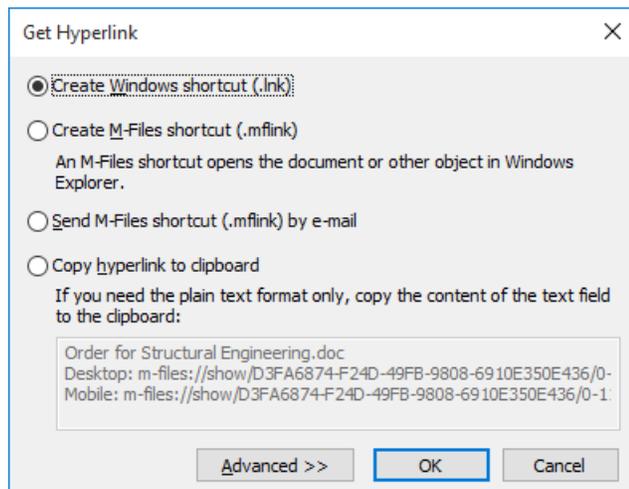


Figure 50: The "Get Hyperlink" dialog.

▶ Video: [Creating Object Links](#)

Create Windows shortcut and Create M-Files shortcut

Use these options to create a shortcut to your Windows desktop. Opening the Windows shortcut opens the document in the default application for the document type, and the M-Files shortcut opens the document or object in M-Files Desktop.

Send an M-Files shortcut by e-mail

This option automatically creates and opens a new e-mail message with a shortcut included in the message. The *Send Link by E-Mail* function under *Sharing, E-mail and PDF* creates a new e-mail message with shortcuts in the same way.

Copy hyperlink to clipboard

This option enables you to copy an object hyperlink to your clipboard. By using this option, you can ensure that the link remains usable even if the document is renamed. You can paste the link to e-mail messages in HTML format, or open the document directly in M-Files by entering the path in the Windows *Run* function.

If you need the link – or, for example, just the M-Files Desktop link – in plain text format only, you can copy the URL from the text field to your clipboard.

Tip:

The command in the plain text URL can also be manually changed if you want the link to do something else than to just open the object or file. The available commands are: *show*, *showmetadata*, *open*, *view* and *edit*. The table below describes how these commands function.

Command	Action
<i>show</i>	Displays the object in M-Files Desktop.
<i>showmetadata</i>	Shows the metadata card for the object.
<i>open</i>	Shows the check-out dialog and opens the document in the default application.
<i>view</i>	Opens the document in the default application in read-only mode without prompting the user to check it out.
<i>edit</i>	Checks out the object and opens it for editing in the default application.

For instance, the command *m-files://edit<vault GUID>/<object name>-<id>* would check out the document and open it for editing in the associated default program.

For more information about M-Files URL properties, refer to [this knowledge base article](#).

Advanced

The advanced settings enable you to specify whether you want the link to always point to the latest version of the document (*Latest version*) or to the version that you have selected (*This version*).

Send M-Files shortcut by e-mail

You can add or drag documents from M-Files to the e-mail in the same way as any other documents. You can also use the *Send M-Files shortcut by e-mail* function. With this function, M-Files creates a new e-mail message with a copy of the file attached.

Web links

It is also possible to use web links to share documents contained in M-Files. M-Files can be used as a content management system for sharing documents with interested parties. For more information about M-Files Web, refer to [this knowledge base article](#).

Creating Shortcuts

1. In M-Files, right-click the object for which you want to create a link and select **Get Hyperlink...** from the context menu.

The **Get Hyperlink** dialog is opened.

2. Select one of the following options and click **OK**:

Select...**Create Windows shortcut (.lnk)****Create M-Files shortcut (.mflink)****If you...**

want to create a shortcut that opens the selected object in the default application for the file type.

want to create a shortcut that displays the selected object in M-Files Desktop.

3. Click **Yes** when you are prompted to place the shortcut on your desktop.

The shortcut that you have just created is placed on your desktop. Double-clicking the shortcut, depending on the shortcut type, either opens the object in the default application for the file type or displays the object in M-Files Desktop.

Sending Shortcuts

1. In M-Files, right-click the object for which you want to create a link and select **Get Hyperlink...** from the context menu.

The **Get Hyperlink** dialog is opened.

2. Select the **Send M-Files shortcut (.mflink) by e-mail** option.

A new e-mail message is opened in your e-mail client, containing the M-Files shortcut as an attachment.

Copying Hyperlinks

1. In M-Files, right-click the object for which you want to create a link and select **Get Hyperlink...** from the context menu.

The **Get Hyperlink** dialog is opened.

2. Select the **Copy hyperlink to clipboard** option.

3. Either:

a. If you want the link in HTML format, click **OK** to copy the hyperlink to the clipboard.

or

b. If you want the link in plain text format, select and copy the text in the text field and click **Cancel**.

You now have the link to the selected object copied to your clipboard. If you chose the HTML format and you paste the link, for example, to a new Outlook message, the link is pasted to the message in the following HTML format, provided that you have HTML formatting enabled in Outlook:

[Order for Structural Engineering.doc \(Desktop, Web, Mobile\)](#)

If you copied the plain text format instead, or you paste the link in HTML format to an editor or e-mail client that does not support HTML formatting, the link is pasted as plain text.

Sharing, E-mail and PDF**Share via OneDrive**

Instead of using e-mail attachments, you can share individual files for reading and editing in [Microsoft OneDrive](#) also to people without an M-Files user account. In this case the editor/reader does not need to have a Windows Live ID either.

Share the file with these functions under *Sharing, E-mail and PDF: Share via OneDrive* or *Share via OneDrive as PDF*. The files can be shared in their original format (for instance *.docx*) or as PDF files.

The link can be sent in its full or in a shortened form. The shortened form is more convenient, but with confidential files, you should use the full form. Everyone who has access to the link, can read and edit the file. You can also copy the link from the dialog box for other uses.

-  **Note:** If changes to a file are made in M-Files, the version of the file that is shared is not automatically updated in OneDrive. If you want the modifications made in M-Files to be visible in the OneDrive version, you need to share the file again and send a new link to the recipients.

You can manage the shared files via your OneDrive account (<https://onedrive.live.com/>). Previously shared files and currently redundant files should be deleted from time to time.

If you want to share, for instance, brochures and price lists in a way that the shared versions are automatically updated, you should utilize the [interaction between vaults](#) on page 167 for this kind of publication.

Send link by e-mail

With this function, M-Files creates a new e-mail message with a link to the file. The recipient must have access to the M-Files vault and the file.

Send (original or PDF version) by e-mail

You can send the file directly in PDF format, whereby the file will be converted to PDF format prior to sending. When the PDF file is ready, M-Files creates a new e-mail message with the PDF file already attached. Alternatively, you can send the file in its original format by choosing *Send Copy by E-mail*. In both cases, the file is sent as an e-mail attachment without any linking to M-Files.

Save as PDF

You can save a file directly as a PDF file by using the M-Files functions. This enables you to save the file in M-Files using the *Save as PDF* function without needing to open the file.

If you save a single-file document as a PDF file, M-Files creates a new document in PDF form with a metadata card. If you save a file in a multi-file document as a PDF file, M-Files suggests saving the file in the same multi-file document by default.

Convert to PDF

You can also convert a file to PDF. In this case, the original file (e.g., a Word file) is replaced with the corresponding PDF file.

You can use the function *Convert to PDF (adds separate file)*, when you want to keep the original version and then have a PDF of it. If converting a single-file document using this function, M-Files will convert it to multi-file document at the same time with PDF converting.

Go Offline

You can use M-Files without a network connection as well.

 Video: [Offline Mode](#)

Start using M-Files without a network connection by selecting the *Go Offline* function. You will then have access to the *Offline* view, which shows all documents and other objects that have been made available offline. In other words, the documents and objects in this view can be accessed even when a connection to M-Files Server is unavailable.

The *Go Offline* command prepares M-Files so that it can also be used offline. The same preparation procedures are performed during a normal logout and when Windows is being shut down.

For example: A sales representative is leaving the office to give a presentation to a customer. She makes a PowerPoint presentation and intends to present it offline. She will have no access to the corporate network from the customer premises, but M-Files offers access to the PowerPoint document through the *Offline* view.

You can make the desired documents and other objects available offline by using the *Mark for Offline Availability* function. For more information, refer to [Offline Availability](#) on page 94. Collection members, relationship objects, and subobjects are also automatically available offline if they are associated with objects marked as available offline.

When you are using the offline mode, you can create new objects and edit objects available offline.

Go Online

You can move back online from the offline mode by using the *Go Online* function. Once you are back in the online mode, M-Files restores all other views and you can continue browsing the document vault normally. You can also, for example, check in documents shown in the *Offline* view and thus save the changes on the server.

When switching to online mode, M-Files detects whether the changes made offline cannot be checked in to the server directly. For instance, somebody may have edited the document on the server while you were editing it offline. If the latest version checked in to the server matches the version you started to edit offline, the version edited offline can be saved as the new document version. In this case, no changes have been made to the object in question during offline editing. However, if the server contains a new versions created during the time offline, M-Files notifies the user, who can then choose from the following procedures:

- Save the version edited offline as a new document (the document on the server remains unchanged).
- Reject the changes made (accepts the new version on the server and rejects changes made offline).
- Cancel *Go Online*.

 **Tip:** If you check out the document online, editing offline should not create unclear situations. The user can edit the document normally while offline, and other users can see that the document is checked out to the user in question.

Log Out

You can log out from the document vault with the *Log Out* function. You can also log out via the menu in the upper-right corner of the user interface.

5.4. "Settings" Menu

This section offers a brief description of the *Settings* menu's functions.

M-Files Admin

Here you can start the M-Files Admin tool. For more information, refer to [M-Files Admin](#) on page 144.

Notification Settings (M-Files Desktop)

You can set M-Files to inform you by e-mail about certain events, for instance about changes made to objects. This is useful, for example, when you wish to keep track of modifications made to a certain document.

 Video: [Notifications Overview](#)

To be able to use this feature, event logging and notifications must be enabled on the M-Files server. For more information about server settings, refer to [Notification Settings \(M-Files Admin\)](#) on page 150.

You can access the *Notification Settings* dialog via the *Settings menu bar* on page 68 item.

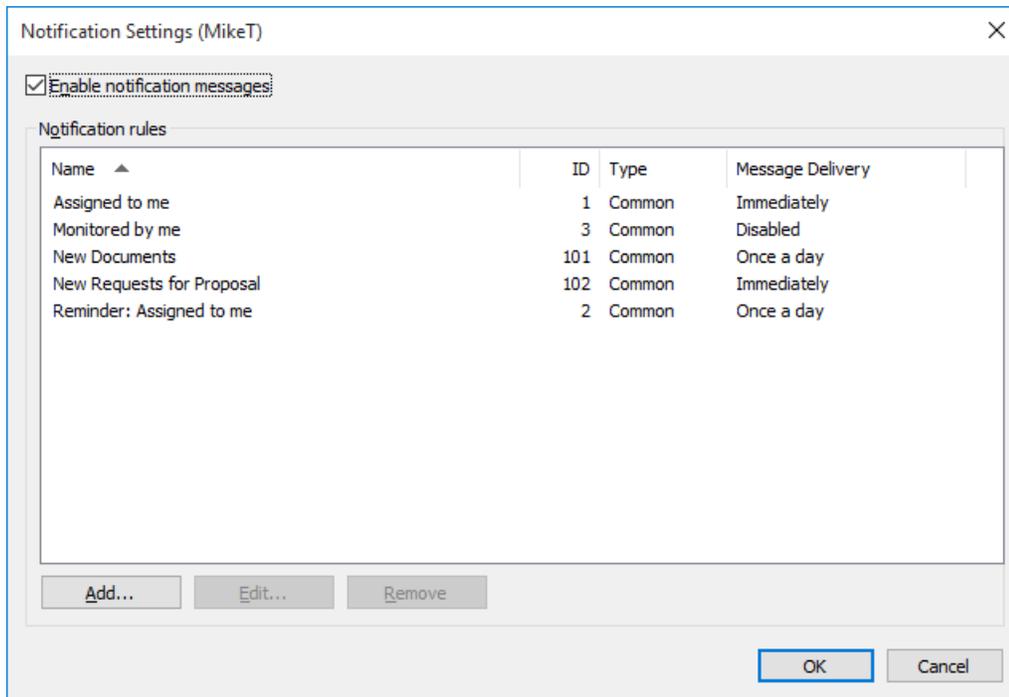


Figure 51: You can set M-Files to inform you by e-mail of modifications made to objects.

Notification rules

Open the *New Notification Rule* dialog by clicking the **Add...** button in the *Notification Settings* window.

Give the rule a name, and define a filter. The filter determines the group of objects to which the notification rule applies. For more information about filters, refer to [Define Filter](#) on page 79.

Then select the events that you wish to be reported about by e-mail.

▶ Video: [Creating Notification Rules](#)

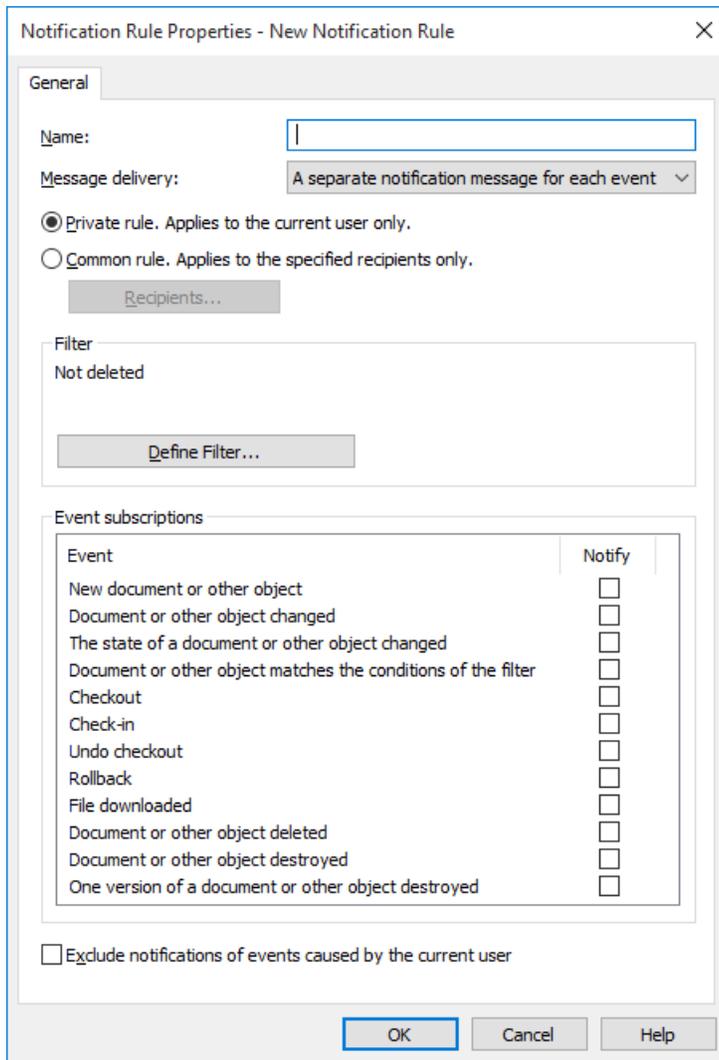


Figure 52: The "New Notification Rule" dialog.

Message delivery: Notification messages disabled

Select this option to disable notification messages.

Message delivery: A separate notification message for each event

Select this option if you wish to receive a separate message for every event that meets the rule.

Message delivery: A digest message once a day

Select this option if you wish to be informed of events via a digest message once a day. The time when the message is sent is set by the system administrator in M-Files Admin. For more information, refer to [Notification Settings \(M-Files Admin\)](#) on page 150.

Private rule vs. common rule

If you want a notification message to be sent only to you, select *Private rule*. If you want a notification message to be sent to several selected recipients, select *Common rule*. M-Files Admin is used for specifying the permissions for creating a common rule. For more information, refer to [New User](#) on page 23.

Recipients

Specify the users or user groups who will receive notifications on the basis of this rule.

Exclude notifications of events caused by the current user

Select this option if you do not wish to be informed of events caused by yourself, such as modifications that you yourself have made to an object.

Refresh External Objects

M-Files can also be connected to external databases. This way, a two-way connection can be set up between M-Files and, for example, a customer database. Customer data can be accessed through M-Files as well as through the customer system's own user interface. You can refresh data automatically in both directions.

Using the *Refresh external objects* function enables you to ensure that M-Files contains the current external object information.

Substitute Users

You can define substitute users for periods of absence. The substitute users you specify have the rights to perform tasks assigned to you during this period.

▶ Video: [Substitute Users](#)

Because assignment and document permissions may differ, the assignment may also be performed by a user who only has read permission to the document. For more information about assignments, refer to [Creating and Completing Assignments](#) on page 53.

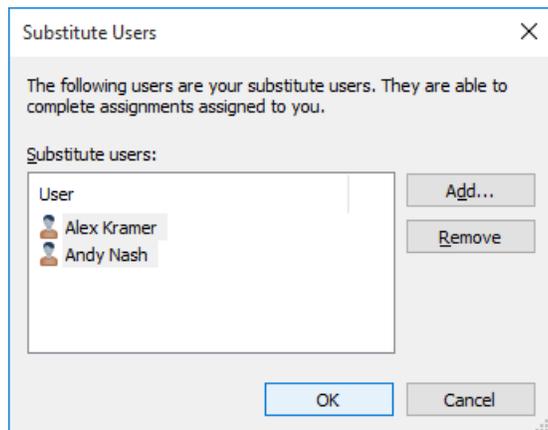


Figure 53: The "Substitute Users" dialog.

If the assignment is created after the substitute user has been specified, the substitute user will also receive notification of the assignment. If the substitute user is specified after creating the assignment, the substitute user will not receive any separate notification of the assignment. By using the *Assigned to Me* shortcut in the task area, the substitute user can view all uncompleted assignments.

Applications (M-Files Desktop)

Various third-party application can be used in order to modify and extend the behavior of your M-Files Desktop and M-Files Server. For information on managing and installing the applications, see [Applications \(M-Files Admin\)](#) on page 177.

Using the applications

After a vault-specific client application has been installed via M-Files Admin, it is available for M-Files Desktop users. Upon logging into the vault, M-Files prompts you to enable the new application. If the administrator requires the application to be enabled, you cannot log in and use the vault until you have approved the use of the application.

You can manage computer-specific client applications via the Alt menu **Settings > Applications**.

Computer-specific settings

Note that the computer-specific settings influence the use of the applications as well. By default, the user computer-specifically allows M-Files to use applications that are installed in the document vault. If this setting is disabled, neither the optional nor compulsory vault-specific applications are available.

To enable or disable this setting:

1. Open M-Files Desktop Settings.
2. Select the *Settings* tab.
3. Open *Computer-specific Settings*.
4. Select the *Miscellaneous* tab.
5. Enable or disable the application setting under the *Security* heading.

Change Language

You can change both the *software language* and *vault language*. For more information, see [Selecting the Software and Vault Language](#) on page 189.

Clear Local Cache

You can remove all temporary local files from a document vault with the *Clear Local Cache* function under the *Settings menu bar* on page 68 item.

All data in the local cache will be cleared at the same time. The cache is used to store data such as document listings and property values. Also refer to [Convert to Document](#) on page 89 and [Daily M-Files terminology](#) on page 7.

5.5. Export Results of Views or Searches

The *Export* function enables you to save the results of views or searches in CSV (comma-separated values) format.

Use this command to export properties (metadata) and, optionally, object files from M-Files. You can find it in the *File* menu and the listing view context menu. After exporting the metadata, you can view the CSV files, for instance, with Microsoft Excel or Open Office Calc.

-  **Note:** The number of exported results can be modified by using a registry setting. Contact M-Files consulting services for additional information if you need to limit or expand the number of exported search results.

 Video: [Export Views](#)

6. Search Functions

M-Files supports quick searches and advanced searches.

▶ Video: [Searching](#)

General search criteria

Search all objects: With the default setting, *Search all objects*, M-Files searches for all objects on the basis of the search strings (unless more specific search criteria have been defined in the advanced search).

Predefined search criteria

Predefined search criteria can be used to speed up the search. You can search for objects according to a certain object type or the modification date:

- Search only: by object type
- Search only: documents modified today or within the last week/month/year
- Search only: documents I have accessed today or within the last week/month/year

Other search functions

You can make the results more specific by enabling the *Search within this view* checkbox. In this case, the search only covers the view that you are in, whereas M-Files would normally search from the entire vault.

 **Note:** The *Search within this view* option is only available for views and virtual folders, and is thus not displayed, for instance, in the *Home* view.

You can clear all search criteria with the *Reset All* button in the top-right corner of the user interface.

Search results

The order in which the search results are listed is based mainly on frequency or recency of use. The main idea is to emphasize things that are relevant for the user. The following information is of primary importance for providing search results:

1. When was this document or other object **created**?
2. When and how many times was the document or other object **edited**?
3. When and how many times was it **processed**?

For more information, see [Finding Documents and Other Objects](#) on page 64.

Emphasizing the search words

When you make a search in M-Files, your search terms are marked in yellow on the listing area as well as on the metadata card and file content (preview). When preview is in use, M-Files highlights the search terms in yellow in the file contents for common file formats (Word, Excel, PowerPoint, Outlook, etc.).

The screenshot displays the M-Files interface with a search for 'Agreement' in the 'Sample Vault'. The search results are listed in a table with columns for Name, Size, Date Modified, and Score. The selected document is 'Employment Agreement / Alex Kramer'. The preview pane on the right shows the document's metadata, including its class, document ID, version, creation and modification dates, author, employee, effective through date, keywords, and description. It also includes a section for 'Automatic permissions from object'.

Name	Size	Date Modified	Score
Documents (17)			
Non-disclosure Agreement Template.doc	42 KB	8/6/2012 11:48 PM	83979
Project Agreement - CBH International (6/2012).docx	26 KB	8/6/2012 11:49 PM	82475
Project Agreement - DAT Sports & Entertainment (6/2012).d...	26 KB	8/6/2012 11:51 PM	82475
Project Agreement - ESTT Corporation (IT) (11/2004).doc	31 KB	8/6/2012 11:44 PM	82475
Subcontracting Agreement - A&A Consulting (AEC) (12/200...	31 KB	8/6/2012 11:52 PM	82475
Employment Agreement / Alex Kramer		6/22/2011 9:23 PM	82147
Editable version.doc	35 KB	6/22/2011 9:23 PM	
Signed copy.pdf	8 KB	6/10/2008 6:59 PM	
Employees (1)			
Employment Agreement Template.doc	35 KB	6/22/2011 9:23 PM	82062
Non-disclosure Agreement - A&A Consulting (AEC) (6/2011...	120 KB	8/6/2012 11:45 PM	81979
Project Agreement - Reece, Murphy and Partners (11/2004)		8/6/2012 11:51 PM	81979
Reseller Agreement - DAT Sports & Entertainment (11/2000)...	32 KB	8/6/2012 11:54 PM	81979
Subcontracting Agreement - A&A Consulting (AEC) (11/2004)		8/6/2012 11:53 PM	81979
Subcontracting Agreement - A&A Consulting (AEC) (3/2005...	32 KB	8/6/2012 11:53 PM	81979
Subcontracting Agreement - A&A Consulting (AEC) (3/2006...	32 KB	8/6/2012 11:53 PM	81979
Subcontracting Agreement - A&A Consulting (AEC) (9/2004)		8/6/2012 11:53 PM	81979
Agreement Template.docx	21 KB	8/6/2012 11:47 PM	81706
Employment Agreement / Kimberley Miller.doc	35 KB	6/22/2011 9:22 PM	81431
Collective Labor Agreement.doc	43 KB	7/9/2007 7:29 PM	78992

Figure 54: Results of a quick search in the user interface.

Contents of the following types of files can be highlighted in the **Preview** tab:

- Email files (eml, eml, msg)
- HTML and web archive files (htm, html, mht, mhtml)
- Image files (tif, tiff, jpg, jpeg, bmp, gif, png)
- Microsoft Excel files (xlsx, xlsx, xlt, xltm, xlsb, xls, xlt)
- Microsoft PowerPoint files (pptx, pptm, ppsx, ppsm, potx, potm, ppt, pps, pot)
- Microsoft Word files (docx, docm, dotx, dotm, doc, dot)
- OpenDocument files (odt, ott, ods, odp)
- PDF files
- RTF files
- Text files (txt)
- Visio Drawings (vsd, vdx, vss, vsx, vst, vtx, vdw)

6.1. Quick Search

Quick Search is a useful way to search for documents and other objects in the vault. Quick Search looks for objects that contain the search word in the file contents or metadata. You can determine whether to search metadata, file contents, or both. By default, both metadata and file contents are searched. If you change the setting, M-Files will use your setting for all subsequent searches.

In the search field, enter a search string that has to do with the object, such as the title, the login account of a person who has edited it, or a customer related to it, and click the arrow button. The search string does not need to be a whole word – you can truncate the word by using an asterisk. For example, when you search for data in the *Demo Vault* with the search string *specific**, you will find a document named *Technical Specifications*, because the name contains the string searched for.

To search for a particular word form, remove the selection from [Look in different inflected forms of the words in Quick Search](#) on page 118 in the advanced search options. This option is selected by default. When you do

this to search for, say, the word "corporation," the search results include only those objects that match this exact word, not *corporate*, *incorporated*, etc.

Words and phrases searched for are saved in a pull-down menu, making it easy to repeat the searches.

The screenshot shows a search interface for 'Sample Vault'. The search field contains 'Employment Agreement' and an 'Advanced Search' dropdown is visible. Below the search bar is a table with columns: Name, Size, Date Modified, and Score. The results are grouped under 'Documents (3)'. The first result is 'Employment Agreement Template.doc' (35 KB, 6/22/2011 9:23 PM, Score 82335). The second is 'Employment Agreement / Alex Kramer' (6/22/2011 9:23 PM, Score 81924). The third is 'Employment Agreement / Kimberley Miller.doc' (35 KB, 6/22/2011 9:22 PM, Score 81704).

Name	Size	Date Modified	Score
▲ Documents (3)			
Employment Agreement Template.doc	35 KB	6/22/2011 9:23 PM	82335
Employment Agreement / Alex Kramer		6/22/2011 9:23 PM	81924
Employment Agreement / Kimberley Miller.doc	35 KB	6/22/2011 9:22 PM	81704

Figure 55: In the quick search, you only need to enter the search word.

Advanced options for quick search

By clicking **Advanced Search** to the right of the search field and selecting one of the three search types, you can specify the way your search queries are matched. You can select one of the following options:

All words	Matched objects contain all the specified search words.
Any word	The search will return all objects that contain at least one of the specified search words.
Boolean	The search allows you to use more specific search phrases and different operators.

You can also use different operators and special characters in your search query to find documents and objects that strictly meet your search criteria. The table below lists the operators and special characters that can be used to broaden or narrow a search.

Search type	Operator or special character	Description
Exact match	Quotation marks: "phrase"	Enclose the search words in double quotation marks to find objects where the words appear adjacent to each other. Example search: "functional specification"
Any single character	Question mark: appl?	The ? character matches any single character in its position. Example search: appl? matches both "apply" and "apple". Note: This character cannot be used as the first character in a search term.
Any number of characters	Asterisk: market*	The * character matches any number of characters in its position. Example search: market* matches "markets", "marketing", and so on. Note: This character cannot be used as the first character in a search term.
All of the search terms must be found	AND (Boolean search only)	The AND operator combines two search terms. Documents found contain both terms. Example search: functional AND specification

One of the search terms must be found	OR (Boolean search only)	<p>The OR operator retrieves all documents which contain at least one of the terms entered.</p> <p>Example search: <code>agenda OR minutes</code></p>
Exclude a search term	NOT (Boolean search only)	<p>The NOT operator excludes a search term from the search results. It can be used as a standalone operator or in conjunction with AND, OR or W/N.</p> <p>Example search: <code>agenda AND NOT minutes</code></p>
Required search term and an optional search term	AndAny (Boolean search only)	<p>The AndAny operator combines required search terms with optional ones. Search terms before the AndAny operator are required and terms appearing after the operator are optional. In other words, search terms after the AndAny operator are considered as matches only if the search terms before the operator are also found in the document.</p> <p>Example search: <code>agenda AndAny minutes</code></p>
Faceted query	() (Boolean search only)	<p>Brackets are used to group search terms together.</p> <p>Example search: <code>(agenda OR minutes) AND market*</code></p> <p>This search returns all objects which contain the word "agenda" or "minutes" and which also contain a word or words beginning with "market".</p>
Proximity search	W/N (Boolean search only)	<p>The W/N operator retrieves objects that contain two words or phrases within a certain distance of one another. The N value indicates the number of intervening words between the search words or phrases.</p> <p>Example search: <code>agenda W/4 2015</code></p>
Fuzzy search	Vertical bar: <code>que ry</code>	<p>Vertical bars can be used for searching for spelling variations of the search term. The number of characters used indicates how many characters in the search term will be ignored. Characters to the left of the first vertical bar must have an exact match in the search results.</p> <p>Example search: <code>release s chedule</code></p>
Phonic search	The grave accent mark (`): <code>`query</code>	<p>You can use the grave accent mark (`) for searching for words that sound like the word in your search query and begins with the same letter. Add the ` character in front of the search word to search for its phonic matches.</p> <p>Example search: <code>`John Doe</code></p> <p> Note: Phonic searches are inclusive by nature, and therefore they may occasionally produce too many search results or their search precision may be low.</p>

 **Note:**

Phonic and fuzzy searches are disabled by default and are enabled by setting a registry key. The tables below list the registry key and values that must be set if phonic or fuzzy searches are to be used.

To enable fuzzy or phonic searches at the server level, add the following registry key:

Key
HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<version>\Server\MFServer\FullTextSearch\

To enable fuzzy or phonic searches at the vault level, add the following registry key:

Key
HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<version>\Server\MFServer\Vaults\<vault GUID>\FullTextSearch\

Add one or both of the following values under the key defined above:

Value name	Valid values	Type	Description
Phonic	1	REG_DWORD	1 enables phonic searching.
	0 (default)		0 disables phonic searching.
Fuzzy	1	REG_DWORD	1 enables fuzzy searching.
	0 (default)		0 disables fuzzy searching.

6.2. Advanced Search

With the advanced search features, you can define more specific search criteria for the document or object you are looking for. The more search criteria you use in the advanced search, the more likely you are to find the exact object you want. This way, you can prevent the search from returning too many results. Advanced search features can be opened by clicking **Advanced Search** to the right of the search field.

Advanced search

Each object has property values that can be used to search for documents in a precise manner. The value of the property *Project* can be for instance *Hospital Expansion (Florida)*. If you perform an advanced search with these values, the search returns all the documents in which the *Project* property contains the value *Hospital Expansion (Florida)*. You can also restrict the search to a specific object type, such as *Customer* or *Contact person*.

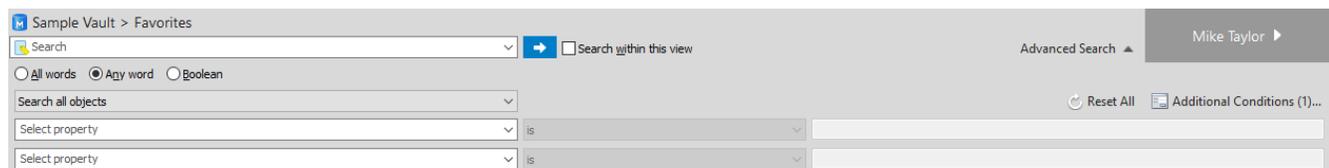


Figure 56: Advanced search features.

Subordination of search criteria

You can easily specify search criteria by utilizing their subordination, so the options shown in the lists are filtered on the basis of other list choices. For example, if you have selected a certain workflow as the search criterion, the state options are filtered in such a way that only the states related to your selected workflow are visible and selectable. Corresponding filtering will be performed automatically for other interdependent value lists as well. For example, contact persons are filtered by customer if these value lists have a hierarchical relationship.

Subordinate search criteria can be used with the "is" operator. In additional conditions, the operator "one of" can also be used.

Indirect searches

You can specify search criteria also by means of *property relationships*, which means that the object itself need not have the property in question. Instead, the property selected as the search criterion is in this case the property of a related object.

By using indirect search, you can, for example, find agreements related to a specific country; even if the *Country* property has not been defined for the actual agreement, it is enough if it can be found via a customer associated with the agreement. In this case, the search criterion is specified as "*Customer.Country*" combination.

You can specify these indirect search properties by clicking the plus-sign button in the list and then selecting the property of a related object to be used as the search criterion. In the example below, *Customer* was selected from the list first, and then the customer's *Country* property, which resulted in the search criterion with a period, "*Customer.Country*", being displayed in the search field.

By using additional conditions, you can create three-level indirect search criteria.

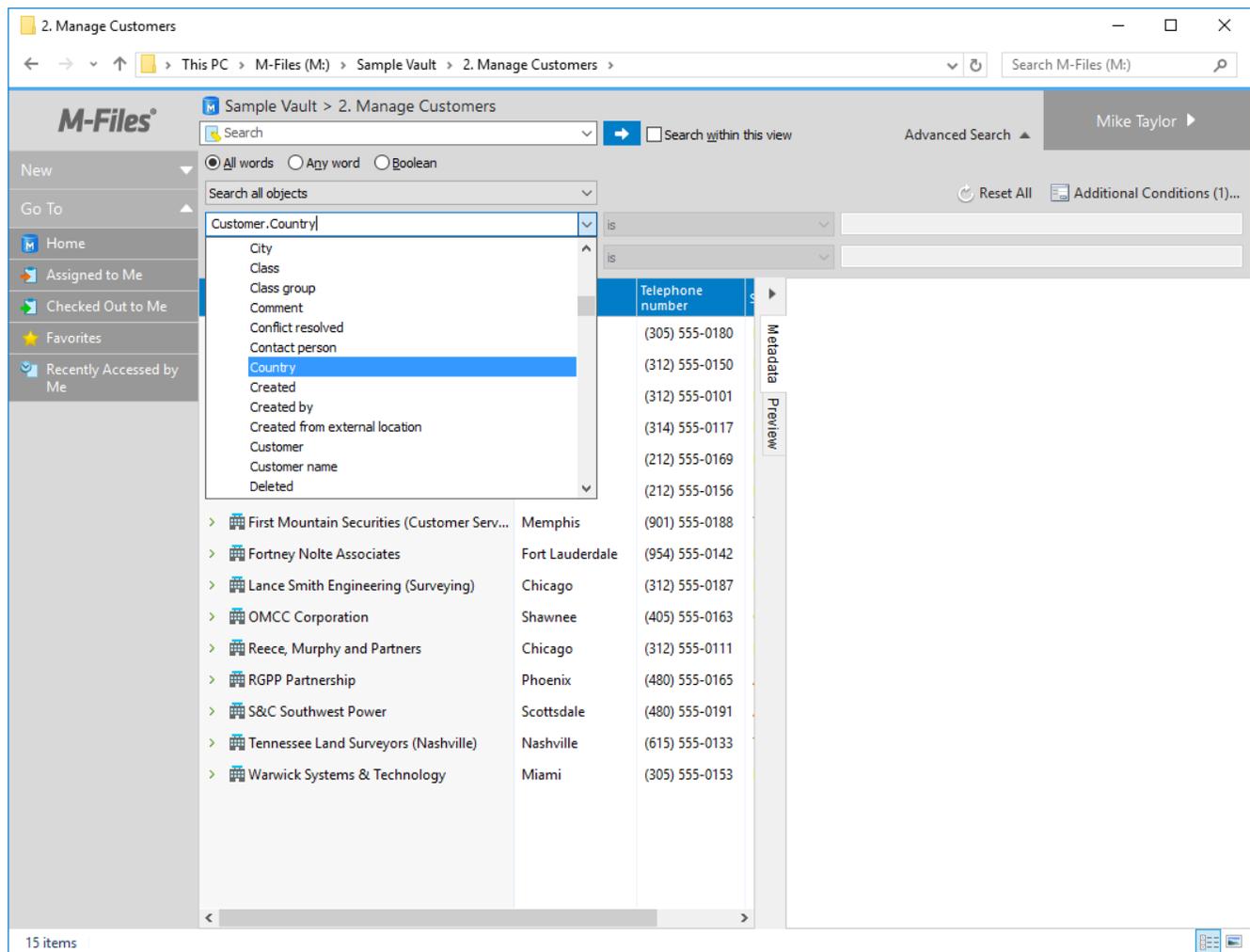


Figure 57: Indirect search criteria.

- Tip:** You can specify indirect views in the same manner, by using the properties of related objects. You can utilize indirectness in specification of filter settings as well.

6.3. Additional Conditions

The *Additional Conditions* dialog can be launched via the link in the top-right corner of the user interface. In addition to the filter settings, the window contains a few options.

Look in all versions

When you select *Look in all versions*, the search will be performed on all versions of each document and object. If this option is not selected, the search is performed on the latest versions only.

Look in different inflected forms of the word in Quick Search

To search for a particular word form, remove the default selection from *Look in different inflected forms of the words in Quick Search* in the advanced search options. When you do this to search for, say, the word *corporation*, the search results include only those objects that match this exact word, not *corporate*, *incorporated*, etc.

Show latest version

When you select *Look in all versions*, the search will be performed on all versions of each object. If the option *Show latest version* is on, M-Files will show the newest version of each returned object instead of showing the old version that actually matched the search conditions.

Example: Searching for a Particular Word Form

1. Click **Advanced Search** on the right side of the search bar to bring up the advanced search options.



2. Click **Additional Conditions...**

- The **Additional Conditions** dialog is opened.

3. Uncheck the **Look for different inflected forms of the words in Quick Search** check box.
4. Click **OK** to close the **Additional Conditions** dialog.
5. Enter a search string in **Quick Search** and press Enter to search.

The search results should include only objects that contain the specific word or words that you searched for.

Export Conditions

You can use the *Export Conditions* function to save the search criteria. To access this search-related function, press the *Alt* key on your keyboard and select **File > Export Conditions....**

The generated text file contains the search criteria as a string that can be used with the M-Files API method *SearchForObjectsByExportedSearchConditions*. For more information on the method, refer to the M-Files API documentation.

Filter Settings

With filter settings you can add additional filters and conditions for your search. You can define the following criteria for the objects to be searched:

- [Status](#) on page 120
- [Properties \(Additional Conditions\)](#) on page 122
- [Files](#) on page 128
- [Permissions](#) on page 131

Status

The search criteria related to the *object status* are specified on this tab.

Object type

Define the object type of the objects being searched for. If the object type is not specified, the search will be performed on all objects.

Object ID

Each object has an *individual ID* that M-Files Server automatically creates for each new object using consecutive numbers. With the ID search criterion, you can find the objects efficiently according to their ID numbers. You can make the ID search more specific by using *operators*. For more information, refer to [Properties \(Additional Conditions\)](#) on page 122.

Checked out

If you specify as a search criterion that the document has been *checked out* and select *Yes* from the pull-down menu, the search returns all documents that have been checked out for editing. This search criterion is useful, for example, when you want to see all documents in the vault that have been checked out to any user.

Checked out to

You can also search for documents that have been *checked out to* specific *users* of the document vault. For example, if you want to find all the documents in the *Demo Vault* that have been checked out to the user *AndyN*, choose *=* as the operator and select *AndyN* from the user list. You can also select *!=*, in which case you will see all the documents that have been checked out by users other than *AndyN*. *Checked Out to Me* shows all the documents that have been checked out to the user logged in to the document vault.

Checked out between

When you *check out* a document, it remains checked out until you *check it in*. Thus you can also search for documents that have been checked out earlier but have not been checked back in. For example, if you want to find all documents that were checked out between February 16 and 17, 2013, select 2/16/2013 as the start date and 2/17/2013 as the end date.

Object flags

Interaction between vaults has imported special objects to M-Files which are used to process data between vaults. These are described as conflicts and shortcuts. Conflicts are created when the versions in separate vaults differ. Shortcuts refer to objects that are located in different vaults.

When a filter is used, these special objects can be included in the search or omitted from it.

Deleted

If you specify as a search criterion that the document has been deleted, you will see all deleted documents. As stated earlier in this manual, M-Files preserves even deleted documents. In order to perform this search, you need permissions for viewing deleted documents.

Example: Searching Only for Deleted Projects

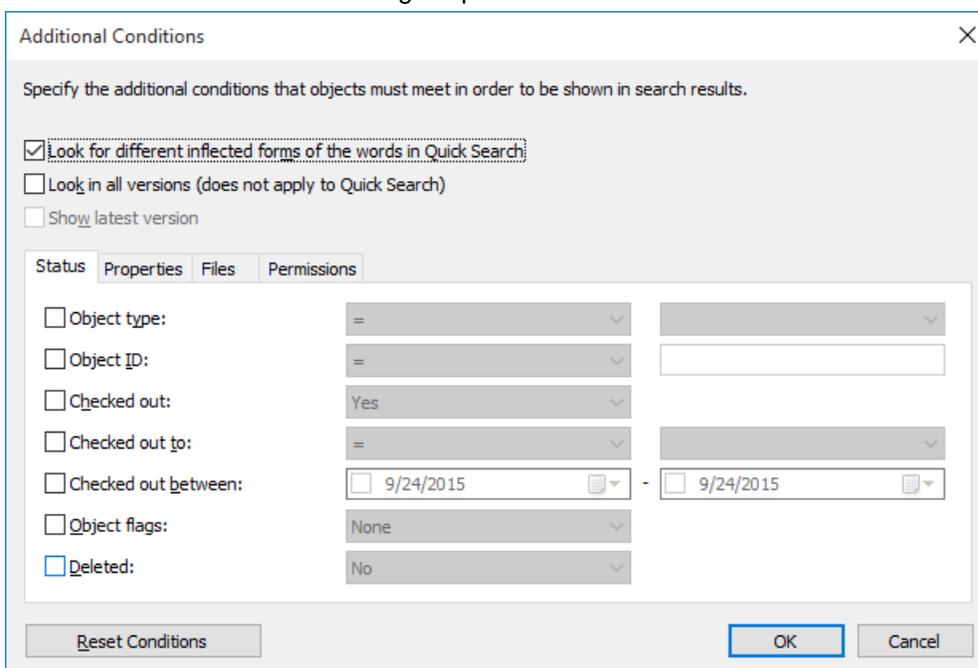
You need to have permissions to see deleted objects.

1. Click **Advanced Search** on the right side of the search bar to bring up the advanced search options.



2. Click **Additional Conditions...**

- The **Additional Conditions** dialog is opened.



3. Check the **Object type** check box, select = from the first drop-down menu, and finally select **Projects** from the rightmost drop-down menu.
4. Check the **Deleted** check box and select **Yes** from the drop-down menu.
5. Click **OK** to close the **Additional Conditions** dialog.
6. Enter a search term in the **Quick Search** field or leave it empty if you do not want to filter your search any further.
7. Press **Enter** or click the arrow button next the **Quick Search** field to start your search.

The search results show the deleted projects for your search term or all the deleted projects if you omitted the search term.

Properties (Additional Conditions)

Each object has property values that are assigned to it in the metadata card. These property values can be used to search for documents in a precise manner. A document property can be for example *Project*, and the value of this project can be *Hospital Expansion (Florida)*. If you perform an advanced search with these values, the search returns all documents for which *Hospital Expansion (Florida)* has been defined as the value of the *Project* property.

Properties

A property can be an object property or an *Item from a list* selection. *Item from a list* selections affect all property definitions that have been defined using the selected value list. For example, if you have installed M-Files for evaluation, the properties *Buyer* and *Supplier* in the demo vault are both defined using the value list *Customers*. If you now select *Item from list 'Customers'* as a search criterion, the search returns all documents where the *Buyer* or *Supplier* property has the value that was searched for. If, on the other hand, your search criterion is, for example, the *Buyer* property only, the M-Files search is limited to the *Buyer* property of documents.

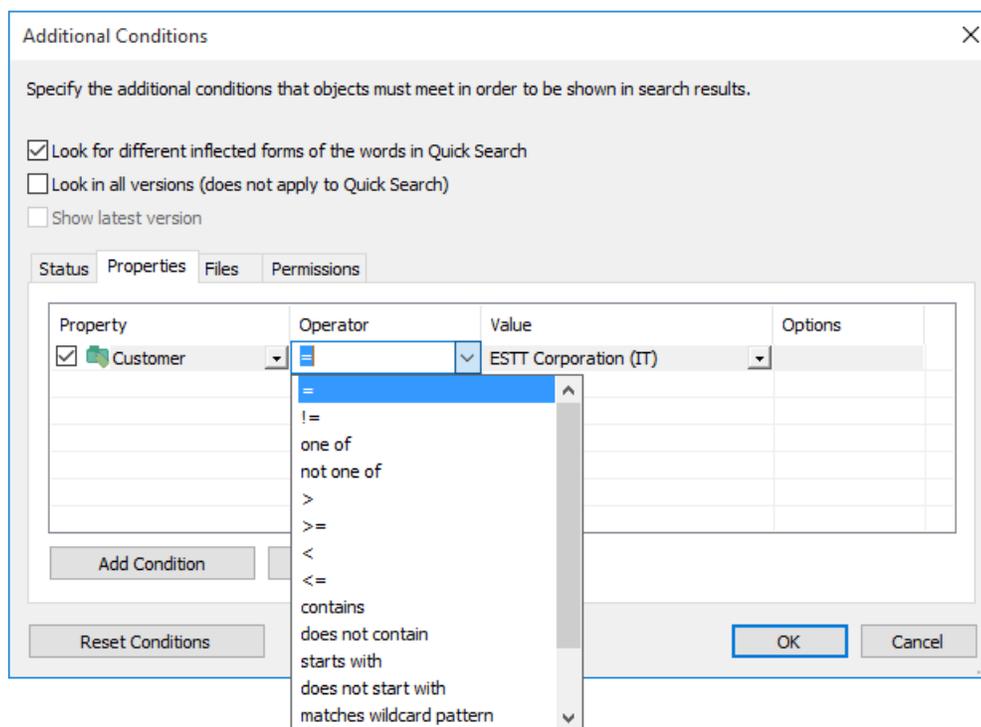


Figure 58: The properties tab of the additional search conditions dialog.

Operators

In the *Operator* field, you can determine criteria other than *equal to*. See the table below for the list of available operators.

=	Equal to
!=	Unequal to
>	Greater than
	This operator is useful when the <i>value</i> to be selected contains numbers. You can easily find all values that are greater than the value you have specified. For example, if your document vault contains the data type of the <i>Department</i> property as numbers, the search criterion > 10 returns the documents whose <i>Department</i> value is greater than 10.

>=	Greater than or equal to
<	Less than
<=	Less than or equal to
One of	You can select some property values for the search, for instance certain projects but not all of them. In this case, the search results are just the documents whose Project property has one of the values you selected with the <i>One of</i> operator. For example, the Project property of the document <i>Window Chart E12.dwg</i> is " <i>Hospital Expansion (Florida)</i> ".
Not one of	This search option is the opposite of the previous one.
Contains	When you want to search for documents by letter combination, for instance a word, you can use the <i>Contains</i> operator. For example, if you want to find all documents in the <i>Demo Vault</i> whose <i>Project</i> property value contains the letters <i>pan</i> , the search results include the document <i>Window Chart E12.dwg</i> , whose <i>Project</i> property is " <i>Hospital Expansion (Florida)</i> ". The word <i>Expansion</i> contains the letters <i>pan</i> that were determined as the search criterion.
Does not contain	This search option is the opposite of the previous one.
Starts with	The <i>Starts with</i> option works in almost the same way as the <i>Contains</i> option. Here, the word must start with the value specified.
Does not start with	This search option is the opposite of the previous one.
Matches wildcard pattern	The matches wildcard pattern option can be used with the wildcards ? and *. The ? character replaces any single character, and the * character replaces any number of characters. For example, if you want to find documents whose Project property value starts with the string <i>Web Site</i> followed by <i>any number of any characters</i> and ends with the string <i>ESTT</i> , you would select the Project property and specify <i>web site * estt</i> as the search string for the matches wildcard pattern operator. The Project property value of documents returned by this search could be, for example, <i>Web Site Graphics for ESTT</i> or <i>Web Site Design for ESTT</i> .
	 Note: Wildcard characters cannot be used as the first character in a search term.
Does not match wildcard pattern	This search option is the opposite of the previous one.
Is empty	In some cases, the properties of a document have no value. This happens when no value is specified for the property at the stage of filling in the metadata card – e.g., when no value has been specified for the <i>Project</i> property. The <i>Is empty</i> operator utilizes the missing value in the search. For example, you can easily find all documents whose <i>Project</i> property has no value.
Is not empty	This search option is the opposite of the previous one.

Values

From the **Value** column, you select the value for the selected property that is used as the search criterion. You can filter the list of available values by selecting the **Filter** option and entering a suitable filter word in the **Set Filter to List** dialog.

 **Note:** You can select multiple values by holding down the *CTRL* key.

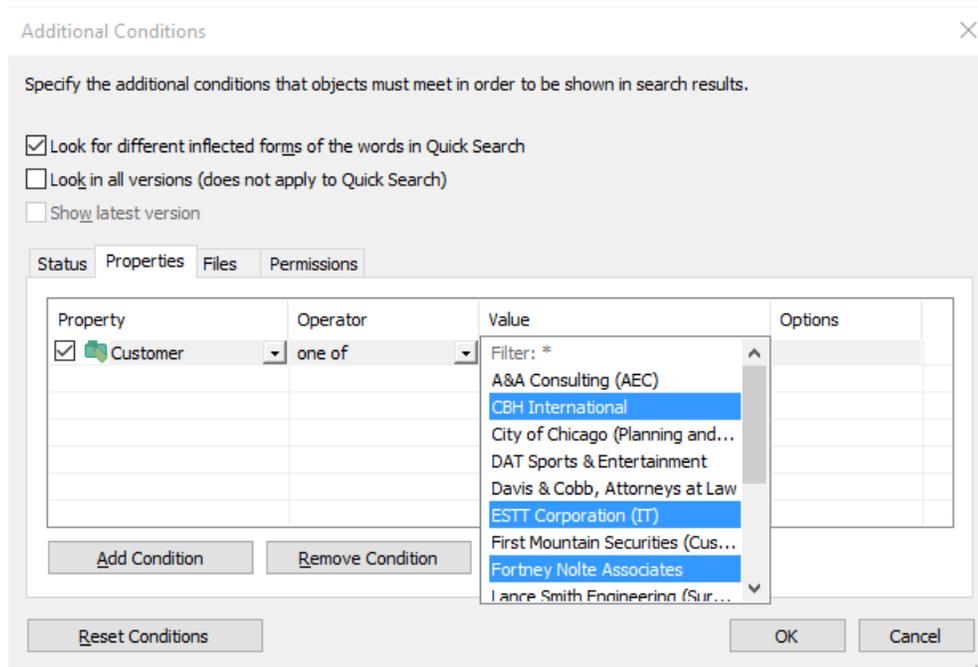


Figure 59: Selecting properties for the search filter.

When you search for Projects with the *Matches wildcard pattern* operator (????house*), one of the documents returned from the *Demo Vault* is the document *Functional Specification.doc*, whose Project property has the value *Warehouse Management System Development*. The word Warehouse begins with *any four character string*, followed by the word *house* and then any character string.

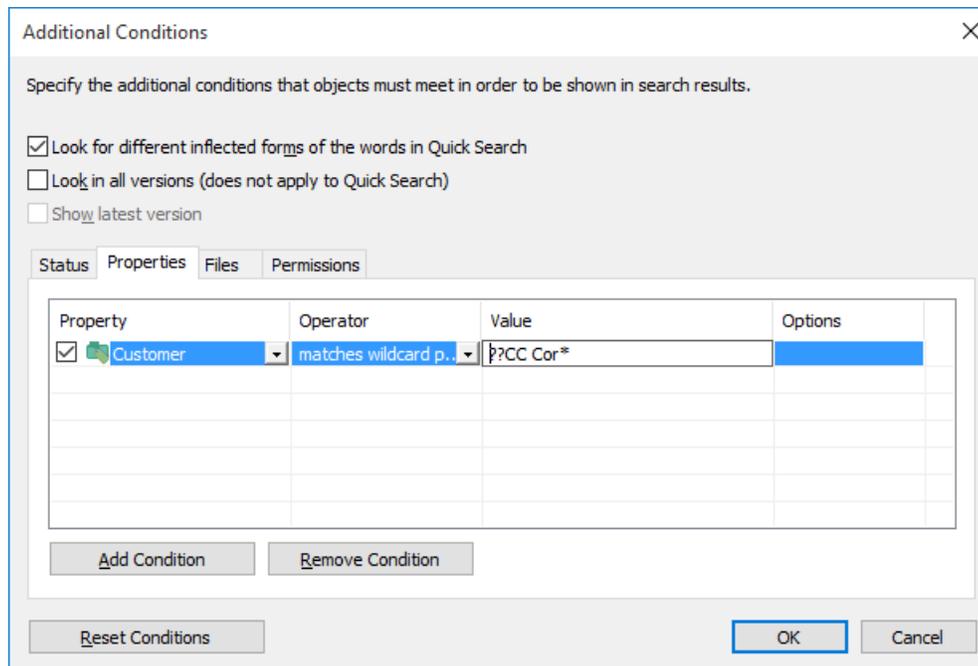


Figure 60: Utilizing the "Matches wildcard pattern" operator.

If a property definition based on a hierarchical value list is selected as the search criterion, you can also select whether to include the values higher and lower in the hierarchy in the search.

Options

If your search criteria includes a property containing a timestamp, you can make the search more specific by selecting an option from the **Options** column, selecting an operator, and entering a suitable value in the **Value** field. For example, you can find all recently created documents. Give "Created < 7" as your search criterion, and select the option `DaysFrom()`. The search will return all documents created over the last seven days. See the table below for the list of available options for timestamp properties and their descriptions.

Option	Example	Description
Date()	Created = 18.12.2015	Returns objects that have a given timestamp property containing a given date.
DaysFrom()	Created < 7	Returns objects with a given timestamp property containing a date within a given number of days <i>preceding</i> the current date.
DaysTo()	Effective through < 10	Returns objects with a given timestamp property containing a date within a given number of days <i>following</i> the current date.
Month()	Created = 05	Returns objects that have a given timestamp property containing a date with a given month. Use the format <i>MM</i> .
Year()	Document date = 2015	Returns objects that have a given timestamp property containing a date with a given year. Use the format <i>YYYY</i> .
YearAndMonth()	Created = 2015-12	Returns objects that have a given timestamp property containing a date with a given year and month. Use the format <i>YYYY-MM</i> .

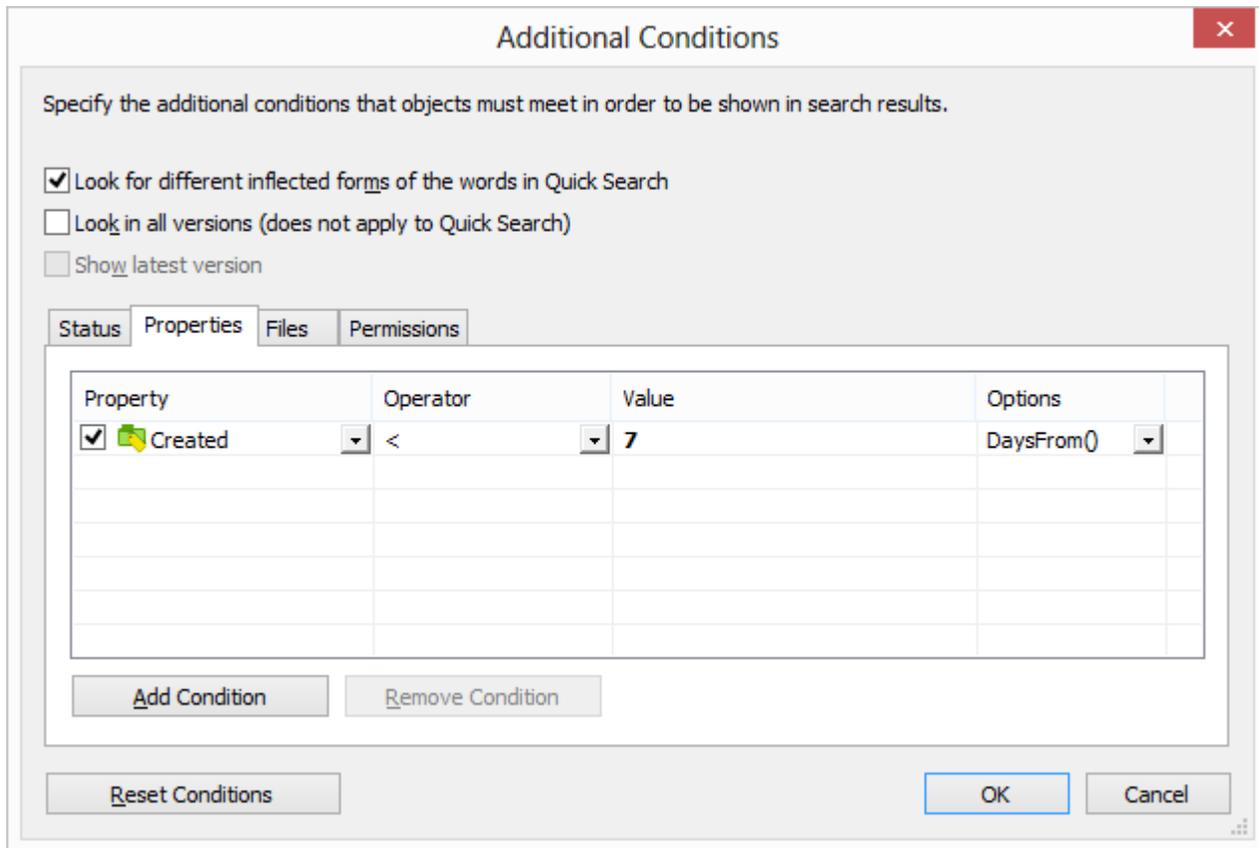


Figure 61: Utilizing options for properties of the timestamp data type.

Also refer to **Subordination of search criteria** and **Indirect searches** under [Advanced Search](#) on page 116. You can always utilize indirectness for specifying the properties in filter settings.

Example: Searching for Ongoing Projects for American Customers

1. Click **Advanced Search** on the right side of the search bar to bring up the advanced search options.



2. Click **Additional Conditions...**

- The **Additional Conditions** dialog is opened.

3. Go to the **Properties** tab and click **Add Condition** to add a property condition.
4. From the topmost **Property** drop-down menu, select **In progress**.
5. From the topmost **Operator** drop-down menu, select **=**.
6. From the topmost **Value** drop-down menu, select **Yes**.
7. Click **Add Condition** again to add another property condition.
8. Locate **Customer** in the next **Property** drop-down menu and click the plus sign next to **Customer** to expand its properties and select the **Country** customer property.
 - ❗ This creates an indirect property association that uses the **Country** property of the customer object to define a country for the project. As the project object does not include country data in this case, the customer object can be used indirectly to provide it.
9. From the **Operator** drop-down menu, select **=**.
10. From the **Value** drop-down menu, select **USA**.
 - ☑ The **Additional Conditions** dialog should now look like this:

Additional Conditions

Specify the additional conditions that objects must meet in order to be shown in search results.

Look for different inflected forms of the words in Quick Search

Look in all versions (does not apply to Quick Search)

Show latest version

Status Properties Files Permissions

Property	Operator	Value	Options
<input checked="" type="checkbox"/> In progress	=	Yes	None
<input checked="" type="checkbox"/> Customer.Country	=	USA	

Add Condition Remove Condition

Reset Conditions OK Cancel

11. Click **OK** to close the **Additional Conditions** dialog.

12. Enter a search term in the **Quick Search** field or leave it empty if you do not want to filter your search any further.

13. Press **Enter** or click the arrow button next the **Quick Search** field to start your search.

The search results show the projects (for the search term or all the projects if no search term was given) that are in progress for customers from the United States.

Files

As described earlier in this manual, an M-Files document consists of metadata and zero or more files. This tab in the detailed search is used to specify search criteria for just the document files – i.e., not the metadata, which was specified on the *Properties* and *Status* tabs.

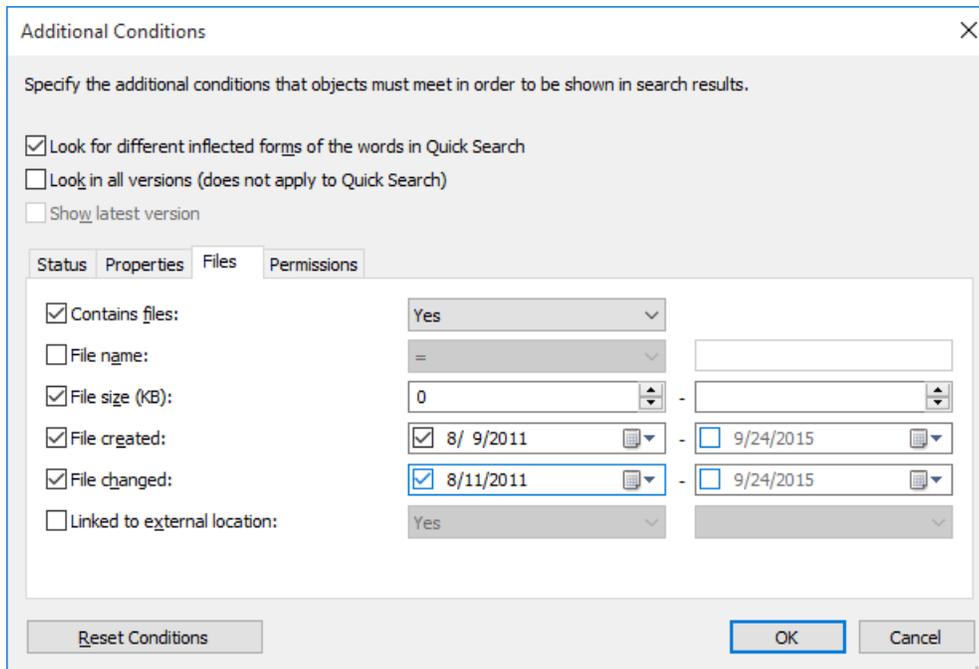


Figure 62: The Files tab allows you to specify search criteria for document files.

File name

If you can remember the file name or parts of it, *File name* is an efficient search criterion. If you remember the exact name, select the *equals* sign and enter the name of the file in the next field. If you cannot remember the exact name, you can use other operator settings than the *equals* sign; refer to [Properties \(Additional Conditions\)](#) on page 122.

File size (KB)

If you want the search to return files of a certain size, you can specify the minimum and maximum file size here.

File created, File changed

Searches can also be performed according to the time stamps of files, i.e., creation date and change date. The use of dates as search criteria works in the same manner in all searches. For more information about the use of dates as search criteria, refer to [Status](#) on page 120.

Linked to external location

You can also perform a search on files that are linked to an external location. You can choose to search within files that are all linked to one and the same external location, or within all linked files that are external to M-Files. For more information about linking files, refer to [External File Sources](#) on page 265.

Example: Searching for PNG Images

1. Click **Advanced Search** on the right side of the search bar to bring up the advanced search options.



2. Click **Additional Conditions...**

- The **Additional Conditions** dialog is opened.

Additional Conditions

Specify the additional conditions that objects must meet in order to be shown in search results.

Look for different inflected forms of the words in Quick Search

Look in all versions (does not apply to Quick Search)

Show latest version

Status Properties Files Permissions

Object type: =

Object ID: =

Checked out: Yes

Checked out to: =

Checked out between: 9/24/2015 - 9/24/2015

Object flags: None

Deleted: No

Reset Conditions OK Cancel

3. Go to the **Files** tab, check the **Contains files** check box, and select **Yes** from the adjacent drop-down menu.
4. Check the **File name** check box and select **matches wildcard pattern** from the adjacent drop-down menu.
5. Enter `*.png` in the text field next to the drop-down menu.

The **Files** tab should now look like this:

Additional Conditions

Specify the additional conditions that objects must meet in order to be shown in search results.

Look for different inflected forms of the words in Quick Search

Look in all versions (does not apply to Quick Search)

Show latest version

Status Properties Files Permissions

Contains files: Yes

File name: matches wildcard pattern *.png

File size (KB):

File created: 9/24/2015 - 9/24/2015

File changed: 9/24/2015 - 9/24/2015

Linked to external location: Yes

Reset Conditions OK Cancel

6. Click **OK** to close the **Additional Conditions** dialog.
7. Enter a search term in the **Quick Search** field or leave it empty if you do not want to filter your search any further.
8. Press **Enter** or click the arrow button next the **Quick Search** field to start your search.

The search results show the PNG images found for your search term or all the PNG images in the vault if you omitted the search term.

Permissions

Each object has permission settings that are assigned to it on the *Permissions* tab of the metadata card. Objects can also be searched according to their permission settings. You can, for example, create a search listing all objects that are visible to the company management only. This way, you can also change the permissions of specific objects.

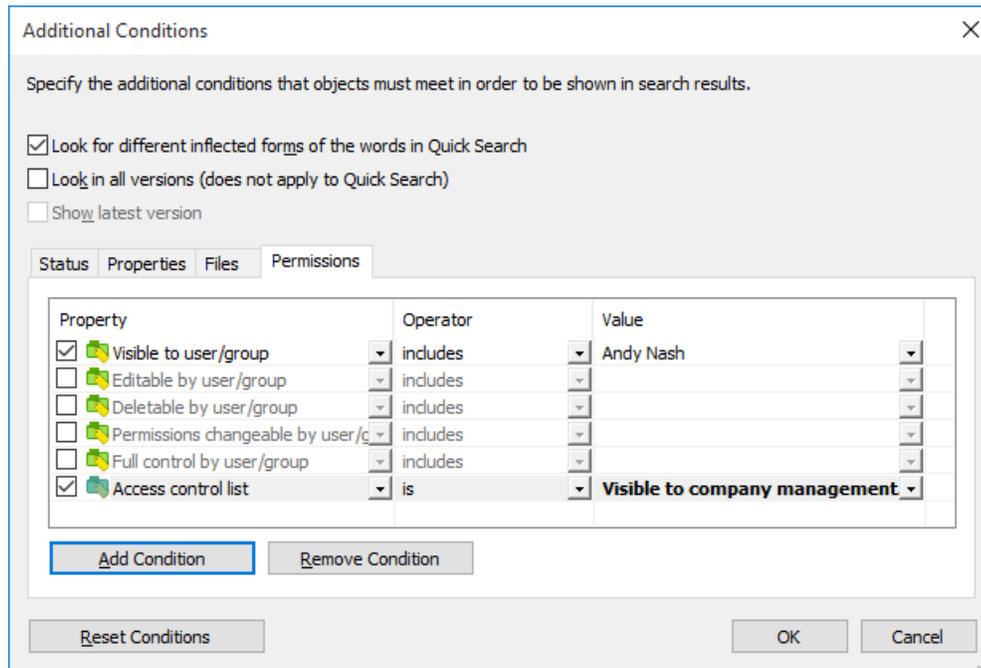


Figure 63: You can also search objects by specific permissions.

Example: Searching for Objects That Are Visible to the HR Department

Your vault needs to have the **HR Department** user group and you need to be a member of that group.

1. Click **Advanced Search** on the right side of the search bar to bring up the advanced search options.



2. Click **Additional Conditions...**

- The **Additional Conditions** dialog is opened.

3. Go to the **Permissions** tab and check the **Visible to user/group** check box.
4. From the **Operator** drop-down menu, select **includes**.
5. From the **Value** drop-down menu, select **HR Department**.
6. Click **OK** to close the **Additional Conditions** dialog.
7. Enter a search term in the **Quick Search** field or leave it empty if you do not want to filter your search any further.
8. Press **Enter** or click the arrow button next the **Quick Search** field to start your search.

The search results show the objects that match your search term and are visible only to the HR department.

6.4. Search Results Groupings

M-Files automatically groups search results by object type. Thanks to this, you can quickly and easily find the desired object, regardless of whether you are looking for, for example, a document or a project.

If there is a "+" sign in addition to the number beside the object type title, there are more search results than are being shown (for instance *Documents (50+)*). You can display more search results by clicking on *Show more results*.

The screenshot shows the M-Files search results interface. The window title is "Search Results: dat". The breadcrumb path is "This PC > M-Files (M:) > Sample Vault > Latest Searches > Search Results: dat". The search term "dat" is entered in the search bar. The interface includes a menu bar with "File", "Edit", "View", "Tools", "New", "Operations", "Settings", and "Help". The main area displays a table of search results grouped by object type. The table has columns for "Name", "Size", "Date Modified", and "Score". The results are grouped into "Documents (2)", "Contact persons (3)", and "Customers (1)".

Name	Size	Date Modified	Score
▲ Documents (2)			
> Project Agreement - DAT Sports & Entertainment (6/2012).docx	26 KB	06/08/2012 21:21	83979
> Reseller Agreement - DAT Sports & Entertainment (11/2000).doc	32 KB	06/08/2012 21:24	81979
▲ Contact persons (3)			
> Nancy Hartwick		17/07/2008 16:43	1758
> Eric Gardner		10/06/2008 16:44	1755
> Helen Chase		10/06/2008 16:44	1755
▲ Customers (1)			
> DAT Sports & Entertainment		10/06/2008 20:25	80167

6 items

Figure 64: M-Files groups the search results by object type.

Try new searches

If needed, M-Files guides the user toward the desired search result by displaying various quick tips. For example, M-Files may suggest the use of another search string or making the search broader with the * character.

7. M-Files Functions in Microsoft Office and AutoCAD

This chapter describes how M-Files has been integrated into your Microsoft Office and AutoCAD.

7.1. Functions in Word, Excel and PowerPoint

The M-Files functions accessible directly in Word, Excel, and PowerPoint make it easy to work with documents. You can access the functions from the *File menu*, *Office menu*, or *M-Files menu*. The menus may look a little different, depending on the software versions in use.

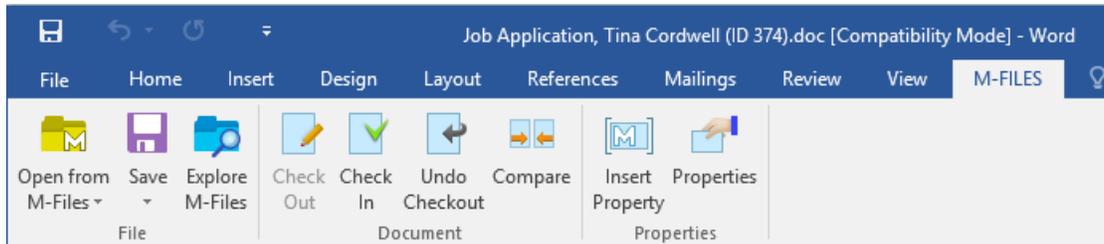


Figure 65: All M-Files functions are available through the M-Files menu.

The M-Files functions presented below are available in Microsoft Word, Excel, and Powerpoint versions 2007, 2010, 2013, and 2016.

Open From M-Files

You can open a document for reading or editing directly from the document vault. If you are using several document vaults, use the *Open from M-Files* function to select the desired document vault. This function is also available on the *File* and *Office* menus.

Save to M-Files

Save is the handiest way to save a new or edited document to M-Files. When you save to M-Files directly, the metadata card opens for editing just as it does when you create a new document via M-Files Desktop. For more information, refer to [New Document](#) on page 69. If you are using several document vaults, choose the target document vault in the *Save* submenu. This function is also available on the *File* and *Office* menus.

Explore M-Files

You can open the M-Files user interface at the same time. If the opened file is in M-Files, the *Explore M-Files* function displays the file in M-Files, making it easier to perform other M-Files functions on the file (such as copying or sending a link by E-mail).

Check Out

The *Check Out* function checks out for editing a document that has been opened as read-only. This function converts the document from read-only mode to edit mode.

-  **Note:** If the document is in read-only mode and has been edited, and the *Check Out* function is performed, all changes are lost.

Undo Checkout

The *Undo Checkout* function closes the current document and cancels its checkout without saving changes. If the *Undo Checkout* function is performed on a document that has been edited, all changes made after the document was *checked out* will be lost.

 **Note:** *Undo Checkout* cannot be used on a single file of a multi-file document. In this case, the function is not available in the M-Files menu.

Compare

With the *Compare* function, the content of the current document can be compared to an earlier version of the same document. The *Compare* function opens the document version history, which allows you to select the earlier version to compare the current one to. The results are displayed with the changes visible.

Insert Property

For more information, refer to [Insert M-Files Property](#) on page 135.

Properties

For more information, refer to [M-Files Properties](#) on page 135.

M-Files Properties

The document properties defined in M-Files can also be displayed in Word, Excel and PowerPoint via the *Properties* function. This function can be found in the [M-Files menu](#) on page 134. The metadata card opened by means of the *Properties* function is the same as the metadata card in M-Files.

The document properties can be edited and saved as in M-Files. For more information, refer to [Document Properties](#) on page 70.

Insert M-Files Property

Document metadata stored in M-Files can be included in document contents by using the *Insert Property* function.

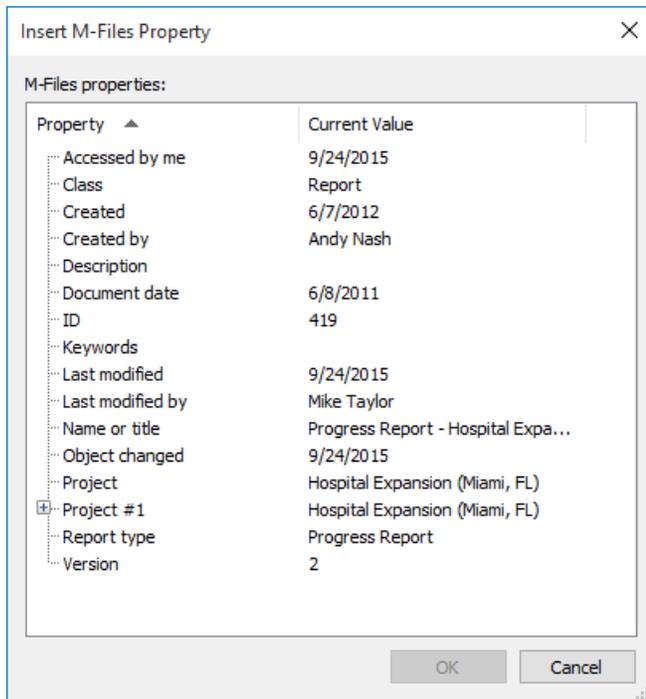


Figure 66: List of properties that can be inserted to the document.

You can set up text fields or cells in Word, Excel, and PowerPoint in which the selected M-Files properties are filled in automatically. For example, you can select a customer name and address from the document properties and insert them as the recipient's contact information in a proposal.

Other M-Files properties can be added in a similar way. For example, you might insert the name of your proposal document as the heading of the cover letter or add product information to the proposal.

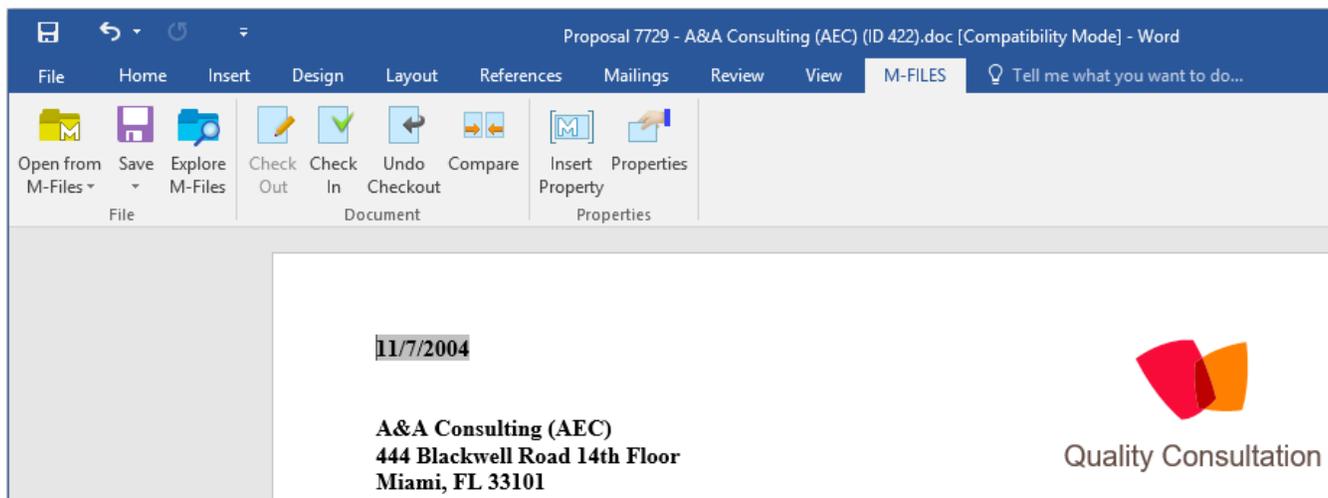


Figure 67: The "Insert Property" function automatically inserts selected document properties into the document content.

You can also add an electronic signature to an Office document by selecting the *Add property* function. For more information, see [Electronic Signature](#) on page 253.

Document metadata can also be edited using the *Properties* function when the document is processed in Word, Excel, or PowerPoint. For more information, refer to [M-Files Properties](#) on page 135.

Note: In PowerPoint, the *Insert Property* function is available in versions 2007, 2010, 2013, and 2016 only.

Utilizing "Insert Property" with document templates

The *Insert Property* function can be used to conveniently create document templates. Text fields or cells defined in the template are automatically populated with the selected properties when a new document is created. For example, a proposal template can be set up to include fields for the properties *Customer*, *Contact*, *Address*, and *Country*. When a new proposal is created using the template, the customer information in the metadata is automatically inserted into the fields. This means that address information no longer has to be separately copied from the customer contact information.

An existing document can be defined as a document template in M-Files by selecting the [Is template option](#) on page 69. The [property definition permissions](#) on page 231 in M-Files Admin are used for controlling which users are able to set documents as templates.

If a property does not have a value (*Current value* is empty), the text fields or cells in the document templates may also be left empty. When a user creates a new document using the template, these text fields and cells are automatically populated with *current property* values.

An M-Files property inserted into a Word document is displayed as a text field, which by default turns gray when clicked. In Excel documents M-Files properties are displayed as cell formulas and in PowerPoint documents as text areas.

Note, however, that inserting metadata in a document does not in itself require the document to be defined as a *template*.

7.2. Functions in Outlook

M-Files offers several features and diverse benefits for the daily handling of e-mail messages and for their utilization in customer relationships. For example, you can automate storing messages in M-Files by utilizing Outlook rules and M-Files features. Extensive integration with Outlook provides you with, for example, the following features:

- E-mail messages and attachments can be saved to M-Files in various file formats.
- E-mail messages can also be saved automatically with their metadata by means of Outlook rules and M-Files features.
- Contact persons and customers can be automatically associated with e-mail messages.
- The M-Files flag indicates messages that have been saved to M-Files.
- Messages related to a particular message are interlinked in M-Files. Thanks to this, the entire message thread is easily accessible and readable in M-Files.
- The *Show in M-Files* function allows you to open a stored message in the M-Files user interface.
- When an e-mail message is saved to M-Files in Outlook, the document date will automatically be the same as the e-mail date, no matter when the message is saved to M-Files.

 Video: [Email Integration](#)

Storage Formats

E-mail messages and attachments can easily be saved from Outlook directly to M-Files. The following M-Files functions are available in Microsoft Outlook 2007, 2010, 2013, and 2016.

Outlook offers the following save options for *Save to M-Files*:

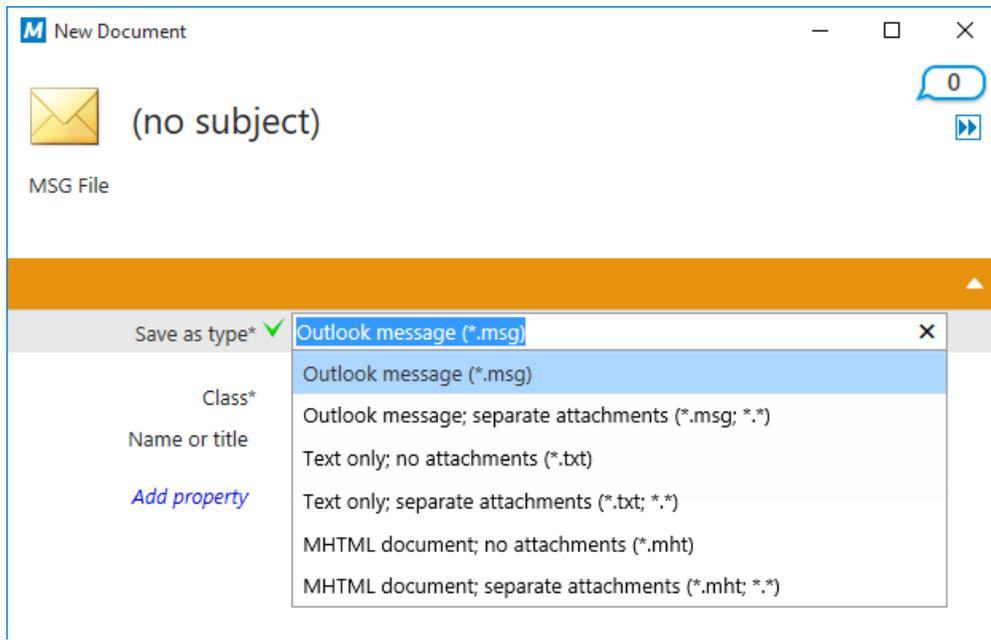


Figure 68: E-mail messages can be saved to M-Files in many formats.

Outlook message (*.msg)

The e-mail message and any attachments are stored in M-Files in MSG format. The stored file and its attachments open as a message in Outlook.

Outlook message; separate attachments (*.msg; *.*)

The e-mail message is stored as a multi-file document: message text is stored in MSG format and the attachments in their native file formats. The stored MSG file opens as a message in Outlook. The attachments open in the applications associated with the file format.

Text only; no attachments (*.txt)

The e-mail message is stored as a text file. The stored file opens in, e.g., Notepad. Attachments are not saved.

Text only; separate attachments (*.txt; *.*)

The e-mail message is stored as a multi-file document: message text is stored as plain text and the attachments in their native file formats. The attachments open in the applications associated with the file format.

MHTML document; no attachments (*.mht)

The e-mail message is stored in M-Files in MHT format. The stored file is opened in a program that supports reading of MHT files such as Internet Explorer.

MHTML document; separate attachments (*.mht; *.*)

The e-mail message is stored as a multi-file document: the content of the message is stored in MHT format and the attachments in their native file formats. The attachments open in the applications associated with the file format.

Save Attachments to M-Files

The *Save Attachments to M-Files* function stores only e-mail attachments. The attachments are stored in their native file formats. If an e-mail message contains several files as attachments, these files are saved as a multi-file document. If the message contains one attachment, the file is saved as a single-file document. The attachments open in the applications associated with the file format.

Note: If you would prefer to store multiple attachments as ZIP archives rather than as multi-file documents, please contact your M-Files consultant for additional information.

Utilizing Outlook Rules

By utilizing Outlook rules, you can easily automate saving certain messages to M-Files, on the basis of, for instance, the message's sender or subject. Example: you can specify that all proposals sent are to be saved to M-Files on the basis that the subject contains the word *proposal*.

You can find the Outlook rules in the *Tools* menu (select *Rules and Alerts*). The rules are user-specific.

-  **Note:** The best practice normally is to *move a copy* of the message to M-Files, in which case the actual message remains in the original folder, such as the *Inbox* or *Outbox* folder.

If Outlook is not open when the user receives a message that would be saved to M-Files according to the rule, M-Files will suggest *Save pending messages now* when Outlook is opened the next time.

Saving messages in M-Files Folders

In addition to using the *Save to M-Files* function, you can save messages to M-Files by using M-Files folders. This offers several additional features for saving messages:

- You can save messages quickly and easily by dragging them to M-Files folders in Outlook.
- M-Files folders are automatically available to you in Outlook if M-Files (7.0 or higher) has been installed on your computer. Automatically used M-Files folders correspond to the M-Files vaults to which you have added a document vault connection.
- The messages are always copied from their original folder in Outlook: messages are not removed from their original Outlook folder when you move them to the M-Files folder.
- You can specify automatically populated metadata for each M-Files folder.

The above functions are available in Microsoft Outlook 2007, 2010, 2013, and 2016.

Automatically Populated Metadata

You can specify automatically populated properties to be added to e-mail messages when you save them to M-Files by dragging them to M-Files folders in Outlook. These settings are folder-specific, allowing you to utilize multiple subfolders for a variety of use cases. The function is available in Microsoft Outlook 2007, 2010, 2013 and 2016.

-  **Note:** These folders need to be added as subfolders under the automatically created M-Files folders (representing your M-Files vault connections). If you create a folder directly on the main level, you create a normal Outlook folder, for which you cannot specify M-Files properties.

Defining automatically populated metadata

You can find the *Specify M-Files Properties* function in Outlook by right-clicking an M-Files folder.

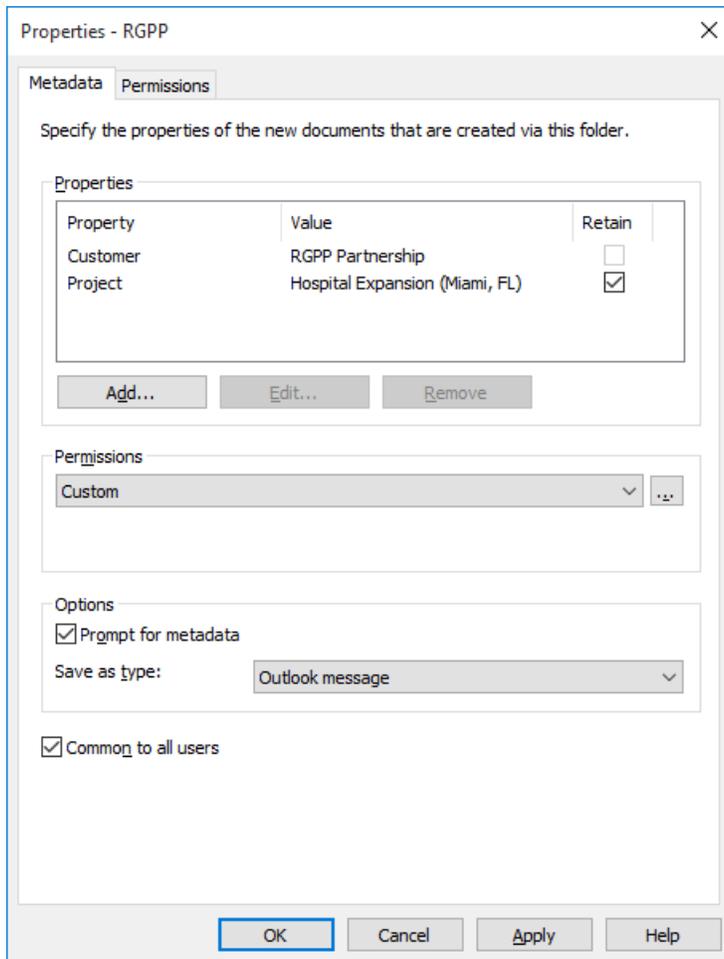


Figure 69: Properties dialog for setting up automatically populated, folder-specific metadata.

Click the **Add...** button to define a new property.

You can, for instance, use the property *Project* and set it to have the fixed value *Zenith Construction Project*. This way, the messages dragged into that folder are automatically associated with the *Zenith Construction Project*. Alternatively, if you wish to save all job applications in the *Job application* class, select the folder property *Class* and set its value to *Job application*.

You may also specify M-Files folder properties to be read from the e-mail message itself. In this case, select **Add...**, then the *Read from the e-mail message* option and choose a suitable field from the drop-down menu.

Allow users to retain the property value for this folder

This setting (visible only to users with at least the right to manage common views) adds a *Retain* column to the folder properties dialog. The *Retain* option is available for all users, and also controlled by each individual user. Activating the *Retain* option for a property tells M-Files to remember the latest value provided by the user, ignoring the original fixed value set by the administrator.

Let's say the organization is connected to two projects with the same customer, and the default project has been set to *Alpha*. The project manager for project *Beta* would probably want to enable the *Retain* option, because this way the property needs to be changed only once. After this, M-Files remembers that the project manager wants to associate his e-mails with project *Beta*, not *Alpha*, even though the default project was set to *Alpha*.

Permissions

The *Permissions* option enables you to define user permissions for the messages that are saved in this M-Files folder. This should not be confused with the view permissions for common folders (see below).

Prompt for metadata

You can specify whether the metadata card is to be displayed when messages are dragged into the M-Files folder. The metadata card should be displayed if you wish to check or modify automatically populated metadata during saving, or if you have not defined any folder-specific properties.

Specifying common M-Files folders

You can also specify that the M-Files subfolder you created is common to all users, in which case the folder will be displayed in Outlook to all users. A common M-Files subfolder can be created and specified by a user with at least the right to manage common views. When the user drags a message to a common folder, the message automatically receives the metadata (properties) that have been specified for the common folder.

The common folder settings are applied once the user starts Outlook while being logged into the vault.

Common folder view permissions

As soon as the *Common to all users* option has been enabled, the *Permissions* tab appears next to the *Metadata* tab. This allows you to select view permissions for the common folder. This should not be confused with the *Permissions* option on the *Metadata* tab (see above).

Associating Messages with Contacts

You can use M-Files Admin for specifying messages to be automatically associated with contact persons and customers saved in M-Files on the basis of the sender and recipient information. A message from, for example, *matt.bay@estt.com* can be automatically associated with the contact person *Matt Bay* and the customer *ESTT*.

When the user is saving an e-mail message to M-Files in Outlook, M-Files looks for similarity between the e-mail addresses in the message and the properties that have been specified in M-Files Admin. On the basis of similarity and the properties specified by the administrator, M-Files automatically associates the message with customers or contact persons when the message is saved in the M-Files folder in Outlook.

 **Note:** The association is possible only if the message is saved in Microsoft Outlook 2007, 2010, 2013, or 2016.

This automation takes place on a vault-specific basis (with a vault-specific M-Files folder in Outlook), also applying to all subfolders of the M-Files folder in question. The message must be saved via the *Save to M-Files* function or by dragging the message to the M-Files folder in Outlook. If you drag the message directly to the M-Files user interface, it will not be associated with the customer or contact person.

E-mail Client Integration Settings

To open E-Mail Client Integration Settings:

1. Open M-Files Admin.
2. Select a vault in the left-side tree view.
3. Select **Action** > **E-Mail Client Intergration Settings**.

Contact persons

M-Files looks for a full match with a contact person's e-mail address. M-Files associates the message with the contact person *Matt Bay* if *Matt Bay*'s properties have exactly the same e-mail address as the message does (*matt.bay@estt.com*).

Customers

If customer information has been specified in the e-mail integration settings:

1. M-Files looks for customer matches via the contact person (the *Customer* object type must be the owner of the *Contact person* object type): M-Files associates the message with the customer *ESTT* if Matt Bay is the contact person for *ESTT*.
2. M-Files looks for similarity between the domain name in the e-mail address and the customer's properties: M-Files associates the message with the customer *ESTT* on the basis of the e-mail address domain, *matt.bay@estt.com* or *patsy.bay@estt.com* if the domain *estt.com* can be found in the customer's properties. The message will not be associated with any contact person in this case, unless a full match is found with the contact person information.

E-Mail Client Integration Settings - Advanced

The **Advanced** tab of the **E-Mail Client Integration Settings** dialog allows you to further specify associations between e-mail information and M-Files metadata. M-Files automatically populates the metadata card according to the mappings defined in these settings.

First, you can select a default class for all the e-mail messages that are saved to M-Files via Outlook. Secondly, the options allow you to define an appropriate metadata property for each e-mail header field value.

For instance, if you want the information contained in the *From* field to be automatically inserted to a certain property on the metadata card of the e-mail object, select the appropriate property from the drop-down menu.

The M-Files Flag

The M-Files flag, shown in Outlook's message list, indicates that you have already saved the message to M-Files.

If some other user (for instance another recipient) has saved the same message to M-Files, M-Files prompts you to confirm whether you wish to save that message again. Even if you do not save the message again, the M-Files flag will now be displayed in Outlook for that message.

With the *Update M-Files Status* function (in the message's context menu), you can easily display all M-Files flags. Also messages saved in M-Files by other users will then have an M-Files flag in Outlook.

7.3. Functions in AutoCAD and AutoCAD LT

The M-Files functions accessible directly in AutoCAD and AutoCAD LT make it easy to work with CAD drawings. You can access the functions from the *File menu* or the *M-Files menu*. The menus may look a little different, depending on the version of AutoCAD or AutoCAD LT in use.

The following M-Files functions are available in Autodesk AutoCAD and AutoCAD LT versions 2007–2016. The functions are also available in discipline-specific products based on these versions of AutoCAD, such as AutoCAD Architecture, AutoCAD Civil 3D, AutoCAD Map 3D, and AutoCAD MEP.

M-Files functions in AutoCAD and AutoCAD LT are:

- Open from M-Files
- Save to M-Files
- Check Out
- Check In
- Undo Checkout

For more information about these functions, see [Functions in Word, Excel and PowerPoint](#) on page 134.

Properties

For more information about this function, see [M-Files Properties](#) on page 135

Insert Field

With the *Insert Field* function, you can add M-Files metadata to drawings along with AutoCAD fields. The M-Files metadata fields are located in the M-Files *field category* in the *Field* selection dialog in AutoCAD.

For more information, see [Insert M-Files Property](#) on page 135.

8. M-Files Admin

This chapter describes the functionality of the M-Files Admin tool by examining the tree structure in the left pane and the options in the *Action* menu.

The application is used for administrating and maintaining M-Files document vaults and M-Files Server connections.

M-Files Server is the backbone of the M-Files system. It saves all objects (such as documents, employees and customers), controls access rights, registers object modifications (version history), and allows the system administrator to configure connections also to other systems (such as a customer registry). Basically, M-Files Server saves and controls all information related to the M-Files system.

Technically, M-Files Server, like M-Files Desktop, is a *service*. This means that M-Files Server starts automatically when the server computer starts. The M-Files server software is run even if there are no users logged in on the computer running the M-Files server software.

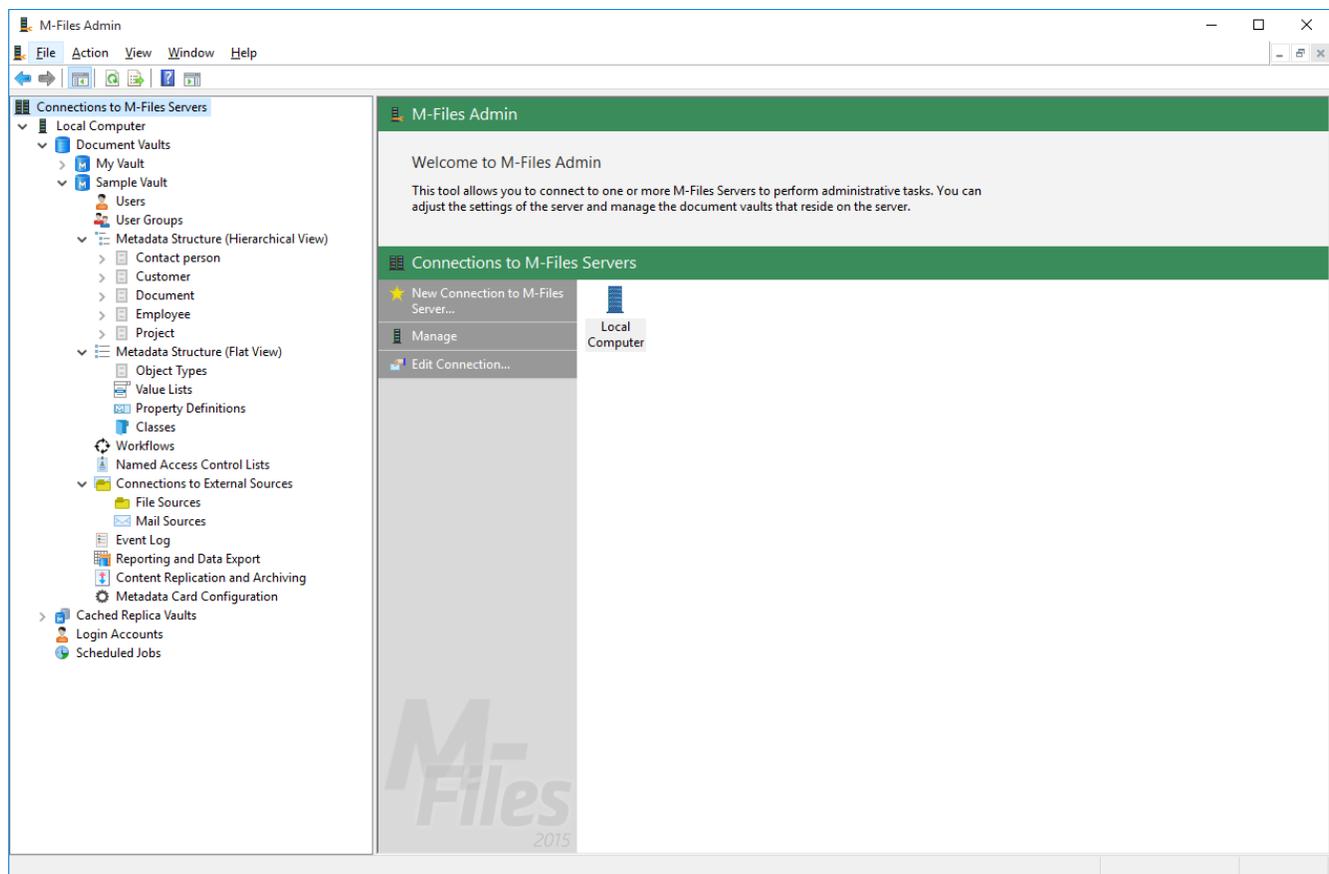


Figure 70: The M-Files Admin main window displaying the different levels inside a document vault.

Terminology

Vault	The <i>document vault</i> is managed with M-Files Admin. This is where you can add users to the document vault, change the metadata structures of objects, and edit views visible to all users. Also refer to the table Daily M-Files terminology on page 7.
Login account name	The M-Files Server login account that is used to log in to M-Files Server and on the basis of which a new user can be added to the document vault.

User	<p>The M-Files user, who, at the server level, can be either a regular user or a system administrator. Users can be added to the desired document vaults, and a user's document vault administration permissions depend on the document-vault-level roles assigned to the user. On the document vault level, roles mainly determine the user's permissions to document vault administration. A regular user's basic permissions are also assigned by means of roles.</p> <p>Users can be grouped into external and internal users. For example, you can define your customers as external users. External users can only see and access documents and objects specifically marked for them. By default, they do not have permissions to view any documents.</p>
System administrator	<p>A system administrator is a user who has been assigned the role of system administrator. A system administrator automatically receives all permissions to every document vault, i.e., basically he can perform all possible functions in M-Files. A system administrator can add the role of system administrator to any other user. However, a system administrator cannot log in to a document vault if he has not been added as a user of that particular vault.</p>
User group	<p>You can create <i>user groups</i> on the M-Files server to which individual users can be added. Each user automatically belongs to the user group <i>All internal and external users</i>. In addition, each internal user automatically belongs to user group <i>All internal users</i>. User groups are specified on the document vault level. User groups can be used to define the permissions to an object, i.e., to specify the users who may access it.</p>
Role	<p>Roles can be used to provide users with permissions that mainly affect M-Files Server Administration. The permissions gained through roles always take precedence over document and object permissions. User who has all permissions to a document vault can access any object, even if the access of a particular user to a document has been denied by means of object-specific permissions.</p>
Value List	<p>A value list is a list that contains various values, such as the names of all customers. The same value list can be utilized in several different <i>properties</i>.</p>
Property Definition	<p><i>Property definitions</i> are used to determine properties associated with <i>document classes</i>. A property definition is used to define the property name (which should be descriptive) and <i>data type</i>, which determines the type of the data entered (in relation to the property).</p>
Workflow	<p>Workflows define how the organization manages a process. An example of a workflow is <i>invoice circulation</i>. The workflow has related states and definitions regarding the task performer, permissions, and state transitions.</p>
Object type	<p>Besides documents, you can also manage other objects, such as <i>customers</i> and <i>projects</i>. These data set definitions are called object types. <i>Document</i> is one object type.</p>
Metadata	<p>In M-Files Admin, you can change the structures of metadata (for example, value lists, property definitions, document classes, and document class groups) and create new metadata, whereas you just specify values for these metadata items in the day-to-day use of M-Files. Cf. the table Daily M-Files terminology on page 7.</p>

Connections to external databases

M-Files offers flexible approaches for information presentation and transfer also from external sources. Databases, for example, are required to support [OLE DB](#) or Open Database Connectivity ([ODBC](#)) connections. The type of a database connection can be either read-only or two-way. With a read-only connection, M-Files is reading from an external database, such as a customer database, but you are not allowed to enter new data via M-Files. With a two-way connection, changes and additions made in M-Files are saved in the external database.

A good example of an external database connection is a connection between M-Files and an external customer database. Many organizations already have a vast database of customer information, consisting of tables populated with customer information. When the user creates a new offer document in M-Files, it makes sense to add the existing customer information to it. M-Files can be set to import customer information from an external database. The information can then be accessed directly from, for example, the metadata card when a new document is created.

You can also import and link existing files from external objects. This function makes deploying M-Files easy and quick, since all existing files can be accessed via M-Files without a separate time-consuming transfer process. When one is accessing files via M-Files, it makes sense to add metadata for them at the same time. Furthermore, among other things, version history is created in M-Files; concurrent editing is avoided; and, thanks to M-Files scheduled jobs, backups are easy to manage. Adding metadata also enables you to better take advantage of the search capabilities of M-Files.

Saving and managing e-mail messages

M-Files provides the opportunity to save, manage, and share important e-mail in a controlled manner. The messages can be transferred directly from the mail server to the document vault without the need for separate actions by the user.

For example, messages and their attachments sent to the organization's common e-mail box can be transferred directly to the document vault. In the document vault, imported messages can be handled in a controlled manner via, for example, the workflow features. The purpose of use might be central, controlled handling of orders or saving of sent offers. This way, important information can be managed in M-Files so that the information does not disappear or get forgotten in e-mail boxes.

For more information about these and many other possibilities, refer to [Functions in Outlook](#) on page 137.

8.1. New Server Connection

Start setting up a new server connection by selecting *Connections to M-Files Servers* in the left-side tree structure of the M-Files Admin and selecting *Action > New Connection to M-Files Server...* Connecting to the server with this function is quite similar to establishing a document vault connection (see [Adding a Document Vault Connection](#) on page 25).

The screenshot shows a 'Connection Properties' dialog box with the following fields and options:

- General** tab selected.
- Alias:** Text box containing 'Company's M-Files Server'.
- Connection** section:
 - Server name:** Text box containing 'Server01'.
 - Port number:** Text box containing '2266'.
 - Protocol:** Dropdown menu set to 'TCP/IP'.
 - Encrypted connection:** Unchecked checkbox.
 - Test Connection:** Button.
- Authentication:** Dropdown menu set to 'M-Files user'.
- Buttons at the bottom: OK, Cancel, Apply, Help.

Figure 71: Server Connection Properties.

Alias

First assign a name to the server connection.

Connection / Server Name

Enter the network name or IP address of the server on which M-Files Server has been installed and that contains the document vault.

Connection / Port Number

The server was specified in the previous field, and in this field you specify the port to connect to on the server. Enter the server port number to connect to. M-Files uses port 2266 by default.

Connection / Protocol

Specify the protocol to be used for the network connection. The available protocols are *TCP/IP*, *SPX*, *Local Procedure Call (LPC)* and *HTTPS*.

Encrypted connection

Activate this option to enable RPC encryption between M-Files Admin and M-Files Server.

The option is available for the TCP/IP protocol only. If the protocol is HTTPS, the connection is always encrypted at the HTTPS protocol level. For connections from outside the organization's internal network, HTTPS or VPN should still be used, as RPC communication to the default TCP port, 2266, is often blocked by firewalls.

- Note:** For RPC encryption to work, the user as well as the computer must be able to authenticate to the server computer. In practice, this requires that the client computer belongs to the Windows domain and that the user is a domain user.

For more information on encrypted connections and for instructions on how to configure the server to require encrypted connections, refer to [Protecting Data in Transit with Encryption in M-Files](#).

Connection / Test Connection

You can test the operation of the server connection with the **Test Connection** button.

Authentication

Specify the method M-Files Server is to use for authenticating the user. The authentication options are *Current Windows user*, *Specific Windows user* and *M-Files user*.

8.2. M-Files Server

This section offers a brief description of M-Files servers.

It is recommended to use Universal Naming Convention (UNC) paths (such as `\\ServerName\`) with network drives, because letters assigned to these drives may not necessarily be visible to the M-Files server; in Windows, drive letter assignments are frequently user-specific. A network drive may contain an external database for a value list, among other things. Also refer to [Value Lists](#) on page 211.

Note that, in a network, the M-Files server uses by default the identity of the computer running the M-Files server software (DOMAIN\COMPUTER\$). Backup to a network drive, for example, is possible as long as the DOMAIN\COMPUTER\$ Windows user, representing the server, has write permissions to this drive. In certain functions, it is possible to enter the logins that the function is to use during the procedure.

Disconnect, Connect

You can use the **Disconnect** function to disconnect the network connection to the server. You can reconnect the connection later without having to specify the server registration properties again.

To disconnect:

1. Highlight the server connection.
2. Open the **Action** menu.
3. Select **Disconnect**.

To reconnect:

1. Highlight the server connection.
2. Open the **Action** menu.
3. Select **Connect**.

License Management

License management settings are accessed by right-clicking the server and selecting *License Management*. For more information about licenses and assigning licenses to login accounts, refer to [License types](#) on page 150.

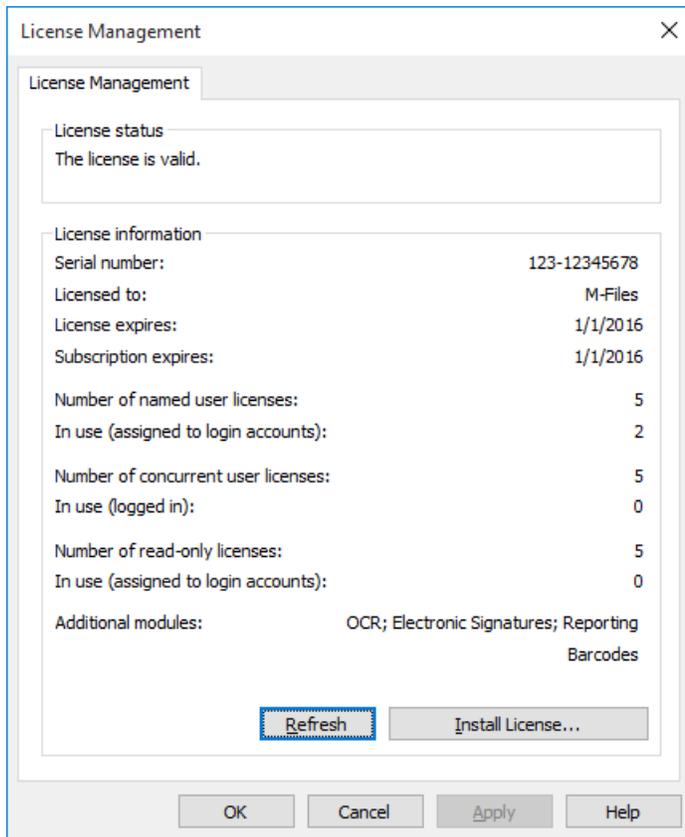


Figure 72: M-Files license management window.

License Status

The status of the license is shown here. Users receive a notification before the license expires.

Serial number

This is your M-Files serial number.

Licensed to

The license holder is displayed here. This confirms that your organization is the registered user of the software.

License expires

License expiry date. Normally, the license never expires.

Subscription expires

Subscription expiry date. During the subscription period, you are entitled to all M-Files version updates free of charge. You also need to have an active M-Files subscription for receiving customer support free of charge.

Number of named user licenses / In use

The number of licenses installed is displayed for each license type separately. Below that you can see the number of licenses in use. *Named user licenses* are assigned to individual login accounts. For more information about license types, refer to [License types](#) on page 150.

Number of concurrent user licenses / In use

The number of *concurrent user licenses* in use is determined by the number of currently logged in logins using this license type. A license is reserved when a user using this license type logs in to M-Files. When the user *logs out* on page 107 of M-Files, the license becomes available. For more information about license types, refer to [License types](#) on page 150.

Number of read-only licenses / In use

A read-only license allows the user only to read content. It does not allow the user to create or modify documents in the document vault. For more information about license types, refer to [License types](#) on page 150.

Additional modules

Here you can see the additional modules to which you have access, such as the OCR module.

Refresh

The **Refresh** button brings the "in use" license data up to date.

Install License

When the evaluation period expires, you need a license to be able to use M-Files. Install your license by selecting **Install License**. Enter the serial number and license code you have obtained, and then click **OK**.

License types

Select a license type for the login account. The different license types are listed below. For more information about licenses, refer to [License Management](#) on page 148.

 Video: [Licenses and Login Accounts](#)

Named user license

Named user licenses are assigned to individual login accounts. This license allows the login account to use M-Files any time, independent of other users.

Concurrent user license

When a login account entitled to a concurrent user license logs in, one license of this type is taken up. When the login account logs out, the license becomes available for use by other login accounts that use this same license type.

Read-only license

Read-only licenses are assigned to individual login accounts. This license allows the login account to use M-Files at any time, independent of other users. The license is limited in the sense that not all M-Files features are available for use: the user is only able to read but not to create or modify documents.

Notification Settings (M-Files Admin)

You can access the server's notification settings by right-clicking the server connection and selecting *Notification Settings*. With the notifications enabled, M-Files users are able to request e-mail notifications about object modifications (see also [Notification Settings \(M-Files Desktop\)](#) on page 107 and *"Follow this object" functionality* under [Metadata Card](#) on page 42).

 **Note:** To be able to use this feature, event logging and notifications must be enabled.

Notification Settings

General

Enable notifications

SMTP server:

Use encrypted connection (SSL/TLS)

SMTP server port:

SMTP server requires authentication

Account name:

Password:

Sender's e-mail address:

Sender's display name:

Digest message time:

NOTE: Notifications are generated based on events. Ensure that event logging is enabled in the document vault.

OK Cancel Apply Help

Figure 73: The "Notification Settings" dialog.

Enable notifications

Check this box to enable notifications. After this, you can specify the notification settings.

SMTP server

Specify the SMTP server to be used for sending notification e-mails, for instance `smtp.gmail.com`. Ask the network administrator for the e-mail server name used by your company.

Use Encrypted connection (SSL/TLS)

Use this checkbox to encrypt your connection with SSL/TLS.

SMTP server port

Specify the SMTP server port to be used. Usually there is no need to change the default value.

The most commonly used ports are 25, 465, and 587. The default ports are 587 (with SSL), and 25 (without SSL).

Sender's e-mail address

The e-mail address defined as the sender of notification messages, for instance `m-files@company.com`. The address does not have to actually exist.

Sender's display name

The name of the e-mail sender. Enter the name to display in the notification's From field. Example: `M-Files`.

Digest message time

M-Files users can choose to receive their notifications as individual messages or as a digest message. Here you can specify the time when the daily digest messages are sent. For more information, refer to [Notification Settings \(M-Files Desktop\)](#) on page 107.

Notification templates can also be customized. The *notifications_template.txt* file in the M-Files installation directory contains various notification templates. Messages can include placeholders. For example, to include an object ID in the message text, add the string `%OBJID%`.

 **Note:** The modified notification templates are reset when M-Files Server is updated.

Placeholder descriptions:

Placeholder	Description
CAUSEDBY	The name of the user who caused the event.
CAUSEDBYACCOUNT	The account name for the user who caused the event.
FILENAME	The name of the file.
HYPERLINKFRAGMENTHTML	An HTML formatted hyperlink containing URLs to the object for M-Files Desktop, M-Files Web, and M-Files Mobile.
HYPERLINKFRAGMENTPLAIN	A plain-text formatted text fragment containing URLs to the object for M-Files Desktop, M-Files Web, and M-Files Mobile.
INTERNALID	The (internal) ID of the object. The internal ID is always unique for each object of a single object type and within a single vault (see also <i>OBJID</i>).
MFILESURL	An M-Files URL that shows the latest version of the object in question.
MFILESURLTOVERSION	An M-Files URL that shows the specific version of the object in question.
NOTIFICATIONRULENAME	The name of the notification rule that caused the event. Available for notification templates.
OBJID	The (external) ID of the object (see also <i>INTERNALID</i>).
OBJTITLE	The name or title of the object.
OBJTYPE	Object type.
OBJVER	Object version.
ROLLEDBACKTOVERSION	The version that the object was rolled back to.
TIMESTAMP	The time when the event occurred.
USERCAUSEDWORKFLOWSTATE_Z	The user who moved the object into a specific state, Z being the ID of the workflow state.
VAULTNAME	The name of the document vault.
VAULTGUID	The unique identifier (GUID) of the vault.

Placeholder	Description
WEBURL	An M-Files Web URL that shows the latest version of the object in question.
WEBURLTOVERSION	An M-Files Web URL that shows the specific version of the object in question.
PROPERTY_<ID>	The value of the specified property of the object. (Replace <ID> in the placeholder with the ID of the property definition.)
OLDPROPERTY_<ID>	The old value of the specified property of the object. (Replace <ID> in the placeholder with the ID of the property definition.)
OBJTYPE_<ID>	Values of all the properties that can refer to the specified object type. (Replace <ID> in the placeholder with the ID of the object type.)

Notification rule messages

You can also create and edit notification rule messages. This enables you to define the content of messages related to each notification rule.

1. Add a new notification rule in M-Files Desktop. By accepting it and reopening the *Notification Settings* dialog, you can find the *ID* that M-Files has created for the new notification rule.
2. Create a new folder in the *M-Files Server* installation directory for the new notification rule message: You can find previously created message folders in the *Server\Data\Notifications* directory. If you have access to several document vaults, you can check the *document vault ID* in M-Files Admin by opening the document vault properties. Create a new folder in the selected document vault and name it according to the added notification rule ID. The directory path can be in, e.g., the following format: *C:\Program Files\M-Files 16.0.2236.0\Server\Data\Notifications\{967413FE-14F4-4B78-A236-AFED2A86FAD5}\103*. In this example, "*967413FE-14F4-4B78-A236-AFED2A86FAD5*" is the ID of the document vault in question. The folder name is "*103*" because that is the ID of the new notification rule.
3. Create the defined *notifications_template.txt* in this folder.

Enabling Web and Mobile Access

M-Files Web provides a way of accessing your document vaults via a web browser. It is thus possible to use M-Files on any computer that provides the capability for web browsing.

The M-Files Web interface is managed with the M-Files Server computer. In a normal implementation, M-Files Web is set to listen on TCP port 80 for the HTTP protocol, but there are other possibilities as well. For more information, contact M-Files customer support.

M-Files Web has been implemented with standard languages, such as HTML, DHTML, JavaScript, and CSS. This makes it possible to use M-Files with various browsers, among them Mozilla Firefox, Opera, and Safari. Please see the [M-Files Technical Data Sheet](#) for details.

M-Files Web uses Microsoft Internet Information Services and .NET framework version 4.0 (or higher). These applications must be installed on the computer running the M-Files Server in order to enable M-Files Web.

The following Internet Information Services (IIS) components need to be enabled on the M-Files Server computer (via **Control Panel > Programs and Features > Turn Windows features on or off**):

- ASP.NET features (under *Internet Information Services > World Wide Web Services > Application Development Features*)

- Dynamic Content Compression (under *Internet Information Services > World Wide Web Services > Performance Features*)
- Windows Authentication (under *Internet Information Services > World Wide Web Services > Security*)
- IIS Metabase and IIS 6 configuration compatibility (under *Internet Information Services > Web Management Tools > IIS 6 Management Compatibility*)

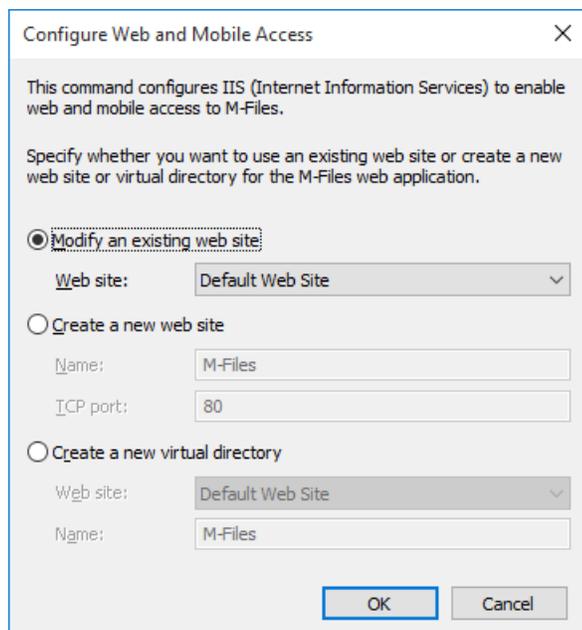


Figure 74: The "Configure Web and Mobile Access" dialog.

Modify an existing web site

Choose *Modify an existing web site* if you want to use an existing site in IIS as an M-Files Web site. Choose site from the available web sites.

Create a new web site

Choose *Create a new web site* to create a new web site for M-Files Web within IIS. Enter the name and TCP port for the new site.

Create a new virtual directory

By choosing *Create a new virtual directory*, you can add a new virtual directory to the selected web site in IIS software. With this selection, M-Files Web is defined as a separate virtual directory. Enter the name for the virtual directory.

M-Files Web Publication Settings

When documents are published online for customers or other interest groups, it is usually a good idea to hide some of the object properties. For example, if the user has read-only access, the functions for editing need not be displayed at all. With the publication settings, the users can be granted suitable and sufficient functions that facilitate and simplify accessing and processing the published information.

Note: You can use the *Get Hyperlink* function in the task area when you want to send a link to the document from the M-Files Web interface.

Site for definition of the publication settings (site and vault specific)

You can specify different publication settings specific to the site and vault by using a separate configuration site.

Log in to the configuration page by using your company's M-Files Web URL (for instance "http://www.publications.company.com") and by adding "/configuration.aspx" at the end of the address. For example, "http://www.publications.company.com/configuration.aspx". If you have already logged in to M-Files Web in the browser, M-Files does not ask you to log in again.

Note: You must have system administrator's rights in order to be able to edit the publication settings

Site-specific settings

From the site-specific settings, you can make selections that apply to the configuration site and all vaults of the site.

The screenshot shows the M-Files configuration interface in a browser window. The address bar shows "http://localhost/configuration.aspx". The page title is "M-Files Web | M-Files 2015...". The left sidebar shows a navigation menu with "General settings" expanded, containing "General", "Vault-specific settings", "My Vault", and "Sample Vault". The main content area is titled "General - General settings" and contains the following sections:

- Server information:** Hostname, Port: MFServer_6249E5A3-78DA-4A0F-818D-A288E2314D87, Protocol: ncalrpc. A note indicates to change this by editing SOFTWARE\Motive\M-Files\11.1.4310.40\Server\MFWA.
- Restrict access to configuration pages:** A checkbox is unchecked. Below it is an "Allowed IP range" field with a CIDR notation example (192.168.12.0/23).
- Display options:** "Page title" is set to "M-Files Web" and "Language" is set to "Automatic".
- Windows SSO:** Radio buttons for "Disabled (Default)", "Show on login page", and "Use automatically". A note explains that Windows authentication requires the site to be in an intranet zone.
- Force M-Files user login:** A checkbox is unchecked.
- Default authentication type:** Radio buttons for "Windows user" (selected) and "M-Files user".
- Automatic login:** A checkbox is checked. Below it are input fields for "Username", "Password", and "Domain", and a "Document vault" dropdown menu.

At the bottom of the form are "Save" and "Reset" buttons.

Figure 75: The publication settings configuration site.

Restrict access to configuration pages

You can specify the configuration site to be accessible for a certain IP address range only. Access to the configuration site is usually allowed only for connections from inside the company.

Display options

Page title: You can freely name the page of the web site you are offering. The default title is "M-Files Web".

Language: By default, M-Files uses *Automatic* as the language selection. This means that the M-Files Web language is determined by the language of the user's browser settings. If the language in the browser settings is not supported by M-Files, the language installed on the M-Files server will be used.

Alternatively, you can set a *Specific language* to be the M-Files Web language. For example, if your company's instructions refer to functions that are in English or the users work in different languages, you can specify English as the M-Files Web language. You can choose from all languages supported by M-Files.

Note:

This applies to the user interface language only. For the full M-Files Web experience to be in the language defined by a specific user, four prerequisites need to be met:

- The vault has been *localized to the target language* on page 186.

- The vault language has been [set for the vault user](#) on page 199.
- The language setting has been set to *Automatic* as described further above.
- The language preference settings of the user's browser have been set to the desired language. For more information, see [this W3C article](#).

Windows SSO

With Windows authentication enabled, M-Files Web can automatically use the user's Windows credentials for login. The administrator can configure the single sign-on (SSO) setting so that the login credentials are no longer required when users navigate to M-Files Web.

The automatic authentication is disabled by default, but can be enabled by setting the single sign-on value to *Use automatically*. Alternatively, the choice of using single sign-on can be displayed on the login page by selecting *Show on login page*.

Force M-Files User Login

Select this setting if you do not want to display the Windows login option to users. Then the user does not have to consider which login option is appropriate and M-Files suggests logging in as an M-Files user. For data security reasons, it may be advisable to disable Windows login in some cases.

 **Note:** This does not prevent logging in to the configuration site with your Windows user account.

Automatic Login

Select *Automatic Login* and enter the authentication information if you do not wish to require the users to enter their user ID for M-Files Web. This means that any user can access the site's vaults if authorized by the user ID.

Authentication (username, password and domain): If automatic login is enabled, this is the authentication information that M-Files uses for the automatic login. If you want M-Files to offer a specific ID for the user by default, save the default ID in the authentication information and disable automatic login. The user is still able to use other IDs, possibly granting more extensive web-based access.

Vault: You can also specify the vault to which the user is to be connected to. If the vault is not specified, the users can see all the vaults accessible with the credentials.

Vault-specific settings

You can specify, for example:

- Whether the vault is to be available for use via M-Files Web.
- The vault-specific default view.
- The configuration of the vault user interface.

Allow access to this vault

Select this if you want the vault to be accessible via M-Files Web.

 **Note:** In order to use a vault, the user must always have permissions for that vault.

Default View

You can specify which view is to be opened by default. The home view is opened by default.

Layout

- Default layout
- Default layout with navigation pane
- No Java applet
- No Java applet and no task area
- No Java applet and no task area (but show 'Go To' shortcuts)
- Listing pane and properties pane only

- Listing pane only

If you select *No Java applet*, the users cannot open the documents directly in the applications; instead, the documents must be loaded first. Don't forget to accept the new settings with the **OK** button.

If you display the listing pane and properties pane only or listing pane only, you should note that users will not be able to perform searches. It is important to specify the default view so that it is suitable for this use.

Prevent navigation outside default view

You can prevent navigation beyond the default view by choosing *Prevent navigation outside default view*. In this case, navigation is not possible, even if the breadcrumb is used.

Default search criteria and settings

You can select whether the latest search criteria and settings selected by users are to be kept or if you would prefer to use a specific criterion and setting. The same options as in M-Files Desktop are available.

Navigation within the vault

You can display or hide the top menu (*New*, *Operations*, and *Settings*) and/or breadcrumb.

- **Note:** When M-Files Web is displayed in the "Listing pane only" mode, object metadata and search functions are hidden from the users. This allows the users to only read and edit objects displayed in the listing pane, according to their permissions.

Vault controls

These settings allow you to control which functions are available for the users of the vault.

- *Save view settings*. If several users have the same user ID (for example, during automatic login), it is recommended to prevent saving of the column settings.
- *Workflow shortcut in properties pane*.
- *Checkout prompt*. If the M-Files Web users are granted *read-only* access and no edit permission, displaying the *Check Out* dialog is not necessary.
- *Hidden properties*. Some properties may be hidden from external users. In these cases, the information (*hidden*) is displayed in the properties pane or on the metadata card. It is recommended to hide this (*hidden*) information.
- *State transition prompt*.
- *Save search terms*.
- *Context menu*.
- *Advanced Search*.
- *Search in right pane*. With this option enabled, the search functions can be placed into the right pane.

Task area operations

The options in the task area settings allow you to decide which links are to be displayed in the task pane.

- **Note:** If you hide the *New* commands, users cannot create new objects. Additionally, if the *View and Modify* commands are hidden, they are not accessible via the context menu either.

Document-specific Publishing via a Web Link

You can use M-Files for sharing documents with interested parties through direct web links. This feature makes it possible to, for example, provide a company web site with a direct link to a price list in M-Files. The link can be made to always refer to the latest version of the document, to be able to provide up-to-date information at all times. The link works in the same way as any ordinary web URL.

Normally, M-Files Web always requires a login name and a password to be entered. However, if the system is used for publishing, it may often be necessary to allow users to view documents without entering any credentials. To enable this, M-Files can be set to use a predetermined login account with, for example, read permissions for certain documents.

Creating a login account for publishing

To create a login account and a user in the document vault for publishing purposes:

1. Create a login, such as *Publishing*, on the server.
2. Select M-Files authentication as the authentication method, and enter a password and other necessary data.
3. Assign the user to the desired document vault.
4. Define the user as an external user in the vault.
5. Provide the user with read permissions for published documents.

Enabling the login account to log in automatically

Before continuing any further, make sure M-Files Web is configured properly. For more information, refer to [Enabling Web and Mobile Access](#) on page 153.

To make it possible to view published documents without logging in, M-Files must be set to log in automatically through M-Files Web. This way, published documents can be viewed without entering a username and password. To ensure sufficient permissions, an *unlimited read-only license* is required.

To enable users to log in automatically:

1. On the M-Files server computer, create the following registry key, where `<version>` is the M-Files version number (for example `11.1.4310.92`) and `<web site ID>` is a unique ID assigned to the M-Files Web site by Internet Information Services (IIS):

```
HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\<version>\Server\MFWA\Sites\<web site ID>\
```

- If there is only one web site, the site ID is usually `1`.
- If the M-Files Web site is running in the virtual directory of the web site, add a colon and the name of the virtual directory after the site ID. For example, if the application is accommodated in the M-Files Web virtual directory of this single web site, the web site ID is `1:MFWA`.
- The IIS server software in Windows 2003 displays the ID as one column.

Example of a registry key: `HKEY_LOCAL_MACHINE\SOFTWARE\Motive\M-Files\11.1.4310.92\Server\MFWA\Sites\1\`

2. Specify the registry key values to be used for automatic login. The table below lists the values available for specification.

Registry key values for automatic login

Value	Type	Description
Domain	REG_SZ	If the authentication method used is Windows authentication, use this value to specify the domain.
Password	REG_SZ	Login password.
UserName	REG_SZ	Login account name, for example "publishing".
Vault	REG_SZ	The document vault ID. The value can be for instance

Value	Type	Description
WindowsUser	REG_DWORD	{A8DCB561-913F-4318-A276-E7E171EAFBE6}. The value can be found in the <i>Document Vault Properties</i> window of M-Files Admin. Specifies the authentication method. 0 means M-Files authentication, 1 means Windows authentication.

Creating direct web links

Once automatic login is enabled, you can create direct web links between, for example, the company web site and document files. The opening page, `openfile.aspx`, can be assigned the following parameters.

M-Files Web parameters for document opening page:

Parameter	Description
docid	ID of the document containing the file to be opened. This parameter is compulsory.
docver	Version of the document containing the file to be opened. This parameter is not compulsory. If this parameter is not used, the link always refers to the latest version of the document.
fileid	ID of the file to be opened. This parameter is not compulsory, unless the document containing the file is a multi-file document.
filever	File version.
objtype	Object type ID of the object to which the file to be opened belongs. This parameter is not compulsory. If this parameter is not used, the link always refers to files of the <i>Document</i> object type.
showopendialog	This parameter specifies whether or not the web browser displays an opening dialog. If the value assigned to this parameter is 0, the dialog is not displayed.

As described above, you can provide your web site with a link that refers directly to a document. Below are examples of such web links. Replace `<server>` with the web address of your own server.

```
http://<server>/openfile.aspx?docid=71
```

```
http://<server>/openfile.aspx?docid=71&docver=7
```

```
http://<server>/openfile.aspx?docid=71&docver=7&fileid=71
```

```
http://<server>/openfile.aspx?docid=71&showopendialog=0
```

Sharing documents via OneDrive

In addition, you can use [Share via OneDrive](#) on page 105 links for version-specific publication of individual documents.

Back Up and Restore Master Database

The M-Files master database contains the server login accounts and scheduled backup jobs. For example, in case of a hardware failure, the master database can be restored from the backup so that login information and server-specific settings like scheduled backup jobs are not lost.

8.3. Document Vault Overview

This section offers a brief overview on document vaults. For a more detailed description, refer to [Document Vault Administration](#) on page 181.

New Document Vault

You can start creating a new document vault by right-clicking *Document Vaults* in the left-side tree view of the M-Files Admin and selecting *New Document Vault...*

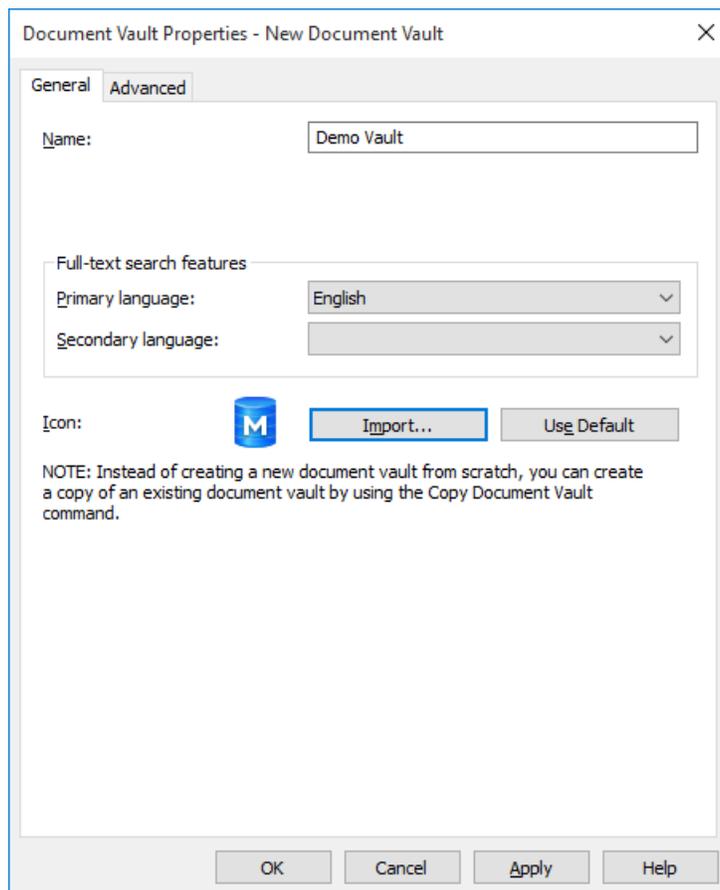


Figure 76: New document vault creation dialog.

Name

When creating a new document vault, you need to assign a name to the vault. M-Files then automatically creates an ID for the document vault. The ID can be changed later using the *Change Unique ID* function in the vault's properties.

Language selection

Select the language to be used in full-text searches. The selection affects, for example, the way inflected forms of words are dealt with in searches. If the document vault contains material in several languages, select the search language that is used most.

You can specify not only the primary language but also a secondary language if the language analyzer supports the primary language. Language analyzer support covers the improvements related to irregular inflected forms of words and splitting of compounds into their component parts. Select the most commonly used language as the primary language and, if desired, a less commonly used language as the secondary language. In practice, the order of these languages does not have any great influence on the search results.

- **Note:** Selecting a language or languages improves the probability of finding the right search results. Even if a certain language was not added, the full-text search gives results if words in this language were used in the search. Selection of a language may be important when one is searching with, for example, different inflected forms of the word.

Also refer to the notes in [M-Files Server](#) on page 148.

Icon

You can change the icon of your new vault to help you select the appropriate vault in case you are using multiple vaults in your environment. The icon selection dialog is opened by clicking **Import...** You can revert back to the default icon by clicking **Use Default**.

Document Vault Advanced Properties

In the document vault advanced settings, you need to define whether you are using Firebird or Microsoft SQL Server for saving document vault information.

Firebird is a SQL database engine integrated in M-Files. As part of the M-Files Server service, it requires no separate installation and is therefore very easy to use. Choose Firebird as the database engine, unless you have a particular reason to choose Microsoft SQL Server. Switching from Firebird to Microsoft SQL Server can be easily done later on if necessary. Changing from Microsoft SQL Server to Firebird is not, however, possible.

Microsoft SQL Server is a SQL database engine that requires purchasing and separate installation. It is recommended to use Microsoft SQL Server with large document vaults, but it also requires that the administrator is already familiar with the Microsoft SQL Server management.

- **Note:** Never modify the content structure of the document vault database directly using, for instance, database system management tools. The database contents may be modified with the M-Files Server service only. Other modifications endanger the logical integrity of the database, which may cause faulty operation of the software and loss of data. The structure and contents of the document vault may only be modified via M-Files Desktop, M-Files Admin tool, and M-Files API.

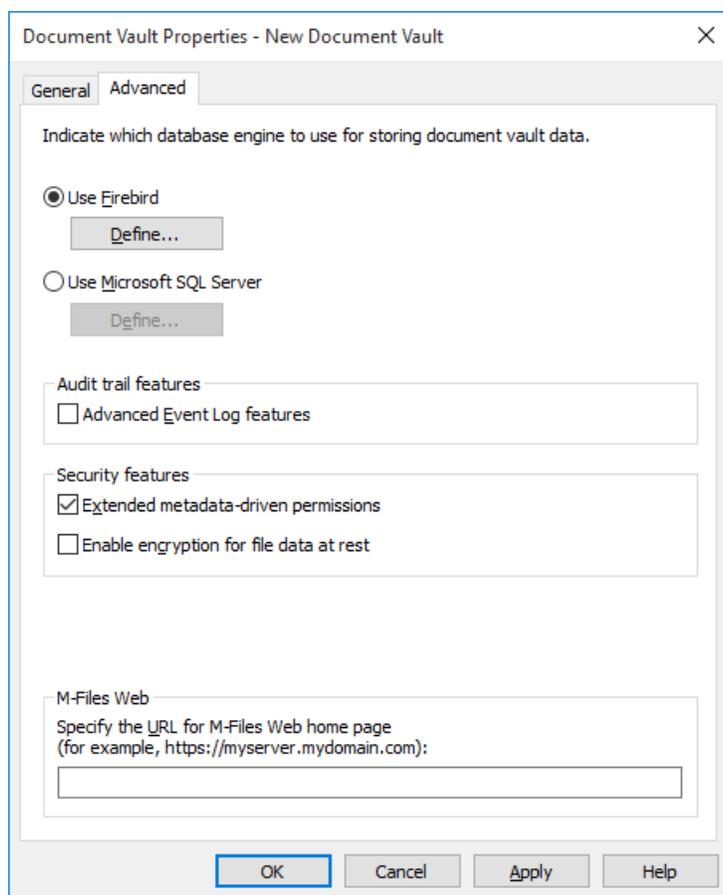


Figure 77: The advanced options of the "Document Vault Properties".

Use Firebird

See [Using Firebird as the Database Engine](#) on page 163.

Use Microsoft SQL Server

See [Using Microsoft SQL as the Database Engine](#) on page 164.

Audit trail features

M-Files supports the administration of electronic records and signatures in compliance with FDA 21 CFR Part 11. Electronic signing requires the Electronic Signatures module, which is available for a separate fee. The module includes event logging extensions and electronic signature functionality. The module is activated with an appropriate license code.

In addition to this, vault-specific properties of the audit trail must be activated. Open the *Properties* dialog of the vault for which you want to activate these features and, on the *Advanced* tab, enable *Advanced Event Log features* under *Audit trail features*. Electronic signatures are automatically enabled as soon as the license code is activated. For more information, see [Electronic Signing and Compliance](#) on page 179.

Security features

Extended metadata-driven permissions

For vaults created with version 8.0 (or later), the extended metadata-driven permissions are active by default. Otherwise they need to be manually activated. Please bear in mind that you cannot undo the operation.

-  **Note:** If you have assigned automatic permissions to values in earlier versions of M-Files, it is strongly recommended to check that the permissions are still working as desired.

For more information on automatic permissions, refer to [Automatic Permissions](#) on page 215. You can activate the automatic permissions by value, value list, object type, or class. For you to be able to use the automatic permissions via a specific property, you should also allow this in the property definition's properties. For more information, see [New Property Definition](#) on page 219.

Enable file data encryption at rest

This option allows you to use the AES-256 algorithm for encryption of the vault file data at rest. The encryption is compliant with the Federal Information Processing Standard (FIPS) publication 140-2.

This option only encrypts file data that is stored to the vault *after* the feature has been turned on. If you want to encrypt existing data:

1. Select the vault in the left-side tree view of M-Files Admin.
2. Select **Action > Maintenance > Update encryption status of existing files**.

From the perspective of the end-user, file data encryption is not visible in any way.

-  **Note:** Especially when encryption is enabled, it is crucial for the administrator to have thorough and frequent back-up processes in place. The combination of encrypted file data, hard drive failure and inadequate backup system could eventually lead to the loss of all data.

Other features

The *Annotation and redlining* feature enables you to add annotations to documents in the document vault. For more information about annotations in M-Files, see the topics [Annotations and Redlining](#) on page 61 and [Using Annotations](#) on page 62.

M-Files Web

The text field in this section should contain the URL to your M-Files Web home page. Creating M-Files hyperlinks for documents and objects stored in the vault requires this to be able to include M-Files Web URLs in the hyperlinks.

Make sure the URL starts either with *http://* or *https://*. For example: *https://myserver.mydomain.com*.

Using Firebird as the Database Engine

Firebird is a SQL database engine integrated in M-Files. Select Firebird as the database engine, unless you have a particular reason to choose Microsoft SQL Server.

Click the **Define...** under the *Advanced* tab of the *Document Vault Properties* to open settings for the Firebird engine.

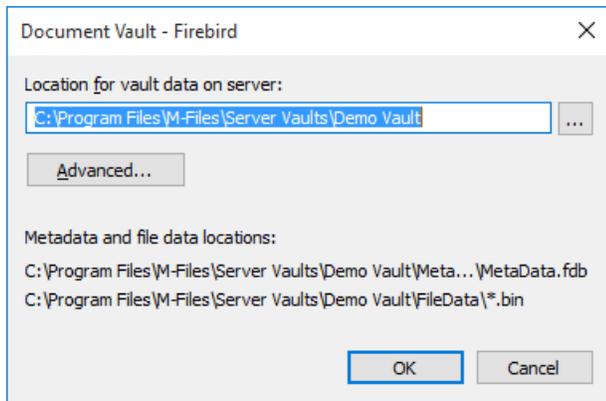


Figure 78: Location of metadata and file data when using Firebird.

Here you can define the vault folder on the server in which all of the document vault data is to be physically stored.

By default, *files* are stored in the same folder as the *metadata*. With the *Separate location for file data* option under **Advanced...**, you can define a location for file data that is different from the metadata location. This enables you to locate your file storage at a storage facility on a large network drive or file server. It is, however, recommended to store the metadata and files in the same location.

Using Microsoft SQL as the Database Engine

In addition to Firebird, you can use Microsoft SQL Server (2008, 2008 R2, 2012 or 2014) as the database system. M-Files supports all the SQL Server editions (Express, Standard, Enterprise, etc.).

Using SQL Server means that the database server memory can be more efficiently used and the backup storage of large data vaults is improved. In the event of problems, errors etc., you can switch to the mirrored database server without delay.

We recommend using Microsoft SQL Server with large document vaults that contain several hundreds of thousands or more documents or other objects. With large document vaults, Microsoft SQL Server provides better overall efficiency than Firebird. However, use of the Microsoft SQL Server database engine requires that the administrator is already familiar with the Microsoft SQL Server management.

Note: Microsoft SQL Server licenses are not included in M-Files licenses and must be purchased separately.

Microsoft SQL Server may be located on the same machine as the M-Files Server, or it can be installed on another server. If SQL Server is installed on another server, M-Files Server and SQL Server must be linked with a fast network connection. Instructions for ensuring the efficient operation of SQL Server can be found in the Microsoft SQL Server documentation. Firstly, it is recommended to ensure that the SQL Server machine has a sufficient amount of memory. The number and speed of processors and hard drives also have a significant impact on the efficiency.

Figure 79: The Microsoft SQL Server properties dialog.

- Note:** If your SQL Server does not use the default port (1433), the server name must be given as *<server name>,<port>*.

When Microsoft SQL Server is used as the document vault database engine, M-Files Server stores data in the document vault in the associated database. Certain secondary data that do not require a backup, such as search indices, are left outside the database.

Location of file data

File data can be saved in the Microsoft SQL Server database or other location, such as a network drive.

You can choose to:

- *Store file data in the vault database.*
- *Store file data in a file-system folder.*
 - With this option, you can freely specify the location for saving the files, on a network drive or in another location. You can keep the file data secure by designating a specific account for processing the file data.

Backing Up

The administrator is responsible for making backup copies and timing the backup copies of the document vault database. Backup copying is performed using SQL Server's own management tools and backup copying solutions offered by third parties. When restoring a backup copy, the administrator first returns the document vault database to the SQL Server using the desired method, and then reattaches the document vault to M-Files using the *Attach Document Vault* function.

▶ Video: [SQL Server Backups](#)

For more comprehensive backup instructions, please see the M-Files Knowledgebase article [M-Files Backup Policy](#).

Migrating to Microsoft SQL Server

The document vault database engine can also be changed from Firebird to Microsoft SQL. Refer to [Migrate to Microsoft SQL Server](#) on page 182.

Attach Document Vault

A document vault may have been detached from M-Files Server (see [Detach](#) on page 182), in which case all data in the document vault is kept in a file folder on a hard drive but the document vault is not registered on the server. If you know the name of the document vault and want to start using it again, you can do so by attaching the vault back to *M-Files Server* with the *Attach Document Vault* function. You can find it by opening the *Document Vaults* section in M-Files Admin's tree-view.

If, for example, lack of space makes it necessary to move a document vault from one server to another, this can be done with the **Detach** and **Attach** functions – simply detach the vault on server A, and attach it on server B. The **Advanced** tab enables you to further specify information related to the database connection, such as vault data location for a Firebird vault, or Microsoft SQL Server connection details.

You can select whether to attach the vault with its *original identity* or with a *new identity*. For the difference between these two, see [Restoring a document vault](#) on page 167.

Restore Document Vault

A *full backup* and *differential backup* (see [Scheduled Backup Jobs](#) on page 178) of the document vault can be restored with the *Restore Document Vault* function. You can find it by opening the *Document Vaults* section in the M-Files Admin's tree-view.

▶ Video: [Restore Backups](#)

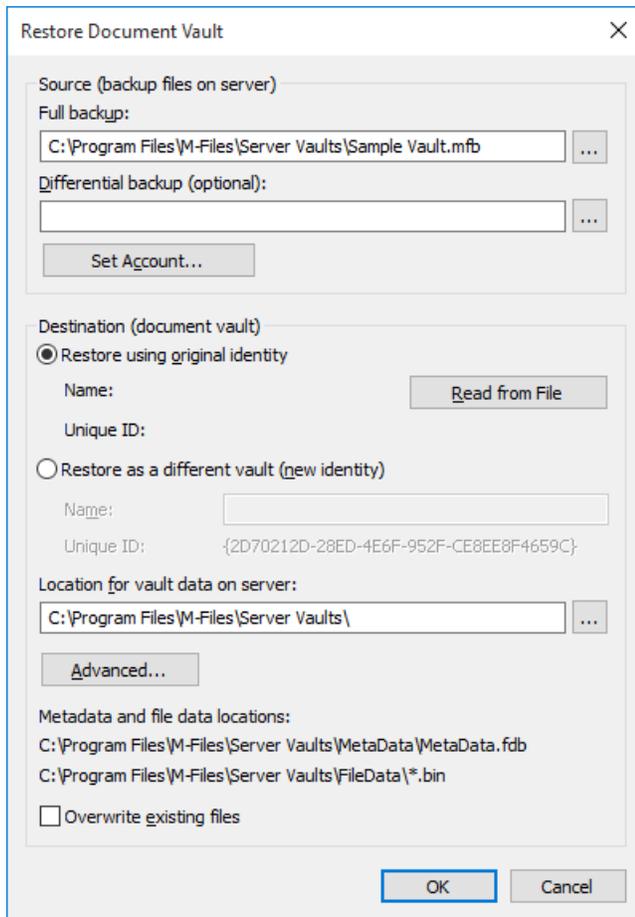


Figure 80: The "Restore Document Vault" dialog.

Restoring a document vault

Specify the *source* (backup files on the server) from which the *full backup* (and *differential backup*, if desired) is to be restored.

You can also determine whether the document vault is to be restored as a *different vault* (in which case M-Files creates a new unique ID for the vault) or with the *original identity* of the vault. The identity is used in establishing document vault connections to the server.

Tip: The name of the vault can be changed on the server, and the document vault connection can have any name in the end user's client software.

You can also define the location for vault data, a separate location for file data under *Advanced...*, and whether or not to overwrite existing files.

Even if the document vault is *destroyed*, you can *restore* it if a backup has been made. For more information about backups, refer to [Scheduled Backup Jobs](#) on page 178.

8.4. Interaction Among Several Vaults

M-Files enables a multi-level interaction between several document vaults. The interaction enables you, for instance, to:

- Replicate data across several locations, which enables work that spans a variety of locations at all times, even if network connections are slow or get interrupted.
- Archive data from an actively used vault to an archive vault.

- Back up data from the vault on your server to the vault in the cloud service so that the users can immediately connect to the cloud service if they face problems with the vault installed on your server.
- Centralize data from several M-Files vaults to a single vault.
- Use several vaults, separating the various functions of the company so that content, metadata structures, and the permissions for the vaults can be customized to match the needs of various operations and business units.
- Publish certain documents via a separate vault for interest groups.
- Create relationships between objects in different vaults so that objects in other vaults can be found as the company's operations require.

With interaction, you can share documents and other objects efficiently between separate vaults. You can, for example, specify certain documents for sharing from the company's vault with a publishing vault. This enables you to easily provide your customers and other cooperation partners with up-to-date price lists, product descriptions, brochures, and other material from this publishing vault at all times without any manual copying or outdated information.

 **Note:** If M-Files is installed on several servers, there must be an *M-Files Additional Server License* installed on the additional servers. For example, if you want to replicate information between vaults on separate servers, this license must be installed on the additional servers.

Settings required for the interaction

Associations for the metadata definitions

In order for you to associate and synchronize metadata between vaults, the metadata definitions must also be associatable between vaults. For more information, refer to [Associating the Metadata Definitions](#) on page 168.

Synchronization of objects and values between vaults

In addition to associations for the metadata, the objects and values need to be updated or synchronized regularly so that the data content is up to date across vaults. Synchronization of data between vaults is performed with *replication* of contents, with data then exported from the source vault and imported to another vault.

The synchronization of this content can be performed with scheduled export and import operations. The content can be synchronized, for example, every 15 minutes. With this approach, the data in the target vault will always be up to date. For more information, refer to [Content Replication and Archiving](#) on page 285.

Two-way synchronization is possible between vaults, but synchronization can also be performed among many individual vaults. When defining the export, you can use a filter if you want to export and publish only certain documents or another objects for the target vault.

Associating the Metadata Definitions

In order to associate and synchronize objects and their metadata between different vaults, the metadata definitions must also be associatable between different vaults.

Associations between metadata definitions can be made in several ways depending on how the vaults are used. Certain metadata definitions are always associated automatically. Some of them are associated automatically according to the vault structure, but for some of them, it must be done manually using aliases.

Purpose of the Vault vs. Metadata Associations

Associations between metadata can be created in several ways, depending on the purpose of use of the vaults. The target vault can be used in archiving, replication, backups, and publication. For this reason, you should consider – before creating a vault that might be used as a target vault – which implementation is the easiest and best for creation of the desired vault.

If the association and synchronization is performed between two or more existing vaults, check the association of the metadata definitions and define the scheduled export and import between vaults.

Perfect copy (for example replication, archiving, and backup)

If you want the vaults to be perfect – full and complete – copies of each other in terms of both metadata and contents, you should first create a target vault through backup or copy of the relevant vault and then define the export and import. This way, especially the metadata definitions are automatically matched with the names and IDs and any separate definition of aliases need not be performed one metadata definition at a time.

 **Note:** Metadata definitions created after creation of the vault must be manually associated between vaults by using aliases.

Partially the same metadata structure and partially the same contents (for example vaults intended for different purposes in the company)

If you want the metadata largely matching each other between vaults, you should consider first creating the metadata structure of the target vault through metadata structure export (see [Export Structure](#) on page 290) and then define the export and import. After this, you should verify in the target vault that the metadata structure corresponds to the use of the target vault.

 **Note:** Metadata created after creation of the vault must be manually associated between vaults by using aliases.

Different metadata structure but partially the same content (for example, publication of certain objects from one vault to another)

If you want to publish only certain objects and metadata in the so-called publishing vault, you should create the metadata structure of the publishing vault separately from that of the source vault.

In this case, aliases must be defined for all other metadata structures than built-in ones, so that metadata can be associated when the synchronization is performed.

Associating Metadata

By default, M-Files associates metadata by the following methods (in order of relevance):

1. **The built-in metadata definitions are always automatically associated**, regardless of the manner of creation of the vault metadata structures or methods of performing the association. These metadata definitions might be *Name or title*, *Created by*, *Last modified by*, *Keywords*, etc. In publishing operations, you may want to hide some of these; for example, you may not want to show the document creator in the publishing vault. You can edit the built-in metadata to suit the publishing operation via the registry settings and permissions.
2. All the items have a **GUID (globally unique identifier)**. If there is a GUID match across vaults, the metadata definitions are always mapped automatically.
3. If the **aliases match** between the vaults, the association of the metadata definitions is always performed. The alias must be manually defined in each vault for the metadata definition in question. For more information, refer to the section *Aliases for association of the metadata between vaults* below.
4. If **both metadata definition's ID and the name match**, the association of the metadata is performed automatically. This default setting can be changed from the registry settings. Note that when the association is performed with name, the names in line with the default languages for vaults are used. Also note that if the metadata structures have been separately created in different vaults, the IDs are not the same and the association must be performed via aliases.
5. You can also use the **name of imported metadata definition as it's alias** if there are no other aliases available. In this case, you need to define the alias only in the target vault using the name of the metadata definition from the source vault. For more information, refer *Use the name of an imported element as its alias if no other alias is available* under [Import Content](#) on page 292.
6. If, in addition to those mentioned above, you want to **have associations using the name only**, you can include this definition in the registry settings. Then the name of the metadata definition, such as *Telephone number*, must be the same across vaults. When default settings are used, the name alone is not sufficient for

association of the metadata. Note that when the association is performed by means of name, the names in line with the default languages for the vaults are used.

Aliases for Associating Metadata Between Vaults

Because only the built-in metadata definitions and those matching the GUID or ID and name are associated automatically, for other metadata definitions the association must be performed by using aliases.

Aliases can be used for identifying semantically equivalent metadata. For example, when importing objects from another vault, their *Date* and *Description* properties can be mapped to the target vault's equivalent properties on the basis of aliases even if the properties' internal IDs and/or names are different. That is, the aliases refer to semantically equivalent metadata in different vaults. In other words, **alias is a common identifier for the same metadata definition between several vaults.**

The alias is defined as a common ID with the same name in both source and target vault.

When defining the alias, you can use various external data type and archive standards, such as SÄHKE2, MoReq2, and Dublin Core.

Check that there are sufficient definitions for all desired metadata definitions so that the association can be performed. Check the following: object types, value lists, property definitions, classes and class groups, workflows and workflow states, user groups, and named access control lists. In the properties of these metadata definitions, you can find the *Advanced* tab, where you can define the alias(es) for the metadata definitions.

For example, the source vault has the property definition *Telephone number*, whose vault-specific ID is *1001*. The semantically equivalent property definition is also in the target vault, but the vault-specific ID is *1005* – the name can be the same ("*Telephone number*") or different (for example, "*Phone*" or "*Phone number*"), in the default language. If you want to associate these, you must define a common alias for this property definition in both vaults. The alias can be anything, such as *Telephone number* or *dc.PhoneNumber*, as long as it is the same in both vaults.

The alias is not shown to the users in M-Files Desktop; that is, the users see the name of the vault-specific property definition, just as before.

-  **Note:** If there are several metadata definitions with the same alias in the target vault, the association is bypassed for these and the data will not be imported to the target vault.

Assigning Aliases for Metadata Definitions

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, expand the **Metadata Structure (Flat View)** node and select the type of metadata definition, for example **Property Definitions**, for which you want to assign an alias or aliases.
 - The list of metadata definitions is opened in the right-side panel.
5. From the list, right-click the instance for which you want to assign an alias and select **Properties** from the context menu.
 - The **Properties** dialog for the selected metadata definition is opened.
6. Go to the **Advanced** tab.
7. In the **Aliases** field, type in the name of the alias for the selected metadata definition.
 -  Use the same aliases for semantically equivalent metadata in both the source and the target vault.
8. Click **OK** to close the **Properties** dialog.

The alias is displayed in the **Aliases** column of the metadata definition listing.

Login Accounts

Depending on the purpose of use of the target vault, the users of the target vault may be the same as, or entirely different from, those of the source vault. If you want to grant certain users permissions for both vaults, synchronize the metadata for the *Users* value list, or do both, you should create user accounts with the same name for these users for both vaults. User accounts are not automatically synchronized between vaults.

Related Objects in Separate Vaults

The interaction between several vaults enables creation of relationships between objects across vaults. The objects are not exported from one vault to another; instead, the relationship is created by reference to an object in another vault; that is, a link is created to the original object. The object types of the objects must be associatable, but synchronization of the objects (replication of content) is not required, because the objects are not transferred from one vault to another. For more information, see [Relationships Between Objects in Separate Vaults](#) on page 97.

Synchronization of Objects and Their Values Between Vaults

This section provides further information on synchronization of objects and their values. We recommend studying this section before defining any synchronization jobs. Synchronization is implemented via [Content Replication and Archiving](#) on page 285.

Synchronizing Objects

When the metadata structures of vaults have been defined according to your needs and the required metadata definitions can be associated with them, the actual synchronization of objects and values can be performed between vaults. Synchronization of data between vaults is performed with replication of content. For more information, refer to [Content Replication and Archiving](#) on page 285 and [Replication and Archiving User's Guide](#).

-  **Note:** Only the values for which there is a built-in object type are synchronized automatically. For other object types, either the alias or the combination of ID and name must match, so that objects of this object type are imported to the target vault during import. You should check that these definitions are in proper order. For more information, see [Associating the Metadata Definitions](#) on page 168.

Conflicts and their resolution

If objects are edited at the same time in multiple vaults, conflicts may result during synchronization of data, for example, from source vault A to target vault B. When detecting a conflict, M-Files creates a so-called conflict object, from which the conflict can be resolved in favor of either the source or the target vault.

You can find these conflict objects through relations: if the object has conflicts, you can find them under the *Conflicts* grouping title. You can also find all conflict objects by means of the *Conflicts* view (hidden by default).

Resolve conflicts by keeping the changes in the target vault (*Keep These Changes*) or discarding them (*Discard These Changes*), as appropriate. The latter chooses the version in the source vault. When resolving the conflict, you must have editing rights to the actual object and the conflict object in the same vault.

If two-way synchronization (replication of contents) is performed, you must resolve the conflict in both vaults in order to rectify the conflict situation.

Publishing selected objects of one vault in another vault

If you want to publish only certain objects from a vault by using another vault, you can do this by using a search filter when defining the content export. You should also check that the object types of the published objects can be associated either automatically or based on aliases.

Synchronizing Metadata Values

Value-list values

When the metadata structures of vaults have been defined according to your needs and the required metadata definitions can be associated, the actual synchronization of objects and their values can be performed between vaults. Data synchronization between different vaults is performed with replication of contents.

However, you should note that if the value does not exist in the target vault or you cannot create it as a normal value-list value during import (for example, in the case of built-in values, such as classes, workflows, and users), the value name is displayed in metadata in the form "Value name XYZ (*deleted*)". In other words, if the value does not exist in the metadata structure of the target vault after import, it is shown as a "Value name XYZ (*deleted*)" value.

-  **Note:** The default permissions for the imported values are the target vault's default permissions for new values set from value lists. This means that the name of the value may be shown regardless of its permissions in the source vault. For example, the name of the document creator is shown in the metadata of the published document via the "Created by: User XYZ (*deleted*)" value. If necessary, check the permissions and association of the metadata definitions if you do not want to display this information in the other vault.

Related objects

The object metadata contains information on other, related objects. For example, a document might be related to a project or a customer.

When objects are exported to another vault, you may not want to export their related objects to the target vault. For example, you export documents to the target vault but not projects or customers (for instance, in publishing operations, you publish price lists and brochures but not customer information). Then the related object is shown as a shortcut in the object's metadata (or, less frequently, with the "Value name XYZ (*deleted*)" value). The object refers to the source vault and has not been imported as a genuine object to the target vault. For further information, refer to *Relationships between objects in separate vaults* under [Relationships](#) on page 96.

-  **Note:** The default permissions for the related object are the target vault's default permissions for new objects set in the import by object type. This means that the name of the related object is shown in the metadata of the imported/published object regardless of its permissions in the source vault. For example, the name of the customer or project may be shown in metadata of the published document as a shortcut or as a "Value name XYZ (*deleted*)" value. If necessary, check the permissions and association of the metadata definitions if you do not want to display this information in the other vault.

8.5. Cached Replica Vaults

Document vaults can be replicated from the main server to geographically separate *replica servers*. Opening objects from replica servers often makes it quicker to open documents for editing, because the connection to the main server may be slow. Therefore, replication makes accessing frequently used documents on client computers in geographically separate facilities much faster.

Cached replica vaults need a connection to the main server, but full replication can be used even if the connection to the main server is cut off. For more information on implementation of full replication, refer to [Interaction Among Several Vaults](#) on page 167.

The document vault is replicated from the main server to the replica server. The document vault on the replica server is called a *cached replica vault*.

-  **Note:** The files on the cached replica server are not encrypted.

In M-Files Desktop Settings, the connection to the cached replica vault is created in the same way as any other document vault connection. The M-Files Desktop user only sees the name of the cached replica vault. In other words, the user does not know whether the vault is replicated or not.

▶ Video: [Cached Replica Vaults](#)

Permissions required for replication

Installation of the M-Files software requires administrator rights for the *computer that serves as replica server*. These rights are necessary for installation of the M-Files software on the replica server. Administrator rights are needed also when one is specifying the cached replica vault. Specification of the cached replica vault also requires a user ID for a regular user with *standard access to the document vault on the main server*.

Note: The requirement of *administrator rights* applies only to access to the *replica server*. The main server does not require administrator rights at any stage in specification of the replication.

For more information, see *Server roles: System administrator* under [New Login Account](#) on page 175.

The screenshot shows a dialog box titled "Cached Replica Vault Properties - New Cached Replica Vault". It has a "General" tab selected. The "Source document vault" section contains three input fields: "Server name:" (empty), "Port number:" (2266), and "Protocol:" (TCP/IP). Below these are two buttons: "Test Connection to Server" and "Test Connection to Document Vault". The "Source vault:" field is a dropdown menu. Below this is an "Update" button. The "Name:" field is empty, and the "Unique ID:" field contains a hyphen. The "Cache location on server:" field contains the path "C:\Program Files\M-Files\Server Vaults\" followed by an ellipsis button. Below this is a "Set Account..." button. The "Location for cached file data:" field contains the path "C:\Program Files\M-Files\Server Vaults\FileData*.bin". At the bottom of the dialog are four buttons: "OK", "Cancel", "Apply", and "Help".

Figure 81: The cached replica vault properties include the information on the document vault to be replicated.

Server name

Enter the network name or IP address of the server on which M-Files Server has been installed and that contains the document vault.

Port number

The server was specified in the previous field, and in this field you specify the port to connect to on the server. Enter the server port number to connect to. M-Files uses port 2266 by default.

Protocol

Define the protocol to be used for the network connection. You can select TCP/IP, SPX, or HTTPS.

Test Connection to Server

After specifying the contents of the above fields, you can check whether you can successfully connect to the document vault. If the connection works, the server has responded to the connection test.

Source vault

Select the document vault to be replicated.

Test Connection to Document Vault

After specifying the contents of the above fields, you can check whether you can successfully connect to the document vault. If the connection works, the document vault has responded to the connection test.

Name

By default, the cached replica vault has the same name as the source vault.

Update

The *Update* function can be used to update the name of the cached replica vault when the name of the source vault changes.

Unique ID

The *Unique ID* value is the storage identification of the cached replica vault. The cached replica vault always has the same unique ID as the source vault. The M-Files server uses the IDs to tell document vaults apart, which prevents, for instance, the same vault being replicated twice to the same server.

Cache location on server

Specify the directory where the document vault replica is stored on the server.

Set Account

Select the account used to connect to the server cache. The M-Files server uses this account to store information in the server cache or open files from it. The account must be specified when the cache is on, e.g., a file server requiring authentication for connection.

Location for cached file data

The *Location for cached file data* specifies the path to the replicated files in the cache directory.

8.6. Login Accounts

The document vault has users who must first authenticate themselves to M-Files Server. Before creating the users, you must create *login accounts on M-Files Server*. These login accounts are added to document vaults as *users*. Different users can be selected for document vaults from among the login accounts.

 Video: [Vault Users and Login Accounts](#)

New Login Account

You can start creating a new login account by right-clicking on the *Login Accounts* in the left-side tree view of M-Files Admin and by selecting *New Login Account...*

Figure 82: The new login account creation dialog.

Windows authentication

Windows authentication can be used for authentication on M-Files Server, in which case the user logs in to the document vault with the same login information used to log in to Windows or the organization's domain.

Using the domain logins is the quickest and easiest authentication method. This means that new passwords and logins are not needed, which makes this a rather user-friendly method. For more information, refer to table [Differences between the various user authentication methods](#) on page 25.

Note: In case your organization is using federated identity management, refer to [Using Federated Authentication with M-Files](#).

M-Files authentication

The M-Files authentication method allows the user to log in to M-Files only. If the organization does not have a Windows domain or the user is not to have access to it, it is a good idea to use M-Files authentication for the document vault.

Personal information

Enter an e-mail address and a full name for the login account. This information is used for sending notifications. For more information about notifications, refer to [Notification Settings \(M-Files Admin\)](#) on page 150. If the

authentication method used is Windows authentication, you can retrieve the personal information from the domain by clicking **Update Information from Domain**.

License type

Select a license type for the login account. The different license types are listed below. For more information about licenses, refer to [License Management](#) on page 148.

Named user license

Named user licenses are assigned to individual login accounts. This license allows the login account to use M-Files any time, independent of other users.

Concurrent user license

When a login account entitled to a concurrent user license logs in, one license of this type is taken up. When the login account logs out, the license becomes available for use by other login accounts that use this same license type.

Read-only license

Read-only licenses are assigned to individual login accounts. This license allows the login account to use M-Files at any time, independent of other users. The license is limited in the sense that not all M-Files features are available for use: the user is only able to read but not to create or modify documents.

External Connector license

External Connector licenses enable 3rd party systems to anonymously read M-Files database. The license type is needed for example when M-Files data is published programmatically in an intra- or extranet environment to an unrestricted number of users.

Account is disabled

This function provides an easy way to specify whether the user is allowed to log in to the server or not. This function is useful if you do not want to remove the login account altogether, but to disable it for the time being.

Server roles: System administrator

This role entitles the user to make any changes on the server level. These include *changing the server logins* and *creating and deleting document vaults*. In other words, a system administrator can perform any operation on a document vault.

Import Login Accounts

You can open the *Import Login Accounts* dialog window by right-clicking *Login Accounts* in the tree view and selecting *Import Login Accounts...*

Select the login accounts to be imported according to domain, organizational unit and user group. For more information on importing user groups, refer to [Import User Groups](#) on page 203.

Also select a license type for the new login accounts. For more information about licenses, refer to [License type](#) under [New Login Account](#) on page 175.

Show Logged-in Users

You can server-specifically view the currently logged-in users and their license types.

To view logged-in users on the server:

1. Open M-Files Admin.
2. Select *Login Accounts* on the left-side tree view.

3. Click **Show Logged-in Users** on the task pane.

If necessary, you can also force certain users to log out by selecting the user and clicking **Force Logout** in the **Logged-in Users** dialog. This might be very useful, for instance, when concurrent licenses are used: The operation enables you to force the logout of idle users in order to release the license to be used by someone who actually needs it at the moment. Forcing active users to log out, however, normally does not affect them at all. Active users immediately get a license if available licenses exist.

Note: Displaying the logged-in users and forcing their logout requires you to have administrator rights.

8.7. Applications (M-Files Admin)

You can manage vault-specific client and server applications via M-Files Admin. These applications allow you to modify and extend the behavior of your M-Files Desktop and M-Files Server. This way you can choose to give priority to the functions that are the most important for the efficiency of your organization.

Note: Creating the applications requires advanced programming skills. Instructions for the programming are available from the M-Files technical staff for a separate fee. For more documentation and sample applications, see the guide to [M-Files UI Extensibility Framework](#).

Application types

The application can either be a *client application* or a *server application*.

- Client applications run in M-Files client computers and can affect the behavior of M-Files Desktop.
- Server applications run on the M-Files server computer, and can affect M-Files server behavior.

Installing the applications

Open the vault-specific *Applications* dialog by highlighting a document vault via the left-side tree view and by then selecting **Action > Applications**.

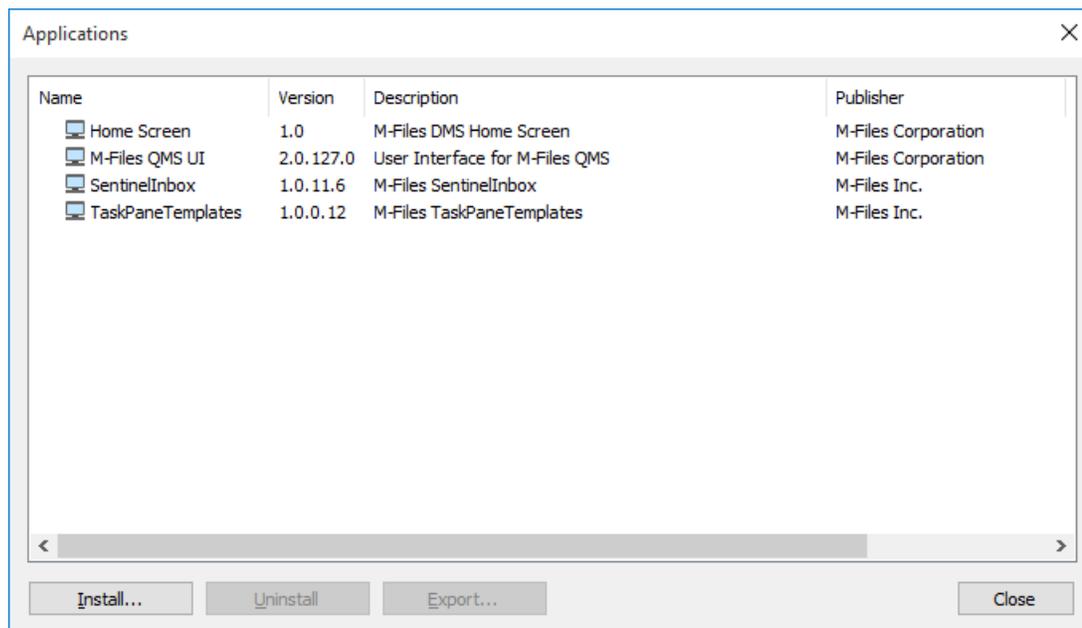


Figure 83: The "Applications" dialog in M-Files Admin.

To install an application, simply click **Install** in the *Applications* dialog, locate the application package and click **Open**. You can also **Uninstall** or **Export** the application.

For information on enabling the applications in M-Files Desktop, see [Applications \(M-Files Desktop\)](#) on page 110.

8.8. Scheduled Jobs

Backups can be made automatic with *Scheduled Jobs*, which you can find at the bottom of the left-side tree structure in M-Files Admin. Backups are saved on the hard drive or a network drive, from which they can be transferred to, for instance, a tape drive. If necessary, backups can be restored with M-Files Admin (see [Restore Document Vault](#) on page 166).

The jobs also include other scheduled tasks, such as the database optimization. The operation performs, for example, database search index maintenance ensuring that document vault access remains fast regardless of the amount of changes made to the data.

New Scheduled Job

To start defining a new scheduled backup job:

1. Select *Scheduled Jobs* from the left-side tree structure in M-Files Admin.
2. Select *New Scheduled Backup Job...* via the task pane.

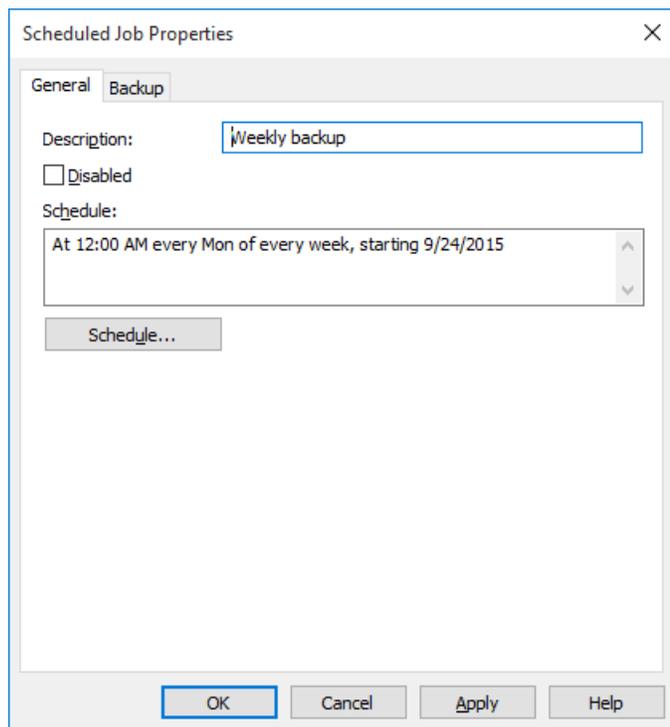


Figure 84: The "Scheduled Job Properties" dialog.

Scheduling a backup job is quite similar to defining a scheduled task in the Windows Control Panel. The **Schedule...** button opens a dialog for defining the job schedule. The *Schedule* text field can be used for a free-form textual description.

If you opened this page via a *New Scheduled Export/Import* dialog, you might be looking for [Content Replication and Archiving](#) on page 285.

Scheduled Backup Jobs

The *Backup* tab of the *Scheduled Job Properties* window enables you to define what needs to be backed up and to which location. You can also specify whether to divide the backup into multiple files and whether to overwrite existing backup files.

▶ Video: [Backups](#)

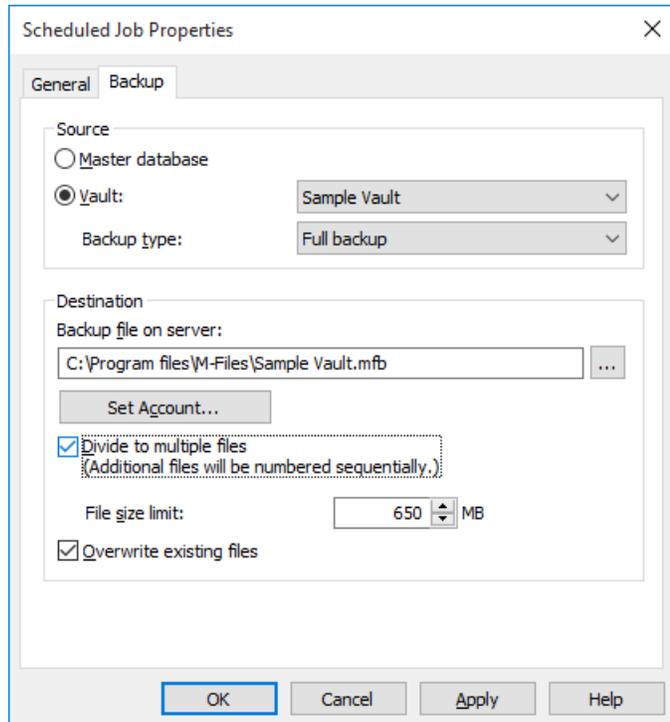


Figure 85: The "Backup" tab of the "Scheduled Job Properties" dialog.

Backup types

Two kinds of backups can be made of document vaults: *full backups* and *differential backups*. Only full backups can be made of the master database.

A full backup is the most complete copy that can be produced with M-Files. It contains, for example, the *history information* of all documents. You cannot make a differential backup if you have not made a full backup first.

To save disk space, full backups should be scheduled to occur less frequently, for instance once a week, and differential backups for example once a day. Be sure to specify backups separately for both the *document vault* and the *master database*.

The differential backup contains all data that has been changed after the last full backup. When restoring a differential backup, you will need the full backup and the files from the last differential backup.

Also refer to [M-Files Server](#) on page 148.

8.9. Electronic Signing and Compliance

Companies using M-Files can manage their documents and processes efficiently and with quality. M-Files can be used for compliance with various specifications, good manufacturing practices, general procedures, and documentation according to standards. Moreover, M-Files provides functions to manage and monitor general documents associated with daily business.

M-Files also meets the special requirements related to records and following various specifications and standards. For example, M-Files complies with the following standards and guidelines: the ISO 9000 series, FDA 21 CFR Part 11, EU GMP Annex 11, HIPAA, and Sarbanes-Oxley. M-Files can also be used to implement TLL-4-compliant data systems (TLL-4 is a data security classification used in public administration and defense forces).

M-Files supports the administration of electronic records and signatures in compliance with FDA 21 CFR Part 11. This involves maintenance of the detailed audit trail of actions performed on the documents, secure monitoring of individual actions, and certification of electronic signatures with usernames.

Activation

The Electronic Signatures module includes the event logging extensions mentioned above and electronic signature functionality. The module is available for a separate fee.

For you to activate the module, an appropriate license code must be activated on your system. The license is provided on a subscription basis. Activate or update the license code in M-Files Admin (for more information, refer to [License Management](#) on page 148). In addition to this, vault-specific properties of the audit trail must be activated (see [Document Vault Advanced Properties](#) on page 161). Electronic signatures are automatically enabled with the license code.

More information

For more information on the Electronic Signatures module related extensions for event logging and electronic signatures, refer to [Event Log](#) on page 277 and [Electronic Signature](#) on page 253.

M-Files can also be used to address other standards, quality management systems, compliance requirements, guidelines, and procedures and processes in different fields. Log entries, audit trails, version history, and electronic signatures form one set of functions that M-Files can offer. To find out how M-Files can support your business by complying with applicable standards and specifications, please contact us at sales@m-files.com.

9. Document Vault Administration

This chapter describes all the available operations and settings available for a single document vault via M-Files Admin.

Note: It is also possible to distribute vault settings via M-Files Server, so that the settings are read from the server when a user logs in and written to the Windows registry of the client computer. For more information, refer to [Distributing Vault-Specific Registry Settings from M-Files Server](#).

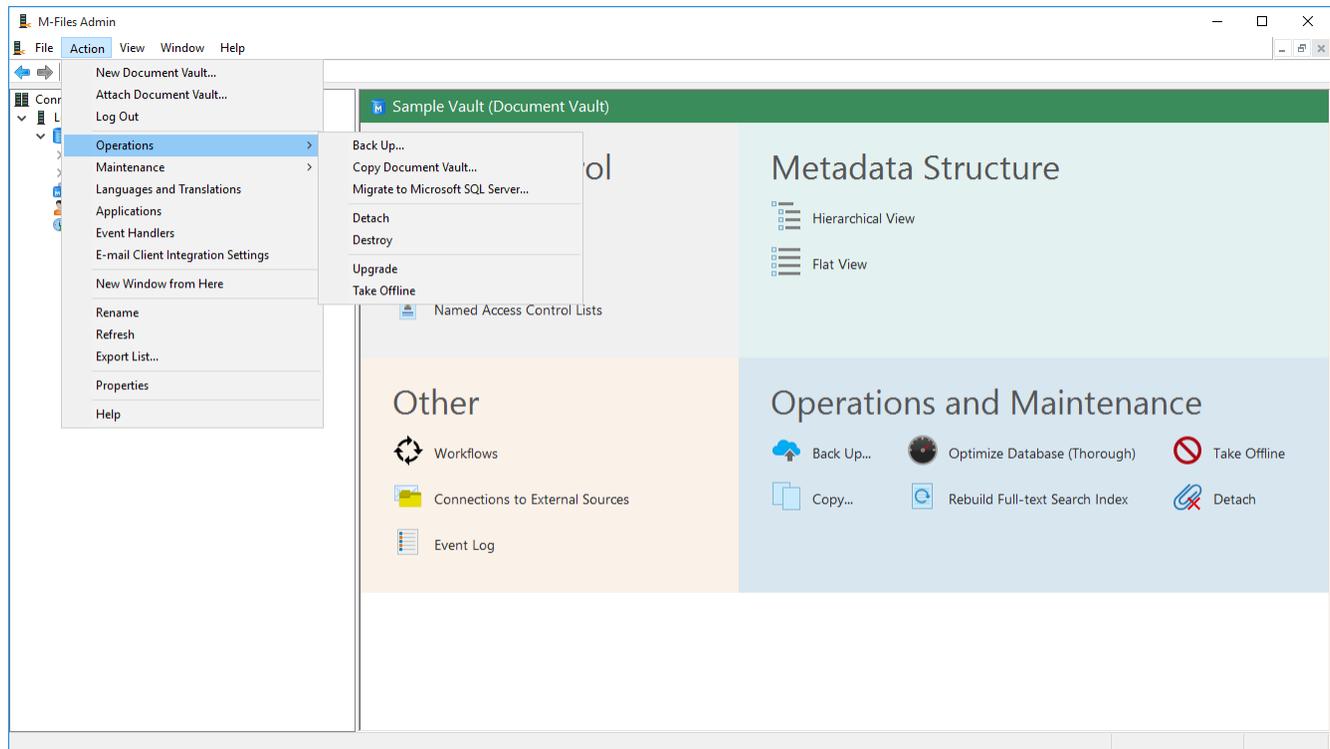


Figure 86: Document vault operations.

9.1. Document Vault Action Menu

There are a number of actions related to document vault management that you can find by highlighting a vault and opening the *Action* menu in M-Files Admin. This chapter offers a description of those actions as well as information on translating M-Files and using the software in a variety of languages.

Creating and Attaching a Document Vault

For information on creating and attaching document vaults, and on document vault properties, refer to [Document Vault Overview](#) on page 160.

Log Out, Log In

You can use the *Action > Log Out* function to log out from the document vault on the server level. When you have logged out from the document vault, the name of this function will change to *Log In*, and you can use it to log in to the document vault on the server level.

Vault Operations

This chapter introduces the various vault actions under the *Operations* menu.

Back Up

This function can be used for backing up the document vault. You can also use this function to add a scheduled backup job. For more information about scheduled backups, refer to [Scheduled Jobs](#) on page 178.

Copy Document Vault

When you copy a document vault, a copy of the original vault will be displayed in both M-Files and on the computer's hard drive, in the same way as when creating a new document vault (see [Document Vault Overview](#) on page 160). You can also just copy parts of the document vault and select these under *Data to copy*.

For example, if you have found the structure of an old document vault useful and want to copy it to a new vault without the actual content, you can easily do this by clicking the **Structure Only** button. This way, you can utilize, for instance, the *Demo Vault* included in the M-Files installation.

Migrate to Microsoft SQL Server

You can easily migrate to Microsoft SQL Server from Firebird with the *Migrate to Microsoft SQL Server...* function. You can only migrate the document vault database engine from Firebird to Microsoft SQL Server; migrating from Microsoft SQL Server to Firebird is not supported.

Detach

You can detach a document vault from the server connection, in which case the data will not be destroyed but will be kept on the computer's hard drive. The *Detach* and *Attach* document vault functions are the opposites of each other. A document vault that has been *detached* can be *attached* back to the M-Files server from the hard drive. For more information on attaching a document vault, refer to [Attach Document Vault](#) on page 166.

Destroy

The *Destroy* function can be used to permanently destroy all data from a document vault. The function naturally does not affect backups located on the hard drive. The document vault can thus be restored if backups have been made.

Upgrade

If the internal database structure of the document vault changes, which usually happens during a software upgrade, the document vault must be upgraded. During a software upgrade, this is done automatically for all the vaults that are in the online state. If the vault is offline during a software upgrade, it can only be used after it has been manually upgraded. To do this, open the vault context menu and select **Upgrade**.

 **Note:** Upgrading a document vault makes it incompatible with older M-Files Server versions.

Take Offline, Bring Online

When you take a document vault offline, M-Files closes the vault. This also closes any open sessions that users may have. Users cannot log in to a document vault that has been taken offline until the vault has been brought back online with the *Bring Online* function.

Vault Maintenance

The *Maintenance* submenu contains functions for verifying and optimizing the integrity of the internal database structure. Additionally, you can rebuild the full-text search index and reset thumbnail images in the vault. Regular vault maintenance ensures high performance even with vaults containing a large number of objects.

 Video: [Vault Maintenance - Optimization](#)

Optimize Database

The *Optimize Database (Thorough)* operation attempts to improve the performance of the vault database by defragmenting indexes, updating database statistics, and compressing the full-text search index.

M-Files automatically runs the *Optimize Database (Thorough)* operation once a week, so you do not normally need to do this yourself at all. If the vault is, however, responding more slowly than usual, you may want to try running the operation. This may happen, for instance, after a large number of objects has been imported to the vault (for instance if the number of objects in a vault using Firebird as the database engine quickly increases from 0 to 10,000 objects).

The operation can be run in the *Quick* mode first, but we recommend using the *Thorough* mode in most cases.

Update encryption status of existing files

Depending on the state of the setting **Enable encryption for file data at rest** in the [Document Vault Advanced Properties](#) on page 161, the **Update encryption status of existing files** does one of the following:

- If the **Enable encryption for file data at rest** has been enabled, all the files in the vault previously not encrypted are now encrypted as well.
- If the **Enable encryption for file data at rest** has been disabled, the encryption of all the encrypted files in the vault is removed.

Rebuild Full-text Search Index

This operation completely rebuilds the full-text search index, and may take up an extensive amount of time in large repositories (with hundreds of thousands of objects and hundreds of gigabytes of data).

We recommend running this operation if you think the search index might be corrupted or if the search operations are more sluggish than usual. In large repositories, especially if the objects get modified a lot, we recommend running this operation twice per year.

Reset Thumbnail Images

You can reset the thumbnail image cache for the vault if you are using the thumbnail view in M-Files Desktop and if the images are not working correctly. This might happen, for instance, after installing a software capable of displaying thumbnails that could not previously be shown.

Verify and Repair

This operation can be used for verifying that the database is intact and that all the data has been saved correctly to M-Files. The *Thorough* mode additionally checks whether the file sizes and the file checksums of the physical files in the vault data server location match those reported by the metadata database.

If errors are found, some of them can be repaired automatically by M-Files, but some errors might need additional user actions. If you have errors that cannot be resolved automatically, and that you cannot fix yourself, please contact our customer support at support@m-files.com.

We recommend running the *Verify and Repair (Thorough)* operation twice per year.

Maintenance recommendations

Here is a short roundup of the recommended maintenance operations:

- The *Optimize Database* operation does not need to be run regularly. It is automatically taken care of by M-Files.
- The *Rebuild Full-text Search Index* operation should be run twice a year for large repositories (with hundreds of thousands of objects and hundreds of gigabytes of data).
- The *Reset Thumbnail Images* operation only needs to be used if the thumbnail images are not working correctly.
- The *Verify and Repair (Thorough)* operation should be run twice a year for all repositories.

Languages and Translations

Changing the software language

M-Files software can be used in several different languages. Changing the language is easy and the change can also be done during use. You can open the *Change Language* dialog by clicking on the M-Files icon on the Windows notification area and by selecting *Settings > Change Language*. M-Files software offers these languages automatically.

If, for example, English is selected as the software language, the following options are displayed in English: *Check Out*, *Check In* and *Workflow*. If Finnish were to be chosen, the same options would be shown in Finnish: *Varaa muokattavaksi*, *Palauta muokkauksesta* and *Työnkulku*.

Additional language versions to those currently supported are available upon separate agreement with M-Files.

Translating the metadata structure

The document vault metadata structure can be translated into different languages. The document vault metadata structure refers to the vault's object types, classes, property definitions, value lists, workflows, etc. The document class titles, such as *Proposal*, *Order* and *Contract*, can be translated into the desired languages.

The company can translate the metadata structure independently or have it translated by a third party. Managing the translation material is easy: the administrator can export the translation material in XML file format. The material can then either be translated in-house or by a professional translation agency. The actual translation process is not dependent on the M-Files Admin or its permissions.

Translating the metadata structure can be particularly beneficial for companies with operations in more than one country, or companies with more than one in-house language. This enables each user to add documents and other objects using the metadata structure in his/her own language. The multilingual metadata structure can also be useful if the company uses several languages for other than geographical reasons.

Different language for software and metadata structure

Besides the M-Files functions, metadata specific to document vaults can be selected and edited in a user-specified language if the metadata structure has also been translated. If the metadata structure has not been translated into the relevant language(s), for instance, from Finnish to English, it can be difficult for the user to understand why some information is displayed in Finnish and some in English. Only users with administrator rights can view and edit the actual content of the metadata structure.

For example, the class *Proposal*, object type *Customer* and property definition *Document date* belong to the metadata structure. If the user has selected Finnish as the software language but the metadata structure has not been translated into Finnish, the user will see these options in English only because they have been added to the metadata structure and titled in English.

Thus, for instance, when creating a new document, some metadata card information will be displayed in Finnish (*Lisää ominaisuus*, *Avaa muokattavaksi* and *Luo*) and some in English (*Proposal*, *Customer* and *Project*). This is because some of the texts, such as *Luo*, are part of the M-Files software that has been already translated into Finnish but the *Proposal* concept in the metadata structure has not yet been translated.

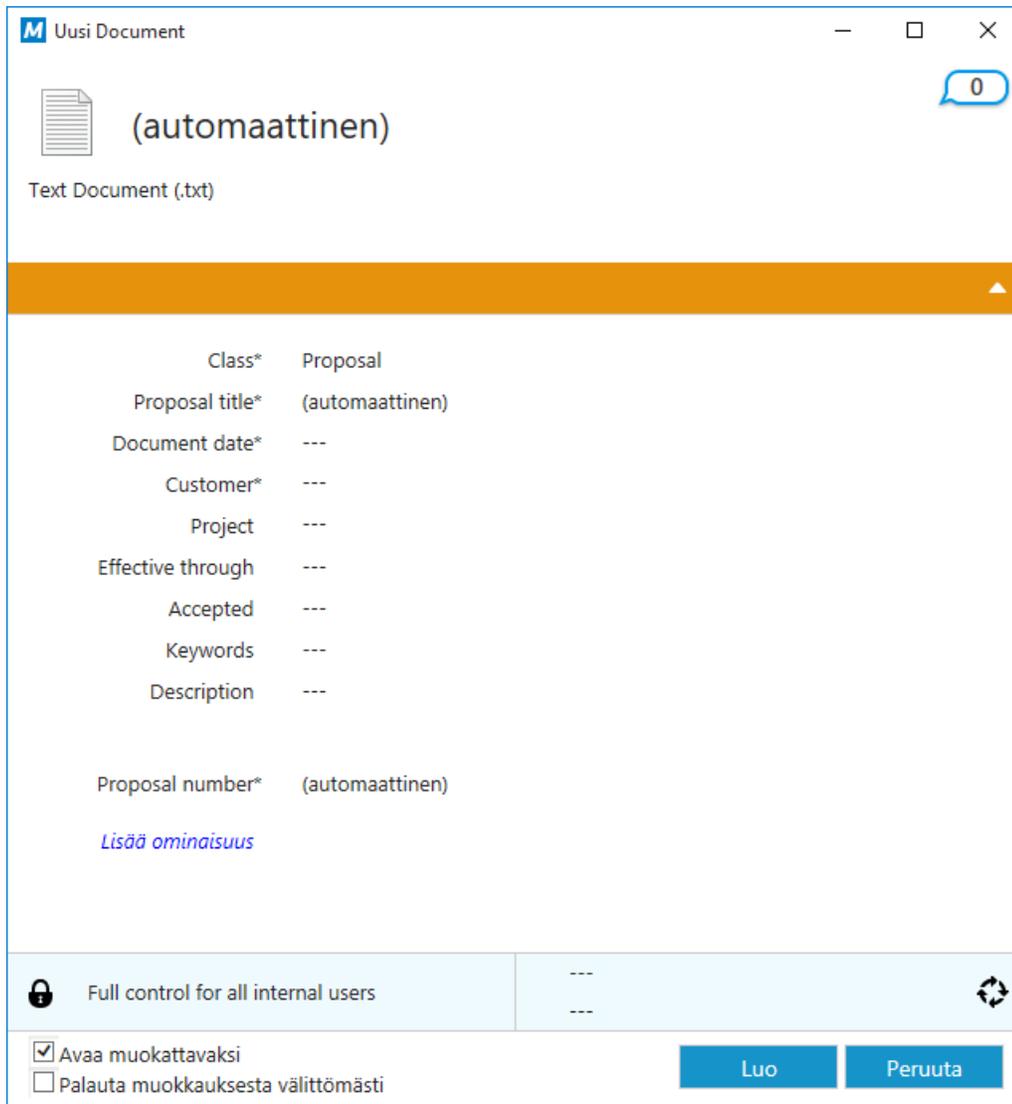


Figure 87: A metadata card containing Finnish and English.

Implementing a Multilingual Metadata Structure

The metadata structure is always specific to the document vault and the vault can have a multilingual metadata structure. For example, the following concepts in metadata structure can be translated into different languages:

- Names of classes and class groups.
- Names of object types.
- Names and values of value lists (for instance meeting types).
- Names of property definitions.
- Names of user groups and named access control lists.
- Names of workflows and their states.
- Names of views.

Note: Names of documents and other objects cannot be translated.

The default setting for value lists is that the contents of the value list is not translated. If you want to translate the contents of the value list, i.e. the values, activate *The contents of this value list can be translated* in the *Advanced* tab of the value list's properties.

Managing vault languages and translations

Languages and translations can be managed via the *Languages and Translations* dialog. Right-click on the desired vault in the left-side tree view of M-Files Admin and select *Languages and Translations* from the context menu.

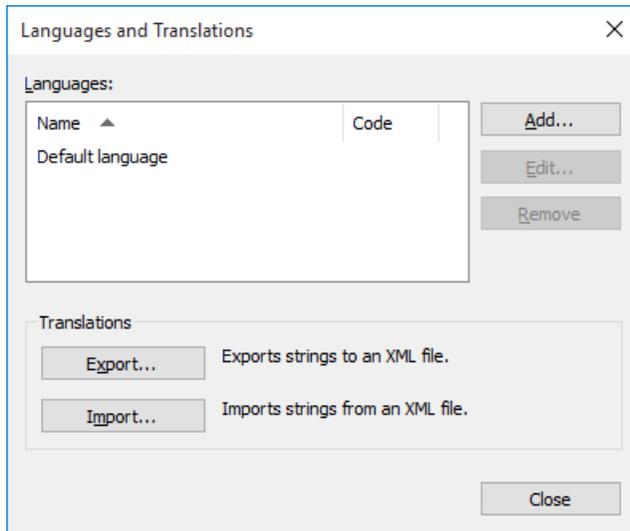


Figure 88: The "Languages and translations" dialog.

With the buttons on the right, you can add, edit and remove translation languages. You can optionally define a code for the translation language.

You can translate in Excel, Word, or a professional translation program, such as SDL Trados or SDL Passolo. In our example, we use Excel due to its ease of use and clarity when translating.

Adding and Exporting Languages

The *Export* function of the *Languages and Translations* dialog can be used to specify the target language of the translation and the format of the material to be translated:

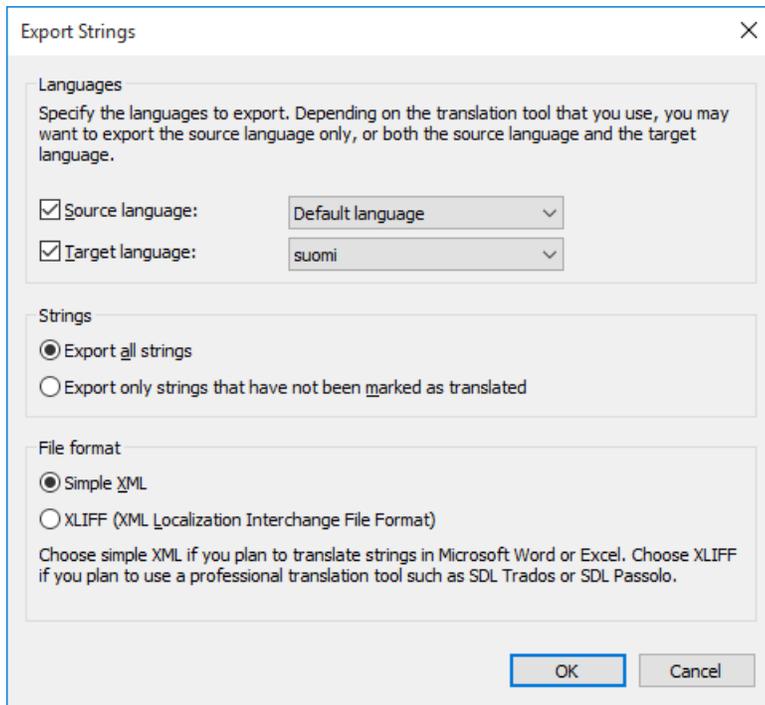


Figure 89: The "Export Strings" dialog.

Languages

Select the *source* and *target* languages. Note that you can translate the metadata structure only one language at a time.

In case you are working in Excel, both the source and target language need to be exported. The source language character strings, i.e. words to translate, are in their specific column and the target language translations are added to a column of their own.

You can also export the source language only. If you are using a translation agency or separate translation software for translating, you should determine the required format for the translation material.

Strings

When commencing the translation process for the first time, select *Export all strings*. A string refers to one concept or a specific attribute in the metadata structure, thus usually, a word or a phrase. Each language has its own strings, i.e. a specific vocabulary for the metadata structure.

You can later use the *Export only strings that have not been marked as translated* option in order to export the new or changed strings only.

File format

The available file formats are *Simple XML* and *XLIFF*.

Select *Simple XML*, if you want to translate the strings in Microsoft Word or Excel. Select *XLIFF*, if you want to use a professional translation tool, such as SDL Trados or SDL Passolo.

Translating in Excel

Translating the metadata structure into the target language in Excel is quite straightforward. Simply open the XML file in Excel: choose the default settings *As an XML table* and *Excel will create a schema based on the XML source data*.

Identifier is the identifier of the concept, i.e. the word or phrase to be translated. For example, an identifier starting with *PropertyDef* indicates that it is a property definition name. *ObjectType* is an object type name and *UserGroup* is a user group name. M-Files creates these identifiers automatically. The translator does not need to pay much attention to these identifiers as such, although they can be helpful pointers when choosing a suitable translation.

The *Source* column contains the concepts to be translated. The *Target* column is empty. The translator enters the translations in this column.

1	identifier	source	target	translated	source-version
2	PropertyDef_0_0_Name	Name or title		0	
3	PropertyDef_20_0_Name	Created		0	
4	PropertyDef_21_0_Name	Last modified		0	
5	PropertyDef_22_0_Name	Single file		0	
6	PropertyDef_23_0_Name	Last modified by		0	
7	PropertyDef_24_0_Name	Status changed		0	
8	PropertyDef_25_0_Name	Created by		0	
9	PropertyDef_27_0_Name	Deleted		0	
10	PropertyDef_28_0_Name	Deleted by		0	
11	PropertyDef_29_0_Name	Version label		0	
12	PropertyDef_30_0_Name	Size on server (this version)		0	
13	PropertyDef_31_0_Name	Size on server (all versions)		0	
14	PropertyDef_32_0_Name	Marked for archiving		0	
15	PropertyDef_33_0_Name	Comment		0	
16	PropertyDef_34_0_Name	Traditional folder		0	
17	PropertyDef_35_0_Name	Created from external location		0	
18	PropertyDef_36_0_Name	Additional classes		0	
19	PropertyDef_37_0_Name	Is template		0	
20	PropertyDef_38_0_Name	Workflow		0	
21	PropertyDef_39_0_Name	Workflow State		0	
22	PropertyDef_40_0_Name	Moved into current state		0	
23	PropertyDef_41_0_Name	Assignment description		0	
24	PropertyDef_42_0_Name	Deadline		0	
25	PropertyDef_43_0_Name	Monitored by		0	
26	PropertyDef_44_0_Name	Assigned to		0	
27	PropertyDef_45_0_Name	Marked as complete by		0	
28	PropertyDef_46_0_Name	Collection members (documents)		0	
29	PropertyDef_47_0_Name	Collection members (document collections)		0	

Figure 90: The exported XML table opened in Excel for translation.

In the above example, a translation from English to the target language has been started. The translation for each source language string is to be placed in the *target* column. When the translation has been added, the *0* in the *translated* column should be replaced with *1*. This tells M-Files that the strings has been translated.

Importing Translations to M-Files

When translating in Excel, the string can be marked as translated by changing the cell value of the *translated* column from *0* to *1*. However, if the *Import all strings* option is selected when re-importing the translation back to M-Files, all strings are imported to M-Files regardless of whether the value of the *translated* column.

If you only want to import the strings marked as translated, select the *Import only strings that have been marked as translated* option. This way, only the strings with the value *1* in the *translated* column are imported to M-Files. For example, if new additions are made to the source language at a later stage, this selection can be used to import only the translations of the new additions to M-Files.

If changes are made in the source language, this version data can be found in the *source-version* column of the exported XML file: when changes are made to the source language string, the value of this string cell is always

increased by one. The target language translation must then be checked and changed to correspond to the change in the source language.

Also, if the values of the translated strings in the *translated* column have previously been changed to *1*, they will be reset to *0* if changes are made to the source language of these strings. For this reason, it is recommended to instruct the translator to mark the translated and accepted translations as translated, after which the value *1* indicates that the target language translations are up to date.

To import the translation back to M-Files from Excel, save the translated XML file in Excel in *XML Data* format. You can then import the file to M-Files using the *Import* function of the *Languages and Translations* dialog. It is alright for the file to have different name when importing and exporting.

Importing a translation to M-Files is quite straightforward. Just select the appropriate target language and whether you want to import all the strings or just the ones marked as translated.

After importing, M-Files asks if you want to rebuild the *full-text search index* for the metadata. Edited translations cannot be used in searches until the search index is rebuilt. This may take several minutes or even hours depending on the number of objects in the document vault.

Selecting the Software and Vault Language

Users can change both the *software language* and *vault language* via M-Files Desktop (press *Alt* and select *Settings > Change Language...*). The software language selection is integrated in the software. The *vault language* refers to the metadata structure language, as the metadata structure is always specific to the document vault. The language selection contains all languages that the document vault has been translated into.

Administrators can also change the user-specific default vault language via the *Properties* dialog of each M-Files user object. This can be any of the vault languages. If the user nor the administrator do not specifically change the vault language, M-Files will use the vault source language as the default.

If 1) the software installation language, 2) the vault language, and 3) the Windows display language are the same, all the M-Files functions and the metadata structure of the document vault are displayed in the language in question.

 **Note:** If the user adds a new value to the value list, the new value (concept) will be added to the original metadata structure, i.e. source language contents, regardless of the user's vault language. For example, a user with Finnish as the vault language, can add a new value *LVI-piirustus* to the value list *Drawing Types/Piirustustyyppit*. If the source language was English, the new Finnish value "*LVI-piirustus*" is displayed among the English values: "*Architectural, LVI-piirustus, Mechanical, Services*, etc. The name of this value can be changed in *Value List Properties* to correspond the source language, after which it can be re-translated into Finnish. Common views can be named in the same way according to the text added by the user, regardless of the source language.

 **Note:** If the metadata structure is translated into several languages, the software or the vault language selected by the user does not affect the search results. For example, if the user has selected Finnish as the language and added a document to class *Hinnasto*, the document in question is included in the search results when using the search criterion *Price List*. However, then the concepts *Price List* and *Hinnasto* must be translations of each other, i.e. different translations of the same concept.

Event Handlers

With *Event handlers* you can define different operations that are performed when editing objects. The operations are specified using variables, generic features of VBScript, and M-Files API.

You can create and edit event handlers in M-Files Admin: Activate the document vault that you want to define event handlers for. You can then find the event handlers in the *Action* menu or by right-clicking the vault. You can add several different operations to the same event handler by naming them separately.

Examples of event handler use

- Object permissions can be set to change automatically when the object properties (metadata) are changed.

- When adding a new project, add certain basic documents to it via a pre-defined project model.
- Save certain Word documents always as PDFs, so that when a Word file is checked in, it is always saved in PDF format as well in the server.
- Data related to photos, such as date and image size, can be automatically added to the metadata of the photo document.
- If the user adds a new value to the value list, the event handler can be used to check that the added value is entered correctly.
- Login to M-Files can be prevented outside working hours, for instance during night time and weekends.
- Downloading of certain files can be monitored, downloading of large numbers of files can be prevented, or an alarm of suspicious downloads can be sent to the administrator.

 **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

Example

When creating a new object, the event handler can be used to check, for example, whether the document vault already contains an object with that title. If it does, the user receives an error message. In this case, the VBScript code follows the following format (the example only in English):

```
' The ID of the title property.
Dim titleProperty
titleProperty = MFBuiltInPropertyDefNameOrTitle
' Find the title property of the current object.
Dim currentTitleProp
currentTitleProp = PropertyValues.SearchForProperty(titleProperty)
' Get the title of the object.
Dim currentTitle
currentTitle = currentTitleProp.Value
' Search for objects on the basis of title.
Dim titleSearch
Set titleSearch = CreateObject("MFilesAPI.SearchCondition")
Dim titleExpression
Set titleExpression = CreateObject("MFilesAPI.Expression")
titleExpression.SetPropertyValueExpression titleProperty,
MFParentChildBehaviorNone, Nothing
Dim titleTypedValue
Set titleTypedValue = CreateObject("MFilesAPI.TypedValue")
titleTypedValue.SetValue MFDatatypeText, currentTitle
titleSearch.Set titleExpression, MFConditionTypeEqual, titleTypedValue
Dim SearchResults
```

```

Set SearchResults =
Vault.ObjectSearchOperations.SearchForObjectsByCondition(titleSearch, false)
' If an existing object with the same title was found, raise an error.
If SearchResults.Count > 1 Then
Err.Raise MFScriptCancel, _
"The document vault already contains an object with the same title."
End if

```

Available Event Handlers

Below you can find the available event handlers, with their variables and explanations. For more information about variables, refer to [VBScript Variables Explained](#) on page 304.

[Document vault event handlers](#) on page 191

[Server event handlers](#) on page 198

Document vault event handlers

BeforeSetProperties and AfterSetProperties	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, PropertyValues, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when the property values of the object stored in the document vault are re-set. Properties can be inspected during <code>BeforeSetProperties</code> before they are set. It is not, however, recommended to modify properties during <code>BeforeSetProperties</code> as they may be overwritten after the event handler has been executed. Properties, on the other hand, can be modified during the <code>AfterSetProperties</code> event.
BeforeCreateNewObjectFinalize and AfterCreateNewObjectFinalize	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, PropertyValues, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when a new object is created in the document vault, regardless of whether the new object has been checked in or not. When executing the <code>AfterCreateNewObjectFinalize</code> event handler, the object may have already been checked in. For this reason, the metadata or files can no longer be modified during operation of the event handler, and thus the event handler is only suitable for validating changes.
BeforeCancelCreateObject and AfterCancelCreateObject	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID

BeforeCancelCreateObject and AfterCancelCreateObject	
Execution	The event handlers are executed when an object which has never been checked in is removed from the document vault. The execution takes place, for instance, when the user performs the "Undo Checkout" function on the object or removes the object from the document vault.

BeforeCheckInChanges and AfterCheckInChanges	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when the user checks the object in. The event handlers are not executed if the object was not modified, in which case the <code>BeforeCancelCheckOut</code> and <code>AfterCancelCheckOut</code> event handlers are executed. It is still possible to modify the object during <code>BeforeCheckInChanges</code> . These event handlers are also executed when the user creates a new object with the Check in immediately option unchecked, and checks in the object without making any changes to the file. These event handlers are not executed when a new object is created with the Check in immediately option enabled. During the execution of the <code>AfterCheckInChanges</code> event handler, the object can no longer be modified as the object has already been checked in, and thus the event handler is only suitable for validating changes.

BeforeCancelCheckOut and AfterCancelCheckOut	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when modifications of a checked out object are undone using, for example, the "Undo Checkout" function. The event handlers are also executed if the object is checked in without any modifications. During execution of the <code>AfterCancelCheckOut</code> event handler, the object cannot be modified as the object is no longer checked out.

BeforeCheckOut and AfterCheckOut	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when a document vault object is checked out. During execution of the <code>BeforeCheckOut</code> event handler, the object has not been checked out, so the object cannot be modified.

BeforeDeleteObject and AfterDeleteObject	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when an object is marked as deleted.

BeforeDestroyObject and AfterDestroyObject	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when an object is destroyed from the document vault.

BeforeDestroyObjectVersion and AfterDestroyObjectVersion	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when an individual version of the object is destroyed from the document vault.

BeforeSetObjectPermissions and AfterSetObjectPermissions	
Variables	ObjectAccessControlList, ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when the object permissions are changed.

BeforeFileUpload	
Variables	FileTransferSessionID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is executed when the user starts a file transfer to the M-Files Server.

AfterFileUpload	
Variables	FileTransferSessionID, FileVer, ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is executed when the file transfer to the server is completed.

BeforeFileDownload and AfterFileDownload	
Variables	FileTransferSessionID, ObjID, FileVer, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID

BeforeFileDownload and AfterFileDownload	
Execution	The event handlers are executed when the user loads the file from the M-Files Server to the client machine's local cache. If necessary, these event handlers can be used to prevent transfer of certain files to the users' machines.

BeforeCreateNewValueListItem and AfterCreateNewValueListItem	
Variables	ValueListItem, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are executed when new values are added to a certain value list of the document vault. These event handlers can be used to, for example, ensure that all values entered in the value list are in a specified form as desired.

BeforeLoginToVault	
Variables	LoginAccount, Vault, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is executed immediately prior to logging in of the user to the document vault. At this stage, the user has already been identified against M-Files Server, so the event handler is not executed, for instance, if a user who attempts to log in does not have a login account on the server.

AfterLoginToVault	
Variables	LoginAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is executed when the user has successfully logged in to the document vault.

BeforeLogoutFromVault	
Variables	Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is executed immediately before the user is logged out of the document vault. The logout cannot be interrupted during this event handler. The client software does not react to any error messages received from this event handler.

AfterLogoutFromVault	
Variables	LoggedOutUserID, Vault, VaultSharedVariables, SavepointVariables, TransactionCache, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID

AfterLogoutFromVault	
Execution	The event handler is executed when the user has been logged out of the document vault. The logout cannot be interrupted during this event handler. The client software does not react to any error messages received from this event handler.

Replication: AfterCheckInChanges	
Variables	RestoredVersions, Vault, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, ObjVer, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handlers are invoked when new versions are imported to the existing object from the content package or when a conflict between two objects is resolved in favor of the source-vault version. When the <code>AfterCheckInChanges</code> event handler is invoked, the object has already been checked in. For this reason, the metadata or files can no longer be modified during operation of the event handler.

Replication: AfterCreateNewObjectFinalize	
Variables	RestoredVersions, Vault, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, ObjVer, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is invoked when a new object is imported to the document vault from the content package. On invoking of the <code>AfterCreateNewObjectFinalize</code> event handler, the object has already been checked in. For this reason, the metadata or files can no longer be modified during operation of the event handler.

VaultExtensionMethod	
Variables	Input, Output, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event handler is invoked explicitly by the client (the so-called vault extension method).

BeforeCreateLoginAccount and AfterCreateLoginAccount	
Variables	LoginAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	<code>BeforeCreateLoginAccount</code> : an event that is triggered for all online vaults before a login account is created on the server. An exception in the event does not prevent the operation to be executed. <code>AfterCreateLoginAccount</code> : an event that is triggered for all online vaults after a login account is created on the server.

BeforeModifyLoginAccount and AfterModifyLoginAccount	
Variables	LoginAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel,

BeforeModifyLoginAccount and AfterModifyLoginAccount	
	GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	BeforeModifyLoginAccount: an event that is triggered for all online vaults before a login account is modified on the server. An exception in the event does not prevent the operation to be executed. AfterModifyLoginAccount: an event that is triggered for all online vaults after a login account is modified on the server.

BeforeRemoveLoginAccount and AfterRemoveLoginAccount	
Variables	LoginAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	BeforeRemoveLoginAccount: an event that is triggered for all online vaults before a login account is removed from the server. An exception in the event does not prevent the operation to be executed. AfterRemoveLoginAccount: an event that is triggered for all online vaults after a login account is removed from the server.

BeforeCreateUserAccount and AfterCreateUserAccount	
Variables	UserAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The BeforeCreateUserAccount event is triggered for all online vaults before a user account is created on the server. The AfterCreateUserAccount event is, in turn, executed for all online vaults after a user account is created.

BeforeModifyUserAccount and AfterModifyUserAccount	
Variables	UserAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The BeforeModifyUserAccount event is triggered for all online vaults before a user account is modified on the server. The AfterModifyUserAccount event is, in turn, executed for all online vaults after the modification.

BeforeRemoveUserAccount and AfterRemoveUserAccount	
Variables	UserAccount, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The BeforeRemoveUserAccount event is triggered for all online vaults before a user account is removed from the server. The AfterRemoveUserAccount event is, in turn, executed for all online vaults after the removal.

BeforeCreateUserGroup and AfterCreateUserGroup	
Variables	UserGroupAdmin, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The <code>BeforeCreateUserGroup</code> event is triggered for all online vaults before a user group is created on the server. The <code>AfterCreateUserGroup</code> event is, in turn, executed for all online vaults after the user group is created.

BeforeModifyUserGroup and AfterModifyUserGroup	
Variables	UserGroupAdmin, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The <code>BeforeModifyUserGroup</code> event is triggered for all online vaults before a user group is modified on the server. The <code>AfterModifyUserGroup</code> event is, in turn, executed for all online vaults after the modification.

BeforeRemoveUserGroup and AfterRemoveUserGroup	
Variables	UserGroupAdmin, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The <code>BeforeRemoveUserGroup</code> event is triggered for all online vaults before a user group is removed from the server. The <code>AfterRemoveUserGroup</code> event is, in turn, executed for all online vaults after the removal.

AfterBringOnline and BeforeTakeOffline	
Variables	Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The <code>AfterBringOnline</code> event is triggered after the vault is brought online. The <code>BeforeTakeOffline</code> event, in turn, is executed before the vault is taken offline. An exception in any of the two event handlers does not prevent the online/offline transition.

AfterCheckInChangesFinalize	
Variables	ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	The event is triggered when an object has been completely checked in (or when an object is immediately checked in after it has been created) after all the operations occurring after the check-in, such as any automatic state transitions, have been completed.

Server event handlers

BeforeRunScheduledJob and AfterRunScheduledJob	
Variables	MFScriptCancel, CurrentUserID, ScheduledJob, ScheduledJobOutputInfo, CurrentUserSessionInfo, GetExtensionObject
Execution	The event handler is executed when one of the timed jobs of the server is performed. These event handlers can be used to automatically monitor the execution of the automatically timed jobs. In case of error, the event handler can automatically send an e-mail notification to the administrator to facilitate resolution of the problem.

BeforeCreateLoginAccount and AfterCreateLoginAccount	
Variables	LoginAccount, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	BeforeCreateLoginAccount: an event that is triggered before a login account is created on the server. AfterCreateLoginAccount: an event that is triggered after a login account is created on the server.

BeforeModifyLoginAccount and AfterModifyLoginAccount	
Variables	LoginAccount, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	BeforeModifyLoginAccount: an event that is triggered before a login account is modified on the server. AfterModifyLoginAccount: an event that is triggered after a login account is modified on the server.

BeforeRemoveLoginAccount and AfterRemoveLoginAccount	
Variables	LoginAccount, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID
Execution	BeforeRemoveLoginAccount: an event that is triggered before a login account is removed from the server. AfterRemoveLoginAccount: an event that is triggered after a login account is removed from the server.

9.2. Users

Under *Users*, you can add users to the document vault, thus assigning a name to the user and specifying the user's permissions. Each user object is based on a *server login account* (see [Login Accounts](#) on page 174).

M-Files assigns each user a unique ID, which can be found via the user's properties in M-Files Admin.

New User

Start creating a new user by selecting *Users* in the left-side tree view of M-Files Admin and by clicking the *New User...* link on the *Users* window's task pane.

The *User Properties* dialog enables you to specify the properties for a new user of the document vault. The properties determine the user's permissions to the documents and to the document vault itself.

▶ Video: [Configure User Properties](#)

Figure 91: The "User Properties" dialog.

Login account, full name, and vault language

The login account name created can be selected from the pull-down menu, and the user's full name can be specified in the *Full name* field. Refer to [New Login Account](#) on page 175. The vault language defines which of the available vault language versions is to be displayed to the user.

User account is disabled

When the account is disabled, the user cannot use the document vault. Logging in to the document vault has been disabled, but the user information will be kept. The account can be easily enabled again with this function when necessary. For example, you may want an employee's account to be disabled during his vacation for data security reasons.

User cannot create documents or other objects

The user cannot create documents or other objects in the vault but can, for example, read them if provided with the necessary permissions.

User cannot create or modify traditional folders

The user cannot create traditional folders in the vault or modify existing traditional folders.

External user

Users can be grouped into external and internal users. A user can be defined to be an external user by choosing the *External user* option. External users cannot see or access any documents other than those specifically marked for them. By default, they do not have permissions to view any documents. For example, you can define your customers as external users and grant them access to customer-specific documents in the document vault.

As stated above, external users do not, by default, have permissions for accessing any documents. To share a document with an external user, access must be expressly granted in the Permissions of that document.

Full control of vault

With this option, the user is assigned all *administrative permissions* in the vault, which are detailed below.

See and read all objects (including deleted ones)

Regardless of the permissions specified for a document or object, a user with this permission can *see and read all objects*, including deleted ones.

See and undelete deleted objects

The permission to restore documents and other objects marked as deleted.

Destroy objects

The permission to permanently destroy objects.

Force undo checkout

A user with this permission can undo the *checkout* made by another user. For example, if a user has forgotten to check in a document that others should be able to edit, a user with this permission can check in the document. In this case, the changes made to the document during the checkout will not be saved on the server.

Change permissions for all objects

The permission to change the permissions for any document or object. You can edit the permissions for an object, for instance, remove the write permission to a document from other users. A user with this permission can handle documents to which he would not be entitled according to the permission settings for the document.

Change metadata structure

The permission to modify document vault metadata, such as add new document classes or value lists. For example, if you want to change the *Invoice* document class so that the *Project* property field must be filled in for each invoice, you can make the change if you have this permission. Even if the user does not have the permission to do this, the user can still add new metadata fields to individual objects using the metadata card.

Manage workflows

This permission enables the user to create, edit and delete workflows in M-Files Admin.

Manage user accounts

Permission to manage the login accounts in the document vault. With this permission, you can, for instance, add or remove users from the document vault.

Manage common views and notification rules

The permission to manage the document vault views and notification rules. With this permission, you can, among other operations, create a document vault view visible to all users. You can also define common notification rules. Common views and notifications are created via M-Files Desktop.

Permissions

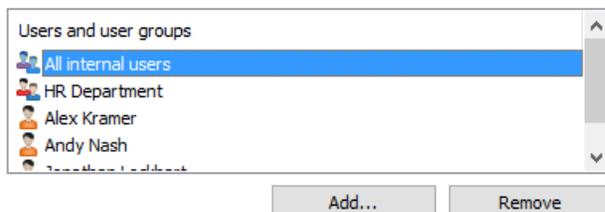
The *Permissions* tab enables you to specify who may see this user.

 **Note:** The system administrator and all users with full control of the document vault in question always see all users.

 Video: [Configure Vault User Visibility](#)

Adjusting Permissions

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight the appropriate node or subnode of the vault and select the desired item from the list on the right.
5. Right-click the item and select **Properties** from the context menu.
6. Go to the **Permissions** tab.
7. From the **Users and user groups** list, select the user or user group whose permissions you want to adjust.



 If the user or user group is not on the list, click **Add...** to add the user or user group to the list.

8. Either:
 - a. Check the **Allow** check box to allow the selected user to see this item.
 - or
 - b. Check the **Deny** check box to deny the selected user from seeing this item.
9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.
10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

Import Users

The *Import Users* feature allows you to import users from domain to M-Files. Select a user group and the users to be imported. Also select a license type for the new login accounts. For more information about licenses, refer to [License types](#) on page 150.

You can use the **Include users from nested groups** option to control whether you want the list to include users from the subgroups of the selected user group.

9.3. User Groups

User groups can be managed by selecting the *User Groups* heading in the left-side tree view of M-Files Admin.

You can create, edit, remove and import user groups to your vault. Creating user groups makes it easier to specify permissions for documents. You can combine individual users into user groups with a certain common feature, such as their position in the organization (management, research & development, etc.).

New User Group

Start creating a new user group by selecting the *User Groups* heading in the left-side tree view of M-Files Admin and by clicking the *New User Group...* link on the *User Groups* window's task pane.

You need to assign a name to the group and use the **Add...** and **Remove** buttons to manage the members of the group. You may also want to retrieve the users using a domain of your choosing (see [Import User Groups](#) on page 203).

On the *Advanced* tab, you can specify the alias for the User Group. For more information, refer to [Associating the Metadata Definitions](#) on page 168.

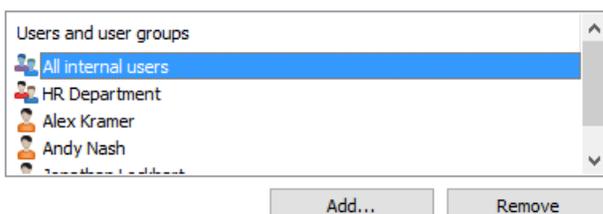
Permissions

The *Permissions* tab enables you to specify who may see this user group.

Note: The system administrator and all users with full control of the document vault in question always see all user groups.

Adjusting Permissions

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight the appropriate node or subnode of the vault and select the desired item from the list on the right.
5. Right-click the item and select **Properties** from the context menu.
6. Go to the **Permissions** tab.
7. From the **Users and user groups** list, select the user or user group whose permissions you want to adjust.



i If the user or user group is not on the list, click **Add...** to add the user or user group to the list.

8. Either:

a. Check the **Allow** check box to allow the selected user to see this item.

or

b. Check the **Deny** check box to deny the selected user from seeing this item.

9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.

10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

Import User Groups

The *Import User Groups* feature allows you to import user groups to M-Files. To open the dialog, select the *User Groups* section under your document vault in the tree-view of M-Files Admin and click **Import User Group...**

User groups can be imported by domain and by organizational unit. This makes importing user groups into M-Files quicker and easier. M-Files can check for new and deleted user group members periodically.

Importing user groups by domain and organizational unit

Select the user group by domain and organizational unit. Also select a license type for the new login accounts. For more information about licenses, refer to *License type* under [New Login Account](#) on page 175.

You can use the **Include users from nested groups** option to control whether you want to also import subgroups of the selected user group.

You can also have M-Files check for new and deleted members of the group every 15 minutes. Otherwise, M-Files checks for changes with the *Refresh Now* action found in an imported domain user group's context menu.

Importing a user group from a changed domain user group

The imported domain user group can also be disabled or edited.

For example, if the domain user group changes (it is for instance renamed or the grouping is changed), the earlier M-Files user group can be merged with the new domain user group. This preserves the identity of the M-Files user group regardless of changes in the domain user group, and the permissions related to it can remain the same.

In the properties of the user group, enable *Group members are synchronized from the domain* and click **Define...** Then edit the information for the user group to be imported.

Users in synchronized Active Directory groups

When new users are added to Active Directory (AD) groups that are synchronized to M-Files:

- The users are added as vault users to the vault in which the user group is located.
- If the added users do not yet have M-Files login accounts, new login accounts are automatically created for the users and the license specified in the synchronization settings is applied to the new login accounts.
- No changes are made to existing M-Files login accounts. If users have been assigned concurrent licenses, and they are added to a group for which named licenses are specified, the users retain their concurrent licenses.

When users are removed from AD groups that are synchronized to M-Files:

- The users are removed from the user group in M-Files, losing all permissions that were granted to them through the group membership.
- No other changes are made. The users retain their access to the document vault and their login accounts remain active, keeping the licenses assigned to them.

9.4. Metadata Structure

M-Files Admin enables you to modify the document vault's metadata elements, such as *object types*, *value lists*, *property definitions* and *classes*. Classes can also further be categorized into *class groups*. The document and object metadata is utilized almost everywhere in M-Files, such as in views and search functions, so the purpose of the metadata should be studied carefully.

You can browse the metadata structure either as a hierarchical view or as a flat view.

▶ Video: [Metadata Structure](#)

Object Types

M-Files uses object types to define the objects to be stored. Built-in object types include *documents* and *document collections*, but depending on the needs of the organization, you can also define object types like *customer*, *contact*, *project*, etc. in the document vault. They can then be managed via M-Files, storing the change history of these objects as well.

▶ Video: [Objects](#)

Besides versioning, M-Files enables sorting in dynamic views, protection against concurrent editing, easy-to-use permissions functionality, and extremely versatile search capabilities for all objects.

The metadata card is provided both for documents as well as for other object types. Other object types differ from documents in that they need not contain any files whereas documents are always based on at least one file (such as a Word document).

New Object Type

New object types are created in M-Files Admin. Highlight *Object types* in the left-side tree view and select *New object type...* from the task menu.

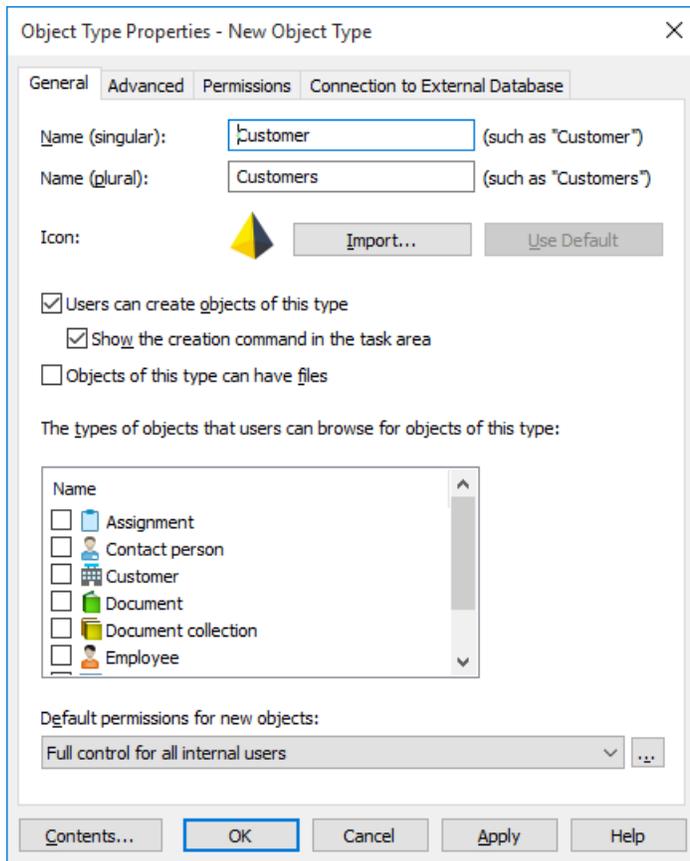


Figure 92: The "New Object Type" dialog.

Name (singular)

Give the object type a name (for instance *Customer*).

Name (plural)

Give a name to the value list that lists all the objects of this object type. The name of the value list is usually the plural form of the object type name (for instance *Customers*).

Icon

Select or import an icon for the object type by using the **Import...** button or go back to the standard icon with the **Use Default** button.

Users can create objects of this type

Select whether users will be able to create new objects of this type via M-Files Desktop.

Objects of this type can have files

You can determine whether users will be able to incorporate files with the object type. Some objects types, such as a document collection, do not contain files but instead consist of other objects.

The types of objects that users can browse for objects of this type

Objects frequently have relationships with other objects; for example, a document is often attached to a project or a customer. The objects related to the current object can be viewed by means of the *Browse Relationships* function in M-Files Desktop.

With the *The types of objects that users can browse for objects of this type* function, the objects available for use with the selected object type can be specified. For example, if the object type *Projects* is selected for use with the Customer object type, selecting the customer in M-Files Desktop and using the *Browse Relationships* function displays a list of all projects attached to the customer in question.

-  **Note:** These object types have not been specified in the default settings, since related objects can easily be browsed in the listing view. In other words, this setting should be used in special cases only.
-  **Note:** This setting does not affect the related objects displayed in the listing view (search result or view), which have been grouped below the main object by object type.

Default permissions for new objects

You can specify the default permission for new objects by type. When you create an object of this type, the new object is given these default permissions.

Advanced

Object type hierarchy

Object types can have hierarchical relationships. For example, the relationship between a customer company and its contact person can be defined so that the *Contact Person* object type is a subtype of the *Customer* object type. Viewing the value list for the Customer object type also displays the contact persons filtered by customer. You can also, for example, define the properties *Buyer* and *Buyer contact*, in which case the contact person selection is filtered into the *Customer (Buyer)* field by selected customer.

Use the **Add...** and **Remove** buttons to add and remove subtypes. You can also define the object type being edited as a subtype of another object type.

For more information, refer to [Value Lists/Contents](#) on page 213.

-  **Note:** You cannot define an internal hierarchy for an object type.

Default for automatic permissions

The actual final object receives automatic permissions when a value with automatic permissions specified is added for the object.

You can activate the automatic permissions by value, value list, object type or class. You can specify the automatic permissions for each object type in the same way as for each value.

-  **Note:** The value-specific settings always have priority over the settings made at value list and object type level. For more information, see [Automatic Permissions](#) on page 215.

Aliases

Aliases can be used for identifying semantically equivalent metadata. For example, when importing objects from another vault, their *Date* and *Description* properties can be mapped to the target vault's equivalent properties on the basis of aliases even if the properties' internal IDs and/or names are different. That is, the aliases refer to semantically equivalent metadata in different vaults, or in other words, alias is a common ID for the same metadata definition between several vaults.

The alias is defined as a common ID with the same name in both source and target vault.

When defining the alias, you can use various external data type and archive standards, such as SÄHKE2, MoReq2, and Dublin Core.

For more information, see [Associating the Metadata Definitions](#) on page 168.

Permissions

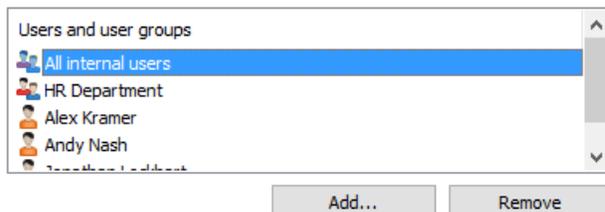
Access for viewing this object type and creating objects of this type can be defined on the *Permissions* tab.

If the user does not have the permission to view the name of the object type, it is not available for selection in M-Files Desktop (for example when you are creating a new object or search). Even if the object type name is hidden, the user can see the objects themselves in views or search results, for example.

If you cannot see the object type name, you do not have the permission to create objects of this type either. However, the user may have the permission to see the name without having permission to create new objects.

Adjusting Permissions

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight the appropriate node or subnode of the vault and select the desired item from the list on the right.
5. Right-click the item and select **Properties** from the context menu.
6. Go to the **Permissions** tab.
7. From the **Users and user groups** list, select the user or user group whose permissions you want to adjust.



- i If the user or user group is not on the list, click **Add...** to add the user or user group to the list.

8. Either:
 - a. Check the **Allow** check box to allow the selected user to see this item.
 - or
 - b. Check the **Deny** check box to deny the selected user from seeing this item.
9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.
10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

Connection to External Database

On the *Connection to External Database* tab you can define the object type to use a connection to an external database.

- Note:** Normally, external object types can only be added or modified with login accounts having the "System administrator" server role. In addition, vault users having the rights "Full control of vault" or "Change metadata structure" can be configured to have access to modifying and adding external object types. Please ask our customer support for additional information.
- Note:** When using M-Files API, it is advisable to use internal IDs instead of display IDs for referring to objects that reside in an external database. This is because the display ID and internal ID are usually different for an object that has been imported from an external database. The internal ID of an object is always unique.

Object Type Properties - New Object Type

General Advanced Permissions **Connection to External Database**

Use a connection to an external database to import and modify objects that reside in the external database.

OLE DB connection string (from server):
 Define... ?

SELECT statement:
 ?

Columns: Refresh Columns

Source Column	Target Property	Update	Insert

If you want to allow users to modify the data in the external database from within M-Files, specify the SQL statements that M-Files Server can use to create, modify, or delete records in the external database:

UPDATE statement for modifying an existing record:
 Default ?

INSERT INTO statement for creating a new record:
 Default ?

SELECT statement for getting the ID of the new record after insertion:
 Default ?

DELETE statement for deleting a record:
 Default ?

Disabled

Contents... OK Cancel Apply Help

Figure 93: The "Connection to External Database" tab of the "New Object Type" dialog.

▶ Video: [Importing from Databases](#)

Use a connection to an external database to import and modify objects that reside in the external database

To import and edit objects in an external database, establish a connection to it. M-Files can be configured to connect to, for instance, the company customer database.

OLE DB connection string (from server)

M-Files Server uses the connection definition to establish an *OLE DB* connection to an external database. The syntax of the connection definition depends on the OLE DB supplier used to establish the connection to the external database. If Open Database Connectivity (*ODBC*) is required to establish a connection, the data store has to be accessed over OLE DB and ODBC. The specific connection definition depends on the database.

Note that for technical reasons, M-Files Admin displays those OLE DB providers that are available on the computer running M-Files Admin. However, the M-Files server can reside on a different host. Ensure that the selected OLE DB connection definition works from the M-Files server.

Provider recommendations

Database	Provider
MS SQL Server	Microsoft OLE DB Provider for SQL Server.
Access	Microsoft JET OLE DB Provider.
Excel	<p>Microsoft JET OLE DB Provider. Also, set Extended Properties to "Excel 8.0;".</p> <p>Use the <i>Define name</i> functionality to define the data area in Excel. This named Excel data area corresponds to a database table. The values in the first row of the data area become the column titles of a table.</p>
MySQL	<p>Microsoft OLE DB Provider for ODBC Drivers (MySQL Connector/ODBC).</p> <ul style="list-style-type: none"> • Use the Data sources (ODBC) administrative tool to configure a new system data source. • Select MySQL Connector/ODBC as the ODBC driver. • Define the data source. • Under driver properties, select the <i>Disable Transactions</i> check box. <p>In connection settings, select Microsoft OLE DB Provider for ODBC Drivers as the provider and the system data source you defined as the data source. The <i>default collection</i> in the connection settings remains empty. Thus you only define the database in the driver settings.</p> <p>You can also use MySql.OLEDB Provider with MySQL.</p>

-  **Note:** The Microsoft OLE DB Provider for Jet and the Jet ODBC driver are available in 32-bit versions only. If you need to use either of these in a 64-bit environment for connecting to an external Excel or Access resource, we recommend installing the 64-bit version of [Microsoft Access Database Engine 2010 Redistributable](#) or running M-Files Server in the 32-bit mode.

SELECT statement

M-Files Server uses the SELECT statement to retrieve records from an external database.

Examples of SELECT statements:

```
SELECT CustomerNumber, CustomerName FROM Customer
```

```
SELECT ID, Name + ' ' + Department FROM Company
```

```
SELECT ID, Name, CustomerID FROM Contacts
```

```
SELECT * FROM Customer
```

Update columns

Fetches the data defined in the SELECT statement into the *Columns* field.

Columns

The *Columns* field displays correspondences between columns fetched from an external database and document vault property definitions. You can edit the correspondences between source columns and target properties. Object types must always correspond to a unique ID and name. Subtypes must also correspond to the columns of the owner object. If the external database field can be updated using the UPDATE database statement, you can define the *Update* field accordingly. The *Add* field is used to specify the fields that can be added to the external database via the INSERT INTO statement.

UPDATE statement

When you edit an object in M-Files, M-Files Server edits the corresponding record in the external database using an UPDATE statement. Use a question mark (?) to signal columns to be updated.

Examples of UPDATE statements:

```
UPDATE Customers SET CustomerName = ? WHERE CustomerID = ?
```

```
UPDATE Contact SET Name = ?, CustomerID = ? WHERE ContactID = ?
```

INSERT INTO statement

When you create a new object in M-Files, M-Files Server adds a corresponding record in the external database using an INSERT INTO statement. Use a question mark (?) to indicate the value of each column.

Examples of INSERT INTO statements:

```
INSERT INTO Customers( CustomerName ) VALUES( ? )
```

```
INSERT INTO ContactPersons( Name, CustomerID ) VALUES( ?, ? )
```

-  **Note:** The INSERT INTO statement input to M-Files does not define a value for the ID column. The database should be set up to automatically provide an ID for new records. For example: in SQL Server databases, set the type of the ID column as identity; in Access databases, use an AutoNumber type column for IDs. Because Excel cannot produce new ID values, the INSERT INTO statement cannot be used with Excel.

DELETE statement

When you delete an object from M-Files, M-Files Server deletes the corresponding record in the external database using a DELETE statement. Use a question mark (?) for the ID of the record to be deleted.

Examples of DELETE statements:

```
DELETE FROM Customers WHERE CustomerID = ?
```

```
DELETE FROM Contacts WHERE ContactID = ?
```

Disabled

You can temporarily disable the external connection by selecting the *Disabled* checkbox.

Value Lists

A value list contains various values, such as a list of city names. The same value list can be utilized in several different properties.

▶ Video: [Value Lists](#)

The following example illustrates the significance of value lists:

1. Log in to the *Demo Vault*.
2. Create a new document with the class *Proposal*.
3. When filling in the metadata card, select a value for the *Supplier* property (based on the *Customers* value list). The same value list can be utilized in several properties (for instance *Buyer*).

A value list is one of the M-Files [data types](#) on page 219. Creating and using value lists makes it significantly faster to specify metadata for a document. In many cases, selecting a value from the list is more sensible than typing it in each time. On the other hand, not all values can reasonably be selected from a list, such as the title of the object.

To view the available value lists in your vault:

1. Open M-Files Admin.
2. Expand the *Document Vaults* node on the left-side tree view.
3. Expand your document vault node.
4. Expand *Metadata Structure (Flat View)*.
5. Select *Value Lists*.

You should now be able to see the available value lists in the right-side listing view. To also display the built-in value lists, click **Show All Value Lists** on the task pane.

New Value List

A value list can either be *internal* or *external*.

The contents of an internal value list are saved in the document vault database, meaning that the list is used only inside the document vault. An external value list, on the other hand, can be updated from an external database. In this case, you need to define how the server is to retrieve the value list contents from the other database. For example, an employee database running on an external database server can be connected to the M-Files value lists by defining the database connection. Also refer to [M-Files Server](#) on page 148.

To start creating a new value list:

1. Open M-Files Admin.
2. Expand the *Document Vaults* node on the left-side tree view.
3. Expand your document vault node.
4. Expand *Metadata Structure (Flat View)*.
5. Select *Value Lists*.
6. Select **New Value List...** via the task pane.

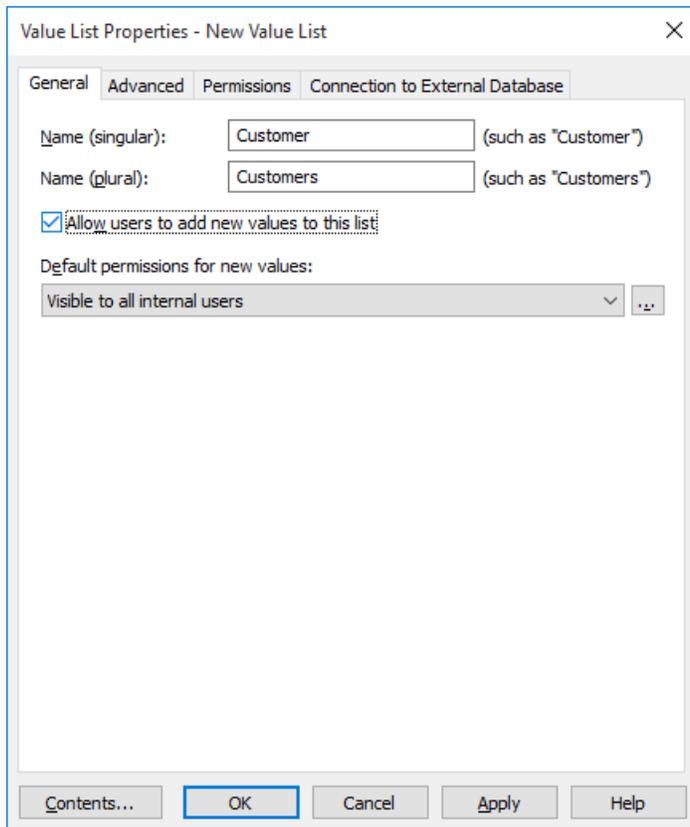


Figure 94: New value list creation dialog.

Allow users to add new values to this list

Turn on this option in order to allow users to add new values to this value list when they are filling in the metadata card. This enables the user to add, for instance, a missing customer value to the value list within the metadata card.

Default permissions for new values

You can specify the users who may view the new values on the value list by default.

Creating a New Value List

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, expand the **Metadata Structure (Flat View)** node and select the **Value Lists** node.
5. Click **New Value List...** on the task pane.
 - The **Value List Properties** dialog is opened.
6. In the **Name (singular)** and **Name (plural)** fields, enter the name of the new value list respectively in singular (for example, *Client*) and plural (for example, *Clients*) forms.
7. Optional: Check the **Allow users to add new values to this list** if you want to allow users to add new values to the value list.

8. From the **Default permissions for new values** drop-down menu, select the default permissions for new values in this value list.
9. Optional: On the **Advanced** tab, set hierarchical relationships for the value list.
 - i** See [Advanced](#) on page 216 for more information.
10. Optional: On the **Permissions** tab, you can specify the users who may see this value list or add new values to it.
 - i** See [Permissions](#) on page 218 for more information.
11. Optional: On the **Connection to External Database**, set the connection to an external database for importing value list contents from an external database source.
 - i** Connections to external databases for value lists are defined the same way as for object types. See [Connection to External Database](#) on page 207 for more information.
12. Click **OK** to finish creating the value list.

The new value list is added to the **Value Lists** list.

Converting a Value List to an Object Type

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, expand the **Metadata Structure (Flat View)** node and select the **Value Lists** node.
5. From the **Value Lists** list, select and highlight the value list that you want to convert to an object type.
6. Click **Convert to Object Type** on the task pane.
 - The **Convert to Object Type** dialog appears.
7. You are prompted to confirm that you want to convert the selected value list to an object type. Click **Yes**.
 - i** Once you have clicked **Yes**, you cannot undo the conversion.

The selected value list is converted to an object type and removed from the **Value Lists** list and added to the **Object Types** list.

Value List Contents (Individual Values)

You can create new items for the value list as well as new subitems for internally hierarchical values. You can also define hierarchical relationships between value list items (see [Advanced](#) on page 216). You can also set value-specific permissions as well as default permissions for objects that use the item.

To edit value list contents, click the **Contents...** button in the properties dialog of a value list.

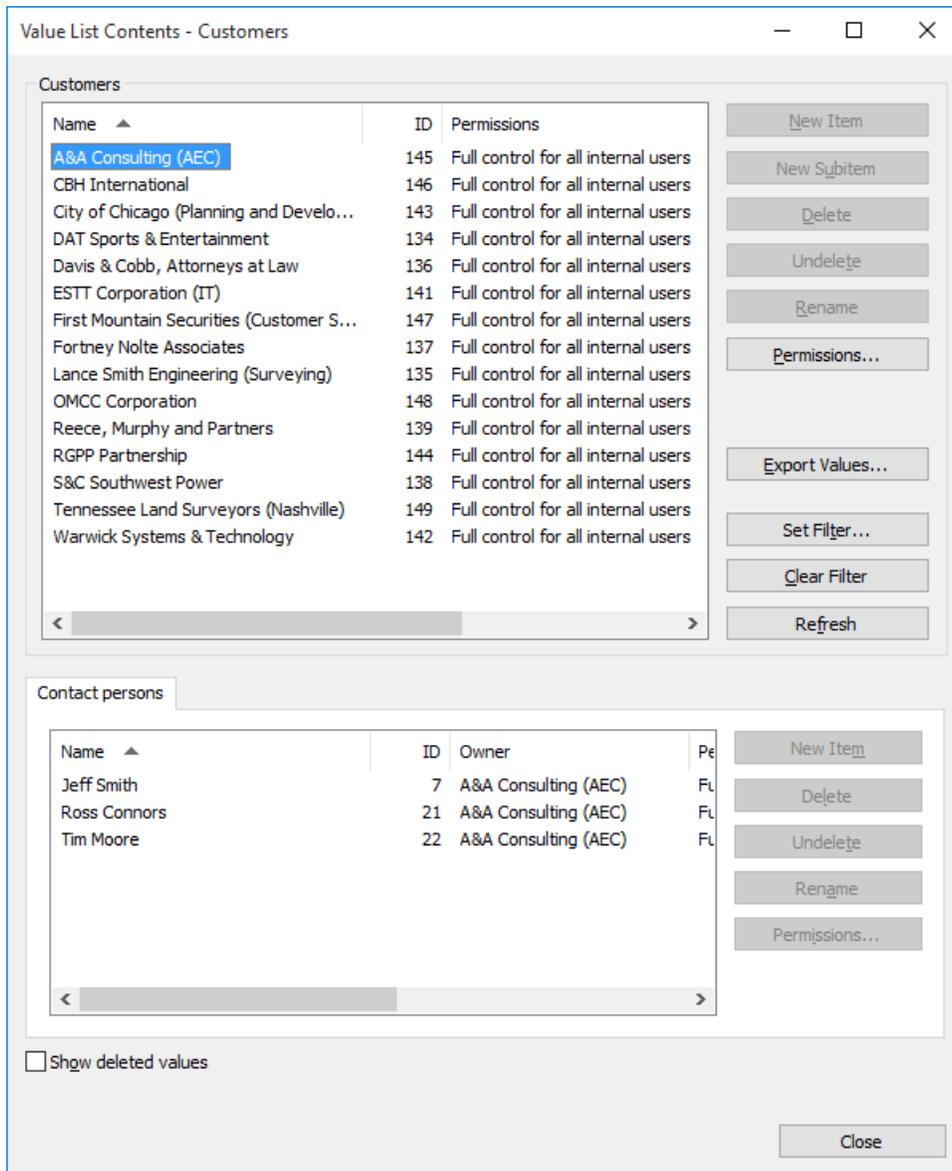


Figure 95: The "Contact persons" value list used as a sublist for the "Customers" value list.

Icons for value list items

In addition to being able to add icons for object types, you can add, change, and remove icons for value list items. This allows you to further increase the clarity of the M-Files user interface.

Specific icons can be assigned to, for instance, workflow states and meeting types. Since workflow states can be changed directly with the shortcuts in the task area or from the metadata card, icons can be used to make the states visually more distinguishable.

Permissions

Via *Permissions*, you can specify the users who may see this value list item. This way, you can make a value list value to be visible to a specific target group only.

Automatic permissions

The actual final object receives automatic permissions when a value with automatic permissions specified is added for the object.

You can activate the automatic permissions by value, value list, object type, or class. For more information, see [Automatic Permissions](#) on page 215.

Versions older than 8.0: *Default Permissions for Objects* is a tab that enables you to set default permissions for any object that includes this item as a value. This makes it possible to implement permission settings that are based, for example, on the type of project selected.

Automatic Permissions

The automatic permission settings are located under **General > Contents... > Permissions... > Automatic Permissions**. You can activate automatic permissions by value, value list, object type or class.

-  **Note:** The actual final object receives automatic permissions when a value with automatic permissions specified is added for the object.

 Video: [Automatic Permissions](#)

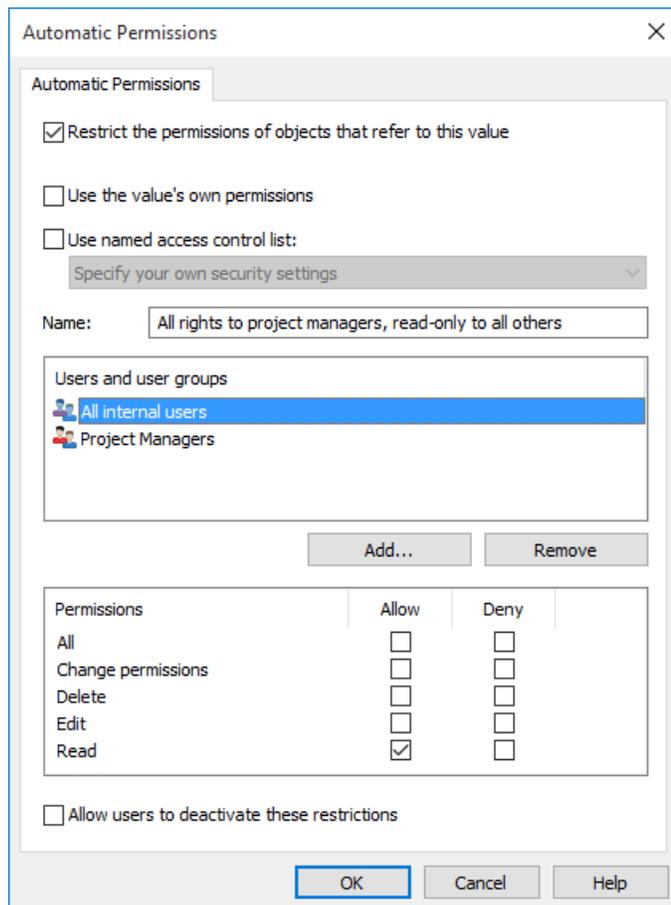


Figure 96: The "Automatic Permissions" dialog for a value list item.

In the above example, automatic permissions have been activated. Read-only access has been granted to all users and a separate access to project managers.

Restrict the permissions of objects that refer to this value

Activate the function *Restrict the permissions of objects that refer to this value* when you want to activate the automatic permissions.

Use the value's own permissions

You can use the permissions of the associated value or object, such as a project, as automatic permissions.

Then, for example, a house project plan would receive the permissions of the project that is associated with the plan. For example, the *House project Haven* may have its own permissions that allow access for the project manager and project group only. When this project is associated with the house project plan, the same permissions are granted to the plan. The automatic permissions are then the same as the project's own permissions, so definition of separate automatic permissions for the project is not necessary.

- **Note:** If the associated value or object has automatic permissions via properties, these automatic permissions are not transferred to the actual object.

Name

Give as descriptive a name as possible to the automatic permissions set, because this information will be displayed in the client software.

Specify permissions

You can then specify the automatic permissions that are always activated automatically for the object when a value, object, or class using automatic permissions is added to the object's metadata.

For more information on permissions, see [New Document](#) on page 69. Also refer to the specification of pseudo-users in [Pseudo-users](#) on page 74.

- **Note:** If you do not explicitly allow any permissions, using this kind of value or object restricts all permissions for the final object.

Allow users to deactivate these restrictions

You can also specify whether the users are allowed to deactivate the automatic permission restrictions created via this value, so that the users can delete the preset automatic permissions if they so desire.

Then accept the automatic permissions specified.

When you have added automatic permissions to a value, object, class, value list or object type, M-Files will display the property definitions in which the automatic permissions are enabled and those in which they are disabled. Make sure that the automatic permissions are enabled for the desired property definition. For more information, see [New Property Definition](#) on page 219.

The specified value must be selected for the explicit property definition for which you have enabled automatic permissions.

- **Note:** The value-specific settings always have priority over the settings made at value list and object type level.
- **Note:** For you to be able to use the automatic permissions after you have updated the document vault from version 7.0 to a higher version, the extended metadata-driven permissions must be manually activated vault-specifically. For vaults created in version 8.0 (or higher), the extended automatic permissions are active by default and their activation is not needed. For more information, see [Document Vault Advanced Properties](#) on page 161.

Advanced

Value list hierarchy

Value lists can have two types of hierarchical relationships.

Internal hierarchical value list

A value list can be *hierarchical in itself*, meaning that it can contain items and subitems. A parent item collects related subitems. This way, you can create, for example, a value list containing all drawing types hierarchically. The parent object can be for instance a floor plan, with floor plans in different scales as its subobjects.

Regardless of their internal hierarchy, all items in the hierarchical value list represent the same concept (for example, the parent item *Floor plan* and its subitems *Floor plan 1:100* and *Floor plan 1:50*). If the parent item and subitems represent different concepts, like countries and their cities, create a separate value list for each and define a hierarchical relationship for these value lists.

A hierarchical value list can be created by selecting *Same list (defines a value list with internal hierarchy)* under *This value list is a sublist of the following value list* on the *Advanced* tab of the value list properties. This enables you to create subitems for value list items. For more information, refer to [Value List Contents \(Individual Values\)](#) on page 213.

Hierarchical relationship between value lists

Customers and related contact persons must be defined as *two hierarchically related value lists*. The item in the *Customers* value list (company name) is the owner value for the items in the *Contacts* value list. The *Customers* value list is then the higher-level list and the *Contacts* list is its sublist.

You should define the hierarchical relationship between properties that use these value lists (property definition using a filtered value list). For more information, refer to [Property Definitions](#) on page 219.

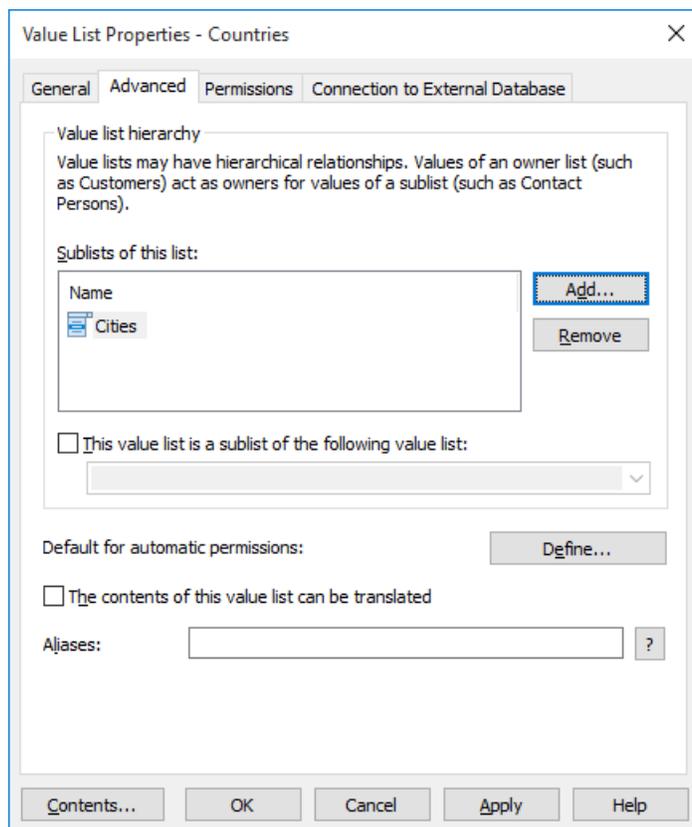


Figure 97: In the advanced settings, various hierarchical relationships can be defined.

Default for automatic permissions

You can activate the automatic permissions by value, value list, object type, or class. You can specify the automatic permissions for each value list in the same way as for each value.

- Note:** The actual final object receives automatic permissions when a value with automatic permissions specified is added for the object.

- Note:** The value-specific settings always have priority over the settings made at value list and object type level. For more information, see [Automatic Permissions](#) on page 215.

The contents of this value list can be translated

Activate by value list the contents that can be translated to different languages. For more information, see [Languages and Translations](#) on page 184.

Aliases

Via the *Advanced* tab, you can define an alias for the value list. For more information, see [Associating the Metadata Definitions](#) on page 168.

Permissions

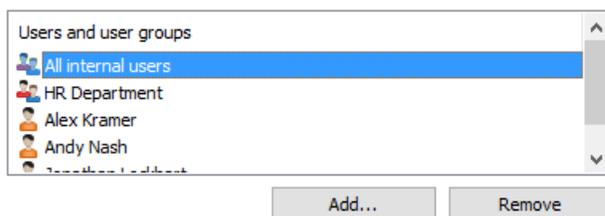
Access for viewing this value list and creating items to the list can be defined on the *Permissions* tab.

If the user does not have the permission to view the name of the value list, it is not available for selection in M-Files (for example, when you are creating a new search).

If the user cannot see the value list, the user does not have the permission to create items to it either. However, the user may have the permission to see the list without having the permission to create new items.

Adjusting Permissions

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight the appropriate node or subnode of the vault and select the desired item from the list on the right.
5. Right-click the item and select **Properties** from the context menu.
6. Go to the **Permissions** tab.
7. From the **Users and user groups** list, select the user or user group whose permissions you want to adjust.



- i** If the user or user group is not on the list, click **Add...** to add the user or user group to the list.

8. Either:
 - a. Check the **Allow** check box to allow the selected user to see this item.
 - or
 - b. Check the **Deny** check box to deny the selected user from seeing this item.
9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.
10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

Connection to External Database

Defined the same way as for external object types. Refer to [Connection to External Database](#) on page 207.

Property Definitions

Property definitions are used to determine properties associated with *classes*. A property definition is used to define the property name (which should be descriptive) and data type, which determines the type of the data entered (in relation to the property).

Various properties can be combined to create classes; refer to [Classes](#) on page 232. For example, *Contract of Employment* is a document class with the associated properties *Title*, *Document Date*, *Employee*, *Keywords* and *Description*.

The property definitions are used for determining the metadata on the metadata card. The properties that are associated with the document class are displayed on the metadata card after class selection.

New Property Definition

New property definitions are created in M-Files Admin. Highlight *Property Definitions* in the left-side tree view and select *New property definition...* from the task menu.

In a new property definition, you need to specify the data type after assigning a name to the property. For example, if you are creating a property with the name "Document Date," the logical data type choice is "Date".

Figure 98: The "New Property Definition" dialog.

The property definition data types

Text	Any typed text, for instance, a heading.
------	--

Text (multi-line)	Any typed text. The text can have multiple lines.
Choose from list	You can select one value from the options on the value list.
Choose from list (multi-select)	You can select several values from the options on the value list.
Date	You can select a date. As a default, M-Files suggests the current date.
Time	You can select a time.
Timestamp	This data type can be used for generating a timestamp with a script.  Note: The timestamp needs to be defined as a calculated value. Go to the Automatic Values tab of the Property Definition Properties dialog and select the Calculated value (VBScript) option and click Edit Code... to add the VBScript code for generating the timestamp.
Number (integer)	You can enter the desired integer.
Number (real)	You can enter the desired real number.
Boolean (yes/no)	You can specify the Boolean value <i>yes</i> or <i>no</i> for the desired variable.

The data type indicates the type of the property. For example, if you create a new property named *Confidential* and specify *Boolean (yes/no)* as its data type, you need to select *yes* or *no* when filling in the *Confidential* field on the metadata card. This happens only if the property *Confidential* has been associated with the document class (*Report*, *Memo*, *Agenda*, etc.) to which the document you are creating belongs.

After creating this property, you can create a new view that lists the documents on the basis of whether they are confidential or not. You can group the documents into the *Yes* and *No* property folders by using the view hierarchy.

Value lists can be efficiently utilized in property definitions. For example, the *Customers* value list is utilized in several property definitions in the *Demo Vault*.

When specifying, for example, the *Author Organization*, the options are retrieved from the *Customers* value list, to which you can easily add new values (customers). This way, the same company names need not be entered again, but the existing list can be utilized instead. The lists decrease the number of input errors and make work more efficient.

Pre-filtering of properties

You can specify pre-filtering for property definitions to show a subset of the objects. This way, the list of objects to be displayed can be limited by certain criteria, and the user can more quickly find the desired object when, for example, adding a customer to the metadata card.

For example, pre-filtering can be used to divide:

- Customers into prospective and actual customers.
- Customers into buyers and suppliers.

- Customers into persons and companies.
- Projects into internal and external projects.
- Projects into current and past projects.

The customer class may also be used as a pre-filter for customer listing. Likewise, the project class, for example, may be used as a pre-filter for a project listing.

Filter the list by using the value of the following property

A property definition using a value list that is filtered by some other value list can be defined to be filtered by some other property definition that uses the main value list of the filtered one. This is a case of dynamic filtering, which depends on what the user selects in the metadata card.

Example: The properties *Customer (Buyer)* and *Customer's Contact Person* are filled in the metadata card. Selecting the correct *Customer (Buyer)* also filters values available in the *Customer's Contact Person* value list to show only contact persons of this selected customer. The *Customer (Buyer)* property may use the *Customers* value list and *Customer's Contact Person* may use the *Contact Persons* value list. The *Contact Persons* value list is filtered by customer.

In addition, the *Customer (Buyer)* property is defined to be filtered by the *Buyer* property. For more information about hierarchical relationships between value lists and object types, refer to [Value Lists](#) on page 211 and [Object Types](#) on page 204.

Also, you can select an *automatic filter* allowing M-Files to search for the best metadata card filter selection to filter the property in question. In this case, for example, the two-way filtering of value lists between ZIP codes and cities functions in a user-friendly manner: In the metadata card, you can choose a ZIP code first, and M-Files then chooses an appropriate city from the list automatically. If you choose the city first, M-Files filters the available ZIP codes automatically according to the city.

Sort values in the list in the following order

You can define whether you want the value list used for the property definition to be ascending or descending.

Allow using this property with the following object type

You can also limit the use of this functionality to just one object type.

Enable automatic permissions via this property

For you to be able to use the automatic permissions via a specific property, you should allow this in the property definition's properties. For the *Class* property definition, the automatic permissions are active by default, so activation is not needed in this case.

When you have added automatic permissions to a value, value list or object type, M-Files will display the property definitions in which the automatic permissions are enabled and those in which they are disabled. Make sure that the automatic permissions are enabled for the desired property definition.

Note that the specified value must be selected for the explicit property definition for which you have enabled automatic permissions.

Aliases (Advanced tab)

Via the *Advanced* tab, you can define an alias for the property definition. For more information, see [Associating the Metadata Definitions](#) on page 168.

Automatic Values

An **automatic value** can be set for a property. This means that, for example, invoices can be consecutively numbered. An automatic value can also contain text, in which case it is a combination of other properties. For example, to create proposal headings in a set format such as *Class/Product/Customer*, these properties (*Proposal/Mach20A/ESTT Corporation*) can be used to automatically create the headings.

Automatic values offer increased utilization of document and object metadata in storing and searching for information. In addition, using automatic values makes the naming of documents and objects more consistent and reduces the need for repeated data entries.

Automatic values are especially useful for naming objects (for more information, refer to [New Class](#) on page 233) and in automatically including metadata in document content (for more information, refer to [Insert M-Files Property](#) on page 135).

Automatic numbers and values

A property can have an automatic number or value. An **automatic number** is calculated once and it does not change. Such automatic numbering is useful, for instance, in various company internal processes and record-keeping.

An automatic value can contain other properties, usually by concatenating two or more properties. For example, a document name (automatic value) can be defined as *Class (Customer)*, which would return, for instance, *Proposal (ESTT)*. The automatic value changes when the object is edited. If the automatic value is created using the class and customer name (*Proposal (Customer A)*), the automatic value changes when another customer is selected (*Proposal (Customer B)*).

Property Definition Properties - New Property Definition

General Automatic Values Validation Permissions Advanced

You can specify an automatic value for this property.

An automatic number is calculated once and then remains unchanged. Other types of automatic values are recalculated each time the object is modified.

No automatic value

Simple automatic numbering

Increment:

Customized automatic numbering (VBScript)

Simple concatenating of properties

Calculated value (VBScript)

Last value used: Change

Calculation order: (from smallest to largest)

Figure 99: Property definition with automatic numbering.

The example above illustrates a property with consecutive numbering in single whole number increments (increment: 1). The last value used is set as 1000. Thus, the next object to use this property will be numbered as 1001. The calculation order value is 100 (see *Calculation order* below).

Simple automatic numbering

Generates an incrementing numerical value. The increment can also be specified (*Increment*). The default value is one (1).

Customized automatic numbering (VBScript)

Generates an automatic number that can contain letters and/or numbers. Creating a customized automatic number is specified in more detail by using the M-Files API and generic features of VBScript. For more information, refer to [Editing VBScript Code](#) on page 226.

The following M-Files variables can be used with this script: `PropertyDef`, `Output`, `LastUsed`, `ObjVer`, `DisplayID`, `Vault`, `CurrentUserID`, `CurrentUserSessionInfo`, `PropertyValues`, `VaultSharedVariables`, `SavepointVariables`, `TransactionCache`, `MFScriptCancel`, `GetExtensionObject`, `MasterTransactionID`, `CurrentTransactionID`, `ParentTransactionID`. For more information about the variables, refer to [VBScript Variables Explained](#) on page 304.

Simple concatenation of properties

Conjoins selected properties (for instance *Proposal/Device/Customer*). Any characters or text can be inserted between the selected properties. For example: *Proposal: Customer (Project)* or *Proposal, Customer, Project*.

A list of available placeholders can be opened when specifying an automatic value for a property. The **Add Placeholder...** button opens the list of property definitions and other placeholders available for use.

Placeholder	Description
CAUSEDBY	The name of the user who caused the event.
CAUSEDBYACCOUNT	The account name for the user who caused the event.
FILENAME	The name of the file.
HYPERLINKFRAGMENTHTML	An HTML formatted hyperlink containing URLs to the object for M-Files Desktop, M-Files Web, and M-Files Mobile.
HYPERLINKFRAGMENTPLAIN	A plain-text formatted text fragment containing URLs to the object for M-Files Desktop, M-Files Web, and M-Files Mobile.
INTERNALID	The (internal) ID of the object. The internal ID is always unique for each object of a single object type and within a single vault (see also <i>OBJID</i>).
MFILESURL	An M-Files URL that shows the latest version of the object in question.
MFILESURLTOVERSION	An M-Files URL that shows the specific version of the object in question.
NOTIFICATIONRULENAME	The name of the notification rule that caused the event. Available for notification templates.

Placeholder	Description
OBJID	The (external) ID of the object (see also <i>INTERNALID</i>).
OBJTITLE	The name or title of the object.
OBJTYPE	Object type.
OBJVER	Object version.
ROLLEDBACKTOVERSION	The version that the object was rolled back to.
TIMESTAMP	The time when the event occurred.
USERCAUSEDWORKFLOWSTATE_Z	The user who moved the object into a specific state, Z being the ID of the workflow state.
VAULTNAME	The name of the document vault.
VAULTGUID	The unique identifier (GUID) of the vault.
WEBURL	An M-Files Web URL that shows the latest version of the object in question.
WEBURLTOVERSION	An M-Files Web URL that shows the specific version of the object in question.
PROPERTY_<ID>	The value of the specified property of the object. (Replace <ID> in the placeholder with the ID of the property definition.)
OLDPROPERTY_<ID>	The old value of the specified property of the object. (Replace <ID> in the placeholder with the ID of the property definition.)
OBJTYPE_<ID>	Values of all the properties that can refer to the specified object type. (Replace <ID> in the placeholder with the ID of the object type.)

Placeholders are used by bracketing them with % characters. For instance, %PROPERTY_23% (%PROPERTY_21%) could give us "John Smith (08/25/2014)", assuming that 23 is the ID for the *User name* property and 21 the ID for the *Modification date*.

Indirect placeholders

Indirect placeholders are metadata indirectly related to an object. For example, if a contract is related to a customer object, the country of the customer is indirect metadata for the document.

To specify the customer's country as an indirect placeholder the syntax %PROPERTY_1079.PROPERTY_1090% is used, where 1079 is the property definition ID for *Customer* and 1090 is the property definition ID for *Country*.

Calculated value (VBScript)

Creating an automatic value can be specified in more detail by using the M-Files API and generic features of VBScript. A calculated value is defined for the property. For more information about defining calculated values, refer to [Editing VBScript Code](#) on page 226.

The following M-Files variables can be used with this script: PropertyDef, Output, ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, PropertyValues, VaultSharedVariables,

SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID. For more information about the variables, refer to [VBScript Variables Explained](#) on page 304.

 Video: [Calculated Value](#)

Last value used

The starting value for consecutive numbering or values. The default is zero (0). The value can be changed; for example, consecutive numbering can start at *3000*.

Calculation order

Calculation order determines the order in which automatic values are calculated (from smallest to greatest). This is significant when several automatic values are used and their combinations form new automatic values.

For example, calculation order is crucial if the name of an object is an automatic property value consisting of two other automatic values. These two automatic values should be calculated first and their combined value afterward.

The values themselves make no difference other than that the calculation order proceeds from smallest to greatest. The calculation order values for different properties can be, for example, 10, 12, 17 and 20. The property with the calculation order number 10 is thus calculated first, followed by the property with the calculation order number 12, etc.

 Video: [Calculation Order](#)

Recalculate

The *Recalculate* function is available in M-Files Admin's task area (or by right-clicking) when a property with an automatic value is selected.

Recalculate Empty Values

Calculates automatic values for properties that have not been calculated yet. This is the default for calculating automatic values. Changes to settings only apply to new values. For example, if you edit the *Last value used*, only new objects will have the new value. Old values are preserved; that is, once defined, a value does not change.

Recalculate All Values

Recalculates the automatic values of all properties. *Recalculate All Values* thus also recalculates previously defined values. For example, if consecutive numbering is used and the *Last value used* is changed, this function renumbers all existing objects.

Naming a template without using automatic values

Document templates work differently when automatic values are used. All properties in the template metadata work without the calculation of an automatic value. Thus, in templates, automatic property values work as if they were not automatic. Their values can be defined normally and the server does not calculate an automatic value for the property.

For example, objects in the *Proposal* class may use automatic values in their titles (such as *Proposal <number> - <customer name>*). However, it makes sense to name the *Proposal* class templates as templates; titles using automatic properties only make sense for actual proposals, not templates. Thus, the template might be called *Proposal Template*, while the actual proposal documents created using the template will have names formulated with automatic values, such as *Proposal 35 - ESTT*.

For more information, refer to [Use Template](#) on page 69 and [New Class](#) on page 233.

Editing VBScript Code

Creating customized automatic values and calculated values can be specified in more detail by using M-Files API and generic features of VBScript. This section provides additional instructions for using VBScript with automatic values.

- **Note:** Automatic properties can also be created for objects so that the calculated properties include not only the object's properties, but also those of another object related to the current object. For example, if the property *Customer* has been attached to the project but not to the document, an automatic name can be given to the document based on the properties of the document, the project, or both. The automatic name of the document can follow, for instance, the format *House plan Star / ESTT*.

Creating automatic values with VBScript

VBScript code is edited in the *Edit VBScript code* window. The code is executed whenever a property value is recalculated; in other words, whenever a property is edited. VBScript creates the value and finally assigns it to a variable called *Output*. This value is stored as the value of the property in the object metadata.

The simplest piece of VBScript to formulate an automatic value might look like this:

```
Output = "Automatic value"
```

Usually an automatic value uses other object properties, for example, by concatenating them. VBScript code can utilize the property values and basic information of the same or another object, with the aid of the following VBScript variables:

- CurrentUserID
- DisplayID
- LastUsed
- MFScriptCancel
- ObjVer
- Output
- PropertyDef
- PropertyValues
- Vault
- VaultSharedVariables

For the variable descriptions, refer to [VBScript Variables Explained](#) on page 304.

Sample code

The following sample code creates an automatic value for the *"Proposal Title"* property by utilizing the proposal number and customer information in the object version metadata. The ID of the *Proposal Number* property is 1156 and the ID of the *Customer* property is 1288. For example, if a document has the proposal number 5577 and the customer is ESTT, the code below creates the following string as the title of the proposal: *"Proposal #5577 / ESTT"*.

```
Option Explicit
' Get proposal number.
Dim szNumber
szNumber = PropertyValues.SearchForProperty( 1156 ).TypedValue.DisplayValue
' Get customer.
Dim szCustomer
szCustomer = PropertyValues.SearchForProperty( 1288 ).TypedValue.DisplayValue
' Create proposal title.
Dim szName
```

```
szName = "Proposal #" & szNumber & " / " & szCustomer
' Set result.
Output = szName
```

 **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

Validation

On the *Validation* tab you can define the criteria that the property values should meet. For example, you can validate that the property value contains the specified number of characters. In this way, you can check that the customer's phone number or invoice number is added correctly to the object. You can also validate that, for instance, the value can be accepted in relation to other properties or that the value is not empty.

The validation is specified by using variables, generic features of VBScript, and M-Files API. The following M-Files variables can be used in the conditions: PropertyDef, PropertyValue, ObjVer, DisplayID, Vault, CurrentUserID, CurrentUserSessionInfo, VaultSharedVariables, SavepointVariables, TransactionCache, MFScriptCancel, GetExtensionObject, MasterTransactionID, CurrentTransactionID, ParentTransactionID. For more information about the variables, refer to [VBScript Variables Explained](#) on page 304.

Sample code

The code below is used for checking that the property value specified contains 10 characters:

```
Option Explicit
DIM value
value = PropertyValue.GetValueAsUnlocalizedText
If Len(value) < 10 Then
Err.Raise MFScriptCancel, "The value you enter must be 10 characters long."
End If
```

 **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

Built-in Property Definitions

The table below lists the descriptions for built-in property definitions that come included in the metadata structure of every vault implementation. These property definitions are essential elements of every vault metadata structure, and therefore modifying these definitions is restricted by design.

Built-in Property Definition	Data type	Description
Accessed by me	Timestamp	The last time the object was accessed by the current user.
Additional classes	Choose from list "Classes" (multi-select)	A list of additional classes for the object.
Assigned to	Choose from list "Users" (multi-select)	A list of users to whom an assignment is assigned.

Built-in Property Definition	Data type	Description
Assignment	Choose from list "Assignments" (multi-select)	An assignment related to the selected object.
Assignment description	Text (multi-line)	The assignment description for an assignment.
Class	Choose from list "Classes"	The class of the object.
Class groups	Choose from list "Class groups" (multi-select)	The class group of the object.
Collection members (document collections)	Choose from list "Document collections" (multi-select)	A list of document collections belonging to the document collection.
Collection members (documents)	Choose from list "Documents" (multi-select)	A list of documents belonging to the document collection.
Comment	Text (multi-line)	Comment text for an object.
Completed	Boolean (yes/no)	Specifies whether the assignment has been completed.
Conflict resolved	Timestamp	The date and time a conflict was last resolved in favor of the selected object.
Created	Timestamp	The creation date and time of an object.
Created by	Choose from list "Users"	Identifies the user who created the object in M-Files or imported the object into M-Files.
Created from external source	Choose from list "External sources"	The external source from which the object was imported.
Deadline	Date	The deadline date for the current assignment.
Deleted	Timestamp	The deletion date and time of the object.
Deleted by	Choose from list "Users"	Identifies the user who deleted the object.
Deletion status changed	Timestamp	The date and time the object was last deleted or undeleted.
Document	Choose from list "Documents" (multi-select)	A document related to the selected object.
Document collection	Choose from list "Document collections" (multi-select)	A document collection related to the selected object.
Favorite view	Number (integer)	The ID of the <i>Favorites</i> view where the object is shown.
Is template	Boolean (yes/no)	A Boolean property identifying whether the object is a template.

Built-in Property Definition	Data type	Description
Last modified	Timestamp	The last modification date and time of an object.
Last modified by	Choose from list "Users"	Identifies the user who last modified the object.
Marked as complete by	Choose from list "Users" (multi-select)	A list of users who have completed the current assignment.
Marked as rejected by	Choose from list "Users" (multi-select)	A list of users who have rejected the current assignment.
Marked for archiving	Boolean (yes/no)	A Boolean property identifying whether the object is marked for archiving.
Message ID	Text	The Message-ID value of an e-mail extracted from the Internet header.
Monitored by	Choose from list "Users" (multi-select)	A list of users who are monitoring the current assignment.
Moved into current state	Timestamp	The date and time when the object was moved to its current state.
Name or title	Text	The name of title of the current object.
Object changed	Timestamp	The date and time of the last change to the object.
Original path (1/3)	Text	The location from which the object was imported to M-Files.
Original path (2/3)	Text	The location from which the object was imported to M-Files (continued).
Original path (3/3)	Text	The location from which the object was imported to M-Files (continued).
Owner (Assignment)	Choose from list "Assignments"	The owner value of the selected object.
Owner (Class group)	Choose from list "Class groups"	The owner value of the selected object.
Owner (Class)	Choose from list "Classes"	The owner value of the selected object.
Owner (Document collection)	Choose from list "Document collections"	The owner value of the selected object.
Owner (Document)	Choose from list "Documents"	The owner value of the selected object.
Owner (External source)	Choose from list "External sources"	The owner value of the selected object.
Owner (Report)	Choose from list "Reports"	The owner value of the selected object.

Built-in Property Definition	Data type	Description
Owner (State transition)	Choose from list "State transitions"	The owner value of the selected object.
Owner (State)	Choose from list "States"	The owner value of the selected object.
Owner (Traditional folder)	Choose from list "Traditional folders"	The owner value of the selected object.
Owner (User group)	Choose from list "User groups"	The owner value of the selected object.
Owner (User)	Choose from list "Users"	The owner value of the selected object.
Owner (Version label)	Choose from list "Version labels"	The owner value of the selected object.
Owner (Workflow)	Choose from list "Workflows"	The owner value of the selected object.
Permissions changed	Timestamp	The date and time when the permissions of the object were last changed.
Reference	Choose from list "Documents" (multi-select)	A list of referenced documents.
Remote vault GUID	Text	
Reply to	Choose from list "Documents" (multi-select)	
Reply to (ID)	Text	
Report	Choose from list "Reports" (multi-select)	A report related to the selected object.
Report placement	Number (integer)	Specifies the placement of the selected report.
Report URL	Text	Specifies the URL of the selected report.
Shared files	Text (multi-line)	The shared location paths of the shared files of the selected object.
Signature manifestation	Text (multi-line)	Electronic signature manifestation of the selected assignment.
Single file	Boolean (yes/no)	A Boolean property identifying whether the object is a single-file object.
Size on server (all versions)	Number (integer)	The total size of all versions of the selected object.
Size on server (this version)	Number (integer)	The size of the selected object version.
State	Choose from list "States"	The workflow state of the object.

Built-in Property Definition	Data type	Description
State transition	Choose from list "State transitions"	The workflow state transition of the object.
Status changed	Timestamp	The date and time of the last status change of the object.
Traditional folder	Choose from list "Traditional folders" (multi-select)	A traditional folder containing the selected object version.
Version comment changed	Timestamp	The date and time of the last change to the comment of the object version.
Version label	Choose from list "Version labels" (multi-select)	The version label for the object.
Version label changed	Timestamp	The date and time of the last change to the version label of the object version.
Workflow	Choose from list "Workflows"	The workflow of the selected object.
Workflow Assignment	Choose from list "Assignments" (multi-select)	A property that indicates the assignment related to the workflow of the object.

Permissions

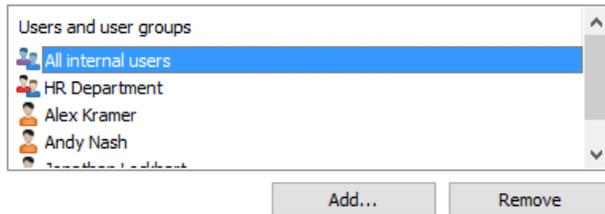
Access for viewing this property and editing the property in object metadata can be defined on the *Permissions* tab.

If the user does not have the permission to view the property, it is not available for selection in M-Files (for example, when you are creating a new search or when *More properties* is selected).

If the user cannot see the property, the user also does not have the permission to edit it. However, the user may have the permission to see the property without having the permission to edit it. Editing in this case refers to the user being able to edit the property in the object metadata in all possible ways: edit its value, or add or delete the property.

Adjusting Permissions

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight the appropriate node or subnode of the vault and select the desired item from the list on the right.
5. Right-click the item and select **Properties** from the context menu.
6. Go to the **Permissions** tab.
7. From the **Users and user groups** list, select the user or user group whose permissions you want to adjust.



i If the user or user group is not on the list, click **Add...** to add the user or user group to the list.

8. Either:

a. Check the **Allow** check box to allow the selected user to see this item.

or

b. Check the **Deny** check box to deny the selected user from seeing this item.

9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.

10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

Classes

A document class is an object type that combines several properties (see [Property Definitions](#) on page 219). Classes are designed to help categorize objects, to improve consistency as well as to speed up the process of filling in the object metadata.

You can create new classes and specify properties for each class via M-Files Admin. When the class is selected in M-Files Desktop, the properties that the system administrator has specified for the class will appear on the metadata card. M-Files users provide the properties with values when creating the new object.

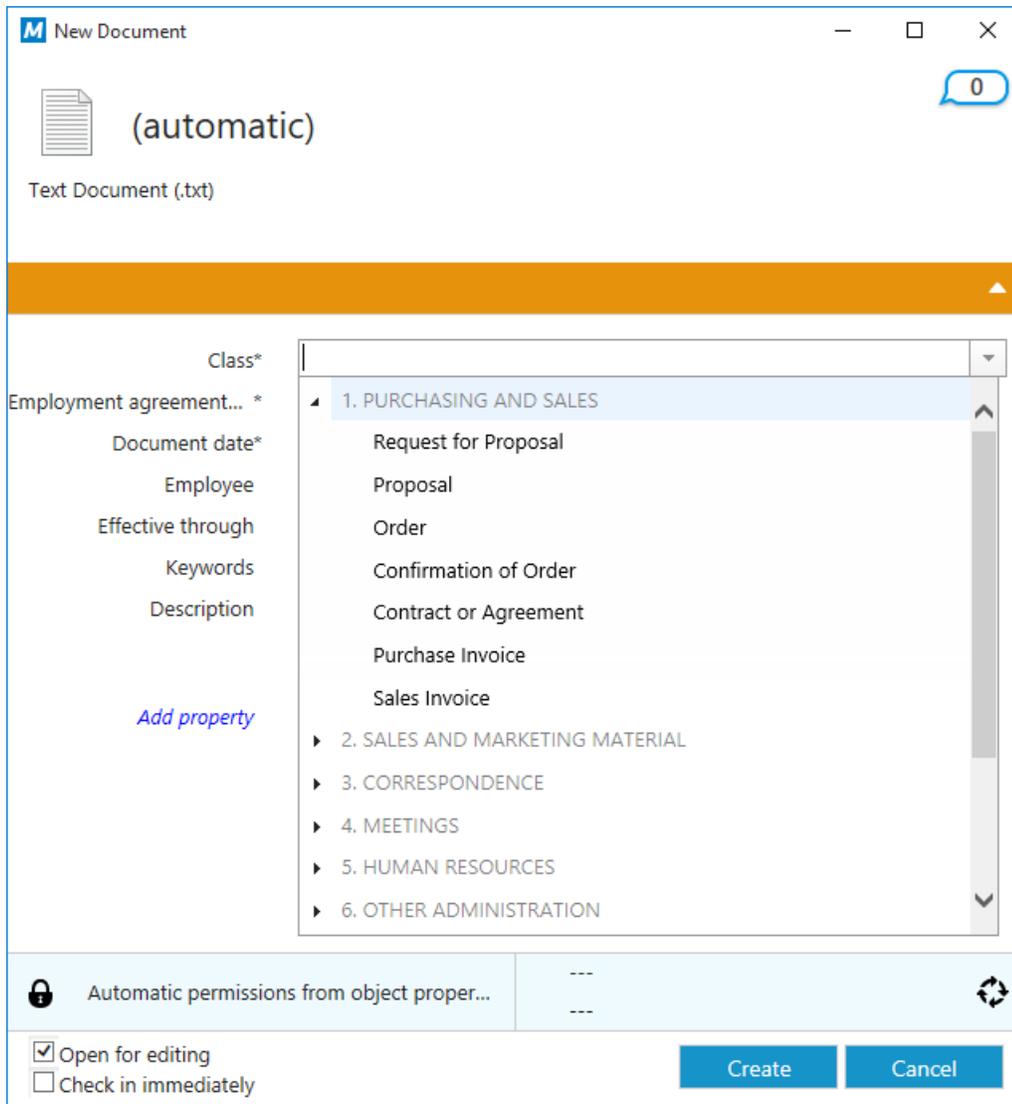


Figure 100: Classes shown on the metadata card for a new document.

New Class

You can start creating a new class by highlighting the *Class* heading in the left-side tree view of M-Files Admin and by clicking the *New Class...* link on the task pane.

▶ Video: [Class Structure](#)

Class Properties - Purchase Invoice

General Templates Permissions Automatic Permissions Advanced

Name: Purchase Invoice

Object type: Document

Properties:

Name	Data Type	Required
Name or title *	Text	<input checked="" type="checkbox"/>
Document date	Date	<input checked="" type="checkbox"/>
Keywords	Text	<input type="checkbox"/>
Description	Text (multi-line)	<input type="checkbox"/>

Add... Remove Set As Name ↑ ↓

The asterisk (*) indicates the property that is used as the object name.

Basic properties:
Created; Created by; Last modified; Last modified by; Accessed by me

Default workflow for new objects:
Reviewing and accepting purchase invoices

Force this workflow for new objects

OK Cancel Apply Help

Figure 101: The properties dialog of a new "Purchase Invoice" class.

In the example shown above, a new class is being created. You can add new properties by clicking the **Add...** button. If the *Required* checkbox for the property is active, users need to assign a value for the property when creating a new object in that class. Otherwise, the object cannot be created. The *Purchase Invoice* class being created in the above image dictates that the *Name or title* and *Document date* properties would need to be filled in for users to be able to create a *Purchase Invoice* object.

▶ Video: [Class Properties](#)

Set As Name

Any property of the class can be defined as the name of the object; that is, the property is selected as the *name property* for the objects of this class. Then the name of the object does not have to be entered separately; instead, a certain property can be set up to always be the name or "title" of the object belonging to the class in question. This makes the naming of objects in a class more consistent.

This property is very useful for working with automatic values (see [Automatic Values](#) on page 222). The automatic value of the property may at the same time be the name of the proposal document ("Proposal/ESTT").

Note: Templates are named without automatic values.

The *Update names* function (found on the M-Files Admin task pane for a class) can be used to update the names of all existing objects in the class to conform to the new definition.

Default workflow for new objects

You can define a default workflow for new objects in this class. For example, all invoices can be set to use the *invoice circulation* workflow.

Force this workflow for new objects

If a specific workflow is forced for new objects in the class, the workflow cannot be deleted or changed. For example, the *Purchase Invoice Approval* workflow can be specified as compulsory for a new document created in the *Purchase Invoice* class.

Templates

You can define templates to be used when creating new objects in this class. To specify a document or other object as a template, add the property *Is template* and set it to *Yes*. Templates are class-specific. You can specify the template to be a part of several classes by specifying multiple classes for the object being used as a template, with the *Additional Classes* property.

Aliases (Advanced tab)

Via the *Advanced* tab, you can define an alias for the class. For more information, see [Associating the Metadata Definitions](#) on page 168.

Assignment Class

When you are creating a [New Class](#) on page 233 with the object type *Assignment*, an additional tab appears to the **Class Properties** dialog, the **Assignment Details** tab. It enables you to select the assignment type and certain conditions related to the completion or approval of the assignment.

Assignment type

There are two types of assignments, task assignments and approval assignments. The assignees of the task assignments simply mark the assignment complete when they have successfully carried out the task, whereas the assignees of approval assignments have more say in the actual approval process: they can use the assignment for approving or rejecting the target object.

In both cases, you can set the completion of the assignment to require action from all or any assignees. You may also want to require an [Electronic Signature](#) on page 253.

Permissions and Automatic Permissions

Permissions

On the *Permissions* tab, you can specify the users who may see this class.

Automatic permissions

You can activate the automatic permissions by value, value list, object type, or class. You can specify the automatic permissions for each class in the same way as for each value. For more information, see [Automatic Permissions](#) on page 215.

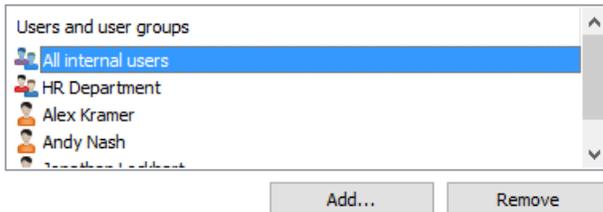
Note: The actual final object receives automatic permissions when a value with automatic permissions specified is added for the object.

Versions older than 8.0: On the *Default Permissions for Objects* tab, you can set the default permissions to be applied when a new object in this class is created.

Adjusting Permissions

1. Open M-Files Admin.

2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight the appropriate node or subnode of the vault and select the desired item from the list on the right.
5. Right-click the item and select **Properties** from the context menu.
6. Go to the **Permissions** tab.
7. From the **Users and user groups** list, select the user or user group whose permissions you want to adjust.



i If the user or user group is not on the list, click **Add...** to add the user or user group to the list.

8. Either:
 - a. Check the **Allow** check box to allow the selected user to see this item.
 - or
 - b. Check the **Deny** check box to deny the selected user from seeing this item.
9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.
10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

Class Groups

Classes can be combined into class groups. This makes it easier to select a class while creating a new document.

You can create a new class group by right-clicking the *Document* heading under *Document Vaults > (Vault) > Metadata Structure (Hierarchical View)* and selecting *New Class Group...*

 Video: [Class Groups](#)

New Class Group

The image below displays the properties window for creating the class group *Meetings*. The *Members* field lists the classes that belong to this group.

The document classes are shown in the menu in numerical order when you fill in the metadata card. You can easily change the order of the list by using numbering.

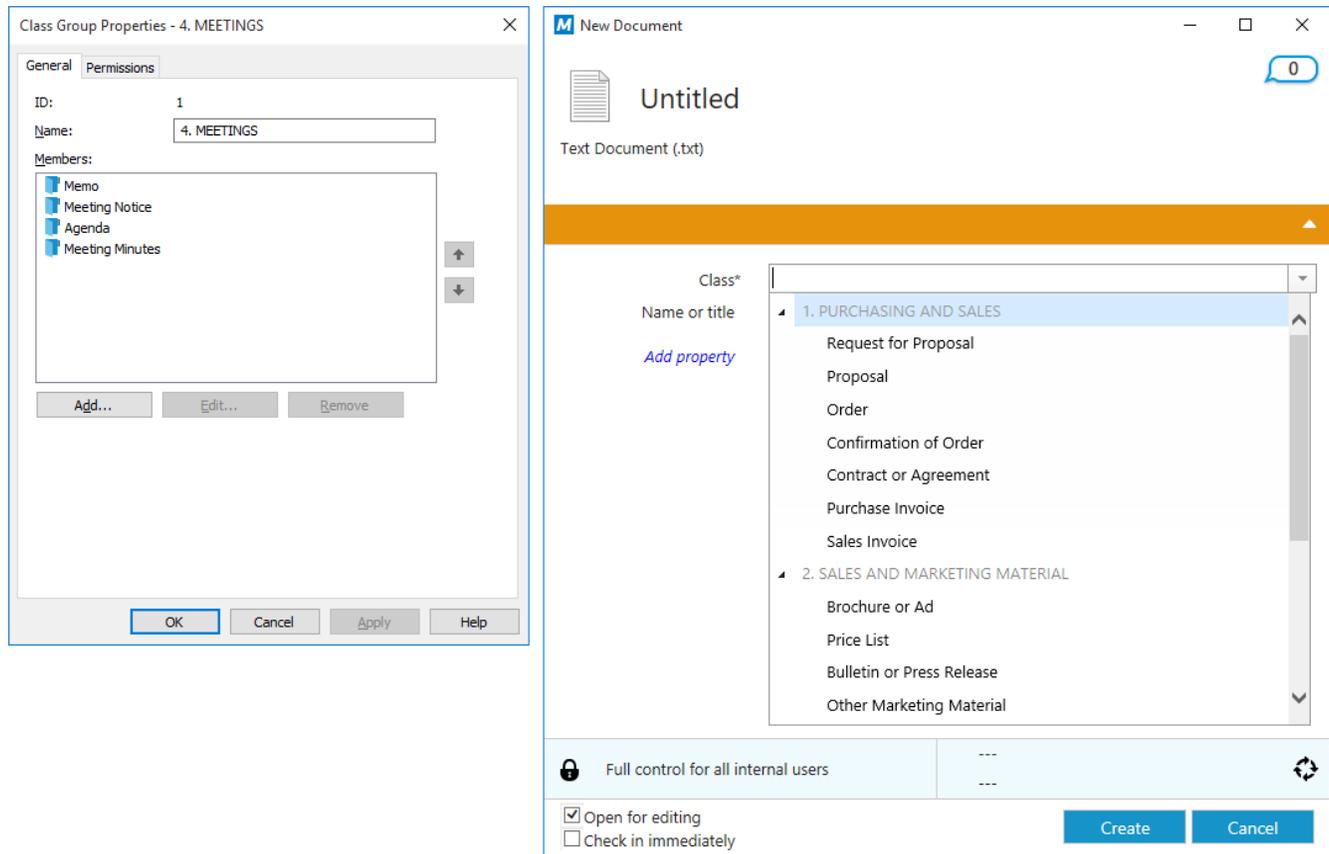


Figure 102: The "Class Group Properties" window and the new document creation dialog showing various class groups.

Permissions

You can specify the users who may see this class group via the *Permissions* tab of the *Class Group Properties* dialog.

9.5. Workflows

M-Files integrates with the organization's administrative and executive processes. Defining and monitoring tasks is easiest where the task documents are located. With the *Workflow* feature, the company's routines can be widely automated and tasks can be assigned to the right people at the right time. Users receive e-mail notifications about task-related issues, and managers can monitor task progress and approve completed tasks.

Workflows can be used, among many other processes, for purchase invoice circulation. Workflow states could in that case include:

- Awaiting approval
- Approved
- Rejected
- Paid in full

You can define who is allowed to transfer the object from one state to the next and who is responsible for the next workflow task. For example, invoices could only be approved for payment by a member of the management group.

When the invoice is in the *Approved* state, the department responsible for money transactions would automatically be informed that a new invoice is awaiting payment. When the invoice has been paid, it is transferred to the *Paid in full* state.

Graphical Workflow Designer

M-Files 2015 (and later) comes with a graphical user interface for managing workflows. See [Graphical Workflow Designer](#) on page 238 for more details.

Graphical Workflow Designer

In M-Files versions 2015 and later, you can use a graphical tool for creating and modifying workflows. The designer is an integral part of M-Files Admin. You can access the designer by selecting your vault connection from the left-side tree view and by navigating to *Workflows*.

Note: The designer requires Internet Explorer 9 or later to be installed in the computer.

Workspace

The *Workflows* window has two sections:

- The top section lists the available workflows and the task pane commands *New Workflow*, *Make Copy*, *Delete* and *Properties*.
- The bottom section displays the graphical workflow designer. The designer-related task pane commands are explained under *Using the designer* and *Task pane commands*.

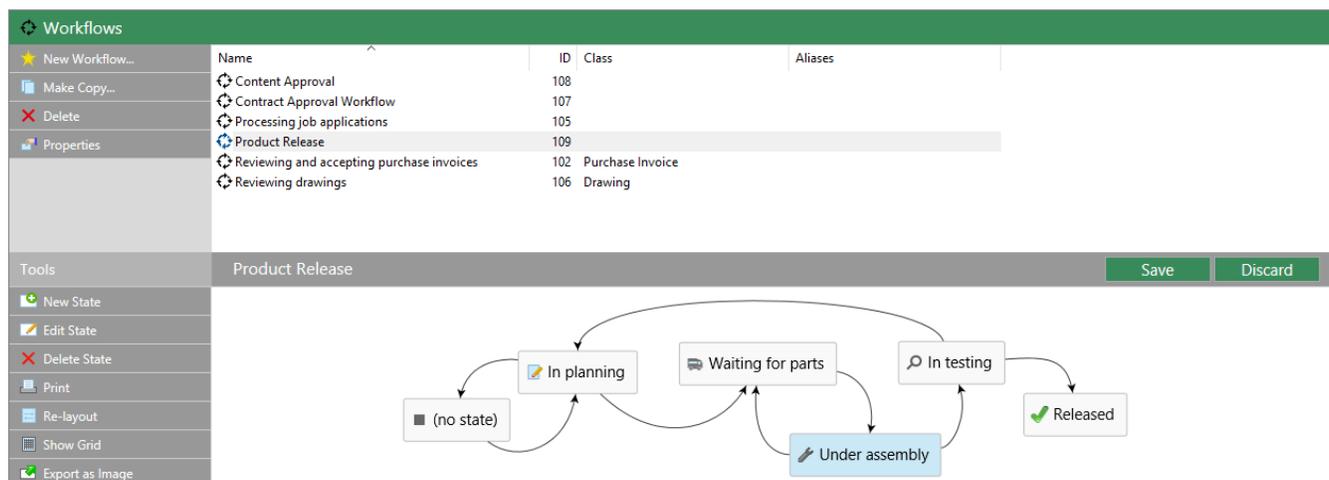


Figure 103: The graphical workflow designer in M-Files Admin.

The *Save* and *Discard* commands are located in the top-right corner of the workspace, on the title bar of the selected workflow. The *Save* command covers all the modifications to the workflow, including the layout of your graphical representation.

You can modify the workspace proportions by dragging the workflow title bar up or down.

Using the designer

The designer has been designed to work very intuitively. You can use the task pane and/or interact with the graphical designer and context menus.

Creating new states

You can create new states either via the task pane or by double clicking an empty space on the canvas. This opens up the dialog for a new workflow state.

Editing states

You can open the properties dialog for an existing state simply by double clicking the state, by selecting it and then clicking *Edit State* via the task pane, or via the context menu for the state.

Deleting states

States can be deleted via the task pane command *Delete*, via the state's context menu, or by selecting the state and pressing the *Delete* key on your keyboard.

Modifying the layout

The workflow states can be freely moved around on the canvas by dragging and dropping.

Connectors (state transitions)

You can add arrow connectors between the states by moving your cursor on the edge of a state rectangle and by using drag and drop. The state rectangle has green edges and the cursor changes into a cross (+) when a connector can be drawn. The connectors represent workflow state transitions.



Figure 104: A state transition being drawn from "Draft" to "Released".

Sometimes the connectors may overlap with each other or with the state rectangles. The connectors can also be modified to make the layout more readable. Just select a connector and use the two handles for re-shaping the connector.

The context menu for a connector allows you to *Edit* or *Delete* the state transition in question, as well as to *Straighten* the connector. Double clicking the connector opens the properties dialog for the state transition.

Zooming and dragging the canvas

You can zoom in and out by scrolling, as well as drag the canvas around. The context menu for an empty space on the canvas allows you to reset the zoom level.

Task pane commands

In addition to context-specific task pane commands, such as *Edit State* or *Straighten*, there are also a few actions that affect the designer or your workflow as a whole.

Re-layout

With the *Re-layout* command you can "clean up" the canvas. This basically makes M-Files suggest a default positioning for the workflow components.

Show Grid

The *Show Grid* command toggles the grid shown on the background.

Print

You can create a paper copy of the workflow by using the *Print* command on the task pane.

- **Note:** The print function uses Internet Explorer's *Page setup* settings for the page header and footer. You can set the settings for the header and footer to *empty* if you want to remove them from the printout. For instance with Internet Explorer 10, you can open the *Page setup* by clicking the tools button in the top-right corner of the browser and by selecting **Print > Page setup**.

Export as Image

In addition to creating a print-out, you can export the workflow as a PNG file. Clicking the *Export as Image* command opens the common Windows save dialog for the image file.

Tooltips

The state rectangles and connectors may display a tooltip while the cursor is hovered above them.

In addition to the title of the element, the tooltips may contain a description as well as information on the state transition conditions and special actions related to the transition or workflow state.

New Workflow

The Workflow feature enables automating company processes. You can start creating a new workflow by highlighting the *Workflows* heading in the left-side tree view of M-Files Admin and selecting *New Workflow...* on the task pane.

Workflow Properties - Reviewing drawings

General Permissions Advanced

Name: Reviewing drawings

Description: Any drawings submitted need to be approved.

States:

Name	ID
Listed for approval	135
Approved	136

Add... Edit... Remove

Allow using this workflow with the following class: Drawing

OK Cancel Apply Help

Figure 105: The properties dialog for a workflow.

Name

Give a descriptive name for the workflow.

Description

A free-form description of the workflow.

States

Use the arrow keys along the right side of the dialog to change the order of the states. Use the **Add...**, **Edit...** and **Remove** buttons to manage the workflow states.

Allow using this workflow with the following class

You can allow a given workflow to be used with all classes or with one class only. For example, you can define that the *Purchase Invoice Approval* workflow can be selected for documents in the *Purchase Invoice* class only. The workflow will in that case not be selectable for documents in any other class.

The Permissions tab

Access for viewing this workflow can be set on the *Permissions* tab. If the user does not have access for viewing the workflow, also the workflow states are hidden.

The Advanced tab

From the *Advanced* tab, you can define an alias for the workflow. For more information, see [Associating the Metadata Definitions](#) on page 168.

Creating a New Workflow

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, select the **Workflows** node.
5. Click **New Workflow...** on the task pane to start creating a new workflow.
 - The **Workflow Properties** dialog is opened.
6. In the **Name** field, enter a name for the workflow and, in the **Description** field, enter an optional description for the workflow.
7. Optional: Click **Add...** to add states to the workflow.
 - i** States can also be added later in the graphical workflow designer by selecting a workflow and clicking **New State** on the **Tools** pane.
8. Click **OK** to finish creating the workflow.

The workflow you have just created is added to the **Workflows** list. You can add workflow states and state transitions to it by selecting the workflow from the list and using the tools on the **Tools** pane.

- For instructions on adding workflow states to a workflow, see [Adding States to a Workflow](#) on page 242.
- For instructions on adding state transitions between states in a workflow, see [Adding State Transitions to a Workflow](#) on page 250.

Workflow States

Workflow states are used for dividing workflows into smaller stages. You can create a new workflow state by double clicking the canvas in the [Graphical Workflow Designer](#) on page 238 or by clicking the **Add...** button on the **General** tab of the **Workflow Properties** dialog (see [New Workflow](#) on page 240).

Individual states allow a variety of settings. The *General* tab contains the name and the description of the state. The properties dialog for a workflow state also includes the tabs *Conditions*, *Actions*, and *Advanced*. The *Advanced* tab allows you to assign an alias for the state. The tabs **Conditions** and **Actions** are presented in their own subtopics.

In versions 2015 and earlier, the **State Properties** dialog contains the **State Transition** tab. This can be enabled in M-Files 2015.1 and later by using a Windows registry setting. Ask your M-Files consultant for more information, or contact our customer support at support@m-files.com.

Adding States to a Workflow

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, select the **Workflows** node.
5. Select a workflow from the **Workflows** list and click **New State** on the **Tools** pane to open the **State Properties** dialog.
6. In the **Name** field, enter a name for the workflow state and, in the **Description** field, enter an optional description for the state.
7. Optional: In the **Conditions** tab, specify the preconditions and postconditions that must be met before an object can be moved in or out of this state.
 -  For more information on workflow state conditions, refer to [Conditions](#) on page 242.
8. Optional: In the **Actions** tab, specify the actions that are performed when an object is moved to this state.
 -  For more information on workflow state actions, refer to [Actions](#) on page 244.
9. Click **OK** to close the **State Properties** dialog.
10. Click **Save** to save your changes.

The new state you have just defined is added to the workflow. The state can be seen in the graphical workflow designer.

- For instructions on adding state transitions between states in a workflow, see [Adding State Transitions to a Workflow](#) on page 250.
- For instructions on creating a new workflow, see [Creating a New Workflow](#) on page 241.

Conditions

On the *Conditions* tab you can specify different pre- and post-conditions for the state transitions. For example, you can define specific properties or their values that a document should meet before it can be moved to this state. The conditions can also specify that, for instance, the basic documents related to the project (specification document, implementation and project timetable instructions, etc.) must be on a certain level before moving to the next level is possible.

 Video: [State Transition Conditions](#)

The conditions can be specified in broader scope and detail using variables, generic features of VBScript, and M-Files API. The following variables can be used in advanced conditions: `VaultSharedVariables`, `MFScriptCancel`, `CurrentUserID`, `Vault`, `DisplayID`, `ObjVer`, `PropertyValues`, `StateID`, `PropertyDef`, `SavepointVariables`, `TransactionCache`, and `GetExtensionObject`. For more information about variables, refer to [VBScript Variables Explained](#) on page 304.

-  **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

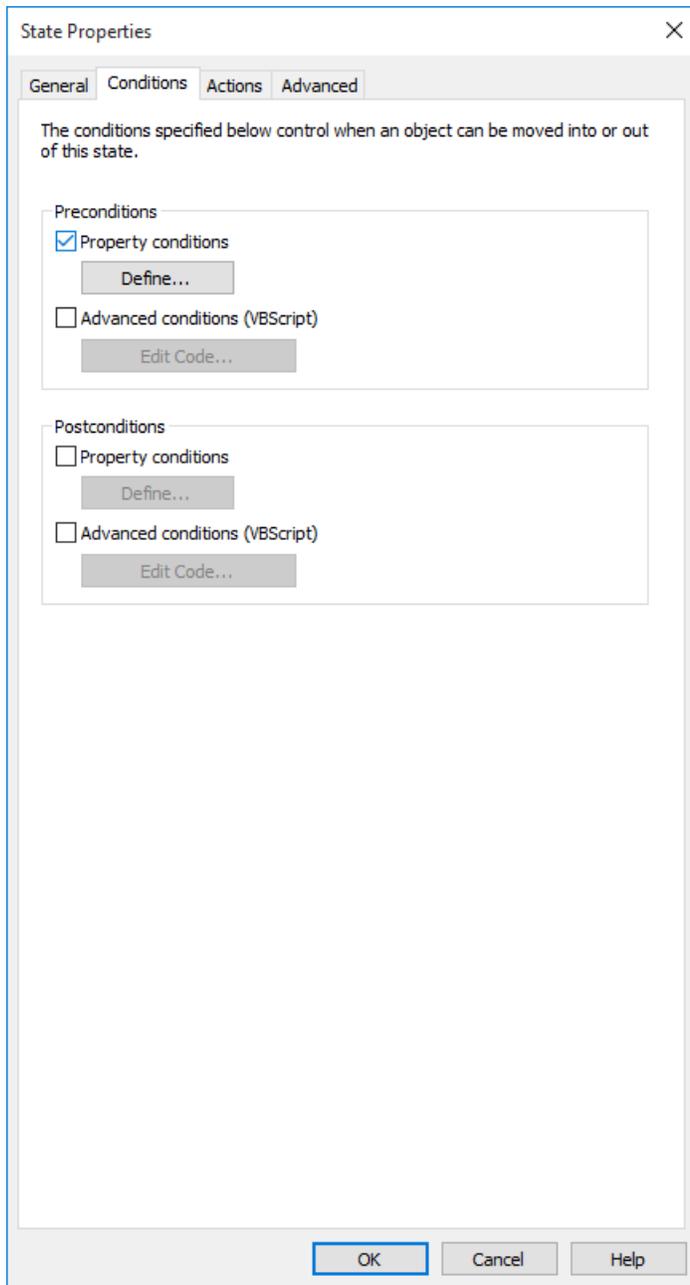


Figure 106: The "Conditions" tab of the workflow state properties.

Preconditions

The state preconditions specify the object properties that are required in order for the object to be moved to this state.

For example, you can specify that the *Approved by* information must be entered before the document can be moved to the *Approved* state.

Postconditions

The state postconditions specify the object properties that are required in order for the object to be moved out of this state.

For example, you can specify that the *Cost center* information in a purchase invoice must be entered before the document can be moved from the *Awaiting definition of cost center* state.

Actions

The *Actions* tab is used for setting the actions to be performed when the object enters to a certain state.

The screenshot shows the 'State Properties' dialog box with the 'Actions' tab selected. The dialog contains the following elements:

- Tabbed interface: General, Conditions, **Actions**, Advanced.
- Text: "The actions specified below are carried out when an object moves into this state."
- Checked action: **Set permissions:**
 - Dropdown menu: Full control for all internal users
 - Buttons: Do not use automatic permissions, Ignore the permissions of the latest checked-in version for this version
- Unchecked actions:
 - Delete
 - Mark for archiving
 - Send notification (with Define... button)
 - Set properties (with Define... button)
 - Convert to PDF format (with Define... button)
 - Run script (with Edit Code... button)
 - Assign to user (with Define... button)
 - Create separate assignments
- Table for 'Create separate assignments':

Class	Title
- Buttons: Add..., Edit..., Remove
- Bottom buttons: OK, Cancel, Help

1. [Set permissions, Delete, and Mark for archiving](#) on page 245
2. [Send notification and Set properties](#) on page 245
3. [Convert to PDF format](#) on page 245
4. [Run script](#) on page 246
5. [Assign to user](#) on page 246
6. [Create separate assignments](#) on page 247

Set permissions, Delete, and Mark for archiving

You can define new permissions to be set, the object to be deleted, and/or archiving to be performed as a result of a state transition. Several options of the **Actions** tab can be selected at the same time.

Do not use automatic permissions

As a result of this state transition, the object bypasses the automatic permissions that would normally be applied to the object, and the effective permissions for the object version are configured with the **Set permissions** feature. However, if a user modifies the object, the automatic permissions are re-applied to the object.

Ignore the permissions of the latest checked-in version for this version

The permissions of the objects are version-specific in M-Files. In order for you to access the latest object version, you must have at least read access to it. To access any of the previous versions, you must have at least read access to that specific version *and* to the currently latest version. Enabling this checkbox ignores the permissions of the latest checked-in version and grants users access the prior versions of the object to which they have at least read access rights – regardless of the permission settings of the latest version.

This feature merits an example: Let's suppose that we have an SOP and an SOP workflow with the states *Draft*, *Waiting for Approval* and *Approved*. All three states have different permissions, as a draft is shown only to the user who created the document, and an approved document is shown to all users.

The document is now at version 3 and in the *Approved* state (and thus visible and accessible to all users). As modifications need to be introduced, it is moved back to the *Draft* state and the permissions are changed so that only the creator of the document can see it. If the check box **Ignore the permissions of the latest checked-in version for this version** was active when the new version was created, all users would still be able to access the document version 3, but not the newest one. If the check box was not active, however, only the creator of the document would be able to see the document version 3.

Send notification and Set properties

Send notification

To send a notification, first define the recipient users and user groups. Then enter the notification subject and the message. You can also specify the user from metadata or state transitions.

The **Add Placeholder...** buttons can be used to insert values from the object metadata to the subject line or message content (see also *Placeholder descriptions* under [Notification Settings \(M-Files Admin\)](#) on page 150).

▶ Video: [Notifications in Workflows](#)

Set properties

You can define different object properties and values to be applied when an object's state is changed. For example, you can make the *Published* version label to be assigned to a drawing when the drawing moves to the *Approved* state.

Convert to PDF format

Files of the object can be automatically converted into PDF form on the server when the object changes state. Conversion to PDF on the server can be done for files in such source formats as Word, Excel, PowerPoint, Outlook, and Visio, as well as RTF and OpenOffice files.

When converting to PDF, M-Files updates the M-Files property fields, if any, in Word and Excel documents by using the current metadata of the object.

Conversion settings

When you activate the **Convert to PDF** function from the **Actions** tab, M-Files converts the files in a single-file or multi-file document to PDF form automatically when the object's state changes. You can define advanced settings for the conversion.

Store each PDF file as a separate file next to the original file: If you also want to keep the file in its original format, select to store the PDF file next to the original file. Then the PDF file does not replace the original. The PDF file is created with the same name as the original file. If this function is applied to a single-file document, M-Files changes it into a multi-file document when creating the PDF file.

Overwrite existing PDF files: If there are already PDF files with this name in the multi-file document, select this option if you want to overwrite the identically named existing PDF files with the versions created via this function. If this option is not selected and the multi-file document already has a PDF file with the same name, M-Files will notify of the error and the PDF file will not be created.

Convert to PDF/A-1b: Select storage in PDF/A-1b form when you want to comply with ISO standard 19005-1:2005 for long-term preservation of electronic documents. PDF/A-1b is a more restricted format than that of standard PDF files, so files converted to PDF/A are often bigger than files converted to standard PDF. In addition, in export to PDF/A, certain advanced appearance settings may be omitted. You should use conversion to PDF/A form only if it is particularly necessary on account of, for example, requirements for long-term preservation.

Prevent state transition if the object contains files in an unsupported format: Select this if you want to prevent the state transition in cases wherein the PDF conversion function encounters files with formats that cannot be exported as PDF files (for instance, ZIP files). An error message is displayed and the state transition is prevented.

Run script

Operations can be specified in more detail using variables, generic features of VBScript, and M-Files API. For example, you can set consecutive numbers for different publication versions or add the send date for a document when it moves to the *Sent* state.

The following variables can be used in this script: `VaultSharedVariables`, `MFScriptCancel`, `CurrentUserID`, `Vault`, `DisplayID`, `ObjVer`, `PropertyValues`, `StateID`, `SavepointVariables`, `TransactionCache`, `PropertyDef`, and `GetExtensionObject`. For more information about variables, refer to [VBScript Variables Explained](#) on page 304.

 **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

Assign to user

Assignments are an important part of workflows. They transfer information and responsibility for task execution to the correct person automatically during a state transition. M-Files offers two types of assignments for use in connection with workflows.

 Video: [Assign to User](#)

By selecting **Assign to User**, you can create an assignment that does not result in a separate object. An assignment created with this option is switched to the "complete" state when one of the persons to whom the task was assigned changes the document state in the workflow (usually by moving the object to the next state).

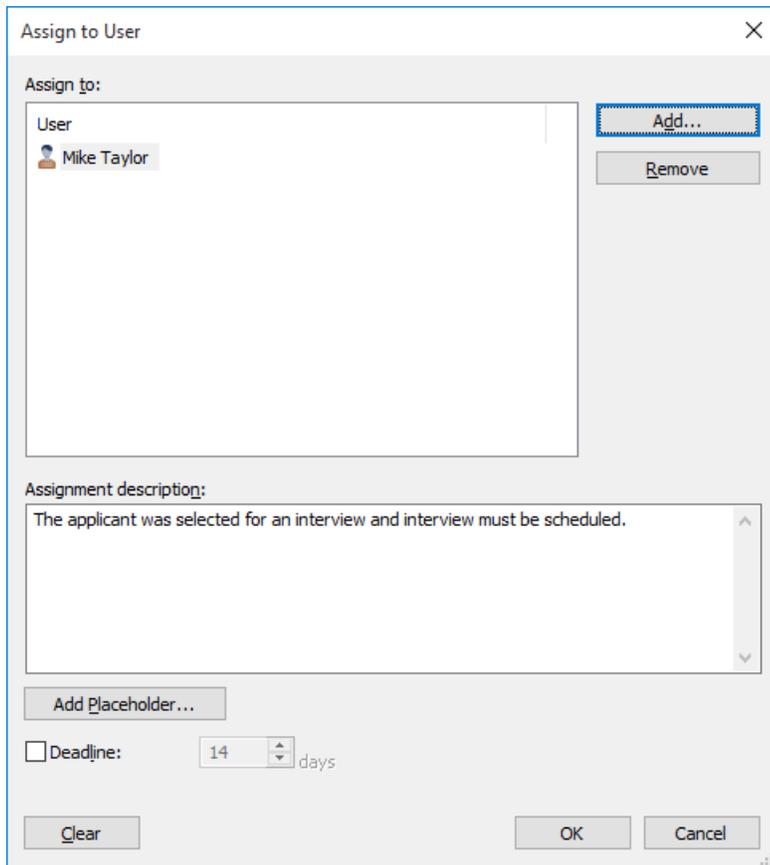


Figure 107: Define the task in the Assignment dialog.

In the object's properties, you can see whom it has been *assigned to*, provided that the object is in a state to which an assignment is related.

The person to whom the task was assigned can change the state by using the functions in the task area, metadata card or context menu.

Create separate assignments

You can also have separate assignments created once the object workflow is moved to a certain state. To create such assignments, enable **Create separate assignments** and click **Add...** on the **Actions** tab of the **State Properties** dialog.

If you want the workflow state to be automatically changed after the completion of the separate assignment(s), you need to define that in the [Trigger](#) on page 261 options of the state transition.

Adding and Removing users

You can manage the persons responsible for completing the task by using the **Add...** and **Remove** buttons in both the **Assign to User** dialog and the **Create separate assignment** dialog. In addition to adding users via the **Users or user groups** list, you can add users based on metadata or a state transition. For example, a person who has been specified in the property *Approved by* in the object's metadata can automatically be specified as the person to whom the task is assigned. For more information, see *Permissions* under [Permissions](#) on page 252 and [Pseudo-users](#) on page 74.

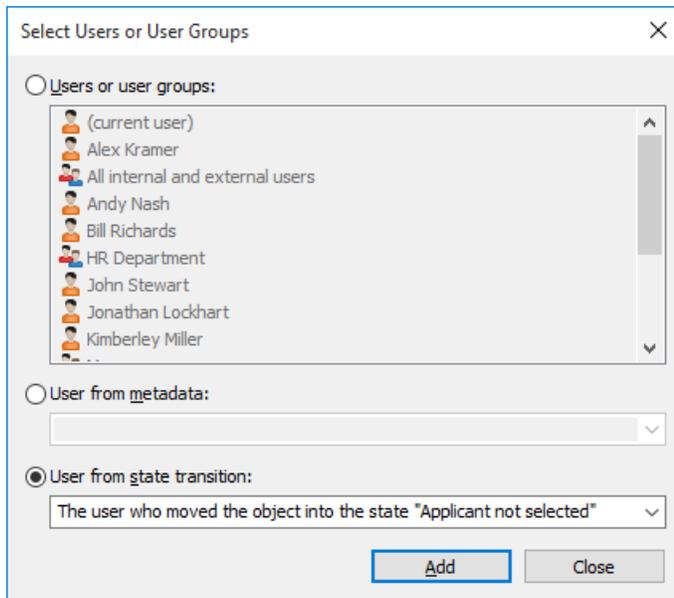


Figure 108: Selecting a user based on an earlier state transition.

Monitoring

In the **Monitoring** section (**Actions > Create separate assignments > Monitoring**), you can define the users that you want to notify each time a task has been completed. The assignment submitter is automatically defined as a task monitor.

There are separate icons for uncompleted and completed assignment objects, making it easy to distinguish between uncompleted and completed assignments.

Assignment class

The assignment class determines the assignment type and assignment completion conditions. See [Assignment Class](#) on page 235 for more information.

Assignment description

Add a free-form description of the task. The assignment notice by email displays the description to the person to whom the task was assigned. Notification templates supported by M-Files can also be included in the description. For more information on notification templates and placeholders, refer to [Notification Settings \(M-Files Admin\)](#) on page 150.

Deadline

If desired, you can specify a deadline for the assignment. An automatic reminder is sent if the assignment has not been marked complete when the deadline is approaching. The reminder will be sent using a common notification rule which can be deleted by the administrator.

-  **Tip:** The deadline can also be useful for creating views. You can create a view to display any assignments with an approaching deadline. For more information about views, refer to [New View](#) on page 76.

Creating a Workflow State with a Separate Assignment

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.

3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, select the **Workflows** node.
5. Select a workflow that you want to edit from the **Workflows** list.
 - The workflow is opened in the graphical workflow designer.
6. In the graphical workflow designer, right-click a workflow state to which you want to add a separate assignment and select **Edit**.
 - The **State Properties** dialog is opened.
7. In the **Actions** tab, check the **Create separate assignments** check box and click the **Add...** button.
 - The **Create Separate Assignment** dialog is opened.
8. Click **Add...** to add the user or users the separate assignment is assigned to.
9. Optional: Click **Monitoring...** to add a user or users who will receive a notification once this assignment is marked complete, approved, or rejected.
10. From the **Select assignment class** drop-down menu, select the assignment class for the separate assignment.
11. In the **Title** field, enter a title for the assignment and, in the **Assignment description** field, enter an optional description for the assignment.
 - By clicking the **Add Placeholder...** button, you can place placeholders for metadata properties in the **Title** and **Assignment description** fields.
12. Optional: Check the **Deadline** check box and select the number of days to define a deadline for the separate assignment.
13. Click **OK** to close the **Create Separate Assignment** dialog.
14. Click **OK** to close the **State Properties** dialog.
15. Click **Save** to save your changes.

The separate assignment is added to the workflow state. When an assignment with the aforementioned workflow is moved to the aforementioned state, the separate assignment is created and added as a linked assignment under the primary assignment.

Workflow State Transitions

Workflow state transitions are used for moving from one workflow state to another. The transitions can be initiated manually by users or *triggered* on page 261 automatically by M-Files Server. They may also be set to require an *Electronic Signature* on page 253.

The General tab

The **General** tab contains the name of the state transition as well as an optional description for the state transition.

The Electronic Signature tab

The **Electronic Signature** tab allows you to enable eSigning for a state transition. If enabled, an electronic signature must be signed by the user before the state transition is performed. See [Electronic Signature](#) on page 253 for more information.

The Trigger tab

On the **Trigger** tab, you can define conditions for automatic state transitions. See [Trigger](#) on page 261 for more information.

The Advanced tab

On the **Advanced** tab, you can set an alias for the state transition. For more information about using aliases, see [Associating the Metadata Definitions](#) on page 168.

Adding State Transitions to a Workflow

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, select the **Workflows** node.
5. Select a workflow that you want to edit from the **Workflows** list.
 - The workflow is opened in the graphical workflow designer.
6. In the graphical workflow designer, place your cursor on the border of the state from which you want to create a state transition so that your cursor changes to a crosshair.
7. Holding down the left mouse button, draw a state transition by dragging the mouse cursor from the selected state to another.
8. Right-click the state transition arrow that you just created and select **Edit** from the context menu.
 - The **State Transition** dialog is opened.
9. In the **Name** field, enter a name for the state transition and, in the **Description** field, enter an optional description for the transition.
10. Optional: In the **Electronic Signature** tab, you can specify an electronic signature that must be provided before completing this state transition.
 - i** For more information on electronic signatures, refer to [Electronic Signature](#) on page 253.
11. Optional: In the **Trigger** tab, you can define a condition that triggers this state transition once the condition is fulfilled.
 - i** For more information on triggers, refer to [Trigger](#) on page 261.
12. Click **OK** to close the **State Transition** dialog.
13. Click **Save** to save your changes.

The state transition is added to the workflow between the selected workflow states. This is manifested by the arrow between the states in the graphical workflow designer.

- For instructions on adding states to a workflow, see [Adding States to a Workflow](#) on page 242.
- For instructions on creating a new workflow, see [Creating a New Workflow](#) on page 241.

Parallel State Transitions

You can define multiple workflow state transitions between two states. This is useful, for instance, if you need to define multiple automatic transitions based on different criteria. For more information about creating state transitions, see [Adding State Transitions to a Workflow](#) on page 250.

Example: Creating a Workflow with a Parallel State Transition

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, highlight **Workflows**.
5. In the **Workflows** list, select one of the existing workflows, such as *Reviewing drawings*.
 - The workflow is shown as a flowchart in the graphical workflow designer below the **Workflows** list.
6. Click **New State** in the **Tools** pane to create a new state for the workflow.
 - i** If you already have a state called *Rejected* in your workflow, you can skip this and the next step, and proceed to step 8.
 - The **State Properties** window is opened.
7. Enter the name *Rejected* in the **Name** field and click **OK** to close the **State Properties** window.
8. In the graphical workflow designer, place your cursor on the border of the *Listed for approval* state (or any other intermediary state, if your workflow does not have the *Listed for approval* state) so that your cursor changes to a crosshair.
9. Hold down the left mouse button and drag the crosshair to the *Rejected* state to draw a state transition between the *Listed for approval* and *Rejected* states.
10. Repeat step 8 to draw another state transition between the *Listed for approval* and *Rejected* states.
11. Right-click one of the state transition connector arrows and select **Edit**.
 - i** If you are seeing only one connector arrow between the states, the connectors are most likely on top of each other. Click the topmost connector to select it and click and drag the handles to reshape the connector.
12. Go to the **Trigger** tab, select the **Trigger the state transition after** option, and enter *10* in the **days** field.
13. Click **OK** to close the **State Properties** window.
14. Click **Save** in the upper-right corner of the graphical workflow designer to save the changes you have made to your workflow.

You should now have a workflow with two parallel state transitions from the *Listed for approval* state to the *Rejected* state: one that is initiated by users and another that is triggered automatically after 10 days, if it is not initiated by users in 10 days.

Permissions

You can access the state transition permissions by adding and selecting a state transition, clicking the **Edit Transition...** button and selecting the *Permissions* tab.

▶ Video: [State Transition Permissions](#)

Permissions

On the *Permissions* tab, you can specify which users are allowed to perform an explicit state transition.

State Transition: Applicant selected for interview -> Interview scheduled

General | **Permissions** | Electronic Signature | Trigger | Advanced

Specify the users or user groups who may cause this state transition.

Users and user groups

Managers

Add... Remove

Permissions	Allow	Deny
Cause this state transition	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel Help

Figure 109: Define permissions for changing state by means of state transitions.

The *Select Users or User Groups* dialog under the **Add...** button also contains the options *User from metadata* and *User from state transition*.

User from metadata

You can also utilize pseudo-users in state transitions. For example, you can specify that invoices are to be accepted only by the project manager of the project linked to the invoice. In other words, you can define users via the object's metadata. Then the right to perform state transitions is not bound to a certain named person; it is instead determined dynamically on the basis of an object's metadata.

User from state transition

You can also select users on the basis of previous state transitions. You can specify that the document can be moved from the *Approved* state to *Approval undone* only by the user who originally moved the document into the *Approved* state.

Electronic Signature

The electronic signature offered by the Electronic Signatures module expands the versatile workflows of M-Files: the state transition can be certified with a username. This function can easily be used to certify, for example, approval of documents.

The Electronic Signatures module is available for a separate fee. This module includes event logging extensions and electronic signature functionality. For more information, see [Electronic Signing and Compliance](#) on page 179.

Electronic signature for workflow state transitions

To incorporate an electronic signature with a workflow state transition:

1. Select a transition in the [Graphical Workflow Designer](#) on page 238.
2. Click **Edit Transition** in the left-side task pane.
3. Move to the **Electronic Signature** tab.

You should now have the **Electronic Signature** tab of a state transition in front of you.

State Transition: Applicant selected for interview -> Interview scheduled

General Permissions **Electronic Signature** Trigger Advanced

Require electronic signature for this action:

Signature meaning

Show a predefined signature meaning to the signer

Signature reason:

Signature meaning: %SIGNED_FROM_STATE% -> %SIGNED_BY%
"/>

Allow the signer to choose the signature meaning

Signature metadata

Prompt the signer to enter a free-form feedback property value

Property:

Additional information (not displayed when signing):

%SIGNED_AT_UTC% %SIGNED_BY%
"/>

Signature target

Create a separate signature object

Identifier:

Save signature manifestation as text

Property:

Figure 110: The "Electronic Signature" tab for a state transition.

Enable the option **Require electronic signature for this action** to be able to modify the options.

Signature meaning

The **Signature meaning** options enable you to select either a predefined signature reason-meaning pair or to define multiple meanings for the signer to choose from. The signature reason is a brief heading-level description for the signature, such as *Approval of instruction document* or *Approval of invoice*. The signature meaning is a description that should enable the signer to understand what is being approved. The maximum number of characters is 500, and placeholders can be used. The available placeholders are listed under [Placeholders for Signature meaning and Additional information fields](#) on page 257.

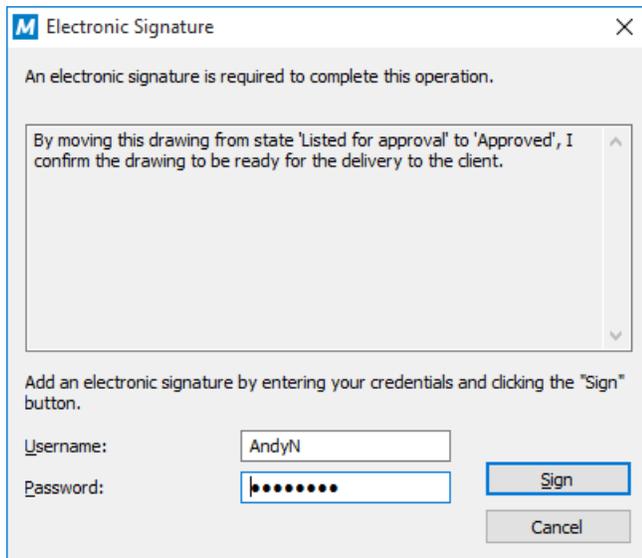


Figure 111: The signature reason and meaning displayed on an electronic signature prompt.

Signature metadata

The electronic signature can be set to require the signer to add a value for a selected metadata property, such as *Comment*. The text is saved either to a separate signature object (see below) or to the object using the workflow. You can also include additional information to the **Additional information** text box. The available placeholders are listed under [Placeholders for Signature meaning and Additional information fields](#) on page 257.

Create a separate signature object

Select this option if you want to create a new object for the signature. Then the signature object is automatically in relationship with the object to which the state transition applies.

- Note:** In order for M-Files to be able to create the signature objects, certain metadata definitions have to be set up. See [Metadata Definitions for an Electronic Signature Object](#) on page 257 for more details.

Identifier

The identifier is free-form text. You can set, for example, *Purchase Invoice Approval* as the identifier. In creation of the signature object, the identifier becomes a part of the metadata for the object. The *Identifier* property can be utilized in, for example, scripts for state-transition functions or in searches to individualize a certain type of signature.

Content Approval: Mike Taylor 2.2.2015

Signature ID 1 Version 5

Created 9/24/2015 5:40 PM Mike Taylor
Last modified 9/24/2015 5:42 PM Mike Taylor

Class*	Executed signature
Name or title*	Content Approval: Mike Taylor 2.2.2015
Meaning	I hereby electronically sign the state transition from "1. Draft" to "2. Content Approval". In other words I approve the document's content.
Reason	Content Approval
Signer	Mike Taylor
Signature identifier	CONTENT APPROVAL

[Add property](#)

Full control for all internal users

Content Approval
2. Content Approval

Close

Figure 112: A signature object showing information on the signer, the signing date, the meaning of the signature and other elements.

Save signature manifestation as text to a property

Select the property that the signature is to be associated with. Then the content of the signature that has been defined is displayed as the property value in the object's metadata. The default property is *Signature manifestation*. The text content of the signature property consists of the *reason*, *meaning* and *additional information* for the signature.

- Note:** If you use the same property for signatures of all state transitions in the workflow, such as the default property *Signature manifestation*, you can see only the latest signature manifestation in the metadata of the object's latest version. Other signatures with their contents (manifestations) can be found via the relevant object's version history.

You can also create a separate property definition of your own for each signature of the relevant state transition in the workflow. Then you can see all of the properties created and their signature content (manifestations) in the metadata of the object's latest version.

- Note:** If you first create a property in the *Property definitions* area, specify its permissions in such a way that the users can see the property used in the signatures but cannot edit it.

Electronic signature for the state transition

If an electronic signature has been defined for the state transition, the signature is always required for the user before the change in state. In order for the state to change, the object must be checked in, and change of state with a signature can only be done one object at a time. Only users using Windows authentication can perform state changes that require an electronic signature. The user adds an electronic signature to the state transition by entering his or her identification data and logging in. The electronic signature does not refer to an electronic "fingerprint"; it always requires entering the user identification and logging in.

Placeholders for Signature meaning and Additional information fields

The available placeholders to be used with the *Signature meaning* and *Additional information* fields are listed in the table below.

Placeholder	Description
%SIGNED_AT_UTC%	The UTC time at the time of signing.
%SIGNED_AT_LOCAL%	The time on the client computer at the time of signing.
%SIGNED_AT%	The time on the server computer at the time of signing.
%SIGNED_BY%	The signer name.
%SIGNED_FROM_STATE%	The source state.
%SIGNED_TO_STATE%	The target state.
%SIGNED_FOR_STATETRANSITION%	The title of the state transition for which the electronic signature is required.
%SIGNED_BY_WITH_PROXY%	Displays the name of the signer and the user on behalf of whom an assignment has been electronically signed. For instance: "Preston Present, on behalf of Abraham Absent".

Metadata Definitions for an Electronic Signature Object

In order for automatic signature objects to be created in M-Files, aliases must be created for the new object type as well as for the required property definitions. The aliases are used for creating objects at the time of signing. If you are using the [Electronic Signatures module](#) on page 179, these definitions are already available. Otherwise, you should create the metadata definitions below in order to activate the separate signature objects.

Object type

Create a new object type and name it, for example, the *Signature* object type. In the advanced settings, specify the object type alias:

```
M-Files.QMS.Signature.ObjectType
```

Compulsory property definitions for the signature object

When you have created a new object type, M-Files automatically creates an equivalent property definition. Select this property definition in the property definitions and add the following alias:

```
M-Files.QMS.Signatures
```

In addition to this, add the aliases listed below:

Identifier	
Alias	M-Files.QMS.Signature.Identifier
Data Type	Text
Description	The identifier property is added to the electronic signature when the electronic signature object is created. The identifier property value is specified in the electronic signature settings in M-Files Admin.

Reason for signature	
Alias	M-Files.QMS.Signature.Reason
Data Type	Text
Description	A brief heading-level description for the signature.

Signature meaning	
Alias	M-Files.QMS.Signature.Meaning
Data Type	Text (multi-line)
Description	A description enabling the signer to understand what is being approved.

Signer	
Alias	M-Files.QMS.Signature.Signer
Data Type	Choose from list (select the <i>Users</i> value list)
Description	The vault user electronically signing the state transition.

User	
Alias	M-Files.QMS.Signature.User
Data Type	Choose from list (select the <i>Users</i> value list)
Description	The vault user to whose identity the signature is bound when the signature is used for moving an assignment to a terminal state, such as <i>Completed</i> , <i>Accepted</i> , or <i>Rejected</i> .

You can freely name the compulsory property definitions mentioned above, but you should use the most descriptive names possible, since this information is shown in the metadata of the signature object.

Optional property definitions for the signature object

You can also create various optional property definitions for the signature object. For example, you may want to create a new property definition for *additional signature information* with the data type *Text (multi-line)* and add the following alias:

M-Files.QMS.Signature.AdditionalInfo

The rest of the optional properties are listed below:

M-Files.QMS.Signature.Signer.Name	
Data Type	Text

M-Files.QMS.Signature.Signer.Name	
Description	Contains the full name of the signer.

M-Files.QMS.Signature.Signer.Account	
Data Type	Text
Description	Contains the M-Files account name of the signer.

M-Files.QMS.Signature.LocalTimestampText	
Data Type	Text
Description	The local time of the signature as text, including the timezone information.

M-Files.QMS.Signature.UTCTimestampText	
Data Type	Text
Description	The UTC time of the signature as text, including the timezone information.

M-Files.QMS.Signature.UTCTimestamp	
Data Type	Timestamp
Description	The UTC timestamp of the signature.

M-Files.QMS.Signature.Date	
Data Type	Date
Description	The signature date in local (server) time.

M-Files.QMS.Signature.FromState	
Data Type	Choose from list (select the <i>States</i> value list)
Description	The workflow state prior to the state transition. Available only when signing state transitions.

M-Files.QMS.Signature.ToState	
Data Type	Choose from list (select the <i>States</i> value list)
Description	The workflow state after the state transition. Available only when signing state transitions.

M-Files.QMS.Signature.StateTransition	
Data Type	Choose from list (select the <i>State Transitions</i> value list)
Description	The workflow state transition that has been executed. Available only when signing state transitions.

Executed, empty, and invalidated signature objects and how to utilize them

You can also create so-called empty signature objects and use them to monitor which signatures have not yet been signed and which signatures have already been executed. You can utilize these empty, executed, and invalidated signature objects creating different classes for the signature object type.

Here are the aliases which, if specified for classes of the *Signature* object type, are utilized by M-Files in various phases of electronic signing:

```
M-Files.QMS.Signature.Class.Empty
```

```
M-Files.QMS.Signature.Class.Executed
```

```
M-Files.QMS.Signature.Class.Invalidated
```

Permissions

Metadata definitions (object type and property definitions) created for the automatic signature object should be secure; it should not be possible to create signature objects manually or change their metadata. Also the property definition that binds the signed object to the signature must be secure. If you are using M-Files QMS, these definitions are already available.

Separate signature object

When you have created the necessary definitions and chosen creation of a separate object for the signature, the object will be automatically created after signing.

The name of the signature object is created automatically from the signature reason, signer and timestamp.

Other metadata for the signature object are created automatically on the basis of the signature definitions.

Inserting the Signature Property to Office Documents

The text content of the signature property can be added to a Word, Excel, or Powepoint document in the same way as other M-Files properties.

When the user selects the added property from the list, the property name, such as the name of the built-in property *Signature manifestation*, is displayed. This is why it is recommended to make the name of the property as unambiguous as possible.

When the property is selected, M-Files automatically adds the text content to the document. You should bear this in mind when you define the reason and meaning for the signature.

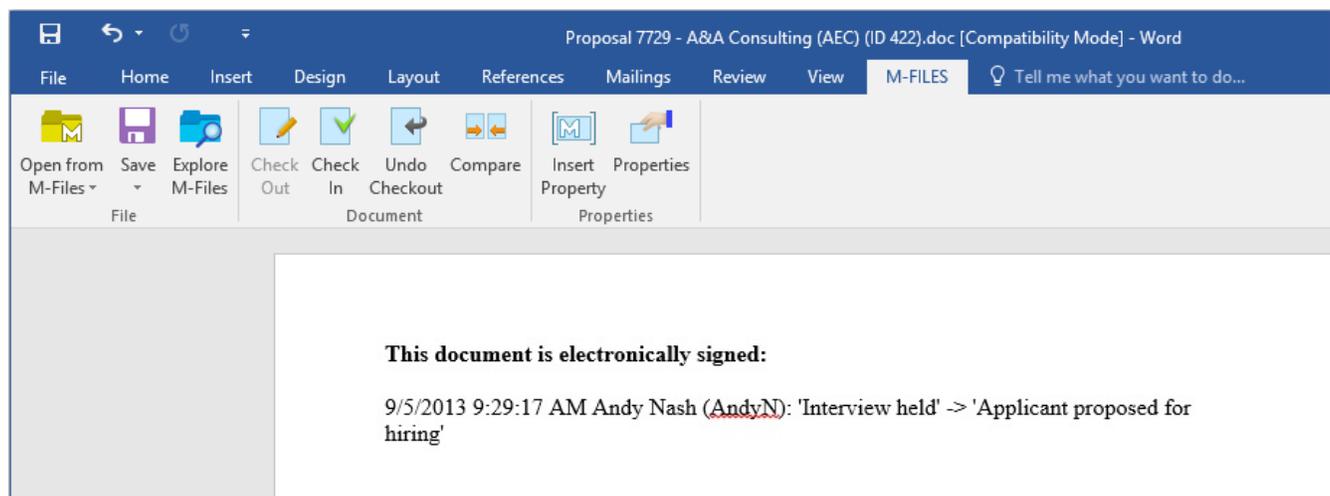


Figure 113: The signature content (manifestation) can be added to Office documents by using the "Insert Property" function.

- Note:** If the signature is inserted in the Office document and you want to cancel the state transition, you should cancel it manually by removing the property value (signature manifestation) or the property itself, in order for the cancellation to apply for the document. In most cases, rolling back this kind of state transition to the previous state requires system administrator rights.

Trigger

You can define a trigger to automatically initiate a state transition when certain conditions are fulfilled. For example, you can set a state transition to take place when all the assignments of the current workflow state are completed or approved.

▶ Video: [Automatic State Transitions](#)

Automatic state transitions are executed by the server, ignoring user permissions. This means that permissions can be used to prevent users from manually initiating a state transition, ultimately executed by M-Files Server when all the assignees have completed the task.

State Transition: Applicant selected for interview -> Interview scheduled

General Permissions Electronic Signature **Trigger** Advanced

You can define a condition that triggers this state transition automatically once the condition is fulfilled.

No automatic state transition

Trigger the state transition after 365 days

Trigger the state transition once all separate assignments are completed or approved

Trigger the state transition if any separate assignment is rejected

Trigger the state transition once the object fulfills the specified criteria

Specify...

Trigger the state transition once the conditions set in a user-defined script are fulfilled

Edit Code...

You can define the priority in which parallel transitions are evaluated on the server. The lower the number, the higher the priority.

Evaluation priority: 100

OK Cancel Help

Figure 114: Triggers can be used for automating workflow phases.

Using various criteria for the automatic transition

An automatic state transition can be configured to take place when an object fulfills certain conditions. You can configure, for example, the object to be moved to the next state when it is given a certain property or certain property value. For example, in the message process workflow, you can define that when a date is added to the *Sent* field for the document, the document will automatically be changed to the *Sent* state.

You can also set the state to be changed after all separate assignments are completed, approved, or rejected. Alternatively, you can specify custom criteria for the state change. For more information about filter settings, refer to [Filter Settings](#) on page 120.

Using a user-defined script for the automatic transition

The state transition can also be triggered via a user-defined script. This allows you to specify the transition conditions in more detail by using variables, generic features of VBScript and M-Files API. For example, you can define several state transitions related to the properties and property values at the same time.

The following M-Files variables can be used in this script: *StateID*, *StateTransitionID*, *AllowStateTransition*, *NextStateID*, *ObjVer*, *DisplayID*, *Vault*, *CurrentUserID*, *CurrentUserSessionInfo*, *PropertyValues*, *VaultSharedVariables*, *SavepointVariables*, *TransactionCache*, *MFScriptCancel*, *GetExtensionObject*, *MasterTransactionID*, *CurrentTransactionID*, *ParentTransactionID*. For more information about variables, refer to [VBScript Variables Explained](#) on page 304.

- **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

Evaluation priority

The evaluation priority enables you to define the priority in which parallel state transitions are evaluated on M-Files Server. The priority is sorted from the lowest to the highest number, zero (0) representing the highest priority.

9.6. Named Access Control Lists

A named access control list is a list of permissions that can be attached to an object. It is a list consisting of one or more subjects (users, user groups, or [pseudo-users](#) on page 74) and operations (delete, edit, read, or change permissions) that are either allowed or denied to those particular subjects. Named access control lists make managing permissions in M-Files much quicker and more effortless.

 Video: [Named Access Control List Permissions](#)

New Named Access Control List

Start by selecting *Named Access Control Lists* in the left-side tree view of M-Files Admin and click the *New Named Access Control List...* link on the task pane.

In the properties window, you can specify the users that belong to the access control list and provide them with permissions.

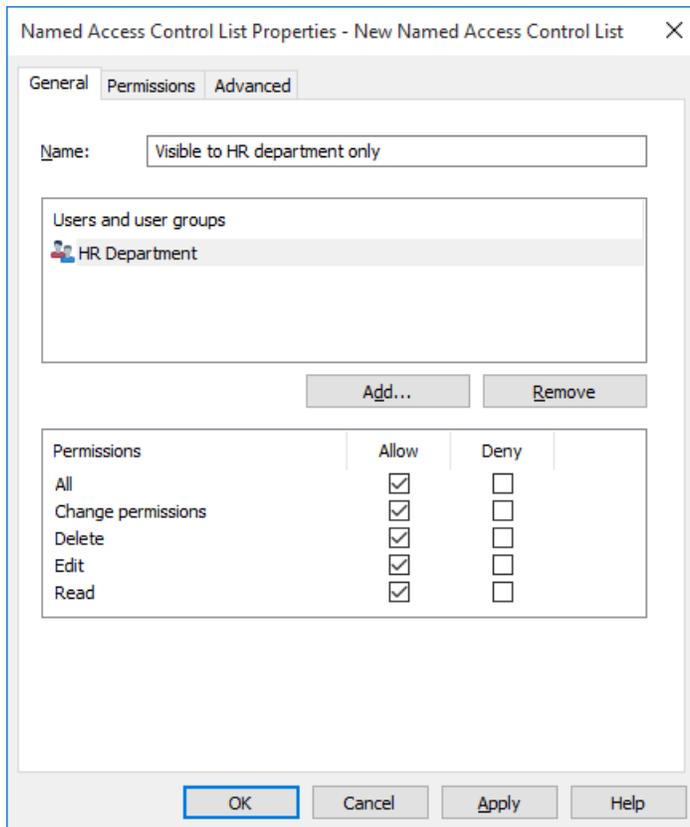


Figure 115: The "New Named Access Control List" dialog.

Named access control lists make it more efficient to manage permissions when you are filling in the object metadata (see also [New Document](#) on page 69). You can also utilize pseudo-users when creating a new named access control list. For more information, refer to [Pseudo-users](#) on page 74.

On the *Advanced* tab, you can specify the alias for the named access control list. For more information, refer to [Associating the Metadata Definitions](#) on page 168.

Modifying Named Access Control Lists

When you modify a named access control list, the modified permissions are applied to either new and existing objects to which the named access control list is already attached or to new objects only, depending on your choice.

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Highlight the **Named Access Control Lists** node.
 - The list of named access control lists in the selected vault is opened in the right-side pane.
5. In the **Named Access Control Lists** list, right-click the item that you want to edit and select **Properties** from the context menu.
 - The **Named Access Control List Properties** dialog is opened.
6. Optional: On the **General** tab, click **Add...** if you wish to add a new user or user group to this named access control list.

or

b. Check the **Deny** check box to deny the selected user from seeing this item.

9. Optional: If you want to adjust additional permissions, repeat the steps 7 and 8.

10. Click **OK** once you are done.

You have adjusted the view permissions of the selected item for the selected users.

9.7. Connections to External Sources

Here we look into using connections to external file, scanner and e-mail sources in conjunction with your M-Files vault, and for importing new content to the vault.

External File Sources

By using *connections to external sources*, you can significantly speed up the launch of M-Files. You can, for example, create a link between an existing network drive and M-Files, which makes it possible to modify files both in M-Files and externally to M-Files, using the network drive.

You can also import files from an external source. Importing involves copying the files to M-Files. This means that modifying imported files in M-Files does not affect the original files.

You can also use this function to create a link between M-Files and, for example, a scanner. The M-Files server can be set to import new files from a source folder where scanned documents are saved. For more information, refer to [Scanner Sources](#) on page 273.

 Video: [Import Files](#)

New Connection to External Source

To create a new connection to an external source, highlight the *Connections to External Sources* heading in the M-Files Admin's tree view and open *Action > New Connection to External Source*. The following dialog box should appear.

Connection Properties - New Connection to External Source

General Metadata Searchable PDF Advanced

Description: Old Network drive

Source

Path from the server: \\10.0.0.11\Documents

Include subfolders

Set Account... Filters...

Action

M-Files creates a document from each file in the source location. File contents can be linked or imported.

Link files
M-Files uses the original files. The files can be modified in M-Files and outside M-Files.

Import files
The files are copied into M-Files. Modifying the documents in M-Files does not affect the original files.

Delete source file after importing

Preserve folder structure

Target folder: Old Network Drive

Check for new and deleted files periodically

Delay between checks: 900 seconds

Refresh Now Refreshing Status...

Disabled

OK Cancel Apply Help

Figure 116: The properties for a new external connection.

Description

Give the connection a name.

Source > Path from the server

Select the external location that you wish to connect to M-Files. The path must be specified from the point of view of the M-Files server.

Source > Include subfolders

Check this box to connect the entire folder structure to M-Files.

Source > Set Account

Specify an account for M-Files to use for processing files from the specified external location. By default, M-Files uses the server identity (Local System).

Source > Filters

Define the files to be processed. For example, you can exclude all files with the extension TMP by entering **.tmp* to the filter's exclude files list.

Action > Link files

If you select *Link files*, M-Files will use the original files. You can modify files both in M-Files and externally. Modifications made in M-Files are also visible to external users, and modifications made outside M-Files are visible in M-Files. M-Files will store a version history of linked documents, so that at least all versions modified in M-Files will be available for future use.

Linking is useful while launching the system, for example, when some users may still be without an M-Files license.

Action > Import files

If you select *Import files*, the files will be copied to M-Files. Modifying documents in M-Files will not affect the original files.

Delete source file after importing

If you check this box, the source file will be deleted after it has been imported to M-Files. This feature is useful, for example, when importing scanned files to M-Files.

Preserve folder structure

This setting preserves the imported folder structure in M-Files using traditional folders.

Target folder

The target folder is an M-Files target folder for viewing linked or imported files.

Check for new and removed files periodically

If you enable this option, M-Files will check the source folder at predefined intervals and update itself according to which files and folders are new and which have been deleted. In this way, any changes made to the source folder become visible in M-Files as well.

Refresh Now

Click **Refresh Now** to refresh the source folder immediately.

Disabled

By activating the *Disabled* checkbox, you can disable the connection.

Advanced settings

On the *Advanced* tab, you can specify the alias for the file source. For more information, refer to [Associating the Metadata Definitions](#) on page 168.

Metadata

The *Metadata* tab of the connection properties window is used for defining metadata for externally created documents.

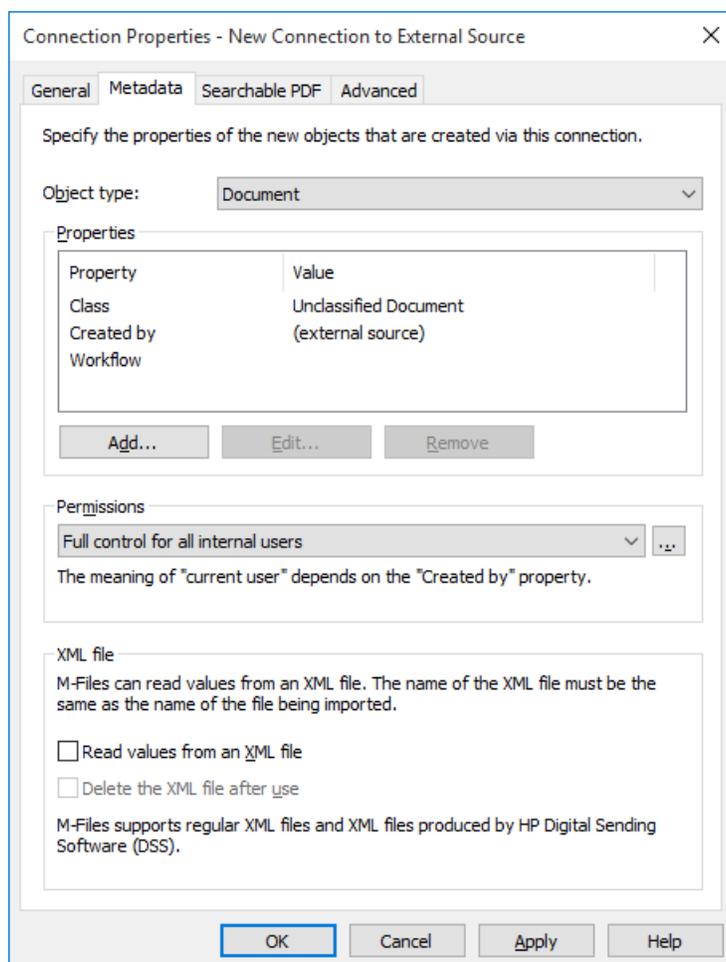


Figure 117: The "Metadata" tab of the properties window for a new external source.

Properties

Under *Properties*, define the metadata to be applied to new documents automatically. You can add, edit, and delete properties. You can use a fixed property value, or M-Files can read it from, for example, an XML file or an OCR value source produced by the scanner. For more information about defining an OCR value source, refer to [Use an OCR value source](#) on page 269.

Figure 118: The "Define Property" dialog.

Permissions

Set the permissions for a new document. The value of *Current user* (seen in the *Select users or user groups* window) is based on the document's "Created by" property.

XML file

M-Files can read values from XML files. The name of the XML file must match the name of the file to be imported. If you want M-Files to read property values in XML files, select the *Read values from an XML file* function. M-Files can also delete the XML file after use.

Supported file formats:

- Regular XML data.
- XML data output by HP Digital Sending Software (DSS).

With HP DSS, you can define, for example, the *Customer* value to be input from a scanner. If you want M-Files to utilize the input information, set up M-Files to read the property value in the HP DSS XML file and name the value *Customer*. With regular XML, use an XPath statement to define the relevant location. XPath is a W3C standard syntax for defining locations in an XML document.

Use an OCR Value Source

For files imported from an external source, you can define an automatically added property that uses the OCR value source. The OCR value source is a zone defined on the page. Using OCR, the zone gives a value for the selected property. In the *Define Property* dialog you can select *Use an OCR value source*. For more information about defining different properties, refer to [Metadata](#) on page 267.

The use of an OCR value source is only possible when using an external source. The OCR value source cannot be defined in M-Files Desktop.

Note: The *M-Files OCR module* is an M-Files add-on product available for extra fee. It can be activated with a license code. The old license code must be replaced by the license code that enables the use of

OCR. For more information, refer to [License Management](#) on page 148. In order to enable OCR, you need also to download and install some additional files to your M-Files Server (for further information, contact our customer support). The OCR related functions will then be available in M-Files Admin and M-Files Desktop.

M-Files uses an OCR engine offered by I.R.I.S. M-Files OCR also offers barcode recognition. For *the M-Files OCR module* purchase inquiries, please contact our sales team at sales@m-files.com.

Defining an OCR value source

Start defining an OCR value source by adding a new property via the *Metadata* tab of the *New Connection to External Source* dialog, and by then selecting *Use an OCR value source* and **Define...**

OCR Value Source Definition - Accepted

Zone type

Text

Barcode

Zone position

Page:

Left: Right:

Top: Bottom:

Unit: pixels

mm

inches

The zone position specifies the top-left and bottom-right corners of the zone, relative to the coordinate origin (the top-left corner of the page).

Text recognition (OCR) guidance

Specifying the languages used and the associated character sets often improves the quality of the recognition results.

Primary language:

Secondary language:

The list of secondary languages includes only those that are allowed to be used with the selected primary language.

OK Cancel

Figure 119: The "OCR Value Source Definition" dialog.

Zone type

Specify whether the recognition is to be done via barcode or text.

Zone position

Define a zone in which certain characters are recognized as values of a defined property. The characters may include any letters, numbers or punctuation marks. For example, an invoice number shown on a page can be added as the *Invoice number* property value for the scanned document. This enables you to automate scanning and storing specified documents in M-Files with metadata that is always correct.

In most cases, to ensure that the defined zone is correctly positioned, the document to be scanned should be placed onto the scanner's glass plate by hand rather than fed via an automatic sheet feeder.

In some cases, the OCR may give an incorrect recognition result of the text: for example, depending on the font type or size, the number *1* may be interpreted as the letter *l*. To ensure that the characters are added correctly

to the document metadata, you can check the property values with event handlers and VBScript. You can then use VBScript to check, for example, that all added characters are numbers. For more information, see [Event Handlers](#) on page 189.

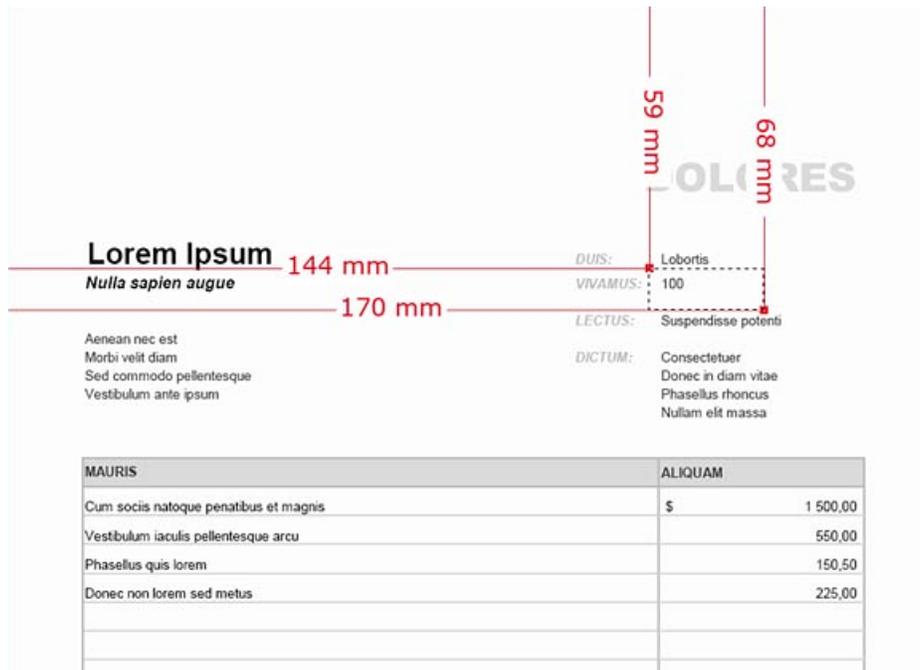


Figure 120: An example of a zone definition.

Barcode recognition

M-Files recognizes most of the 1D barcodes in use and two types of 2D bar code: PDF417 and QR Code.

If there is only one barcode to recognize on the page, you can specify the whole page as a zone. If there are several barcodes, restrict the zone in a such a way that it contains the desired barcode only. With QR codes, you should specify a zone larger than the actual barcode.

If the specified zone has several barcodes, all of them are considered to be a property value.

If you are using an OCR supported license code that has been delivered before the version 9.0, please ask our customer service to provide you a new license code if you want to use barcode recognition.

Text recognition (OCR) guidance

Although the OCR automatically recognizes all Western languages and Cyrillic character sets, specifying a language selection often improves the quality of the text recognition results.

In ambiguous cases, a problematic recognition result may be resolved by a language-specific factor, such as recognition of the letter 'Ä' in Finnish. The list of secondary languages only includes languages that are allowed to be used together with the selected primary language.

The zone position determines the two corners (top left and bottom right) of the zone in relation to the origin of the coordinate system (the top left corner of the page). In the above example, the following values are used: left 144 mm, top 59 mm, right 170 mm, and bottom 68 mm.

Note: You can use the OCR value source without selecting the *Use OCR to enable full-text search of scanned documents* function in the *Searchable PDF* tab.

Searchable PDF

To perform automatic text recognition of files imported from the scanner, select the option *Use OCR to enable full-text search of scanned documents* on the *Searchable PDF* tab of the *Connection Properties* dialog for a [connection to an external source](#) on page 265. M-Files then converts the imported image files into *searchable PDFs*. This makes full-text search of the scanned document possible. After conversion, you can find the PDF document by searching the actual document content.

Text recognition can be performed on the following file formats: TIFF, JPEG, BMP, PNG, and PDF. TIFF files using an alpha channel or JPEG compression are not supported.

- Note:** Converting the file to a searchable PDF does not affect the outward appearance of the document when viewing it. The users still see the original scanned image. M-Files stores the automatic text recognition results in the PDF as invisible text, which is used when searching the file. Possible text recognition inaccuracies will not affect the appearance of the scanned document in any way when viewed on screen or printed.

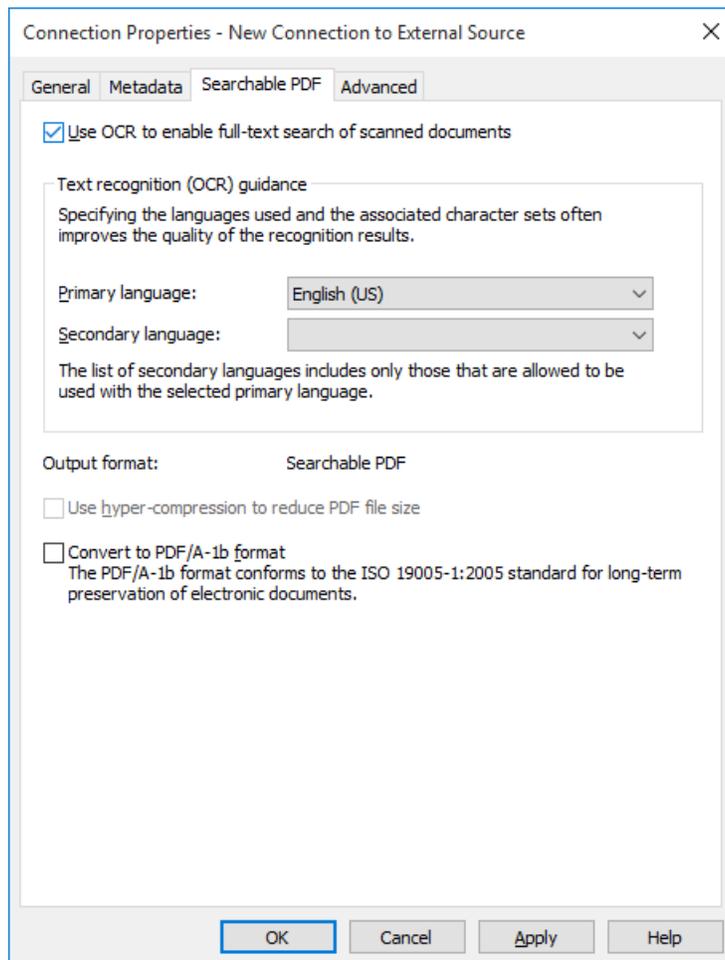


Figure 121: The "Searchable PDF" tab of the "Connection Properties" dialog.

Although OCR automatically recognizes all Western languages, specifying a language selection often improves the quality of the text recognition results. The list of secondary languages only contains languages that are allowed to be used with the selected primary language.

Text recognition can also be performed via M-Files Desktop. For more information, refer to [Scanning and Text Recognition \(OCR\)](#) on page 99. If you wish to use text recognition using external sources through the M-Files Admin only, this limitation can be set by changing the registry settings. The registry settings can be used to set other limitations as well. For more information on registry settings, contact M-Files customer support at support@m-files.com.

- Note:** The *M-Files OCR module* is an M-Files add-on product available for extra fee. It can be activated with a license code. The existing license code must be replaced by the new license code to enable use of the M-Files OCR. For more information, refer to [License Management](#) on page 148. The OCR related functions will then become available in M-Files Admin and M-Files Desktop.

M-Files uses an OCR engine offered by I.R.I.S. To purchase the M-Files OCR module, please contact our sales team at sales@m-files.com.

Convert to PDF/A-1b format

Select this option when you want to comply with ISO standard 19005-1:2005 for long-term preservation of electronic documents.

PDF/A-1b is a more restricted format than that of standard PDF files, so files converted to PDF/A are often bigger than files converted to standard PDF. In addition, by exporting to PDF/A, certain advanced appearance settings may be omitted. You should use conversion to PDF/A form only if it is particularly necessary on account of, for example, requirements for long-term preservation.

Scanner Sources

Via the scanner connection, it is easy to save paper documents into the document vault. This way, the M-Files search capabilities can be applied also to scanned paper documents.

When using external sources, M-Files does not communicate directly with the scanners but uses an external connection to read the file produced by the scanner from, for instance, the scanner's network drive. The connection is configured in M-Files Admin under [External File Sources](#) on page 265.

These connections can be made, for example, with Hewlett-Packard MFP-series devices by using HP Digital Sending Software (DSS). In this case, the device is connected directly to the local area network and the user scans the paper document with the device.

It is also possible to enter metadata via the device's touchscreen. The scanned file and the metadata are sent to the DSS software performing optical character recognition (OCR) for the file. The scanned image and recognized text are combined into a PDF file. The PDF file and an XML metadata file are saved in a folder controlled by M-Files via external location configuration. On detecting new files, M-Files transfers the files to the document vault as documents with metadata.

- Note:** Text recognition can also be performed with the M-Files OCR module. For more information, refer to [External File Sources](#) on page 265. You can also scan using a local scanner that is directly connected to your computer. For more information, refer to [Scanning and Text Recognition \(OCR\)](#) on page 99.

Mail Sources

M-Files provides the opportunity to save, manage, and share important e-mail in a controlled manner. The messages can be transferred directly and automatically from the mail server to the document vault.

For example, messages and their attachments sent to the organization's common e-mail box can be transferred directly to the document vault. In the document vault, imported messages can be handled in a controlled manner via, for example, workflow features. Example use cases include a centralized and controlled way for handling orders, and a systematic method for archiving sent offers. Important information can thus be managed in M-Files so that it does not get lost and forgotten in e-mail boxes.

The organization may also want to save important sent e-mail to M-Files. Such important messages could include, for instance, proposals and order confirmations. Your organization can use a designated *archive* e-mail account to which M-Files is connected. From this box, M-Files imports all e-mail to the document vault and then deletes the messages from the mail server. Important sent messages can be archived in M-Files by sending the message to the archive box via the *Cc* or *Bcc* fields. To avoid junk mail, it is possible to set the e-mail account to accept mail from internal users only.

 Video: [Email Monitoring](#)

You can start creating a new mail server connection by selecting *Connections to External Sources > Mail Sources* from the left-side tree view in M-Files Admin, and by then clicking the *New Mail Source...* link in the task pane.

Connection Properties - New Connection to External Source

General Metadata Advanced

Description:

Source

Server type: POP3 IMAP

Mail server:

Use encrypted connection (SSL/TLS)

Port number: Folder:

Login information:

Username:

Password:

Action

M-Files creates a document from each imported message.

Include attachments

Import only messages that have attachments

Delete message from server after importing

Remove attachments from server after importing

Save in Outlook message format (*.msg)

Separate attachments from the message

Check for new and deleted files periodically

Delay between checks: seconds

Disabled

Figure 122: Mail server connection settings.

Description

Give the connection a name.

Source > Server type

Select the mail server connection method.

Source > Mail server

Enter the mail server's network address (IP address or network name, for example, *mail01.company.com*).

Use Encrypted connection (SSL/TLS)

Use this checkbox to encrypt your connection with SSL/TLS.

Source > Folder (IMAP connections only)

Select the folder from which the mail is read and imported into the system.

Source > Port number

Enter the port number on which the server is to listen for connection requests.

Source > Username

Enter the required user authentication information. Users are identified according to the information provided via the mail server. The form for user identification is *user@domain* (for instance, *sam@company.com*).

Source > Password

Enter the required user authentication information. Users are identified according to the information provided via the mail server.

Action > Include attachments

If you select Include attachments, mail attachments are included with the mail in M-Files.

Action > Import only messages that have attachments

If this is selected, only messages with attachments are transferred to the document vault. Messages without attachments remain on the mail server as they are.

Action > Delete message from server after importing

You can remove the messages from the mail server automatically once they have been transferred to M-Files. This saves disk space and clarifies mail traffic responsibilities.

Action > Remove attachments from server after importing (IMAP connections only)

Mail attachments can be removed from the mail server when IMAP connections are used. This way, you can transfer all mail attachments directly to the document vault so that they do not burden the mail server.

Action > Save in Outlook message format (*.msg)

If this option is selected, messages are saved to M-Files in the *.msg* file format of the Microsoft Outlook application. Any attachments of the messages are stored inside the msg file, and the message will always appear in M-Files as a single-file document (see [Single-File and Multi-File Documents](#) on page 69).

 **Note:** This functionality requires Microsoft Exchange Server or a 32-bit MAPI client to be installed on the server running M-Files Server.

Action > Separate attachments from the message

If this option is selected, the attachments of the message are saved separately from the body of the message. The message without its attachments is saved into an msg file, and any attachments are stored beside the msg file in their original file formats. If the message contains attachments, the message and its attachments appear in M-Files as a multi-file document.

Check for new and deleted files periodically

If you enable this option, M-Files is synchronized with the mail server information at predefined intervals.

Refresh Now

Click **Refresh Now** to synchronize your M-Files vault with the mail server immediately.

Disabled

You can temporarily disable the external connection by checking the **Disabled** check box.

Defining metadata for the imported content

The *Metadata* tab allows you to define metadata properties for imported content.

Connection Properties - New Connection to External Source

General Metadata Advanced

Specify the properties of the new objects that are created via this connection.

Object type: Document

Properties

Property	Value
Name or title	Subject
Class	Unclassified Document
Created by	(external source)
Workflow	

Add... Edit... Remove

Permissions

Full control for all internal users

The meaning of "current user" depends on the "Created by" property.

OK Cancel Apply Help

Figure 123: The "Metadata" tab of the properties window for a new external source.

Properties

Under *Properties*, specify the metadata to be automatically applied to new documents created from e-mail messages. You can add, edit, and delete properties. You can define a fixed property value, or M-Files can read it from, for instance, an e-mail header field.

Permissions

Set the permissions for a new document. The value of *Current user* (seen in the *Select users or user groups* window) is based on the document's "Created by" property.

Advanced settings

On the *Advanced* tab, you can specify the alias for the connection. For more information, refer to [Associating the Metadata Definitions](#) on page 168.

9.8. Event Log

The Event Log logs document vault events, such as new object creations and user logins.

To enable logging, select *Enable Event Logging* via the task pane. Events can be viewed and organized in any desired order.

Event logging must be enabled to send notifications. For more information about notifications, refer to [Notification Settings \(M-Files Admin\)](#) on page 150.

Showing events X–XXXX

You can browse the events page by page by using the arrow icons. A single page can display 10,000 events at maximum.

Define Filter

You can specify the events to be displayed in the list by either object type or object ID.

Export

You can export and archive all or selected events in XML file format.

Delete events X–XXXX

In addition to being able to delete all events, you can select events for listing on the page and delete them (this does not apply to filtered lists).

 Video: [Event Logs](#)

Detailed information on an individual event

Event Details provides detailed information on the saved changes.

-  **Note:** To view more detailed information on an individual event, you must have the [Electronic Signatures module](#) on page 280 activated.

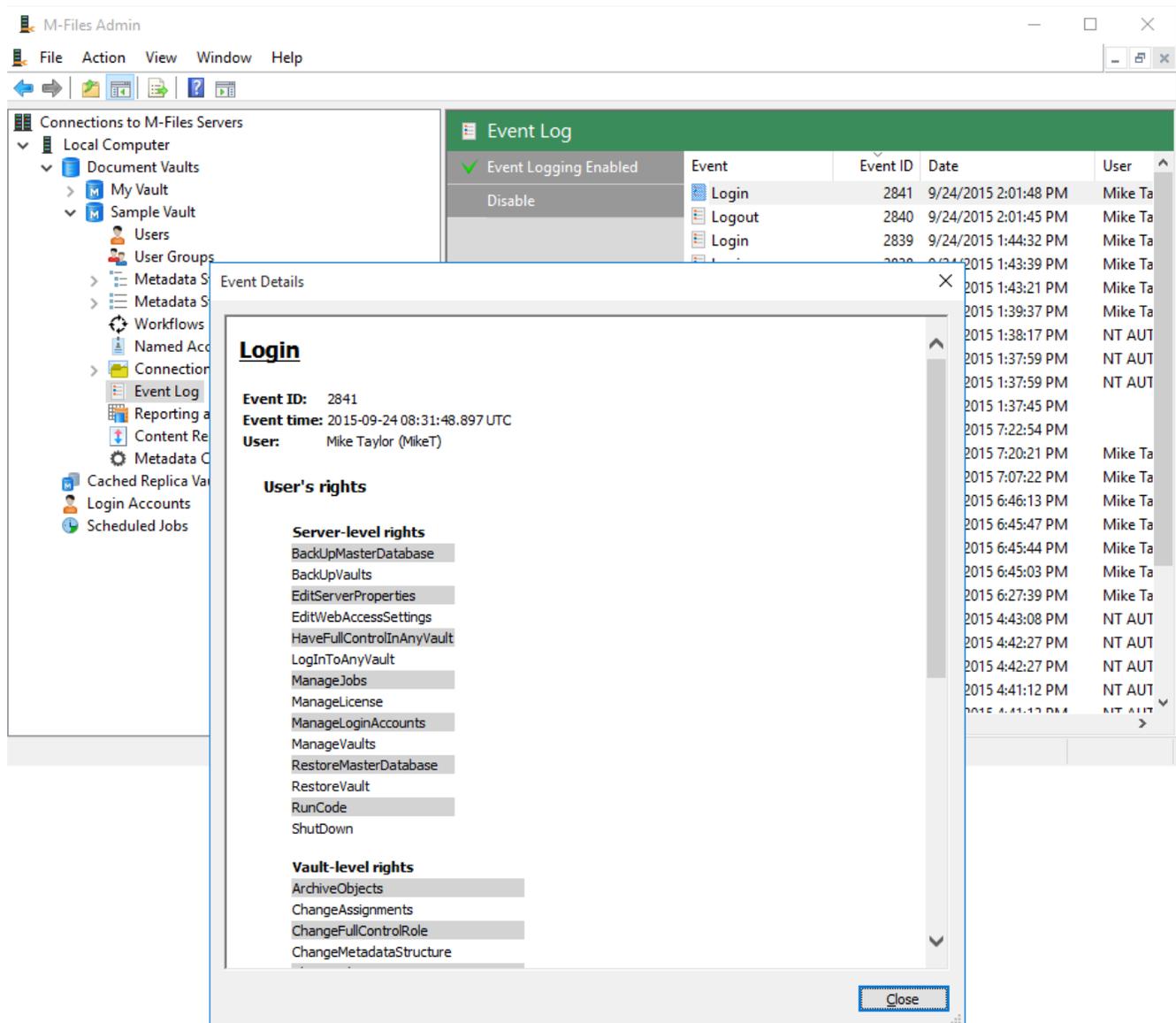


Figure 124: The "Event Details" window.

Number of events, and event types

If the [Electronic Signatures module](#) on page 179 is in use and the [Advanced Event Log features](#) on page 162 have been enabled, the event log records all events without any restrictions. Otherwise, the M-Files server removes the oldest events automatically if the number of events exceeds 10,000. The maximum number of events can be changed via a registry setting (for more information, contact M-Files customer support).

While M-Files offers a versatile event log, several additional event types that can be covered by logging are enabled with the Electronic Signatures module.

The following event types are recorded in the M-Files Admin event log:

Assign request	Document vault created as a copy of another vault	Object changed	Signature settings modified
Backup completed	Event log cleared	Object deleted	State changed

Backup started	Event log exported	Object destroyed	The state of a document or other object changed
Check-in	Event logging disabled	Object undeleted	User created
Check-in request	Event logging enabled	Object version destroyed	User deleted
Checkout	File downloaded	One version of a document or other object destroyed	User modified
Undo checkout	Free-form request	Property definition deleted	User group created
Document or other object changed	Login	Restoration from backup completed	User group deleted
Document or other object deleted	Logout	Rollback	User group modified
Document or other object destroyed	New document or other object	Signature settings added	Vault variable modified
Document vault created	New object	Signature settings deleted	

The Electronic Signatures module adds the following event types to the M-Files Admin event log:

Metadata structure changes:

Class changed	Named ACL deleted	State transition changed	Value list item deleted
Class created	Object type changed	State transition created	Workflow changed
Class deleted	Object type created	State transition deleted	Workflow created
Common view changed	Object type deleted	Value list changed	Workflow deleted
Common view created	Property definition created	Value list created	
Common view deleted	Property definition changed	Value list deleted	
Named ACL changed	State created	Value list item changed	
Named ACL created	State deleted	Value list item created	

Vault property changes:

Event handler changed
 Event handler created
 Event handler deleted
 Event handler index changed

Other:

Application installed
 Application uninstalled

Content package exported

Content package import
completed

Electronic Signatures module

The [Electronic Signatures module](#) on page 179 includes event logging extensions and electronic signature functionality. The module is available for a separate fee. For you to activate the Electronic Signatures module, the license code must be activated on your system. The license is provided on a subscription basis. Activate or update the license code in M-Files Admin (for more information, refer to [License Management](#) on page 148). In addition to this, properties of the audit trail must be activated that are specific to the vault. For more information, see [Document Vault Advanced Properties](#) on page 161.

9.9. Reporting and Data Export

Saving and protecting data is important, but the saved data must also be available for analysis. In addition to being able to save many types of data in M-Files, you can use it to create various reports.

The reports can be used to gather information on, for example, sales processes, completed projects, the size of the proposal base, volumes of orders, participation in training, and sales by each salesperson itemized by customer. Graphical reports make the data analysis quick and easy. In real-world operation, reports can be generated from any metadata.

Updating the license code for reporting

The reporting module is an M-Files add-on product available for a separate fee. It can be activated with an accompanying license code. The reporting module enables data export from M-Files to create reports and display them in the M-Files user interface.

For you to activate the reporting module, the license code must be activated on your system. The license is provided on a subscription basis. Activate or update the license code in M-Files Admin (for more information, refer to [License Management](#) on page 148).

To find out how M-Files can support your business with M-Files reports, please contact us at sales@m-files.com.

Report object type and class

To display the reports, M-Files has a built-in object type and class for reports. By default, the *Report* object type is hidden from the users. Provide the required access rights for the *Report* object type so that actual reports can be created in the client software.

Metadata Export and Data Set Settings

M-Files Reporting Data Services enable data exporting from M-Files to external databases (SQL Server). The administrator can specify manually which data will be exported, or export data on a scheduled basis from M-Files for reporting or other purposes. The *M-Files Reporting Data Services* functionality is installed in conjunction with M-Files Server.

In M-Files Admin, you can specify by vault which data you want to export for reporting. You can export data for other uses as well. Select *Data Export and Reporting* in the left-side tree view and create a new data set to export.

General settings for the data set

This tab enables you to define the name and content of the data set.

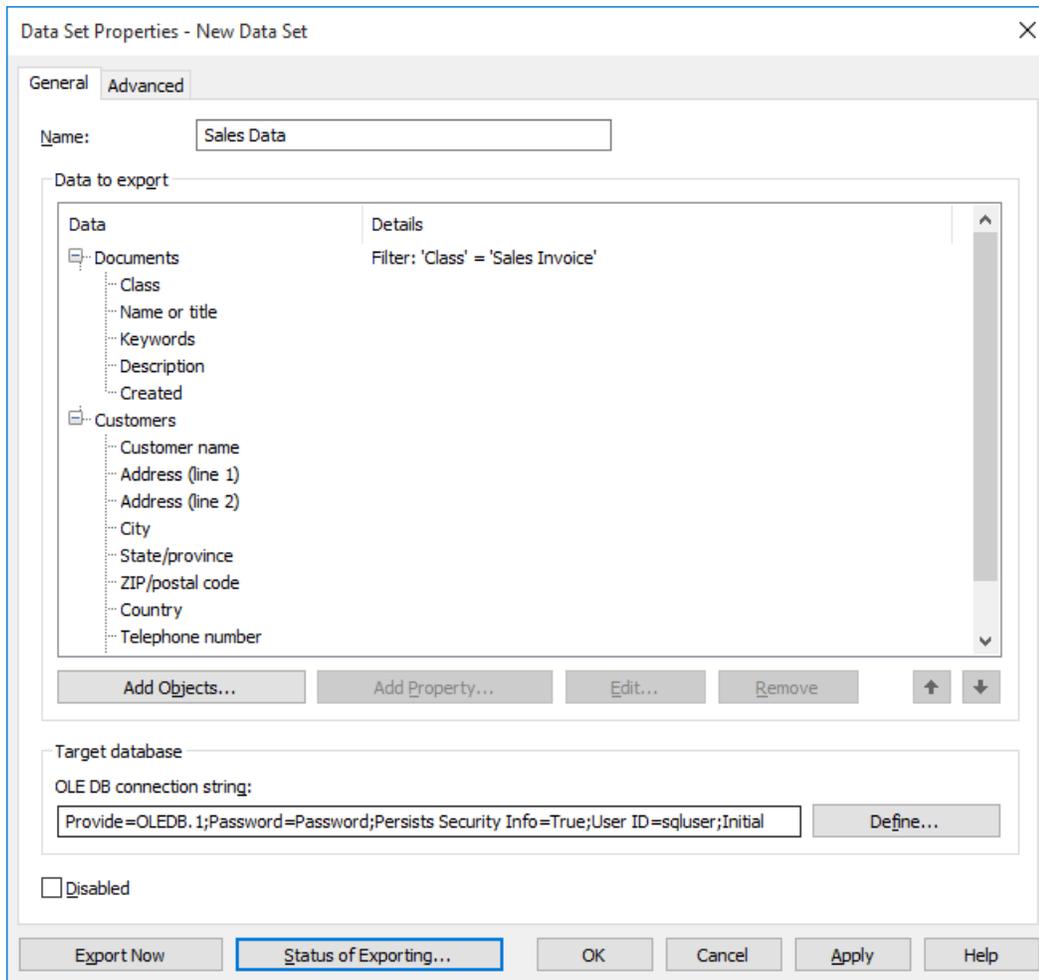


Figure 125: General properties for a new data set.

Name

Give a descriptive name for the data set.

Data to export

Specify the object types and their properties that you want to export to the external database. You can export different customer, project, event data, and so on. Using such data, you can create various reports, such as sales by month, size of the proposal base, or open projects by customer.

OLE DB connection string

For more information, see [Connection to External Database](#) on page 207.

Disabled

You can disable the data set by selecting the *Disabled* checkbox.

Advanced settings for the data set

The *Advanced* tab contains a few useful settings as well.

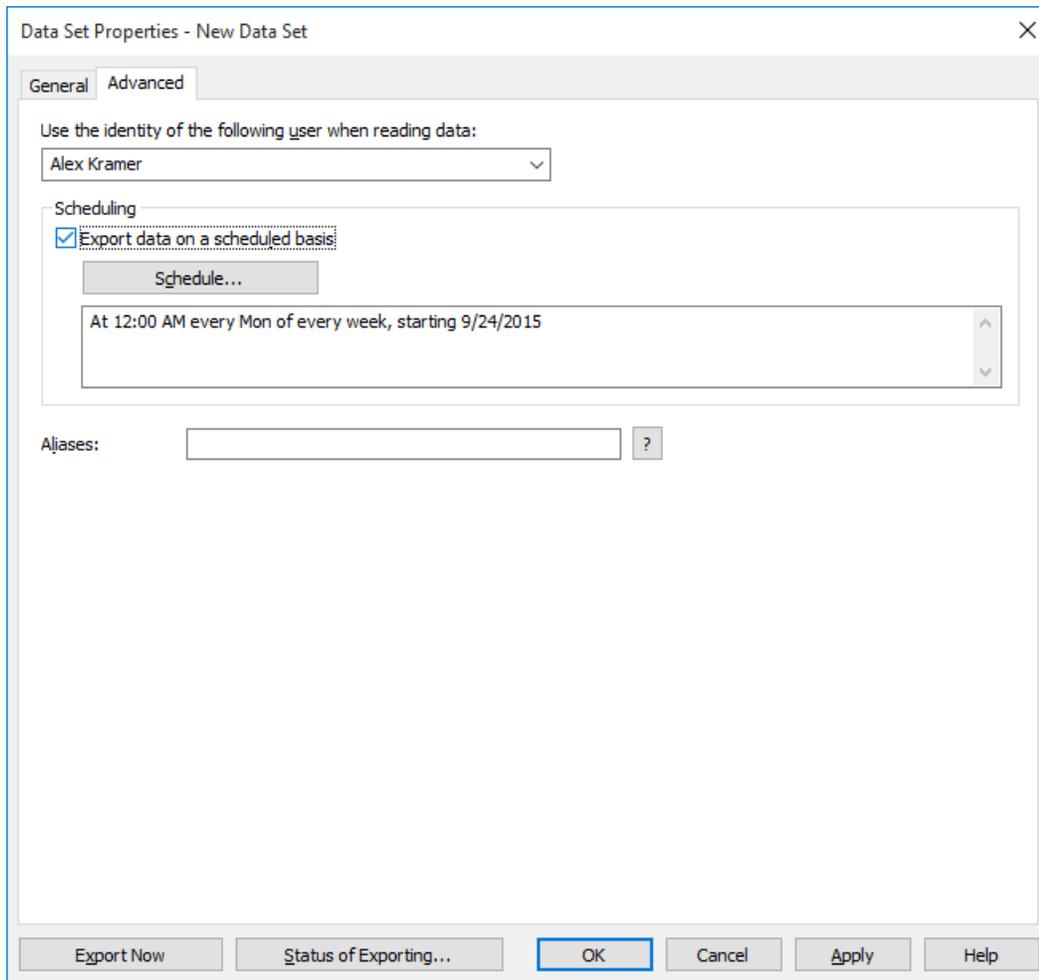


Figure 126: The "Advanced" tab of the properties dialog for a new data set.

User identity

Select a user whose identity you want to use to read data from M-Files to the reporting services. The most suitable user is a "regular" user without any extended rights. If you use, for example, your own user identity that has a system administrator role, data that you do not want to expose to all users could end up in the reports displayed by the client software.

Scheduling

Use scheduling if you want to update the data exported to the reports at certain intervals. It is recommended to schedule the data export to be performed once a day/week/month. The reports are updated at the same time. If you do not select scheduling, the data will not be updated after export.

You can also create a separate update link in the reporting services so that the user can update the report in the client software whenever desired. For more information, please contact M-Files customer support at support@m-files.com.

Property history and old values

You can specify by property whether the property's change history or old values should also be exported. If you want to export the property's change history or old values, go to the *General* tab, select the property whose history data you want to export and click **Edit...** Finally, select the *History and Old Values* tab.

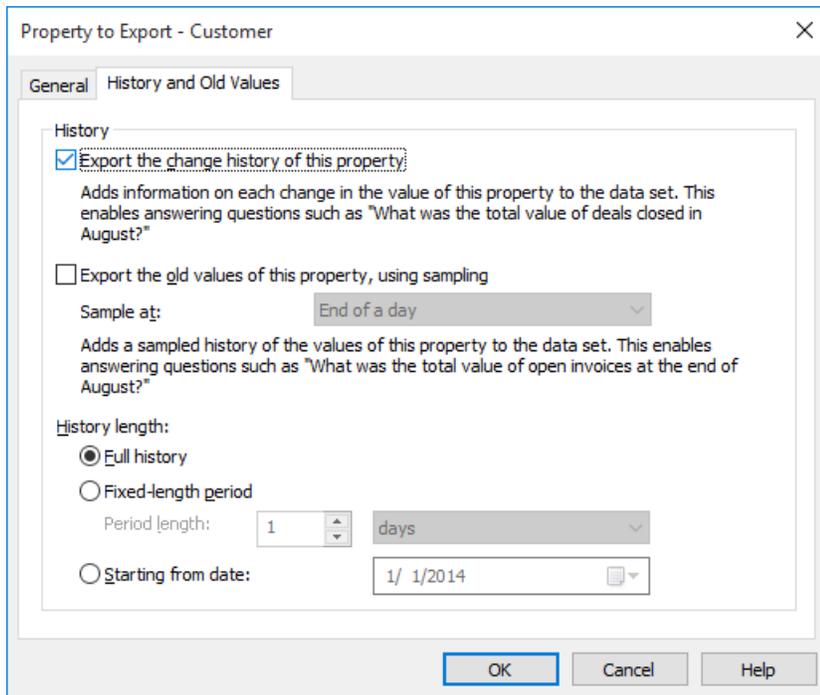


Figure 127: You can also export the change history or old values with the property.

Export the change history of this property

The change history adds an entry of each change in the property value to the data set. This makes it possible to answer questions such as this: "What was the total value of deals closed in August?" The report interprets change from *No status* to *Yes status* during August.

Export the old values of this property, using sampling

Sampling adds the sampling history of this property to the data set. This makes it possible to answer questions such as this: "What was the total value of open invoices at the end of August?" The report generation then calculates the total value of open invoices with the status *Not paid* at a specific point in time.

Sample at: You can specify whether the sample is to be taken at the end of the day, week, month, or year. Then the sample is taken at the last moment of the day in question.

You can specify the length of the time period for the change history or sampling. If the frequency of sampling is high (for instance daily), it is recommended to restrict the length of the history period in order to avoid expanding the database unnecessarily and to increase the speed of the export function.

History length

You can export the full history, history data for a specified fixed-length period, or data from a specific date onward.

Report Access Identity

The report access identity is the identity that is used in retrieval of reports from the reporting services to M-Files Desktop and in reading them. You can find this function in the task area after selecting *Reporting and Data Export* in the left-side tree view of M-Files Admin.

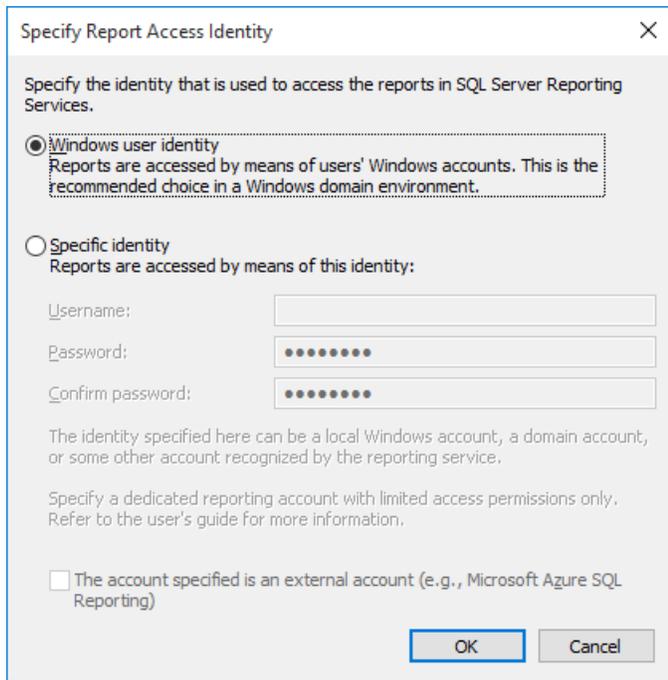


Figure 128: The "Specify Report Access Identity" dialog.

Windows user identity

Reports are accessed via the user's Windows account. This is the recommended choice in a Windows domain environment.

Specific identity

The identity specified here can be a local Windows account, a domain account, or some other account recognized by the reporting service.

Specify a dedicated reporting account with limited permissions for the reporting services.

Creation of Reports and the Required Software

The reports from M-Files to an external database are created by using the *Microsoft SQL Server Reporting Services* infrastructure, which must be implemented and configured correctly.

When reports have been created and they are to be used in M-Files, the *SQL Server Reporting Services* system contacts the database to which the data export was done from M-Files, creating a report when M-Files Desktop so requires.

Microsoft's SQL Server Reporting Services infrastructure can be installed with the SQL Server installation package (*SQL Server 2008* or *SQL Server 2008 R2*).

Also the SQL Server Express versions can be used in reporting. Then select the *SQL Server 2008 R2 Express with Advanced Services* installation package. You can download it via Microsoft's web site at <http://www.microsoft.com/express/Database>.

For more information, refer to <http://msdn.microsoft.com/en-us/library/ms159106.aspx> (SQL Server Books Online).

In planning the reports, you also need **Business Intelligence Development Studio** or, a simpler tool, **Report Builder**. The person planning the reports must be experienced in this and have the skills required for creating reports. Please contact our consulting services personnel, and we will be happy to help you with planning of the reports (sales@m-files.com).

For more information on installing Microsoft's reporting services, please consult Microsoft's web pages and the M-Files customer support staff at support@m-files.com.

- **Note:** Instructions for planning and creating reports and for using third-party software are available via the M-Files consulting services for a separate fee.

Reports and Their Properties in M-Files Desktop

When a report has been created, it can be retrieved for use in M-Files Desktop. For the reports to be displayed in M-Files, *.NET Framework 3.5 Service Pack 1* or *.NET Framework 4.0* must be installed. *.NET Framework Client Profile* is also a suitable solution. When necessary, M-Files will suggest installation, if the installation is possible.

Create a new *Report* object for the report in M-Files Desktop (note that you must have rights to create objects of the *Report* type). Specify the report properties:

Report name

Give as descriptive a name as possible for the report.

Report URL

Give the URL that will be used for retrieving the report from the reporting services to M-Files. The URL is of the form "http://servername/instance?/report_path". The same URL can be used to retrieve the report in the browser. Note, however, that this address will not be displayed in the browser's address field after opening of the report. For more information, please contact M-Files customer support at support@m-files.com.

Binding the report to a view

You can bind the report to, for example, the view *Sales by customer* or *Proposals by salesperson*.

With the *Reports* function in the *View* menu, you can bind the report to the view and specify its location. If you want this setting to apply for all users, select the option *Common to all users* in the view settings. In order to define a common view, however, you need document vault permissions for managing the document vault's common views.

Associating the report object with other objects

You can associate the *Report* object with other objects, such as *Customers*. As specified in the reporting services settings, you can display the report data by customer by selecting a customer from the list. Then M-Files will show the data (for instance sales by month) for only this specific customer in the report. When you select another customer, the report will be updated with data related to the second customer.

Bringing the report up to date

The data in the report will be based on the latest data from M-Files to the reporting service. The data can be exported either manually or on a scheduled basis. If a separate update link was created for this report in the reporting services, the report can be updated whenever desired via M-Files Desktop. For more information, please contact M-Files customer support at support@m-files.com.

Export function

You can export the report as-is to various file formats (for example PDF, Word and XML formats).

- **Note:** The report is exported in a static format, and it cannot be edited in other applications.

9.10. Content Replication and Archiving

The content replication and archiving functions enable synchronization of objects between vaults so that data are up to date between various specified vaults.

With content replication and archiving, you can, for instance:

- Replicate data between locations.
- Archive data from an actively used vault to an archive vault.
- Archive data for long-term preservation in XML or PDF/A form in compliance with standards.
- Collect data from several M-Files vaults within a single, centralized vault.
- Use specific vaults for each of the various operations of the company.
- Publish certain documents for interest groups.
- Perform backups.
- Restore the system after an error reliably (as in disaster recovery).

▶ Video: [Replication Overview](#)

Global companies can, for example, replicate data to remote servers, ensuring quick access to data even if network connections to the main server are slow or cut off. Moreover, documents can be published for use by partners, customers and subcontractors by using a separate publishing vault, which can be part of a cloud service or on your own server. This way, all documents and other objects are always up to date and easily available for various user groups.

Functions for content replication and archiving are available in M-Files Admin. Replication and archiving are implemented with content export and import operations.

▶ Video: [Configure Replica Servers](#)

For a more extensive presentation on replication and archiving, refer to the [M-Files Replication and Archiving User's Guide](#).

- **Note:** For association and synchronization of objects and their metadata between separate vaults, the metadata definitions too must be associatable between vaults. For more information, refer to [Associating the Metadata Definitions](#) on page 168.
- **Note:** It is advisable to check the permissions of confidential imported objects in the target vault after an import operation is complete, especially if the source and the target vaults have differing users or user groups.

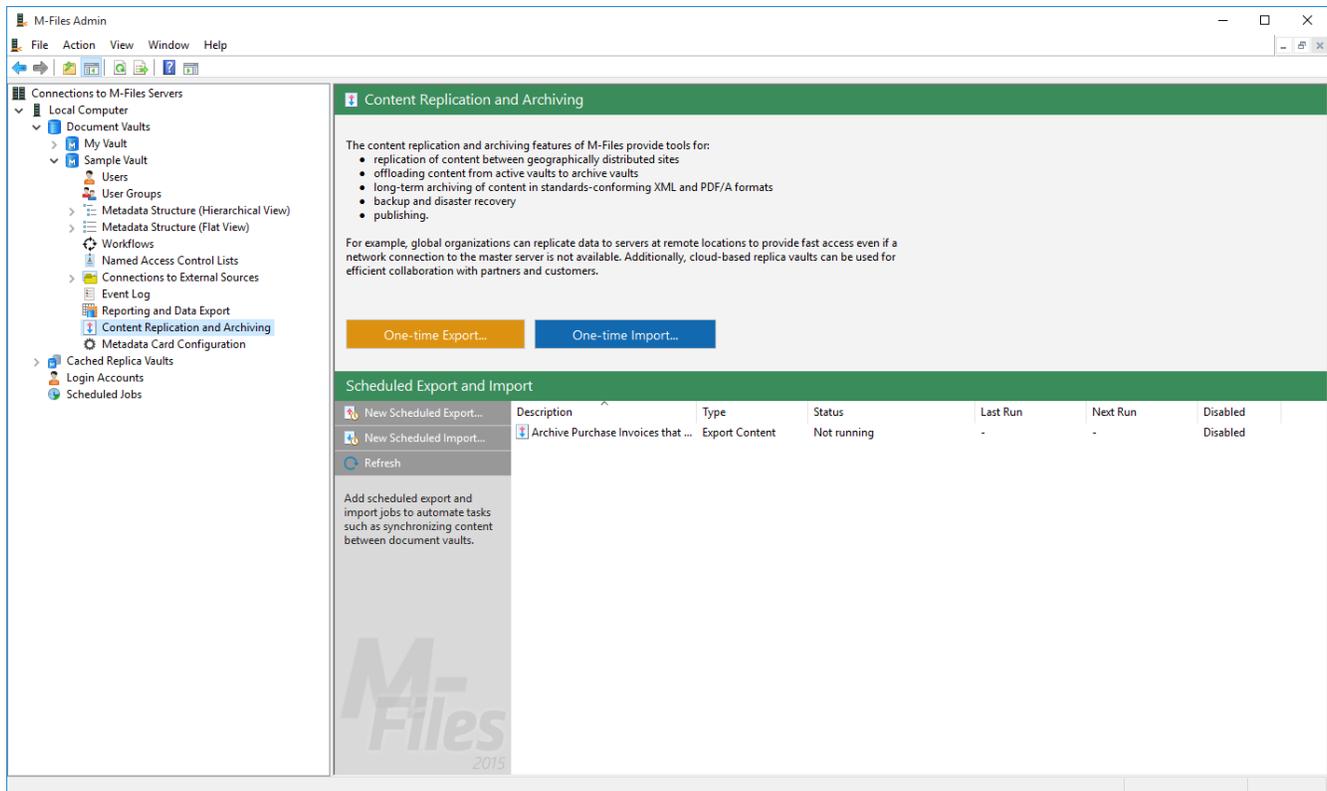


Figure 129: The replication features in M-Files Admin.

If M-Files is installed on several servers, an *M-Files Additional Server License* must be installed for the additional servers.

In case you have archived documents in earlier versions of M-Files than 9.0, please note that you cannot restore archive files in the *.mfa* file format to a vault using version 9.0 or later. If you want to restore an archive file in the *.mfa* file format, you must use a vault that has version 8.0 or older installed. After this, you can upgrade the vault and perform archiving that is compatible with version 9.0 and newer.

Export Content

When you want to export objects and their metadata from the source vault, define the export in the source vault. Export can be used in long-term archiving of the content, synchronization of data among several vaults, or freeing up of disk space on the server.

Choose the vault you want to use as the source for metadata structure replication, and then start the export process by selecting *Content Replication and Archiving > Export Content...*

- Note:** Exporting objects with relationships to other objects may, in some cases, produce a conflict. If the conflict cannot be resolved automatically, some of the selected objects might not be replicated. The *Import Summary Report* on page 298 should be reviewed carefully before proceeding with the replication procedure.

The export dialog is divided into three tabs: *Package Location*, *Objects and Files*, and *Structure*.

Export Package Location

On the *Package Location* tab of the *Export Content* dialog, you can change the location of the content package. M-Files names the files automatically according to the vault ID and timestamp, so that you can find the content package easily at a later time.

You can also modify the user account to be used. The user needs to have the rights to the specified saving location in order for the export to be successfully completed. The default selection is "Local System account".

Use replication via cloud storage

You can also use replication via a cloud storage location. When exported, the replication packages are locally encrypted with the AES-256 algorithm and then uploaded to the cloud storage location. When imported, the replication packages are downloaded from the cloud storage location and then decrypted locally. This functionality can be helpful when you are replicating data between different locations and want to be completely certain that only the appropriate persons can access the data.

Connection string

Use the **Get** button to obtain the connection string for the cloud storage location. Please make sure to use the same string for both export and import.

Folder name

The folder name is unique for one export-import pair. For instance, replication from the master vault to a secondary vault could be named "MasterOut" and replication from the secondary vault to the master vault "MasterIn".

Password for encryption

The replication password is used for encrypting the replication packages. The password can be whatever you decide. Just remember to use the same password for both export and import.

Export Objects and Files

The *Objects and Files* tab enables you to change settings for exporting object and file content.

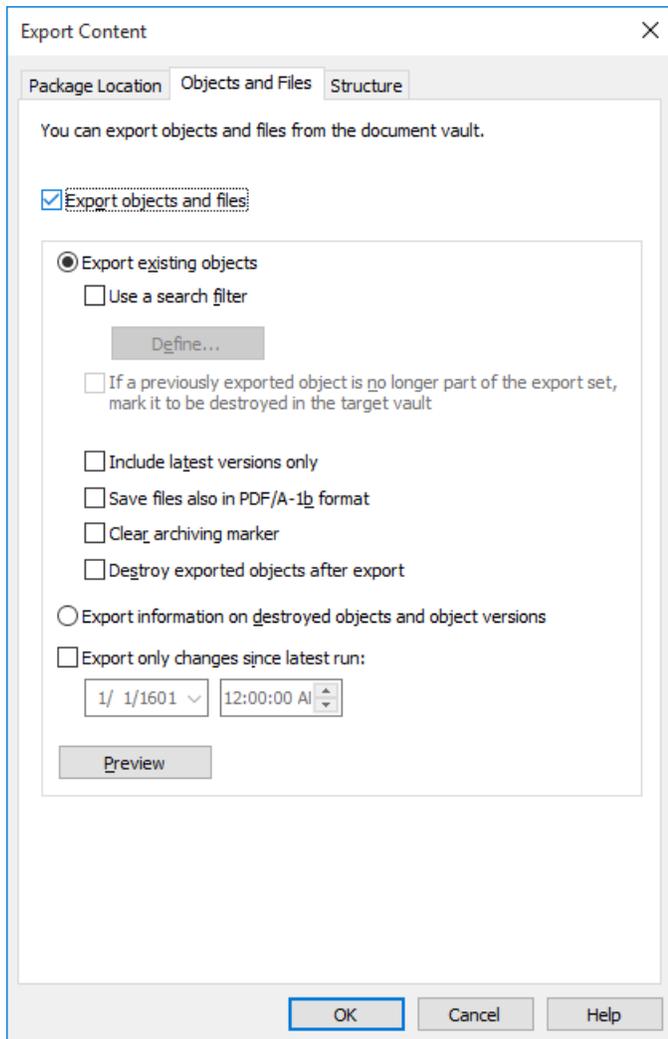


Figure 130: The "Objects and Files" tab of the "Export Content" dialog.

Export existing objects

Use a search filter

By using a filter, you can specify which existing objects you want to export. For example, you can export certain objects by object type or property. In particular, when publishing certain documents, such as brochures or press releases, for interest groups only, you can use the search filter for the publication when, for example, the requirement of a certain class or property is met.

If a previously exported object is no longer part of the export set, mark it to be destroyed in the target vault

By enabling this setting, any of the objects that were included in an earlier export set but are not in the current one will be deleted in the target vault upon import. If you wish to delete, say, certain price lists from a vault designed for partner use, you just need to make sure that this setting has been enabled and that they do not fit the criteria of the export set.

Note: The setting is job-based and applies only for scheduled export and import jobs.

Note: The setting *Do not import object destructions* in the properties of the import job overrides this setting.

Include latest versions only

You can choose to export only the latest versions of the selected objects for archiving. Older versions of the selected objects will not be archived.

Save files also in PDF/A-1b format

You can indicate whether you also want to save the files in PDF/A-1b format when archiving them. PDF/A-1b format complies with the standard ISO 19005-1:2005, on the long-term preservation of electronic documents.

Saving in PDF/A-1b format is possible with Office files and standard PDF files. Files in PDF/A-1b format are not imported during import. Saving in PDF/A-1b format slows down the export to some extent.

Clear Archiving Marker

If you have chosen to export objects with the *Marked for archiving* property defined, you can indicate that the property should be cleared after the content export. With this setting is enabled, the exported objects are no longer marked for archiving.

Destroy exported objects after exporting

You can specify whether you want to destroy the exported objects after the export. If you have selected to export the latest versions only, you cannot choose this setting.

Export information on destroyed objects and object versions

Instead of the existing objects, you can choose to export data from the destroyed objects and object versions only. This function is intended mainly for clearing the destroyed objects from the vault.

Export only changes since latest run

You can choose to export only the changes made since the latest run. By default, M-Files offers the date of the latest export (or of the last import of exported objects to the source vault with a timestamp older than the previous export).

Preview

The **Preview** button displays the number of objects affected by the export process.

Export Structure

The *Export Structure* tab enables you to select which parts of the metadata structure you want to export.

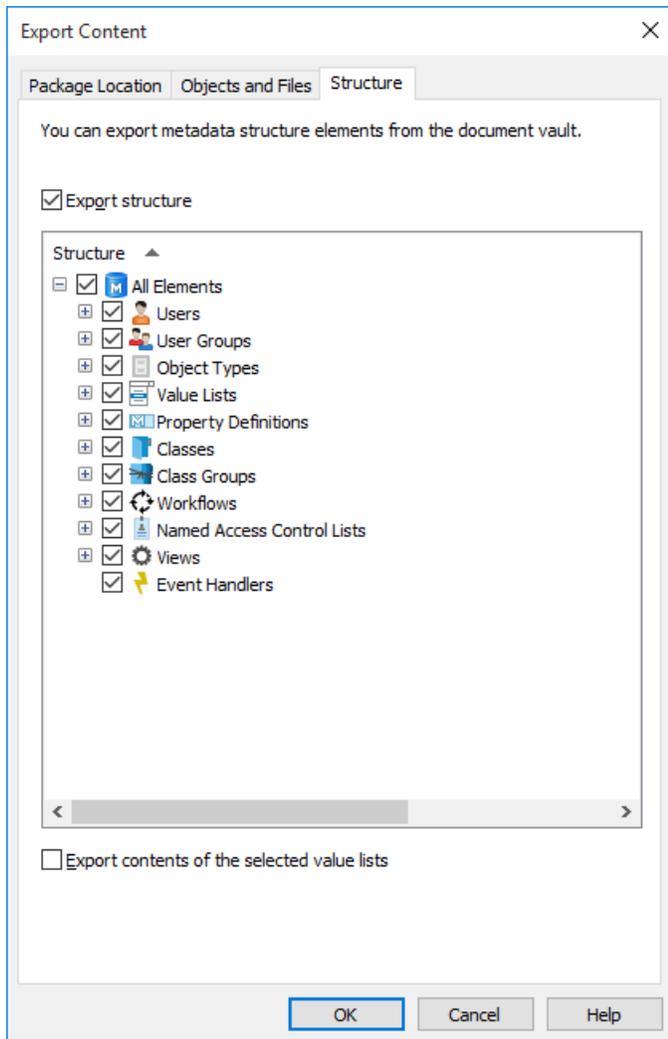


Figure 131: The "Structure" tab of the "Export Content" dialog.

Export Structure

You can choose the metadata structure elements of the selected vault to be exported or select all elements by activating *All Elements*.

Note: Built-in elements are always created in M-Files by default and include, for example, the property definitions *Name or title*, *Created by*, *Last modified by*, and *Keywords*. In addition to these, administrators can create new, user-defined elements.

Export contents of the selected value lists

By selecting the *Export contents of the selected value lists* checkbox you can choose to export all value list content.

Note: All the removed values are replicated as well. This means that values in the target vault may be deleted through a metadata structure import. The values are not deleted completely, however, but instead only marked as deleted. This enables the ability to search and re-enable any deleted values in the source or target vault via M-Files Admin.

Selecting **OK** creates an export package of the selected metadata to the location specified on the *Package location* tab.

Import Content

After creating an export package, you can import its content to a vault of your choosing.

The *Import Content* function is used in particular when one wishes to import data to another vault for example for replication, publication, archiving, or backup purposes. The objects and their metadata are imported and synchronized with those in the target vault. M-Files always imports versions that are new or changed when comparing against the current versions in the target vault.

The importing dialog is accessed through *Content Replication and Archiving > Import Content...*

The import dialog is divided into the same three tabs as the export dialog – *Package Location, Objects and Files* and *Structure* – but also contains a fourth tab for permission settings.

If you have archived documents in M-Files 8.0 or older, you cannot restore an archive file in the *.mfa* file format to a 9.0 (or newer) version vault. If you want to restore an archive file in the *.mfa* file format, restore the file to a vault using M-Files 8.0 or older. After this, you can update this vault to version 9.0 (and newer) and archive content for future use.

Import Package Location

The *Package Location* tab displays options related to the package containing the objects and files and/or metadata structure to be imported. Refer to the corresponding settings in [Export Content](#) on page 287 when you are importing the content package to the selected vault.

The location must be the same as that of the content package exported from the source vault; that is, M-Files must find the exported data in order to perform the import. The location may be different, but in that case a separate data transfer between locations must be implemented.

-  **Note:** The exported package can contain different marker files. M-Files only imports content packages that have the *Ready* marker file but not the *Imported* marker file for the target vault.

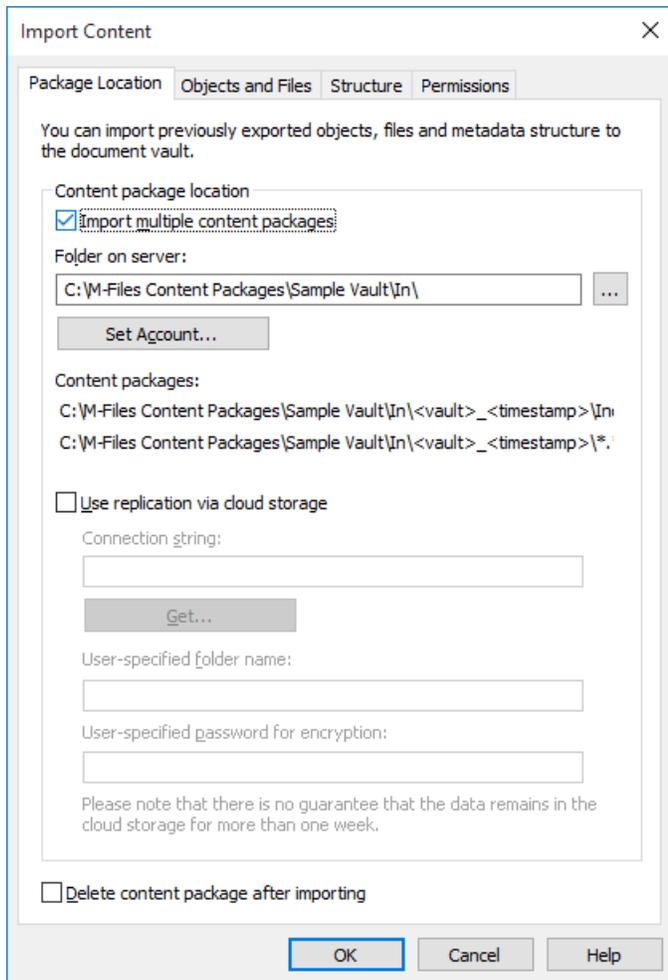


Figure 132: The Package Location tab of the Import Content dialog

You can also import several packages at a time by checking the *Import multiple content packages* checkbox. This enables you to select a folder instead of a single file.

The content package will be automatically deleted after importing if the *Delete content package after importing* option is enabled.

Use replication via cloud storage

You can also use replication via a cloud storage location. When exported, the replication packages are locally encrypted with the AES-256 algorithm and then uploaded to the cloud storage location. When imported, the replication packages are downloaded from the cloud storage location and then decrypted locally. This functionality can be helpful when you are replicating data between different locations and want to be completely certain that only the appropriate persons can access the data.

Connection string

The connection string contains the storage location information. Please make sure to use the same string for both export and import (see [Export Package Location](#) on page 287).

Folder name

The folder name is unique for one export-import pair. For instance, replication from the master vault to a secondary vault could be named "MasterOut" and replication from the secondary vault to the master vault "MasterIn".

Password for encryption

The replication password is used for encrypting the replication packages. The password can be whatever you decide. Just remember to use the same password for both export and import.

Import Objects and Files

The *Objects and Files* tab enables you to change settings related to importing object and file content.

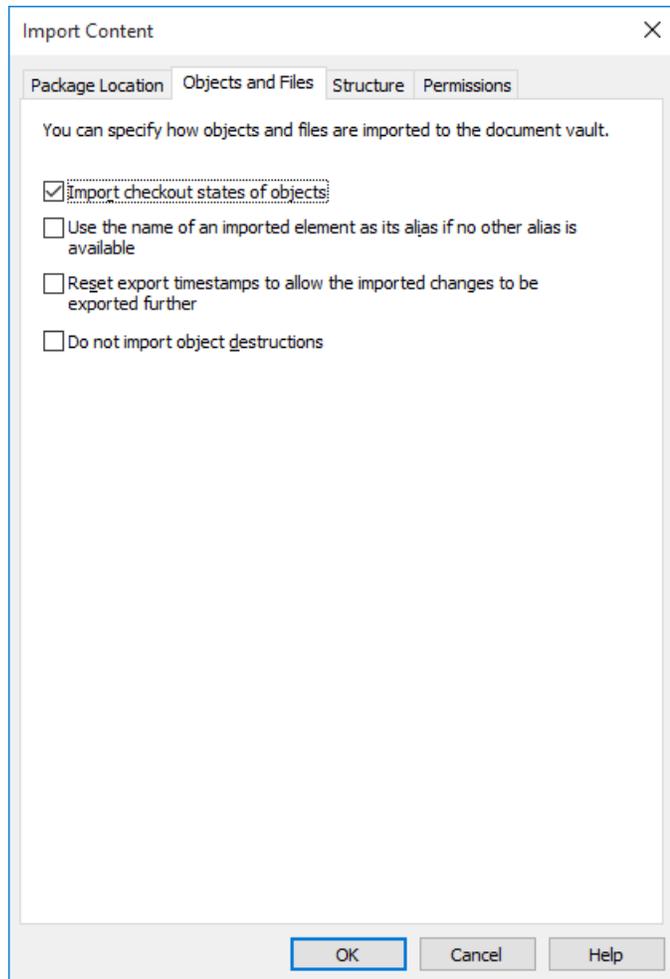


Figure 133: The "Objects and Files" tab of the "Import Content" dialog.

Settings

Import check-out states of objects

If the objects are checked out in the vault from which you are exporting, you can import the check-out states to the target vault as well. Then the object is also checked out in the target vault, which prevents other users from editing it. This reduces the possibility of conflicts, which could be caused by simultaneous editing in multiple vaults.

Use the name of an imported element as its alias if no other alias is available

Since only built-in, GUID and "ID+name" matching metadata definitions are automatically connected, other metadata definitions must be associated by using aliases. However, the necessary alias definitions may not have been made in the source vault. In the latter case, the data export can be facilitated by means of this setting. When this option has been selected, the alias need only be defined in the target vault as long as it is in line with the element's source vault name.

For example, you may want to import objects of the *Project* type but have not defined an alias for the *Project* object type in the source vault. By selecting this option and adding, in the target vault, an alias corresponding to the source vault's name for the project object type (in this case, the alias is "Project"), you will get the necessary definitions for the import.

 **Note:** You must use the default language names from the source vault as the aliases for the metadata definitions in the target vault in order to be able to perform connection of the metadata definitions.

 **Note:** This setting is valid only when the metadata definition in question (object type, property definition, value list, or similar) has no alias defined in the source vault.

Reset export timestamps to allow the imported changes to be exported further

If you want to export objects and their changes from one vault to another – for example, from vault A to vault B – and then onward (to vault C, D and so forth), enable this setting when you are importing from vault A to vault B. In this case, the corresponding objects and their changes can be exported from vault B to vault C as new information because the timestamps were reset.

In this case, make also sure that you have activated the *Export information on destroyed objects and object versions* selection in connection with the export to vault B.

Do not import object destructions

Select this option if:

- You do not want to destroy objects that you have destroyed in the source vault also in the target vault. For example, if you use the target vault for archiving destroyed objects, select this setting.
- You do not want to destroy objects that are no longer part of the export set. Please note that this setting nullifies the export setting *If a previously exported object is no longer part of the export set, mark it to be destroyed in the target vault*.

Import Structure

In the *Structure* tab, you can disable any external database connections to object types, value lists and to user groups, as well as disable any active event handlers to be replicated.

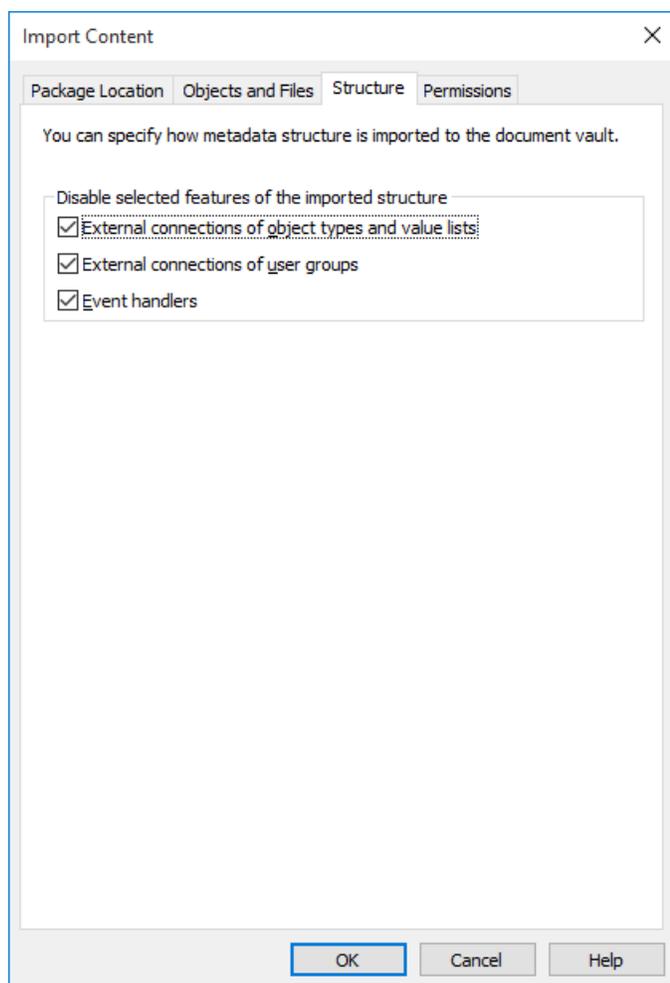


Figure 134: The Structure tab of the Import Content dialog

Selecting **OK** generates a report that displays all modifications to the target vault structure.

Permissions

The *Permissions* tab of the importing dialog allows you to change certain permission settings of the content to be imported.

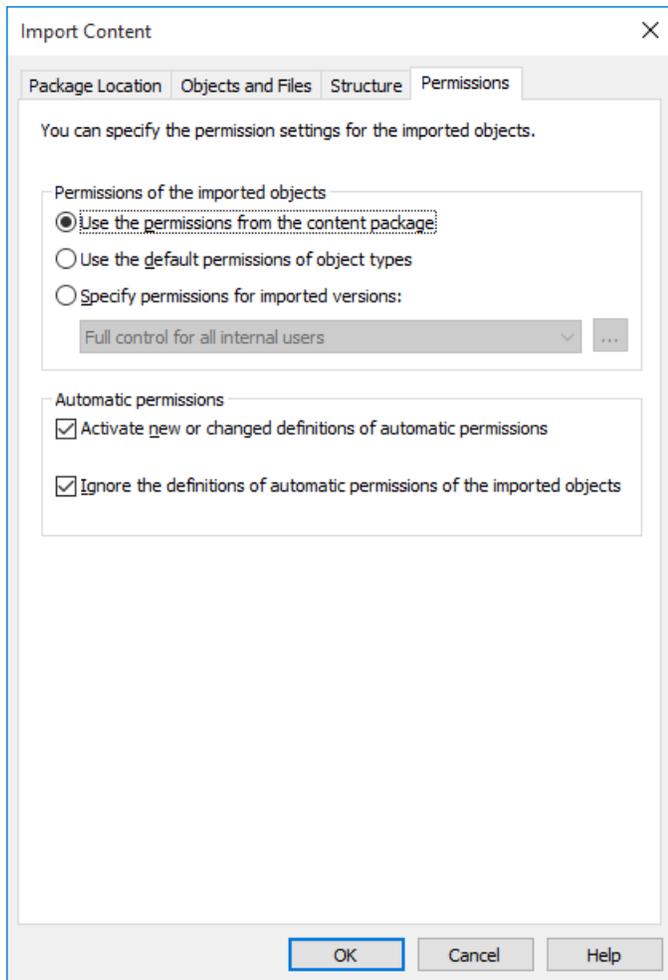


Figure 135: The "Permissions" tab of the "Import Content" dialog.

Permissions of the imported objects

This section allows you to define which permission settings should be used for the imported content. You can choose between using the permissions from the content package, using default permissions of object types, or specifying customized permissions of your own. For example, if you are publishing objects from a company-internal vault to a publishing vault, different permissions are often used.

Automatic permissions

This section allows you to define settings for automatic permissions of the imported content.

Activate new or changed definitions of automatic permissions

If the content package contains any new or changed definitions of automatic permissions, importing the content package with this option enabled activates all the automatic permissions triggered by the imported definitions in the target vault. Importing the content package with this option unchecked still imports the automatic permission definitions to the target vault, but does not cause any new automatic permissions to be activated.

Ignore the definitions of automatic permissions of the imported objects

When selected, this option makes the importing process bypass the definitions of automatic permissions of all the imported objects in the content package. This way you can choose to preserve the automatic permissions of all the objects in the target vault by leaving out any potential changes to the definitions of automatic permissions from the objects in the imported content package.

Import Summary Report

Before accepting any changes to the target vault, M-Files presents a detailed summary of the content package to be imported. It is highly recommended to carefully review the summary report explaining the results of the content import.

It is very important to make sure that no unintended duplicate structure elements will be generated, and that all changes to the target vault's metadata structure will be as expected. In the event there are incorrect mappings, the process should be canceled and the names or aliases of the elements in the source and/or target vault modified accordingly.

-  **Note:** The imported metadata structure elements overwrite their existing counterparts in the target vault. It is not recommended to configure similar object type structures in the master vault and replica vault if the vaults have different connections to external databases configured.

Scheduled Export and Import

For keeping vaults up to date between each other and in interaction, scheduled export and import must be defined for the vaults. With scheduled export and import, you can synchronize the objects and their metadata between vaults.

-  **Note:** The schedule option *When idle* is not supported in M-Files.
-  **Note:** It is recommended that you study the section [Interaction Among Several Vaults](#) on page 167 before defining any export or import jobs.

 Video: [Continuous Replication](#)

Scheduled export

Define the scheduled export in the source vault where you can save the content to be exported on a scheduled basis. The same settings are available as when defining an individual export. For further information, refer to [Export Content](#) on page 287. Exported data can be imported to another vault for publication, replication, archiving or backup.

Scheduled import

When you want to import the content to another vault for synchronization or other use, you should define the scheduled import to the target vault. The same settings are available as when defining an individual import. For further information, refer to [Import Content](#) on page 292.

Scheduling an export or an import job works the same way as scheduling tasks in the Windows Control Panel.

-  **Note:** In addition to the content export and import, you should be able to associate the metadata definitions for the interaction between separate vaults, so that synchronization is possible through archiving. For further information, refer to [Interaction among several document vaults](#) on page 167.

Defining a Scheduled Export

1. Open M-Files Admin.
2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, select the **Content Replication and Archiving** node.
 - The content replication and archiving features are displayed in the right-side pane.
5. Click **New Scheduled Export...** on the task pane.

- The **Scheduled Job Properties** dialog is opened.
- 6. In the **Description** field, type in a name for the scheduled export job.
- 7. Click **Schedule** to define a schedule for the export job.
 - The **Define Schedule** dialog is opened.
- 8. Define the appropriate schedule using the available options and click **OK** to close the **Define Schedule** dialog.
 - i** The schedule option **When idle** is not supported in M-Files.
- 9. On the **Package Location** tab, define the location for the content package.
 - a) Click the ... button to define a temporary local folder for the content package.
 - b) Optional: Click **Set Account...** to define the user account to be used for saving the content package to the selected local folder.
 - i** You need to use a user account that has write permissions to the selected local folder.
- 10. Optional: Still on the **Package Location** tab, enable the **Use replication via cloud storage** option to export to a cloud storage location.
 - a) In the **Connection string** field, enter the provided connection string for connecting to the cloud storage.
 - i** If you do not yet have the connection string, click **Get...** to obtain one. This opens up a preformatted e-mail message to be mailed to M-Files customer support.
 - b) In the **User-specified folder name** field, enter a folder location in the cloud storage that will be used for exporting from one vault and importing to another.
 - c) In the **User-specified password for encryption** field, enter a password of your choice that will be used for encrypting content packages. The same password must be used for exporting and importing the same packages.
- 11. On the **Objects and Files** tab, enable the **Export objects and files** option by checking the check box and select the **Export existing objects** option.
- 12. Optional: To define the conditions that objects must meet in order to be exported, enable the **Use a search filter** option by checking the check box and click the **Define...** button.
 - a) In the **Define Filter** dialog, define the conditions that objects must meet in order to be exported and click **OK** once you have defined all the necessary conditions.
- 13. On the **Structure** tab, enable the **Export structure** option and either:
 - a. Check the **All Elements** option to export all metadata structure elements.
 - or
 - b. Check individual metadata structure elements on the list to define individually the elements to be exported.
- 14. Click **OK** to save the scheduled export job and close the **Scheduled Job Properties** dialog.

The scheduled export job that you have just defined is added to the **Scheduled Export and Import** list and will be run according to the defined schedule.

Defining a Scheduled Import

1. Open M-Files Admin.

2. In the left-side tree view, expand the desired connection to M-Files Server.
3. In the left-side tree view, expand the desired document vault.
4. Still in the left-side tree view, select the **Content Replication and Archiving** node.
 - ✓ The content replication and archiving features are displayed in the right-side pane.
5. Click **New Scheduled Import...** on the task pane.
 - ✓ The **Scheduled Job Properties** dialog is opened.
6. In the **Description** field, type in a name for the scheduled import job.
7. Click **Schedule** to define a schedule for the import job.
 - ✓ The **Define Schedule** dialog is opened.
8. Define the appropriate schedule using the available options and click **OK** to close the **Define Schedule** dialog.
 - i The schedule option **When idle** is not supported in M-Files.
9. On the **Package Location** tab, define the location for the content package.
 - a) Optional: Enable the **Import multiple content packages** if you want to import multiple packages from the selected location.
 - b) Click the ... button to define the location of the content packages to be imported.
 - c) Optional: Click **Set Account...** to define the user account to be used for retrieving the content package from the selected folder.
 - i You need to use a user account that has read permissions to the selected folder.
10. Optional: Still on the **Package Location** tab, enable the **Use replication via cloud storage** option to import from a cloud storage location.
 - a) In the **Connection string** field, enter the provided connection string for connecting to the cloud storage.
 - i If you do not yet have the connection string, click **Get...** to obtain one. This opens up a preformatted e-mail message to be mailed to M-Files customer support.
 - b) In the **User-specified folder name** field, enter a folder location in the cloud storage that will be used for importing to one vault and exporting from another.
 - c) In the **User-specified password for encryption** field, enter a password of your choice that will be used for encrypting content packages. The same password must be used for exporting and importing the same packages.
11. On the **Objects and Files** tab, you can specify how objects and files are imported.
 - i For more information, see [Import Objects and Files](#) on page 294.
12. On the **Structure** tab, you can specify how metadata structure is imported.
 - i For more information, see [Import Structure](#) on page 295.
13. On the **Permissions** tab, you can specify the permission settings for the imported objects.
 - i For more information, see [Permissions](#) on page 296.
14. Click **OK** to save the scheduled import job and close the **Scheduled Job Properties** dialog.

The scheduled import job that you have just defined is added to the **Scheduled Export and Import** list and will be run according to the defined schedule.

Archive Old Versions

You can use the *Archive Old Versions* function to transfer old versions of documents to the archive file. The selected document versions are then transferred from the document vault to the archive file.

Open the dialog by highlighting *Content Replication and Archiving* the left-side tree structure and select *Action > Archive Old Versions...*

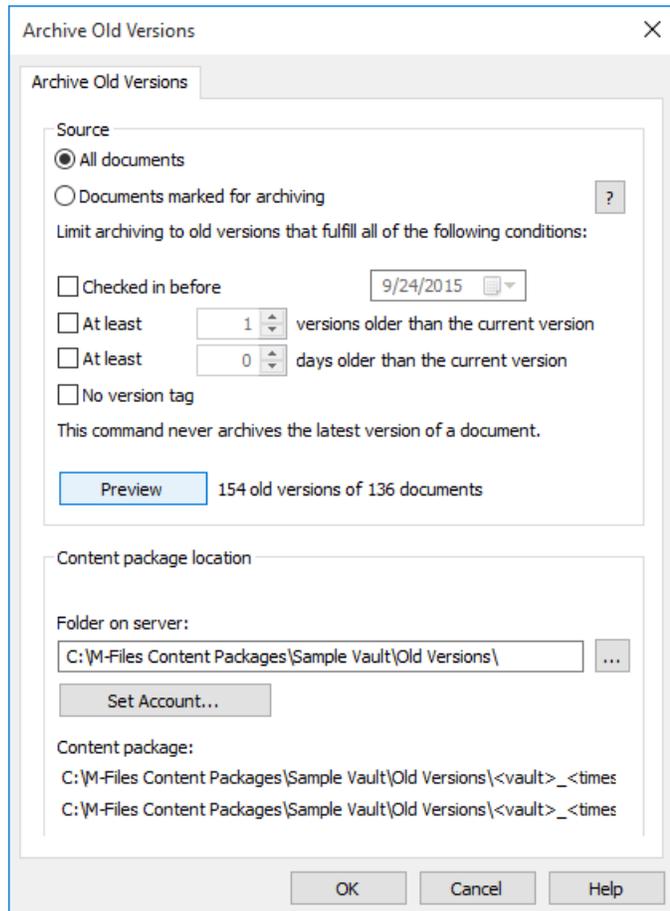


Figure 136: The "Archive Old Versions" dialog.

If the source setting selected is *Documents marked for archiving*, you can use the *Mark for Archiving* function to select the documents whose versions are to be archived; refer to [Archiving](#) on page 102. In this case, the function will only affect the specified versions of the documents marked for archiving. You can limit the archiving to document versions that meet certain conditions.

The archived documents can be restored to the document vault with the *Import Content* function under [Content Replication and Archiving](#) on page 285.

If you have archived documents in earlier versions of M-Files than 9.0, please note that you cannot restore archive files in the *.mfa* file format to a vault using version 9.0 or later. If you want to restore an archive file in the *.mfa* file format, you must use a vault that has version 8.0 or older installed. After this, you can upgrade the vault and perform archiving that is compatible with version 9.0 and newer.

9.11. Metadata Card Configuration

Via the left-side tree view of M-Files Admin, you can access a JSON-based editor for modifying the behavior of the metadata card.

Note: The feature requires Internet Explorer 9 or later to be installed.

The editor enables you, for instance, to:

- add an additional header, including text and an image, for a certain object type or a class.
- add tooltips and description fields for individual properties.
- create collapsible property groups.
- control the order in which properties and groups are displayed on the metadata card.
- assign default values for properties.
- manage automatically added (mandatory and optional) properties based on, for instance, object type and class.
- hide properties from the metadata card.

User interface

The user interface of the editor is comprised of four parts:

- The hierarchical rules list (left)
- The rule name (top right)
- The rule condition (middle right)
- The rule behavior (bottom right)

The screenshot displays the 'Metadata Card Configuration' tool. On the left, a tree view shows the hierarchy: 'Customers' > 'USA'. The main area is divided into four sections:

- Rule name:** A text input field containing 'USA'.
- Rule condition:** A JSON editor showing:


```
1 {
2   "Class": [64, 5]
3 }
```
- Rule behavior:** A JSON editor showing:


```
1 {
2   "MetadataCard": {
3     "Description": "Metadata card description",
4     "Theme": {
5       "Ribbon": {
6         "BackgroundColor:Edit": "#00994C",
7         "BackgroundColor": "#0080FF"
8       },
9       "DescriptionField": {
10        "Color": "white",
11        "BackgroundColor": "#0080FF"
12      },
13      "Properties": {
14        "DescriptionField": {
15          "Color": "white",
16          "BackgroundColor": "#00994C"
17        }
18      }
19    },
20  },
21   "Properties": {
22     "1004": {
23       "Description": "This is a description.",
24       "Tooltip": "This is a multiline tooltip.\n\nHere's another line of text."
25     }
26   }
27 }
```

At the bottom right, there are two buttons: 'Save' and 'Discard'.

Figure 137: The metadata card configuration tool.

You can add and remove rules by using the plus and cross icons at the top right corner of the rule list, or by right-clicking any of the rules. The list is hierarchical, meaning that you can add subordinate rules for further specifying main rules (or any superordinate rules).

The **Name** field should contain a descriptive name for the rule. The name is only visible in the rule editor.

The **Condition** field defines the scope of the rule in JSON. You may want to, for example, hide certain properties from an object of certain class.

The **Behavior** field is used basically for establishing what happens when the above-defined condition is met. For instance, when the object class is *Customer*, you might want to use the property groups *Contact information*, *Subscription* and *Responsible employee*.

For more information on defining the rule condition and behavior, see the article [Configuring the Metadata Card](#).

10. VBScript Variables Explained

VBScript code is edited in the *Edit VBScript code* window available in the following dialogs:

- [Automatic Values](#) on page 222
- [Validation](#) on page 227
- [Trigger](#) on page 261
- [Actions](#) on page 244
- [Conditions](#) on page 242
- [Event Handlers](#) on page 189

The available variables are described in the table below.

-  **Note:** The documentation for the M-Files API is located in **Start > Programs > M-Files > Documentation > M-Files API**. For more information about VBScript code and M-Files API, go to www.m-files.com/api. Instructions on writing VBScript code and working with the M-Files API are available for a separate fee from M-Files customer support (support@m-files.com).

ActivityID	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	The unique ID of the operation that is being processed. Can be used for identifying which events are caused by a certain server operation.

AllowStateTransition	
Data Type	Boolean
Mode	Out
Variable Use	Can be used to allow or deny automatic state transition when running the automatic state transition script.

CurrentTransactionID	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	The ID of the transaction. If event handlers are executed recursively (so that executing one causes another to be executed), the ID changes on every recursion level.

CurrentUserID	
Data Type	MFilesAPI.Number
Mode	In
Variable Use	Contains the ID of the user who performed the action that triggered the script.

CurrentUserSessionInfo	
Data Type	MFilesAPI.SessionInfo
Mode	In

CurrentUserSessionInfo	
Variable Use	Contains information about the login session of the user who caused the operation.

DisplayID	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	Contains the object's unique ID. This ID is displayed to users in the property area of M-Files Desktop when the object is selected in the list. <code>DisplayID</code> can contain both numbers and letters. Often, <code>DisplayID</code> is the same as the object's internal ID whose value can be retrieved with the <code>ObjVer</code> variable. The internal ID can only contain numbers. <code>DisplayID</code> and the internal ID are usually different when the object has been imported from an external database.

FileTransferSessionID	
Data Type	MFilesAPI.Number
Mode	In
Variable Use	Contains the user-specific data transfer identifier. The data transfer identifier is created when the data transfer is being started on the server and, at the same time, the same identifier is given to the <code>BeforeFileUpload</code> and <code>BeforeFileDownload</code> event handlers. After completion of the data transfer, the same data transfer identifier will be given to the <code>AfterFileUpload</code> and <code>AfterFileDownload</code> event handlers. This way it is possible to attach the event handlers of type "Before" to the event handlers of type "After".

FileVer	
Data Type	MFilesAPI.FileVer
Mode	In
Variable Use	Contains the complete unique ID of the target file, consisting of the file ID and file version.

GetExtensionObject	
Data Type	(Method)
Mode	N/A
Variable Use	<p>A method for retrieving the extension object defined by the vault application.</p> <p>Use: <code>GetExtensionObject(<object name> [, application GUID])</code>, where the part <code>[, application GUID]</code> is optional.</p> <p>For example: <code>Set CK = GetExtensionObject("M-Files.ComplianceKit", "{0CAC5452-631F-4646-AC95-4A06BFB8147E}")</code></p> <p>If the application GUID has not been specified, the extension object is searched from all the applications of the vault.</p>

Input	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	A client-defined parameter for the <code>VaultExtensionMethod</code> event handler.

LastUsed	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	<p>Available only if a <i>customized automatic number</i> is being calculated for a property. The value of an automatic number usually depends on the previous calculation. For example, in ordinary consecutive numbering, the automatic value is incremented by one each time. When you are setting up customized automatic numbering, the result of the previous calculation can be retrieved by using the <code>LastUsed</code> variable.</p> <p>For example, simple automatic numbering that increments by one could be implemented with the following simple VBScript code: <code>Output = LastUsed + 1</code></p>

LoggedOutUserID	
Data Type	MFilesAPI.Number
Mode	In
Variable Use	Contains the logged out user ID after logout.

LoginAccount	
Data Type	MFilesAPI.LoginAccount
Mode	In
Variable Use	Contains the user account data in the login.

MasterTransactionID	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	The ID of the transaction. If event handlers are executed recursively (so that executing one causes another to be executed), this transaction ID is the ID of the first transaction.

MFScriptCancel	
Data Type	MFilesAPI.Number
Mode	In
Variable Use	<p>Contains the error code which is used by the scripts for displaying error messages to users. M-Files often adds detailed data to error messages; this can be prevented with the error code of the <code>MFScriptCancel</code> variable.</p> <p>Example: <code>Err.Raise MFScriptCancel, "This is the error message shown to the user."</code></p>

NextStateID	
Data Type	MFilesAPI.Number
Mode	Out
Variable Use	During the automatic state transition, the <code>NextStateID</code> variable contains the ID of the state for which the automatic state transition will be performed. By changing the value of this variable,

NextStateID	
	you can define the next state in the automatic state transition script. By default, the target state is the same as set in the <i>Next State</i> option in the user interface.

ObjectAccessControlList	
Data Type	MFilesAPI.ObjectAccessControlList
Mode	In
Variable Use	Contains the current permissions of the viewed object.

ObjID	
Data Type	MFilesAPI.ObjID
Mode	In
Variable Use	The ID of the object being processed.

ObjVer	
Data Type	MFilesAPI.ObjVer
Mode	In
Variable Use	Contains the complete unique ID of the target version, consisting of the object type ID, object internal ID, and object version.

Output	
Data Type	MFilesAPI.TypedValue
Mode	Out
Variable Use	<p>Available only if a <i>customized automatic number</i> is being calculated for a property. When VBScript code starts to run, the <code>Output</code> variable contains the current value of the property being calculated (but not for automatic numbering).</p> <p>The main purpose of VBScript code is usually to create a new value and assign it to the <code>Output</code> variable, which is then stored in the object's metadata. If the VBScript code does not set the value of the <code>Output</code> variable, the property value in the metadata remains the same.</p> <p>The value of the <code>Output</code> variable can, in simple cases, be set with a simple statement, for example: <code>Output = 123</code></p> <p>If the datatype of the value being calculated is, say, <i>Choose from list</i>, the <code>SetValue</code> method is recommended for setting the value of the <code>Output</code> variable (see M-Files API), for example, as follows: <code>Output.SetValue MFDatatypeLookup, 101</code></p>

ParentTransactionID	
Data Type	MFilesAPI.TypedValue
Mode	In
Variable Use	The ID of the transaction. If event handlers are executed recursively (so that executing one causes another to be executed), this transaction ID is the ID of the previous (calling) transaction.

PropertyDef	
Data Type	MFilesAPI.PropertyDef
Mode	In
Variable Use	Contains the information about the property value being calculated, such as the property value definition ID, name, and data type.

PropertyValue	
Data Type	MFilesAPI.PropertyValue
Mode	In
Variable Use	Contains a property value. Each property value is stored in the <code>PropertyValues</code> variable as a variable of the type <code>PropertyValue</code> . A certain property value can be retrieved with the <code>SearchForProperty</code> method.

PropertyValues	
Data Type	MFilesAPI.PropertyValues
Mode	In
Variable Use	Contains all current property values for the target version (such as <i>Name</i> , <i>Project</i> , and <i>Customer</i>). Each property value is stored in the variable <code>PropertyValues</code> as a variable of the type <code>PropertyValue</code> . A certain property value can be retrieved with the <code>SearchForProperty</code> method.

RestoredVersions	
Data Type	MFilesAPI.IDs
Mode	In
Variable Use	Contains object versions of the exported object that were imported from the content package.

SavepointVariables	
Data Type	MFilesAPI.NamedValues
Mode	In/Out
Variable Use	A container for optional name-value pairs stored for the duration of a single transaction. The container automatically reverts the modifications caused by failed operations in the container.

ScheduledJob	
Data Type	MFilesAPI.ScheduledJob
Mode	In
Variable Use	Contains a description of the scheduled job which is being performed.

ScheduledJobOutputInfo	
Data Type	MFilesAPI.ScheduledJobOutputInfo
Mode	In
Variable Use	Contains information of the scheduled job result after the job has been performed.

StateID	
Data Type	MFilesAPI.Number
Mode	In
Variable Use	Contains the workflow state identifier which can be used to recognize the process state in scripts related to the workflows.

StateTransitionID	
Data Type	MFilesAPI.Number
Mode	In
Variable Use	The ID of the state transition.

TransactionCache	
Data Type	MFilesAPI.NamedValues
Mode	In/Out
Variable Use	A container for optional name-value pairs stored for the duration of a single transaction. The container retains all the modifications, even if they were caused by an operation that was later canceled due to an error.

UserAccount	
Data Type	MFilesAPI.UserAccount
Mode	In
Variable Use	Vault user information.

UserGroupAdmin	
Data Type	MFilesAPI.UserGroupAdmin
Mode	In
Variable Use	Vault user group information.

ValueListItem	
Data Type	MFilesAPI.ValueListItem
Mode	In
Variable Use	Contains the value list value which is being processed in the event handler.

Vault	
Data Type	MFilesAPI.Vault
Mode	In
Variable Use	Represents the document vault which is used in running the script. With the identifier, the script is able to handle the document vault contents in the same way as is possible with the M-Files API interface. In an error situation, all changes made to the document vault through the <code>Vault</code> entity will be cancelled.

Vault	
	The use of <code>Vault</code> entity with scripts entails certain limitations. The scripts cannot, through <code>Vault</code> entity, change the state of the object which the script is run to. The state change refers to checking out the object, checking in the object, undoing the check-out, and deleting and destroying the object. Also, all other objects that are checked out in the script must be checked in during running of the same script.
VaultSharedVariables	
Data Type	<code>MFilesAPI.NamedValues</code>
Mode	In/Out
Variable Use	<p>A collection of named values stored in the document vault database. With the variable, the scripts can store their own values in the database so that they are also available to other scripts. The allowed data types for the named values are integer variables, Booleans, and strings.</p> <p>In the following example, the value 123 is stored as a named value and the number-based calculated value is then set as the value.</p> <pre>VaultSharedVariables("Message") = 123 Output = VaultSharedVariables("Message")</pre>

11. Contacting Support

In case you cannot find a solution to your problem from this document, you can contact the M-Files customer support at support@m-files.com.

In addition to a verbal description of the problem, please include as much of the following information as possible to speed up the support process:

- Windows version and system type (64-bit or 32-bit).
- Complete M-Files version number (for instance, 9.0.3372.6).
- Number of affected users.
- Frequency and reproducibility of the problem/malfunction.
- Steps to reproduce the problem/malfunction.
- Application level error messages from the *Windows Event Viewer*.
 - *Event Viewer* is accessed via **Control Panel > Administrative Tools > Event Viewer**.
 - Include error messages for M-Files Server and M-Files Desktop separately.
- Name and complete version number of an installed antivirus software.
- Contents of a possible M-Files error message window (for instance, a screen capture including the error stack via the **Details >>** button).
- If a file cannot be opened via M-Files, can it be dragged to desktop and accessed on the local drive?

For Office products

- Microsoft Office version.
- The program (Word, Excel, Outlook, etc.) causing the problem/malfunction.

Status of the vault

- Is the vault Firebird or Microsoft SQL based?
- Is the file data included in the database or stored in a separate location?
- Has the vault been optimized recently?
 - Optimization procedure sets the vault to offline state.
- Has the vault been verified and repaired recently?
- If M-Files Admin is used for verifying and repairing the vault, does it report any errors?
- Has the vault been indexed lately?
- Does the M-Files installation include integrations or other add-ons (Dynamics, SharePoint, Salesforce, etc.)?
 - Provide full version information of any integrations or add-ons.

 **Note:** Any relevant screen captures of the situation and settings are always helpful.

12. Frequently Asked Questions

This section deals with some of the most common questions related to the use of M-Files.

12.1. What are the hardware requirements and recommendations?

For technical specifications, refer to [System Requirements](#) on page 18 and [M-Files Technical Data Sheet](#).

In a system with fewer than 40 users, the M-Files server can be run on a computer meeting the Windows operating system requirements. The higher the number of concurrent users, the more is required of the hardware. Free space requirements depend on the number of documents and other objects. The version history, however, does not expand the disk space requirement in a linear fashion, because M-Files Server saves the data in the form of changes between different versions.

The M-Files server and its document vault can be easily transferred to another server machine as system requirements increase.

12.2. How often should I make backups?

The M-Files server is used to save important data, so it is very important to take care of backup procedures. A regular backup should be made of each document vault and master database on the server. Backups are easy to set up via the [scheduled jobs](#) on page 178 in the M-Files Admin tool. We recommend setting M-Files to run backups every night.

Each backup produces files that should be transferred to a safe place.

Example: Your organization has a separate disk server. The master database and document vault backups are run on the M-Files server every night using the scheduled jobs. The jobs are set up so that each produces a single file that replaces the older one. Backup files are set to be transferred to the disk server and from there to a tape drive. In the event of problems, like hardware failure, the backups allow quickly returning M-Files to working order.

12.3. What's new in this M-Files version?

For more information about new, version-specific M-Files features, refer to the M-Files Web site <http://www.m-files.com/latest-ecm-features>.

12.4. How do the automatic updates work?

M-Files includes a function allowing it to check for updates. When a new M-Files version is released, the M-Files installation notices it automatically via the automatic updates. In this case, the upgrade is downloaded to the user's computer, and the user can install it when doing so is convenient.

Automatic updates are a useful way to keep your software up to date. However, many system administrators opt to disable such functionality, because in larger organizations it is easier to handle updates in a centralized manner. Therefore, automatic updates can be disabled.

The feature obtains the latest update information from the update server using HTTP on TCP port 80. This means that normally you do not need to change any firewall settings.

See also *Automatic Updates* under [Installing M-Files Upgrades](#) on page 33.

12.5. Why can't I access the document vault?

The cause of the problem can be either authentication or the network connection.

If there are problems with the network connection, an error message usually reveals the cause of the problem. As regards authentication, there can be a few problems that should be solved by making the following checks.

1. Check that you have an active *login account* in M-Files Admin (refer to [Login Accounts](#) on page 174) and that a *user* (refer to [Users](#) on page 198) has been created for the login account in the document vault.
2. Ensure that your *password* is correct.
3. Check that you are using the *authentication method* (Windows/M-Files) specified for your login account. You can see your authentication method in the *Authentication* column in the login accounts.

If the problem cannot be solved, contact the M-Files system administrator.

12.6. Why can't I edit a document that has been checked out?

You cannot edit the document because it has been checked out by another user who has not yet checked the document back in. This is to prevent the creation of several different copies in M-Files. With system administrator permissions, the document can be forced to be checked in, but the changes made to the document during the checkout will then be lost.

12.7. How can I find the documents I have created myself?

You can search for documents based on certain specifications via additional conditions of the *Advanced Search* feature.

1. Open the *Advanced Search* pane and select **Additional Conditions...**
2. Open the *Properties* tab.
3. Click the **Add Condition** button.
4. Specify *document* as the object type, your own login account as the user, and select the equals sign (=) as the operator.
5. Perform the search by clicking **OK** and then the **Search** button.

Note: You can also create a view that shows only the documents you have created. Refer to [Properties \(Additional Conditions\)](#) on page 122 and [New View](#) on page 76.

12.8. How can I create a document that is only visible to me?

When filling in the metadata card, select *Only for me* in the *Permissions* field.

12.9. How can I add a new property to a class?

If you are a regular M-Files user, you can add properties while filling in the metadata card. You can select the *Add property* label in the metadata card to add a new property for the object. Please note that this property is only added to this particular object, not all objects of the class.

If you want to add a property to all documents of the class, go to *Classes* in M-Files Admin, right-click the desired class and select *Properties* from the context menu. You can add default properties for the class by clicking the **Add...** button. If the desired property cannot be found in the list, you need to create a new property definition (see [Property Definitions](#) on page 219).

12.10. Why did a file with a grayed-out icon appear on the M-Files drive when I saved a new document in Word?

The file became a temporary local file in the document vault. You can convert the *temporary local file to a document*; refer to [Convert to Document](#) on page 89.

12.11. How can I add a new item to a value list?

You can add values to a value list while filling in the metadata card via the **Add Value** button in the toolbar. This function is available only if it has been defined in the value list properties that regular users can add new values to this list.

If you are an M-Files system administrator, go to *Value Lists* in M-Files Admin, right-click the desired value list, and select *Properties* in the context menu. Click the **Contents...** button and add a new item by clicking the **New Item** button. If you do not have administrator rights, check with the system administrator that the *Allow users to add new values to this list* box is checked in the properties of the value list.

If the value list is object-type-based, the value list is edited through the object type. In this case, the new object type is created using the *Explore M-Files* interface.

12.12. How can I create a new view in which the objects are displayed by customer?

1. Move to the home view in the document vault.
2. Select **New View** from the shortcut menu. The *Define View* window should now be displayed.
3. Click the **Add...** button and select *Customer* from the property pull-down menu.
4. Click **OK**.
5. Define a name for your new view.
6. Click **OK**.

12.13. How can I add a new user to the document vault?

1. Go to *Users* in M-Files Admin.
2. Select the **New User** function from the task pane. The *User Properties* window should now be displayed.
3. The *Login account name* pull-down menu shows all login accounts that have not been added to the document vault. If you want to create an entirely new login account, refer to [Login Accounts](#) on page 174.
4. Click **OK**.
5. Specify the permissions for the new user, click **Apply** and then **OK**.

12.14. Why can't I find the Checked Out to Me view?

Each user has the *Checked Out to Me* view, and it cannot be destroyed. However, the view may have been *hidden*.

To display hidden views:

1. In the view window, select the **Unhide Views** function from the shortcut menu.
2. Select the hidden view from the list and click **Unhide**.

Note: You can hide views by highlighting the view and selecting **Hide View** from the **View** menu.

12.15. Can I use M-Files programmatically?

You can use M-Files programmatically with M-Files Application Programming Interface (M-Files API). You can, for instance, generate reports or integrate M-Files into your applications by using it. For further documentation, see the Documentation folder in the M-Files installation folder (**Start > Programs > M-Files > Documentation**).

The M-Files API is a COM/ActiveX component providing the M-Files server with an application programming interface.

12.16. How do I change the name of a client computer without interfering with M-Files functionality?

If documents are checked out to the client in question when its name changes, edited information may be lost. This is because checkouts are user- and computer-specific. The computer is identified by its name. After the name is changed, M-Files considers the checkouts to belong to another computer and does not allow the user to access the edited information.

Check in all documents and items from the computer before changing the computer's name.

12.17. Where can I find more information when I need it?

In addition to this manual, you can look for help in the [M-Files Getting Started Guide](#) or consult your organization's M-Files system administrator.

Customer Support

The M-Files upgrade agreement covers customer support (see also [Contacting Support](#) on page 311).

Customer support e-mail: support@m-files.com, tel.: +358 3 3138 7500.

Please note that customer support does not provide instructions on using the software.

More Information

More information can be found at <http://www.m-files.com>.

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