



Specification

# DTSEARCH, OPENTEXT IDOL, AND M-FILES SMART SEARCH: DIFFERENCES IN M-FILES SEARCH

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M-Files uses [dtSearch](#) as its default full-text search engine, but [OpenText IDOL](#) or M-Files Smart Search can be set up to replace dtSearch. OpenText IDOL and M-Files Smart Search improve the search performance with large amounts of data. Environments with OpenText IDOL or M-Files Smart Search let end users refine their search results with filters (so called facets).

This document tells about the different aspects of the M-Files search feature with dtSearch, OpenText IDOL, or M-Files Smart Search.

## Contents

- 1. Feature Summary ..... 1
- 2. Changes Visible for End Users ..... 2
- 3. Search Target with Different Search Engines ..... 3
- 4. High-Level Data Flow in Full-Text Search ..... 5
- 5. Feature-Level Details ..... 6

## 1. Feature Summary

A summary of the pros and cons of the solutions from the point of view of the infrastructure:

	PROS	CONS
<b>dtSearch</b>	<ul style="list-style-type: none"> <li>+ Embedded to M-Files Server and it is not necessary to install or configure it separately</li> <li>+ Relatively low system requirements</li> <li>+ Very simple system architecture</li> </ul>	<ul style="list-style-type: none"> <li>- Does not scale as well as OpenText IDOL or M-Files Smart Search</li> <li>- Does not support faceted search</li> </ul>
<b>OpenText IDOL</b>	<ul style="list-style-type: none"> <li>+ Stand-alone product that integrates with M-Files Server (must be installed and configured separately)</li> <li>+ Supports multi-server infrastructure and scales out very well</li> <li>+ Supports faceted search (For more details, see <i>Filters tab</i> in section 2 and section 0.)</li> </ul>	<ul style="list-style-type: none"> <li>- Relatively demanding hardware requirements</li> <li>- More complex system architecture</li> <li>- More complex to install and maintain</li> <li>- Not available for M-Files Cloud</li> </ul>
<b>M-Files Smart Search</b>	<ul style="list-style-type: none"> <li>+ Memory-based technology provides instant search experience</li> <li>+ Hosted as a cloud service: easy deployment and configuration</li> <li>+ Built-in high availability</li> <li>+ Supports faceted search (For more details, see <i>Filters tab</i> in section 2 and section 0.)</li> </ul>	<ul style="list-style-type: none"> <li>- Hosted as a cloud service: Not available as standalone to on-premises environments</li> <li>- Not optimal for archiving</li> </ul>

## 2. Changes Visible for End Users

When end users do searches in M-Files, there are some differences in the functionality when the search engine is OpenText IDOL or M-Files Smart Search when compared to dtSearch.

In the table, you can see the differences on a high level. For more details, see the sections from 2.1 to 2.4.

SEARCH CONDITIONS	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH	AVAILABLE WITH DTSEARCH
Advanced filters	Yes	Yes	No
Additional conditions with full-text search	No	No	Yes
Search within the current view in <b>basic</b> views	Yes	Yes	Yes
Search within the current view in <b>advanced</b> views	No	No	Yes

**Table 1:** Differences when searching from the end-user perspective.

### 2.1 Filters Tab

With dtSearch, there is a set of standard filters on the **Filters** tab in the classic M-Files Desktop. Users can refine the search results with the filters:

The screenshot shows the M-Files search results page. The top navigation bar includes the M-Files logo, a search bar with the text 'estt', and utility icons. Below the navigation bar, there are tabs for 'All', 'Recent', 'Assigned (0)', 'Checked out (0)', and 'Pinned'. The main content area displays a list of search results with columns for Name, Size, and Score. The filters sidebar on the right is titled 'Search filters' and includes a dropdown for 'Default Active Index' and a 'Clear search filters' button. The filters are organized into three sections: 'Search in' (Metadata, File contents), 'Object type' (Document, Assignment, Contact person, Customer, Document collection), and 'Last modified' (Any time, Past 24 hours, Past week, Past month, Past year). A status bar at the bottom of the filters section shows performance metrics: 'Listing: 0 ms at engine, 0 ms at engine from M-Files Server, 68 ms at M-Files Server, 70 ms from client, 182 ms total in MFSHELL.'

With OpenText IDOL and M-Files Smart Search, the system administrator can specify more filters to be shown. For example:

This image shows a detailed view of the search filters sidebar. It includes the same 'Search filters' header and 'Default Active Index' dropdown as the previous image. The filters are organized into four sections: 'Search in' (Metadata, File contents), 'Object type' (Document, Assignment, Contact person, Customer, Document collection), 'Last modified' (Any time, Past 24 hours, Past week, Past month, Past year), and 'File extension' (pdf, docx, pptx, xlsx, msg). The 'File extension' section is further divided into 'Class' and 'Created (year)'. The 'Class' section lists categories like Document (791), Account (662), Employee (378), Agreement (213), and Other Document (127). The 'Created (year)' section lists years from 2020 to 2024 with corresponding counts: 2024 (292), 2023 (413), 2022 (279), 2021 (331), and 2020 (160). Each section has a 'Show more' link.

## 2.2 Use of Additional Conditions with Full-Text Search

In dtSearch, you can have any combination of search conditions. That is because dtSearch searches are done in both the full-text search index and the vault database. For more information, see section 3.

With OpenText IDOL and M-Files Smart Search, some combinations of search conditions are not possible. For example, if the end user has selected certain additional conditions in the **Additional Conditions** window and then enters a search term in the **Search** field, an error will be shown. This is because the additional conditions are not compatible with quick search in OpenText IDOL and M-Files Smart Search. You can find the incompatible conditions from the tables in sections from 5.4 to 5.4.4.

**With OpenText IDOL and Smart Search, you can instead use the powerful search facets.** See section 0 for more information.

## 2.3 Searching in the Current View

With OpenText IDOL and M-Files Smart Search, you cannot search within the views **Favorites**, **Checked Out to Me**, **Recently Accessed by Me**, **Recently Modified by Me**, and **Assigned to Me**.

## 2.4 Search Results and Their Order

With the different search engines, the search results can be in a different order. The reason is that the relevancy ranking of the search engines is different.

The search results can be slightly different compared to one another. The companies do not reveal the search logic of the search engines. For more information about where the searches are done, see section 3.

**Example:** The metadata of a document contains the word **customer** but it does not exist in the file data. The file data of the document contains the word **project** but it does not exist in the metadata. When you search for **customer project**, dtSearch does not find the document but OpenText IDOL and Smart Search do.

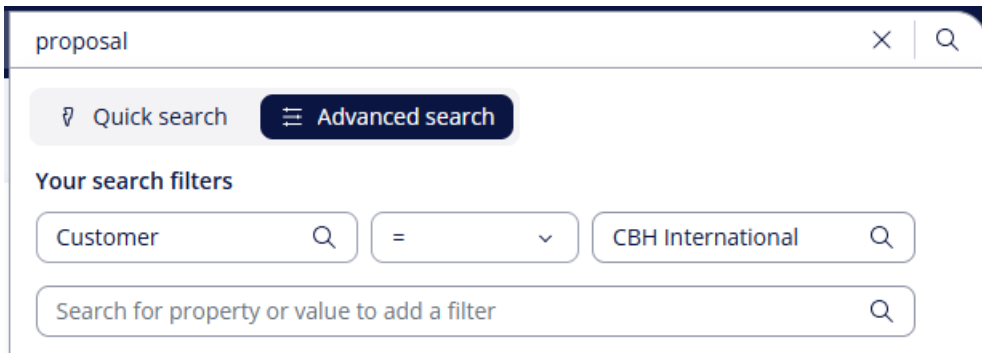
## 3. Search Target with Different Search Engines

In the M-Files search feature, the targeting of individual search conditions is probably the most notable difference between the search engines.

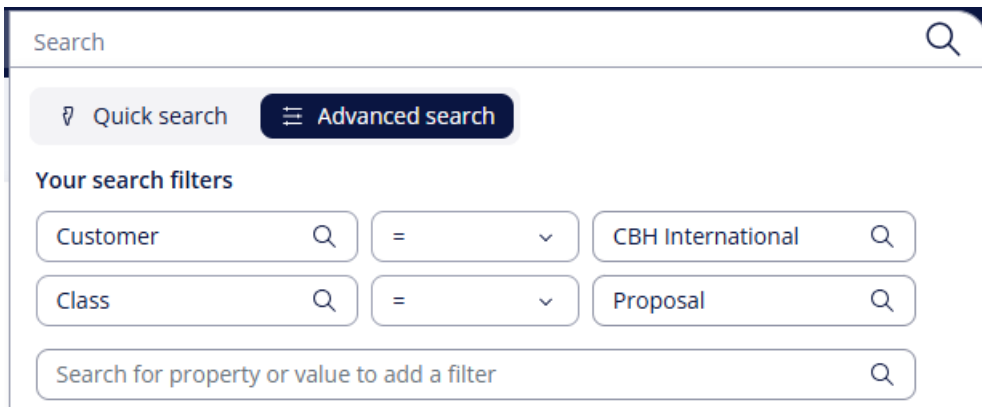
With **dtSearch**, depending on the search conditions, some of the conditions are targeted at:

- The full-text search index of the vault file data, metadata, or both.
- The vault database (for example with additional search conditions, such as "Customer is ESTT Corporation").
- Both of the above.

If there is at least one full-text search condition in a query, the primary source for the search results is the full-text search index. If required, the vault database additionally supports it. This happens, for example, if you use *proposal* as a search term and specify that "Customer is CBH International":



On the other hand, the vault database is the only source of the search results if there is no full-text search condition in the query. This happens, for example, if you do not use any search term and specify one or more additional search conditions – such as "Customer is CBH International" and "Class is Proposal".



With **OpenText IDOL** and **M-Files Smart Search**, the target of **all** search conditions is the full-text search index. If unsupported search conditions are present in a full-text search (see section 5), the query cannot be completed.

This table lists the search targets depending on the search engine being used.

SEARCH ENGINE	FULL-TEXT SEARCH CONDITION USED	ADDITIONAL CONDITIONS USED	SCENARIO SUPPORTED?	SEARCH TARGET	DETAILS
dtSearch	Yes	Yes	Yes	Search index (full-text search) and vault database (additional conditions)	
	Yes	No	Yes	Search index	
	No	Yes	Yes	Vault database	
IDOL and Smart Search	Yes	Yes	Partially supported	Search index	See supported conditions in section 5.4.
	Yes	No	Yes	Search index	
	No	Yes	Yes	Vault database	

**Table 2:** Search targets with dtSearch, OpenText IDOL and M-Files Smart Search.

**Tip:** After you do a full-text search with OpenText IDOL and Smart Search, you can use search facets to narrow down the search results. See section 0 for more information.

### 3.1 Additional remarks

- The final access control list (ACL) check of the search results is done in the vault database when your search engine is dtSearch or OpenText IDOL (not when it is M-Files Smart Search).
- OpenText IDOL and Smart Search: The client can sometimes refresh the search result listing, but that happens only after the end users can already see the search results.
- Indirect search conditions are only supported with dtSearch (see section 5.10). With OpenText IDOL and Smart Search, you can use the search facets to efficiently find what you are looking for (see section 0).
- dtSearch: If the main quick search condition is provided, the following search conditions, if specified, are included in the full-text search (although they are evaluated in the vault database as well):
  - Object type condition
  - Property or object type specific lookup conditions with the *equal* or *one of* operator and a single lookup value
- M-Files Smart Search returns a maximum of 1,000 most relevant results at a time for a single query.

## 4. High-Level Data Flow in Full-Text Search

### 4.1 dtSearch

1. Do a full-text search with the main quick search condition and additional full-text search conditions (if any).
2. Allow up to 100,000 results. If there are more than 100,000 results, fail immediately.
3. Receive the results as object IDs and temporarily store them into the vault database.
4. For each object type requested, do a separate database search in the vault database by joining the resulted object IDs, all the search conditions (if any) other than the main quick search condition, and the ACL access check.
5. Show the results.
6. Asynchronously retrieve the result counts.

### 4.2 OpenText IDOL

1. For each object type configured as "primary", do a full-text search with all the compatible search conditions.
  - You must configure only a very limited number of object types as "primary".
  - By default, only the "Document" object type is configured as "primary".
2. Allow up to 51 results (or possibly another number of results, depending on the search mode and the configuration) for each primary object type.
3. Receive the results as object IDs and temporarily store them into the vault database.
4. Do a separate database search in the vault database by joining the stored object IDs and the ACL access check.
5. Show the results for "primary" object types.
6. Asynchronously retrieve the result counts for all the relevant object types, both "primary" and "secondary".

### 4.3 M- Files Smart Search

1. The search request is sent to the search engine.  
The ACLs are saved in the search index. The permissions are checked when the search request is sent.

- The search engine returns the search results. Metadata is retrieved and shown to the user as it is in the search index. It is not necessary to send a request to the database.
- When the results are already shown to the user, there is a background operation that checks the ACLs and the status of the shown objects.

**Note:** If there are changes to the objects, but the changes are not yet updated in the search index, some of the objects can be removed from the search results shown to the user. This is an exception that occurs only for [external objects](#) and usually within a couple of seconds.

## 5. Feature-Level Details

This section tells you about the differences between dtSearch, OpenText IDOL, and M-Files Smart Search feature by feature.

**Note:** Unless written otherwise, the features are available with dtSearch but unavailable (or partly available) with OpenText IDOL and M-Files Smart Search.

### 5.1 Facets with M-Files Smart Search and OpenText IDOL

M-Files Smart Search supports the use of facets. The system administrator can configure facets that the end users see as filters. Facets can be for example value lists or numeric values, like timestamps, dates, and times.

OpenText IDOL supports range facets with numeric values and dates/times. M-Files Smart Search supports generic year facets (where the property is not given and transformation = Year). This way, the user can search for objects that refer to a specific year. For example, the user finds objects that were created, modified, or accepted year 2017.

M-Files Smart Search also supports month facets to be used with year facets:

<p>Created (year)</p> <p><input checked="" type="checkbox"/> 2020 (93)</p> <p><input type="checkbox"/> 2019 (22)</p> <p><input type="checkbox"/> 2012 (78)</p> <p><input type="checkbox"/> 2011 (1)</p> <p><input type="checkbox"/> 2010 (14)</p> <p><a href="#">Show more</a></p>	<p>Created (month)</p> <p><input type="checkbox"/> November (1)</p> <p><input type="checkbox"/> March (5)</p> <p><input type="checkbox"/> January (72)</p> <p><input type="checkbox"/> February (15)</p>
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### 5.2 Phrase Queries

To do a phrase query with any of the search engines, use double quotes. For example, "faceted search".

### 5.3 Properties Not Indexed in Full-Text Search Index

The properties that are not indexed and therefore not available in full-text search with any of the search engines:

- Accessed by me (user-specific property values)

- Favorite view (user-specific property values)
- In reply to
- Message ID
- Shared files
- Total data on server
- Original path 1
- Original path 2
- Original path 3

**Note:** Smart Search does not support the use of property values with the [data type Number \(integer\)](#) in searches, but you can use integer values in facet filters.

## 5.4 Additional Conditions

All limitations given in this section apply only **if a search term and an additional search condition**, or many conditions, **are used together**. If the user does not enter a search term, the use of additional conditions is not limited.

### 5.4.1 Status-Based Conditions

The advanced search status conditions available with OpenText IDOL and M-Files Smart Search:

CONDITION	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH	REMARKS
Object type	Yes	Yes	Only one object type ID (including the combined ID for "Document or Document Collection") is allowed.
Object ID	Yes	Yes	Only available with the operators <i>equal</i> and <i>not equal</i> . Matches the display ID.
Checked out	No	No	
Checked out to	No	No	
Checked out between	No	No	
Object flags	Yes	Yes	
Deleted	Yes	Yes	

**Table 3:** Status conditions.

## 5.4.2 Property-Based Conditions

In the tables, you can see the availability of search operators with **OpenText IDOL** and **M-Files Smart Search**, grouped by data type.

OPERATOR	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH	REMARKS
equal = is	Yes	Yes	Not available if an indirect search is used (such as <i>Customer.Country</i> as the <a href="#">property condition</a> in the <b>Additional Conditions</b> dialog). In Smart Search, normally not available for text values. See <a href="#">this tip</a> .
not equal != is not	Yes	Yes	In Smart Search, not available for text values.
is empty	Yes	No	Based on the existing NULL value. Missing values are out of scope.
is not empty	Yes	No	Based on an existing non-NULL value. Missing values are out of scope.

**Table 4:** All data types.

**Tip for Smart Search:** You can set two text-based properties to be used with the IS operator in the [search options](#) for quick search and [property-based additional conditions](#) with this [Advanced Vault Settings](#) option: **Search** > **<Smart Search index name>** > **Smart Search Options** > **Text Properties Searchable with IS Operator**.

OPERATOR	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH	REMARKS
one of	Yes	Yes	Based on list value IDs. Means <i>equal (=)</i> .
not one of	Yes	Yes	Based on list value IDs. Means <i>not equal (!=)</i> .
greater than >	No	No	Based on display names of list values.
greater than or equal >=	No	No	Based on display names of list values.
less than <	No	No	Based on display names of list values.
less than or equal <=	No	No	Based on display names of list values.

**Table 5:** List values (in both single-select and multi-select lists).

For M-Files Smart Search, the operators are available only if full-text search is not used in the search operation.

OPERATOR	AVAILABLE WITH IDOL	AVAILABILITY WITH SMART SEARCH	REMARKS
contains (all words)	Yes	No	Specifies a full-text search condition that is applied to a single property. Not available with dtSearch.
contains (any word)	Yes	No	Specifies a full-text search condition that is applied to a single property. Not available with dtSearch.
matches Boolean condition	Yes	No	Specifies a full-text search condition that is applied to a single property. Not available with dtSearch.
contains (substring)	Yes	No	
does not contain (substring)	Yes	No	
starts with	Yes	No	
does not start with	Yes	No	
matches wildcard pattern	Yes	No	
does not match wildcard pattern	Yes	No	
greater than >	No	No	Only available if full text search is not used in the search operation.
greater than or equal >=	No	No	Only available if full text search is not used in the search operation.
less than <	No	No	Only available if full text search is not used in the search operation.
less than or equal <=	No	No	Only available if full text search is not used in the search operation.

**Table 6:** Text values (both simple and multi-line).

OPERATOR	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH	REMARKS
greater than >	Yes	Yes	Timestamp values are compared without the time part.
greater than or equal >=	Yes	Yes	Timestamp values are compared without the time part.
less than <	Yes	Yes	Timestamp values are compared without the time part.
less than or equal <=	Yes	Yes	Timestamp values are compared without the time part.

**Table 7:** Date and timestamp values.

OPERATOR	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH
greater than >	No	Yes
greater than or equal >=	No	Yes
less than <	No	Yes
less than or equal <=	No	Yes

**Table 8:** Time values.

OPERATOR	AVAILABLE WITH IDOL	AVAILABLE WITH SMART SEARCH
greater than >	Yes	Yes
greater than or equal >=	Yes	Yes
less than <	Yes	Yes
less than or equal <=	Yes	Yes

**Table 9:** Numeric values.

### 5.4.3 File Information Based Conditions

The advanced file conditions available with OpenText IDOL:

CONDITION	AVAILABLE
Contains files	Yes
File name	No
File size	No
File created	No
File changed	No
Linked to external location	No

**Table 9:** File conditions.

### 5.4.4 Permission-Based Conditions

None of the advanced search permission-based conditions are available with OpenText IDOL and M-Files Smart Search in full-text searches. They are available with dtSearch.

## 5.5 Wildcards

**Note:** M-Files Smart Search does not support wildcards, but it supports typo tolerance.

You can use wildcards in dtSearch. You can see the supported wildcard characters in [Operators and Special Characters](#) in the M-Files user guide.

With OpenText IDOL, alphanumeric or all-numeric words of the indexed data can be stored in an optimally split structure to avoid search term explosion and consequent index bloat. As a result, with the current configuration (SplitNumbers=TRUE) used by default, **a search term with a wildcard does not match any indexed words that contain numbers.** The native `DateTime` index fields in OpenText IDOL are an exception to this rule. For instance,

the search term **201?** finds the objects whose date or timestamp value represents one of the years between 2010 and 2019.

In general, OpenText IDOL supports these wildcard characters:

WILDCARD CHARACTER	DESCRIPTION	AVAILABLE
*	Zero or more characters.	Yes
?	Exactly one character	Yes
#	Exactly one digit.	No

**Table 10:** Wildcard character support with OpenText IDOL.

With OpenText IDOL, M-Files can accept and show only a partial set of results when a search term with a wildcard expands to too many actual terms (configurable threshold value in OpenText IDOL). In these cases, OpenText IDOL can return *some* of the results to M-Files, and a warning message is shown to the end user.

By default, and primarily for performance reasons regardless of the search engine, you cannot use any leading wildcard character in M-Files. For instance, if you use the search term **\*files**, you will get an error message.

## 5.6 Object Access Check

With dtSearch, object access check is always done with access control lists (ACLs) in the vault database only.

With OpenText IDOL, an approximated ACL is used in the full-text index, but the final ACL evaluation is done in the vault database. There is a limitation of the approximated ACL in OpenText IDOL index: Up to **three** ACL components (meaning up to two automatic permissions components in addition to the custom ACL) are indexed separately. Any additional components are flattened to the last indexed component, thus losing part of the intersected evaluation of the components.

With M-Files Smart Search, only the full-text index is used. Up to **five** ACL components are indexed separately.

As a result, the visibility of the actual search results is always enforced by M-Files Server, but the result count is taken directly from OpenText IDOL, and it can indicate a larger number of results to be available than there actually is.

## 5.7 Hit Highlighting

Regardless of the main search engine, dtSearch is currently always responsible for hit highlighting. Due to differences between the search engines, the highlighting is not necessarily entirely accurate with the OpenText IDOL or M-Files Smart Search search. The reason is that hit highlighting is done separately in the user interface. Therefore, hit highlighting may not always be a reliable source when determining why a specific object is included in the search results.

## 5.8 Full-Text Search Within the Current View

With OpenText IDOL and M-Files Smart Search, full-text search is supported together with the *Search within this view* feature provided that **both** the user-provided search conditions **and** the current view-specific filtering conditions are compatible with OpenText IDOL. Please note that the message on the user interface does not

currently show whether the incompatible search conditions are part of the user-provided set or of the view-specific filter.

As examples of incompatible standard views, **Favorites** or **Recently Accessed by Me** cannot be further searched with full-text search. In those views, the **View** filter cannot be shown because the underlying property condition is in both cases based on a user-specific property that is not indexed in the full-text index.

## 5.9 Search User Interface Limitations

The current search user interface does not remove previously entered search conditions if a user enters conditions that would be incompatible with the previously entered search conditions. For example, when a user enters a search condition that indicates full-text search with OpenText IDOL, other incompatible search conditions can still be present in the user interface. The user must remove the incompatible search conditions themselves.

## 5.10 Indirect Searches

If the user has defined conditions that point to a related object, the full-text search is possible only with dtSearch. This type of search is not possible with OpenText IDOL and M-Files Smart Search because the quick search index indexes only the object itself, not the related object. For more information, refer to [Indirect searches](#) in the M-Files user guide.

## 5.11 Other Changes in the Search User Interface

Some of the search operators previously available in the user interface for advanced search conditions are now available in the **Additional Conditions** dialog only. The order of the search operators is a bit different than in previous M-Files versions.