

M-FILES CORPORATION

VIEW EXTENSIONS USER GUIDE

VERSION 4.0

2018-03-01

Abstract

The View Extensions application is an add-on for the M-Files desktop client. It enhances existing views by making it easier to see the metadata of objects that a view's content is grouped by, and by automatically displaying key related objects inside additional detail listings. The application reduces the need to navigate between views and drill down through object hierarchies, meaning significant objects can be found faster. The detail listings can easily be configured from the client, and they follow the paradigms of M-Files' built-in views, meaning all users can define their own, and folder managers can deploy them and other settings to all users.

Keywords: UI Extensibility Applications Detail Listings

Note: In the M-Files Web and in new M-Files Desktop, the View Extensions is replaced with the Workspaces. For more information, refer to [Workspaces - FAQ](#) and [Workspaces Configuration](#).

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1. Introduction

This document is written to instruct users on the features of the View Extensions application and guide them in their daily use.

The View Extensions application is designed to enhance the standard view interface by displaying object listings in addition to a folder's primary object listing. View Extensions provides two types of additional listings; *Grouping Level Listings* and *Detail Listings*.

A *Grouping Level Listing* displays all the grouping levels that are applicable to the current folder and are only available in folders that have grouping levels in their path. If a grouping level corresponds to an M-Files object, that object can be selected in the listing, and its metadata will be shown.

A *Detail Listing* is a user configured listing that can be shown in certain folders when certain objects are selected. They show objects that are related to the object currently selected.

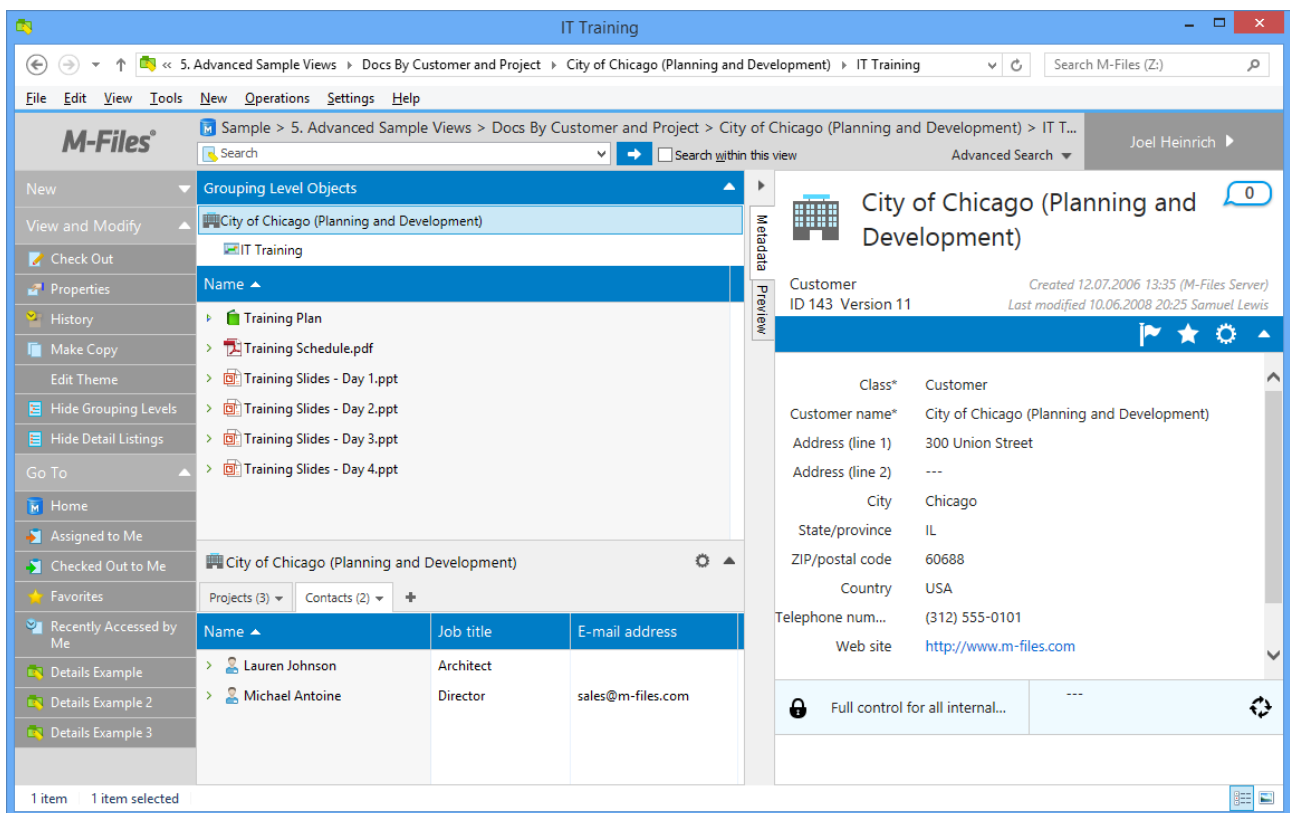


Image 1 - A folder location where the three listings types are shown. Grouping Level Listing (top), Primary Listing (middle), Detail Listings (bottom).

The View Extensions application is implemented using M-Files' UI Extensibility Framework, and can be installed and deployed to all users from the M-Files Admin interface.

1.1.1 M-Files Software Requirements

Make sure your M-Files software meets these minimum requirements:

M-FILES PRODUCT	VERSION
M-Files Desktop	M-Files 2015.1 or later
M-Files Server	M-Files 2015.1 or later

2. Basic Use

2.1 Grouping Level Listing

The grouping level listing is designed to show all grouping levels that affect the current folder path. Grouping levels that correspond to M-Files objects are selectable; meaning if they are clicked, their metadata (and detail listings) will be shown.

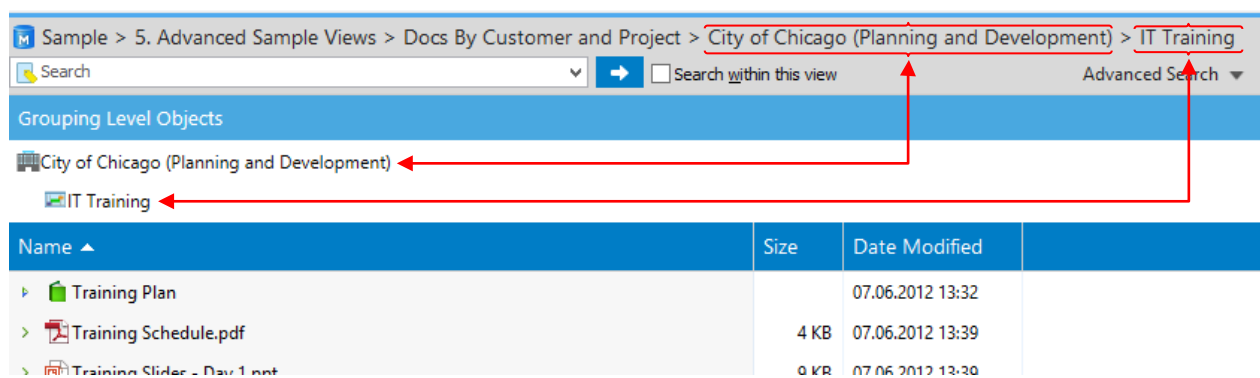


Image 2 - Grouping level objects displayed in the Grouping Level Listing correspond to the path's grouping level folders.

2.1.1 Grouping Level Listing Visibility

The *Grouping Level Listing* can be shown or hidden by using the **Show Grouping Levels** and **Hide Grouping Levels** task pane buttons respectively.

If the current folder path is not within any grouping levels, the listing and the buttons will not be available.

By default, the *Grouping Level Listing* will be shown automatically if there is at least one grouping level that corresponds to an M-Files object. Once a user has explicitly set the visibility in a particular folder path, it will be remembered and respected unless reset by common settings.

2.1.2 Expanding and Collapsing the Grouping Level Listing

The grouping level listing can be partially collapsed to only show grouping levels corresponding to M-Files objects, or fully collapsed to hide all grouping levels.

The grouping level listing can be toggled between the expanded, partially collapsed, and fully collapsed states by clicking on the grouping level listing's header. If all of the grouping levels correspond to M-Files objects, or if none of them do, then the partially collapsed state will be skipped.

By default, the grouping level listing will appear partially collapsed if applicable, otherwise it will be expanded. Once a user has explicitly set the state in a particular folder path, it will be remembered and respected unless reset by common settings.

2.2 Detail Listing Panel

The *Detail Listing Panel* shows predefined listings of objects related to a target object. The target object is the one that was last selected in the primary listing or grouping level listing.

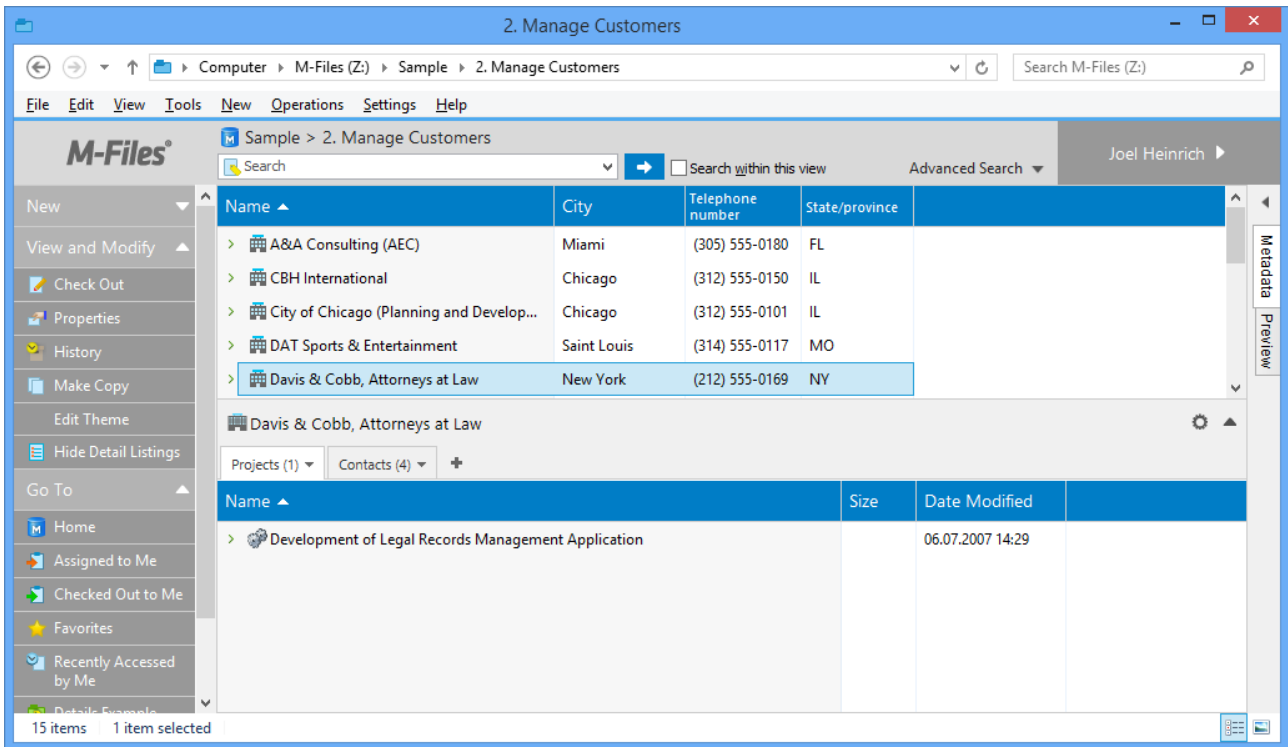


Image 3 – The detail listings displayed correspond to the item selected in the primary listing.

The panel header indicates the target object for which the detail listings are shown.

Each detail listing's tab has an item count in parentheses, which indicates the number of items that are currently shown the listing.

2.2.1 Detail Listing Panel Visibility

The *Detail Listing Panel* can be shown or hidden by using the **Show Detail Listings** and **Hide Detail Listings** task pane buttons respectively.

The *Detail Listing Panel* is hidden by default. Once a user has explicitly set the visibility in a particular folder path, it will be remembered and respected unless reset by common settings.

2.2.2 Expanding and Collapsing the Detail Listing Panel

The *Detail Listing Panel* can be collapsed to allow the primary listing more space. When the panel is collapsed, the listings' contents will not be shown.

Users can switch between the collapsed and expanded states by clicking the triangle (arrow) button in the upper-right corner of the panel. The panel can also be expanded by clicking on an inactive tab.

The *Detail Listing Panel* is expanded by default. Once a user has explicitly set the state, it will be remembered and respected unless reset by common settings.

2.2.3 Detail Listing Visibility

Users can set whether a detail listing should be shown in each folder.

The visibility of detail listings applicable to the target object can be changed by opening the *Show Listing* menu (click the button with the “+” icon) and selecting the listing to be shown or hidden. If the listing has a check next to it, it is currently visible and will be hidden if selected. If the listing does not have a check next to it, it is not currently visible and will be shown if selected.

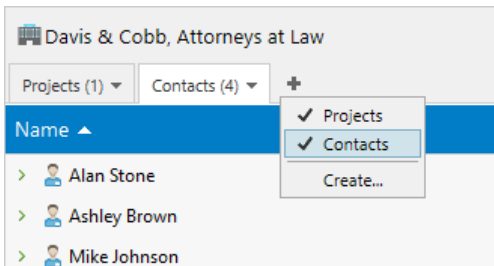


Image 4 – Toggling tab visibility in the *Show Listing* menu.

A visible detail listing can also be hidden by opening the corresponding tab’s menu and selecting *Hide*.

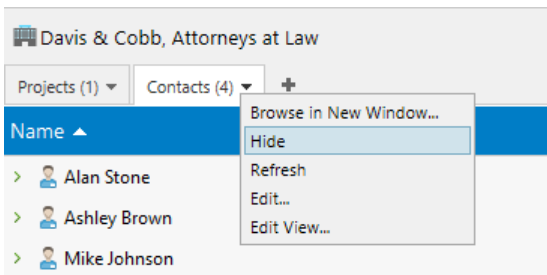


Image 5 – Hiding a tab from the Tab menu.

The visibility of all detail listings for a particular folder path can be set from the *Manage Detail Listings* dialog described in section 3.1 Manage Detail Listings.

2.2.4 Detail Listing Column Settings

The column settings for each detail listing can be modified like any other listing in M-Files. However, changes made to the column settings of listings shown in the *Detail Listing Panel* are not propagated to the same detail listings for other target objects, and they are not persisted once you leave the current view.

To have a detail listing’s column settings persisted, they must be set in a separate window. Users can quickly navigate to a detail listing in a separate window by opening the corresponding tab’s menu and selecting *Browse in New Window...*

Once the column settings have been saved you will need to switch views before the changes are visible in the detail listings.

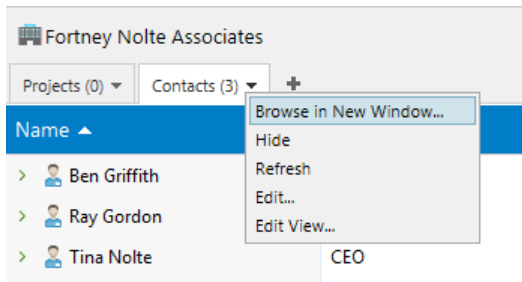


Image 6 - Browse to the detail listing's view in a new window.

2.3 Common Settings

Similar to how common view settings can be defined and forced on M-Files users, settings for the *Grouping Level Listing* and *Detail Listing Panel* can be set as common, and when doing so, those common settings can replace all users' settings.

Users can modify their own settings even in common views, and revert to the common settings if they so desire.

2.3.1 Saving Common Settings

Only folder managers (users with the rights to "Manage common views and notification rules") have the ability to save common settings. Common settings can only be saved for common folders within common views.

Folder managers can save their current settings as common settings by opening the *Settings Menu* (gear icon) in the upper-right corner of the *Detail Listing Panel* and selecting *Save as Common Settings*.

2.3.2 Reverting Settings

Users can revert to the common settings for common view paths or to the default settings by opening the *Settings Menu* (gear icon) in the upper-right corner of the *Detail Listing Panel* and selecting *Revert Settings*.

3. Configuring Detail Listings

3.1 Manage Detail Listings

All available detail listings and their properties can be seen from the *Manage Detail Listing* dialog. The dialog can be accessed from the *Settings Menu* (gear icon) in the upper-right corner of the *Detail Listing Panel* and selecting *Manage Settings*.

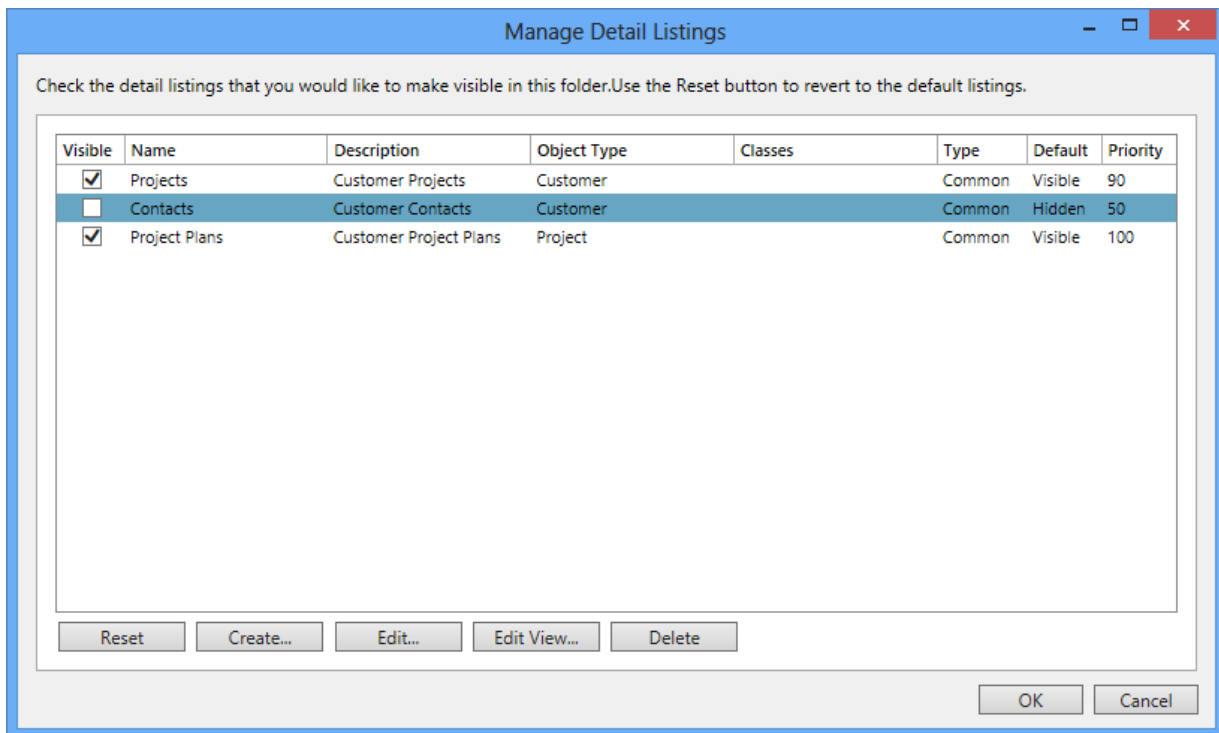


Image 7 – See and modify all the detail listings in the vault from the “Manage Detail Listings” dialog.

Listings are only visible to a user if the user has access to the corresponding view.

The visibility of all tabs in the current folder path can be set or reset via the *Manage Detail Listings* dialog. Users can simply check or uncheck each listing that they want shown or hidden respectively. The **Reset** button will return each listing to its default visibility. The new visibility settings will only take effect when the dialog is closed with the **OK** button.

3.2 Detail Listings

A detail listing consists of the following properties:

- **Name** – A required name for the listing. The text is visible in the detail listing’s tab button.
- **Description** – An optional description for the listing. The text is displayed as a tooltip when the user hovers their mouse over the detail listings’ tab button.
- **Common to all users** – Indicates whether the detail listing is common or personal. Only users with rights to manage common views can mark a detail listing as common.
- **Object Type** – Indicates the type of target object this detail listing is applicable to. The detail listing will only be available if a target object is selected. To be a listing target the object type or at least one property that refers to objects of that type must be allowed as a grouping level.
- **Classes / All Classes** – Further restricts which target objects this detail listing is applicable to. The detail listing will only be available if a target object is one of the selected classes. If the *All Classes* option is selected, no class restriction is applied. Note that every class can be selected but the *All Classes* option not enabled, meaning that if a new class for the object type is added, it will not be selected.
- **Priority** – Used to determine the order the detail listing tabs are displayed in the *Detail Listing Panel*. The tab of a detail listing with a higher priority will be placed to the left of a tab belonging to a detail listing with a lower priority. Values between 0 and 100 are accepted.

- **Show by default** – Determines whether the detail listing will be visible by default. If enabled, all folders will display the listing except in those where it has been explicitly hidden. If disabled, the detail listing will not be visible in any folder except in those where it has been explicitly shown.

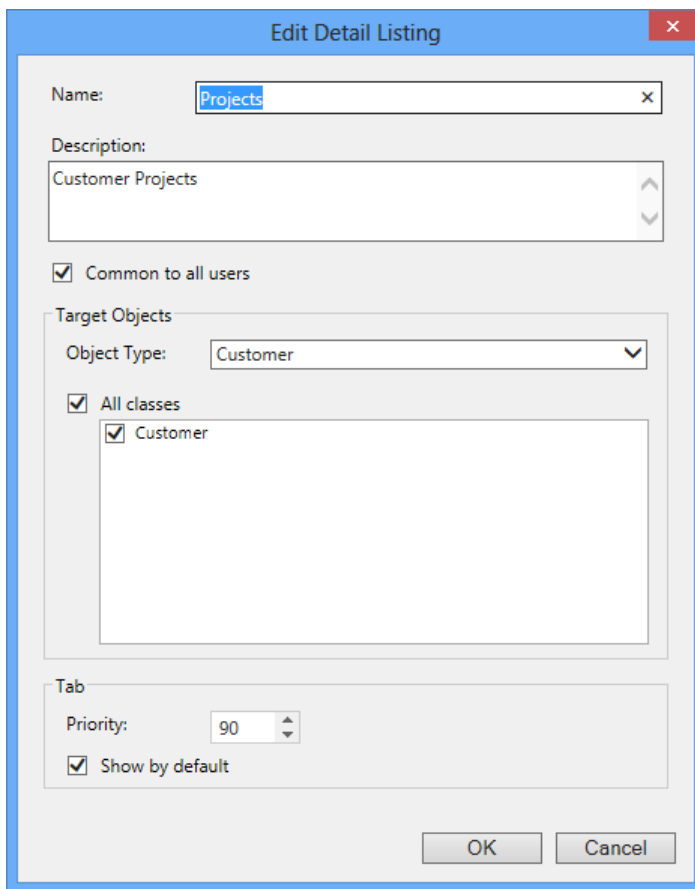


Image 8 - Editing a detail listings properties.

3.2.1 Creating a Detail Listing

New detail listings can be created with the *Create Detail Listing* dialog.

The *Create Detail Listing* dialog can be launched from the *Manage Detail Listings* dialog by clicking the **Create...** button, or by selecting the *Create...* option from the *Add Tab* menu in the *Detail Listing Panel*. If the latter method is used, the *Create Detail Listing* dialog will default the object type and class properties to those of the current target object (if there is one).

Once properties of the new detail listing have been specified, the **OK** button should be clicked to create it.

A view is automatically created for each detail listing that is created. The newly created view's properties are displayed after the *Create Detail Listing* dialog is closed.

Users must have the rights to manage common views to create common detail listings.

3.2.2 Modifying a Detail Listing

Existing detail listings can be modified from the *Edit Detail Listing* dialog.

The *Edit Detail Listing* dialog can be launched from the *Manage Detail Listings* dialog by selecting the appropriate item in the table and clicking the **Edit...** button, or by selecting the *Edit...* option from the detail listing's own *Tab* menu in the *Detail Listing Panel*.

After the properties of the detail listing have been changed, the **OK** button should be clicked to apply them.

Users must have the rights to manage common views to edit common detail listings.

3.2.3 Deleting a Detail Listing

An existing detail listing can be deleted from the *Manage Detail Listings* dialog by selecting the appropriate item in the table and clicking the **Delete** button.

Deleting a detail listing also deletes the corresponding view.

Only users with rights to manage common views can delete common detail listings.

Warning: Deleting detail listings cannot be undone!

3.2.4 Detail Listing Permissions

Common detail listings follow the permissions of their corresponding view.

Permissions cannot be set for personal views, and therefore cannot be set for personal detail listings either.

3.3 Detail Listing Views

Each detail listing is bound to its own view. The system automatically creates a view when a new detail listing is created. Grouping levels are used to create property folders for all possible target objects. When a target object is selected, the detail listing displays the contents of that target object's property folder within the view.

A detail listing's view has three grouping levels. The deepest level (level 3) directly references the target objects and the top two extend the third level referencing the target objects' ID (level 2) and ID Segment (level 1). User's should only edit the third (deepest) grouping level, after saving changes, View Extensions will automatically update the first and second levels to align with the third.

Note: If the object type or property definition is not available for selection as a grouping level, an administrator may need explicitly allow it to be used as one.

The permissions of a common detail listing's view apply to the detail listing itself.

A detail listing view should only be edited within the view extensions interface to ensure it is aware of all changes. If a detail listing's view is not configured correctly, it will show incorrect results, or may not load at all. In some cases, view extensions may "fix" issues with the view automatically after saving changes to the view or before displaying a detail listing.

Guidelines for configuring a detail listing view:

- The view's filter determines what item's (which reference the target object) will be shown in the detail listing.
- The view should only be marked *Common to all users* if the detail listing is also marked so.

- The application will automatically try to keep the “Common” setting between the detail listing settings and its view settings the same.
- The view should have three grouping levels.
 - The application will automatically update the view (if the current user has permission) to ensure it has three levels, using the deepest level that points to the target object type as a template for the three levels.
- The view’s deepest grouping level should point to objects whose type matches the target *ObjectType* defined in the detail listing’s properties.
- The view’s grouping levels should be set to *Show empty folders*.
 - The application may automatically set this value when updating/setting the grouping levels.
- The view’s grouping levels should not be filtered.
 - The system may automatically set this value when updating/setting the grouping levels.

The system places the views it creates in one of two parent views. Common views are placed in a common view called “Detail Listings” and personal views are placed in a personal view called “Personal Detail Listings”. The system will create the parent views as needed and place them root folder. Users can hide them to avoid clutter in the root view.

Each detail listing view is created as follows:

- **Name** – The default view name is set to “<Detail Listing Name> by <Target Object Type>”
- **Common to all users** – Is set to the corresponding value of the detail listing.
- **Grouping Level** – A single grouping level is created that groups on all references of the detail listing’s target object type. The *Show empty folders* is set to true.

When a detail listing’s *Common to all users* property changes, the system updates the view’s setting to match, and attempts to relocate the view to the corresponding parent view.

3.4 Performance Considerations / Lazy Loading

By default, M-Files only loads detail listings when they are viewed. This behavior is called lazy-loading, and it ensures that the client responds quickly when items are selected in the primary listing, and the available detail listings change. However, this behavior prevents the detail listing counts from being visible in their tabs before it has been selected/viewed.

In most cases, seeing all the item counts of the available detail listings immediately is not crucial, and the default lazy-loading behavior is appropriate. In cases where they are wanted though, there is a registry setting to disable the behavior. In cases where the vault is not very large, and/or the number of detail listings shown is small, the performance impact on the client can be negligible.

Key HKEY_CURRENT_USER\Software\Motive\M-Files\<version>\Client\Common\<vault-name>\ViewExtension

Value name	LazyLoadDetailListings	
Value type	REG_DWORD	
Description	Enables/Disables the lazy-load detail listing behavior in the View Extensions application.	
Valid values	0	Disabled
	1	Enabled (default)

The registry settings is user and client machine specific. M-Files' Named Value Storage (NVS) can be used to deploy the desired setting to all users of the vault. M-Files' *Named Value Manager* utility can be used to modify values in NVS.

Namespace	M-Files.Core.Client.Settings
Storage Type	MFConfigurationValue

Key	ViewExtension
Value	<pre>{ "Common": { "ViewExtension": { "LazyLoadDetailListings" : true false } } }</pre>
Description	<p>Deploys View Extensions lazy load behavior setting to registry for all users when they log in to the vault. A value of <i>true</i> will set the registry setting to 1 (Enabled, default). A value of <i>false</i> will set the registry setting to 0 (Disabled).</p>

4. Advanced Topics

4.1 Import / Export

4.1.1 Exporting Common Detail Listings

Common detail listings defined in one vault can be exported for use in another. The common detail listing's views must be exported alongside the detail listings for them to be usable.

Only administrators can export detail listings and their views.

To export the common detail listings:

1. Select *Export Common Listings* from the *Settings* menu (gear icon).
2. Specify the name and location of the export file.
3. Click **Save**.

To export the common detail listings' views:

1. Launch M-Files Admin.
2. Select the *Content Replication and Archiving* node underneath the desired server and vault.
3. Click the **One-time Export...** button
4. Define the content package location.
5. Select the *Structure* tab.
6. Check the *Export structure* box
7. Expand the Views > Common User-defined Views node.
8. Select the "Detail Listing Views" view and all views in its path.
9. Click **OK**.

4.1.2 Importing Common Detail Listings

Common detail listings exported from one vault can be imported into another. The common detail listing's views must be imported before the detail listings are imported for them to be usable.

Only administrators can import detail listings and their views.

To import the common detail listings' views:

1. Launch M-Files Admin.
2. Select the *Content Replication and Archiving* node underneath the desired server and vault.
3. Click the **One-time Import...** button
4. Specify the location of the replication package containing the exported common detail listing views as the "Index file on server".
5. Click **OK**.
6. Review the import summary.
7. Click **Yes** to proceed with the import.

To import the common detail listings:

1. Select *Import Common Listings* from the *Settings* menu (gear icon).
2. Choose the file that contains the exported common detail listings.
3. Click **Open**.
4. Review the import summary.
5. Click **Import** to proceed.

4.2 Custom Theme Integration

The *Grouping Level Listing* is rendered by the View Extensions application itself, and the default colors scheme of M-Files 2015 have been hard coded into its style sheets. This means it will typically not render with the correct styles if a custom theme has been set by other dedicated UI applications.

The *View Extensions* application will however follow custom theme styles if they have been defined and deployed with the *Theme Editor* application.

The *Theme Editor* application provides a user interface to design M-Files themes in real-time and deploy them to all users with the click of a button. Further information can be found in the "M-Files Compliance Kit 2015 - Configuration Manual".

5. Change History

The table below describes the essential changes by document version.

VERSION	DATE	ESSENTIAL CHANGES
1.0	2015-10-02	Initial published version.
1.1	2015-10-26	Updated section 3.3 Detail Listing Views to describe grouping level behavior introduced in v1.1.20.
2.0	2015-11-20	Finalized for release with Compliance Kit 2015.1
3.0	2016.05.26	Finalized for release with Compliance Kit 2015.2
4.0	2016.11.18	Finalized for release with Compliance Kit 2015.3
5.0	2018.03.01	Finalized for release with Compliance Kit 2018 - Included section 3.4 Performance Considerations / Lazy Loading - Added notes about grouping level restrictions

6. Reference Documents

You may want to see these articles for additional information:

- [Compliance Kit 2018 - Configuration Manual.pdf](#) ([Desktop](#), [Web](#), [Mobile](#))