

[**< Certified M-Files Developer \(<https://partner-mfiles.talentlms.com/learner/courseinfo/id:2083>\)**](#)

1. Overview

1.1 About the Certification Test

In the certification test, you shall implement one vault application for the contract management vault of a fictional customer, Acme Corporation. The requirements for the vault application are defined in chapter 2Specification.

The estimated time needed for developing the vault application is one full working day.

Return the application and its source code as a ZIP file by using the Upload a file function at the bottom of the page.

1.2 Preparations

Before starting the development, please do the following:

1. Install M-Files version 20.11.9630.6 or later if you have an older version.
2. Download the M-Files vault from [this link \(https://mfdevcert.blob.core.windows.net/mf-developer-certification/Acme_Corporation_CLM_APAC.mfb\)](https://mfdevcert.blob.core.windows.net/mf-developer-certification/Acme_Corporation_CLM_APAC.mfb) and add it to your local M-Files environment as a document vault. This vault is the Acme Corporation contract management vault you do development on.
3. Download the Visual Studio template version 2.2 for vault application development from Partner Portal, if you don't have it already.

Objects in the given vault are created via replication so Display ID and Internal ID are not matching.

2. Specification

2.1 Background

Acme Corporation's has an M-Files vault for contract management. The vault needs custom functionality that you need to implement as a vault application.

2.2 Non-functional Requirements

The vault application shall meet the following non-functional requirements:

- Unless otherwise stated in the functional requirements, any modifications to the vault contents performed by the vault application shall be rolled back in the case of exceptions, i.e. the code shall be transactional.
- The application shall use appropriate levels of commenting.
- The application shall use the aliases of the provided vault to ensure transferability of the application.
- The application shall use MFIdentifier for handling structural vault elements.
- The application shall not adversely affect standard M-Files functionality, such as the object history.
- The application shall use the Helper Utilities of the Vault Application Framework wherever feasible.
- The application shall show appropriate error messages to the user.
- Except for disabling the VBScript, you should not make any changes to the vault structure.
- Asynchronous operations shall be implemented by using task queue.

2.3 Functional Requirements

2.3.1 Configuration

The application shall have the following configuration parameters that can be set in the M-Files Admin tool:

Parameter	Value	Comment
Application Enabled	Yes/No	If No, the application code is not executed
Contract Managers User Group	User group	The Contract Manager user group in the vault.
Executive Managers User Group	User group	The Executive Managers user group in the vault.
Contract Manager Role	Value list item	Item in the Roles value list of the vault
Executive Management Role	Value list item	Item in the Roles value list of the vault

2.3.2 Converting VB Script to a Vault Application

The vault has a VBScript for automatically calculating the value of the Contract Title property. To improve the maintainability of the vault, you need to implement the same

automatic value calculation in the vault application.

You need to disable the automatic value calculation via the VBScript to avoid errors.

The name of the user who edited the contract document shall be shown in the Last Modified By property of the document whose Contract Title value is calculated by the vault application.

2.3.3 User Groups by Role

The vault has a Person object type for Acme Corporation employees. The associated M-Files user is defined in the M-Files User property of the Person object. A Person can have roles defined in the Roles property; the possible roles are listed in the Roles value list.

Implement the following functionality in a vault application:

- If the role Contract Manager is added to a Person, the associated M-Files user is added to the Contract Managers user group, if the user is not already in the group.
- If the role Executive Management is added to a Person, the associated M-Files user is added to the Executive Management user group.
- If the role Contract Manager is removed from a Person, the associated M-Files user is removed from the Contract Managers user group, if the user is in the group.
- If the role Executive Management is removed from a Person, the associated M-Files user is removed from the Executive Management user group, if the user is in the group.

In the implementation, you shall use the configuration parameters defined in section 2.3.1 Configuration.

2.3.4 Listing Valid and Expired Contracts

The vault application shall do the following:

- When a Delivery Agreement document is set to Signed state, the document is added to the Valid Contracts property of the Customer if it is not already there.
- When a Delivery Agreement document is set to Expired state, the document is removed from the Valid Contracts property and added to the Expired Contracts property if it is not already there.
- If the Customer cannot be updated, a user-friendly error message shall be shown to the user.

2.3.5 Successor of a Contract Owner

The vault includes several Supplier Agreement and Delivery Agreement documents. The Person responsible for each document is in the Contract Owner property. The vault has a metadata card configuration that works as follows: if a Person is marked as a former employee (Former Employee property is set as Yes), a successor needs to be selected for the Person (Successor property).

The vault application shall do the following:

- If a Person is marked as a former employee and no successor is named, the application shall raise an exception.
- If the Person marked as a former employee is set as his/her own Successor, the application shall raise an exception.
- If a Person is marked as a former employee and a Successor is named, the vault application's background operation shall replace Person with Successor in all documents where the Person is the Contract Owner.
- If there is an error situation, the vault application shall create an assignment to the Successor with a link to the document where the error occurred (a separate assignment for each document causing an error) and continue handling the remaining documents.



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