

MasterControl 8.0.x Toolkit API Overview

Contents

Overview..... 3

 Introduction..... 3

 Background..... 3

 Licensing 4

 Rights 4

 Scenarios 4

 Additional Details 5

Overview

The Toolkit API reference outlines the functionality available to developers to interface with the MasterControl suite of applications. The API enables external applications to create, access, and change data in MasterControl. The API was introduced in conjunction with MasterControl Portal version 6.0.0. Companies using prior versions of the Portal will need to upgrade in order to utilize the API.

The Toolkit API can be used in any application environment / language that can find and use web services, including ColdFusion and Visual Basic.NET. Additionally, the MasterControl My Files directory structure is used to transport files. When the Toolkit API is installed several files are installed with the base product which enables the API calls to be made.

Introduction

The *MasterControl API Toolkit* functionality supports many of the basic functions within the MasterControl Documents Module and performs the following basic functions:

- User connect and disconnect
- InfoCard creation, revision and data editing InfoCard, main file and attachment retrieval and replacement
- Get Available Fields and Search on them
- InfoCard check in and checkout

MasterControl API Toolkit shall also be designed to meet the requirements for good document control within the confines of FDA/GxP environments including compliance with 21 CFR Part 11.

The Connections Toolkit module is a separately purchased module that will enable MasterControl to exchange files and data with other applications. The focus of the initial version is to enable exchanging data with ERP systems using a generic interface as well as enabling other systems to initiate actions within MasterControl, such as creating InfoCards.

Additional functionality that could be considered for future versions (or potentially separate modules) include tighter integrations with specific ERP packages as well as integrations with PDM, CAD, MES, etc. packages.

Background

As companies grow, elements that need to be managed grow; for example, the number of employees, vendors, products, customers, etc. The pain of managing these elements increases until the company decides to provide a solution to manage the data. Different software applications address one or more of these pains. Software applications are grouped together in segments to assist buyers, sellers, and analysts to make sense out of all the choices.

- ERP (Enterprise Resource Planning) – manages financials, employees, manufacturing resources, purchasing, inventory, etc.
- CRM (Customer Resource Management) – manages customers
- MES (Manufacturing Execution Systems) – manages plant floor execution
- PDM (Product Data Management) – manages CAD file data
- Etc.

Some applications are more industry-specific than others (i.e. MES software doesn't apply to non-manufacturing companies). ERP systems are arguably the most horizontal enterprise application segment in that ERP systems are used in most industries. Since MasterControl can't provide all the functionality every company needs, we need to be able to exchange the data we control with other applications (i.e. documents and their associated metadata as well as form data). The main issues to consider are the specification of what data should be made available and when it should be made available.

Licensing

Connections must be licensed to run. The web service API will be disabled if the module is not licensed.

Rights

The external application user must have normal MasterControl rights to perform the operations requested through each service. This includes rights to the vaults where the InfoCards are housed and any rights to edit or add InfoCards if those methods are going to be used.

Scenarios

Receiving Documents/Data (Outside System Owns Trigger)

Document Creation 1

ABC, Inc. is a pharmaceutical company that uses their ERP system to create their batch records, however, their ERP system does not have a robust approval routing system. They would like to automatically store the batch records in MasterControl and route them for approval. ABC, Inc. uses the Connections module and adds a small amount of code to their ERP system, which automatically creates and routes InfoCards for each batch record within MasterControl.

Document Creation 2

Blood, Inc. is a blood center that processes thousands of donations every month. Each donor completes an information sheet when donating blood (type, donor history, etc). The donor information sheets have to be signed by hand and then controlled. Blood, Inc. would like to control them in MasterControl, which is their secure document repository. Blood, Inc. has a system that scans the donor information sheets and retrieves specific

metadata using OCR technology. They use the Connections module to automatically create and route InfoCards for each donor information sheet.

Document Revision

Widget, Inc., a manufacturing company, uses an MES system to manage their plant-floor operations. When a configuration file is changed for a specific piece of equipment, they would like to maintain a revision history of each change. They configure their MES system to revision the appropriate InfoCard that contains the configuration files within MasterControl using the Connections.

Scanning

MasterControl has already partnered with Kofax scanning solutions to build an integration with their software Ascent Capture. This integration will allow companies to scan batches of documents at a time in order to place them into MasterControl. Blood, Inc. uses a form for donors to fill out, and they have thousands of documents in boxes that need to be scanned and processed. Blood, Inc. would be able to setup their Ascent Capture software to look for the fields and scan them into MasterControl using custom fields. This will allow them to be categorized and saved on MasterControl.

Additional Details

Other systems should have the ability to push or pull data from MasterControl when they own the process trigger. Also when MasterControl owns the trigger event, it should be able to initiate process changes as well. Below is a list of features that the Connections module should enable.

Receiving Data

- **Log-in**
Another system should be required to provide security information before it can initiate MasterControl actions. An API connection will consume licenses just like any other user. Additionally, the login credentials supplied must have the appropriate rights to perform the actions outlined below. If the appropriate rights are not available, the action will fail and an error code returned to the initiating system.
- **Log-out**
The toolkit has the ability to log-out when finished. An API connection should be logged if there has been no activity based on the session time-out setting.
- **Create InfoCard**
An InfoCard can be created from an outside system by providing all the required InfoCard fields. In addition to the main Information tab fields, custom fields, attachments, and links can be created via this interface. A number of error codes are returned if the request does not match the required elements, for example:
 - Required field(s) missing
 - Specified custom fields do not match custom fields for the InfoCard type

- Specified attachment or link not found (in this case, the InfoCard may still be created).
- Check-out InfoCard

An InfoCard can be checked out, which will lock the InfoCard and copy the file to the My Files directory for the user logged in via the interface. If My Files is not enabled the action should return an error code.

- Check-in InfoCard

An InfoCard can be checked in by supplying the appropriate information: file name and path, vault and revision (if template settings are not available), as well as optional information, such as, Notes, Change Number, etc. An option for this action is to check-in without revision.

Note: we could consider a revision InfoCard action, which is the action that will be most commonly used, however, separate check-out and check-in provides the most flexibility.

- Edit InfoCard

An InfoCard can be edited via the API toolkit. The same rights apply as normal. If invalid information is provided – for example, a custom field is designated to be changed, but doesn't exist or the filename and path of the main file is invalid, the appropriate error code should be returned.
- Get Document URL

The function provides the external link to the main file for the InfoCard number and revision specified. In addition, to the InfoCard number and revision, the function can specify whether the link should be dynamic or static and authenticated or anonymous.