



User Manual

# MDOpen

Eclipse based plug-in for Change and  
Distribution Management from  
Midrange Dynamics

Version 8.0  
Published April 13, 2017



**MDOpen - Table of Contents**

1	OVERVIEW OF THE MDOPEN MANUAL .....	5
2	INSTALLING MDOPEN .....	5
2.1	General MDOpen Information .....	5
2.2	Prerequisites .....	5
2.3	Installing a Specific Version of MDOpen for the First Time .....	6
2.4	Updating an Installed Version of MDOpen .....	6
2.5	Uninstall MDOpen .....	7
2.6	The MDOpen Perspective .....	7
3	MDCMS REPOSITORY CONNECTIONS .....	8
3.1	Adding an MDCMS Repository .....	8
3.2	Change User or Password for Repository Connection .....	9
3.3	Export/Import Repository Definitions .....	9
3.4	Using Remote Systems Explorer Toolset in MDCMS perspective .....	10
4	STARTING MDOPEN .....	11
4.1	Common Handling Features in MDOpen .....	12
5	MDCMS SETTINGS WITHIN MDOPEN .....	14
5.1	Common Settings Options .....	14
5.2	App Hierarchy .....	14
5.3	Applications .....	14
5.4	Levels .....	15
5.4.1	Process Flow Report .....	15
5.5	Attributes .....	16
5.5.1	Attribute Script Maintenance .....	17
5.6	Commands .....	19
5.7	System i Settings .....	19
5.8	OS/400 Locations .....	20
5.9	OS/400 Location Groups .....	20
5.10	Distribution Levels .....	20
5.11	Remote Server Locations .....	21
5.12	Services .....	22
5.13	SVN Repositories .....	22
5.14	eMail Bodies .....	23
5.15	Script Templates .....	23
5.16	Project Phases .....	24
5.17	Project Types .....	24
5.18	Task Types .....	24
5.19	User Group Types .....	24
5.20	User Groups .....	24
6	MDWORKFLOW SETTINGS WITHIN MDOPEN .....	25
6.1	Acceptance Group Types per Level .....	25
6.2	Project/Task Status Codes .....	25
6.3	Custom Fields .....	26
6.3.1	DDL Entries .....	27
6.4	WebApp Config xml .....	27
7	MANAGE SESSION SETTINGS .....	28
7.1	Change password .....	28
7.2	Show locked objects .....	28
7.3	Preferences .....	28
7.4	Close editors .....	29
7.5	Report output .....	29
7.6	Spooled output .....	30
8	MDXREF .....	31
8.1	MDXREF Objects .....	31
8.1.1	MDXREF Object Details .....	32



8.1.2	Objects using File.....	33
8.1.3	Objects Using File Inline.....	33
8.1.4	Fields in File.....	33
8.1.5	Join Fields in File.....	34
8.1.6	CPYF/OVRDBF Information.....	34
8.1.7	Keys in File.....	35
8.1.8	Files Used.....	35
8.1.9	Files Used Inline.....	35
8.1.10	Up.....	36
8.1.11	Up Inline.....	36
8.1.12	Down.....	37
8.1.13	Down Inline.....	37
8.1.14	Copybooks Used.....	38
8.1.15	Exported Procedures.....	38
8.1.16	Imported Procedures.....	38
8.1.17	Modules Used.....	39
8.1.18	Objects using Module.....	39
8.1.19	Process Flow Report.....	40
8.1.20	Print Relational Dependencies.....	40
8.1.21	View Source.....	41
8.1.22	XREF Refresh for Objects.....	41
8.1.23	Fresche Legacy View / Advisor.....	41
8.2	<i>MDXREF Source</i> .....	42
8.2.1	Source containing Field.....	43
8.2.2	Source Compare.....	43
8.2.3	Programs using Source.....	43
8.2.4	View Source.....	43
8.3	<i>MDXREF Procedures</i> .....	44
8.4	<i>MDXREF IFS</i> .....	45
8.5	<i>MDXREF Search for Fields</i> .....	46
9	OBJECT REQUESTS.....	47
9.1	<i>Overview</i> .....	47
9.2	<i>Object Request View</i> .....	47
9.3	<i>Object View Detail</i> .....	51
9.4	<i>Object View Options</i> .....	55
10	REQUEST OBJECTS DIRECTLY ON IBMI.....	60
10.1	<i>Modify Existing Object</i> .....	61
10.2	<i>Add New Object</i> .....	63
10.3	<i>Recompile Object</i> .....	63
10.4	<i>Delete Object</i> .....	63
10.5	<i>Update Object</i> .....	63
10.6	<i>Request Related Objects</i> .....	64
10.7	<i>Request Linked Objects for Attribute</i> .....	66
10.8	<i>Bound ILE Objects</i> .....	67
10.9	<i>Import Source</i> .....	68
10.9.1	Source Import Definition.....	68
10.9.2	Source Import Result List.....	69
10.10	<i>Import Library</i> .....	71
10.11	<i>Request Objects from MDXREF</i> .....	72
10.12	<i>Request Source Members from MDXREF</i> .....	73
10.13	<i>Request IFS Objects from MDXREF</i> .....	74
10.14	<i>Request IFS Source from MDXREF</i> .....	75
10.15	<i>Import Objects or Source from IFS Folder</i> .....	76
11	REQUEST OBJECTS FROM OTHER LOCATIONS.....	77
11.1	<i>Request Objects to/from Workspace</i> .....	78
11.1.1	Create an Ignore List for Requests and Commits from Local Workspace.....	79
11.2	<i>Import Objects from Local Folders</i> .....	80



11.3	<i>Import Objects from Remote Server</i> .....	80
11.4	<i>Request Objects from Git</i> .....	81
11.5	<i>Request Objects from SVN</i> .....	82
11.6	<i>Request – Initial Dialog</i> .....	83
11.7	<i>Request - Selection Confirmation for Objects</i> .....	85
11.8	<i>Request - Selection Confirmation for Source</i> .....	86
12	COMPARE OBJECT SOURCE.....	87
13	PROJECTS.....	89
13.1	<i>Project Listing</i> .....	89
13.2	<i>Viewing Project Tasks and Subtasks</i> .....	91
13.3	<i>Time Entry Listing</i> .....	92
13.4	<i>Time Entry Details</i> .....	92
14	RFP.....	93
14.1	<i>RFP Listing</i> .....	93
14.2	<i>RFP Details</i> .....	93
14.3	<i>Add New RFP</i> .....	94
14.4	<i>Copy RFP</i> .....	95
14.5	<i>Merge Multiple RFPs into One RFP</i> .....	95
14.6	<i>Reset Status of RFP</i> .....	95
14.7	<i>Close RFP</i> .....	95
14.8	<i>Create RFP Objects into Developer Library</i> .....	95
14.9	<i>Viewing and Managing Spooled Files for an RFP</i> .....	96
14.10	<i>Viewing the RFP Deployment Log</i> .....	96
14.11	<i>Viewing and Managing Projects for an RFP</i> .....	96
14.12	<i>Viewing and Managing Object Requests for an RFP</i> .....	96
14.13	<i>Adding a New Object Request to RFP</i> .....	96
14.14	<i>RFP Commands</i> .....	97
14.15	<i>RFP Scripts</i> .....	98
14.16	<i>Promoting an RFP</i> .....	99
14.17	<i>The Batch Installation Process</i> .....	100
14.17.1	<i>The Source/Object Preparation Steps</i> .....	100
14.17.2	<i>Source and Object Signing</i> .....	100
14.18	<i>The Installation Steps</i> .....	101
14.19	<i>The Archiving and Cleanup Steps</i> .....	101
14.20	<i>The Set for Next Level Steps</i> .....	101
14.21	<i>Approving a Promotion</i> .....	102
14.22	<i>Installing a Promotion</i> .....	102
15	RFP INSTALLATION HISTORY.....	103
15.1	<i>Copy RFP</i> .....	103
15.2	<i>Rollback RFP</i> .....	104
15.3	<i>Acceptance Test Status</i> .....	105
15.4	<i>Objects in Installed RFP</i> .....	107
16	RFP SEND LISTING.....	108
16.1	<i>Send RFP to Target Systems</i> .....	109
16.2	<i>Add Object to Send RFP</i> .....	111
16.3	<i>Merge Multiple RFPs into One RFP</i> .....	111
16.4	<i>Send RFP Commands</i> .....	112
16.5	<i>Send RFP Scripts</i> .....	112
16.6	<i>Objects in Send RFP</i> .....	112
17	RFP RECEIVE LISTING.....	113
17.1	<i>RFP Receive Listing Options</i> .....	114
18	RFP RECEIVE HISTORY.....	116
18.1	<i>RFP Receive History Detail</i> .....	117
18.2	<i>RFP Receive History Options</i> .....	118



## 1 Overview of the MDOpen Manual

This manual is a guide for installing and using the MDOpen Eclipse based plug-in for multiplatform development for the Midrange Dynamics Change Management System (MDCMS). This manual will refer to the core system as MDCMS. MDCMS is a tool that helps manage source and objects throughout the development, migration, modification, and distribution life cycle.

Additional configuration steps pertaining to the core MDCMS product are outlined in the **MDCMS User Manual** and will not be covered within this manual. Please refer to those steps outlined in the MDCMS User Manual or contact your systems administrator or the person who installed and setup the core MDCMS product.

## 2 Installing MDOpen

### 2.1 General MDOpen Information

MDOpen consists of a java plug-in for use within an Eclipse-based IDE such as Eclipse, MyEclipse, Rational Developer for I or Zend Studio.

The plug-in provides an Eclipse Perspective named MDCMS. Within the MDCMS Perspective, MDCMS functions are provided within specific views for each function.

Additionally, the MDOpen plug-in provides Context Menu options from within other Eclipse Perspectives for the seamless management of objects by MDCMS from the programmer's preferred workspace or subversion repository.

MDOpen connects to MDCMS database repositories that reside on 1 or more IBMi systems. All MDCMS information is retrieved from, and stored to, these repositories, so that all MDCMS interfaces (MDOpen, MDWorkflow or emulator) use the same database.

MDOpen provides nearly every function that is available within the MDCMS emulator client. Additionally, MDOpen is required when managing non-native objects and is much more convenient when managing IFS objects.

### 2.2 Prerequisites

- Java JDK 6 or newer (with Java EE)
- Eclipse based IDE
- 1 or more IBMi systems with MDCMS installed
- A valid MDOpen License Key for each IBMi system. If you are unsure of your License Key status you will need to check with your systems administrator or the person who installed and licensed the MDCMS product.

### **2.3 Installing a Specific Version of MDOpen for the First Time**

If upgrading from a version prior to 7.2, you should first delete any com.md.mdcms\* jar files from the plugins or dropins folders within Eclipse and then restart Eclipse.

The version ID of MDOpen is in the format of v.r.m.yyyymmddhhss and the v.r.m portion of the version ID must correspond to the version of MDCMS that is installed on the IBMi.

For example, MDOpen version 7.3.201503152123 would be appropriate for connecting to the IBMi system running MDCMS version 7.3.

For each MDCMS version beginning with 7.2, a Site URL is provided in the Midrange Dynamics Customer Area for simple installing and updating directly within Eclipse. Copy that URL to the clipboard.

Then, take the following steps within Eclipse:

- 1) Select Menu option Help/Install New Software...
- 2) Click Add...
- 3) Enter the text MDOpen v.r.m into the Name field where v.r.m is the MDCMS version such as 7.3
- 4) Paste the URL into the Location field
- 5) Click OK
- 6) If the URL is not already displayed in the Work with drop down list, select it from the list
- 7) Select MdOpen and click Next
- 8) Click Next from the Review list
- 9) Accept the terms of the license agreement and click Finish.  
Eclipse then downloads the newest package
- 10) Probably, a Security Warning will be displayed indicating that the software contains unsigned content. Click OK to continue the update.
- 11) Restart Eclipse

### **2.4 Updating an Installed Version of MDOpen**

MDOpen may be updated for the same MDCMS version in order to correct problems or add additional minor features. To check for and update MDOpen to a newer release of the same MDCMS version, take the following steps within Eclipse:

- 1) Select Menu option Help/Check for Updates
- 2) If MdOpen is listed, ensure it is selected and click Next
- 3) Click Next from the Review list
- 4) Accept the terms of the license agreement and click Finish.  
Eclipse then downloads the newest package
- 5) Probably, a Security Warning will be displayed indicating that the software contains unsigned content. Click OK to continue the update.
- 6) Restart Eclipse
- 7) If not already open, open the MDCMS Perspective (Window => Open Perspective => Other => MDCMS)
- 8) Reset the MDCMS Perspective by Right-Clicking on the MDCMS Perspective button in the upper-right corner of the IDE and selecting option Reset



## 2.5 Uninstall MDOpen

If MDOpen is no longer necessary, it can be uninstalled within Eclipse using the following steps:

- 1) Close the MDCMS Perspective by Right-Clicking on the MDCMS Perspective button in the upper-right corner of the IDE and selecting option Close
- 2) Select Menu option Help/About Eclipse
- 3) Click Installation Details
- 4) Left-Click MdOpen. If MdOpen is not in the list, then it may be a version older than 7.2. In this case, manually delete the jar file from the plugins or dropins folders.
- 5) Click Uninstall...
- 6) Click Finish

## 2.6 The MDOpen Perspective

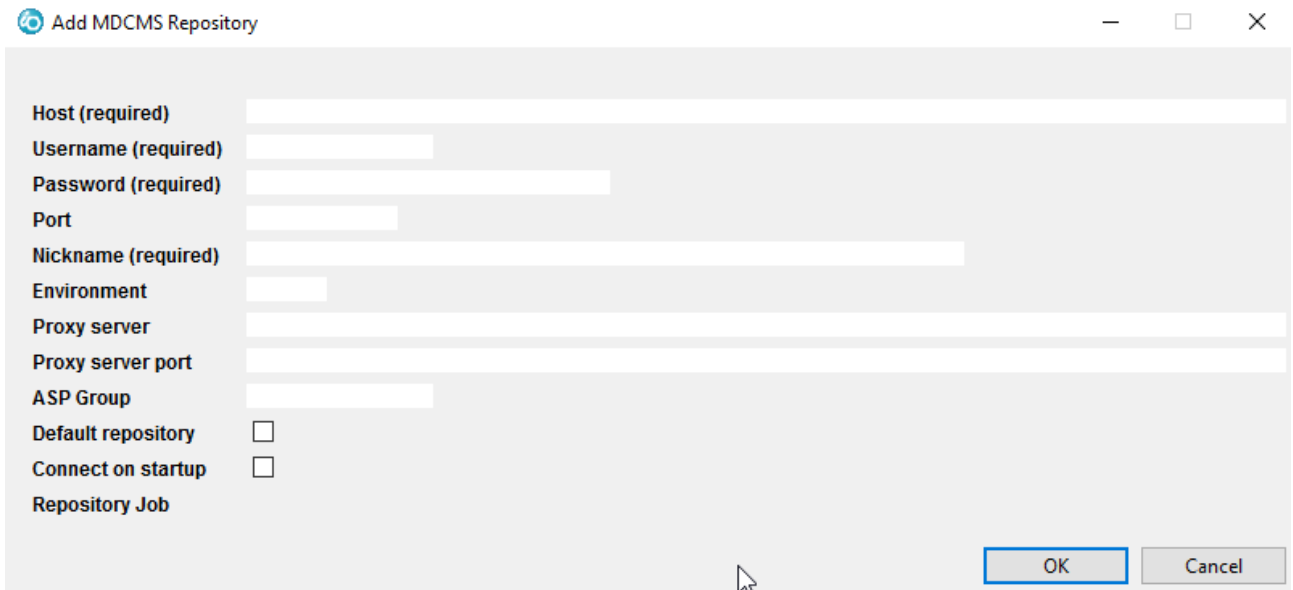
1. Start your Eclipse or Rational IDE
2. If not already open, open the MDCMS Perspective (Window => Open Perspective => Other => MDCMS)
3. If not already shown, display the **MdRepositoryView** (Window => Show View => Other => Mdcms Main Views => MdRepositoryView)

### 3 MDCMS Repository Connections

A Repository definition specifies the parameters required to connect to an instance of MDCMS on an IBMi partition. The MDCMS libraries, including MDREP, must be installed on that system and a valid MDOpen license key must exist on that system.

#### 3.1 Adding an MDCMS Repository

To add an MDCMS Repository definition, position your cursor within the **MdRepositoryView** and right-click to select **Add Repository Location**. That action will display the **Add MDCMS Repository** dialog.



Fill in all required parameters and any optional parameters that are necessary.

The parameters are as follows:

Host	the IBM i host name that is used to connect to that system
Username (required)	a valid user profile on the IBM i
Password (required)	the password for the profile
Port	the JTOpen Signon Port – defaults to 8476
Nickname	a name to help you identify this repository connection when multiple connections are present
Environment	the MDCMS instance ID. Blank indicates the default instance without a suffix for the libraries
Proxy server	the host name of the proxy server, if required to connect to the IBM i
Proxy server port	the port on the proxy server
ASP Group	The ASP device name that MDCMS is installed in. Leave blank if installed to the base system.
Default repository	1 Repository may be designated as the default connection when checking out remote objects from other perspectives/views
Connect on startup	When true, MDOpen will attempt to automatically connect to the repository when the perspective is started.
Repository Job	when a connection is successful, the corresponding job name on the IBM i will be displayed here







Import:

- 1) From the Eclipse Menu, select File/Import...
- 2) Select MDOpen/Repository connections and click Next
- 3) Enter or browse to existing connection file. Click Next
- 4) Enter user id and password to be applied to imported definitions
- 5) Select one or more Repository definitions to be imported. Click Finish

### **3.4 Using Remote Systems Explorer Toolset in MDCMS perspective**

If using MDOpen as a plug-in within Rational Developer for i, the Remote Systems Explorer LPEX editors can be used to edit source code.

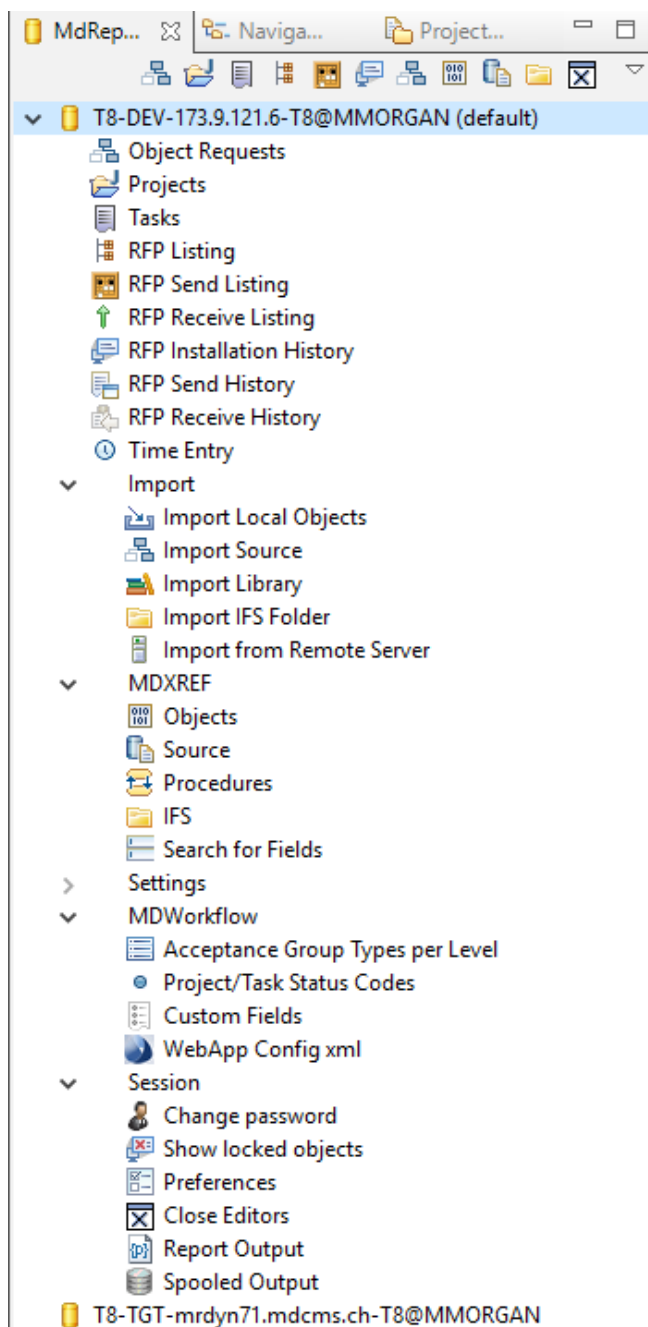
To enable this, a connection in RSE must be defined for the exact same IBMi host name as the name used for the MDOpen repository connection. Then, when MDOpen finds this connection, it will automatically use the LPEX editors as long as they are set as the preferred editor for the given file type. Use Window->Preferences->File Associations to confirm/change the editor to use.

## 4 Starting MDOpen

After completing the creation of one or more Repository locations within your MDOpen installation you can now access the different MDOpen views and functions as follows:

Within the **MdRepositoryView** you can expand your connection node using the arrow to the left of the Repository connection to carry out options for that partition. If an expand arrow isn't visible, then right-click on the node and select option Connect.

Some of the most common options for the default repository can also be invoked by clicking the icons above the list of repositories.



## 4.1 Common Handling Features in MDOpen

### Prompting for Valid Field Values

MDOpen uses the **Content Assist Ctrl + Space** for the prompting of fields within most editable text fields where a value can then be selected from a list. For certain fields with large lists of information, such as object names or project ids, an initial string of characters can be entered before pressing Ctrl + Space to limit the list to values starting with that string.

### Selecting Multiple Rows in a List

To individually select several rows before selecting an option, hold down the Ctrl key and Left-Click each row to select. Left-Click again to unselect one of the rows.

To select a range of rows, hold down the Shift key and Left-Click the first and last row in the range.

To select all rows, hover over the list and press Ctrl + a

### Prompting for Valid Options for a List Row

Right-Click on a row (or one of the multi-selected rows) within a list view to select and perform an action for that row or rows.




All defined options for the list are displayed, but only options that are valid for the specific row or rows will be enabled.

Right-Click within the white space of a list view to select to add a new row to that list.


### Display/Edit all fields for a Row

Left-Click on a row within a list view to display and, when allowed, edit all fields for that row in a separate editor view. The editor will either replace any prior MDCMS editor or it will open in a new tab, depending on the preference set in Window->Preferences->MDOpen. If a specific editor should be opened differently to the preference, then right-click and select the choice of editor.

### Changing the Row Sorting of List Views

To reorder any view within MDOpen you can click on any of the column headings and the view will be sorted by that column. A down arrow  in the column heading will indicate that the column is sorted by descending order and an up arrow  in the column heading will indicate that the column is sorted in ascending order. In order to return the row sorting to the default, click the clear sort  icon at the top right of the view.

### Changing the Column Sorting of List Views



For the most important list views, the preferred ordering of the columns can be modified and retained for future use. To do so, click the  icon at the top right of the view. This brings up a dialog listing all columns in the view in the current sort sequence. Drag and Drop a column within the list to move that column to a different position and then click Save.

### Refreshing a List View

Clicking the Refresh  button will cause the list data to be refreshed


### Loading Next Frame of Data for a List View

For performance reasons, MDOpen limits the number of list rows collected from MDCMS based on the frame size. The frame size default is 100 rows and can be changed in the MDOpen preferences.

A list view indicates if additional rows are available by displaying the  icon at the top right of the view. Click on the  icon to load the next frame.



### Expand/Collapse Tree Elements

When the  arrow is displayed at the beginning of a row, it can be clicked to expand the view to display child elements for that row. It can be clicked again to collapse the child element information.

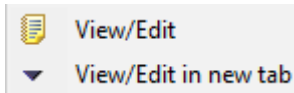
### Filter Rows in a List

For certain list views, an expandable filter settings section is available above the list. When expanded, a set of fields will be displayed allowing for the entry of filter values for that list.

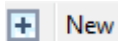
## 5 MDCMS Settings within MDOpen

The various MDCMS configuration settings are located within the expandable option named Settings.

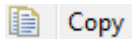
### 5.1 Common Settings Options



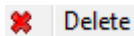
View or change the detail of the setting element in a shared tab or new tab.



Add a new element for the specified setting without pre-filled information.



Add a new element for the specified setting with all fields pre-filled with the values from the selected existing element.



Delete the setting element

### 5.2 App Hierarchy

App Hierarchy displays the defined Application Attributes in tree form with Application as primary branch followed by level, type and then attribute. The App Hierarchy view opens by default in a view under the repository view.

Left-Click on a tree node to view details for that node.

Right-Click on a tree node to select a maintenance option. The options are the same as those discussed in the following sections for the specific node type.

### 5.3 Applications

An Application defines your business application software into manageable groups within MDCMS.

Complete descriptions of the Application Fields can be found in the MDCMS user manual.

Options

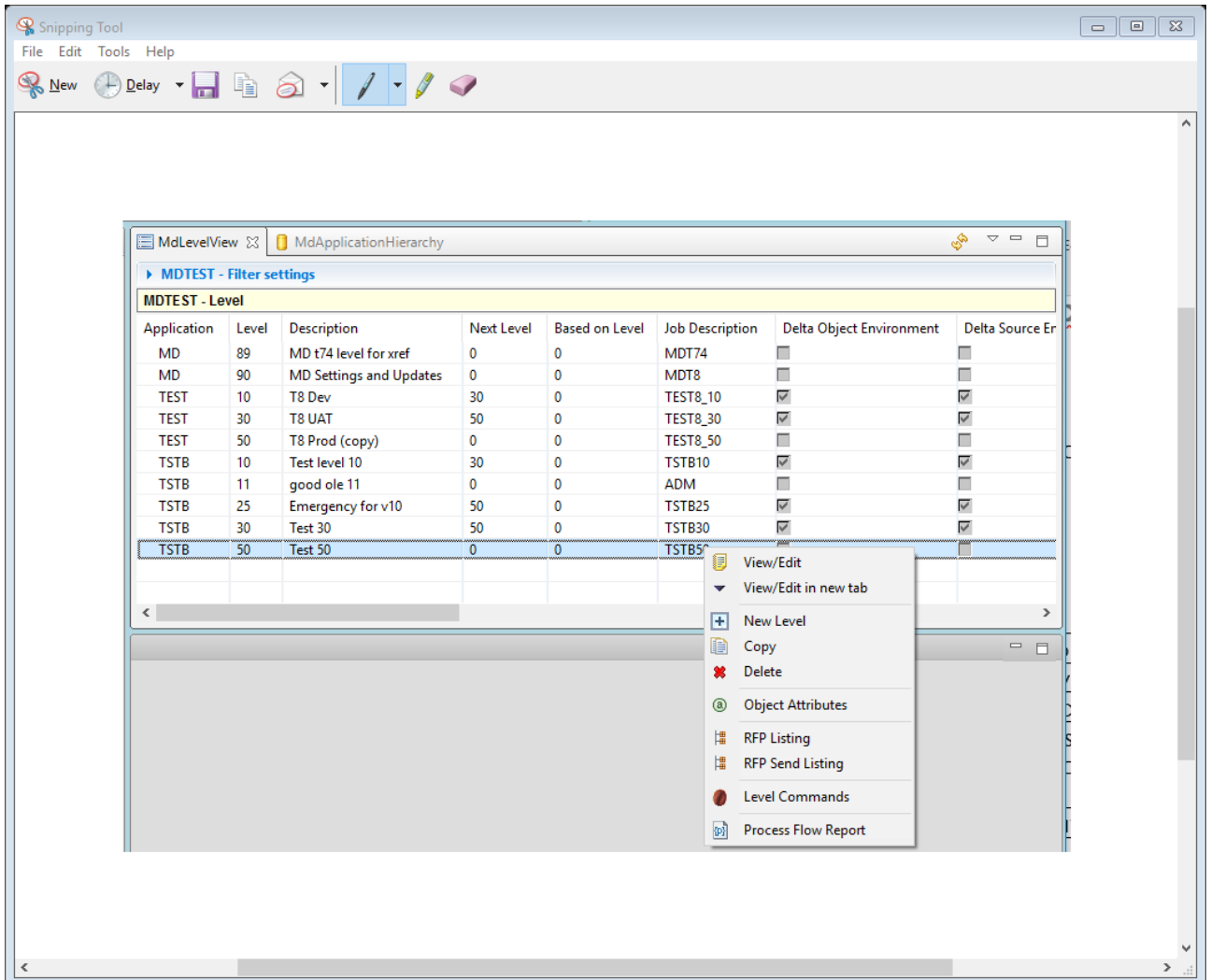
Levels	Open Level View with rows filtered to selected Application
RFP Listing	Open RFP View with rows filtered to selected Application
RFP Send Listing	Open RFP Send View with rows filtered to selected Application



## 5.4 Levels

A Level defines a specific runtime environment (dev, test, prod, etc.) for an application.

Complete descriptions of the Level Fields can be found in the MDCMS user manual.



### Options

Object Attributes	Open Attribute View with rows filtered to selected Application Level
RFP Listing	Open RFP View with rows filtered to selected Application Level
RFP Send Listing	Open RFP Send View with rows filtered to selected Application Level
Level Commands	Open Command View with rows filtered to *RFP commands (commands that run once per RFP regardless of contents) for selected Application Level
Process Flow Report	Open the <b>ProcessFlowReport</b> dialog for the selected Application Level

### 5.4.1 Process Flow Report

Function: to report on the flow of all execution objects for an application level.



Complete descriptions of the Generate Process Flow Report for Level fields dialog can be found in the MDXREF user manual.

## 5.5 Attributes

An Attribute defines the target location and behaviour for a specific type of object in MDCMS.


Complete descriptions of the Attribute Fields can be found in the MDCMS user manual.

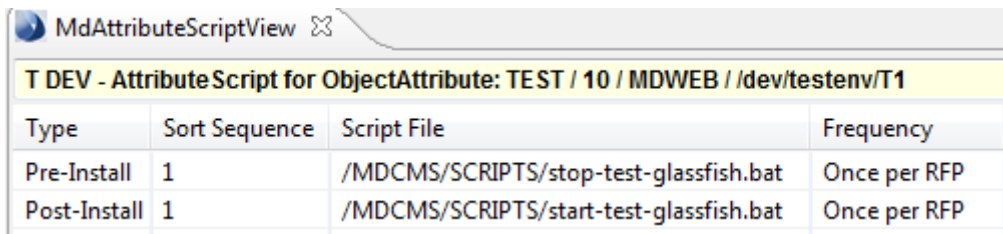
### Options

Attribute Commands	Open Command View with rows filtered to selected Attribute
Attribute Scripts	Open Remote Server Script View with rows filtered to selected Attribute. This option is only applicable for *REMOTE attribute types.
Linked Attributes	Define the Attributes that are linked to the selected Attribute. When a checkout occurs for this attribute, the developer will be prompted to check out objects for the linked attributes.



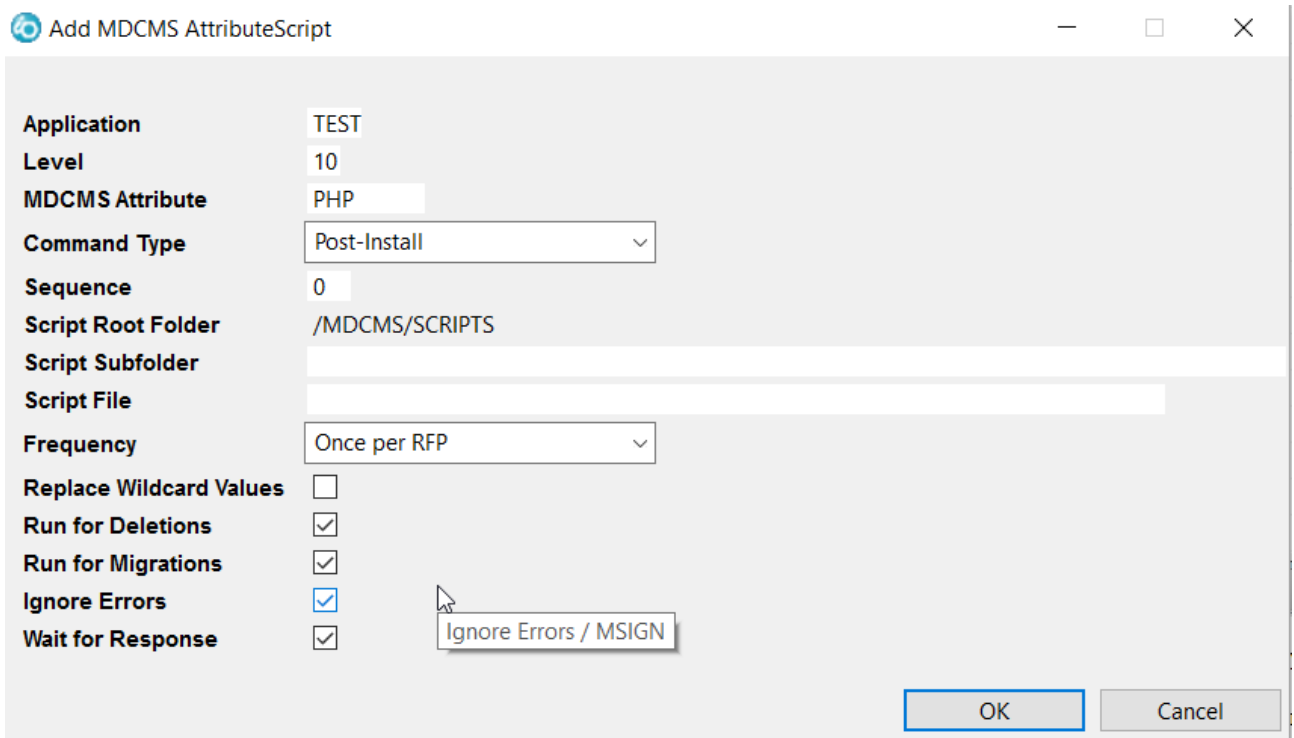
### 5.5.1 Attribute Script Maintenance

Scripts may be allocated to a specific \*IFS or \*REMOTE attribute to be executed during the installation of an RFP containing that attribute. To access the scripts for an Attribute, right click on the MDCMS Attribute and select  **Attribute Scripts**. The **MDAttributeScriptView** is displayed. The following is an example of the **MDAttributeScriptView** that contains several of the possible script types:



Type	Sort Sequence	Script File	Frequency
Pre-Install	1	/MDCMS/SCRIPTS/stop-test-glassfish.bat	Once per RFP
Post-Install	1	/MDCMS/SCRIPTS/start-test-glassfish.bat	Once per RFP

To add a new script, right click within the **MDAttributeScriptView** and select  **Add**. That action brings up the **Add MDCMS AttributeScript** dialog.



**Add MDCMS AttributeScript**

Application: TEST  
 Level: 10  
 MDCMS Attribute: PHP  
 Command Type: Post-Install  
 Sequence: 0  
 Script Root Folder: /MDCMS/SCRIPTS  
 Script Subfolder:   
 Script File:   
 Frequency: Once per RFP  
 Replace Wildcard Values:   
 Run for Deletions:   
 Run for Migrations:   
 Ignore Errors:   
 Wait for Response:  Ignore Errors / MSIGN

OK Cancel

Complete the following parameters and click OK to add the Script to the Attribute.

Application

The Application Group that the Attribute resides in.

Level

The Application Group Level that the Attribute resides in.

### MDCMS Attribute

This field is tied to the attribute defined in Source/Object Attribute Maintenance (see previous section).

### Type

The Type designates when the script should run for this Attribute.

- Pre-Install – the script should be run prior to the installation of objects using the attribute
- Post-Install – the script should be run after the installation of objects using the attribute

### Sort Sequence

The sort sequence of the script at run time, in case multiple scripts for the same attribute and type are defined.

### Script Root Folder

The constant value /MDCMS/SCRIPTS which is the IFS location for script folders and files.

### Script Subfolder

The relative path of the script within the root folder. Content assist is available to browse for the value.

### Script File

The name of the script file within the folder path. Content assist is available to browse for the value.

### Frequency

- Once per Object – the script should be run for each object in the RFP using this attribute
- Once per RFP – the script should be run once per RFP containing at least one object using this attribute

### Replace Wildcard Values

A checked value (Y) indicates that the script contains wildcard values that should be replaced by the actual values at run-time.

### Run for Deletions

A checked value (Y) indicates this script should run for deleted objects.

### Run for Modifications

A checked value (Y) indicates this script should run for new or changed objects.

### Ignore Errors

A checked value (Y) indicating if the RFP Installation should continue running if the script fails. **NOTE:** This flag is only considered for Pre-Install scripts.

### **\*REMOTE Specific Parameters**

### Wait for Response

When true, the MDCMS installation process will wait until a response is received from the script execution service on the remote server before continuing to the next step.

### **\*IFS Specific Parameters**

#### Submit Job

When true, the IFS Script execution will be submitted to a separate job. MDCMS will not wait for a response in this case, but instead continue with RFP processing.

When false, the ifs script execution runs within the RFP job and the RFP won't continue to the next step until the execution is complete.

#### Job Name

The name of the submitted job that will process the IFS script

#### Job User

The user profile of the submitted job that will process the IFS script

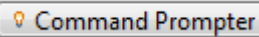
#### Job Queue

The name and library of the Job Queue to receive the submitted job

## **5.6 Commands**

A Command defines an executable IBM I command that runs during the promotion process at the time indicated by the command type. Commands defined for an attribute are executed when an object is assigned to the attribute. \*RFP commands run once per RFP (installation package) regardless of the contents of the RFP.

Complete descriptions of the Command Fields can be found in the MDCMS user manual.



MDOpen provides a prompter for command keywords and descriptions. To use the prompter, enter at least the name of the command and then press the Command Prompter button. The entries into the prompter will be pasted into the command string.

MDOpen also provides for the automatic insertion of MDCMS wildcards into the command string. Position the cursor to the position in the string where a wildcard is necessary and then press Ctrl-Space for the list of Wildcard values.

## **5.7 System i Settings**

The global MDCMS settings for the partition.

Complete descriptions of the System i Fields can be found in the MDCMS user manual.



**5.8 OS/400 Locations**

An OS/400 Location is another partition where MDCMS is installed and information or deployments should be shared between that partition and this partition.

Complete descriptions of the Location Fields can be found in the MDCMS user manual.

Left-clicking on a location allows for the definition of the basic information about the location as well as the DDM connection and the distribution method. Additional distribution configuration, based on the distribution method, is accessible by using option Distribution Settings.

Options

Export Data to Location	Provide project information from the local system to the target system. If the target system contains the MDWorkflow repository, then additional object and promotion information is provided. If the local system contains the MDWorkflow repository, it should also be synced initially to load the local information into the MDWorkflow tables.
Distribution Settings	Define the connection information to the target location for the distribution of RFPs based on the distribution method.
Distribution Levels	Define the list of target Application Levels for the distribution of RFPs

**5.9 OS/400 Location Groups**

OS/400 Location Groups provides the ability to group locations based on arbitrary requirements. A group can contain any number of OS/400 locations and an OS/400 location can belong to any number of groups.

Click on the OS/400 Location Groups option in the repository list to view and maintain the groups.

A group value can then be used to filter the list of locations for OS/400 Locations settings, Distribution Levels settings and the RFP Send listing.

**5.10 Distribution Levels**

A Distribution Level defines a target application level on an IBM I partition that objects for a given application and level should be deployed to.

Complete descriptions of the Distribution Level Fields can be found in the MDCMS user manual.

Options

Target Attributes	Open List of all Attributes for selected Target Level to view/change what should be sent for each attribute.  Left-Click the MDCMS Attribute Option to select a different value from the drop-down-list.
-------------------	--



## 5.11 Remote Server Locations

Remote Server Locations are the definitions for the non IBMi servers that you will be deploying objects to. In order for MDCMS to deploy to a server, that server must have an FTP service running on it. The Remote Server Location definition describes how MDCMS as the FTP client is to connect to the FTP service on the remote server.

A Remote Server Location is then defined for each \*REMOTE attribute. In this way, MDCMS knows the destination of each remote object for each level within the migration path.

### Fields

Description	A description of the location to make it easy to identify from a list. The description is then applied to each Attribute that will connect to the server using the RemoteServerLocation definition
Server Address	The address of the server that is known to the IBMi partition
FTP Method	<ul style="list-style-type: none"> <li>• FTP – standard File Transfer Protocol</li> <li>• FTPS – FTP over SSL</li> <li>• SFTP – FTP over SSH</li> </ul>
Port	The port number for the FTP service
Transfer Mode	<ul style="list-style-type: none"> <li>• Active</li> <li>• Passive</li> </ul>
User	A user id known to the FTP service
Password	The password for the user
FTP Timeout in Seconds	The maximum amount of time to wait for a response from the FTP service. If the timeout is reached, MDCMS assumes that the FTP deployment step has failed
Update Permissions	<ul style="list-style-type: none"> <li>• False – the folder/file permissions will not be updated after deployment to the server</li> <li>• True – the folder/file permissions are set based on the attribute object authority settings</li> </ul>
Client Certificate Keystore	The path in IFS to the Keystore for FTPS connections
Client Certificate Keystore Password	The password of the Keystore
Client Certificate Keystore Type	<ul style="list-style-type: none"> <li>• JKS – java keystore</li> <li>• PKCS12 – Public Key Standards 12</li> </ul>
FTPS Encryption Method	<ul style="list-style-type: none"> <li>• Implicit – connection without negotiation</li> <li>• Auth SSL – request security and step up to SSL encryption</li> <li>• Auth TLS – request security and step up to TLS encryption</li> </ul>
Script Runtime Folder on Server	The path on the remote server where Pre-Install or Post-Install scripts should be placed. If scripts are used on this server, a service must be installed on the server to monitor for script files in the defined folder.
Script Timeout in Seconds	The maximum amount of time to wait for a response file to be placed in the scriptFolder/OK or NOK subfolder. If the timeout is reached, MDCMS assumes that the script run has failed.



## 5.12 Services

The Services list provides an overview of all possible persistent batch jobs that run in the background to carry out MDCMS processes. The job name for a service is the same as the service name + the environment ID.

Complete descriptions of the Service Fields can be found in the MDCMS user manual.

## 5.13 SVN Repositories

If you intend to request objects directly out a SVN (Subversion) Repository, the connection information for that repository location must be defined in MDOpen.

It is also necessary to have a Subversion plugin, such as Subversive, installed in Eclipse.

### Fields

URL	The complete URL path, including http or https, to reach the SVN Server
Description	A description of the repository
Repo User	A user id authorized to read the Repository on the Server
Password	The password for the user

### Options

Test Connection	Verify that a connection can be established with the SVN server based on the entered field values.
-----------------	--



**5.14 eMail Bodies**

The eMail Bodies function enables a user to define the contents used for the body of an email for the MDCMS Workflow process or for use within the MDMAILF command.

A set of email templates are predefined and are placed in IFS folder /MDCMS/MAIL. When upgrading to a new version of MDCMS, the existing templates are left in place and the new templates are placed in a subfolder named the same as the version id (for example 7.3).

View/Edit an existing email body by left-clicking on the file name. MDOpen provides its own editor for email bodies that allow for the Content-Assist selection of wildcards to be inserted at the current cursor location within the body.

Navigate into a subfolder by left-clicking on the folder name. Navigate up to a parent folder by left-clicking on folder .. .

Options

New Folder	Create a subfolder
Rename	Rename an existing file or folder

When option Copy is used, the file can be copied to the same folder or to a different folder within the /MDCMS/MAIL path. Content-Assist is available for the New Folder parameter.

**5.15 Script Templates**

The Script Templates function enables a user to define the scripts to be run on Remote Servers before or after \*REMOTE objects are installed, or to define the scripts to be run on the partition before or after \*IFS objects are installed.

If for \*REMOTE, the script should be written in the language that the remote server understands as the script will be placed on the server at runtime after any wildcard values have been replaced by runtime values.

If for \*IFS, the script should be written to be understood in a QSH session.

View/Edit an existing script by left-clicking on the file name. MDOpen provides its own editor for scripts that allow for the Content-Assist selection of wildcards to be inserted at the current cursor location within the body.

Navigate into a subfolder by left-clicking on the folder name. Navigate up to a parent folder by left-clicking on folder .. .

Options

New Folder	Create a subfolder
Rename	Rename an existing file or folder

When option Copy is used, the file can be copied to the same folder or to a different folder within the /MDCMS/SCRIPTS path. Content-Assist is available for the New Folder parameter.



### **5.16 Project Phases**

The Project Phase is used as a category for time entered for work performed for a Project or Task. Project Phases can be created and managed from this function.

### **5.17 Project Types**

The Project Type is used as a category for projects as well as to set some general rules for Projects of the given type.

Complete descriptions of the Project Type Fields can be found in the MDCMS user manual.

### **5.18 Task Types**

The Task Type is used as a category for tasks and subtasks as well as to set some general rules for Tasks of the given type.

Complete descriptions of the Task Type Fields can be found in the MDCMS user manual.

### **5.19 User Group Types**

The User Group Type is used as a category for user groups.

### **5.20 User Groups**

A User Group is a collection of users defined in MDSEC that can then be used for Project assignments, Workflow management and Reporting.

Left-Click on the Users column to view/manage the users belonging to a User Group.





## 6 MDWorkflow Settings within MDOpen

The MDWorkflow section contains settings functions that can be managed from MDOpen, if a valid MDWorkflow license is applied to the partition that MDOpen is connected to.

### 6.1 Acceptance Group Types per Level

For each MDCMS Promotion Level, between 0 and n types of groups can be designated to be responsible for the acceptance of an installed RFP into that level. This means that each time an RFP, which is a package of objects, is installed into a specific level, 1 person from a group for each required group type must accept the results of the installation before that object package will be allowed to move on to the next step in the Workflow process.

Example:

MDCMS Promotion Level 50 is defined as the User Acceptance Environment level. When objects are installed into this level, business users and IT management must test the environment before those objects are allowed to be installed into the Production Environment level. To ensure that this occurs, group types BUS\_USER and IT\_MGMT are specified as Required Acceptance Group Types for level 50. Then, whenever an RFP is installed into level 50, a user within a group of type BUS\_USER and a user within a group of type IT\_MGMT must accept the RFP before it can be sent to Production.

#### Fields

Application	MDCMS Application
Level	The MDCMS Application Promotion Level
Group Type	The type of group that must accept the results of an installation into the given Level
Description	Description of the Group Type

### 6.2 Project/Task Status Codes

MDCMS comes packaged with several fixed Status Codes to be used by Projects and Tasks. Additional Custom Status Codes can be created to fulfil the personal requirements for the Organization.

#### Fields

Status	A 1 Character Code for the Status of a Project or Task
Description	A description of the Status
Sort Sequence	The order in which the Status Code appears in the list. It is recommended to sort the status codes based on when a Project or Task would reach that status. Status Codes that indicate the end of a Project or Task may not be sorted lower than Status Codes indicating an active Project or Task
Ending Status	The Code indicates that the Project or Task has ended
Use in Projects	If true, the Status Code may be used by Projects
Use in Tasks	If true, the Status Code may be used by Tasks
Allow Auto-Update	If true, a project or task can be set to this status automatically via the use of an MDCMS API.
Allow Manual-Update	If true, a project or task can be set to this status from within the MDCMS, MDOpen or MDWorkflow client screen.
Group Type Authorized to Update	Limit the persons who can manually update a project or task to this status to involved groups of the entered Group Type.



### 6.3 Custom Fields

Additional Fields can be added to the Project or Task Detail screens. These fields are then available for list filtering, managing and reporting within MDOpen and MDWorkflow.

#### Fields

Field Name	A 10 Character Code for the ID of the custom field
Description	A description of the field – this is then displayed as the label for the field
Sort Sequence	The order in which the field appears in the list
Type	String – alphanumeric Number – numeric Date Time Checkbox DropDownList URL – web link
Length	The total length of a field, including decimal positions for a numeric field The maximum length for a string is 160 and the maximum length for a number is 24
Decimal Positions	The number of decimals for a number field. The maximum is 9.
DropDownList View	What should be displayed to the user for a DDL field DDL Code DDL Value Both
Visible from Status	The minimum status that allows the field to be seen. If blank, then the field is always visible.
Required from Status	The minimum status that requires that a value is entered for the field. If blank, then the field is always optional.
Editable from Status	The minimum status that allows a value to be entered or changed. If blank, then the field is editable as soon as it's visible.
Editable until Status	The maximum status that allows a value to be entered or changed. If blank, then the field is editable until the project or task is closed.
Allow Auto-Update	If true, the field can be updated via the MDUPDCFLD API.
Allow Manual-Update	If true, the field can be updated from within the MDOpen or MDWorkflow client screen.
Group Type Authorized to Update	Limit the persons who can manually update the field to involved groups of the entered Group Type.
Wildcard ID	A 6-character ID to use in commands or email templates. When the command or email is prepared, the value ##<wildcard id>## will be replaced by the value of the Custom Field for the applicable Project or Task.

#### Options

Project Types Using Field	The list of all project types is opened so that the user can see which Project Types allow for the use of the field as well as to change the selections.
Task Types Using Field	The list of all task types is opened so that the user can see which Task Types allow for the use of the field as well as to change the selections.
DDL Entries	Manage the list of DropDownList elements for the DDL field



### 6.3.1 DDL Entries

This view allows for the maintenance of the list of Code Elements for a Custom DropDownList field. Use option DDL Entries for a DDL field to open this view.

#### Fields

Code	The unique code value to identify the element. Maximum Length of code is set by the parent field
Description	The description of the code, which can be set to be displayed to the user
Sort Sequence	The order in which the code appears in the list
Selectable from Status	The minimum status that allows this code to be selected. If blank, then the code is selectable as soon as it's visible and editable.
Selectable until Status	The maximum status that allows this code to be selected. If blank, then the code is selectable until the field is no longer editable.

### 6.4 WebApp Config xml

The MDWorkflow web app configuration settings, which are stored in file conf-faces-config.xml within the MDWorkflow web app within the WEB-INF folder, can be saved in MDCMS and then published within MDOpen.

By storing the values in MDCMS, it is very simple to set the properties and then republish them when a new version of MDWorkflow is installed.

The initial field, Config File, should be the full path to the conf-faces-config.xml that should be updated when the Publish to Config File button is clicked. Content-Assist can be used to navigate the IFS directories to get to the file.

Complete explanations of the property fields can be found in the MDWorkflow installation instructions.

#### Buttons

Save	Save the settings to MDCMS for reuse at a later time
Publish to Config File	Update the contents of the Config File with the current values



## 7 Manage Session Settings

The various MDCMS session settings are located within the expandable option named Session.

### 7.1 Change password

Use this option to change the password of the user profile defined for the Repository connection. This will change the password in the connection definition and for the user profile on the IBM i partition.

### 7.2 Show locked objects

If source located on the IBM i is opened in an editor outside the control of Eclipse (such as MS Word or Notepad), MDOpen isn't informed when the editor is closed again to automatically release the lock on the source member.

Use this option to view all source members that were locked by MDOpen for editing in an external editor.

### 7.3 Preferences

Open the Eclipse Preferences panel for MDOpen.  
This is a shortcut to Window->Preferences->MDOpen.

The preferences defined here apply to all repository connections in MDOpen.


Fields

XA-Versions	Select the version of the Fresche Legacy View / Advisor plugin API you want used by the View / Advisor menu options if more than one version is installed.
Name of the cross reference library to be used	Enter a Fresche Legacy View / Advisor cross reference library to be used by the View / Advisor menu options for objects vs being prompted for a cross reference library if an object exists in two cross reference libraries.
Show outline view when opening LPEX editor	When true, a separate view opens at the bottom left of the MDOpen perspective that displays the source outline when an LPEX editor is opened for source editing.
Notify when new MDOpen version available	When true, MDOpen sporadically checks the defined update site to see if a new version of MDOpen is available. When this is the case, a message is displayed in the task tray.
Replace each editor on element left click for session	When true, any MDCMS element, except source, that is opened using the action left-click will replace the prior element that was shown in the MDCMS editor tab in the bottom portion of the perspective.  When false, the left-click action will open the editor in a new tab.
Replace each view for same function on element right click for session	When true, when a child view is requested by right-clicking on a parent row, the view will replace any tab that had the same child view open, even if the child element is different.



	When false, the child view will only be replaced if for the same child element.
Log file location folder	The path from the drive that Eclipse is installed on to contain logging information collected during the runtime of MDOpen
Log level	Debug – the most verbose amount of logging – may effect performance Info – also very verbose logging – may effect performance Warn – Warnings and Errors are logged Error – Errors are logged
Number of compare history to keep	Each time a two-way or three-way source comparison is performed, MDOpen saves the input values for simple reuse later. This number is the total number of distinct input values that should be saved (FIFO)
Initial framesize	The initial number of rows to load when a list view is opened or refreshed
Subsequent framesize	The size of any subsequent frames that are loaded when the user clicks the next frame icon at the top-right of a list view

#### 7.4 Close editors

Use this option to close any open non-source editors in the MDOpen perspective that belong to the repository connection. The  icon at the top of the repository view can also be used to close the editors for the default repository connection.

#### 7.5 Report output

Use this option for reports (MD Output) generated to be copied to a formatted table, deleted, viewed, printed, exported or emailed. The exported and emailed formats supported are CSV, PDF, TXT and XLS.

Left clicking on a report displays the report as a TXT file. NOTE: If the file does not open, you probably lost your connection to the server.

##### Options

View/Edit	Display the report as a TXT file.
Copy	Copy to PF – Copy the detail contents of the report into a formatted table (DDS Physical File). This provides a simple means to extract information out of the MD database for use in SQL, Queries or programs.
Delete	Permanently delete the report.
Print	Print the report contents to a spooled file.
Export	Export the report to a CSV, PDF, TXT or XLS formatted file. The file can be placed in the IFS or emailed to one or more recipients. See the MDXREF or MDCMS User Manual for the parameters of command MDRUNRPT for more information.



## 7.6 Spooled output

Use this option for spool files generated to be deleted, viewed, exported or emailed. The exported and emailed formats supported are PDF and TXT.

Left clicking on a spool file displays the spool file as a TXT file. NOTE: If the file does not open, you probably lost your connection to the server.

### Options

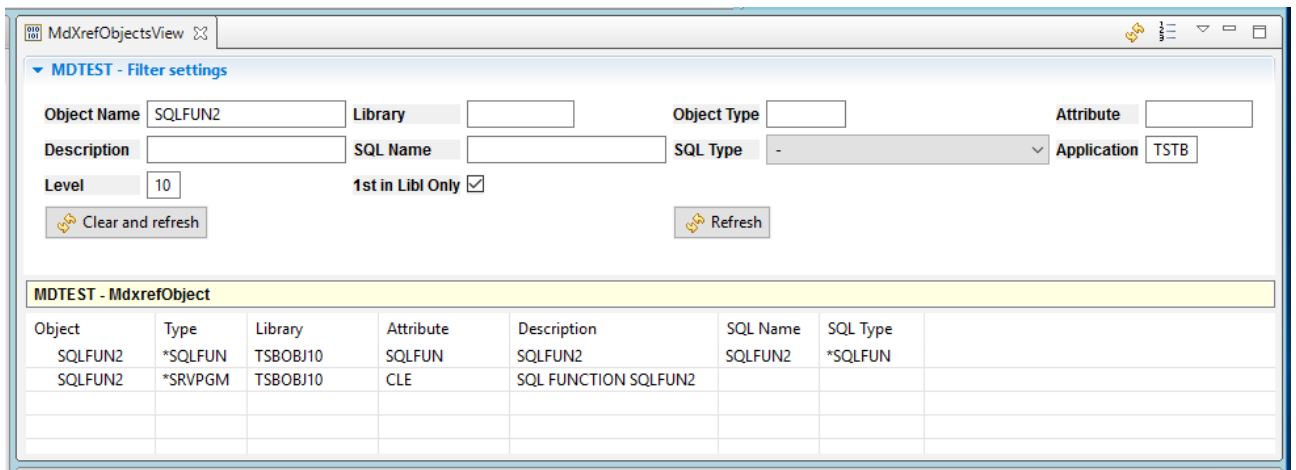
View/Edit	Display the spool file as a TXT file.
Delete	Permanently delete the spool file.
Export	Export the spool file to a PDF or TXT formatted file. The file can be placed in the IFS or emailed to one or more recipients. See the MDXREF or MDCMS User Manual for the parameters of command MDEXPSPLF for more information.

## 8 MDXREF

The MDXREF section of MDOpen provides the cross-reference functionality for referential analysis of objects, source, procedures and fields, as well as listing and searching abilities for IFS.

### 8.1 MDXREF Objects

The MDXREF Objects View **MdXrefObjectsView** provides the user with a filtered list of IBMi objects in all libraries that are built in the MDXREF cross reference product.



The screenshot shows the 'MdXrefObjectsView' application window. At the top, there's a title bar with the application name and standard window controls. Below the title bar is a section for 'MDTEST - Filter settings'. This section contains several input fields: 'Object Name' (SQLFUN2), 'Library' (empty), 'Object Type' (empty), 'Attribute' (empty), 'Description' (empty), 'SQL Name' (empty), 'SQL Type' (dropdown menu showing '-'), and 'Application' (TSTB). There are also 'Level' (10) and '1st in Libl Only' (checked checkbox) options. Two buttons, 'Clear and refresh' and 'Refresh', are located below the filter settings. Below the filter settings is a table titled 'MDTEST - MdxrefObject'. The table has columns for Object, Type, Library, Attribute, Description, SQL Name, and SQL Type. The first row shows Object: SQLFUN2, Type: \*SQLFUN, Library: TSBOBJ10, Attribute: SQLFUN, Description: SQLFUN2, SQL Name: SQLFUN2, and SQL Type: \*SQLFUN. The second row shows Object: SQLFUN2, Type: \*SRVPGM, Library: TSBOBJ10, Attribute: CLE, Description: SQL FUNCTION SQLFUN2, and SQL Name: SQLFUN2. The table has several empty rows below it.

Object	Type	Library	Attribute	Description	SQL Name	SQL Type
SQLFUN2	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN2	SQLFUN2	*SQLFUN
SQLFUN2	*SRVPGM	TSBOBJ10	CLE	SQL FUNCTION SQLFUN2	SQLFUN2	

Right-Click on a row to see the enabled options available for that specific object attribute. The complete list of all object attribute menu options and explanations follows.

If the selected object had the library entry of '\*LIBL' and the object exists in more than one library within the cross-reference database, the user is prompted to select the desired library from a list before the result is displayed.

In order to always show and use the highest library in the library list where an object is found, then filter the Application and Level to specific values and set 1<sup>st</sup> in Libl Only to true.



### 8.1.1 MDXREF Object Details

Left-Click on a row to bring up the **MdxrefObject** view to see a large amount of system and SQL details about the object. Or select a row and right-click to select the option View or View in new tab to also bring up the **MdxrefObject** view.

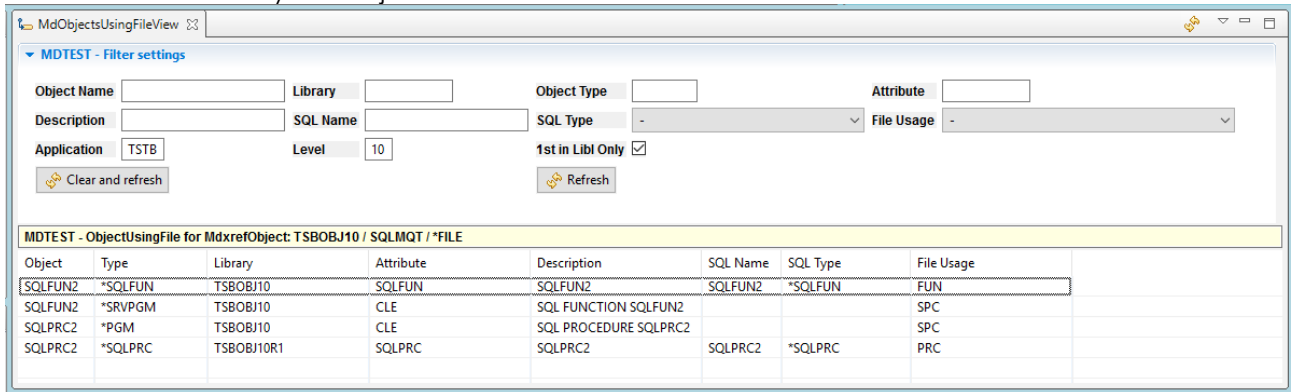
MDTEST - Detail for MdxrefObject: TSB OBJ10 / SQLFUN2 / *SRVPGM	
Library	TSB OBJ10
Object	SQLFUN2
Type	*SRVPGM
Attribute	CLE
Description	SQL FUNCTION SQLFUN2
User Defined Attribute	SQLFUN
Object Owner	MD
Primary Group	*NONE
Object Size	110592
Units for Size	Bytes
Create Date	01.03.2017
Create Time	17:31:23
Last Used Date	
Days Used	0
Change Date	01.03.2017
Change Time	17:31:23
Source Date	
Source Time	
Source Library	
Source File	
Source Member	
RFP 1 / Object Control Level	1211
RFP 1 Type	Origin
RFP 2 / PTF	1211
RFP 2 Type	Current
Application	TSTB
Level	10
Proj, Task, Subtask / LICPGM	V8 3

If stamping is not being used to stamp all object fields available to be stamped in the application, there could be values in those fields that are not there from MDCMS/MDOpen object stamping.



### 8.1.2 Objects using File

This option will display a list **MDOBJECTSUSINGFILEVIEW** of all objects that use the specific file as well as how the file is used by the object.



MDTEST - Filter settings

Object Name:  Library:  Object Type:  Attribute:   
 Description:  SQL Name:  SQL Type:  File Usage:   
 Application: TSTB Level: 10 1st in Libl Only:

MDTEST - ObjectUsingFile for MdxrefObject: TSBOBJ10 / SQLMQT / \*FILE

Object	Type	Library	Attribute	Description	SQL Name	SQL Type	File Usage
SQLFUN2	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN2	SQLFUN2	*SQLFUN	FUN
SQLFUN2	*SRVPGM	TSBOBJ10	CLE	SQL FUNCTION SQLFUN2			SPC
SQLPRC2	*PGM	TSBOBJ10	CLE	SQL PROCEDURE SQLPRC2			SPC
SQLPRC2	*SQLPRC	TSBOBJ10R1	SQLPRC	SQLPRC2	SQLPRC2	*SQLPRC	PRC

### 8.1.3 Objects Using File Inline

Same as option Objects using File except the usage list remains in this same list

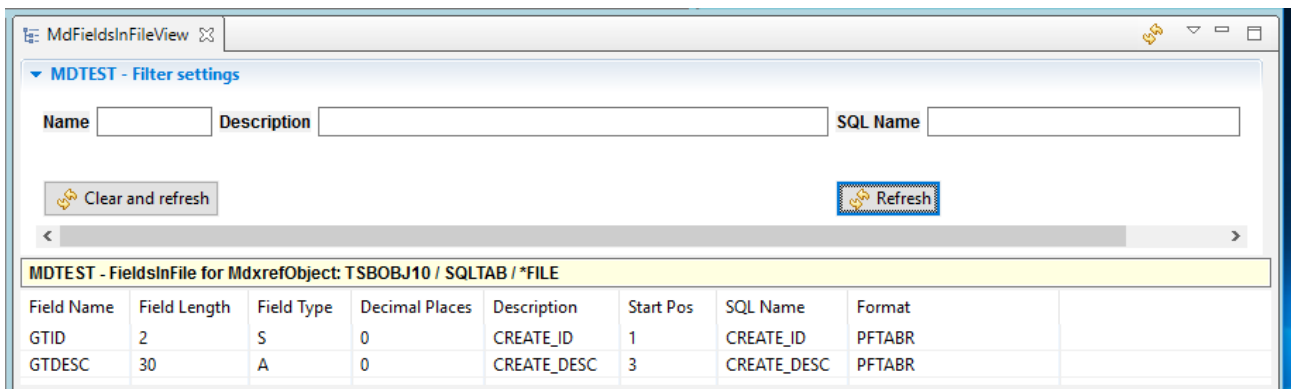
T8-DEV - MdxrefObject

Object	Type	Library	Attribute	Description	SQL Name	SQL Type
DSPFSTAMP	*FILE	TSBOBJ10		DSPF STAMPING		
GENUNIQREF	*FILE	TSBOBJ10	PF-DTA		GENUNIQREF	*SQLTAB
GENUNIQTRG	*FILE	TSBOBJ30	PF-DTA	Generate unique exampe file	GENUNIQTRG	*SQLTAB
ObjectUsingFile						
GENUNIQCSC	*SQLCST	TSBOBJ30	SQLCST	CHECK for file GENUNIQTRG	GENUNIQCSC	*SQLCST
GENUNIQCSR	*SQLCST	TSBOBJ30	SQLCST	FOREIGN KEY for file GENUNIQTRG	GENUNIQCSR	*SQLCST
GENUNIQCST	*SQLCST	TSBOBJ30	SQLCST	UNIQUE for file GENUNIQTRG	GENUNIQCST	*SQLCST
GENUNIQTRP	*PGM	TSBOBJ30	CLE	SQL TRIGGER GENUNIQTRP		
GENUNIQTRP	*SQLTRG	TSBOBJ30	SQLTRG	INSERT BEFORE for file GENUNIQTRG	GENUNIQTRP	*SQLTRG
GTIDENT	*SQLCST	TSBOBJ30	SQLCST	PRIMARY KEY for file GENUNIQTRG	GTIDENT	*SQLCST
SQLFUNC	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUNC	SQLFUNC	*SQLFUN

### 8.1.4 Fields in File

Valid option for physical, logical and SQL files only.

This option will display a list **MDFIELDSINFILEVIEW** of all fields and their attributes for a file.



MDTEST - Filter settings

Name:  Description:  SQL Name:

MDTEST - FieldsInFile for MdxrefObject: TSBOBJ10 / SQLTAB / \*FILE

Field Name	Field Length	Field Type	Decimal Places	Description	Start Pos	SQL Name	Format
GTID	2	S	0	CREATE_ID	1	CREATE_ID	PFTABR
GTDESC	30	A	0	CREATE_DESC	3	CREATE_DESC	PFTABR

The Source containing Field context menu option is available for a row in the list. This option causes MDXREF to collect the source for all objects either directly using the file or a logical over the file, along with all copybooks used by dependent programs. It then inspects the code for any non-commented lines containing the field and then presents the results.

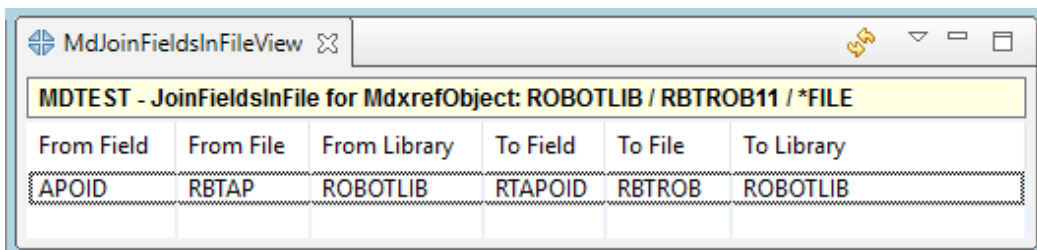
### 8.1.5 Join Fields in File

Valid option for logical files only.

This option will display the list **MdJoinFieldsInFileView** of join fields and duplicate sequencing fields for a join file.

If the selected file had the library entry of '\*LIBL' and the file exists in more than one library within the cross-reference database, the user is prompted to select the desired library from a list before the fields are displayed.

The listing is sorted in the same order that the join fields were defined. Fields used to order duplicate records are designated with the To Field name \*DUPSEQ.

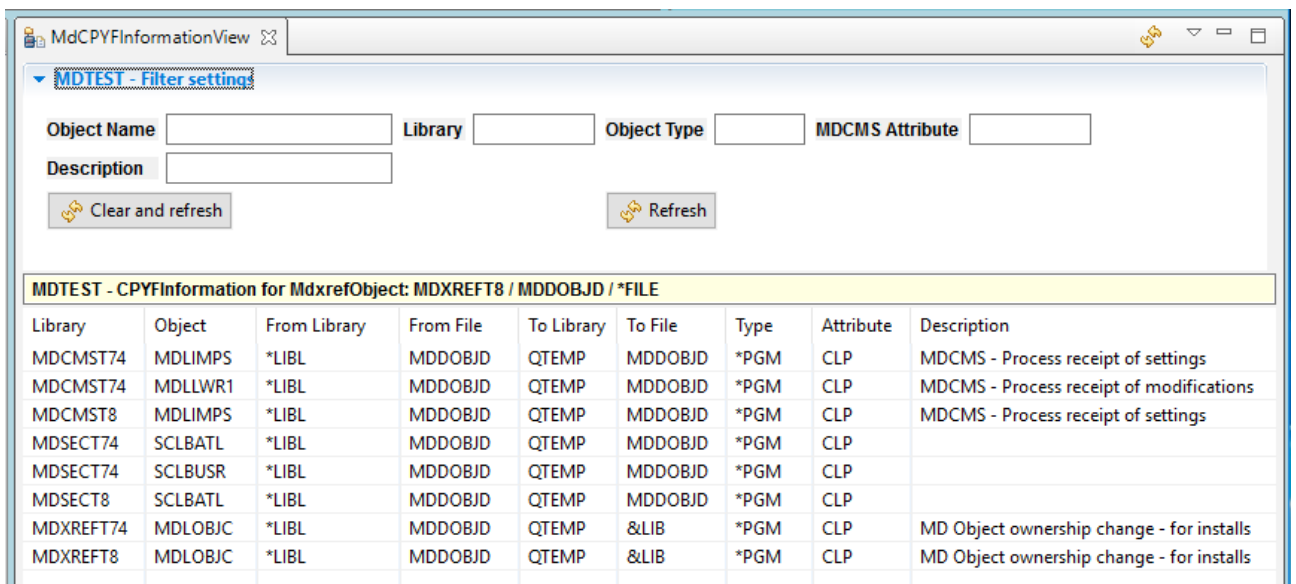


From Field	From File	From Library	To Field	To File	To Library
APOID	RBTAP	ROBOTLIB	RTAPOID	RBROB	ROBOTLIB

### 8.1.6 CPYF/OVRDBF Information

Valid option for files only.

This option will display the list **MdCPYFInformationView** of all CL programs or robot commands that perform an override or a CPYF from the selected file to another file. CL programs will only be listed if the source is specified as Observable.



MDTEST - Filter settings

Object Name  Library  Object Type  MDCMS Attribute

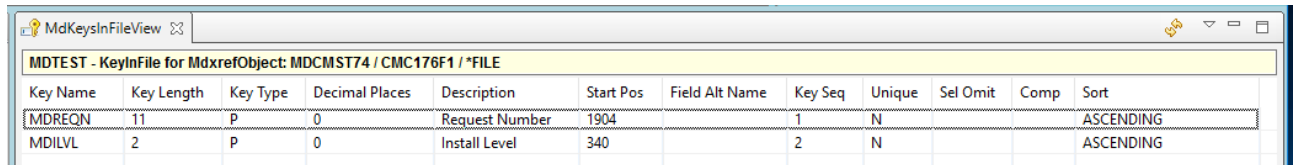
Description

Library	Object	From Library	From File	To Library	To File	Type	Attribute	Description
MDCMST74	MDLIMPS	*LIBL	MDDOBDJ	QTEMP	MDDOBDJ	*PGM	CLP	MDCMS - Process receipt of settings
MDCMST74	MDLLWR1	*LIBL	MDDOBDJ	QTEMP	MDDOBDJ	*PGM	CLP	MDCMS - Process receipt of modifications
MDCMST8	MDLIMPS	*LIBL	MDDOBDJ	QTEMP	MDDOBDJ	*PGM	CLP	MDCMS - Process receipt of settings
MDSECT74	SCLBATL	*LIBL	MDDOBDJ	QTEMP	MDDOBDJ	*PGM	CLP	
MDSECT74	SCLBUSR	*LIBL	MDDOBDJ	QTEMP	MDDOBDJ	*PGM	CLP	
MDSECT8	SCLBATL	*LIBL	MDDOBDJ	QTEMP	MDDOBDJ	*PGM	CLP	
MDXREFT74	MDLOBJC	*LIBL	MDDOBDJ	QTEMP	&LIB	*PGM	CLP	MD Object ownership change - for installs
MDXREFT8	MDLOBJC	*LIBL	MDDOBDJ	QTEMP	&LIB	*PGM	CLP	MD Object ownership change - for installs

### 8.1.7 Keys in File

Valid option for physical, logical and SQL index files only.

This option will display the list **MdKeysInFileView** of field keys and their attributes for a file. Also, if for a logical file, all select/omit rules will also be listed.



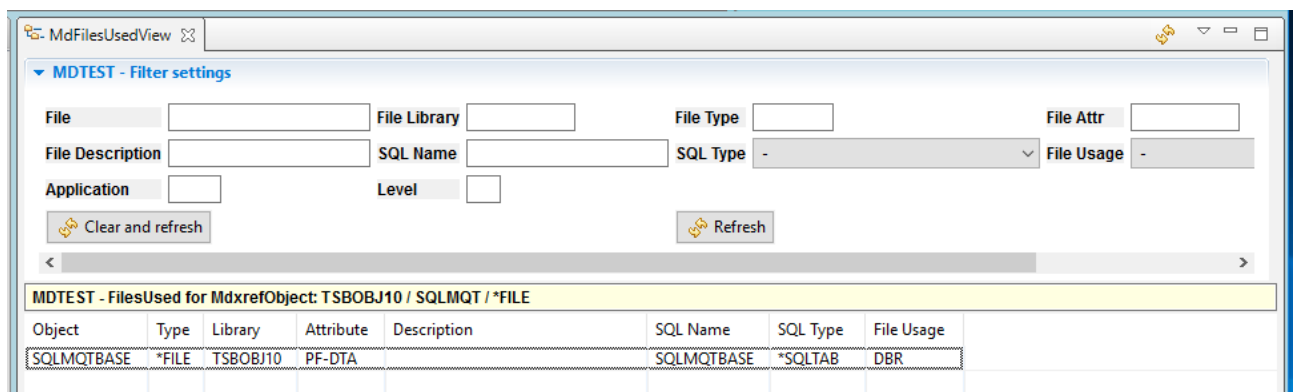
Key Name	Key Length	Key Type	Decimal Places	Description	Start Pos	Field Alt Name	Key Seq	Unique	Sel Omit	Comp	Sort
MDREQN	11	P	0	Request Number	1904		1	N			ASCENDING
MDLVL	2	P	0	Install Level	340		2	N			ASCENDING

The Source containing Field context menu option is available for a row in the list. This option causes MDXREF to collect the source for all objects either directly using the file or a logical over the file, along with all copybooks used by dependent programs. It then inspects the code for any non-commented lines containing the field and then presents the results.

### 8.1.8 Files Used

Valid for many types of objects.

This option will display a list **MdFilesUsedView** of all files that are used by the specific object as well as how the file is used.



MDTEST - Filter settings

File:  File Library:  File Type:  File Attr:

File Description:  SQL Name:  SQL Type:  File Usage:

Application:  Level:

Object	Type	Library	Attribute	Description	SQL Name	SQL Type	File Usage
SQLMOTBASE	*FILE	TSBOBJ10	PF-DTA		SQLMOTBASE	*SQLTAB	DBR

### 8.1.9 Files Used Inline

Same as option Files Used except the usage list remains in this same list. The following is an example:

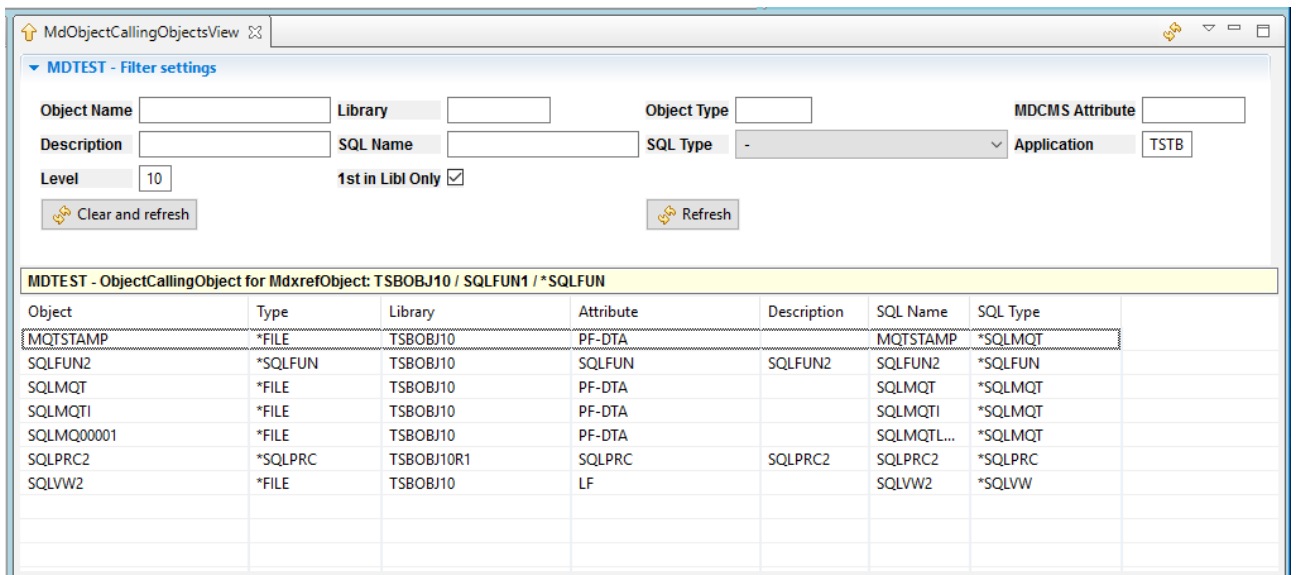
T8-DEV - MdxrefObject					
Object	Type	Library	Attribute	Description	
FUNSTAMPRP	*MODULE	TSBOBJ10	RPGLE	RPGLE MOD STAMPING - SUBPROCEDURE FOR SRVPGM	
GETTRGINFO	*MODULE	TSBOBJ10	RPGLE	GET TRIGGER INFO SUBPROCEDURES FOR SQL TRIGGERS	
FilesUsed					
PGMSTSDS	*FILE	TSBOBJ10	PF-DTA	RPG PROGRAM STATUS DATA STRUCTURE	
REF	*FILE	TSBOBJ10	PF-DTA	field ref	
MODSTAMP	*MODULE	TSBOBJ10	RPGLE	RPGLE stamping	

### 8.1.10 Up

Valid for many types of objects

This option will display a list of all objects that call or somehow invoke the selected object. For example, if 'Up' was requested for program JORDCB1, a list would be displayed showing all programs that call JORDCB1, all commands that invoke JORDCB1, or all menus that JORDCB1 is called from.

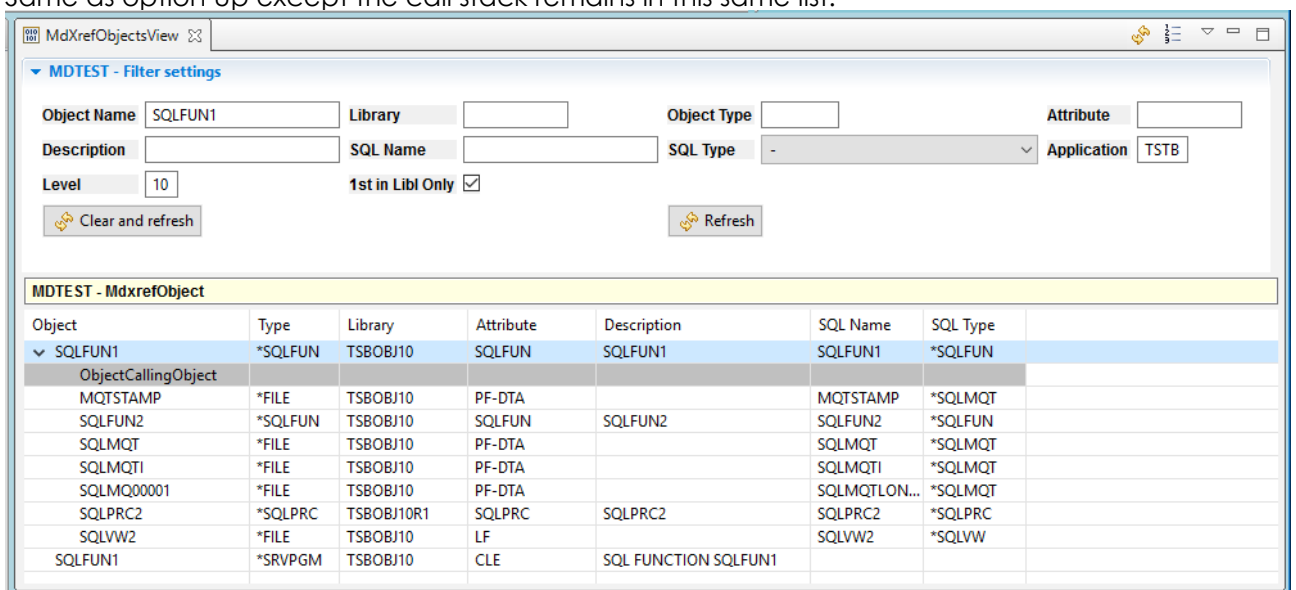
SQL object types \*SQLFUN and \*SQLPRC can be the called object types used by calling object types \*SQLFUN, \*SQLMQT, \*SQLPRC and \*SQLVW.



Object	Type	Library	Attribute	Description	SQL Name	SQL Type
MQTSTAMP	*FILE	TSBOBJ10	PF-DTA		MQTSTAMP	*SQLMQT
SQLFUN2	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN2	SQLFUN2	*SQLFUN
SQLMQT	*FILE	TSBOBJ10	PF-DTA		SQLMQT	*SQLMQT
SQLMQT1	*FILE	TSBOBJ10	PF-DTA		SQLMQT1	*SQLMQT
SQLMQ00001	*FILE	TSBOBJ10	PF-DTA		SQLMQTLON...	*SQLMQT
SQLPRC2	*SQLPRC	TSBOBJ10R1	SQLPRC	SQLPRC2	SQLPRC2	*SQLPRC
SQLVW2	*FILE	TSBOBJ10	LF		SQLVW2	*SQLVW

### 8.1.11 Up Inline

Same as option Up except the call stack remains in this same list.



Object	Type	Library	Attribute	Description	SQL Name	SQL Type
SQLFUN1	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN1	SQLFUN1	*SQLFUN
ObjectCallingObject						
MQTSTAMP	*FILE	TSBOBJ10	PF-DTA		MQTSTAMP	*SQLMQT
SQLFUN2	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN2	SQLFUN2	*SQLFUN
SQLMQT	*FILE	TSBOBJ10	PF-DTA		SQLMQT	*SQLMQT
SQLMQT1	*FILE	TSBOBJ10	PF-DTA		SQLMQT1	*SQLMQT
SQLMQ00001	*FILE	TSBOBJ10	PF-DTA		SQLMQTLON...	*SQLMQT
SQLPRC2	*SQLPRC	TSBOBJ10R1	SQLPRC	SQLPRC2	SQLPRC2	*SQLPRC
SQLVW2	*FILE	TSBOBJ10	LF		SQLVW2	*SQLVW
SQLFUN1	*SRVPGM	TSBOBJ10	CLE	SQL FUNCTION SQLFUN1		

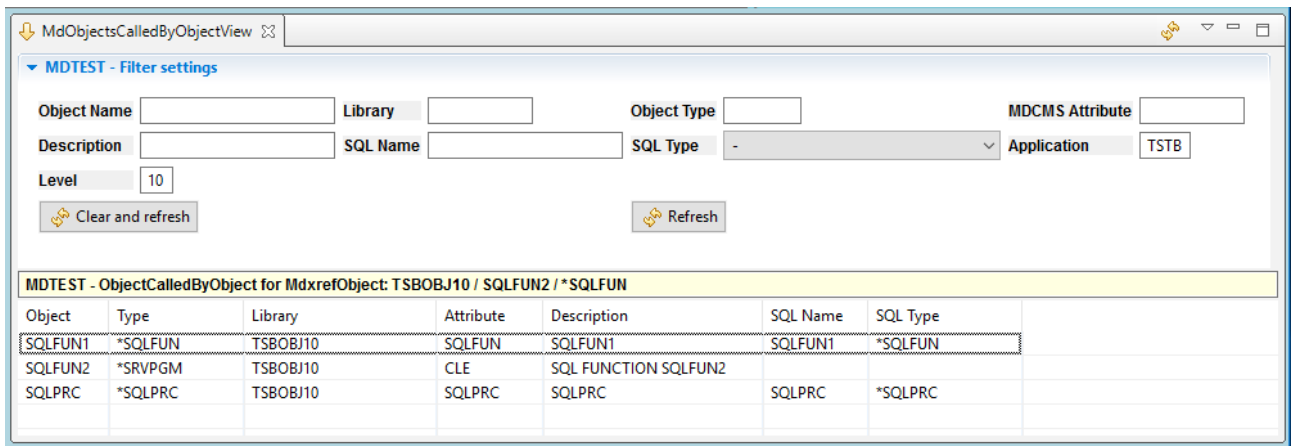
### 8.1.12 Down

Valid for many types of objects

This option will display a list of all objects that are called by the selected object.

For example, if 'Down' was requested for program JORDCB1, a list would be displayed showing all programs that JORDCB1 calls, all user commands that JORDCB1 invokes, all menus that JORDCB1 starts, or all queries that JORDCB1 runs.

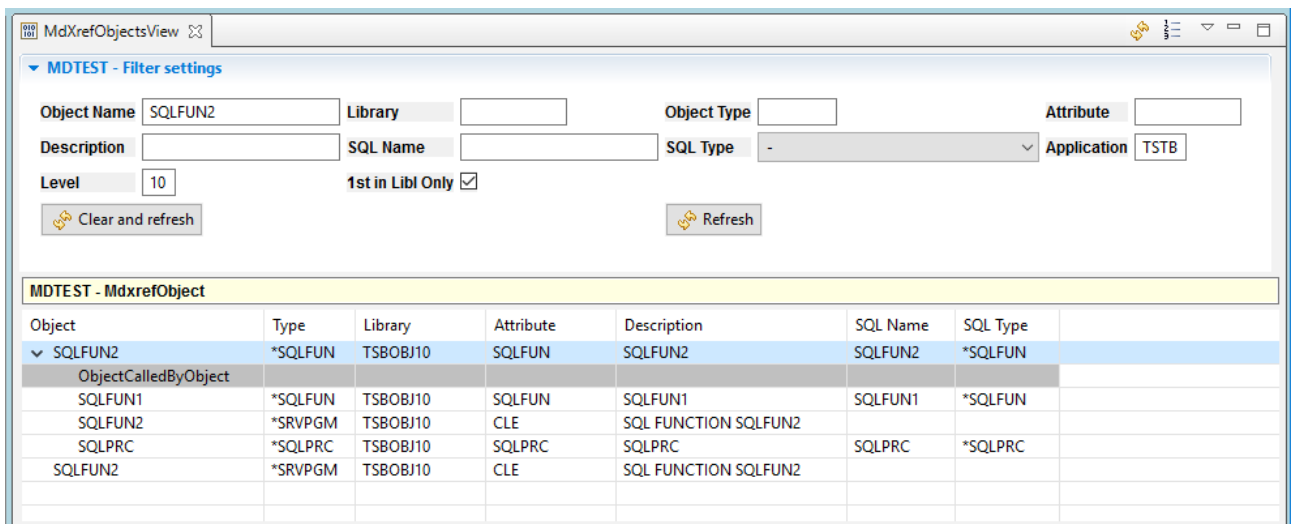
SQL object types \*SQLMQT, \*SQLVW, \*SQLFUN and \*SQLPRC can be the calling object types of called object types \*SQLFUN and \*SQLPRC.



Object	Type	Library	Attribute	Description	SQL Name	SQL Type
SQLFUN1	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN1	SQLFUN1	*SQLFUN
SQLFUN2	*SRVPGM	TSBOBJ10	CLE	SQL FUNCTION SQLFUN2		
SQLPRC	*SQLPRC	TSBOBJ10	SQLPRC	SQLPRC	SQLPRC	*SQLPRC

### 8.1.13 Down Inline

Same as option Down except the call stack remains in this same list.

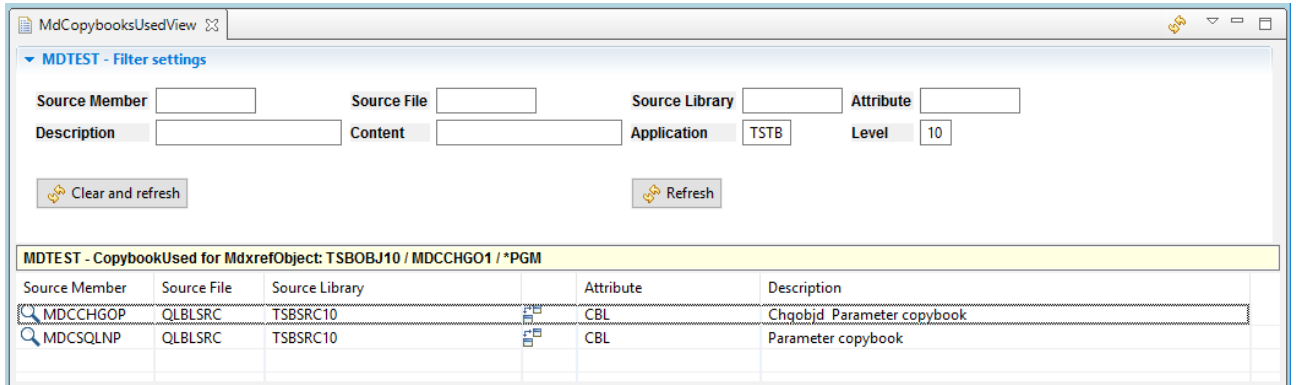


Object	Type	Library	Attribute	Description	SQL Name	SQL Type
SQLFUN2	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN2	SQLFUN2	*SQLFUN
ObjectCalledByObject						
SQLFUN1	*SQLFUN	TSBOBJ10	SQLFUN	SQLFUN1	SQLFUN1	*SQLFUN
SQLFUN2	*SRVPGM	TSBOBJ10	CLE	SQL FUNCTION SQLFUN2		
SQLPRC	*SQLPRC	TSBOBJ10	SQLPRC	SQLPRC	SQLPRC	*SQLPRC
SQLFUN2	*SRVPGM	TSBOBJ10	CLE	SQL FUNCTION SQLFUN2		

### 8.1.14 Copybooks Used

Valid for CLP, COBOL and RPG programs (ILE or OPM) and modules if the source for those objects is managed by MDCMS.

This option lists all source members that are used as copybooks in the program or module.



**MdCopybooksUsedView**

**MDTEST - Filter settings**

Source Member:  Source File:  Source Library:  Attribute:   
 Description:  Content:  Application: TSTB Level: 10

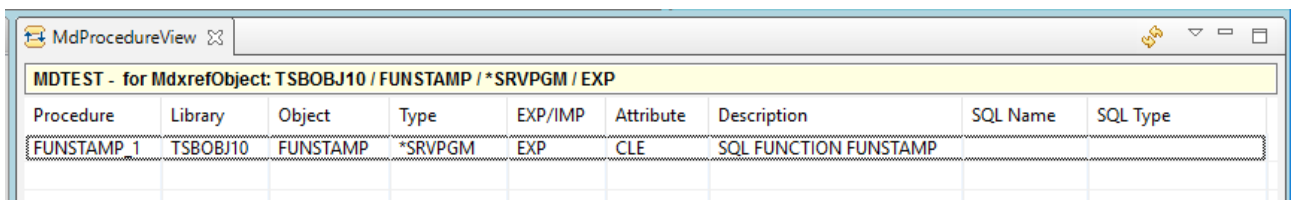
Clear and refresh Refresh

**MDTEST - CopybookUsed for MdxrefObject: TSBOBJ10 / MDCCHG01 / \*PGM**

Source Member	Source File	Source Library	Attribute	Description
MDCCHGOP	QLBLSRC	TSBSRC10	CBL	Chqobjid Parameter copybook
MDCSQLNP	QLBLSRC	TSBSRC10	CBL	Parameter copybook

### 8.1.15 Exported Procedures

This option will display a list **MdProcedureView** of all procedures exported by the ILE Module or Service Program.



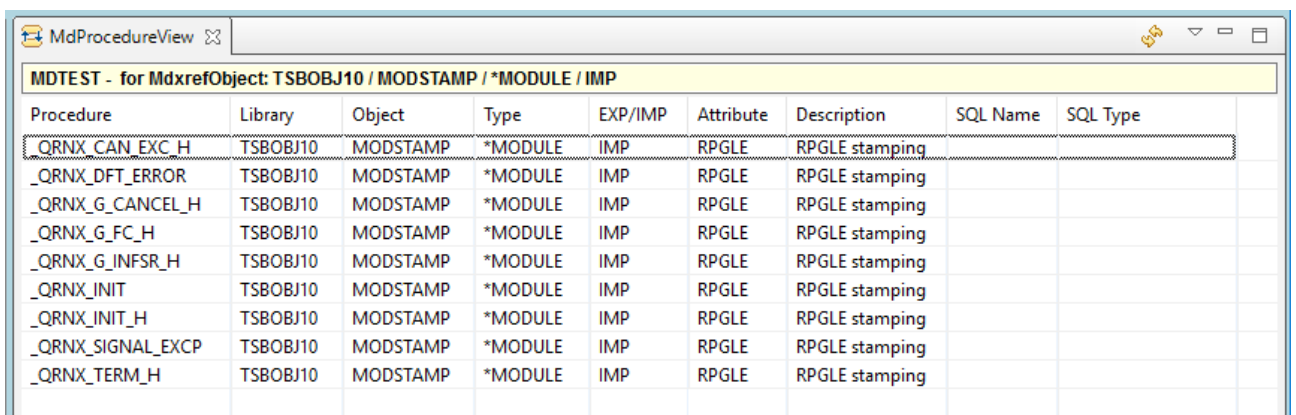
**MdProcedureView**

**MDTEST - for MdxrefObject: TSBOBJ10 / FUNSTAMP / \*SRVPGM / EXP**

Procedure	Library	Object	Type	EXP/IMP	Attribute	Description	SQL Name	SQL Type
FUNSTAMP_1	TSBOBJ10	FUNSTAMP	*SRVPGM	EXP	CLE	SQL FUNCTION FUNSTAMP		

### 8.1.16 Imported Procedures

This option will display a list **MdProcedureView** of all procedures imported by the ILE Module.



**MdProcedureView**

**MDTEST - for MdxrefObject: TSBOBJ10 / MODSTAMP / \*MODULE / IMP**

Procedure	Library	Object	Type	EXP/IMP	Attribute	Description	SQL Name	SQL Type
_QRNX_CAN_EXC_H	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_DFT_ERROR	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_G_CANCEL_H	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_G_FC_H	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_G_INFRR_H	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_INIT	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_INIT_H	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_SIGNAL_EXCP	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		
_QRNX_TERM_H	TSBOBJ10	MODSTAMP	*MODULE	IMP	RPGL	RPGL stamping		



### 8.1.17 Modules Used

Valid for programs and service programs.

This option lists all modules that are bound by the program. The PEP flag designates which module contains the Program Entry Procedure (PEP) for the program.

The screenshot shows the 'MdModulesUsedView' window. The filter settings are as follows:

- Object Name: [ ] Library: [ ] Object Type: [ ] MDCMS Attribute: [ ]
- Description: [ ] SQL Name: [ ] SQL Type: - PEP: -
- Application: TSTB Level: 10
- Buttons: Clear and refresh, Refresh

The table below shows the results for 'MDTEST - ModuleUsed for MdxrefObject: TSBOBJ10 / FUNSTAMPER / \*PGM':

Object	Type	Library	Attribute	Description	SQL Name	SQL Type	PEP
FUNSTAMPER	*MODULE	QTEMP	RPGLE				Y

### 8.1.18 Objects using Module

Valid option for ILE Modules only.

This option will display a list of all programs or service programs that use a specific ILE module.

The screenshot shows the 'MdObjectsUsingModuleView' window. The filter settings are as follows:

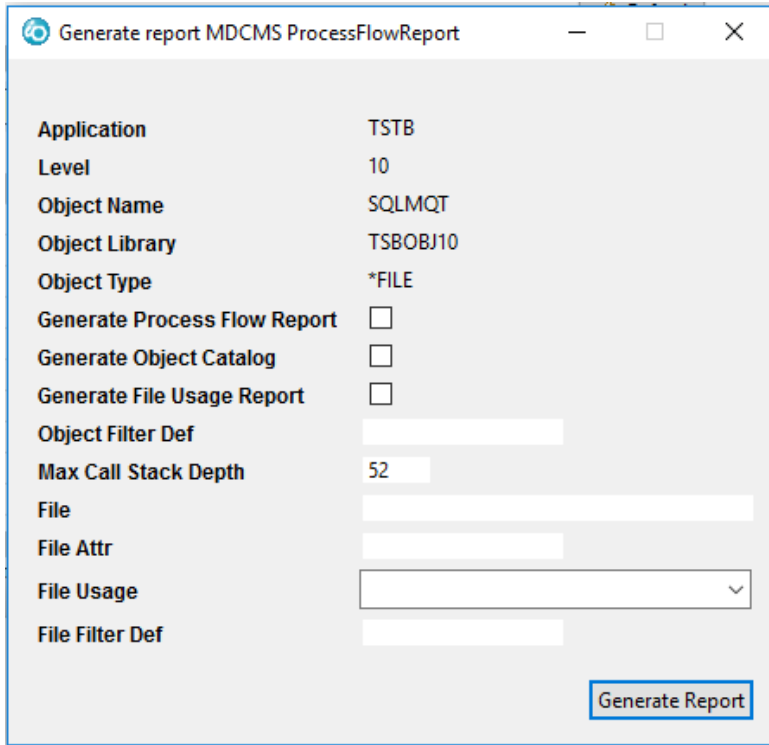
- Object Name: [ ] Library: [ ] Object Type: [ ] MDCMS Attribute: [ ]
- Description: [ ] SQL Name: [ ] SQL Type: - Application: TSTB
- Level: 10 1st in Libl Only:
- Buttons: Clear and refresh, Refresh

The table below shows the results for 'MDTEST - ObjectUsingModule for MdxrefObject: TSBOBJ10 / FUNSTAMPRP / \*MODULE':

Object	Type	Library	Attribute	Description	SQL Name	SQL Type	PEP
FUNSTAMPRP	*SRVPGM	TSBOBJ10	RPGLE				

### 8.1.19 Process Flow Report

Valid option for menus, commands, functions, materialized query tables, modules, procedures, programs, scheduled jobs, table objects and views.



Generate report MDCMS ProcessFlowReport

Application TSTB  
 Level 10  
 Object Name SQLMQT  
 Object Library TSBOBJ10  
 Object Type \*FILE  
 Generate Process Flow Report   
 Generate Object Catalog   
 Generate File Usage Report   
 Object Filter Def   
 Max Call Stack Depth 52  
 File   
 File Attr   
 File Usage   
 File Filter Def

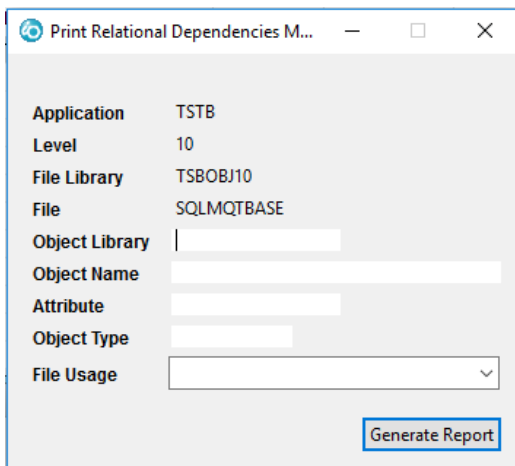
Generate Report

Complete descriptions of the Generate Process Flow Report for an object dialog can be found in the MDXREF user manual.

### 8.1.20 Print Relational Dependencies

Valid option for files only.

This option will result in a formatted report listing all files, programs, queries, etc. that use the file. In addition, if a file uses the base file, all files, programs, queries, etc. are also included for that file.



Print Relational Dependencies M...

Application TSTB  
 Level 10  
 File Library TSBOBJ10  
 File SQLMQTBASE  
 Object Library   
 Object Name   
 Attribute   
 Object Type   
 File Usage

Generate Report



### 8.1.21 View Source

Highlight 1 row in the list and right-click to select the option View Source to view the contents of the source member or IFS source file used to compile the object. If using RDI, the source will open in the LPEX editor in browse mode.

### 8.1.22 XREF Refresh for Objects

Valid for all objects. Note there isn't a view displayed for this option.

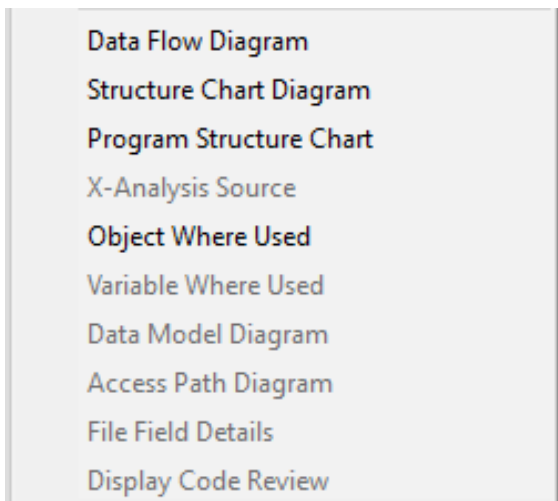
If an object has been manually changed or deleted since the last build of the MDXREF application database, the object's MDXREF information may be refreshed by using this option.

If the selected object had the library entry of '\*LIBL' and the object exists in more than one library within the cross-reference database, the user is prompted to select the desired library from a list before the object's information is refreshed.

### 8.1.23 Fresche Legacy View / Advisor

If Fresche Legacy View or Advisor is installed, the following options are **also** available following the list of available MDOpen menu options. The appropriate View/Advisor menu options available for the object type will be in bold vs greyed out if not available. See the Fresche Legacy View or Advisor documentation for using these options. Note that the Display Code Review option is not licensed with Fresche Legacy View but only with Fresche Legacy Advisor.

The following is an example of the View / Advisor options for a \*PGM object type. Note the unavailable options for a \*PGM are greyed out.





## 8.2 MDXREF Source

The MDXREF Source view provides the user with a filtered list of source members in all libraries that are built in the MDXREF cross reference product.

The screenshot shows the 'MdXrefSourceView' window. At the top, there are filter settings for 'MDTEST - Filter settings'. Below this is a table titled 'MDTEST - MdxrefSource' with the following columns: Source Member, Source File, Source Library, Attribute, Description, Create Date, Create Time, Change Date, and Change Time. The table contains 14 rows of data.

Source Member	Source File	Source Library	Attribute	Description	Create Date	Create Time	Change Date	Change Time
GETJOBNBR	QSQLSRC	TSBSRC10	SQL	GET JOB NUMBER FUNCTION	22.04.2016	21:22:39	11.03.2016	20:20:22
GETJOBNBR	QSQLSRC	TSBSRC30	SQL	GET JOB NUMBER FUNCTION	25.04.2016	21:42:33	11.03.2016	20:20:22
GETPROGRAM	QSQLSRC	TSBSRC10	SQL	GET PROGRAM NAME FUNCTION	25.04.2016	17:37:31	11.03.2016	20:20:29
GETPROGRAM	QSQLSRC	TSBSRC30	SQL	GET PROGRAM NAME FUNCTION	25.04.2016	21:42:34	11.03.2016	20:20:29
GETTRGINFO	QRPGLESRC	TSBSRC10	RPGL	GET TRIGGER INFO SUBPROCEDURES FOR SQL TRIGGERS	25.04.2016	18:47:12	10.03.2016	16:02:15
GETTRGINFO	QRPGLESRC	TSBSRC30	RPGL	GET TRIGGER INFO SUBPROCEDURES FOR SQL TRIGGERS	25.04.2016	18:53:04	10.03.2016	16:02:15
IDXSTAMP	QSQLSRC	TSBSRC10	SQL	SQL INDEX FOR STAMPING	18.08.2016	17:15:33	18.08.2016	17:14:52
IDXSTAMPLO	QSQLSRC	TSBSRC10	SQL	SQL INDEX FOR STAMPING	18.08.2016	17:17:55	18.08.2016	17:16:38
LFSTAMP	QDSSSRC	TSBSRC10	LF	LF STAMPING	19.08.2016	14:14:14	19.08.2016	14:12:56

- click this icon for a member to view the contents of the source member

- click this icon to perform a 2-way or 3-way compare of the source member to another member, IFS file or local file.

Right clicking on a source row entry within the **MdXrefSourceView** will display the following options:

The screenshot shows the same 'MdXrefSourceView' window as above, but with a context menu open over the row for 'MDCSQLNP'. The menu options are: Request Source, Compare, Compare to each other, Programs using Source, and View source.



### 8.2.1 Source containing Field

When viewing the list of fields or keys in a file, or viewing the result list from the field search, an option is available to display a list **MdXrefSourceView** of all source containing the field. When this option is taken, MDXREF collects the source for all objects either directly using the file or a logical over the file, along with all copybooks used by dependent programs. It then inspects the code for any non-commented lines containing the field and then presents the results.

The screenshot shows the 'MdXrefSourceView' window with the following filter settings:

- Source Member:
- Source File:
- Source Library:
- Attribute:
- Description:
- Content:
- Minimum Change Date:
- Maximum Change Date:
- Application:
- Level:
- 1st in Libl Only:

Buttons: Clear and refresh, Refresh

Table: MdXref Source containing Field SQLTAB / GTDESC

Source Member	Source File	Source Library	Attribute	Description	Create Date	Create Time	Change Date	Change Time
SQLVW	QSQLSRC	TSBSRC10	SQL	SQL VIEW	27.02.2017	21:18:24	23.11.2016	01:45:32
SQLVW2	QSQLSRC	TSBSRC10	SQL	SQL VIEW USING FUNCTION	27.02.2017	21:18:30	17.02.2017	18:53:01

### 8.2.2 Source Compare

Highlight 1 row in the list and right-click to select the option Compare to display a dialog to capture information about a second and an optional third member to compare to.

Highlight 2 rows in the list and right-click to select the option Compare to each other to immediately perform a 2-way compare of the selected members.

### 8.2.3 Programs using Source

Highlight 1 row in the list that is a copybook source member and right-click to select the option Programs using Source to display the programs or modules using the copybook.

The primary source for those objects must be managed by MDCMS for MDXREF to be aware of the copybook references.

The primary source used to compile the object is not considered a copybook and is not listed on this screen.

### 8.2.4 View Source

Highlight 1 row in the and right-click to select the option View Source to view the contents of the source member.



### 8.3 MDXREF Procedures

**MdProcedureView** is used to view the list of ILE Procedures (procedures imported or exported by ILE modules and procedures exported by service programs) matching the search criteria instead of listing objects. This is the same functionality as MDXREF using the object type filter of \*ILEPRC.

The following is an example of procedures exported:

The screenshot shows the MdProcedureView application window. At the top, there are filter settings for 'MDTEST - Filter settings'. Below this, there are input fields for Object Name, Library (TSBOBJ10), Object Type, MDCMS Attribute, Description, EXP/IMP (EXP-Exported), Application (TSTB), and Level (0). There are 'Clear and refresh' and 'Refresh' buttons. Below the filter settings is a table titled 'MDTEST - Procedure' with the following data:

Procedure	Library	Object	Type	EXP/IMP	Attribute	Description	SQL Name	SQL Type
FUNSTAMP_1	TSBOBJ10	FUNSTAMP	*SRVPGM	EXP	CLE	SQL FUNCTION FUNSTAMP		
FUNSTAMPLONG_1	TSBOBJ10	FUNST00001	*SRVPGM	EXP	CLE	SQL FUNCTION FUNSTAMPLONG		
FUNSTAMPRP	TSBOBJ10	FUNSTAMPRP	*MODULE	EXP	RPGLE	RPGL MOD STAMPING - SUBPROCEDURE FOR SRVPGM		
FUNSTAMPRP	TSBOBJ10	FUNSTAMPRP	*SRVPGM	EXP	RPGLE			
FUNSTAMPRP	TSBOBJ10	PRCSTAMPRP	*MODULE	EXP	RPGLE	RPGL MOD STAMPING - SUBPROCEDURE FOR SRVPGM		
FUNSTAMPRP	TSBOBJ10	PRCSTAMPRP	*SRVPGM	EXP	RPGLE			
FUNSTAMP27_1	TSBOBJ10	FUNSTAMP27	*SRVPGM	EXP	CLE	SQL FUNCTION FUNSTAMP27		



## 8.4 MDXREF IFS

If library value \*IFS is included in the MDXREF build list, then MDXREF will contain information about every folder and file in the IFS file system. This then makes it very fast and simple for the user to search for IFS folders and files as well as to collect information about the size and quantity of folders and files.

The following is an example of search for all xml files modified since the beginning of 2017 with a file size of at least 3000 bytes:

T8-DEV - Filter settings

Path Name \*gen\*  File/Folder Name \*gen\* \*.XML

Minimum Date 01.01.2017  Maximum Date

Minimum File Size 3000  Maximum File Size

T8-DEV - IFSFileObject					
Object	Size (Bytes)	Last Modified	File Count	Folder	
QIBM	0			true	
UserData	0			true	
OS400	0			true	
UniversalConnection	0			true	
serviceProviderBM.xml	1'637'091	2017-03-29 03:29:45	1	false	
serviceProviderBMLocationDefinition.xml	28'063	2017-01-28 03:29:13	1	false	
test8	0			true	
30	0			true	
conf	0			true	
server.xml	6'577	2017-03-10 19:22:08	1	false	
custom	0			true	
conf	0			true	
server.xml	6'577	2017-02-26 14:11:03	1	false	
50	0			true	
conf	0			true	
conf-faces-config.xml	6'794	2017-02-26 13:59:46	1	false	
server.xml	6'577	2017-02-27 13:21:52	1	false	

When not filtering, MDOpen shows the total size and file count of each folder, regardless of the number of subfolders, to provide a very helpful summary of parent folder information.



## 8.5 MDXREF Search for Fields

This list **MdFieldSearchView** is used to search for, and report on, all physical, logical or SQL files that contain a specific field or field attribute. Additionally, to inspect source code for the usage of specific fields via the context menu option Source containing Field.

The following is an example of an SQL table search:

The screenshot shows the MdFieldSearchView application window. At the top, there are filter settings for 'MDTEST - Filter settings'. Below this, there is a table titled 'MDTEST - Field Search' with the following data:

File Library	File	Field Name	Field Length	Field Type	Decimal Places	Description	Start Pos	Field Alt Name	Referenced Field	Variable in Length	Format
TSBOBJ10	SQLTAB	GTDESC	30	A	0	CREATE_DESC	3	CREATE_DESC		N	PFTABR
TSBOBJ10	SQLTAB	GTID	2	S	0	CREATE_ID	1	CREATE_ID			PFTABR
TSBOBJ10R1	SQLTAB	GTDESC	30	A	0	CREATE_DESC	3	CREATE_DESC		N	PFTABR
TSBOBJ10R1	SQLTAB	GTID	2	S	0	CREATE_ID	1	CREATE_ID			PFTABR
TSBOBJ10R2	SQLTAB	GTDESC	30	A	0	CREATE_DESC	3	CREATE_DESC		N	PFTABR
TSBOBJ10R2	SQLTAB	GTID	2	S	0	CREATE_ID	1	CREATE_ID			PFTABR

## 9 Object Requests

### 9.1 Overview

The MDCMS Object Manager within MDOpen is a multi-function view that enables the user to access the functions required for making and installing modifications to objects.

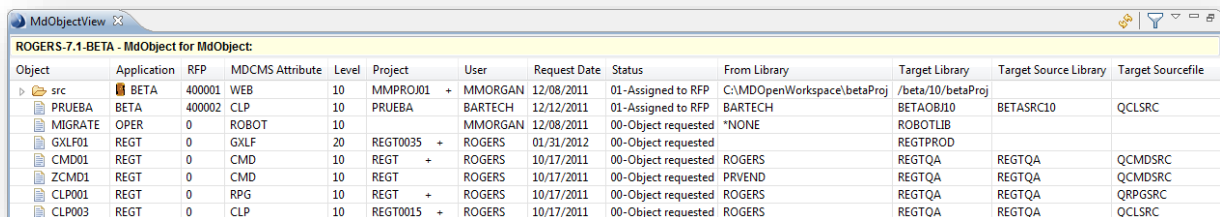
The Object Manager is used for:

- IBMi Source/Object request and retrieval.
- Reserving Object names for new objects.
- Grouping objects for installs.
- Identifying modification requests
- Requesting the installation of objects into application environments

All options discussed from the Object Requests view are also available when working with requests by RFP, Project or Task, allowing the developer to choose the preferred method of grouping object requests.

### 9.2 Object Request View


The Object Requests in MDOpen are displayed in the **MdObjectView**. The **MdObjectView** is accessed from the repository connection option  **Object Requests**.



Object	Application	RFP	MDCMS Attribute	Level	Project	User	Request Date	Status	From Library	Target Library	Target Source Library	Target Sourcefile
src	BETA	40001	WEB	10	MMPROJ01 +	MMORGAN	12/08/2011	01-Assigned to RFP	C:\MDOpenWorkspace\betaProj	/beta/10/betaProj		
PRUEBA	BETA	40002	CLP	10	PRUEBA	BARTECH	12/12/2011	01-Assigned to RFP	BARTECH	BETAOBJ10	BETASRC10	QCLSRC
MIGRATE	OPER	0	ROBOT	10		MMORGAN	12/08/2011	00-Object requested	*NONE	ROBOTLIB		
GXLFO1	REGT	0	GXLFO1	20	REGT0035 +	ROGERS	01/31/2012	00-Object requested		REGTPROD		
CMD01	REGT	0	CMD	10	REGT +	ROGERS	10/17/2011	00-Object requested	ROGERS	REGTQA	REGTQA	QCMDSRC
ZCMD1	REGT	0	CMD	10	REGT	ROGERS	10/17/2011	00-Object requested	PRVEND	REGTQA	REGTQA	QCMDSRC
CLP001	REGT	0	RPG	10	REGT +	ROGERS	10/17/2011	00-Object requested	ROGERS	REGTQA	REGTQA	QRPGRSRC
CLP003	REGT	0	CLP	10	REGT0015 +	ROGERS	10/17/2011	00-Object requested	ROGERS	REGTQA	REGTQA	QCLSRC

The following fields are displayed in the **MdObjectView**.



#### Folder Icon

If the Object is an IFS or Remote Folder, the Folder Icon  is displayed. If contents of the folder are also requested, it can be left-clicked to expand or collapse the view of the contents.

#### Object





The Object name. For IFS or Server requests this value may also include the directory structure associated with the request in addition to the actual object request.

#### Source Icon

If the Object request contains source in the local workspace, as a source member on the IBMi, or as an IFS file on the IBMi, either the View source Icon  or the Edit source Icon  is displayed, depending on whether or not editing is allowed for that request. The icon can be left-clicked to view or edit the source code.

### Commit Icon

For Folders and Files that were requested from outside the IBMi, an Icon is displayed to indicate the status of the Commit of a file or for the contents of a folder. The commit process copies files from the a location such as the local workspace to the MDCMS IFS folder on the IBMi for deployment when the RFP is installed.

-  = File has not been committed
-  = File has been modified in the local workspace since the last Commit
-  = File is located in a workspace on another computer and can't be compared
-  = Committed file is the same version as file in the local workspace

### Application

The Application Group name that will be used to retrieve Application Level and Environment information required for source retrieval and installation of object and/or source.

### RFP

An RFP is a Request for Promotion. The RFP number that will be used for the installation of the object within the application environment. When an object or a group of objects are ready to be installed into an application environment, an RFP is required to be assigned to the object request to track and group an installation.

**NOTE:** An RFP is Application Group and Application Level specific. MDCMS edits the assignment process and will not allow assignments across Application Groups and Levels. When the RFP is submitted for installation, all objects that are assigned to it will be installed.

### Object Type

The system object type, such as \*FILE or \*PGM.

Or, one of the MDCMS special object types, such as \*IFS, \*REMOTE or \*SOURCE

### MDCMS Attribute

The MDCMS Attribute is the Source or Object Type that is used during the Retrieval and Installation processes to define the compile handling or creation behaviour of the object.

### Level

The Application Level is used to define the target source and object libraries that changes are deployed into. If the Application Level is not specified when creating an object request, or if the object is new, the level will be automatically set to the lowest level for the specified application.

### Project

The Project(s) that the object request is assigned to. A Project documents the reason, the responsible parties, and timeline for work to be done. If the object is assigned to more than one(1) Project a plus sign (+) will be displayed to designate multiple projects.





### Req Sts

The current status associated with the request record. As each object is processed through the MDCMS system, a status is applied to the object record to track the modification and installation progress.

Status values:

RP – Request pending - the RFP is waiting for Workflow acceptance of an RFP in the prior level before the new RFP can be used.

UL – Request unlocked - Object is requested in unlocked mode. Other users are able to request the same Object.

00 – Object requested - Object is requested for modification but a Request for Promotion has not been assigned.

01 – Assigned to RFP - An RFP number has been assigned to the requested object.

02 – Waiting for approval - An RFP approval is required before the installation process can continue.

CP – MDRapid Data Copy Pending

CR – MDRapid Data Copy Running

03 – Ready to be installed - The object is ready for installation and requires an RFP installation release.

04 – Installation in progress - RFP has been submitted to batch for an installation.

### Create Sts

The object creation/copy status for the object in the developer library or during the compile step of the RFP.

Created Status values:

blank – an attempt to create the object has not been made

Yes – the object was successfully created or copied

Error – an error occurred when attempting to create the object

Locked – the RFP is unable to proceed due to a lock on the object

00 – 99 – the % of initial data records that have been copied by MDRapid

### Res Sts

The lowest Conflict Resolution Status for the object for other versions that are based on the object.

Resolution Status values:

blank – Conflict Resolution not applicable for this request

O – Resolution Open

L – Resolution Ignored for this install level only. Will be reset to Open for next level in migration path.

I – Resolution Ignored for entire migration path

R - Resolved

### User

The user that initiated the object request. When an object is requested for modification or a new object name is reserved, it is assigned to a user profile.

### Cmds

true – commands are defined to be run for the specific object

### Scripts

true – scripts are defined to be run for the specific object



From Library

The requester's personal development work library or directory.

Target Library

The target library or target directory for the migration of the object request. This value is based on the Application level and Attribute specified for the request record.

Target Source Library

The target source library for the migration of the object request. This value is based on the Application group level specified for the request record. This value will be blank for IFS or Server Requests.

Target Sourcefile

The target source file for the migration of the object request. This value is based on the Application group level specified for the request record. This value will be blank for IFS or Server Requests.

Date

The date that the Object was requested



### 9.3 Object View Detail

To view the complete details of any object request, left click on the object within the **MdObjectView** to display the **MdObject** view.

ROGERS-7.1-BETA - Detail for MdObject: REGT / 20 / GXPF01	
Property	Value
Application	REGT
Level	20
Object	GXPF01
MDCMS Attribute	GXPF
Object Type	*FILE
Object Description	GXPF01 No Source PF
Action	Modify Existing Object
User	ROGERS
User Description	Paul Rogers
Request Date	01/31/2012
Status	01-Assigned to RFP
Target Library	REGTPROD
Target Source Library	
Target Sourcefile	
From Level	10
From Library	REGTQA
From Sourcefile	
RFP	40323
RFP Description	More GX file changes
Lock Request	<input checked="" type="checkbox"/>
Object Commands included	<input checked="" type="checkbox"/>
Folder	<input type="checkbox"/>
Migrate Data	<input type="checkbox"/>
Committed File Date	
Committed File Time	00:00:00

Project	Task	Subtask	Description
REGT0035	1	1	Subtask #1 for Task#1/Process Changes..

Some of the information in the **MdObject** view is already visible within the **MdObjectView**. Refer to previous section for details on those fields.

The following are fields that appear in the **MdObject** view that are not present, or do not display their full details, in the **MdObjectView**:

#### Object Description

The object description associated with the object

#### New Description

The description to apply to the object during the deployment. The following special values can also be used:

\*SAME – if the object description of the new version of the object is blank, the description will be taken from the object it is replacing.

\*BLANK – remove any description from the object



### Action

The reason for the Object Request

- Modify Existing Object
- Add New Object
- Recompile Object
- Delete Object
- Update Object

### User Description

The description associated with the User specified for this object request. This value is taken from the MDSEC User description.

### Source Name

The name of the source member or IFS source file used to create the object

### Source Attribute

The system attribute for the source member

### Source Description

The text defined for the source member

### From Level

If this object request was created from a lower application level this value will represent the Application level from which it originated.

### From Sourcefile

The from source file for the migration of the object request. This value is based on the Application level and Attribute specified for the request record.

### RFP Description

The user defined description that was assigned to the RFP associated with this object request.

### Lock Request

A checkbox indicating if this object request is locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

### Compile Sequence

The primary sort sequence for this object in an RFP based on the attribute

### Compile Subsequence

The secondary sort sequence for this specific object, in case other object of the same primary sequence are dependent on it or vice-versa. This value can be modified to correct the order in which the objects will be processed by the RFP. For SQL objects see the MD Best Practice – Managing SQL Entities guide for more information on automatic sorting.

### Data Origin

The file that contains the data that should be copied to the new format of this file or table at installation time.

\*SAME – the data will be copied from the file of the same name as this object in the target library (default)

\*MIGRATE – the contents of the new version of the file will be migrated with the format from the prior environment, replacing any records currently in the target library.

\*NONE – data will not be copied to the new version of the file. If changing a file from physical to logical, \*NONE must be specified.

The system name of a physical file or the SQL name of a SQL table – the name of an existing file or table in the target library that contains the records to copy to the new version of this file or table.

### Data Member

The existing member(s) to migrate from the existing data origin to the new format for the file.

\*FIRST – the first member will be copied

\*ALL – all members will be copied – not valid when the new file is an SQL table

The name of a member in the Data Origin file

### MDRapid Program

The service program that MIMIX Promoter should use during the MDRapid data copy to map the records from the old file format to the new file format.

\*DEFAULT – the default service program packaged with MIMIX Promoter will be used

\*NONE – MDRapid will not be used for this file, even if the number of records in the file means that it's qualified.

The name of a service program to use for the mapping of the records. The program must be in the library list in order to be invoked.

### Reapply Journaling

A checkbox indicating if any journaling information for a file should be automatically applied to the new version of the file.

### Reapply Constraints

A checkbox indicating if any constraints for a file should be automatically applied to the new version of the file.

#### Reapply System (non sql) Triggers

A checkbox indicating if any system (non sql) triggers for a file should be automatically applied to the new version of the file.

#### Reapply Logical File Members

A checkbox indicating if any current members for a logical file should be automatically applied to the new version of the file.

#### Committed File Date

The last modified date of the file at the time it was committed to the repository.

#### Committed File Time

The last modified time of the file at the time it was committed to the repository.

#### Revision Number

If the object was committed from SVN, this number indicates the SVN revision number of the file committed to MDCMS.

#### Project/Task/Subtask/Description

Basic Project information will appear in the **MdObjectView**. When an object request is assigned to multiple Projects, Tasks, or Subtasks a plus sign (+) will appear to the right of the Project value in the **MdObjectView**. Detailed information for these multiple Project entries can be found in the Project/Task/Subtask area of the **MdObject** view.

The Project/Task/Subtask section of the **MdObject** view allows for the addition and deletion of Project, Task and Subtask values if the user has sufficient authority for that function. Right click within the **MdObject** view and select **+ Add to Project** or **✗ Remove Project**.

#### Some important points about the Object Request Process:

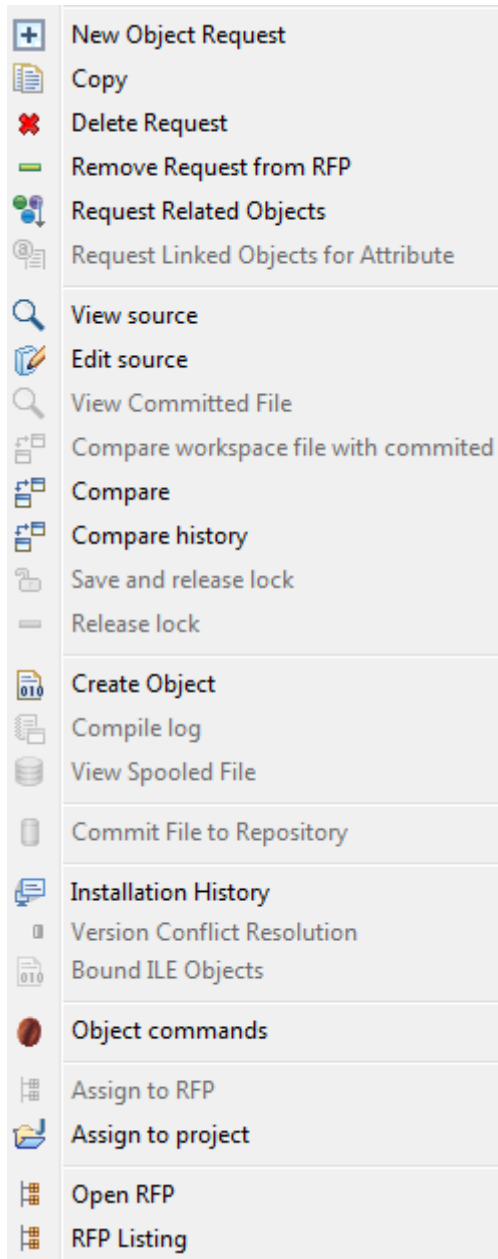
The From Library, From Source File may only be changed if the object request is for the lowest level of the Application Group.

Any entered User value (programmer ID) for an object request must already exist in the **MDSEC** authorization list. If you are unable to modify the programmer ID, it is because you have not been granted authority to do so in **MDSEC**.

The Object type may not be changed as a result of changing the MDCMS Attribute for an object request.

## 9.4 Object View Options

The following options are available within the **MdObjectView** for objects:



### New Object Request

The New Object Request option is used to initiate a request for an object. See details for requesting native IBMi, IFS and server objects in the additional sections on this chapter.

**NOTE:** When no objects exist within the **MdObjectView**, or when a right click option is initiated within the view but not against any existing object, the New Object Request option will be the only available option.



### Copy

The Copy option is used to create a new Object Request with the values of the existing Request filled into the input fields.

### Delete Request

The Delete Request function is used to delete an existing object request. This option is only allowed if the Status of the request record is currently *No Request assigned (00)* or *Request assigned (01)*, which means that the installation of the request is not yet in progress. A confirmation window is displayed before the request(s) are actually deleted. For each request that is checked out to the developer's library, the row can be selected in the confirmation window to delete the source and/or object in the developer library, should they exist.

Multiple Object Rows may be selected at the same time using the shift or ctrl keys for this option.

### Remove Request from RFP

The Remove Request function is used to remove an object request from an assigned RFP. The request still exists, but the status is returned to *No Request assigned (00)*, allowing for the request to be assigned to a different RFP.

Multiple Object Rows may be selected at the same time using the shift or ctrl keys for this option.

### Request Related Objects

The Request Related Objects option enables the user to review and select from a list of objects that are related to the selected object. For further instructions about requesting related objects, refer to that section in this manual.

### Request Linked Objects for Attribute

This option enables the user to check out objects that are linked by attribute to the selected object. For further instructions about requesting linked objects, refer to that section in this manual.

### View/Edit source

The ability to view or edit source directly within the programmer's work library is enabled with this option. A user may edit the source if it is requested by that user and if the request is for a level flagged as a Check-out level for the application.

You can also left-click on the source icon in the Object Request row to open the source.

**Choosing the Editor:** the source editor available to the user for a particular type of source will be dependent upon the File Associations defined within Eclipse.

To view/set Preferences:

Window -> Preferences -> General -> Editors -> File Associations

**For native i source:** if MDOpen is used within Rational Developer for i, the associated LPEX editor will be used and control is handled natively by the RSE features that are invoked directly from the MDOpen perspective. In this case, it is important that the same user, password and host names are used in RSE that are defined for the Repository location in MDOpen.





If MDOpen isn't used within Rational Developer for i, the File Type is the system attribute for the source. For example, RPG source would have a File Type of \*.rpg in the File Association listing. If an association is not present, the default text editor will be used.

LPEX Editors, in conjunction with Rational Developer for i, are available for most native languages.

Editors, in conjunction with a variety of eclipse plugins are available for most commonly used open source languages.

#### View Committed File

If a version of the requested \*IFS or \*REMOTE file has been committed, that version can be viewed within the associated editor.

#### Compare workspace file with committed

With this option, the version of the currently committed code for a file is displayed next to the local workspace code and the differences between the two versions are indicated.

#### Compare

This option allows the requested code to be compared to another request, an archived version of the source, the committed version of the source, any source member, any IFS file, or any file in the local workspace. Optionally, a third source can be selected for a 3-way comparison. For further instructions about the Compare feature, refer to that section in this manual.

#### Compare history

Select one of the last n compares as a template for a new compare. The number of compares to keep in history can be set in the MDOpen preferences.

#### Save and Release Lock

If an editor that is external to eclipse, such as Microsoft Word, is used to edit source located on the IBM i, a mechanism to track when the local copy of the source should be saved and the lock of the member on the system should be released doesn't exist. For this reason, this option should be used when changes to the source are complete in order to save the source back to the system and release the lock.

#### Release Lock

This option is as described above, except that the local changes are not saved back to the system – only the lock on the member is released.



### Create Object

If the Object Request belongs to the current user and is for a level allowing Check-Outs, a Modify, Recompile or Update Request can be compiled into the user's library for unit testing, etc. The pre-compile and compile commands defined for the object's attribute or object itself are used for creating the object so that the user can be certain that it created exactly like it would be created at deployment time. At compile time, the library list of the target level is set, optionally with the user's own library at the top of the library list, so that references can be found for the compile.

The option to see the create log, which is a combination of job log messages generated during the create process, and compile messages, if option \*EVENTF is included for the compile command, can be entered.

If the create log is displayed in Rational Developer for i, and the LPEX editor for the source is currently open, the compile message can be clicked to position the cursor in the editor to the row causing the message.

### Compile log

Display the log from the most recent creation attempt. More details about the Compile log in the Create Object option section above.

### View Spooled File

If an attempt has been made to compile the source locally in the developer's library or during the compile step of the RFP, this option can be used to directly view the spooled file generated by the compiler or SQL runtime engine.

### Commit File to MDCMS

Upload the newest version of the requested \*IFS or \*REMOTE file in the local workspace, Git or SVN to the MDCMS repository on the system. When the MDCMS RFP containing this request is executed, the committed version will be deployed to the target IFS folder, remote server or converted to the target source member.

### Installation History

Open the Installation History view with the rows filtered to the specific object.

### Version Conflict Resolution

This option enables the user to view/manage Resolution of conflicts for other versions of the object that are based on this request.

For further instructions about Version Conflict Resolution, refer to that section in this manual.

### Bound ILE Objects

This option enables the user to view and manage the ILE Modules and Service Programs that are bound to this ILE program/service program.

For further instructions about Bound ILE Objects, refer to that section in this manual.



### Object commands

The ability to view, add and edit commands related to the specific object is enabled with this option. The management and fields for Object Commands are the same as those for Attribute commands.

### Object scripts

The ability to view, add and edit scripts related to the specific \*IFS or \*REMOTE object is enabled with this option. The management and fields for Object Scripts are the same as those for Attribute scripts.

### Assign to RFP

The Assign to RFP function is used to assign an object request to an RFP. The RFP must be for the same Application and Level as the request and the current status of the RFP must be *No Request assigned (00)* or *Request assigned (01)*.

A window is then displayed where an existing RFP number can be entered or selected using content assist. Or, the New RFP button can be pressed to create a new RFP number.

Multiple Object Rows may be selected at the same time using the shift or ctrl keys for this option.

### Assign to Project

The Assign to Project function is used to assign an object request to an active Project, Task or Subtask.

A window is then displayed where an existing Project ID can be entered or selected using content assist. To optionally specify a Task within the Project, enter or select a Task number after having entered a valid Project ID. To optionally specify a Subtask within the Task, enter or select a Subtask number after having entered a valid Task Number.

Multiple Object Rows may be selected at the same time using the shift or ctrl keys for this option.

### Open RFP

If the Object Request is assigned to an RFP, this option will open the detail view for the RFP in order to view/edit the details of the RFP or to submit the RFP for processing.

### RFP Listing

This option opens or navigates to the RFP Listing view



## 10 Request Objects directly on IBMi

To initiate an object request directly from the Object, RFP, Project, Task or Subtask listings, right click on an Object Row, or its parent row, and select **+** **New Object Request**. That action will display the **Add MdObject** dialog.

In the **Add MdObject** dialog, the following Content-Assist enabled parameters are presented:

Application	The 4 character application code
Level	The application level (environment) – if left blank, the lowest level will be used
Object	the object name - enter a portion of the name for Content-Assist to list objects starting with that text
MDCMS Attribute	the attribute indicating the type and location of the object to be requested. If left blank, MDCMS will attempt to discern the attribute based on MDXREF and MDCMS history
Action	DDL to decide to Modify, Add new, Recompile, Update or Delete the object
Relative Path	The relative path, if requesting an IFS object, that resides in a subfolder of the folder defined for the attribute. Content-Assist may be used multiple times to drill down to the appropriate folder
From Level	If multiple levels migrate into the request level, the level to be migrated from can be entered here
RFP	The RFP number to use for deploying the object – use content assist to select from list or press the New RFP button to create a new RFP. The RFP field can also be left blank and the object assigned at a later time
Project	the Project, or reason, for the request - enter a portion of the name for Content-Assist to list Projects starting with that text. Or, press the New Project button to create a new Project. The Project field can also be left blank and the object assigned at a later time.
Task	a Task number within the Project, if necessary. Press the New Task button to create a new Task.
Subtask	a Subtask within the Project Task, if necessary. Press the New Subtask button to create a new subtask.
Lock Request	if checked, the request is locked for you if unchecked, another programmer can also request the object



## 10.1 Modify Existing Object

When an object is requested, MDCMS checks to see if another user already has the object requested. If another request of the object already exists the user will receive an 'Error' dialog with the message 'Object is already requested by user USERNAME'. When the user clicks OK they will be returned to the **Add MdObject** view with the Object field highlighted in red. The user has the option of completing the object request in unlocked mode by unchecking the 'Lock Request' value.

MDCMS then checks if the source/object already exists in the target library of the lowest level of the Application for the entered Attribute. If not, the request process searches the library list for the Attribute to see if the object is in one of the libraries defined in the list.

The **Add MDCMS MdObject\_M** dialog is then displayed where the user may alter where to copy the source from and where to copy the source to.

If the Source for the selected MDCMS Attribute resides in a Source Member, the following parameters are presented:

Lock Request	The source/object is reserved exclusively for this request. Others can still request the item in unlocked mode, but they won't be able to deploy it.
Compile Subsequence	Objects are sorted in the RFP (Installation package) based on the sequence of the MDCMS Attribute. If objects of the same primary sequence are dependent on each other, such as SQL Views, then this field can be used to ensure that the sort sequence of the compiles is correct. See the MD Best Practice – Managing SQL Entities guide regarding smart sorting.
Developer Object Library	The name of the Library where Development of the Object will occur. This is the location that will be used if the programmer compiles the checked out source for compile or unit testing prior to installing the RFP. Or, if the object doesn't contain source. The library can't be a library that is managed by MDCMS as a target environment library.
Copy from Source Library	The Library to copy existing source from. By default, this will be the location where MDCMS found the source
Copy from Source File	The Source File to copy existing source from. By default, this will be the location where MDCMS found the source
Copy from Source Member	The name of the Source Member to copy. By default, this will be the name of the target source
Location	When blank, the system location of the source is the same as the system location of the developer library. Otherwise, another location can be selected using Content-Assist and MDCMS will copy the source from that system to the developer library on the local system
Developer Source Library	The name of the Library where changes to the Source will occur. The library can't be a library that is managed by MDCMS as a target environment library.
Developer Source File	The name of the Source File to contain the source member to change.
Source Member Name	The name of the Source member. By default, it is the same as the object name, but can be a different name when necessary and MDCMS will then remember the name for future check-outs of that object.



If the Source for the selected MDCMS Attribute resides in IFS, the following parameters are presented:

Lock Request	The source/object is reserved exclusively for this request. Others can still request the item in unlocked mode, but they won't be able to deploy it.
Compile Subsequence	Objects are sorted in the RFP (Installation package) based on the sequence of the MDCMS Attribute. If objects of the same primary sequence are dependent on each other, such as SQL Views, then this field can be used to ensure that the sort sequence of the compiles is correct. See the MD Best Practice – Managing SQL Entities guide regarding smart sorting.
Developer Object Library	The name of the Library where Development of the Object will occur. This is the location that will be used if the programmer compiles the checked out source for compile or unit testing prior to installing the RFP. Or, if the object doesn't contain source. The library can't be a library that is managed by MDCMS as a target environment library.
Copy from IFS Source Path	The Folder to copy existing source from. By default, this will be the location where MDCMS found the source
Copy from IFS Source File	The name of the IFS File to copy. By default, this will be the name of the target source.
Developer IFS Source Path	The full path of the IFS Folder where changes to the Source will occur. The folder can't be a folder that is managed by MDCMS as a target environment folder.
Developer IFS Source Name	The name of the Source. By default, it is based on the naming defined for the selected MDCMS Attribute, but can be a different name when necessary and MDCMS will then remember the name for future check-outs of that object.

The following buttons are available:

Save	Complete the Object Request and copy the source into the developer library/folder. If the source already exists in the developer library/folder, you will be provided the choice of whether or not to overwrite the existing source
Request without Copy	Complete the Object Request, but don't copy any source to the developer library/folder
Cancel	Cancel the Object Request – MDOpen returns to the Add MDCMS MdObject window where changes can be made to the request parameters or the process can be cancelled

If clicking Save to copy the source, MDCMS checks if the source being copied differs from the source in Production (if the Compare Source level definition is set in the Location settings). If they are different, a dialog is presented providing the opportunity to compare the source versions and change or cancel the checkout.

MDCMS then checks if the last checkout for the object was from an Emergency level. If so, a dialog is presented providing the opportunity to change or cancel the checkout.



## 10.2 Add New Object

This option is used to reserve an object name for the purpose of creating a new object. The new object name may not already exist in the destination library for the Attribute.

The Copy parameters are the same as for a Modify

The following buttons are available:

Save	Complete the Object Request and copy the source into the developer library/folder. If the source already exists in the developer library/folder, you will be provided the choice of whether or not to overwrite the existing source.
Generate Empty Source	Complete the Object Request without copying existing source to use as a template. Instead, create an empty source member of IFS source file to code from scratch.
Request without Copy	Complete the Object Request, but don't copy any source to the developer library/folder
Cancel	Cancel the Object Request – MDOpen returns to the Add MDCMS MdObject window where changes can be made to the request parameters or the process can be cancelled

If the Save or Generate Empty Source buttons are pressed, and the source is stored in a Source Member, you are then prompted for the Attribute and Description of the new Source Member.

## 10.3 Recompile Object

This option is used to recompile an object at the requested level. This type of request can be initiated when work is in progress for the object and source. The user specifies a value of **Recompile Object** for the Action parameter of the **Add MdObject** dialog and the object will be added to the **MdObjectView** with a value of '\*RECOMPILE' in the 'From Library' column.

When the source for the object is not found in the migration chain or search template based on the selected MDCMS attribute, the user will receive an 'Error' dialog with the message 'MDCMS could not find the Source for this object.'

## 10.4 Delete Object

This option is used to delete an object and the source for the object. When the promotion occurs to delete the object the source or object is archived prior to deletion. Any cross-reference information about the object is also removed.

## 10.5 Update Object

This option is used to update an existing object without modifying any source or migrating the object from a lower level. An Update command must be defined for the object or Attribute. An example of an Update command would be the UPDPGM command for updating existing ILE programs. The Update option may be requested even when work is in progress for the source or object.



## 10.6 Request Related Objects

The Request Related Objects function enables the user to review and request objects that are related to the selected object. This function is used to request objects that are dependent upon a requested file, ILE module, Service Program, copybook, or that invoke a requested program, command, query, menu, etc... The **MDXREF** function of MDCMS is used to identify these objects.

To Request Related Objects, right click on an existing object request in Object Listing and select **Request Related Objects**. That action will bring up the **MdRequestRelatedObjectView**.

The screenshot shows the 'MdRequestRelatedObjectView' window. At the top, it displays the title bar with 'MdObjectView' and 'MdRequestRelatedObjectView'. Below the title bar, a yellow header bar contains the text: 'T - RequestRelatedObject: Level:30 / Object:MDA004 / Object Type:\*PGM'. The main area is divided into two sections. The upper section contains fields for 'Application' (TEST), 'Level' (30), 'Object' (MDA004), 'Object Type' (\*PGM), and 'RFP' (2000116). There is a 'Lock Request' checkbox which is checked, and a 'New RFP' button. The lower section is a table with columns: 'Recomp', 'Modify', 'Update', 'Delete', 'Object', 'Object Type', 'MDCMS Attribute', 'Object Description', 'Requested by', and 'Message'. The table has three rows of data, with the first row selected. At the bottom, there are 'Process Selections' and 'Next Application' buttons.

Recomp	Modify	Update	Delete	Object	Object Type	MDCMS Attribute	Object Description	Requested by	Message
<input type="checkbox"/> all	<input type="checkbox"/> all	<input type="checkbox"/> all	<input type="checkbox"/> all						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ADMIN	*PGM	CLP	MD Admin		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MDA002	*PGM	CBLLE	Admin: Customer Licenses		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MDA006	*PGM	CBL	Admin: Invoices		

### Header Parameters:

Application	The Application Code of the Related Objects. The initial listing will be for the same Application as the selected Object. When the Next Application button is clicked, and references are found in another linked application, the application code will change and its dependencies will be listed.
Level	The Level of the selected Object
Object	The selected Object name
Object Type	The System or MDCMS Type of the selected Object
RFP	The RFP number to assign to the objects that are selected in the list. This field is editable. Options: - Blank out the field to Request objects without already assigning them to an RFP. - Enter an existing RFP number that is in status 00 or 01 for the given Application and Level, or use Content-Assist to select a valid RFP from a list. - Press the New RFP button to create a new RFP number
Lock Request	A checkbox indicating if these object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.





Listing Parameters:

Recomp	Check the box if the Object should be requested for Recompile. The all checkbox can be used to select or unselect all rows that are qualified to be recompiled based on the MDCMS Attribute.
Modify	Check the box if the Object should be requested for Modify. The all checkbox can be used to select or unselect all rows that are qualified to be modified based on the MDCMS Attribute.
Update	Check the box if the Object should be requested for Update. The all checkbox can be used to select or unselect all rows that are qualified to be updated based on the MDCMS Attribute.
Delete	Check the box if the Object should be requested for Delete. The all checkbox can be used to select or unselect all rows that are qualified to be deleted based on the MDCMS Attribute.
Object	Object name
Object Type	The System or MDCMS Type of the Object
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. MDCMS predetermines the attribute based on Installation History for the object and cross-referencing information. This value can be modified and content assist can be used to select a different attribute from a list.
Object Description	The system description for the Object
Requested by	The user that has already requested this object in lock mode, or, the RFP request reason when the object is already requested and assigned to the RFP number selected in the header.
Message	The error or success message based on results of attempting to process the selection.

Buttons:

Process Selections	Once one or more Object Rows have been selected, press this button to generate the requests. If a row is selected for Modify, the Modify Object window will be displayed to confirm the From and To locations for the source.
Next Application	If Linked Applications are defined for the Application of the original object, the Next Application button can be clicked to check if references exist in another linked application. If found, those dependencies will be listed for selection and the Next Application can be pressed again to continue looping through the Linked Applications. If no further dependencies are found, the process will end.

Some examples where the Request Related Objects function can be used:

Example 1: the length of a field in file COHDRP needs to be changed. The user would first select COHDRP for modification. Then, the user would use the Request Related Objects option for the file so that all of the objects that use COHDRP (or other files that use COHDRP, such as logical files) can be selected for modification, deletion, or recompilation.

Example 2: the \*ENTRY parameters of a RPG program needs to be changed. The user would first select the program for modification. Then, the user would use the Request Related Objects option for the program so that all of the objects that invoke the program can be selected for modification, deletion, or recompilation.



## 10.7 Request Linked Objects for Attribute

When an object is checked out with an attribute that has other attributes linked to it, the developer is automatically presented a dialog with the names and attributes of objects that are suggested to be checked out at the same time. This is based on the Linked Attribute configuration in the settings.

This option is also available for an active request from the object list.

Header Parameters:

Application	The Application Code of the selected Object
Level	The Level of the selected Object
Object	The selected Object name
Object Type	The System or MDCMS Type of the selected Object
Attribute	The Attribute of the selected Object
Lock Request	A checkbox indicating if these object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

If a request is processed from this dialog, the RFP and Project information for the selected Object will be automatically applied to the linked objects.

Listing Parameters:

Modify	Check the box if the Object should be requested for Modify. The all checkbox can be used to select or unselect all rows that are qualified to be modified based on the MDCMS Attribute.
New	Check the box if the Object is new for the application and should be requested to add to the application. The all checkbox can be used to select or unselect all rows that are qualified to be modified based on the MDCMS Attribute.
Recomp	Check the box if the Object should be requested for Recompile. The all checkbox can be used to select or unselect all rows that are qualified to be recompiled based on the MDCMS Attribute.
Update	Check the box if the Object should be requested for Update. The all checkbox can be used to select or unselect all rows that are qualified to be updated based on the MDCMS Attribute.
Delete	Check the box if the Object should be requested for Delete. The all checkbox can be used to select or unselect all rows that are qualified to be deleted based on the MDCMS Attribute.
Object	Object name, which is editable and enabled for content-assist in the dialog
Object Type	The System or MDCMS Type of the Object
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. The attribute is fix to the value in the linked attribute settings.
Message	The error or success message based on results of attempting to process the selection.

Buttons:

Process Selections	Once one or more Object Rows have been selected, press this button to generate the requests. If a row is selected for Modify or New, the window will be displayed to confirm the From and To locations for the source.
--------------------	--



## 10.8 Bound ILE Objects

When an ILE Program or Service Program is requested, the bound modules and service programs for the request can be viewed/modified and checked out from the list. This option is available as an option for an active program or service program from the object list.

Header Parameters:

Application	The Application Code of the selected Object
Level	The Level of the selected Object
Object	The selected Object name
Object Type	The System or MDCMS Type of the selected Object
Lock Request	A checkbox indicating if these object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

If a request is processed from this dialog, the RFP and Project information for the selected Object will be automatically applied to the linked objects.

Listing Parameters:

Modify	Check the box if the Object should be requested for Modify. The all checkbox can be used to select or unselect all rows that are qualified to be modified based on the MDCMS Attribute.
Remove	Check the box if the Object should be remove from the binding list for the requested program. The all checkbox can be used to select or unselect all filled rows.
Object	Object name, which is editable and enabled for content-assist in the dialog for empty rows
Object Type	The System Type of the Object. *MODULE or *SRVPGM can be selected from the drop down list for empty rows
PEP	Checkbox indicating if Module contains the Program Entry Procedure for an ILE program. When editable, a module can be selected as the PEP.
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. MDCMS predetermines the attribute based on Installation History for the object and cross-referencing information. This value can be modified and content assist can be used to select a different attribute from a list.
Object Description	The system description for the Object
Requested by	The user that has already requested this object in lock mode, or, the RFP request reason when the object is already requested and assigned to the RFP number selected in the header.
Message	The error or success message based on results of attempting to process the selection.

Buttons:

Process Selections	Once one or more Object Rows have been selected, press this button to generate the requests. If a row is selected for Modify or New, the window will be displayed to confirm the From and To locations for the source.
--------------------	--



## 10.9 Import Source

The Import Source function enables the user to search for source members in non-managed libraries, compare those members to the members in the application libraries and then request the members for deployment into the application.

To Work with the function, right click on a Repository Location and select  **Import Source**. That action will bring up the **MdSourceImportDefinitionsView**.

T72 - SourceImportDefinition						
Import Def	Application	Level	Build Status	Build Date	Build Time	Libraries
M1	TEST	10	Built	20.11.2014	11:10:02	MMTS1, MMTS2
M1_FILES	TEST	10	Built	19.11.2014	07:45:15	DD01000008, MMTS1, MMTS2
RENE BIG	TEST	10	Built	20.11.2014	14:37:38	MDSRCT, MDSRCT72
RENE 3RD	TEST	10				#MDJRN

Right-Click any row to select the option to add a new Source Import definition or any filled row to select to Copy or Delete the definition.

### 10.9.1 Source Import Definition

A Source Import Definition is a reusable set of search criteria for the listing of Source member candidates to import into an Application Level.


Header Parameters:

Application	The Application Code of the application to import source into
Level	The Level of the Application that allows checkout
Member Name	Limit members to those with the given name * can be used before and/or after the value for generic searching
Source File	Limit members to those residing in the entered source file. * can be used before and/or after the value for generic searching
Source Type	Limit members to those with the given type * can be used before and/or after the value for generic searching
Source Text	Limit members to those with the given text description * can be used before and/or after the value for generic searching
Minimum Create Date	Limit members to those created on or after the entered date
Only New/Different	Limit members to those that are new or different when compared to the members in the application
Omit Comments	True - Don't include blank or comment lines in the source code for the comparison. A member will only be considered different when uncommented code varies when compared to the application.  False – any difference in the source member code will cause the member to be considered different.

Libraries – a list of 1-n libraries to be included in the search. A library defined as a target library for an MDCMS attribute is not permitted.





The  icon in the Diff column can be clicked to show the differences between the import member and the existing member

Button:

Process Selections	Generate the Object Requests for all selected rows
--------------------	--

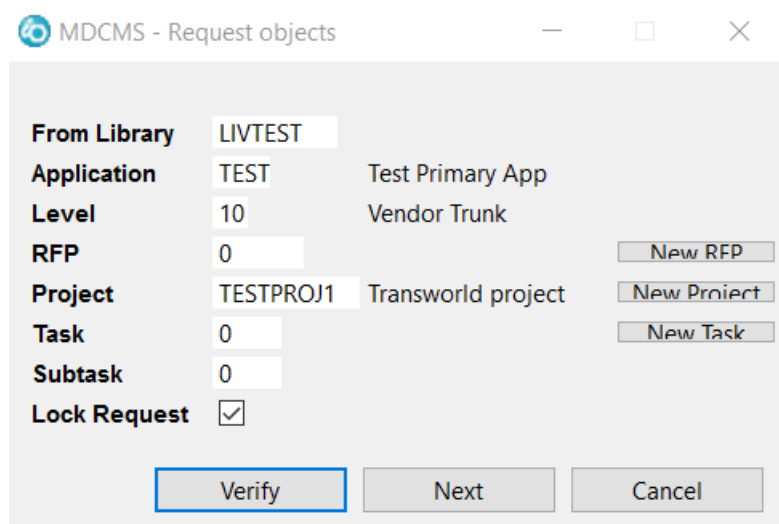
## 10.10 Import Library

The Import Library function enables the user to select one or more objects to be migrated from a non-managed library into a target environment.

A typical use for the Import Library function is when a vendor delivers object modifications in a temporary library.

This feature is accessed from the repository connection option  **Import Library**.

The initial dialog



From Library	The library containing the objects to be imported into an application
Application	The Application Code
Level	The Promotion Level. This level must allow checkouts to be allowed.
RFP	The RFP number to assign to the objects that are selected in the list- Enter an existing RFP number that is in status 00 or 01 for the given Application and Level, or use Content-Assist to select a valid RFP from a list. - Press the New RFP button to create a new RFP number
Project	An open and authorized Project to apply to any selected objects - Press the New Project button to create a new Project
Task	An open task within the selected project - Press the New Task button to create a new task for the project
Subtask	An open subtask within the selected project task - Press the New Subtask button to create a new subtask for the task
Lock Request	A checkbox indicating if the selected object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

After pressing the Next button, the list of all objects in the library are listed.

Select each object in the list that should be requested for migration to the select application level. Alternatively, select **all** to select every object in the list. Afterwards, objects can be de-selected.

The MDCMS Attribute column specifies which attribute will be applied to each selected object. This value can be changed within the list, when necessary.



### 10.11 Request Objects from MDXREF

The Request Object option is available from any Object-Level listing within MDXREF. Mark some or all of the rows in the object list, then right-click on one of the marked rows and select Request Object to check out the object(s).

When the request option is selected, an initial dialog captures the following primary information for the request of the object(s):

Application	The Application Code
Level	The Promotion Level. This level must allow checkouts to be allowed.
RFP	The RFP number to assign to the objects that are selected in the list- Enter an existing RFP number that is in status 00 or 01 for the given Application and Level, or use Content-Assist to select a valid RFP from a list. - Press the New RFP button to create a new RFP number
Project	An open and authorized Project to apply to any selected objects - Press the New Project button to create a new Project
Task	An open task within the selected project - Press the New Task button to create a new task for the project
Subtask	An open subtask within the selected project task - Press the New Subtask button to create a new subtask for the task
Lock Request	A checkbox indicating if the selected object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

Once the Next button is clicked. All selected objects are listed.

#### Listing Parameters:

Modify	Check the box if the Object should be requested for Modify. The all checkbox can be used to select or unselect all rows that are qualified to be modified based on the MDCMS Attribute.
Recomp	Check the box if the Object should be requested for Recompile. The all checkbox can be used to select or unselect all rows that are qualified to be recompiled based on the MDCMS Attribute.
Update	Check the box if the Object should be requested for Update. The all checkbox can be used to select or unselect all rows that are qualified to be updated based on the MDCMS Attribute.
Delete	Check the box if the Object should be requested for Delete. The all checkbox can be used to select or unselect all rows that are qualified to be deleted based on the MDCMS Attribute.
Object	Object name
Object Type	The System or MDCMS Type of the Object
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. MDCMS predetermines the attribute based on Installation History for the object and cross-referencing information. This value can be modified and content assist can be used to select a different attribute from a list.
Object Description	The system description for the Object
Requested by	The user that has already requested this object in lock mode, or, the RFP request reason when the object is already requested and assigned to the RFP number selected in the header.
Message	The error or success message based on results of attempting to process the selection.





**10.12 Request Source Members from MDXREF**

Highlight one or many rows in the MDXREF Source list and right-click to select the option Request Source to check out the source member(s).

When the request option is selected, an initial dialog captures the following primary information for the request of the member(s):

Application	The Application Code
Level	The Promotion Level. This level must allow checkouts to be allowed.
RFP	The RFP number to assign to the objects that are selected in the list- Enter an existing RFP number that is in status 00 or 01 for the given Application and Level, or use Content-Assist to select a valid RFP from a list. - Press the New RFP button to create a new RFP number
Project	An open and authorized Project to apply to any selected objects - Press the New Project button to create a new Project
Task	An open task within the selected project - Press the New Task button to create a new task for the project
Subtask	An open subtask within the selected project task - Press the New Subtask button to create a new subtask for the task
Lock Request	A checkbox indicating if the selected object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

Once the Next button is clicked. All selected objects are listed.

Listing Parameters:

Modify	Check the box if the Object should be requested for Modify. The all checkbox can be used to select or unselect all rows that are qualified to be modified based on the MDCMS Attribute.
Recomp	Check the box if the Object should be requested for Recompile. The all checkbox can be used to select or unselect all rows that are qualified to be recompiled based on the MDCMS Attribute.
Update	Check the box if the Object should be requested for Update. The all checkbox can be used to select or unselect all rows that are qualified to be updated based on the MDCMS Attribute.
Delete	Check the box if the Object should be requested for Delete. The all checkbox can be used to select or unselect all rows that are qualified to be deleted based on the MDCMS Attribute.
Source Library	The library containing the source member
Source File	The source file containing the source member
Source Member	The name of the source member
Attribute	The system attribute of the source member
Description	The Text description of the source member
Object	The Object name to use for the request. This value is editable and can differ from the name of the source.
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. MDCMS predetermines the attribute based on Installation History for the object and cross-referencing information. This value can be modified and content assist can be used to select a different attribute from a list.



Requested by	The user that has already requested this object in lock mode, or, the RFP request reason when the object is already requested and assigned to the RFP number selected in the header.
Message	The error or success message based on results of attempting to process the selection.

### 10.13 Request IFS Objects from MDXREF

Highlight one or many rows in the MDXREF IFS list and right-click to select the option Request Object to check out the IFS folder(s) and file(s).

When the request option is selected, an initial dialog captures the following primary information for the request of the object(s):

Developer Folder	The non-managed development folder that any requested objects should be copied to
Overwrite any existing Files	If checked, then any files that already exist in developer folder that match the name of the requested files will be overwritten. Otherwise, existing files will be left alone, but the request will still be generated.
Application	The Application Code
Level	The Promotion Level. This level must allow checkouts to be allowed.
MDCMS Attribute	The *IFS or *REMOTE attribute to apply to the requested folders and files to indicate the target server/root folder.
Action	Migrate – check out the objects with the intent of migrating them to the target environment when the RFP is installed Delete – create object deletion requests. The objects will not be copied to the developer folder.
RFP	The RFP number to assign to the objects that are selected in the list- Enter an existing RFP number that is in status 00 or 01 for the given Application and Level, or use Content-Assist to select a valid RFP from a list. - Press the New RFP button to create a new RFP number
Project	An open and authorized Project to apply to any selected objects - Press the New Project button to create a new Project
Task	An open task within the selected project - Press the New Task button to create a new task for the project
Subtask	An open subtask within the selected project task - Press the New Subtask button to create a new subtask for the task
Lock Request	A checkbox indicating if the selected object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.
Target Relative Path	By default, the requested folder structure will be deployed directly to the target folder defined by the attribute. If the folder structure should be deployed to a subfolder for the target environment, enter the relative path of that folder from the point where the attribute folder leaves off. Content assist can be used to browse the currently defined subfolders on the target file system or a new path can be entered.

Once the Next button is clicked. All selected objects are listed and pre-selected. The All, None, Files and Directories options can be clicked to mass-change the selected items, or individual rows can be selected/unselected.

Once the selections are chosen, click Request to process the selections.

#### 10.14 Request IFS Source from MDXREF

Highlight one or many rows in the MDXREF IFS list and right-click to select the option Request Source to check out the IFS file(s) to use as source for system objects.

When the request option is selected, an initial dialog captures the following primary information for the request of the source:

Developer Folder	The non-managed development folder that any requested files should be copied to
Overwrite any existing Files	If checked, then any files that already exist in developer folder that match the name of the requested files will be overwritten. Otherwise, existing files will be left alone, but the request will still be generated.
Application	The Application Code
Level	The Promotion Level. This level must allow checkouts to be allowed.
Action	Migrate – check out the objects with the intent of migrating them to the target environment when the RFP is installed Delete – create object deletion requests. The objects will not be copied to the developer folder.
RFP	The RFP number to assign to the objects that are selected in the list- Enter an existing RFP number that is in status 00 or 01 for the given Application and Level, or use Content-Assist to select a valid RFP from a list. - Press the New RFP button to create a new RFP number
Project	An open and authorized Project to apply to any selected objects - Press the New Project button to create a new Project
Task	An open task within the selected project - Press the New Task button to create a new task for the project
Subtask	An open subtask within the selected project task - Press the New Subtask button to create a new subtask for the task
Lock Request	A checkbox indicating if the selected object requests will be locked and cannot be requested by another user. A lock will only be granted to a request if the object is not already locked by another request.

Once the initial information is correct, click Next to continue to the selection listing.

Listing Parameters:

Selection	If checked, the file will be included in the checkout
File	The name of the IFS file to be used as source
Request Path	The IFS location where the file will be copied from
Action	the selected action from the initial screen – Migrate or Delete
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. MDCMS predetermines the attribute based on Installation History for the object and cross-referencing information. This value can be modified and content assist can be used to select a different attribute from a list. When selecting to check out IFS source,



	the attribute must be defined with a target source file of *IFS
Object Name	The system or SQL name of the Object that will be created from the requested source. This value can be modified and content assist can be used to select a different object from a list.
Member Name	not applicable when requesting IFS source from MDXREF
Message	The error or success message based on results of attempting to process the selection.

### 10.15 Import Objects or Source from IFS Folder

MDOpen can import the folders and files in an IFS folder directly into an RFP or Project for deployment to target IFS folders or to target Remote Servers. Or, the files can be imported to be used as source for system or SQL objects.

Option  **Import IFS Folder** can be selected from the following MDOpen locations:

- Repository list under the Import section – fields will be filled with any valid values from the most recent import
- MDXREF IFS list – fields will be filled valid values from most recent import
- RFP list for any RFP in status 00 or 01 – Application and RFP number field will be pre-filled with selected RFP values
- Project list for any open Project – Project will be pre-filled
- Task list for any open Task – Project and Task will be pre-filled
- Subtask list for any open Subtask – Project, Task and Subtask will be pre-filled

The initial dialog includes the following checkboxes:

- Request IFS/Remote Objects – select this to handle the selected folders/files as objects. See section Request Objects from MDXREF for further information.
- Request Source for IBMi Objects – select this to handle the selected files as source for IBMi objects. See section Request Source from MDXREF for further information.

## 11 Request Objects from Other Locations

Requesting and committing folders and files from outside the IBMi can be done in the following ways:

- From a user's workspace
- From a server (any server other than the IBM i)
- From Local Folders
- From Git (Git Repository)
- From SVN (Subversion Repository)

The deployment targets of these requests can be:

- Remote Linux or Windows Servers
- IFS folders for IFS object files
- IFS folders for IFS source used to create IBMi objects
- Source members used to create IBMi objects (MDCMS automatically converts them from stream files to members if the target attribute requires the source to be in a source file)

**NOTE 1:** The context menu options for requesting objects from various views and perspectives in Eclipse are always duplicated.

The 1<sup>st</sup> listing of an option will include the text **(default repository)**. Selecting this option will indicate to MDOpen to use the MDCMS Repository location defined as the default. To set a default repository location, check the box labelled **Default repository** for the appropriate Repository connection that you have created.

The 2<sup>nd</sup> listing of an option won't include the text **(default repository)**. If this option is selected, MDOpen will provide a dialog with the list of defined repositories to select from.

**NOTE 2:** Anything requested from outside the IBMi must be committed to MDCMS before an RFP can deploy the files to the target file system. A commit copies the local or team repository copy of files to the IBM i in preparation for RFP installation.

The Commit option is available anywhere the request option is available as well as directly from the Objects listing in the MDOpen perspective.

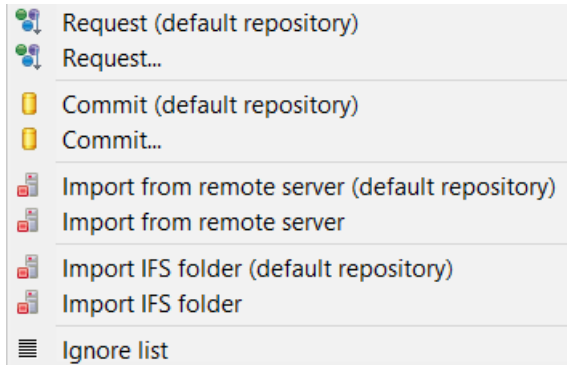
If changes occur to the local copy of a file since the last commit, and those changes should also be included in the deployment, then reselect the commit option for the file.

**NOTE 3:** Sections 11.1 – 11.5 explain the different areas within Eclipse where folders and files can be requested. Sections 11.6 - 11.8 explain the central dialogs to process the selections.



## 11.1 Request Objects to/from Workspace

MDOpen provides the following context menu options within any Eclipse perspective when right-clicking on a folder or file within a local workspace navigator view:



**Request** – the folders and files already exist in the local workspace and need to be requested for deployment by MDCMS. Right-click on the parent folder or one or more files in a folder in a workspace navigator view to select them.

**Commit** – the folders and files already exist in the local workspace and are already requested for MDCMS. Any changes that have been made to the files since the request can then be repeatedly committed to the MDCMS repository. The commit can also occur directly from the request record.

**Import from Remote Server** – the current version of the folders and files exist on a remote server and need to be copied into the local workspace for modification, or merely to have in the local workspace. Right-click on the folder in a workspace navigator view to indicate the destination that the soon-to-be-selected folders and files will be copied to.

**Import from IFS** – the current version of the folders and files exist in IFS (folder structure on the IBM i) and need to be copied into the local workspace for modification, or merely to have in the local workspace. Right-click on the folder in a workspace navigator view to indicate the destination that the soon-to-be-selected folders and files will be copied to.



### 11.1.1 Create an Ignore List for Requests and Commits from Local Workspace

Right click and select **MDCMS => Ignore list** and the following dialog is presented:




The Ignore list dialog provides a function for the user to specify a list of file patterns that are to be ignored during requests.

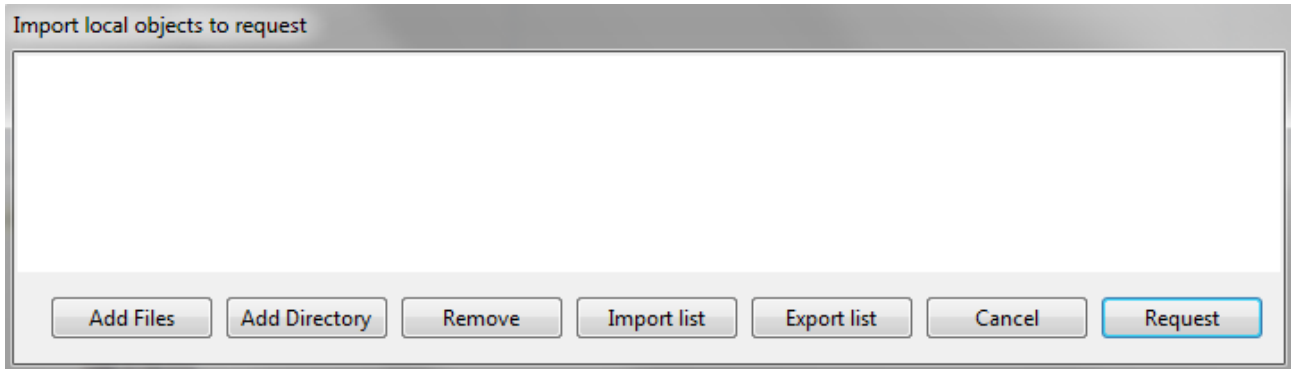
Ignore file pattern examples may be: \*ol\*, \*xt, al\*lo\*.do\* or \*.txt where '\*' is any character sequence that can be after a fixed character sequence or followed by them.

## 11.2 Import Objects from Local Folders

MDOpen can import any files and folders from the local file system by selecting Repository option:

 **Import Local Objects**

This brings up the following window:



Files and Folders can be dragged from a file explorer such as Windows Explorer and dropped into this window. Alternatively, the following buttons can be used:

**Add Files** – browse the file system for files to individually add to the list in the window.

**Add Directory** – browse the file system for folders to add to the list in the window. Once the request button is pressed, all subfolders and files will be listed for possible selection/de-selection.

**Remove** – remove some of the files or folders from the list.

**Export list** – export the currently displayed list of files and folders to a file for simple reuse in future requests.

**Import list** – import a previously export list of files and folders into the window.

Once the list is complete, click the Request button.

## 11.3 Import Objects from Remote Server

MDOpen can import the folders and files on a remote system directly into an RFP or Project for deployment to target IFS folders or to target Remote Servers. Or, the files can be imported to be used as source for system or SQL objects.

Option  **Import from Remote Server** can be selected from the following MDOpen locations:

- Repository list under the Import section – fields will be filled with any valid values from the most recent import
- RFP list for any RFP in status 00 or 01 – Application and RFP number field will be pre-filled with selected RFP values
- Project list for any open Project – Project will be pre-filled
- Task list for any open Task – Project and Task will be pre-filled
- Subtask list for any open Subtask – Project, Task and Subtask will be pre-filled

The Remote Server that is selected in the initial dialog must already be defined in the Remote Server Locations settings. MDOpen then uses the defined FTP properties to get any selected folders and files.

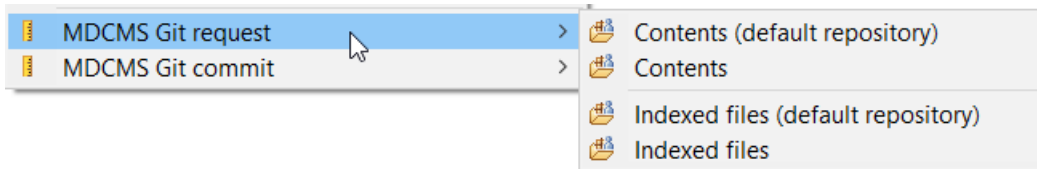


## 11.4 Request Objects from Git

### Prerequisites:

- The Eclipse Git Plugin (EGit) must be installed in the IDE with a minimum version of 3.2.
- Each local Git repository to pull objects from must be defined in the Git Repositories view.

From the Git Repositories view, expand the repository and right-click on any file or folder within the Working Tree. The following options are displayed:



**Request Contents** – request some or all of the files/folders that are contained in the selection.

**Request Indexed files** – request some or all of the files/folders that are contained in the selection and have staged changes.

**Commit Contents** – re-commit any files that have changed since they were first requested.

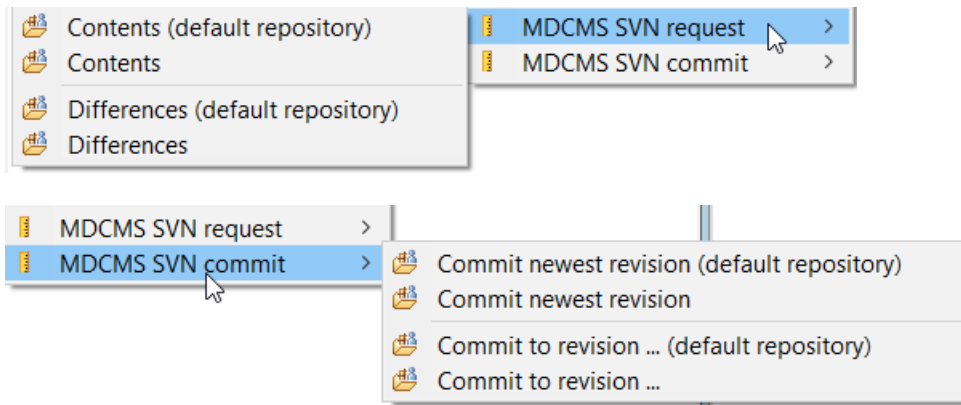
**Request Indexed files** – re-commit any staged files that have changed since they were first requested.

## 11.5 Request Objects from SVN

### Prerequisites:

- The Polarian SVN Plugins for Connectors and Team Provider must be installed in the IDE.
- Each SVN repository to pull objects from must be defined in the SVN Repositories view.

From the SVN Repositories view, expand the repository and right-click on any file or folder within a trunk or tag. The following options are displayed:



**Request Contents** – request some or all of the files/folders that are contained in the selection.

**Request Differences** – request adds, changes or deletes that have occurred between 2 revisions. If both revisions are tagged, the tags themselves can be selected at the same time to automatically check the differences between them.

**Commit newest revision** – copy the newest version of a file to MDCMS for any matching existing requests.

**Commit to revision...** – copy specific version of a file to MDCMS for any matching existing requests.



## 11.6 Request – Initial Dialog

Regardless of the request option, the following initial Request dialog is presented to provide the developer with the opportunity to select the originating location, RFP, Project, Task and target attribute and relative path. The fields enabled will vary slightly depending on the origin of the request.

Example Parameter Selection for SVN:

Possible Request parameters:

From Server	The Remote Server Location to request from. The location must already be defined in settings/Remote Server Locations
From Folder	The folder on the Remote Server or in IFS from which to copy folders and files
Request IFS/Remote Objects	When selected, the selected folders and files will be deployed as objects to the selected target file system (IFS or a remote server).
Request Source for IBMi Objects	When selected, the selected files will be deployed as IFS source or source members used to create system or SQL objects on the IBMi
Copy without Requesting	If a workspace folder was selected with option Import from Remote Server or option Import IFS folder, this box can be checked to simply copy the contents from a remote server or IFS folder into the local workspace.  If checked, the remaining parameters can be ignored.
Application	MDCMS Application Group name
Level	Target Application level for the request
MDCMS Attribute	The MDCMS Attribute for this object request. Must be a valid MDCMS Attribute for this application level and must be either of type *IFS or *REMOTE



Action	Migrate – add/replace objects in target level with requested objects Delete – delete objects in target level
RFP	The RFP number to contain the request (optional at this time, required prior to deployment)
Project	The Project value (optional at this time, required prior to deployment)
Task	A Project Task number (optional)
Subtask	A Project Subtask number (optional)
Lock Request	By default, the Lock Request checkbox will be checked, resulting in the Object Request being locked to prevent someone else from also requesting the same object. Unchecking the box will create the Object Request as unlocked and available for other users to request. A lock will only be granted to the request if the object is not already locked by another Object Request.
Start Revision Number	If requesting from SVN, enter the smallest (oldest) revision number that should be considered for any folders/files in the selected folder.
End Revision Number	If requesting from SVN, enter the largest (newest) revision number that should be considered for any folders/files in the selected folder. If the same file has been committed for more than one of the revisions in the range, the newest revision in the range will be selected.
Target Relative Path	By default, the requested parent folder or file will be deployed directly to the target folder defined by the attribute. If the parent folder or file should be deployed to a subfolder on the target system, enter the relative path of that folder from the point where the attribute folder leaves off. Content assist can be used to browse the currently defined subfolders on the target server or a new path can be entered.

**Buttons:**

Verify

Verify that the information supplied within the MDCMS request object dialog is valid and refresh the view with descriptions of the fields as well as the full target path.

Next

Continue to the selection and confirmation dialog

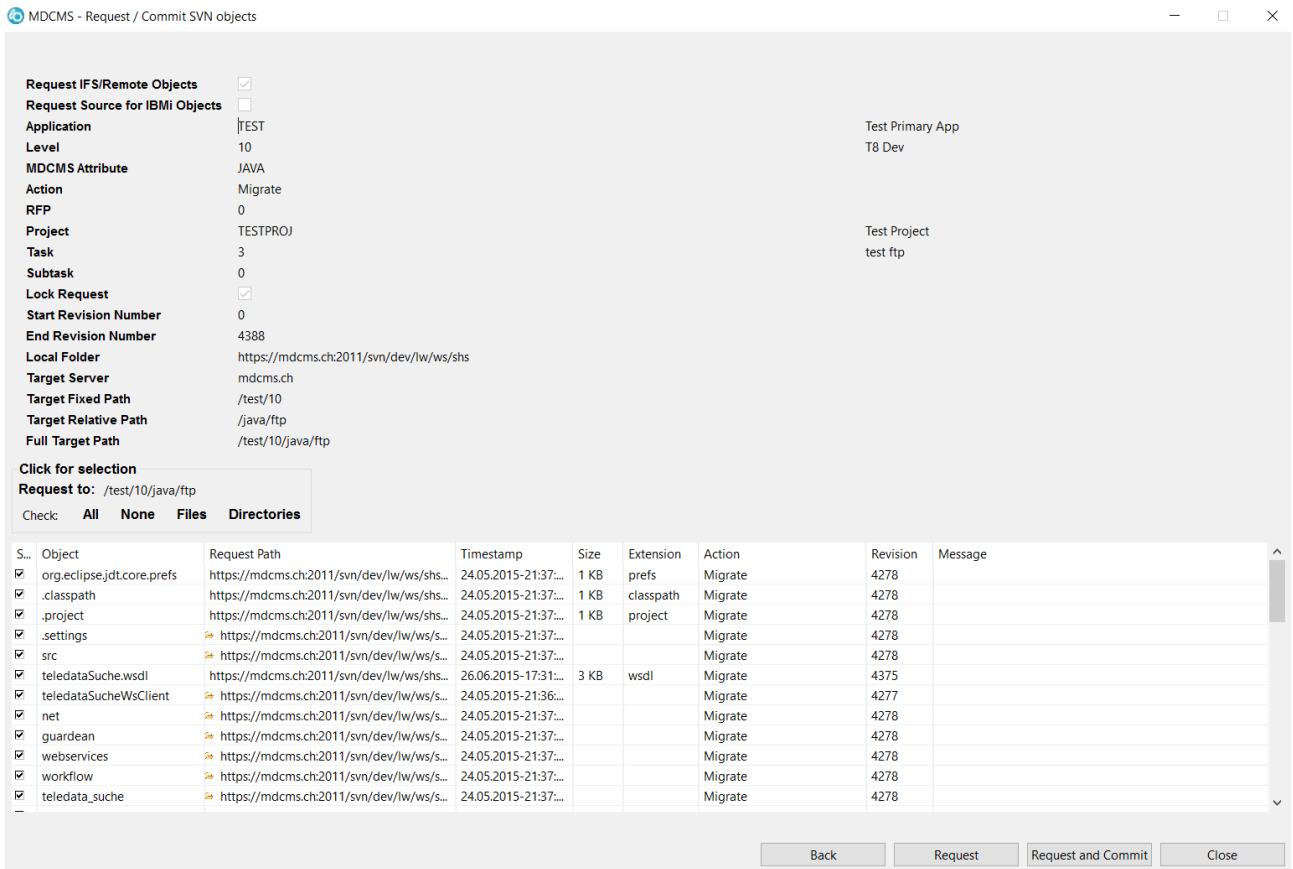
Cancel

Cancel the Request



## 11.7 Request - Selection Confirmation for Objects

The following dialog is displayed when checkbox Request IFS/Remote Objects is selected:



MDOpen displays all selected files and folders as well as any subfolders and files in those subfolders. Select one or more of the items to have them requested. Additionally, All can be clicked to select all items, or None, Files or Directories can be clicked to select only those items.

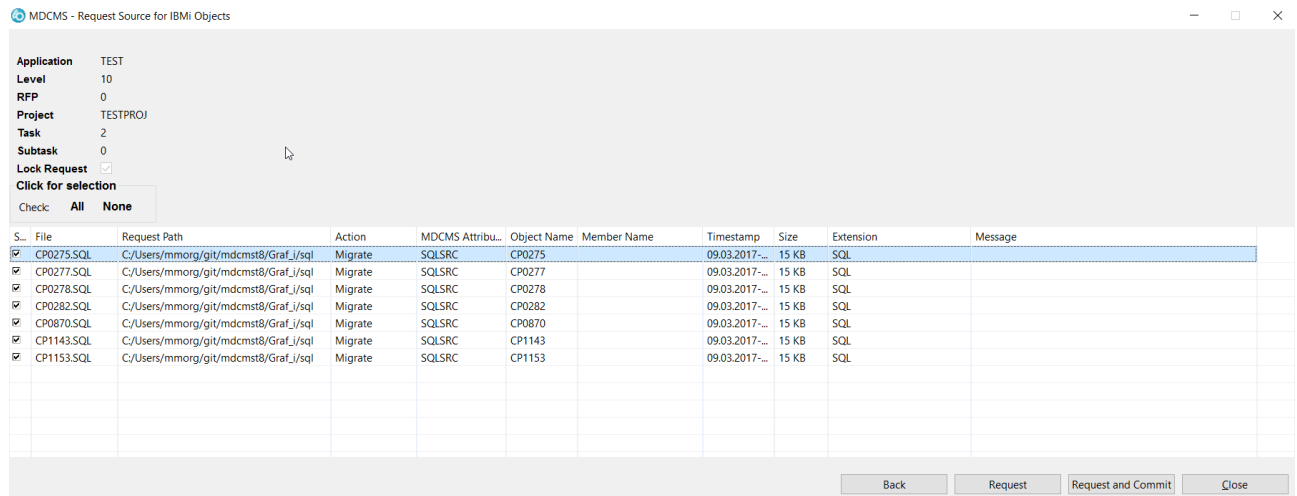
Buttons:

Back	Return to the Initial Dialog to adjust the parameters
Request	Request the selected items, but don't yet commit them to the MDCMS repository.
Request and Commit	Request the selected items and commit them to the MDCMS repository.
Copy to Workspace	Confirm to copy the selected folders and files to the local workspace without requesting them in MDCMS.
Close	Close the Request Dialog



## 11.8 Request - Selection Confirmation for Source

The following dialog is displayed when checkbox Request Source for IBMi Objects is selected:



MDOpen displays all selected files. Select one or more of the items to have them requested. Additionally, All can be clicked to select all items, or None can be clicked to unselect all items.

Listing Parameters:

Selection	If checked, the file will be included in the checkout
File	The name of the IFS file to be used as source
Request Path	The IFS location where the file will be copied from
Action	the selected action from the initial screen – Migrate or Delete
MDCMS Attribute	The Attribute that defines how an object is to be created and the target source and object libraries for the object and level. MDCMS predetermines the attribute based on Installation History for the object and cross-referencing information. This value can be modified and content assist can be used to select a different attribute from a list. When selecting to check out IFS source, the attribute must be defined with a target source file of *IFS
Object Name	The system or SQL name of the Object that will be created from the requested source. This value can be modified and content assist can be used to select a different object from a list.
Member Name	not applicable when requesting IFS source from MDXREF
Message	The error or success message based on results of attempting to process the selection.

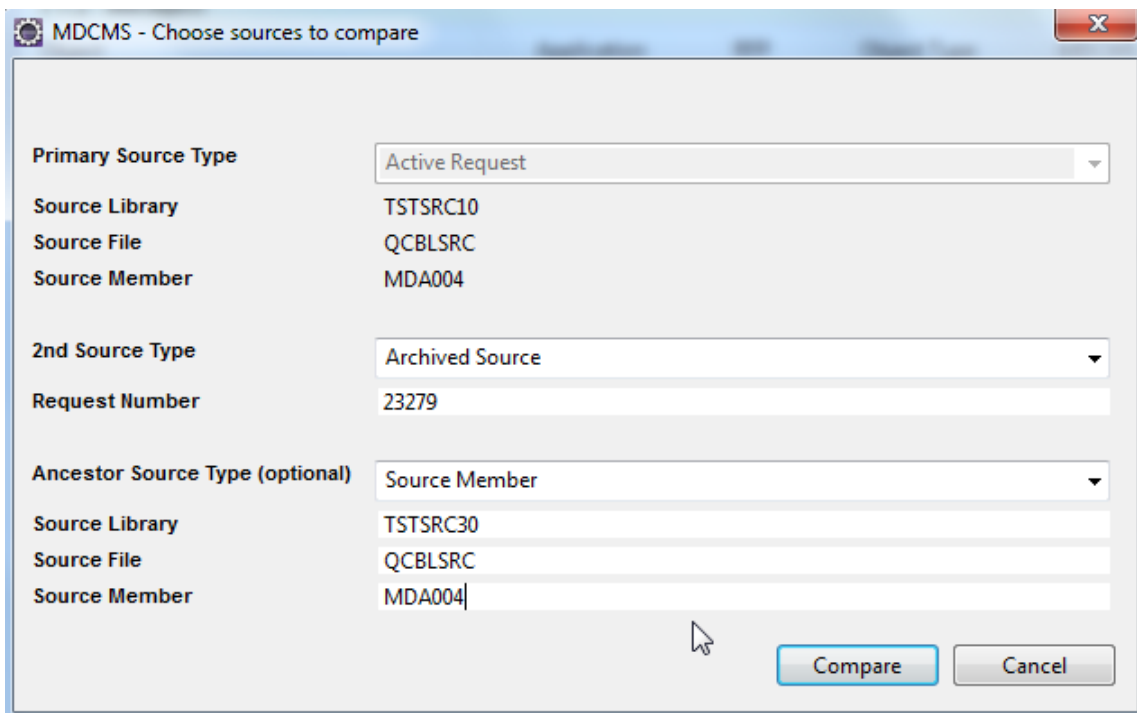
Buttons:

Back	Return to the Initial Dialog to adjust the parameters
Request	Request the selected items, but don't yet commit them to the MDCMS repository.
Request and Commit	Request the selected items and commit them to the MDCMS repository.
Close	Close the Request Dialog

## 12 Compare Object Source

2-Way and 3-Way comparisons of source can be performed within MDOpen. To initiate a comparison, Right-Click on an Object row within the Object, RFP, Installation History, Project, Task or Subtask listings. You can also click on a file in the workspace to compare that to anything else.

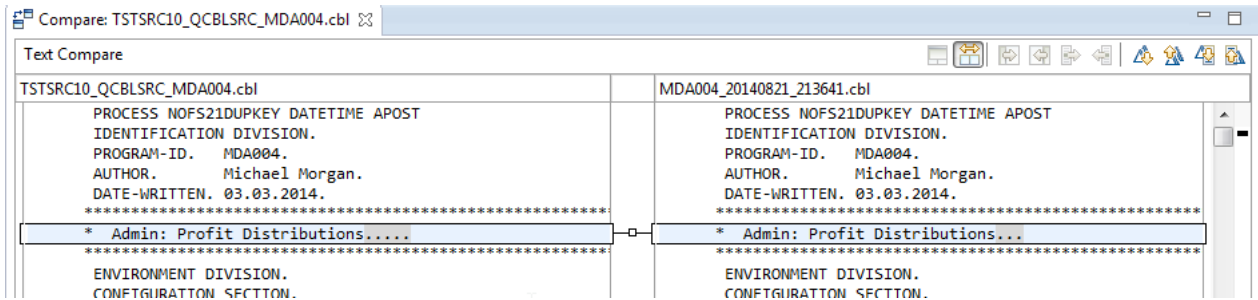
The primary source will be based on the selected object. A 2<sup>nd</sup> source must be selected for the comparison and a 3<sup>rd</sup> source can be selected as the Ancestor for a 3-Way comparison. The type of source (source member, IFS file, local file) can vary for each selection – in other words, you can compare a source member to an IFS file or local file.



Possible Source Types:

Active Request	The source in the developer library or folder that has been checked out on behalf of an Object Request. The Request Number of the Request is required and Content Assist can be used to select from a list.
Source Member	A source member residing in a library on the local system. The Source Library, Source File and Source Member name is required and Content Assist can be used to select from a list.
IFS File	A file residing in IFS on the local system. The IFS Folder and Source name is required and Content Assist can be used to select from a list.
Archived Source	The source (member or IFS file) that was replaced by an RFP Installation. The Request Number is required and Content Assist can be used to select from a list of installations for the Primary Object.
File in Workspace	The full path of a file in the local workspace of the IDE. The Browse button can be used to select the file.
Committed Version of File	The currently committed version of the Active Request of the Primary Object.

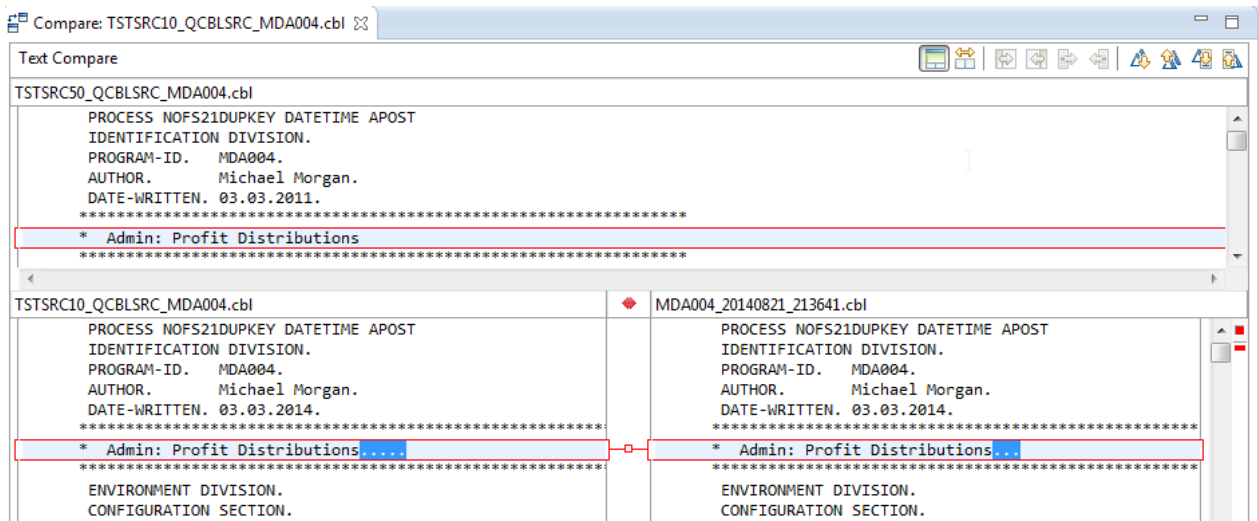
### 2-Way Comparison Results:




The left pane shows the source code of the Primary Source and the right pane shows the source code of the 2<sup>nd</sup> source. Differences between the 2 versions of the source are marked in gray.

The   icons can be clicked to navigate up or down the source to the next difference.

### 3-Way Comparison Results:



The left pane shows the source code of the Primary Source and the right pane shows the source code of the 2<sup>nd</sup> source. Differences between the 2 versions of the source are marked in gray. Differences between the 2 versions of the source that are also different to the original version of the ancestor are marked in red which denotes a conflict.

The ancestor pane, when displayed, is located above the 2 comparison panes. The  icon can be clicked to show or hide the ancestor pane.

The   icons can be clicked to navigate up or down the source to the next difference.

The   icons can be clicked to navigate up or down the source to the next conflict.





## 13 Projects

### 13.1 Project Listing


The **MdProjectView** is accessed by right clicking on your repository connection and selecting **Projects** and the following view will be displayed.

**NOTE:** Most, but not all functions of the Project Management system are available within the MDOpen interface. Refer to the MDWorkflow web application documentation for those features available only within MDWorkflow.

MD-DEV - Filter settings												
MD-DEV - Project												
Project	Project Title	Tasks	URL	Application	Requester	Assign to Group	Assign to User	Priority	Status	Project Type	Creation Date	Completion Date
ADMIN	Administrative tasks	4		MD	MMORGAN	NORAM		3-Medium	Work in Progress	*DFT	08.09.2010	
JAVAERO	René's Project	26			REN			4-Low	Work in Progress	*DFT	02.09.2010	
MD INTERNAL	MD Internal (Administrative and Internal issues)	28			SD	MD INTERN		3-Medium	Work in Progress	*DFT	13.12.2010	31.12.2035
MDRAPID	MDRapid	6		MD	MMORGAN	PGMR 1	MMORGAN	3-Medium	Testing Complete	*DFT	21.01.2013	15.10.2014
OPER	Operations	2		MD	MMORGAN			3-Medium	Work in Progress	*DFT	15.05.2011	30.06.2011
V6.9	MDCMS v6.9	18			MMORGAN	PGMR 1	MMORGAN	3-Medium	Work in Progress	*DFT	17.04.2012	31.05.2012
V7.1.2	MDCMS v7.1.2	21		MD	MMORGAN	PGMR 1	MMORGAN	3-Medium	Work in Progress	*DFT	13.12.2013	31.01.2014
V7.2	MDCMS v7.2	67		MD	MMORGAN	PGMR 1	MMORGAN	3-Medium	Work in Progress	*DFT	14.07.2013	31.08.2013
V7.3	MDCMS v7.3	49		MD	MMORGAN	PGMR 1	MMORGAN	3-Medium	Work in Progress	*DFT	15.05.2014	29.08.2014
V7.4	MDCMS v7.4	113		MD	MMORGAN	PGMR 1	MMORGAN	3-Medium	Work in Progress	*DFT	28.03.2015	30.11.2015
V8	MDCMS v8	127		MD	MMORGAN	PGMR 1		3-Medium	Work in Progress	*DFT	14.05.2016	31.08.2016
WEB	midrangedynamics.com website	0			MMORGAN	PGMR 1	REN	3-Medium	Work in Progress	*DFT	22.12.2010	31.01.2011

#### Listing Parameters:

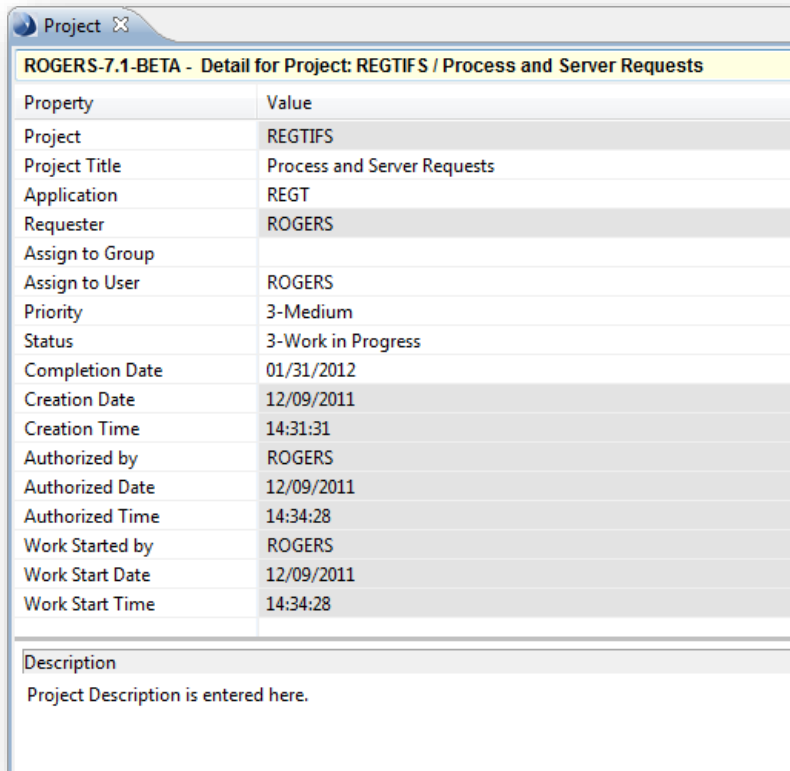
Project	A 12-character unique ID for the project
Project Title	A short description of the project
Tasks	Total number of tasks defined for the project. Left-click on this field in a row to open the Task view filtered by the row's project.
URL	A link, if defined, to either the project in MDWorkflow or to the first custom URL value for the project
Application	The primary application for the project
Requester	The creator of the project
Assign to Group	The user group responsible for carrying out the project
Assign to User	A specific user responsible for carrying out the project
Priority	the project priority from 1 (critical) to 5 (optional)
Status	the project status. May be a fixed value delivered with MDCMS or can be a custom value
Project Type	the project category to aid in filtering and to set certain rules
Creation Date	the date the project was created
Completion Date	the date the project is expected to complete

If any Project entry includes a  to the left of the Project name in the Project column that entry can be expanded to show the Object Requests currently assigned to that Project. The following view shows a Project with native, IFS and server objects associated with it, with an RFP value already assigned.

REGTIFS	Process and Server Requests	REGT	ROGERS	Level	ROGERS	3-Medium
Object	Application	RFP	MDCMS Attribute		Project	User
License-01.html	REGT	40305	IFS	10	REGTIFS	ROGERS
CLP005	REGT	40305	CLP	10	REGTIFS	ROGERS
ReadMe	REGT	40305	WEB	10	REGTIFS	ROGERS
README1.txt	REGT	40305	WEB	10	REGTIFS	ROGERS
README2.txt	REGT	40305	WEB	10	REGTIFS	ROGERS
README3.txt	REGT	40305	WEB	10	REGTIFS	ROGERS



Clicking directly on any Project entry will display the **Project** view.



The **Project** view will contain the following additional detailed information about the project that does not appear in the **MdProjectView**:

Creation Time	The time of day that the project was created
Hours Estimated	The number of hours estimated to complete the project
Cost Estimated	The estimated cost to complete the project
Hours Actual	The actual number of hours that have been added to time entry for the project
Cost Actual	The accumulated cost based on time entry for the project
Custom Fields	Any custom fields that are defined to appear for the given project type. Custom fields are only permitted if a valid License Key exists for MDWorkflow.

Right-click to add or copy a project, for Time Entry or to request or import objects for the project.

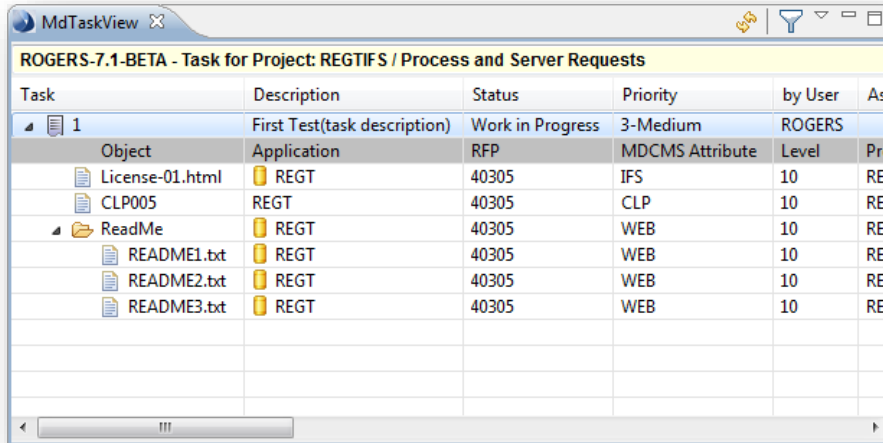


### 13.2 Viewing Project Tasks and Subtasks

Within the **MdProjectView**, left click on the task count for a project, or right click on a Project and select Tasks and the **MdTaskView** is displayed with the tasks filtered to the selected Project.


Within the **MdTaskView** right click on a Task and select Subtasks and the **MdSubtaskView** is displayed with the subtasks filtered to the selected Project Task.

Alternately, Tasks and Subtasks can be listed together across Projects by selecting the Tasks repository option. The previously used filter parameters are reused.



Listing Parameters:

Due Date	expected completion date for task
Priority	the task priority from 1 (critical) to 5 (optional)
Subtask	Subtask number, if row is for a subtask
Description	First 80 characters of the task description
Status	the task status. May be a fixed value delivered with MDCMS or can be a custom value
Task Type	the task category to aid in filtering and to set certain rules
URL	A link, if defined, to either the task in MDWorkflow or to the first custom URL value for the task
By User	User that created the task
Assign to Group	The user group responsible for carrying out the task
Assign to User	A specific user responsible for carrying out the task
Creation Date	the date the task was created

If any Task entry includes a  to the left of the Task number in the Task column the entry can be expanded to show the Object Requests currently assigned to that Task.

Left-click a task row to view/edit the task. Right-click to add or copy a task, for Time Entry or to request or import objects for the task.



### 13.3 Time Entry Listing

The Time Entry Listing displays all hours entered for Projects, Tasks or Subtasks based on the filter values. The Total Hours field displays the sum of all hours based on the current filter values.

If the listing is invoked from the repository view option [Time Entry](#), then the filters are set to the last used values for your user profile. If the listing is started from a Project, Task or Subtask, then the filters are set to show all hours for that Project, Task or Subtask.

The date range filters can be easily set to the most common values using the buttons shown representing different spans of time.

### 13.4 Time Entry Details

#### Fields

Date	The date that the work was performed
Project	The project for which the work was performed
Task	The task within the project, if applicable, for which the work was performed
Subtask	The subtask within the task, if applicable, for which the work was performed
Phase	The project phase during which the work was performed
User	The user that carried out the work
Hours	The number of hours worked. Any amount after the decimal point is interpreted as a fraction of an hour.
Comment	Any further comments or descriptions of the work performed

Any time entered is then summarized in the Project, Task and Subtask detail views and can also be reported on by defining a report using the MDCMS Time Reports configurator.



## 14 RFP

An RFP is an installation package containing 1 or more objects to migrate from one environment to another.

### 14.1 RFP Listing

The **MdRFPView** is accessed by right clicking on the repository connection in the **MdRepositoryView** and selecting **RFP Listing**.

Application	RFP	Level	User	Description	Status
▶ BETA	400001	10	MMORGAN	migrate source to web server	Requests assigned
▶ BETA	400002	10	BARTECH	Rfp Prueba	Requests assigned
▶ OPER	320006	10	BARTECH	Test	No Requests assigned
▶ REGT	40212	10	ROGERS	For Library Migration objects only	Requests assigned
▶ REGT	40264	10	ROGERS	Testing code 35(#2-duplicate)	Requests assigned
▶ REGT	40281	20	ROGERS	ROLLBACK: All README files(3)	No Requests assigned
▶ REGT	40282	20	ROGERS	ROLLBACK: All README files(3)	No Requests assigned
▶ REGT	40288	20	ROGERS	ROLLBACK: ROLLBACK: New RFP for CLP007 ONLY	Requests assigned
▶ REGT	40289	20	ROGERS	ROLLBACK: ROLLBACK: New RFP for CLP007 ONLY	Requests assigned
▶ REGT	40291	20	ROGERS	ROLLBACK: New RFP for CLP007 ONLY	Requests assigned
▶ REGT	40305	10	ROGERS	Changes for process, license and readme	Requests assigned
▶ REGT	40307	10	ROGERS	Test RFP, not used.	No Requests assigned
▶ REGT	40309	20	ROGERS	ROLLBACK: For PF001 and related objects	Submission in Progress
▶ REGT	40311	20	ROGERS	PREPOSTCMD	Requests assigned
▶ REG3	160011	10	ROGERS	Testing level jobd set to *RQD and Attribute set to '...	Waiting for Approval

### 14.2 RFP Details

To view an RFP click on the RFP entry in the **MdRFPView**. That action will display the **RFP** view.

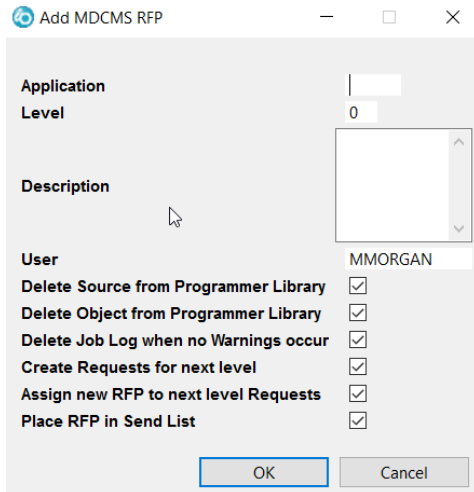
If the RFP is ready to be submitted a Submit button will appear at the bottom of the view. Other possible button options are Approve and Rollback. For details on Approving, Submitting, Installing and Rollback of an RFP refer to additional sections in this chapter.

The possible status code values for an RFP are:

- Request pending (RP)** – the RFP is waiting for Workflow acceptance of an RFP in the prior level before the new RFP can be used
- No Requests assigned (00)** – Open, no request records assigned to RFP
- Submission Pending (SP)** – RFP has been scheduled for submission and is waiting for the MD Submission service to submit the RFP
- Requests assigned (01)** – Open, one or more request records assigned to RFP
- Submission in JOBQ (YY)** – RFP Submission currently in Job Queue
- Submission in Progress (XX)** – RFP Submission in progress
- Waiting for Approval (02)** – RFP is ready for approval
- Data Copy Pending (CP)** – RFP is waiting for launch of MDRapid
- Data Copy Running (CR)** – MDRapid is currently mapping data to new file formats
- Waiting for Installation (03)** – RFP is ready for installation
- Installation Pending (IP)** – RFP has been scheduled for installation and is waiting for the MD Installation service to install the RFP
- Installation in JOBQ (04)** – Installation is submitted and in JOBQ
- Installation in Progress (XY)** – RFP Installation in progress
- Installed (05)** – RFP is installed and complete
- RFP Closed without Install (09)** – RFP closed without Install

### 14.3 Add New RFP

To create a new RFP right click and select  **New RFP**. That action will display the **Add MDCMS RFP** dialog.



#### Fields

Application	The target Application of the object promotion
Level	The target Level of the object promotion
Description	Description of the RFP
User	The MDCMS User ID of the programmer assigned to this RFP. More than one programmer may have objects requested for an RFP, but only one may be entered here.
Delete Source from Programmer Library	If the RFP will be used to promote source and/or objects from a programmer's library into the lowest level of an application, the choice may be made to delete the source and/or objects from the programmer's library at the completion of the promotion.
Delete Object from Programmer Library	If the RFP will be used to promote source and/or objects from a programmer's library into the lowest level of an application, the choice may be made to delete the source and/or objects from the programmer's library at the completion of the promotion.
Delete Job Log when no Warnings Occur	If the RFP completes without any errors or warnings, it will automatically delete the job log spooled file if this box is checked. The RFP Log, including job log entries, will still be stored in the database and accessible from the completed RFP.
Create Requests for next level	If a higher application level exists for direct migration from this target level, new request records can automatically be generated for that level.
Assign new RFP to next level Requests	If the option to automatically create requests for the next level is active, a new RFP number can be automatically generated and assigned to the new request records.
Place RFP in Send List	If a Distribution Level is defined, then a send package can be automatically generated for the level(s) and placed in the RFP Send Listing. The actual sending of the RFP to a remote system is initiated within the RFP Send Listing, unless automatic.

The Set as Default button can be pressed from the RFP editor to retain the preferred value for the Delete checkboxes.



#### 14.4 Copy RFP

To copy an existing RFP in order to create a new RFP right click and select  **Copy**. That action will display the **Copy MDCMS RFP** dialog with all fields pre-filled with the values from the selected RFP.

If copying a completed RFP, 2 additional fields are presented:

Copy Object Requests – if selected, a list of all objects on the original RFP are listed and pre-selected with the same action (Modify, Recompile, Update or Delete) as before. Unselect any unneeded objects and click button Process Selections to add those objects to the new RFP. This is a quick way to repeat work for a large block of objects.

Copy RFP Commands/Scripts – if selected, all commands and scripts defined to run at the RFP level for the specific original RFP will be copied to the new RFP.

#### 14.5 Merge Multiple RFPs into One RFP

Any RFPs for the same application level that are in status 00 OR 01 may be merged together. To do so, select each of the rows of RFPs to be merged and then right-click on one of the selected rows and select option Merge.

A confirmation window is then displayed where some of the selected RFPs can be unchecked and the description of the result RFP can be edited. Click Merge to carry out the merge process.


#### 14.6 Reset Status of RFP

This function will return the status of any active RFP to the next lower status. For example, if the RFP is in status 03 (Ready to Install), a reset will return it to 02 (Waiting for Approval) or 01 (Requests Assigned), depending on if automatic approval occurs for the level or not.

If the RFP was in the process of compiling or installing and the job ended abnormally, this function should be used to reset the status so that the RFP can be submitted again.

If the RFP is currently in status 01 (Requests Assigned) and a reset occurs, all object requests currently assigned to the RFP will be removed from the RFP.

#### 14.7 Close RFP

If an RFP has been created, but is not intended to ever be used, and the RFP has no objects assigned to it, it can be closed by right clicking on the RFP and selecting  **CLOSE**. This action will display the 'Close confirmation' dialog with the message 'Are you sure you want to close RFP APPL / nn / nnnnnn?' Click OK to close RFP or Cancel to cancel the process.

#### 14.8 Create RFP Objects into Developer Library

If the objects in the RFP are checked out to the developer's library, this option can be taken to create each of the objects in the order of the compile sequence. If an object creation fails, the process will stop to allow for troubleshooting.



## 14.9 Viewing and Managing Spooled Files for an RFP

If the RFP has previously been submitted, the spooled files generated by the RFP, such as compile listings or job logs, can be viewed and/or deleted using this function.


## 14.10 Viewing the RFP Deployment Log

If an attempt has been made to submit the RFP for deployment, the deployment log can be viewed. Each entry in the log provides a description of the step taken. The step can then be expanded to see all job log entries that occurred during the processing of that step. This can be very helpful in understanding what occurred during the RFP processing, particularly if the RFP failed or warnings occurred.

## 14.11 Viewing and Managing Projects for an RFP


To view the list of all Projects assigned to Object Requests for an RFP, right-click on the RFP and select option Projects. The standard Project List view is then displayed with the filters set to the selected Application and RFP.

## 14.12 Viewing and Managing Object Requests for an RFP

To view the list of all active Object Requests for an RFP, left-click on the expansion  arrow to the left of the RFP. If the expansion arrow isn't displayed, then there aren't any Object Requests currently assigned to it.


All options available from the main Object Listing are also available from the Object Listings within RFPs.

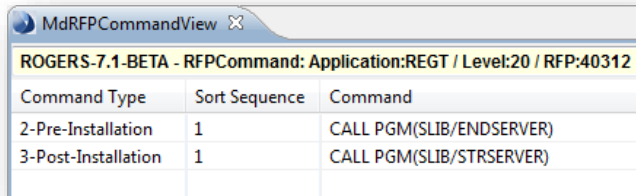
## 14.13 Adding a New Object Request to RFP

Right click any RFP within their RFP List view and select  **New Object Request** and the **Add MdObject** dialog is displayed with the Application, Level and RFP number preselected. The remainder of the Object Request Process is identical to the process described in the Objects chapter.



## 14.14 RFP Commands


To view and manage the commands that will each run once for a specific RFP, right-click on that RFP and select option  **RFP Commands**. That action will display the **MdRFPCommandView**.

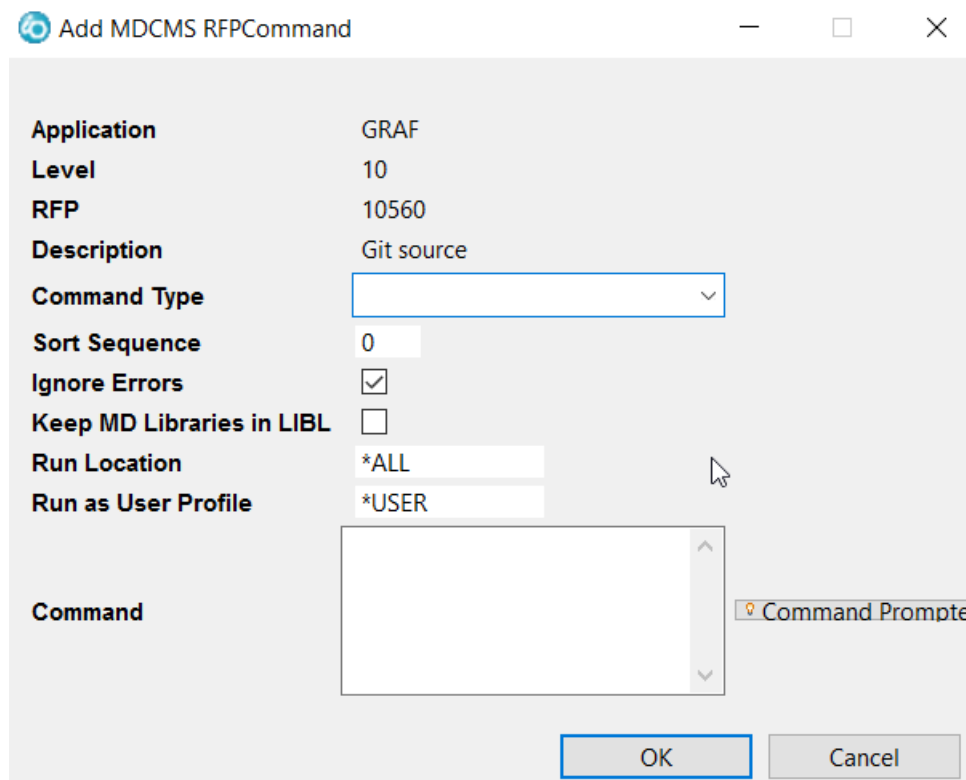


ROGERS-7.1-BETA - RFPCommand: Application:REGT / Level:20 / RFP:40312		
Command Type	Sort Sequence	Command
2-Pre-Installation	1	CALL PGM(SLIB/ENDSERVER)
3-Post-Installation	1	CALL PGM(SLIB/STRSERVER)

A right click option within the **MdRFPCommandView** will enable context menu options to add a new command, copy an existing command to a new command and to delete an existing command.

### Command Details

To create a new command right click within the view and select  **New Command**. That action will display the **Add MDCMS RFPCommand** dialog.



**Add MDCMS RFPCommand**

Application: GRAF  
 Level: 10  
 RFP: 10560  
 Description: Git source

Command Type:

Sort Sequence:


Ignore Errors:

Keep MD Libraries in LIBL:

Run Location: \*ALL

Run as User Profile: \*USER

Command:

 Command Prompter

OK Cancel

## Command Parameters

Command Type	The type or exit point within the RFP process when the command should be executed
Sort Sequence	If multiple commands are defined for the same RFP and Command Type, this value is used to ensure they are executed in the appropriate order
Ignore Errors	Whether or not the RFP processing should continue if the commands fails to execute. This can only be false for types up to and including Post-Installation.
Keep MD Libraries in LIBL	Whether or not the MDCMS product libraries should remain in the library list during the execution of the command. This should be true if the command is a MDCMS API. This should be false if the underlying MDCMS objects could have the same name as objects within your application
Run Location	*ALL – command will run for every level that the RFP is promoted to *LOCAL – run command only for levels on this partition *LOCLVL – run command only for this level *REMOTE – run command on all target partitions, but not this partition specific location – only run command for levels on the specified partition
Run as User Profile	*USER – the user defined for the job description for the level executed the command otherwise, entire the User profile ID of a user to run the command. You must have *USE authority to the profile in order to save it on the command.
Command	The command string to be executed. Content assist is available within the string to insert wildcards that are replaced at runtime by the applicable values. The Command Prompter can be used to prompt for all valid parameters for the command

Options are also available from the list to copy or delete a command.

### 14.15 RFP Scripts

IFS or Remote Server Scripts can be defined to run for a specific RFP. See the section for Attribute Scripts for more information about the script parameters.

One additional parameter provided when for a specific RFP is the Attribute for Server/Folder Settings. A valid \*IFS or \*REMOTE attribute must be entered here so that MDCMS will know the location for the execution of the script.



## 14.16 Promoting an RFP

When one (1) or more objects are assigned to an RFP, the Request for Promotion becomes eligible to be submitted. From the **MdRFPView**, click on an RFP. That action will display the **RFP** view.

Property	Value
Application	BETA
Level	10
RFP	400001
Description	migrate source to web server
User	MMORGAN
Status	Requests assigned
Date Created	12/08/2011
Time Created	04:22:38
Submitted by	
Submission Date	
Submission Time	00:00:00
Installed by	
Date of Installation	
Time of Installation	00:00:00
Reserved until Date	
Reserved until Time	00:00:00
Delete Source from Programmer Library	<input checked="" type="checkbox"/>
Delete Object from Programmer Library	<input checked="" type="checkbox"/>
Create Requests for next level	<input checked="" type="checkbox"/>
Assign new RFP to next level Requests	<input checked="" type="checkbox"/>
Place RFP in Send List	<input type="checkbox"/>
Commands defined for RFP	<input type="checkbox"/>
From RFP	0

Clicking the **Submit** button causes MDCMS to make a series of checks for potential problems. Any warnings or errors detected will be presented in a series of windows. Right-Click on a row in the error windows to select an option to fix the issue directly from the window (where applicable). Once all errors are eliminated, the following confirmation window is presented where the date, time and job queue information can be modified:

**NOTE:** If the RFP job is not placed in the Job Queue, then the status is changed to SP for Submission Pending and will wait until the RFP Submission API (MDSBMRFP) submits the RFP.



## 14.17 The Batch Installation Process

Once a request for promotion has been submitted, the actual process of installing the new or modified source and objects takes place. Listed below are the steps that this process goes through and the result of each step.

### 14.17.1 The Source/Object Preparation Steps

Temporary MDCMS libraries (CMSxxxxxx and SAVxxxxxx where xxxxxx is the RFP number) are created to handle the entire process so that no permanent changes take place until MDCMS is certain that all is ready.

- 1- Object-Level pre-compile commands are performed.
- 2- Attribute-Level pre-compile commands are performed.
- 3- RFP-Level pre-compile commands are performed
- 4- The source members and non-compiled objects are checked for existence.
- 5- If source is to be compiled, it is compiled at this time using the job description's library list that is defined for the Application Level. The compile command itself is based on the command definition for the attribute, unless an object-level compile command has been defined.
- 6- The source and/or objects are placed in the CMSxxxxxx library
- 7- Object-Level post-compile commands are performed
- 8- Attribute-Level post-compile commands are performed.
- 9- RFP-Level post-compile commands are performed
- 10- The source and objects are signed by MDCMS to ensure that manual changes are detected.

If a failure occurs during these steps, a message will be sent to the user that submitted the job describing why the failure occurred. For additional detail, the spooled files for the job should be reviewed. The RFP will remain at status Requests assigned (01) and can be re-requested for submittal from the **MdRFPView**.

### 14.17.2 Source and Object Signing

MDCMS uses an SHA-1 encryption algorithm with a HMAC key unique to each distinct object migration chain to create a 1-way signature for each source and object that has been prepared to be installed. The initial signature is applied when it is installed into the initial Application Level and this signature is compared to the newly generated signature at higher levels.

If the signature does not match, then this indicates that the source or object was manually modified since installation in the prior level. MDCMS will then require that an authorized user approves the installation before the installation steps will be started.

MDCMS uses a java program running under job name **MDSIGN(instance)** to perform the signature process. The job queue to be used for this job is, by default, the same as for the RFP. If this job should be submitted to a different queue, it can be defined in Data Area MDCMS/MDSTRSIGN whereby characters 1-10 contain the job queue name and characters 11-20 contain the job queue library. The default value of \*JOBQ will cause the job to be submitted to the job queue defined for the job description.

If the signing job does not function, troubleshooting can be performed by running command MDTESTSIGN from a command line within MDCMS.



#### **14.18 The Installation Steps**

1. Object-Level pre-installation commands are performed.
2. Attribute-Level pre-installation commands are performed.
3. RFP-Level pre-installation commands are performed
4. The source and objects are either moved into the next level for modifications and recompiles, removed from the level for deletes, or updated for updates.
5. The authorities are set for each of the promoted objects.
6. All prior members for modified physical files are copied to the new file with option \*map/\*drop (unless an overriding data copy command is specified) and all system (non sql) triggers and journals are reapplied (if data area MDCMS/MDAUTOJRN = 'Y' and MDCMS/MDAUTOTRG = 'Y'). If a logical file is being replaced, all prior members of the file are created for the new file (if data area MDCMS/MDAUTOLFM = 'Y').
7. The MDXREF information is refreshed for the installed objects.
8. Physical file data is copied into the next level for \*DATA requests.
9. Object-Level post-installation commands are performed.
10. Attribute-Level post-installation commands are performed.
11. RFP-Level post-installation commands are performed

If a failure or warning occurs during these steps, a message will be sent to the user that submitted the job describing why the failure occurred. For additional detail, the spooled files for the job should be reviewed. The RFP will remain at status 03 and can be re-requested from the Install Promotions option (menu option 4). If the RFP is not in the list, it needs to be reset by RFP Maintenance.

#### **14.19 The Archiving and Cleanup Steps**

1. All replaced source is archived if the Application Level is defined to allow archiving. Replaced objects will be zip compressed and archived to the MDCMS IFS path, if they are not compiled from source.
2. If the installation occurred at the lowest Application Level and the RFP is defined to remove the source or objects from the programmer's library, the removal is performed at this time.
3. Installation History records are created for each object.
4. The finished Request detail records are removed.
5. The temporary libraries and spool files are deleted.

#### **14.20 The Set for Next Level Steps**

1. If a Distribution Queue is defined, the RFP is placed in the send list. If Auto-Send is set to Y for this Level, the RFP will immediately sent to all Distribution Queues where the Default flag is set to Y.
2. New Request records are created for each promoted source member for the next defined level for that member.
3. Any user-defined commands are set to handle the next level.
4. A new RFP number is generated and automatically assigned to the new Request records.
5. If a source member is already requested for the next level, a Request record will not be created. To help ensure that the programmer realizes this, an error report is generated which lists all sources which could not be requested at the next level because of existing requests.
6. If Auto-Submit is set to Y for the next level, and no errors exist at the next level, and Workflow acceptance of this RFP is not required, the new RFP is submitted to batch.



#### 14.21 Approving a Promotion

An RFP is approved for promotion from the **MdRFPView**. The RFP creates a temporary library, CMSxxxxxx, and all objects are compiled into that library. If there are no errors, the installation process checks the Application Level parameters and if the Approval flag is set to 'Y', the RFP status is set to *Waiting for Approval* (02). An authorized user must then approve the promotion before it can be installed. To do this, the authorized user will select the RFP from the **MdRFPView** and enter their approval by clicking the **Approve** button at the bottom of the RFP. That action will display the 'Confirm approve' dialog with the message 'Do you wish to approve RFP?' Click OK to Approve or Cancel to cancel the process.

#### 14.22 Installing a Promotion

An RFP is submitted for promotion from the **MdRFPView**. The RFP creates a temporary library, CMSxxxxxx, and all objects are compiled into that library. If there are no errors, the installation process checks the Application Level parameters and if the Auto-Install flag is set to 'N', the RFP status is set to *Waiting for installation* (03). An authorized user must then select the promotion for installation before the objects are actually installed into the application levels target libraries. To do this the authorized user can use the **Install** button. Clicking the Install button will display the 'Set Install date and time' dialog where the user can set the Scheduled Date and Scheduled Time and click OK to install the RFP or Cancel to cancel the process.

## 15 RFP Installation History

Historical information is kept in MDCMS for every object that is promoted. If the promotion of an object results in the change or deletion of previously existing source, the previous version of the source will be archived. Installation History stores up to 99 generations of the source for each object at each Application Level. If an object does not have, or wasn't compiled from, source code, then the object itself is compressed and archived in the IFS directory MDCMS/ARCHIVE/. The number of generations to store is set per Application Level. A different number of generations can be set for each \*DATA or \*DTAGRP attribute.

Completed RFPs can be viewed from the RFP Installation History listing, or from the RFP Listing, if the RFP listing isn't filtered to a different status.

The RFP Installation History listing is accessed by right clicking on the Repository connection in the **MdRepositoryView** and selecting **RFP Installation History**. That action will bring up the **MdInstallationHistoryView**. This view will present the history of installed or deleted objects and allows for the ability to compare, retrieve or rollback prior versions of objects.

T8-DEV - IH											
Date of Installation	Time of Installation	RFP	Application	Level	Description	User	Installed by	Install Status	Test Status	RFP Commands	RFP Scripts
> 10.04.2017	11:02:16	10549	GRAF	10	svn clp source	MMORGAN	MMORGAN		Ongoing	false	false
> 31.03.2017	11:25:42	10556	GRAF	10	test compile, move and rollback of stamping	MMORGAN	MMORGAN		Accepted	false	false
√ 31.03.2017	11:23:58	10555	GRAF	10	test compile, move and rollback of stamping	MMORGAN	MMORGAN		Accepted	true	false
Object	MDCMS Attribute	Project	User	Acti...	Target Library	Target Sourc...	Target Sourcefile	Cmds	Scripts		
MDA010	CBLL	GRAF01...	MMORGAN	Mod...	TEST80_10	TEST85_10	QCBLSRC	false	false		
MDA011	CBLL	GRAF01...	MMORGAN	Mod...	TEST80_10	TEST85_10	QCBLSRC	false	false		

The history can be filtered based on many different fields. One special filter is the **Filter Objects** checkbox – if this is true and a value is entered in the Object Name filter field, then the listing will show each RFP containing the object and will be automatically expanded to show only that object. This provides a way to see RFP and object information at once for all history for the object.

Otherwise, expand an RFP row to see all objects that were installed by the RFP.

### 15.1 Copy RFP

To copy an existing RFP in order to create a new RFP right click and select  **Copy**. That action will display the **Copy MDCMS RFP** dialog with all fields pre-filled with the values from the selected RFP.

2 additional fields are presented:

Copy Object Requests – if selected, a list of all objects on the original RFP are listed and pre-selected with the same action (Modify, Recompile, Update or Delete) as before. Unselect any unneeded objects and click button Process Selections to add those objects to the new RFP. This is a quick way to repeat work for a large block of objects.

Copy RFP Commands/Scripts – if selected, all commands and scripts defined to run at the RFP level for the specific original RFP will be copied to the new RFP.

## 15.2 Rollback RFP

Use the Rollback option to reverse the installation of one or more objects in the original RFP.

<b>Application</b>	GRAF				
<b>Level</b>	10				
<b>Original RFP</b>	10555				
<b>New Description</b>	ROLLBACK: test compile, move and rollback of stamping				
<b>New RFP</b>	0				
Select	Orig Action	Object	Object Ty...	MDCMS Attri...	Library/Path
<input type="checkbox"/> <b>all</b>					
<input checked="" type="checkbox"/>	Modify Existing...	MDA010	*PGM	CBLLE	TEST8O_10
<input type="checkbox"/>	Modify Existing...	MDA011	*PGM	CBLLE	TEST8O_10
Process Selections		Submit RFP			

A dialog will appear where one or more of the objects can be selected. Once all necessary objects are selected, click Process Selections to generate a new RFP with the description in the Header. The new RFP can then be submitted immediately by clicking the Submit RFP button or can be kept in the RFP listing to be submitted at a later time. A rollback RFP does the following:

- deletes new objects
- adds deleted objects
- repeats recompiles or updates
- reverts to prior version for modifications







**Project List Fields**


Check Box	The check box will be displayed for a row if: a) the RFP Test Status has not yet been confirmed and b) the current user is a member of the defined Group and c) either the defined user is blank so that anyone in the Group can edit the Status for the Project, or, the defined user is the current user
Project	The Project ID that is impacted by the RFP. The ID may be clicked to view more details about the Project
Group Type	The Group Type that is responsible for the acceptance of an installed RFP into the specified level.
Group	The Group that is assigned to the Group Type for this Project in order to test the results of the RFP. The Group may be clicked to view more information about the Group
User	If a value exists, then only this user may edit the status. If blank, then any user in the group can edit the status.
Status	The status for that Project. The status for all projects must be Accepted before the RFP Test Status of Accepted can be confirmed. Only the status for 1 project must be Rejected before the RFP Test Status of Rejected can be confirmed.
Date	The date that the current status was set by the user
Time	The time that the current status was set by the user
Comment (in header)	A comment that will be applied to every checked row when a button is clicked. A comment is mandatory for rejected rows

**Buttons**

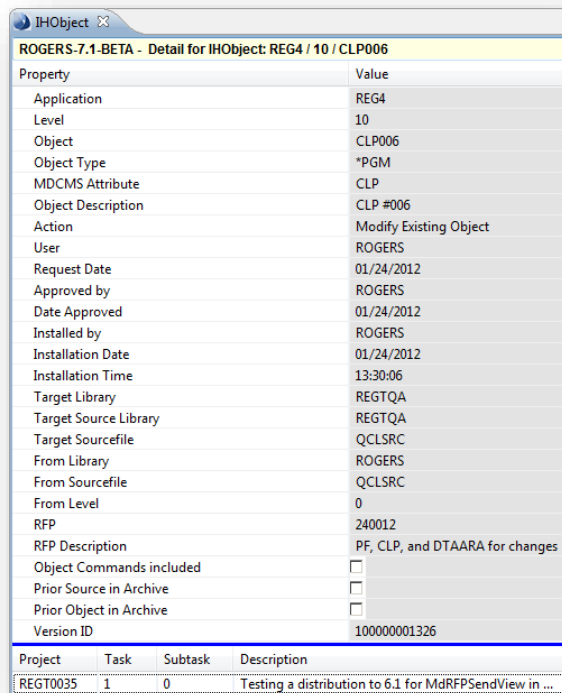
In Progress	Set every checked Project to status In Progress, signifying that you are in the process of testing for those Projects.
Accept	Set every checked Project to status Accepted, signifying that you have accepted the testing results for those Projects.
Reject	Set every checked Project to status Rejected, signifying that you have rejected the testing results for those Projects.
Undo	Undo the current status for the checked Projects.
Confirm Acceptance	Once all project rows have been accepted, the Confirm Acceptance button can be clicked by an authorized user to permanently set the RFP to accepted and to allow the next step in the Workflow process to occur for the RFP.
Confirm Rejection	Once 1 or more project rows have been rejected, the Confirm Rejection button can be clicked by an authorized user to permanently set the RFP to rejected and to remove any pending next steps from the Workflow process for the RFP.



## 15.4 Objects in Installed RFP

Clicking the caret  that appears to the left of the date in the Date of Installation column will expand the RFP entry and display the Objects associated with the RFP.

Clicking on any object for an RFP will bring up the **IHObject** view.



The **IHObject** view will display all details for the selected object, including Project information.

### View Archived Source

If source is archived for a given object in the installed RFP, this option will be enabled. When selected, the source code is pulled out of the archived and displayed in the editor defined for the given file type in display mode.

### Compare

If source is archived for a given object in the installed RFP, this option will be enabled. When selected, the Compare prompt is provided to compare the Archived Source with 1 or 2 other versions of source. See the Section Compare Object Source for more details.

### Object Commands

If Commands were executed for a given object in the installed RFP, this option will be enabled. When selected, the list of commands will be displayed.

## 16 RFP Send Listing

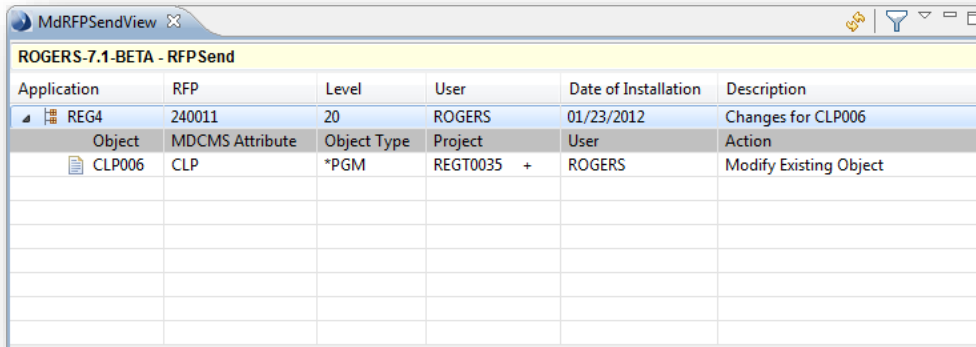
It is possible to control your business applications across your IBMi systems or logical partitions with MDCMS, as long as a licensed copy of MDCMS exists on each of the systems or logical partitions involved.

The first step for specifying what is to be sent to those additional systems is to define the OS/400 locations and distribution levels that will be used for RFP distribution. Refer to those sections in the manual for details on creating and maintaining the required target locations and levels.

When a promotion is installed into an Application level, the RFP with all of its installed objects, commands and scripts will appear in the list as long as:

- 1) the application/level has at least 1 defined distribution level
- 2) the flag, **Place RFP in Send Promotion List**, is set to Y at the RFP level

To view the RFP Send Listing, select option  **RFP Send Listing** from the repository list.





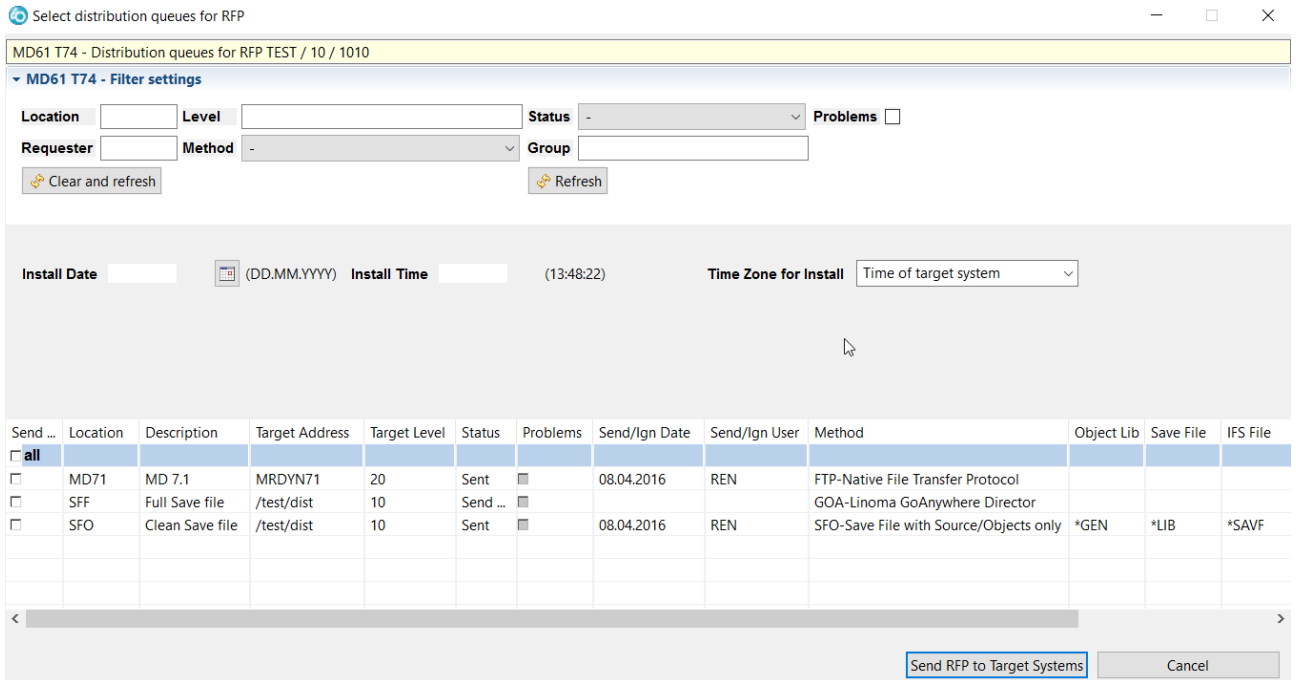
ROGERS-7.1-BETA - RFPsSend					
Application	RFP	Level	User	Date of Installation	Description
REG4	240011	20	ROGERS	01/23/2012	Changes for CLP006
	<b>Object</b>	<b>MDCMS Attribute</b>	<b>Object Type</b>	<b>Project</b>	<b>User</b>
	CLP006	CLP	*PGM	REGT0035 +	ROGERS
					Modify Existing Object

The **MdRFPsSendView** will contain any RFP's that are currently open for distribution to other systems or logical partitions.

To view or reopen RFPs that are closed in the Send Listing, use repository option RFP Send History.

## 16.1 Send RFP to Target Systems

To send an RFP to the designated target systems or logical partitions right click on the RFP and select  **Send RFP to Target Systems**. Alternatively, left click on the  icon for a row in the list. This action will display the Select distribution queues for RFP dialog.



Select distribution queues for RFP

MD61 T74 - Distribution queues for RFP TEST / 10 / 1010

MD61 T74 - Filter settings

Location  Level  Status -  Problems

Requester  Method -  Group

Install Date  (DD.MM.YYYY) Install Time  (13:48:22) Time Zone for Install

Send ...	Location	Description	Target Address	Target Level	Status	Problems	Send/Ign Date	Send/Ign User	Method	Object Lib	Save File	IFS File
<input type="checkbox"/> all												
<input type="checkbox"/>	MD71	MD 7.1	MRDYN71	20	Sent	<input type="checkbox"/>	08.04.2016	REN	FTP-Native File Transfer Protocol			
<input type="checkbox"/>	SFF	Full Save file	/test/dist	10	Send ...	<input type="checkbox"/>			GOA-Linoma GoAnywhere Director			
<input type="checkbox"/>	SFO	Clean Save file	/test/dist	10	Sent	<input type="checkbox"/>	08.04.2016	REN	SFO-Save File with Source/Objects only	*GEN	*LIB	*SAVF

The target levels can be filtered by values entered in the filter settings section of the view. See the MDCMS User Manual for more information about the filter and list fields.

### Install Date

The date that the install should take place on the target systems.

If the target level is set to automatic, it will be received, submitted and approved for installation immediately on the target system. Then a 2<sup>nd</sup> batch job will be submitted to batch that will be scheduled for the date/time provided.

If the target level is set to manual, then a user will need to carry out the manual steps, but the install date/time will default to the value provided in this screen.

If blank, the installation will be scheduled for the same day that the submission completes on the target system.

### Install Time

The time that the install should take place on the target systems.

If blank, the installation will begin as soon as installation approval is complete on the target system.



### TimeZone

Indication of which location the entered Install Date/Time refers to.

Local System – schedule the date/time based on the time zone of the local (sending) system. If the target system is in a different time zone, the scheduled date/time will be adjusted accordingly. So, if the RFP is scheduled to install at 9pm EST because the local system is in New York, it will be installed at 6pm PST if the target system is in Los Angeles.

Target System – schedule the date/time based on the time zone of the target system. The scheduled date/time used on the SBMJOB command will match the value entered exactly. So, if the RFP is sent to 3 different locations and scheduled for 9pm, it will install at 9pm of the time zone of each of those systems.

### Send

Select 1 or more Locations to send the RFP to, or click all to select all locations in the list. Once selected, press button Send RFP to Target Systems to submit the send job.

Additionally, for Transmit Type SFO (export Objects to a Save File without MDCMS information), the following fields can be edited for each row:


- Name of Temporary Library saved to the Save File
- Name of the Save File
- Name of the IFS File, if the Save File is copied to IFS

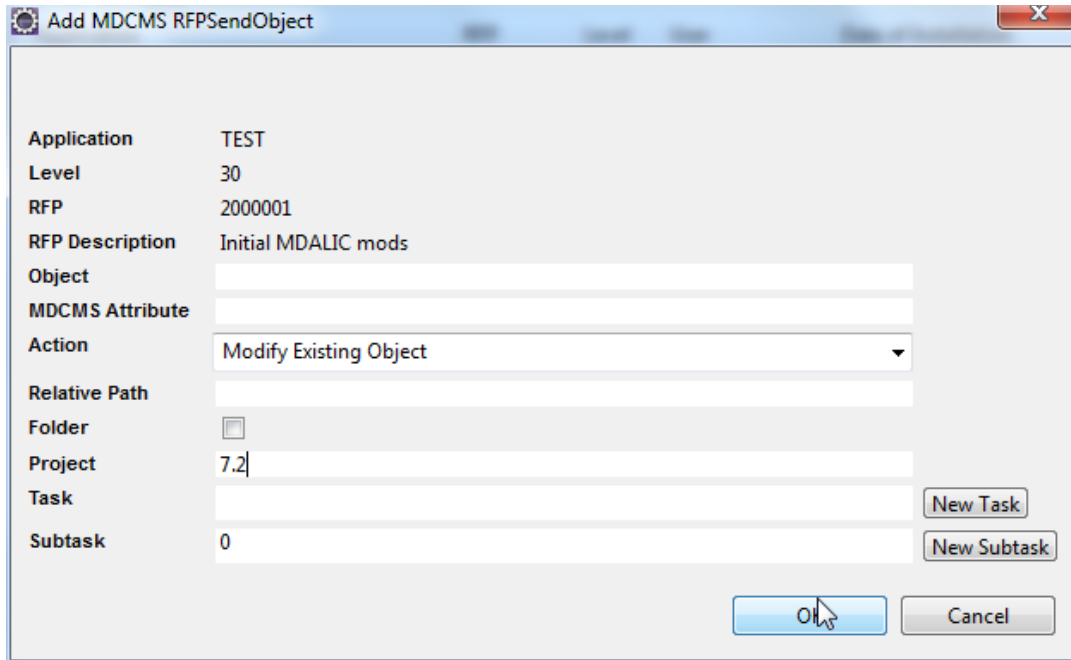
### Options

RFP Send History – open the RFP Send History view filtered by the RFP and target location

FTP Log – view the FTP log of the most recent attempt to send via FTP to the selected location for this RFP

## 16.2 Add Object to Send RFP

When it is necessary to add additional objects to the RFP that will be sent to a target system or logical partition, right click on RFP and select  New Object Request. That action will bring up the **Add MDCMS RFPsSendObject** dialog.



Add Object Parameters:

Object	the object name - enter a portion of the name for Content-Assist to list objects starting with that text
MDCMS Attribute	the attribute indicating the type and location of the object to be requested. If left blank, MDCMS will attempt to discern the attribute based on MDXREF and MDCMS history
Action	DDL to decide to Modify, Recompile, Update or Delete the object
Relative Path	The relative path, if requesting an IFS object, that resides in a subfolder of the folder defined for the attribute. Content-Assist may be used multiple times to drill down to the appropriate folder
Folder	Whether or not an IFS object is a folder
Project	the Project, or reason, for the request - enter a portion of the name for Content-Assist to list Projects starting with that text
Task	a Task number within the Project, if necessary
Subtask	a Subtask within the Project Task, if necessary

## 16.3 Merge Multiple RFPs into One RFP

Any RFPs for the same application level that are in status 00 OR 01 may be merged together. To do so, select each of the rows of RFPs to be merged and then right-click on one of the selected rows and select option Merge.

A confirmation window is then displayed where some of the selected RFPs can be unchecked and the description of the result RFP can be edited. Click Merge to carry out the merge process.



#### 16.4 Send RFP Commands

To view or modify the commands that are defined for the specific RFP, right click on the RFP and select **RFP Commands**. That action will display the **MdRFPCommandView**. See section RFP Commands for more details.

#### 16.5 Send RFP Scripts

To view or modify the scripts that are defined for the specific RFP, right click on the RFP and select **RFP Scripts**. That action will display the **MdRFPScriptView**. See section RFP Scripts for more details.

#### 16.6 Objects in Send RFP

To review the details of any object included on the RFP, simply expand the RFP contents using the  arrow to the left of the Application name in the Application column and then left click an object row.

Use right-click for an object row for the following options:

Add – add an object to the RFP

Copy – add an object to the RFP with the parameter values initially filled with the values from the selected row

Delete – remove the Object from the RFP to be Sent

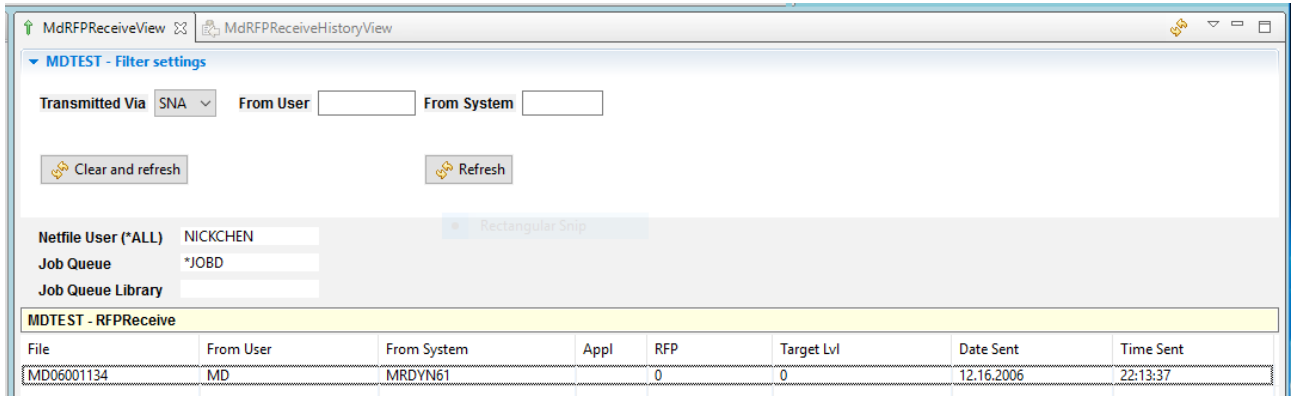
Object Commands – view and modify the list of commands that are to be sent with the specific Object. See section Attribute Commands for more information about defining commands.



## 17 RFP Receive Listing

If the automatic receipt of Promotions is not used (see MDOpen Settings Levels and MDCMS API's MDRCVIFS or MDRCVSNA), then MDCMS promotions sent from remote systems are received manually using **RFP Receive Listing** from the repository list.

The **MdRFPReceiveView** below will contain any RFP's that are currently open for receipt from other systems or logical partitions.



File	From User	From System	Appl	RFP	Target Lvl	Date Sent	Time Sent
MD06001134	MD	MRDYN61		0	0	12.16.2006	22:13:37

Promotion packages may be received here via SNA or FTP (or anything else besides SNA). MDCMS remembers which method was used the last time that a promotion was received. It is best to select the Transmitted via (if incorrect) before entering the other information because the screen fields available change based on Transmitted via. The example above had SNA selected so the Netfile User field is available for entry.

To view RFPs that are received (not showing) in the Receive Listing, use repository list option RFP Receive History.

### Netfile User

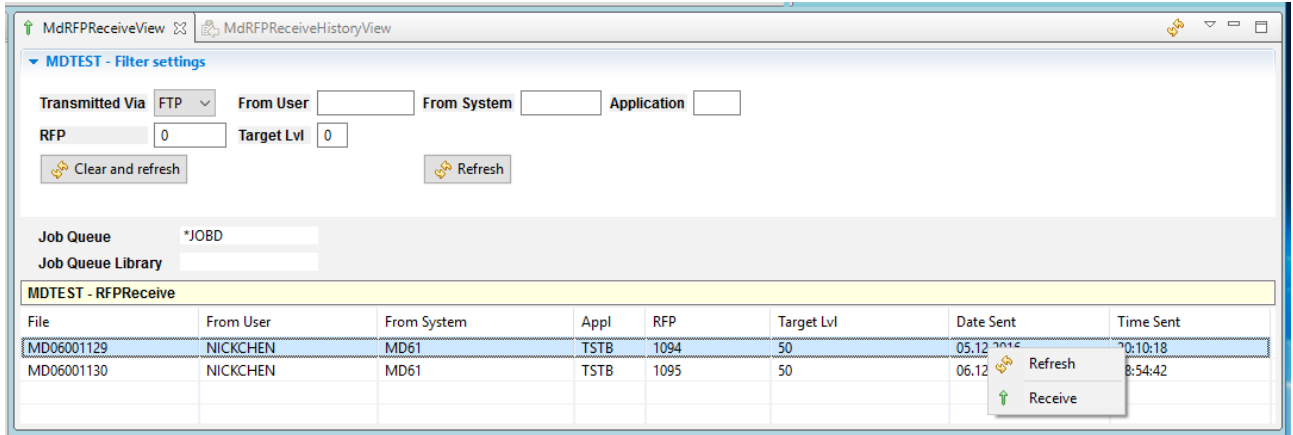
If the promotion package was sent via SNA, and a specific Netfile user was entered (default is QPGMR) then that same user id must be entered here to receive the promotion. Press the refresh button after entering the Netfile User to filter the list of RFPs.

### Job Queue/Library

The actual receive job is submitted to batch. The subsystem job queue/library may be specified for the receive job.

## 17.1 RFP Receive Listing Options

Right clicking on an RFP received entry within the **RFPReceiveView** will display the following options:

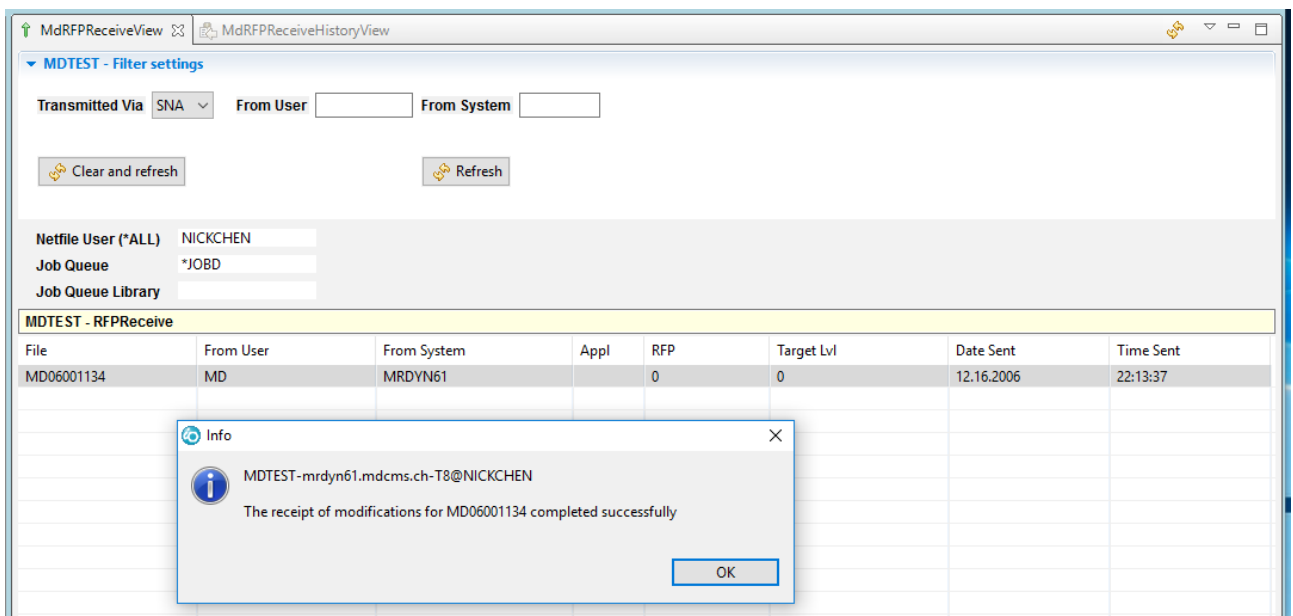


If FTP is selected for Transmitted Via, the filter fields are available above. The Netfile user is not available.

Options:

Refresh	Refreshes the list of RFPs to receive
Receive	Submits a job to Receive the RFP

Choosing the Receive menu option will generate the following success window otherwise an error window will display:



The submitted job creates a temporary library with the same name as the file. All source and objects related to the promotion are placed in this temporary library. After the objects are installed, the temporary library is deleted.



New MDCMS request records are written for the source/objects and a new RFP number is generated for the received items. The Promotion will then be ready to be installed into the lowest level for the application, unless a higher target level was specified when the Promotion was sent.

If Auto-Submit for the Promotion Level is set to Y, then the compilation portion of the installation will begin as soon as the receipt has completed.

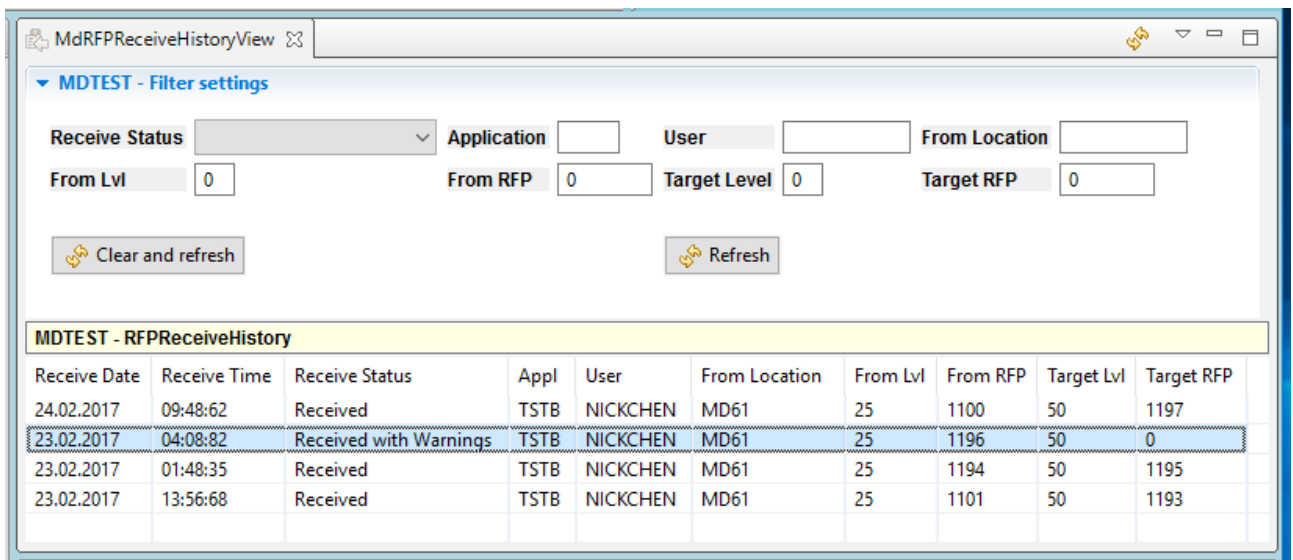
## 18 RFP Receive History

RFP Receive History can be selected from the repository listing view to view a log of all attempts to automatically or manually receive an RFP onto this system.

For each attempt, any warnings or exceptions can be viewed.

If an RFP was successfully sent, and should have been automatically received, but doesn't appear in the receive history view, then perform DSPMSG QSYSOPR to see the reason why the receive job couldn't be submitted.

The **MdRFPReceiveHistoryView** below will contain any RFP's that have been received or attempts to be received from other systems or logical partitions.



The screenshot shows the 'MdRFPReceiveHistoryView' application window. It features a 'Filter settings' section with the following controls:

- Receive Status:
- Application:
- User:
- From Location:
- From Lvl:
- From RFP:
- Target Level:
- Target RFP:

Below the filters are two buttons: 'Clear and refresh' and 'Refresh'.

The main data area is titled 'MDTEST - RFPReceiveHistory' and contains the following table:

Receive Date	Receive Time	Receive Status	Appl	User	From Location	From Lvl	From RFP	Target Lvl	Target RFP
24.02.2017	09:48:62	Received	TSTB	NICKCHEN	MD61	25	1100	50	1197
23.02.2017	04:08:82	Received with Warnings	TSTB	NICKCHEN	MD61	25	1196	50	0
23.02.2017	01:48:35	Received	TSTB	NICKCHEN	MD61	25	1194	50	1195
23.02.2017	13:56:68	Received	TSTB	NICKCHEN	MD61	25	1101	50	1193



## 18.1 RFP Receive History Detail

Left clicking on any receive history entry within the view will bring up the **RFPReceiveHistory** detail view. The **RFPReceiveHistory** detail view will present complete details for the selected RFP received and may also contain errors as shown below if the status is other than Received.

MdRFPReceiveHistoryView

**MDTEST - Filter settings**

Receive Status  Application  User  From Location

From Lvl  From RFP  Target Level  Target RFP

**MDTEST - RFPReceiveHistory**

Receive Date	Receive Time	Receive Status	Appl	User	From Location	From Lvl	From RFP	Target Lvl	Target RFP
24.02.2017	09:48:62	Received	TSTB	NICKCHEN	MD61	25	1100	50	1197
23.02.2017	04:08:82	Received with Warnings	TSTB	NICKCHEN	MD61	25	1196	50	0
23.02.2017	01:48:35	Received	TSTB	NICKCHEN	MD61	25	1194	50	1195
23.02.2017	13:56:68	Received	TSTB	NICKCHEN	MD61	25	1101	50	1193

RFPReceiveHistory

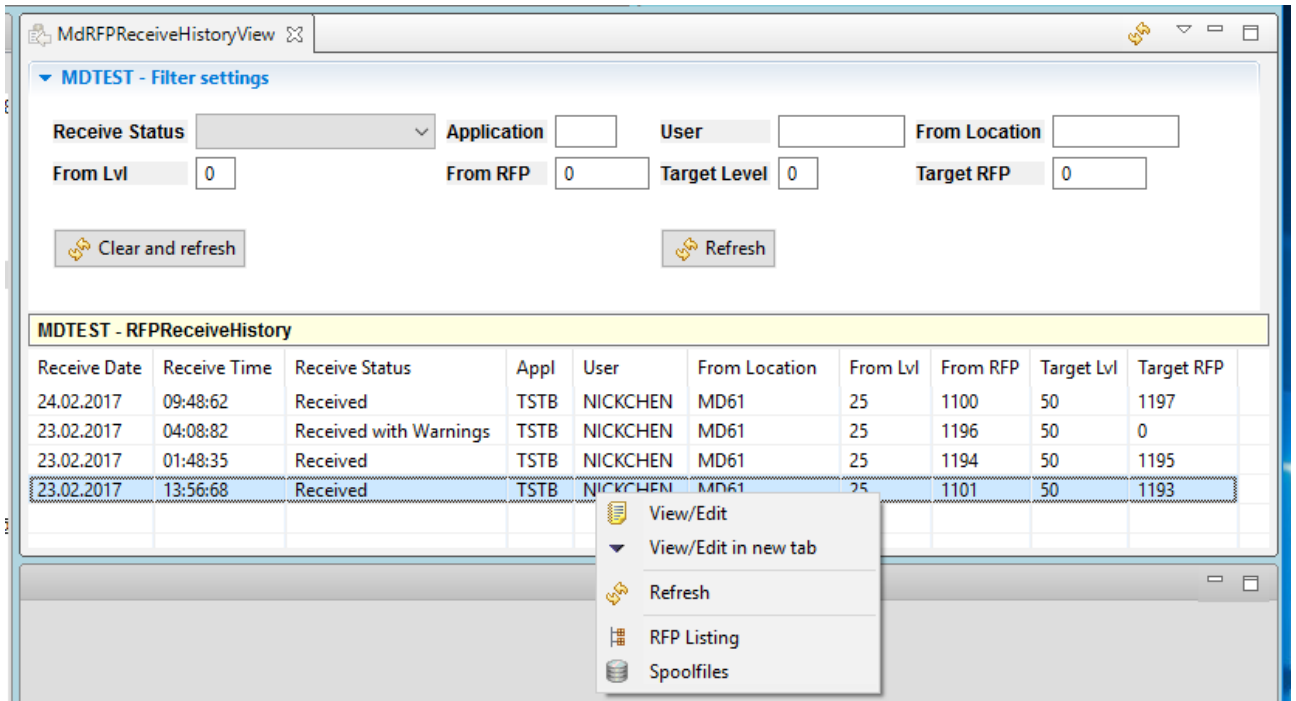
**MDTEST - Detail for RFPReceiveHistory: MD06001160 / 1**

Property	Value
Receive Date	23.02.2017
Receive Time	20:04:08
Receive Status	Received with Warnings
Appl	TSTB
User	NICKCHEN
From Location	MD61
From Lvl	25
From RFP	1196
Receive Library	R806001160
Target Lvl	50
Target RFP	0

Step	Sev	Message	Object
1	20	Object SQLTABRCV4 type *SQLTAB merged into existing request for use...	SQLTABRCV4

## 18.2 RFP Receive History Options

Right clicking on an RFP received entry within the **RFPReceiveHistoryView** will display the following options:



Receive Date	Receive Time	Receive Status	Appl	User	From Location	From Lvl	From RFP	Target Lvl	Target RFP
24.02.2017	09:48:62	Received	TSTB	NICKCHEN	MD61	25	1100	50	1197
23.02.2017	04:08:82	Received with Warnings	TSTB	NICKCHEN	MD61	25	1196	50	0
23.02.2017	01:48:35	Received	TSTB	NICKCHEN	MD61	25	1194	50	1195
23.02.2017	13:56:68	Received	TSTB	NICKCHEN	MD61	25	1101	50	1193

Options:

View/Edit	Same as left clicking to display the RFP receive history detail view
Refresh	Refreshes the RFP receive history view
RFP Listing	Brings up the RFP listing for the specific target RFP
Spoolfiles	Brings up any spool files for the receive job. Note: usually exist only on error