User Manual

MDOpen

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

Version 7.4
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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

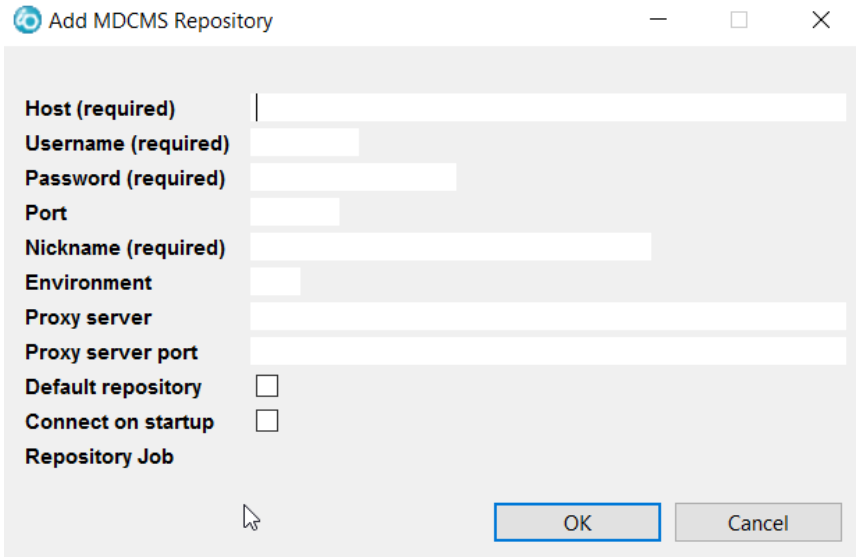
1. Start your Eclipse or Rational IDE
2. If not already open, open the MDCMS Perspective (Window => Open Perspective => Other => MDCMS)
3. If not already shown, display the ***MdRepositoryView*** (Window => Show View => Other => Mdcms Main Views => MdRepositoryView)

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 ***New Repository Location.*** That action will display the ***Add MDCMS Repository*** dialog.



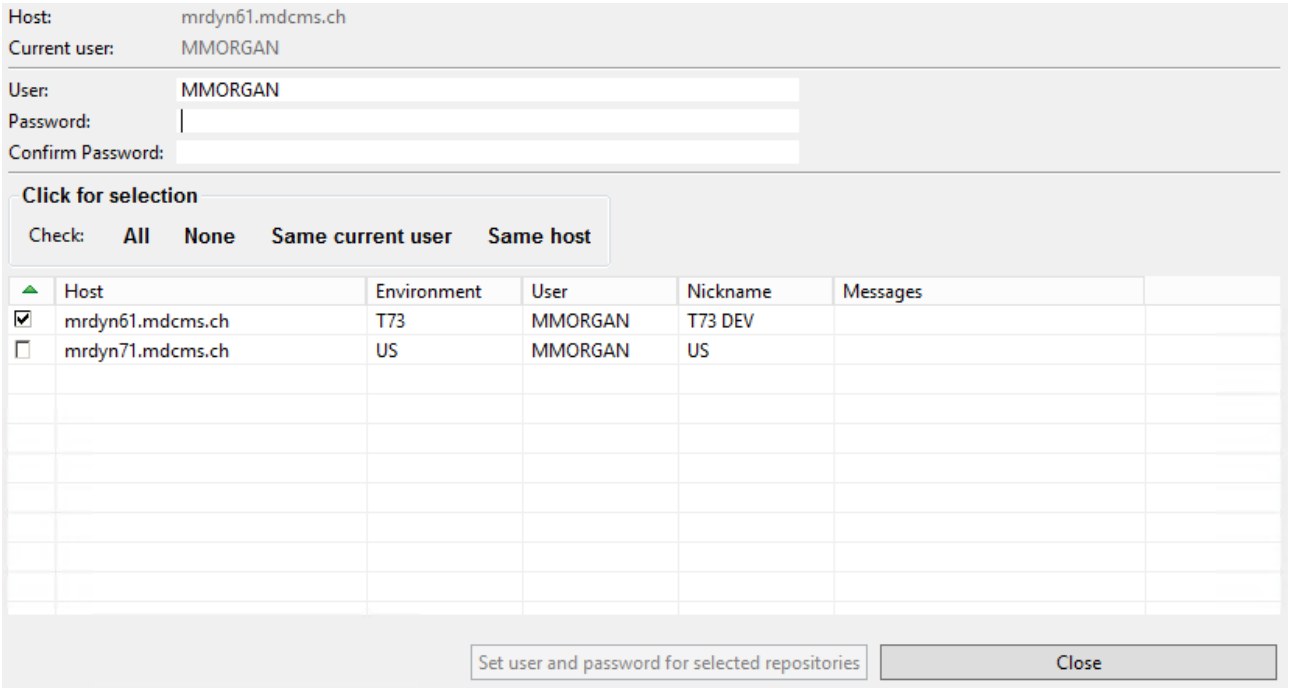
Fill in all required parameters and any optional parameters that are necessary (refer to the MDOpen User Manual for details on these parameters).

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
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

3.2 Change User or Password for Repository Connection

If the currently defined user or password for an existing repository definition should be changed, Right-click and select option Set repository user/password. If the option doesn't appear, then the repository is currently connected. In this case, first select option Disconnect and then try again.



Enter the user, if it should change, and the password for the user in the single fields at the top of the window. Then, select each repository that the change should be applied to and click button Set user and password for selected repositories.

The changes are only made to the repository definitions. If the password for the user on the target system itself should be made, then use the Session option Change password.

3.3 Export/Import Repository Definitions

Some or all repository definitions can be exported to a file. This file can then be imported into a different workspace.

Export:

1) From the Eclipse Menu, select File/Export…
2) Select MDOpen/Repository connections and click Next
3) Select one or more Repository definitions to be exported. Click Next
4) Save to a file in a folder of your choice and click Finish
   For each selected definition, everything except the password is included.

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.

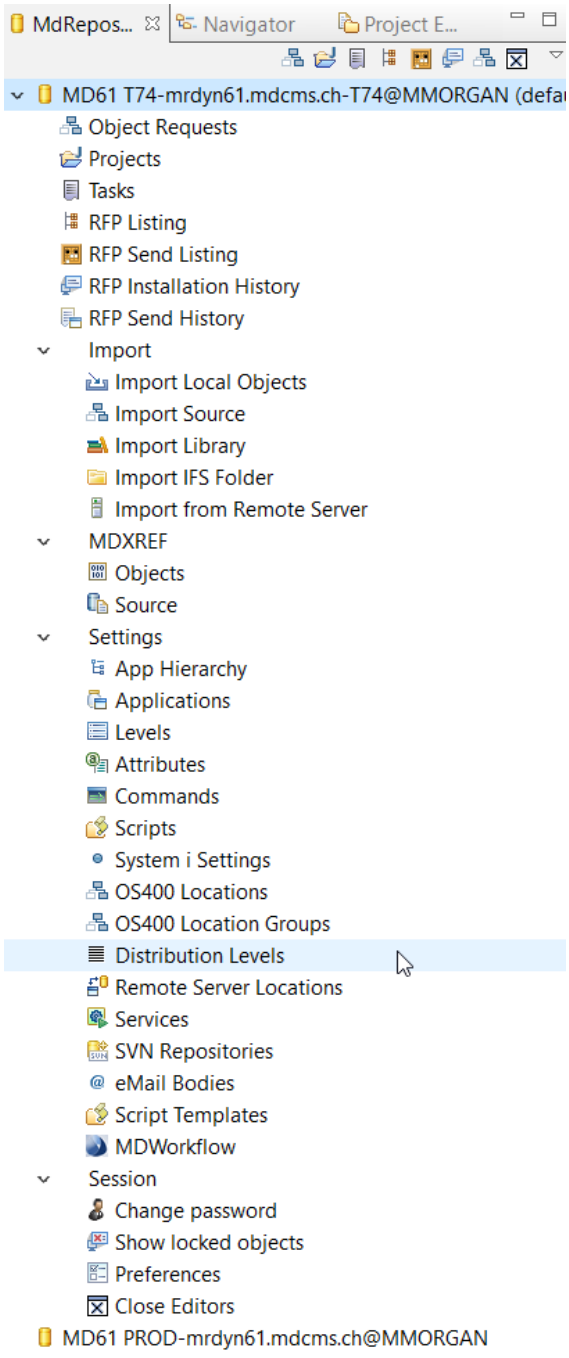
To enable this, a connection in RSE must be defined for the exact same IBMi host name as the name used for the MDOpen repository connection. Then, when MDOpen finds this connection, it will automatically use the LPEX editors as long as they are set as the preferred editor for the given file type.

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 and 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 Sequence 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 Clicking the Refresh button will return the view to its original state.

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 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 Setting up MDCMS within MDOpen

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

5.1 Common Settings Options

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

5.5 Attributes

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

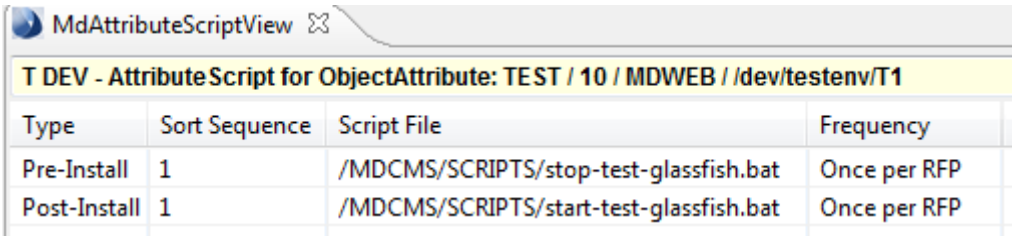
Complete descriptions of the Attribute Fields can be found in the MDCMS user manual.

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

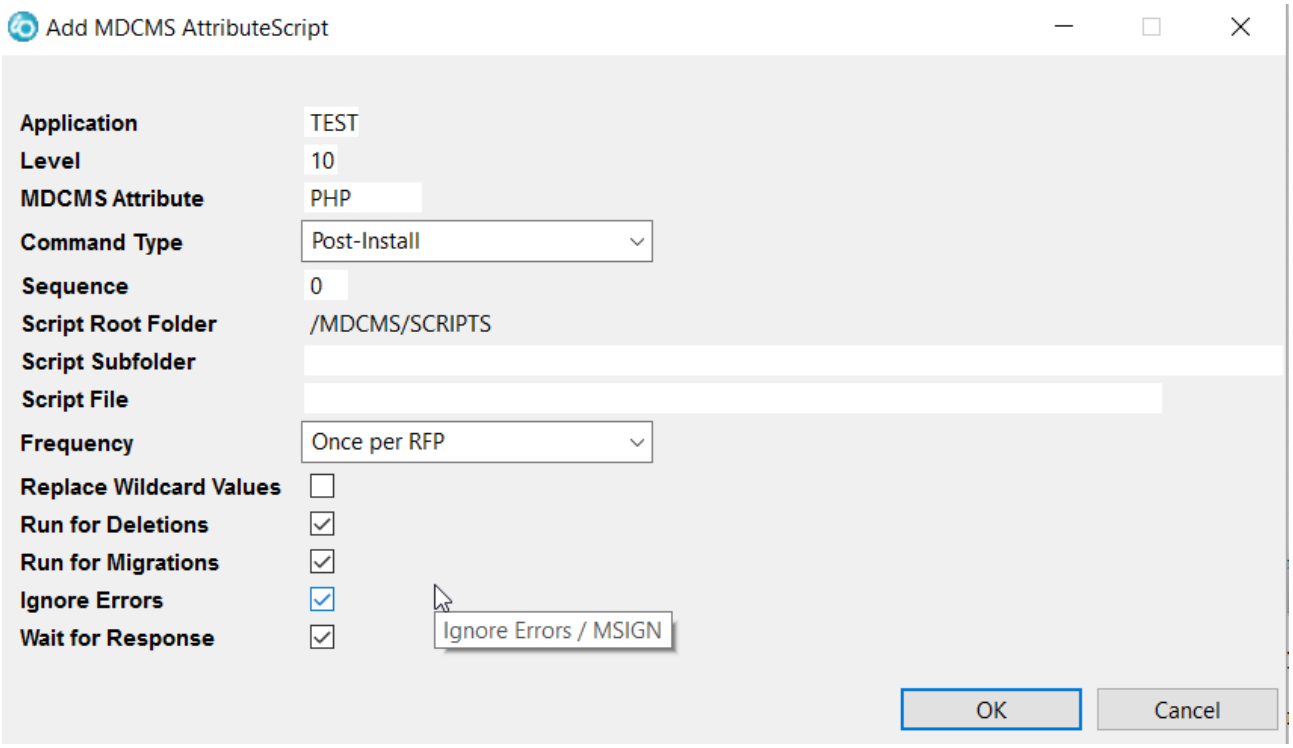
Scripts may be allocated to a specific *IFS or *REMOTE attribute to be executed during the installation of an RFP containing that attribute. To access the scripts for an Attribute, right click on the MDCMS Attribute and select ***Attribute Scripts***. The ***MDAttributeScriptView*** is displayed. The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


MdAttributeScriptView

T DEV - AttributeScript for ObjectAttribute: TEST / 10 / MDWEB / /dev/testenv/T1

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.



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 Root Folder

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 AS/400 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 where Project Data should be synced or Source should be compared or retrievable.

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 AS/400 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	• FTP – standard File Transfer Protocol • FTPS – FTP over SSL • SFTP – FTP over SSH
Port	The port number for the FTP service
Transfer Mode	• Active • Passive
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	• False – the folder/file permissions will not be updated after deployment to the server • True – the folder/file permissions are set based on the attribute object authority settings
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	• JKS – java keystore • PKCS12 – Public Key Standards 12
FTPS Encryption Method	• Implicit – connection without negotiation • Auth SSL – request security and step up to SSL encryption • Auth TLS – request security and step up to TLS encryption
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 Remote Server Scripts

The Remote Server Scripts function enables a user to define the scripts to be run on Remote Servers before or after *REMOTE objects are installed.

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.

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 MDWorkflow

The MDWorkflow 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 especially to 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

6 Manage Session Settings

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

6.1 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.

6.2 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.

6.3 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

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.
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

6.4 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 Object Requests

7.1 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.

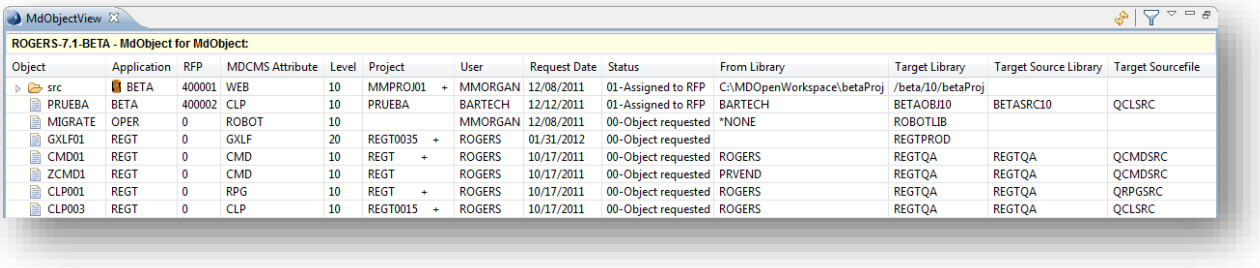
The Object Manager is used for:

- 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.

7.2 Object Request View

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


MdObjectView

ROGERS-7.1-BETA - MdObject for MdObject:

Object	Application	RFP	MDCMS Attribute	Level	Project	User	Request Date	Status	From Library	Target Library	Target Source Library	Target Sourcefile
src	BETA	400001	WEB	10	MMPROJ01 +	MMORGAN	12/08/2011	01-Assigned to RFP	C:\MDOpenWorkspace\betaProj	/beta/10/betaProj		
PRUEBA	BETA	400002	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		
GXLF01	REGT	0	GXLF	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	QRPGSRC
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 AS/400, or as an IFS file on the AS/400, 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 the local workspace, 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 local workspace to the MDCMS IFS folder on the AS/400 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.

Request Date

The date that the object request was initiated.

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

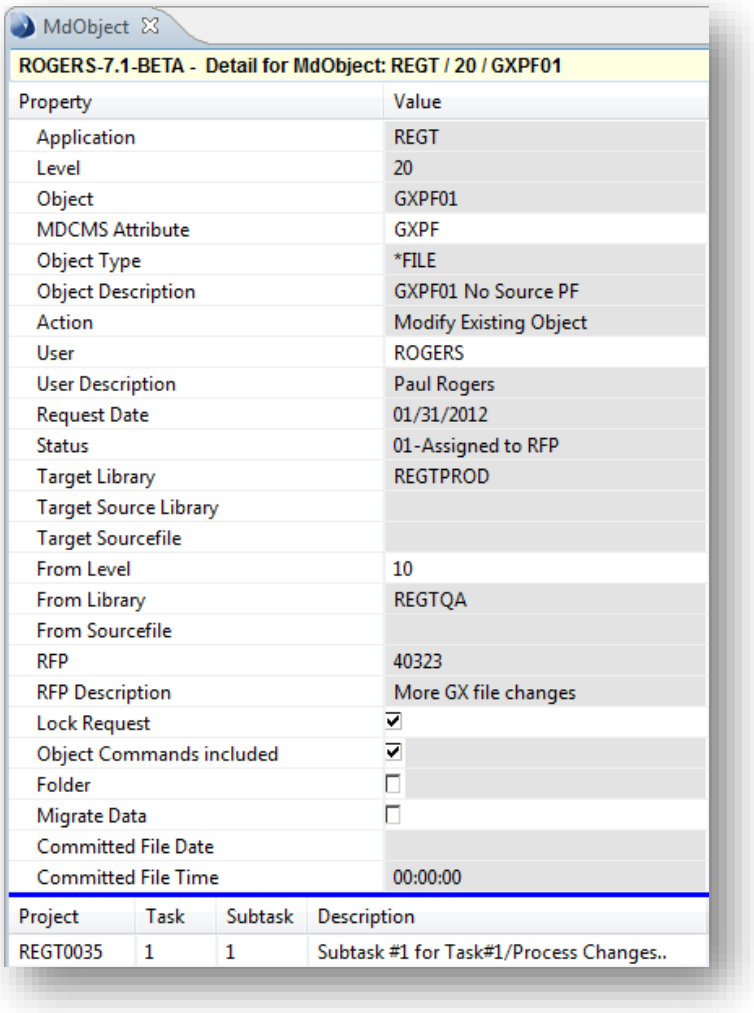
The target source file for the migration of the object request. This value is based on the Application group level specified for the request record. This value will be blank for IFS or Server Requests.

Date

The date that the Object was requested

7.3 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.


MdObject

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	☑
Object Commands included	☑
Folder	☐
Migrate Data	☐
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

Action

The action that was specified when the object was requested

- 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.

Object Commands included

A checkbox indicating if this object request has object commands associated with it. To view, add or edit any existing object commands right click on the object and select **Object commands.**

Folder

A checkbox indicating if the value in ***MdObjectView*** that was selected is a folder.

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.

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 Triggers

A checkbox indicating if any 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.

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:

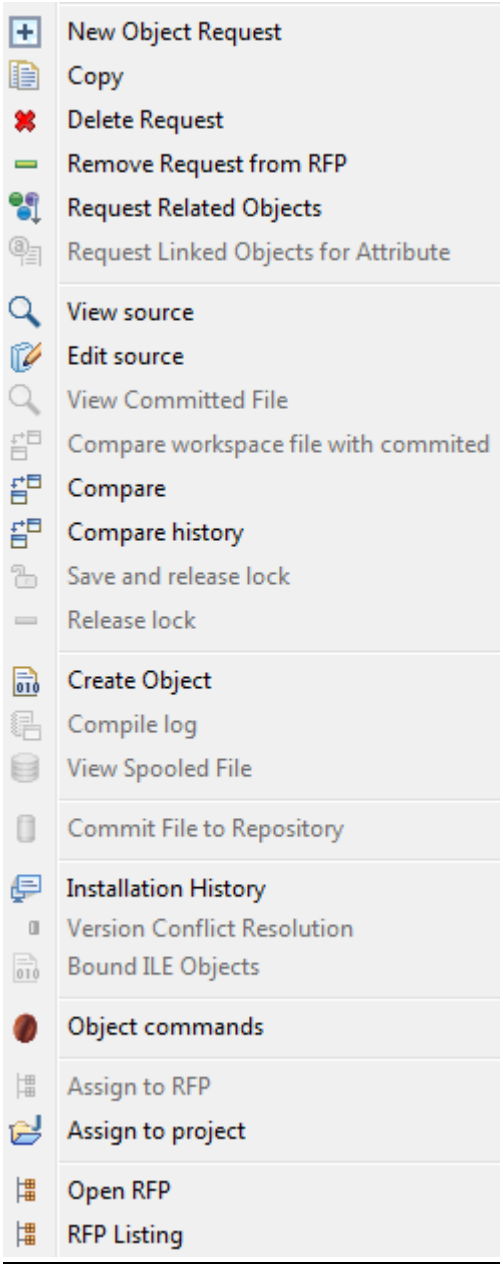
The From Library, From Source File may only be changed if the object request is for the lowest level of the Application Group.

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.

7.4 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.

Eclipse Editors, in conjunction with Rational Developer for i, are available for at least the following native languages:

- CLP
- DDS
- C/C++
- COBOL/ILE COBOL
- RPG/ILE RPG

And editors, in conjunction with a variety of eclipse plugins are available for the following commonly used languages (plus many others not listed):

- C#
- CSS
- HTML
- Java/JavaScript
- Perl
- PHP
- Ruby
- VBScript/VisualBasic
- SQL
- XML

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 Repository
Upload the current version of the requested *IFS or *REMOTE file in the local workspace 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 or remote server.

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.

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

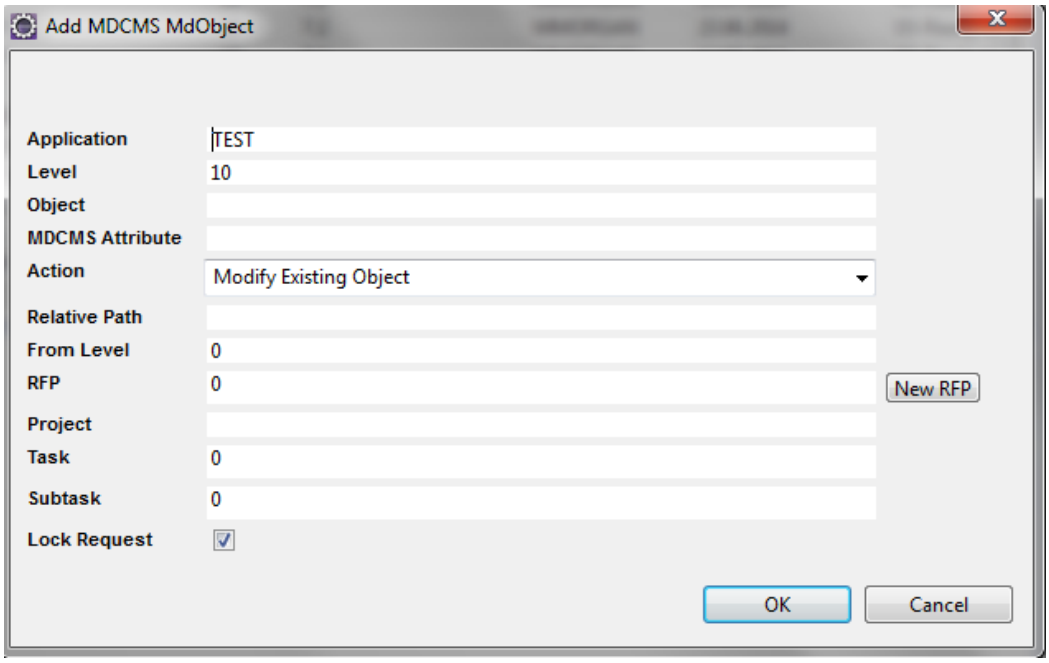
If the Object Request is assigned to an RFP, this option will open the detail view for the RFP in order to view/edit the details of the RFP or to submit the RFP for processing.

RFP Listing

This option opens or navigates to the RFP Listing view

8 Request Objects for Checkout and Deployment on IBMi

To initiate an object request, right click on an Object Row within the Objects Listing, or within the RFP, Project, Task or Subtask listings, 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
Task	a Task number within the Project, if necessary
Subtask	a Subtask within the Project Task, if necessary
Lock Request	if checked, the request is locked for you if unchecked, another programmer can also request the object

8.1 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.
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.
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 OS/400 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.

8.2 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.

8.3 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.*'

8.4 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.

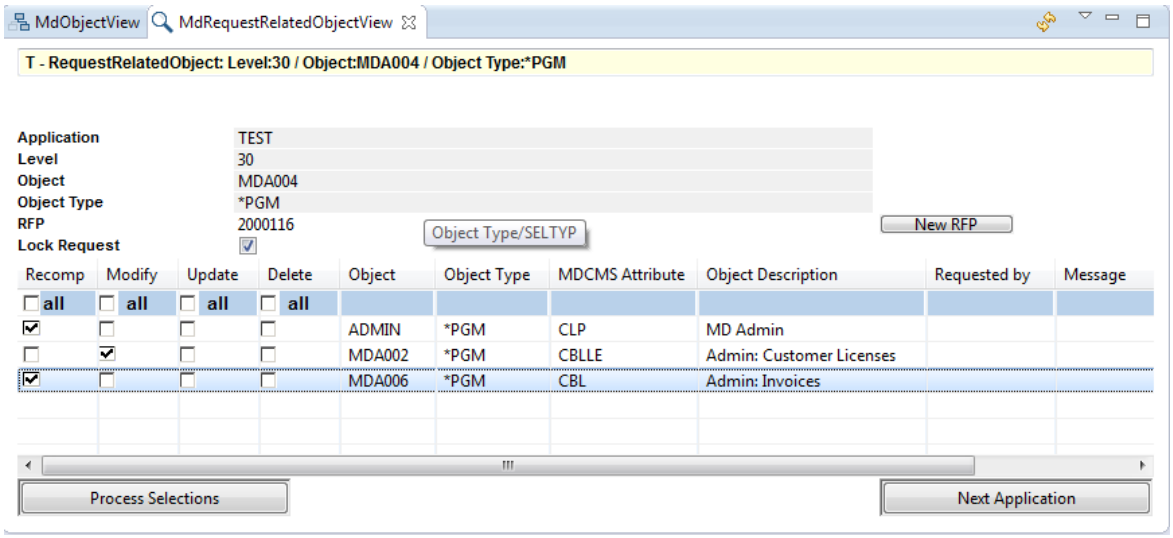
8.5 Update Object

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.

8.6 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***.



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.

8.7 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.

8.8 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.

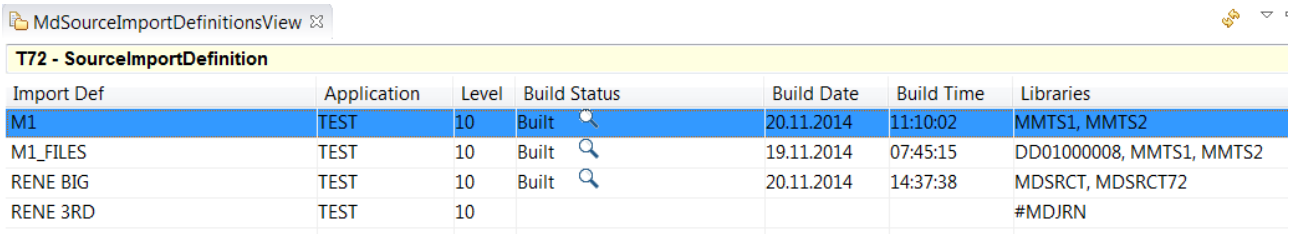
Buttons:

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.

8.9 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***.



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.

8.9.1 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.

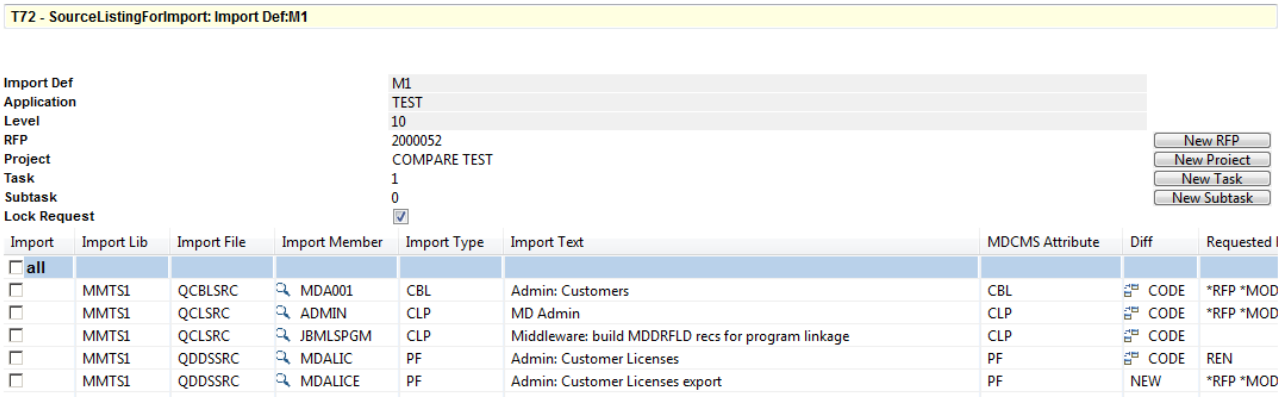
Libraries – a list of 1-n libraries to be included in the search. A library defined as a target library for an MDCMS attribute is not permitted.

Buttons:

Build List	Once at least one library is included for the definition, this button is enabled. When clicked, a job is submitted to batch to generate a list of all members matching the filter criteria. A message will be displayed when the batch job is complete.
Work with Results	Once a Build is complete, this button is enabled. When clicked, the list of found source members are listed.

8.9.2 Source Import Result List

The Result List displays all source members found in the Definition's Libraries that meet the search criteria.



Header Parameters:

RFP	The RFP number to assign to any selected members to request
Project	The Project ID to assign to any selected members to request
Task	The Project Task number to assign to any selected members to request
Subtask	The Project Subtask number to assign to any selected members to request
Lock Request	Specify if members should be requested in locked or unlocked modes

Import Column
Click for any row to select to create an Object Request to migrate the source from the import library into the defined Application Level.
The all checkbox can be clicked to select all rows that aren't already requested by a user.

Diff Column
Blank – no difference between source in Import Library and source in application
CODE – differences found in source code
NEW – source member only in Import Library and not in application. For a source file to be considered for the application, an MDCMS attribute must be defined that refers to the source file as the target for the level or a level higher up in the chain on the same system.
TYPE – the source type differs between the member in the Import Library and the member in the application.

MDCMS Attribute Column
The attribute to apply to the object request when processed

The icon next to the import member or next to the existing member can be clicked to view the source code in that member.

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

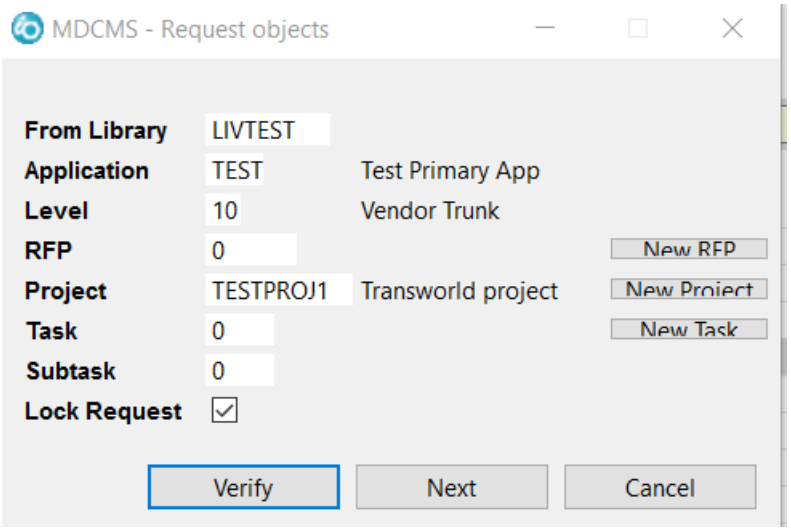
8.10 Import Library

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.

8.11 MDXREF Objects

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

Left-Click on a row to see a large amount of system and SQL details about the object.

Highlight one or many rows in the list and right-click to select the option 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.

8.12 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.

- 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.

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

Highlight one or many rows in the list and right-click to select the option Request Source to check out the source members.

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.
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.

9 Request Objects for Deployment to IFS or Non-OS/400 Servers

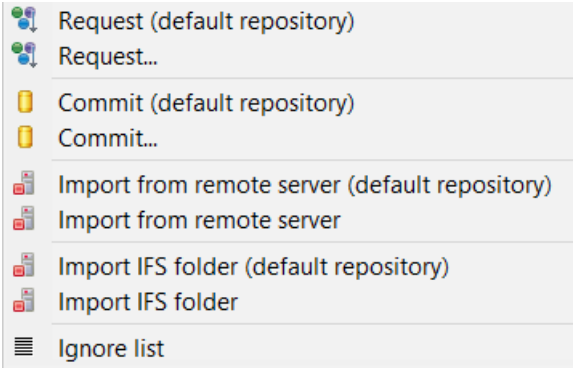
Requesting and committing non-native IBM i objects can be done in the following ways:

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

9.1 Selecting Files and Folders to be requested

9.1.1 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.

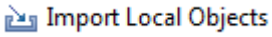
Import from Remote Server – the current version of the folders and files exist on a remote server and need to be copied into the local workspace for modification, or merely to have in the local workspace. Right-click on the folder in a workspace navigator view to indicate the destination that the soon-to-be-selected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

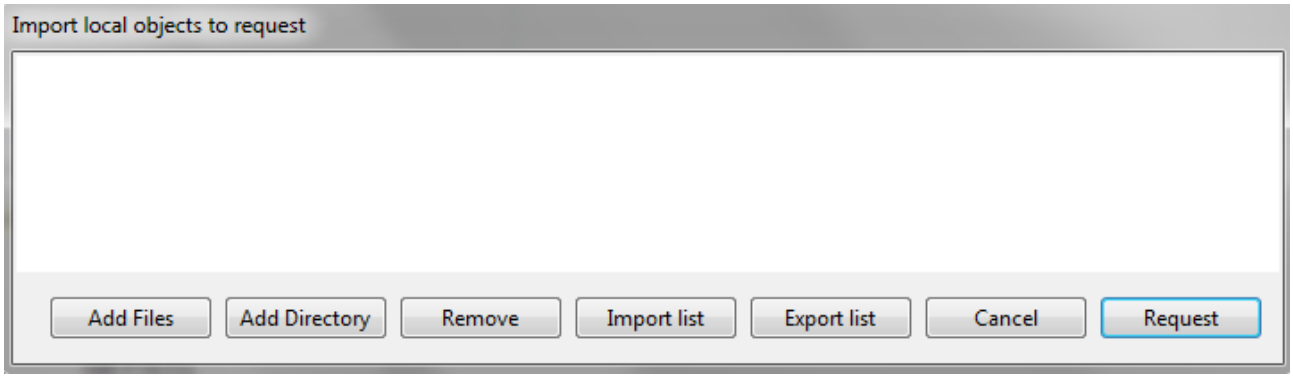
NOTE: The context menu options that include the text ***(default repository)*** will use the MDCMS Repository location defined as the default. To set a default repository location, check the box labelled ***Default repository*** for the appropriate Repository connection that you have created. The options without ***(default repository)*** will provide the list of defined repositories to select from.

9.1.2 Import Objects from Local Folders

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



This brings up the following window:



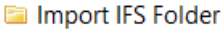
Files and Folders can be dragged from file explorer such as Windows Explorer and dropped into this window. Alternatively the following buttons can be used:

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.

9.1.3 Import Objects from IFS Folder

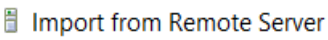
MDOpen can import the folders and files in an IFS folder directly into an RFP or Project for deployment to target IFS folders or to target Remote Servers.

Option 

can be selected from the repository list, or from an open RFP, Project or Task.

9.1.4 Import Objects from Remote Server

MDOpen can import the folders and files from a remote server directly into an RFP or Project for deployment to target IFS folders or to target Remote Servers.

Option 

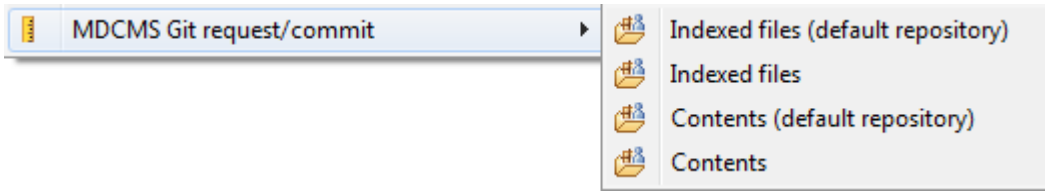
can be selected from the repository list, or from an open RFP, Project or Task.

9.1.5 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:



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

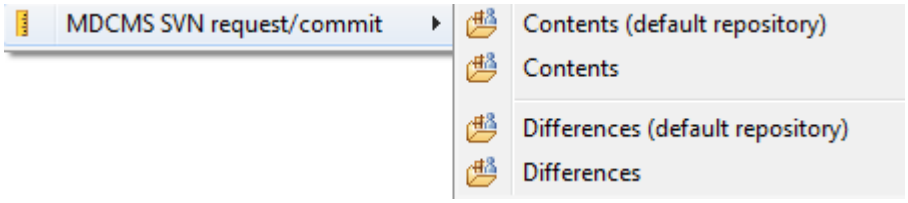
Contents – request some or all of the files/folders that are contained in the selection.

9.1.6 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:



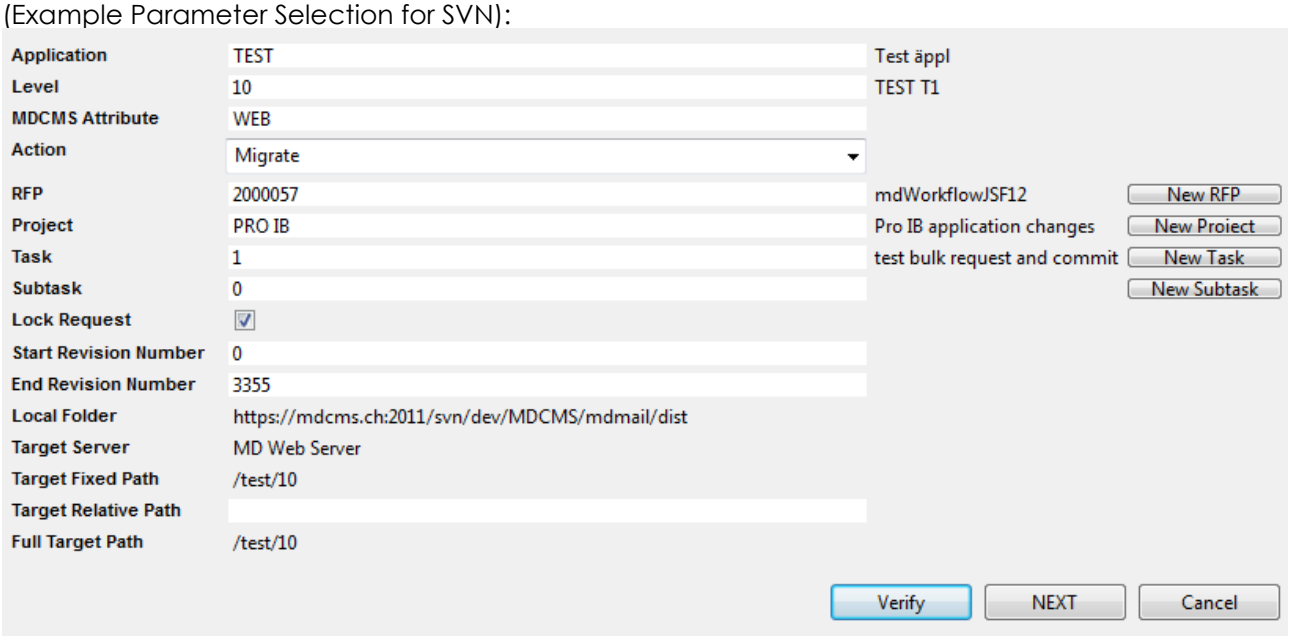
Contents – request some or all of the files/folders that are contained in the selection.

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.

9.2 Request – Location, RFP, Project and Target Selection

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
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:

Cancel

Cancel the Request

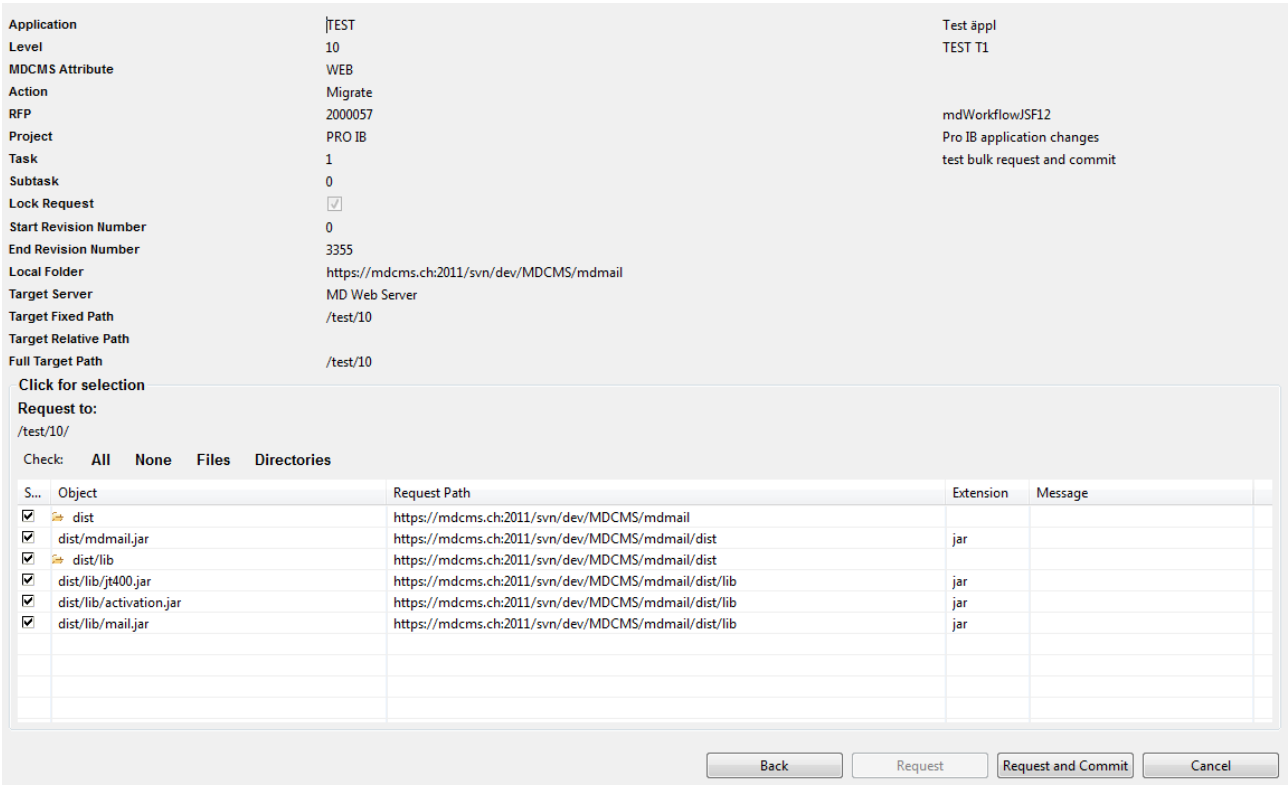
Verify

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

9.3 Request - Selection Confirmation



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 previous dialog

Request
Request the selected items, but don't yet commit them to the MDCMS repository. This button is only enable when requesting from the workspace.

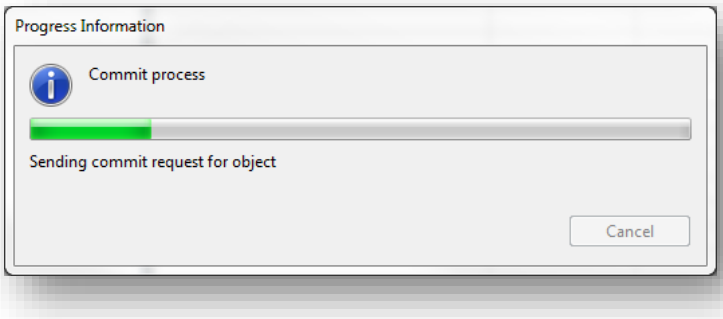
Request and Commit
Request the selected items and commit them to the MDCMS repository.

Copy to Workspace – Confirm to copy of the selected folders and files to the local workspace without requesting them in MDCMS.

Close
End the request dialog

9.4 Commit objects

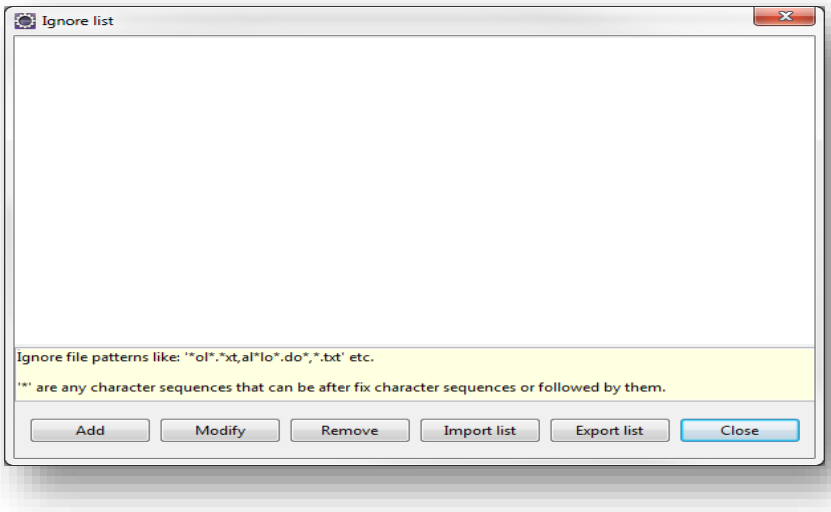
A commit copies the local copy of folders/files to the IBM i in preparation for RFP installation. Right click and select ***MDCMS => Commit (default repository)*** or right click and select ***MDCMS => Commit…*** and the following progress dialog should appear:



The Commit option is also available 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.

9.5 Create an Ignore List for Requests and Commits

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



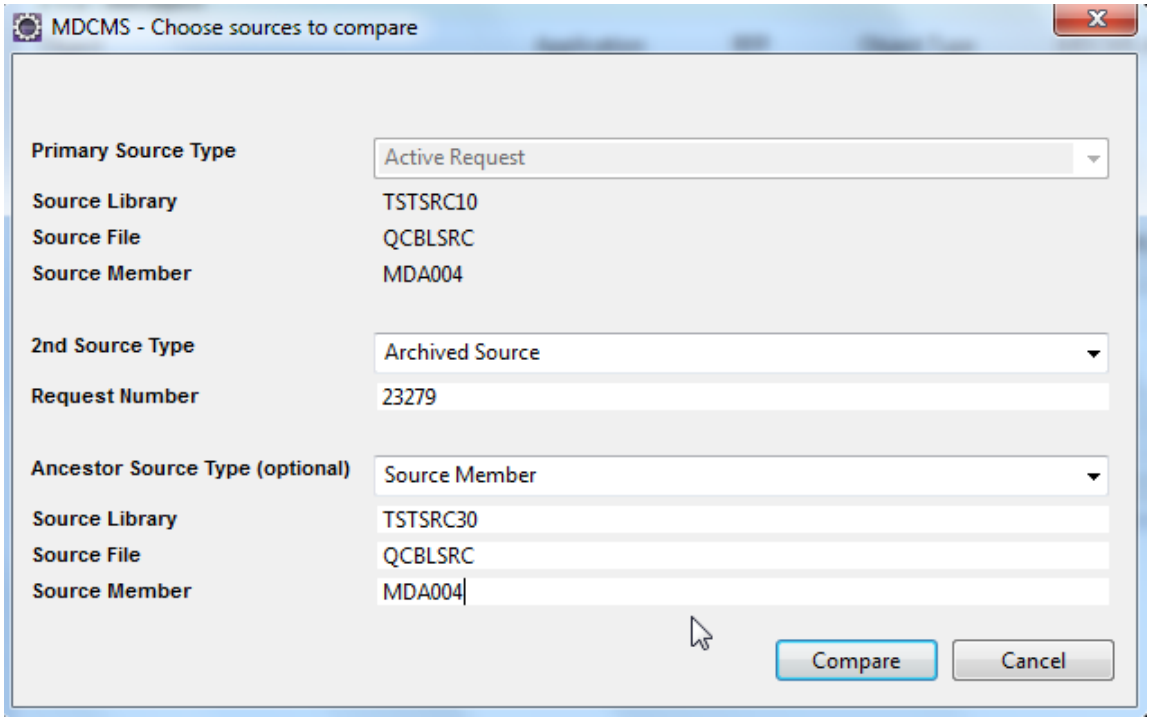
The Ignore list dialog provides a function for the user to specify a list of file patterns that are to be ignored during requests.

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.

10 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.

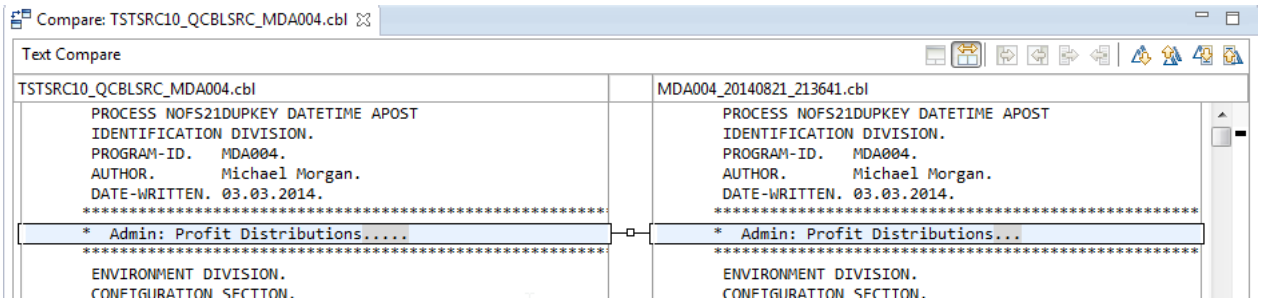
The primary source will be based on the selected object. A 2nd source must be selected for the comparison and a 3rd source can be selected as the Ancestor for a 3-Way comparison.
The type of source (source member, IFS file, local file) can vary for each selection – in other words, you can compare a source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

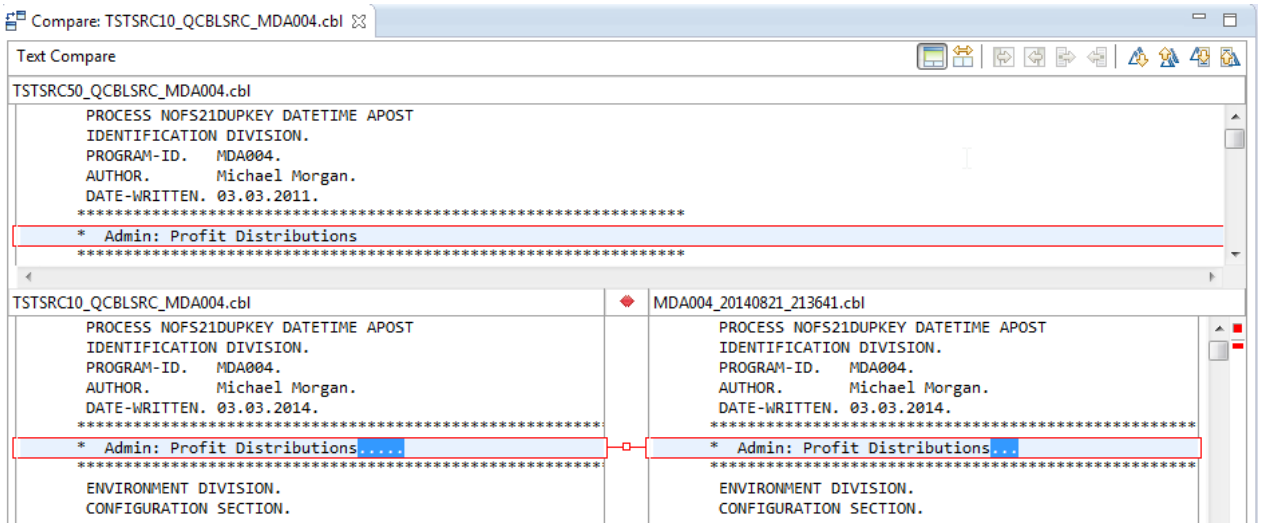
2-Way Comparison Results:



The left pane shows the source code of the Primary Source and the right pane shows the source code of the 2nd 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 2nd 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.

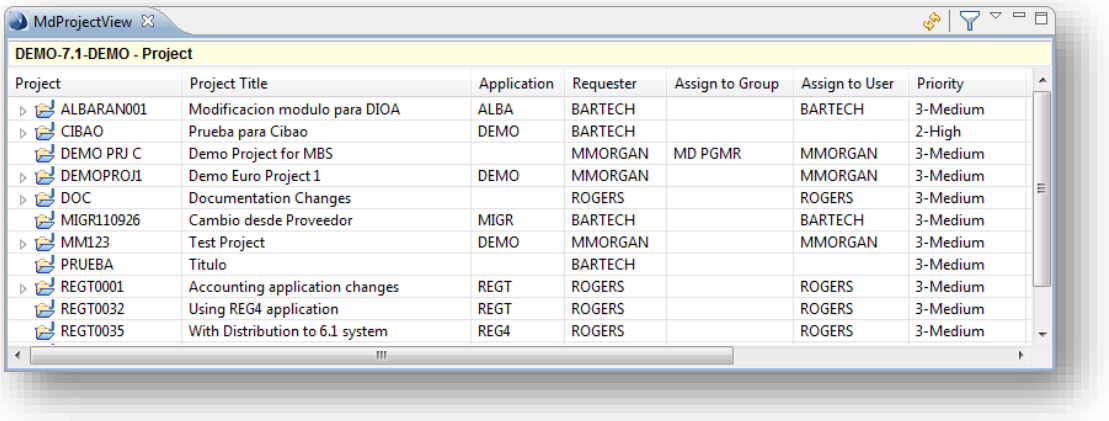
The  icons can be clicked to navigate up or down the source to the next conflict.

11 Projects

11.1 Project Listing

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

NOTE: 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.



Project	Project Title	Application	Requester	Assign to Group	Assign to User	Priority
ALBARAN001	Modificacion modulo para DIOA	ALBA	BARTECH		BARTECH	3-Medium
CIBAO	Prueba para Cibao	DEMO	BARTECH			2-High
DEMO PRJ C	Demo Project for MBS		MMORGAN	MD PGMR	MMORGAN	3-Medium
DEMOPROJ1	Demo Euro Project 1	DEMO	MMORGAN		MMORGAN	3-Medium
DOC	Documentation Changes		ROGERS		ROGERS	3-Medium
MIGR110926	Cambio desde Proveedor	MIGR	BARTECH		BARTECH	3-Medium
MM123	Test Project	DEMO	MMORGAN		MMORGAN	3-Medium
PRUEBA	Titulo		BARTECH			3-Medium
REGT0001	Accounting application changes	REGT	ROGERS		ROGERS	3-Medium
REGT0032	Using REG4 application	REGT	ROGERS		ROGERS	3-Medium
REGT0035	With Distribution to 6.1 system	REG4	ROGERS		ROGERS	3-Medium

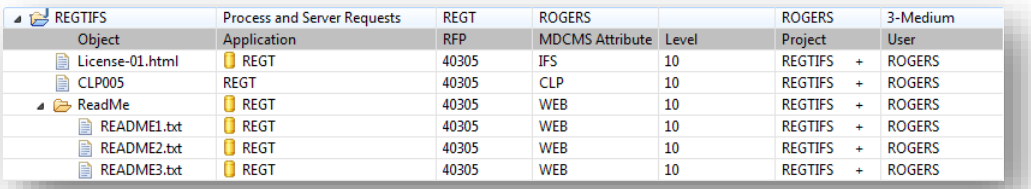
The ***MdProjectView*** contains the following columns of information for each project:

Project – The Project name (12 character length)
Project Title – The Project Description title (80 character length)
Application – The Application Group that is associated with the Project
Requester – The Project Requester (the user that created the Project)
Assign to Group – The Group that the Project is assigned to
Assign to User – The user that is assigned to the Project
Priority – The current Priority of the Project
- 1 - Critical
- 2 - High
- 3 - Medium
- 4 - Low
- 5 - Optional

Status – The current status of the Project
- 1 - Project Opened
- 2 - Project Authorized
- 3 - Work in Process
- 4 - Ready for Testing
- 5 – Testing Complete
- 6 - Project Complete
- 9 - Project Cancelled
- Any Custom MDWorkflow status codes

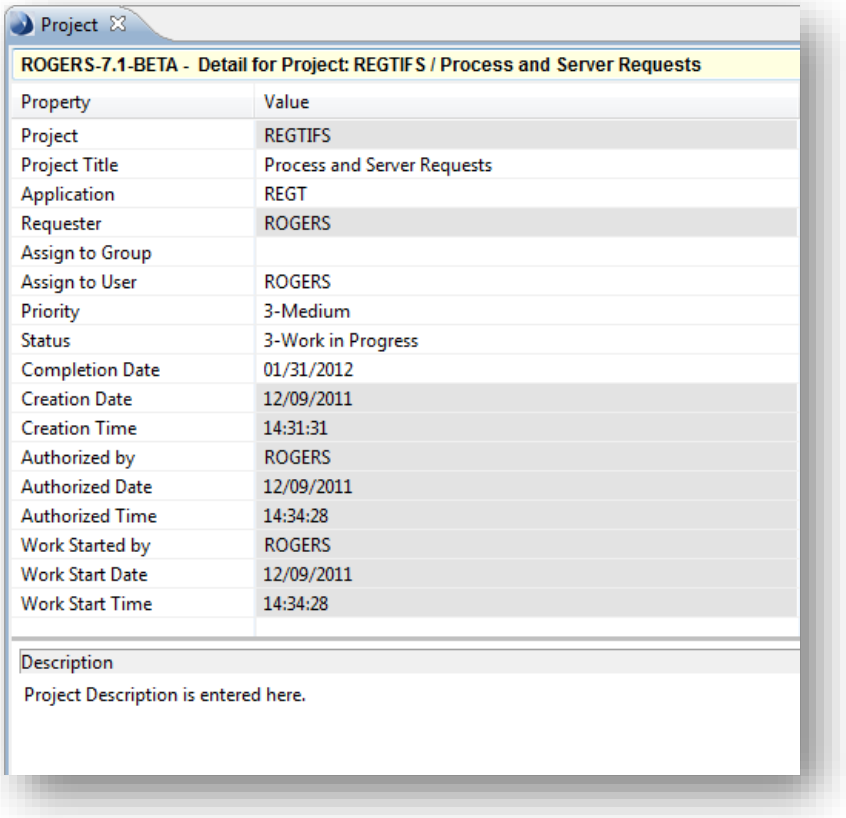
Creation Date – The date the Project was created
Completion Date – The Expected Completion Date of the Project

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		ROGERS	3-Medium
Object	Application	RFP	MDCMS Attribute	Level	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.



Project

ROGERS-7.1-BETA - Detail for Project: REGTIFS / Process and Server Requests

Property	Value
Project	REGTIFS
Project Title	Process and Server Requests
Application	REGT
Requester	ROGERS
Assign to Group	
Assign to User	ROGERS
Priority	3-Medium
Status	3-Work in Progress
Completion Date	01/31/2012
Creation Date	12/09/2011
Creation Time	14:31:31
Authorized by	ROGERS
Authorized Date	12/09/2011
Authorized Time	14:34:28
Work Started by	ROGERS
Work Start Date	12/09/2011
Work Start Time	14:34:28

Description

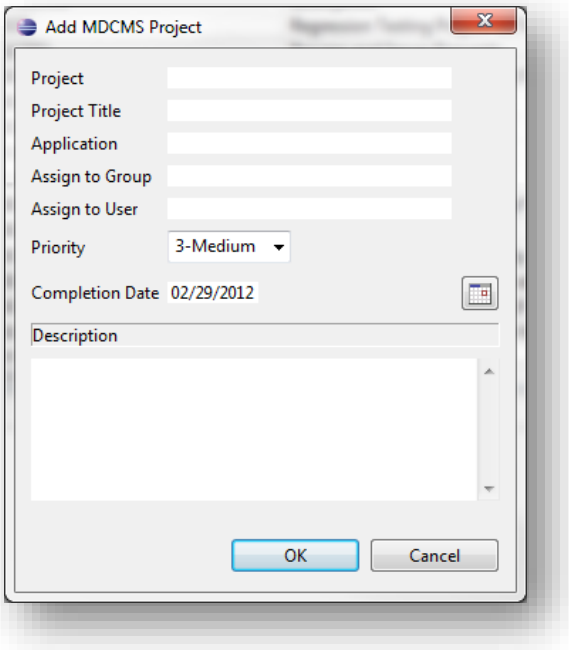
Project Description is entered here.

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

Creation Time
Authorized by – The user who authorized the Project
Authorized Date
Authorized Time
Approved by – The user who approved the Project
Approved Date
Approved Time
Description – The complete Project Description field
Any Custom Fields

11.2 Add a new Project

Right click within the ***MdProjectView*** and select New Project and the ***Add MDCMS Project*** dialog will be displayed.



Complete the parameters:

Project
Project Title
Application
Assign to Group
Assign to User
Priority
Completion Date – Set the completion date of the project. A calendar box appears to the right to assist the user in selecting a date.
Description

Any MDWorkflow Custom Fields will also be presented in the window.

Note: The fields Application, Assign to Group and Assign to User can be prompted using the ***Ctrl + Space*** function.

11.3 Copy a Project

Right click within the ***MdProjectView*** and select Copy and the ***MDCMS Project*** dialog will be displayed with the fields pre-filled with the values from the selected Project.

11.4 Viewing and Managing Object Requests for a Project, Task or Subtask

To view the list of all active Object Requests for a Project, Task or Subtask, left-click on the expansion arrow to the left of the Project, Task or Subtask. 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 Projects, Tasks or Subtasks.

11.5 Adding a New Object Request to Project, Task or Subtask

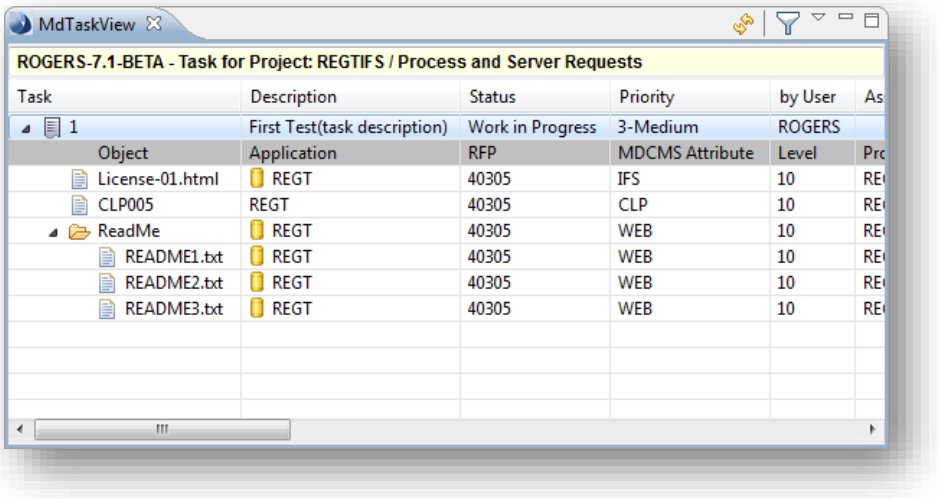
Right click any Project, Task or Subtask within their respective list view and select **New Object Request** and the ***Add MdObject*** dialog is displayed with the Project ID (and Task and Subtask when applicable) preselected. The remainder of the Object Request Process is identical to the process described in the Objects chapter.

11.6 Viewing Project Tasks and Subtasks

Within the ***MdProjectView*** 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.



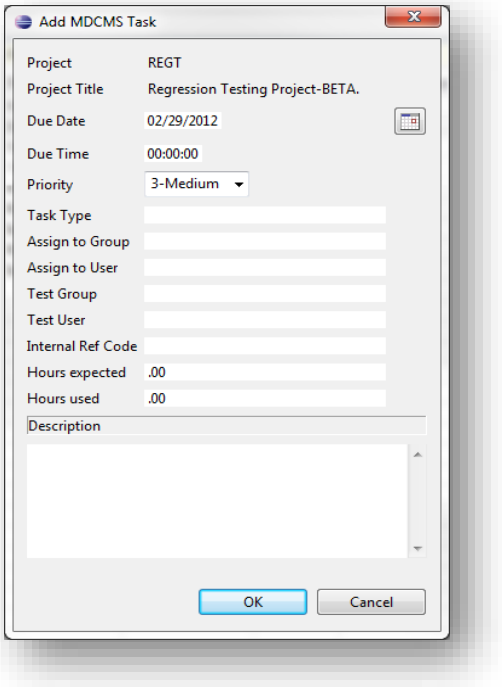
The ***MdTaskView*** displays the following fields:

Task – The task number
Description – The first 80 characters of the task description
Status – The current status of the task
Priority – The current priority of the task
by User – The user that created the task
Assign to Group – The group that the task is assigned to
Assign to User – The user that the task is assigned to
Task Type – The current value for the task type
Created – The date that the task was created
Due Date – The due date of the task

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. The above view shows a ***MdTaskView*** with native, IFS and server objects associated with it, with an RFP value already assigned. This expanded view includes additional headings for Object, Application, RFP, MDCMS Attribute, Level, Project, User, Request Date, Status, From Library, Target Library, Target Source Library and Target Source file.

11.7 Add a Task/Subtask

Within the ***MdTaskView*** a user can right click and select **Add** to add a new Task. The ***Add MDCMS Task*** dialog is displayed.



The ***Add MDCMS Task*** dialog will contain the Project and Project Title values of the current Project. These values cannot be changed. Complete the following fields and click OK to create the new task:

Due Date
Due Time
Priority
Task Type
Assign to Group
Assign to User
Test Group
Test User
Internal Ref Code
Hours expected
Hours used
Description

Any MDWorkflow Custom Fields will also be presented in the window.

11.8 Copy a Task/Subtask

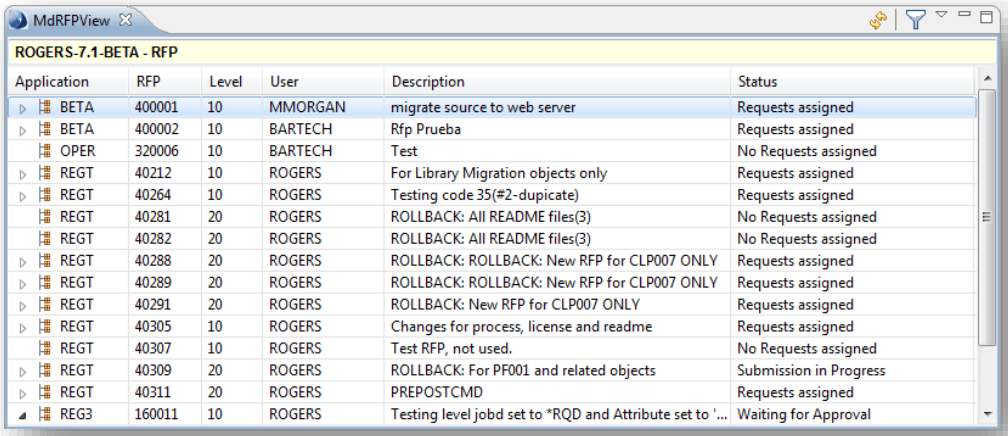
Right click within the ***MdTaskView*** and select Copy and the ***MDCMS Task*** dialog will be displayed with the fields pre-filled with the values from the selected Task.

12 RFP

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

12.1 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-dupicate)	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

12.2 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.

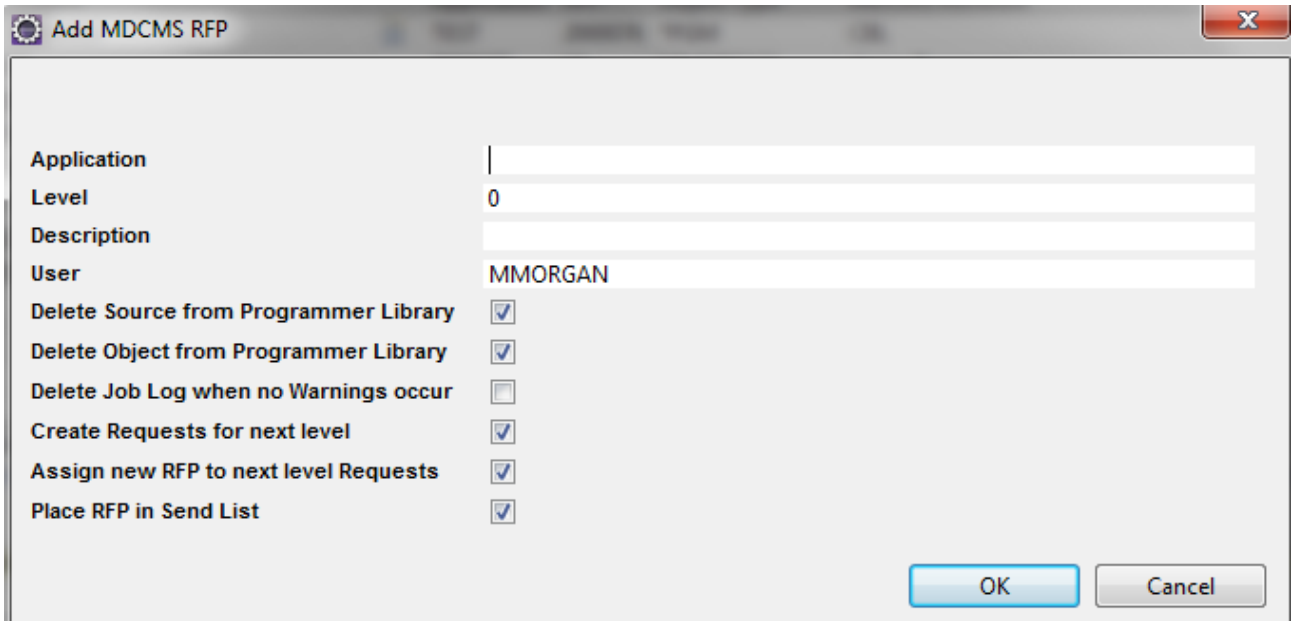
The possible status code values for an RFP are:

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

12.3 Add New RFP

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



The **Add MDCMS RFP** dialog contains the following fields:

Application – The Application that will be used for object migration.

Level – The Application level that will be used for object migration.

Description – The user specified description for this RFP.

User – The MDCMS User ID of the programmer assigned to this RFP. More than one programmer may be included in a request 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 if this box is checked.

Create Requests for next level – If higher application levels exist new request records can automatically be generated for next level.

Assign new RFP to next level Requests – If higher application levels exist and 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 Queue is defined (see Distribution Queues in chapter 12), then a send package can be automatically generated for the Queue(s) and placed in

the RFP Send Listing. The actual sending of the RFP to a remote system is initiated within RFP Send Listing.

Complete all required parameters and click OK to create the new RFP or Cancel to cancel the process.

12.4 Copy RFP

To copy an existing RFP and 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.

12.5 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.

12.6 Close RFP

If an RFP has been created, but is not intended to ever by 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 / nnnnnnn?'* Click OK to close RFP or Cancel to cancel the process.

12.7 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.

12.8 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.

12.9 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.

12.10 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.

12.11 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.

12.12 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.

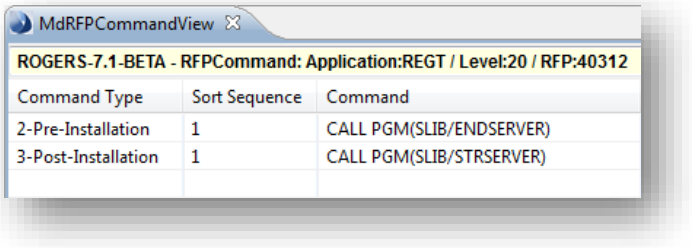
All options available from the main Object Listing are also available from the Object Listings within RFPs.

12.13 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.

12.14 RFP Commands

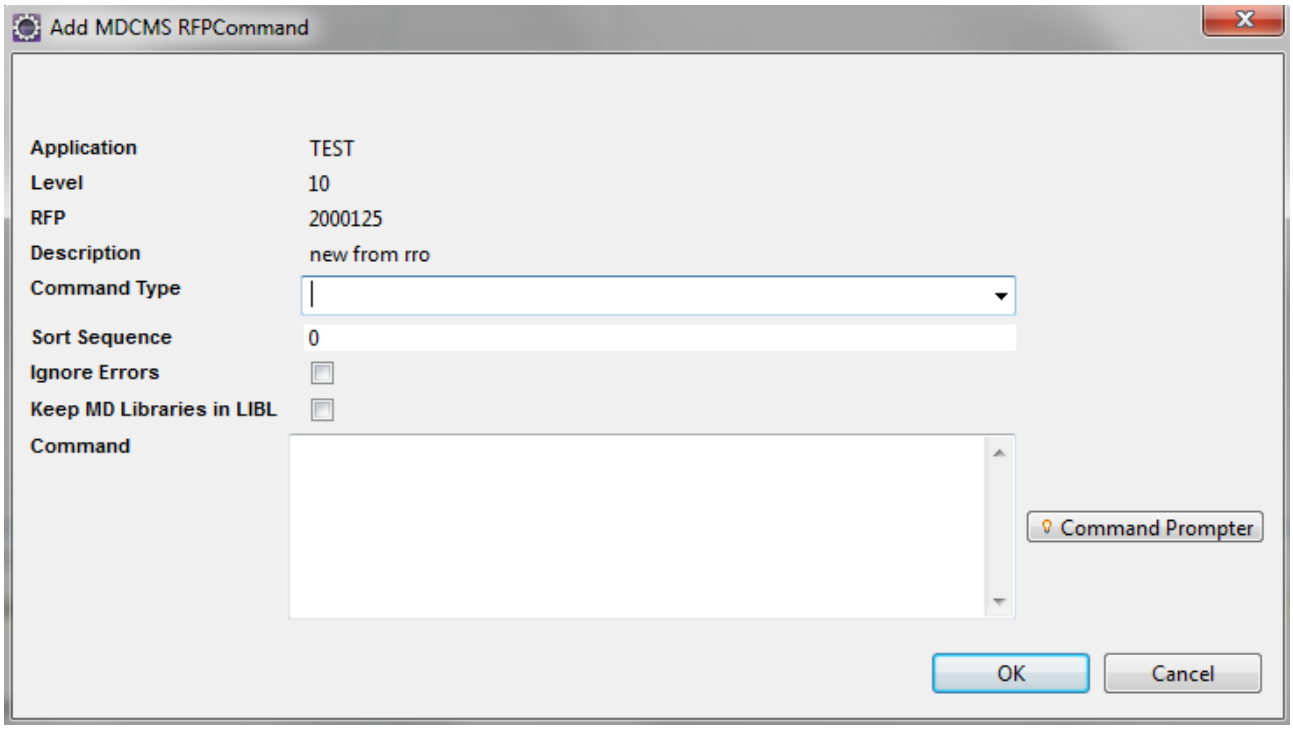
To view and manage the commands that will each run once for a specific RFP, right-click on that RFP and select option **RFP Commands.** That action will display the ***MdRFPCommandView***.



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.



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 Pre-Compile, Post-Compile and Pre-Installation commands
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
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.

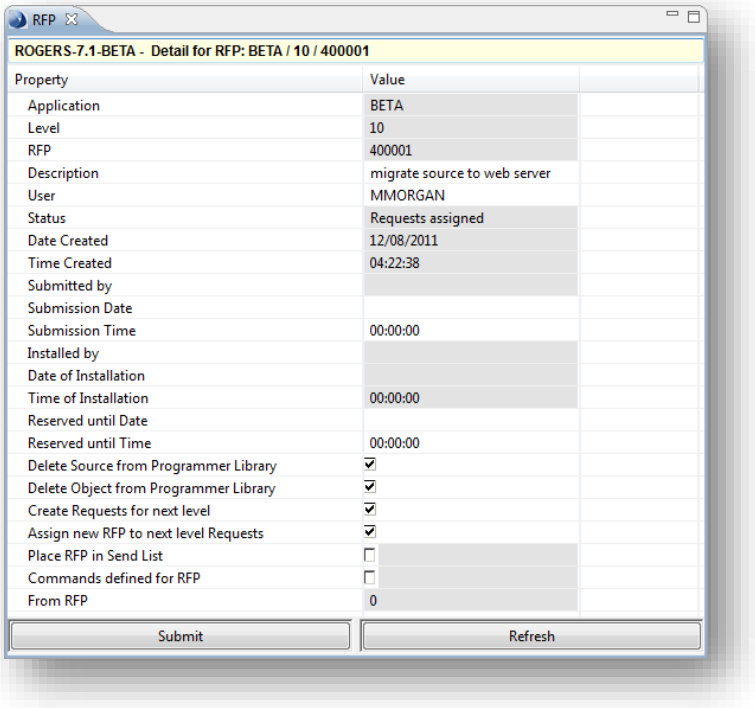
12.15 RFP Scripts

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.

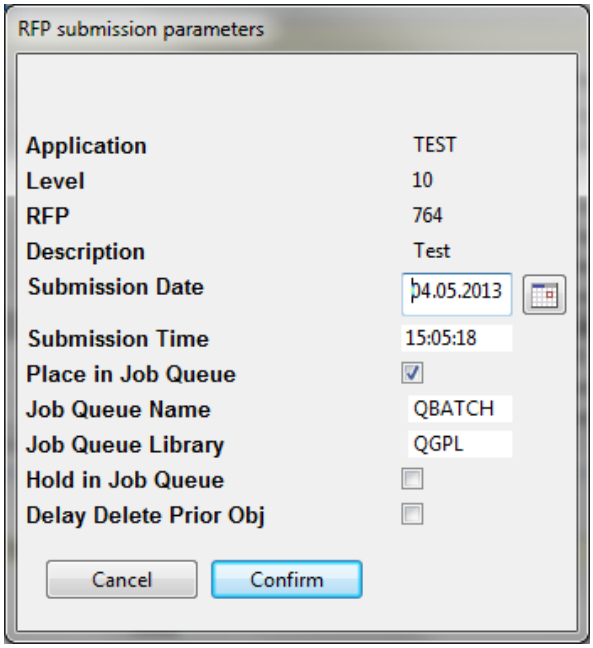
One additional parameter provided when for a specific RFP is the Attribute for Server/Folder Settings. A valid *IFS or *REMOTE attribute must be entered here so that MDCMS will know the location for the execution of the script.

12.16 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.



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.

12.17 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.

12.17.1 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**.

12.17.2 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 *JOBD 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.

Command **MDENDSIGN** can be used to cleanly end MDSIGN.

12.18 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 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.

12.19 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.

12.20 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.

12.21 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.

12.22 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.

13 RFP Send Listing

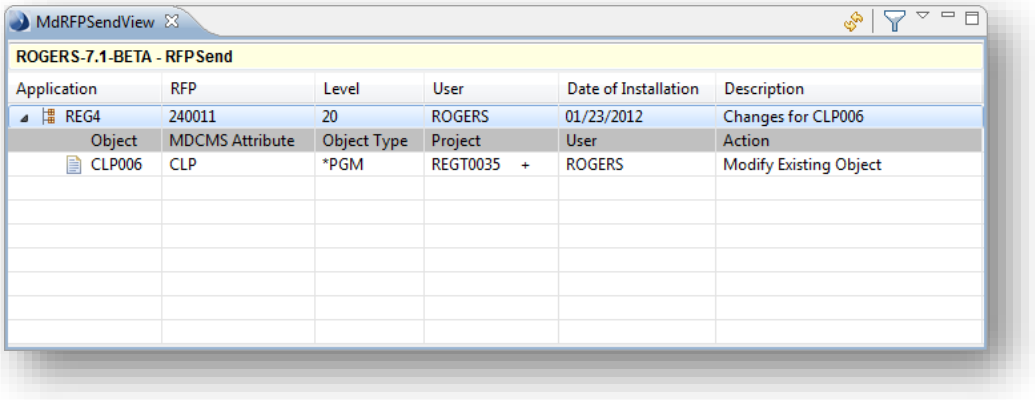
It is possible to control your business applications across your IBMi systems or logical partitions with MDCMS, as long as a licensed copy of MDCMS exists on each of the systems or logical partitions involved.

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.

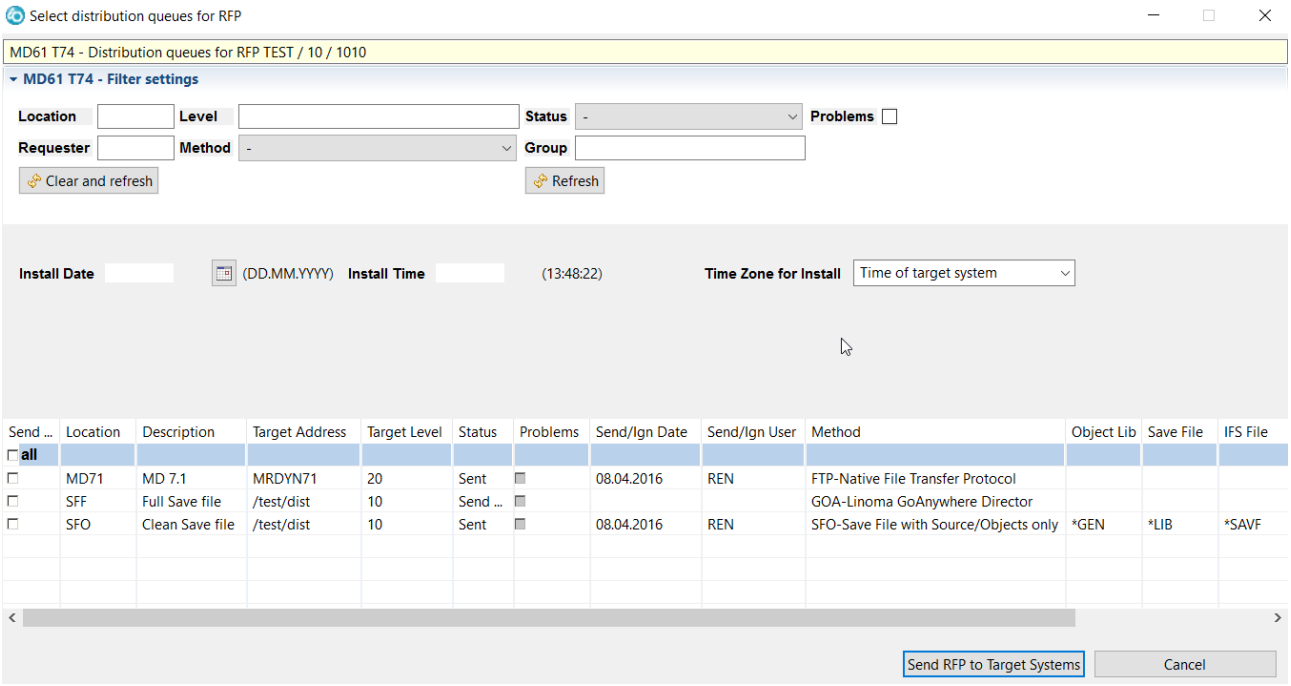


The ***MdRFPSendView*** will contain any RFP's that are currently open for distribution to other systems or logical partitions.

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

13.1 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.



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 2nd 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.

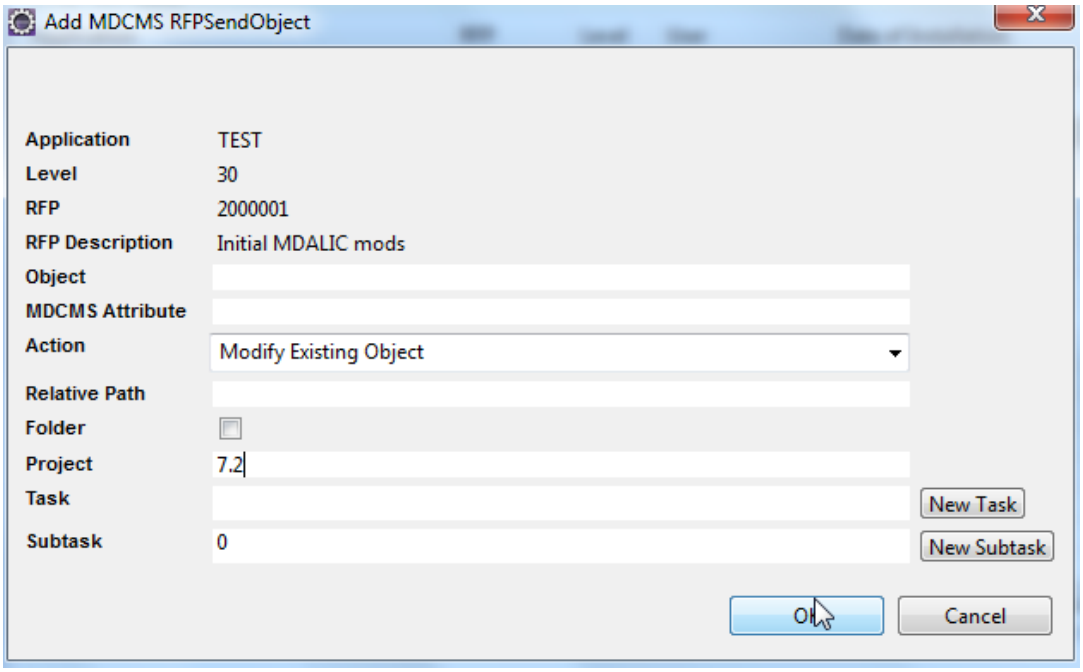
Additionally, for Transmit Type SFO (export Objects to a Save File without MDCMS information), the following fields can be edited for each row:

- 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

13.2 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 RFPSendObject*** 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

13.3 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.

13.4 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.

13.5 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.

13.6 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

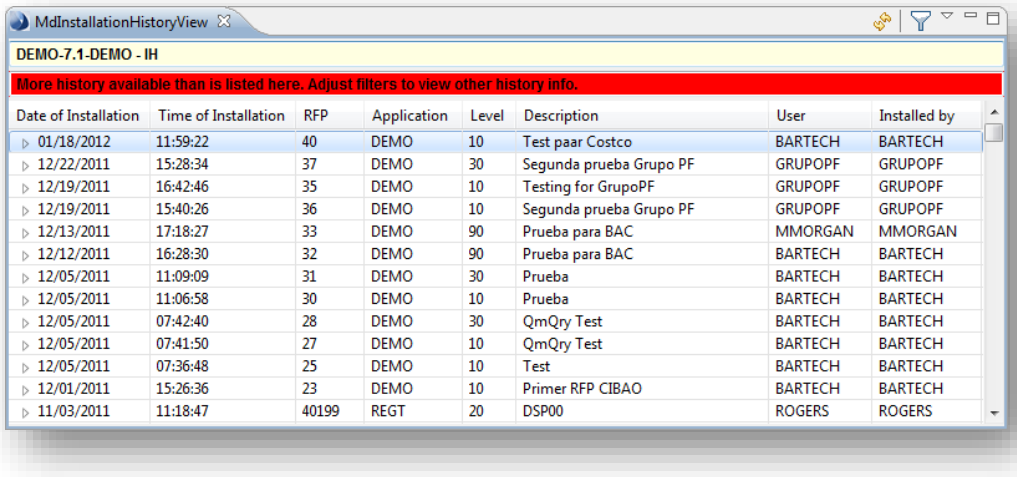
Delete – remove the Object from the RFP to be Sent

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.

14 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 source code, then the object itself is compressed and archived in the IFS directory MDCMS/ARCHIVE/. The number of generations to store is set within the application Application Level maintenance function.

The RFP Installation History 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 retrieve or rollback prior versions of objects.



Date of Installation	Time of Installation	RFP	Application	Level	Description	User	Installed by
01/18/2012	11:59:22	40	DEMO	10	Test paar Costco	BARTECH	BARTECH
12/22/2011	15:28:34	37	DEMO	30	Segunda prueba Grupo PF	GRUPOPF	GRUPOPF
12/19/2011	16:42:46	35	DEMO	10	Testing for GrupoPF	GRUPOPF	GRUPOPF
12/19/2011	15:40:26	36	DEMO	10	Segunda prueba Grupo PF	GRUPOPF	GRUPOPF
12/13/2011	17:18:27	33	DEMO	90	Prueba para BAC	MMORGAN	MMORGAN
12/12/2011	16:28:30	32	DEMO	90	Prueba para BAC	BARTECH	BARTECH
12/05/2011	11:09:09	31	DEMO	30	Prueba	BARTECH	BARTECH
12/05/2011	11:06:58	30	DEMO	10	Prueba	BARTECH	BARTECH
12/05/2011	07:42:40	28	DEMO	30	QmQry Test	BARTECH	BARTECH
12/05/2011	07:41:50	27	DEMO	10	QmQry Test	BARTECH	BARTECH
12/05/2011	07:36:48	25	DEMO	10	Test	BARTECH	BARTECH
12/01/2011	15:26:36	23	DEMO	10	Primer RFP CIBAO	BARTECH	BARTECH
11/03/2011	11:18:47	40199	REGT	20	DSP00	ROGERS	ROGERS

MdInstallationHistoryView columns:

Date of Installation
Time of Installation
RFP
Application
Level
Description
User
Installed by

When more records are available to display than can be listed in the ***MdInstallationHistoryView*** the message "More history available than is listed here. Adjust filters to view other history info." appears within the view. Use the Filter Fields to limit the display to installs pertaining to your search.

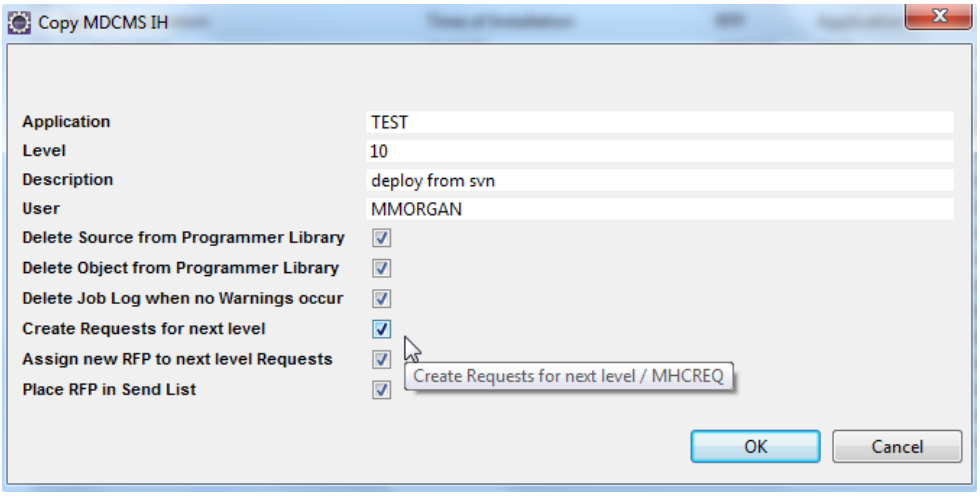
14.1 RFP Options

Clicking on any RFP entry within the view will bring up the ***RFP*** view. The ***RFP*** view will present complete details for the selected RFP and may also contain a button to Rollback the RFP if archiving was turned on for the application level when the RFP originally processed. These details for the RFP will present all the audit information related to the RFP.

Right clicking on an RFP entry will display the following options:

Copy

To copy and create a new RFP right click on an existing RFP and select Copy. That action will display the ***Copy MDCMS IH*** dialog.



Change any parameter and click OK to create a new RFP or Cancel to cancel the operation.

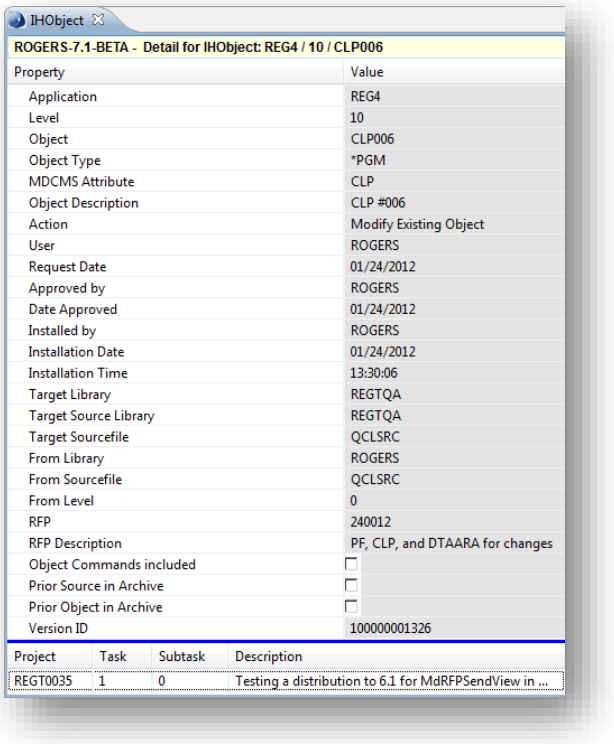
RFP Commands

To review the RFP level commands for any RFP, right click on the RFP and select RFP Commands. That action will display the ***MdRFPCommandView*** which lists all commands that were run at the RFP level on behalf of the specific RFP.

14.2 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.

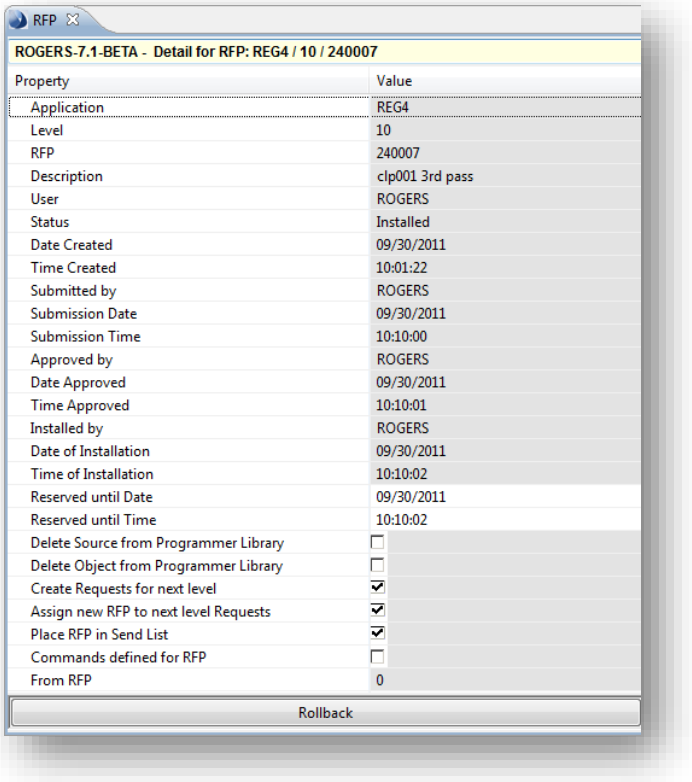
Compare
If source is archived for a given object in the installed RFP, this option will be enabled. When selected, the Compare prompt is provided to compare the Archived Source with 1 or 2 other versions of source. See the Section Compare Object Source for more details.

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.

14.3 Rolling back a Promotion from within Installation History

A promotion may very easily be reversed, or "rolled back", in MDCMS, as long as archiving is used for the application level of the RFP. A Rollback is initiated from within the ***MdInstallationHistoryView***.

To rollback an RFP, click on the RFP within the ***MdInstallationHistoryView*** and it will display the ***RFP*** view.



At the bottom of the ***RFP*** view click on the Rollback button. You will be presented with a ***Confirm rollback*** dialog asking "Do you wish to rollback RFP?" Click OK or Cancel to cancel the process.
The RFP submittal process will be indicated by an ***Info*** dialog with the message "RFP has been submitted for processing". Click OK.
If the RFP installation process completes successfully, you will receive an ***Info*** dialog with the message "The INSTALLATION run for RFP APPL 999999 completed successfully". Click OK.

NOTE1: MDOpen currently only supports the Rollback of an entire RFP. To select individual objects within an RFP for Rollback, use the 5250 UI main menu option 5 Installation History/Archive. Refer to the MDCMS User Manual for details on how to rollback individual objects for an RFP.

NOTE2: All RFP's selected for Rollback will have the text value of "ROLLBACK" added as a prefix to the RFP Description value.