MSP-REX - Project Report Extractor

User Guide

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Introduction

The MSP-REX program is designed to consolidate Microsoft Project Server information from multiple projects into a single master Project Pro project or Excel report. It provides a user interface that allows the user to create highly flexible filtration criteria, as well as selecting the fields to be displayed in the target file. For Project files, this is done by selecting the Project information from Project Server based on the users filter criteria, generating the information into one or more text files in a format called "XML", and using Project Pro to convert the files into its native .mpp format. For Excel, Project information is generated into an Excel spreadsheet while you watch.

Report extraction is based on three component parts; Tables, Filters, and Reports. Tables are analogous to Tables in Project Pro; they simply identify which fields you wish to see on your output. Likewise, Filters are analogous to Project Filters in the respect they allow you to select which Projects and Tasks you wish to see on your output. You can work with Tables and Filters directly in an ad hoc way to create your target Project or Excel file, or you can save the specific table and filter information, along with the target file and type definitions in a Report. Report content can also be defined by combining multiple filters.

Table, Filter, and Report information can be saved for subsequent reuse. This information can also be organized into sets, for functional organization or for ease of sharing.

MSP-REX runs as a program installed on a user's PC. Each user maintains their own Table, Filter, and Report information, but other configuration settings should be common to all users. MSP-REX provides an administrative interface for configuring those settings. The administrative user(s) for MSP-REX are based upon who has Project Server administrative rights.

Information supporting the report extract functionality is primarily based upon the Project Server Reporting database. A limited amount of information is also acquired from the Project Server Publishing database. Users of MSP-REX must be granted read access to these databases by an enterprise database administrator prior to usage.

MSP-REX can be configured to access multiple Project Server PWA instances.

This manual is organized in two main sections; a reference section that describes each screen in detail, and a walkthrough that describes creating a report extract from scratch.

MSP-REX Administration and Setup

Pre-Install

Before MSP-REX can be used by the general user, there are some configuration and housekeeping tasks that need to be completed. Most of them are handled via the MSP-REX administration dialogs, but there are three items that must be configured outside the control of MSP-REX.

- Assignment of the administrator. MSP-REX determines who has administrative rights for MSP-REX configuration based upon who has administrative rights for Project Server; specifically the right to create and modify Enterprise Custom Fields. The "Administration" button in the Backstage area will only be available to a user who possesses those rights. The first time a user starts MSP-REX on a machine, it will attempt to access Project Server Enterprise Field functionality to see if the user has those rights. This may cause a bit of a start up lag, but MSP-REX will remember the results so subsequent startups should be faster.

- Assignment of rights to log into the SQL Server that contains the Project Server databases of interest (primarily the Reporting DB, but for some functionality the Published DB is also needed). Read only access rights will be needed for those databases. We suggest the use of an Active Directory group, with MSP-REX users listed as members. The administrator does not need elevated rights, read only is sufficient.

- If MSP-REX is to be used by multiple users, a network file share directory needs to be identified to house the common configuration settings files. All MSP-REX users at a minimum need read access. MSP-REX administrators need write access.

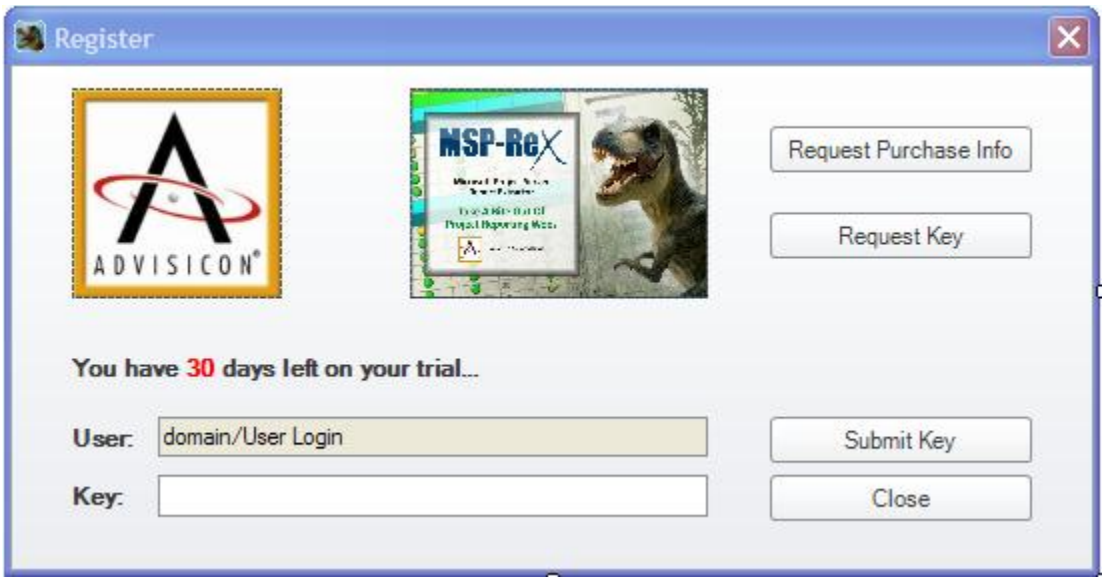
Configuration files

MSP-REX uses a number of different files to manage configuration and definition of Reporting sets. Only one needs to be considered prior to installing the MSP-REX executables, MSP-REX-Settings.xml. This file should be installed in the network file share directory noted above. If there is only a single MSP-REX user the file can be installed anywhere. This is actually just a seed file; we'll be creating PWA specific settings files as the administrative process continues.

Other configuration setup tasks are handled via the Administration page. It is accessible via the "Administration" button on the File (Backstage) tab.

Initial Setup

License Key Entry



Until a valid license key is entered, MSP-REX will pop up the license key entry dialog after the splash screen is displayed. You will have a 30 day grace period after the initial invocation to review MSP-REX without a license key. After that period MSP-REX will shut down after this dialog is closed unless a valid key is submitted.

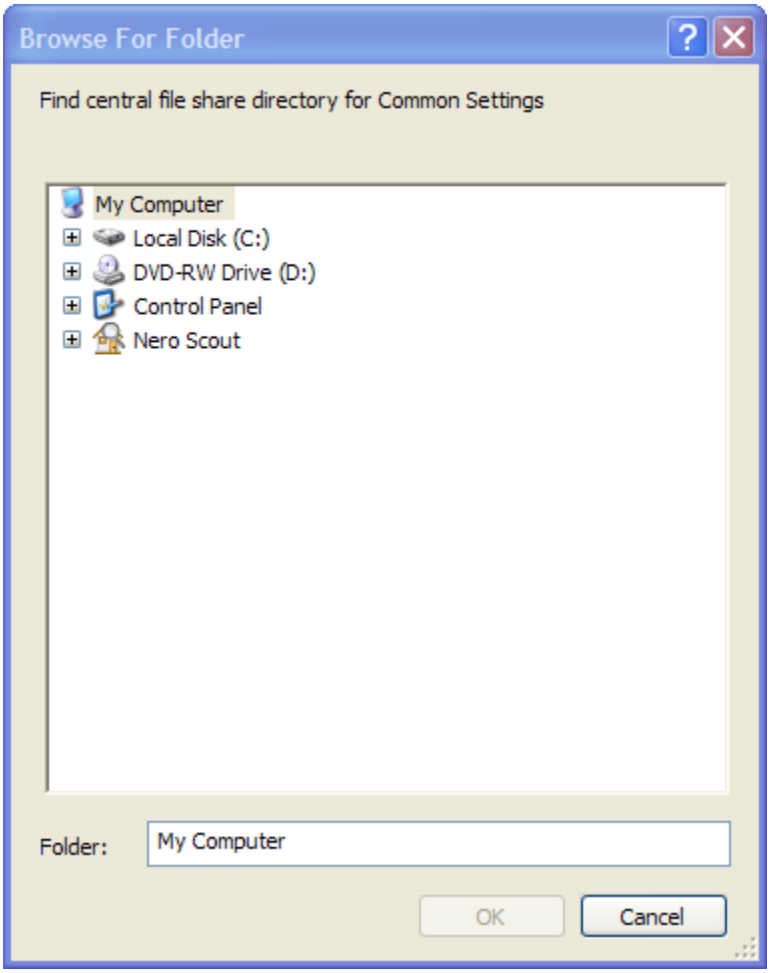
To contact Advisicon about purchasing a license for MSP-REX, press the "Request Purchase Info" button to start an email message. Fill in your contact information and email it off. An Advisicon representative will contact you to discuss licensing options, or any other MSP-REX questions you might have. You can also contact us directly, toll free, at 866-362-3847. Typically licenses will be offered at an enterprise level, with varying costs depending on number of users. Frequently Advisicon will have negotiated licensing for MSP-REX as part of a larger package, so if you have the product installed your company may already have an agreement.

License keys are associated with user login information, so you can install a copy on multiple PC's if you have a login profile on each PC. You will have to register it for each PC, but can reuse the same key for your login. Different users will have different license keys. Once licensing has been purchased, use the "Request Key" button to request your personal license key. This will trigger an email message prompting you to enter contact information. It will also include your login name which will be used to generate the license key. Upon receipt on the email request Advisicon will validate that your company has a license agreement and remaining unused license keys, and if so will send you a return email with your personal license key.

Once you have the license key you can type it, or more simply just copy and paste the key from your email into the text box for the key, and press the “Submit Key” button. MSP-REX will validate that the key matches your profile. If it does the key is saved on the PC for future reference and you will not see the Registration dialog again. If the key is rejected and you feel that it is correct for your login please contact Advisicon for support.

Configuring the Common Settings Folder

The first time MSP-REX is invoked, a “Browse For Folder” dialog will be displayed.

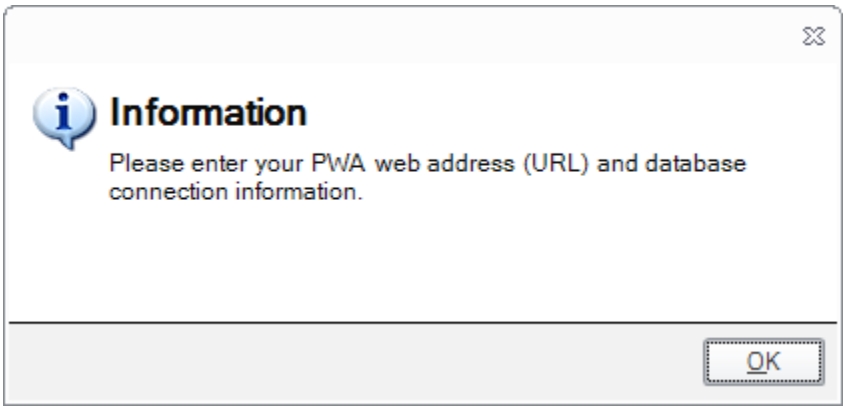


This dialog is used to define to MSP-REX which common folder the MSP-REX-Settings.xml was placed in. You’ll only see this the first time MSP-REX is started up, it will remember the location on subsequent uses.

You can select the folder by navigating to a drive mapping, or if you're using a network share you can type the UNC name (for example. \\ServerName\SharedFolderName) into the Folder box where "My Computer" is shown in the illustration.

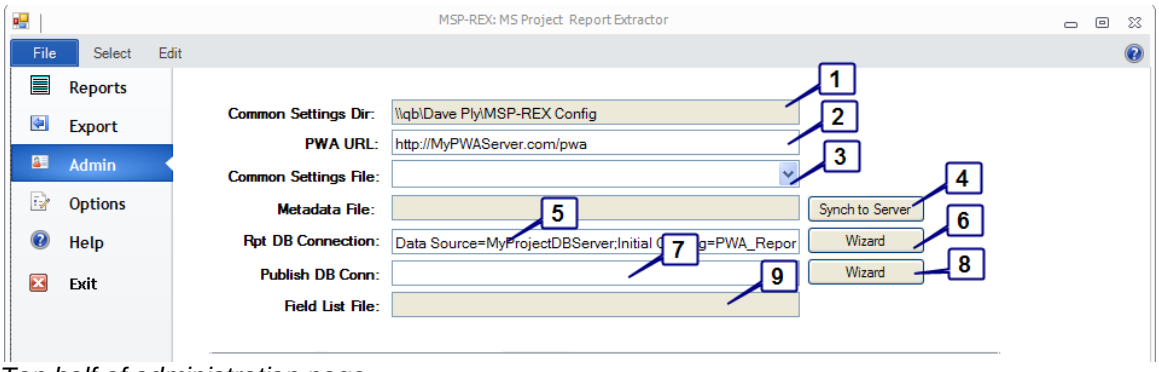
The next step occurs in the background. MSP-REX checks to see if the user has administrative rights by checking against a Project Server PWA instance identified in the MSP-REX-Settings.xml file. This may cause a response time lag; don't worry if it takes a few seconds before the main form displays. MSP-REX will assume the first person to use MSP-REX after the MSP-REX-Settings.xml is installed is an administrator.

At this point you should bring up the Admin dialog via the File Tab/Administration button. If you did not preset a PWA URL in the MSP-REX-Settings file, you'll be prompted to enter a PWA web address and Database connection info:



You should then see the Administration page.

Administration Page



Top half of administration page

This portion of the admin page is used to set up configuration information for each of the PWA instances that MSP-REX should run against. It includes the following components, which should be defined in the order noted below:

1. Common Settings Directory: This is the directory that you identified in the Browser For Folder step, and is shown here for reference.

2. PWA URL: The URL of the current PWA being configured. This is the address that would be used to access the Project Web Access application, and should be consistent with the URL used in setting up Project Pro's Project Server Accounts. Entering a URL into this field and navigating to another field will trigger a validation step; MSP-REX will attempt to connect to the server to insure it has a valid address.

   Since the Common Settings File that corresponds to the PWA will have a name based on the URL, the Common Settings File box will be updated. Likewise, the Metadata and Field List files (to be described shortly) will also have their names derived and the corresponding text boxes filled in. In addition, the Synch to Server (description following) will be automatically invoked.

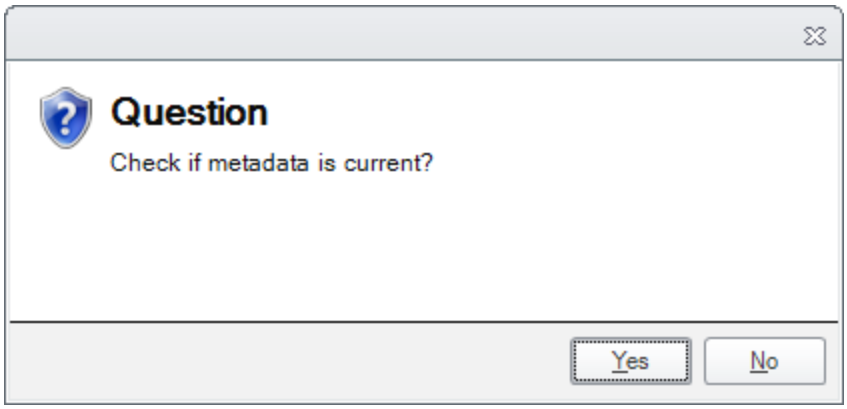
   To create additional PWA references, simply enter the additional URL into the URL entry field and tab out.

3. Common Settings File: This is the file that will contain the information entered via this section of the admin page. Each PWA server instance configured will have its own copy. The settings file will have a format of "MSP-REX-Settings-[PWA URL].xml", with some character substitution in the URL section to allow for a legal file name. No data entry is needed; the name is generated when a valid PWA URL is entered.

   This field is presented as a drop down list. If you are supporting access to multiple PWA instances, the list will show and allow you to select the configuration settings files that have been created for any of the instances.

4. Synch to Server: This button corresponds to the Metadata File. Metadata, in this context, contains information about Enterprise Custom Fields acquired from Project Server to assist MSP-REX generate XML files that Project Pro can read. Synch to Server will connect to Project Server, compare its Custom Field information against any existing Metadata, and update the Metadata file. This process may need to be repeated on a periodic basis if Enterprise Custom Fields are added, changed, or deleted to ensure proper use within MSP-REX.

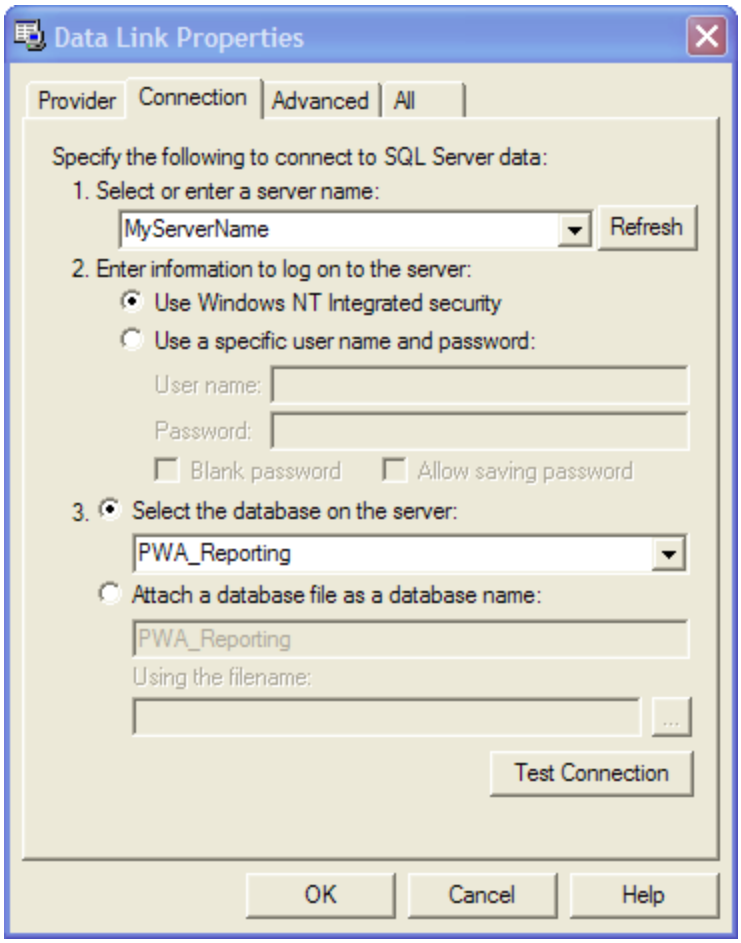
   Once MSP-REX has been configured and is ready for ongoing use, a related process can be used to check to see if the Metadata remains in synch with the Project Server Enterprise fields. The first time the Admin button is pressed after starting up MSP-REX, or when PWA instances are switched in the Common Settings File drop down, MSP-REX will prompt if you'd like to check to see if the metadata is current:



If you say “Yes”, MSP-REX will compare the metadata file against Project Server and identify any fields that have changed, or verify that the Metadata is current. The results will be displayed in a dialog box. If there are differences, i.e. the metadata is not current, use the Synch to Server button to resynchronize.

5. Rpt DB Connection: This is the connection string MSP-REX will use to connect to the Reporting database. You also have the option of entering a connection string into the text box directly, or using the Wizard button (item 6). After entering the connection string directly, or generating it via the Wizard, tab out of the connection string field to trigger validation. If the connection is valid, MSP-REX will access the Reporting DB and generate a list of fields that are available for reporting. This list can be further filtered down to a more manageable size for general usage, see “Update Master Field List” below for more details.

6. The Wizard button will bring up a Data Link wizard that will help create and verify the connection.



Data Link Wizard

Enter the name of the SQL Server and Reporting database that the PWA instance you are configuring is associated with. Test Connection will validate your connection. When you click OK, the associated connection string will be placed into the Rpt DB Connection text box.

7. Publish DB Connection: This is the connection string MSP-REX will use to connect to the Published database. You also have the option of entering a connection string into the text box directly, or using the Wizard button (item 6). In either case, the connection string will be validated again before the settings are saved. A Published DB connection is not required in this version of MSP-REX, unless Predecessor/Successor information is needed on generated Project File Gantt charts.

8. The Wizard button will bring up a Data Link wizard that will help create and verify the connection, similar to the Reporting DB Wizard.

9. Field List File. The reporting database contains a large number of fields that can be reported upon. Many of these are not likely to be needed for MSP-REX reporting extraction. MSP-REX allows the administrator to choose a subset of these fields to create a master list of fields that the end users can work with. The Field List File contains this master list, as well as additional supporting properties

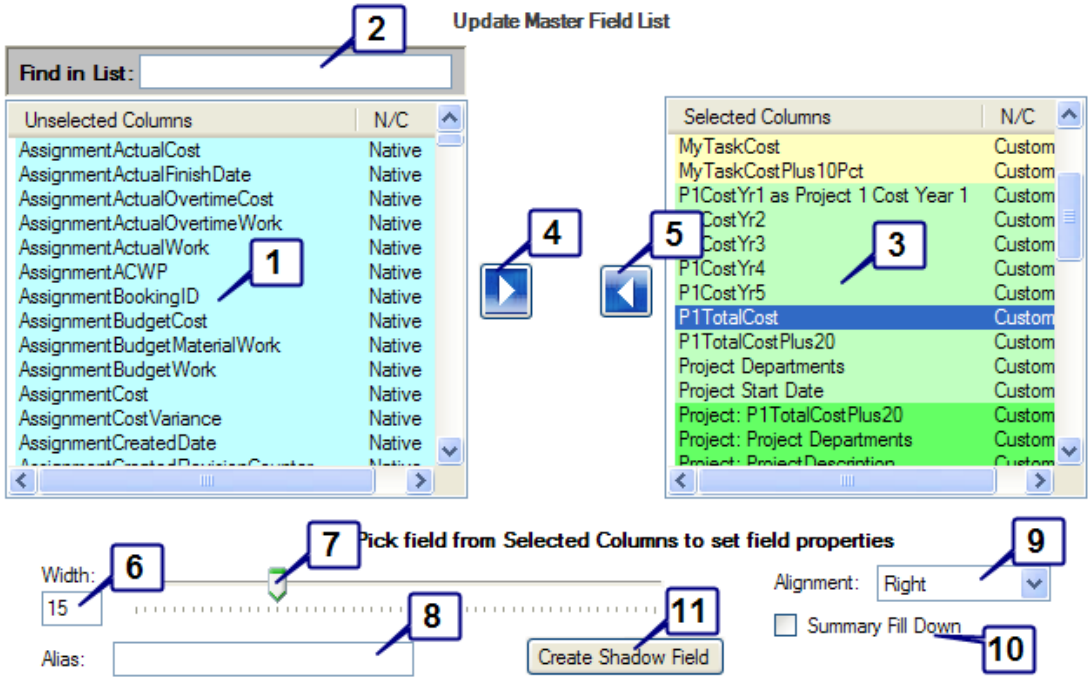
for each field. This text box contains the name of the master list file for a PWA instance, and is generated at the time the PWA URL is validated. See “Update Master Field List” below for more information about the Field List.

Note: Changing PWA URL’s, Synching to Server, and Checking if Metadata is Current all make calls to Project Server services. If the URL is invalid or unset, or even the first time a call is made to a valid server, there can be a lag of several seconds before the server responds.

Update Master Field List

Between native fields and custom enterprise fields, there are a very large number of fields available for reporting. MSP-REX provides functionality to limit/simplify the number of fields the user has to wade through in order to create his table definitions. In addition to selecting the fields that are available for reporting, the Field List helps track data type, field aliases for headers, default width to be used for reporting, default justification, and default fill down options. The bottom half of the Admin page, discussed below, is used to define these field settings.

Because the potential field list is derived from the Custom Field Metadata and Native Fields included in the Reporting DB, the “Synch to Server” process and Reporting DB connection string must be defined before the initial pick list of fields is available.



Bottom half of administration page

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The Update Master Fields List section contains the following components:

1. The Unselected Columns list: This list is populated from two sources; the fields available in the reporting database, and the enterprise custom fields defined in the enterprise custom field metadata file. It does not include any fields in the selected columns list.

2. Find in List: Because there are so many fields available for reporting, MSP-REX provides a quick filter to help you isolate fields of interest. Simply type all or part of a field name and the Unselected Columns list will be reduced in size to only include those fields whose names contain the entered letters. Clear out the entered letters with the Backspace key to return to the full sized list.

3. The Selected Column list: This list includes all fields currently available for general MSP-REX usage. Note that both this and the Unselected Columns list are color coded; green for project level fields, yellow for task level fields, and light blue for Assignment/Resource level fields. Fields in both lists will be in alphabetical order. MSP-REX provides a default Selected Columns set when the PWA URL, Metadata Synch, and Report DB connection are first defined, but this should be altered to fit the needs of you company.

4. Move to selected button: Moves unselected fields from the Unselected Columns list to the Selected Columns list. Selection can be via single click, or CTRL click or Shift click for multiple field selection.
5. Move to unselected button: Moves selected fields from the Selected Columns list to the Unselected Columns list. Selection can be via single click, or CTRL click or Shift click for multiple field selection.

6. Width. The default width of a column in Project or Excel. If nothing has been set an initial width of 15 will be used.

7. Width scale bar: This is a more visual version of the width column. Moving the width pointer should approximate the resulting width on the Project or Excel reports. Note that the width text and the width scale bar are interconnected, i.e. changing one will change the other.

8. Alias: Native field names follow the naming convention they have in the Reporting database. While these are generally understandable, they typically concatenate the words in their name and may not make the best labels. The Alias field can be used to replace the database field name to provide a more user friendly label. As for Enterprise Custom Fields, they support embedded spaces and normally should not need an Alias, unless a shorter name is needed.

9. Alignment: Sets the default alignment for the field in the Project or Excel output (Left, Right, Center). Initial defaults are left aligned for text fields, and right aligned for other data types (Dates, Numeric, etc).

10. Summary Fill Down: This option was designed to solve a problem where Enterprise Custom Field values were being set at the top task outline level, but

were also needed at the subtask level to support calculated fields. Choosing this option causes the value in the top level task to be propagated into its subtasks. Note that this does not affect the data in the actual Projects, only the data in the generated Project or Excel file.

11. Create Shadow Field: Project files can contain data at the Project, Task, Resource, and Assignment levels. Normally, when dealing with one project at a time Project level information is accessed by bringing up the "Project Information" dialog box. When dealing with a single project it is also possible to show the Project level values by showing the Project fields in a column, where they show the same values for all tasks.

    In the case of MSP-REX, we are effectively creating a new "Master" project, and loading each of the projects selected for generation as a top level task with subtasks. This is analogous to inserting a subproject into a master project without clicking on the "Link to Project" checkbox, i.e. taking a snapshot of a project and inserting it into a master.

    The problem with the "subproject snapshot" approach is, the master level project becomes the owner of the Project level fields, and each subproject's Project level data is lost. In order to facilitate reporting Project level data, MSP-REX uses the concept of "Shadow Fields". The way this works is; for each Project level field that is of interest for MSP-REX reporting, a Task level version of the Project level field should be created.

    The "Create Shadow Field" button aids in this task; when a project level field is selected the button becomes visible, and pressing it will create a copy of the Project level field at the task level, only using a "Project: " prefix on the field name. Note that this field will not contain any data in the physical project; it is only used by MSP-REX reporting. Once a shadow field is created for a Project level field, the "Create Shadow Field" button will no longer be visible. In the lists, although the Shadow fields are defined at a Task level, they're shown with a dark green background to help them stand out.

    When MSP-REX generates the Project file, it will automatically transfer Project level data for the "subprojects" to the Task level field with a corresponding "Project:" prefix. For example if we had a Project level field named "Location", the "Create Shadow Field" button would create a task level field named "Project: Location", and at the time the Project file is being generated the value of the "Location" field for each project selected would be transferred into the "Project: Location" field. The values would be repeated for each task and subtask within the subproject, but when the next subproject is displayed its Project level data would take effect.

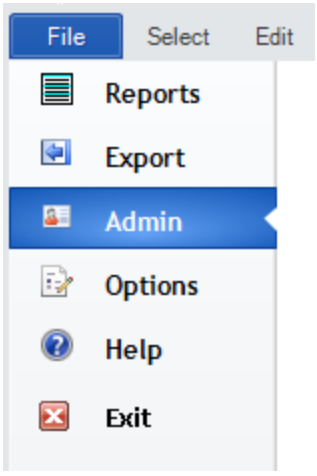
    Note that for Excel based output, Shadow Fields are not required; the project level data can be rendered directly to Excel. So if you are only doing Excel based reports you will not need to create the Shadow Fields, you can specify the Project level fields directly in the table definitions. The Excel generation will honor the use of "Project: " fields, so if you wish to generate output in both formats you can use the same table definition.

Other Setup Tasks

MSP-REX comes with a preset Default Table with commonly used fields and a preset Default Filter (all projects). If alternate defaults are desired, or some predefined Table, Filter, and Report definitions to be commonly used are desired, the administrator should create those definitions on his copy of MSP-REX, then Export them to a network location where they are accessible to all potential users for import. Standard MSP-REX functionality, as described in the following sections, can be used to perform those tasks.

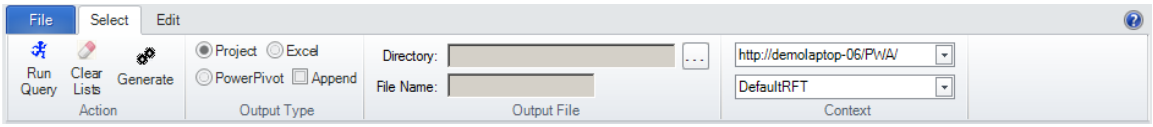
MSP-REX Navigation and Control

MSP-REX uses a navigation and control scheme introduced in MS Office 2007 products and continued in their 2010 products; that of having "ribbons" rather than menu bars and a "Backstage" area for supporting functionality. The ribbon is divided into three tabs; a File (or Backstage) tab, a Select tab, and an Edit tab.



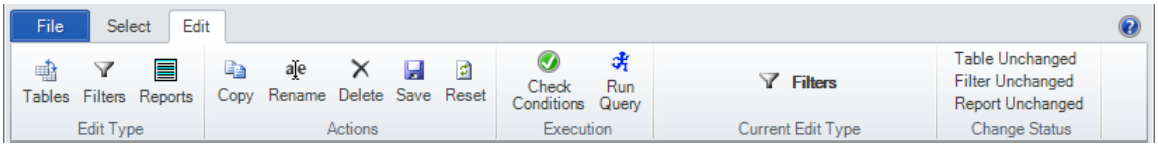
The File (Backstage) tab includes the Reports, Export, Admin, Options, Help, and Exit buttons. Each of these buttons, apart from the Exit button, will bring up a corresponding work area to the right of the button list. You have already seen the work area for Admin, as that section was needed to show how to configure MSP-REX prior to general use. We will defer describing the details of the Reports, Export, and Options sections until later in this guide as they provide supporting functionality that will make more sense after you understand the primary functionality. The Help section provides access to this User Guide, as well as "About" information for the MSP-REX version and Advisicon.

File Tab



Select Tab

The Select tab provides the primary area for selecting the PWA to be used, the Projects to be included in reporting, Report Sets, running queries, and generating files. Full details will be described in the "Select Tab" section.

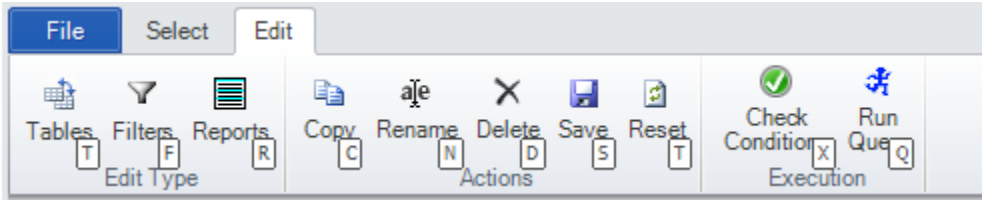


Edit Tab

The Edit tab provides access to the work areas used for editing Tables, Filters, and Reports via the corresponding buttons. Actions provide access to actions common to all three areas. Execution provides quick access to validation and execution for reports and filters. The Current Edit Type shows which type of work area is being displayed. The Change Status shows if there are any pending, unsaved changes to Tables, Filters, or Reports.

Full details can be found in the Editing Tables, Editing Filters, and Editing Reports sections respectively. All ribbons contain a  in the upper right corner that gives quick access to this document.

Navigation among the tabs and buttons can also be keyboard driven. Pressing the “Alt” key will highlight a letter on each tab in the ribbon. After entering the appropriate letter for the tab, letters for each of the buttons in the selected ribbon will be highlighted.



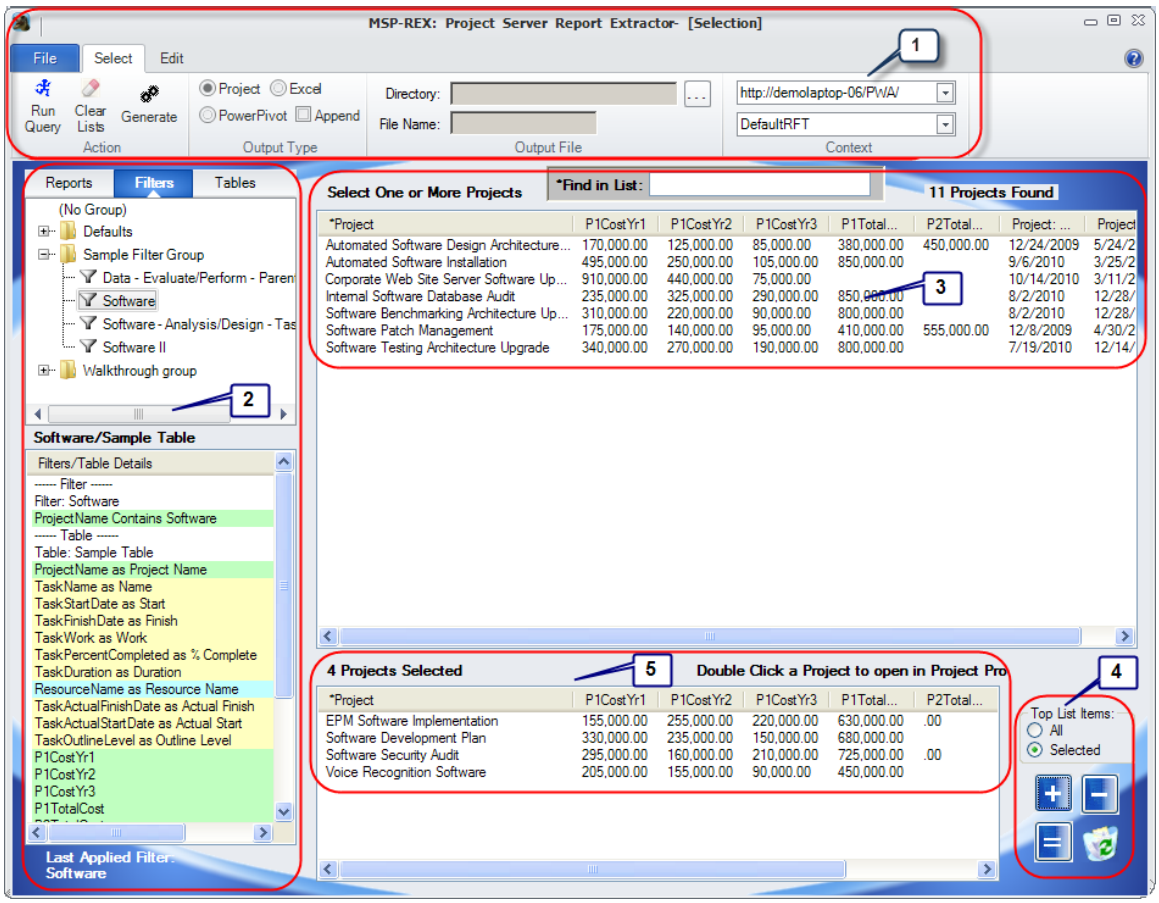
Alt key navigation and highlighting

For example, if you were in the Select area, to get to the Edit Filters area you’d type Alt, then E to get to the Edit ribbon, then F to display the Filter work area.

Selection Tab

This is the main form that is displayed upon starting the application. It includes functionality for selecting and applying filters, selecting Projects to be included into the generated project or spreadsheet, and generating them to a desired target directory and file name. We will start with a look at the main form, calling out the sections of interest, then dive into each section in more detail.

Overview



1. This area is used to select PWA Instances, Report Sets, target file to be generated, file type to be generated, drive the database queries, and drive the file generation process.

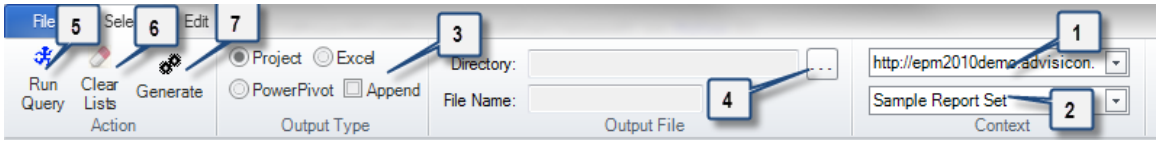
2. This area is used to select Reports, Filters, and Tables to be used, and to show the details of the currently selected information.

3. This “selection results” area is used to show which Projects satisfy the filter criteria after a query against the Reporting database. It can also be used to select projects to be included in the generation list.

4. This area is used to control which Projects are moved from the “selection results” list into the “generation” list.

5. This “generation list” area is used to show which Projects will be included in the generated file.

Control Ribbon



Select Tab – Control Ribbon

The Control Ribbon section contains the following components:

1. PWA Instance Selection. For those environments where more than one PWA instance is available, due to different business groups or having a Development or Test instance, MSP-REX can be set to switch between PWA instances. Each instance needs to be configured separately (see MSP-REX Administration). All configured instances will be available via this drop down list, and you can switch simply by selecting the instance desired. Please note that since each PWA instance stands alone and may have its own set of Custom Fields, etc, when switching to a new instance you may need to also subsequently pick a new Report Set.

2. Report Set Selection: Report Sets can be used to share definitions for various reports between users, or to standardize on commonly used reports. This drop down allows you to select a current report set. See Import, Export, and Report Sets for more details.

3. This area is used to select the output type (Project, Excel, Excel for PowerPivot). If Excel for PowerPivot is selected, you also have the option of checking an “Append” checkbox. This can be useful if you wish to do snapshots of a set of projects over time.

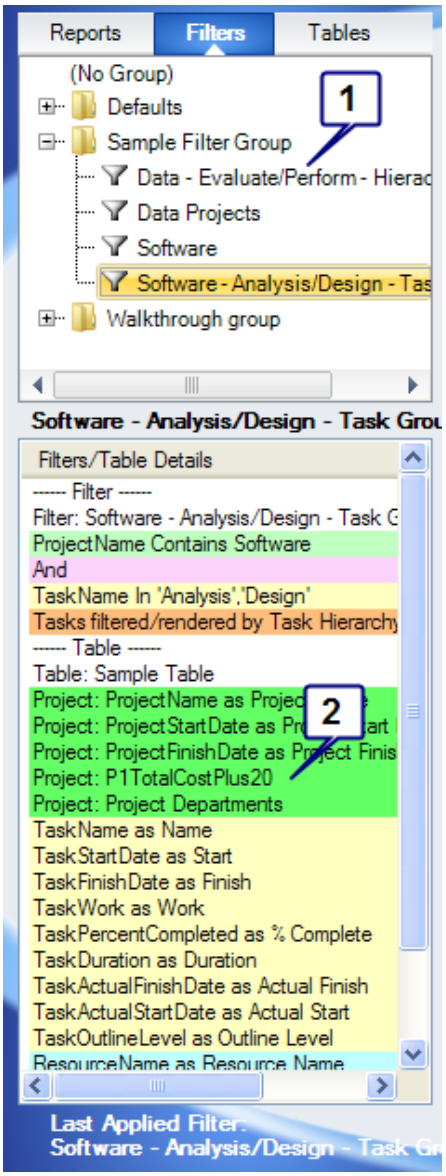
4. The target file name is selected by pressing the button with the ellipsis (…), which will bring up a file save dialog. File generation is not possible until a target file directory and name are chosen.

5. The Execute Query button will generate the queries against the reporting database and return the results to the results list. If a Filter is active the results will be placed in the upper results list, where the user can further pick projects he’d like to have generated. If a Report is active the filter or filters will be executed and combined as needed, with the results automatically moved to the lower “selected” list.

6. Clear Lists: This button will clear the contents of both the upper and lower list.

7. Generate: This triggers the process that will generate the Project or Excel file.
    a. For Project files, MSP-REX performs an intermediate step of generating xml files in a format Project Pro can read, and then subsequently imports the xml files. For enterprises with a large number of projects to be consolidated into the single project report, the generation process is handled in chunks with multiple smaller project files created, then merged together in a final step.
    b. For Excel files (including the PowerPivot extract), MSP-REX opens Excel and dynamically generates the content on the fly. It is important the user allows this process to occur without interruption, i.e. don't start navigating around the report while it is still generating.

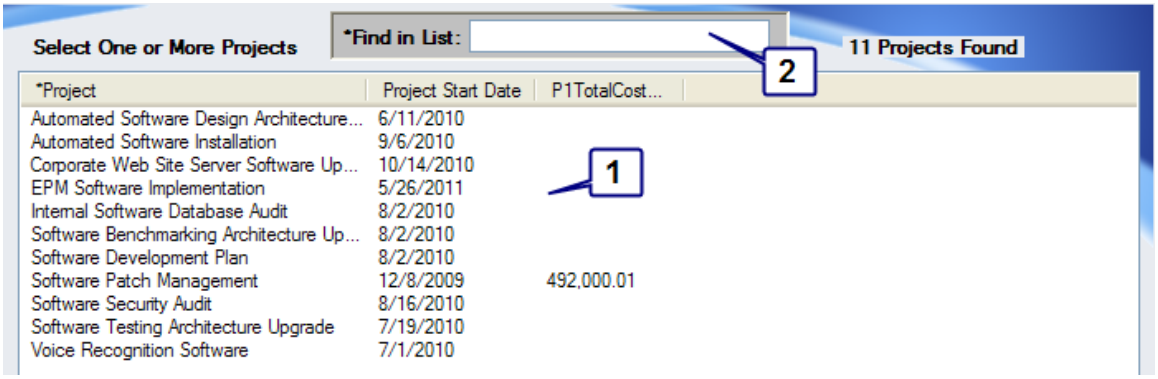
Report, Filter, and Table Selection



1. Reports/Filters/Tables tab. These tabs provide access to Report, Filter, and Table definitions. These definitions are further organized into groups and are accessible via a tree style control to expand or collapse displaying each group and its member reports, filters, or tables. When an item is selected with a Report, Filter, or Table tree, its details are shown in the Filter/Table detail list.

2. Filter/Table details. When a report, filter, or table item is selected from within a report, filter, or table tab, the details are displayed. Selecting a report item will show the file information and type, as well as all filters and table information. Selecting a filter will update the filter information, selecting a table will update the table information. It is not necessary to select a report first, you can pick and combine table and filter combinations and run reports in an ad hoc manner based upon that. Report definitions are primarily intended for reports you wish to run on a regular basis. Color coding; Project level information is light green, shadow fields ("Project: xxx" fields defined at a task level to support Project file reporting) are darker green, Task level is yellow, and Resource/Assignment level is light blue. For filters you might see an orange line that designates Task rendering filters (Filtered Task Groups or Filtered Task with Parents), or a pink line to show condition groups.

Results List



1. This is the main results list for execution of a query. This list shows project level fields associated with the active table. Task level information is not available. Items can be further filtered or selected from this list for insertion into the "generate" list. Projects can be selected by clicking on a single project, or clicking on multiple projects while using the CTRL or Shift keys. If multiple projects are selected while using the CTRL key, they will be added to the selection list individually. If they are selected while using the Shift key, all the items between the current and last item selected are selected, and any items outside that range are deselected.

2. Find in List. This provides a secondary filtering mechanism. Once a list of projects is filtered and displayed in the main results list, you can type into this list and the main results list will be further filtered by the contents of Find in List. Filtering is only applied to text fields, which will have an asterisk (*) pre-pended to their header label. The entered characters can appear anywhere, i.e. entering "Software" would successfully find "Software Security" or "Automated Software". You can enter multiple filters here by separating them with a semicolon. If multiple filters are used a match on any will return the project. So, entering "EPM;Software" would find projects with EPM or Software in any of the fields being searched.

Move to Generate List

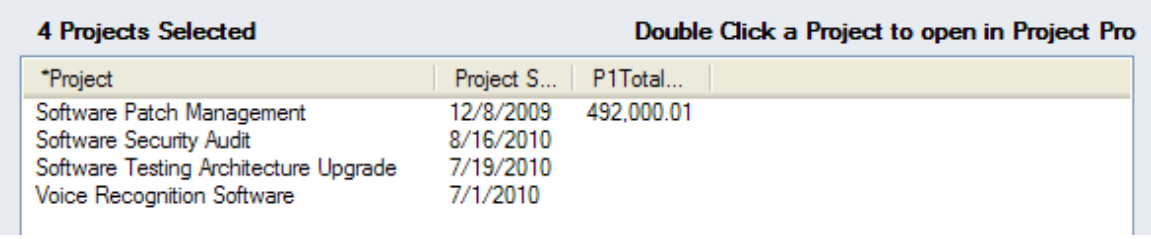
This area is used to select and combine results from the filtered results list for insertion into the "generate" projects list. This area has several components:

a. Selection for "All" or "Selected" items.
   i. If "All" is selected, all items will have the designated action performed upon them, regardless of whether they have been selected or not.
   ii. If "Selected" is selected, only items that are

selected in the filtered results list are affected by the designated action.

b. The + (plus), - (minus), and = (equals) buttons are used to combine selected Projects from the results list with any Projects in the selected list. Combining criteria can also be done in filter definition, but occasionally selection criteria can become too complex and these buttons offer a work around.
c. The + (plus) button will merge selected Projects from the top list (filtered results) into the bottom list (generate). Any projects from the top list that are already in the bottom list will be ignored. This is the most commonly used action as it is used to load the initial (or only) selected items from the filtered list into the generate list. It can also be subsequently used to add more Projects to the generate list.
d. The – (minus) button will compare selected Projects in the top list with any Projects in the bottom list, and if they match will remove them from the bottom list. This might be used if you had one filter that gets everything you want, but you want to omit a subset of it. For example you might have a filter that gets all projects containing a certain resource, and a second filter that gets all projects prior to the current fiscal year. You could combine those two items to only get projects with that resource that are current.
e. The = (minus) button compares selected items from the top list with items in the bottom list. Only items that are in both lists will remain in the bottom list.
f. The trash can is used to remove selected items from the generate list.

Generate List



When you hit the Generate File button, only projects that are in this list will be included in the generated Project or Excel file.

Open Project in Project Pro

This snapshot also includes a “Double Click a Project to open in Project Pro” note. Double clicking on a project from either the Results list or the Generate list will start Project Pro and open the selected project. This functionality will allow you to have a closer look at the project if you’re uncertain you want to include it, or even allow you to use MSP-REX primarily as a way to find a particular project or projects for subsequent

maintenance, independent of report file generation. Note that if Project Pro is already open, but opened local to the PC or using a profile that points to a different Project Server instance, the open will fail. The opened Project Pro instance should be closed before retrying. If Project Pro is already started and pointed to the same Project Server instance MSP-REX will simply open the selected project in addition to any other projects already open in Project Pro.

Creating and Editing Tables

MSP-REX uses the concept of a "Table" to define which fields should be shown on the generated Project or Excel file. To Edit a table use the "Edit" tab, then press the "Tables" button (item 1 below) on the Edit ribbon.

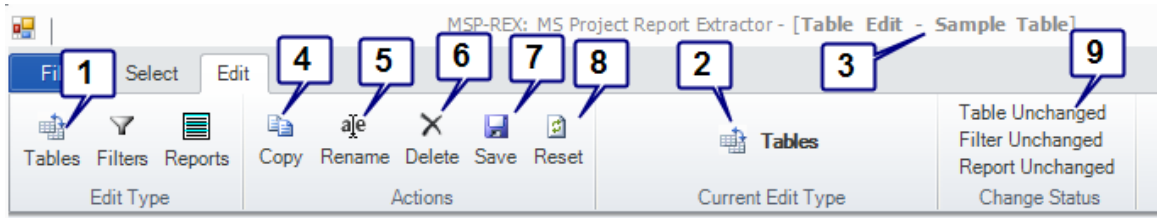


Table Edit Ribbon

1. Tables button: This button will bring up the tables work area below the ribbon.

2. Tables Type: This is simply a label and icon to help you identify which work area is active in the Edit tab.

3. The title bar should always indicate where you are. In the case of Table Edit, it should also tell you which table is currently being edited.

4. Copy button: Used to create new table definitions.

5. Rename button: Allows you to rename the table definition. If the table is being used in any report definitions, MSP-REX will automatically rename the table assignment in those definitions.

6. Delete button: Allows you to delete the table definition. If the table is being used in any reports, MSP-REX will warn and prompt you. You will have the option of cancelling the delete, continuing with the delete and "breaking" the report definition(s), or deleting both the table definition and the report definition(s). "Broken" report definitions must have a new table assigned to them before they can be used.

7. Save button: Saves the table definition so it is available for future sessions. Note that this will also save any pending Filter or Report changes.

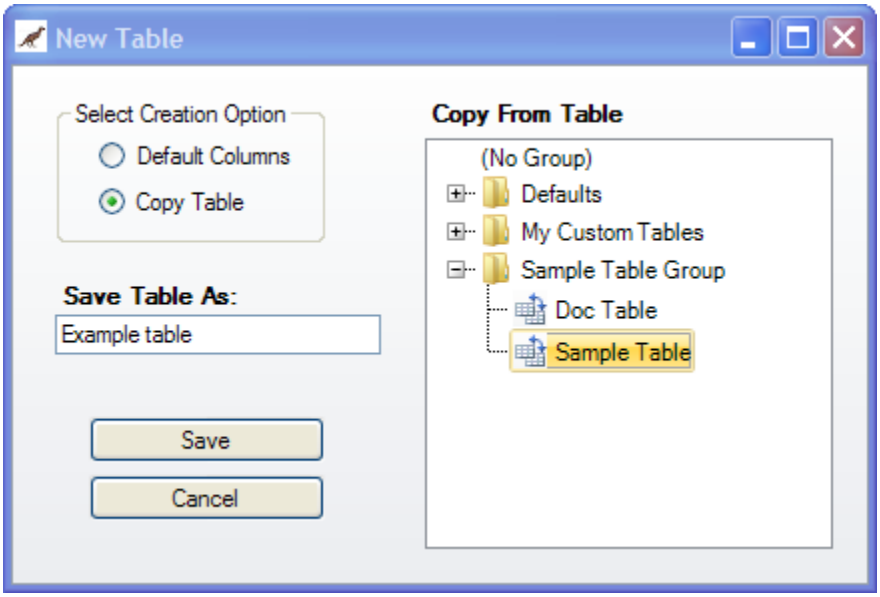
8. Reset button: MSP-REX allows you to make changes to tables without saving the changes. However changes are retained in memory until MSP-REX is exited. The Reset button restores all Table, Filter, or Report definitions to the point at which they were last saved. If you are making a series of changes to a table but wish to start over, this will help you get back to where you started.

9. Change Status: These labels will flag if a change to a Table, Filter, or Report is pending.

Creating Tables

Creating a new table definition is always done by copying an existing table. A Default table will always be available for copying, however frequently you may have an existing table that is closer to your desired result.

On the Edit Table ribbon, press the Copy button (Ribbon Item 4) or use the Alt key sequence. This will bring up the following dialog:



Initially the "Default Columns" option will be selected and the existing table list will be disabled (grayed out). "Default Columns" is a table definition that will always be available. It can be edited if the preset columns do not match your needs.

The Copy Table option allows you to copy an initial table definition from another table. You can subsequently edit the table to add any variations you need. When Copy Table is selected the Table list tree becomes enabled. You can expand or collapse table groupings, and select the table you wish to copy.

To create a new table, enter the table name into the "Save Table As" text box and press "Save". If the table definition already exists you'll be prompted to Cancel, or replace the existing definition. If it does not exist the new table is created. After table creation the copied table with the new name will be displayed in the table work area.

Editing tables

Once a table has been created or selected, changes are done simply by moving items from the unselected column to the selected column (or vice versa), reordering, or entering field properties. For the property fields (Width, Alias, Alignment, Fill Down) it may be necessary to tab out or select another field for the change to be processed.

Changes are made a definition in computer memory, you must use the Save button for them to persist.

Table Work Area

The table work area is where selection of and changes to the current table are performed.

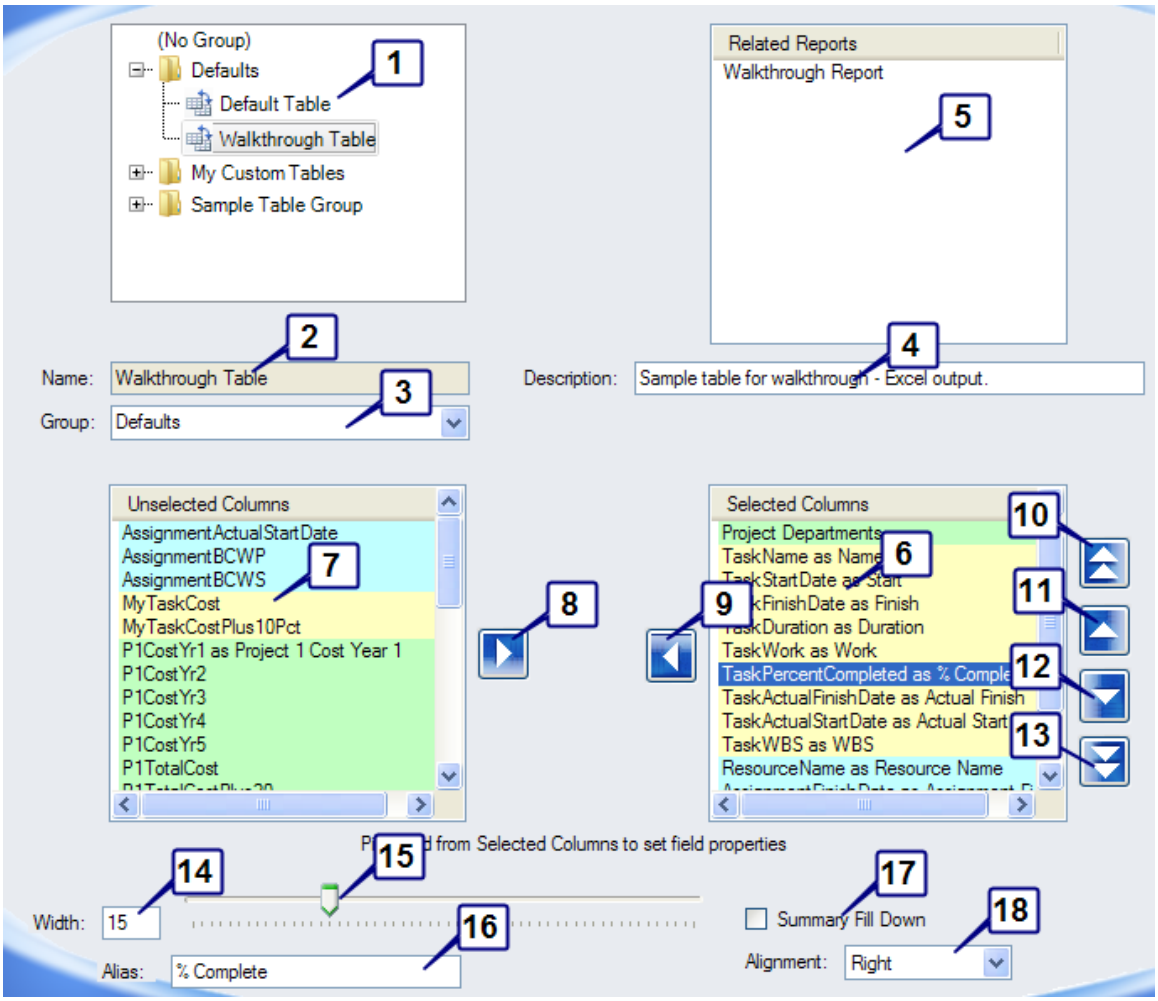


Table Edit Work Area

The Edit Table dialog contains the following components:

1. Table list tree: This component provides a list of existing table definitions, broken out by table groups. Use the + or – on the tree to expand or collapse a grouping. Normally, when the work area is shown it should already be pointing at the current table being used by MSP-REX. However it is not necessary to select a table before going to the table edit dialog; using the list tree you can navigate to any table. Selecting a table within the tree will update the Related Reports list (item 5), the selected columns list (item 6), and the Unselected Columns list (item 7). Color coding may be used on the tree items; a brown or orange background

indicates the table is the current active table in MSP-REX, and a bright yellow background implies the table has not been used in any Report definitions.

2. The table name. It should match the name on the title bar.

3. Group: Table group to assign the table definition into. You can either use the drop down arrow to select an existing group, or type in a new Group name. The group assignment should be reflected in the table lists, both in item 1 and in the lists on the Select form (Table tab) and the Edit Report work area (Table tab). Note that Table groups are independent from Report Groups and Filter Groups. Naming standards are recommended, but entirely up to the user.

4. Description: Provides a place to show more background information about a table than simply naming it would.

5. Related Reports list: When a table is selected in the Table list tree, MSP-REX will display any reports that use the table. This is useful to know, as you then can tell what might be impacted if you modify or delete the table.

6. Selected Columns list: This list displays the columns that have been selected for use in the table definition. Displayed items will show both the internal name and the alias, if assigned. Color coding; Project level information is light green, shadow fields ("Project: xxx" fields defined at a task level to support Project file reporting) are darker green, Task level is yellow, and Resource/Assignment level is light blue. Fields are presented in order that they will be shown, from left to right, in the generated Project or Excel file. Fields can be added, removed, and re-sequenced by using the buttons noted in items 8-13. Columns can be selected one at a time, or multiple selections done via CTRL Click (individual non-contiguous items) or Shift Click (contiguous items in a range).

7. Unselected Columns list: This list displays the columns that are available to be added to the table definition. It is based upon a master list that is defined by the MSP-REX administrator, and can include both built in and enterprise custom fields. Columns from the master list that have already been selected are not shown. Fields are displayed in alphabetical order. Like the Selected Columns list, they are color coded in green, yellow, and blue to reflect Project, Task, or Assignment/Resource level fields. Fields are added or removed by using the buttons noted in items 8 and 9. Columns can be selected one at a time and manipulated, or multiple selections via CTRL Click.

8. (Single Arrow Right button): Moves the selected items in the Unselected Columns list to the Selected Columns list.

9. (Single Arrow Left button): Moves the selected items in the Selected Columns list to the Unselected Columns list. Note that any table level customizations for Alias, Alignment, etc will be lost – those properties will revert to the master defaults.

10. (Double Arrow Up button): Moves the selected fields to the top of the Selected Columns list (left most on the generated Project/Excel file).

11. (Single Arrow Up button): Moves the selected fields up (left on output) in the column sequence by one column. Multiple fields can be moved.

12. (Single Arrow Down button): Moves the selected fields down (right on output) in the column sequence by one column. Multiple fields can be moved

13. (Double Arrow Down button): Moves the selected fields to the bottom of the Selected Columns list (right most on the generated Project/Excel file).

    Note on items 14-18: These properties are given standard assignments by the MSP-REX administrator at the master field list level. However, they can be overridden at the table definition level using these items should you prefer some alternatives to the master assignments.

14. Width. The default width of a column in Project or Excel. If nothing has been set an initial width of 15 will be used.

15. Width Scale Bar: This is a more visual version of the width column. Moving the width pointer should approximate the resulting width on the Project or Excel reports. Note that the width text and the width scale bar are interconnected, i.e. changing one will change the other.

16. Alias: Native field names follow the naming convention they have in the Reporting database. While these are generally understandable, they typically concatenate the words in their name and may not make the best labels. The Alias field can be used to replace the database field name to provide a more user friendly label. As for Enterprise Custom Fields, they support embedded spaces and normally should not need an Alias, unless a shorter name is needed.

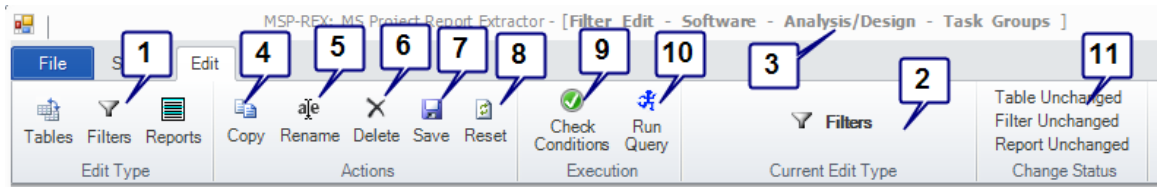
17. Summary Fill Down: This option was designed to solve a problem where Enterprise Custom Field values were being set at the top task outline level, but were also needed at the subtask level to support calculated fields. Choosing this option causes the value in the top level task to be propagated into its subtasks. Note that this does not affect the data in the actual Projects, only the data in the generated Project or Excel file.

18. Alignment: Sets the default alignment for the field in the Project or Excel output (Left, Right, Center). Initial defaults are left aligned for text fields, and right aligned for other data types (Dates, Numeric, etc).

Creating and Editing Filters

MSP-REX uses the concept of a "Filter" to define which Projects and Tasks should be shown on the generated Project or Excel file.

To create or edit a filter, press the Filter button on the Edit tab or use Alt key navigation to get to the Edit Filters area.



Filter Edit Ribbon

1. Filters button: This button will bring up the filters work area below the ribbon.

2. Filters Type: This is simply a label and icon to help you identify which work area is active in the Edit tab.

3. The title bar should always indicate where you are. In the case of Filter Edit, it should also tell you which filter is currently being edited.

4. Copy button: Used to create new filter definitions.

5. Rename button: Allows you to rename the filter definition. If the filter is being used in any report definitions, MSP-REX will automatically rename the filter assignment in those definitions.

6. Delete button: Allows you to delete the filter definition. If the filter is being used in any reports, MSP-REX will warn and prompt you. You will have the option of cancelling the delete, continuing with the delete and "breaking" the report definition(s), or deleting both the filter definition and the report definition(s). A report with multiple filters can still function if one of them is deleted, however the results will likely be different. A report needs at least one filter, even if the filter does not contain any filtering criteria.

7. Save button: Saves the filter definition so it is available for future sessions. Note that this will also save any pending Table or Report changes.

8. Reset button: MSP-REX allows you to make changes to filters without saving the changes. However changes are retained in memory until MSP-REX is exited. The Reset button restores all Table, Filter, or Report definitions to the point at which they were last saved. If you are making a series of changes to a filter but wish to start over, this will help you get back to where you started.

9. Check Conditions: Before a set of conditions can be used to filter a query, it must pass certain validation rules. Check Conditions will make a validation

check, and potentially modify the conditions to satisfy the rules. If a condition is modified a warning dialog will be posted. This same process is also done when attempting to Save a filter, the Check Conditions button just lets you do a preemptive check while you are building your filter. Check Conditions will be explored in more detail later in this section.

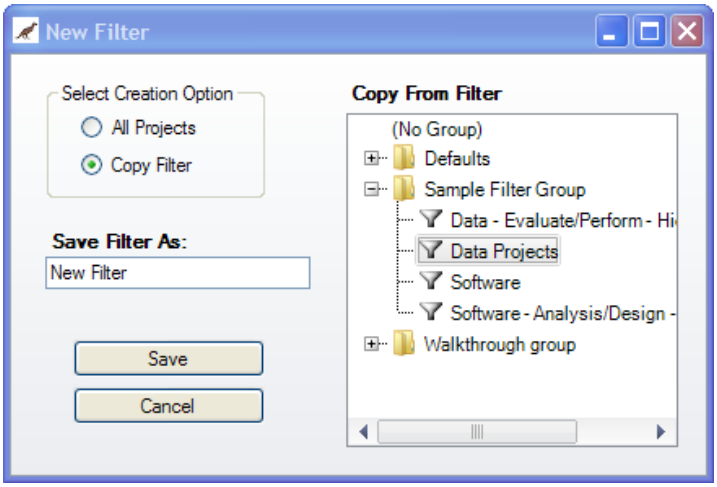
10. Run Query: This button is analogous to using the Run Query button on the Select form. It will check conditions (see item 9), and if valid will switch the view to the Select form and execute the Filter. This "short cut" is useful for testing a filter to see if it returns the expected data. Note that the filter information is not saved; you will need to return to Edit Filter and Save the filter if you want to retain the modifications.

11. Change Status: These labels will flag if a change to a Table, Filter, or Report is pending.

Creating Filters

Creating a new filter definition is always done by copying an existing filter. A Default filter (All Projects) will always be available for copying, however you may have an existing filter that is closer to your desired result.

On the Edit Filter ribbon, press the Copy button (Ribbon Item 4) or use the Alt key sequence. This will bring up the following dialog:



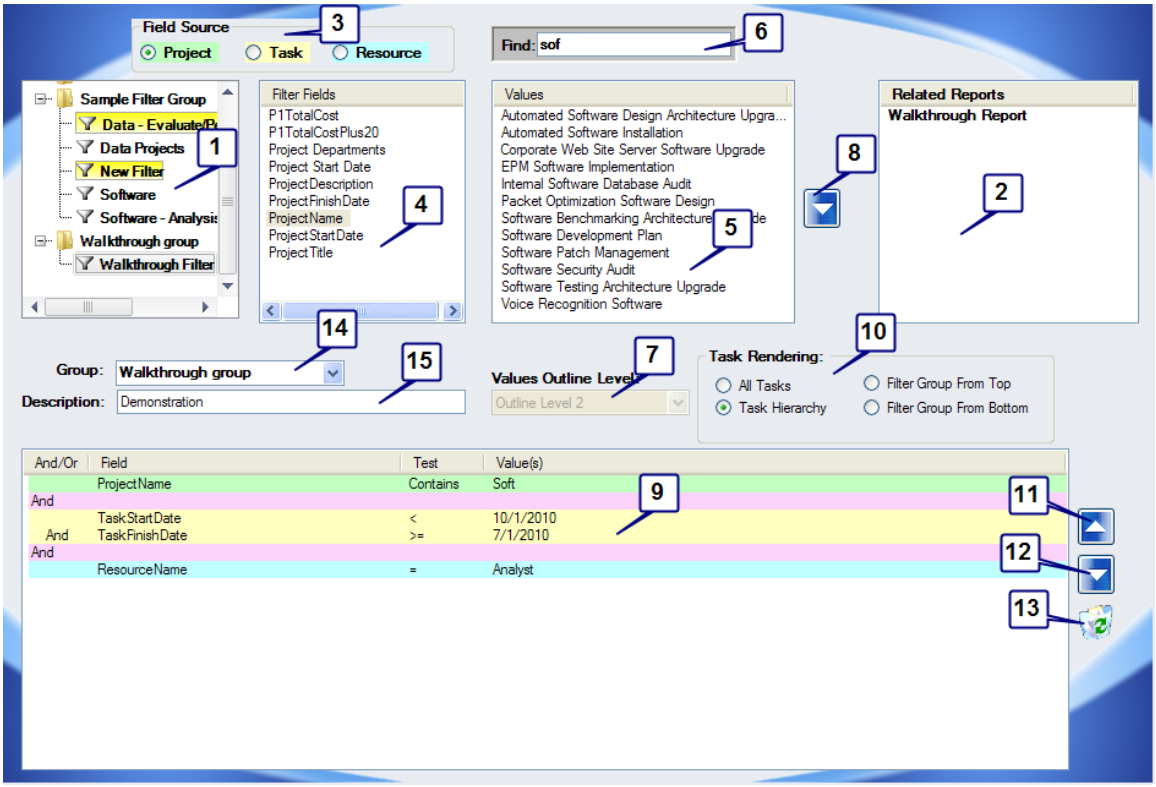
Initially the "All Projects" option will be selected and the existing filter list will be disabled (grayed out). "All Projects" is a filter definition that will always be available, and is essentially a filter without any filter criteria.

The Copy Filter option allows you to copy an initial filter definition from another filter. You can subsequently edit the filter to add any variations you need. When Copy Filter is selected the Filter List tree becomes enabled. You can expand or collapse filter groupings, and select the filter you wish to copy.

To create a new filter, enter the filter name into the “Save Filter As” text box and press “Save”. If the filter definition already exists you’ll be prompted to Cancel, or replace the existing definition. If it does not exist the new filter is created. After filter creation the copied filter with the new name will be displayed in the filter work area.

Editing Filters

After creating a new filter or a filter has been selected, filter details are modified in the filter work area.



Filter Work Area

1. Filter List tree: This component provides a list of existing filter definitions, broken out by filter groups. Use the + or – on the tree to expand or collapse a grouping. Normally, when the dialog is raised it should already be pointing at the current filter being used by MSP-REX. However it is not necessary to select a filter before going to the filter edit dialog; using the list tree you can navigate to any filter. Selecting a filter within the tree will update the Related Reports list (item 2), and the filter conditions list (item 9). Color coding may be used on the tree items; a brown background indicates the filter is the current active filter in MSP-REX, and a bright yellow background implies the filter has not been used in any Report definitions.

2. Related Reports list: When a filter is selected in the Filter List tree, MSP-REX will display any reports that use the filter. This is useful to know, as you then can tell what might be impacted if you modify or delete the filter.

3. Field Source: Selecting one of these option buttons will populate the "Filter Fields" list with prospective search fields at that level. For example, selecting the "Task" option will cause the "Filter Fields" list (item 4) to be populated with Task level fields from the master field list – both native and enterprise custom fields.

4. Filter Fields: This list will contain the available fields that can be used for filtering at the level identified via the Field Source (item 3) option. When you click a field in this list, it will set up values pick list or data range entry, depending on the data type of the selected filter field.

5. Values:
   - For text based fields, clicking on a Filter Field item will result in the existing values for that field to be shown in the Values list. To include one or more values in the filter criteria, select the values of interest via single mouse click, or optionally with Shift or Ctrl as appropriate.
   - For numeric fields, clicking on a Filter Field item will result in two text entry boxes being shown to allow selection of the field value within a range. Range selection is inclusive, i.e. if you enter 0 and 100 values equal to 0 or 100 would be included.
   - For date fields, clicking on a Filter Field item will result in two date entry boxes being shown to allow selection of the field value within a date range. Each date entry box includes a down arrow which will pop up a calendar that can be used to select the date within a calendar context. The calendar includes left and right arrows for scrolling months, or click on the month name will pop up a month name list for selection. Years can be selected by clicking on the year value; a year scroll bar will become visible. A date can be picked by selecting the day of the month. Clicking on "Today" will set the item to Today's date (which is the default value). As in numeric values, date ranges are inclusive.
   - If the selected field already has conditions, an attempt is made to match the values with the conditions for that field, with any matches given a light gray background color. As the conditions may be refined or altered this matching is not always possible.

6. Find: Provides a method of filtering down the list of values found for a specific text field. It works the same way the "Find in List" filter on the Main form window works; just type in characters and it'll pattern match. Reducing the size of the pick list can help pick specific values to filter upon.

7. Values Outline Level / Generic Resource Only: As the values list can show all the distinct values in Project Server for all existing projects, this list has the potential to grow very large, especially for Task or Resource Names. In the interest of keeping the list manageable, we provide a means to limit how many values are returned:

a. If a Task Field Source is selected, you can control how deep into the Outline Levels MSP-REX will search for values. By default you can go two levels deep, use the drop down to select a different level.
b. If a Resource Field Source is selected, along with the "ResourceName" field, a check box is provided that will enable you to toggle between a list of all resources and only generic resources.

8. (Down Arrow button): Once items are selected in the value list or set in range entry, use the Down Arrow to move the criteria for the selected field into the Conditions list. If multiple values are selected, the default behavior is to create multiple conditions with an "Or" connector.

9. Filter Conditions List: When conditions are selected from the "Filter Field and Filter Field Value Selection" process, they are moved into the Condition List. As you may wish to have alternatives to simply picking exact values to filter on, or numeric or date ranges, once a field/condition has been added to this list it can be refined by double clicking on the item. This will bring up a "Refine Condition" dialog which will be described later in this Filtering section. In addition, a more expanded discussion of filtering considerations will be presented.

   Short Cut: If you know you're going to use a condition other than Equals for text or Between for dates and numbers, or you don't wish to go hunting for specific values, you can Right Click on a field name in the Filter Fields list. This will cause the selected field to be immediately added to the Conditions List, and the Refine Condition dialog displayed for that field. Refine Conditions will be described in more detail shortly.

10. Task Rendering: This option allows you to limit what tasks get rendered in the generated Project or Excel file. For task level rendering control the filter must have either Task level or Resource level filter fields defined. Option behavior works as follows:

    a. All Tasks: All tasks and subtasks for selected projects will be rendered, regardless of whether Task/Resource level selection criteria have been provided.
    b. Task Hierarchy: If a task satisfies the task/resource selection criteria, only that task and any task parents going up to outline level 1 will be rendered.
    c. Filter Group From Top: If a task satisfies the task/resource selection criteria, it and all sibling subtasks going up to outline level 1 will be rendered.
    d. Filter Group From Bottom: This is essentially a combination of items b and c; if a task satisfies the task/resource selection criteria, that task and any task parents going up to outline level 1 will be rendered, as well as all subtasks of the task that satisfies the selection criteria.

    Note that for Reports, multiple filters can be applied. If any of the filters include Task Hierarchy, Filter From Top, or Filter From Bottom, tasks will be filtered from the generated file, even if one of the filters includes "All Tasks". If more than one of the non "All Tasks" options is present in the filters, all tasks that satisfy any of the filters will be rendered.

11. (Up Arrow button): This can be used to move one or more items in the condition list up one line. This can be useful for rearranging filters.

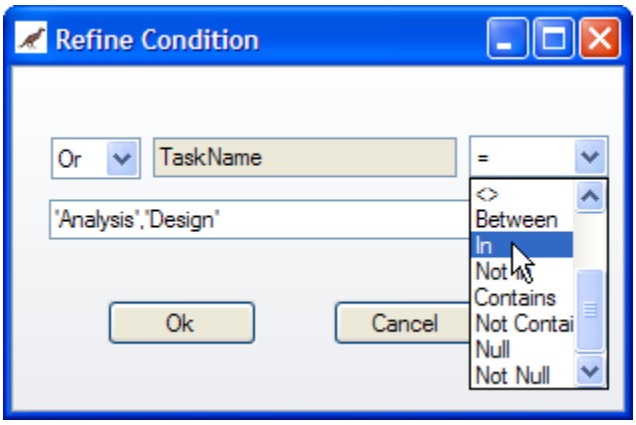
12. (Down Arrow button): This can be used to move on or more items in the condition list down one line. This can be useful for rearranging filters.

13. (Trash Can button): This can be used to delete one or more items from the condition list.

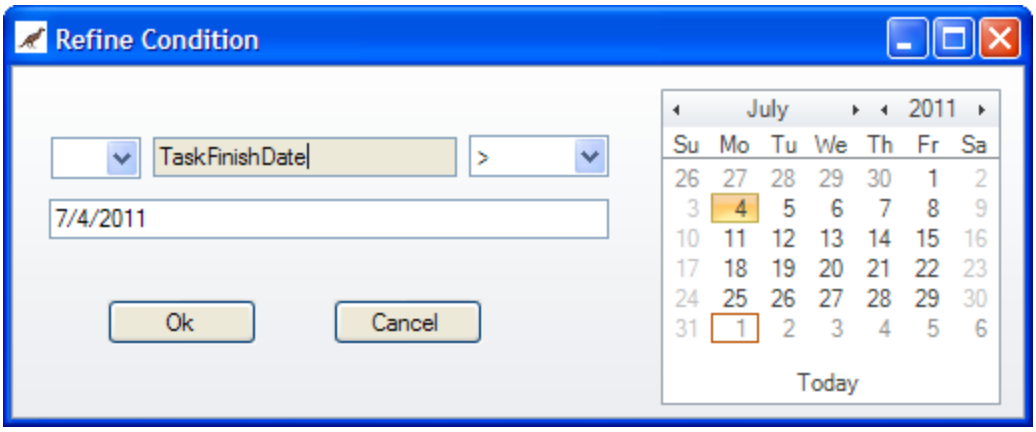
14. Group: Filter group to assign the filter definition into. You can either use the drop down arrow to select an existing group, or type in a new Group name. The group assignment should be reflected in the filter lists, both in item 2 and in the lists on the Main form (Filter tab) and the Report form (Filter tab). Note that Filter groups are independent from Report Groups and Table Groups. Naming standards are recommended, but entirely up to the user.

15. Description: Provides a place to show more background information about a filter than simply naming it would.

Refining Conditions



Non Date version



Date version

While the generation of conditions from the Filter Field and Filter Field Value mechanism will likely satisfy the majority of filtering needs, some additional tweaking is sometimes needed. For example, how does one change the default "And" for a group to an "Or" for a group? What if "=" or "Between" isn't quite what you want?

Double clicking on an item in the condition list will pop up the "Refine Conditions" dialog. The dialog will be defaulted to show the current values for the condition. Using this dialog, the user can change "And's" to "Or's", "Or's" to "And's", and add "And/Or" to those lines that don't have them (the first item in a group does not have And/Or). The condition test can also be changed from "=" or "Between" to one of "=, >, <, >=, <=, <> (not equal), Between, In, Contains, Not Contains, Null, or Not Null". The condition value can also be changed.

For those who may not be familiar with Between, Contains, In, or Null; a quick primer:

- "Between" is used to specify a range of values. For example with quantity Between 50 and 100, all values between 50 and 100, as well as the values 50 and 100 would be included.
    - When specifying dates, time should also be a consideration for the high end of the range. This is because under the covers, comparisons include time, and if no time is specified 12 AM is assumed. So Finish Date Between 9/1/2010 and 9/30/2010 really means between 9/1/2010 at 12 AM and 9/30/2010 at 12 AM, so anything after 12 AM on 9/30/2010 would not be included. Therefore, we recommend using the following date (10/1/2010 in this case) for the high end of a range. This also holds true if you're doing a < (less than) comparison.
- "Contains" is used with text values (i.e. not numbers or dates). It allows you to find items where you only specify part of a value, for example "Contains Soft" would find any of these values: "Software", "Soft touch", "A soft bed".
- "In" is used to find exact values in a list. For example, if you wanted to look for tasks named "Analysis", "Design", or "Testing", you could use a single "In" test and just list those values rather than having to create a multiple = tests linked together with Or's.
- Null is a concept that means we have no value specified. It is distinct from spaces and is often used with dates to show a date has not been called out. Since Null doesn't have a value, it can't be compared directly to something that

has a value as there is no basis for comparison. However we can check to see if something is Null or is Not Null.

If the field being refined is a date field, the calendar control will be shown; otherwise it will be hidden. This control can be used as noted in "Filter Field Value Selection". If the test is "Between", the first click on a calendar day will yield the start date in the range, and the second click will yield the finish date. Navigation between calendar day clicks is still possible.

If "Between" is used for a text field test, the format for the value must be

'xxxxxxx' and 'xxxxxx'

with the values within single quotes in order to contain embedded spaces. Likewise, if "In" or "Not In" is used for a text field test, the format for the value must be

'xxxx', 'xxxx', 'xxxxx'

If "Null" or "Not Null" is used, there should not be a value in the value text box. For other text value tests, only a single value applies and the quotes are assumed.

Cost values are expected to be numeric, date values are expected to be valid dates.

The Condition List and Condition Groups (And, Or, What?)

Filter support allows for the creation of complex filtering, i.e. the ability to filter by more than one filter criteria. These criteria are linked together by "And" or "Or" statements. "And" implies that *all* of the conditions linked together via the "And" statement must be true for an item to be included by the filter. "Or" implies that *any* of the conditions linked together via the "Or" statements can be true for an item to be included by the filter.

Combining "And" and "Or" together can sometimes yield unexpected results. For example, if you linked the conditions

Status = 'In Process'
Or Status = 'Complete'
And Actual Total Cost > 5000

you might think that either status *and* cost > 5000 would satisfy the filter. However the expression engine gives "And" precedence, so the condition would really be

Status = 'In Process'
Or (Status = 'Complete' And Actual Total Cost > 5000)

In other words, 'In Process' would satisfy the filter regardless of what the Actual Total Cost is. Because of this potential confusion, filtering allows for Condition Groups. This mechanism is quite similar to filtering condition groups in Project Pro.

Like simple criteria, Condition Groups are linked together via “And” or “Or” statements. The difference is, Condition Groups allow the user to mix “And’s” and “Or’s” without the confusion noted above. For example:

	Status = ‘In Process’	(Condition Group 1)
Or	Status = ‘Complete’	
And		
	Actual Total Cost > 5000	(Condition Group 2)

In this case the “Or” conditions are evaluated together so either of the status’s would satisfy the criteria regardless to the Actual Total Cost, and the Total Cost criteria would be subsequently applied. So, unlike the ungrouped condition, ‘In Process’ would only satisfy the filter if Actual Total Cost was also > 5000.

Another way to think about Condition Groups is by envisioning each group to be contained within parenthesis, thereby establishing precedence. So, the condition set above could be thought of as

(Status = ‘In Process’ Or Status = ‘Complete’) And (Actual Total Cost > 5000)

How then, are Condition Groups created? When a condition is generated from the Filter Field and Filter Field Value mechanism, the results are automatically generated into a new Condition Group, linked with an “And” statement. If the condition was generated from a text based field and multiple values were selected from the value list, each value is given its own condition line within a Condition Group, linked with an “Or” statement. A Condition Group can be differentiated from linked items within a group based on the “And” or “Or” statement being left adjusted, and on a line by itself to start the grouping. The first set of conditions is included in a default Condition Group.

Combining items from different groups within a single group can be done by selecting an item and moving it to a different group via the Up or Down arrow to the right of the condition list. Items, including the “And” or “Or” from a condition group can be removed by selecting the item via mouse click, then clicking on the trash basket icon. As a rule of thumb, you should not combine “And’s” and “Or’s” within a single group, as that would just lead back to the confusion we started off with.

Checking Conditions

The “Check Conditions” button is used to provide a level of validation for the conditions and condition groups. While this functionality is automatically invoked when a filter is being saved, or being used without being saved, manually clicking the button while creating the condition set is considered a best practice. In addition to validation, this process will automatically correct some errors and set some defaults. If an adjustment is made a message dialog will bring this to the user’s attention so the adjustments can be verified. The Check Condition process does not guarantee the condition set is bulletproof, however it will catch most problematic errors.

Check Conditions will perform the following checks:

- Group level And/Or's:
    - If moving member conditions around leaves a group level And/Or stranded at the beginning or end of the condition set, it will be removed.
    - If moving member conditions around leaves group level And/Or items next to each other, all but the first will be removed.

- Blanks, And's, and Or's configured – the first list item, and first item of all Condition Groups should be blank, and will be set to blank if not. Any blank condition item that is not the first item in a group will be defaulted to "And".

- Mixed And's/Or's within a group – if "And" and "Or" are both found within the same Condition Group, a warning message is posted.

- Combining Project, Task, and Resource conditions within the same group – the default behavior for filtering is designed to apply each filter to a Project as a whole. In other words, when specifying filters at the task level and at the resource assignment level each would be applied against the project independently. If a combination of a specific Task and Assignment is desired special rules (see next section) will be applied. This check will see if Project, Task, and Resource Assignments are within the same group, and if so move the Project filter conditions into a separate group, and trigger the special rules for Task/Resource combinations.

Failing the "Check Condition" process will prevent the Save, or Execute Filter processing from occurring. Passing the process will automatically update the "in memory" version of the filter, making it available for use.

Special Task/Assignment Conditions

When a Task level test and a Resource Assignment level test are combined within the same Condition Group, special considerations apply.

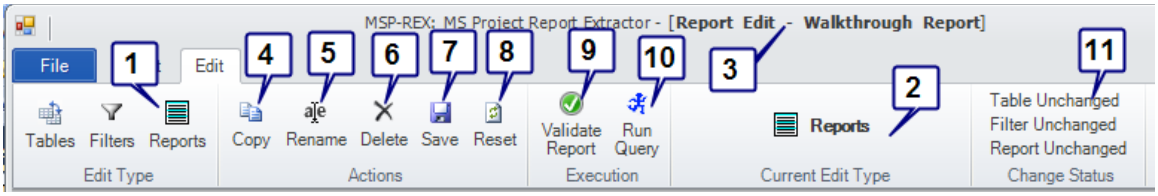
Best practices for Project Resource Assignments state that the Assignment should occur at a subtask level, rather than a summary task level. As a task filter may be expressed in terms of finding a summary level task, but resource requirements really apply to the subtasks, there may be a disconnect between how the Task/Resource filter is requested and how the relationships actually exist. For example, a user might want to include only Projects that have a Construction task with Electricians assigned to more than 20 hours of work. For example, you might have a "Construction" summary task, and a "Wire Breaker Box" subtask, with the Electrician resource assigned to the "Wire Breaker Box" task. If the search is on "Construction" and "Electrician hours > 20", we somehow have to make the connection between assignments made on "Wire Breaker Box" and the task named "Construction". If the Task and Resource criteria are contained within the same condition group, MSP-REX will assume the task may be a parent task.

If there is an interest in doing filters that include both Task level and Assignment level criteria, but the Assignment level criteria could be applied to resource assignments for any task, place the Assignment test in its own Condition Group.

Creating and Editing Reports

MSP-REX uses the concept of a "Report" to define a combination of Filters and Tables, along with the desired report type (Project or Excel) and the desired target location and file name. While it is possible to generate a report "ad hoc", simply by creating or using existing tables and filters and handling the definitions and execution of each report piece manually, saving the component pieces in a Report definition makes it easier to run the report on a regular basis, and provides a starting point for creating new, related reports.

To create or edit a report, press the Report button on the Edit tab or use Alt key navigation to get to the Edit Reports area.



Report Edit Ribbon

1. Reports button: This button will bring up the report work area below the ribbon.

2. Report Type: This is simply a label and icon to help you identify which work area is active in the Edit tab.

3. The title bar should always indicate where you are. In the case of Report Edit, it should also tell you which report is currently being edited.

4. Copy button: Used to create new report definitions.

5. Rename button: Allows you to rename the report definition.

6. Delete button: Allows you to delete the report definition. Any member tables or filters are not deleted, they remain available for future assignments.

7. Save button: Saves the report definition so it is available for future sessions. Note that this will also save any pending Table or Report changes. Before saving it will verify at least one filter and only one table is present (with the table as the last item). If those conditions are not met it will not Save.

   Note that despite the validation check, it is still possible for a report definition to be "broken". This could happen if a member filter or table is deleted, and the user opts to "break" the report rather than cancelling or deleting both the filter or table and the report. Also, if a report is initially created using the default "Rpt – No Content" option it will be "broken" until filter and table assignments are made. If a report is "broken" it should be shown with a red background both in the tree list in item 1 below and the Report Tree list on the Report tab on the Select form.

8. Reset button: MSP-REX allows you to make changes to filters without saving the changes. However changes are retained in memory until MSP-REX is exited.

The Reset button restores all Table, Filter, or Report definitions to the point at which they were last saved. If you are making a series of changes to a filter but wish to start over, this will help you get back to where you started.

9. Check Conditions: Before a set of conditions can be used to filter a query, it must pass certain validation rules. Check Conditions will make a validation check, and potentially modify the conditions to satisfy the rules. If a condition is modified a warning dialog will be posted. This same process is also done when attempting to Save a filter, the Check Conditions button just lets you do a preemptive check while you are building your filter. Check Conditions will be explored in more detail later in this section.

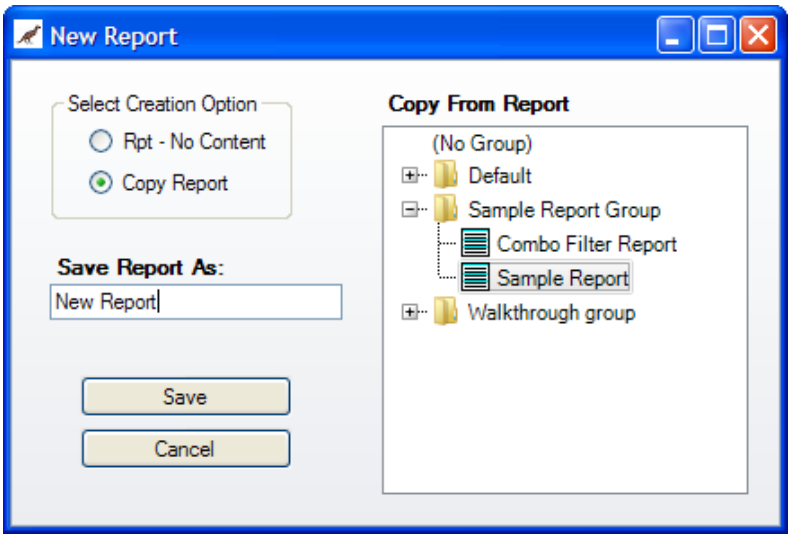
10. Run Query: This button is analogous to using the Run Query button on the Select form. It will verify at least one filter and only one table is present (with the table as the last item), and if valid will close the Edit Report dialog and execute the report from the Main window. This "short cut" is useful for testing a report to see if it returns the expected Projects. Execute Report does not trigger the Generation process; it only sets the current table, any target file and output type information, and executes the member filters and Actions. If you continue without saving you will need to return to Edit Report later and Save the report if you want to retain the modifications.

11. Change Status: These labels will flag if a change to a Table, Filter, or Report is pending.

Creating Reports

Creating a new report definition is always done by copying an existing report. A Default report (No Content – not executable) will always be available for copying, however you may have an existing report that is closer to your desired result.

On the Edit Report ribbon, press the Copy button (Ribbon Item 4) or use the Alt key sequence. This will bring up the following dialog:

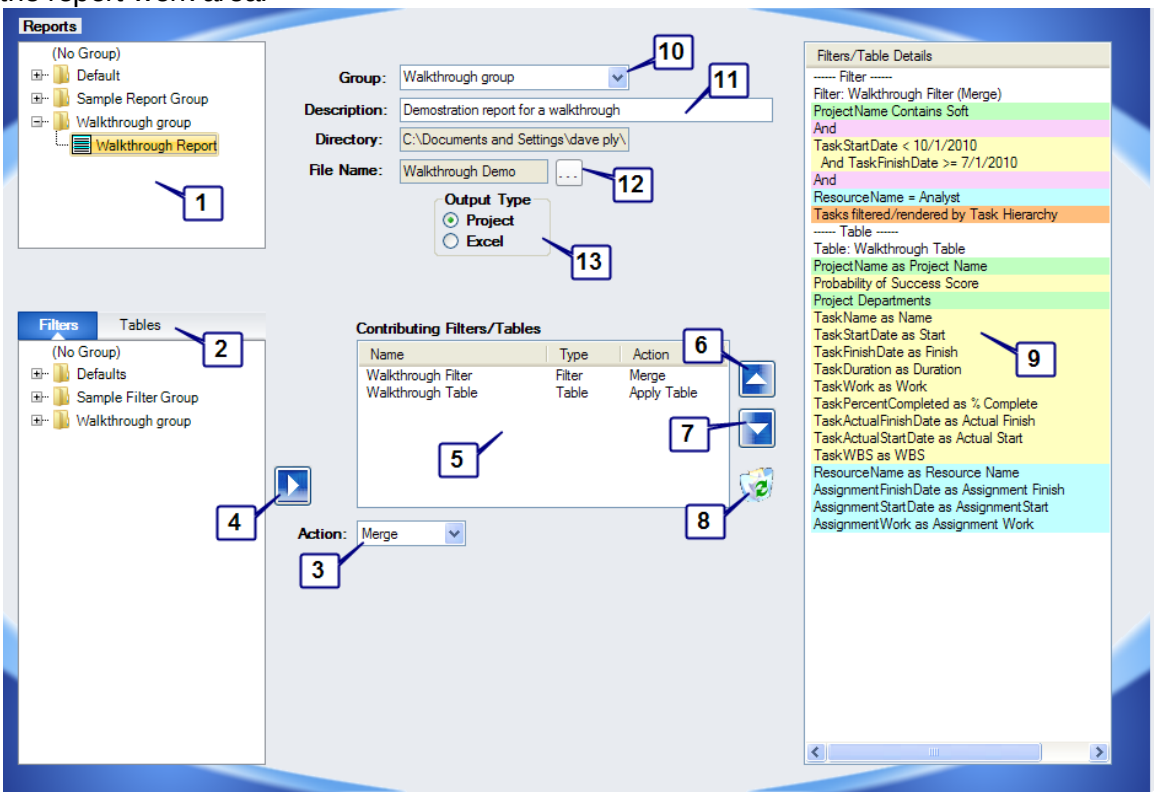


Initially the “Rpt – No Content” option will be selected and the existing report list will be disabled (grayed out). “Rpt – No Content” is a report definition that will always be available, and is essentially a report without any filters or tables assigned.
The Copy Report option allows you to copy an initial report definition from another report. You can subsequently edit the report to add any variations you need. When Copy Report is selected the Report List tree becomes enabled. You can expand or collapse report groupings, and select the report you wish to copy.

To create a new report, enter the report name into the “Save Report As” text box and press “Save”. If the report definition already exists you’ll be prompted to Cancel, or replace the existing definition. If it does not exist the new report is created. After report creation you will be transferred to the Report Edit dialog.

Editing Reports

After creating a new report or a report has been selected, report details are modified in the report work area.



Report Work Area

A report definition must include at least one filter and one table definition to be useable. Any number of filters can be used/combined. Only one table can be assigned, and must be the last item assigned. When filters are assigned, you also need to include the action, corresponding to the +, -, = button on the Select form.

The Report Edit dialog contains the following components:

1. Report List tree: This component provides a list of existing report definitions, broken out by report groups. Use the + or – on the tree to expand or collapse a grouping. Normally, when the dialog is raised it should already be pointing at the current report being used by MSP-REX. However it is not necessary to select a report before going to the filter edit dialog; using the list tree you can navigate to any report. Selecting a report within the tree will update the Contributing Filters/Tables list (item 5). Color coding may be used on the tree items; a brown background indicates the report is the current active report in MSP-REX, and a red background implies the report is "broken", i.e. it is missing a filter or report assignment.

2. Filter/Table tab and Tree Lists: Clicking on the Filters or Tables tab will display a tree list of existing filters and tables, respectively. The Tree lists group by Filter Groups or Table Groups as appropriate. Expand/Collapse groups as in other trees. Selecting a filter or table within a group makes it available to be assigned to the report being edited.

3. Action drop down: When a report is executed, each filter is executed and the results are applied to the Generate list on the Select form, using an action that corresponds to the + (plus), - (minus), or = (equals) buttons that form. The drop down actions correspond to the buttons as follows:

    a. Merge – corresponds to + (plus)
    b. Subtract – corresponds to – (minus)
    c. Only Matches – corresponds to = (equals)

    See the + (plus), - (minus), or = (equals) button descriptions in the Select form for a description of their behavior.

    An Action is required for filters. If the Tables tab is active the Action drop down is disabled, by default table action is always "Apply Table".

4. (Right Arrow button): Once a filter or table has been selected, it can be assigned to the report. Use this button to make the assignment. Note that while a report can only support one table, this button will allow any number of tables. The reason this is allowed is it helps change a table assigned; you can add a new table before or after deleting the old table. However, it will check to verify the filter or table being assigned isn't already in the Filter/Table list; if it does a warning is posted and the assignment is not made.

5. Contributing Filter/Table list: This list shows any filters or tables that are assigned to the report being edited. Once a report or filter has been assigned to the report, it can be moved up or down, or deleted using button items 6-8. The assigned table must be the last item. The order of filters can be significant, depending on the Actions assigned. Filters are executed in the order presented.

6. (Up Arrow button): Used to move filters up in the execution sequence.

7. (Down Arrow button): Used to move filters down in the execution sequence, or to move the table item to the bottom.

8. (Trash Basket button): Useful for replacing filter or table assignments. Add the new assignment via the right arrow button (item 5) and delete the old assignment via this button. Can also be useful to remove items assigned in error.

9. Filter/Table Details: This list shows the details of the filters and tables that have been assigned to the report definition. Information is shown in the same sequence as the filter list (item 5), and has the same sequence validation requirements. Color coding; Project level information is light green, shadow fields ("Project: xxx" fields defined at a task level to support Project file reporting) are darker green, Task level is yellow, and Resource/Assignment level is light blue. For filters you might see an orange line that designates Task rendering filters (Filtered Task Groups or Filtered Task with Parents), or a pink line to show condition groups. Note that while tables can be defined with Project level fields (light green), they are only supported for Excel output. For Project output they will be ignored if present; you should use shadow fields to reflect Project level data in Project generation. MSP-REX will warn you if your report definition is for Project output and includes Project level fields.

10. Group: Report group to assign the report definition. You can either use the drop down arrow to select an existing group, or type in a new Group name. The group assignment should be reflected in the report lists, both in item 1, and in the list on the Select form (Report tab). Note that Report groups are independent from Filter Groups and Table Groups. Naming standards are recommended, but entirely up to the user.

11. Description: Provides a place to show more background information about a report than simply naming it would.

12. (… button – ellipsis): The target file directory and name is selected by pressing this button, which will bring up a file save dialog. This file will be reflected on the Main form when the report is selected. A target file is not required to save the report definition, but if it is not assigned it must be assigned at the time the report is generated.

13. Output Type: This option designates what type of report is desired (Project or Excel). This will be reflected on the Main form when the report is selected.

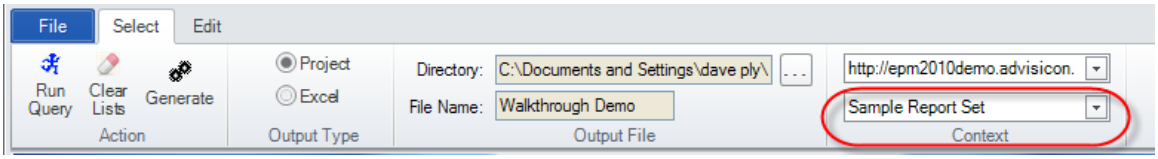
Report Sets

Overview

The discussion thus far has been limited to the context of a single user's reporting needs. This is in part because by default, all the Report, Table, and Filter definitions are stored in files in the user profile area of a user's PC. But what happens if you create a really cool report and want to share it with fellow MSP-REX users, or you create a whole series of cool reports you like to share? Or maybe you're the administrator and would like to publish a standard set of reports that anyone can use?

MSP-REX provides the concept of "Report Sets", along with Import and Export functionality to deal with these issues. A Report Set is really nothing more than the file that your Report, Table, and Filter definitions are stored in. In order to share the reports that you or someone else has defined, these definition files can be Exported and Imported.

A Report Set is stand alone. In other words only one Report Set can be active at a time within MSP-REX, and all the functionality described up to this point is done within the context of that Report Set. The current report set is named and can be selected in the Context Bar in the ribbon of the Select form



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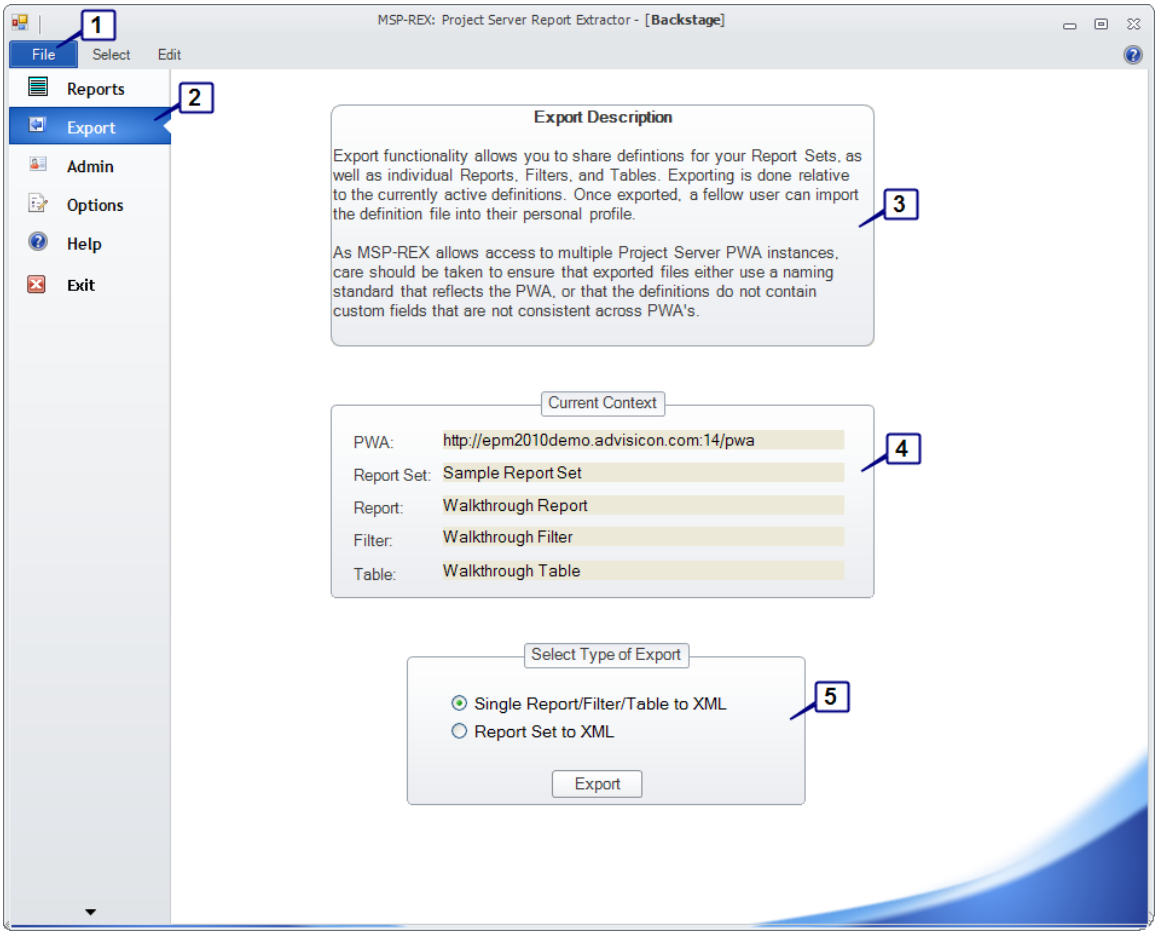
When you start up MSP-REX, it will remember the last Report Set you used, as well as the last Report, Filter, and Table, and start you up where you left off.

Changing Report Sets is a simple as clicking on the drop down arrow and selecting a new report set. It should be noted that the Filters, Tables, and Reports within a Report Set are associated with a specific PWA instance, as it may reflect custom fields that are specific to a PWA. As such, if you have an environment where multiple PWA's are supported, you should use a naming convention on your Report Sets to help avoid confusion. MSP-REX will allow you to use a Report Set based on one PWA against a different one, but unless the field names referenced are common to both you may get errors. When switching PWA instances (via the drop down just above the Report Set drop down), MSP-REX will warn you about the need to switch Report Sets.

Export

Before we can deal with someone else's Report Set, or they can deal with yours, it first needs to be Exported. Export functionality is available via the File (Backstage) tab, and the Export button.



Backstage Export Page

1. Navigate to the Export page via the File tab

2. and the Export button.

3. This text block describes the Export process.

4. Exporting occurs within the current context:
    a. PWA Instance
    b. Report Set
    c. Report (for single report Export)
    d. Filter (for single report Export). If the report being exported includes multiple filters, all will be included.
    e. Table (for single report Export)

5. Exporting can occur at two levels, the full current Report Set, including all Report, Filter, and Table definitions, and a single Report. Single report Export files include only the Report, Filter, and Table definitions specific to that report. Currently exporting is only done to a format called “XML”, which can in turn be Imported into another user’s MSP-REX.

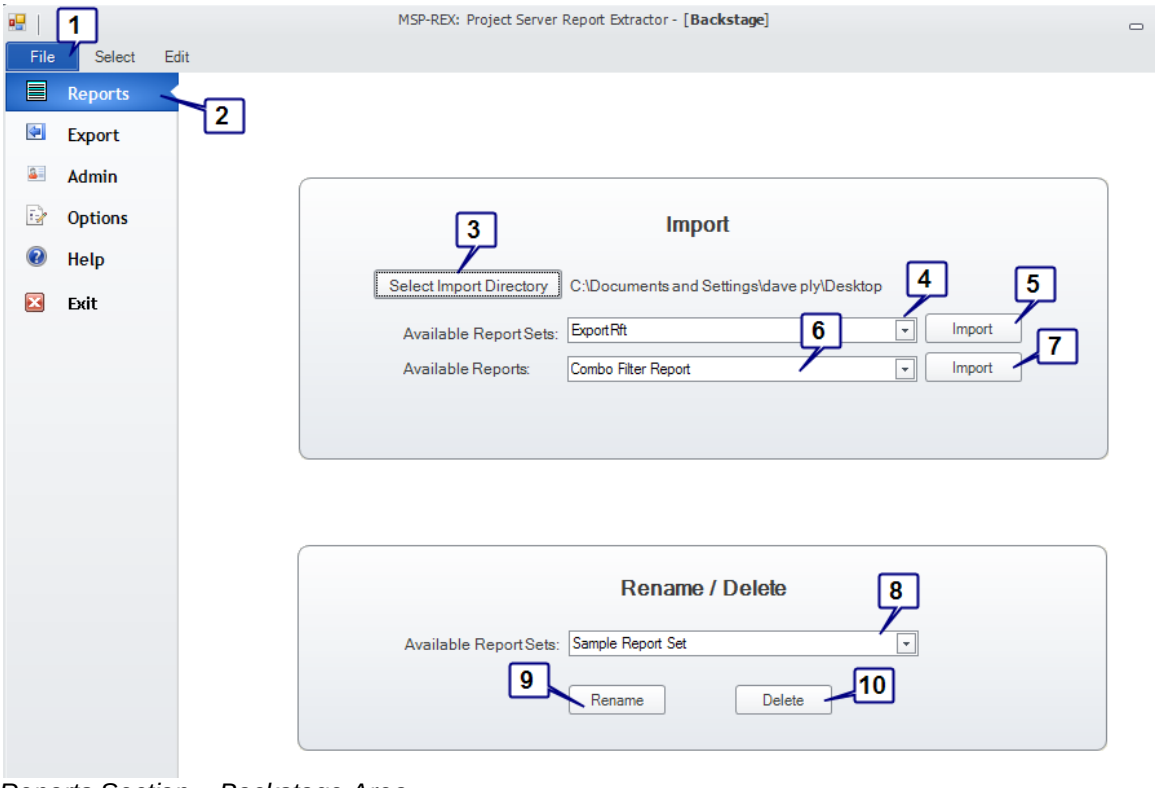
After choosing Report Set or Single Report level Export, press the Export button. You will get a Save File dialog that prompts you for where you want to save the file. This should be dropped in a location where the folks who want to import it can get to it. The file does not have to retain the existing name, but should be named something meaningful in a MSP-REX context.

Additional Export options are expected in future versions of MSP-REX.

Importing, Renaming, and Deleting Report Sets

MSP-REX accesses Report Set definitions stored in a user's personal profile area. If another users definitions or a common set of definitions has been exported to a common folder, you will need to use Import functionality to copy those definitions into your profile area.

Functionality for Importing single Reports and full Report Sets, as well as renaming Report Sets can be handled from the same page in the Backstage area.



Reports Section – Backstage Area

1. Navigate to the Reports page via the File tab
2. and the Report button.

Importing Reports and Report Sets

Once you've arrived at the Reports section of Backstage, the Import process is begun by pressing the "Select Import Directory" button (item 3). A "Browser for Folder" dialog will pop up, where you can navigate to the location where the Exported Report Set or Single Report file(s) reside. Note that if these files were placed in an area that does not have a drive mapping, you can enter the UNC name (for example \\ServerName\SharedFolderName) into the Folder text box of the dialog. After you press the Ok button on the dialog, MSP-REX will scan the indicated folder looking for files that match the export format for Reports and Report Sets, and populate the appropriate drop down lists (items 4 and 6). After these lists have been populated, you can use the drop down box for the Report or Report Set to select the definition you'd like to Import, followed by clicking on the appropriate Import button (item 5 or 7).

- Because Report Sets are stand alone, import is pretty straightforward, as we just deal with the files as a whole. MSP-REX simply copies the file into your profile area, and sets the imported Report Set as your new current Report Set. If the Report Set being imported has the same name (based on file name) as one of your existing report sets, you'll be prompted to Rename, Replace, or Abort the import. Rename will allow you to save the imported Report Set with a new name. Replace will overwrite your existing Report Set.

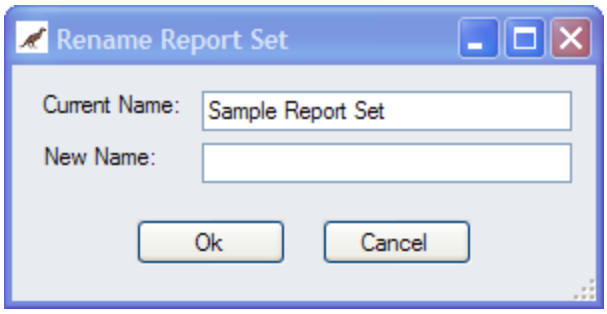
- Importing single reports is actually much more involved. We need to merge the definitions into the current report set and resolve any duplicate report, filter, or table names. Each component name (Reports, Filters, or Table), if duplicated, is subject to the same Rename, Replace, or Abort considerations as the full Report Set.

Renaming or Deleting Report Sets

Once you start collecting Report Sets, you may need to rename some of them to better reflect the context of the included definitions (PWA, report types, etc), or to help avoid duplicate name collisions on import. Some may also become redundant or obsolete and should be deleted.

As previously noted, MSP-REX stores Report Sets in the user's personal profile area of his PC. At the time MSP-REX is started up, it will check that area and populate the list of available Reports sets, both in the Context bar of the ribbon in the Select tab, and in the Reports sections of the File (Backstage) tab. Using the drop down list in the Backstage area (item 8), you can select and rename or delete Report Sets as needed.

- Rename Report Set: (Item 9) When you select this menu option, you'll get the following dialog:



Enter your desired name into the “New Name” field and press Ok. The new name will also be applied to the Report Set list on the Select tab.

- Delete Report Set: (Item 10) Deletes the selected report in the Report Set list (Item 8). You cannot delete the currently active Report Set.

Report Set Strategies

- If multiple MSP-REX users have a need to run the same reports or if generic report formats and/or filtering schemes exist, consider Exporting these definitions to a central location where any user can import the report set(s).

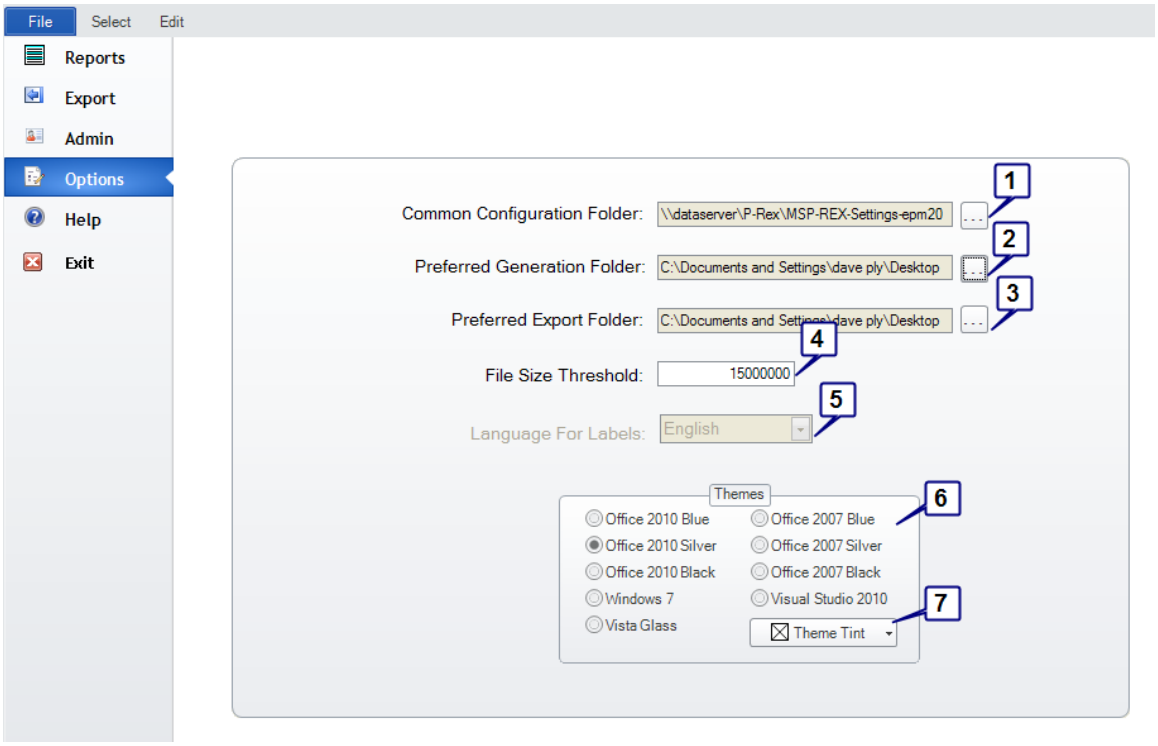
- Remember that after a Report Set is Imported, it becomes a local copy and any changes only affect the local copy. This is both good and bad. Good in the respect that generic reports can be turned into specialized reports with a minimum of effort. Bad in the respect that standard reports can easily become non standard, and specific to a user.

- If a centralized store of common Report Sets is maintained, a method of announcing changes to the central store is needed so users can re-import the updated Report Sets.

- Individual Report and Report Set files Export to a text file format called “xml”, which can easily be emailed as an attachment. This provides an alternative to exporting to a central file share. Once the Email attachment is saved to a local location it can be Imported by another MSP-REX user. This holds true for both Single Report Exports and All Report (Report Set) exports.

Options

MSP-REX provides a limited number of configuration options. They are accessible via the File (Backstage) tab, and the Options button.



Backstage Options Page

The following options are included:

1. Common Configuration Folder: This is the folder that you point to the first time you start up MSP-REX. It is the central location where configuration information, maintained by the MSP-REX Administrator, and shared by all MSP-REX users is stored. Normally this folder should not change. However, should the Administrator need to move the folder due to reorganization issues, this option allows the general MSP-REX user to point his copy at the new location. The new folder location needs to have had the configuration files moved prior to reassignment.

2. Preferred Generation Folder: This option simply sets a default folder for the Save File dialog used when setting the Generation target file.

3. Preferred Export Folder: This option simply sets a default folder for the Save File dialog used when Exporting Reports and Report Sets.

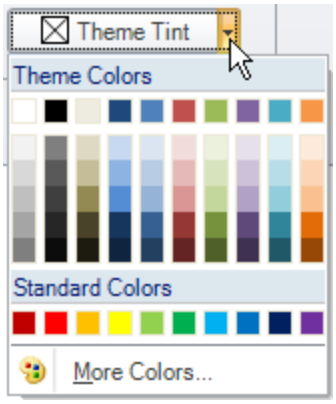
4. File Size Threshold: In enterprises where a large number of projects and tasks may be selected for a MSP-REX Project file generation, the generated file size can get too big for Project Pro to swallow and convert from XML to .mpp in one pass. To alleviate that problem, we set a governor on how big a file we can

handle at one time. Subsequently we'll generate our files in chunks of approximately the threshold size, convert each chunk from xml to mpp format individually, and then merge the .mpp's together as a last step. This option allows you to change the default threshold. Setting a smaller threshold means more chunks, which should load and convert to mpp faster, but more time is needed to merge them back together into one final result. Setting a larger threshold swings the opposite way, and you run the risk of exceeding what Project Pro and your PC can handle. 15-20 MB seems to be a reasonable tradeoff, being big enough so most reports will not need to be chunked out, yet small enough that Project Pro can handle it without hanging up.

5. Language for Labels: At the time of this writing, MSP-REX only supports English. However Spanish is an anticipated extension, with additional languages added as needed.

6. Themes: MSP-REX can have its look and feel, primarily in the ribbon area, modified to reflect various Microsoft Office themes. Selecting one of the option buttons will change to the new theme. The selected theme is remembered and applied on subsequent MSP-REX start ups.

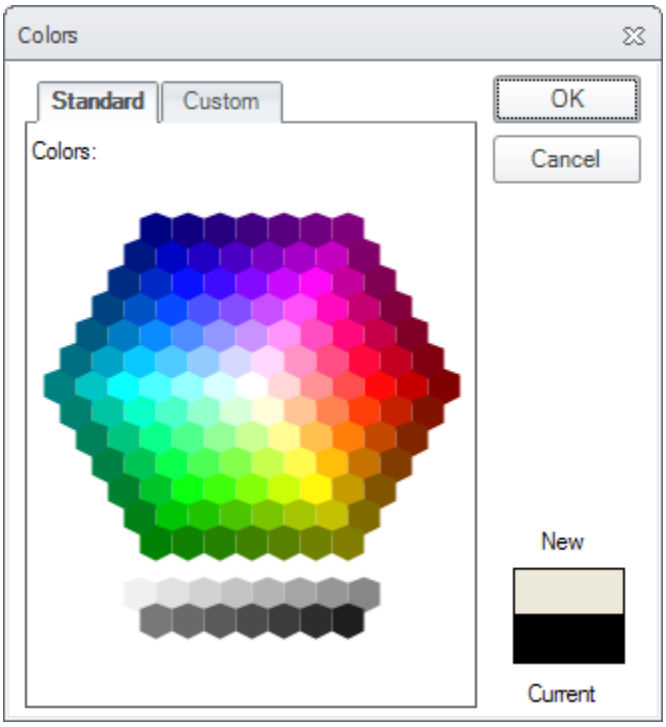
7. Theme Tint: In addition to the slight changes in format and color that the themes apply, an additional tint can be added to the color. The Theme Tint button (click the drop down arrow within the button) allows you to pick a new custom shade to fit your preference. The button will bring up the following dialog:



You can hover your mouse pointer over the various theme colors shown, and the results will be dynamically shown on the Options page. Note that the colors in the box may not translate directly to the page; as it is a tint the effect will be lighter, and the tint is added to the existing theme color. Once you find a color you like, click on it to set the tint.

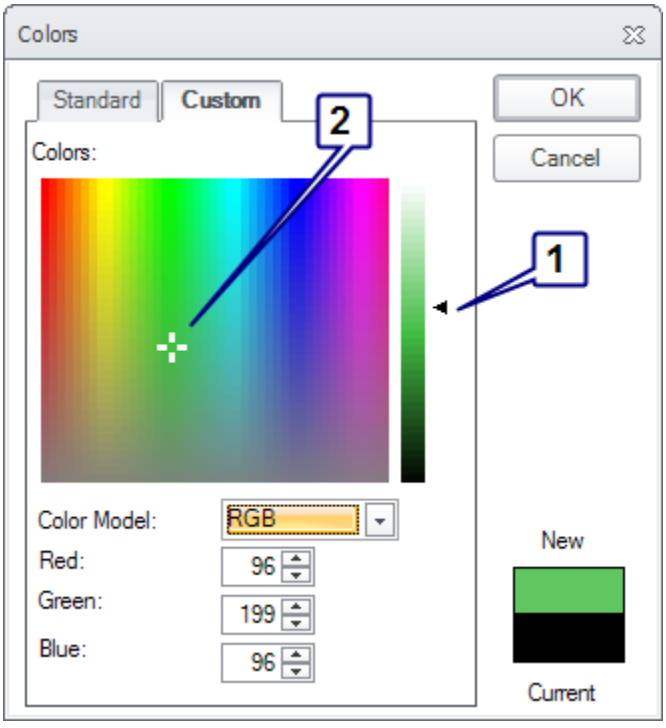
If, after trying a few tints, you'd like to revert to no additional tinting, simply select a new theme from the theme options (or switch to a new theme then back to your current theme if you're already on the base theme you prefer). This will clear the tint and revert to the coloring associated with the selected theme.

There are also additional color selection options available by clicking on the "More Colors…" button.



In this case moving the mouse around only shows the selected color in the comb, it does not dynamically apply the color to the theme. You'll need to click on a color, then click on OK for the color to be applied to the theme. If the results are not as desired, try again.

One final color option is to click on the "Custom" button on this dialog.



For this option there are two primary means for manipulating color. The pointer noted in Item 1 is used to control the lightness or darkness of the hue. When this color control is first shown, the pointer is all the way up, so the selected color will always look white. We recommend dragging it about halfway down with your mouse, then mousing around in the color area (Item 2) to find the hue you like. Last, move the lightness/darkness pointer again until you find the saturation you like.

Like the comb, you will only see the effect on your theme when you hit the OK button.

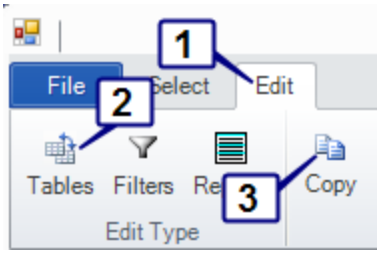
At the time of writing, themes and colors are newly introduced to MSP-REX, and some portions of the interface still do not pick up on the theme colors.

Walkthrough

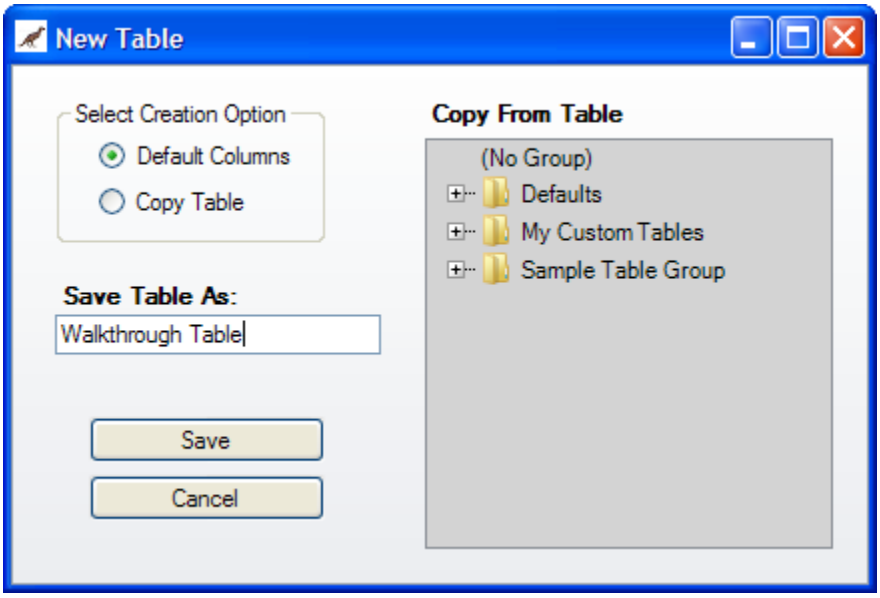
Now that we've laid out all the details of the MSP-REX functionality, let's do a walkthrough for creating a report from scratch. We'll assume the administrative setup is already complete.

Table Creation

Create a table. Any generated file will need an output format, where we identify which columns, in what order, column widths, justification, etc. To do this we need a table definition. In many cases you will likely have a definition that is similar to your desired layout; the thing to do then is copy the original and tweak to suit. This time we'll start with a default.

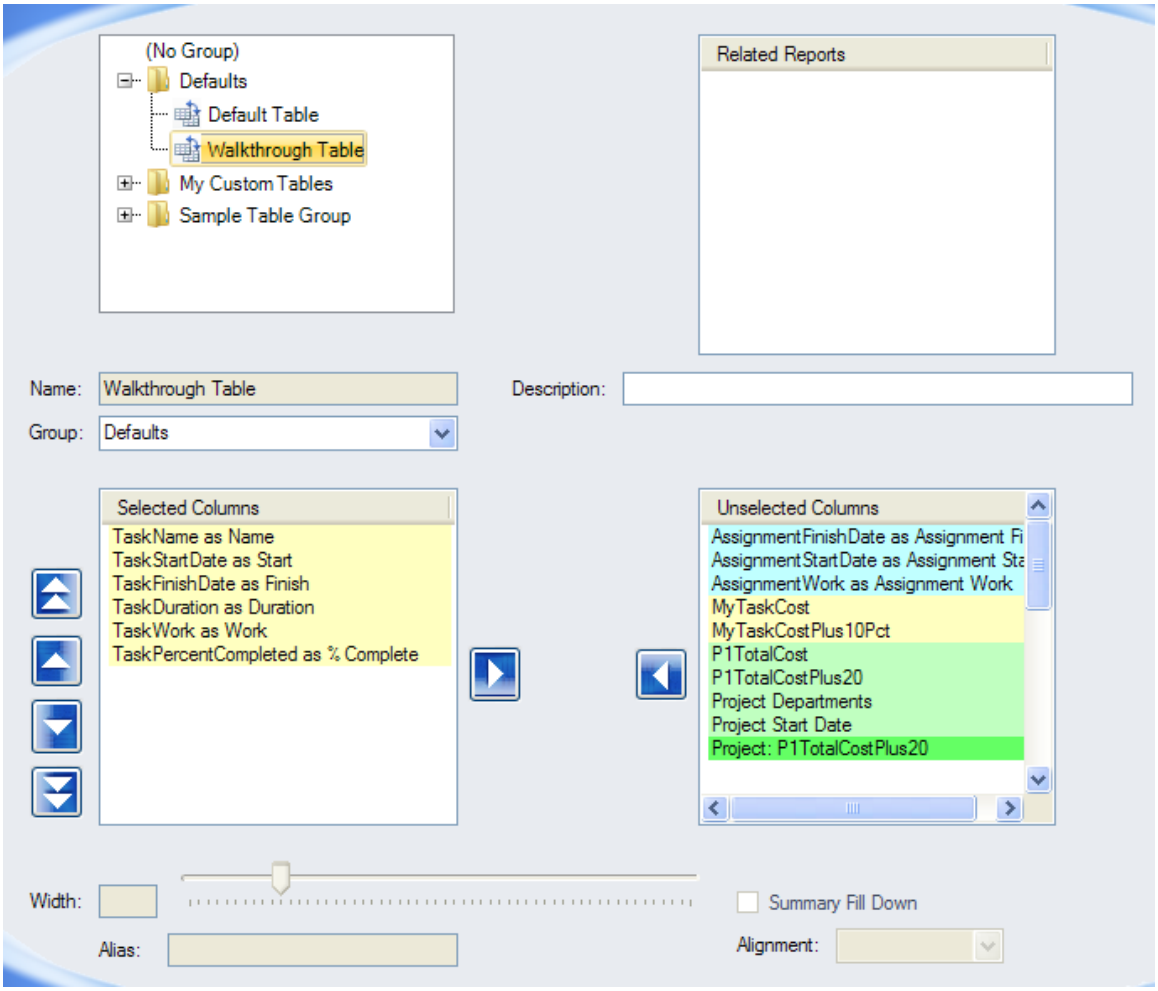


Select the Edit tab, then the Tables button to get to the Table work area, then the Copy button.



Select "Default Columns", enter a table name, and hit Save. If you were to create a new table based on a different table you've already customized, you'd select the "Copy Table" option, then open the appropriate table group and select a source table to copy. Note that since "Default Columns" is selected, the "Copy From Table" tree is disabled (grey background) and will not respond to input.

The table work area should now show the copied table.



The selected columns list should show the default columns. Add any additional columns from the Unselected Columns by selecting one or more column names and clicking the left arrow. Remove any unwanted columns from the Selected Columns list by selecting one or more column names and clicking the right arrow. Set the order you'd like the columns to appear, left to right, in the resulting Excel or Project report by performing the following steps:

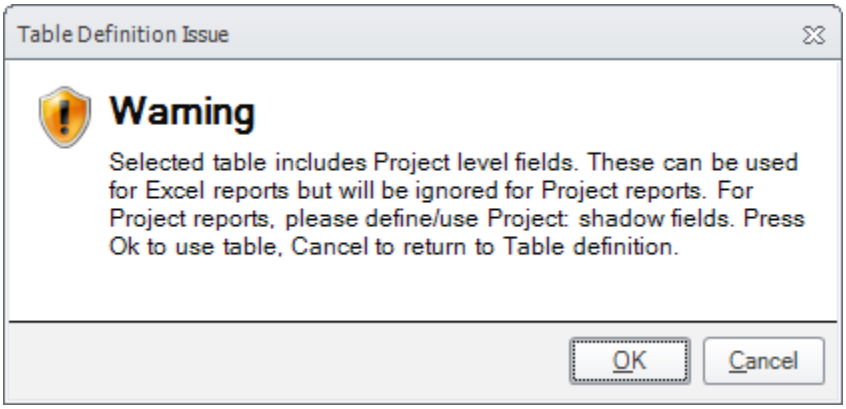
- Select the column or columns you'd like to move in the Selected Columns list
- Use the single up arrow to move it/them one column to the left (up in the columns list). Repeat as needed.
- Use the double up arrow to move it/them all the way to the left (top in the columns list).
- Use the single down arrow to move it/them one column to the right (down in the columns list). Repeat as needed.
- Use the double down arrow to move it/them all the way to the right (bottom in the columns list).
- You can adjust the preferred output Width, Alias, or Alignment of a column by selecting the column and changing the values at the bottom of the form.

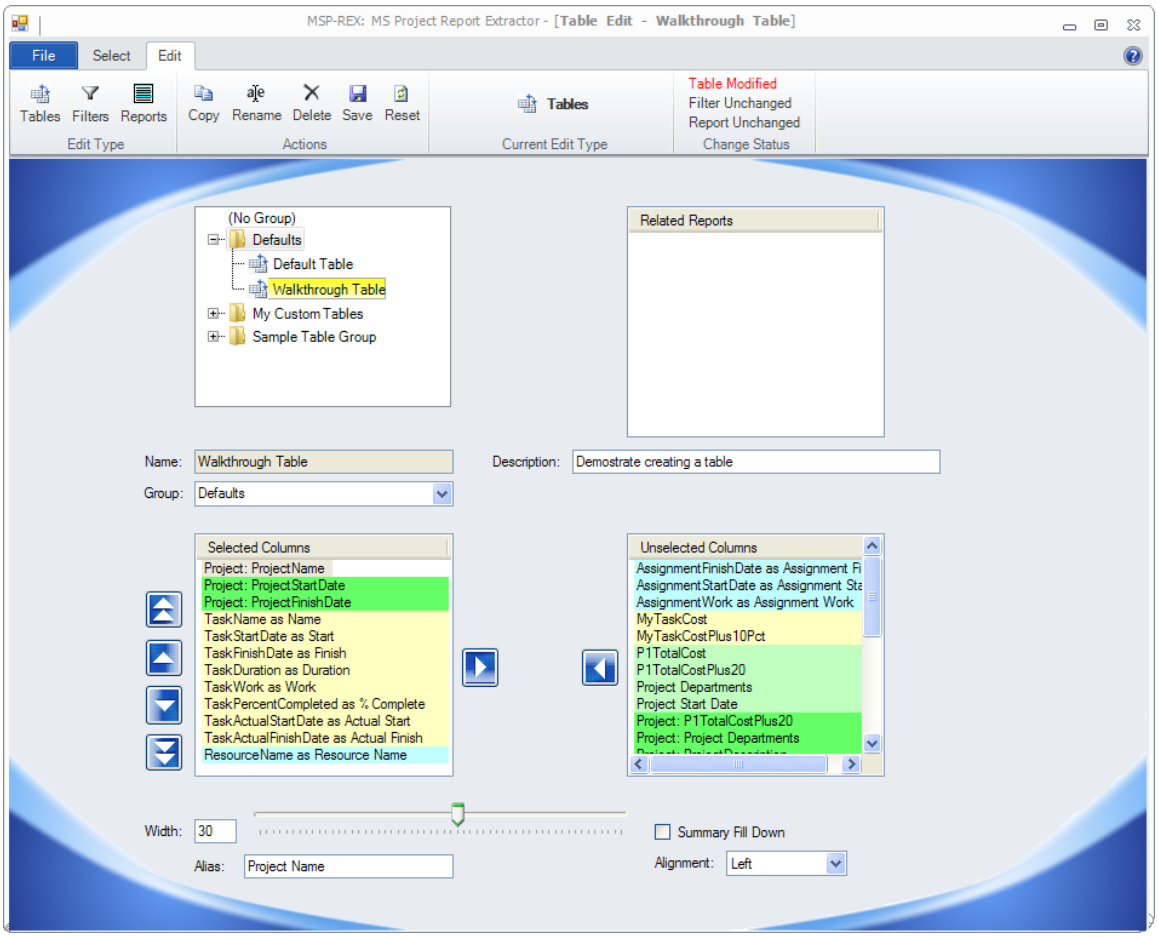
- Select a new column or columns and repeat the process until complete.
- Select an existing, or type in a new Group name, and optionally a description for your table.
- Note that for changes to Group, Description, Width, Alias, Alignment, and Summary Fill Down, you'll need to tab out of the field or select a different field with your mouse for MSP-REX to know you've finished your change so it can apply it to the table definition.

Notes on Shadow Fields:

If your intended output is a Project file, and you want to include project level fields (fields that contain the same values for an entire project), you'll need to use "shadow" fields. Shadow fields allow project level data to be shown at the task level for the multiple projects that can be selected and generated by MSP-REX. They have the same name as the project level fields, only with a "Project: " prefix. They are also designated in the column lists as being dark green, whereas the standard project fields are designated as light green. Shadow fields are only used by MSP-REX for Project file reporting; they do not physically contain data in Project Server. If you need a shadow field for a Project file extract and cannot find one, please contact your MSP-REX administrator, who can create the field and move it to the master pick list. If you do include project level fields (light green) in a table definition, they will be ignored in the Project file generation. If your intended output is an Excel file, you can specify project level fields (light green) directly; shadow fields are not required. You can reuse tables defined for Project file generation; the Excel generation process will handle the remapping.

Note that you'll receive a nag message about this at Save time if Project fields (light green) are included.



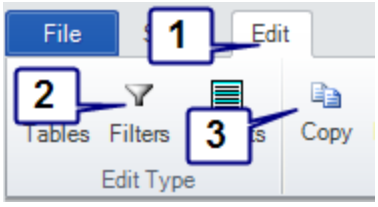


Note that after changes have been made to the table, a “Table Modified” message shows in red in the Change Status area. Once you have the table laid out the way you wish, press the Save button. This will save the table changes for future sessions, and reset the status to “Table Unchanged”.

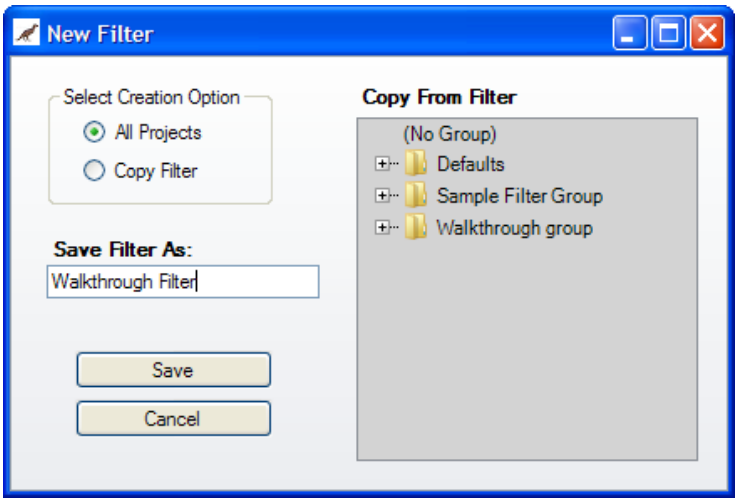
Filter Creation

Every report extraction needs a table definition and at least one filter definition. It’s possible the filter definition may not actually have filter criteria; in fact the “out of the box” Default Filter has no criteria and as a result will select all existing projects.

We will create a custom filter that includes Project level, Task Level, and Resource level criteria, as well as criteria to limit tasks being generated into the target file.

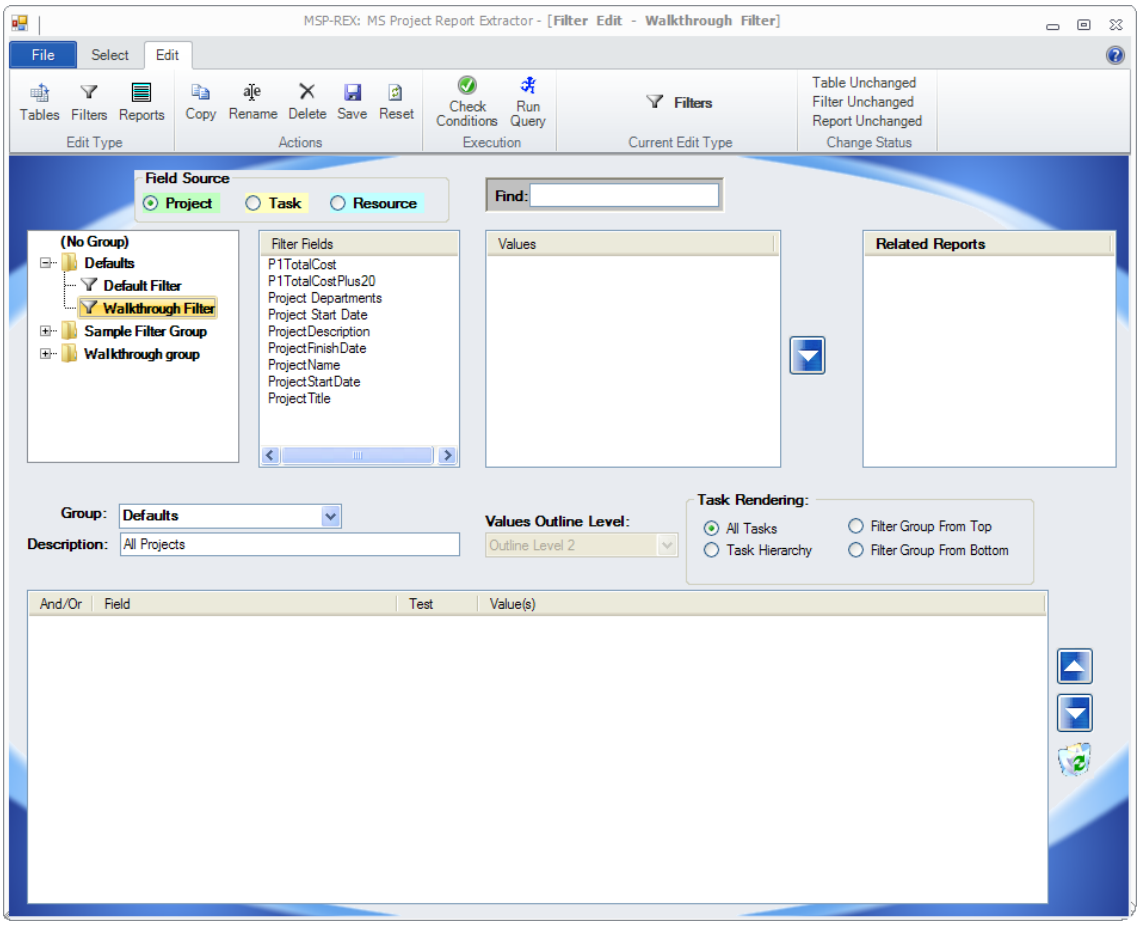


Select the Edit tab, then the Filters button to get to the Filter work area, then the Copy button.



In this case, we'll start with "All Projects" (a filter with no selection criteria) and build it up from scratch. You could also start with an existing filter by selecting "Copy Filter", opening the appropriate filter group, and selecting a filter to Copy. Note that since "All Projects" is selected, the "Copy From Filter" tree is disabled (grey background) and will not respond to input. Enter a new Filter name and press Save.

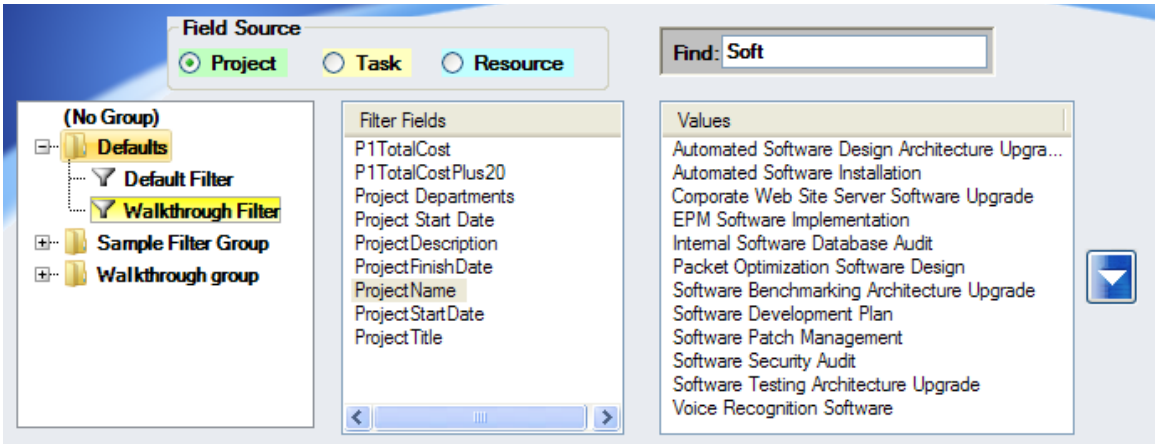
The Filter work area should now show the copied filter.



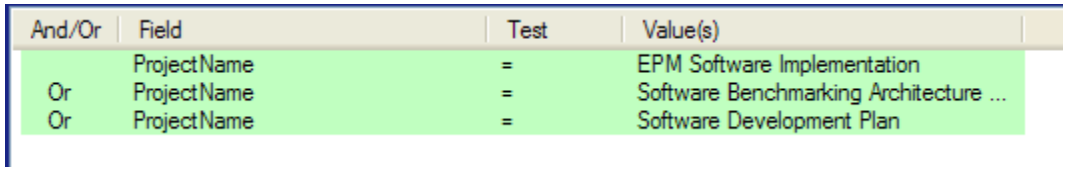
MSP-REX allows you to create filters with a full range of filtering capabilities, but as filtering is often based on specific value or values we start by setting a value for the field of interest then tweak it as needed.

Our first criteria will be any projects that have “Software” in their project name. By default, the “Field Source” box in the upper left is pointing to “Project” when the Filter Edit dialog is opened. This means that the Filter Fields list contains a list of all the project level fields that are available for filtering. This can include both “built in” and Enterprise Custom fields. The list is controlled by the MSP-REX administrator; if you can’t find a field you believe should be available please contact your administrator. There are some limitations here; we’re limited to what data is in the Reporting database, so some data, such as Predecessors/Successors is not available.

Select the “ProjectName” field from the list. This will cause a list of all existing project names to be shown in the Values list. We will further reduce this list by typing “Soft” in the Find box:

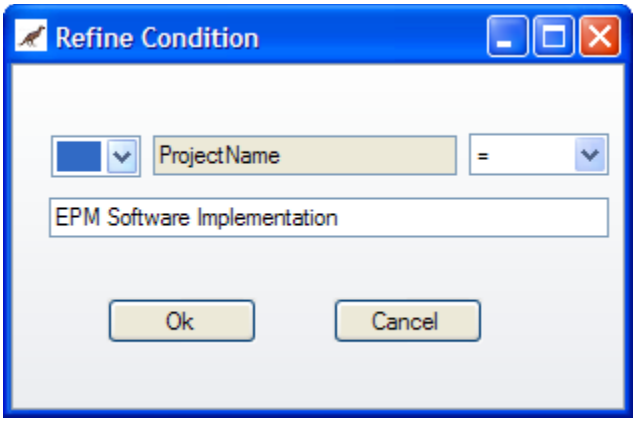


Although we’re ultimately only going to use one filter condition for project names, let’s start by selecting a couple of values via CTRL click, and moving them to the conditions list by clicking the down arrow.

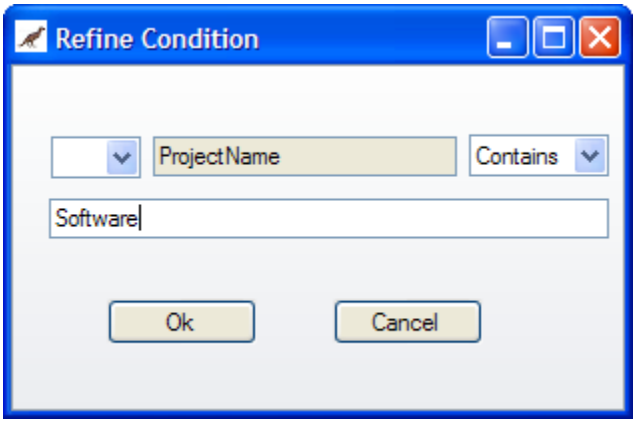


MSP-REX automatically set up a list of conditions with an equals test and an “Or” connector. But as you can see from the full list of values we could have by filtering on “Soft” (based on the Find: value), if we wanted to include all “Soft” projects we’d end up with a sizable list of conditions, connected by “Or”s. It would be simpler to just have one condition, where the test would be “Contains Soft”.

To do this we'll start by removing the extra condition lines, then clicking the trash can icon in the lower right. This should leave a single condition line. We'll now double click on that line. This should bring up a Refine Condition dialog:

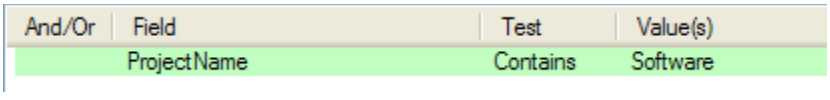


This dialog will have the field name, "ProjectName" in this case, as a preset value, with an = (equals) test and the actual value selected. We'll change the = (equals) test to "Contains" and type "Software" into the dialog box. Your Refine Condition dialog should match the screen shot below.



In this case it's the first condition line in a condition group, so the And/Or dropdown box remains empty. If we were dealing with additional conditions on a compound condition, we could change And's to Or's or vice versa with that dropdown.

Click Ok to set the refined condition back into the condition list.

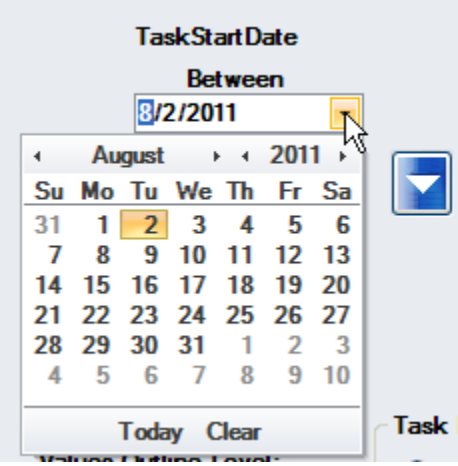


As you're working on filters, you can do interim queries to test what results they return by using the "Run Query" button. Note that your filter changes are still not permanent, and that a "Filter Modified" message shows in the Change Status area. It can be useful to defer saving changes while you're working up a filter, as you can start over by using the "Reset" button. Reset restores all Table, Filter and Report changes to the state they were in when the last save occurred. You should click Save once you're happy with the

filter execution results. Note that since we're only working at the filter level, the field list used on the test queries will be that of whichever table was used last.

Now let's move onto adding a Task criteria. We'll look for projects that have tasks that a Start Date between 8/1/2010 and 9/1/2010.

In the Fields Source box, select Task. This will load the Task level fields that are available for filtering. Choose TaskStartDate. When you choose a date or numeric field, MSP-REX will change the Value pick list to range selection fields. For dates, if you click on the dropdown arrow a calendar control, like the one in "Refine Conditions" will pop up.



You can navigate the calendar control to pick the dates, or enter the date values directly. Enter both dates for the range. Click on the down arrow to move the range to the Condition list. (The second date must be >= the first date). If you don't want a range, and would just like to search for greater than or less than a certain date, use the Refine Condition dialog once the item is in the Condition List.

And/Or	Field	Test	Value(s)
	ProjectName	Contains	Soft
And			
	TaskStartDate	Between	8/1/2010 and 9/1/2010

Note that MSP-REX has added a pink "And" line between the ProjectName and TaskStartDate conditions. This signifies that TaskStartDate is in its own Condition Group. (See "The Condition List and Condition Groups" section earlier in this manual for more details.) At the moment, we can either just leave the Condition Group "And", or delete that line via the trash can and add an "And" to the TaskStartDate "And/Or" field via the Refine Condition dialog; the effect will be the same.

But let's temporarily add another condition to show how and why condition groups are useful, so the test is "Task Start Date is in Aug 2010" or "Task Finish Date is less than Sept 2010".

And/Or	Field	Test	Value(s)
	ProjectName	Contains	Soft
And			
	TaskStartDate	Between	8/1/2010 and 9/1/2010
Or	TaskFinishDate	<	9/30/2010

To do this:

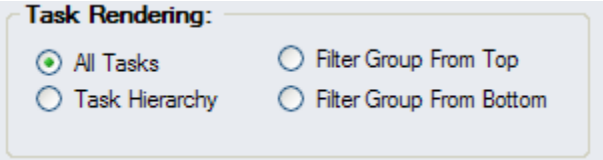
- Add “TaskFinishDate” as a condition line. You could add the date in a range (doesn’t matter what it is as we’ll tweak it anyway), or more simply, use the Right Click shortcut on the TaskFinishDate field, which will set up the new condition lines and bring you directly to the Refine Condition dialog.
- Using Refine Conditions set the condition to “< 9/30/2010” and set the “Or” value.
- Remove the new pink Condition Group “And” line so the Task Start and Task Finish Dates are tied together

The pink “And” line does two things for us. One, it allows us to mix “And” and “Or” conditions, i.e. in order for a project to be selected it must both have a name with “Soft” in it and either of the two options for date selection. It also visually makes the distinction more obvious.
We’ll change our conditions once again, selecting projects with tasks having scheduled activity within Q3 2010 (for this example we’ll assume that’s between 7/1/2010 and 10/1/2010), and continue building our filter by adding a resource check for an Analyst.

And/Or	Field	Test	Value(s)
	ProjectName	Contains	Soft
And			
	TaskStartDate	<	10/1/2010
And	TaskFinishDate	>=	7/1/2010
And			
	ResourceName	=	Analyst

Again, here’s an example of where the separate condition groups will make a difference. This is an example of what is more fully described in the “Special Task/Assignment Conditions” section. As currently set up, to be selected a project will need a name containing “Soft”, a task scheduled during Q3 2010, and an Analyst resource in ***any*** of its tasks. If we were to remove the second pink “And” line, to be selected a project will need a name containing “Soft”, a Q3 task, and an Analyst resource assigned to a task in Q3, as the Task criteria and the Resource criteria would be grouped together.

So far all the criteria we’ve specified apply to selecting projects. Without any further qualification the generated Project or Excel reports would show all the tasks and subtasks for the selected projects. MSP-REX offers an additional level of filtering that gets rendered at the task level via the Task Rendering options.



By default All Tasks get rendered. However, if task or resource level criteria are specified, we have the option of limiting the tasks that are outputted to those that satisfy the task/resource criteria, with three variations.

- Task Hierarchy: If a task satisfies the task/resource selection criteria, only that task and any task parents going up to outline level 1 will be rendered.

- Filter Group From Top: If a task satisfies the task/resource selection criteria, it and all sibling subtasks going up to outline level 1 will be rendered.

- Filter Group From Bottom: This is essentially a combination of the first two variations; if a task satisfies the task/resource selection criteria, that task and any task parents going up to outline level 1 will be rendered, as well as all subtasks of the task that satisfies the selection criteria.

For our example, we'll use Task Hierarchy.

We'll also set the Filter Group and Description for our filter, and Save the Filter definition.

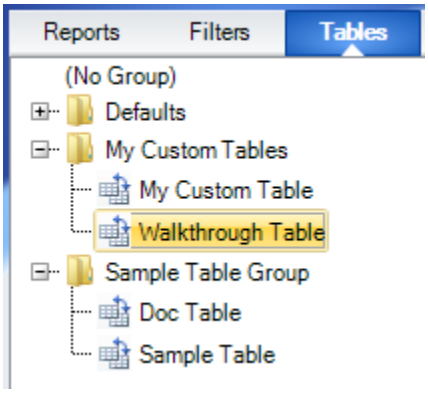
Ad Hoc Reporting

Now we have a table definition and a filter definition, which is all we need to run a report. In the MSP-REX world there are two ways to create reports:

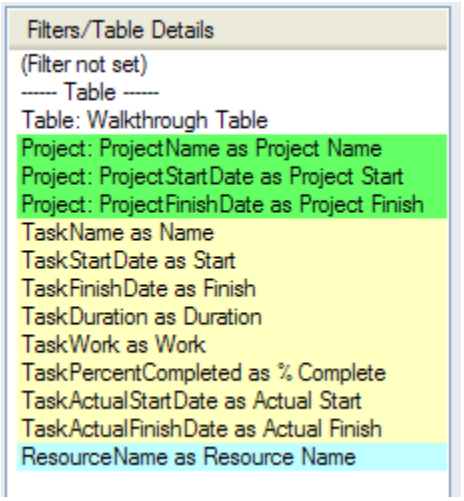
- Ad hoc by selecting/combining any existing tables and filters, adding file type (Project or Excel) and destination, executing the filter (or filters), moving the desired projects to the generate list, and running the generation process.

- Canned Reporting, where all the ad hoc pieces are stored in a report definition. Execution results in projects moved to the generate list. At this point the user can review and/or change the generate list and run the generation process.

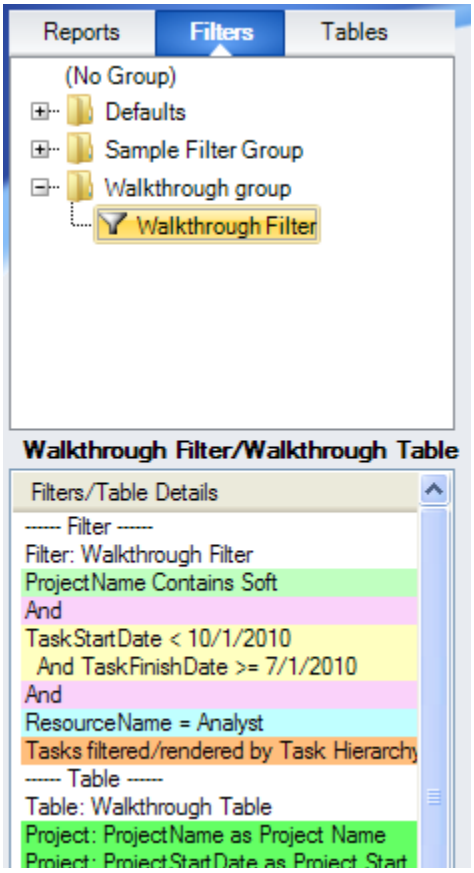
To do ad hoc reporting, we work off the Select form. First we'll pick a table by clicking on the Tables tab, opening the "My Custom Tables" group we created earlier, and selecting the Walkthrough Table we created.



This will set the current table, and show the table fields in the Filters/Table details list:

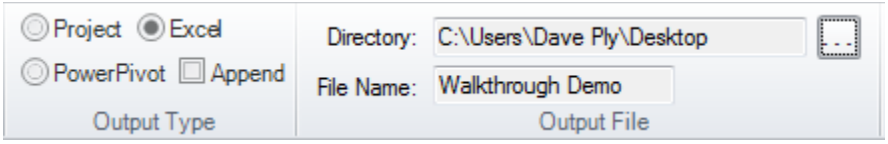


Likewise, for filters we'll select the Filters tab, open the Walkthrough filter group we created, and select the Walkthrough Filter. This will set the current filter, and show the filter criteria in the Filters/Table list:

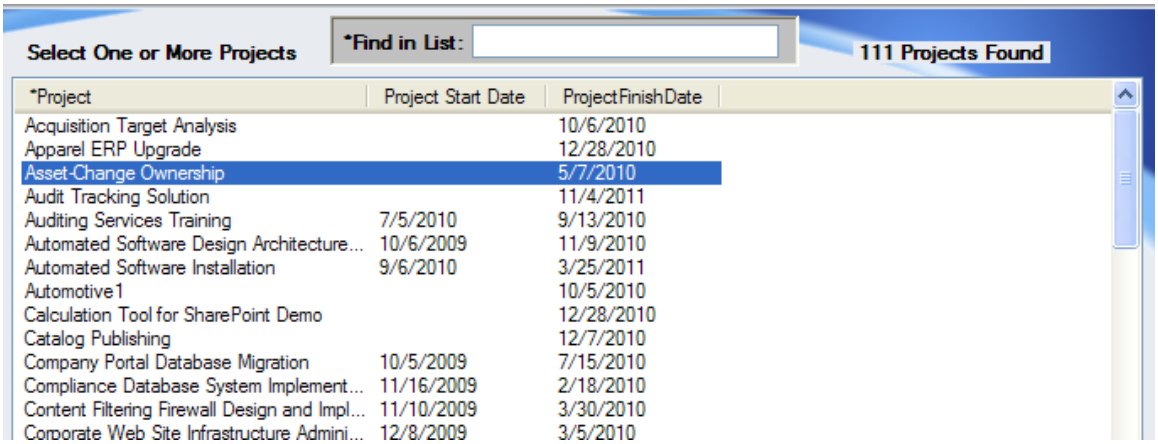


Next we need to set the type of file we wish to generate, and set the filename and target directory. Set the type in the Output Type option box, and set the target location by using the "…" (ellipsis) button. The button will open a "File Save" dialog where you can

navigate to your desired directory and set the file name. You need not specify the file extension (.mpp or .xls), MSP-REX will set that depending on your selected type. We'll select Excel as our sample output.



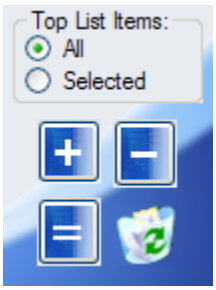
Now we need to execute our filter, and pick which resulting projects we want to include in the generated set. To execute the filter, press the "Apply" button in the lower left corner. The filter execution results will be shown in the Results List (the upper list).



The results list shows columns from the current table, but as the results are only at the Project level only Project level fields from the table will be shown. A label will also show how many projects were found. That number often provides a sanity check on whether the filter is working as intended, or needs further editing.

A side note: You could conceivably use MSP-REX strictly as a tool to find projects that satisfy certain criteria. Depending on what Project level fields you call out in your table definition, you might find the information you need directly without the need to generate any files. You could also use these results to find and edit projects – double clicking on a project line will open it in Project Pro. In either of these scenarios, the table definition would only need Project level fields. The results list can also be sorted by clicking on a results column header.

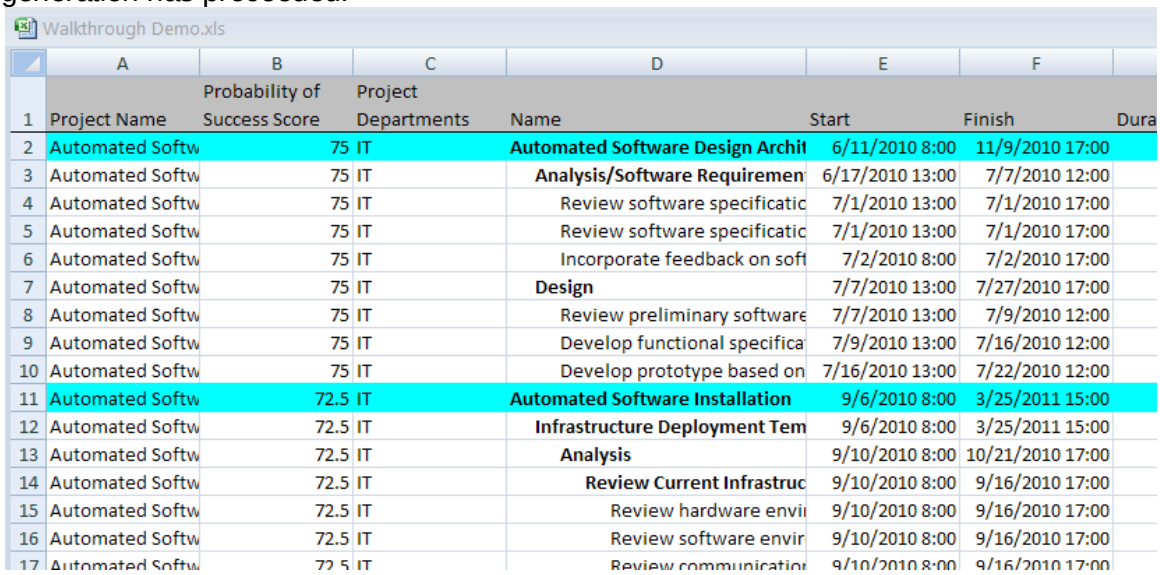
We still need to select the projects to be generated.



If all the projects in the results list should be generated, select the “All” option in the “Top List Items” box and click on the + (plus) button. If you only want a subset of the top list, select the desired projects and the “Selected” option. The plus button will merge all or selected projects from the top results list into any projects in the bottom (projects to generate) list. Duplicate projects will be eliminated. For more details on the + (plus), - (minus), = (equals), and trash can buttons see the Main Form Overview section. The short version is, they can be used to combine results from multiple filters.

Now that you have everything set up, all you need to do is press the “Generate File” button.

- For Excel files, MSP-REX will query the database to get the Project, Task, Assignment, and Resource information designated in the table and filter, open a copy of Excel, and update the cells with the results. Each time a new project is encountered Excel will highlight it in blue. Task names are indented based on Outline Level. A progress dialog will also display, showing how far along the file generation has proceeded.

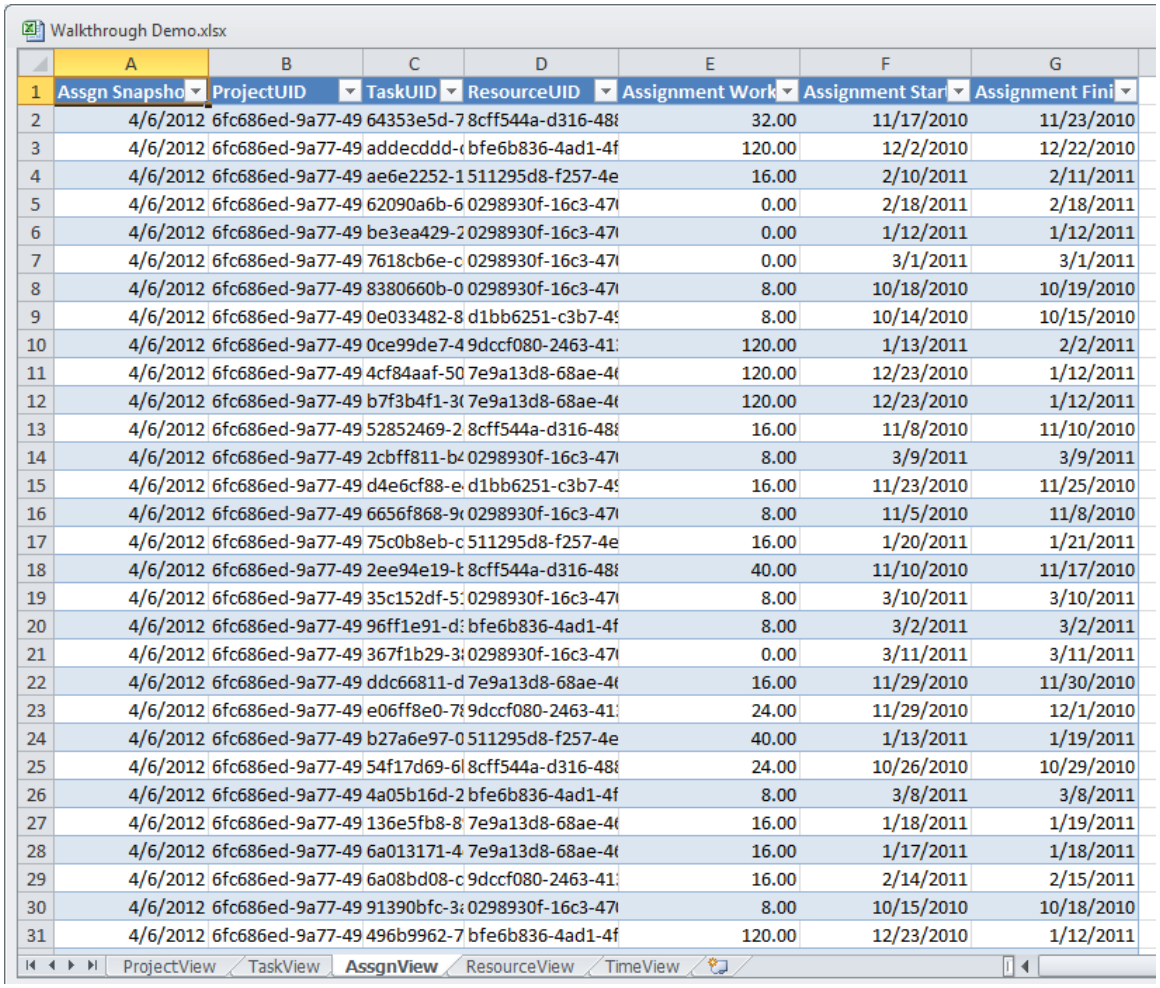


Walkthrough Demo.xls

	A	B	C	D	E	F	
1	Project Name	Probability of Success Score	Project Departments	Name	Start	Finish	Dura
2	Automated Softw	75	IT	**Automated Software Design Archit**	6/11/2010 8:00	11/9/2010 17:00	
3	Automated Softw	75	IT	**Analysis/Software Requiremen**	6/17/2010 13:00	7/7/2010 12:00	
4	Automated Softw	75	IT	Review software specificatic	7/1/2010 13:00	7/1/2010 17:00	
5	Automated Softw	75	IT	Review software specificatic	7/1/2010 13:00	7/1/2010 17:00	
6	Automated Softw	75	IT	Incorporate feedback on soft	7/2/2010 8:00	7/2/2010 17:00	
7	Automated Softw	75	IT	**Design**	7/7/2010 13:00	7/27/2010 17:00	
8	Automated Softw	75	IT	Review preliminary software	7/7/2010 13:00	7/9/2010 12:00	
9	Automated Softw	75	IT	Develop functional specifica	7/9/2010 13:00	7/16/2010 12:00	
10	Automated Softw	75	IT	Develop prototype based on	7/16/2010 13:00	7/22/2010 12:00	
11	Automated Softw	72.5	IT	**Automated Software Installation**	9/6/2010 8:00	3/25/2011 15:00	
12	Automated Softw	72.5	IT	**Infrastructure Deployment Tem**	9/6/2010 8:00	3/25/2011 15:00	
13	Automated Softw	72.5	IT	**Analysis**	9/10/2010 8:00	10/21/2010 17:00	
14	Automated Softw	72.5	IT	**Review Current Infrastruc**	9/10/2010 8:00	9/16/2010 17:00	
15	Automated Softw	72.5	IT	Review hardware envi	9/10/2010 8:00	9/16/2010 17:00	
16	Automated Softw	72.5	IT	Review software envir	9/10/2010 8:00	9/16/2010 17:00	
17	Automated Softw	72.5	IT	Review communicatio	9/10/2010 8:00	9/16/2010 17:00	

- For PowerPivot for Excel files, MSP-REX will query the database to get the Project, Task, Assignment, and Resource information designated in the table and filter, open a copy of Excel, and update the cells with the results. The difference between this version and the standard Excel report is:
  - In the standard report you get one worksheet with all the Project, Task, and Resource Assignment information grouped together.
  - In the PowerPivot version the Project, Task, Assignment, and Resource information is loaded into separated worksheets, along with another worksheet with Date information for Time based calculations. At this point PowerPivot does not support an automation interface so further configuration has to be done manually. We will discuss this in greater depth following this walkthrough.
  - A “Snapshot” date field is included as a column. Combining this with the “Append” option, you can trak performance of you selected project set over time.

- You have the additional option of checking the “Append” checkbox when the PowerPivot option is selected. If you do so, the Output file you select must be either a new file name or an existing file generated using the PowerPivot option.

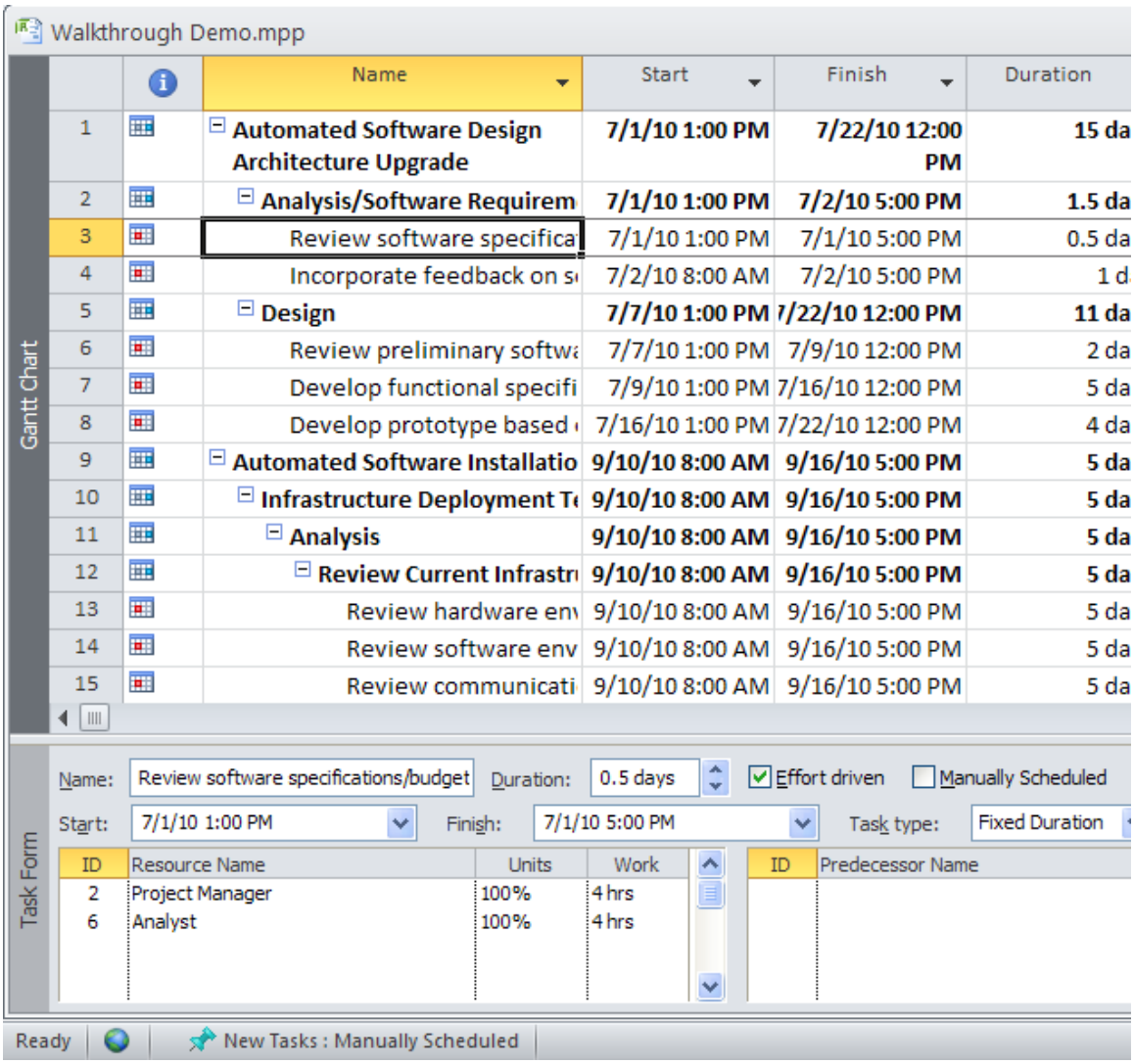


Walkthrough Demo.xlsx

	A	B	C	D	E	F	G
1	Assgn Snapsho	ProjectUID	TaskUID	ResourceUID	Assignment Work	Assignment Star	Assignment Fini
2	4/6/2012	6fc686ed-9a77-49	64353e5d-7	8cff544a-d316-48	32.00	11/17/2010	11/23/2010
3	4/6/2012	6fc686ed-9a77-49	addecddd-(	bfe6b836-4ad1-4f	120.00	12/2/2010	12/22/2010
4	4/6/2012	6fc686ed-9a77-49	ae6e2252-1	511295d8-f257-4e	16.00	2/10/2011	2/11/2011
5	4/6/2012	6fc686ed-9a77-49	62090a6b-6	0298930f-16c3-47	0.00	2/18/2011	2/18/2011
6	4/6/2012	6fc686ed-9a77-49	be3ea429-2	0298930f-16c3-47	0.00	1/12/2011	1/12/2011
7	4/6/2012	6fc686ed-9a77-49	7618cb6e-c	0298930f-16c3-47	0.00	3/1/2011	3/1/2011
8	4/6/2012	6fc686ed-9a77-49	8380660b-0	0298930f-16c3-47	8.00	10/18/2010	10/19/2010
9	4/6/2012	6fc686ed-9a77-49	0e033482-8	d1bb6251-c3b7-4	8.00	10/14/2010	10/15/2010
10	4/6/2012	6fc686ed-9a77-49	0ce99de7-4	9dccf080-2463-41	120.00	1/13/2011	2/2/2011
11	4/6/2012	6fc686ed-9a77-49	4cf84aaf-50	7e9a13d8-68ae-4(	120.00	12/23/2010	1/12/2011
12	4/6/2012	6fc686ed-9a77-49	b7f3b4f1-3(	7e9a13d8-68ae-4(	120.00	12/23/2010	1/12/2011
13	4/6/2012	6fc686ed-9a77-49	52852469-2	8cff544a-d316-48	16.00	11/8/2010	11/10/2010
14	4/6/2012	6fc686ed-9a77-49	2cbff811-b4	0298930f-16c3-47	8.00	3/9/2011	3/9/2011
15	4/6/2012	6fc686ed-9a77-49	d4e6cf88-e	d1bb6251-c3b7-4	16.00	11/23/2010	11/25/2010
16	4/6/2012	6fc686ed-9a77-49	6656f868-9(	0298930f-16c3-47	8.00	11/5/2010	11/8/2010
17	4/6/2012	6fc686ed-9a77-49	75c0b8eb-c	511295d8-f257-4e	16.00	1/20/2011	1/21/2011
18	4/6/2012	6fc686ed-9a77-49	2ee94e19-b	8cff544a-d316-48	40.00	11/10/2010	11/17/2010
19	4/6/2012	6fc686ed-9a77-49	35c152df-5	0298930f-16c3-47	8.00	3/10/2011	3/10/2011
20	4/6/2012	6fc686ed-9a77-49	96ff1e91-d	bfe6b836-4ad1-4f	8.00	3/2/2011	3/2/2011
21	4/6/2012	6fc686ed-9a77-49	367f1b29-3	0298930f-16c3-47	0.00	3/11/2011	3/11/2011
22	4/6/2012	6fc686ed-9a77-49	ddc66811-d	7e9a13d8-68ae-4(	16.00	11/29/2010	11/30/2010
23	4/6/2012	6fc686ed-9a77-49	e06ff8e0-7	9dccf080-2463-41	24.00	11/29/2010	12/1/2010
24	4/6/2012	6fc686ed-9a77-49	b27a6e97-0	511295d8-f257-4e	40.00	1/13/2011	1/19/2011
25	4/6/2012	6fc686ed-9a77-49	54f17d69-6	8cff544a-d316-48	24.00	10/26/2010	10/29/2010
26	4/6/2012	6fc686ed-9a77-49	4a05b16d-2	bfe6b836-4ad1-4f	8.00	3/8/2011	3/8/2011
27	4/6/2012	6fc686ed-9a77-49	136e5fb8-8	7e9a13d8-68ae-4(	16.00	1/18/2011	1/19/2011
28	4/6/2012	6fc686ed-9a77-49	6a013171-4	7e9a13d8-68ae-4(	16.00	1/17/2011	1/18/2011
29	4/6/2012	6fc686ed-9a77-49	6a08bd08-c	9dccf080-2463-41	16.00	2/14/2011	2/15/2011
30	4/6/2012	6fc686ed-9a77-49	91390bfc-3	0298930f-16c3-47	8.00	10/15/2010	10/18/2010
31	4/6/2012	6fc686ed-9a77-49	496b9962-7	bfe6b836-4ad1-4f	120.00	12/23/2010	1/12/2011

ProjectView | TaskView | AssgnView | ResourceView | TimeView

- For Project files MSP-REX takes a different approach; it generates XML files that Project can import. As it is possible to use MSP-REX in an environment with a large number of Projects/Tasks being generated into a single project file, this process may be segmented into multiple XML files, with each converted back into a Project file, and then merged together as a final step. During XML generation, a progress dialog will also display, showing how far along the XML generation has proceeded. A status dialog indicates how the XML to mpp conversion is going. You should wait until the dialog indicates “Master File Generation Complete” before working on the generated Project file.

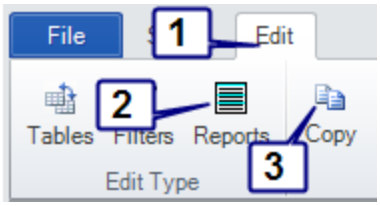


Once you see the generated results, you may opt to return to the table definition and fine tune column widths, Aliases, Alignment, etc. Column widths work out about the same in both Project and Excel, and the Width scale bar in Table Edit. Width can be seen in a tooltip in Excel, and on the status bar at the bottom of Project when resizing columns

It's entirely possible to generate a report in Excel, then simply change the type to Project and generate it again. The caveat here is the use of Project level data fields; for Project generation you'll need to use shadow fields with the "Project: " prefix, for Excel you can use either shadow fields or direct Project level fields. One other gotcha; as Excel doesn't have a separate area to show Assignment level information, if a task has multiple resource assignments the task line is repeated, only the Assignment information changes.

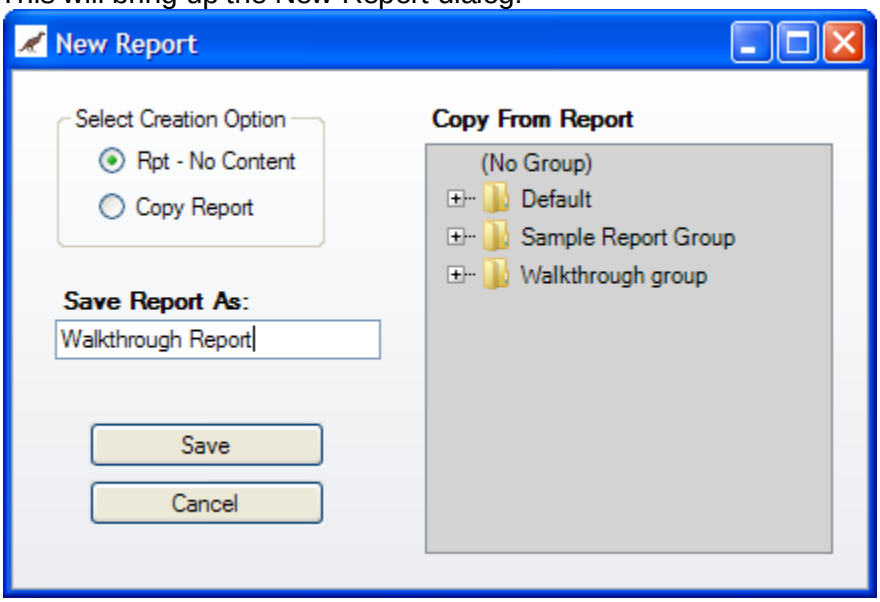
Formal Reporting

We've already built up the needed components, and manually executed the steps to select a table, filters, file types, and names. But if you've come up with a report you'd like to run on a regular basis it would be nice to have it all configured, so all you need to do is execute the report and generate the file. That's where Report definitions come in.



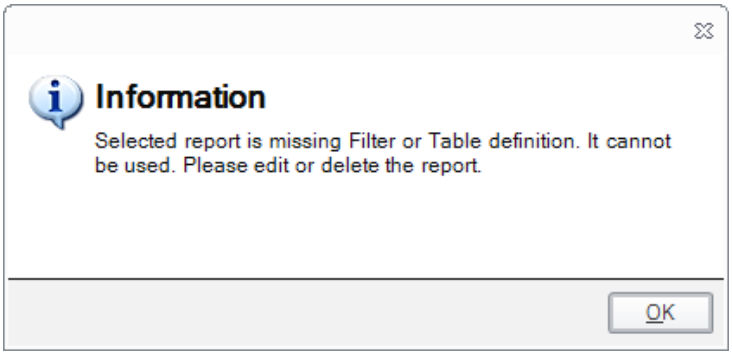
Select the Edit tab, then the Reports button to get to the Report work area, then the Copy button.

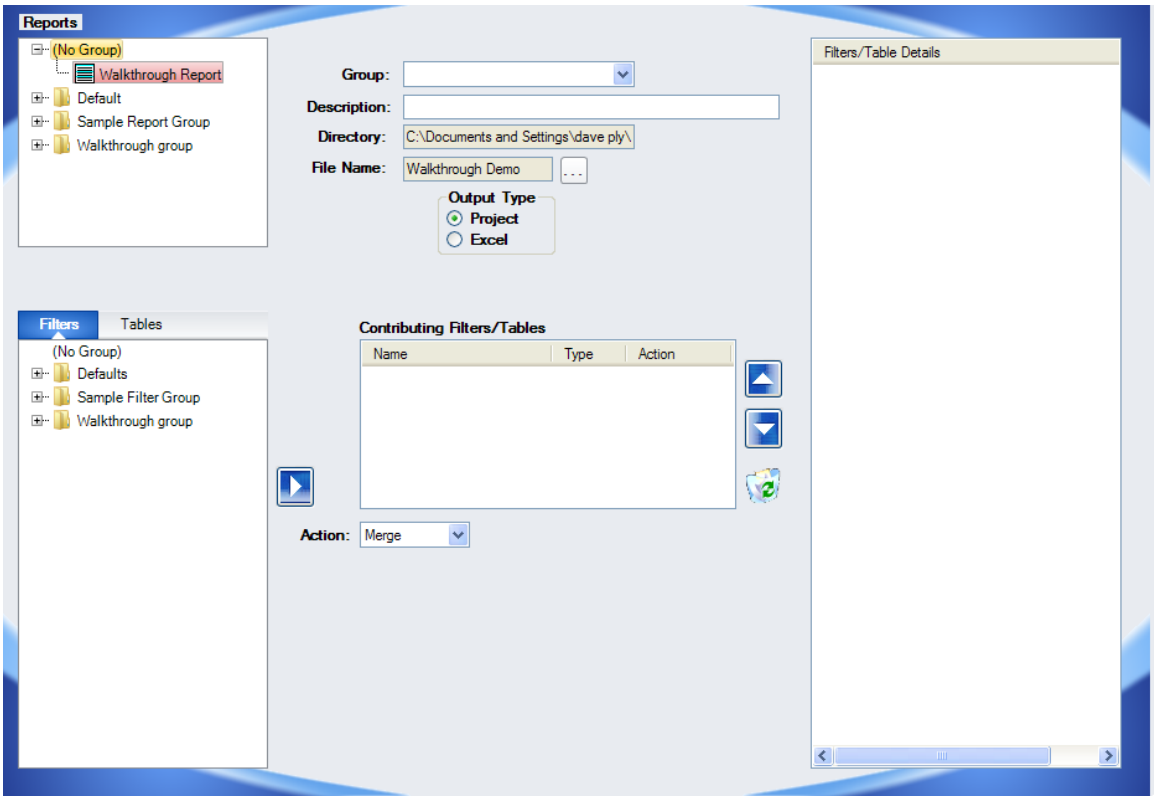
This will bring up the New Report dialog:



In this case, we'll start with "Rpt – No Content". You could also start with an existing report by selecting "Copy Report", opening the appropriate report group, and selecting a report to Copy. Enter a new Report name and press Save.

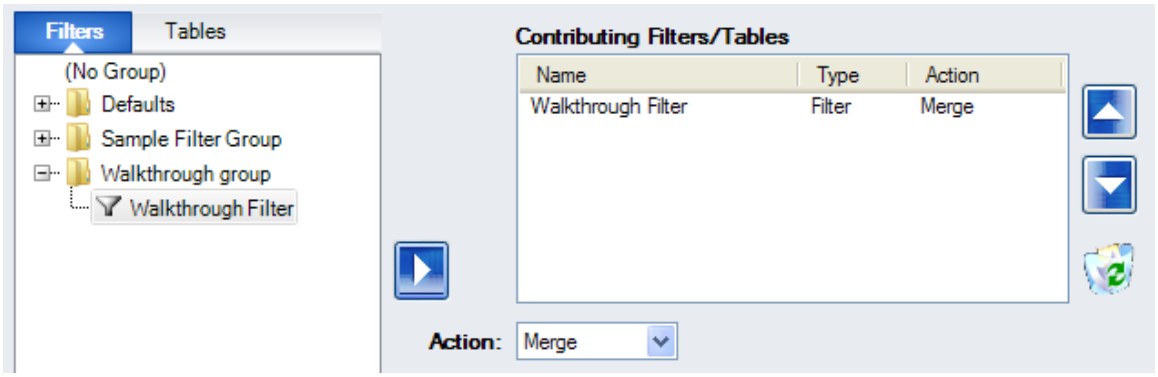
You should now see the copied report in the Report work area. You're also likely to get this error, as the "No Content" report we copied from is, by definition, broken.



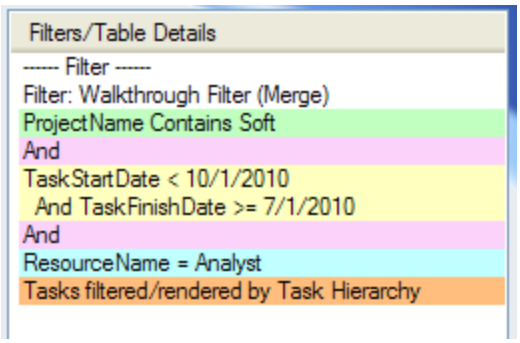


Note how the new report name is highlighted in red. This also indicates the report is "broken", i.e. it's missing its table assignment, a filter assignment, or both. We'll assign the table and filter we built earlier in the walkthrough.

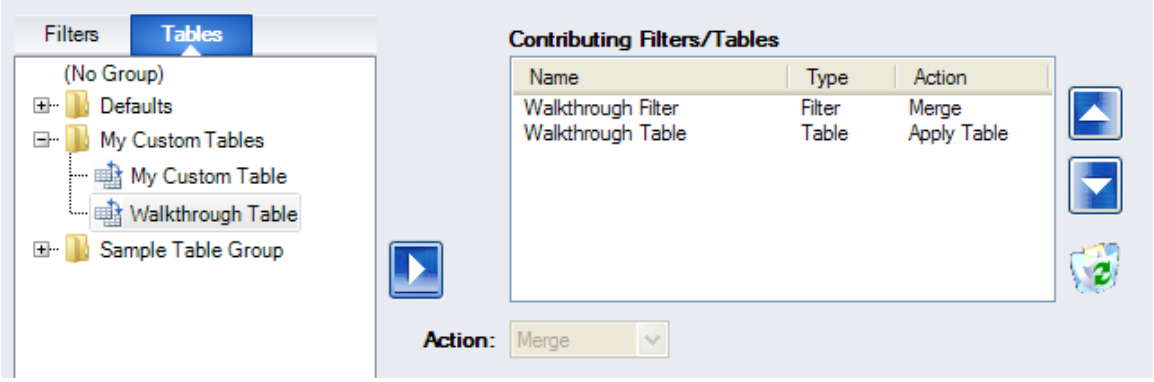
Go to the filter tab, open the Walkthrough group we created earlier, select the Walkthrough filter, set the Action to Merge, and click the right arrow to copy to the Filter/Table list.



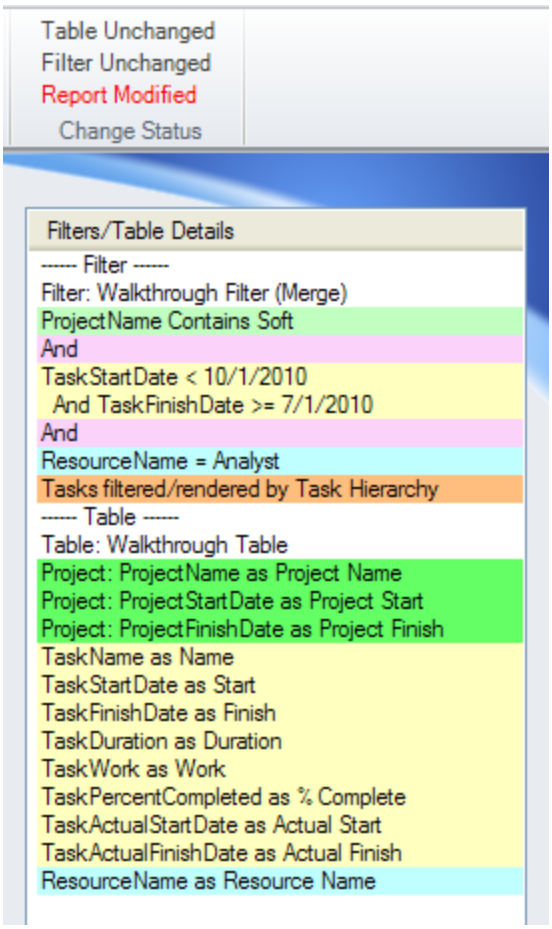
Notice that as we add criteria to the report, the Filter/Table details list begins to show the results:



The Table assignment works the same way. Go to the Table tab, open the "My Custom Tables" group we created earlier, select the Walkthrough Table, and click the right arrow to copy to the Filter/Table list. In this case we do not have to set an action, it's always "Apply Table" for tables.

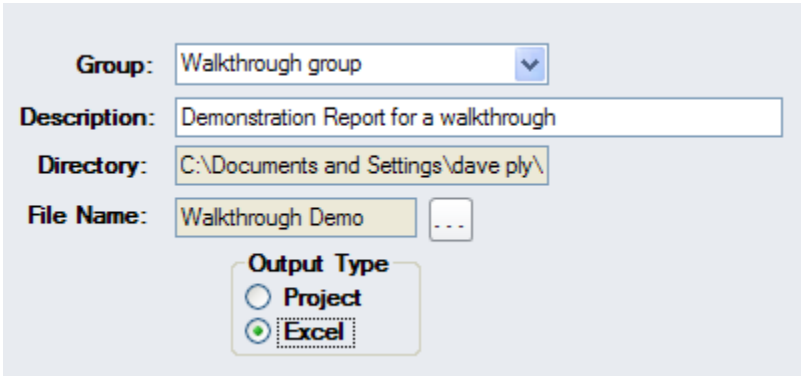


Again, the Filter/Table details are updated. Note as well, that the "Report Modified" status is shown:



You can assign multiple filters to be executed. They will be executed, with the designated Action, in the order displayed. While you can temporarily assign multiple tables, MSP-REX will assume you're just replacing a table by adding a new table and deleting an old one. Use the up and down arrows to make the table the last item, and set filters in the order of execution. Filter Actions correspond to the Action buttons on the main form; Merge to + (plus), Subtract to – (minus), and Only Matches to = (equals).

Now assign the desired file type to generate, a group, description, and file location and name. There's no need to assign a file extension (.xls or .mpp) to the file name.



You can test the report definition by pressing the “Run Query” button. Note that the report definition still is not Saved, it only exists in computer memory. Executing the report transfers control to the Select page, sets the table, file type, file name, and executes the filters/actions in order. Return to Edit Report and Save the report when complete.

Once a report has been defined, you can access it from the Reports tab on the Select form and hit Run Query to run it. You’ll still need to review the projects that have been set in the project generation list. Press the Generate button when everything looks good to go.

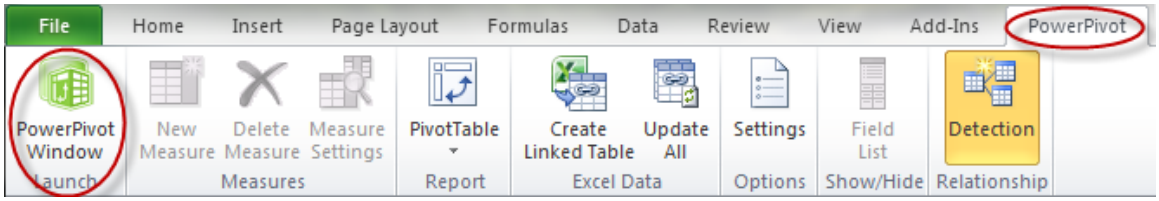
PowerPivot Configuration

One of the options for file generation is “PowerPivot”. PowerPivot is an add in for Excel 2010, which provides the ability to import large amounts of data from files and data from various sources into “tables”, and process it as if it were in an analytical database (similar to OLAP cubes). The data is compressed and stored in a special database area that’s embedded within the Excel file, and accessed via Excel Pivot Tables. PowerPivot only works with Excel 2010, and the add in is available for free via download at http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=7609. There is a 32 bit version and a 64 bit version; the downloaded version must correspond to the version of Excel that you have. If you’re not sure, in Excel, go to the File tab, Help button, and look in the “About Microsoft Excel” section. At the end of the version line the 32 bit or 64 bit version should be indicated.

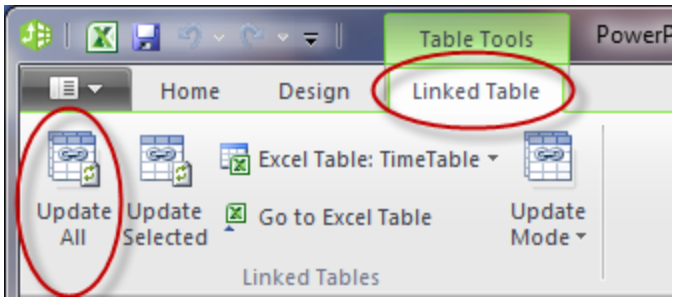
In reality, the data generated by MSP-REX is still part of the standard Excel file, not the special database area. PowerPivot is a relatively new product; at this stage there is no automation interface, so the best we can do is set the table for PowerPivot configuration. Once MSP-REX has loaded the data, at least one additional manual step is needed before you can start building PowerPivot pivot tables and charts.

One of the data source methods supported by PowerPivot is linking to Excel tables. After the data is selected and filtered using the normal MSP-REX functionality, it is generated into separate worksheets for Project, Task, Time, and if the underlying MSP-REX table format contains Resource Assignment information, Assignment and Resource worksheets. The file is then saved and closed.

The reason the generated file must be closed and reopened is for the PowerPivot buttons to work properly. Once you reopen it you can access PowerPivot via a PowerPivot tab.

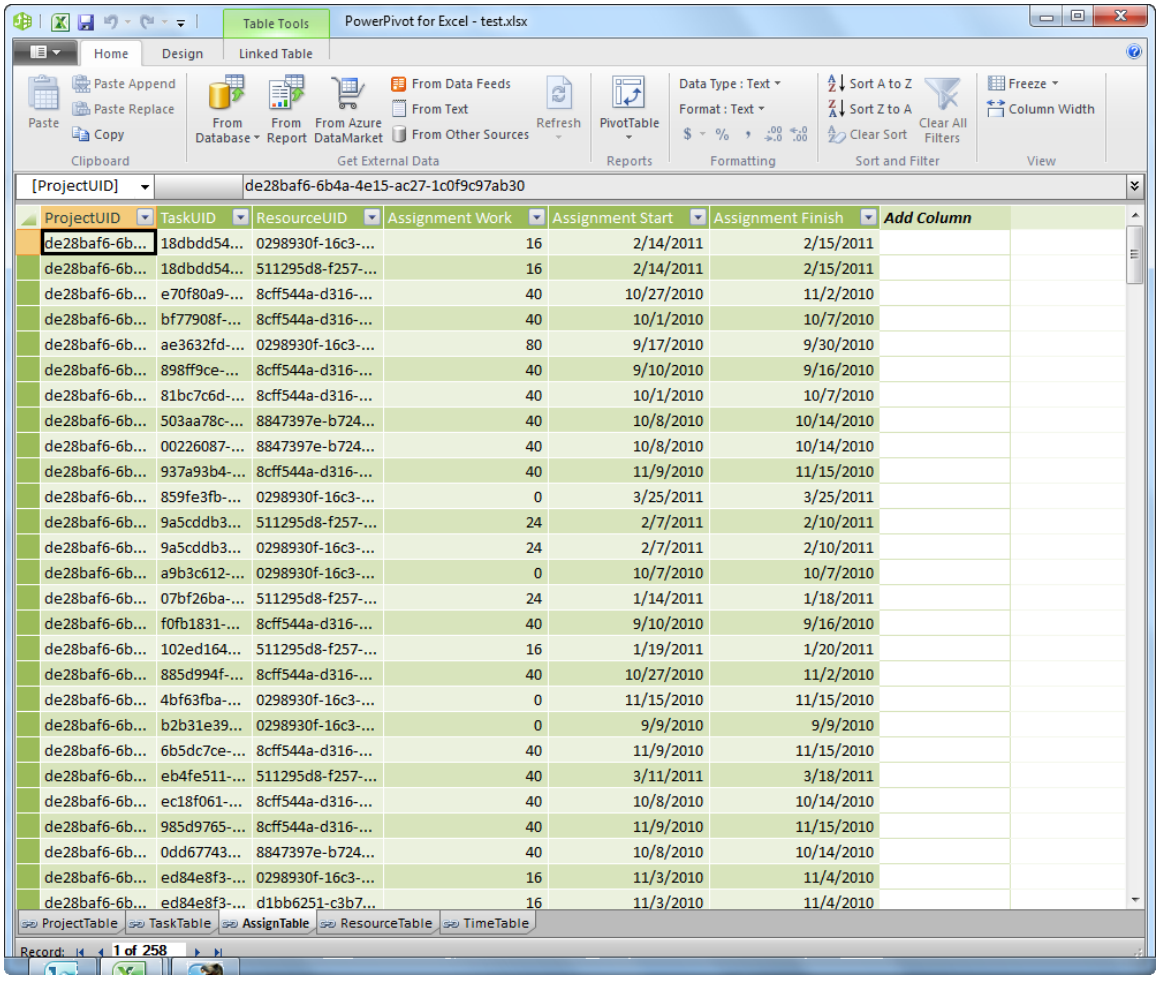


In order to minimize the amount of setup you’ll need to do, and to reduce the build time for the Time dimension table, we did our Excel data generation starting from an Excel file that already has a Time table defined, as well as the PowerPivot table relationships for Project, Task, Assignment, and Resource. These relationships are also already predefined to handle multiple snapshots from the same set of projects over time. However, because we are not able to directly automate PowerPivot functionality from MSP-REX, there is still one simple step you’ll need to do after you’ve reopened the generated file. This step updates the PowerPivot tables with the data we’ve loaded into the Excel worksheets. To do this, select the PowerPivot tab and launch the PowerPivot window using the buttons noted above. In the PowerPivot window, select the Linked Table tab, then click the Update All button as noted below.

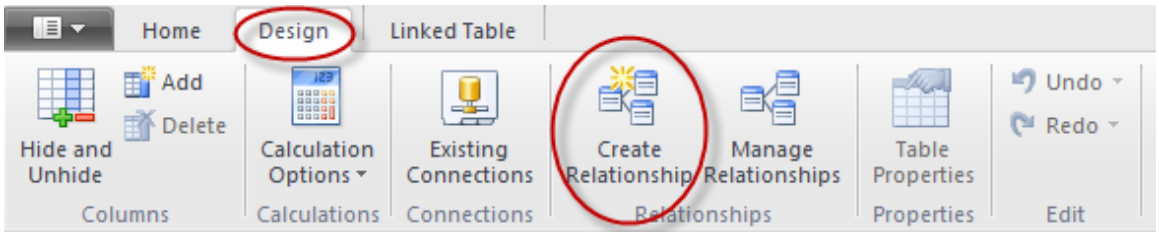


Note: if you're still using the Windows XP operating system, PowerPivot uses Office 2003 style menu bars. If this is the case, follow these menu bar options: Tables/Linked Table/Update/Update All.

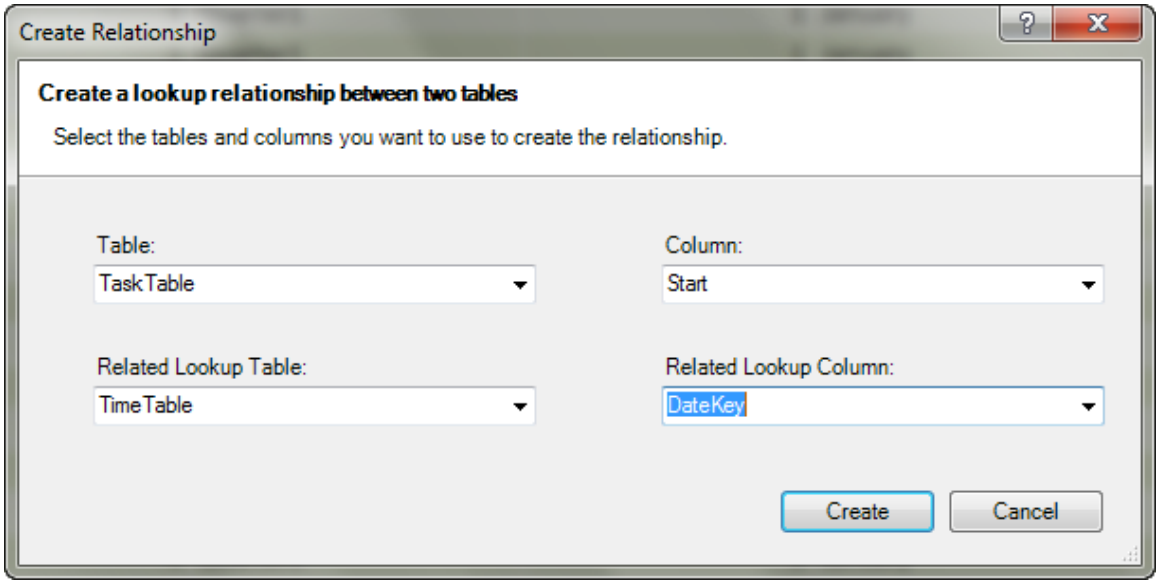
This should import the Excel worksheet data into PowerPivot and display the results in the PowerPivot window.



Depending on the type of reports you wish to create, you may need to create an additional table relationship to the Time Table. If so, on the PowerPivot Window, choose the Design tab, and the Create Relationships button.



This will bring up the Create Relationship dialog. From here, you'll need to specify the tables and keys that should participate in a relationship.



In the example above, we show creating a relationship between the Task Start Date and the TimeTable DateKey field. This enables us to do time based reporting, such as summarizing by Year, Quarter, or Month. PowerPivot supports additional time oriented functionality. If you are doing snapshot based reporting, i.e. appending the results of the same report to the same Excel file to show the values of a set of projects over time, you should link a snapshot date from the Project, Task, Assignment, or Resource table to the TimeTable to ensure the time based reporting works correctly.

The current version of PowerPivot has a limitation; you can only link a single field from one table to another table, directly or indirectly. For example, since we've already linked Task Start Date to our TimeTable, we cannot also link Task Finish Date to the TimeTable. In the indirect context, because we've linked the Task table to the Project table, we also could not link Project Start Date to the TimeTable. This limitation is being addressed in the 2012 version of PowerPivot (related to the SQL Server 2012 release).

There are two work arounds for this problem. Both essentially create a new copy of the Time table, which can then be used in a new relationship.

- Go to the TimeTable tab in the PowerPivot window, select all the rows and columns containing data, and Copy, the Paste to new table.
- Create a new copy of the Excel worksheet that contains the time information. This is most easily done by right clicking on the worksheet tab, selecting Move or

Copy, selecting the worksheet to insert before (or select move to end), check the Create a copy check box, and click Ok.

In either case, you should consider renaming the tables and worksheets involved. There are three places to consider; the worksheet name, the table name on the native Excel side, and the PowerPivot table name. The worksheet and PowerPivot tables can be renamed by right clicking on the tab for the sheet or table and selecting rename. The Excel table can be renamed by clicking in the table area, selecting the Table Tools/Design tab, and then typing over the table name in the Properties group on the left side of the ribbon. The names should reflect the field the date table will be linked to, i.e. if you're linking from Task Start Date you might name the table TaskStartDates.

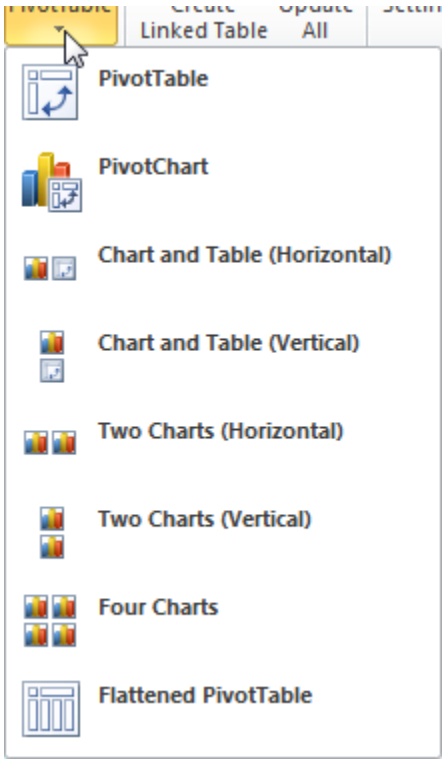
You should also consider renaming the field names to include a prefix reflecting the context the time data will be used in, i.e. Year could be Task Start Year. The reason for this is to avoid ambiguity in the pivot table pick lists and the reports, otherwise it might be difficult to know the context of how you are breaking out your reporting.

None of this renaming is strictly required, but it can help avoid confusion.

Note that if you've already started creating PowerPivot table relationships before renaming tables, you can end up breaking relationships during the rename. This can generally be resolved by deleting and rebuilding the relationships. If you know you're going to want to report on multiple dates up front you'll save yourself trouble by creating the Date table copies and doing the renaming up front, before you define the table relationships.

One of the benefits of PowerPivot is the ability to import data from various sources, then mash them together to do your analysis. After you've created your MSP-REX based extraction, you can further augment it.

After loading all of your data, you can create tables and charts.



All of the tables and charts will be created on the same worksheet, and can be manipulated separately from each other. For charts, this may seem a bit odd, as you may be familiar with the Excel dependency between charts and a backing pivot table. In fact, this is still the case, only when PowerPivot creates the chart it creates the backing pivot table in a separate worksheet.

The Flattened PivotTable is a bit of an odd duck as well. With a standard PivotTable, Hierarchy groupings are shown in the same column, as are the totals for those groups. With the Flattened PivotTable the sub groups will form columns, with sub totals following the groupings and no grand totals. This is primarily intended for those who want to use the pivot table analysis as an intermediate

step, and want to copy/paste the results into another area. Flattening the results helps avoid mixing apples and oranges for this usage.

Here is one final caveat about extracting Project data for use in pivot tables; you need to remember that Project tasks come in two flavors, Summary and Detail. Depending on how you've specified your filters you may get both levels of tasks in your extracted data. This could lead to double counting of hours, costs, etc; once at the detail level and once in the summary level it rolls up into. If this is the case, you should either include the task field "TaskIsSummary" in the original report filter, or include that field in your table definition. If it's in the table definition you can use it in a pivot table report filter. In either case you can use it to exclude either the task or summary level tasks from the values being summarized in the pivot table. "TaskIsSummary" is a true/false field. Selecting either option should help prevent the double dipping.

Pivot tables are powerful tools, and PowerPivot can add even more functionality. A full exploration of Pivot tables and PowerPivot is beyond the scope of this document. To learn more look into Microsoft documentation, or contact Advisicon for training.

Limitations and Restrictions

MSP-REX is a powerful tool, but it does have certain limitations:

- When creating Project output files, the results should be considered a snapshot of the extracted Projects and Tasks, and not something suitable for Project planning beyond a visual analysis. This is true for the following reasons:
    - MSP-REX gets nearly all of its information from the Project Server Reporting database. Since this database is intended for reporting rather than supporting the scheduling effort, it does not contain all the elements needed to completely reproduce a Project. For example, a key missing ingredient is Task Type (Fixed Work, Fixed Duration, Fixed Units). MSP-REX always uses Fixed Duration, regardless of what the original Task type was.
    - Project is a scheduling engine, and normally works up its results based on dependencies between tasks (Predecessors and Successors) and constraint types (As Soon As Possible, Start No Earlier Than, etc). Since MSP-REX may not render all the tasks in a Project depending on filtering, dependency results can change. Even more significantly, a project will often generate its schedules relative to the Project Start or Finish date, and in the MSP-REX context, that will always be the earliest start and latest finish of all the projects that contribute to the final result.
    - Task level filtering may be included, which could omit tasks that might otherwise contribute to scheduling dependencies.
    - Calendar info is very basic, no custom calendars are rendered.
    - As a result, when MSP-REX creates a project file, in order to most closely represent the schedule dates and durations that each individual project and task actually have in Project Server, it always uses the following settings:
        - A Start No Earlier Than constraint on summary tasks
        - A Must Start On constraint for subtasks
        - The constraint dates set to the dates the scheduling engine has worked out in the real schedules
        - Fixed duration on the tasks, with the duration matching the value in Project Server for each task. The Finish date should then be consistent with the original Project Server task.

- MSP-REX ignores Master Projects. It will process Sub Projects.

- If Projects contain cross project dependencies, the external task will show as a project task, but not as an external task. The Excel output will color code that a task is an external task, but cannot identify the parent project. The Project output can show Gantt dependencies for what would otherwise be considered an external task but does not reflect the original external link path; it shows the target ID in the generated file.

- Predecessors and Successors are generated into the Project output if the Publishing database connection string is defined by the MSP-REX administrator.

However those fields will not show up in the Table pick lists, they have to be manually shown in Project. Excel output does not support Predecessors and Successors at all.

- In Excel based output, if the Table definition includes Assignment level data and a Task includes multiple Assignments, each Assignment is rendered as a separate row in the Excel output. This means if you also have Task level fields that you add summation to, you can get double entry of the task values as it is repeated for each Assignment line.

- If a filter uses Task Rendering options other than "All Tasks", and the Projects selected have a large number of Projects/Tasks (5000 plus), you may encounter time out errors due to the size and complexity of the queries needed to resolve the hierarchies.

- MSP-REX should be compatible with Project Server 2007 or Project Server 2010, but does not support Project Server 2003.

Chances are you'll think of other functionality you'd like to see added to MSP-REX. Please contact Advisicon at Development@Advisicon.com with any new ideas or bug reports.