IBM® Tivoli® Software

Maximo Asset Management – Version 7 Releases

Update Reports Utility – Starting with Version 7.5.0.3

Version 1

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Maximo Report Designer/Architect

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REVISION HISTORY

Date	Version	Revised By	Comments
March 2013	1	PD	Updated formatting and reference material links
July 2012		PD	Initial Release

1 Overview

This document details two report utilities that are available to you. These utilities automate the process of applying updates to report designs, rather than manually editing each report. These are known as update utilities, and supplement the existing utilities of importing and exporting report designs.

The two utilities are Page Break and Auto Layout. Both utilities are for formatting data within a report. Additionally, within each of these two utilities are variations for the two different types of reports in Version 7 – which are Enterprise Reports, and QBR (Query Based Reporting) or Ad Hoc Reports. Details on these report types are in the section below.

You may want to utilize these utilizes in certain scenarios – whereas in some cases, they may not be utilized below. Be sure to review the features of each utility, the types of reports they apply to, along with the releases in which they were introduced, to determine if they are applicable to you or not.

Note: This document is specific to the Version 7.5.0.3 and future releases. For information on this functionality for releases prior to Version 7.5.0.3, reference the document below:

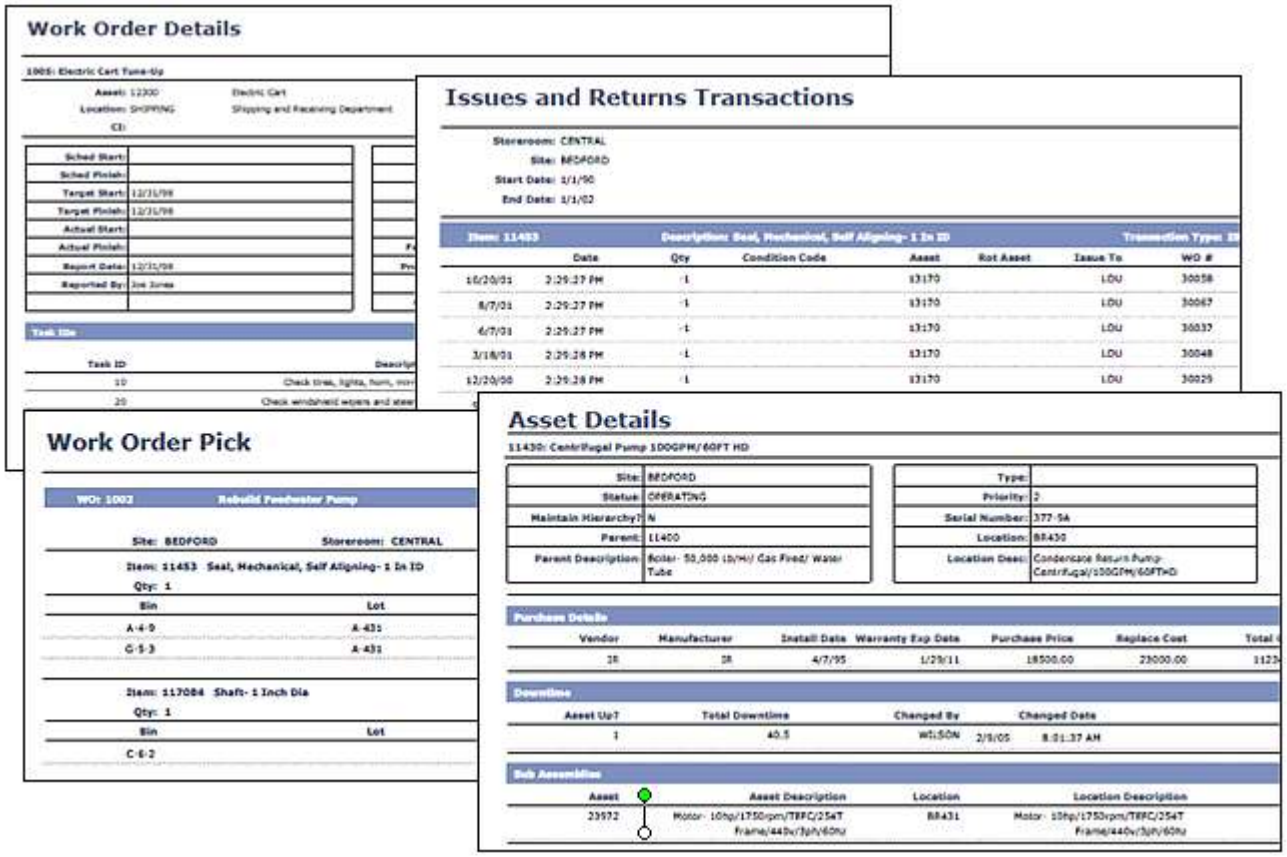
http://www-01.ibm.com/support/docview.wss?uid=swg21433106

2 Version 7 Report Types

2.1 Enterprise Reports

Enterprise reports are also often referred to as Operational or transactional reports. These reports are primarily composed of the day to day detail reports users require for their daily business tasks. Enterprise reports are developed within the BIRT Report Design tool, and imported into V7 for access by users.

Examples of Delivered Enterprise reports include:
Work Order Details, Asset Details, Work Order Pick, Inventory Transaction Reports



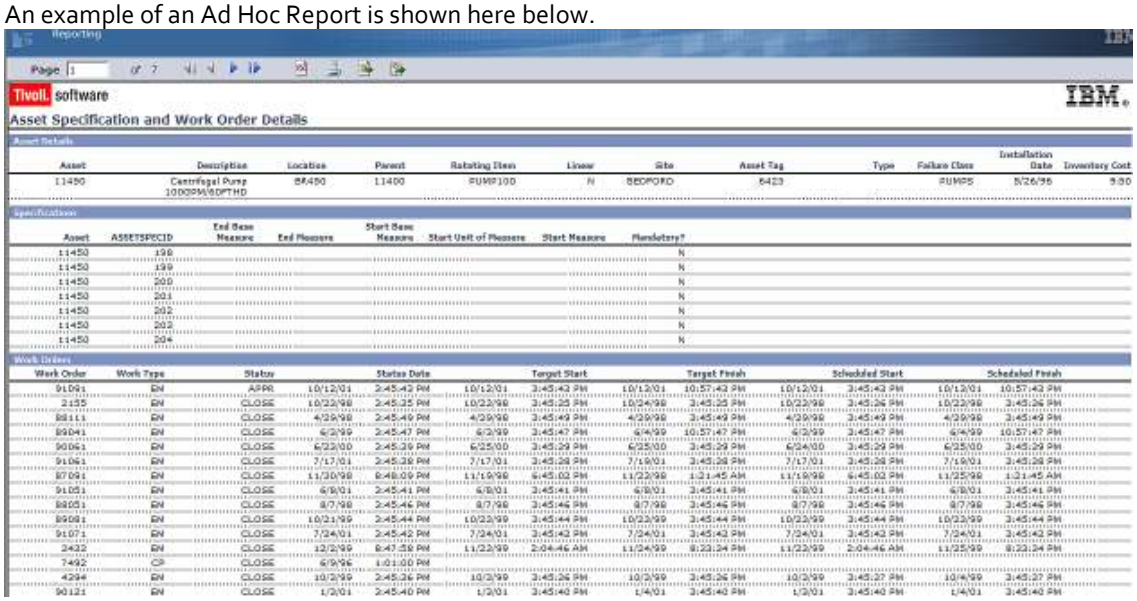
2.2 Ad Hoc (QBR) Reports

Ad Hoc reports are also known as QBRs or Query Based Reporting. These reports enable business users to create their own, individual reports on the fly without the need for technical skills or database knowledge. QBR reports are created within the various applications, by presenting a tabbed window that the user navigates thru to build his report. Within this window, the user selects the fields he wants in his own report, along with defining sorting, grouping and filtering.

QBR reports can be created for very simple summary reports containing only attributes of the main table of the application, or more complex reports. The complex, detail reports can incorporate fields from multiple related tables, and can also utilize multiple one-to-many relationships.

Because QBRs are created by individual Users within the Version 7 applications, they are identified in the database where REPORT.USERID is not null. Additionally, you can quickly find them in the Report Administration by sorting on the 'User ID' field, or by creating a saved query where the userid is not null.

An example of an Ad Hoc Report is shown here below.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Asset Specification and Work Order Details

Asset	Description	Location	Parent	Rotating Item	Linear	Site	Asset Tag	Type	Failure Class	Installation Date	Inventory Cost
11450	Centrifugal Pump 1000GPM/60FTHD	BR450	11400	PUMP100	N	BEDFORD	6423		PUMPS	5/26/96	930

Asset	ASSETSPECID	End Base Measure	End Measure	Start Base Measure	Start Unit of Measure	Start Measure	Mandatory?
11450	198						N
11450	199						N
11450	200						N
11450	201						N
11450	202						N
11450	203						N
11450	204						N

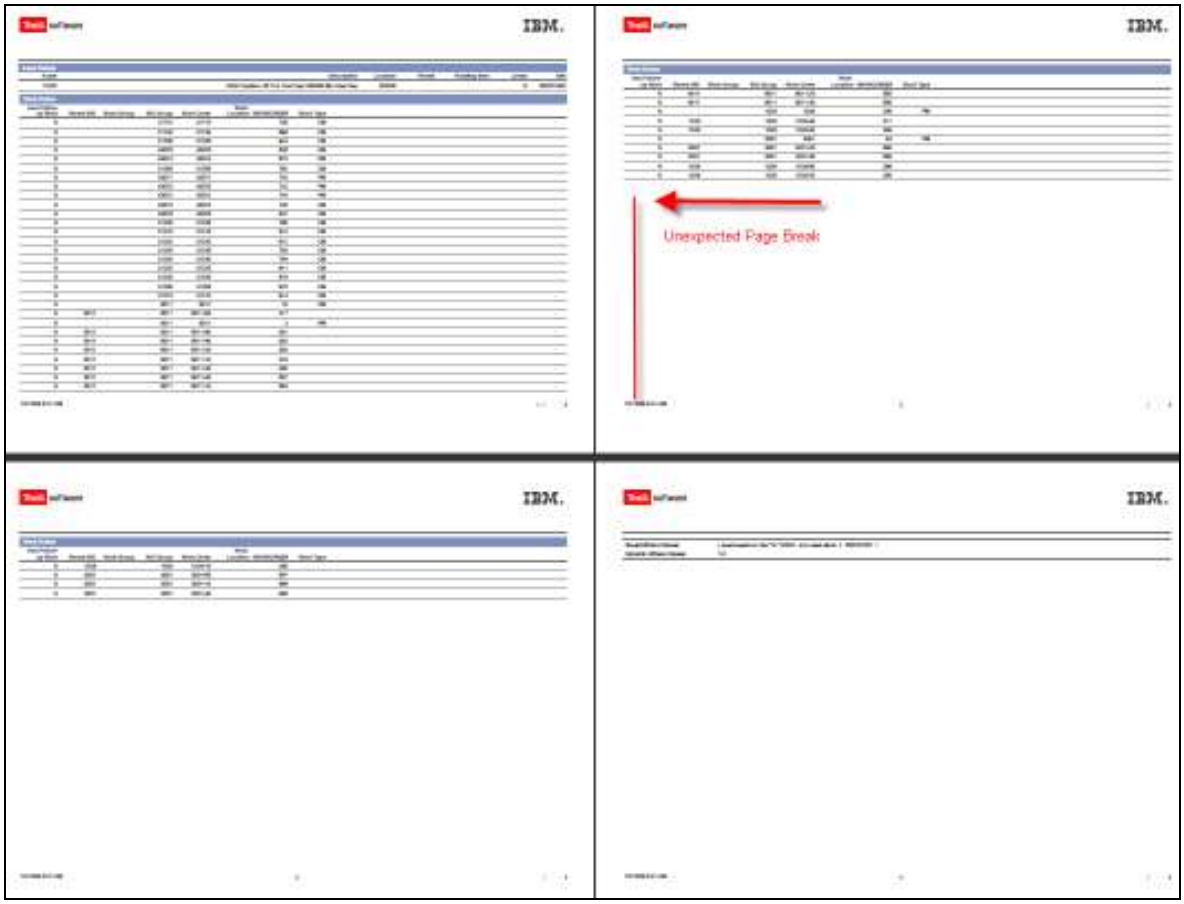
Work Order	Work Type	Status	Status Date	Target Start	Target Finish	Scheduled Start	Scheduled Finish
91091	EM	APPR	10/12/01 2:45:42 PM	10/12/01 3:45:42 PM	10/12/01 10:57:42 PM	10/12/01 3:45:42 PM	10/12/01 10:57:42 PM
2155	EM	CLOSE	10/22/98 2:45:25 PM	10/22/98 3:45:25 PM	10/24/98 3:45:25 PM	10/22/98 3:45:26 PM	10/22/98 3:45:26 PM
88111	EM	CLOSE	4/29/96 2:45:49 PM	4/29/96 3:45:49 PM	4/29/96 3:45:49 PM	4/29/96 3:45:49 PM	4/29/96 3:45:49 PM
89041	EM	CLOSE	6/2/99 2:45:47 PM	6/2/99 3:45:47 PM	6/4/99 10:57:47 PM	6/2/99 3:45:47 PM	6/4/99 10:57:47 PM
90061	EM	CLOSE	6/23/00 2:45:29 PM	6/25/00 3:45:29 PM	6/25/00 3:45:29 PM	6/24/00 3:45:29 PM	6/25/00 3:45:29 PM
91061	EM	CLOSE	7/17/01 2:45:28 PM	7/17/01 3:45:28 PM	7/19/01 3:45:28 PM	7/17/01 3:45:28 PM	7/19/01 3:45:28 PM
87091	EM	CLOSE	11/30/98 9:48:09 PM	11/19/98 6:45:02 PM	11/22/98 1:21:45 AM	11/19/98 6:45:02 PM	11/25/98 1:21:45 AM
91051	EM	CLOSE	6/8/01 2:45:41 PM	6/8/01 3:45:41 PM	6/8/01 3:45:41 PM	6/8/01 3:45:41 PM	6/8/01 3:45:41 PM
88051	EM	CLOSE	8/7/98 2:45:46 PM	8/7/98 3:45:46 PM	8/7/98 3:45:46 PM	8/7/98 3:45:46 PM	8/7/98 3:45:46 PM
89081	EM	CLOSE	10/21/99 2:45:44 PM	10/22/99 3:45:44 PM	10/22/99 3:45:44 PM	10/22/99 3:45:44 PM	10/22/99 3:45:44 PM
91071	EM	CLOSE	7/24/01 2:45:42 PM	7/24/01 3:45:42 PM	7/24/01 3:45:42 PM	7/24/01 3:45:42 PM	7/24/01 3:45:42 PM
2432	EM	CLOSE	12/2/99 8:47:58 PM	11/22/99 2:04:46 AM	11/24/99 8:23:24 PM	11/22/99 2:04:46 AM	11/25/99 8:23:24 PM
7492	CP	CLOSE	6/9/96 1:01:00 PM				
4294	EM	CLOSE	10/3/99 2:45:26 PM	10/3/99 3:45:26 PM	10/3/99 3:45:26 PM	10/3/99 3:45:27 PM	10/4/99 3:45:27 PM
90121	EM	CLOSE	1/2/01 2:45:40 PM	1/2/01 3:45:40 PM	1/4/01 3:45:40 PM	1/2/01 3:45:40 PM	1/4/01 3:45:40 PM

3 Page Break Update Utility

The page break utility updates report design files to resolve unexpected page break issues when reports are converted to Adobe ® PDF format for printing or saving.

The unexpected page break occurs when a report is generated in the report viewer. The report engine automatically inserts page breaks after every 50 rows. This is done for viewing optimization so the user does not need to wait for the entire report to generate before viewing the contents. However, these page breaks are also used when the report is converted to PDF output, which can cause page breaks to occur in the middle of a page.

An example of the unexpected page break is shown below. In this case, a four page report is generated when converted to PDF. However, on page two highlighted by the red arrows, a page break unexpectedly occurs in the middle of the page.



3.1 When should Page Break Update Utility be applied?

You may want to apply the page break update utility in these specific cases:

1. If you have QBR reports created before the Maximo Base Services 7.1.1.7 release.
   In these cases, you may encounter an unexpected page break issue when the report is exported from the report browser to PDF for printing or saving.

2. If you have any enterprise reports, with noticeable page break issues, with the conditions below:
   a. Delivered list reports that you utilize
   b. Custom enterprise reports that you created prior to Maximo Base Services 7.1.1.7 release

3.2 Page Break Update Utility Details

To resolve the unexpected page break issue when converting a report to Adobe PDF, the following changes are made to each report via the Page Break Upgrade Utility.

1. A new parameter called "usepagebreaks" is added.

2. The code below is added to the report's beforeFactory method:

```
if ( (reportContext.getParameterValue("usepagebreaks") == "false")||
    reportContext.getOutputFormat() == "pdf" ) {
// Give each table in the report a name, and add the names to the list below,
// e.g. ["mainTable", "childTable1"]
  var tableListing = ["mainTable"];
  for each(var tableName in tableListing) {
     var table =   reportContext.getReportRunnable().designHandle
       .getDesignHandle().findElement(tableName)
     if (table != null) {
       table.setProperty("pageBreakInterval", 0);
     }
  }
}
```

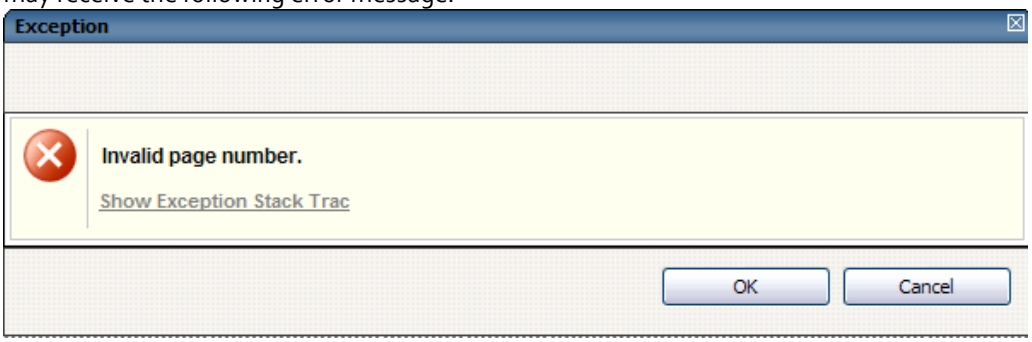
3. A line is added to the report's comments and the comments for each table indicating that this fix has been applied.

3.3 Additional Notes on Page Break Update Utility

1. The Page Break Update Utility does not remove all page breaks from PDF output. It only removes the automatic page breaks inserted by default after every 50 records.

2. Page breaks are hardcoded in the report output at runtime. This update requires the report to be re-generated when it is exported to PDF.
   a. Because of this, when your users select to export the report to PDF for printing or saving, this process may take longer after the update is applied.

   b. Additionally, when the report is exported to PDF, the report viewer* will no longer by synchronized with the outputted pdf report content. If you try to change pages in the viewer, you may receive the following error message.



When you click OK, the report content will be refreshed with the current pagination.

*The report viewer displays the content of the report in the report browser session.

Note: It is recommended that reports only be printed or exported once viewing is complete.

3. Starting with Version 7.1.1.7 released in June 2010, the page break modifications detailed below are incorporated.

A. The report design templates include the page break changes.

Note: To insure the page breaks are applied properly, when you create a custom report, any tables you add should be given names and added to the beforeFactory script. Likewise, if you modify default table names, you should update the script to reflect the new names.

B. The Version 7 QBR report functionality includes the page break updates in any new Query Based reports you create.

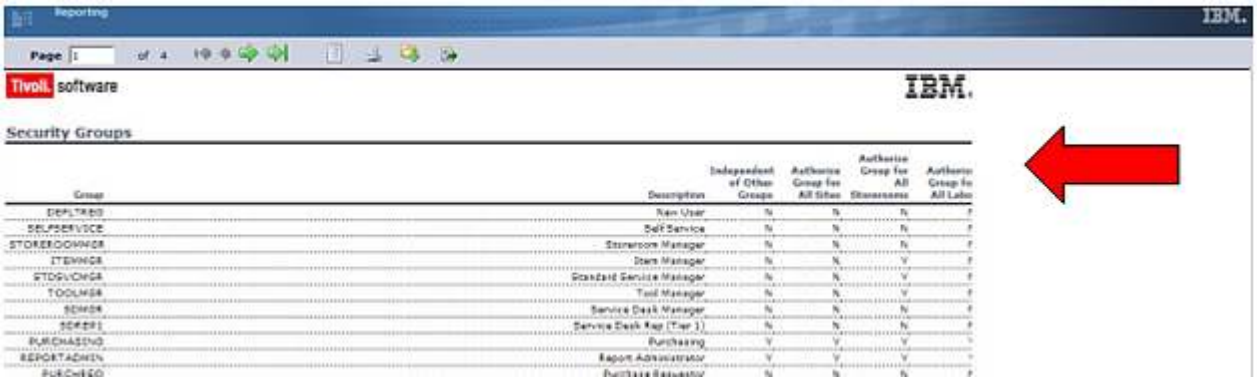
4 Auto Layout Update Utility

4.1 Overview

The auto layout utility updates report design files from Fixed to Auto Layout so the contents of the entire report display.

With the BIRT 3.7.1 Upgrade, many QBR reports may default to fixed page layout. Fixed layouts are optimized for viewing and printing in PDF, however, they can truncate the content of the reports. The alternative is auto layout, which enables all report content to display within the Report Viewer. Auto layout allows the content to scale with the size of the browser.

An example when the auto layout update may be needed is shown below. In this case, the report content is not fully displayed within the report viewer, and the last column text is truncated.



4.2 When should Auto Layout Update Utility be applied?

You may want to apply the auto layout update utility in these specific cases:

1. If you have QBR reports created prior to Maximo Base Services 7.5.0.3 release

2. Also, due to the wide range of custom reports that can be created, you could also encounter this issue in one of your Enterprise custom report created prior to Version 7.5.0.3.

4.3 Auto Layout Update Utility Details

To resolve the auto layout issue, the following changes are made to each report via the Auto Layout Update Utility.

1. The code below is added

   <property name="layoutPreference">auto layout</property>

2. A line is added to the report's comments indicating that this fix has been applied.

4.4 Additional Notes on Auto Layout Update Utility

If you have a custom report design created prior to Maximo 7.5.0.3, using either BIRT 2.1.2 or 2.3.2, and you resave that custom report design in BIRT Report Designer 3.7.1, a layout preference will automatically be inserted. Typically, an auto layout is applied to the report design, but in some cases, a fixed layout is applied.

> Therefore, if you execute the pagebreak update on these reports, it may appear that the autolayout update has been executed as well.

5 Update Utility Process – Enterprise Reports

When you update enterprise reports with the Page Break and Auto Layout utilities, the following process occurs -

5.1 Existing Report Export Step

First, the existing reports are exported to a backup directory.

5.1.1 Export Backup Location

1. You can specify the location of the exporting backup directory by setting the value of maximo.report.birt.outputfolder in the reporttools.properties file. The name of the directory folder is <outputfolder>-backup-<timestamp>.

   By default, the output folder path is <V7>\reports\birt, so the default backup location is <V7>\reports\birt-backup-<timestamp>.

<V7>\reports\birt-backup-1333469623640
    libraries
        asset.properties
    reports
        ASSET
            assetprint.rptdesign
            assetprint.rptdesign.xml

2. Additionally, you can view the actual location the files are written to either in the console or in the resulting update.log. The update.log file is available in <V7>\reports\birt\tools

5.2 Update Process

After the report backup has completed, the update process begins and includes the steps below.

1. The report is evaluated to determine if it needs to be updated. If the report design already includes all available updates, no action is taken on that report and the process moves to the next report.

2. If the report does require updates, the updates are applied and the updated report design is saved to a new folder.

    a. The location of this folder is the same as the backup directory, which you specify in the maximo.report.birt.outputfolder setting of the reporttools.properties file. The name of the directory is <outputfolder>\reports-modified-<timestamp>.

    By default, the output folder path is <V7>\reports\birt, so the updated report designs are located in <V7>\reports\birt\reports-modified-<timestamp>.

3. If no reports are updated, the reports-modified folder is not created.

5.3 Enterprise Update Utility Commands

The following variations of the Update Utility for Enterprise reports are available. To execute these commands, access your Version 7 server. Open a command prompt window and navigate to <V7>\reports\birt\tools.

5.3.1 To Update Enterprise reports for all updates

updatereports
Updates all reports with all available updates, which currently are the autolayout and pagebreak updates.

updatereports savechanges
Updates all reports with all available updates, which currently are the autolayout and pagebreak updates. Additionally, saves the modified reports to Version 75x database.

updatereports app [appname]
Updates all reports in the specified application with all available updates, which currently are the autolayout and pagebreak updates.

updatereports app [appname] savechanges
Updates all reports in the specified application with all available updates, which currently are the autolayout and pagebreak updates.
Additionally, saves the modified reports to the Version 75x database.

5.3.2 To Update Enterprise reports for either Page Break or Auto Layout

updatereports type [updatetype]
Updates all reports with the specified update type, which is either autolayout or pagebreak.

updatereports type [updatetype] savechanges
Updates reports with the specified update type, which is either autolayout or pagebreak. Saves modified reports to the Version 75x database.

updatereports type [updatetype] app [appname]
Updates all reports in the selected application for the specified update, which is either autolayout or pagebreak.

updatereports type [updatetype] app [appname] savechanges
Updates all reports in the selected application for the specified update, which is either autolayout or pagebreak. Saves modified reports to the Version 75x database.

Enterprise Update Utility Commands Details

5.3.3 Saving and reviewing the updated report design files

You can either specify to save the modifications to your Enterprise reports via the Save Argument in the update utility.

1. If you specify the savechanges argument in your update utility, the modified report designs are saved to the report repository, which is the Version 75x database, in addition to being saved to the report directory.
    a. This will enable the updates to be available when executing the reports from within the various Version 75x applications.

2. If you do not specify the savechanges argument, the modified report designs are not saved to the database. This means that the updates will not be available when executing the reports from within the various Version 75x applications. The updates are only saved to the modified report directory, and you can view them using the BIRT report designer.

    a. If you evaluate the updates from within the report designer, and determine that you want to implement them in your system, you can then either
        - Copy the reports from the outputted report folder to the reports source directory. Then, import them using the importreports command

        - Or you could re-execute the updatereports command using the savechanges argument.

5.3.4 Enterprise Reports - If you need to restore the original files from a backup

If you find that you want to rollback the updates, you can perform one of the options listed below

1. If the reports source directory < V7>\reports\birt\reports contains your pre-updated report designs, execute the importreports command to roll back the updates.

2. If the report source does not contain your intended report designs

    a. Copy the initially exported reports from the backup directory to the reports source directory. The backup directory is what you specified in the previous step called 'Export Backup Location'

    b. Once the pre-updated reports are copied, you can then execute the importreports command.

3. You can define the directory location for the import process to use via the importfolder setting in the reporttools.properties file. If you define this setting as the backup directory you created in the step 'Export Backup Location', the pre-updated reports will be re-imported into your system.

6 Update Utility Process – QBR Reports

When you update QBR reports with the Page Break and Auto Layout utilities, the following process occurs

6.1 Existing Report Export Step

First, before any updates are performed, the existing reports, including their design files, properties file and xml file, are exported to a backup directory.

6.1.1 Export Backup Location

1. You can specify the location of the exporting backup directory by setting the value of maximo.report.birt.outputfolder in the reporttools.properties file. The name of the directory folder is <outputfolder>-backup-<timestamp>.

   By default, the output folder path is <V7>\reports\birt, so the default backup location is <V7>\reports\birt-backup-<timestamp>.

   An example of an exported location and its contents is shown below:

<V7>\reports\birt-backup-1333469623640
    libraries
        ASSET_WILSON_1_133096602313309660543 12.properties
    reports
        ASSET
            ASSET_WILSON_1327679581.rptdesign
            report-ASSET_WILSON_1327679581.rptdesign.xml

2. Additionally, you can view the actual location the files are written to either in the console or in the resulting update.log. The update.log file is available in <V7>\reports\birt\tools

6.2 Update Process

The update process begins when the report backup has completed. In these steps,

1. The report is evaluated to determine if it needs to be updated. If the report design already includes all available updates, no action is taken on that report and the process moves to the next report.

2. If the report does require updates, the updates are applied. The updated qbr report designs are placed in the report repository, the V7.5x database.

6.3 QBR Update Utility Commands

The following variations of the Update Utility for QBR reports are available. To execute these commands, access your Version 7 server. Open a command prompt window and navigate to <V7>\reports\birt\tools.

6.3.1 To Update QBR reports for all updates

updateqbrs
Updates all qbr reports with all available updates.

6.3.2 To Update QBR reports for specific updates

updateqbrs type [updatetype]
Updates all qbr reports with the specified update.

The current [updatetype] values include:
autolayout
pagebreak

QBR Update Utility Commands Details

The update QBR utility functions vary slightly from the Enterprise report utilities due to the way they are created. Starting with the Version 7.5.0.3 release, both the Enterprise and QBR update utilities back up the report design files as the initial steps. However, there is no save argument to the QBR utilities as the updates are always saved to the report repository, the Version 7x database.

6.3.3 QBR Reports - If you need to restore the original files from a backup

If you find that you need to rollback the updates, you can follow any one of the options listed below

1. You can copy the exported reports and import files from the backup directory to the reports source directory. After the copy is complete, you can then execute the importreports utilities.

2. You can define the directory location for the import process to use via the import folder setting in the reporttools.properties file. If you define this setting as the backup directory you created in the step 'Export Backup Location', when you execute the importreports utilities, the pre-updated reports will be re-imported into your system.

7 Miscellaneous Information

7.1 Property Files

The property settings in the reporttools.properties file enable the Report Update Utility. This file is located in <Version7.x>\reports\birt\tools

These properties are detailed below:

 # Output folder used for the update operation
maximo.report.birt.update.outputfolder=./../../birt

The setting enables you to change the location of the backup files that are exported prior to the update.

 # Indicates whether the report updates should be saved to the database
maximo.report.birt.savechanges=false

If you set this value to true, the report updates will always be saved to the database – regardless if you specify the save argument in the update report command utility.

If you leave the default value to false, you must specify the save argument in the update report command utility for the report updates to be saved to the database.

 # Input folder used for the import operation
maximo.report.birt.inputfolder=./../../birt-backup-1333469623640

7.2 Logging

As noted in the property section above, you can enable logging to see which reports have been updated.

The logging feature displays results in the console, and to the log file specified to the maximo.report.birt.updatelog property from reporttools.properties. The default file location and value is < V7>\reports\birt\tools\update.log. This log is used by all update utility commands, and the output is appended to the existing file each time the commands are executed.

You can also see the list of files updated by examining the contents of the <V7>\reports\birt\reports-modified-<timestamp> folder. Report design files that are not updated are not written to this folder.

For additional details on Report Logging, reference the document titled 'Report Logging V7 Release' available from this url:
http://www-01.ibm.com/support/docview.wss?uid=swg21423974

REFERENCE MATERIALS

To access additional Maximo Report Reference materials, access this IBM Maximo Wiki Page:

https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/IBM%20Maximo%20Asset%20Management/page/Reporting%20Documentation

or its shortened url of http://ibm.co/1321CuI

This page contains the latest listing of report reference materials, including description, revision levels and hyperlinks to the documentation

Additional details on Maximo Reporting can be found throughout the Wiki Pages here

https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/IBM%20Maximo%20Asset%20Management/page/Reporting

or its shortened url of

http://ibm.co/VgncuK

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