

IBM® Tivoli® Software

Maximo Asset Management – Version 7 Releases

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V7.5 Report Feature Guide  
Version 4

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# REVISION HISTORY

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Date	Version	Revised By	Comments
August 2013	4	PD	Updates include (1) reformat of document (2) additional details on request page xml (3) updated property settings (4) Updated reference URLs
July 2012	3	PD	Updates include (1) Updated Email Note section on page 45 to include more details on mxe.email.content.type setting (2) Updates to property settings for Version 7.5.0.3
May 2012	2	PD	(1) Included information on downloading portrait templates from ISM Library (2) Updated Cron Task, property settings, and JVM Settings
March 2012	1	PD	(1) Removed diagram on page 72 which was no longer applicable (2) Additional information included on page 81, with details on how to update the import/export utilities for use with application server security (3) Added information on report import on JVM restart on page 73 (3) Updated report reference materials section
May 2011		PD	Original Release

# 1 Overview

In the Version 7.5 (V7.5) Releases, BIRT (Business Intelligence Reporting Tool) is the embedded reporting tool. BIRT is an Eclipse-based tool for designing and viewing reports. The BIRT report engine uses XML report definitions to produce reports in a web-based report viewer in HTML.

To understand the reporting process, it can be broken down into the five major components shown below.



## Configuration

Configuration involves the architecture of the entire system; including the application server and database, and the variety of ways it can be configured to meet your performance and volume requirements.

## Design

The design process involves an analysis of not only how the report should display, but also how it is accessed within the applications, what types of parameters it should use, and the sql it utilizes.

## Development

The development of a report design file is done within the BIRT report design tool. In this stage of the reporting process, the developer takes the designer's inputs and translates them into the report design file.

## Administration

Report administration includes not only the functionality to register and maintain the report file produced by the developer, but also to manage the entire reporting process. This includes functionality like enabling record and schedule limits, and monitoring report usage.

## Execution

The last stage of the reporting process is when users execute reports from the different access points in the applications, including toolbar icons, report menus, and start center portlets and kpis.

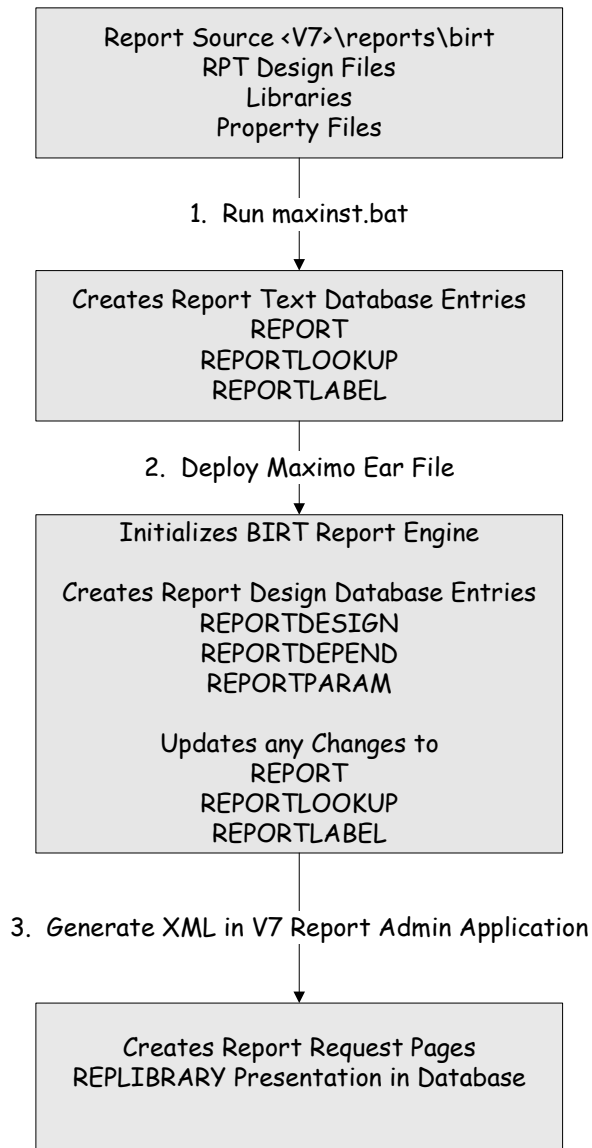
This guide details the embedded BIRT reporting functionality by focusing on two of the five major processes: *Execution and Administration*. The guide will first start with an overview of the Execution of reports. This includes topics of installation, execution, emailing, scheduling and database and both delivered and recommended custom file structures.

Then, administration will be detailed. These specific topics will include security, importing and exporting, and the multiple actions and functionality available within the Report Administration application.

The other three reporting processes areas - Configuration, Design and Development – each have their own separate guide or guides detailing their unique functionality. Information on these can be found in the Reference Material Section at the end of this guide.

## 1.1 Installation

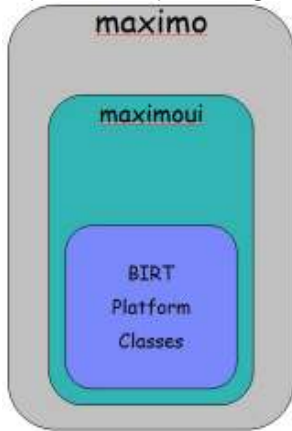
There is no separate installation process for either the BIRT Engine or BIRT Reports. Both components are installed through the standard Maximo Install Process. The process below depicts the three main steps in enabling the report engine, and populating the report database tables.





Each of these three steps is described in detail below:

1. In the first step, the maxinst process is performed. This process creates the database entries in the REPORT, REPORTLABEL and REPORTLOOKUP Tables.
  - a. To enable potential localization, these three tables are populated during the maxinst process.
  - b. The information for the REPORT and REPORTLOOKUP tables comes from each application's reports.xml file.  
ex. <V75>\reports\birt\reports\ASSET\reports.xml
  - c. The information for the REPORTLABEL table comes from the properties file.  
ex. <V75>\reports\birt\reports\libraries\asset.properties
2. In the second step, the Maximo EAR File is deployed. This process initializes the BIRT Report Engine, and imports the report designs into the database.

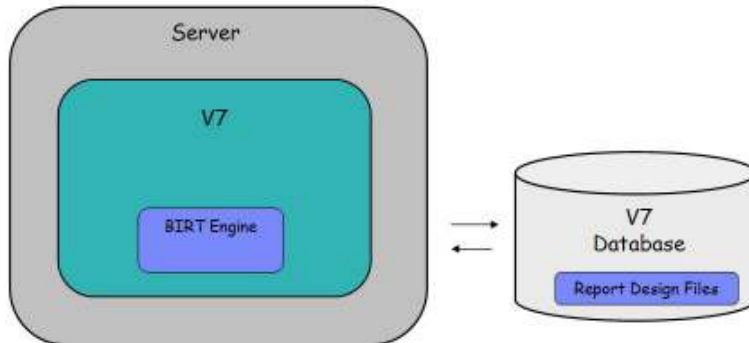


The Maximo Ear file contains the BIRT Platform Classes. When Maximo is deployed thru the EAR File Process, BIRT is automatically deployed also.

\*NOTE: During startup, a copy of the BIRT platform classes is made to a temporary location on the Server. These files are used to initialize the BIRT report engine. To specify the temporary file location, reference the Property File Settings at the end of this document. Otherwise, the temporary location will default to <c>:\temp

- 2a. The information for the REPORTDESIGN, REPORTDEPEND and REPORTPARAM tables comes from a variety of places including the reports.xml files, the report design files and the system library.  
<V75>\reports\birt\reports\ASSET\reports.xml  
<V75>\reports\birt\reports\ASSET\asset\_measurehistory.rptdesign  
<V75>\reports\birt\libraries\libraries.xml

At the end of the second step, the BIRT Engine is embedded, and the report files have been placed in the database.

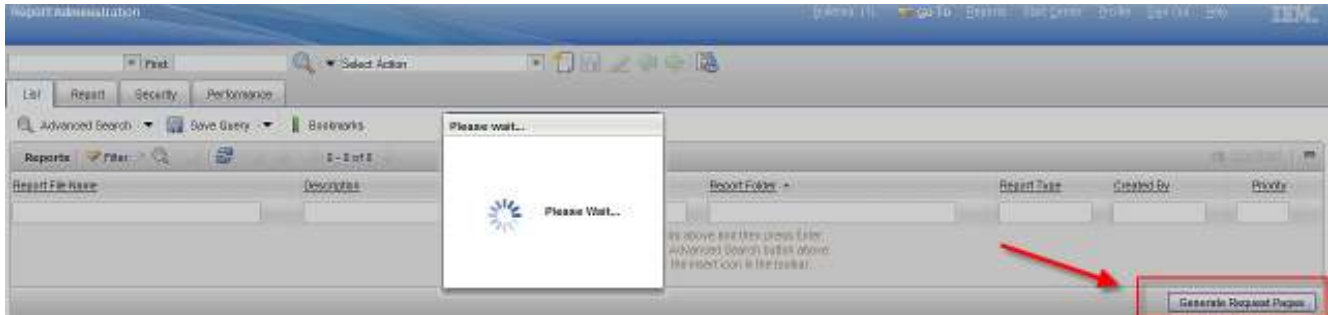


Note: To verify report designs have imported, execute one of the sql statements below against the target database:

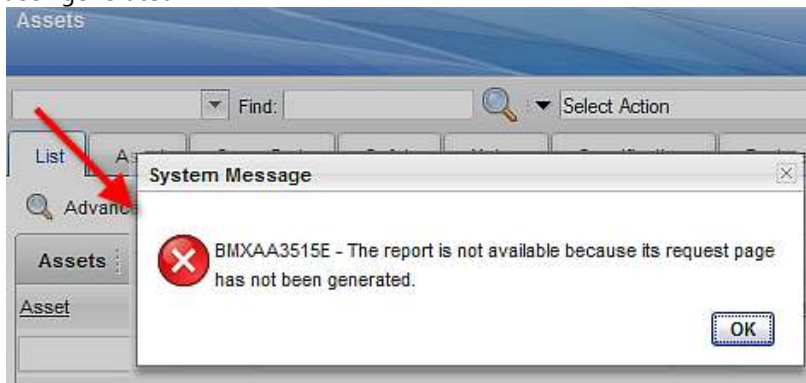
Select reportname from reportdesign (to verify reports loaded)

Select \* from report design (NOTE: This statement will take considerably longer as it will pull all the reports.xml files, which are stored as CLOBs in the Database)

3. In the third step, an administrator, with security privileges, accesses the Report Administration application. The administrator must then generate the Report's Request Pages by clicking on the 'Generate Request Page' button in the lower right section of the page. This will create the REPLIBRARY presentation in the database.



If the request pages have not been generated, and a user tries to run a report from an application, they will receive the error below: 'BMXAA3515E – The report is not available because its request page has not been generated.'

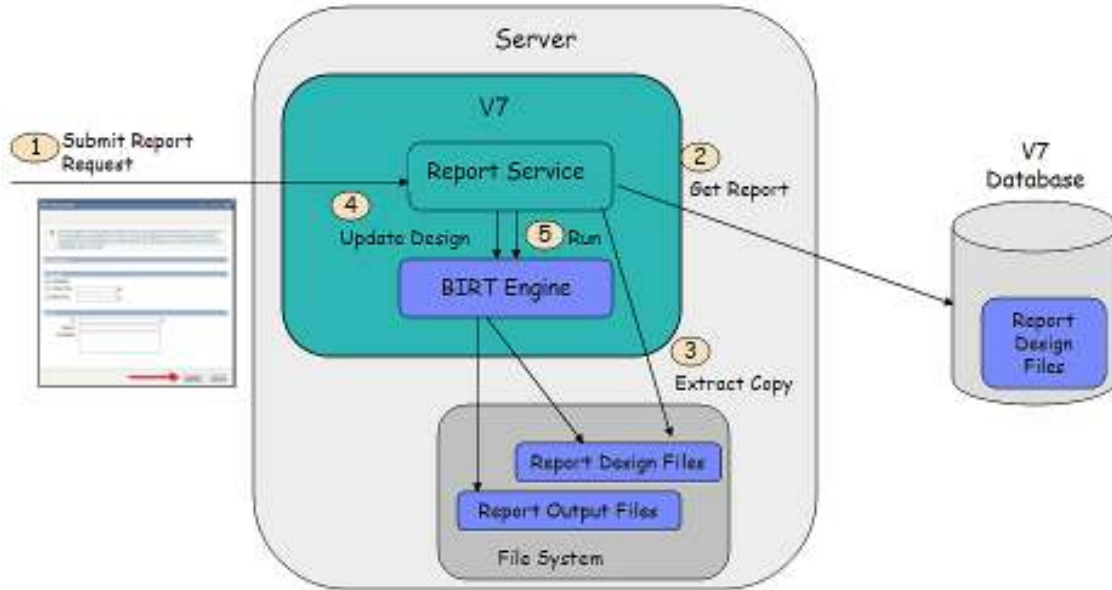


Notes:

1. For additional information on the request page xml, reference section 1.5 below.
2. For version 7.5, the recommended screen resolution for the applications has changed to 1280x768.

## 1.2 Report Execution

When a report is executed, the process below occurs.



1. The user first submits his report request. This can happen by clicking on the Submit button on the Request Page, or by clicking on one of the Report Icons in the application's toolbar.  
This request is passed through to the report service.
2. The report service queries the database for the report design file.
3. The report design XML file is extracted from the database. It is stored in a temporary location within the application server.
4. The XML design file is updated with information passed from the application.  
This includes the user's locale, time zone, parameter info, etc.

Note: This is a temporary update of the xml file only for this particular report instance. There are no updates made to the actual report design file stored in the database.

5. The report is then executed, and displayed to the user in a separate browser session.

Notes:

1. When immediate reports are executed, these temporary files are removed from the file server via a cleanup mechanism. This mechanism deletes the reports when any of the following occur:

A. If the user runs the same report multiple times, the previously run report information from the temporary folder will be removed.

B. If the user signs out, all the temporary report information related to all the reports that the user has run from the browser will be removed.

C. If the user session times out (which is by default, 30 minutes), then all the temporary report information related to all the reports that the user has run from the browser will be removed.

D. If the server is restarted, then all the temporary report information related to all the reports that any user has run from the browser will be removed.

2. This process will vary slightly depending on:

A. If the report is scheduled

B. If the report is enabled for Browser View, Direct Print or Direct Print with Attachments.

In these cases, the access point for the submitted job will vary (for example – a Browser View report request is initiated from an icon in the toolbar versus an immediate job is initiated via the Submit Button on the Request Page.)

3. You can specify the location for the report temporary files by setting the JVM System Property, `mxe.report.birt.tempfolder` property. Details on this can be found in the Properties Section of this document.

4. There are a variety of ways in which systems can be configured to use the report engine. These include the ability to separate out the Report Server on its own, or to configure a clustered environment, and utilize the Cron cluster to run scheduled Reports. Each of these configurations and others are contained in the Report Performance Guide. This document is available along with other report support documentation at the url referenced at the end of this document, which is also copied here:

<http://www.ibm.com/developerworks/wikis/display/maximo/Report+Reference+Materials>

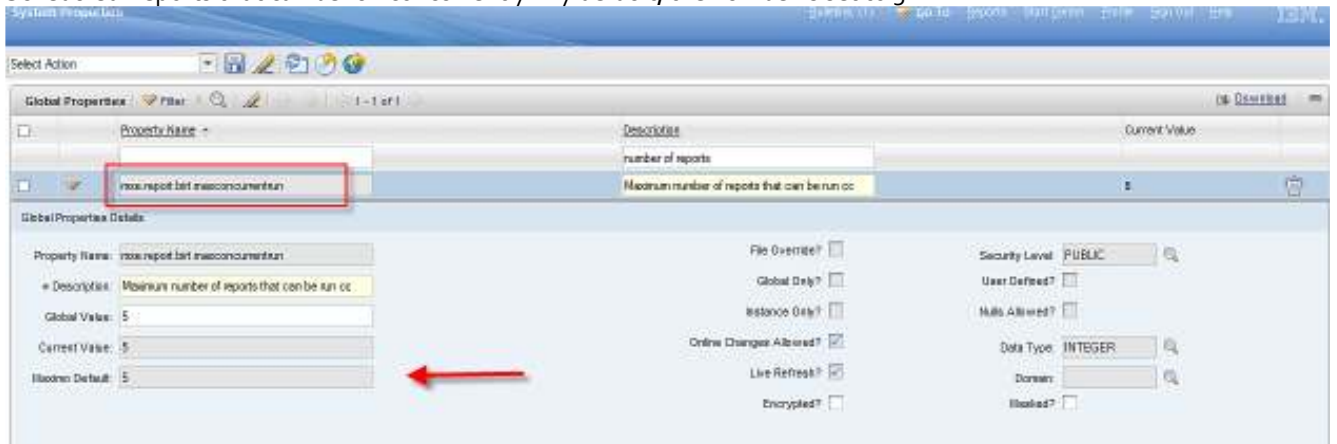
### 1.3 Report Queue

When numerous reports are executing in the report engine at once, performance can be adversely affected. Therefore functionality is enabled which limits on the number of jobs that can be executed at any given time. This will distribute the load on the server from reports, and reduce the amount of wait time for report users.

Report Queuing is used to handle the load of report jobs. The Queue Manager oversees the report queuing process. It is responsible for managing the scheduled jobs that enter the queue and the workers who process the scheduled jobs.

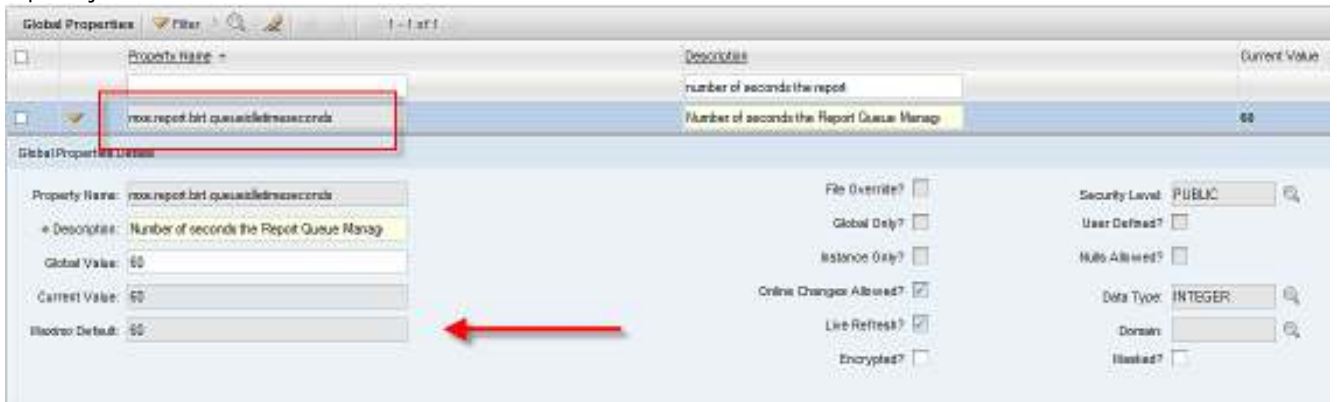
#### 1.3.1 Property Settings

A. The property, `mxe.report.birt.maxconcurrentrun`, manages the number of BIRT Immediate and Scheduled Reports that can be run concurrently. By default, the number is set to 5.



This property file is used by each application server. So, if there are 4 application servers running, the `maxconcurrentrun` property applies to each app server. Each server would be added as a separate value in the Instance Properties section.

B. A second property, called `mxe.report.birt.queueidletimeseconds`, is used by the Queue Manager. Its default value is 60 seconds. This value is the frequency that the Queue Manager polls the queue for new reports jobs.



### 1.3.2 Cron Task

The Report Queue Lock Release Task has a parameter, Lock Interval Minutes. This is used to determine if Locked Report Jobs should continue to be executed, or if they should be stopped, and re-entered into the queue.

**Cron Task Setup**

Find:  Select Action

List Cron Task

Cron Task:

Class:

Access Level:

**Cron Task Instances** Filter > 1 - 1 of 1

Cron Task Instance Name	Schedule	Run as User	Active
REPORTLOC	1m.*.*.*.*.*	MAXADMIN	<input checked="" type="checkbox"/>

Parameters History

**Cron Task Parameters** Filter > 1 - 1 of 1

Parameter	Value	Description
LOCKINTERVALINMINUTES	15	

### 1.3.3 Report Queuing Process

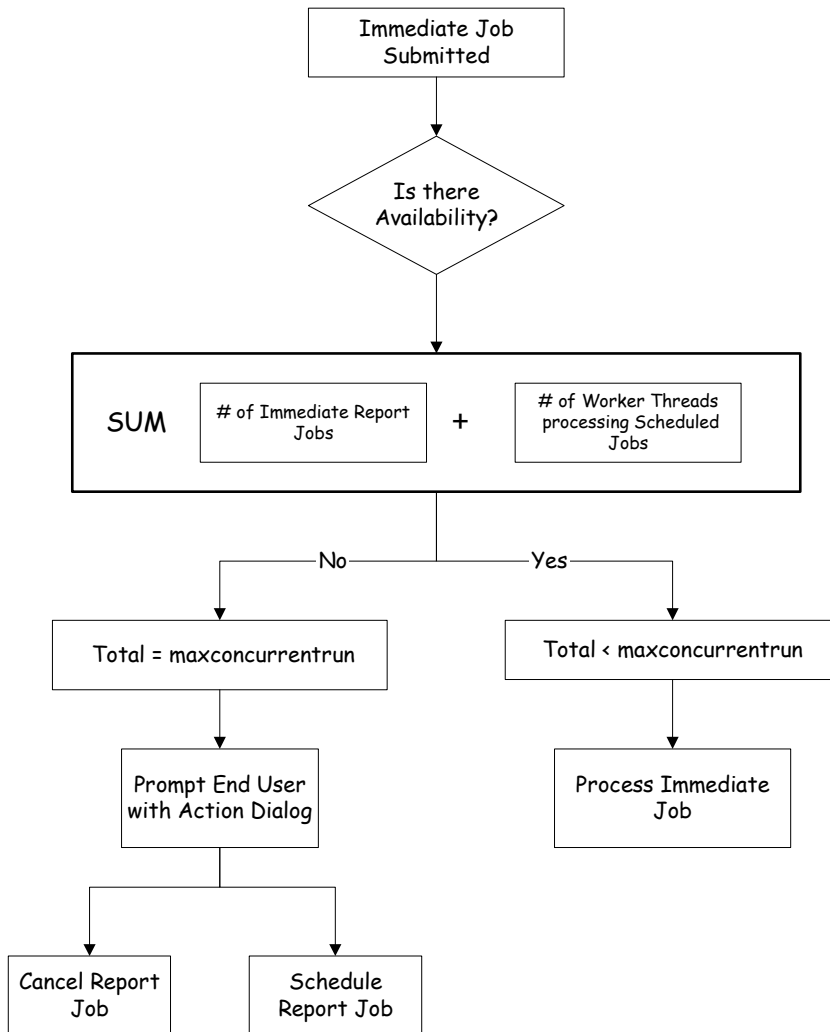
The Report Queuing Process is made up of two components: Scheduled Report jobs and Immediate Reports jobs. Scheduled Report Jobs are controlled by the Queue Manager. The Queue Manager and Worker Threads Do Not apply to Immediate Report jobs. The Queue Manager and worker threads apply ONLY to Scheduled Report jobs.

To limit the number of report jobs that can be executed on a server at any time, the maxconcurrentrun property setting is used. By default this value is set to 5. Before Immediate Report Job Requests are accepted, the availability is checked to see if the immediate job can be processed or not. This is done using the formula:

$$\# \text{ Actively Running Scheduled Jobs} + \# \text{ Immediate Jobs} < \text{maxconcurrentrun}$$

If  $\# \text{ Actively Running Scheduled Jobs} + \# \text{ Immediate Jobs} < \text{maxconcurrentrun}$ , the Immediate Job is Processed.

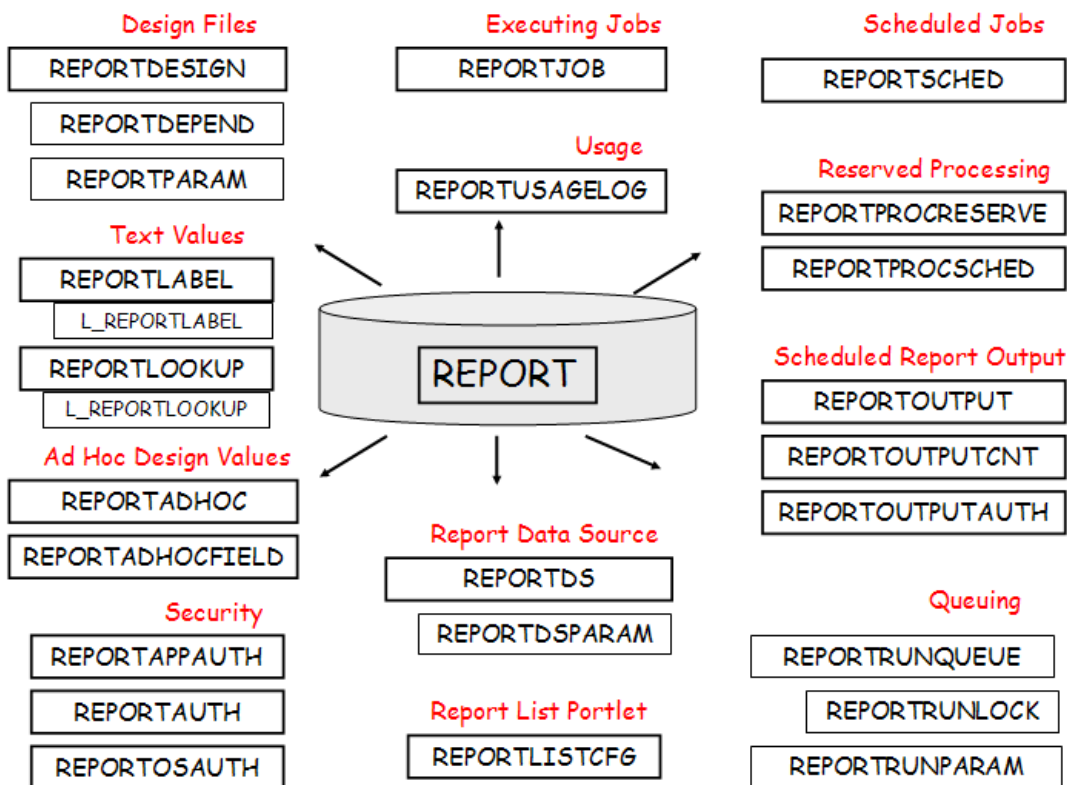
If  $\# \text{ Actively Running Scheduled Jobs} + \# \text{ Immediate Jobs} = \text{maxconcurrentrun}$ , the Immediate Job is not Processed.



## 1.4 Report Design Repository

To support the execution of reports, a repository is necessary to hold the report design files. In V75, the database is the repository for the report design files. During the deployment of the Maximo Ear File, an import process occurs, which brings the report design files, and any of their dependant report files (ex. libraries or resource files) into the database.

Additionally, a number of other database tables are required to support the reporting functionality, including security, scheduling, processing and usage tables. The top level diagram below highlights these key reporting tables, followed by a description of each.





REPORT: ParentTable

REPORTDESIGN: Report design's XML

REPORTDEPEND: Dependencies of report designs (ex. MaximoSystemLibrary)

REPORTPARAM: Report design parameters

REPORTLABEL: Text values of report titles and column headings.

L\_REPORTLABEL: Localized text values of REPORTLABEL.

REPORTLOOKUP: Text values of report parameters.

L\_REPORTLOOKUP: Localized text values of REPORTLOOKUP.

REPORTADHOC: Contains design information on ad hoc report (ex. Sort, group, filtering) for future editing

REPORTADHOCFIELD: Details fields used within ad hoc report design

REPORTAPPAUTH: Security group authorizations on report application security level

REPORTAUTH: Security group authorizations on report level

REPORTOSAUTH: Security group authorizations for Report Object Structures used in Ad Hoc (QBR)

REPORTJOB: Lists jobs that are currently being executed.

(Used for View Report Processing Action in the Report Administration application.)

REPORTUSAGELOG: Detailed information on executed BIRT Reports. Information is held in this table until the REPORTUSAGECLEANUP Cron Task removes the entries.

REPORTDS: Data Source Information for multiple databases.

REPORTDSPARAM: Data Source Parameter Information on multiple databases.

REPORTLISTCFG: Lists Reports displayed in Report List Portlet of Start Center

REPORTSCHED: Report schedule information

REPORTPROCRESERVE: Holds reserved processing times for complex, batch reports.

REPORTPROCSCHEM: Shows available schedule time for complex, batch reports

REPORTOUTPUT: Details on executed report

REPORTOUTPUTCNT: Content of executed report

REPORTOUTPUTHAUTH: Lists users who have access to executed report

REPORTRUNQUEUE: Report queuing

REPORTRUNLOCK: Processing information of queued report

REPORTRUNPARAM: Parameter information of queued report

## 1.5 Request Page XML

The information below provides additional details on the request page xml.

### ***What is the Request Page XML?***

Report request pages enable a user to input parameter, schedule and email inputs for reports. Report request pages vary by the type of report that is used (BIRT, Cognos or Custom) and by the types of parameters that are used.

The report request page information, including the parameter input dialogs, for all reports is held in one XML structure in a library called REPLIBRARY. This REPLIBRARY presentation is often referred to as the Request Page xml.

### ***How is the Request Page XML generated?***

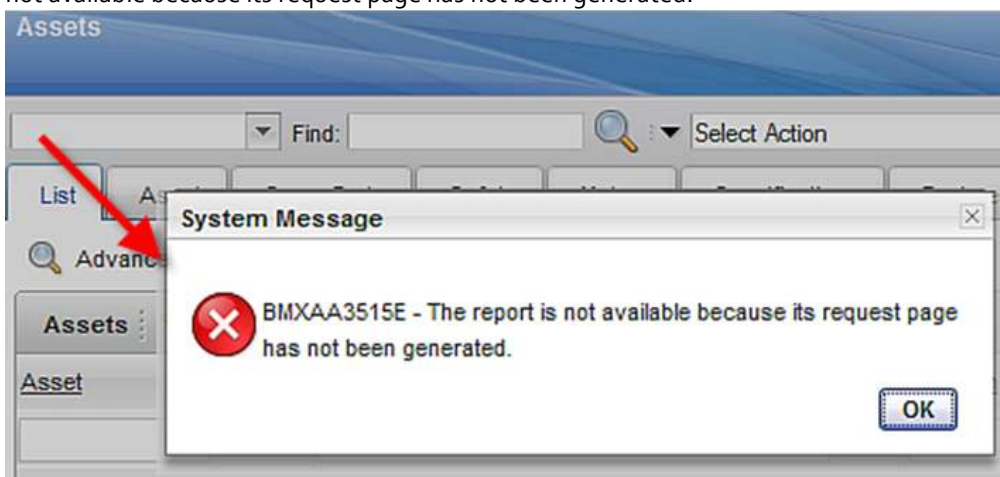
The request page xml is generated with the Report Administration application. To do this, an administrator, with security privileges, accesses application. Then, on the bottom right hand side of the page, the administrator clicks on the 'Generate Request Page' button. This creates the REPLIBRARY presentation in the database.

Before the request page xml is generated, the REPLIBRARY presentation in the database has no values. After it is generated, the REPLIBRARY is created, and reports can then be executed.

### ***What happens if the Request Page XML is not generated?***

If the request page xml has not been generated from the Report Administration application, you will be unable to execute reports.

Specifically, what will occur is that the list of available reports will display to a user. However, if they select a report, an error will display as the request page is unavailable. The error is: BMXAA3515E – The report is not available because its request page has not been generated.



**Where is the replibrary located?**

The REPLIBRARY presentation is a system library, stored in maxpresentation. It is not associated to a specific application. You can export it via the Application Designer application from Maximo by selecting Export System Library from the action menu, and choosing REPLIBRARY.

**How can I confirm if a report's request page is in the replibrary?**

To confirm if a request page is included in the presentation, export the presentation. Then, search thru the xml by looking for the applicable reportnum. Each report dialog ID for a request page is in the format reportd<reportnum>.

The reportnum value is not available from the Report Administration application. However, you can find it by querying the database with a script similar to as shown below:

```
select reportnum from report where reportname=<value> and appname=<value>
```

**How can I customize the replibrary?**

Currently the replibrary presentation is not externalized or recommended for modifications. However, if you must make changes to it, you can export and import it through Application Designer. First, generate the request page xml from the Report Administration application, then export the presentation. Apply your customizations, and then reimport the presentation through Application Designer.

*\*NOTE\** If you re-generate your report request pages from Report Administration, it will overwrite any customizations you have made to the presentation. Additionally, if you have a multi-language environment and use QBR Ad Hoc reports, the cron task REPORTADHOCLOC will overwrite this presentation

**When do you need to generate Request Page XML?**

The request page xml should be generated under any of the following conditions

1. When you perform a new Maximo installation
2. When you apply a Maximo Fix pack
3. When you add a new enterprise report. This could be a BIRT, Cognos or any other external reporting tool you use through a Integration.
4. When you modify any of the report's parameters or parameter settings. These settings include: Parameter name, attribute name, lookup, Display name, Display Sequence, Required, Multi-lookup enabled, default value or Operator
5. If you change the settings for a report including: Schedule Only, Priority, No Request Page
6. If you add or delete Reserved Processing Times for a Schedule Only Report
7. If you have a multi-language environment, please see the requirements for these environments in the section below.

**When do you NOT need to generate Request Page XML?**

The request page xml does not have to be generated in these conditions

1. If you add a new JVM to a clustered environment. In this case, the JVM will take the request page xml (REPLIBRARY) from the database.
2. If you modify any of the Browser View, Direct Print or Direct Print with Attachments settings.
3. If you modify the Use Where Clause setting
4. If you modify existing Reserved Processing Times for a Schedule Only Report
5. If you modify the report design file.

### ***What are the Request Page XML requirements for Clustered Environments?***

If you have a clustered environment, depending on the version of Maximo you are using, will determine how request page xml generation functions.

#### Scenario 1: For Maximo 7.1.1.9 or later, or any of the Maximo 7.5.0.1 or later Releases

In a clustered environment, initially, you must generate the request page xml for each individual instance, or all JVMs have to be restarted after generation of request pages in one JVM. However, when you add new reports or modify existing ones, the request page xml needs to be generated on a single server only.

Reference: APAR IZ98911

#### Scenario 2: For Maximo 7.1.1.9 and earlier versions

In a clustered environment, initially, you must generate the request page xml for each individual instance. Then, if you add new reports or modify existing ones, the request page xml must be generated on each instance.

This occurs because after the presentation that contains the new report is built, it is saved to the database, but it is only loaded into memory of the current Maximo instance. However, the other clustered instances are unaware of the new presentation as it is not in their memory. These other clustered instances must either be restarted (to load from the database again) or have their request page xml regenerated.

These two scenarios are explained in this example. An environment has three JVMs which are started. These three JVMs are JVM\_A, JVM\_B and JVM\_C. The administrator generates request pages on JVM\_A.

-In Scenario 1, if you are on Version 7.1.1.9 or higher, or 7.5.0.1 or higher, no additional actions need to be taken. JVM\_B and JVM\_C will recognize see the newly generated request pages.

-However, in Scenario 1, if you are on versions earlier than 7.1.1.9, or Version 7.5.0.0., JVM\_B and JVM\_C will not know that in JVM\_A request pages are generated. In this case, you will have to regenerate the request pages on JVM\_B and JVM\_C.

### ***What are the Request Page XML requirements for a Multi-Language Environment?***

1. If you have a multi language environment, additional steps must be taken to create the request page xml for each of the individual languages. These steps include signing into Maximo in each of the individual languages, and then generating the request page xml for each language. This process insures that the report request pages will display properly for each individual language.

Additionally, whenever any new report is added, the request page xml must be generated for each language for all reports. Not just the new report. Additional details on the request page xml language requirements can be found in the Maximo Report Localization guide available here <http://www-01.ibm.com/support/docview.wss?uid=swg21505045>

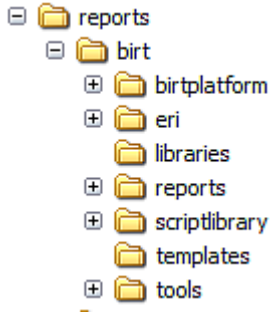
2. Additionally, in a multi language environment, if you utilize QBR Ad Hoc reporting, the request page for the QBR report is initially generated in the base language of the user creating the report.

Starting in Maximo 7.5.0.1, a new cron task is available to generate the QBR request pages in multiple languages. The cron task is called REPORTADHOCLOC. It determines the frequency that newly created Ad Hoc Report Request Pages are enabled in multi-language environments. This cron task is for multiple language environments only. In a single language environment, this cron task can remain inactive.

## 1.6 Report File Structure

### Delivered Report File Structure

The reporting infrastructure contains not only the files required for the report engine, but also the design files, libraries, templates and various tools used during the reporting processes. The 75 file structure is shown and detailed below.



birtplatform: Contain files required for the BIRT engine. These files should not be modified.

eri: Files for configuring V7RI (Integration used when a Version 6 environment uses V7 Reporting)

libraries: Library, Resource and Property files required to support the report design files.

A. Library. Libraries store re-usable components, functionality and images. Reports that use libraries are automatically updated with the latest library information when they are executed.

One system library, called MaximoSystemLibrary.rptlibrary, is used. It contains two core items:

1. Master Pages. This defines items like the margins for printing, and the controls used for page formatting (ex page n of m). This is contained in the library because it is used on all reports, and rarely changes.
2. Themes. This contains the style sheet, which defines the font type, font size and other text characteristics to be used in the reports. The theme in the library is referred to as the style in the report design. The maximoTheme contains the specific colors and formatting for the reports.

The libraries.xml file is used for importing the MaximoSystemLibrary file.

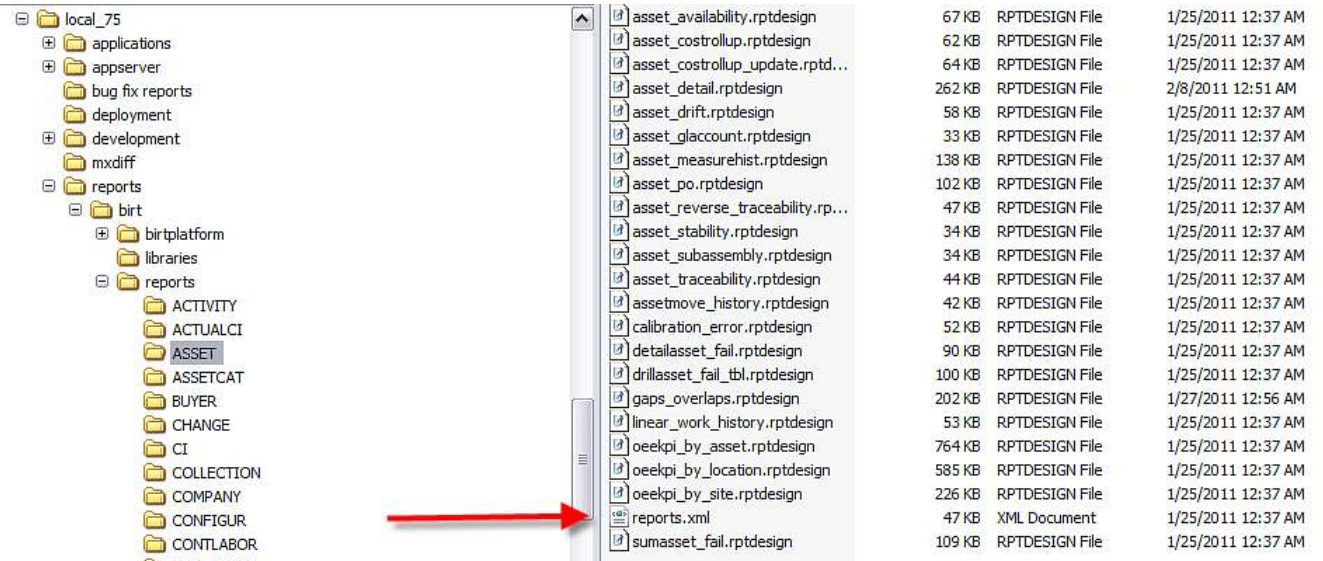
B. Resource. Resource files are .gif or .jpg images used in report designs. Two resource files are used. These are IBM\_logo\_black.gif and tivoli.gif, which are the two logos displayed at the top right and left hand corner of each V7.5 Out of the Box report. Resource files are imported into the database as zipped files.

Clients may want to customize the reports to use their own corporate logos. Information on how to do this is in 'Changing Logos in BIRT Reports' referenced on the last page of this document.

C. Properties File. Each of the application's properties file is contained within this subdirectory. Property files contain the text values of the report titles, and column/Subheader labels.

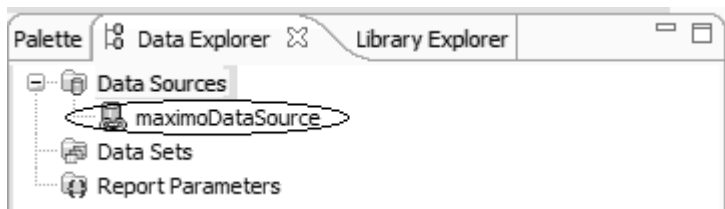
Property files are created at the application level, and not at the report level, because reports within an application frequently share the same text label values. (Example: Asset Reports often use the same labels of Asset, Location, Site, multiple times.)

Reports: Contains Report Design files stored within their corresponding application subfolder. Also contains the reports.xml file with information on each report used for importing.



Scriptlibrary: Contains script library classes and mxreportdatasources.properties file used by BIRT Designer tool to connect to databases.

For the integration of BIRT, when a report developer creates a report, a Custom Scripted Data Source is used. This Scripted Data Source is called 'maximoDataSource'.



A scripted data source is used to fully utilize the specific functionality for Runtime Data Translation and Time Zone Conversions. An example of this functionality is the localized values of Description. For example, if you are running both English and Spanish environments, and the English values of descriptions been localized into Spanish, the scripted data source is required to insure the localized Spanish descriptions display in reports.

The classes for the scripting are contained within this subfolder.

**Templates:** Twelve Template files are delivered, and must be used if you are creating any custom reports directly in the Report Design Tool. Each template type is delivered in both landscape and portrait format. The landscape file is listed in the table first, followed by the portrait template

*Note: You must use these templates when creating custom reports as they contain the Maximo data source, and scripting classes required for reports to properly execute from within the V75 instance. If you do not use them, your custom reports may initially execute from within V75, but your reports will eventually fail as the report jobs will not be processed correctly.*

File Name	Template Name	Description
maximoListReport maximoListReportPortrait	Tivoli Maximo List Report Template	For simple listing report - traditional row, column format
maximoGroupReport maximoGroupReportPortrait	Tivoli Maximo Grouped Report Template	Same as listing report - but contains sections for grouping results - ex. group by site or status
maximoSubreport maximoSubreportPortrait	Tivoli Maximo Subreport Template	Used for complex reports, including detail reports
maximoChartListReport. maximoChartListReportPortrait	Tivoli Maximo Graphic List Report Template	Simple listing report, which includes a graphic for either bar, line or pie chart before the report's results.
maximoChartGroupReport maximoChartGroupPortrait	Tivoli Maximo Graphic Grouped Report Template	Grouped report with graphic for either bar, line or pie chart before the report's results.
maximoChartSubreport maximoChartSubreportPortrait	Tivoli Maximo Graphic Subreport Template	Complex report with graphic for either bar, line or pie chart before the report's results.

**Tools:** Files used to importing and exporting report design files from database. More information on these tools is contained in the Import and Exporting sections.

#### Additional Notes on Report Source:

1. There are no separate library or design files for the three database types that are supported. Within the report source, the sql is being written in ANSI Standards, so it will be applicable to any of the three database types.
  - There may be a few reports where the database specific sql is required. In these cases, the sql will be written with conditional statements (ex. If database type = IBM DB2®, do this. If not, do this + that...etc)

### 1.6.1 Your Custom Reports and the Report File Structure

The section above reviewed the delivered report source and file structure. However, you may need to create or modify reports to meet your individual business needs. In this case, you will have new or modified report design files, reports.xml and properties file.

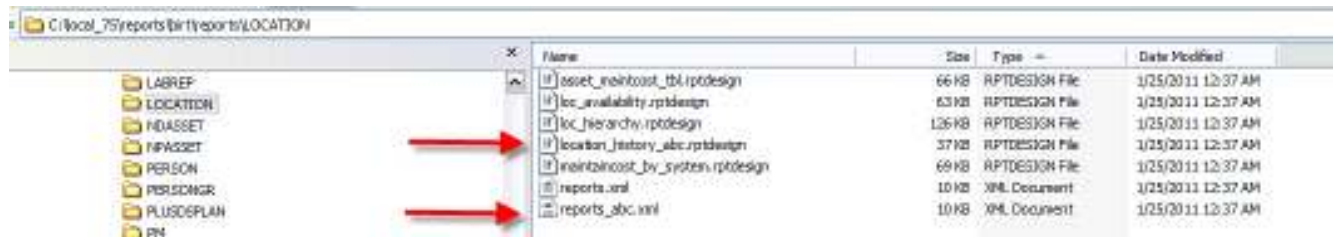
To streamline the administration and maintenance of your custom report design files, and also to insure that they are properly updated in future hot fix and fix pack releases, it is highly recommended that you implement a file structure similar to what is shown below.

#### For New Custom Reports – Report Design and XML file

For any new custom reports you create, it is highly recommended that you assign them unique report file names, and also create new reports.xml files for these. You may want to make them unique by utilizing your company name, or another identifier in their file name and reports.xml.

To illustrate this, let's imagine you created a new report for the Location application, which is titled Location History Report. To highlight this as your report, you may want to call it location\_history\_abc.rptdesign, where abc is the name of your company.

Additionally, when you create its reports.xml, instead of modifying the existing location's reports.xml for this new report, create your own unique reports.xml titled reports\_abc.xml, which is located under the directory: <V75>\reports\birt\reports\LOCATION





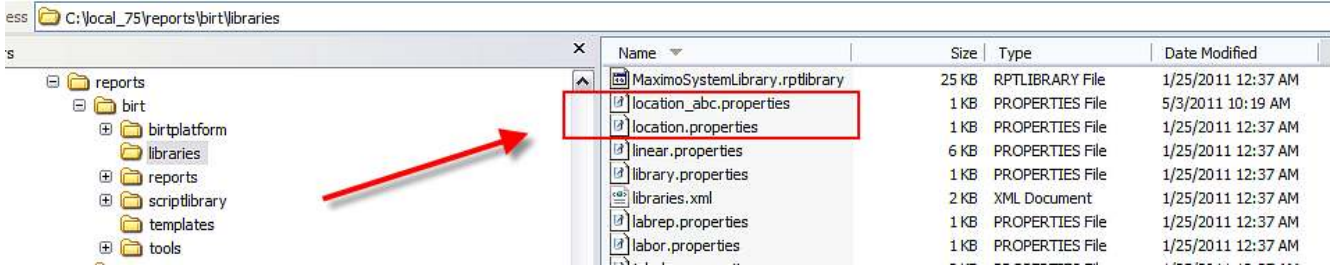
For New Custom or Modified Reports – Properties file

As stated above, the properties file contains the text for the title and labels within your report. This is used to insure the values can be properly localized.

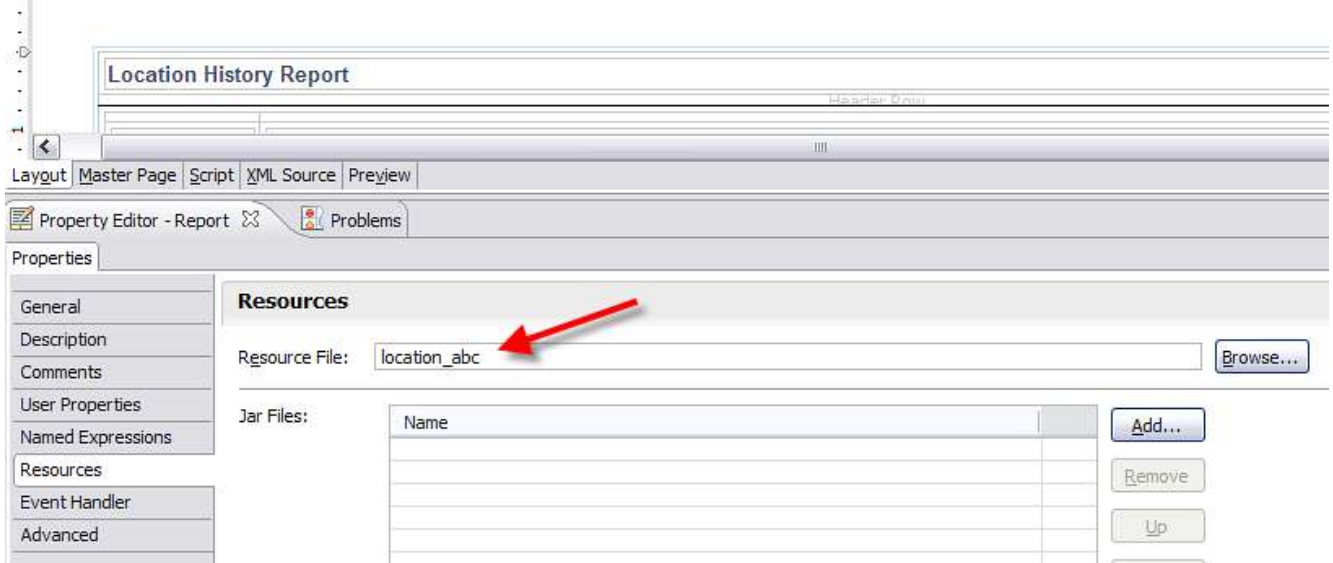
When you create custom reports, you can choose to either modify the existing properties file for the application, or create your own new properties file. To determine the solution that is best for your environment, you may want to take the following into consideration

1. A single report design can only reference a single properties file.
2. Applications can utilize multiple properties file. During the command import process, all properties file for the application will be imported.
3. Report titles, labels may be modified during release, fix pack or hot fix updates. Therefore, if you modify the delivered properties file with your customizations, your updates may be overridden during an update.

Based on this, you may want to create your own custom properties file, by copying the delivered file and then renaming your properties file to quickly identify it.



Then, when your developer adds new labels for your new reports, he will add them to the custom properties, location\_abc.properties as shown below in the Report Designer.



By creating unique file names and unique reports.xml files for your custom reports, they will always be imported during the import process. The import process imports any xml file it sees – not just the delivered reports.xml file. Additionally, when modifications are made to the out of the box reports, you will not have to merge your changes – they will be kept separate.

Notes:

1. More details on how the developer creates the custom properties file is in the V75 Report Development Guide. You can find this and other report reference materials at this url: <http://ibm.co/14r8jK7>
2. For details on importing your new or customized reports thru the Report Administration application, reference the 'Individual Report Importing thru Report Administration' section at the end of this guide.

For Modifications to Delivered Reports - Report Design and XML file

You may decide that you simply need to add or remove fields to a delivered report to meet your data analysis requirements.

In this case, it is recommended that you follow the same process as above, in making a copy of the original report design file, renaming it to a unique file name, and then making the customizations to the new report design file. This same process would apply to the reports.xml file. Make a copy of it, rename it, and make the change to the new reports.xml file.

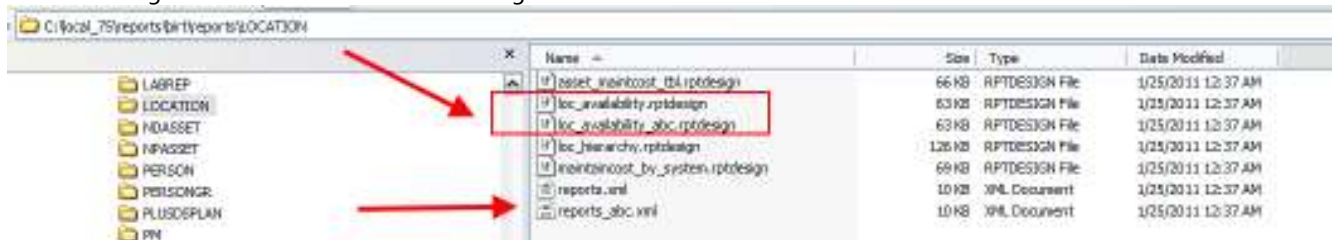
Following a similar example as above, you need to modify the Location Availability Report. To do this, you

1. Copy the loc\_availability.rptdesign file
2. Rename the copied version to loc\_availability\_abc.rptdesign
3. Make the changes to the report in the Report Design tool and save.

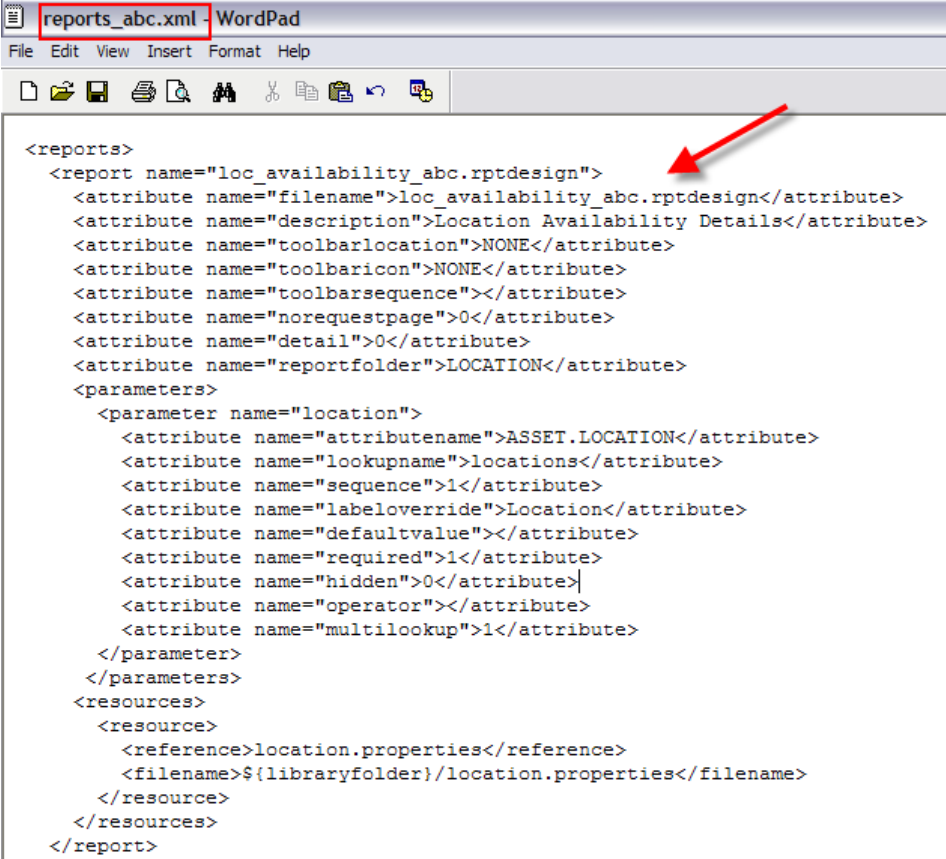
For the reports.xml file, you

1. Copy the reports.xml file
2. Rename the copied version to reports\_abc.xml.
3. Find the location availability entry and modify it to use the new file name, loc\_availability\_abc.rptdesign and any other changes to the report and parameters. Delete all other references to design files that you have not modified.

Your resulting file structure will look something like this



An example of the copied and modified reports\_abc.xml is below. Note again, that this version of the reports.xml should only include the entries for the files you have updated. Do not leave in entries of the report design files you have not modified.



```

<reports>
  <report name="loc_availability_abc.rptdesign">
    <attribute name="filename">loc_availability_abc.rptdesign</attribute>
    <attribute name="description">Location Availability Details</attribute>
    <attribute name="toolbarlocation">NONE</attribute>
    <attribute name="toolbaricon">NONE</attribute>
    <attribute name="toolbarsequence"></attribute>
    <attribute name="norequestpage">0</attribute>
    <attribute name="detail">0</attribute>
    <attribute name="reportfolder">LOCATION</attribute>
    <parameters>
      <parameter name="location">
        <attribute name="attributename">ASSET.LOCATION</attribute>
        <attribute name="lookupname">locations</attribute>
        <attribute name="sequence">1</attribute>
        <attribute name="labeloverride">Location</attribute>
        <attribute name="defaultvalue"></attribute>
        <attribute name="required">1</attribute>
        <attribute name="hidden">0</attribute>
        <attribute name="operator"></attribute>
        <attribute name="multilookup">1</attribute>
      </parameter>
    </parameters>
    <resources>
      <resource>
        <reference>location.properties</reference>
        <filename>${libraryfolder}/location.properties</filename>
      </resource>
    </resources>
  </report>

```

#### Notes:

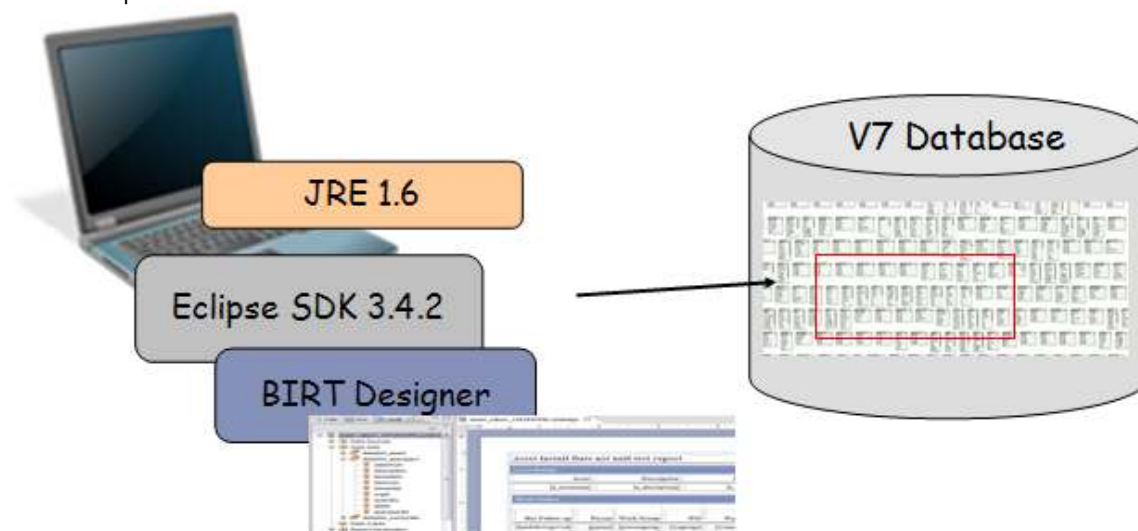
1. With this approach on duplicating and modifying the report source and files, you will end up with two entries of the location availability report in your database and also in the Report Administration application. These are the original report, and the report you have customized.
  - A. To only make the customized version (loc\_availability\_abc.rptdesign) available to your users, only enable report file security to this file in the report administration application.
  - B. Or, you could remove the original file (loc\_availability.rptdesign) from the original reports.xml file. However, you would need to repeat this process for each future fix pack or release upgrade you receive.
2. For recommendations on the properties file for modifications to delivered reports, please see the section above titled '[For New Custom or Modified Reports – Properties file](#)'

## 1.7 Report Designer Overview

The BIRT Report Designer is an Eclipse Based Tool that Java Developers use to create and customize V7 Enterprise reports. In V7.5.0.0 thru V7.5.0.2, BIRT Designer 2.3.2 is used, which is based on Eclipse 3.4.2. Starting with V7.5.0.3, BIRT Designer 3.7.1 is used, which is based on Eclipse 3.7.1.

To enable the report integration, custom library, style sheet, templates and data sources have been created. These files insure a consistent, look and feel for all reports, plus most importantly, insure that reports will execute correctly from the various applications. These files must be used on all custom reports to insure the report integration executes properly.

The BIRT Designer is installed on the client machine of the Java Developer(s) who will be creating or customizing reports. It is not required to be on each user's machine – only those users who will be physically creating or customizing reports. Since the BIRT Designer executes off the Eclipse Framework, Eclipse must first be installed on the Java Developers Workstation, and then the BIRT Designer is installed within Eclipse. The client must also have a JRE version installed.



### Note:

Details on downloading and configuring the BIRT Designer to work with Version 7.5 can be found in the V75 Report Development Guide. You can find this and other report reference materials at this url: <http://ibm.co/14r8jK7>

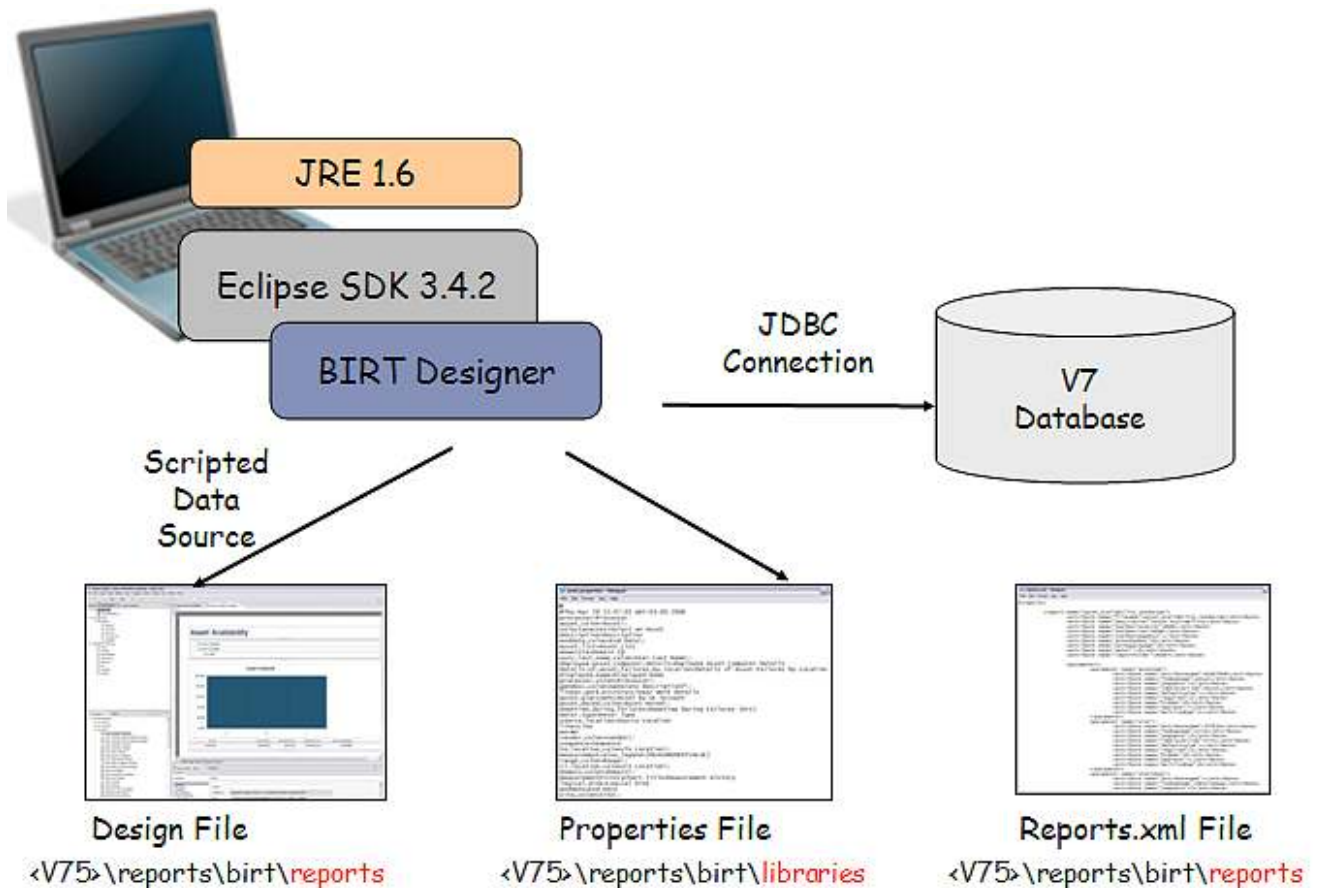
There are three files created for report designs.

1. **Design File.** This contains the details on the report – its sql, grouping, sorting, hyperlinking, etc. An example of this is the asset\_availability.rptdesign file.

The Design File uses a custom scripted data source. This is done to fully utilize the specific functionality for Runtime Data Translation and Time Zone Conversions.

The scripted data source calls the JDBC Connection to execute the report against the V7.5 Database.

2. **Properties File.** This contains the text values and keys of each column label and report title. There is one properties file for each application that has reports. This enables the same label values (ex. Description) to be used only once. This property file is one of the major components used in localization. An example of this is the asset.properties file.
3. **Reports.xml File.** This file defines the report information (its design file name, its parameters, its application etc.) and is used to import the report files into the database. There is one reports.xml file for each application.



The chart below shows how the report files interact with each other. At the top level is the design file, which always has the file extension of .rptdesign.

Each of the reports has a dependency on the Maximo® System Library File. A BIRT Design file can only have a dependency on either another design file (.rptdesign) or another library file (.rptlibrary)

The Maximo System Library file has its own import file, called libraries.xml. If a change is made to the Maximo System Library, the libraries.xml file is used to import that library change into the database.

The Maximo System Library file contains references to the resources, or image files. These typically have a .gif or .jpg extension. When a resource file is imported into the database, the files are converted to .zip format. (These files are stored as BLOB data types in the database.)

The properties files are also resource files. Properties files are referenced in the reports.xml which is used to import the reports into the database.

File Name	Dependency	Resource	Description	Location**
Asset.rptdesign	maximoSystemLibrary.rptlibrary		Asset List Design File	reports
		.gif/.jpg files	Maximo System Library Resources or Image Files	libraries
		asset.properties	Asset Property file	libraries
Reports.xml			Information on report and its parameters. Used for importing	reports

\*\*Location in the chart has been condensed. Its full path is <v75>\reports\birt\....

Note:

1. More details on how to configure these files for your custom report needs is noted in the section titled 'Your Custom Reports and the Report File Structure'.

## 1.8 Version 7.5 Report Types

Version 7.5 enables a variety of mechanisms for you to analyze the powerful data created by the 7.5 applications. These data analysis features include:

*QBE – Query By Example.* Using your application’s filter and/or query, you can immediately download your results for additional analysis in Microsoft Excel.

*KPI - Key Performance Indicators.* Visual indicators displaying status against predefined targets.

*RS – Result Sets.* Using an application’s query, enable a set of fields or graphic for display on the Start Center.

*QBR – Query Based Reporting.* Version 7’s version of Ad hoc reporting where users create their own reports on the fly from within the various applications.

*Enterprise Reports* - Often referred to as transactional reporting, these are the day to day detail reports users require to complete their business tasks. These reports may enable viewing of data in varying perspectives thru the use of complex graphs, in depth calculations or scenarios.

While this guide covers an overview of BIRT Reporting, which includes QBR, it focuses on Enterprise reports. If you would like additional information on these data analysis options, including QBR, you may want to reference the documentation below:

1. V75 QBR Ad Hoc Reporting. Details how QBR’s can be created, their business rules, and how to create ROS (Report Object Structures) which enable QBR reports.
2. V75 Upgrade Planning Guide – Details all the data analysis options available to you, including the report integration options of Cognos and External Report Integration.

## Report Parameters

Reports can execute against three different sets of parameter types. These types are:

1. Parameterized Reports
2. Application Reports
3. Both Parameterized and Application Reports

Each of these report types is reviewed below.

### 1.8.1 Parameterized Reports – Type 1

Reports that have user inputted parameters have values defined in the Parameters Section in the Report Administration application. These values are contained in the REPORTLOOKUP table in the database.

The Security Group Access report is an example of a parameterized report. The report has four parameters – Security Group, Independent, Password Duration and User Members.

Additionally, its Use Where Clause field is not enabled. Information on the Use Where Clause field is located separately in this guide.

The screenshot shows the Report Administration application interface. The top navigation bar includes 'List', 'Report', 'Security', and 'Performance'. The main content area displays the configuration for the 'Security Group Access' report. The 'Report File Name' is 'security\_group.rptdesign' and the 'Report Type' is 'BIRT'. The 'Parameters' section is expanded, showing a table of parameters. A red arrow points to the 'Parameters' tab, and another red arrow points to the 'Use Where Clause?' checkbox, which is currently unchecked.

Display Name	Alias Name	Sequence	Display Name	Required
securitygroup	GROUPNAME	1	Security Group	<input type="checkbox"/>
independent	INDEPENDENT	2	Independent	<input type="checkbox"/>
password	PASSWORDDURATION	3	Password Lasts this Number of Days	<input type="checkbox"/>
groupuser	GROUPUSER USERID	4	User Members	<input type="checkbox"/>



When the user executes this report, the report will collect the user inputted values for these four parameters and use those as filters to run against ALL records in the database.


**Request Page**

---

**Help Text**

**Parameters**

Security Group:


Independent?  


Password Lasts this Number of Days:

User Members:


**Schedule**

Immediate

At this Time  

Recurring  

**Email**

To:  

This report will always execute against ALL records – even if the user has a selected record set in his application’s Query.

## 1.8.2 Application Reports – Type 2

For reports where no parameters are specified, the report executes against the current/selected/all (C/S/A) record set passed from the application to the report server. This is often referred to as executing against the 'where clause'.

This SLA List report is an example of this type of report. When the administrator views its record, he sees it has no values defined in the parameters section, and hence no values in the REPORTLOOKUP table. Also, notice that for reports using the C/S/A Record Set, the Use Where Clause? Field is disabled.

The screenshot shows the 'Report Administration' window for the 'SLA List' report. The 'Report File Name' is 'slr/qDesign' and the 'Report Type' is 'BIRT'. The 'Report Folder' is 'SLA' and the 'Last Report Date' is '4/5/11 8:13 AM'. The 'Settings' section includes options for 'List Records?', 'Max Record Limit', 'Schedule Only?', 'Priority', 'No Request Page?', 'Use Where Clause?' (disabled), 'Display Order', 'Toolbar Sequence', 'Browser View?', 'Browser View Location', 'Direct Print?', 'Direct Print Location', 'Direct Print with Attachments?', and 'Direct Print with Attachments Location'. The 'Parameters' section is empty, showing a table with columns 'Parameter Name', 'Attribute Name', 'Sequence', 'Update Rate', and 'Required'. A red box highlights the text 'No rows to display.' in the parameters table.



Then, when a user accesses this report from the SLA application, its parameter section in its request page is blank. Reports using current/selected/all records do not display any parameters on their request pages. There is no input required from the user.

**Request Page**


Help Text

Parameters

Schedule

Immediate  
 At this Time    
 Recurring  

Email

To:  

Subject:

Comments:

File Type:  
 PDF  
 XLS

Report Delivery Format:  
 Email with a file attachment  
 Email with a file URL

The Current/Selected Record Set is passed from the application to the report server. Ex. The user has a selected query where 'APPLIES TO = INCIDENT' in the SLA App. He selects to run the SLA List report, and the filter is passed in the where clause to the report. The report will then only display those records from his query.

Service Level Agreements

Find:  Select Action

List Service Level Agreement Related SLAs Assets and Locations KPIs Escalation Communication Log

Advanced Search Save Query Bookmarks

SLAs Filter 1 - 14 of 14

SLA	Description	Applies To	Type
		=INCIDENT	
<a href="#">1001</a>	IT Generic P1 - Respond in 30 mins., Resolve in 2 hrs.	INCIDENT	CUSTOMER
<a href="#">1002</a>	IT Generic P2 - Respond 4 hrs., Resolve 8 hrs.	INCIDENT	CUSTOMER
<a href="#">1003</a>	IT Email - Respond 2 hrs., Resolve 4 hrs.	INCIDENT	CUSTOMER

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### SLA List

Site: BEDFORD

SLA	Description	Status	Applies To
<a href="#">1001</a>	IT Generic P1 - Respond in 30 mins., Resolve in 2 hrs.	ACTIVE	INCIDENT
<a href="#">1002</a>	IT Generic P2 - Respond 4 hrs., Resolve 8 hrs.	ACTIVE	INCIDENT
<a href="#">1003</a>	IT Email - Respond 2 hrs., Resolve 4 hrs.	ACTIVE	INCIDENT
<a href="#">1004</a>	IT Email VIP - Respond 30 min., Resolve 1 hr.	ACTIVE	INCIDENT
<a href="#">1005</a>	Elevator - Respond 1 hr., Resolve 2 hrs.	ACTIVE	INCIDENT
<a href="#">1006</a>	Facilities Gen. - Respond 24 hrs., Resolve 72 hrs.	ACTIVE	INCIDENT
<a href="#">1007</a>	HVAC P1 - Respond 1 hr., Resolve 2 hrs.	ACTIVE	INCIDENT
<a href="#">1010</a>	Elevator - Respond 30 mins., Resolve 1:30 hr.	ACTIVE	INCIDENT
<a href="#">1011</a>	Generic VIP, Respond 30 mins., Resolve 1 hr.	ACTIVE	INCIDENT
<a href="#">1012</a>	Elevator P1 - Respond 15 min., Resolve 30 min.	ACTIVE	INCIDENT
<a href="#">1015</a>	IT Generic P3 - Respond 24 hrs., Resolve 48 hrs.	ACTIVE	INCIDENT
<a href="#">1016</a>	IT Generic P4 - Respond 2 days., Resolve 4 days	ACTIVE	INCIDENT
<a href="#">1018</a>	Lighting - Respond in 2 hours, Resolve in 4 hours	ACTIVE	INCIDENT
<a href="#">1019</a>	Lighting (Night) - Respond in 6 hours, Resolve in 8 hours	ACTIVE	INCIDENT
<b>Number of Records:</b>	14		

4/5/11 8:05 PM

When a report developer defines a report to use the application record set, he does not define any report parameters in either its report design or reports.xml file.

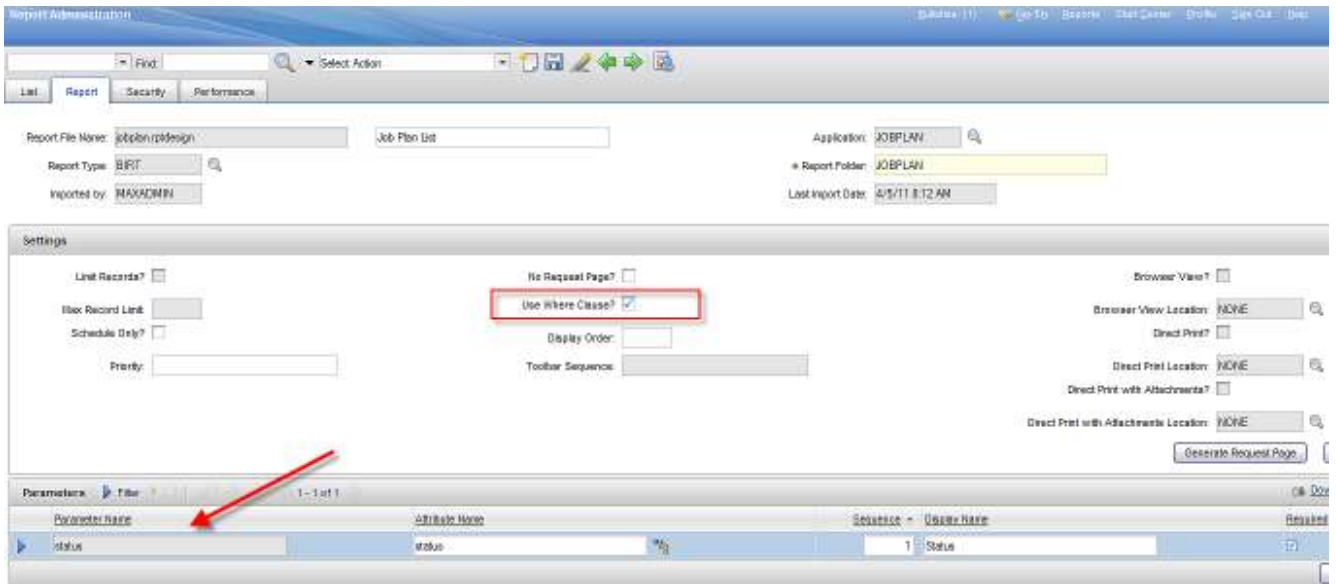
Additionally, application reports are the only type of reports that can use the quick access fields of Browser View, Direct Print, Direct Print with Attachments and Record Limits. More information on these fields and others are contained in the 'V75 Report Toolbar Access\_Direct Print and Related Information' document referenced at the end of this guide.

### 1.8.3 Both Application and Parameterized Reports – Type 3

This type of report enables an application record report to execute along with user defined parameters.

In this case, the report would have parameters defined in the Report Administration application, and the Use Where Clause Flag would be selected. Both of these requirements must be met to enable the report to execute against both the application AND parameter set.

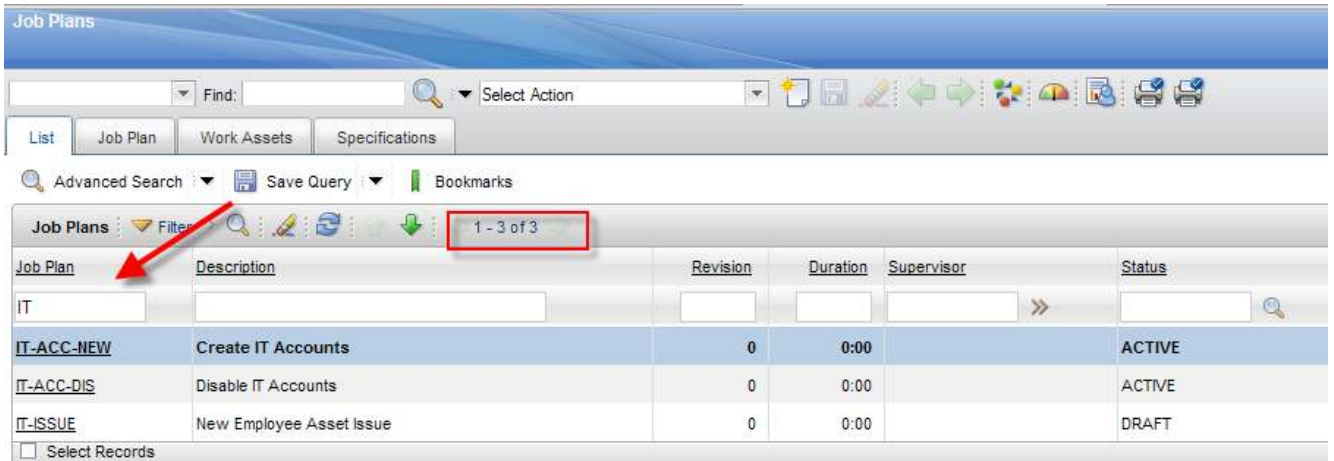
The example below modifies one of the delivered reports Job Plan List. The delivered version contains no parameters, but in this example, a parameter, Status, has been added to the Job Plan List report. Additionally, the Use Where Clause flag has been enabled. The report will then execute against both the User Inputted Value of Status + the application record set that is passed to the report.



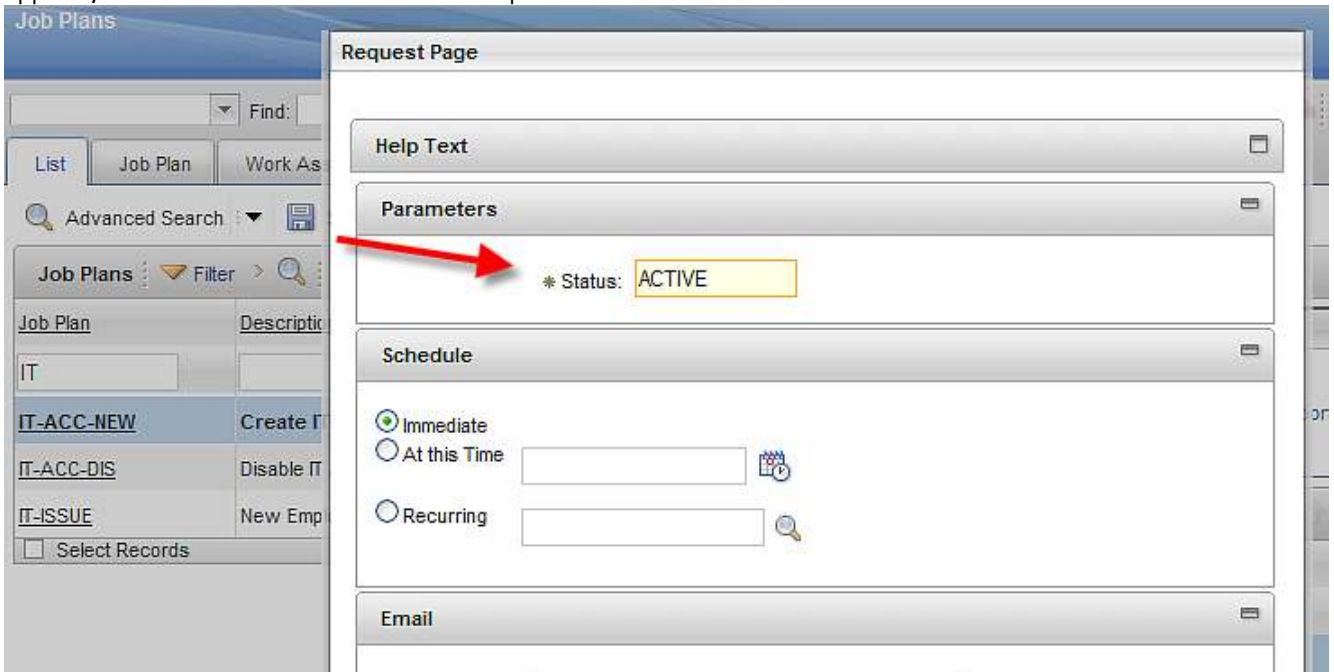
\*Note: In order to do this, to modify the out of the box report, you will have to (1) remove the Browser View Settings and (2) update the BIRT Design File to call out the new status parameter.

To see how this report executes from the Job Plan application, follow the steps below:

A. Access the Job Plan application and form a selected record set by inputting a filter of 'IT' in the Job Plan field. Three Records are returned.



B. Click run reports from the Action Menu, and select the Job Plan List report. When its request page appears, enter a value of ACTIVE in the status parameter.



C. Click Submit. The Report displays in the Report Browser.

Notice that the report executed against both types of Parameters: The Selected Record Set of three records, and the User Inputted Parameter of ACTIVE. The result in the report only displays two records. (Selected record set of 'Job Plan = IT' and report parameter filter of 'STATUS = ACTIVE' .)

Job Plan	Description	Revision	Duration	Supervisor	Status
IT					
<a href="#">IT-ACC-NEW</a>	Create IT Accounts	0	0:00		ACTIVE
<a href="#">IT-ACC-DIS</a>	Disable IT Accounts	0	0:00		ACTIVE
<a href="#">IT-ISSUE</a>	New Employee Asset Issue	0	0:00		DRAFT

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**Job Plan List**

Job Plan
<a href="#">IT-ACC-DIS</a>
<a href="#">IT-ACC-NEW</a>

**Number of Records:** 2

4/6/11 8:16 AM

### Parameter Notes

1. If you are going to create new, custom reports, you may want to review the 'Designing V75 Reports' document to help determine what parameter types (example: user inputted versus application) are best for your individual environment. Information on this document is contained on the last pages of this guide.
2. None of the Out-of-the-box Reports have the 'Use Where Clause' Field enabled.
  - If you want to enable these types of reports, the flag must be set in the Report Administration application or in the reports.xml.



## 2 Report Scheduling

Reports can be executed a variety of ways, including

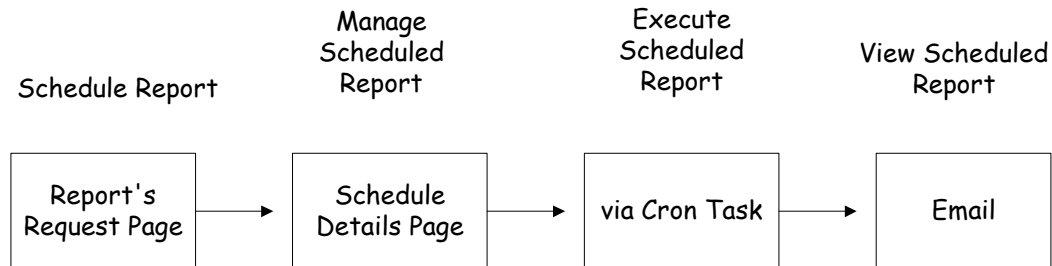
- (1) Executing immediately
- (2) Executing a report at a single date/time in the future
- (3) Executing a report on a recurring basis in the future

Running a report right now is called an immediate job, and passes a report job request to the report engine immediately. The other two options – running a report at a single point in the future – or on a future recurring basis – involve scheduling. The report schedule options are detailed below.

The screenshot shows a web form titled "Request Page" with several sections:

- Help Text:** A small box with a close icon.
- Parameters:** A large empty text area.
- Schedule:** Contains three radio button options:
  - Immediate
  - At this Time: Includes a date/time selection icon.
  - Recurring: Includes a magnifying glass icon.Two red arrows point to the "At this Time" and "Recurring" options.
- Email:** Contains fields for "To:", "Subject:", and "Comments:". Below these are two groups of radio buttons:
  - File Type:**  PDF,  XLS
  - Report Delivery Format:**  Email with a file attachment,  Email with a file URL
- Buttons:** "Submit" and "Cancel" buttons at the bottom right.

Scheduling Reports involve four distinct stages: Scheduling, Managing, Executing and Viewing.





## 2.1 Schedule Report

### 2.1.1 At This Time

The first type of Schedule Report Request is an 'At this time' or 'One Time' Single Schedule Request. The user enters a value for the future point in time that the wants the report to execute.

The value can either be entered by the user or selected from the date/time lookup.

**Request Page**

**Help Text**

**Parameters**

**Schedule**

Immediate  
 At this Time 10/1/11 5:00 AM   
 Recurring

**Email**

\* To: bob@abc.corp

Subject: Asset Report Thru 3rd Quarter

Comments: Important Report to review and file

File Type:

PDF  
 XLS

Report Delivery Format:

Email with a file attachment  
 Email with a file URL

**Submit** **Cancel**

Note:

A. When scheduling a report using the 'At This Time' single run option, the selected date/time must be within 363 days of the current date. For example, if today is 5/25/11, the report must be scheduled to run anytime before 5/23/11. If a report is scheduled on 5/28/11 to be run on 9/1/12, the report will be unable to be scheduled.

### 2.1.1.2 Recurring

The second type of schedule report request is a 'Recurring' schedule request. Recurring schedule request occur at regular intervals – like once a week, once a month, or every Friday at 3pm.

Recurring schedule values must be selected via the lookup. A unique schedule lookup is available for reports. It is similar to the Cron Task Scheduler Lookup. To prevent potential user schedule errors and performance impacts, it does not include the cron task values of Every Second and Every Minute.

Select Value

Select Schedule or Time Interval

Select a date interval and then Preview to see the dates.

Every  hour(s), on minute  00

Every  1 day(s), at time  12:00 AM

Every  week(s), on day  Sunday at time

Every  month(s),

on day  01 at time

on the  first  Sunday of the month, at time

Date Preview

4/7/11 12:00 AM
4/8/11 12:00 AM
4/9/11 12:00 AM
4/10/11 12:00 AM
4/11/11 12:00 AM
4/12/11 12:00 AM
4/13/11 12:00 AM
4/14/11 12:00 AM
4/15/11 12:00 AM
4/16/11 12:00 AM
4/17/11 12:00 AM
4/18/11 12:00 AM
4/19/11 12:00 AM

Preview

OK Cancel

Once a user selects his recurring scheduled option from the lookup, it will display as 'Selected' on the request page.

**Request Page**

Help Text

Parameters

Schedule

Immediate  
 At this Time  
 Recurring

Email

\* To:

Subject:

Comments:

File Type:
   
 PDF
   
 XLS

Report Delivery Format:
   
 Email with a file attachment
   
 Email with a file URL

Submit Cancel

When the user clicks submit for either a single or recurring schedule request, he receives a confirmation message:

**Schedule Confirmation**

The Asset Measurement History report was successfully scheduled.

- Schedule Detail: Will open up the Schedule Detail dialog page where the user can review or edit his schedule inputs
- Delete: Will delete the scheduled report request
- Cancel: Will close the window

## Emailing

You have a number of options to select how your scheduled report should be received. You can choose to receive your scheduled report in either pdf or xls file format in an email, or you can choose to access your scheduled report via a file url.

The screenshot shows a web form titled "Request Page" with several sections:

- Help Text:** A header section with a close button.
- Parameters:** A section with a close button and an empty text area.
- Schedule:** A section with three radio button options:
  - Immediate
  - At this Time: Includes a date/time input field with "6/1/11 4:00 AM" and a calendar icon.
  - Recurring: Includes an empty input field and a magnifying glass icon.
- Email:** A section with a close button containing:
  - \* To: Input field with "lucy@abc.corp" and a magnifying glass icon.
  - Subject: Input field with "Asset Detail Analysis".
  - Comments: A large empty text area.
  - File Type:** Two radio button options:  PDF and  XLS.
  - Report Delivery Format:** Two radio button options:  Email with a file attachment and  Email with a file URL.

At the bottom of the form are "Submit" and "Cancel" buttons.

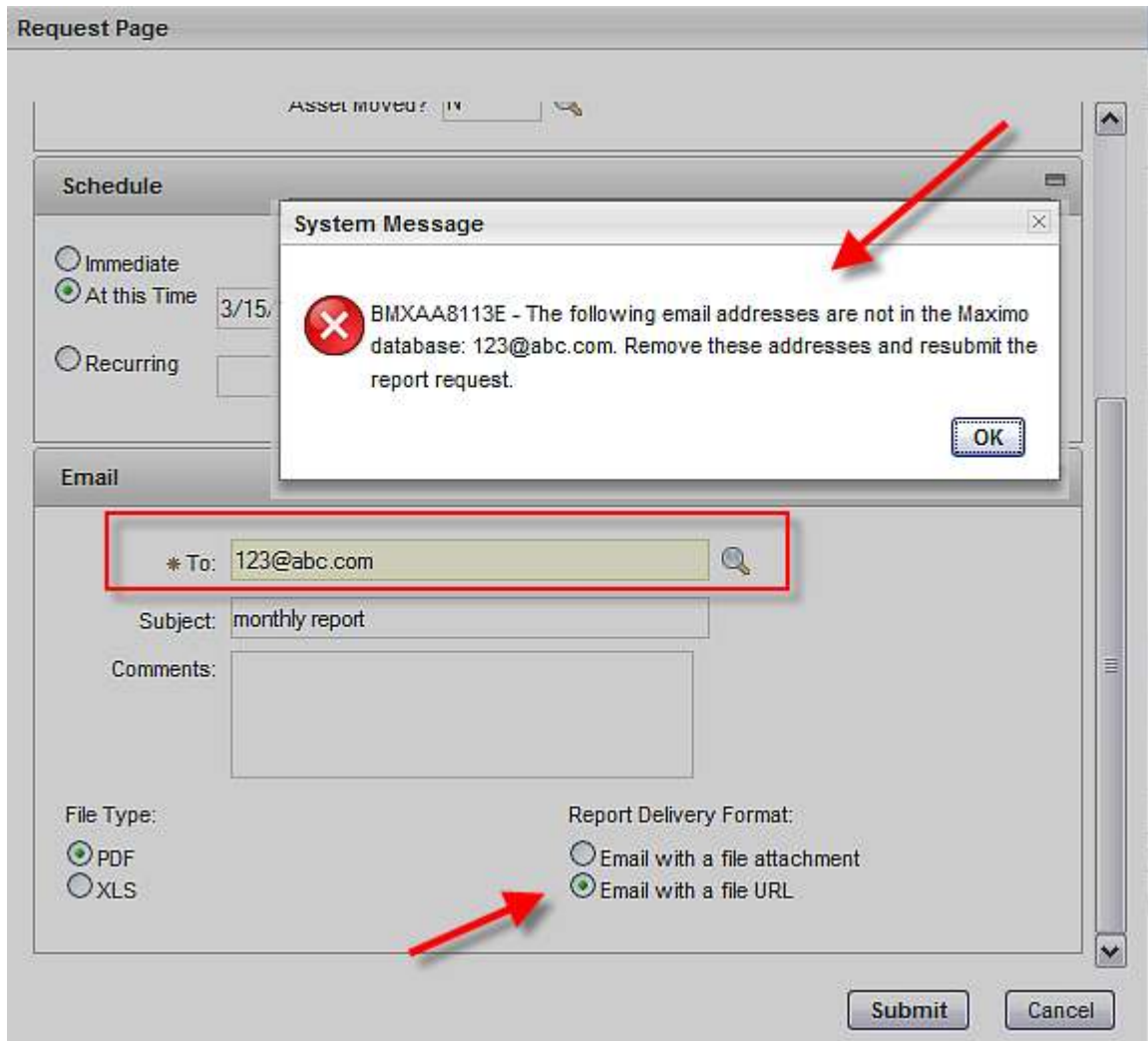
### Email with a file attachment

If you select this option, the scheduled report will be sent directly to your email in either xls or pdf file format. With this option, the scheduled report can be sent to V75 Users or non-V75 users.

### Email with a file URL

If you select this option, users will receive their scheduled report requests via a url. This url will enable them to access and view their scheduled reports from the Report Viewer application within V75.

The key point on emailing with a file URL is that the user receiving the scheduled report url must be a V75 user. This is required because the access to the scheduled report url is within the Report Viewer application. If you enter an email address for someone who is not a V75 user when specifying this file format, the error message below will display:



## Email Notes

### Validation

The user's inputs for his scheduled report request are validated to confirm:

A. If the 'At this Time' Option is selected, the inputted date/time is greater than the server's current time.

\*Note: The scheduling time inputted is based on server time. More info on user's locales and time zone settings are contained in the sections below.

B. If 'At this Time' is typed in, both a date and time are entered.

C. At least one email address has been specified.

D. That the user scheduling the report has a valid email address in the email table. This address is required to populate the 'From' Email section.

E. The recurring schedule report cannot be scheduled to occur for less than an hour.

F. If the 'Email file with URL' option is selected, the recipients must be valid V75 users to access the scheduled report output.

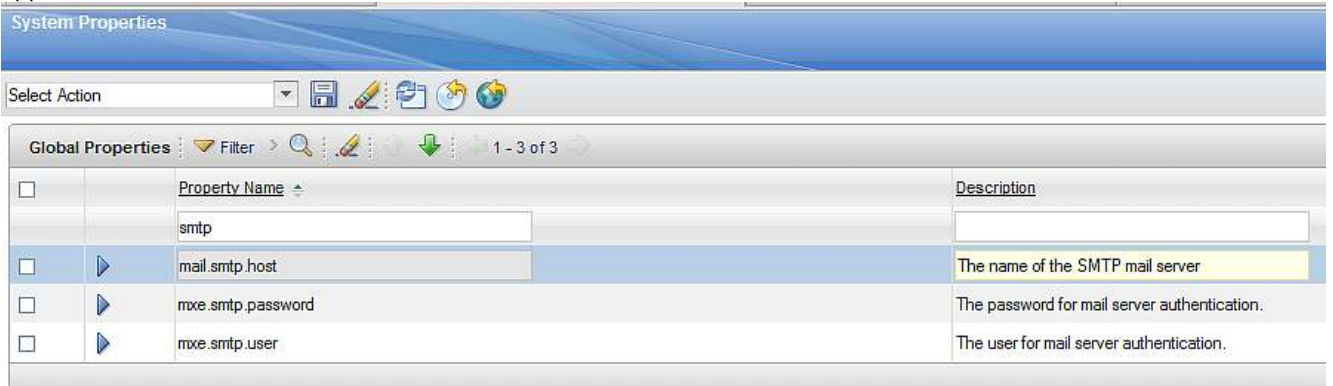
G. Each 'At this Time' scheduled report has to be scheduled within a time period of less than 363 days from the current date. For example, if today is 5/25/11, the report must be scheduled to run anytime before 5/23/11. If a report is scheduled on 5/28/11 to be run on 9/1/12, the report will be unable to be scheduled.

This is required to enable a 48 hour time period for the scheduled cron task to go back and check for 'one time' schedule requests if the Server goes down.

H. Additionally, no validation of input email addresses is performed. This means that if the user types in the email address of an external contractor that he wants to email a report to – it is the responsibility of the user to type the email address in correctly. Reporting functionality cannot be enabled to validate each of the potential combinations of external email addresses.

## Email System Property Settings

A. For report emailing to successfully occur, the smtp server must be defined in the System Properties application as shown below.



B. Additionally, you may want to evaluate setting the `mx.e.email.content.type` setting property from `text/html` to `text/plain`. Changing to `text/plain` will enable your users to receive text that has been input in a Report's Email Comment section with carriage returns as shown below.

When `mx.e.email.content.type` set to `text/html`, email comments received as:

This is a test. It shows how text displays using `mx.e.email.content.type`. This is a test test.

When `mx.e.email.content.type` set to `text/plain`, email comments received as

This is a test.

It shows how text displays using `mx.e.email.content.type`.

This is a test test.

## 2.2 Manage Scheduled Report

After the report job has been scheduled, the user can then manage his scheduled report requests. This is done through the Scheduling Status tab and/or the Scheduling Details.

The Scheduling Status tab is available in the Reports window, and only shows reports that are scheduled to occur on a recurring basis, or at a time in the future.

- If a report has been scheduled to run once, and has been executed, it no longer displays on the Scheduling Status tab.

Reports

Select a report from the list, or click Create Report to create an ad hoc report.

On Demand Reports | Scheduling Status

Schedules You Can Edit Filter > 1 - 3 of 3 Download

Report Name	Type	Next Run Time	
Security Group Access	Recurring	4/7/11 8:30 AM	
Asset Measurement History	Recurring	4/10/11 5:00 AM	
Vendor Performance	Recurring	4/11/11 6:00 PM	

OK

Create Report Cancel

In the 'Schedules You Can Edit' section, a listing of BIRT report schedules can be viewed and modified by the user. This information is displayed in ascending order of next run time. The Next Run Time is a non-persistent field that is calculated via the schedule cron task.

In this tab, the user will see all reports that he has scheduled – regardless of the application he is currently in. In the screen shot above, scheduled reports from the Security, Asset and PO applications all display to the user. This enables the user to have one central location to manage all his schedule report jobs.



The Schedule Details can be accessed through either the (1) Schedule Confirmation Message shown above or (2) By expanding a record in the 'Schedules You Can Edit' Section of the Scheduling Status Tab.

The Schedule Details is shown below. From this window, the user can update his schedule report or email criteria. Additionally, the scheduled report request can be cancelled.

**Reports**

---

Schedules You Can Edit
Filter >
1 - 3 of 3
Download

	Report Name	Type	Next Run Time	
▶	Security Group Access	Recurring	4/7/11 8:30 AM	🗑
▼	<b>Asset Measurement History</b>	<b>Recurring</b>	<b>4/10/11 5:00 AM</b>	🗑
▶	Vendor Performance	Recurring	4/11/11 6:00 PM	🗑

**Schedule**

Report Name:

At this Time

Recurring

**Email**

\* To:

Subject:

Comments:

File Type: Report Delivery Format:

**Notes:**

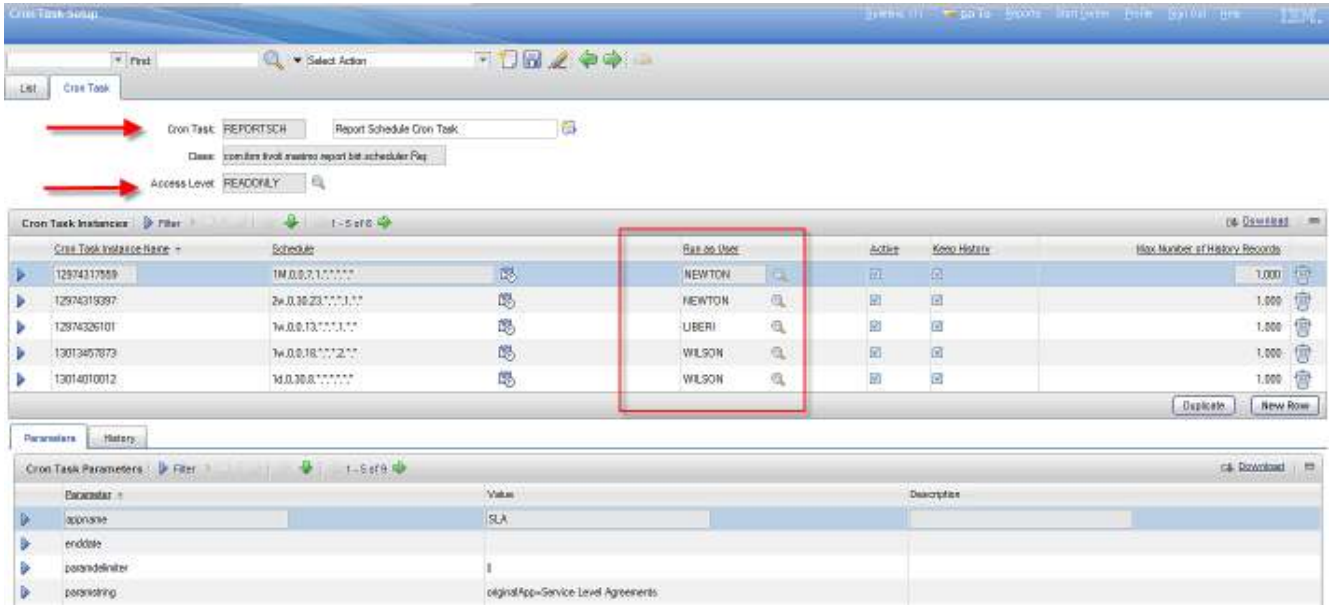
A. Report parameters are not displayed in the Schedule Status Window. Once the parameters are inputted by the user in the Report's request page, they are not available for viewing or for modification.

## 2.3 Execute Scheduled Report

A cron task is used to execute the scheduled reports. The cron task is called REPORTSCHEDULE.

A separate cron task instance is created for each scheduled report. Therefore, your number of cron task instances will be very dynamic as it is dependant on the number of scheduled jobs at any point in time.

*The REPORTSCHEDULE Cron Task is read only, and is not intended to be modified or used to manage report schedules.* Both the instance name and schedule values are auto-assigned values from the cron task.



The screenshot displays the 'Cron Task Setup' application interface. At the top, the 'Cron Task' configuration is shown with the following details:

- Cron Task: REPORTSCH
- Class: cronTaskReportScheduler
- Access Level: READONLY

Below this, the 'Cron Task Instances' table is visible, listing several instances with their respective schedules and user assignments. A red box highlights the 'Run As User' column, which lists users like NEWTON, LIBERI, and WILSON.

Cron Task Instance Name	Schedule	Run As User	Action	Keep History	Max Number of History Records
12874317089	1M.0.0.0.1.***	NEWTON	[Icon]	[Icon]	1,000
12874319397	2w.0.30.23.***1.***	NEWTON	[Icon]	[Icon]	1,000
12874326101	1w.0.0.13.***1.***	LIBERI	[Icon]	[Icon]	1,000
13013457873	1w.0.0.18.***1.***	WILSON	[Icon]	[Icon]	1,000
13014010012	1M.0.30.0.***	WILSON	[Icon]	[Icon]	1,000

At the bottom, the 'Cron Task Parameters' table is shown, listing parameters such as 'appName', 'endDate', 'parameterizer', and 'parametering' with their respective values and descriptions.

Parameter	Value	Description
appName	SLA	
endDate		
parameterizer		
parametering	originalApp=Service Level Agreements	

A separate action is available in the Report Administration application for administrators to manage/delete report schedule instances. This action is called 'View Scheduled Requests'.

The Report Schedule's Cron Task parameter values will vary widely from report to report. The number of cron task parameters can vary significantly because reports which use User Inputted Parameters have more parameters than those that don't. Additionally, the report parameters could vary from within the same report design as one scheduled job may only have a single parameter value, whereas another scheduled job could contain multiple parameter values.

**Cron Task Setup**

Find:  Select Action

List Cron Task

Cron Task:

Class:

Access Level:

**Cron Task Instances** Filter 1 - 1 of 1

Cron Task Instance Name	Schedule	Run as User
<input type="text"/>	<input type="text"/>	liberi
▶ <input type="text" value="12974326101"/>	▶ <input type="text" value="1w,0,0,13.*.*:1.*"/>	LIBERI

Parameters History

**Cron Task Parameters** Filter 1 - 4 of 4

Parameter	Value
▶ appname	PO
▶ paramdelimiter	
▶ paramstring	originalApp=Purchase Orders
▼ where	(( po.historyflag = 0 and po.siteid = 'BEDFO

Details

Parameter:

Value:

**Notes:**

Only Active Scheduled Jobs will be displayed in the Cron Task application. If a scheduled report job is no longer active, it no longer displays. (ex. A non-recurring scheduled job that has been completed),

Report security (what reports a user has access to) is given by Security Group. However, because report scheduling is user specific (what parameters they enter, who they choose to email the schedule report to etc) scheduling will be by user. This means that the user will only be able to see which Scheduled Report Jobs have only been input by them.

## 2.4 View Scheduled Report - Emailing

When a user schedules a report, its delivery format is either sent via an email as either a file attachment or file URL. Emailing is only used for BIRT reports when they are scheduled. Emailing can not be enabled for Immediate Report Requests.

### Email with a file attachment

If the scheduled report was selected to be sent via a file attachment, the user would receive the scheduled report output in either pdf or xls file format in their email as shown below.



### Email with a file url

If the scheduled report was selected to be sent via a file URL, the user would receive the scheduled report output in either pdf or xls file format in their email as shown below.



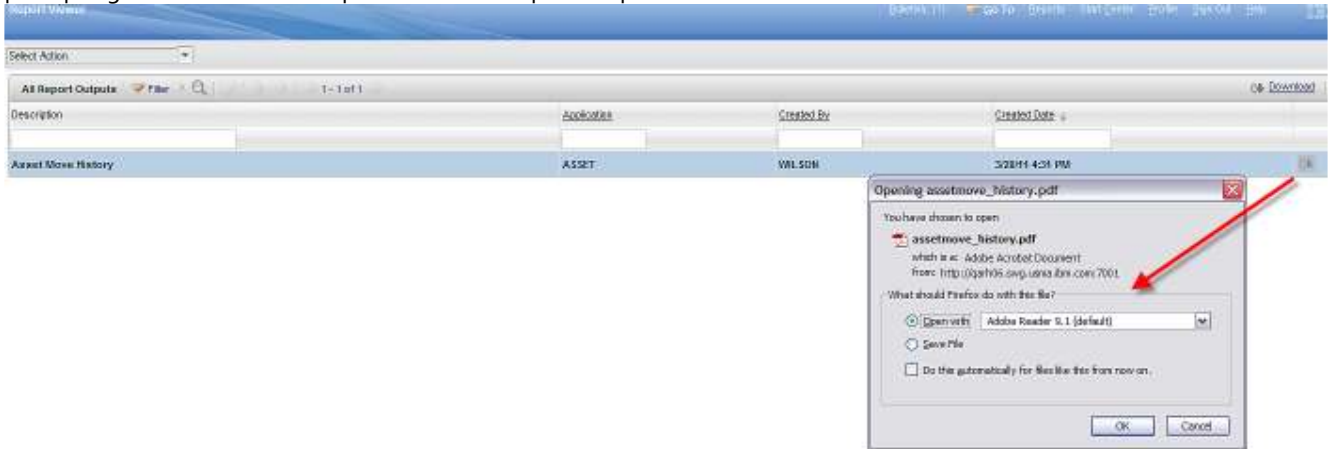
When the user accesses the url, it will take them to the V75 log in page.



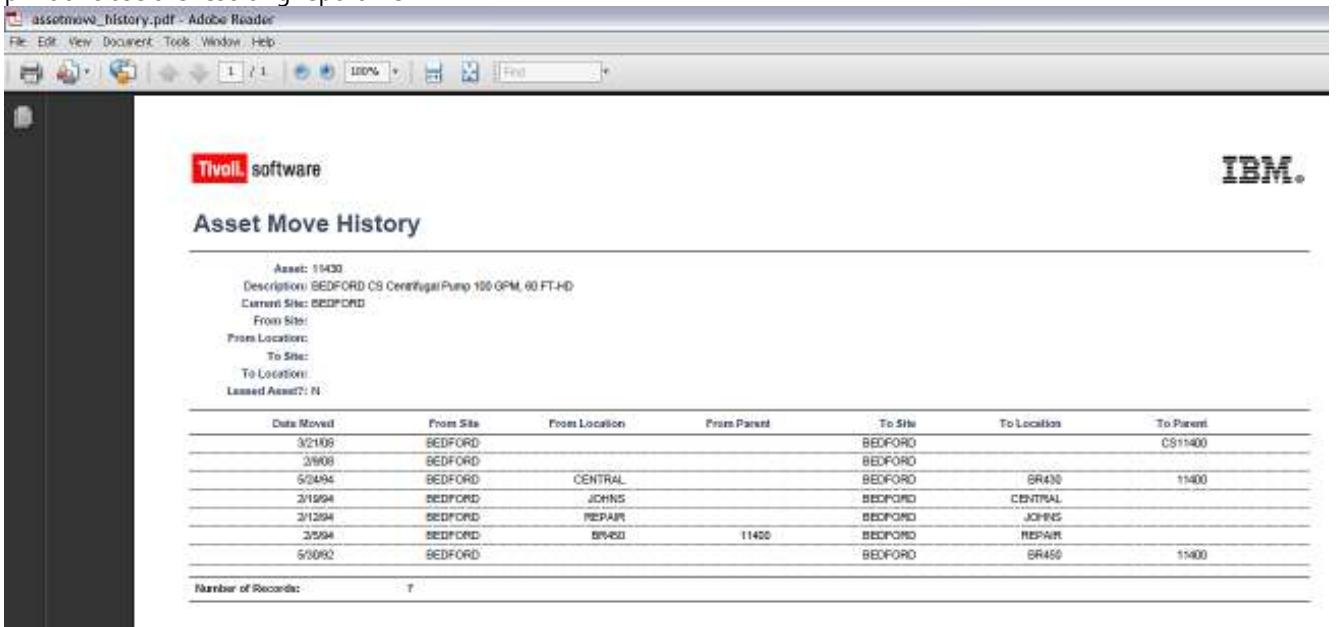
After signing in, the user is brought directly to the Report Viewer application, where his scheduled report output is displayed.



On the right most side of the screen, he can click on the download icon, and a window will appear prompting him if he wants to open or save his report output.



An example is shown here where the user chooses to open the report output. He can then choose to save, print or close the resulting report file.



Additionally, the user may find the need to access the scheduled report output at a future date. He can do that by accessing the Report Viewer application within V75. This application can be accessed from the Go To Menu (Administration – Reporting – Report Viewer), or by setting it up as a favorite application on the Start Center.

The screenshot shows the 'Report Administration' interface. At the top, it says 'Welcome, Mike Wilson'. Below that are two tabs: 'Report Admin' and 'Administration'. The main content area is divided into four sections:

- Report Admin Apps:** A list of applications including Report Administration, KPI Manager, Security Groups, Object Structures, Cron Task Setup, System Properties, and Report Viewer (highlighted with a red box and a red arrow pointing to it).
- Report Administration KPIs:** Shows 'Last Run: 2/11/11 10:12 AM' and a gauge for 'Successful Report Jobs (%)' ranging from 0 to 110. The needle is positioned at approximately 105.
- Applications to test reports:** A list including Assets, Purchase Orders, and Work Order Tracking.
- Daily Report Execution Statistics:** Shows 'Last Run: 3/29/11 8:08 AM' and a yellow bar representing the execution status.

Once you access the application, you can see the total listing of report outputs that you have security privileges to view.

The screenshot shows the 'Report Viewer' application interface. It features a 'Select Action' dropdown, a filter icon, and a status bar indicating '11 - 15 of 15' items. Below is a table listing report outputs:

Description	Application	Created By	Created Date
Database Configuration	COMPNGR	WILSON	3/29/11 8:58 AM
Error Codes	USER	WILSON	3/29/11 8:28 AM
Overall Equipment Effectiveness By Site	ASSET	WILSON	3/29/11 4:48 PM
Asset Move History	ASSET	WILSON	3/29/11 4:31 PM
Asset Measurement History	ASSET	WILSON	3/29/11 4:38 PM

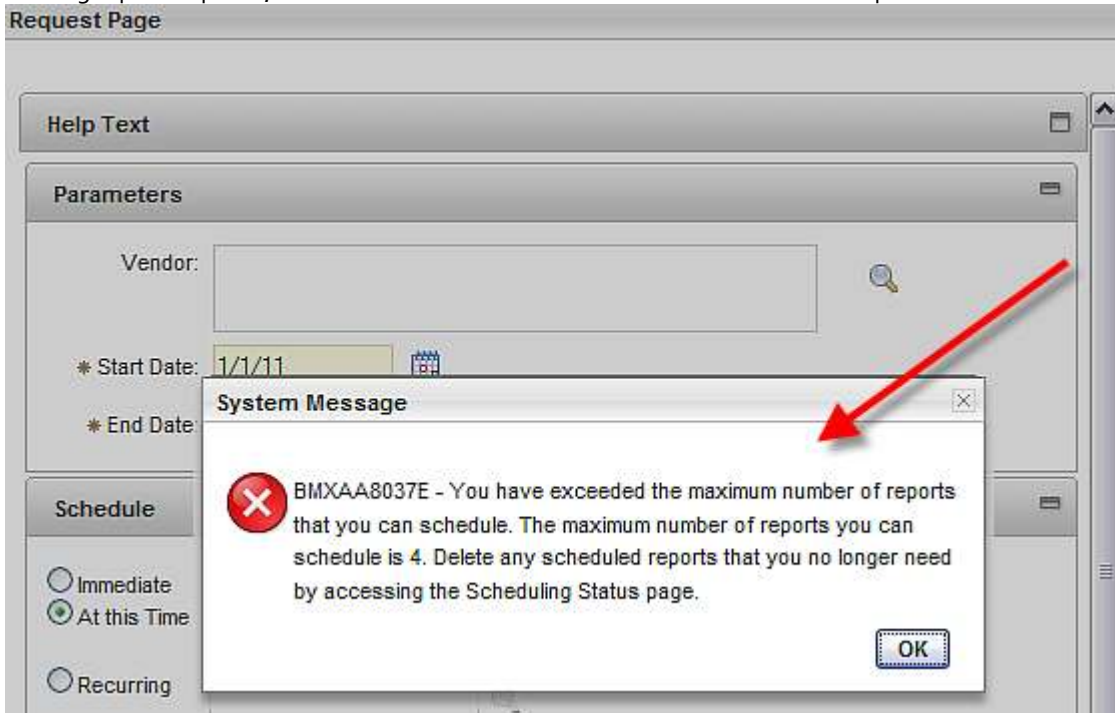
To prevent large number of scheduled report outputs from accumulating, a cron task is used to delete these files on a configured time period. The cron task is called 'Report Output Cleanup Task' and its default value is 7 days.

### 2.4.1 Report Schedule Limits

You can limit the number of report schedule requests your users submit thru the report schedule limit functionality. By limiting them to a maximum number of scheduled jobs, users will only submit schedule requests for reports they need, and delete requests for obsolete report jobs.

Users may submit recurring schedule requests for reports that they think they will always need – but once the need for the report output goes away – they may forget to delete the scheduled report request. However, the report will still continue to execute. This leads to wasted, unnecessary resources – as the processing continues – while the consumption has stopped.

When scheduled report limits are enabled, and a user inputs a scheduled report request that exceeds his maximum allotted number, he will receive a message as shown below. He will then have to review his existing report requests, and delete one of them before he can submit a new request.



If a user is member of multiple security groups, the scheduled record limit for the user is the minimum value set for the various security groups.

This functionality has been introduced in the 7.5 release. Therefore, if you are upgrading from 7.1x to 7.5, your user's scheduled report requests will upgrade as is. If you then implement this functionality, it will not take affect until the user's next new scheduled report request.

Details on how the report administrator can implement this are in the Report Administration Action section at the end of this guide.



## 2.4.2 Scheduled Reports and Time Zones

When a report is scheduled, the scheduled date/time will be based on the Time Zone of the application server.

For example, user Liberi is on Pacific Standard Time. The application server is on Eastern Standard Time. The administrator, Wilson, is on Eastern Time.

User Liberi schedules the PO Status Details to execute on 4/6/11 at 4:00 PM. When her scheduled report request is submitted, it is stored in the database with a scheduled time of 4/6/11 7:00PM EST (the time of the application server).

When Liberi views her schedule details, it will show as 4/6/11 at 4:00 PM – the date she scheduled the request.

**Reports**

Select a report from the list, or click Create Report to create an ad hoc report.

On Demand Reports | **Scheduling Status**

Schedules You Can Edit | Filter > | 1 - 2 of 2 | Download

Report Name	Type	Next Run Time	
PO Status Details	At this Time	4/6/11 4:00 PM	
PO Status Details	Recurring	4/10/11 10:00 AM	

**Schedule**

Report Name: PO Status Details | po\_status.rptdesign

At this Time 4/6/11 4:00 PM

Recurring

**Email**

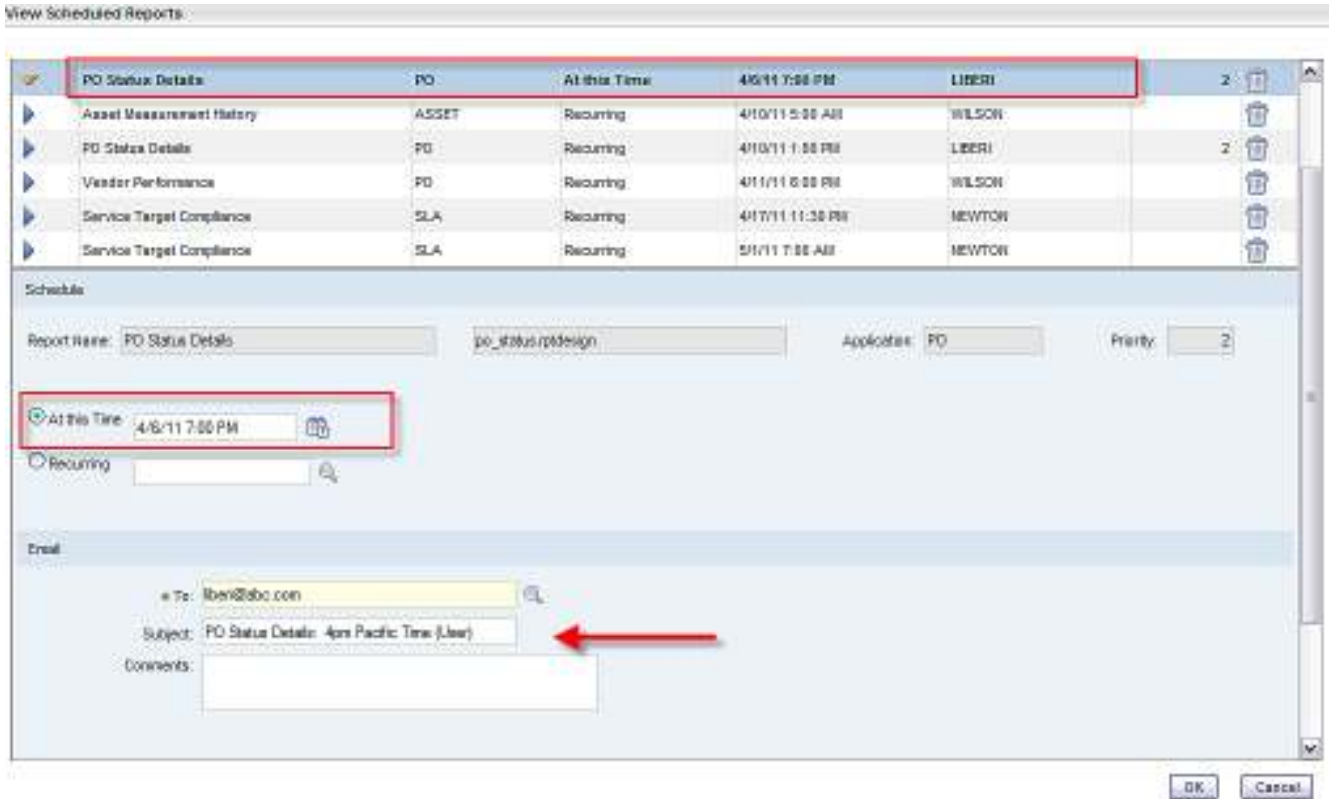
\* To: liberi@abc.com

Subject: PO Status Details: 4pm Pacific Time (User)

Comments:



However, if the administrator, Wilson, views the scheduled report requests in Report Administration, each request will display the server time that it will execute. So in the case of Liberi's 4pm Pacific Standard Time, it will display/execute at the server time of 7:00 pm Eastern Standard Time.



Scheduling Notes:

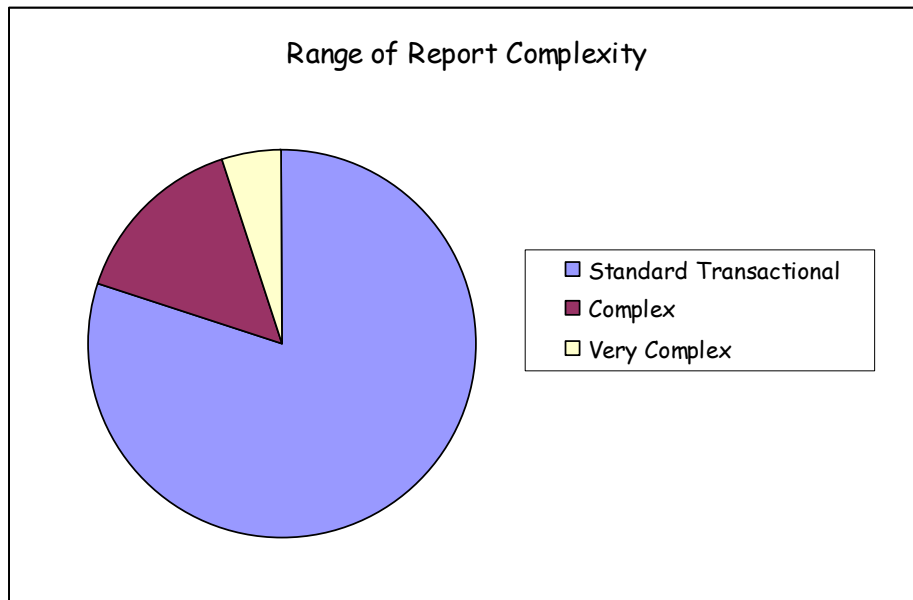
1. The Maximo Server and the Database Server must be configured in the same time zone.
2. If a scheduled job executes, but does not email the output to the user, the failure will be logged in the REPORTUSAGELOG Table. Only one field is currently included in the REPORTUSAGLOG table to track failures – whether those failures are due to the report not executing or not emailing.
3. The Report administrator can view and manage future Scheduled Report Jobs in the Report Administration application via the 'View Scheduled Reports' action. Details on this are in the Report Administration Action section at the end of this guide.

### 2.4.3 Schedule Only Reports

You can configure complex, batch reports to only be executed via Report Scheduling. This will prevent users from running large, complex reports during peak use of the application, database and report server, which can negatively impact overall system performance.

Before this functionality is described, let's review how this could be applied. Each of you has a wide range of complexity in reports. Some reports are very simple, like list reports or single grouped reports, whereas others are very complex due to the number of subreports they encompass or the hierarchy levels they span through. This Report complexity is defined by the processing the report has to do – not by the number of records it displays. So, for example, a fifty page list report could execute ten times faster than a complex two page report due to the processing defined within the report's design.

The pie chart below represents a sample set of reports. Standard, transactional reports are displayed in blue, with complex reports in red, and the most complex reports in yellow. These complex reports are time consuming to design and develop, and are continually analyzed for performance efficiencies. These are often referred to as batch reports, as they traditionally execute overnight due to their large processing requirements.



Because of the processing load complex reports have on a system, they can now be configured to only be executed via report schedules. Additionally, the very complex reports can be configured to only execute via schedules at specific times of the day. This will minimize the impact these complex reports have on overall system performance.

The next few pages describe how to enable this functionality.

To enable the 'Schedule Only' functionality for a complex report, access the Report Administration application and locate the report. The example below will use the Cost by System report.


First, click Preview from the list tab to see what the report's request page looks like. Notice that three Execution Options display – Immediate, Schedule At this Time, or Schedule Recurring. These are the three default run report options.


**Request Page**


**Help Text**

**Parameters**

\* System:


\* Site:  


Start Date:  


End Date:  

**Schedule**

Immediate


At this Time  

Recurring  




Now, enable this report for 'Schedule Only'. Close this window and on the Report Tab, enable the value for 'Schedule Only'.


Report Administration

Find:  Select Action: 

Tab: **Report** | Security | Performance

Report File Name:  Cost by System:

Report Type:  

Report Folder:  


Inherited by:  Last Inport Date:

Application:

**Settings**

Limit Records?

Max Record Limit:

Schedule Only?  

Priority:

No Request Page?

Use Where Clause?

Display Order:

Toolbar Sequence:

Save the change, and generate the Request Page XML. Click Preview, and an updated request page displays. Now, the 'Immediate' Report Execution Option is no longer available. Only the two options for scheduling are presented to the user.

## Request Page

Help Text

Parameters

\* System:

\* Site:

Start Date:

End Date:

Schedule

At this Time

Recurring

k -

Note that the 'Schedule Only' functionality for a report can also be viewed and enabled on the Performance Tab of Report Admin.

Report Administration

List Report Security **Performance**

Report File Name: maintaincost\_by\_system.rptdesign Cost by System:  Applicable: LOCATION

Historical Values

Settings

Limit Records?  Max Record Limit:  Priority:  **Schedule Only?**

### Notes:

1. If the Schedule Only field is enabled, the following fields can not be enabled:
  - No Request Page?
  - Browser View?
  - Direct Print?
  - Direct Print with Attachments?

This is because each of those fields relies on the request page NOT being displayed to the user. In the case of Scheduled Only reports, the request page needs to be displayed so the schedule inputs can be made – therefore, these options are not available.

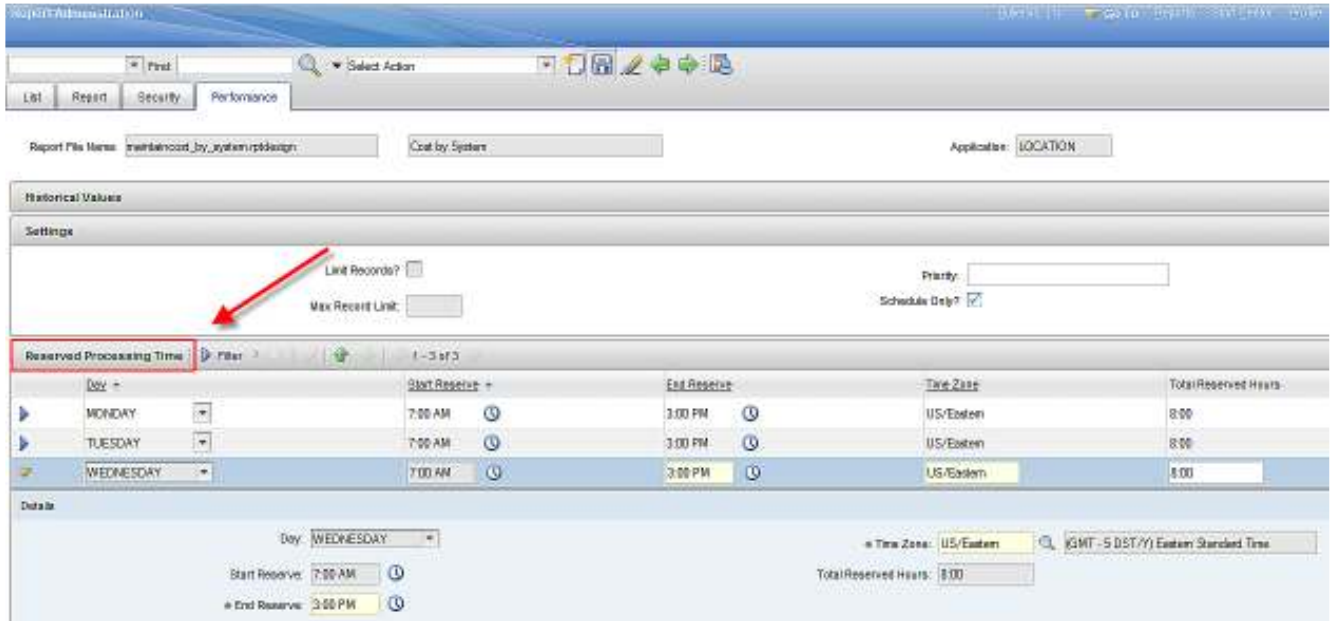
### 2.4.4 Schedule Only Reports – Reserved Processing Time

In addition to enabling 'Schedule Only' functionality for very complex, batch reports, you can also configure what times are available for the report scheduling. This will prevent users from scheduling report jobs of complex reports at the peak times of server use. For example, you may not want your users to run very complex batch reports on Monday morning, when many users are trying to execute their daily or weekly transactional reports.

Reserved Processing time will detail the busy days and time within a week that server processing time is reserved for immediate report jobs and other maximo application functionality. This functionality will be based on days of the week. It is not based on calendar days, example January 1, due to fluctuations with calendars and holidays.

Reserved Processing Time can be set on any day of the week (Monday thru Sunday) and for any amount of time less than 24 hours. On the Performance Tab in Report Administration, the administrator will click New Row and specify the day of the week, and the times during that day that report processing is NOT available for that report job. This functionality is enabled by individual report because of the range of report complexity.

To set the reserve processing time for a report, the administrator must first enable the Schedule Only? Flag. Then, under the 'Reserved Processing Time' section, click new row to define the Day, Start Reserve, End Reserve and Total Reserved Time.



After the values are defined, the administrator saves the change, and must regenerate the request page xml.

### What the Reserved Processing Times Looks like to a User

Report users want to know when they can execute a report, so the reserved processing times on the report request page - - will show instead as the Schedule Availability.

The Schedule Availability shows the opposite of the reserved processing time in Report Administration. In Report Administration, the administrator is concerned with reserving time that the report should NOT be enabled to execute.

On the report request page, the user will also see the time zone in which the report availability was SET. This may not match the time zone of the user. However, it is expected this functionality will be enabled on complex reports executed by fairly technical users, who have an understanding of time zone impacts.

**Request Page**

Help Text

Parameters

**Schedule Availability** Filter > 1 - 10 of 10 Download

Day	Start Time	End Time
SUNDAY	12:00 AM	11:59 PM
MONDAY	12:00 AM	6:59 AM
MONDAY	3:01 PM	11:59 PM
TUESDAY	12:00 AM	6:59 AM
TUESDAY	3:01 PM	11:59 PM
WEDNESDAY	12:00 AM	6:59 AM
WEDNESDAY	3:01 PM	11:59 PM
THURSDAY	12:00 AM	11:59 PM
FRIDAY	12:00 AM	11:59 PM
SATURDAY	12:00 AM	11:59 PM

**Time Zone**

Available Time Shown in (GMT - 5 DST/Y) Eastern Standard Time.

Schedule

Submit Cancel

Notes:

1. Due to potential conflicts with varying time zones, and the complexity involved with Daylight Savings time being utilized in some time zones but not others, the administrator can only reserve processing time for each report using the same time zone.

This means that if he reserves a processing time of 7 AM to 4 PM EST for the Asset Cost Rollup report, any other reserved processing time made for Asset Cost Rollup must be made in the EST time zone.

3. Due to the wide range of unique environments and requirements that each of you may have, no out of the box reports delivered have this functionality enabled. It is meant to be a configurable option that you can enable for your individual business environments.

4. After a 'Schedule Only' report has been scheduled, its available processing time will not show on the 'Scheduling Status' Tab. If the report schedule needs to be modified, it is recommended that the original report schedule be deleted, and a new one input.

### 3 Report Security

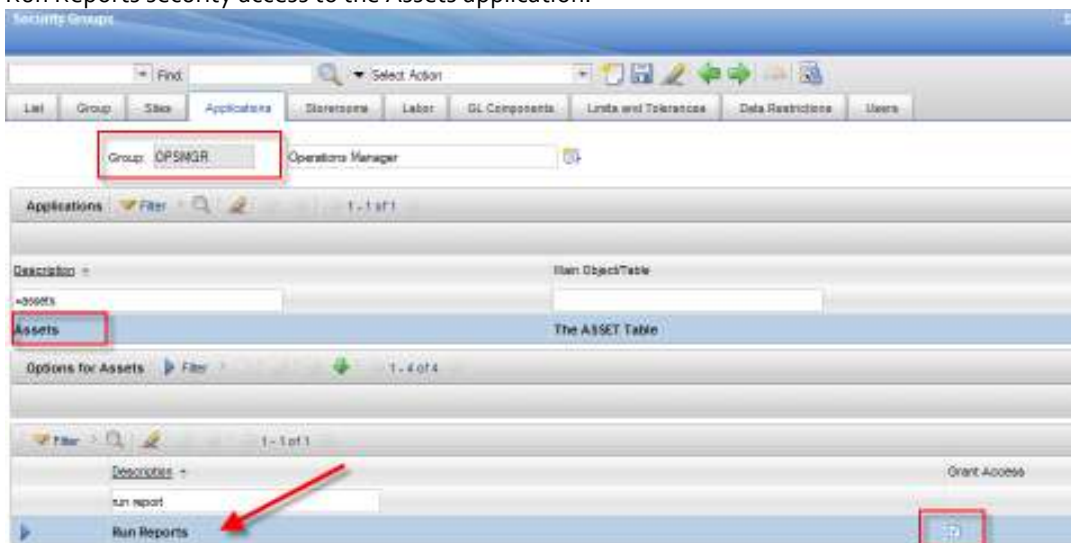
Report security enables users within security groups to see and execute the reports that they have access to. There are cascading levels of report security, with the first two levels being -

1. Which security groups can run reports?
2. What reports can security groups execute?

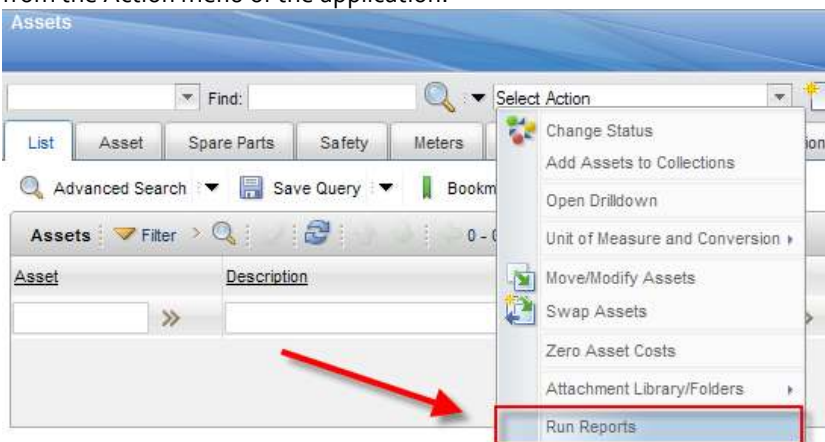
These two access levels will first be discussed, and then information on how data restrictions and report interact will be detailed.

#### 3.1 Which security groups can run reports?

From the Security Group application, the administrator defines which security groups have 'Run Reports' access to the various applications. This is shown below where the OPSMGR security group is given Run Reports security access to the Assets application.



Once this access is granted, a member of this security group will be able to see the 'Run Reports' action from the Action menu of the application.



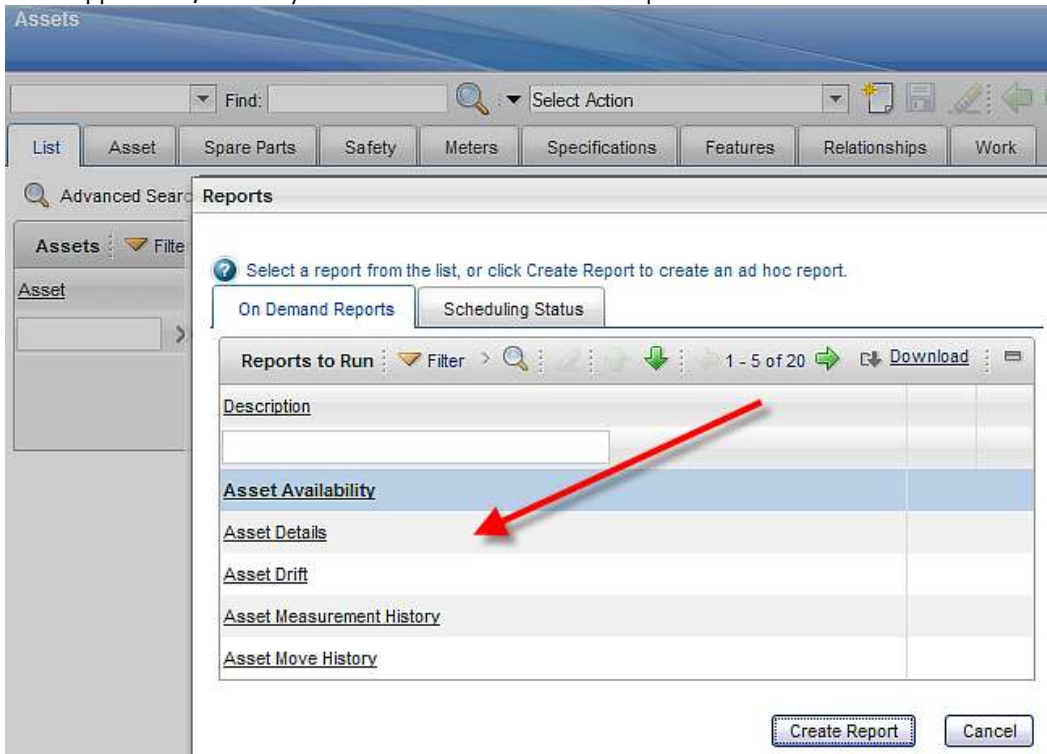


### 3.2 What reports can security groups execute?

After granting Run Report security access in the Security Group application, the administrator then defines which specific reports each security group can access. This report security can be set at

- The Individual Report Level
- All Reports registered to an application
- All reports for all applications the security group has access to

These three different levels of report security access are defined in the Report Administration application. This level of security enables the members of the security group to see and execute a list of specified reports in the Reports window. In this example, the OPSMGR group was given access to All reports in the Asset application, and they have a choice of 20 different reports to choose from.



#### Notes:

1. This report security access is for view and run access only - it does not give the security group the ability to delete a report he has access to.
2. Each of the ways the administrator can set these levels of report security is described in the Report Administration Action section below.

### 3.3 How Security and Report Access Work Together

After security groups have been granted report security privileges, users will be able to access the report capability in a number of different ways. Four ways in which reports can be accessed are:

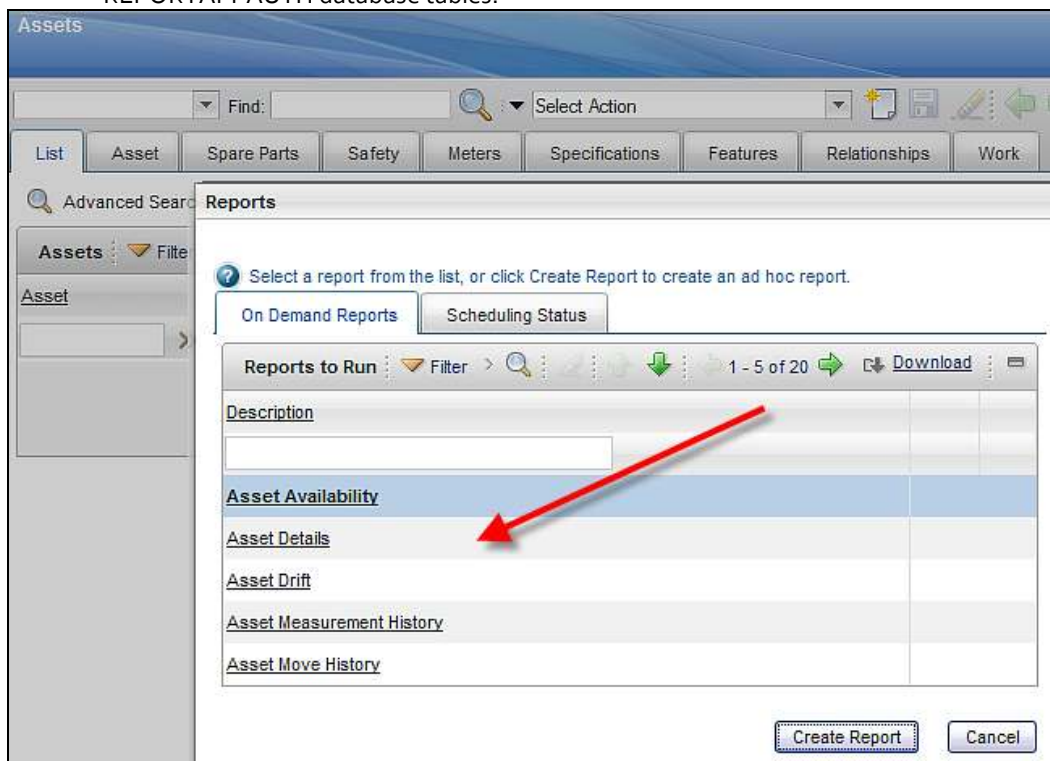
- (1) Reports Window – On Demand Reports Tab
- (2) Report Menu
- (3) Report Icons from an Application's toolbar
- (4) Preview Button from Report Administration

The security for each of these options is described below:

#### (1) Run Report List and (2) Report Menu

The list of reports that the user has access to will be derived from

- (1) the security groups that the user belongs to and
- (2) the report authorization granted to those security groups from the REPORTAUTH and REPORTAPPAUTH database tables.



#### (3) Report Icons from the Application's Toolbar

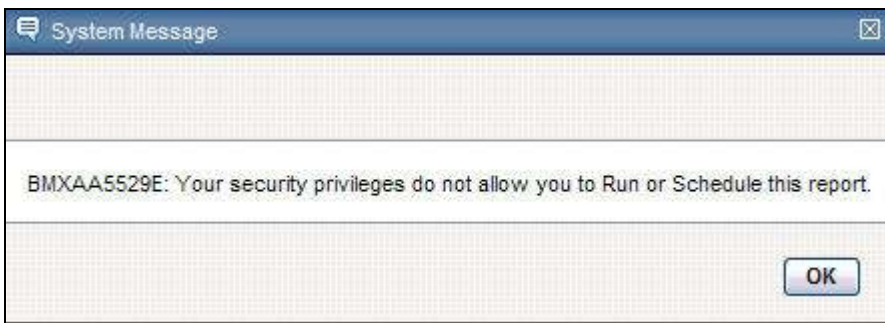
If a user does not have security access to a report, the report icons (📄🖨️ or 📄🖨️) will not be visible to them on the application's toolbar.

(4) Preview Button from Report Admin

The Report Administration application manages all reports – their report settings, parameters, security access and design files. Therefore, if an administrator is granted access to the Report Administration application through the Security Groups application, they will be able to see ALL registered reports. This means that if there are 100 reports registered, the administrator can see all 100 reports within the application.

However, you may not want the administrator to have security rights to each report. Therefore, report security is applied in the Report Administration application at the report Submit level.

This means that an administrator can take action on a report (ex. Add or delete a parameter) that he does not have access to, and preview it. But as soon as the administrator clicks on Submit on the request page, if he does not have security rights to that report, an error message will display



## 3.4 Security Notes – Data Restrictions

Data Restrictions can be enabled to restrict what database records individual security groups see. These restrictions can be used to configure your environment for your unique business needs.

Data Restrictions are set in the Security Group Application, and can then be applied to the various applications. There are three different levels of data restrictions, which are

- (1) Set Data Security, or 'Qualified' Object Restrictions
- (2) Row Level Data Security, or 'Hidden' or 'Read Only' Object Restrictions
- (3) Field Level Data Security. This is also known as 'Hidden', 'Read Only' or 'Required' Attribute Restrictions.

For Reporting, only the first level or Qualified Object Restrictions can be applied. The other two levels can not be enabled for reporting. This occurs because in addition to severely impacting performance, the dynamic placement or non-placement of fields and rows would be extremely difficult to manage.

To enable Set Data Security for reporting, the following conditions must be met:

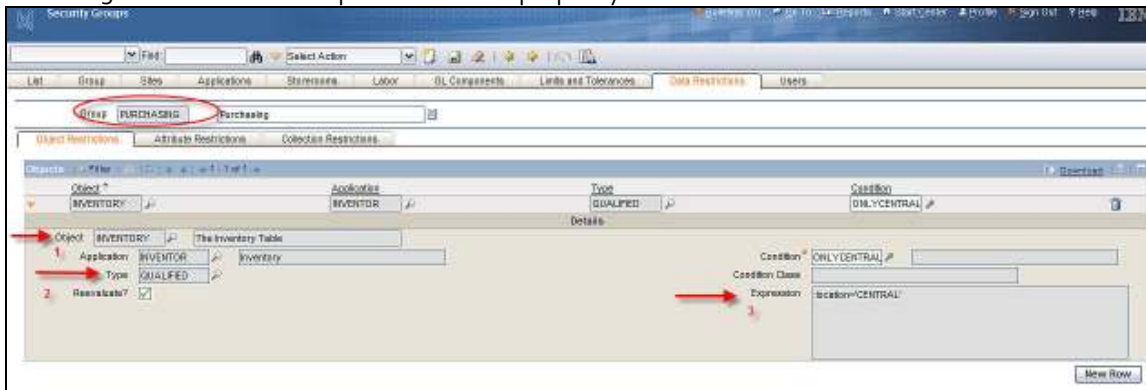
1. The Data Restriction can only be set on the main table (object) of the Application where the report is registered to.
2. The type of Data Restriction must be qualified. It can not be Hidden or Read Only.
3. The Conditional Expression must utilize proper syntax.
4. The SQL of the Report Design must include the main table of the application.

Each of these conditions will be explained in more detail using the Inventory application. In this example, the Security Group Purchasing needs to be set up so it only sees records from the Central Storeroom Location, located in Site Bedford. Even though there are other storeroom locations in Bedford (ex. PKG and GARAGE), the Purchasing Group can only see data from the Central Location.

To enable this, the administrator will first set the storeroom data restriction. He goes to the Security Group application, and filters for Security Group Purchasing. He first confirms that they have all Options Granted for the Inventory application on the Application Tab.

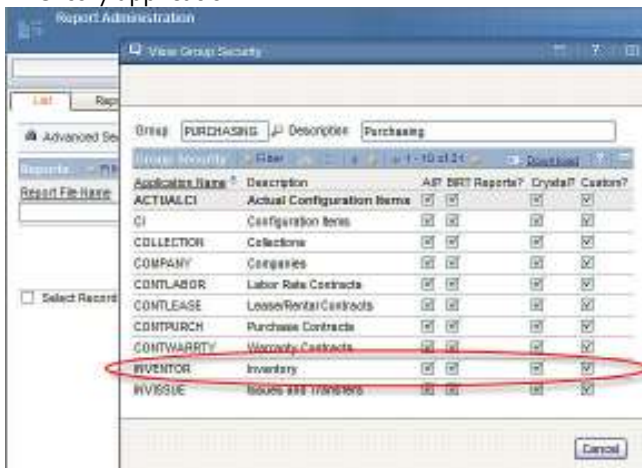
Next, he goes to the Data Restrictions Tab. He then enables the data restriction by implementing the first 3 conditions highlighted below:

1. The Data Restriction is set on the main table (object) of the application where the report is registered to. In this case, it is the INVENTORY application.
2. The type of Data Restriction is set to Qualified.
3. The Conditional Expression utilizes proper syntax



Note: More details on Data Restrictions and the proper syntax for setting up Conditional Expressions are contained in the System Administrator's Guide in Chapter 2.

The administrator saves the new data restriction. Then, the administrator confirms that the Purchasing Security Group has access to see specific Inventory Reports from the Report Administration application. The View Group Security Action in this application shows that Purchasing has all access to reports in the Inventory application.



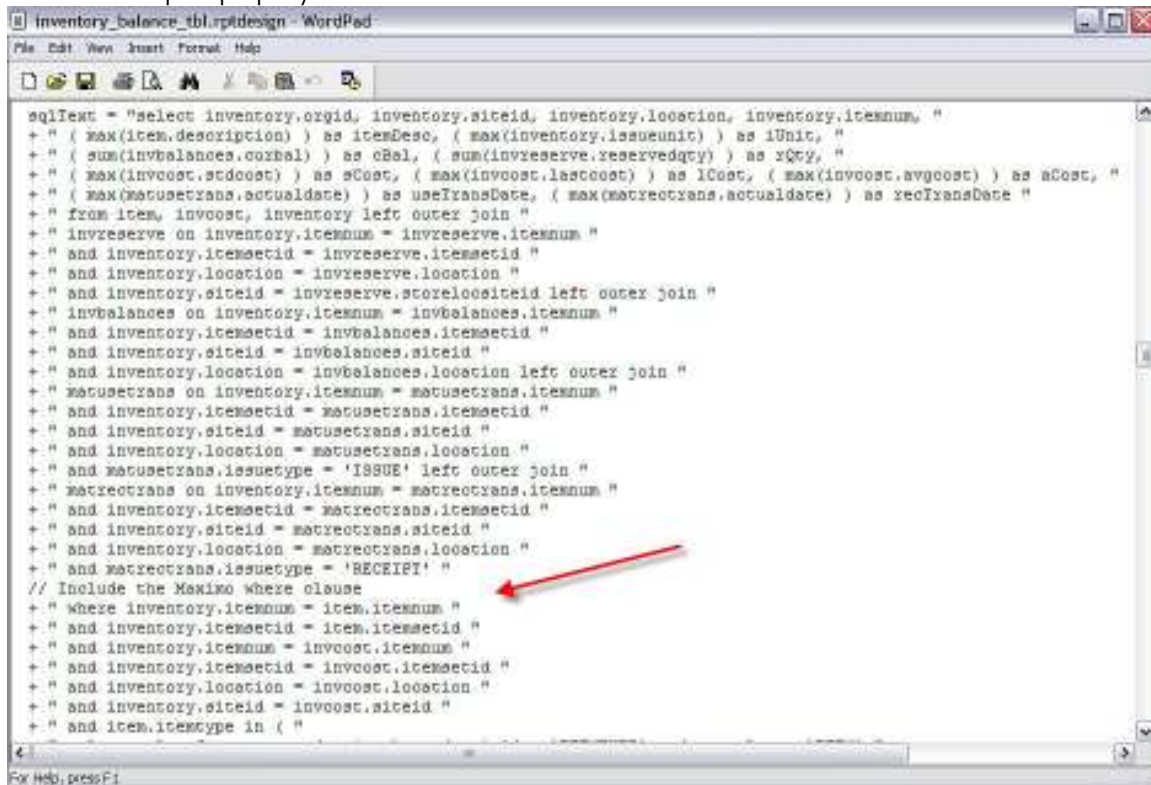
After this has been confirmed, the administrator signs out.

One last step must be completed to insure the data restrictions apply to reports. That step requires that the main table of the application that the report is registered to must be included in the report design's sql statement. Continuing with our example, the Inventory Balance report will be used, and it must be confirmed that the main table of the Inventory application (INVENTORY) is contained in its report's sql.

To do this, either open up the Report Design file (inventory\_balance\_tbl.rptdesign) located in <V7>\reports\birt\reports\INVENTOR in the BIRT Designer or in a text editor.

Scroll down to find the report's sql and confirm that INVENTORY is included. In this case, it is, so the data restrictions can properly pass to the report.

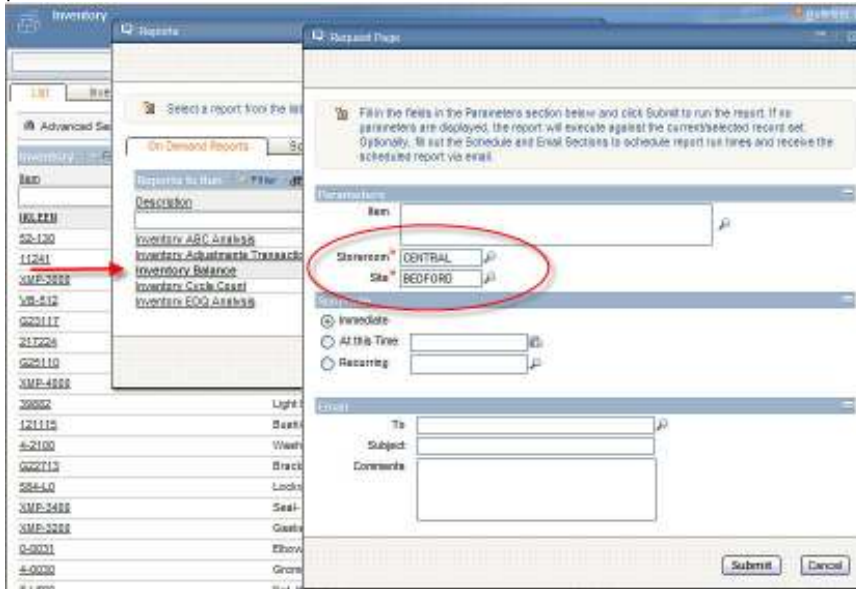
If the main table was not included in the report's sql, it would have to be added in order for the data restrictions to pass properly.



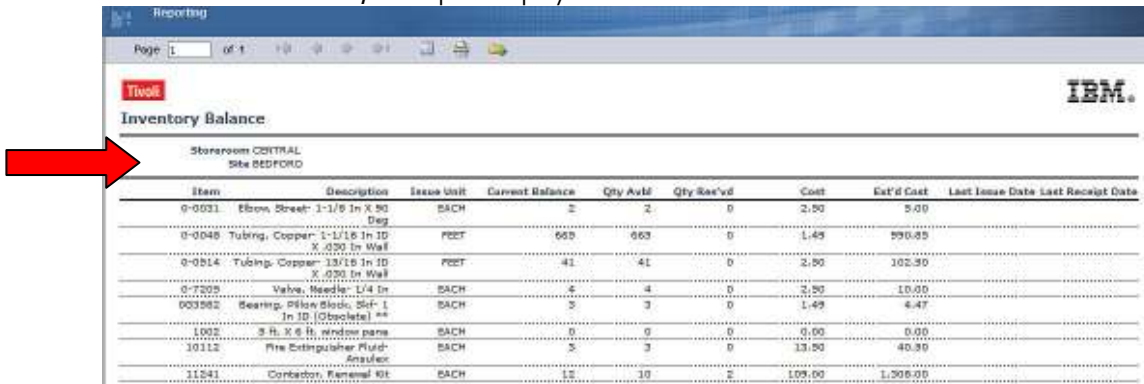
```
sqlText = "select inventory.orgid, inventory.siteid, inventory.location, inventory.itemnum, "
+ " ( max(item.description) ) as itemDesc, ( max(inventory.issueunit) ) as iUnit, "
+ " ( sum(inbalances.cobal) ) as cBal, ( sum(invreserve.reservedqty) ) as rQty, "
+ " ( max(invcost.sdcost) ) as sCost, ( max(invcost.lascost) ) as lCost, ( max(invcost.avgcost) ) as aCost, "
+ " ( max(matustrans.actualdate) ) as useTransDate, ( max(matrectrans.actualdate) ) as recTransDate "
+ " from item, invcost, inventory left outer join "
+ " invreserve on inventory.itemnum = invreserve.itemnum "
+ " and inventory.itemsetid = invreserve.itemsetid "
+ " and inventory.location = invreserve.location "
+ " and inventory.siteid = invreserve.storelocsiteid left outer join "
+ " invbalances on inventory.itemnum = invbalances.itemnum "
+ " and inventory.itemsetid = invbalances.itemsetid "
+ " and inventory.siteid = invbalances.siteid "
+ " and inventory.location = invbalances.location left outer join "
+ " matustrans on inventory.itemnum = matustrans.itemnum "
+ " and inventory.itemsetid = matustrans.itemsetid "
+ " and inventory.siteid = matustrans.siteid "
+ " and inventory.location = matustrans.location "
+ " and matustrans.issueunit = 'ISSUE' left outer join "
+ " matrectrans on inventory.itemnum = matrectrans.itemnum "
+ " and inventory.itemsetid = matrectrans.itemsetid "
+ " and inventory.siteid = matrectrans.siteid "
+ " and inventory.location = matrectrans.location "
+ " and matrectrans.issueunit = 'RECEIPT' "
// Include the Maximo where clause
+ " where inventory.itemnum = item.itemnum "
+ " and inventory.itemsetid = item.itemsetid "
+ " and inventory.itemnum = invcost.itemnum "
+ " and inventory.itemsetid = invcost.itemsetid "
+ " and inventory.location = invcost.location "
+ " and inventory.siteid = invcost.siteid "
+ " and item.itemtype in ( "
```

Note: If modifications are made to the report's sql, the updated design file must then be imported into the database. More information on this is contained within this guide.

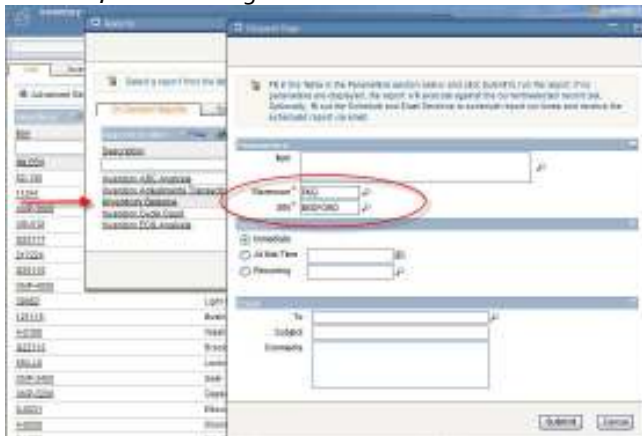
Once the setup items are completed, confirm that the data restrictions apply to reports. To do this, a member of the Purchasing Security Group, Liberi, signs in. Liberi goes to the Inventory application, and selects Run Reports from the Action Menu. She selects the Inventory Balance report, and enters parameter values for the Storeroom (Central) that she has access to.



When she clicks Submit, the report displays with the values from the Central Location.

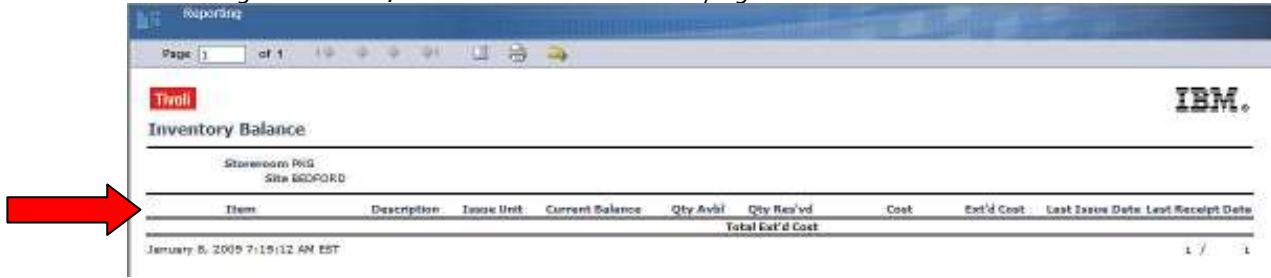


Liberi repeats this process by running the same report against a storeroom she does not have access to. In this case, she runs it against Storeroom PKG.





When she clicks submit, the report initiates, but it does not display any data. This is correct behavior as even though data exists, Liberi does not have security rights to view it.



The screenshot shows a web browser window with the title 'Reporting'. The page content includes the IBM logo, the report title 'Inventory Balance', and the location 'Statenroom PRG Site BGDPORD'. Below this is a table with the following columns: Item, Description, Issue Unit, Current Balance, Qty Avail, Qty Res'vd, Cost, Ext'd Cost, Last Issue Date, and Last Receipt Date. A red arrow points to the 'Inventory Balance' title. The table is currently empty, and the footer shows 'January 8, 2009 7:15:12 AM EST' and '1 / 1'.

Finally, if you need to implement Hidden or Read Only Object or Attribute Restrictions (the 2<sup>nd</sup> and 3<sup>rd</sup> Data Restriction Level) for a specific security group, there are a few different options available. These options will be explained by using an example from the Work Order Tracking application.

The Scheduling Security Group should have access to the Work Order Tracking application, however, this group should *not* have visibility on the Planned Labor and Actual Labor Costs within this application. These fields should be hidden from the Scheduling Security Group. This is called 'field level' security. Once this field level security is implemented, members of the Scheduling Security Group do not see these fields within the Work Order Tracking application.

However, this field level security can not be applied to reports. Therefore, if there are reports that contain Planned Labor and Actual Labor Costs (like Work Order Details), the following Options exist:

1. Do not grant Report Security access to these reports to the Scheduling Security Group.
2. Make a copy of the Work Order Details report and re-name it to something like Work Order Details – Scheduling Group. Then, remove the planned and actual labor costs from this report. Grant report security access to the Scheduling Group to this new report that has the cost information removed.

More details on Data Restrictions and the proper syntax for setting up Conditional Expressions are contained in the System Administrator's Guide in Chapter 2.

#### Notes on Data Restrictions and Reporting:

1. Collections are a 'special' type of object restriction related to collections of CIs, assets or locations. A collection restriction is at the set and row level - creating one creates a number of hidden and qualified object restrictions behind the scenes. Collection data restrictions are also not applied to reporting.
2. If you are hyperlinking to a report, and data restriction is in place, make sure to qualify the table (object) name. If it is not qualified, the hyperlinked report may display blank data.

\*Note: For more details on enabling hyperlinks in reports, reference the V7 Report Development Guide.



## 4 Importing Report Designs into the V75 Database

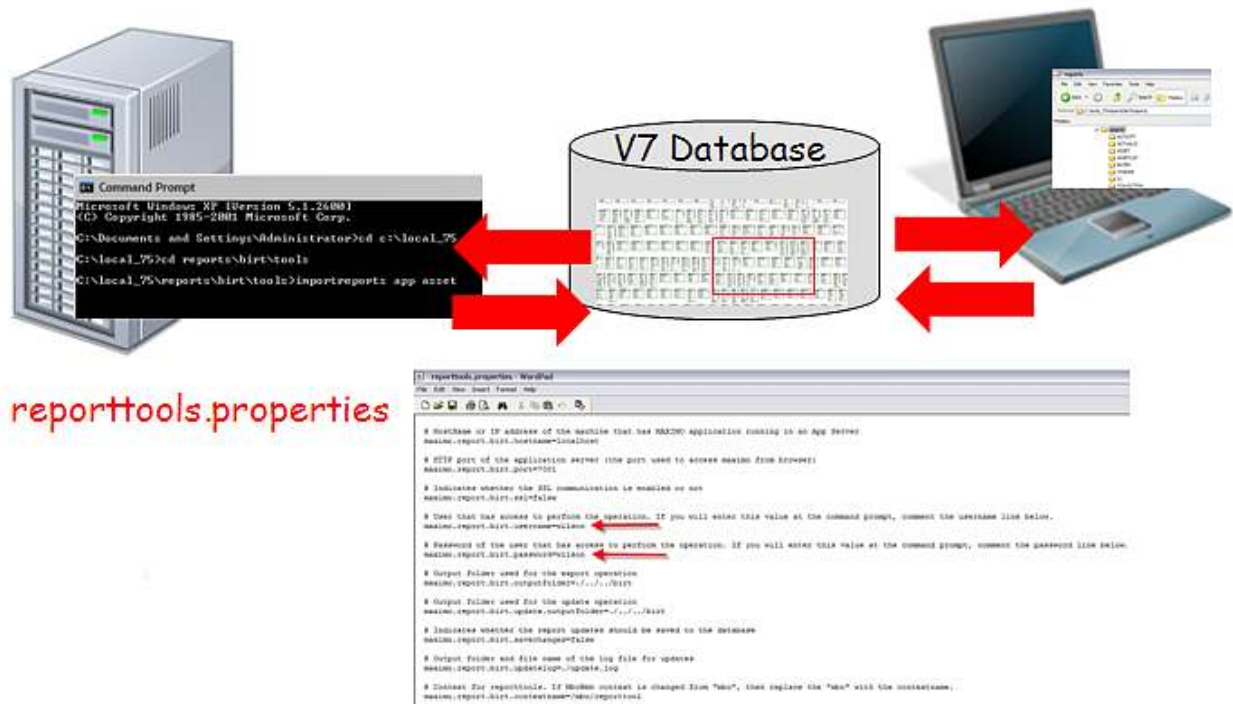
As noted earlier, the repository for the report design files is the V75 database. These files are extracted at run time to meet the individual's report request.

During the V7 installation process highlighted at the beginning of this guide, the import process is performed. Additionally, when a JVM is restarted, the reports directory is checked to see if any new reports have been added. If new reports are detected, the import process will be initiated to bring in the new files only. A complete import of all reports is not done on a JVM system restart.

Note: A JVM restart will not import updated report design files. If you have updated your report design files, you need to import them thru the import utilities or via the Report Administration actions described below.

However, administrators and developers may need to import or export report design files from the V75 database repository outside of any installation or JVM restart process. For example, they may need to export existing or ad hoc report design files from the database so the design files can be modified in the report design tool. Then, once the updates are made, the administrator would import the updated design file into the database.

Importing and exporting of the report design files can be done via command utilities. A key component of these utilities is a properties file called `reporttools.properties`. This property file contains information on the application server, the file directory where the reports designs are either coming from or going to, and username and password information on the user performing the operation. This process is shown in the diagram below.



## 4.1 Set Up: reporttools.properties

Before the importing or exporting processes can occur, the reporttools.properties file must be configured by following the steps below

Browse to the tool location ...<V75> \reports\birt\tools. Locate and open the reporttools.properties file shown below. Enter the standard values required for this file.

```
reporttools.properties - WordPad
File Edit View Insert Format Help

# HostName or IP address of the machine that has MAXIMO application running in an App Server
maximo.report.birt.hostname=localhost

# HTTP port of the application server (the port used to access maximo from browser)
maximo.report.birt.port=7001

# Indicates whether the SSL communication is enabled or not.
maximo.report.birt.ssl=false

# User that has access to perform the operation. If you will enter this value at the command prompt, comment the username line below.
#maximo.report.birt.username=wilson

# Password of the user that has access to perform the operation. If you will enter this value at the command prompt, comment the password line below.
#maximo.report.birt.password=wilson

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

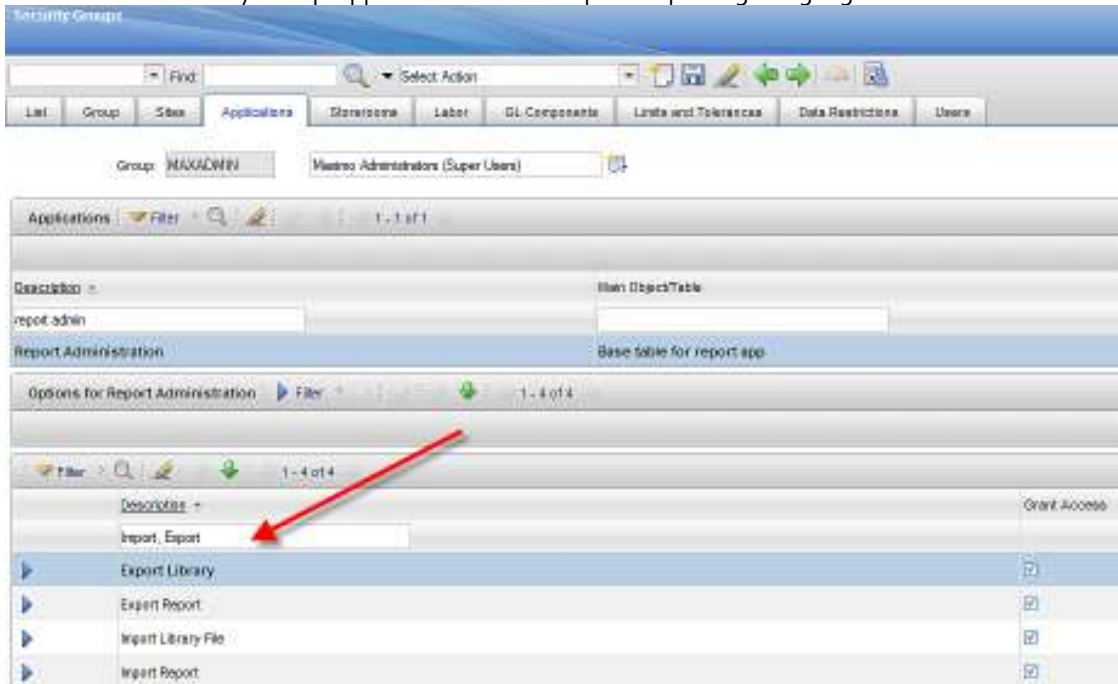
# Output folder used for the update operation
maximo.report.birt.update.outputfolder=../../birt

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

# Output folder and file name of the log file for updates
maximo.report.birt.update.log=./update.log

# Context for reporttools. If MboWeb context is changed from "mbo", then replace the "mbo" with the contextname.
maximo.report.birt.contextname=/mbo/reporttool
```

Within this file, there are entries for the user who has privileges to import and export reports. This user is defined in the Security Group Application in Maximo per the privileges highlighted below.



You have the option to both input the username and password into the property file, or not.

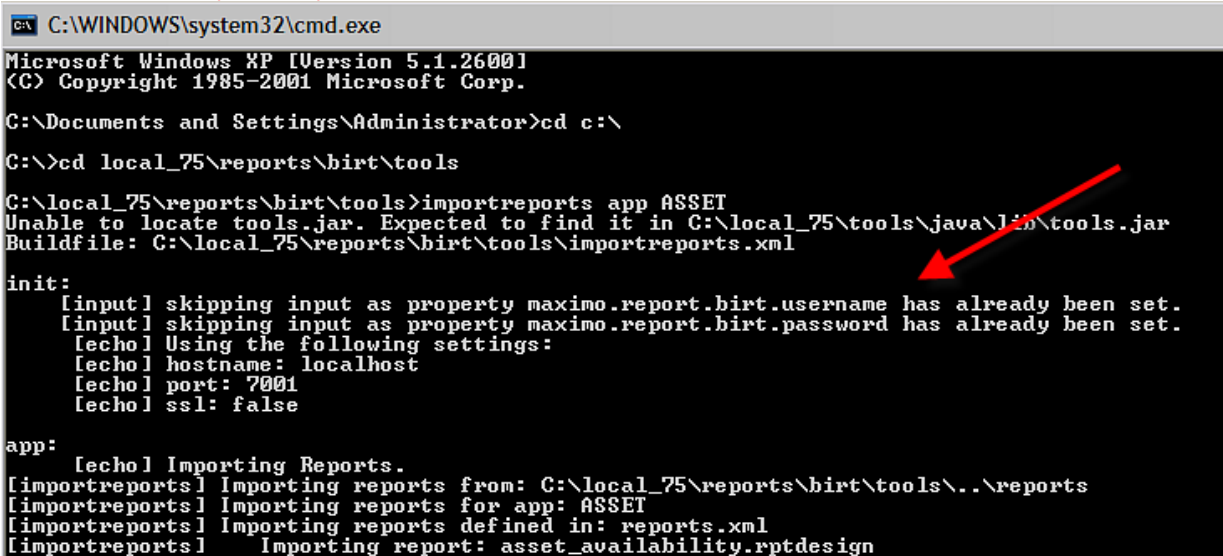
If you enter the username and password values in the reporttools.properties file, they will be used when the import or export utility is used. This is shown in the example below.

# User that has access to perform the operation

`maximo.report.birt.username=wilson`

# Password of the user that has access to perform the operation

`maximo.report.birt.password=wilson`



```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>cd c:\
C:\>cd local_75\reports\birt\tools
C:\local_75\reports\birt\tools>importreports app ASSET
Unable to locate tools.jar. Expected to find it in C:\local_75\tools\java\lib\tools.jar
Buildfile: C:\local_75\reports\birt\tools\importreports.xml

init:
[input] skipping input as property maximo.report.birt.username has already been set.
[input] skipping input as property maximo.report.birt.password has already been set.
[echo] Using the following settings:
[echo] hostname: localhost
[echo] port: 7001
[echo] ssl: false

app:
[echo] Importing Reports.
[importreports] Importing reports from: C:\local_75\reports\birt\tools\..\reports
[importreports] Importing reports for app: ASSET
[importreports] Importing reports defined in: reports.xml
[importreports] Importing report: asset_availability.rptdesign
  
```

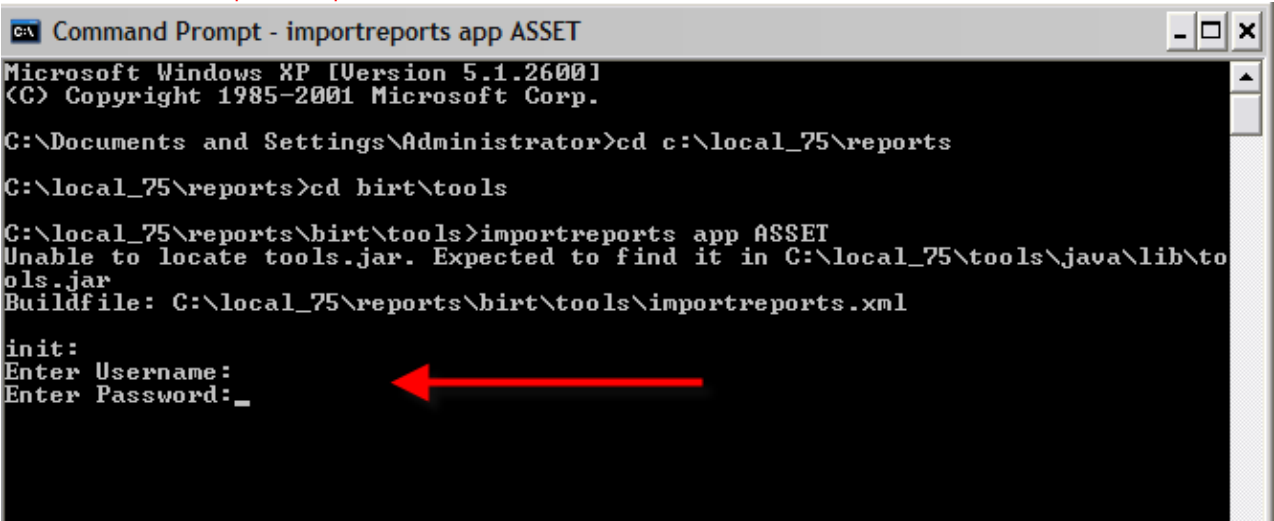
If you *do not* enter the username and password values in the reporttools.properties file, you will be prompted to enter them when you execute the import or export utilities per the example below.

# User that has access to perform the operation

`#maximo.report.birt.username=abcbac`

# Password of the user that has access to perform the operation

`#maximo.report.birt.password=abcbac`



```

C:\ Command Prompt - importreports app ASSET
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>cd c:\local_75\reports
C:\local_75\reports>cd birt\tools
C:\local_75\reports\birt\tools>importreports app ASSET
Unable to locate tools.jar. Expected to find it in C:\local_75\tools\java\lib\tools.jar
Buildfile: C:\local_75\reports\birt\tools\importreports.xml

init:
Enter Username:
Enter Password:_
  
```

## 4.2 Import Command Utility

Importing brings reports into the database. If the report design is new, a new record will be created in the database. If the report design exists, the import process will over-write the existing file. After the import is complete, the updated or new files will be located in the REPORTDESIGN table, which holds the design files, resource files and library files.

If you have a large number of reports to import, you may want to use the import command utility. The import process uses the reports.xml file to import the report design files in the database. A reports.xml file is available for each application that has reports, and is located in the directory <V75>reports\birt\reports.

The reports.xml file references each report design for the individual application. If a report design is not referenced in the reports.xml file, it will not be imported during the command utility process. Details on updating the reports.xml file for any new report files you may create can be found in the 'V75 Report Developer's Guide' referenced at the end of this document.

To use the import utility, follow the steps below.

1. On the V75 server, open a command prompt window and change to the folder <V75> \reports\birt\tools.

Then, run any of the following variations of the import utility

A. importreports

Imports all reports, libraries and resource files in the single import action.

B. importreports help

Displays details on the various import commands

C. importreports libraries

Imports all the libraries

D. importreports reports

Imports all the reports

E. importreports app [appname]

Imports all reports for a specified application.

This command is useful if you only want to import reports for a single application. For example:

importreports app CONFIGUR will import all the reports in the CONFIGURATION application. These are the reports found in the directory below:

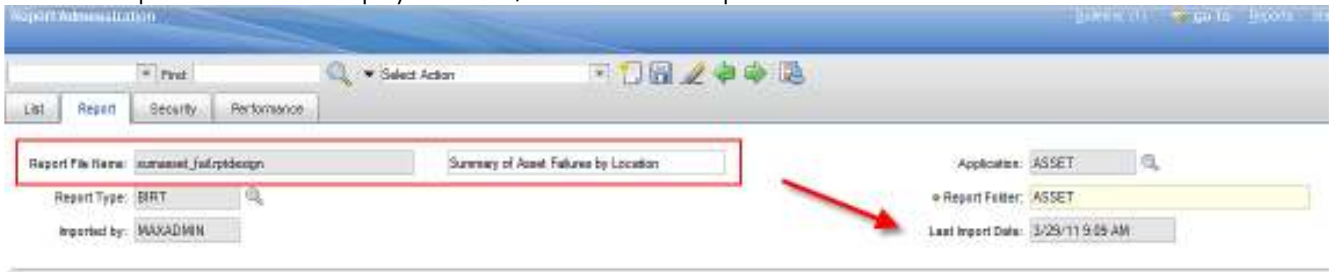
<V75> \reports\birt\reports\CONFIGUR

```

c:\> Command Prompt - importreports
[importreports] Importing report: woprnt.rptdesign
[importreports] Importing reports for app: ACTUALCI
[importreports] Importing reports defined in: reports.xml
[importreports] Importing report: actualci_detail.rptdesign
[importreports] Importing report: actualci_history.rptdesign
[importreports] Importing reports for app: ASSET
[importreports] Importing reports defined in: reports.xml
[importreports] Importing report: asset_availability.rptdesign
[importreports] Importing report: detailasset_fail.rptdesign
[importreports] Importing report: drillasset_fail_tbl.rptdesign
[importreports] Importing report: sumasset_fail.rptdesign
[importreports] Importing report: asset_costrollup.rptdesign
[importreports] Importing report: asset_costrollup_update.rptdesign
[importreports] Importing report: assetmove_history.rptdesign
[importreports] Importing report: asset_glaccount.rptdesign
[importreports] Importing report: asset_po.rptdesign
[importreports] Importing report: mgmt_sw.rptdesign
[importreports] Importing report: asset_detail.rptdesign
[importreports] Importing report: asset_subassembly.rptdesign
[importreports] Importing report: asset.rptdesign
[importreports] Importing report: asset_measurehist.rptdesign
[importreports] Importing report: oee_kpi_by_site.rptdesign
[importreports] Importing report: oee_kpi_by_location.rptdesign
[importreports] Importing report: oee_kpi_by_asset.rptdesign
    
```

4. After the import is complete, sign into your Application as the administrator. Go to the Report Administration application, and generate the XML for the reports. This completes the process for importing new or updated design files.

Additionally, you can view that the import occurred by looking at the 'Last Import Date' field for an individual report record. This displays the date/time of the last import.



Note: Details on importing a report thru the Report Administration application are provided in the 'Report Administration Action' section toward the end of this document.

## 4.3 Export Command Utility

You may want to export report design files for a report developer to modify, or you may want to extend an Ad Hoc or Query Based (QBR) report. For example, a user asks that an Ad Hoc report he created be extended to include a bar chart to the report. To save the developer time, the Ad Hoc report can be exported, and opened in the BIRT Designer. The developer can add the bar chart, and then import the design file back into the database as an enterprise report.

Exporting of reports is enabled as a utility only.

To enable exporting, go to the server, open a command prompt window and change to the folder <V75>\reports\birt\tools. Then, any of the commands below are available:

- A. `exportreports`  
Exports all libraries and reports.
- B. `exportreports report`  
Exports all reports.
- C. `exportreports library`  
Exports all libraries.
- D. `exportreports app [appname]`  
Exports all reports for the specified application.
- E. `exportreport report [appname] [reportfilename]`  
Exports single, specified report for the specified application.

The report will be exported to the location defined by

- (1) the `reporttools.properties` file and
- (2) its report folder that it is registered to in the Report Administration application.

Export Example

The example below will use wotrack.rptdesign to show the exporting functionality. The reporttools.properties file has been set to use the output location shown below in red:

maximo.report.birt.outputfolder= **c:/V75/reports/birt/reports**

Additionally, the wotrack.rptdesign is located in the following applications and report folders:

Report Name	App Name	Report Folder	Description
woprint.rptdesign	QUICKREP	WOTRACK	Quick Reporting
woprint.rptdesign	CHANGE	WOTRACK	Change
woprint.rptdesign	RELEASE	WOTRACK	Release
woprint.rptdesign	ACTIVITY	WOTRACK	Activity
woprint.rptdesign	WOTRACK	WOTRACK	Work Order

When the various exports commands are executed, the following will occur:

1. exportreports

Exports all reports to c:/V75/reports/birt/reports and their various subfolders

AND Exports all libraries to c:/V75/reports/birt/libraries

2. exportreports report

Exports all reports to c:/V75/reports/birt/reports and their various subfolders

3. exportreports library

Export all libraries to c:/V75/reports/birt/libraries

4. exportreports app WOTRACK

Exports all reports registered to WOTRACK to c:/V75/reports/birt/reports/WOTRACK

5. exportreport report WOTRACK woprint.rptdesign

Exports woprint.rptdesign to c:/V75/reports/birt/reports/WOTRACK

### Additional Export Details

- A. If a report structure is not available in the location where the export is to occur, a file structure will be created.
- B. If a reports.xml is not available in the location where the export is to occur, the reports.xml will be created.
  - This may occur if you create a new custom report design file, and register and import the report thru the Report Administration application.
  - If you do this and you make subsequent changes to the parameters or settings of the report in the Report Administration application, make sure to export the report design file so any changes you are made are captured in the new reports.xml file.
- C. If a reports.xml file does exist - the export will not overwrite the existing file.
  - In this case, a new one will be created using a –filename. Ex: In WOTRACK folder, if reports.xml exists and a new export occurs, a new reports-wotrack.xml file will be created.  
This new reports-wotrack.xml will take precedence over the reports.xml file during any future importing actions.
- D. Both the import and export command utility tools use HTTP, not RMI, to support application server security. Only BASIC authentication is supported.

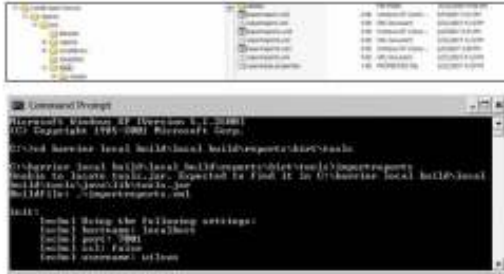
To enable the utilities for use with application server security, you must modify  
<V75>\applications\maximo\mboweb\webmodule\WEB-INF\web.xml.

Open the file with a text editor and search for "AppServer security". Follow the instructions under the NOTE.



Importing of the design files and any dependant report files (libraries, resource files) can be done in two ways - (1) Bulk - Thru Command Utilities or (2) Individually – Through an action in the Report Administration application. The table below describes the differences between the two.

### Bulk Import Utilities



### Individual UI Action



Type	Bulk Import	Individual Import
Description	To import multiple reports or libraries. Import options include all reports/libraries, libraries only, reports for a specified application.	To individually import a single report or library.
Access	Command Utility available from <V7>\reports\birt\tools	Action Available from Report Administration application.
Where Used	...when a number of new reports are created for a Cloned application. The administrator has access to the application server, and wants to import all the new reports for the Cloned application at one time.	...when an administrator needs to import a single report file or library. This may be a new report, or an update to an existing report. Additionally, the administrator may not have access to the application's console, so he can not utilize the command functions.

## 4.4 Update Reports Utility

Additional update utilities can be used to 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 update utilities are available for both Enterprise Reports, and Ad Hoc or QBR Reports.

For enterprise reports, the four update utilities available are:

1. `updatereports`

Updates all reports.

2. `updatereports savechanges`

Updates reports and saves the modified reports to the database.

3. `updatereports app [appname]`

Updates all reports for the specified app.

4. `updatereports app [appname] savechanges`

Updates all reports for the specified app and saves the modified reports to the database

For Ad Hoc reports, the update utility available is:

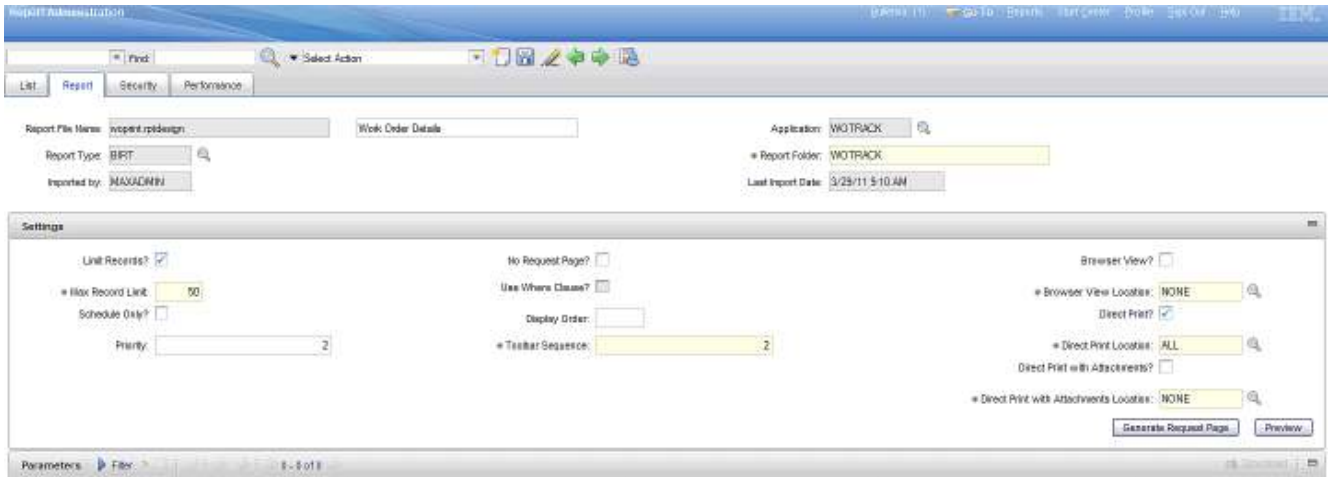
1. `updateqbrs`

Updates all QBR report designs

Specific details on how you can use these utilities can be found in the Update Reports Utility document located on IBM's support website. Information on locating this can be found in the Reference Materials section at the end of this document.

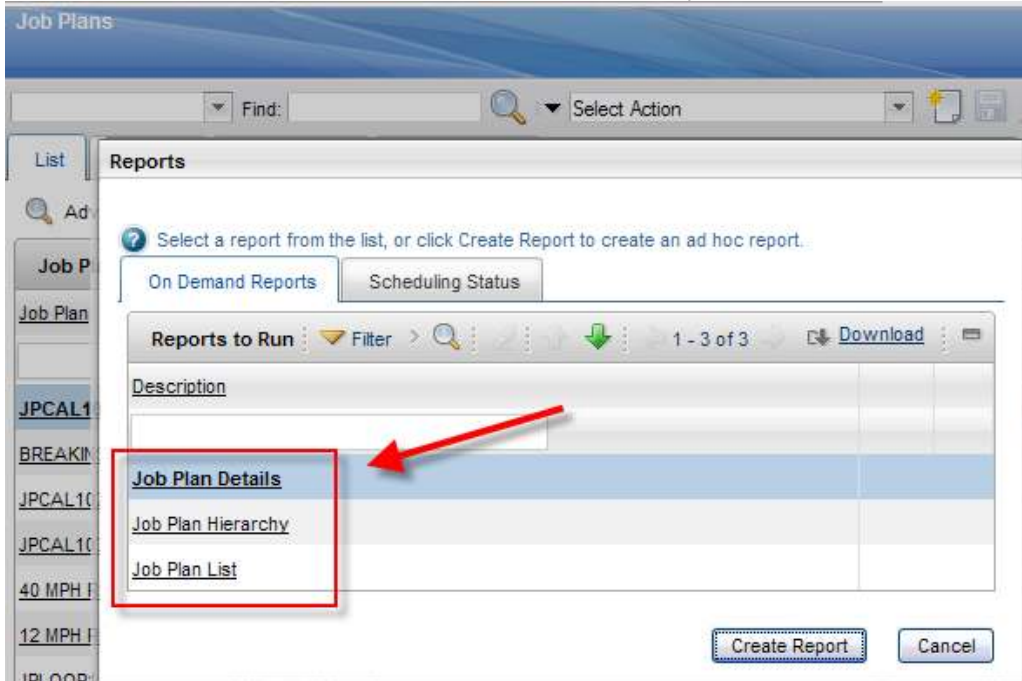
## 5 Report Administration Features

This section details the various features enabled within the Report Administration application. Additionally, it provides more information on individual features including report names, sequencing, priorities, application access and many other features.

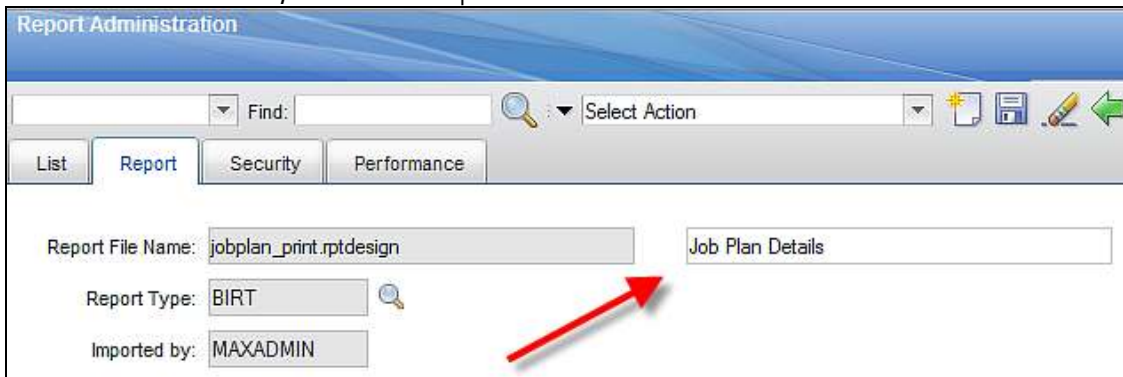


## 5.1 Report Description and Name

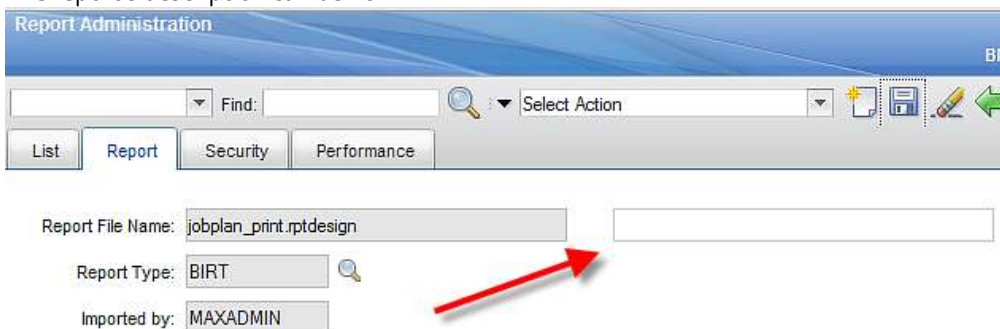
When a user receives the listing of the reports that he has access to, the report's description is displayed. This value correlates to REPORT.DESCRPTION., and an example is shown below.



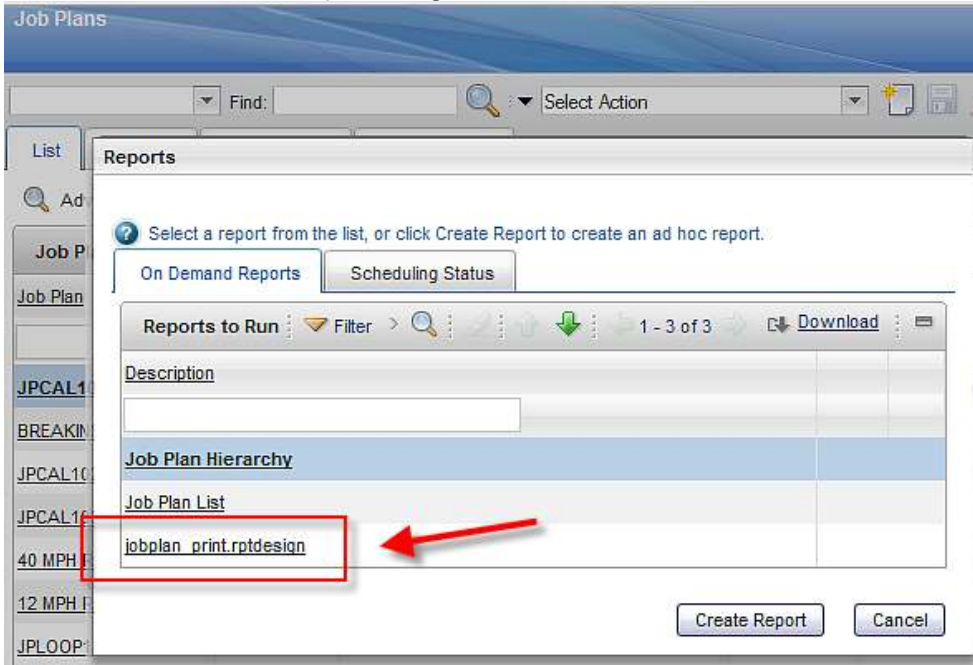
The report's description can be seen in the Report Administration application in the field next to the report file name. Note however, that this is an optional field.



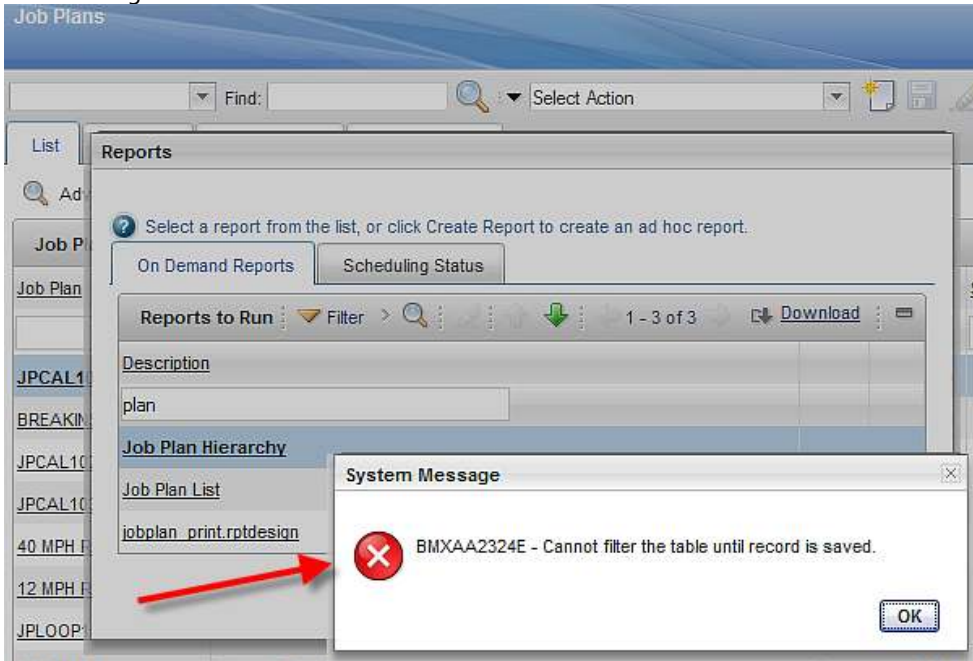
The report's description can be null.



If its description is null, the value that will display to the end user is the report's design file name which is a required field. (REPORT.REPORTNAME). In this case, the value of jobplan\_print.rptdesign is displayed to the end user from the Run Report dialog.



If this scenario occurs, the user will be unable to filter his listing of reports from the dialog. If he tries to filter and a reports' file name is included in the list instead of the report's description, an error will display that filtering is unavailable.



## 5.2 Record Limits

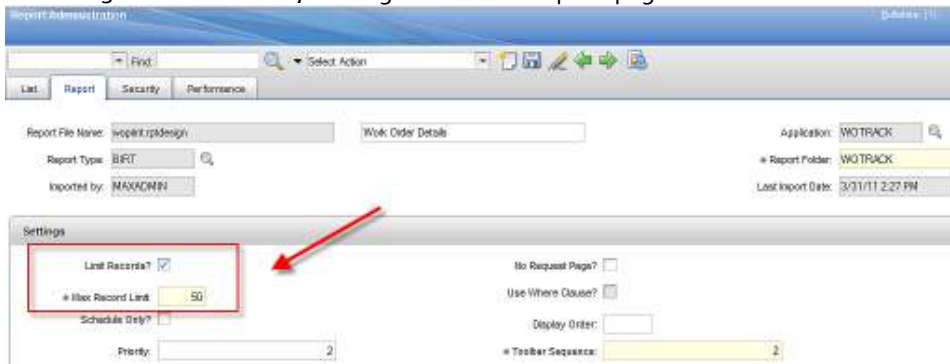
Occasionally, users may inadvertently execute reports against large or very large record sets within an application. This can cause negative performance impacts on both the application and database server.

An example of this scenario can be described using the Work Order Tracking application. In this case, a user wants to print out 10 new work orders which were input during the night shift. However, the user forgot to filter their query, and instead of submitting a Work Order Details Report Request for the only the 10 new work orders, they input a Work Order Details Report Request for all work orders, totaling over 2500 records. And because the Work Order Details report is a very complex report, this request can tie up the application and database server for some time.

To minimize these errors, record limit functionality is available so you can define exactly the maximum number of records a report can execute against. This functionality can be set for reports that use the application record set. (For details on an application record set, reference the section titled 'Application Reports – Type 2')

The record limit functionality can be quickly defined for a report in the report administration application by following these steps:

1. Enable the Limit Record Flag
2. Input a value for the Max Record Limit. The value must be greater than 1, but there is no limit on the maximum number that can be input.
3. Save the record, and regenerate the request page xml.



The screenshot shows the 'Report Administration' interface. The 'Settings' tab is active, and the 'Limit Records?' checkbox is checked. The 'Max Record Limit' is set to 50. A red arrow points to the 'Max Record Limit' field. Other settings visible include 'No Request Page?' (unchecked), 'Use Where Clause?' (unchecked), 'Display Order' (empty), and 'Toolbar Sequence' (2). The report name is 'Work Order Details' and the application is 'WOTRACK'.

Note: This value can also be defined on the Performance Tab of the individual report's record.

Then, when a user executes a report where these values are defined, a count of the user's current record selection is made from the application they are in. This value is then checked against any record limits set for the selected report.

- If the current record set is greater than the record limit, a message is displayed to the user to reduce his query.
- If the current record set is less than the record limit, the report is executed.

If a user tries to execute a report from the app against a record set of 100 records - and the report has a limit of 50 - an error message will display: 'BMXAA3412E – Result set exceeds maximum allowed count of 50 for the report. Please narrow your result set and request the report again.'

Notes:

A. To enable Direct Print (DP) and Direct Print with Attachments (DPA) Functionality, the Record Limit flag must be enabled and a max record limit set.

B. A number of Out of the Box Reports have these values set. A listing of them can be found in the 7.5 Report Booklet referenced at the end of this guide.

C. The corresponding database fields enabling this functionality are:

REPORT.DETAIL = Limit Records YORN Field

REPORT.RECORDLIMIT = Maximum Record Limit

D. If a report has record limits enabled, it can not be executed from

1. The Preview Button in Report Administration
2. The External Reports Menu from the application

The report can only be executed from within the application so a count of its records is available before the report is executed.

## 5.3 Report Priorities

A 'Priority' field is available in the Report Settings section of the Report Tab in Report Administration. This value is stored in the Report table as REPORT.PRIORITY.

The report priority is used for report queuing. Based on ascending order of priority, report jobs are prioritized in the reporting queue based on ascending order of priority. More details on Report Queuing are available in the Report Queuing Section.

An administrator can assign priorities to reports other than BIRT. Priorities are not used in the out of the box functionality, but you could use them to potentially extend the reporting functionality.

The screenshot displays the 'Report Administration' interface. At the top, there is a search bar and a 'Select Action' dropdown. Below this are tabs for 'List', 'Report', 'Security', and 'Performance'. The 'Report' tab is active, showing fields for 'Report File Name' (wooprint\_optoksign), 'Work Order Details', 'Report Type' (BIRT), and 'Imported by' (MAXADMIN). A 'Settings' section is expanded, showing various configuration options. The 'Priority' field is highlighted with a red box and contains the value '2'. Other settings include 'Link Records?' (checked), 'Max Record Limit' (50), 'Schedule Only?' (unchecked), 'No Request Page?' (unchecked), 'Use Where Clause?' (unchecked), 'Display Order' (empty), and 'Toolbar Sequence' (2).



## 5.4 Report Sequencing

Report sequencing enables administrators to specify the order of the reports displayed in the Report Run Dialog. By enabling the sequence field, you can manage the report display order, so users do not have to filter or scroll through pages of reports to find their report. This enables users to quickly see their most frequently accessed reports in the report display window.

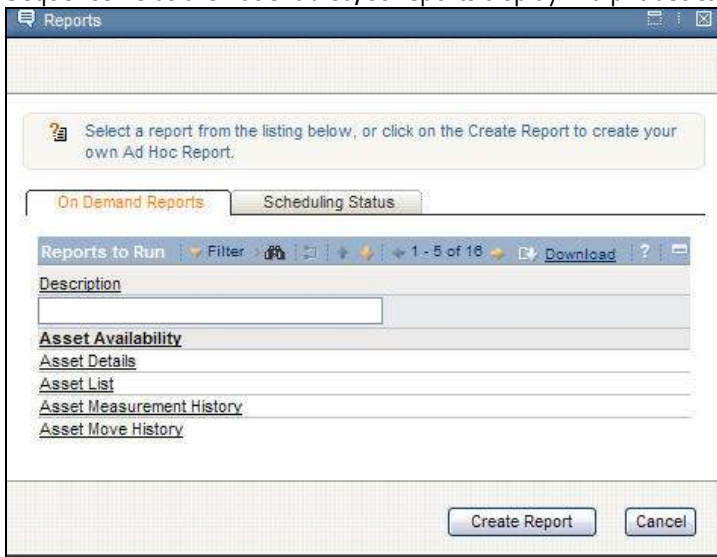
The Display field applies to a variety of report types – BIRT, QBR, Cognos, or Custom. The Display Order field is not required. If the Display Order is not specified, the reports will display in alphabetical order. Also, the display order can be applied to some reports within an application and not others.

To enable this functionality, the administrator will define that Display Order field for Reports within the Report Administration application.

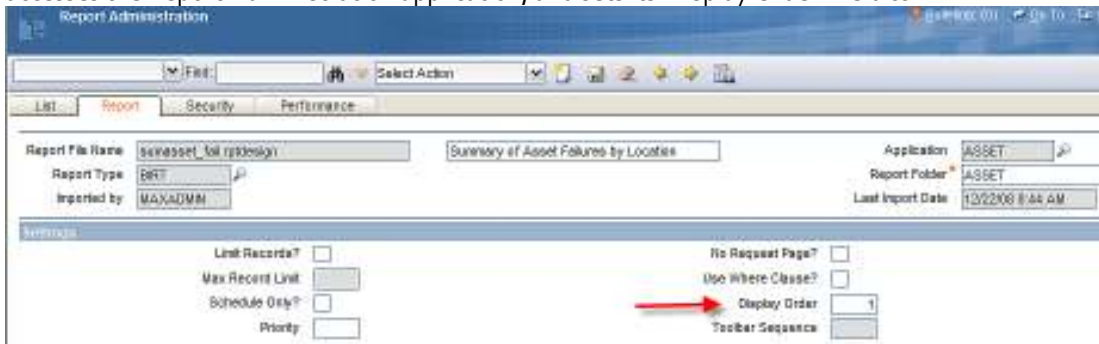
For BIRT Reports, this functionality can be set in the application's reports.xml file and defined when the report is imported. Its new database field is REPORT.DISPLAYNAME.

Unlike the report's toolbar sequence value, the display order field does not have to be unique within the application. This can make it easier for report administrator's to manage the display of their reports as new reports get added, and others deleted. The combination of the sequence field and the report's description (ascending order) will determine the display order of the reports.

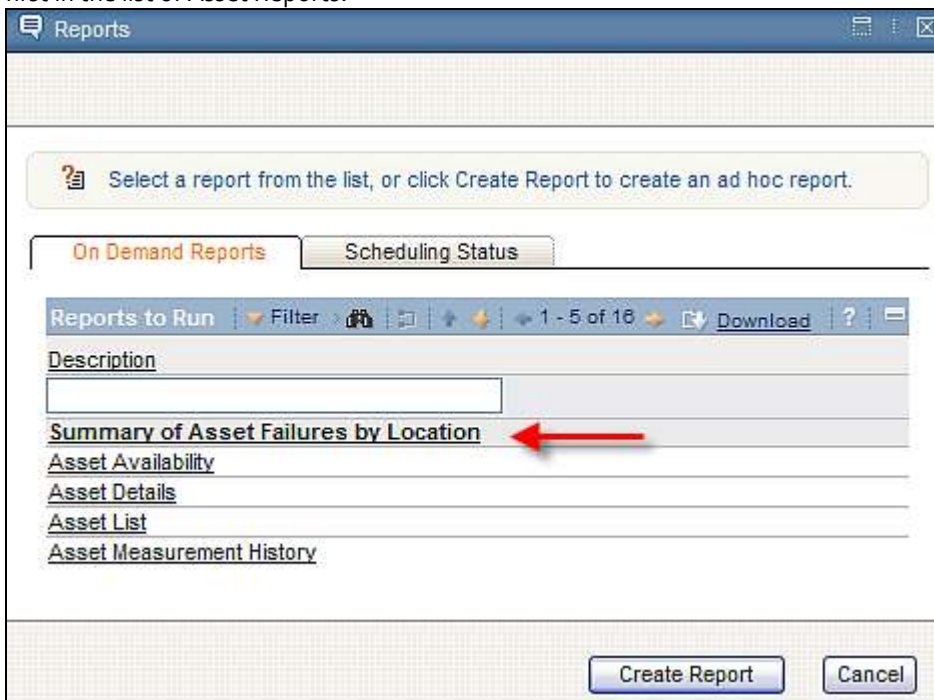
The screens below show this functionality. Within the Asset application, the list of reports is displayed. Sequence fields are not enabled, so reports display in alphabetical order.



Users however, want the 'Summary of Asset Failures' report to be displayed first. So, the administrator accesses the Report Administration application, and sets its 'Display Order' Field to 1.



After saving and regenerating the request page XML, the Summary of Asset Failures report then displays first in the list of Asset Reports.



## 5.5 Parameters – Bound and Unbound

As noted earlier in the guide, reports can have three different types of parameters which are

1. Parameterized Reports
2. Application Reports
3. Both Parameterized and Application Reports

As an administrator, it is important to understand that there are two types of parameterized values - bound and unbound.

Bound parameters either

- exist in the main table of the application the report is registered to or
- exist via a maxrelationship that has been set up for the application.

To identify if an existing parameter is bound, look at its Attribute Name field in the Report Administration application. Bound parameters will ALWAYS have the Attribute Name Field Populated – whereas Unbound Parameters will NEVER have the Attribute Name field Populated.

Bound parameters are appended to the where clause. An example of a bound parameter is the Security Group parameter in the Security Group report. Notice its Attribute Name field is populated.

The screenshot shows the 'Report Administration' interface. At the top, there are tabs for 'List', 'Report', 'Security', and 'Performance'. The 'Security' tab is active. Below the tabs, there are fields for 'Report File Name' (security\_group.rptdesign), 'Report Type' (BIRT), and 'Imported by' (MAXADMIN). A red box highlights the 'Report File Name' field. To the right, there are fields for 'Application' (SECURGR01), 'Report Folder' (SECURGROUP), and 'Last Import Date' (3/31/11 3:14 PM).

Below this is the 'Settings' section, which contains a 'Parameters' table. The table has columns for 'Parameter Name', 'Attribute Name', 'Sequence', and 'Display Name'. The 'securitygroup' parameter is selected, and its details are shown in the 'Data' section below. A red arrow points to the 'Attribute Name' field, which is populated with 'GROUPNAME'.

Parameter Name	Attribute Name	Sequence	Display Name
securitygroup	GROUPNAME	1	Security Group
independent	INDEPENDENT	2	Independent
pwduration	PASSWORDDURATION	3	Password Lasts the Number of Days
groupuser	GROUPUSER.USERID	4	User Members

The 'Data' section for the 'securitygroup' parameter shows the following fields:

- Parameter Name: securitygroup
- Attribute Name: GROUPNAME (highlighted with a red arrow)
- Lookup Name: [Empty]
- Display Name: Security Group
- Display Sequence: 1
- Required? [ ]
- Multi-Lookup Enabled? [x]
- Default Value: [Empty]
- Operator: [Empty]

## Unbound parameters

- do not exist in the main table of the application and
- are not available through any relationship (defined in maxrelationship) for the main table.  
Unbound parameters are not included in the where clause.

An example of an unbound parameter is the User parameter in the Electronic Signature Transaction report. This parameter is unbound because it does not exist in the main table of the application (CONFIGUR) and does not exist in one of the maxrelationship to this application. This is shown below. Notice that its Attribute Name field is blank.

The screenshot displays the 'Report Administration' interface. At the top, the 'Report File Name' is 'esg\_intro.rptdesign' and the report is titled 'Electronic Signature Transaction'. The application is 'CONFIGUR' and the report folder is 'CONFIGUR'. The report type is 'BIFT' and it was imported by 'RAXADMIN' on 3/31/11 at 2:14 PM.

The 'Settings' section shows a list of parameters:

Parameter Name	Attribute Name	Sequence	Display Name
user		1	User(s)
application		2	Application(s)
startdate		3	Start Date
enddate		4	End Date

The 'Details' section for the 'user' parameter shows:

- Parameter Name: user
- Attribute Name: (blank)
- Lookup Name: (blank)
- Display Name: User(s)
- Display Sequence: 1
- Required?
- Multi-Lookup Enabled?
- Default Value: (blank)
- Operator: (blank)

A red arrow points to the 'Attribute Name' field, which is empty, confirming it is an unbound parameter.

The Chart below recaps each of the fields available for parameters in Report Administration, and whether or not they should be populated for bound versus unbound parameters.

	Bound	Unbound
Advantage	Can have lookups, and do not need to be defined in report's design.	Flexibility.
Parameter Name	Do not need to be defined in Report's design file	Must be defined in Report's design file
Attribute Name	ALWAYS Populated	NEVER Populated
Lookup Name	Can either be populated or not	Can only be used for Unbound Dates (*DateLookup Only)
Operator (>, >=, <, <=)	Optional	NEVER Populated
Multi-Lookup Enabled?	Yes or No	Yes or No
Display Sequence	Numeric Value	Numeric Value
Override Label	Any Text	Any Text
Default Value	Can either be populated or not. *NOTE: Default Values are not enabled for localization	Can either be populated or not *NOTE: Default Values are not enabled for localization
Required?	Yes or No	Yes or No
Examples	security_group.rptdesign	eSig_trans.rptdesign

Parameter Notes:

1. The maximum number of parameterized values for a single report is 23. These include 15 Non-Date Time Parameters, and 8 Date-Time parameters.

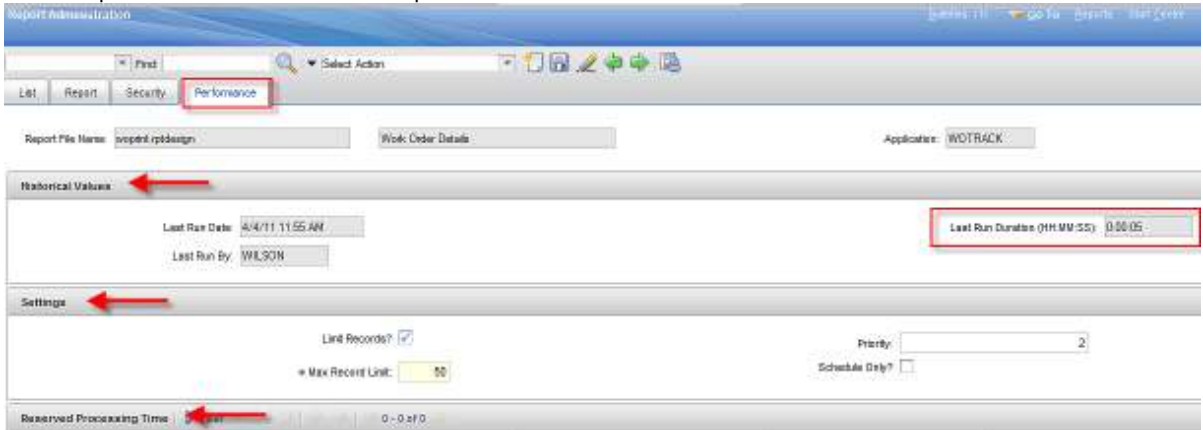
If more than the 15 Non-Date and 8 Date-Time Parameters are entered, invalid bindings will display on the report's request page.

2. Bound and Unbound parameters will behave the same way when a user enters values on the Request Page. Specifically, this means that if there is a parameter for Status, the following will occur:

User entered parameter value	Report Results
=APPR	Records where status = APPR
APPR	Records where status = WAPPR, APPR
%APPR	Records where status = WAPPR, APPR

## 5.6 Individual Report Performance

Within the Report Administration application, a Performance tab enables administrators to quickly monitor performance on individual reports.



The first section of the Performance Tab is Historical Values. This contains value information from the last time the report was executed. In the example below, it shows that the 'Work Order Details' report registered in the Work Order Tracking application was last executed by user Wilson on 4/4/11 at 11:55am. The report executed in 5 seconds.

This information is held in the REPORTUSAGELOG table and can also be displayed by executing the Report Usage report.

Enabling the display of these values quickly gives administrators a data point on how long reports are taking to execute. This is valuable information in a development-type environment as administrators can identify long-executing reports, and enable features like 'Schedule Only' or 'Record Limits' to minimize their performance impact.

The second section of the Performance Tab is Settings. This contains the settings that directly impact performance. These settings are also displayed on the Report Tab, but are also enabled here for ease of use by the administrator. For example, if he sees a long executing report, he can quickly set its 'Limit Records?' Flag here on this tab.

The third and final section of the Performance Tab is Reserved Processing Times. This is functionality enabled for 'Schedule Only' reports. Details on this functionality are contained within this document.

## 5.7 Report Usage

You can monitor report usage to assist in answering key questions often raised by Development and IT, including:

*'Which reports take the longest to execute?'*

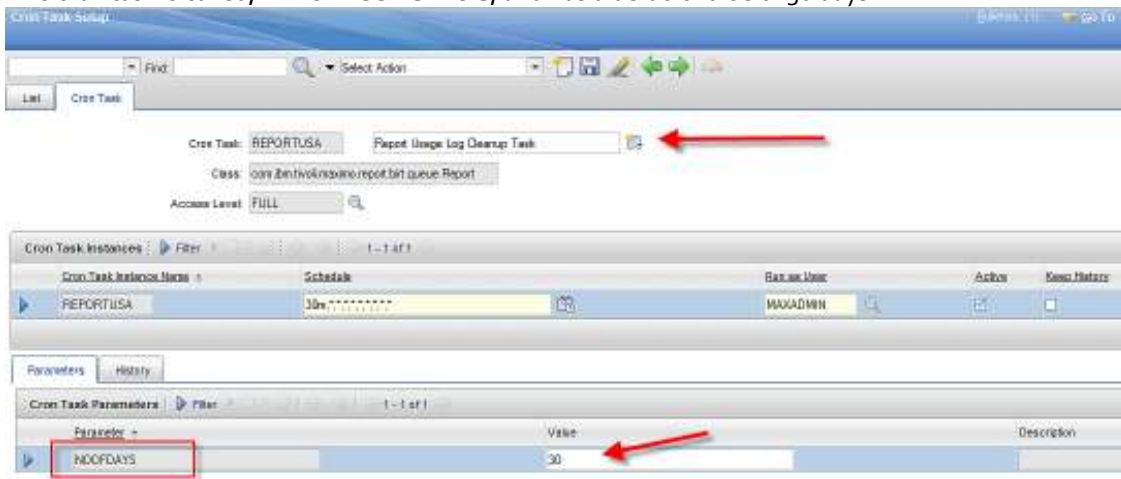
*'Who uses this report? If no one is using it, can it be archived?'*

*'Are users taking advantage of the scheduling functionality? Or are they causing performance constraints by always running reports immediately?'*

Monitoring of report usage is enabled thru the REPORTUSAGELOG database table. Each time a user executes a report, an entry is made in this table. This data includes when the report request was submitted or scheduled, when it actually executed, how long it took to execute, and what server it was executed on. This information is vital to answering the questions on report execution and performance above.

The REPORTUSAGELOG table can get populated very quickly as it records data whenever any report is executed – whether it is an enterprise report or a Query Based Report. Therefore, a cron task is used to delete the entries from the REPORTUSAGELOG table in a specified period of time. The cron task enables you to configure both the frequency of the database cleanup and the length of time the usage records are retained to a schedule that is best suited for them.

This cron task is called, REPORTUSAGELOG, and has a default value of 30 days.



### 5.7.1 BIRT Report Usage Report

The data in the REPORTUSAGLOG Table can be evaluated via a delivered report, called Report Usage (reportusage.rptdesign). It contains information on reports that are executed immediately, scheduled to execute at a future time, accessed via hyperlinks or are QBR Report Types.

One of the most important fields in the Report Usage Report is the Run Time Field. The data from this field comes from REPORTUSAGELOG.RUNTIME, which is stored in the database in milliseconds. The Run Time field is the amount of time the BIRT Report Engine takes to execute the Report, which is the REPORTUSAGELOG.ENDDATE – REPORTUSAGELOG.STARTDATE.

If a user executes an immediate report, the runtime may be less than the physical time the user actually experiences. This is because the report runtime does not include the time for tasks like opening up the report browser, and copying the report temporary files. However because of the report scheduling queuing process, this is the best consistent indicator of a report's run time.

The Report Usage Report converts the runtime data from milliseconds to HH:MM:SS Format for ease of analysis.

The screenshot shows the IBM Report Usage report interface. It features a header with the IBM logo and the title 'Report Usage'. Below the header, there are four distinct sections, each with a blue header bar and a table of data. The sections are: 'Asset Details', 'Asset Use', 'Asset Measurement History', and 'Vehicle Counts'. Each table includes columns for Start Date, End Date, Run Time (HH:MM:SS), User, Application, Scheduled?, and Success?.

Report Name	Asset Details	File Name	www_2044.rptdesign					
Application	Asset Use	File Name	www.rptdesign					
Report Name	Asset Measurement History	File Name	www_2044.rptdesign					
Report Name	Vehicle Counts	File Name	www_2044.rptdesign					
3/27/08	7:28:47 AM	3/27/08	7:28:58 AM	00:00:11	WILSON	ASSET	N	Y
3/27/08	7:28:28 AM	3/27/08	7:28:48 AM	00:00:20	WILSON	ASSET	N	Y
3/27/08	7:28:50 AM	3/27/08	7:29:36 AM	00:00:46	WILSON	ASSET	N	Y
3/27/08	7:28:33 AM	3/27/08	7:28:34 AM	00:00:01	WILSON	COMPANY	N	Y

Query Based Reports (QBRs) are also captured in the Report Usage Table. Because these reports often may be executed only a single time, their corresponding run times will be displayed in a separate section, called 'Transient Reports' at the end of this Report.

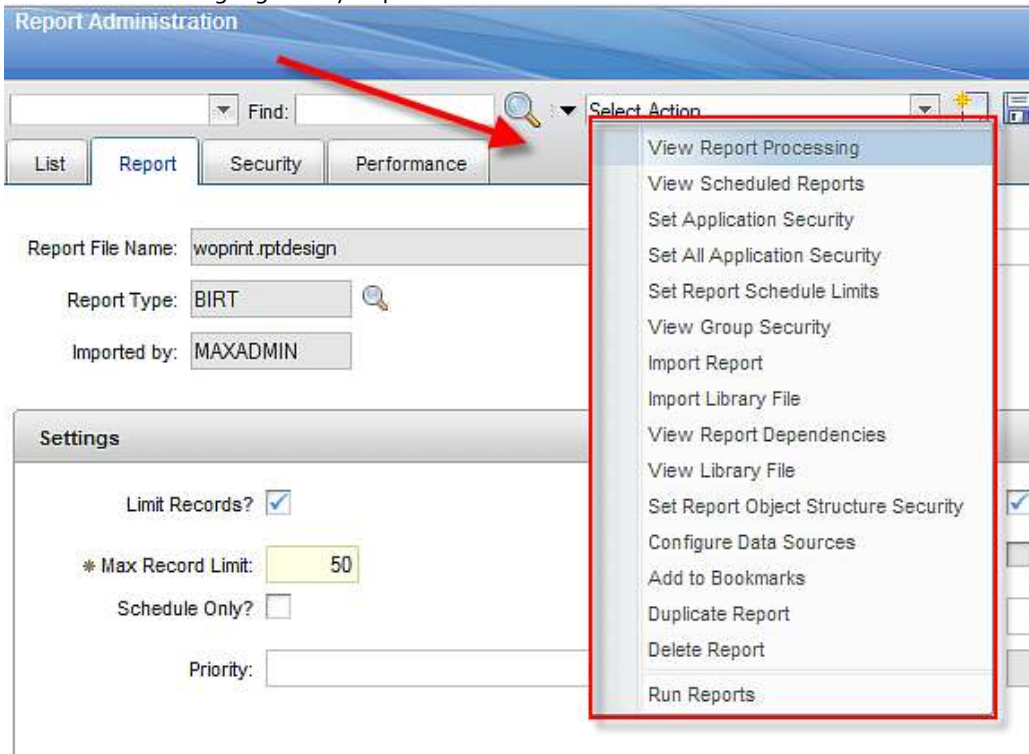
The screenshot shows the 'Transient Reports' section of the Report Usage report. A red arrow points to the section header. The table below lists three transient reports with their respective start and end dates, run times, users, applications, file names, and success status.

Start Date	End Date	Run Time (HH:MM:SS)	User	Application	File Name	Success?		
3/27/08	7:51:53 AM	3/27/08	7:52:00 AM	00:00:07	SNOLAN	WOTRACK	snolan205518979230.rptdesign	Y
3/27/08	7:21:59 AM	3/27/08	7:21:52 AM	00:00:02	WILSON	30EPLAN	wilson120661778921.rptdesign	Y
3/27/08	7:21:17 AM	3/27/08	7:21:21 AM	00:00:04	WILSON	ASSET	wilson1206617744406.rptdesign	Y



## 6 Report Administration Actions

This next section highlights key Report Administration actions.



Action	Description	Where to find Details
View Report Processing	Displays reports that are either being processed by the report engine, or are in the queue waiting to be processed	Page 110
View Scheduled Reports	Enables the administrator a view of all the scheduled reports currently in the system.	Page 109
Set Application Security	Grants report security access to all reports within a selected application	Page 100
Set All Application Security	Grants reports security access to all reports for all applications that a security group has access to	Page 101
Set Report Schedule Limits	Enables you to limit the number of report schedule requests your users submit	Page 107
View Group Security	Displays which applications the selected group has report access to	Page 102
Import Report	Imports individual report into V75 database repository	Page 103
Import Library File	Imports individual library into V75 database repository	Page 103
View Report Dependencies	Displays report files that the selected file is dependant on	Page 105
View Library File	Displays all library files in V75 database repository	Page 106
Set Report Object Structure Security	Report Object Structures (ROS) are base of Ad Hoc Reporting. Each application can have multiple ROS, so this action defines which security groups have access to individual ROS	Reference Document "V75 QBR Ad Hoc Reporting"
Configure Data Sources	Enables use of non-production database for report execution	Reference Document "Enabling secondary Database Configuration for BIRT reports"
Duplicate Report	Duplicates report entry for use in cloned application or for modification of ad hoc report	Page 119
Delete Report	Deletion of ad hoc or enterprise report	Page 116

## 6.1 Security Actions

After the administrator has granted 'Run Report' security access in the Security Group application, the administrator then defines which specific reports each security group can access. This report security can be set at

- The Individual Report Level
- All Reports registered to an application
- All reports for all applications the security group has access to

### 6.1.1 Setting Individual Report Level Security

After a report is imported or registered, the administrator can click on the Security Tab to grant access to the individual report to security groups. The standard functionality of clicking 'New Row' adds a new entry. Clicking on the lookup displays a listing of All Security Groups who have 'Run Report' Access for the application the report is registered to.



### 6.1.2 Setting Application Level Security

To grant access to all reports within an application, click Set Application Security from the Action Menu in Report Administration. This brings up a listing of all applications that have reports registered to them. Select the application, and then click New Row to grant a new Group Access. Clicking on the lookup displays a listing of all groups that have 'Run Report' Access to that application.

Additionally, select 'ALL' to grant access to all report types registered to that application – or select one or more of the individual report types. At least one type must be selected.

The screenshot displays the 'Report Application Security' dialog box. It is divided into two main sections: 'Applications' and 'Application Level Security'.

**Applications Section:**

Application	Description
po	
<b>PO</b>	<b>Purchase Orders</b>
REPORT	Report Administration

**Application Level Security Section:**

Group	Description
▶ MAXADMIN	Maximo Administrators (Super Users)
▶ PURCHASING	Purchasing
▼ <b>SCHEDULING</b>	Scheduling

**Details Section:**

All?     BIRT Reports?     Cognos?     Custom?

**Buttons:** New Row, OK, Cancel

### 6.1.3 Setting All Application Level Security

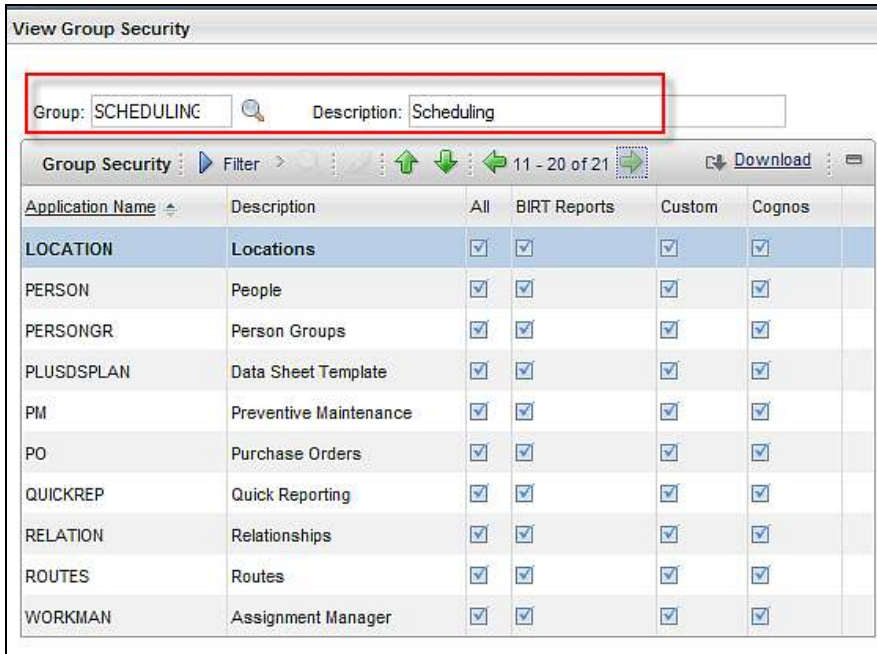
To grant access to all reports that a group has access via a single action, click Set All Application Security from the Action Menu in Report Administration.

Select the security group or groups that you want to grant access to. Then, select 'ALL' to grant access to all report types registered to that application – or select one or more of the individual report types. A minimum of one option must be selected. The screen shot below shows the Bedford Site Security Group which has been granted to access to all BIRT Reports for the applications that they have access to.



## 6.2 Viewing Report Security by Security Group

To view what applications a security group has report access to, click 'View Group Security' from the Action Menu. Select a group, and a listing of all applications the specified security group has access to will display by report type.



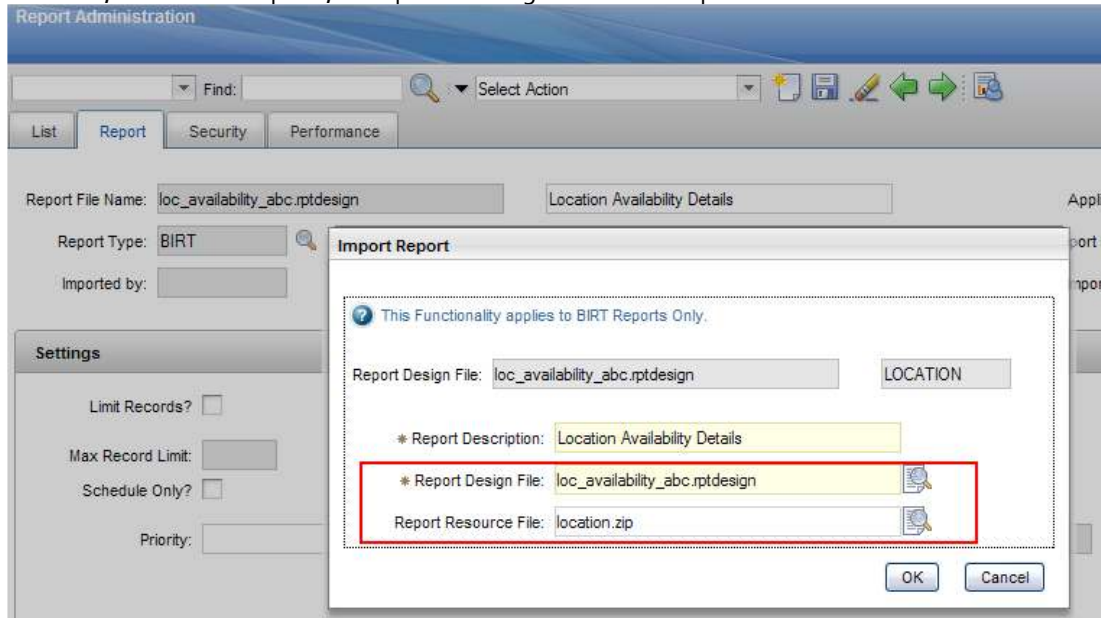
The screenshot shows the 'View Group Security' window. At the top, there is a search bar with 'Group: SCHEDULING' and 'Description: Scheduling'. Below this is a table with columns for 'Application Name', 'Description', and checkboxes for 'All', 'BIRT Reports', 'Custom', and 'Cognos'. The table lists 11 applications, all of which have access to all report types.

Application Name	Description	All	BIRT Reports	Custom	Cognos
LOCATION	Locations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PERSON	People	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PERSONGR	Person Groups	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PLUSDSPLAN	Data Sheet Template	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PM	Preventive Maintenance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PO	Purchase Orders	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
QUICKREP	Quick Reporting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RELATION	Relationships	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ROUTES	Routes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WORKMAN	Assignment Manager	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### 6.3 Individual Report Importing thru Report Administration

If you have modified only a single report, or are registering a small number of reports, you may want to use the Report Administration application to import these report designs. To do this, locate the individual design file, and from the action menu, select 'Import Report'.

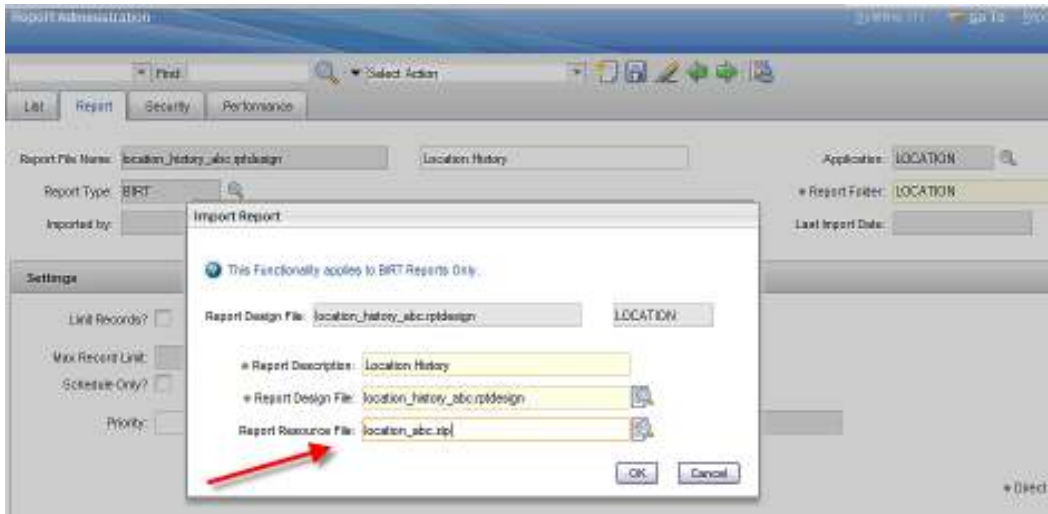
Browse to the location of the design file, and the report resource file if required. Follow the prompts in the windows, and once complete, the updated design file will be imported in the database.



Notes:

- Libraries must be imported before report designs. If the report design references a library that has not been imported, the report design will not import.
  - If the report references an existing library (MaximoSystemLibrary.rptlibrary) that is already in the database, you do not need to import another copy of that library.
- Importing overwrites the existing records in the database with the new design/and or dependant report files.
- Once the process is completed, the 'Imported By' and 'Last Import Date' fields will be updated with the latest values.
- If you are importing a new design file, you must first create its record in Report Administration, and then import the file.
- Do not copy/paste the location of any of the files to be imported. (Report Design File, Report Resource File or Library File.) You must use the browse button to properly import the correct file.
- You must import resource files are imported as .zip files. Resource files include property files and images. If you are importing an existing report where no changes have been made to the properties file, you do not need to reimport its property file.

However, if you have created a new properties file for your new or custom reports, as noted earlier in the guide, you must first zip your properties file before importing it as shown below.



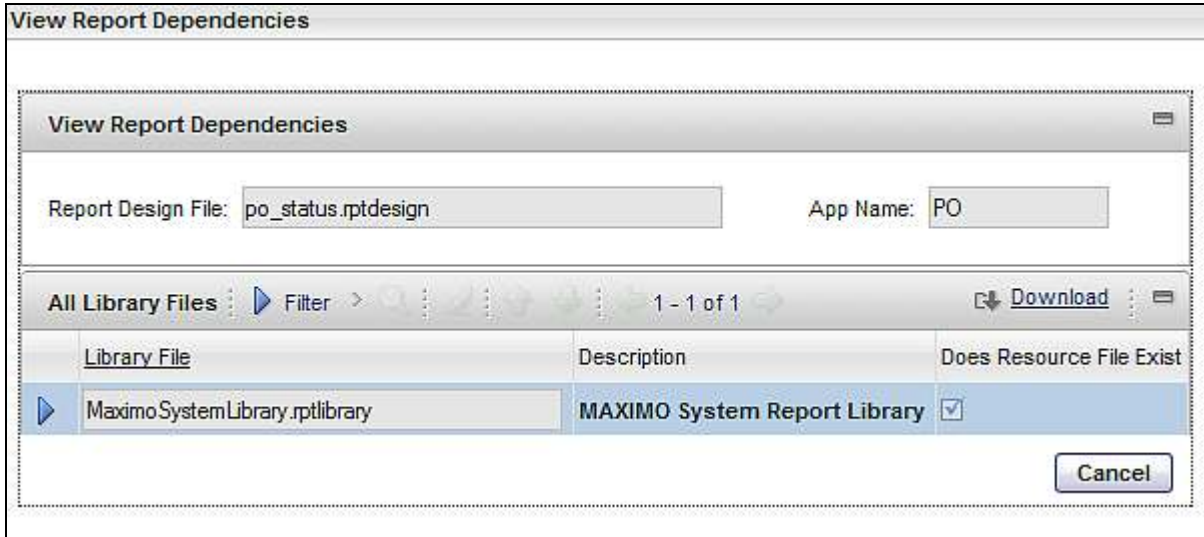
7. There is no validation on the report design's file during the import process. Errors in the report design file will import. It is up to the developer/administrator to insure that the design file is correct. The import process only validates that the design file being imported matches the current record.



## 6.4 View Report Dependencies Action

You can view all the files that an individual report is dependant on by using the action 'View Report Dependencies'. These files could either be library files or other design files.

The example below shows the report dependencies for the Report Usage report.



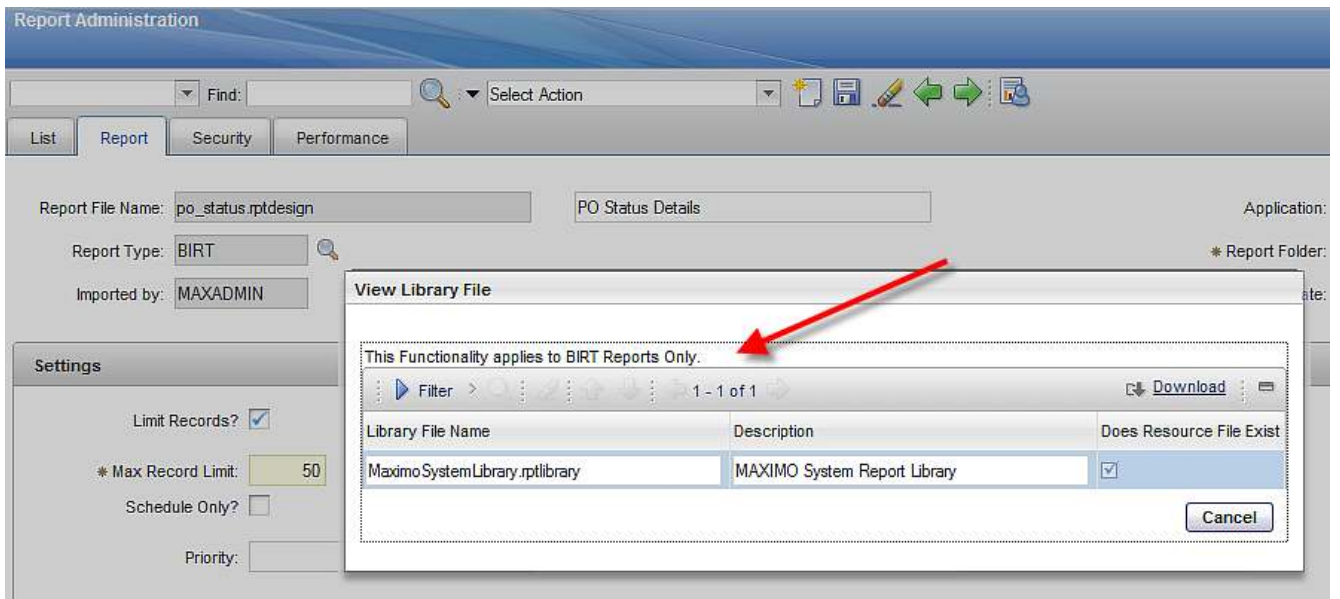
The results for this view are derived from the REPORTDEPEND table.

In the bottom portion of the view, there is a 'Dependant Library Files' section. This will show any children of the selected Library Files. For the out of the box reports, there are no values in this section. The Maximo System Library does not have any children libraries, therefore, no values will display.

## 6.5 View Library Files Action

You can also view all the libraries that are in the report repository via the 'View Library File'. This view is useful when you may want to import a new report design file. You can view the action to insure that all the libraries for the new report have already been added.

**\*\*NOTE:** This will not show a listing of the report dependencies on this file. Instead, it gives a listing of the libraries currently in the REPORTDESIGN Table (where REPORTDESIGN.ISLIB = '1')



The screenshot shows the 'Report Administration' application interface. The main window has a header with 'Report Administration' and a toolbar with 'Find:' and 'Select Action' buttons. Below the header are tabs for 'List', 'Report', 'Security', and 'Performance'. The 'Report' tab is active, showing fields for 'Report File Name: po\_status.rptdesign', 'Report Type: BIRT', and 'Imported by: MAXADMIN'. A 'Settings' panel on the left includes options for 'Limit Records?' (checked), '\* Max Record Limit: 50', 'Schedule Only?' (unchecked), and 'Priority:'. A 'View Library File' dialog box is open in the foreground, displaying a table with the following data:

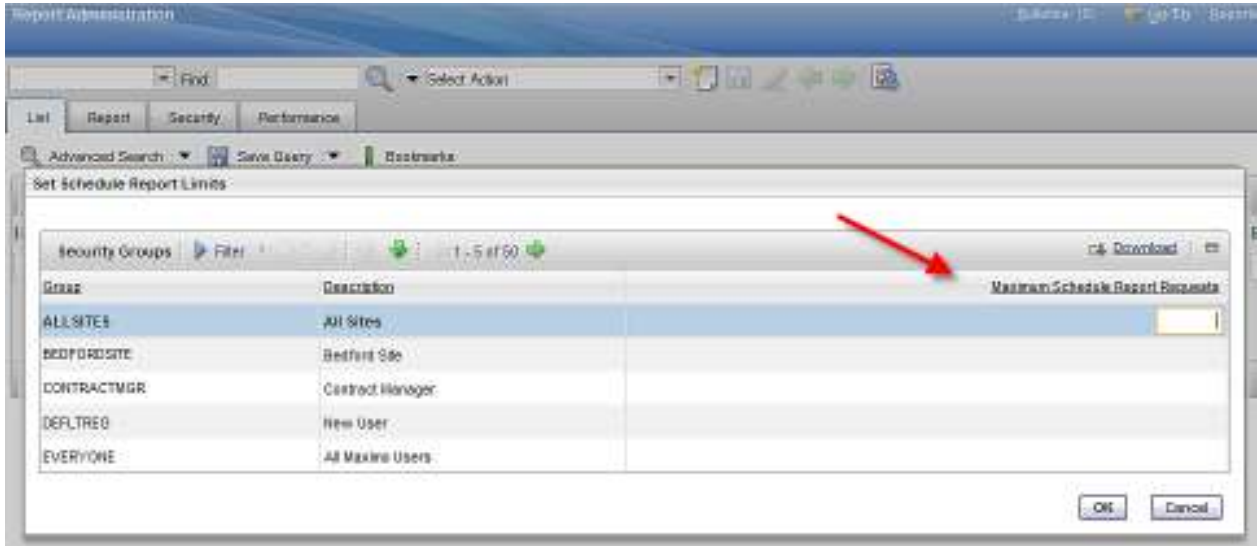
Library File Name	Description	Does Resource File Exist
MaximoSystemLibrary.rptlibrary	MAXIMO System Report Library	<input checked="" type="checkbox"/>

A red arrow points to the 'Filter' button in the dialog's toolbar. The dialog also includes a 'Download' button and a 'Cancel' button.

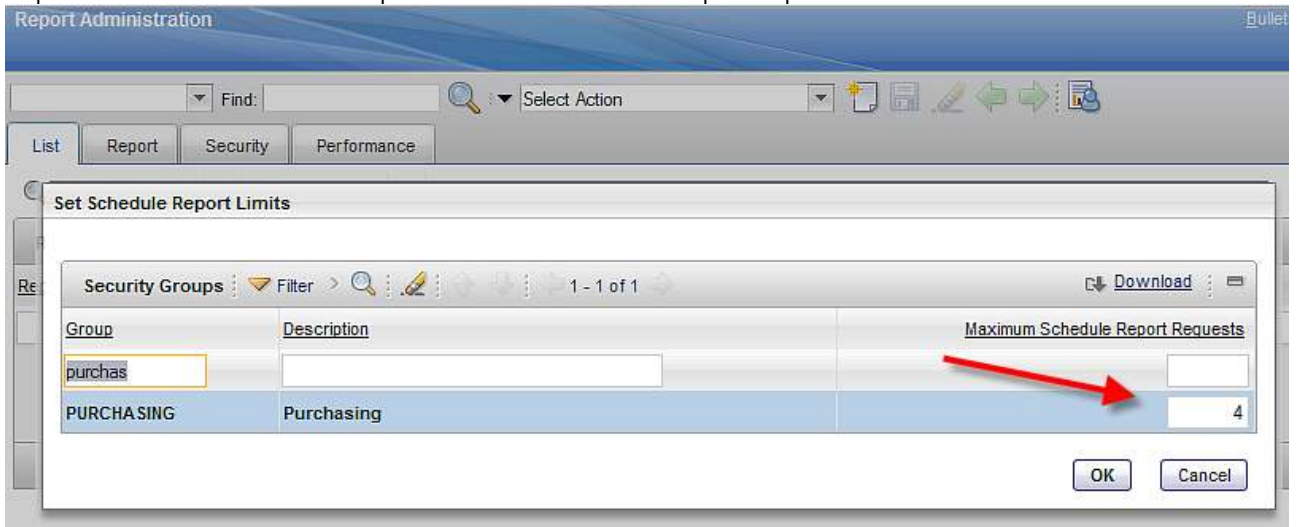
## 6.6 Set Report Schedule Limits

You can limit the number of report schedule requests your users submit thru the report schedule limit functionality. By limiting them to a maximum number of scheduled jobs, users will only submit schedule requests for reports they need, and delete requests for obsolete report jobs.

To configure this functionality, select the 'Set Schedule Report Limits' action. A dialog displays the security groups who have run report access. Input any number for each unique security group. If you input the number 0, the security group will not be able to input any scheduled report requests.



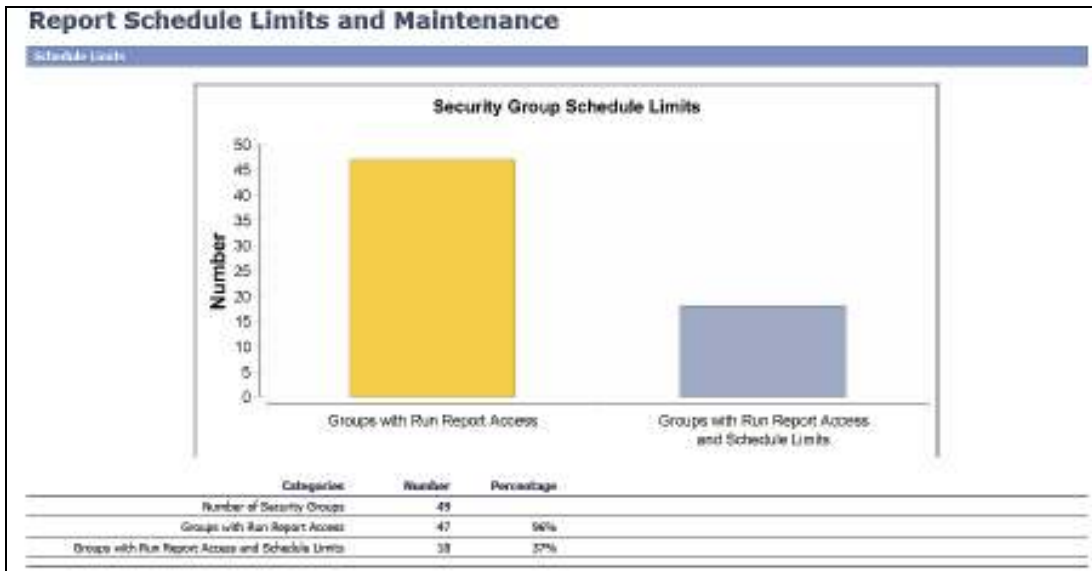
The example here shows that the Purchasing Security Group can enter a maximum of 4 scheduled report requests. This includes both enterprise and ad hoc scheduled report requests.



## 6.6.1 Managing Report Schedule Limits

You can manage the schedule limits you have set for individual security groups through a delivered report or KPI.

The Report Schedule Limits and Maintenance report details the number of security groups in the system. It then shows the value and percentage of those groups with run report access, and those with scheduled limits set. Administrators can use this report to quickly see the percentage of security groups that they closely managing.



The delivered KPI below can also be configured on the report administrator's start center to highlight those security groups with the schedule limit value set.



## 6.7 View Scheduled Reports - Administrator

The Report administrator can view and manage all Scheduled Report Jobs via the 'View Scheduled Reports' action. This enables the administrator a view of all the scheduled reports currently in the system. It includes information on the type of Schedule (Recurring or Once) who scheduled it, and the report's priority.

This is useful for the administrator to view the report schedule load on the server, and potentially distribute the load more evenly if required. Additionally, he has the ability to delete obsolete scheduled report requests by clicking on the standard garbage can icon by the individual scheduled report request.

The screenshot displays the 'View Scheduled Reports' interface. At the top, it notes 'This functionality applies to BIRT Reports only'. Below this is a table with columns: Report Name, Application, Type, Next Run Time, Scheduled By, and Priority. The table lists four reports, with 'Service Target Compliance' selected. Below the table, the 'Schedule' section shows details for the selected report: Report Name: Service Target Compliance, Application: service\_target\_compliance.rptdesign, Application: SLA, and Priority. The 'At the Time' and 'Recurring' options are visible, with 'Recurring' selected. The 'Email' section shows the recipient as 'jess.zamora@hulvisg.com' and the subject as 'Biweekly SLA Report'. A 'Select Value' dialog box is open, showing 'Select Schedule or Time Interval' options. A red arrow points to the 'Recurring' radio button in the main interface, which is linked to the 'Select Value' dialog.

Report Name	Application	Type	Next Run Time	Scheduled By	Priority
PI Status Details	PI	Recurring	4/10/11 1:00 PM	LEERI	2
Service Target Compliance	SLA	Recurring	4/17/11 11:30 PM	NEWTON	
Service Target Compliance	SLA	Recurring	5/1/11 7:00 AM	NEWTON	
Security Group Access	SECURGROUP	Recurring	7/1/11 2:00 AM	WILSON	

**Schedule**

Report Name: Service Target Compliance    Application: service\_target\_compliance.rptdesign    Application: SLA    Priority:

At the Time:     Recurring: **SELECTED**

**Email**

To: jess.zamora@hulvisg.com  
Subject: Biweekly SLA Report  
Comments:

**Select Value**

Select Schedule or Time Interval

Select a date interval and then Preview to see the dates.

Every [ ] hour(s), [ ] minute(s) [ ]

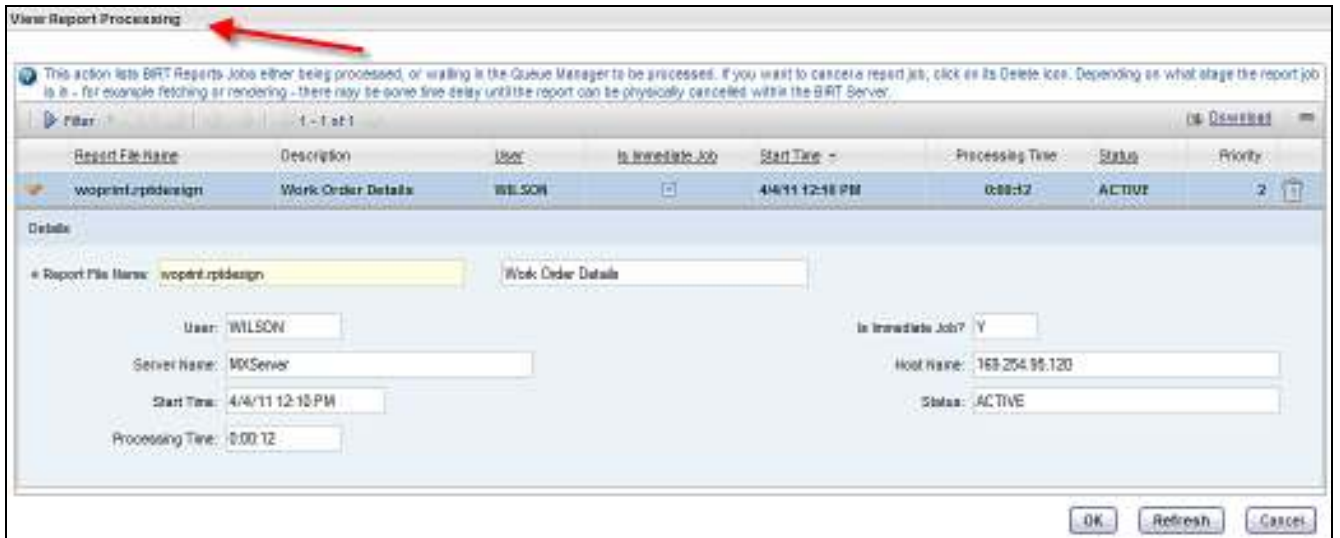
Every [ ] day(s) at time [ ]

Every [ 2 ] week(s), on day: **Sunday** at time: **11:30 PM**

Every [ ] month(s)

## 6.8 View Report Processing

You can view which reports are being executed via the 'View Report Processing' action. It shows all reports that are either being processed by the report engine, or are in the queue waiting to be processed. The records are displayed based on ascending order of Start Time. This display of records enables the administrator to focus on those report jobs that are taking the longest time to execute.



The unique values in this view include:

Start Time: The date/time the report began executing.

### For Immediate Jobs

The Start time is the time that the job is accepted when report processing is available.

### For Scheduled Jobs,

The Start Time is the time that it (1) enters the report queue and (2) is locked by a worker thread to begin processing. The time that it begins processing may not be the exact time it was scheduled for due to unavailability. For example, if a report was scheduled to execute at 6:00 AM, it may not actually execute until 6:01:46 – due to availability. So – the actual Start Time of a report will not always be the Report's scheduled time.

If a scheduled report job has (1) entered the report queue but has not been locked by a worker thread to begin processing, its Start Time will be null. In this case, its Status will be queued.

Processing Time: The amount of time the report has been processing. This is a non-persistent field and only displays for reports with a status of In-Process (INPROG). The processing time can be recalculated at any time when the user clicks on the 'REFRESH' Button on the screen.

Processing time is calculated by:

Current Server Time – Start Time

Status: Status of the report Job. The Status Value List has values of:

INPROG: In Progress.

The status of a report job = INPROG if the report job is locked by a Worker Thread and is being processed. Either immediate or scheduled report jobs can have a status of INPROG.

QUEUED: In Queue, or waiting for report processing availability.

The status of a report job = QUEUED if the report job has entered the report queue, but worker threads are not available to process the report job.

Only scheduled report jobs can have a status of QUEUED.

Immediate report jobs can not have a status of QUEUED, because if the immediate job can not be processed due to any availability, the user will be prompted to either cancel the report job or schedule it for later processing.

### 6.8.1 View Report Processing – Cancelling Report Jobs

After viewing the report jobs that are processing, administrators can cancel user's report jobs by selecting the Garbage Can next to its individual report request. However, each report job is unique, and depending on its report design, and the exact functionality that is being processed, will determine if and when its cancellation can occur. Depending on the function being processed by the report job determines if the report can be cancelled or not.

#### Unique Events triggered from Cancelling Scheduled Report Job

When a scheduled report job is cancelled by the administrator, the following occurs.

1. An email is sent to the user who scheduled the report. The 'To' Email field is the Email address of the user who scheduled the report.
2. The scheduled report job no longer appears in the 'View Report Processing' window.

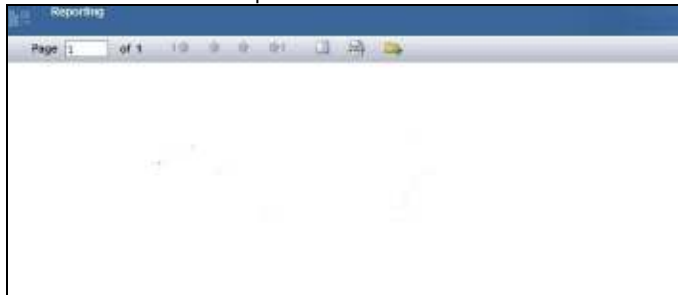
\*Note: There may be a time delay from when the administrator cancels the report until it is physically cancelled. So – if the administrator immediately clicks 'Refresh' after canceling a report job – it may still initially display. Depending on the report process that is executing in the background determines how quickly the report can actually be cancelled.

#### Unique Events triggered from Cancelling Immediate Report Jobs

When an immediate report job is cancelled by the administrator, a variety of scenarios could occur depending on what report process the report job is in at the time of cancellation (ex. either fetching or rendering). It is **highly variable** depending on the individual report job and the processing point it is at – when and if the report cancellation can occur.

Due to the wide range of scenarios available, the following could be seen to the user

1. The user could see a blank report browser like this



2. Or he may see a report browser that contains a few pages of report data (for example, pages 1 and 2 display data) but the balance of the report pages contain report titles only.



**Work Order Details**

1000 Relocate Guard Rails Around Compressor

Asset: 11300      Repeating Compressor- Air-Cooled/100 CFM  
 Location: BR300      Seller Room Repeating Compressor

Sched Start:	Site:	WDFDRD	Job Plan:
Sched Finish:	Priority:	3	Supervisor:
Target Start:	Work Type:	CM	Lead:
Target Finish:	Status:	WAPPR	Vendor:
Actual Start:	Street:		Owner:
Actual Finish:	Failure Class:		Owner Group:
Report Date:	Problem Code:		Service:
Reported By:	Reported By:		Service Group:
	GL Account:	6210-300-777	Classification:

Task ID	Description	Status	Measurement	Value	Date	Observation
10	Relocate guard rails to allow fork truck access	WAPPR		0		
20	Relocate associated electrical conduit	WAPPR		0		

Task ID	Craft	SKILL Level	Labor	Vendor	Contract	Qty	Hours	Rate	Line Cost
10	MECH	FIRSTCLASS				1	07:00	0.00	0.00
20	ELECT	FIRSTCLASS				1	07:00	0.00	0.00
Total Planned Labor:									0.00

October 22, 2008 2:57:23 PM EDT      1 / 121

3. Or if the administrator cancels a report job that he initiated – the report browser window may still show as processing, while the cancel dialog has a status of CANCEL for the report.

Report Administration

BIRT Report Viewer - Microsoft Internet Explorer

Processing, please wait ...

Start Time	Processing Time	Status	Priority
10/22/08 2:59 PM	0:01:36	CANCEL	2

**NOTES:**

1. Again, depending on the report job and its processing point, there may either be delays in when the job is physically cancelled to the user – or if it can be cancelled.
1. If an immediate job takes a long time to execute, and the user closes the report browser – but the report will continue to execute in the background.
3. Report job cancellations are logged in the REPORTUSAGE Table.

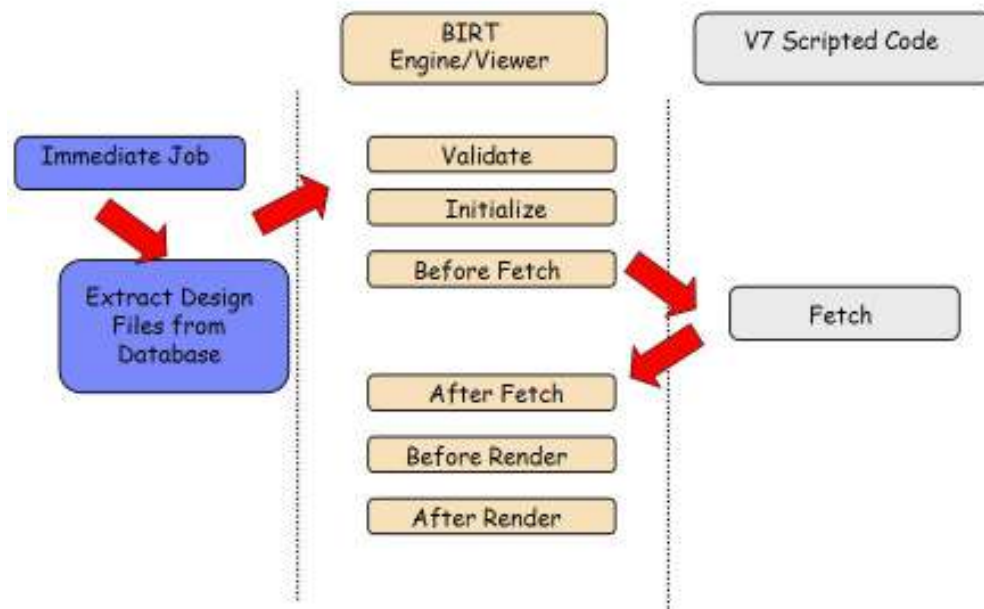
### 6.8.2 Additional details on Report Cancellation

As noted previously, there are two types of report jobs – Immediate and Scheduled Jobs. Immediate jobs are submitted for immediate display or printing, whereas scheduled jobs can either be one time (3/31/11 11:00 PM) or recurring (Every 1<sup>st</sup> Day of the Month at 7:00 AM).

Whether a job is scheduled or immediate is very critical to its ability to be cancelled. Immediate jobs can only be cancelled if they are not in the Fetch Method processing of the report because scripted data sources are utilized.

However, scheduled report jobs are managed by the Queue Manager, and can be cancelled by the administrator no matter what stage of processing it is in.

To further explain the variation in immediate job cancellation, the diagram below shows the top level steps in report processing for a simple report looks like:



If the report is immediate, and the administrator cancels the report job -  
 And the report job is not in the Fetch Processing, its cancellation request can be processed immediately.

And the report job is in the Fetch Processing, its cancellation request will be delayed. The report will finish the Fetch Processing, and as soon as it is completed, and the processing goes back to the report engine, the report job will be cancelled.

	Immediate Report Job	Scheduled Report Job
Processing by BIRT	Yes	Yes
Processing by Fetch	No	Yes

Again, because each report and its data are unique, and some may utilize more fetch logic than others, there are no standards that can be applied on when the fetch functionality occurs. Therefore, depending

on where the report is in its processing, there may be some delay until the report is physically cancelled within the report Server.

#### Additional notes on Report Cancellation

1. If a user initiates either a Direct Print or Direct Print with Attachments job via an icon from the application's toolbar, the user is unable to cancel these report jobs because the report browser is not displayed. In these cases, the report jobs can only be cancelled by the administrator under the three scenarios below -
  - A. The job will be cancelled immediately if it is not in fetch processing and not in the printing phase
  - B. If the job is in the fetch processing, it will be cancelled when it exits the fetch processing
  - C. If the report processing is complete, and the job has entered the printing phase, the report job can not be cancelled. Only the printing job can be cancelled via the user's default printer dialog.
2. This functionality only applies to BIRT Reports.

## 6.9 Deleting Reports

Administrators may want to delete reports when they are no longer used or needed. Depending on the type of report being deleted – either Enterprise or Ad Hoc – the removal process will vary slightly.

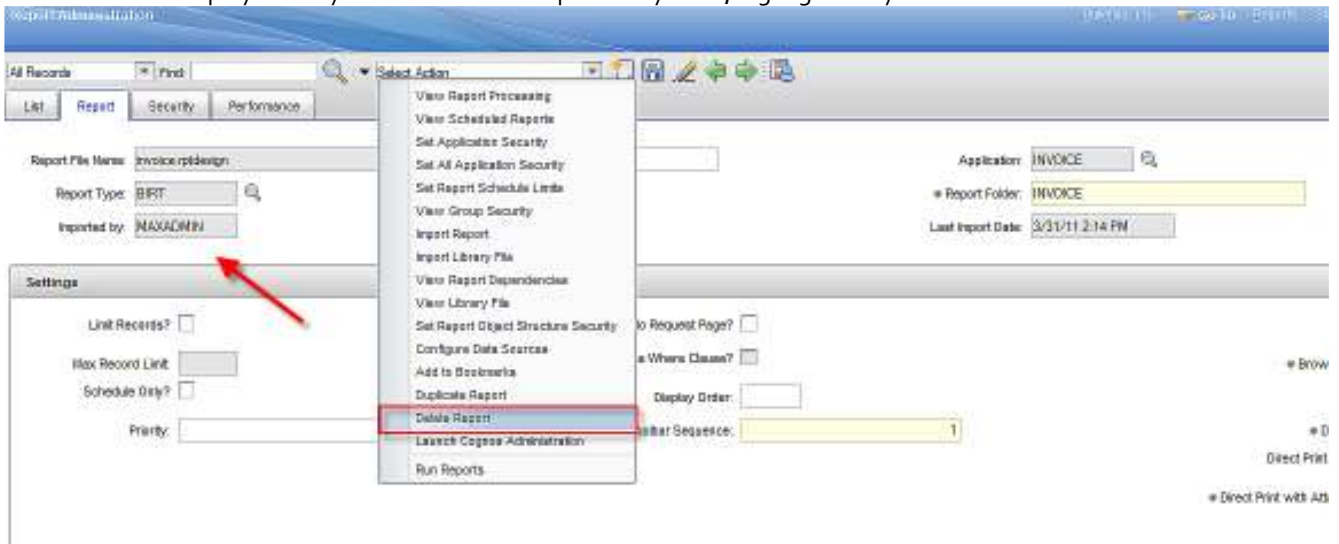
### 6.9.1 Deleting Enterprise Reports

An administrator may want to delete an Enterprise Report because it is no longer executed by users. Enterprise reports differ from Ad Hoc Reports in that they are developed in the report development tool by developers, and then imported into the V75 repository via the command utilities or report administration applications.

Enterprise reports do not display the field 'QBR Created By' on the report tab.

1. To delete an Enterprise Report, locate the specific record and select 'Delete Report' from the action menu.

Notice the example below does not display the field 'QBR Created By'. If the report was an ad hoc report, this field would display directly underneath the 'Imported By' field, highlighted by the red arrow.



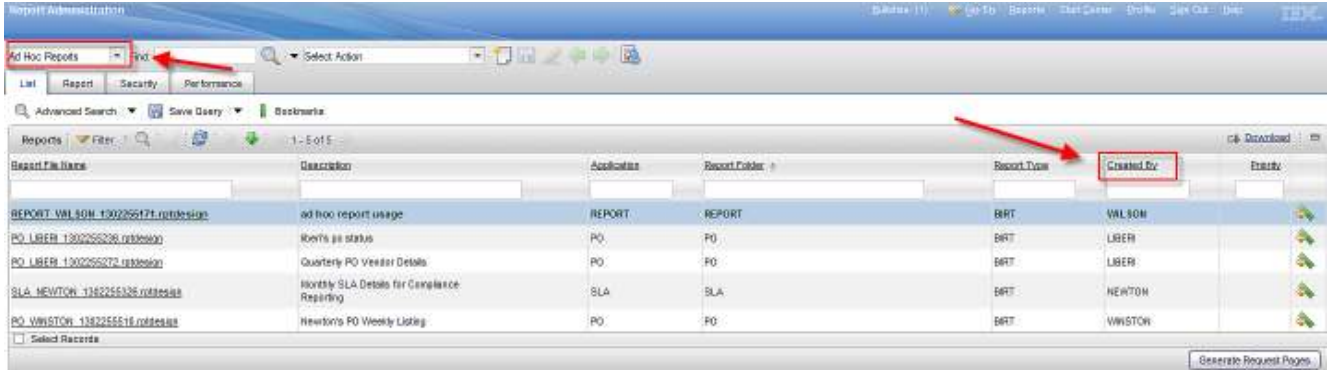
2. After the report is deleted, to prevent the report from being re-imported again on Server Restart or during a future patch release, its entry must be removed from the reports.xml file. The reports.xml file is located in <v75>\reports\birt<name of Report Folder highlighted above> -- which in this case is in <v7>\reports\birt\PR.

The delivered file is shown below with the entry to delete highlighted in red.

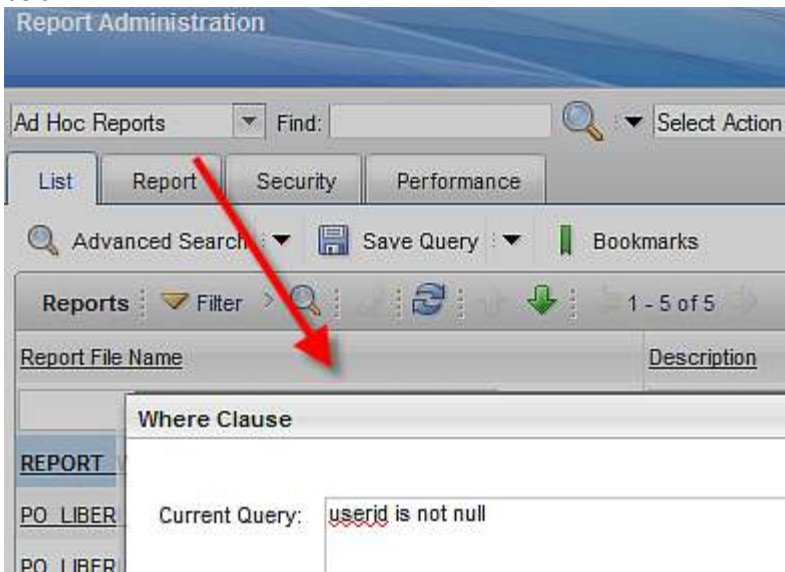
2. After removing the entry from the reports.xml file, rebuild and redeploy the ear file.

### 6.9.2 Deleting Ad Hoc Reports

From within the Report Administration application, you can quickly identify ad hoc reports as their 'Created By' field is populated. You could sort on this field on the list tab or use a default query as shown below to quickly identify them.

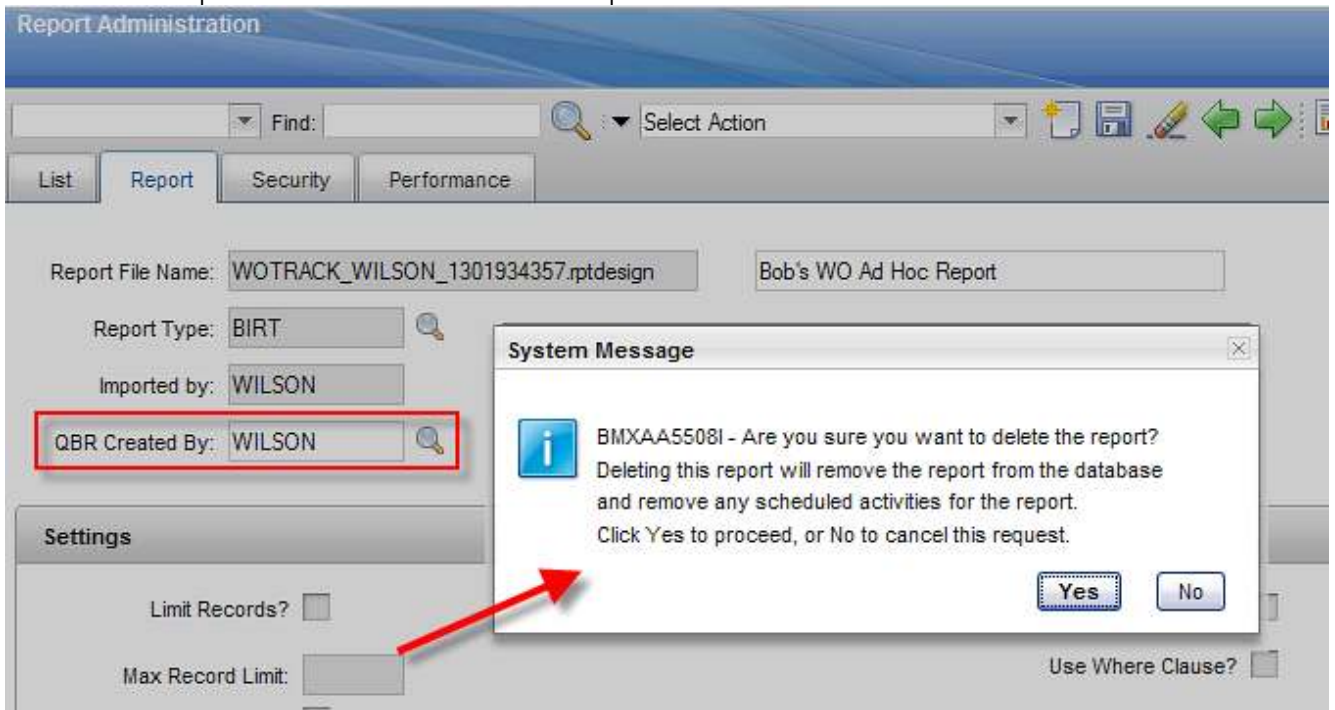


You can form your own application query to identify ad hoc reports using the simple sql statement shown below.



You may want to delete an Ad Hoc (QBR) report is no longer used by the users who created them, or when a user leaves his job position or the company.

The screen shot below is an example of an Ad Hoc Report. The message displays when the administrator selects 'Delete Report' from the Action Menu for this report.



If you select No, the message will disappear and you will remain on the Report Tab.

If you select Yes, the report entries will be deleted from the V75 database

Additionally, if you select Yes, any scheduled job requests for this report will be deleted.

## 6.10 Duplicating Reports

You may want to duplicate a report so it can be accessed from a cloned application. Or you may want to duplicate an ad hoc report, so the duplicated report can be exported to the Report Development tool for additional modification.

The items below are key characteristics to consider when duplicating a report

- A. If you are duplicating a report so it can be accessed from another application, make sure the main table name of the two applications is the same. This is required so the where clause can pass the correct information to the application of the duplicated report.

For example, if you duplicated a work order report and registered it to the purchase order application, the duplicated report would not execute from the purchase order application. This occurs because the main table used in the work order report is WOTRACK, whereas the main table passed from the purchase order application is PO.

- B. When you duplicate a BIRT Report,
  - The report file name will display exactly like the record it is copied from
  - The application name and report folder will be blank.
- C. You can then make any adjustments to the report entries, but you must specify an application name (along with defaulted report folder) before saving.
- D. If you do not change the report file name and use the same application as the duplicated record, a message will display on saving that this is not a valid combination. (The combination of report file name and application make the record unique.)
- E. Once the user has a unique combination, you are able to save the record, and the duplicated report will display on the screen.
- F. When duplicating a report, the individual report security authorizations are not copied.

When duplicating reports, a copy of the duplicated report's design file is made in the REPORTDESIGN table. If you want to use a different report design file, make sure to Import the correct design either via the Action menu in Report Administration, or via the Import Command Utility.

## 7 Miscellaneous Features

### 7.1 Report List Portlet

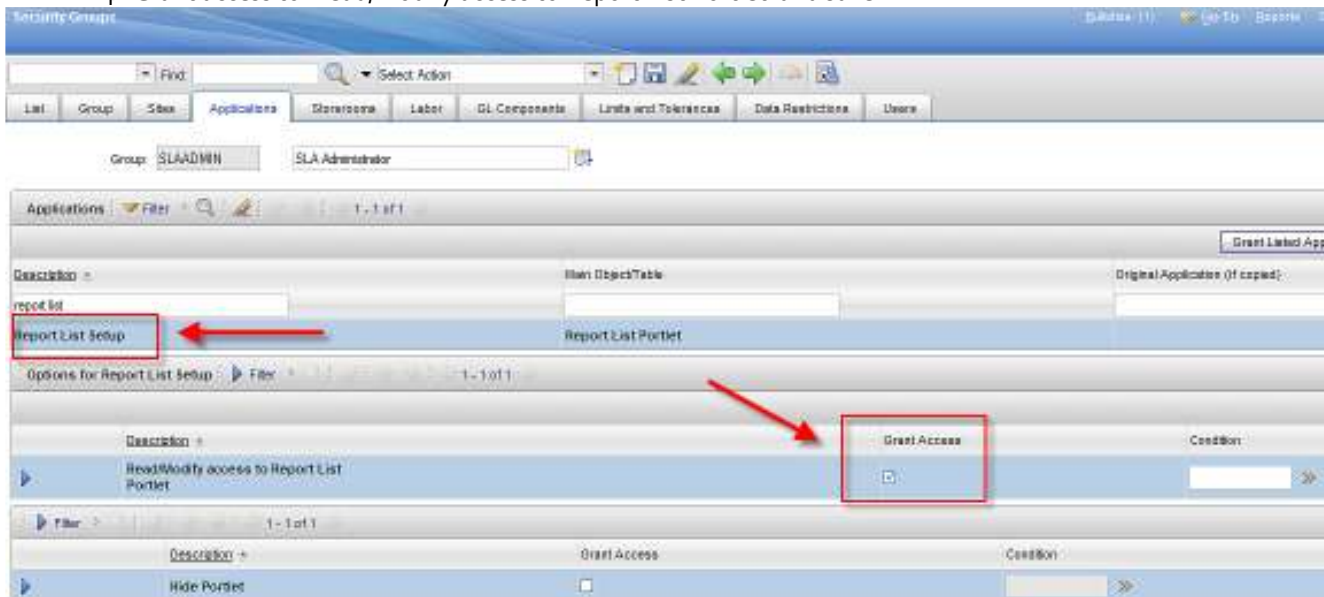
You can configure Start Centers for your individual security groups by creating individual templates (tabs) for users to quickly view and access applications and data. One of the primary purposes of the templates is to show data via KPI Displays, which provide immediate, visual status of particular business metrics. Another purpose is to enable quick access to applications, result sets or reports.

The report list portlet enables a listing of reports on the Start Center. With this functionality, you can configure a listing of your individual, most frequently used reports for quick and easy access.

This functionality can be described by using the example of an SLA Administrator who wants to configure a template for his SLA Related Activities, including a listing of his favorite SLA reports for quick and easy access.

To enable the Report List Portlet, security rights need to first be granted to each Security Group who will use this functionality. (In this case, it is the SLAADMIN group). To do this, follow the steps below:

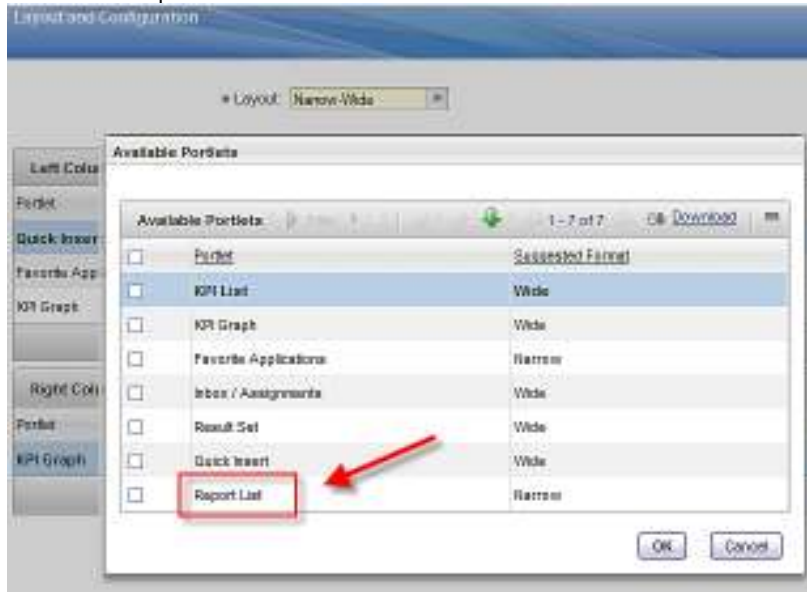
1. Access the Security Group Application.
2. Select the Security Group. On the Applications tab, enter 'report list' in the description field.
3. When the results return, select Report List Setup Application. This is the Report List Portlet.
4. Grant access to 'Read/Modify access to Report List Portlet' and save.



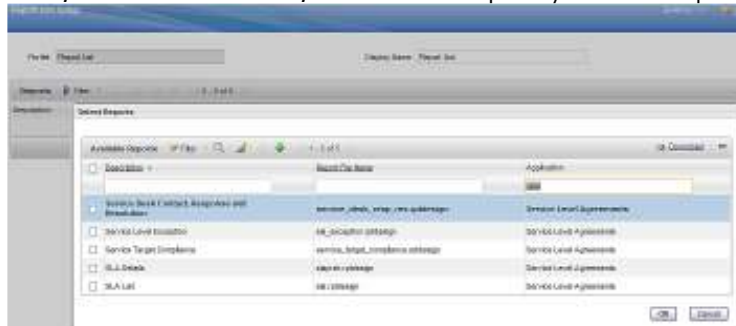
After granting the security group access, sign out of V7.5 to refresh the settings. The next time you sign in, the Security Group should have access to the Report List Portlet.



To enable the report list portlet, click on the Change Content/Layout Section of the template. Select the 'Report List' from the Available Portlet window.

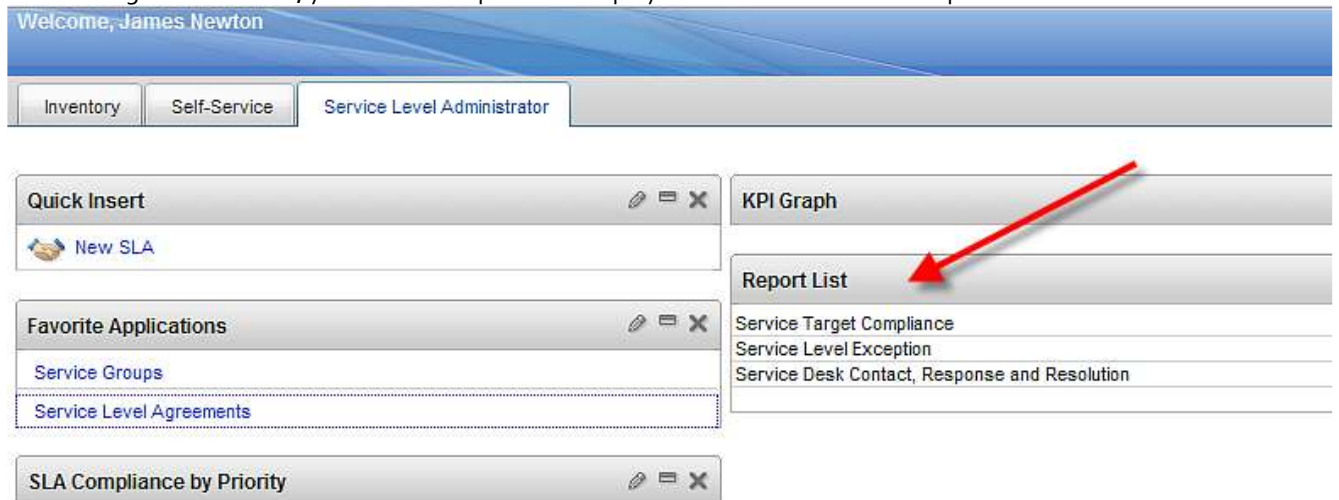


This enables the Report List Portlet to display on the Start Center. Then, click on the Edit icon, and add the frequently accessed reports for display on your portlet.



Note: This list of report that displays are only those that you have security rights to execute.

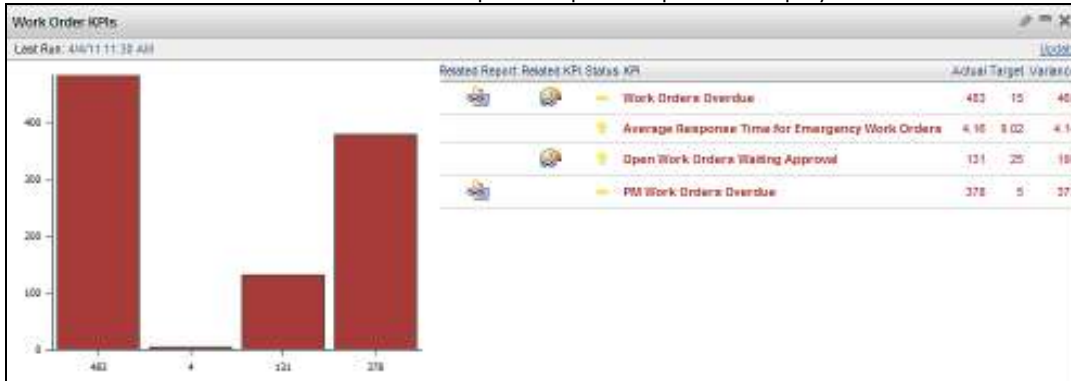
After saving the selections, your favorite reports are displayed on his Start Center for quick access.



## 7.2 Multi KPI Report Linkage

You can hyperlink to a related report or KPI, when multiple KPIs are displayed in list type format within a KPI Graph or List Portlet on a user's Start Center. This enables you to drill down into additional details on the KPI, which can be critical for KPI's in red or yellow status.

This functionality is shown below. Notice that some KPIs have Related Reports and KPIs, and others do not. For those KPIs where the hyperlink is enabled, you will see the name of the related report or related KPI thru a mouse over which enables the report or kpi description to display.



You define the related kpi or report that the kpi will hyperlink to in the KPI Manager application.

The screenshot shows the "KPI Manager" interface. The "KPI Name" is "KPI-10" and the "Work Orders Overdue" is the selected KPI. The "Links" section is highlighted with a red arrow and contains the following configuration:

Link to KPI: KPI-11

Link to Report: labor\_qual.rptdesign Labor Qualification

If there are no related reports or kpis, the related report and kpi columns will not appear as shown below



### 7.3 Property Files and Cron Tasks

A top level listing of the System Properties used by Reporting is shown below

Property Setting	Description	Default Value
mxr.report.birt.maxconcurrentrun Used for Performance Maintenance	Manages the number of BIRT immediate and Scheduled Reports that can be run concurrently	5
mxr.report.birt.queueidletimeseconds Used for Performance Maintenance	Frequency that the Queue Manager polls the Queue for new report jobs	60
mxr.report.birt.disable.queuemanager Used for Multi-Server Configurations, Performance Maintenance	Defines whether the queue manager is enabled. If the queue manager is disabled (value set to 1) scheduled reports will not be executed on the server.	0
mxr.report.birt.viewerurl Used for BIRT Report Only Server (BROS) Configuration	BIRT Viewer URL for cluster or separate report server, ex: <a href="http://myhost:myport/maximo/report">http://myhost:myport/maximo/report</a>	
mxr.sessiontoken.timeoutseconds Used for BIRT Report Only Server (BROS) Configuration	Token based session timeout in seconds. This token is used in the authentication of the user to the Report Server. Note: the session token timeout setting code is generic and currently only BIRT Reporting uses this functionality.	180 seconds or 3 minutes
mxr.Reportsinapage mxr.report.adhoc.editWithGroupAccess For QBR (Ad Hoc) Reporting	Defines the number of reports to display in the Report Window Enables editing of Ad Hoc report when any security group has access to the report.  For example, if an Ad Hoc report is created with Public security Access -If the setting is No, the creator of the ad hoc report cannot edit it  -If the setting is Yes, the creator of the ad hoc report can edit it	5 0 (No)
mxr.report.adhoc.previewLimit For QBR (Ad Hoc) Reporting	Introduced in Version 7.5.0.3 Fixpack April 2013, enables you to define the maximum record limit value during QBR report Creation	50
<b>Other Related Property Settings</b>		
mxr.email.content.type	Sent the content type for all communications Impacts display of email text received from the Comment section of the report request page. If you want text to be delivered with carriage returns, set value to text/plain.  Reference Blog: <a href="http://ibm.co/JOKHEr">http://ibm.co/JOKHEr</a>	Text/html

### 7.3.1 Key Report Property Settings – Direct Print, Direct Print with Attachments

Property Setting	Description	Default Value
mxe.activex	Determines if ActiveX Controls can be used for Direct Print (DP) and Direct Print with Attachments (DPA)	Yes
mxe.directprint.inherited.attachment	Defines if inherited docs should be enabled for printing with Direct Print with Attachments Functionality	No
mxe.doclink.defaultPrintDocWithReport	Default value of printing attached document with report if printable type	Yes
mxe.report.AttachDoc.validateURL	Property to determine if the URL of the attached document should be validated before printing from the V7 Server.	Yes
mxe.directprint.javaconsole.debug	Enable output to Java Console for troubleshooting of Direct Print, Direct Print with Attachments	No
mxe.directprint.printtime.wait	Maximum duration in seconds the current print process waits before moving to the next process Notes: 1. This setting is applicable only to reports, and any PDF Attachments. 2. Prior to the V7.5.0.3 release, this value must be set via the Database, not the System Property Application	600
mxe.report.birt.PrintSeparateRecord	Enables printing of each record separately when no attachments are in the record set.	No
<b>Other Related Property Settings</b>		
mxe.doclink.securedAttachment	Identifies if the attachment is secured or not  If you set this value to true, and you want to print attachments which are Microsoft Office attachments, additional configuration may be required depending on the release you are using. See the Direct Print guide referenced below for additional details.	False

Additional details on these property settings for Direct Print and Direct Print with Attachments can be found in the V75 Report Application Toolbar Access Direct Print Guide. You can access this guide here: <http://ibm.co/KgsJfp> or via the Report Reference Materials Page here: <http://ibm.co/14r8jK7>

### 7.3.2 JVM System Properties

Property Setting	Description
mxe.report.birt.tempfolder	Specifies location of temporary folder on the Server for BIRT Runtime and temporary files created during the report execution process.  *Note: Do not include any spaces in the directory path for this temporary folder.
io.tmpdir	The setup of this property varies for Websphere or Weblogic. Reference the System Administrators Guide for more details on enabling JVM System Properties. The IO Temp directory is used for intermittent, individual BIRT report file generation. This temp directory is deleted when the report completes execution.

For details on specifying it in Websphere, see below.

To set the report temp directory (mxe.report.birt.tempfolder) in Websphere:

1. Login to Websphere Integrated Service Console
2. Go to servers -> Application servers
3. From the right panel click on the server where you have deployed maximo.
4. Under "Server Infrastructure" click on "Process Definition".
5. Under "Additional Properties" click on "Java Virtual Machine"
6. Add the following to the generic JVM Argument `Dmxe.report.birt.tempfolder=c:\tempReport\BIRT-TEMP`

Where you specify the directory of your choice without any spaces

7. Save and restart the server.

To set the IO temp directory, follow the same procedure above, and add the following to Generic JVM Argument

`-Djava.io.tmpdir= c:\tempReport\BIRT-TEMP-IO`

Where you specify the directory of your choice without any spaces

## 7.4 Cron Tasks

Cron Task	Description
REPORTSCHEDULE	Used for Scheduling of BIRT Reports. *NOTE: Its Access Level is set to READONLY. Administrators should monitor report schedules via the Report Administration application.
REPORTLOCKRELEASE	Monitors the locks on report jobs
REPORTUSAGECLEANUP	Determines frequency that entries in REPORTUSAGELOG Table are deleted
REPORTOUTPUTCLEANUP	Determines frequency that scheduled report outputs in the Report Viewer application are deleted
REPORTADHOCLOCINST	<p>Determines the frequency that newly created Ad Hoc Report Request Pages are enabled in multi-language environments. (Introduced in 7.5.0.1)</p> <p>When a public QBR is saved in a multi-language environment, the SYNCREPORTLABELS maxvar is set to true. The REPORTADHOCLOC cron task will check the flag and when true, will launch the process to synchronize the labels. After completion, it will set the maxvar flag back to false.</p> <p>*Note: This is for multi-language environments only. If you using a single language environment, this cron task can remain inactive.</p>

## 7.5 Functionality not Supported

The following is a listing of functionality not supported.

1. Ability to run a report immediately and email the report at the same time.

- If a user wants to email a BIRT Report, it must be scheduled.
- If they want to run a report and retain a copy, the report can be downloaded to .csv or .pdf and a local copy can then be made.

2. Report Browser Back Button

The Report Browser Back Button is not supported.

This is best described by the use case below.

A user executes three reports in the same browser session. When the third report is displayed, he can not use the arrow buttons to go back to the first or second report.

- This is because the executed reports are stored as temporary files on the application server, and the file paths are not retained. The user may be able to go back – but the functionality is NOT supported – as reports will not consistently display.

# REFERENCE MATERIALS

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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/1321Cul>

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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