



## Customizing Tivoli Common Reporting Report Designs

This article describes how you can use the BIRT designer tool to customize a Tivoli Common Reporting report shipped with a product. (Nov 2007)

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IBM Tivoli is delivering the **Tivoli Common Reporting** software, aiming to provide customers with a reporting solution that is shared across the Tivoli portfolio and can be used by Tivoli, business partners, and customers as a base for increasing the value of solutions built around Tivoli products.

### Where to get the BIRT designer

To begin, you need to download the BIRT designer. The BIRT designer can be downloaded from the Tivoli Common Reporting Web page at IBM® developerWorks® (<http://www.ibm.com/developerworks>).

### Anatomy of a Tivoli Common Reporting report design

**Company Branding** | Tivoli | IBM

**Report titles** | Report Title  
Secondary Report Title

**Parameters** | Parameter 1 R2D2, C3PO, Han | Parameter 1 R2D2, C3PO, Han  
Long Parameter 2 2003-12-10 | Long Parameter 2 2003-12-10  
Longer Parameter 3 2000-07-29 | Longer Parameter 3 2000-07-29  
Parameter 4 Pipes and elbows | Parameter 4 Pipes and elbows  
Parameter 5 Old work box | Parameter 5 Old work box

**Information Section** | Sub-Title Text Sentence Style

Legend text	Legend text	Legend text	Legend text
Legend text	Legend text	Legend text	Legend text
Legend text	Legend text	Legend text	Legend text
Legend text	Legend text	Legend text	Legend text
Legend text	Legend text	Legend text	Legend text
Legend text	Legend text	Legend text	Legend text

Status	Header	Header	Header
Critical	Lucy	100	Empire strikes back
Warning	Ben	200	Revenge of a jedi
Normal	Katie	4	I, Robot
Unknown	BJ	6	Hunt for red october

Sub-Title Text Section 2

Status	Header	Header	Header
Critical	Ben	100	Daughty
Warning	Owen	200	Pink
Normal	Lucy	4	Weird Al Yankovic
Unknown	Lynette	6	Big bad Voodoo Daddy

**Description** | Description text goes here. This is stuff to fill out for those who want to see stuff. Man, it is getting late and I'm writing about stuff again. Maybe this is the stuff that goes between stuff or in stuff. Who know's where this stuff is coming from to fill up this area.

**Footer** | 2007-03-27 23:02 EST | Page 1 of NN

A report design can include the following elements:

- A header for company branding
- A primary report title
- Optional secondary titles
- Parameters used to generate the report
- Information sections containing the content of the report in tables and charts
- A description
- A footer containing the generation date and time of the report and a page number



A report design can be customized while maintaining the Tivoli Common Reporting common look and feel. Some of the customization techniques are discussed below.

## Importing a report design into the BIRT designer

The first step in customizing a report design is to import it into the BIRT designer tool:

1. Create a new BIRT Report project. Switch to the Report Design perspective.

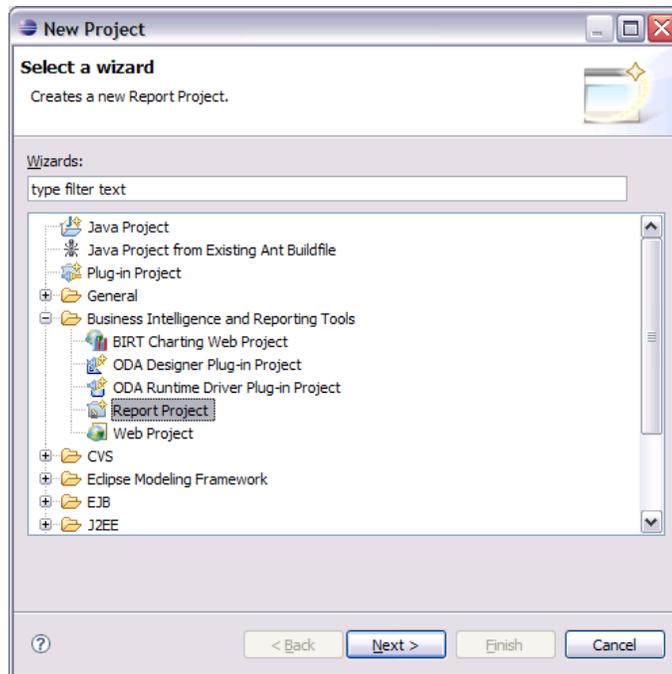


Figure 1

2. Import the Tivoli Common Reporting report package (a .zip file) provided by the product into the project. After you import the package, you can see the structure of the package in the Navigator view. This is shown in Figure 2. The package contains the report designs (files with the .rptdesign extension) and the resources folder containing the images, scripts, library, and properties files needed to render the reports. Product-specific resources are in the resources/<product name> folder, and resources that are common for all reports are in the resources/tcr\_common folder.
3. Double-click on any report design to open it in the Layout editor. Figure 3 shows the report layout as it appears in the Outline view. It shows all the data sources, data sets, parameters, report elements, and styles associated with the report design. Selecting any element in the body of the report from the Outline view selects the corresponding element in the Layout view, and vice versa.
4. Modify the BIRT settings to set the resource path:
  - a. Click **Window -> Preferences**.
  - b. Expand **Report Design**.
  - c. Select **Resource** and specify the project-specific resource directory (for example, C:\Workspace\ITM Reports\resources).



Figure 2. Report Project Structure as viewed in Navigator

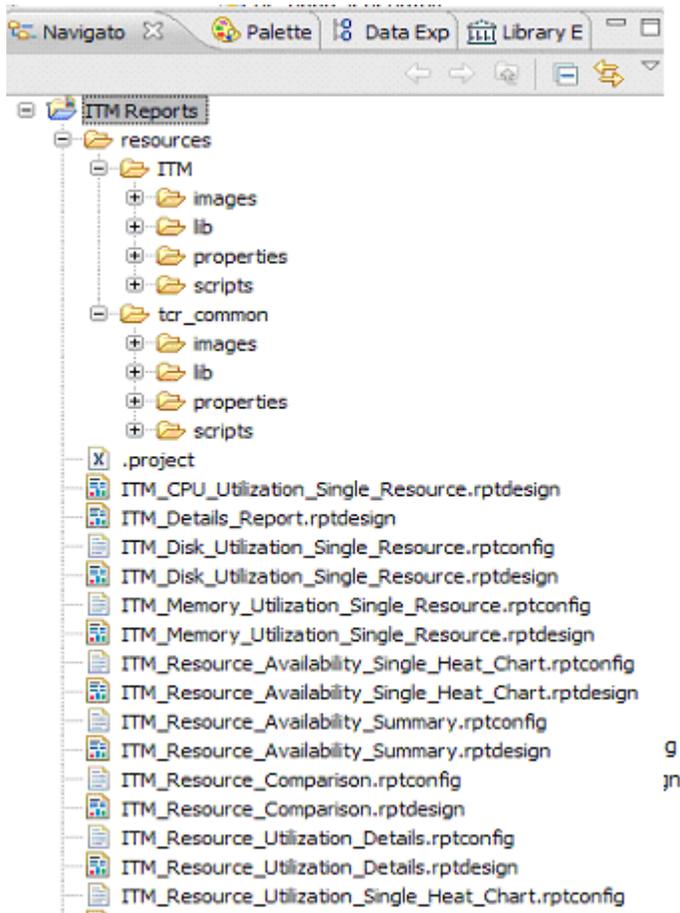
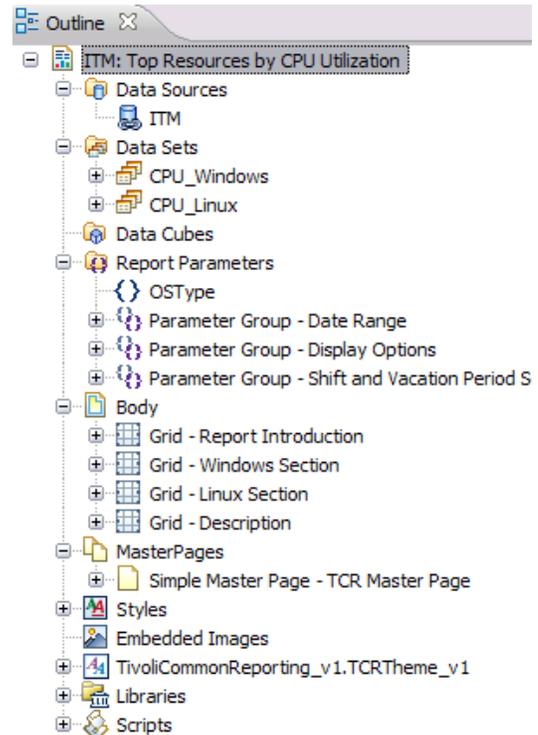


Fig 3. Report Layout as viewed in Outline



## Modifying data sources

A data source is the database from which data is pulled to generate a report. Data sources are defined in the product library and referenced in the report design. The advantage of placing data sources in the library instead of in the individual report designs is that changes made to the library will be reflected across all report designs.

To edit the data source:

1. Navigate to `<product project>/resources/<product name>/lib/` and double-click the `<product name>.rptlibrary` file. The contents of the library open in the Outline view.
2. In the Outline view, expand **Data Sources** and double-click to open the primary data source.
3. Select or add the appropriate driver. Enter the database URL and authorization credentials, or the JNDI URL, as seen in Figure 4.
4. Click the **Test Connection** button verify communication with the database.

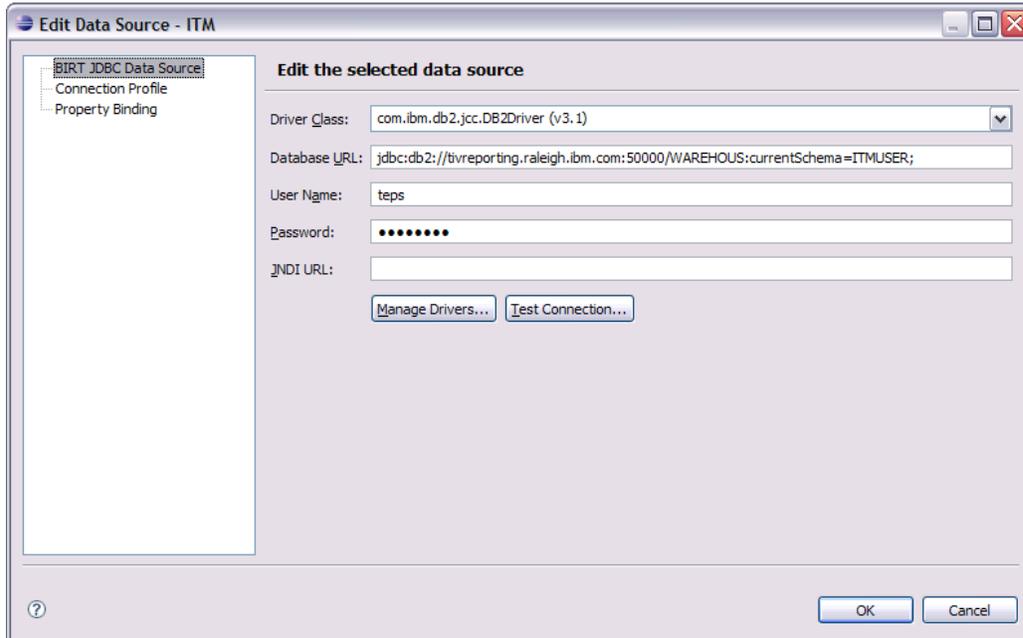


Figure 4.

## Modifying data sets

Data sets are result sets returned by queries. A data set associated with a JDBC data source has a SQL query and accompanying parameters and filters. Each chart or table in a report design is bound to a data set.

Data sets are typically placed in individual report designs. They can also be included in a library, if the same data set is reused in more than one report.

To edit a data set:

1. Expand **Data Sets** in the Outline view of the report or library, and double-click the data set you want to edit.
2. The available tables in the data source appear in the data set editor, as shown in Figure 5. By expanding the table and double-clicking a column name, you can add a field to the SQL query.
3. To see the selected columns and their data types, click **Output Columns**.
4. To create new columns based on calculations on the selected columns, select **Computed Columns** and click **New**.
5. To set filters for the data set (or results) based on new criteria, click **Filters** in the data set editor.

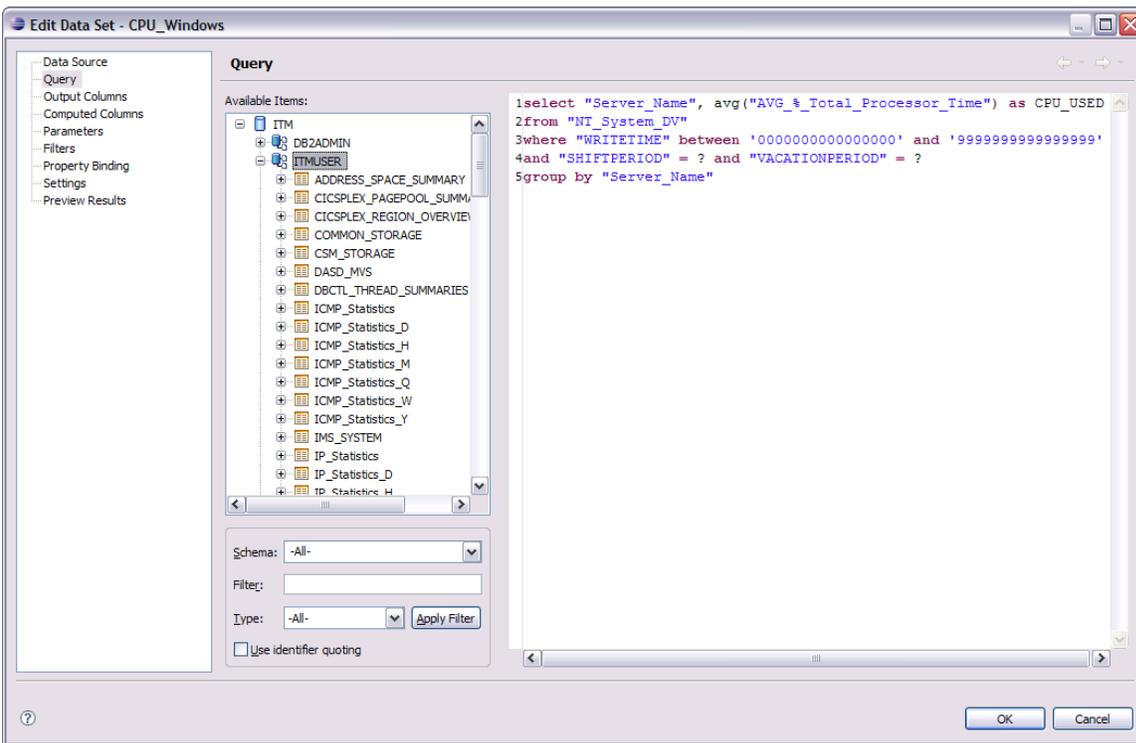


Figure 5.

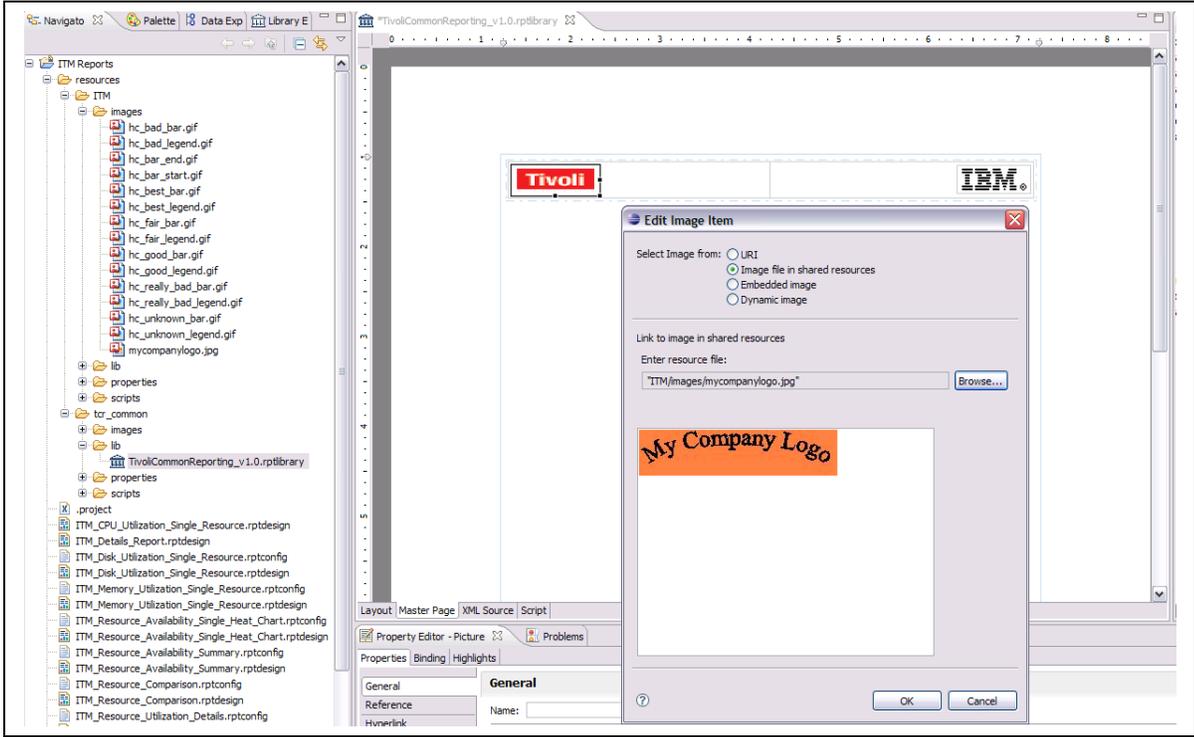
To preview your result set, select **Preview Results**.

If there are JavaScript functions defined or called from the beforeOpen method of the data set, the preview might not run correctly in BIRT 2.2.1. To see these scripts, close the data set editor; with the data set selected, click the Script tab and select **beforeOpen** from the **Script** drop-down list. The script might contain calls to functions defined in scripts in the resources/\*/scripts directory or may contain functions defined there. The code in the beforeOpen script is used to modify the query dynamically before the database is queried.

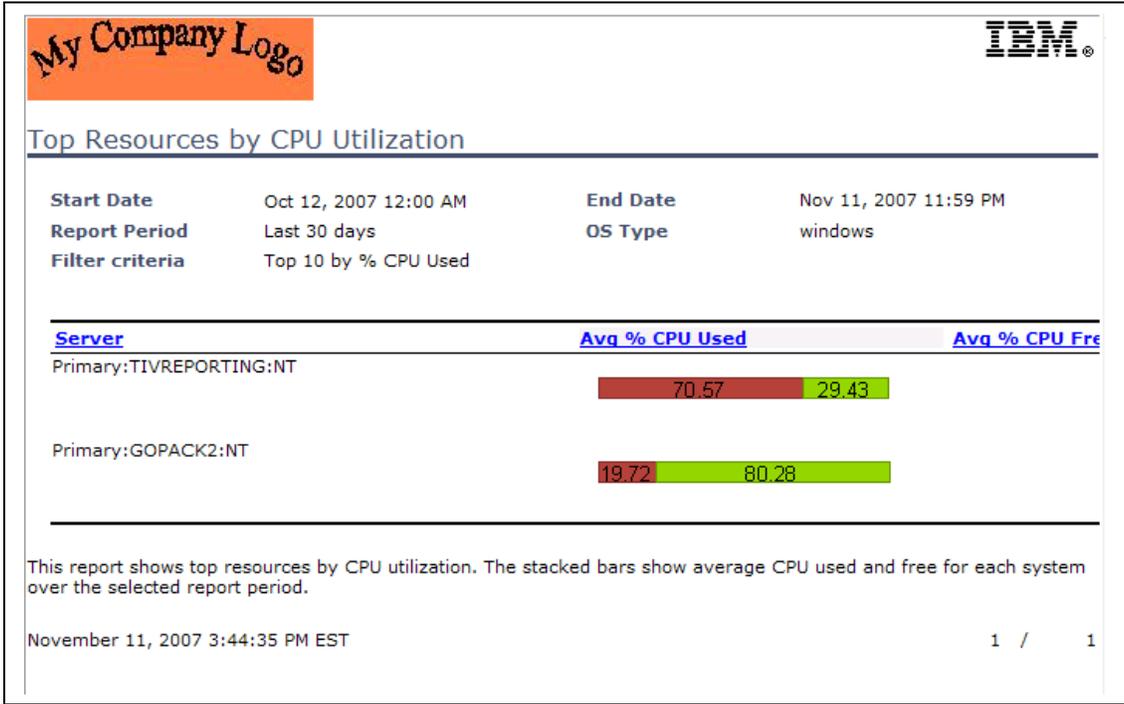
## Modifying logos

The header of each report design includes the IBM and Tivoli logos. The header and footer of the report are defined in the TCR Master Page present in the TCR library. Changes made to this master page are reflected in all reports. To change the logo:

1. Copy your new logo to the resources/<product name>/images folder.
2. Open the TCR library (resources/tcr\_common/TivoliCommonReporting\_v1.0.rptlibrary).
3. Select the Master Page tab as shown in Figure 6.
4. Double-click the Tivoli banner image or the IBM logo image in the header.
5. In the image editor, choose **Image file in shared resources** and enter the location of your logo. Preview it and click **OK** to finish.
6. Save the library.
7. Open any report and preview it to verify that the logo has changed (see Figure 7).



**Figure6. Modifying Logo**



**Figure**

**7. Report Preview after changing Tivoli logo to My Company's logo**

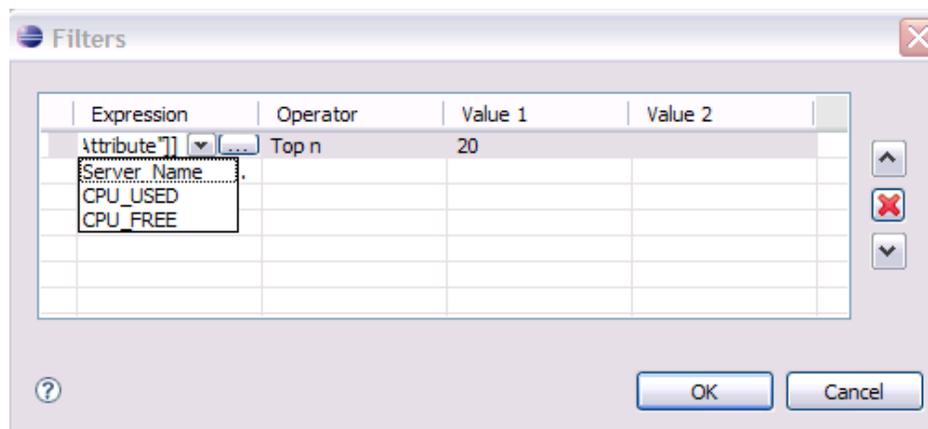


## Filtering and Highlighting Data

Another simple way of customizing reports is to filter certain data that you do not want to show in the report, or to highlight data. For example, you might want to see only the top 10 items instead of all data in a chart or table, or to highlight data within a particular range.

You can set filters on a data set, or on individual report items like charts or tables. For example, if you want to see only top 20 rows in a chart but want to show all of the data in a corresponding table, you would set a filter only on the chart and not on the data set. To do this:

1. Double-click on the chart to open the chart editor.
2. Go to **Select Data -> Filters**.
3. Create a new filter by choosing the column name in the **Expression** drop-down list.
4. Select **Top n** in the **Operator** drop-down list, and enter the value 20 in **Value 1**, as shown in Figure 8. There are other filters in the Operator list that can also be used.



**Figure 8. Setting Filters**

To highlight data in a table:

1. Select a table row and click the Highlights tab in the Property editor.
2. Click **Add** to create a new highlight rule.
3. Select a column name, operator, and value.
4. Choose a background color. The highlight rule shown in Figure 9 specifies that if the value of CPU\_USED in any row is greater than or equal to 90, the background color of that row will be changed to silver.

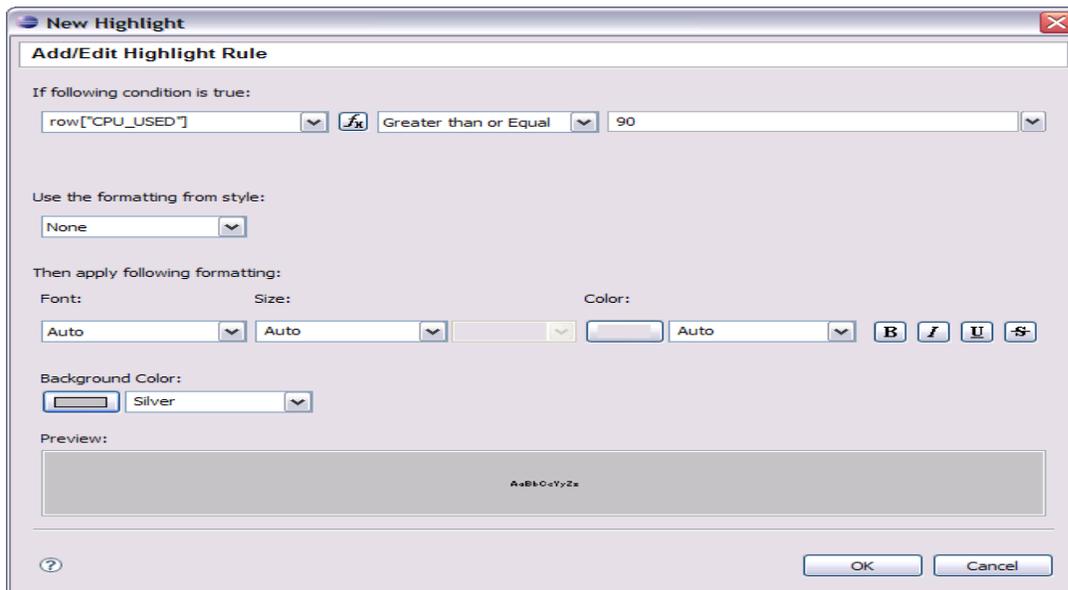


Figure 9. Setting highlight rules

## Modifying text

To modify report text elements such as headers, titles, or parameter names:

1. Click on any text element in the Layout view.
2. Select **Localization** in the Property editor.
3. Click the ... button next to the **Content Key** field to edit the properties file associated with the report.
4. As shown in Figure 10, you can select an existing key or add a new key/value pair in the **Quick Add** section. After adding a new property, select the key from the list and click **OK**. For more information on report globalization, refer to the *Tivoli Common Reporting Development and Style Guide*.



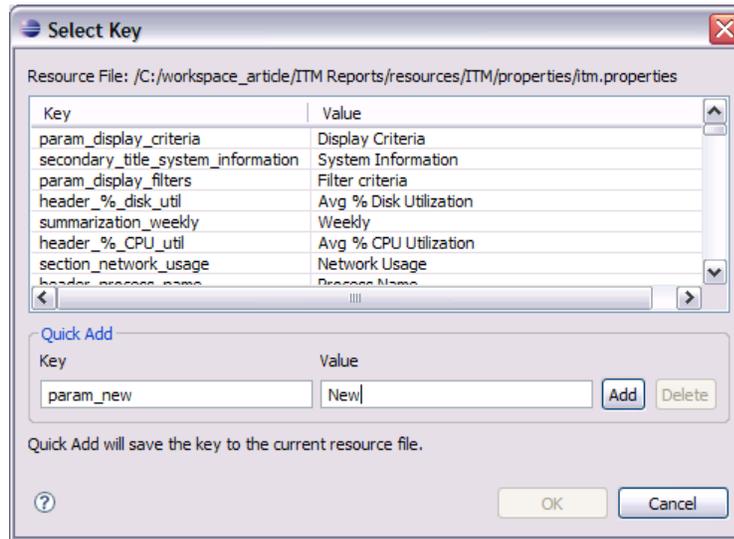


Figure 10. Localizing Text

## Adding report elements

The simplest way to add elements to an existing report is to copy an existing table or chart and edit the binding in order to associate the new element with another dataset. If you are creating new report elements, download the Tivoli Common Reporting Style Package and refer to the *Tivoli Common Reporting Development and Style Guide* for information about how to use the Tivoli Common Reporting templates.

## Creating libraries

As with any software project or tool, one of the most important practices is reuse. Tivoli Common Reporting makes that practice possible with the ability to create libraries. Using the BIRT report designer, you can create a library in a report project that includes report elements you can then reuse in multiple reports.

To create a library:

1. After creating a report project, create the directory structure that you want to use for your library. For example, you might use the same structure used by the out-of-the-box TCR Style Package, `<product project>/resources/<product name>/lib/`.
2. Create the library in the lib directory created above, as shown in Figure 11 below.

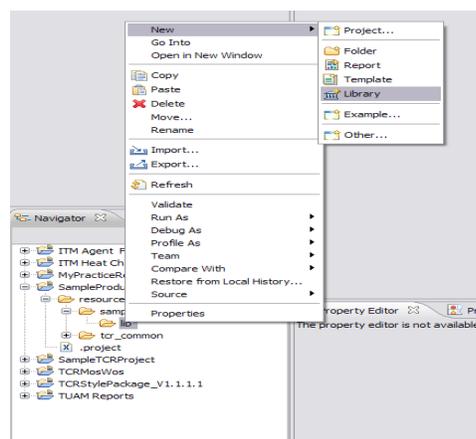
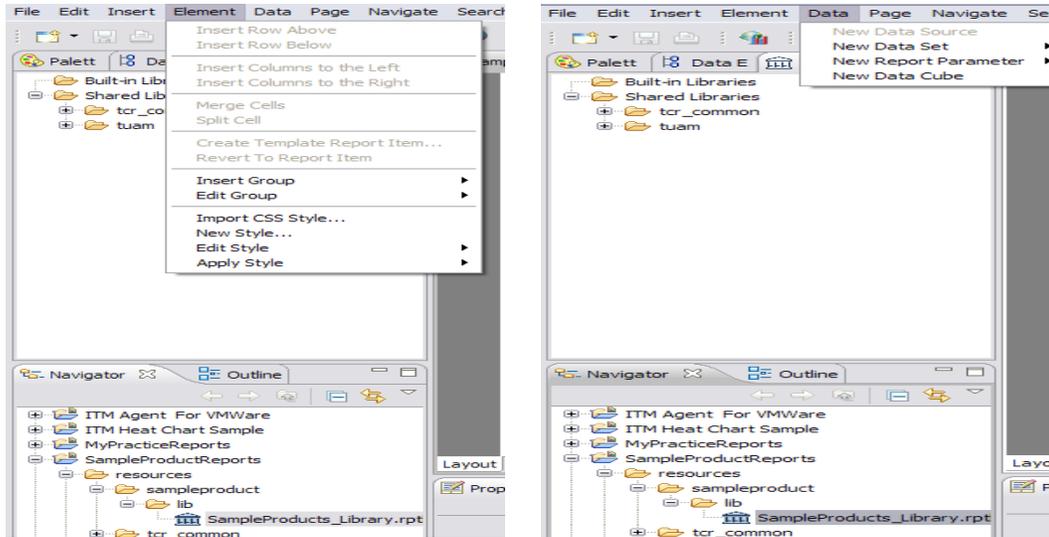


Figure 11. Creating a new library

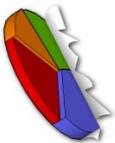


3. You can then insert report elements such as styles, data sources, data sets, and report parameters, as shown in Figure 12.

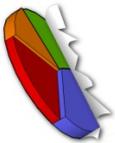


**Figure 12. Adding report elements to a library**

To use the library elements in a report, you must include the library as a library for the report.



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