



Designer's Corner: TCR 1.1.1 Report Packages

Designer's Corner is a periodic article designed to discuss interesting aspects of Tivoli Common Reporting functions and is intended as a supplement to the existing TCR documentation. (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.

Report packages are a convenient method for report designers to deliver reports to users of Tivoli Common Reporting (TCR). Report packages contain one or more report designs and all of the resources that the designs require. Report resources can include anything from images to libraries to nationalized language files. A report package is a single file that is imported into TCR.

A report package is a common zip file that follows a defined format so that TCR will understand how to import the reports contained within it. Report packages can have one of two formats that TCR can understand:

- The first format is based totally on the directory structure of the files; TCR expects files to be within certain directories, and names the reports based on the design names in the file. This format is called **Report Design format** and is intended to be used as a development format since it is quick to generate.
- The second format is based on an XML descriptor file included within the report package; TCR uses the information in the XML file to add the reports to TCR. This format is called **Report Definition format** and is intended to be used as the official delivery format of reports to end users because it contains specific information about the reports.

"**Report Design Format** is intended to be used as a development format..."

"**Report Definition Format** is intended to be used as the official delivery format..."

The Report Design Format

Report Design format is a convenient format for report designers who are building new reports and testing them within TCR. The Report Design format allows TCR to make some assumptions and create the reports based on information deduced from the package structure itself. There are only a few rules to which a package using Report Design format must adhere:

1. All files and subdirectories must be contained within one root directory.
2. All resource files must be contained under a directory named *resources* that is a child of the root directory. Make sure you set the resource directory via your preferences. You do this from within the report designer by clicking Windows->Preferences->Report Design->Resource. Change <Current Project Folder> to point explicitly to the *resources* directory.

That's it! TCR will read through all of the files contained within this structure and import the designs and resources as well as generating the reports and reports sets. Consider the following example:

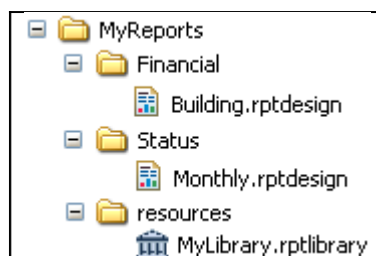


Figure 1 - Sample Report Package



The package format shown in Figure 1 follows the format described in the Tivoli Common Reporting Enablement Guide¹. The above package includes two report designs and one report library. Using this structure, TCR will perform the following:

- **Import Designs**
 - Building.rptdesign imported with the name /MyReports/Financial/Building.rptdesign.
 - Monthly.rptdesign imported with the name /MyReports/Status/Monthly.rptdesign.
- **Create Report Sets**
 - /MyReports/Financial
 - /MyReports/Status
- **Create Reports**
 - Building is created in set /MyReports/Financial with name /MyReports/Financial/Building
 - Monthly is created in set /MyReports/Status with name /MyReports/Status/Monthly

After the import, the TCR Web interface will show the new report sets and reports as

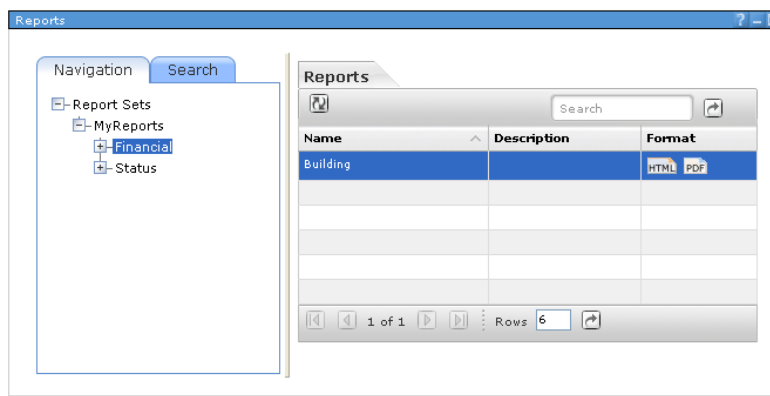


Figure 2 - TCR Web interface

As shown in Figure 2, the TCR interface now shows the report sets based on the directories from the imported package, and it has populated the sets with the appropriate reports based on the names and locations of the designs inside the imported package. During import, any file ending with the .rptdesign extension is imported as a report design, and a corresponding report is created for it. Any file that is found without an .rptdesign extension is ignored. There are two exceptions to these rules:

- First, if a file with the .rptdesign extension falls outside of the single root directory (in Figure 1 this is “MyReports”), then the import will fail.
- Second, TCR will not honor design files located under the resources directory. All files located inside the resources directory will be imported as resources rather than report designs, even if they end with the .rptdesign extension.

Resource files exist only under the “resources” directory and can be almost any kind of file. Examples of resource files include .properties files, JavaScript scripts, libraries, and images. TCR does not make any assumptions about what these files might be because report designers are always inventing new and ingenious ways to present data through reports, and the resources to support the reports can vary greatly. TCR simply imports all of the files found under the resources directory into its data store. Furthermore, TCR assumes that all of the reports found within the imported package rely on the resources found in that resources directory. A relationship called a “resource directory” will be established between the resources directory and each report.

Notice that in Figure 2 there is no description associated with the reports created as a part of the Report Design format. Information such as the report description is carried only in the Report Definition format, which is discussed later in this article. The lack of this type of information is one reason that the Report Design format is more suited for development

“... the **Report Design Format** allows for easy import from the BIRT report designer...”

purposes. Additionally, the Report Design format allows you to easily import projects from the BIRT report designer. To do this, set up your report project to mimic the format expected by TCR by creating a resources directory and placing all resources for the project into that directory. Once the project is ready to be imported into TCR, simply

export the project to a .zip file (be sure to start at the project root), and then import the project into TCR.



The Report Definition Format

The Report Definition format is produced whenever reports are exported from TCR. The Report Definition format contains more information about the reports and report sets than the Report Design format does. Not only does the Report Definition format include the required designs and resources, it also includes additional detailed information:

- Report definitions, including precise naming
- Multiple reports based on a single design
- Globalization information
- Multiple resource directories
- Report membership in multiple sets

The kind of information listed above cannot be simply inferred or dynamically created. The secret to the power of the Report Definition file is the inclusion of an XML file that contains information about the files and directories included within the report package. The metadata XML file is created by TCR during export to precisely describe each of the artifacts in the report package, along with all the supporting information about those artifacts so that they can be imported without loss of fidelity.

No specific directory structure is required, because the metadata XML file describes everything about the package to TCR. The Report Definition format is ideal for distribution to end users and customers because of the precision and additional information that it contains.

“The **Report Definition Format** is ideal for distribution to end users and customers ...”

Importing Report Packages

Report package import is the method of populating the TCR data store with all of the information contained within a report package. Report packages can be imported through the Web user interface or through the command-line interface. To import a package from the Web user interface, right-click on the report set root in the report navigation tree and select **Import Report Package**.

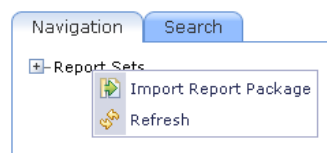


Figure 3 - Import Report Package

A window then prompts you for the specific file to be imported.

From the command line, the following command imports a report package:

```
trcmd -import -bulk c:\rptPkg.zip
```

In this command, *c:\rptPkg.zip* represents the path to the file to import. (This example uses Windows conventions; on Linux and UNIX systems, use the appropriate file name and path conventions.)

Regardless of the interface used to import the package, the result will be the same. TCR reads the package, imports all of the designs and resources, and creates the necessary reports and report sets. After the import successfully completes, the reports are immediately available for use.

As is typically the case when files are copied or imported from one system to another, the names that are created by default might not be appropriate for the destination system. There are a variety of reasons that the default names might not be desired. For example, perhaps an update for an existing report package has been made available, and you want to import the new package without overwriting the old package. TCR provides the ability to modify the names of the reports, report sets, designs, and resources to be imported; essentially, you can add to the beginning of the names.

For example, let's continue with the sample from Figure 1. If you import this package, then the report sets appear as shown in Figure 2. If you try to import the same package again, the import fails, and a message is displayed. Although it is not typical that the same package would be imported multiple times, it is possible that an updated version of a report package could be made available that has the same file structure. In this case, the administrator has two choices when importing the updated package.



- Overwrite the existing files
- Override the base names for reports, report sets, resources, and designs

You can specify overrides when you start to import a package. The following image shows the window that opens when you start to import a report package:

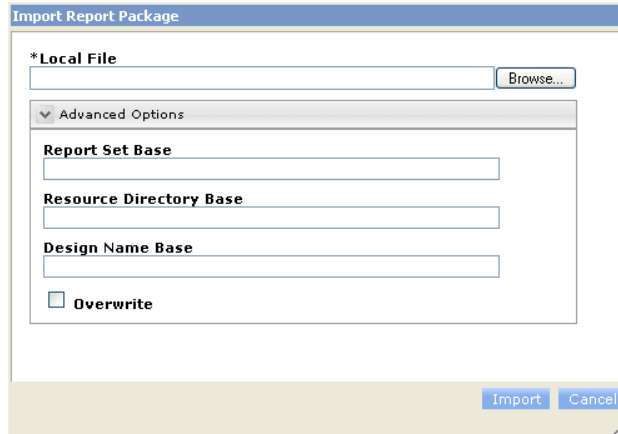


Figure 4 - Bulk import overrides

You can override various aspects of the import package or specify that existing files should be overwritten.

- **Report Set Base** allows the administrator to modify the report names and the report set names.
- **Resource Directory Base** allows the administrator to modify the name of the resource directories contained within the report package.
- **Design Name Base** allows the administrator to modify the name of the designs that are imported from the report package.

These overrides will modify the names in slightly different ways depending on the type of package you are importing. For packages using Report Design format, the specified names replace the first component in the names derived from the package. For packages using Report Definition format, the specified name is added before the first name component. Continuing with the report package example from Figure 1, if we specify override values for **Report Set Base**, **Resource Directory Base**, and **Design Name Base** as "/First/Report", then for a package using Report Design format, the updated names are modified as shown in the following table:

	Name Without Override	Name With Override
Report Set	/MyReports/Financial	/First/Report/Financial
Report Set	/MyReports/Status	/First/Report/Status
Design Name	/MyReports/Financial/Building.rptdesign	/First/Report/Financial/Building.rptdesign
Design Name	/MyReports/Status/Monthly.rptdesign	/First/Report/Status/Monthly.rptdesign
Report	/MyReports/Financial/Building	/First/Report/Financial/Building
Report	/MyReports/Status/Monthly	/First/Report/Status/Monthly

Table 1 - Report Design Format Override

After the import finishes, the TCR web UI shows the following.

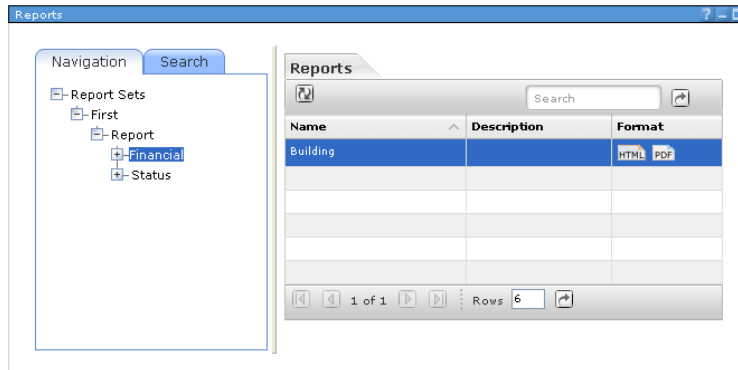


Figure 5 - Report Web UI With Overrides

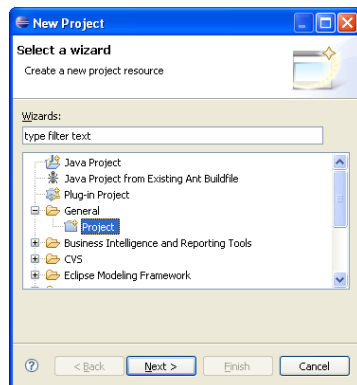
Overriding the names has a slightly different effect when used with report packages using the Report Definition format. The reason for the difference is the flexibility and complexity provided by the Report Definition format. Rather than replacing the first component in the names of the different artifacts within the report package, the override adds name components to the beginning. So, continuing with the same report and report set names, assume that the report package is built using the Report Definition format. If we once again specify all overrides with a value of “/First/Report” we will obtain the following overrides:

	Name Without Override	Name With Override
Report Set	/MyReports/Financial	/First/Report/MyReports/Financial
Report Set	/MyReports/Status	/First/Report/MyReports/Status
Design Name	/MyReports/Financial/Building.rptdesign	/First/Report/MyReports/Financial/Building.rptdesign
Design Name	/MyReports/Status/Monthly.rptdesign	/First/Report/MyReports/Status/Monthly.rptdesign
Report	/MyReports/Financial/Building	/First/Report/MyReports/Financial/Building
Report	/MyReports/Status/Monthly	/First/Report/MyReports/Status/Monthly

Table 2 - Report Definition Format Override

Building Report Packages

This section walks you through a simple, step-by-step scenario for exporting a report from the report designer, and then importing it in TCR.



The first thing to do is to create a new project for your new report or set of reports. The project creation wizard in the report designer guides you through creation of the project.

Figure 6 - Create Project



After you create the project, you should create the resources folder. The resources folder will hold all of the images, scripts, and libraries that might be needed for the reports. To create it, right-click on the project name, and select **New->Folder**. The name of the folder should be *resources*.

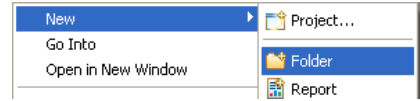


Figure 7 – Folder Creation

After creating the resources folder, open the preferences for the reporting tool by clicking **Windows->Preferences->Report Design->Resource** and modifying the default value to point to the resources directory you just created.

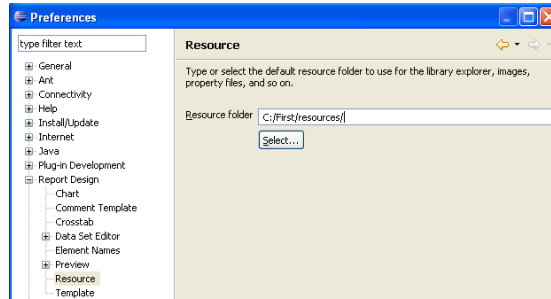


Figure 8 - Preferences Dialog

After you save the preference setting, you can create reports. The reports can be created in the main project folder, or any subfolders that are created. The only directory that cannot contain a report is the resources directory.

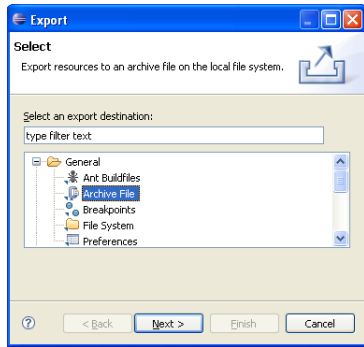


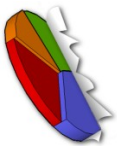
Figure 9 - Export wizard

After you have created and tested your reports inside the report designer, you can create a report package using Report Design format. Right-click on the project name and then click **Export to open the** Export wizard. Export the project as an Archive File of type **zip**. The file can have any name.

After you export this file, you can import it into TCR via on the pop-up menu of the report set root of the TCR Web interface (see Figure 3). After you have imported the package, you can associate any additional information with your reports, such as globalized names and descriptions.

After you have finalized the reports and reports sets and are ready to deliver them to users, you can use a simple export command from TCR to create a report package in Report Definition format that captures all of the necessary artifacts:

```
trcmd -user tcradmin -password tcradmin -export -bulk pkg.zip -reportSets MyReports
```



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[1] *The IBM Tivoli Common Reporting Enablement Guide*, publication information.