

# Custom Reports enhanced

- [General idea - using Jasper Reports with icTime](#)
- [Prerequisites](#)
- [Introduction](#)
- [Starting point](#)
- [Step by Step Explanation](#)
  - [Files & Usage](#)
  - [Installing samples from the plugin](#)
  - [Downloading samples](#)
    - [Full source sample files \(for developing own reports\)](#)
    - [Remarks - Postgres](#)
  - [Parameter usage](#)
- [Supported Parameter Types](#)
  - [Uploading a report \(Custom Reports\)](#)
    - [Fields & Explanations](#)
- [Executing a report](#)
  - [From the Custom Report List](#)
  - [Execution from Timesheet or Reporting view](#)
    - [Sample output:](#)
- [Working with sub-reports](#)
- [Fonts](#)
  - [Adding fonts to your Server Installation](#)
  - [Check if a specific font is available in your JIRA Installation](#)
  - [Make fonts available to JasperReports - Registration of fonts](#)

## [Permissions](#)

- [Compatibility](#)

## [Exchanging the report engine](#)

## General idea - using Jasper Reports with icTime

### Prerequisites

- You should have a report design tool to build Jasper Reports jrxml files. We suggest to use either the standalone Jasper Studio Designer or the Eclipse Plugin to build Jasper reports.
- You should have access to a JIRA Installation with icTime time tracking plugin installed, Version 5.8.2 or later
- We recommend using a copy of your production database while developing reports.

### Introduction

icTime expects a zip archive containing all files required to fill and execute a report. The archive must contain a file named main.jrxml. This file is compiled and "filled" during report execution. Usage of style sheets (jrtx files) and Jasper Sub Reports is supported as well, but must meet some conventions to be executable in your target JIRA installation.

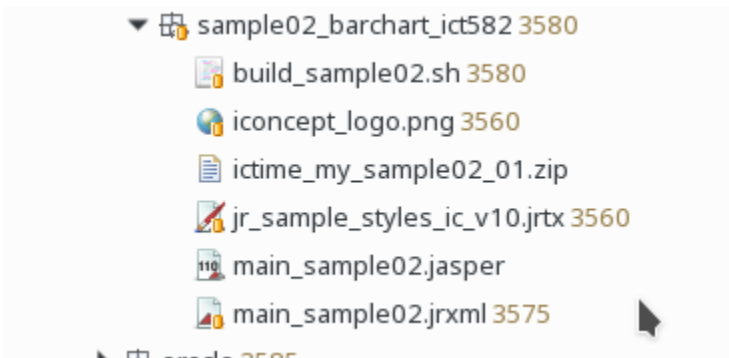
### Starting point

- Download the examples we provide on our website or install the samples bundled in the plugin. Examples are available for the following databases:
  - MySQL
  - PostgreSQL
  - MSSQL
  - Oracle
- Test the example(s) in your JIRA/icTime installation
- For development of your own reports
  - Unzip and explore the example files (download sources from our website)
  - Test main.jrxml file in your Report Designer using the Jasper Reports preview option
  - Rebuild the archive
  - Deploy your test archive and test it in your Jira/icTime environment

### Step by Step Explanation

- Download the source of the sample02: sample02\_barchart\_ict582-src.zip
- Extract example sample02\_barchart\_ict582-src.zip

You will get a structure like this:



## Files & Usage

File	Purpose	Remarks
build_sample02.sh	Build file (Linux) to create the executable Report archive (ictime_sample02.zip)	Steps done by build_sample02.sh: <ul style="list-style-type: none"> <li>• rm ictime_sample02.zip</li> <li>• cp main_sample02.jrxml to main.jrml</li> <li>• create zip archive named ictime_sample02.zip with files <ul style="list-style-type: none"> <li>• main.jrxml</li> <li>• iconcept_logo.png</li> <li>• jr_sample_styles_ic_v10.jrtx</li> </ul> </li> <li>• removes main.jrxml</li> </ul>
iconcept_log.png	The picture (corporate logo) used in the report	
ictime_sample02.zip	The ready to run zip Archive	Ready to upload report zip archive
jr_sample_styles_ic_v10.jrtx	Sample style sheet file used in the main report file	
main_sample02.jasper	Compiled version of main_sample02.jrxml	
main_sample.jrxml	Main report file	Features used: <ul style="list-style-type: none"> <li>• show usage of worklog_id parameter (provided by icTime in report query by result set of filtered and displayed Worklogs)</li> <li>• show usage of style sheet file in execution environment (unix based target environment)</li> <li>• show simple details table</li> <li>• show usage of a chart using main dataset</li> </ul>



icTime expects the main report file to be saved as "main.jrxml" in the zipped report archive. On linux systems you can use the build script (build\_sample\_xx.sh) to create your archive.

## Installing samples from the plugin

Samples for all supported databases are shipped with the plugin.

You can install the plugins using the "Install samples Button" from icTime Administration => Custom Reports view

## Downloading samples

Name	Description	for MySql	Postgres	MsSql	Oracle
sample01	Report, using sub reports to show time worked by <ul style="list-style-type: none"><li>Project</li><li>Activity</li><li>Team</li></ul>	Sample 01 (mysql)	Sample 01 (postgres)	Custom Report Sample 01 (MsSql)	Sample 01 (Oracle)
sample02	Report, showing time worked grouped by user and day	Sample 02 (mysql)	Sample 02 (postgres)	Custom Report Sample 02 (MsSql)	Sample 02 (Oracle)

Name	Description	for MySql	Postgres	MsSql	Oracle
sample01	Report, using sub reports to show time worked by <ul style="list-style-type: none"><li>Project</li><li>Activity</li><li>Team</li></ul>	<a href="#">Sample 01 MySql</a>	<a href="#">Sample 01 Postgres</a>	<a href="#">Sample 01 MsSql</a>	<a href="#">Sample 01 Oracle</a>
sample02	Report, showing time worked grouped by user and day	<a href="#">Sample 02 MySql2</a>	<a href="#">Sample 02 Postgres</a>	<a href="#">Sample 02 MsSql</a>	<a href="#">Sample 01Oracle</a>

## Parameter usage

Parameter name	Purpose	JRXML-Source code
EXEC_DIRECTORY_hidden	Populated during execution from icTime (no action needed by the user). Contains the directory where the report is executed	<pre>&lt;parameter name="EXEC_DIRECTORY_hidden" class="java.lang.String"&gt; &lt;parameterDescription&gt;&lt;![CDATA[Execution Directory]]&gt;&lt; /parameterDescription&gt; &lt;defaultValueExpression&gt;&lt;![CDATA["."]]&gt;&lt; /defaultValueExpression&gt; &lt;/parameter&gt;</pre>
worklog_id	Contains the list (Collection of Integers) when executed from Timesheet or Reporting. This list will be automatically provided by icTime base on the selection you run your Reporting.	<pre>&lt;parameter name="worklog_ids" class="java.util. Collection"&gt; &lt;parameterDescription&gt;&lt;/parameterDescription&gt; &lt;defaultValueExpression&gt;&lt;/defaultValueExpression&gt; &lt;/parameter&gt;</pre>
SUBREPORT_DIR	<p>If present and empty: icTime populates parameter with directory where the report is executed.</p> <ul style="list-style-type: none"> <li>• use this, if your main report uses sub reports (see example Sample 01)</li> </ul>	

## Supported Parameter Types

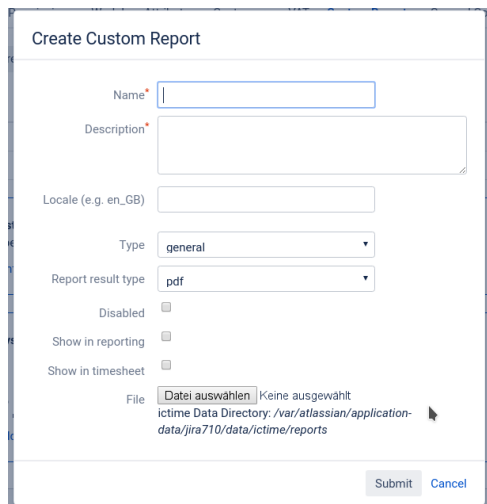
The following data types are supported during report execution in JIRA / icTime.

Report Parameter Data Type	Prompt on execution	Remarks
Long	+	
Integer	+	
BigDecimal	+	Use "." as decimal delimiter. No grouping supported (e.g. 123500.23)
Date	+	With Date picker according to your individual date format settings
java.util.Collection	Number values only	Example:  Entering 123,125,130 will be converted in a collection. Each value will be converted to a Long

## Uploading a report (Custom Reports)

Navigate to **icTime / Administration / Custom Reports** and click on **Create**.

The following screen will appear:



## Fields & Explanations

Field	Change value allowed after creation?	Description	
Name	—	The name of the report. Will be shown in timesheet / reporting if applicable	
Description	+	Put any meaningful description in here (e.g. Version of the report, content of the report)	
Locale	+	During execution of the report (on your target system), localization of Dates and numbers will be done using the locale of the target environment by default. If you need a specific locale in the report, then you can use the locale setting here. It is passed as REPORT_LOCALE parameter to the report.	
Type	—		
Report result type	+	Only applicable for report type "general". Defines the target of the report.	
Disabled	+	Once this option is selected, the report will not be shown any longer in timesheet / reporting and is no longer usable for invoicing	
Show in reporting	+	Option to allow/disallow report execution from icTime reporting page	
Show in timesheet	+	Option to allow/disallow report execution from icTime timesheet page	



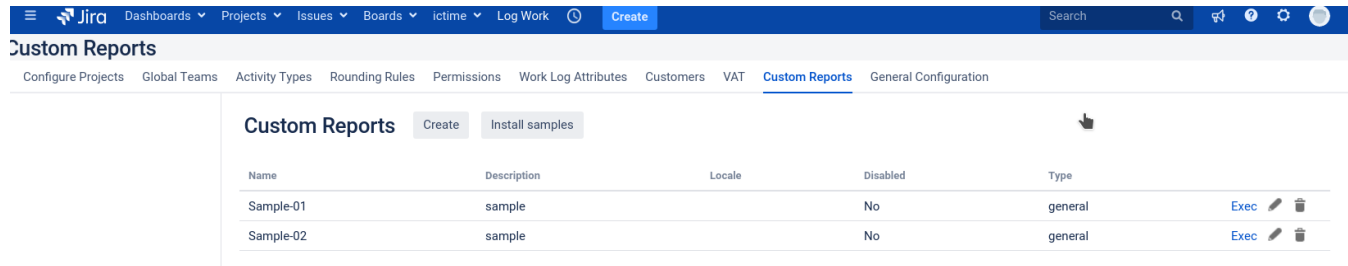
### Execution restriction





To be able to execute any report, you need either to have the Custom Report administration permission OR at least the Custom Report execution permission.

## Executing a report

### From the Custom Report List

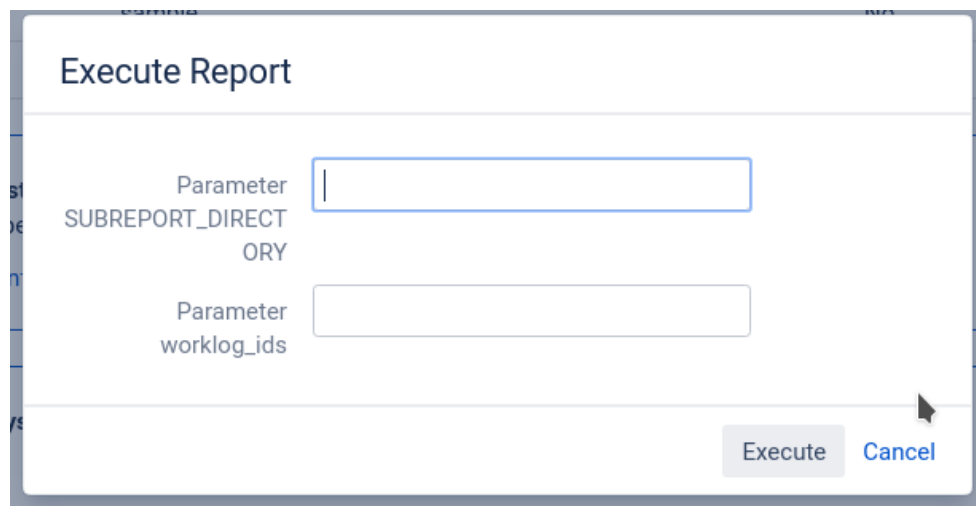
Go to **ictime** / Administration / Custom Reports.  
You will get a list of all Custom Reports available:



Name	Description	Locale	Disabled	Type	
Sample-01	sample		No	general	Exec  
Sample-02	sample		No	general	Exec  

Use the "Exec" link in the most right column to run a specific report.

This will show a dialog prompting for the parameters which are defined in the report.



### Execute Report

Parameter SUBREPORT\_DIRECT ORY

Parameter worklog\_ids

Execute Cancel

All parameters are displayed in a form using the parameter name as label. Submit the form by pressing the "Execute" button.

### Execution from Timesheet or Reporting view

Run a search from the Timesheet or Reporting view. The result of the search is a list of work logs meeting your search criteria.

**Jira** Dashboards ▾ Projects ▾ Issues ▾ Boards ▾ ictime ▾ Log Work ⌚ Create

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## Timesheet

Log Work

Issue  Projects (27) ▾ Components ▾ Fix Versions ▾ 01.03.18 📅 05.06.18 📅

Users (1) ▾ Activity Types ▾ Issue Status ▾ Approval / Accounting ▾ 🔍 Search

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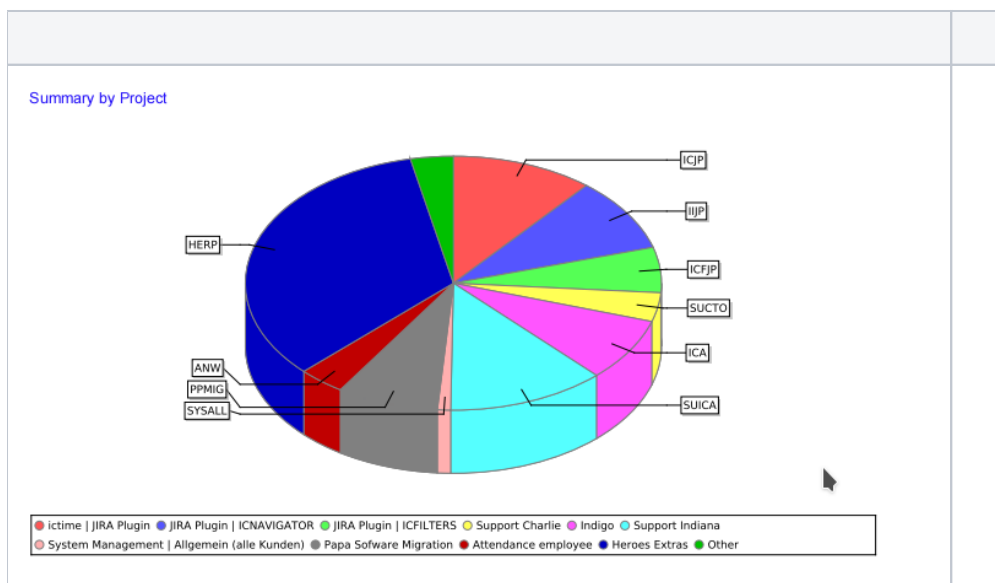
### Timesheet

List Structured Date Grid

Columns ▾ Export Export (CR) ▾ Print

Date	Project	Issue	Issue Summary	Description	User	Organization	Begin	End	Time Spent	Rounded	Corrected	Charge	Approved	Actions
16.05.18	ICJP	ICJP-670	Check ictime compatibility against EAP Release 7.9.0 / ServiceDesk 3.12. OR LATER	Install and Test against 7.10.2	John Doe	--	10:51	10:52	0h 1m	--	--	\$	👤	🗑️ ⏮️ ✎️ 🔄

 If you want run a Custom Report in a specific context like ictime Reporting or Timesheet, please process in this order: Apply your filters, run your query (i.e. in Reporting by "Create Report") and then trigger your Custom Report via click on "Export (CR)" (available only if Custom Reports are available/installed, works with sample reports).

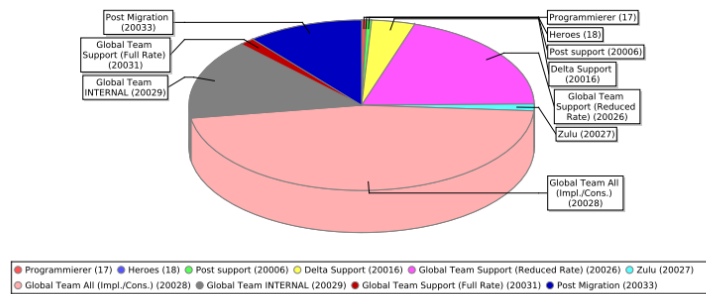


## Basic Example Report for icTime

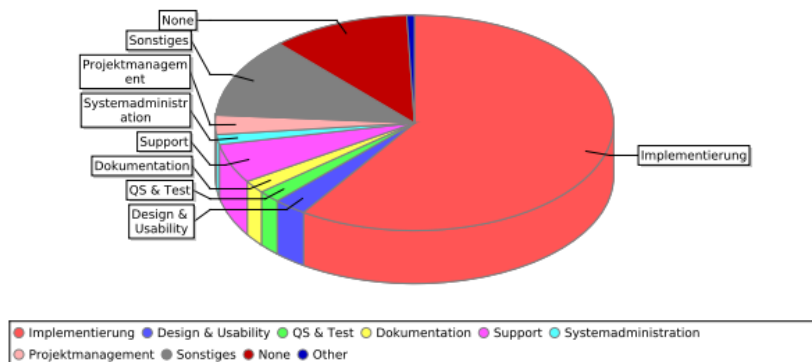
Total

2017.92

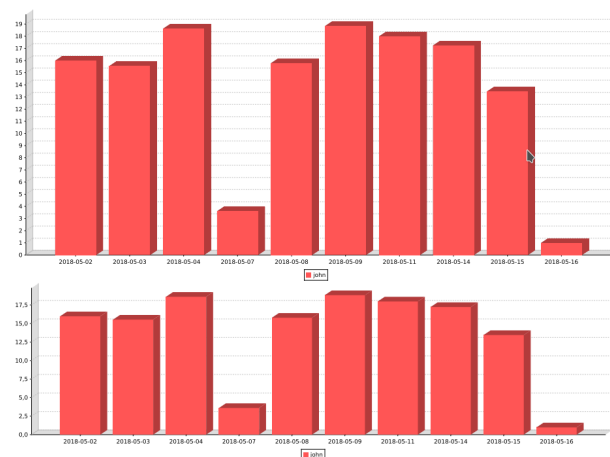
### Summary by Team



### Summary by Activity



### Stacked time worked for all selected users by day



## Working with sub-reports

- How to build jasper files from jrxml in Eclipse
  - Use your report project
  - Remove automatic build: setting in Project => Build Automatically (uncheck checkbox)
  - Run build all from Project menu - for project reportsIcTime
    - This should build the compiled report files in your reportsIcTime Project. As this is linked to IcTime, you are good!
    - There is no need (never do this) to add compiled files in SVN. Only put source files in there .

## Fonts

If you want to use special fonts, we recommend to use a style sheet file to have a single place, where you maintain your font definitions.



The font you are using on your report design system (if this differs from your production machine) may NOT be available in the JIRA / icTime execution environment. **If the font is not available report execution may fail!**

### Adding fonts to your Server Installation

- Please refer to the documentation provided here <http://www.perfectabstractions.com/blog/how-to-install-windows-fonts-in-java-on-linux>

### Check if a specific font is available in your JIRA Installation

All available fonts are listed below the report list in the icTime => Administration : Tab Custom Reports



If the font is shown in the list and is not usable, than you are missing the logical to physical font mapping. Consider to use a font manager library on system level (e.g. libfontconfig).

If you want to manual add the font to manually to the JVM / JRE provided by Jira / Atlassian, consider the documentation provided from Oracle : <https://docs.oracle.com/javase/8/docs/technotes/guides/intl/fontconfig.html>

The fonts listed show ONLY fonts available on your system. Please do not forget to register the fonts.

### Make fonts available to JasperReports - Registration of fonts

Create a font extension including all fonts you require archive usable by JaserReports and provide the jar archive in your Jira Installation directory in the lib subfolder (e.g. /opt/atlassian/jira/lib/).

Structure of the jar extension is:

- jasperreports\_extension.properties
- yourFontDefintion.xml
- FONT\_SUB\_FOLDER
  - fontfile\_1.ttf
  - fontfile\_2.ttf
  - ....

You should NOT use font.xml as font file definion name. This collides (may collide) with the font definiton provided in the default JRE provided by Atlassian.

Contents of jasperreports\_extension.properties

```
net.sf.jasperreports.extension.registry.factory.fonts=net.sf.jasperreports.engine.fonts.
SimpleFontExtensionsRegistryFactory
net.sf.jasperreports.extension.registry.factory.simple.font.families=net.sf.jasperreports.engine.fonts.
SimpleFontExtensionsRegistryFactory
net.sf.jasperreports.extension.simple.font.families.MyFont=YOUR_FONT_DEFINTION_FILE_NAME
```

## Permissions

Permissions considered for Custom Reports.

Permission	Description	Remarks
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Custom Reports	<ul style="list-style-type: none"> <li>• View Custom Reports: <ul style="list-style-type: none"> <li>• allow create, update and delete of Custom Reports</li> <li>• allow execution of Custom Reports</li> </ul> </li> <li>• My Timesheet <ul style="list-style-type: none"> <li>• allow execution of reports enabled for timesheet view</li> </ul> </li> <li>• Reporting <ul style="list-style-type: none"> <li>• allow execution of reports enabled for reporting view</li> </ul> </li> </ul>	
Custom Reports - Execute	<ul style="list-style-type: none"> <li>• My Timesheet <ul style="list-style-type: none"> <li>• allow execution of reports enabled for timesheet view</li> </ul> </li> <li>• Reporting <ul style="list-style-type: none"> <li>• allow execution of reports enabled for reporting view</li> </ul> </li> </ul>	Starting from 5.8.2.6

Please find details for administrating permissions [here](#).

## Compatibilty

icTime Version	Jasper Report Version	Remarks	
5.8.2.x -	6.5.0	we recommend to keep the jrxml file compatible to Jasper Report Version 6.3.0	

## Exchanging the report engine

You may change the reporting engine by changing the the corresponding Jar archive in icTime plugin using a binary compatible version. Support for patched icTime plugins is not be provided.