

This document is provided to give you an idea what R-Tag Version Control can do and how you can use it. If you decide that you need more information or you prefer to see a demo of the software please do not hesitate to [contact us](#).

You can also check the videos at the bottom of this page: <http://r-tag.com/Pages/VersionControl.aspx>

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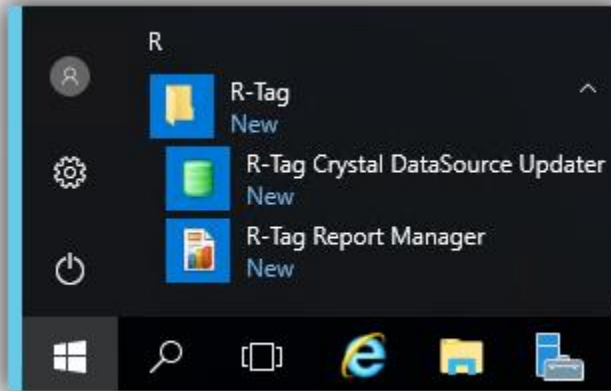
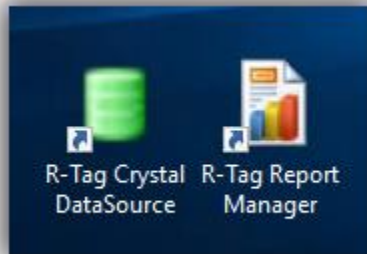
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Getting started with R-Tag Version Control

Installation and initial configuration

Unzip R-Tag installation zip file in a folder and run setup.exe. It will install R-Tag and all required components.

Installation will create 2 icons on the Desktop and 2 shortcuts in the User's Programs Menu.



R-Tag Version Control is part of R-Tag Report Manager. To start R-Tag Version Control please use the icon for R-Tag

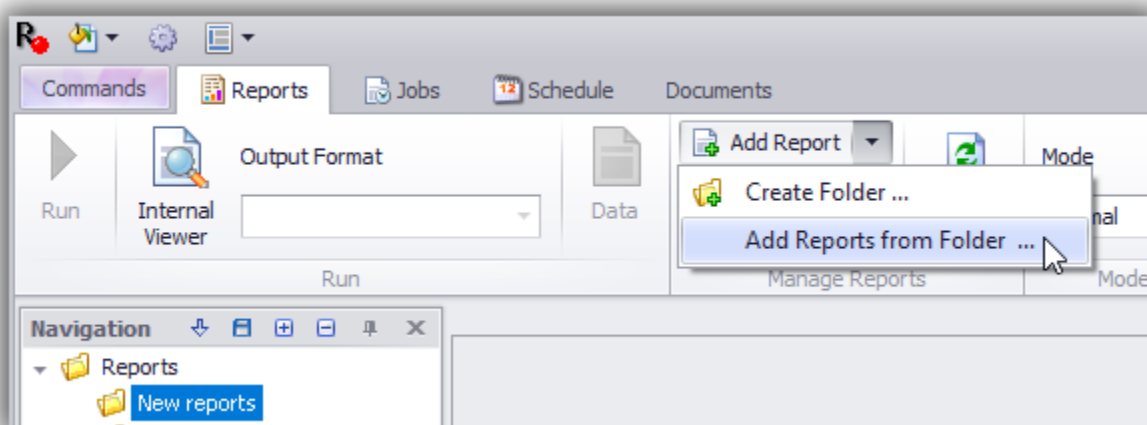
Report Manager 

First thing you need to do is to switch to SQL Server database. By default, R-Tag installation installs and configures a Local database. This database is good for testing R-Tag Viewer and Scheduler. To have access to advanced features like Version Control you need to use SQL Server database. Instructions how to install and configure SQL Server database are available in this document: [Installing SQL Server database for R-Tag](#)

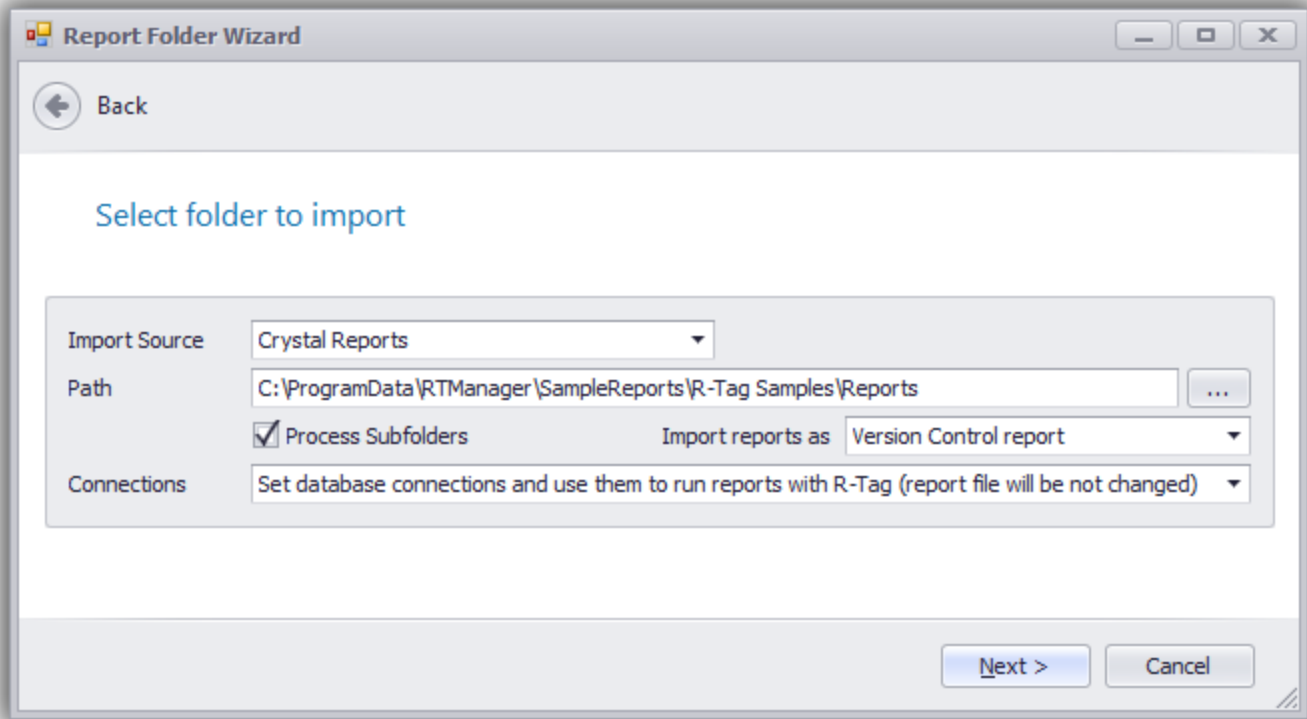
Once SQL Server database is configured request a temporary license key. You will be able to test the software without this key, but there will be limitations. Instructions how to request temporary license key are available in this document: [Request temporary license key](#)

Import folder of reports

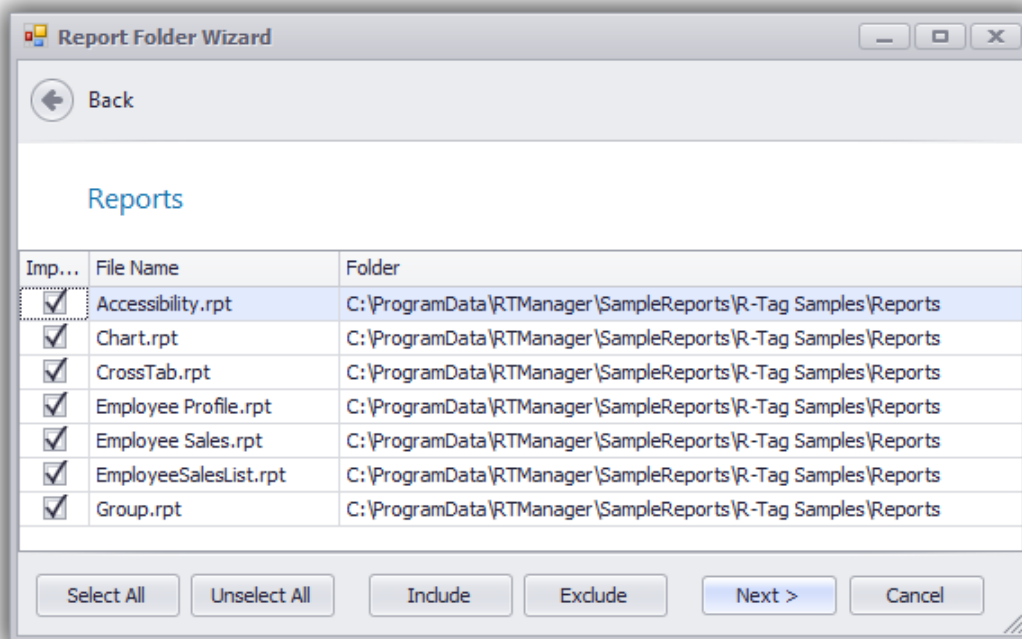
Select the folder where you want to import the reports and click toolbar button "Add Reports from Folder ..."



Report Folder Wizard will guide you through the process of import reports.

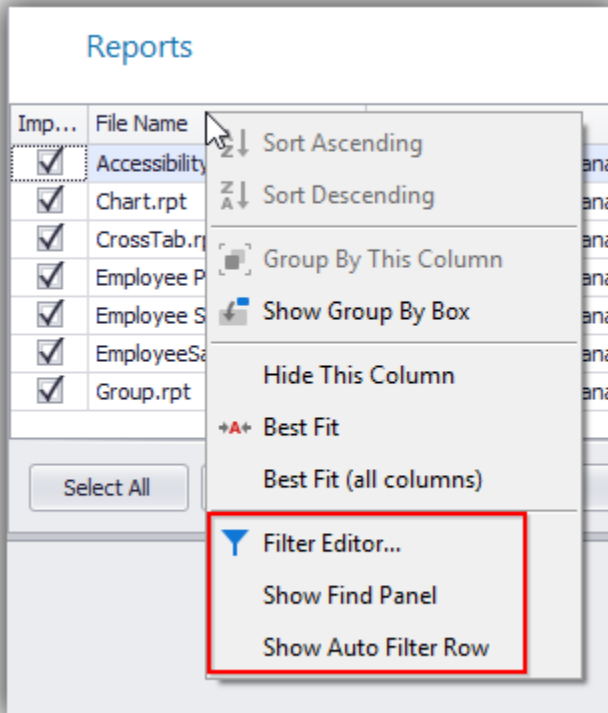


- Initial settings
Set the path to the folder with the reports and select value to import reports as “Version Control report”. For connections, we recommend to use the option “Set database connections and use them to run reports using R-Tag (report will be not changed)”. This will allow R-Tag to retrieve reports’ real SQL and to run reports. If this option is selected R-Tag will analyze the reports and will show the list of used connections. For each connection in the list you can provide a connection, which R-Tag will use to retrieve the reports’ SQL and when running the report. Click “Next”
- Select report to process

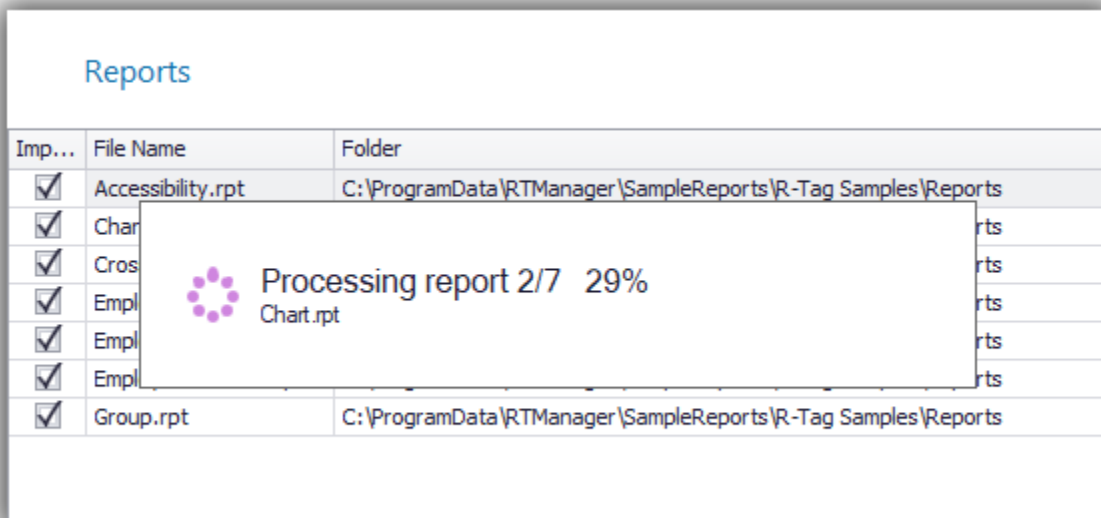


R-Tag will retrieve all files from the path set in the previous screen and will show them so you can choose, the files you want to process. In addition of using “Select All”/” Unselect All”, you can select multiple

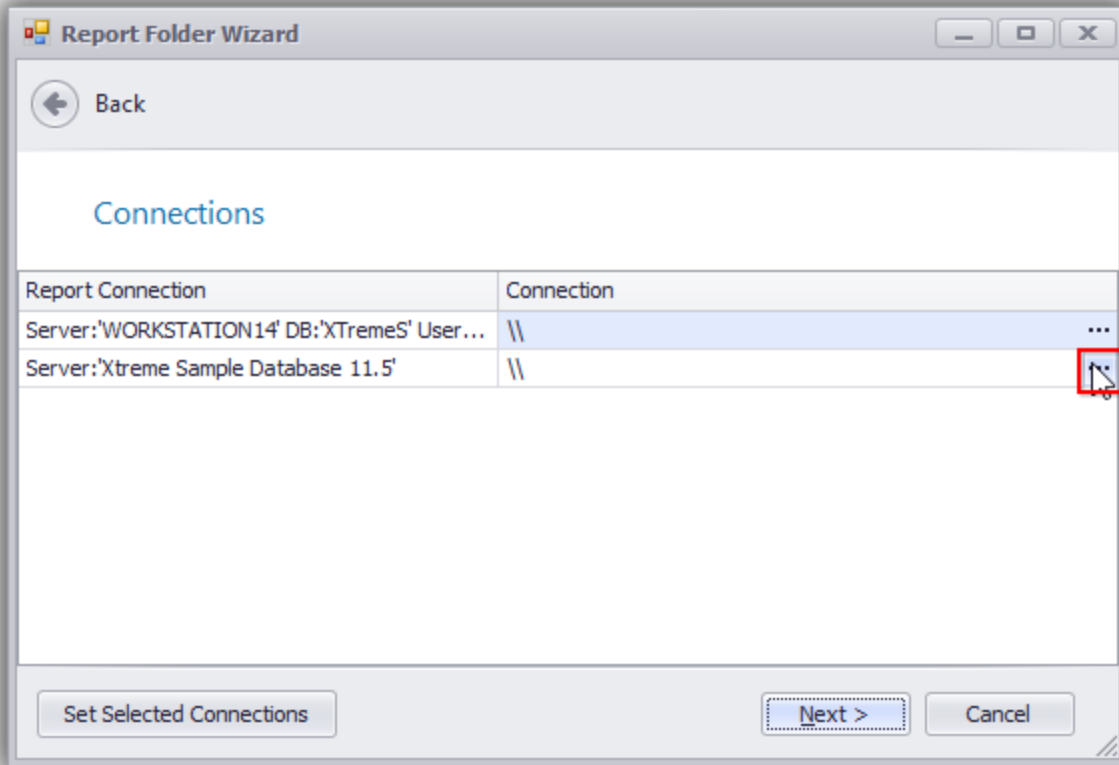
records and use buttons "Include"/" Exclude" to check/uncheck files. You can also use filter to find quickly certain files. Right click on any column caption and use the 3 options at the bottom



"Show Find Panel" will be the fastest way to find matching records and it works on all columns. "Show Auto Filter Row" will be a better choice if you would like to filter data on a specific column. Filter editor is for more complicate searches, when you want to define criteria with multiple "AND" and "OR" clauses. Once all reports you want to process are checked you can click "Next". If on the Initial settings screen you selected connections option "Set database connections and use them to run reports using R-Tag (report will be not changed)", R-Tag will start examining the checked reports for connection information. There will be a splash screen showing the progress

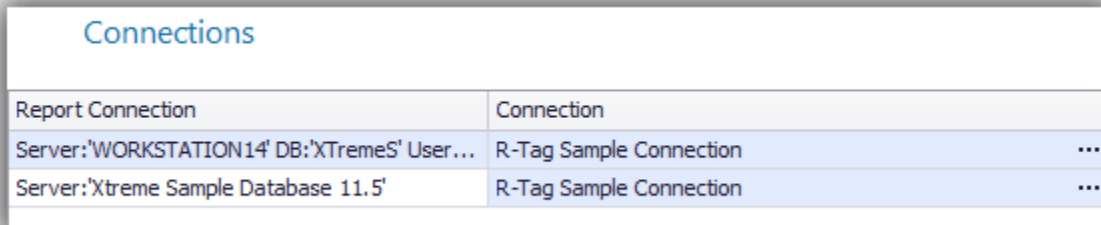


Once the reports in the list are processed R-Tag will show a list of connections

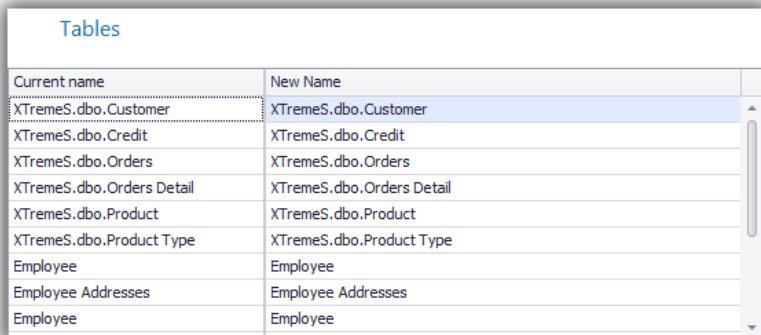


You can click on the 3-dot button for each connection and set the one R-Tag has to use when running the report or retrieving the SQL. Often, different records will point to the same connection, but will have small differences in capital, lower case, different user name etc. You can set these connections with one click by selecting multiple rows (press Control or Shift and select multiple rows with the mouse) and use the button in the bottom left corner "Set Selected Connections"

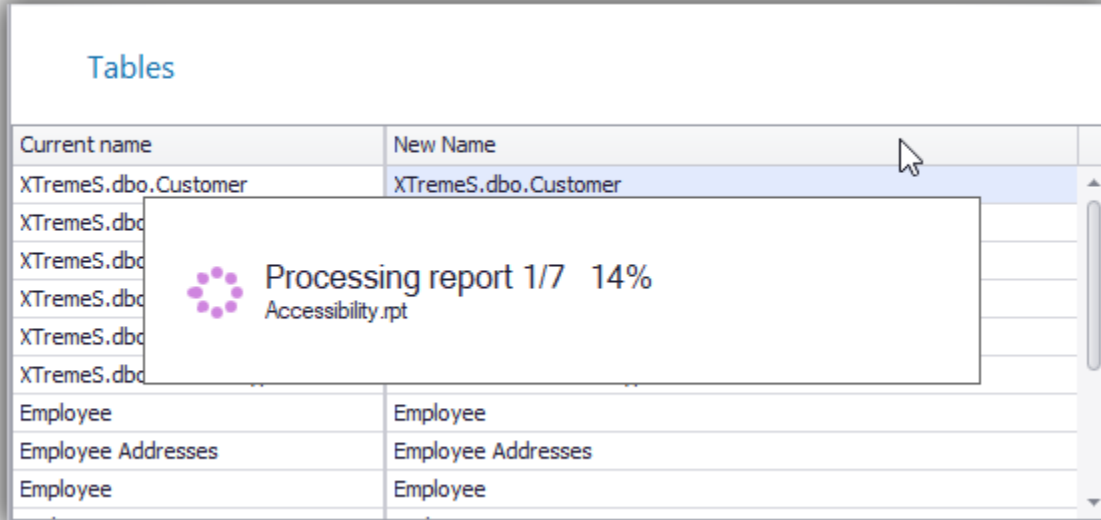
At the end all reports' connections will have assigned connections



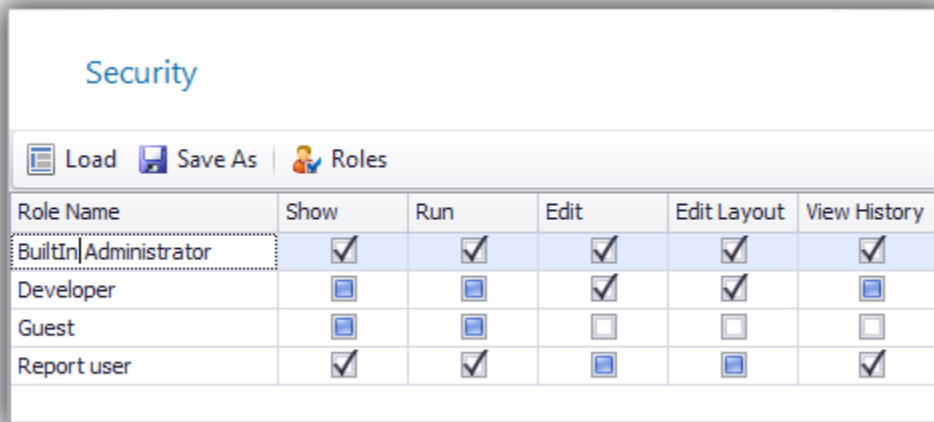
Click "Next" and R-Tag will retrieve the list of tables used in the report and allow you to change the names. This might be useful if database structure was changed and table Database.dbo.Table1 was renamed to Database1.Schema1.Table1. Most of the times you will just click next and use the same table names. Click "Next" to continue



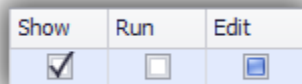
R-Tag will start applying connection and collect report information. A splash screen showing progress will be shown again. This process will take more time than the first one, since R-Tag will apply the new connections and will retrieve more data.



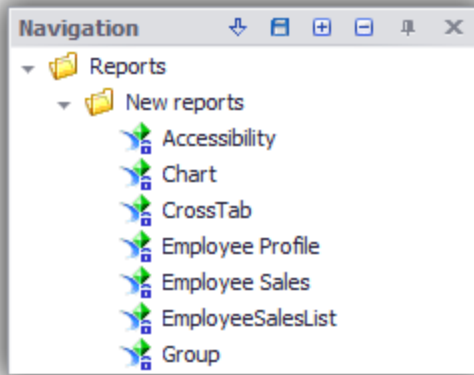
Once all reports are processed R-Tag will go to the next screen “Security”



You need to select the permissions associated with the reports. There are 3 options for each feature. Checked (allowed), Unchecked (Denied) and Unknown



These permissions will be set by role and the user permissions will be determined based on the roles assigned to the user. For example, with the example above users who are members of the role “BuiltIn Administrator” will have full permissions. The same set of permissions will have users who are member of roles “Developer” and “Report user”. These users will inherit “Show”, “Run” and “View History” permissions from “Report user” and “Edit” and “Edit Layout” permissions from role “Developer” so they will have full permissions. Just theoretically, if a user is member of roles “Developer” and “Guest” the user will have no permissions since neither of the roles is allowing “Show” and “Run” and role Guest denies access to “Edit”, “Edit Layout” and “View History”. Since Deny has priority over Allow the user will be denied access to any of these features. Click “Next” and R-Tag will add the reports to the Reports’ tree



Notice the difference between the icons for reports imported for Version Control, which can be used in Version

Control and Viewer/Scheduler compared to regular reports imported just to be used in

Viewer/Scheduler . Icon for Version Control reports has a small lock

Working with reports

R-Tag will not directly make changes in reports. You will use Crystal Reports Designer to make changes. However, R-Tag will keep the reports and all versions in SQL Server repository and will be able to keep track of the changes, search, compare and restore the reports. R-Tag will also control the access to the reports and will not allow multiple users to change the same report simultaneously. R-Tag will also create documentation for the changes connecting the actual report change with the documents and the emails requesting the changes.

Version control is configured in Settings dialog. In the tree view on left select the item "Version control", on right you will see related settings

There are 3 folders required by Version control:

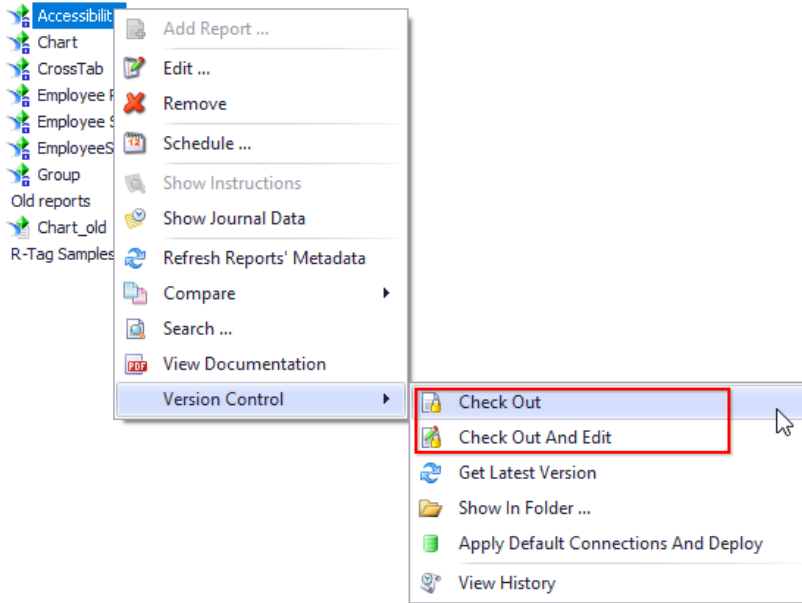
- Reports temp folder – this is the place where R-Tag will download the last checked-in report version from report repository before to run it. This folder will be used when report is run in R-Tag Viewer or Scheduler
- Version control folder – this is the place where R-Tag will download the last checked-in report version for editing and changes using Crystal reports designer.
- Deployment folder – this is the folder where the reports will be copied after connection to production database is applied

There are 2 sets of folders: Default and Local. Usually you are going to use Default folders. They are the same for all user and machines and provide an easy way to set the same environment on all developers' machines. Local folders

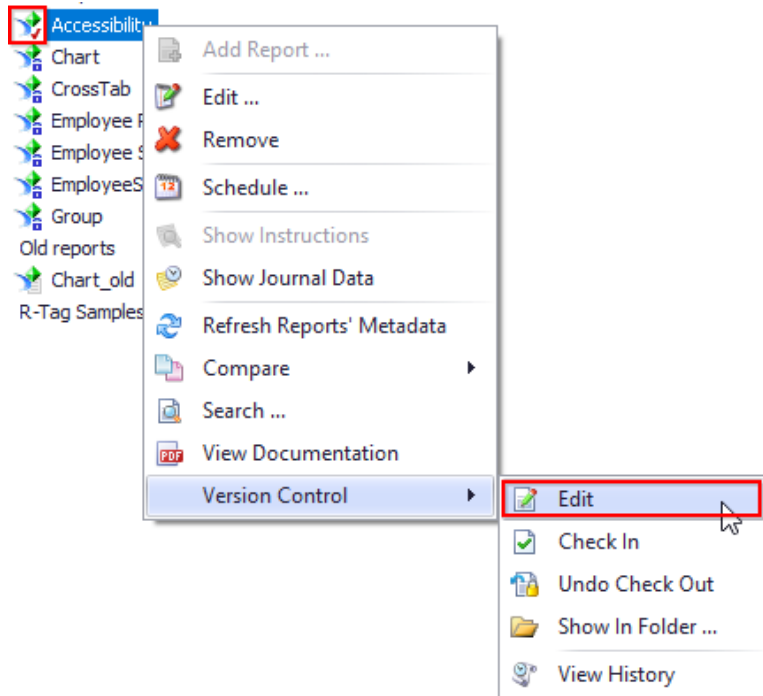
are used just in case it is not possible to use Default folders. For example, in case Default folders are set on drive C and one of the machines does not have enough free space and needs to use another drive.

Check-out for changes



Select the report or folder of reports you want to work on, right click and click “Version Control” -> “Check Out” or “Version Control” -> “Check Out and Edit”



“Check Out” will download the report to the Version control folder and mark it as Checked out by the current user. This will lock the report and everybody else will need to wait until the report is released either by “Check-In” or by “Undo Check-In”. The user will be able to change the report in Crystal reports. If you use “Check Out”, in order to edit the report, you will need either to navigate to Version control folder and open the report with Crystal Reports designer or use right click menu “Edit”

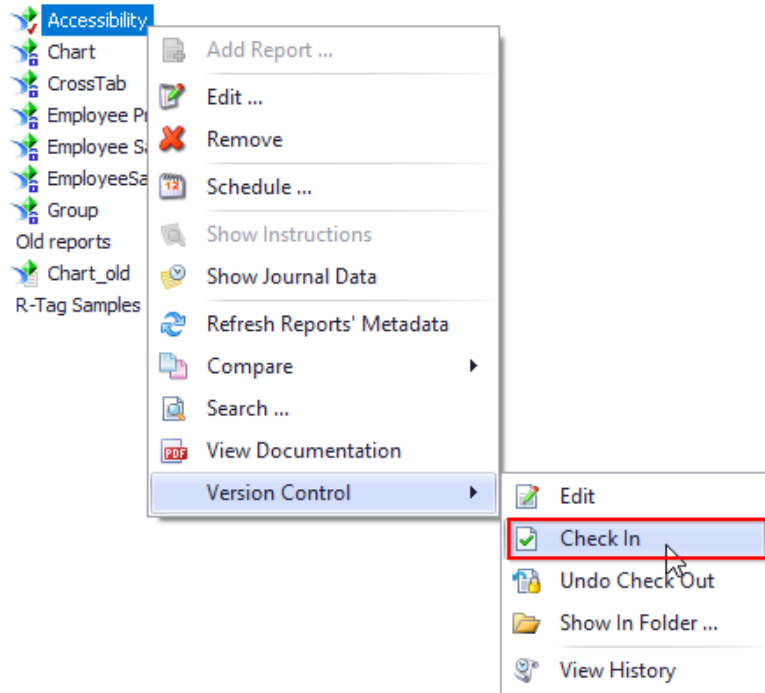


It will be easier if you use “Check out and Edit”, since it will do the same as “Check Out”, but also will open the report in Crystal reports designer.

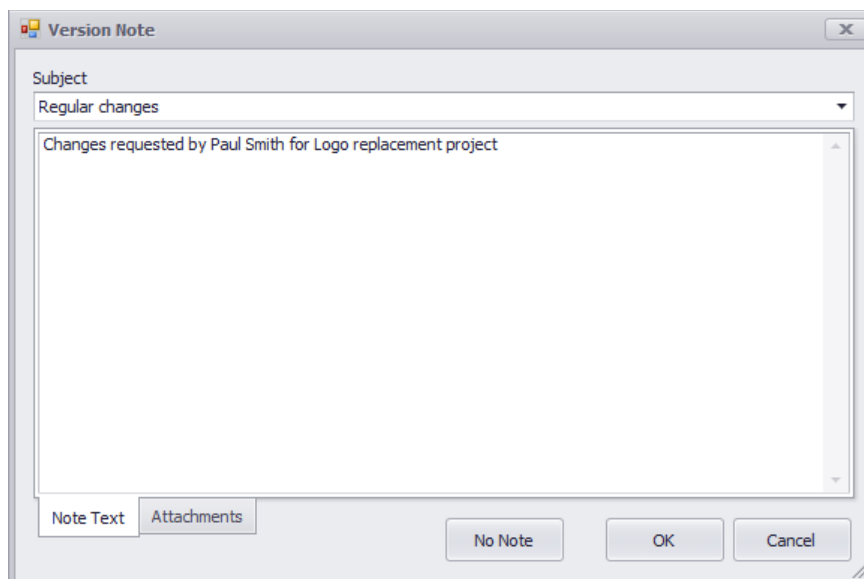
When the report is checked out the user will see it with this icon  , all the other users will see it as grayed icon with lock 

Check-in changed reports

When you are ready with the changes right click on the report or folder you want to check-in and click menu "Check-In"

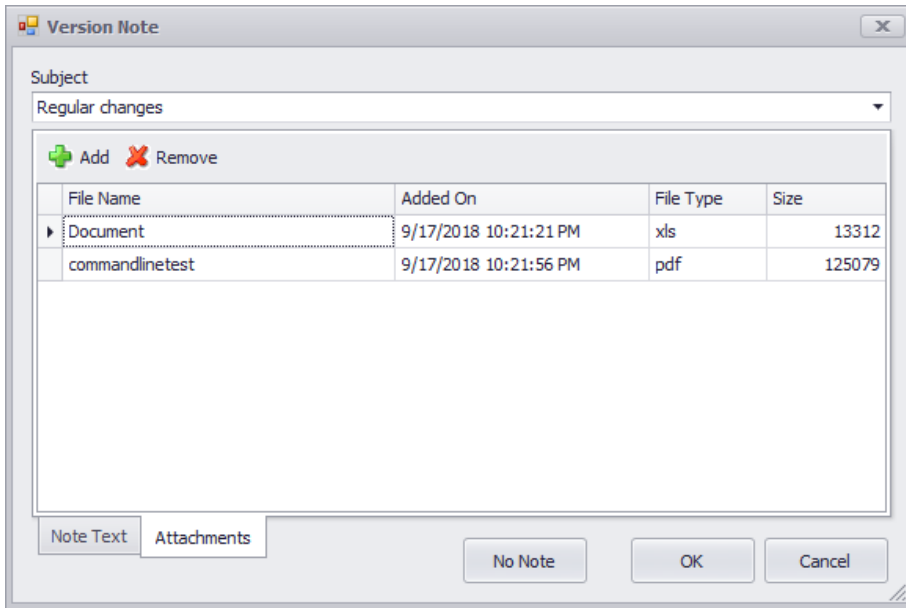


During the check in process R-Tag will update the central repository with the changed version of the report so anybody who gets the latest version or check out the report will get the new version. R-Tag will also ask you to insert a note. You can create subject, which will allow you to search similar check-ins and a note, which will be specific for the current check-in. Notes are to explain the reason for the change. R-Tag will detect the actual changes so it is not necessary to describe them.



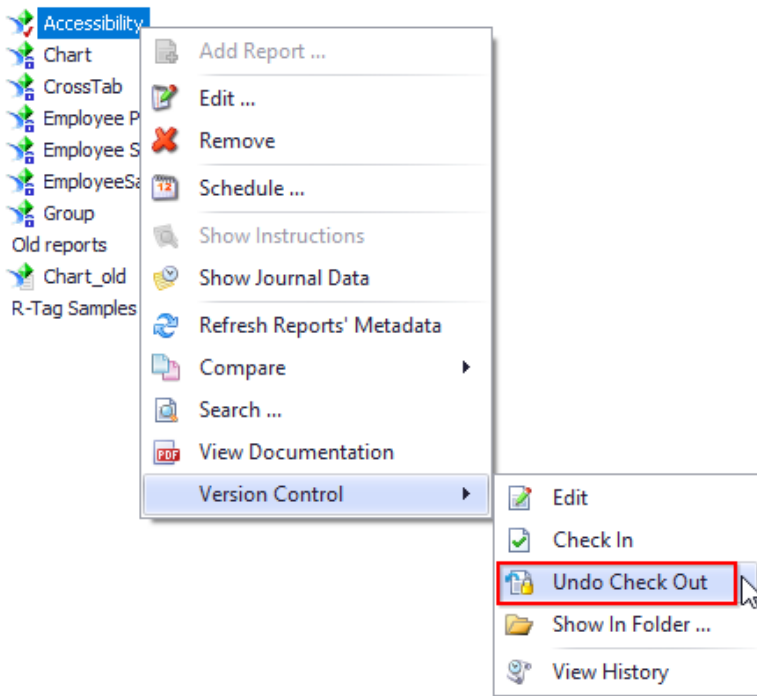
Notes dialog has also a tab for attached documents. You can add or drag files and emails from Windows explorer or Outlook. Add all documents and emails related to the change. Later, when you review the history of the report you

will be able to see each change, the reason why it was made, requesting documents and correspondence. If you do not want to attach a not you can use “No Note” button.



Undo check-out

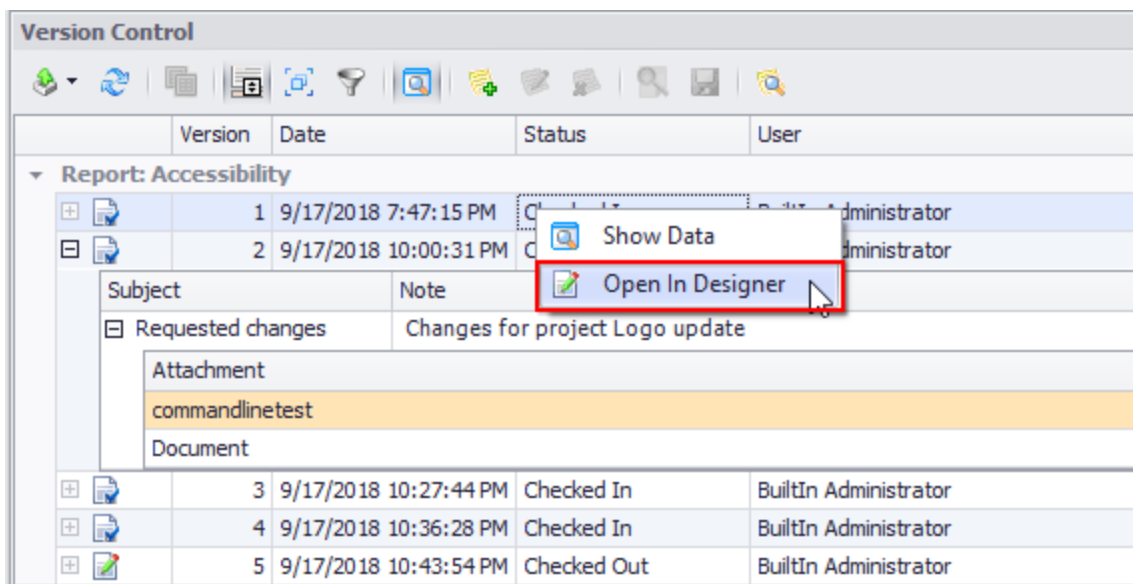
Sometimes it is necessary to cancel the editing and to release the report for editing by another developer. In this case you will use right mouse click menu “Undo Check Out”



This will retrieve the last checked in version to your Version control folder and you will lose all changes.

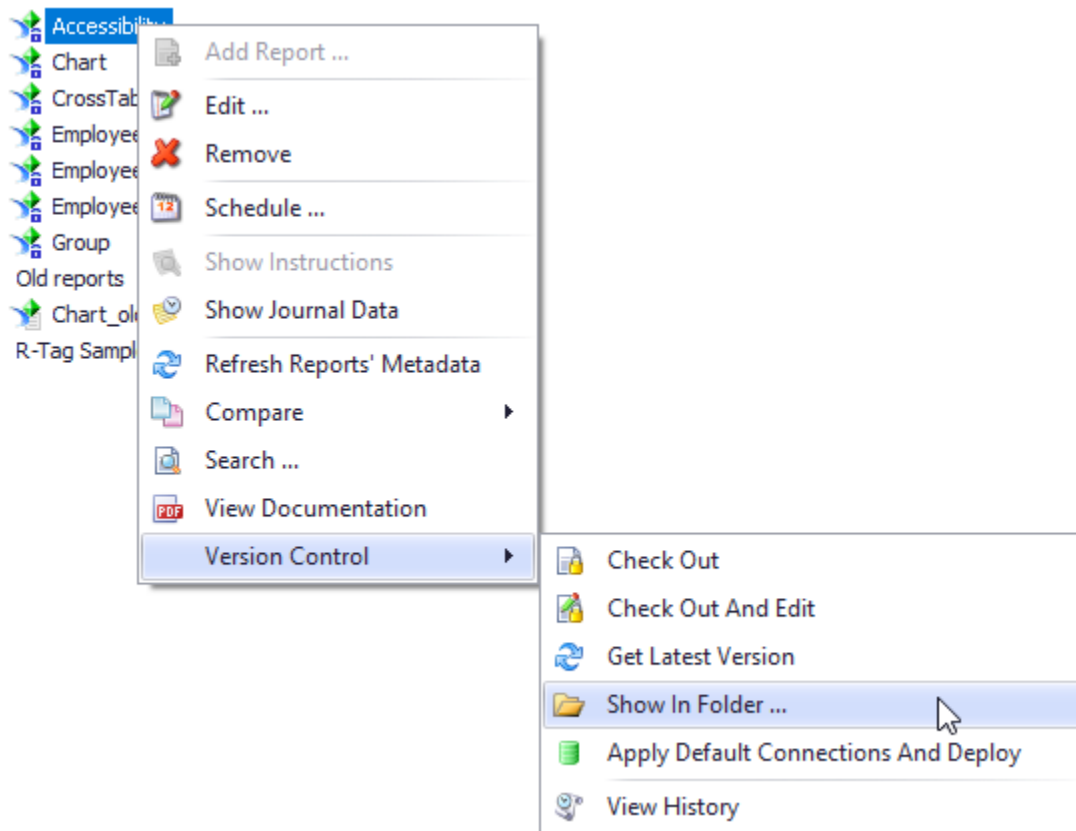
Restore previous version of report

Check out the report, in Version control panel, right click on the version you want to restore and click “Open in Designer”. This will open the version in Crystal reports. From Crystal reports save the report in the Version control folder to overwrite the report and then use “Check-In” to commit the changes. The version you want to restore will be added as the latest version. No versions will be deleted or lost.

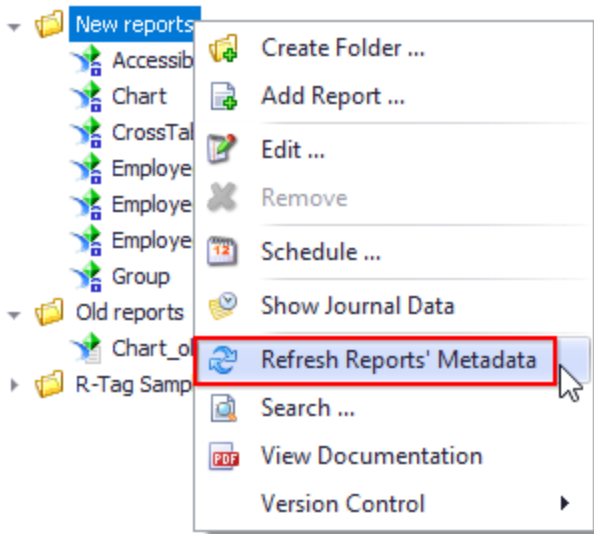


Working with reports offline

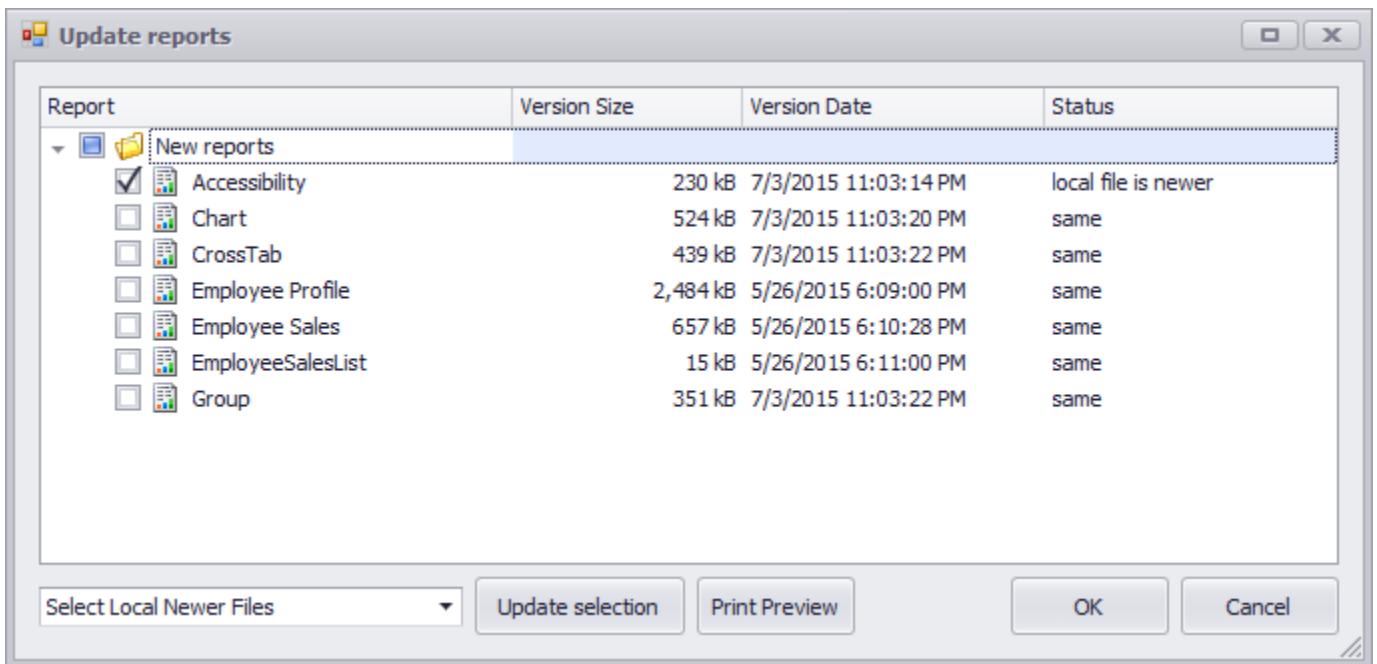
Sometimes it is necessary to deploy changes made by remote developers or external vendors. Select one of the reports you want to update, right mouse clicks and click menu “Show in Folder ...”



This command will open Windows explorer and will navigate to the Version control folder where the report is downloaded. Replace the reports with the new versions you received by the external vendor. Then go back to R-Tag, select the report, right mouse click and click menu “Refresh reports' MetaData”



R-Tag will detect if any of the report is the folder and subfolders is changed and will show a dialog box showing the reports with changes

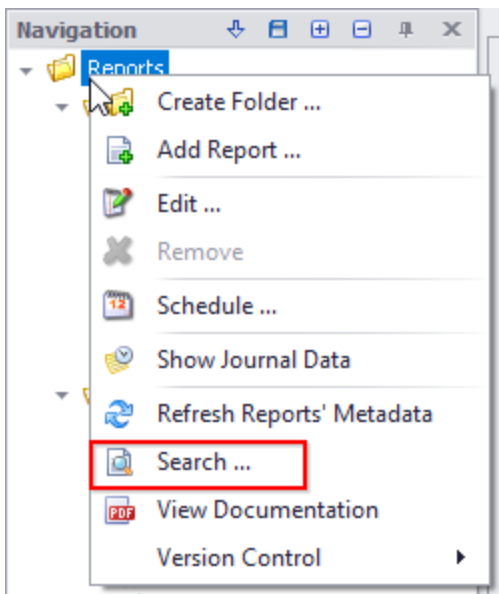


You can uncheck the reports which are different but you don't want to check in yet and click "OK"

R-Tag will ask for a note and will check-out and then check-in the new version of each of the reports

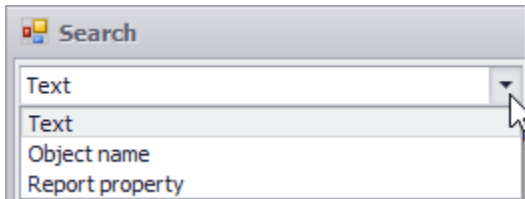
Search

To start searching use right menu "Search ..."

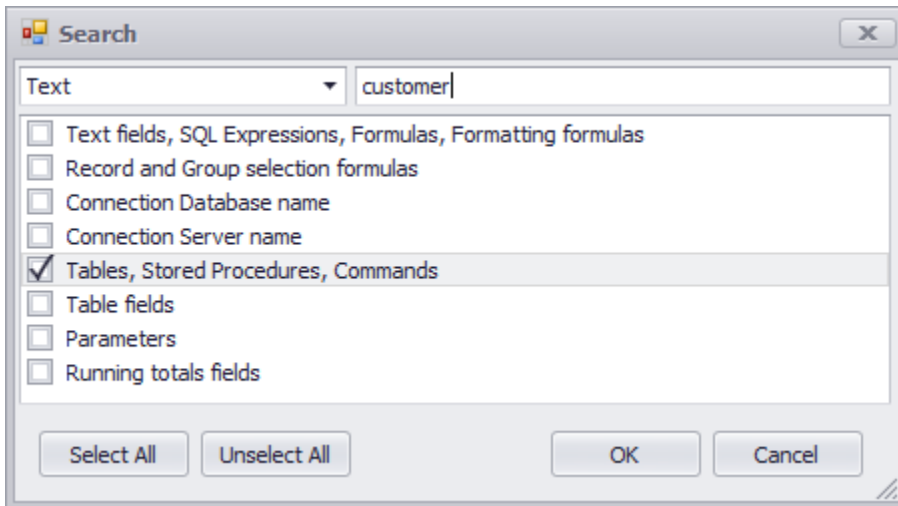


You can select the very top folder (Reports) and then you are going to search all report, but you can narrow the search by selecting a subfolder or report.

R-Tag can search report metadata in 3 different ways: Text, Object name and Report property



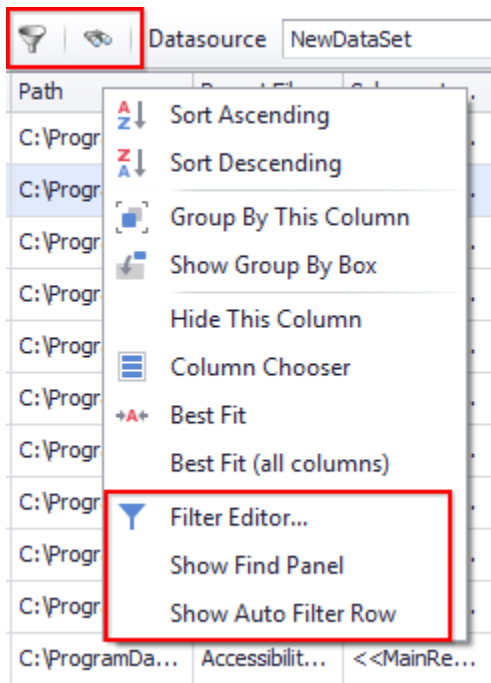
Search by Text



As it is shown in the screenshot above, select search type "Text" and type the text you want to search. You can narrow the search by selecting one of the options. The example above will find all reports with tables containing the text "cutomer". For example reports with tables "NewCustomers", "Customers", "dbo.Customers", "CustomerOrders" etc. Search is not case sensitive. You may select more options, if you do not select any option R-Tag will search for all options as if they all were selected. Here is an example how the result screen will look like for search for text in all options (not just tables)

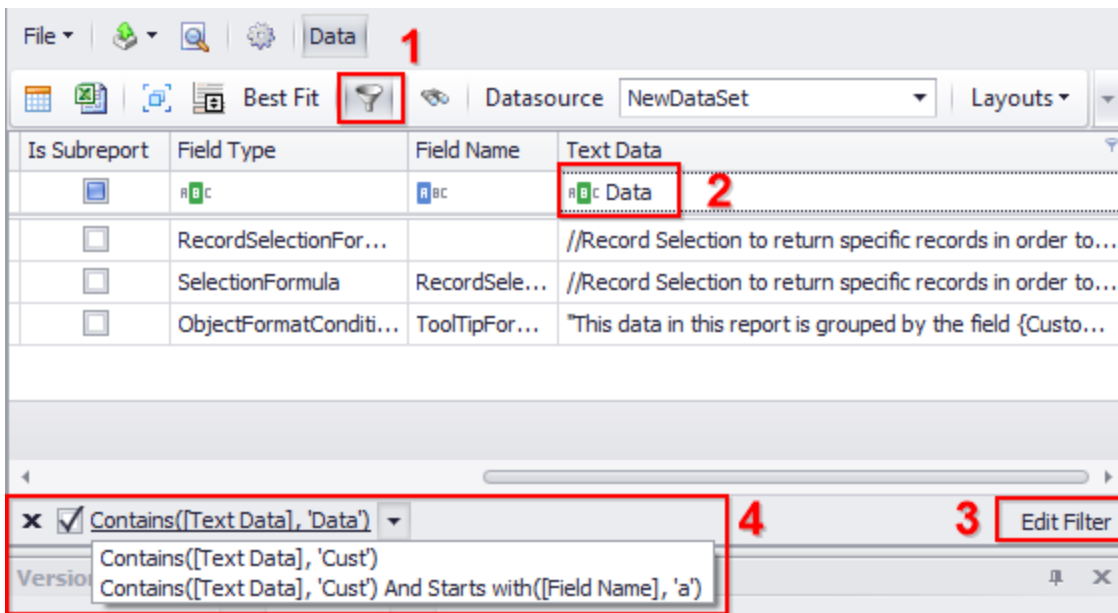
ID	Version ID	Report	Path	Report File ...	Subreport ...	Is Subreport	Field Type	Field Name	Text Data
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	SQL		SELECT `Credit`. `Credit Authorization Number`, `Credit` ...
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	FormulaFieldDefinition	Contact name	"Contact: " + {Customer.Contact First Name} + "" + {Cus...
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Contact First Name}
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Contact Last Name}
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Customer ID}
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Customer Name}
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	FieldObject	FormulaName	CustomerName1
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	Table	Name	Customer
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	SQL	Text	SELECT `Credit`. `Credit Authorization Number`, `Credit` ...
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	TextObject	Text2	By Customer
4	4	Accessibility	C:\ProgramDa...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	TextObject	Text7	Total Credit Amount Sum ({Credit.Amount}, {Customer.C...
5	5	Chart	C:\ProgramDa...	Chart.rpt	<<MainRe...	<input type="checkbox"/>	RecordSelectionFor...		//Record Selection to return specific records in order to make
5	5	Chart	C:\ProgramDa...	Chart.rpt	<<MainRe...	<input type="checkbox"/>	SQL		SELECT `Customer`. `Country`, `Customer`. `Customer ...
5	5	Chart	C:\ProgramDa...	Chart.rpt	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Country}
5	5	Chart	C:\ProgramDa...	Chart.rpt	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Customer Name}
5	5	Chart	C:\ProgramDa...	Chart.rpt	<<MainRe...	<input type="checkbox"/>	Field	FormulaName	{Customer.Last Year's Sales}

As it is shown on the screenshot R-Tag found the text customer in Table names, Formulas, Text fields, reports' SQL etc. each record contains the report name, report file name, identifier for main report or subreport, field type, field name and value, which contains the text. Using the filter and find options you can further search the returned data. This secondary search is very powerful since you can create filters with very complex "AND" and "OR" clauses. In the same way as showing filter during the import you can show filter dialog right clicking any column caption.



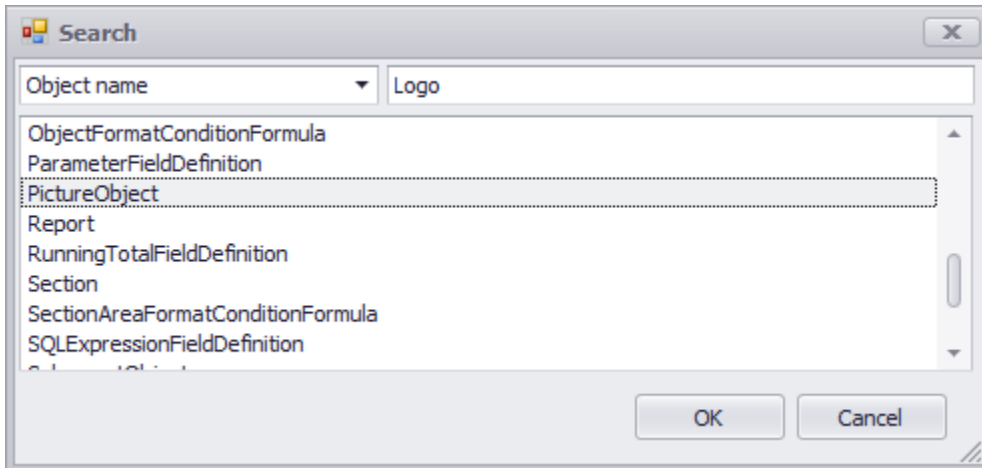
In addition, you can use the toolbar buttons Filter Row and Find. To use Filter Row:

1. Click the button "Filter row"
2. Insert the text in the column you want to search
3. If you want to create more complex filter edit and adjust the filter using the button in the bottom right corner
4. Un-apply the filter by unchecking the checkbox in the bottom left corner or select another filter



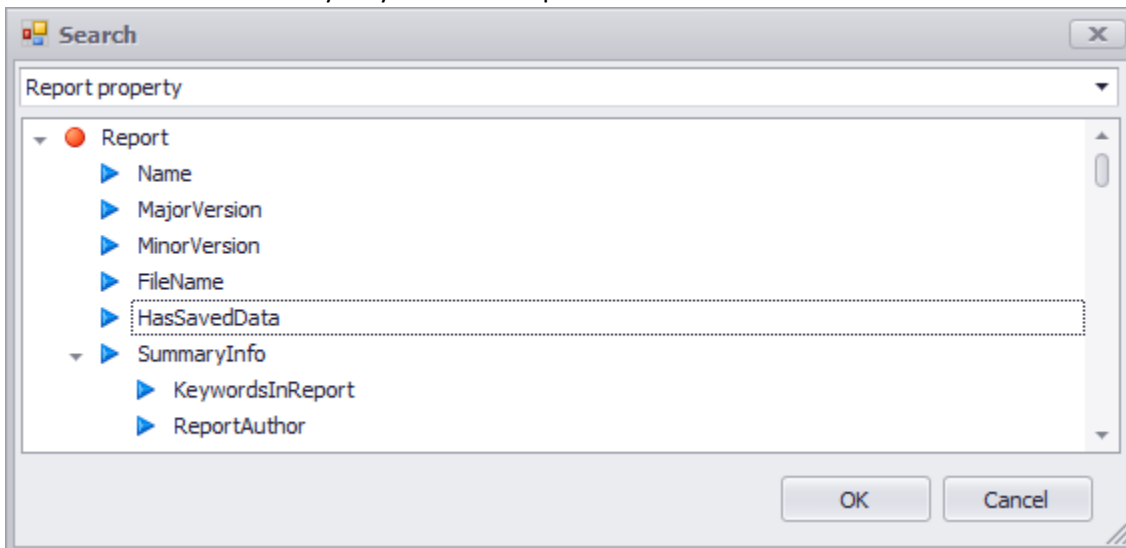
Search by Object name

To search by Object name, select search type “Object name”, insert the text you want to search for and select the object type. The example bellow will search for pictures, which name contains the text “logo”



Search by Report property

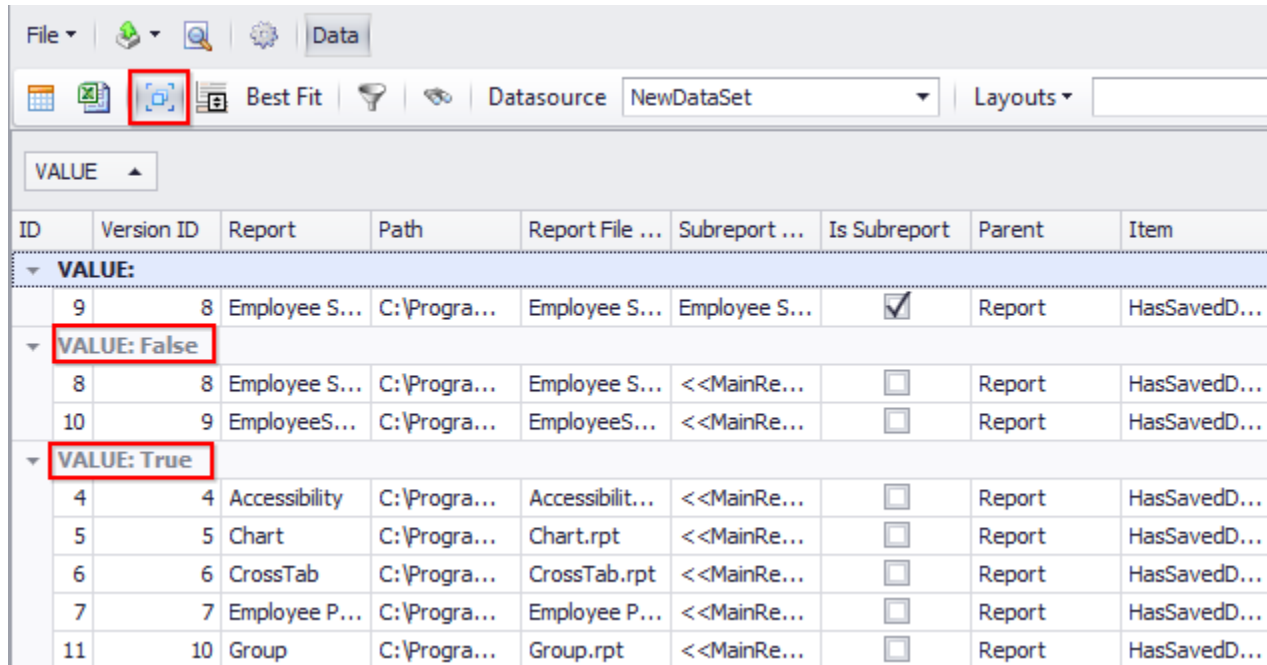
To search by Report property, select search type “Report property” and select the desired. There are more than different 250 properties in Crystal reports and they are available in a hierarchical structure. For example, the screenshot below is an easy way to find all reports with saved data.



This search will show a list of all reports in the searched folder and the value of the property

ID	Version ID	Report	Path	Report File ...	Subreport ...	Is Subreport	Parent	Item	VALUE
4	4	Accessibility	C:\Progra...	Accessibilit...	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	True
5	5	Chart	C:\Progra...	Chart.rpt	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	True
6	6	CrossTab	C:\Progra...	CrossTab.rpt	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	True
7	7	Employee P...	C:\Progra...	Employee P...	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	True
8	8	Employee S...	C:\Progra...	Employee S...	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	False
9	8	Employee S...	C:\Progra...	Employee S...	Employee S...	<input checked="" type="checkbox"/>	Report	HasSavedD...	
10	9	EmployeeS...	C:\Progra...	EmployeeS...	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	False
11	10	Group	C:\Progra...	Group.rpt	<<MainRe...	<input type="checkbox"/>	Report	HasSavedD...	True

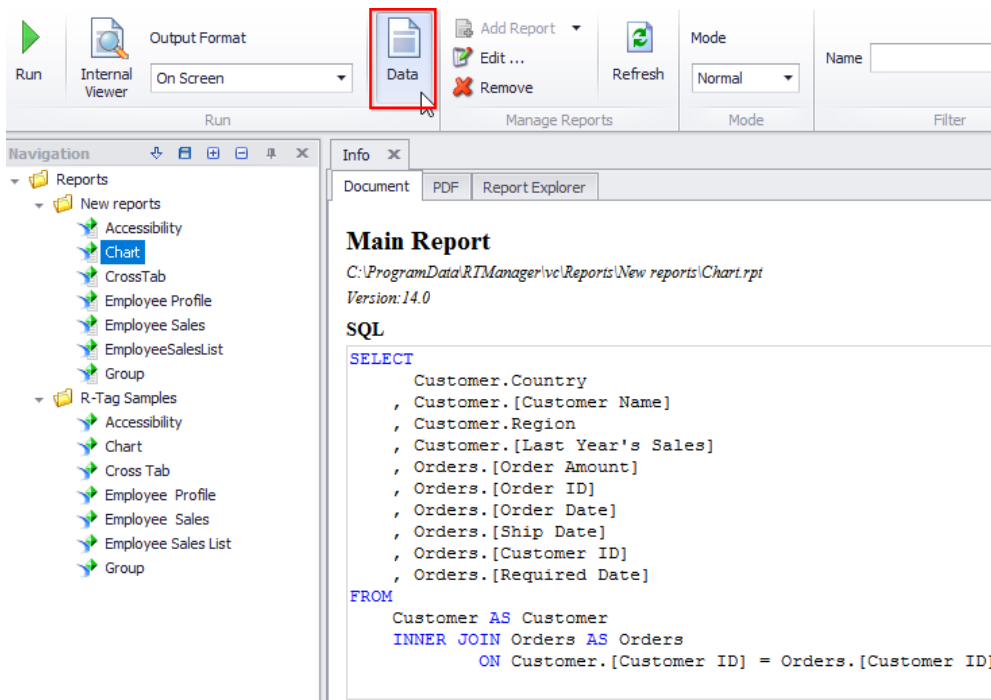
It is easy to group by value using the button “Group” in the toolbar and dragging column “Value” caption to the top of the grid



Examples for other useful searches are: Show a list of all reports in a folder and their printer names, paper sizes, authors, version used to create the report etc. In such a way you may easily find, which reports have to be updated if you are going to retire a network printer, which reports are not following your company standard and are using paper size A4 instead of Letter etc.

Create documentation

To open report documentation, select the report and click button “Data”



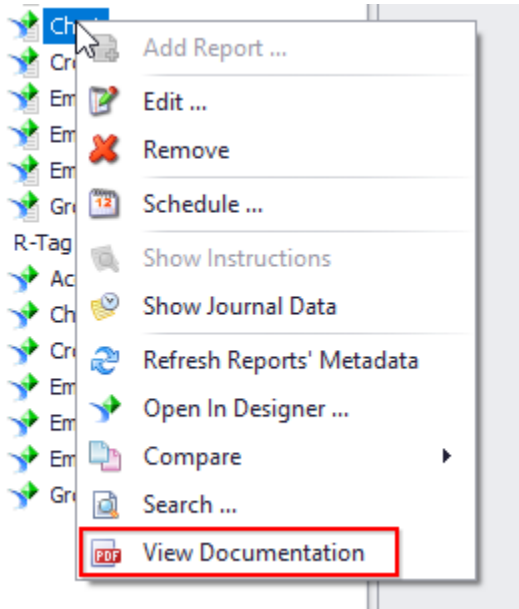
R-Tag will show the available meta data as formatted HTML, PDF and a searchable tree (Report explorer)

All the data available in this documentation is available through search feature. Search is more powerful since you can review big amount of data using filters. Documentation might be useful in case you want quickly to review reports' SQL or formulas since this data is formatted in an easy to read way. Here is how Formulas section for sample report Chart.rpt is presented:

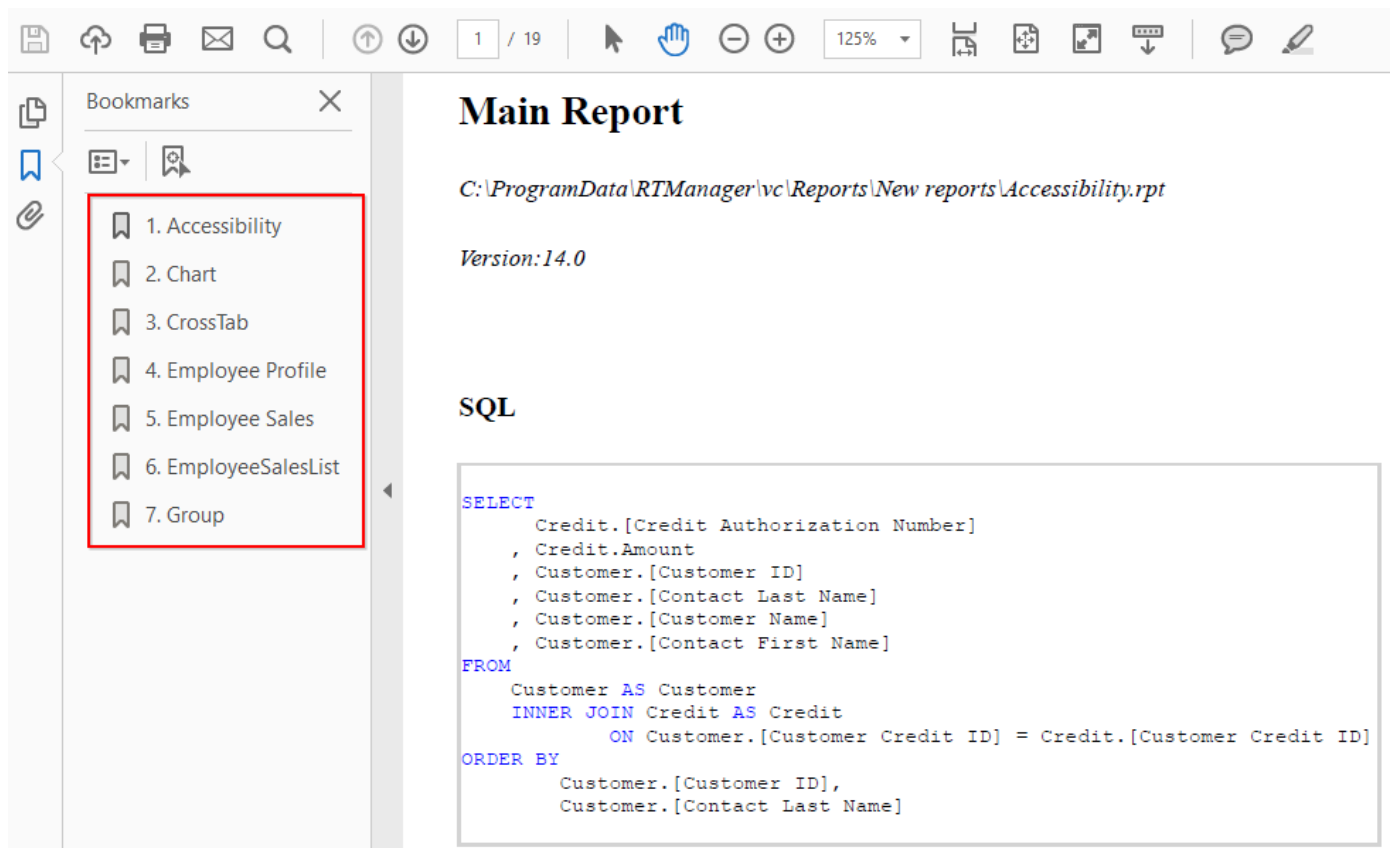
Formulas

Name	Text	Type	Uses
Days to ship	<code>//Calculate how many days it took to ship a product {Orders.Ship Date}-{Orders.Order Date}</code>	NumberField	1
Late or On Time	<code>//Determine if the shipment was Late or OnTime if {@Required Date} - {@Received Date} &gt;= 0 then "On Time" else "Late"</code>	StringField	4
Required Date	<code>//Create a RequiredDate value datetimevar requireddate:= date({Orders.Required Date}) + time((Int(Rnd*24)), 0, 0)</code>	DateTimeField	2
Received Date	<code>//Create a ReceivedDate for value datetimevar receiveddate:= date(dateadd("d", Int(1.1/Rnd), {Orders.Ship Date})) + time((Int(Rnd*24)), (Int(Rnd*59)), 0)</code>	DateTimeField	2
Group	<code>//Assign a specific Country to a specific Chart Type. Used for grouping on. Select {Customer.Country} case "New Zealand": "Bar Chart" case "Australia": "Line Chart" case "Brazil": "Area Chart" case "Canada": "Pie Chart" case "China": "Doughnut Chart" case "Italy": "3D Riser Chart" case "Japan": "3D Surface Chart" case "Germany": "XY Scatter Chart" case "England": "Radar Chart" case "Mexico": "Bubble Chart" case "France": "Stock Chart" case "Switzerland": "Numeric Axis Chart" case "Singapore": "Gauge Chart" case "USA": "Gantt Chart" case "Portugal" : "Funnel Chart"</code>	StringField	5
Fake Value	<code>whilereadingrecords; 1</code>	NumberField	1

You can also open documentation using right mouse click, menu "View documentation".

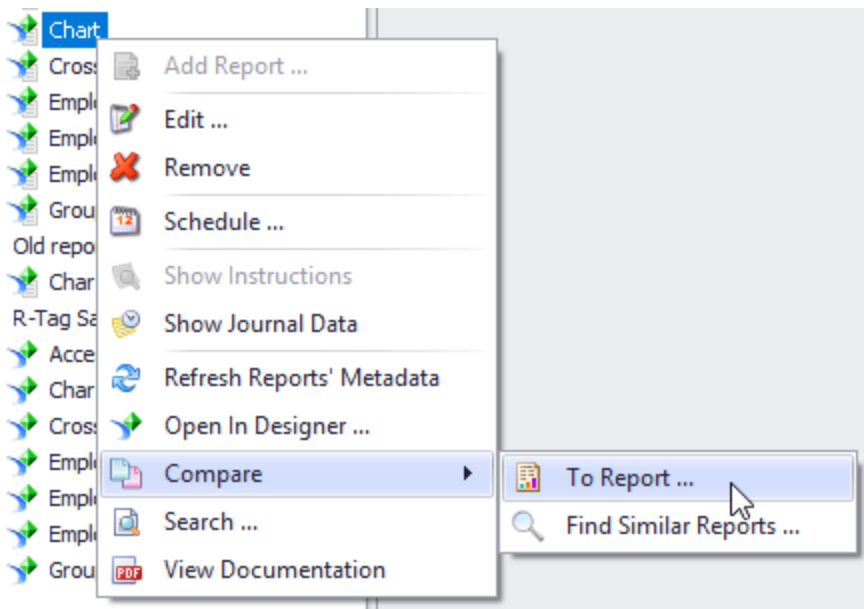


Documentation will be shown just as a PDF file. The advantage of this option is that you can show documentation for a whole folder of reports. R-Tag will generate a single PDF, which will include documentation for all reports. There will be also a Bookmark for each report for easy navigation.

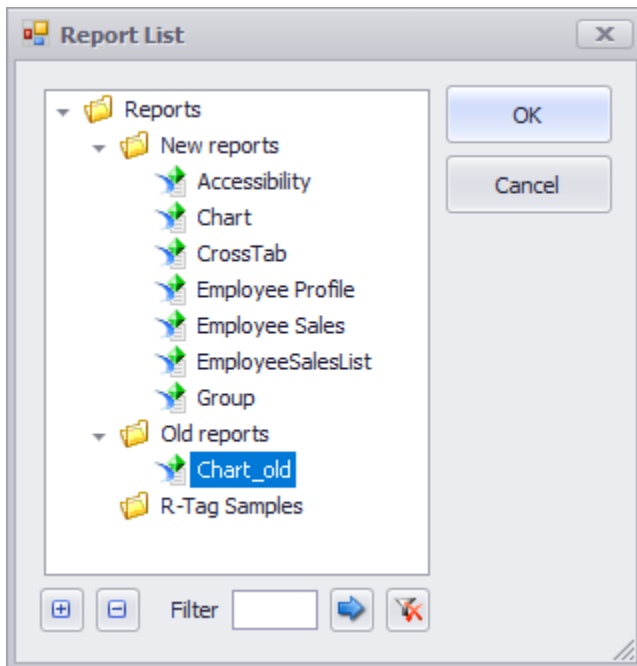


Compare different reports

R-Tag is able to compare different reports and show differences. Select the first report you want to compare using right click menu -> Compare -> To Report ...



In the Report list dialog select the second report you want to compare and click OK



Differences will be shown in a separate window. There are different modes:

- Full list: shows all elements from both reports, all expanded or all collapsed
- Hide equals: shows just the different elements from both reports and their parents
- Smart expand: Show all elements. Equal elements are collapsed, different are expanded

Here is a sample view of Hide equals mode. The toolbar contains groups to change the mode, navigate through the differences, print and export to Excel the differences, switch the first and second reports and filter the data

Chart / Chart_old x

Filter Apply Reset 3/4

Property	Value1	Value2	Difference
MajorVersion	14	11	Changed
FileName	C:\ProgramData\RTManager\vc\Re ports\New reports\Chart.rpt	C:\ProgramData\RTManager\vc\Re ports\Old reports\Chart_old.rpt	Changed
DataDefinition			Same
FormulaFieldDefinitions			Same
FormulaFieldDefinition "Days to ship"			Same
Text			Same
#text	//Calculate how many days it took to ship a product {Orders.Ship Date}-{Orders.Order Date}	//Calculate how many days it took to ship a product {Orders.Ship Date}-{Orders.Order Date} //test this formula before to release	Changed
FormulaFieldDefinition "Late or On..."			Same
Text			Same
#text	//Determine if the shipment was Late or OnTime if {@Required Date} - {@Received	//Determine if the shipment was Late or OnTime if	

Modes **Differences navigator**

Edit Filter

```
//Calculate how many days it took to ship a
product
{Orders.Ship Date}-{Orders.Order Date}
```

```
//Calculate how many days it took to ship a
product
{Orders.Ship Date}-{Orders.Order Date} //test
this formula before to release
```