

Crystal Reports

How to troubleshoot duplicate records from displaying on a report

Overview

If you want to remove duplicate records or values from appearing on a report, read this document to learn how to troubleshoot the different scenarios in the Crystal Reports Designer.

This document has been written for Crystal Reports 9. However, it is applicable to earlier versions of Crystal Reports.

Contents

INTRODUCTION	2
WHAT IS A DUPLICATE RECORD?	2
SCENARIOS THAT CAUSE DUPLICATE RECORDS	2
<i>Scenario one: Duplicate records occurring in a database</i>	<i>2</i>
Why do duplicate records occur in a database?	2
Solutions to scenario one	3
<i>Scenario two: Duplicate records caused by linked tables</i>	<i>3</i>
Why does linking tables cause duplicate records?	3
Equal join type between two tables.....	3
<i>Scenario three: Duplicate Values occur with Running Totals</i>	<i>4</i>
Solutions to scenario three	4
CORRESPONDING SOLUTIONS.....	4
Using “Suppress if duplicate”	4
Database Solutions.....	4
Select Distinct Records	5
Suppressing duplicate detail lines	5
Change linking.....	6
Insert Group and Display First or Last Value	6
Conditional Running Totals.....	7
CONTACTING CRYSTAL DECISIONS FOR TECHNICAL SUPPORT	8

Introduction

First, review the scenarios and determine which one is applicable to your report. An explanation is provided to better understand why duplicate records or values appear on a report.

Second, refer to the corresponding solutions that are recommended for the scenario causing the duplicate records or values.

What is a duplicate record?

In Crystal Reports, a duplicate record is a value that appears more than once on a report. Before you can eliminate duplicate records or values from the report, it is necessary to define the scenario that is causing the duplicate records or values to appear.

Scenarios that cause duplicate records

Review the scenarios. When you have determined which scenario is causing the duplicate records to appear on the report, refer to the corresponding solution(s).

Scenario one: Duplicate records occurring in a database

A duplicate record occurs in a database when an entire row of records in a table is the same as another row in the table.

Figure 1: Example table with duplicate rows

Table X
Field 1X
A
A
B
C

Notice that the value of “A” in the example table is duplicated. If this field was placed on the report, the value of “A” would appear more than once on the report.

Why do duplicate records occur in a database?

Duplicate records may occur in a database due to any one of the following reasons:

- Database design
- Data entry errors
- Database corruption as a result of performing commands such as: **Insert**, **Delete**, **Update**
- Record is intended to be a duplicate value

Solutions to scenario one

To resolve or work around duplicate records appearing on the report due to the fact that it is occurring in the database, refer to the corresponding solutions offered later in this document: [Database Solutions](#) and [Select Distinct Records](#).

Scenario two: Duplicate records caused by linked tables

Linked tables are a common cause of duplicate records. When linking tables in Crystal Reports, there are usually several join types available. Each of these join types represent an argument or a logical way to relate the records from each table.

NOTE	<p>For more information on linking and join types, refer to the following:</p> <ul style="list-style-type: none"> • Crystal Reports Online Help by pressing the F1 key. • Sample reports on linking available on our support site. • Technical brief on linking in Crystal Reports on our support site.
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Why does linking tables cause duplicate records?

Depending on the join type that is selected to link tables, duplicate records may appear on the report.

Review the following cases based on the two example tables of how each join type affects how records are returned and how duplicate records can appear.

Figure 2: Example tables to be used in demonstrating different cases of linking

Table X		Table Y	
Field 1X	----->	Field 1Y	Field 2Y
A		A	1
A		B	1
B		B	2
C		B	3
		C	1
		C	2

Equal join type between two tables

The result set from an Equal join includes all the records where the linked field value in both tables is an exact match.

In this case, when an Equal join links the example tables, Crystal Reports creates the record set as shown in Figure 3.

Figure 3: Result set of an Equal join based on the example tables

Field 1X	Field 1Y	Field 2Y
A	A	1
A	A	1
B	B	1
B	B	2
B	B	3
C	C	1
C	C	2

Notice that based on this result set, the only duplicate records are the first two rows, (A, A, 1). Otherwise, the other rows of records contain values that are not all the same.

If all three fields are not displayed on the report, it may appear that there are more duplicate records than there are.

To resolve or work around duplicate values or records appearing on a report due to linking options, refer to the corresponding solution offered later in this document: [Change Linking](#).

For other possible workarounds to duplicate values or records caused by linking, refer to the corresponding solutions offered later in this document: [Group to use first / last group values](#) and [Suppress duplicate detail lines](#).

Scenario three: Duplicate Values occur with Running Totals

If a running total is created based on a field that contains duplicate records or values, the running total values will also reflect this in its calculation. The inclusion of duplicate values can occur for both manual running totals and running total expert fields.

Solutions to scenario three

To resolve or work around duplicate values or records that occur with running totals, refer to the corresponding solutions, one for manual running totals and the other for running total expert fields, offered later in this document: [Conditional Running Totals](#).

Corresponding Solutions

Using “Suppress if duplicate”

To suppress duplicate values in one field simply group the report by that field, right click on the field, go to Format Field / common Tab and select “suppress if duplicated”. This will suppress only the duplicate data in this specific field, not for the whole record.

Database Solutions

This solution is applicable to Scenario One as described earlier in this document.

Unless the duplicate data is intended to be a duplicate value, it is strongly recommended that you apply the process of *normalization* to minimize the redundancy and to decrease the possibility of database corruption. Normalization usually involves dividing database tables into two or more tables and then defining the relationships between the tables. Review the database product documentation to find out how to apply the process of normalization.

Also, stored procedures, queries and data dictionaries can be created to return record sets with distinct sums, counts and other totals from the database. Crystal Reports can then be used to report off these record sets.

Select Distinct Records

This solution is applicable to Scenario One as described earlier in this document.

If the duplicate data is intended to be a duplicate value occurring in the database and you want to return only distinct records in a Crystal report, enable the **Select Distinct Records** command from the Report Options dialog box to exclude duplicate records.

For more information on the **Select Distinct Records** command, refer to the Crystal Reports Online Help by pressing **F1**.

NOTE	If the duplicate value is not truly a duplicate record, then the option, Select Distinct Records, will not appear to work. Refer to the other solutions offered in this document.
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Suppressing duplicate detail lines

This solution is applicable to Scenario Two as described earlier in this document.

If you want to suppress the entire detail line in Crystal Reports based on duplicate values, format the Detail section with a conditional formula.

Steps to suppress the Detail section based on a conditional formula:

1. In Crystal Reports, right-click on the Details section and select **Section Expert**.
2. In the Section Expert dialog box, select the **X + 2** button beside the **Suppress** command. The check box must remain unselected for this formula to work.
3. In the Formula Editor dialog box, create a conditional formula containing the **Next** function to evaluate the records for duplicate values and to suppress the Details line.

Example conditional suppression formula:

```
//This formula suppresses the Details line
//when there are duplicate values contained in the fields.
{Field1A} = Next({Field1A} And
{Field1B} = Next({Field1B} And
{Field1C} = Next({Field1C}
```

You can add multiple conditions to this formula to specify exactly field or combination of fields needs to contain duplicate values in order for this record to be considered a duplicate.

If duplicate records appear in the report, but, do not appear in order, sort the records based on a field that will contain duplicate values. This will allow the **Next** function to evaluate the subsequent record for duplicate values.

Change linking

This solution is applicable to Scenario Two as described earlier in this document.

Linking can be the cause of returning duplicate values in a report. Change the linking between tables in Crystal Reports to return the correct data and to return a record set without duplicating values.

For example, an equal join that uses an $A > B$, $A > C$ relationship to link three tables may result in less duplicate values than using an $A > B >$ relationship.

Also, the linking command, **Look up both at the same time**, may result in less duplicate values when reporting off a PC-type database in Crystal Reports.

NOTE	<p>For more information on linking and join types, refer to the following:</p> <ul style="list-style-type: none"> • Crystal Reports Online Help by pressing the F1 key. • Sample reports on linking available on our support site. • Technical brief on linking in Crystal Reports on our support site.
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Insert Group and Display First or Last Value

This solution is applicable to Scenario Two as described earlier in this document.

To work around displaying duplicate records on the report, insert a group based on that field. Then display only the field's first or last value in the Group Header or Group Footer.

Steps to Insert Group and Display only the Field's First Value

1. In Crystal Reports, from the **Insert** menu, select **Group**.
2. Group based on the field that displays duplicate records.
3. Place the other field from the Details section in the Group Header.
4. Suppress the Details section.

NOTE	<p>If you place the field from the Details section in the Group Header, the first value displays. Likewise, if you place the field from the Details section in the Group Footer, the last value displays.</p>
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Upon completing these steps, the report will not display duplicate values.

If there are multiple tables and multiple fields, continue to insert multiple group levels for each field that displays duplicate records.

Conditional Running Totals

This solution is applicable to Scenario Three as described earlier in this document.

Create a manual running total

To create a manual running total that calculates only distinct values based on more than one database field, create a conditional running total that contains a declared variable.

NOTE	For more information on how to create formulas and declare variables, refer to the Crystal Reports Online Help by pressing the F1 key.
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Variables can be used to keep a running total of just the values that are not duplicates.

The conditional running total requires three formulas:

- To reset the variable to zero (0)
- To calculate the variable based on the required conditions
- To display the total of the variable on the report

Example of the three formulas of a conditional running total:

- This formula resets the variable to zero and must be placed in a report section ahead of the other two formulas. For example, the Group Header section.

```
//This formula declares the variable
//and assigns the value of zero to it.
NumberVar RunningTotal;
RunningTotal:=0;
```

- This formula calculates the variable based on the required conditions. This formula is placed in a report section between the two formulas. For example, the Details section.

```
//This formula calculates based on the
//required conditions. Replace the example's fields
//with fields from your database tables.
NumberVar RunningTotal;
If {Field1X} = Next({Field1X}) And
   {Field1Y} = Next({Field1Y}) And
   {Field2Y} = Next({Field2Y})
Then RunningTotal
   Else RunningTotal:= RunningTotal + {Value.field}
```

- This formula displays the total value of the variable and is usually placed in a report section after the other two formulas. For example, the Group Footer section.

```
//This formula displays the results of the variable.
```

```
NumberVar RunningTotal;
```

```
RunningTotal
```

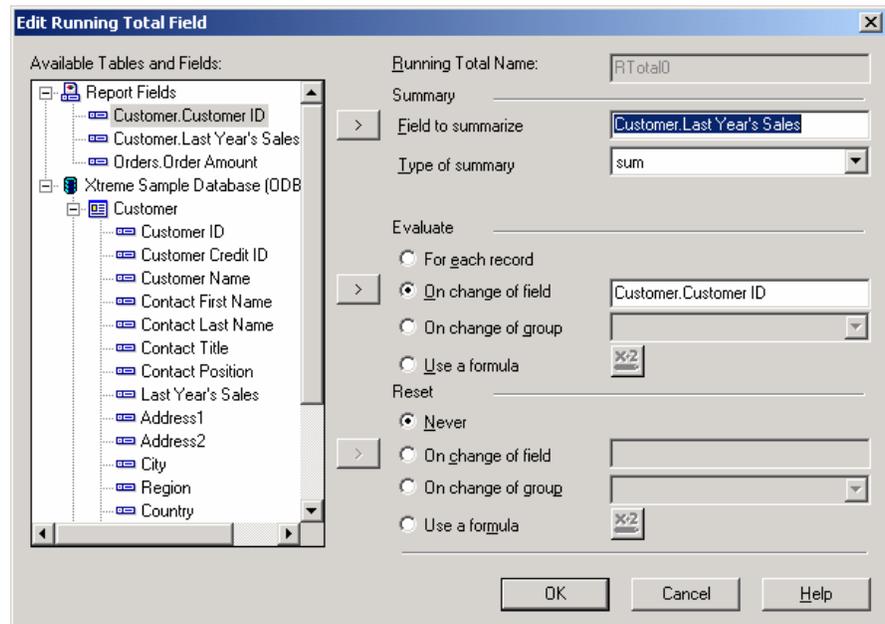
NOTE	For more information on how to create running totals, refer to the technical brief, Scr_runningtotal.zip on our support site at: http://support.crystaldecisions.com/search
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Create a Running Total Expert Field

If only one database field is required to determine if a duplicate record should be excluded from a running total, then use the Running Total Expert instead of the manual running total method.

Configure the Running Total Expert field to evaluate based on the change of the field's value. This means that when the value of the field changes, then the running total will increment. If the value of the field is a duplicate, then the running total will not increment.

Figure 1: Edit Running Total Field dialog box



Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

Self-serve Support:

<http://support.crystaldecisions.com/>

Email Support:

<http://support.crystaldecisions.com/support/answers.asp>

Telephone Support:

<http://www.crystaldecisions.com/contact/support.asp>