R&R *Report Writer®* *Technical Bulletin*

Cross-Tabulating Totals

Product:	R&R Report Writer® for DOS®	**Oper Sys:** DOS
Version:	All	

Summary

R&R Report Writer enables you to select a group field and create totals for each value in that field. Cross-tabulating totals extends this capability by allowing you to create totals for two fields at the same group level. Since the resulting report resembles a table with totals tabulated down columns and across rows, it is referred to as a crosstab report.

Creating a Crosstab Report

The following summary columnar report produces total sales for each product sold by each sales representative. In addition, it produces total sales for each product by all sales reps. But since sales reps are grouped within products, it can't produce the total sales of all products by each sales rep.

<div align="center">

Weekly Sales Summary Report

Total Sales by Product Only

Product/Sales Rep	Amount
C· I· P	
Brenda	1200
Ellen	1850
Rob	1425
Roger	1025

C· I· P - All sales reps	5500
dB Report	
Brenda	450
Ellen	675
Rob	305
Roger	445
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dBR - All sales reps	1875

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Weekly Sales Summary Report

Total Sales by Product Only

R&R Report

Brenda	9820
Ellen	11465
Rob	8775
Roger	10450

R&R - All sales reps	40510
	======
All products - All sales reps	47885

Without using a crosstab, you would have to create two separate reports to produce totals by product and by sales rep. A crosstab report enables you to create both sets of totals on the same report. In addition, a crosstab is more compact and thus easier to read.

Weekly Sales Summary Report			
Total Sales by Product and Sales Rep			
C· I· P	**dB Report**	**R&R Report**	**All Products**
Brenda	1200	450	9820	11470
Ellen	1850	675	11465	13990
Rob	1425	305	8775	10505
Roger	1025	445	10450	11920
All Sales Reps	5500	1875	40510	47885

Note that in this example the crosstab computes *sum* totals. It is also possible to create a crosstab with other totals such as counts, averages, minimums and maximums. Use the following steps to create any crosstab report.

1. **Select a field to total.** In this example, you are summing the amount contained in the database field SALE_AMT. There is one record in the database for each product sold. Each record includes three fields: SALES_REP contains the name of the rep, PRODUCT contains the name of the product, and SALE_AMT contains the dollar amount.

2. **Select the type of total.** R&R Report Writer offers five types of totals: Sum, Count, Average, Highest (maximum), and Lowest (minimum).

3. **Select two fields to tabulate.** In this example, you want to tabulate totals by product and by sales rep. These values are contained in the fields PRODUCT and SALES_REP.

4. **Create the group field.** From the two fields you selected to tabulate in step 3, determine which one contains more values. In this example there are four sales reps and only three products, so the group field should be SALES_REP.

Use the /Sort-Group Sort-Fields command to enter SALES_REP as the level one sort-group field. Since sales reps will each be on a separate row, we will refer to SALES_REP as the *row field* and PRODUCT as the *column field*.

Create the column allocation fields. For each value in the column field, you must create a calculated field. These fields enable you to allocate the sale amount to the correct product. You selected the field with the fewest values to be the column field to minimize the number of fields created in this step.

5a. This procedure applies to a crosstab of sums, averages, minimums, and maximums. For counts, refer to step 5b. Select /Field Calculate Create and enter the name CIP_Amount. Then enter the following expression.

> IIF(PRODUCT="CIP", SALE_AMT, 0)

Think of this action as adding a field to the database that contains the amount only if the product is CIP, otherwise zero. Follow this procedure again for the two other products and create the following fields.

> dBR_Amount = IIF(PRODUCT="dBR", SALE_AMT, 0)
>
> RnR_Amount = IIF(PRODUCT="R&R", SALE_AMT, 0)

5b. If you are producing a crosstab of counts, the calculation expression will be slightly different. In this example, if you were counting the number of sales, the expressions would be as follows.

> CIP_Count = IIF(PRODUCT="CIP", 1, 0)
>
> dBR_Count = IIF(PRODUCT="dBR", 1, 0)
>
> RnR_Count = IIF(PRODUCT="R&R", 1, 0)

Think of this expression as adding one to the count if the sale was for the product being counted. You would then complete steps six through ten, substituting these field names wherever you see the field names: CIP_Amount, dBR_Amount, or RnR_Amount.

6. **Create the crosstab values.** The fields you created in step 5 contain detail information for each sale. You must now create a total of each detail field, since the crosstab contains totals for each sales rep.

Select /Field Total Create and enter the name CIP_X_Tab. To create the sales rep total for CIP, select Sum, CIP_Amount, and 1. The other two crosstab values are similarly calculated as follows.

> dBR_X_Tab = SALES_REP Sub-Sum of dBR_Amount
>
> RnR_X_Tab = SALES_REP Sub-Sum of RnR_Amount

7. **Create row totals.** The total for each sales rep is calculated by simply adding up the three product totals.

   Select /Field Calculate Create and enter the name Rep_Total, then enter the following expression.

   > CIP_X_Tab + dBR_X_Tab + RnR_X_Tab

8. **Create column totals.** Column totals are created the same way the crosstab values were in step 6, except with the *grand* reset level.

   Select /Field Total Create and enter the name CIP_Total. To create the sales rep total for CIP, select Sum, CIP_Amount, and Grand. Follow this procedure again for the two other products to create the following fields.

   > dBR_Total = Grand Sum of dBR_Amount

   > RnR_Total = Grand Sum of RnR_Amount

9. **Create the grand total.** The grand total in the lower right corner is both the total of the last column and the total of the last row. You will use a calculated field to define it as the addition of the three column totals.

   Select /Field Calculate Create and enter the name Grand_Tot. Then enter the following expression.

   > CIP_Total + dBR_Total + RnR_Total

10. **Create the report format.** Now that all the necessary fields have been defined, create the following report format. Create the lines with the /Line Create command and insert fields with the F10 [Choices] key. This completes the crosstab.

```
Field: SALES_REP        Line: 1 Col: 4          READY

Type / for command menu.    Press F1 for help, F10 to insert field

Header              Weekly· Sales· Summary· Report

Header              Total· Sales· by· Product· and· Sales· Rep

Header

Header                          C· I· P      dB· Report    R&R· Report    All· Products

Header

1_SALE              XXXXXXXXXX   #####        #####         #####          #####

1_SALE

Summary                          #####        #####         #####          #####

                    All· Sales· Rep
                    s


                    SALES_REP    CIP_X_Tab    dBR_X_Tab    RnR_X_Tab      Rep_Total


                                 CIP_Total    dBR_Total    RnR_Total      Grand_Tot
```