



BI Publisher Pivot Grids

PT 8.59

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Overview

At design time, we don't always know how many rows and columns a table will have, nor what their labels will be. Pivot Tables place a grid on a BI Publisher report that is data dependent.

Take for example a table showing an employee's taxes. The number of taxes paid by each employee will vary by state and tax locality. One employee may have only one or two taxes, where others may have many more. Creating one table for a report that will accommodate both these data sets is difficult at design time: the number of columns and rows vary per each employee.

One method might be to create a table large enough for the maximum number of columns in this tax report. For most employees, columns will be blank or empty. The real data easily disappears into the noise.

Pivot tables allow us to create a table on the report that is correct to that employee's dataset each time. The exact number of columns and rows are created for each report but will vary depending on the employee's data. One employee's report may have two columns where other reports may have many more.

Documentation

BI Publisher Pivot tables are not well documented in PeopleBooks. However, they are well documented on the BI Publisher general documentation.

Here are some links to Oracle's more detailed documentation on BI Publisher and Pivot Tables

Oracle Docs: Middleware

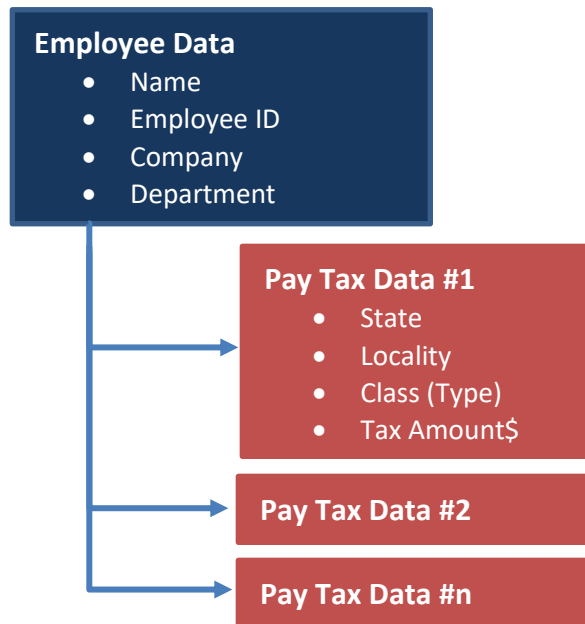
BI Publisher Templates	https://docs.oracle.com/middleware/12212/bip/BIPRD/toc.htm
RTF Pivot Grids	https://docs.oracle.com/middleware/12212/bip/BIPRD/GUID-BD4419D0-BFB5-40F3-BB2E-0B9FA12B43D8.htm#BIPRD2681

Demonstration Example

It's easier to explain the Pivot Table given a specific example. In this Example, we have a report on employee annual payroll taxes.

We have a parent child relationship between Employee Data and Taxes.

Each employee row has one or more tax lines



A simple report using this data might look like this

Paycheck Taxes

KU0151 Chris Cameron

Company GBI
Department 13111
Home State NY

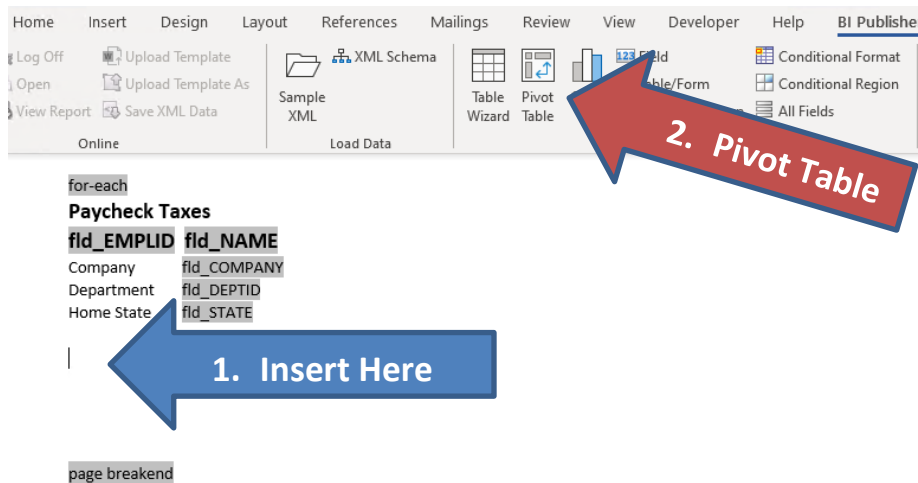
State	Locality	Tax Class (Type)	Tax\$
Federal		OASDI/EE	50.08
Federal		MED/EE	11.71
Federal		Withholdng	82.93
New York		OASDI/EE	0.6
New York		Withholdng	34.83
New York		FLI/EE	4.13
New York	P0001	Withholdng	24.63
Federal		OASDI/EE	50.07
Federal		MED/EE	11.71
Federal		Withholdng	82.93
New York	P0001	Withholdng	24.63
New York		OASDI/EE	0.6
New York		Withholdng	34.83
New York		FLI/EE	4.12
Federal		OASDI/EE	50.08
Federal		MED/EE	11.71
Federal		Withholdng	82.93
New York	P0001	Withholdng	24.63
New York		Withholdng	24.63
New York		OASDI/EE	0.6
New York		FLI/EE	4.13
Federal		MED/EE	11.72
Federal		Withholdng	770
Federal		Withholdng	82.93
Federal		OASDI/EE	217
Federal		MED/EE	50.75

We can see that this employee has paid a lot of taxes over time. However, there is a lot of detail, much of it iterates over multiple paychecks.

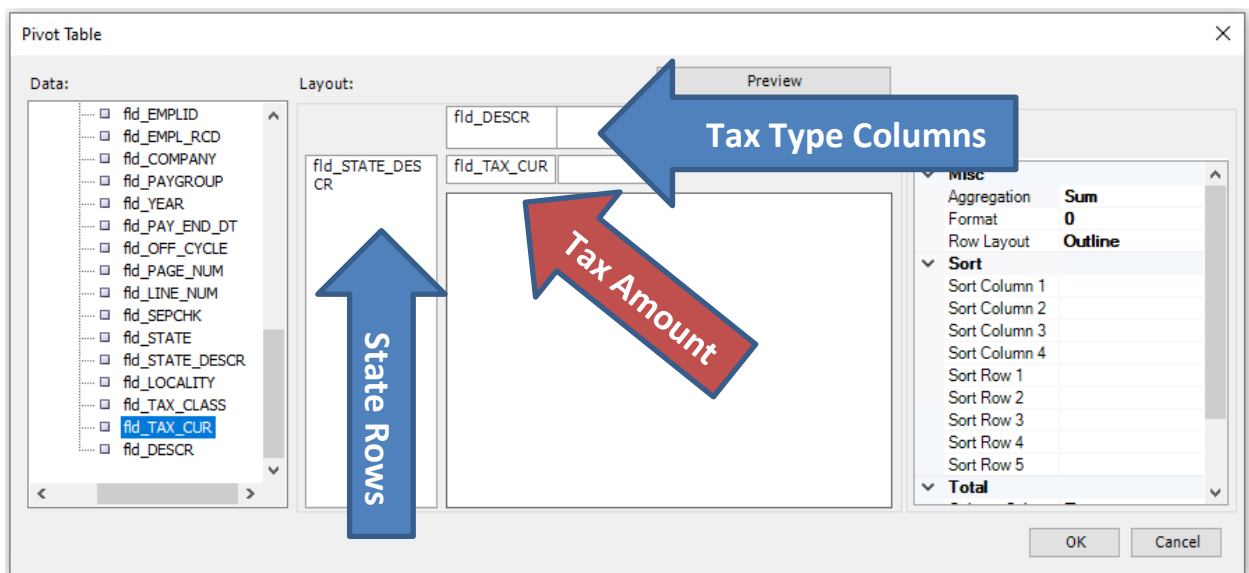
Simple Pivot Table

We can replace the tax detail table with a Pivot Table to summarize and better visualize the employees data.

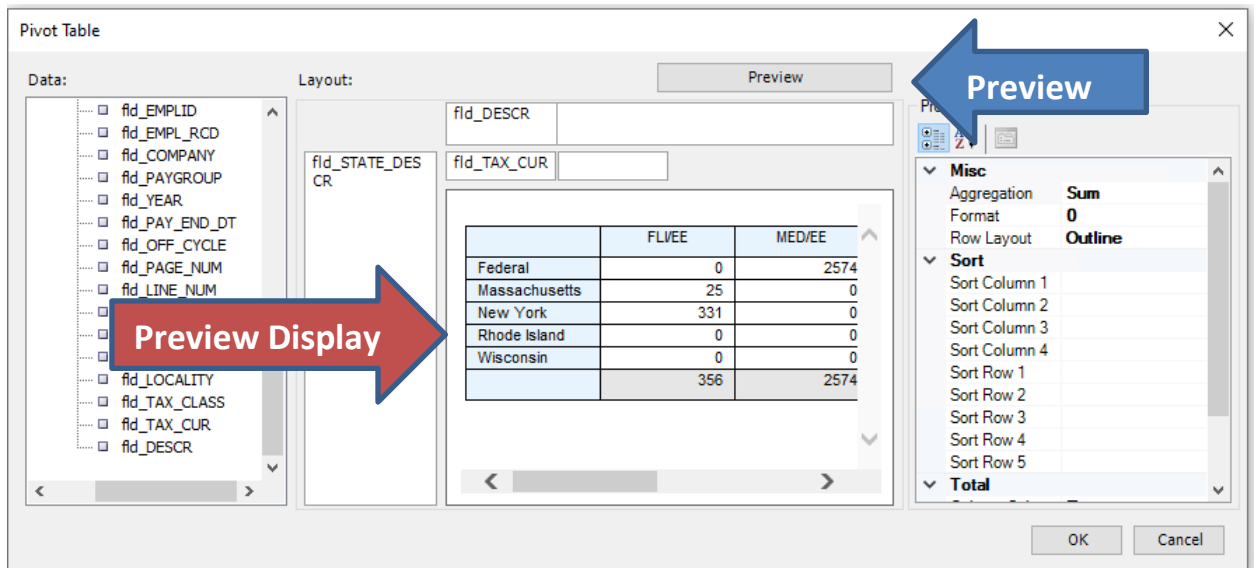
1. Place your cursor in the RTF template where you want the new Pivot table and click on the Pivot Table Control on Word's BI Publisher menu



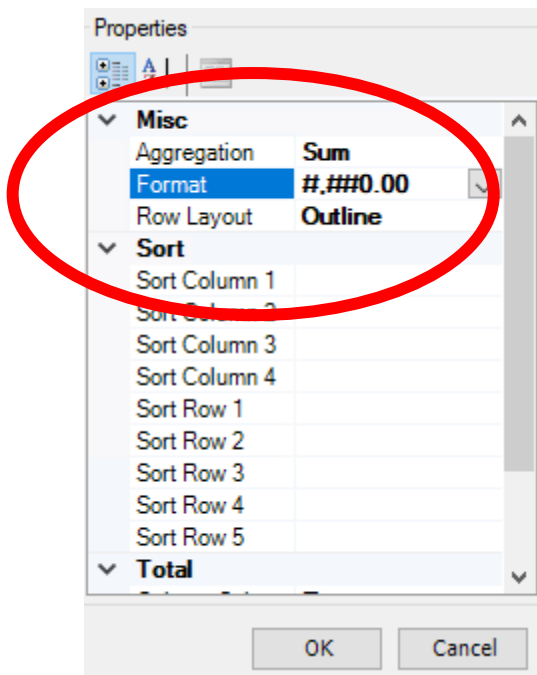
2. The Pivot Table control box appears on your page.
 - a. Drag the fields from the data section onto the Pivot Table control in both the X and Y Axis.
 - b. In the below example, each column of the table will be a separate tax class or type while the rows will be the states.
 - c. The Tax_Cur field, or tax amount, is added to the body of the table



- Click the Preview button on the control to generate an example of what the pivot table will look like in your report



- Adjust the aggregation and number format in the Properties section of the Pivot Table dialog box.



5. Select the proper column and row totals in the Properties section of the Pivot Table dialog box.

Preview

fld_DESCR

fld_TAX_CUR

OASDVEE	Withholding	Total
11,005.86	16,580.40	30,160.21
0.00	1,080.34	1,105.65
45.60	4,921.11	5,297.34
509.32	1,683.78	2,193.10
0.00	1,873.78	1,873.78
11,560.78	26,139.41	40,630.08

Properties

Sort

Sort Column 1

Sort Column 2

Sort Column 3

Sort Column 4

Sort Row 1

Sort Row 2

Sort Row 3

Sort Row 4

Sort Row 5

Total

Column Subtotal False

Column Total True

Row Subtotal True

Row Total True

OK Cancel

6. Click Preview again and update the sample report in the preview window.
7. Once the table is correctly configured, Click "OK"

BI Publisher inserts a completely configured table into your RTF template which will generate the Pivot Table at runtime.

File Home Insert Design Layout References Mailings Review View Developer Help BI Publisher

Log Off Upload Template Log On Open Upload Template As View Report Save XML Data

XML Schema Sample XML Load Data

Table Wizard Pivot Table Chart Field Table/Form Repeating Group

Online

for-each

Paycheck Taxes

fld_EMPLID fld_NAME

Company fld_COMPANY

Department fld_DEPTID

Home State fld_STATE

C H ACC	G fld_DESCRE	Total
G	G 999.00E	999.00E
fld_STATE_D ESCR		
	G 999.00E	999.00

Generated PT Config

page breakend

Run the report using your sample XML file to see the new Pivot Table

Paycheck Taxes

KU0151 Chris Cameron

Company GBI
Department 13111
Home State NY

	FLI/EE	MED/EE	OASDI/EE	Withholdng	Total
Federal	0.00	495.79	2,119.92	3,921.34	6,537.05
New York	174.72	0.00	22.80	2,817.73	3,015.25
	174.72	495.79	2,142.72	6,739.07	9,552.30

Inserting into a Repeating Group

A problem occurs when your report has a repeating group. The Pivot table searches and aggregates all data in the XML file into each row of the repeating group instead of just the data for that row.

What you get is a file summation for every row.

In our example, my file now has five employees with their tax data. The pivot grid appears on each page of the report. However, each table is identical in that it summarized the entire file instead of just that employee.

Paycheck Taxes

KU0151 Chris Cameron

Company GBI
Department 13111
Home State NY

	FLI/EE	MED/EE	OASDI/EE	Withholdng	Total
Federal	0.00	2,573.95	11,005.86	16,580.40	30,160.21
Massachus etts	25.31	0.00	0.00	1,080.34	1,105.65
New York	330.63	0.00	45.60	4,921.11	5,297.34
Rhode Island	0.00	0.00	509.32	1,683.78	2,193.10
Wisconsin	0.00	0.00	0.00	1,873.78	1,873.78
	355.94	2,573.95	11,560.78	26,139.41	40,630.08

Paycheck Taxes

KU0072 Wayne Mosley

Company GBI
Department 10000
Home State WI

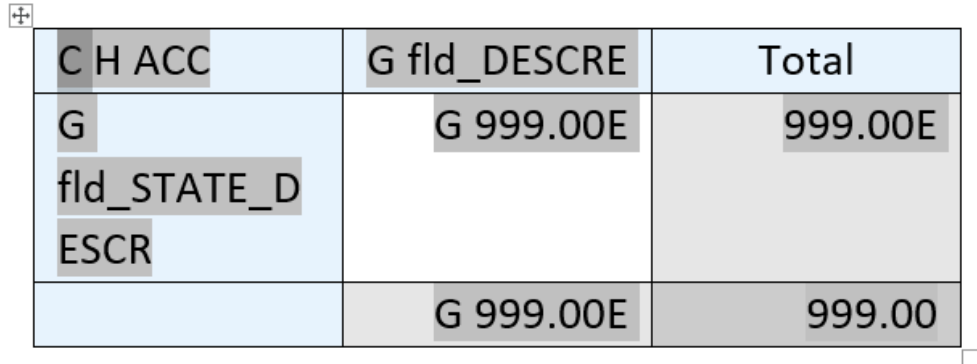
	FLI/EE	MED/EE	OASDI/EE	Withholdng	Total
Federal	0.00	2,573.95	11,005.86	16,580.40	30,160.21
Massachus etts	25.31	0.00	0.00	1,080.34	1,105.65
New York	330.63	0.00	45.60	4,921.11	5,297.34
Rhode Island	0.00	0.00	509.32	1,683.78	2,193.10
Wisconsin	0.00	0.00	0.00	1,873.78	1,873.78
	355.94	2,573.95	11,560.78	26,139.41	40,630.08

Correcting the Group Issue

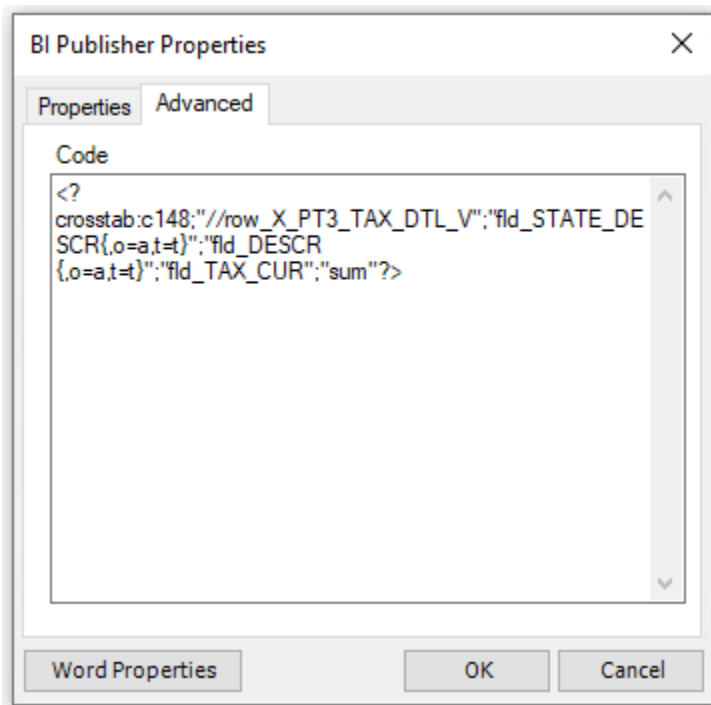
The way to fix this depends on if you created your data in a hierarchical structure as is my example or threw a “Gob” of a huge, flat XML file at your report (Yes, I’m judging). In a hierarchical structure, **your data is already grouped**.

With both methods, we need to edit the XSL of the Pivot table limit the table to the group.

On your template, find the “C” character in the first cell of the Pivot table. Highlight it and then double click on the field.



C H ACC	G fld_DESCRE	Total
G fld_STATE_D ESCR	G 999.00E	999.00E
	G 999.00E	999.00



Structured data

Try this one first. This is the easiest fix if your data is already grouped.

Insert a period (.) before the “//row...” text in the properties box. This will force BI Publisher to only search down that XSL Path to populate data in the pivot grid

```
<?crosstab:c148;  
" . //row_X_PT3_TAX_DTL_V";  
"fld_STATE_DESCR{,o=a,t=t}";  
"fld_DESCR{,o=a,t=t}";  
"fld_TAX_CUR"; "sum"?>
```

Unstructured data

Replace the “//ROW” designation for the source data with “current-group()”.

```
<?crosstab:c148;  
"current-group()";  
"fld_STATE_DESCR{,o=a,t=t}";  
"fld_DESCR{,o=a,t=t}";  
"fld_TAX_CUR"; "sum"?>
```

Click OK and preview your report

Paycheck Taxes

KU0072 Wayne Mosley

Company GBI
Department 10000
Home State WI

	MED/EE	OASDI/EE	Withholdng	Total
Federal	667.22	2,852.95	5,144.06	8,664.23
Wisconsin	0.00	0.00	1,873.78	1,873.78
	667.22	2,852.95	7,017.84	10,538.01

Paycheck Taxes

KU0151 Chris Cameron

Company GBI
Department 13111
Home State NY

	FLI/EE	MED/EE	OASDI/EE	Withholdng	Total
Federal	0.00	495.79	2,119.92	3,921.34	6,537.05
New York	174.72	0.00	22.80	2,817.73	3,015.25
	174.72	495.79	2,142.72	6,739.07	9,552.30

Where to go from here

BI Publisher's Pivot Table tools has more options to explore

- Subcategories in the X-Axis
- Subcategories in the Y-Axis
- Sorting on rows and columns
- Count Vs Summation aggregation
- Choice of totals and subtotals on both X and Y Axis

BI publisher's Pivot Table has the capability to deliver the data visualization your users need.