IBM Db2 Web Query for i Designer Creating Reports Part 1

Release 2.4.0

Contents

Chapter 1

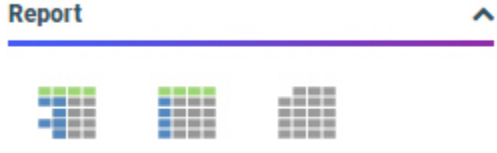
Creating Reports

You can create reports in a visualization in Db2 Web Query Designer similar to the way in which you create charts. Reports allow you to communicate information at a high level of detail using a familiar tabular format. You can create a stand-alone report in a visualization, or combine multiple reports in a page.

In this chapter:

Creating a Report

You can create a report by creating new content in a visualization and changing the content type to a report using the Content picker. The report options in the Content picker are shown in the following image.



Three report layout options are available: a standard, tabbed report in which repeating sort values are only displayed once, a grid in which sort values repeat so that all cells of the report are filled. The third option creates a data grid, which is a type of chart that resembles a tabbed report.

The following image shows a report using the standard report layout.

Product Category	Sale Year	Quantity Sold	Revenue
Accessories	2014	20,152	$5,039,297.57
	2015	31,396	$7,860,068.93
	2016	46,735	$11,820,675.96
	2017	63,836	$16,060,415.69
	2018	139,977	$35,619,872.81
	2019	209,571	$53,208,007.57
Camcorder	2014	17,722	$5,878,431.53
	2015	28,485	$9,673,248.16
	2016	41,250	$13,971,708.11
	2017	56,782	$19,438,607.89
	2018	123,972	$42,396,539.60
	2019	187,033	$63,107,166.95

The following image shows a report using the grid layout.

Product Category	Sale Year	Quantity Sold	Revenue
Accessories	2014	20,152	$5,039,297.57
Accessories	2015	31,396	$7,860,068.93
Accessories	2016	46,735	$11,820,675.96
Accessories	2017	63,836	$16,060,415.69
Accessories	2018	139,977	$35,619,872.81
Accessories	2019	209,571	$53,208,007.57
Camcorder	2014	17,722	$5,878,431.53
Camcorder	2015	28,485	$9,673,248.16
Camcorder	2016	41,250	$13,971,708.11
Camcorder	2017	56,782	$19,438,607.89
Camcorder	2018	123,972	$42,396,539.60
Camcorder	2019	187,033	$63,107,166.95

To populate the report, select measures and dimensions from the Resources panel with the Fields tab selected from the sidebar. The Resources panel displays the fields that were populated from your data source. You can add fields to your report in the following ways:

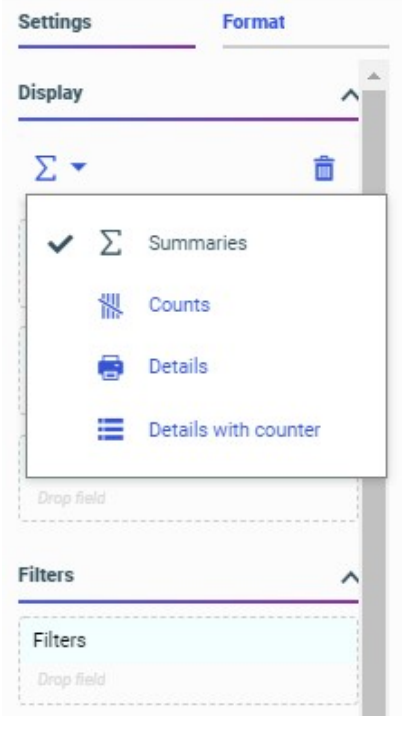
- ❏ Drag a field from the Fields tab into your content.

- ❏ Double-click a field in the Fields tab.
- ❏ Drag a field from the Fields tab into a bucket.
- ❏ Right-click a field on the Fields tab and click *Add to report*.

When you add a field to your report, the canvas updates to display the values in it.

You can define the rows and columns in a report by adding fields to the Rows and Column Groups buckets, respectively. Typically, these are dimension fields. The values in these fields are used to sort the report.

You can display aggregated values in a report by adding fields to the Summaries bucket. This bucket is usually used to display values for measure fields. The Summaries bucket displays by default, but you can change the bucket by selecting a different display option. The available display options are shown in the following image.

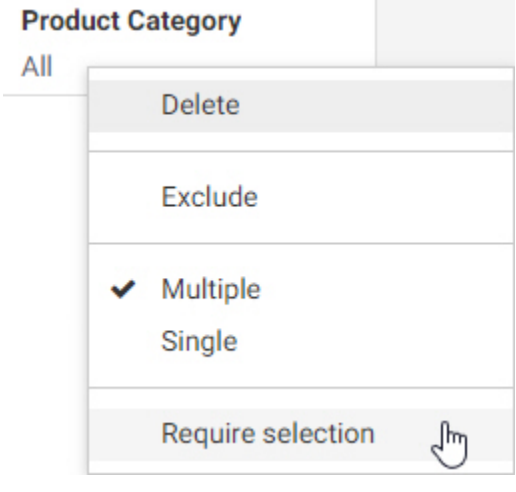


The Summaries and Counts options provide aggregated measure values for each sort value, that is, each row or column, in the report. The Details and Details with counter display options, on the other hand, provide a complete list of every value for the selected field or fields.

Once you have added fields to the report, you can format it to enhance its appearance or style. For example, you might want to add a header and footer to identify the information on each page of the report, or use a report template to modify the layout. You can also click the Format tab to apply a theme or change the output format of the report and style different areas of the report.

On the Format tab, select an option from the quick access menu on the Format tab to select the area that you want to style. By default, *General* is selected. Styling changes made here affect the entire report. Other areas that you can style include different columns, totals, and headers and footers. You can select different options to style only the titles or data values in a report, or both, and for certain areas you can select which fields your styling is applied to. You can change the typeface, size, style, alignment, and color of the text in different areas of a report, and the background color and margins of cells.

You can filter a report using prompted or static filters. To create a prompted filter, drag a field from the Fields tab to the Filter toolbar. A menu appears, allowing you to select default filter values. When a report with prompted filters is added to a visualization assembled from existing content, you can create filter controls to allow users to select their own filter values at run time. When creating a report, you can also require user selection for a prompted filter, so that the report does not run until the user makes a filter selection, by right-clicking the filter in the toolbar and clicking *Require selection*, as shown in the following image.



Static filters, on the other hand, do not allow user selection at run-time. They allow you to apply consistent filters to the report that cannot be modified at run time. To create a static filter, drag a field from the Fields tab to the Filters bucket, then specify filter values in the Add Filter dialog box.

Procedure: How to Create a Report Using Db2 Web Query Designer

1. Open Db2 Web Query Designer. On the Db2 Web Query Hub, click the plus menu and then click *Create Visualizations*, or, on the Db2 Web Query Home Page, click *Visualize Data*.

   Db2 Web Query Designer opens in a new browser tab.

2. Select a workspace and a data source available from that workspace.

   Once you select a data source, Db2 Web Query Designer loads with options to create a single content item.

3. On the Content picker, select a report layout.

4. Add sort fields to the report by dragging dimension fields from the Fields pane into the Rows and Column Groups buckets.

   Note: You can also double-click a dimension field or drag it onto the canvas to add it to the Rows bucket.

5. Add aggregated data values to the report by dragging measure fields from the Fields pane into the Summaries bucket.

   Note: You can also double-click a measure field or drag it onto the canvas to add it to the Summaries bucket, or other measure bucket if you have changed the display option.

   The report displays the selected fields, based on the bucket they were placed in.

6. The following are some of the options you have to customize the report:

   - ❑ Select a theme and apply custom styling options from the Format tab.
   - ❑ Change the layout of the report by changing the report template from the Content picker.
   - ❑ Filter the report by dragging fields into the Filter toolbar or Filters bucket.
   - ❑ Add subtotals, page breaks, or row breaks to the report each time the value in a field changes by right-clicking a field in the Properties panel, pointing to *Insert breaks*, and selecting an option for each category.
   - ❑ Add a header or footer by selecting the header or footer area of the report and typing header or footer text.
   - ❑ Enable Auto Drill or Auto Linking, or make the report an Auto Link target, from the Content section of the Settings tab on the Properties panel.
   - ❑ Add column or row totals to the report from the Settings section.

7. To see a run-time view of the report, including behaviors such as Auto Drill or dynamic filtering that are not available in the canvas, click *Run in new window*  on the Visualization toolbar.
8. On the Db2 Web Query Designer toolbar, click *Save* to save your report to a selected location. Once saved, you can share the report and add it to a page.

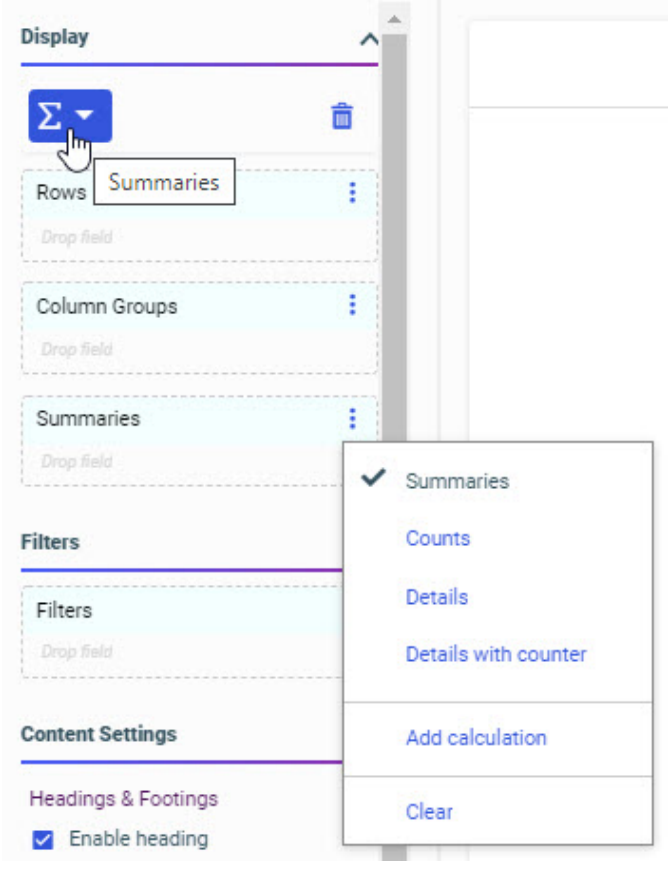
   To open the report to edit it again at a later time, locate it on the Hub or Home Page, right-click it, and click *Edit* from the shortcut menu.

Displaying Measure Values in Reports

When you add a measure field to a report using the Summaries bucket, the values in that field are aggregated, by default. This means that measure values are evaluated for each sort value in the report. This option is used when the Summaries display option  is selected.

By default, the values of fields in the Summaries bucket are aggregated by summing them. You can also aggregate them by average, count, count distinct, percent, percent of count, minimum, maximum, median, and mode values. To use one of these aggregation options, right-click a field in the Summaries bucket, point to *Aggregate*, and select an aggregation.

You can change the display method for measure values from Summaries to Counts, Details, or Details with counter to change how the fields in this bucket are evaluated. These display methods are available from the Calculation Options menu above the buckets on the Display tab, and in the menu next to the measure bucket – the Summaries bucket, by default – as shown in the following image.



Changing the display method also changes the name of the Summaries bucket.

You can use the Counts display option as an alternative to the Count prefix operator aggregation option to provide a count of data records for all fields in the Counts bucket. A count allows you to see the distribution of your data by displaying the number of records in the selected count fields, for each sort value.

You can select the Details display option  to individually display all record values for the fields in the Details bucket instead of aggregating them.

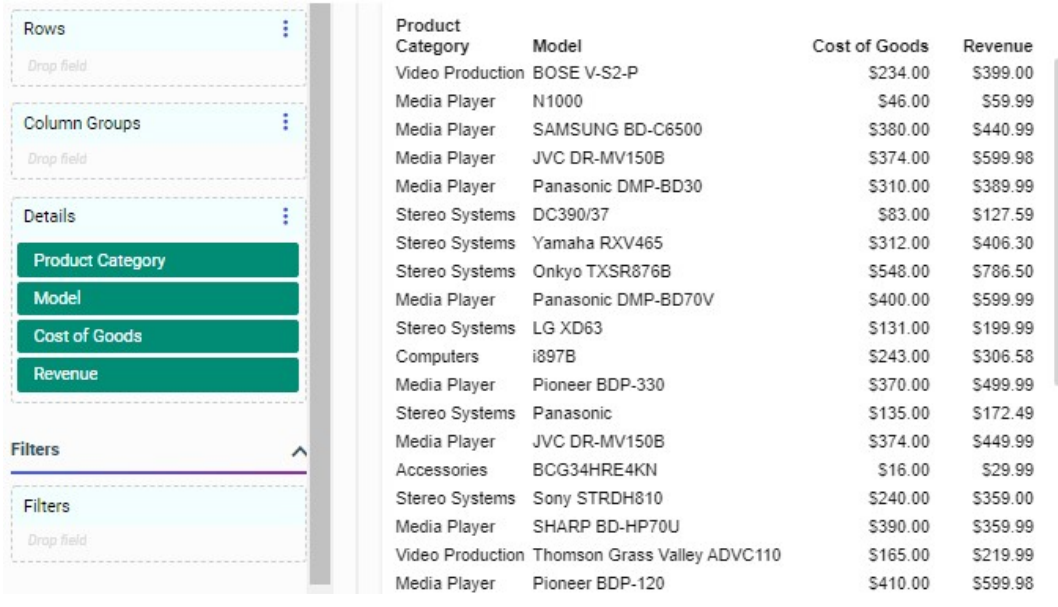
For example, the following image shows two reports. The one on the left uses the default Summaries display option, while the one on the right uses the Details display option.

Product Category	Revenue
Accessories	$485.08
Camcorder	$2,269.94
Computers	$1,889.97
Media Player	$4,949.87
Stereo Systems	$6,574.92
Televisions	$699.98
Video Production	$2,997.00

Product Category	Revenue
Accessories	$349.88
	$135.20
Camcorder	$179.00
	$359.98
	$299.00
	$509.98
	$598.00
	$323.98
Computers	$389.99
	$529.99
	$689.99
	$280.00
Media Player	$299.99
	$279.99
	$399.99
	$389.99
	$279.99
	$739.98
	$509.99
	$599.98
	$449.99
	$999.98
Stereo Systems	$219.99
	$259.98
	$99.99
	$239.00
	$179.98
	$599.98
	$713.97
	$199.99
	$2,697.00
	$279.99
	$149.99
	$179.50
	$527.98
	$99.99
	$127.59
Televisions	$699.98
Video Production	$2,997.00

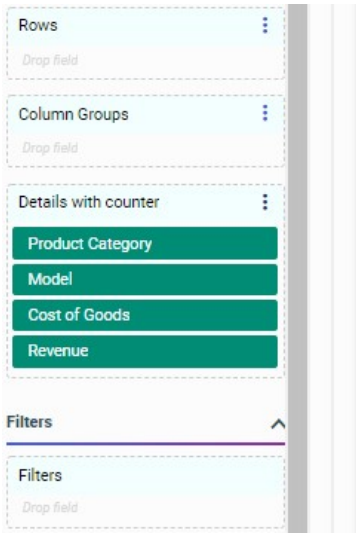
Records in a Details field are separated into groups based on the fields in the Row and Column Groups buckets, but are not individually sorted. The order in which they appear reflects the order in which they are accessed from the data source.

To see a list of the records in your data source without grouping them, for example as a data extract, you can add all desired dimension and measure fields to the Details bucket, as shown in the following image.



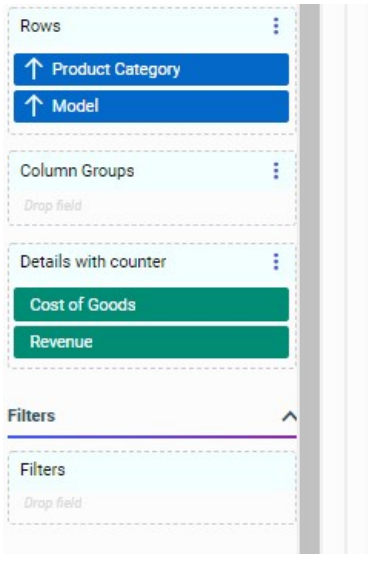
Product Category	Model	Cost of Goods	Revenue
Video Production	BOSE V-S2-P	$234.00	$399.00
Media Player	N1000	$46.00	$59.99
Media Player	SAMSUNG BD-C6500	$380.00	$440.99
Media Player	JVC DR-MV150B	$374.00	$599.98
Media Player	Panasonic DMP-BD30	$310.00	$389.99
Stereo Systems	DC390/37	$83.00	$127.59
Stereo Systems	Yamaha RXV465	$312.00	$406.30
Stereo Systems	Onkyo TXSR876B	$548.00	$786.50
Media Player	Panasonic DMP-BD70V	$400.00	$599.99
Stereo Systems	LG XD63	$131.00	$199.99
Computers	i897B	$243.00	$306.58
Media Player	Pioneer BDP-330	$370.00	$499.99
Stereo Systems	Panasonic	$135.00	$172.49
Media Player	JVC DR-MV150B	$374.00	$449.99
Accessories	BCG34HRE4KN	$16.00	$29.99
Stereo Systems	Sony STRDH810	$240.00	$359.00
Media Player	SHARP BD-HP70U	$390.00	$359.99
Video Production	Thomson Grass Valley ADVC110	$165.00	$219.99
Media Player	Pioneer BDP-120	$410.00	$599.98

You can also use the Details with counter display option to display individual values in the report and number them. This can be useful if you want to display records from your data source and provide a key value, such as a record ID number, for each one, as shown in the following image.



LIST	Product Category	Model	Cost of Goods	Revenue
1	Video Production	BOSE V-S2-P	$234.00	$399.00
2	Media Player	N1000	$46.00	$59.99
3	Media Player	SAMSUNG BD-C6500	$380.00	$440.99
4	Media Player	JVC DR-MV150B	$374.00	$599.98
5	Media Player	Panasonic DMP-BD30	$310.00	$389.99
6	Stereo Systems	DC390/37	$83.00	$127.59
7	Stereo Systems	Yamaha RXV465	$312.00	$406.30
8	Stereo Systems	Onkyo TXSR876B	$548.00	$786.50
9	Media Player	Panasonic DMP-BD70V	$400.00	$599.99
10	Stereo Systems	LG XD63	$131.00	$199.99
11	Computers	i897B	$243.00	$306.58
12	Media Player	Pioneer BDP-330	$370.00	$499.99
13	Stereo Systems	Panasonic	$135.00	$172.49
14	Media Player	JVC DR-MV150B	$374.00	$449.99
15	Accessories	BCG34HRE4KN	$16.00	$29.99
16	Stereo Systems	Sony STRDH810	$240.00	$359.00
17	Media Player	SHARP BD-HP70U	$390.00	$359.99
18	Video Production	Thomson Grass Valley ADVC110	$165.00	$219.99

When there are fields in the Rows bucket, the Details with counter display option generates a numbered list based on the primary sort field, but places it before the measure columns in the report. Notice that in the following image, the report is sorted by Product Category and Model, so the record list column appears to the right of the Model column, but the counter resets only on each Product Category value.



Product Category	Model	LIST	Cost of Goods	Revenue
Accessories	BCG34HRE4KN	1	$32.00	$59.98
	Grado RS1	2	$510.00	$695.00
	Niles Audio RCATT2	3	$176.00	$239.00
	Pioneer HDJ1000	4	$160.00	$338.00
	Sennheiser HD650	5	$380.00	$374.96
		6	$1,140.00	$1,274.87
	Sennheiser HD800	7	$950.00	$1,399.95
	Sennheiser SET830S	8	$87.00	$169.00
	Sony MDRV900HD	9	$83.00	$168.00
		10	$83.00	$142.80
Camcorder	Canon HFR11	1	$1,000.00	$1,398.00
	JVC GCFM2BUS	2	$82.00	$134.25
		3	$82.00	$179.00
	Sanyo VPCPD2BK	4	$60.00	$144.49
	Sony DCRDVD650	5	$205.00	$299.00
		6	$205.00	$254.15
Computers	GLXYT10716	1	$141.00	$279.99
	GLXYT10732	2	$141.00	$335.99

Since the Details and Details with counter display options create a row in the report for every record in the data source, be careful when using them with larger data sources.

Adding Column and Row Totals to a Report

You can summarize the measure data in a report by adding column and row totals. Column totals provide a grand total of each measure column in a report, while row totals provide a grand total of each row in a report, summing multiple measure values.

To add column totals to a report, on the Content section of the Settings tab of the Properties panel, click *Enable column totals* or *Recalculate totals*.

The Enable column totals option provides a sum total for each column. As shown in the following image, the values in each measure column are summed into total values. Columns created by dimension fields in the Column Groups bucket are treated as separate columns for this purpose.

	Sale,Year	2014		2015		2016	
Product Category	Sale Quarter	Quantity Sold	Revenue	Quantity Sold	Revenue	Quantity Sold	Revenue
Accessories	1	4,580	$1,125,123.02	7,121	$1,800,068.41	11,964	$3,048,787.53
	2	4,662	$1,165,106.04	7,323	$1,827,354.16	10,713	$2,695,679.25
	3	4,783	$1,270,872.45	7,893	$1,964,121.52	11,049	$2,760,894.18
	4	6,127	$1,478,196.06	9,059	$2,268,524.84	13,009	$3,315,315.00
Computers	1	1,343	$302,839.60	2,723	$545,285.69	4,622	$935,868.89
	2	1,235	$285,463.66	2,726	$555,012.38	4,211	$859,932.09
	3	1,659	$349,989.27	3,170	$646,064.08	4,579	$969,684.35
	4	2,493	$503,542.66	3,620	$733,129.43	6,408	$1,405,264.26
Media Player	1	11,717	$3,427,197.08	12,067	$3,851,602.64	16,372	$5,239,161.93
	2	11,618	$3,268,394.69	10,264	$3,313,925.34	15,304	$4,981,985.38
	3	12,688	$3,585,613.72	11,422	$3,727,532.88	15,931	$5,098,038.72
	4	14,943	$4,699,372.86	13,379	$4,239,470.35	18,700	$6,084,901.35
Televisions	1	3,925	$1,566,904.80	1,437	$1,096,511.50	2,070	$1,686,377.91
	2	3,748	$1,577,021.42	1,331	$1,074,107.17	1,845	$1,481,739.79
	3	4,301	$1,796,316.25	1,371	$1,181,674.36	1,936	$1,654,188.98
	4	4,431	$1,540,975.20	1,668	$1,385,646.13	2,520	$2,036,387.03
TOTAL		**94,253**	**$27,942,928.78**	**96,574**	**$30,210,030.88**	**141,233**	**$44,254,206.64**

Alternatively, you can use a recomputed total to provide summed totals for measure fields from the data source but recalculate the total values for computed fields created in a report. To add a recomputed total to a report, on the Settings section of the Settings tab of the Properties panel, click *Recalculate totals*. Values for each measure field are recomputed after each value in the selected field.

For example, perhaps you have created a report that includes a calculated field, Revenue Per Item, that is evaluated after aggregation from Revenue divided by Quantity Sold. The following image shows a report containing that field, with summed totals added using the Enable column totals option.

	Sale,Year	2014		2015		2016	
Product Category	Sale Quarter	Revenue	Revenue Per Item	Revenue	Revenue Per Item	Revenue	Revenue Per Item
Accessories	1	$1,125,123.02	$245.66	$1,800,068.41	$252.78	$3,048,787.53	$254.83
	2	$1,165,106.04	$249.92	$1,827,354.16	$249.54	$2,695,679.25	$251.63
	3	$1,270,872.45	$265.71	$1,964,121.52	$248.84	$2,760,894.18	$249.88
	4	$1,478,196.06	$241.26	$2,268,524.84	$250.42	$3,315,315.00	$254.85
Camcorder	1	$1,225,199.72	$316.34	$2,304,019.65	$356.16	$3,452,156.37	$338.48
	2	$1,244,408.92	$326.45	$2,073,189.24	$320.18	$3,339,495.11	$334.08
	3	$1,536,974.19	$353.65	$2,529,194.52	$350.84	$3,385,661.95	$344.25
	4	$1,871,848.70	$328.91	$2,766,844.75	$332.07	$3,794,394.68	$338.18
Media Player	1	$3,427,197.08	$292.50	$3,851,602.64	$319.18	$5,239,161.93	$320.01
	2	$3,268,394.69	$281.32	$3,313,925.34	$322.87	$4,981,985.38	$325.53
	3	$3,585,613.72	$282.60	$3,727,532.88	$326.35	$5,098,038.72	$320.01
	4	$4,699,372.86	$314.49	$4,239,470.35	$316.87	$6,084,901.35	$325.40
Televisions	1	$1,566,904.80	$399.21	$1,096,511.50	$763.06	$1,686,377.91	$814.68
	2	$1,577,021.42	$420.76	$1,074,107.17	$806.99	$1,481,739.79	$803.11
	3	$1,796,316.25	$417.65	$1,181,674.36	$861.91	$1,654,188.98	$854.44
	4	$1,540,975.20	$347.77	$1,385,646.13	$830.72	$2,036,387.03	$808.09
TOTAL		**$32,379,525.12**	**$5,084.20**	**$37,403,787.46**	**$6,908.79**	**$54,055,165.16**	**$6,937.43**

The total row contains summed values for the Revenue and Revenue Per Item fields.

By contrast, the following image shows the same report, but with recomputed totals, using the Recalculate totals option, instead.

Product Category	Sale,Year Sale Quarter	2014		2015		2016	
		Revenue	Revenue Per Item	Revenue	Revenue Per Item	Revenue	Revenue Per Item
Accessories	1	$1,125,123.02	$245.66	$1,800,068.41	$252.78	$3,048,787.53	$254.83
	2	$1,165,106.04	$249.92	$1,827,354.16	$249.54	$2,695,679.25	$251.63
	3	$1,270,872.45	$265.71	$1,964,121.52	$248.84	$2,760,894.18	$249.88
	4	$1,478,196.06	$241.26	$2,268,524.84	$250.42	$3,315,315.00	$254.85
Camcorder	1	$1,225,199.72	$316.34	$2,304,019.65	$356.16	$3,452,156.37	$338.48
	2	$1,244,408.92	$326.45	$2,073,189.24	$320.18	$3,339,495.11	$334.08
	3	$1,536,974.19	$353.65	$2,529,194.52	$350.84	$3,385,661.95	$344.25
	4	$1,871,848.70	$328.91	$2,766,844.75	$332.07	$3,794,394.68	$338.18
Media Player	1	$3,427,197.08	$292.50	$3,851,602.64	$319.18	$5,239,161.93	$320.01
	2	$3,268,394.69	$281.32	$3,313,925.34	$322.87	$4,981,985.38	$325.53
	3	$3,585,613.72	$282.60	$3,727,532.88	$326.35	$5,098,038.72	$320.01
	4	$4,699,372.86	$314.49	$4,239,470.35	$316.87	$6,084,901.35	$325.40
Televisions	1	$1,566,904.80	$399.21	$1,096,511.50	$763.06	$1,686,377.91	$814.68
	2	$1,577,021.42	$420.76	$1,074,107.17	$806.99	$1,481,739.79	$803.11
	3	$1,796,316.25	$417.65	$1,181,674.36	$861.91	$1,654,188.98	$854.44
	4	$1,540,975.20	$347.77	$1,385,646.13	$830.72	$2,036,387.03	$808.09
TOTAL		**$32,379,525.12**	**$307.66**	**$37,403,787.46**	**$331.54**	**$54,055,165.16**	**$332.31**

In this report, the total values in the Revenue Per Item columns are recomputed for the entire report, since Revenue Per Item is a calculated field. On the other hand, the Revenue columns are still summed, since they come from the data source.

Note that the Recalculate totals option does not reapply prefix operators. Fields with prefix operators are summed just as they would be when applying a regular subtotal. Only COMPUTE fields, which are calculated fields evaluated after data aggregation, are recalculated.

When column totals are enabled, they display below the data in the report by default. Select the *Show totals above detail* check box to show the column totals above the data values.

Note: The *Show totals above detail* option is reflected only at run-time.

You can also add row totals to a report to generate summed grand totals for each row of the report. To add row totals, on the Content section of the Settings tab of the Properties panel, click *Row totals*.

Row totals behave differently depending on whether or not fields have been placed into the Column Groups bucket. If there are no fields in the Column Groups bucket, then all measure columns in the report are summed in a single Total column, as shown in the following image.

Product Category	Sale Quarter	Cost of Goods	Discount	Gross Profit	TOTAL
Accessories	1	$4,147,248.00	$280,171.28	$1,826,730.96	**$6,254,150.24**
	2	$3,925,748.00	$269,670.58	$1,762,391.45	**$5,957,810.03**
	3	$4,166,868.00	$297,293.76	$1,829,020.15	**$6,293,181.91**
	4	$4,887,672.00	$334,687.80	$2,174,363.90	**$7,396,723.70**
Camcorder	1	$4,754,152.00	$331,388.92	$2,227,223.74	**$7,312,764.66**
	2	$4,479,378.00	$291,023.13	$2,177,715.27	**$6,948,116.40**
	3	$5,086,129.00	$341,115.23	$2,365,701.66	**$7,792,945.89**
	4	$5,702,159.00	$380,644.79	$2,730,929.13	**$8,813,732.92**
Media Player	1	$9,475,832.00	$577,328.70	$3,042,129.65	**$13,095,290.35**
	2	$8,796,078.00	$548,854.63	$2,768,227.41	**$12,113,160.04**
	3	$9,441,755.00	$577,436.23	$2,969,430.32	**$12,988,621.55**
	4	$11,419,820.00	$670,837.94	$3,603,924.56	**$15,694,582.50**
Televisions	1	$3,376,862.00	$212,974.63	$972,932.21	**$4,562,768.84**
	2	$3,199,280.00	$177,866.59	$933,588.38	**$4,310,734.97**
	3	$3,597,757.00	$218,950.77	$1,034,422.59	**$4,851,130.36**
	4	$3,861,098.00	$240,878.10	$1,101,910.36	**$5,203,886.46**

In this case, ensure that it makes sense to sum all of the measure fields in your report before adding row totals. Since these fields may have different formats, you can edit the field format used for the row totals by clicking *Edit Data Format* under the Enable row totals check box.

If there is a field in the Column Groups bucket, then instead of summing all columns, the row totals are evaluated for each measure field in the report, as shown in the following image.

Product Category	Sale,Year Sale Quarter	2014			2015			TOTAL		
		Cost of Goods	Gross Profit	Discount	Cost of Goods	Gross Profit	Discount	Cost of Goods	Gross Profit	Discount
Accessories	1	$777,258.00	$347,865.02	$50,602.84	$1,247,419.00	$552,649.41	$82,917.59	**$2,024,677.00**	**$900,514.43**	**$133,520.43**
	2	$802,494.00	$362,612.04	$49,781.08	$1,264,225.00	$563,129.16	$95,902.64	**$2,066,719.00**	**$925,741.20**	**$145,683.72**
	3	$880,799.00	$390,073.45	$59,202.81	$1,369,215.00	$594,906.52	$107,491.12	**$2,250,014.00**	**$984,979.97**	**$166,693.93**
	4	$1,020,119.00	$458,077.06	$71,363.50	$1,570,383.00	$698,141.84	$112,769.64	**$2,590,502.00**	**$1,156,218.90**	**$184,133.14**
Camcorder	1	$818,542.00	$406,657.72	$56,378.48	$1,579,534.00	$724,485.65	$103,048.85	**$2,398,076.00**	**$1,131,143.37**	**$159,427.33**
	2	$835,003.00	$409,405.92	$50,411.08	$1,391,888.00	$681,301.24	$92,612.67	**$2,226,891.00**	**$1,090,707.16**	**$143,023.75**
	3	$1,052,933.00	$484,041.19	$69,871.23	$1,716,879.00	$812,315.52	$108,335.05	**$2,769,812.00**	**$1,296,356.71**	**$178,206.28**
	4	$1,263,634.00	$608,214.70	$90,550.44	$1,863,074.00	$903,770.75	$114,996.73	**$3,126,708.00**	**$1,511,985.45**	**$205,547.17**
Media Player	1	$2,501,895.00	$925,302.08	$159,626.31	$2,931,536.00	$920,066.64	$174,497.18	**$5,433,431.00**	**$1,845,368.72**	**$334,123.49**
	2	$2,374,278.00	$894,116.69	$158,289.65	$2,560,704.00	$753,221.34	$152,032.54	**$4,934,982.00**	**$1,647,338.03**	**$310,322.19**
	3	$2,608,682.00	$976,931.72	$170,160.00	$2,886,848.00	$840,684.88	$175,923.44	**$5,495,530.00**	**$1,817,616.60**	**$346,083.44**
	4	$3,448,771.00	$1,250,601.86	$203,938.43	$3,265,462.00	$974,008.35	$193,946.69	**$6,714,233.00**	**$2,224,610.21**	**$397,885.12**
Televisions	1	$1,181,889.00	$385,015.80	$76,501.32	$863,061.00	$233,450.50	$51,326.91	**$2,044,950.00**	**$618,466.30**	**$127,828.23**
	2	$1,189,422.00	$387,599.42	$67,015.51	$847,804.00	$226,303.17	$51,345.34	**$2,037,226.00**	**$613,902.59**	**$118,360.85**
	3	$1,353,177.00	$443,139.25	$81,211.36	$932,960.00	$248,714.36	$52,323.16	**$2,286,137.00**	**$691,853.61**	**$133,534.52**
	4	$1,167,172.00	$373,803.20	$84,834.80	$1,097,664.00	$287,982.13	$66,130.70	**$2,264,836.00**	**$661,785.33**	**$150,965.50**

Note that row totals provide sum values for the measures in each row, including instances when the report includes calculated fields.

If your report includes both column totals and row totals, then column totals are evaluated for any row total columns, as shown in the following image.

Product Category	Sale,Year Sale Quarter	2014		2015		2016		TOTAL	
		Revenue	Quantity Sold	Revenue	Quantity Sold	Revenue	Quantity Sold	Revenue	Quantity Sold
Accessories	1	$1,125,123.02	4,580	$1,800,068.41	7,121	$3,048,787.53	11,964	**$5,973,978.96**	**23,665**
	2	$1,165,106.04	4,662	$1,827,354.16	7,323	$2,695,679.25	10,713	**$5,688,139.45**	**22,698**
	3	$1,270,872.45	4,783	$1,964,121.52	7,893	$2,760,894.18	11,049	**$5,995,888.15**	**23,725**
	4	$1,478,196.06	6,127	$2,268,524.84	9,059	$3,315,315.00	13,009	**$7,062,035.90**	**28,195**
Camcorder	1	$1,225,199.72	3,873	$2,304,019.65	6,469	$3,452,156.37	10,199	**$6,981,375.74**	**20,541**
	2	$1,244,408.92	3,812	$2,073,189.24	6,475	$3,339,495.11	9,996	**$6,657,093.27**	**20,283**
	3	$1,536,974.19	4,346	$2,529,194.52	7,209	$3,385,661.95	9,835	**$7,451,830.66**	**21,390**
	4	$1,871,848.70	5,691	$2,766,844.75	8,332	$3,794,394.68	11,220	**$8,433,088.13**	**25,243**
Media Player	1	$3,427,197.08	11,717	$3,851,602.64	12,067	$5,239,161.93	16,372	**$12,517,961.65**	**40,156**
	2	$3,268,394.69	11,618	$3,313,925.34	10,264	$4,981,985.38	15,304	**$11,564,305.41**	**37,186**
	3	$3,585,613.72	12,688	$3,727,532.88	11,422	$5,098,038.72	15,931	**$12,411,185.32**	**40,041**
	4	$4,699,372.86	14,943	$4,239,470.35	13,379	$6,084,901.35	18,700	**$15,023,744.56**	**47,022**
Televisions	1	$1,566,904.80	3,925	$1,096,511.50	1,437	$1,686,377.91	2,070	**$4,349,794.21**	**7,432**
	2	$1,577,021.42	3,748	$1,074,107.17	1,331	$1,481,739.79	1,845	**$4,132,868.38**	**6,924**
	3	$1,796,316.25	4,301	$1,181,674.36	1,371	$1,654,188.98	1,936	**$4,632,179.59**	**7,608**
	4	$1,540,975.20	4,431	$1,385,646.13	1,668	$2,036,387.03	2,520	**$4,963,008.36**	**8,619**
TOTAL		**$32,379,525.12**	**105,245**	**$37,403,787.46**	**112,820**	**$54,055,165.16**	**162,663**	**$123,838,477.74**	**380,728**

Using Breaks and Subtotals in a Report

Breaks and subtotals allow you to divide a report into smaller sections for more granular analysis and a more digestible view of your data. These sections are generated for each value in a selected Row field or after the last value of a selected Column Group field.

To apply a break or subtotal, right-click a field in the Rows or Column Groups bucket, point to *Insert breaks*, and select an option. Three categories of options are available for row fields: Subtotals, Page breaks, and Row breaks. You can select an option for each of these categories in each row field of a report. For columnar sort fields, only the Subtotal options are available.

Note: The responsive canvas, used for the AHTML and HTML5 output formats, uses AHTML In-Document Analytic capabilities to enable interactive options at design time. When creating a report, page and row break settings are not supported on this canvas, or at runtime when using the AHTML output format. If you select an output format that uses the paginated canvas, such as HTML, PDF, PPTX, or XLSX, you will see these breaks at design time and at runtime.

Using Breaks and Subtotals on Rows in a Report

The Subtotal options allow you to add a subtotal or recompute row after each value in the selected field. Subtotals and recomputes do not add page breaks to a report.

To add a subtotal, right-click a field in the Rows bucket, point to *Insert breaks*, and click *Aggregate columns*. A subtotal row is added for each value in the selected field and evaluated for each measure field in the report.

The selected field does not need to be the primary sort field. For example, the following image shows a report with subtotals for Product Subcategory, the secondary sort field, but not Product Category, the primary sort field. You can add subtotals for each sort field separately.

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Charger	2014	$158,015.56
		2015	$248,167.29
		2016	$374,562.24
		2017	$493,220.38
		2018	$1,101,388.29
		2019	$1,647,481.15
Subtotal Charger			**$4,022,834.91**
	Headphones	2014	$2,914,047.37
		2015	$4,612,931.48
		2016	$6,899,210.86
		2017	$9,332,629.55
		2018	$21,114,466.12
		2019	$31,313,302.59
Subtotal Headphones			**$76,186,587.97**
	Universal Remote Controls	2014	$1,967,234.64
		2015	$2,998,970.16
		2016	$4,546,902.86
		2017	$6,234,565.76
		2018	$13,404,018.40
		2019	$20,247,223.83
Subtotal Universal Remote Controls			**$49,398,915.65**

Alternatively, you can use the recompute option to provide summed totals for fields from the data source but recalculate the total values for computed fields created in a report. To add recompute rows to a report, right-click a field in the Rows bucket, point to *Insert breaks*, and click *Recalculate totals*. Values for each measure field are recomputed after each value in the selected field.

For example, perhaps you have created a report that includes a calculated field, Revenue Per Item, that is evaluated after aggregation from Revenue divided by Quantity Sold. The following image shows a report containing that field, with subtotals added using the Aggregate columns option.

Product Category	Product Subcategory	Sale Year	Revenue	Revenue Per Item
Accessories	Charger	2014	$158,015.56	$38.74
		2015	$248,167.29	$38.32
		2016	$374,562.24	$38.23
		2017	$493,220.38	$38.02
		2018	$1,101,388.29	$38.31
		2019	$1,647,481.15	$38.15
Subtotal Charger			**$4,022,834.91**	**$229.77**
	Headphones	2014	$2,914,047.37	$323.68
		2015	$4,612,931.48	$328.56
		2016	$6,899,210.86	$335.56
		2017	$9,332,629.55	$328.11
		2018	$21,114,466.12	$335.68
		2019	$31,313,302.59	$335.25
Subtotal Headphones			**$76,186,587.97**	**$1,986.84**
	Universal Remote Controls	2014	$1,967,234.64	$278.25
		2015	$2,998,970.16	$275.67
		2016	$4,546,902.86	$277.62
		2017	$6,234,565.76	$278.11
		2018	$13,404,018.40	$277.34
		2019	$20,247,223.83	$277.42
Subtotal Universal Remote Controls			**$49,398,915.65**	**$1,664.40**

The subtotal rows each contain summed values for the Revenue and Revenue Per Item fields.

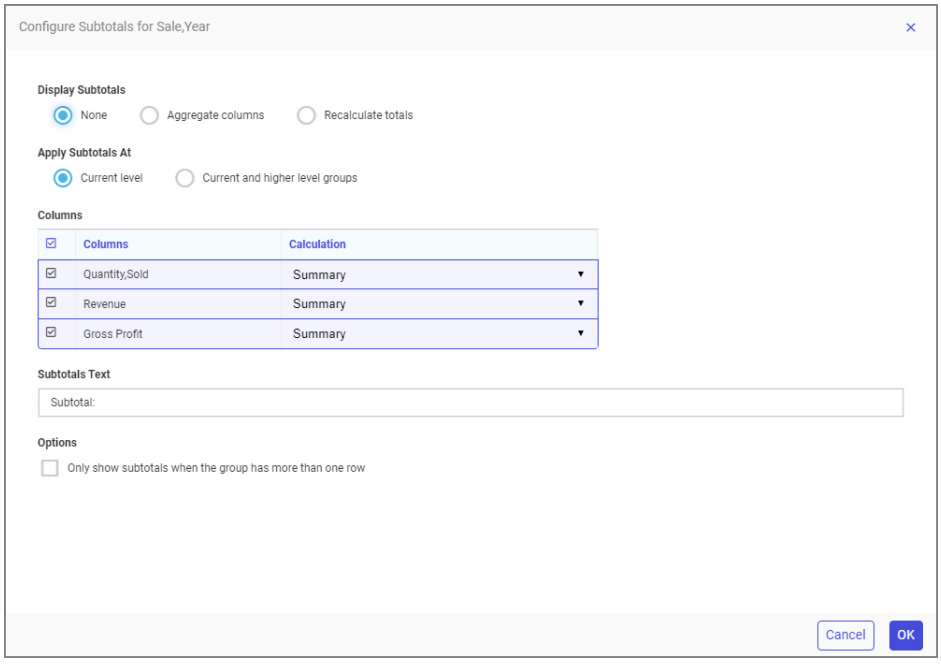
By contrast, the following image shows the same report, but with recomputes, using the Recalculate totals option, instead.

Product Category	Product Subcategory	Sale Year	Revenue	Revenue Per Item
Accessories	Charger	2014	$158,015.56	$38.74
		2015	$248,167.29	$38.32
		2016	$374,562.24	$38.23
		2017	$493,220.38	$38.02
		2018	$1,101,388.29	$38.31
		2019	$1,647,481.15	$38.15
Subtotal Charger			**$4,022,834.91**	**$38.22**
	Headphones	2014	$2,914,047.37	$323.68
		2015	$4,612,931.48	$328.56
		2016	$6,899,210.86	$335.56
		2017	$9,332,629.55	$328.11
		2018	$21,114,466.12	$335.68
		2019	$31,313,302.59	$335.25
Subtotal Headphones			**$76,186,587.97**	**$333.64**
	Universal Remote Controls	2014	$1,967,234.64	$278.25
		2015	$2,998,970.16	$275.67
		2016	$4,546,902.86	$277.62
		2017	$6,234,565.76	$278.11
		2018	$13,404,018.40	$277.34
		2019	$20,247,223.83	$277.42
Subtotal Universal Remote Controls			**$49,398,915.65**	**$277.43**

Now the subtotal rows provide reaggregated values. They provide a sum total value for the Revenue field, just like with a subtotal, and a recalculated value for the Revenue Per Item field.

Note that the Recalculate totals option does not reapply prefix operators. Fields with prefix operators are summed just as they would be when applying a regular subtotal. Only COMPUTE fields, which are calculated fields evaluated after data aggregation, are recalculated.

You can create subtotals and recomputes with more advanced options, such as different aggregations and cascading to all higher level sort fields, by right-clicking a field in the Rows bucket, pointing to *Insert breaks*, and clicking *More options*. The Configure Subtotals dialog box opens, as shown in the following image.



Select the *Aggregate columns* radio button to create subtotals, or the *Recalculate totals* radio button to create recomputes. You can then choose to create subtotals or recomputes at the current levels, that is, the selected field, or for current and higher level sort fields. If you select *Current and higher level groups*, then the same subtotal settings are applied to all higher level fields in the report. Pre-existing subtotals or recomputes are not replaced. Note that the specified subtotal label text is not used for the higher level sort fields.

A grid in the Configure Subtotals dialog box shows a list of measures fields in the report. Select any or all check boxes to indicate which fields should be subtotaled or recomputed. You can also change the prefix aggregation for each one. For example, instead of a summed total, you can show a total average or total count for a selected measure column.

You can also change the text that appears in the subtotal rows of the report, and choose whether break groups with only one row should also be subtotaled. The subtotals for these groups would be the same as the measure values displayed in the group itself, so you may prefer not to subtotal them. For example, the following image shows a report with subtotals on the Store Business Region field. Since the Oceania business region occupies only one row, and the *Only show subtotals when the group has more than one row* option is selected, it is not subtotaled.

Store Business Region	Store Business Sub Region	Quantity Sold	Revenue	Gross Profit
EMEA	Africa	195	$61,881.01	$17,054.01
	Asia	87,192	$26,475,042.07	$7,450,955.07
	Europe	1,317,153	$396,208,754.84	$112,230,885.84
Subtotal: EMEA		**1,404,540**	**$422,745,677.92**	**$119,698,894.92**
North America	Canada	171,492	$51,147,788.36	$14,541,675.36
	East	129,277	$39,052,672.79	$11,063,697.79
	Mexico	42,921	$12,976,898.90	$3,680,274.90
	Midwest	201,153	$60,946,396.65	$17,171,198.65
	Northeast	5,189	$1,526,577.09	$428,166.09
	South	255,640	$77,468,535.43	$21,824,155.43
	Southeast	14,704	$4,488,702.58	$1,268,099.58
	West	1,189,804	$362,309,281.86	$101,987,950.86
Subtotal: North America		**2,010,180**	**$609,916,853.66**	**$171,965,218.66**
Oceania	Australia-New Zealand	4,242	$1,260,307.29	$361,558.29
South America	SA-Port	86,606	$25,974,011.78	$7,359,004.78
	SA-Span	4,323	$1,296,074.55	$368,719.55
Subtotal: South America		**90,929**	**$27,270,086.33**	**$7,727,724.33**

Click *Apply* to create the subtotals or recomputes as you configured them.

If you create subtotals and apply them to all higher fields, and then right-click a higher level sort field and point to *Insert breaks*, only the *More options* option is available for subtotals. If you click *More options*, the Configure Subtotals dialog box opens with options to edit the cascaded group of subtotals from the lower level sort field. If you change the Apply Subtotals At option from *Current and higher level groups* to *Current level*, then the cascaded group of subtotals are removed except for the field that you right-clicked.

You can also add page breaks to a report using two different options. Right-click a field in the Rows bucket, point to *Insert breaks*, and click *Continuous numbering* or *Restart at 1* to split the report into separate pages for each value in the selected field.

Page headers and footers appear at each page break. Page headers and footers can use dynamic text to indicate the values on the page. Dynamic text is added by typing a less-than sign (<) markup tag followed by the name of the field, with no spaces between them.

For example, the following image shows a report with page breaks added for the Product Category field, and page headers added by typing *Sales for <PRODUCT_CATEGORY* in the page header area of the report.

Sales for Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Charger	2014	$158,015.56
		2015	$248,167.29
		2016	$374,562.24
Subtotal Charger			**$780,745.09**
	Headphones	2014	$2,914,047.37
		2015	$4,612,931.48
		2016	$6,899,210.86
Subtotal Headphones			**$14,426,189.71**
	Universal Remote Controls	2014	$1,967,234.64
		2015	$2,998,970.16
		2016	$4,546,902.86
Subtotal Universal Remote Controls			**$9,513,107.66**

Sales for Camcorder

Product Category	Product Subcategory	Sale Year	Revenue
Camcorder	Handheld	2014	$1,632,425.21
		2015	$2,599,025.44
		2016	$3,837,933.41
Subtotal Handheld			**$8,069,384.06**
	Professional	2014	$1,590,967.15
		2015	$2,732,875.05
		2016	$4,036,890.50
Subtotal Professional			**$8,360,732.70**
	Standard	2014	$2,655,039.17
		2015	$4,341,347.67
		2016	$6,096,884.20
Subtotal Standard			**$13,093,271.04**

There is no difference between the Continuous numbering and Restart at 1 page break options unless there are page numbers added to the report. If there are page numbers, then using the Continuous numbering option counts page breaks for all values in the field toward page numbering, while the Restart at 1 option resets the page count for each value in the selected field. You can display page numbers by adding the dynamic text <TABPAGENO to a page header or footer.

The Restart at 1 option can be used on a higher level sort field to control the displayed page number for lower-level sort field page breaks using the Continuous paging option. For example, the report shown in the image below uses the Restart at 1 page break option on Product Category, the primary sort field, and the Continuous numbering option on Product Subcategory, the secondary sort field. It also contains the following page footer text:

```
Page <TABPAGENO of <BYLASTPAGE
```

At run time, <TABPAGENO provides the current page, and <BYLASTPAGE provides the page count for the sort field using the Restart at 1 option. Using <TABLASTPAGE instead of <BYLASTPAGE would instead provide the total page count.

The following image shows that the page for each Product Subcategory is numbered, while different values for Product Category cause the page numbers to reset.

Page for Charger under Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Charger	2014	$158,015.56
		2015	$248,167.29
		2016	$374,562.24
Subtotal Charger			**$780,745.09**

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Page for Headphones under Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Headphones	2014	$2,914,047.37
		2015	$4,612,931.48
		2016	$6,899,210.86
Subtotal Headphones			**$14,426,189.71**

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Page for Universal Remote Controls under Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Universal Remote Controls	2014	$1,967,234.64
		2015	$2,998,970.16
		2016	$4,546,902.86
Subtotal Universal Remote Controls			**$9,513,107.66**

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Page for Handheld under Camcorder

Product Category	Product Subcategory	Sale Year	Revenue
Camcorder	Handheld	2014	$1,632,425.21
		2015	$2,599,025.44
		2016	$3,837,933.41
Subtotal Handheld			**$8,069,384.06**

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By contrast, if Product Category used either the Continuous numbering option or no page breaks at all (since breaks have already been added on a lower level sort field, Product Category values will display on separate pages anyway), <BYLASTPAGE would display the total number of all pages in the report, as shown in the following image, and <TABPAGENO would not reset.

Page for Charger under Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Charger	2014	$158,015.56
		2015	$248,167.29
		2016	$374,562.24
Subtotal Charger			**$780,745.09**

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Page for Headphones under Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Headphones	2014	$2,914,047.37
		2015	$4,612,931.48
		2016	$6,899,210.86
Subtotal Headphones			**$14,426,189.71**

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Page for Universal Remote Controls under Accessories

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Universal Remote Controls	2014	$1,967,234.64
		2015	$2,998,970.16
		2016	$4,546,902.86
Subtotal Universal Remote Controls			**$9,513,107.66**

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Page for Handheld under Camcorder

Product Category	Product Subcategory	Sale Year	Revenue
Camcorder	Handheld	2014	$1,632,425.21
		2015	$2,599,025.44
		2016	$3,837,933.41
Subtotal Handheld			**$8,069,384.06**

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To visually break up a report without adding page breaks, you can add a row break in the form of a blank row or line. To add a row break, right-click a field in the Rows bucket, point to *Insert breaks*, and click *Blank row* or *Solid line*.

Row breaks do not create page breaks, so page headers and footers are not repeated on the field to which the row break is added, and they are not counted for page numbering. This technique can be a good way to space out the values and information in a report without adding unnecessary functionality. In the following image, blank row breaks on Product Subcategory make it easier to locate and isolate the values for each product subcategory.

Product Category	Product Subcategory	Sale Year	Revenue
Accessories	Charger	2014	$158,015.56
		2015	$248,167.29
		2016	$374,562.24
	Headphones	2014	$2,914,047.37
		2015	$4,612,931.48
		2016	$6,899,210.86
	Universal Remote Controls	2014	$1,967,234.64
		2015	$2,998,970.16
		2016	$4,546,902.86
Camcorder	Handheld	2014	$1,632,425.21
		2015	$2,599,025.44
		2016	$3,837,933.41
	Professional	2014	$1,590,967.15
		2015	$2,732,875.05
		2016	$4,036,890.50
	Standard	2014	$2,655,039.17
		2015	$4,341,347.67
		2016	$6,096,884.20

Using Subtotals on Sort Columns in a Report

Page and row breaks are not available for fields in the Column Groups bucket, but you can use the subtotal and recompute options on columnar sort fields similarly to row sort fields. To add columnar subtotal columns, right-click a field in the Column Groups bucket, point to *Insert breaks*, and click *Aggregate rows*. To add columnar recompute columns, right-click a field in the Column Groups bucket, point to *Insert breaks*, and click *Recalculate totals*.

Columnar subtotals work differently than row subtotals. While a subtotal or recompute row is added for each value in the selected Row field, subtotal or recompute columns are added after the last value of the selected field in each column group. For example, in the following image, subtotals have been added to the Sale Quarter field, so the subtotal column sums the revenue values for all of the quarters within each value for Sale Year, which is a higher level columnar sort field. Effectively, the subtotals applied to the Sale Quarter field provide a total for each Sale Year value.

	Sale,Year			2014					2015			
	Sale,Quarter	1	2	3	4	Subtotal	1	2	3	4	Subtotal
Product Category	Product Subcategory										
Accessories	Charger	$36,116.85	$38,033.98	$35,870.62	$47,994.11	$158,015.56	$59,063.73	$53,124.15	$63,139.11	$72,840.30	$248,167.29
	Headphones	$633,086.83	$676,405.46	$799,339.75	$805,215.33	$2,914,047.37	$1,026,814.32	$1,071,607.34	$1,155,022.10	$1,359,487.72	$4,612,931.48
	Universal Remote Controls	$455,919.34	$450,666.60	$435,662.08	$624,986.62	$1,967,234.64	$714,190.36	$702,622.67	$745,960.31	$836,196.82	$2,998,970.16
Camcorder	Handheld	$353,123.43	$361,084.52	$385,634.68	$532,582.58	$1,632,425.21	$581,396.28	$578,553.05	$666,019.48	$773,056.63	$2,599,025.44
	Professional	$275,502.00	$331,737.30	$485,447.00	$498,280.85	$1,590,967.15	$737,995.55	$459,323.45	$794,441.20	$741,114.85	$2,732,875.05
	Standard	$596,574.29	$551,587.10	$665,892.51	$840,985.27	$2,655,039.17	$984,627.82	$1,035,312.74	$1,068,733.84	$1,252,673.27	$4,341,347.67
Computers	Smartphone	$302,839.60	$285,463.66	$349,989.27	$503,542.66	$1,441,835.19	$545,285.69	$555,012.38	$646,064.08	$733,129.43	$2,479,491.58
	Tablet	.	.	.	.	.	.	.	.	.	.
Media Player	Blu Ray	$2,099,584.37	$1,939,154.11	$2,111,309.30	$2,926,219.37	$9,076,267.15	$3,396,269.33	$3,256,868.72	$3,666,756.74	$4,151,645.00	$14,471,539.79
	DVD Players	$1,144,514.72	$1,115,006.84	$1,241,271.01	$1,714,534.87	$5,215,327.44	$400,572.37	.	.	.	$400,572.37
	DVD Players - Portable	$183,097.99	$194,056.33	$193,622.54	$949.91	$571,726.77	.	.	.	.	.
	Streaming	.	$20,177.41	$39,410.87	$57,668.71	$117,256.99	$54,760.94	$57,056.62	$60,776.14	$87,825.35	$260,419.05

As a result, subtotals and recomputes added to the highest level field in the Column Groups bucket serve as a grand total for all of the columns in the report.

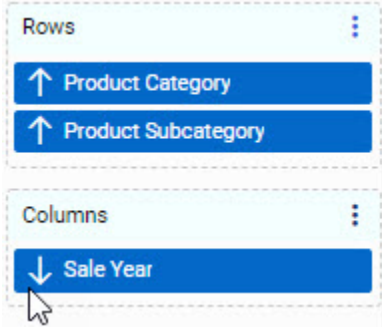
Sorting Data in a Report

You can modify the order and arrangement of values in a report by using different sort orders. Reports are sorted into rows based on the values of fields in the Rows bucket, and into columns based on the values of fields in the Column Groups bucket.

Sorting is hierarchical, so values are first sorted by the first field in the Row or Column bucket, then by the second field, and so on. For example, in the following image, the report is sorted by the Product Category field, then for product subcategories under each product category, then by sale year values for each product subcategory. Product Category, Product Subcategory, and Sale Year have all been placed into the Rows bucket. Gross Profit was placed in the Summaries bucket, so it is not used to sort the report. Instead, gross profit values are sorted by the other three fields.

Product Category	Product Subcategory	Sale Year	Gross Profit
Computers	Smartphone	2014	$560,961.19
		2015	$968,864.58
		2016	$1,451,039.85
		2017	$1,980,595.07
		2018	$5,153,998.61
		2019	$5,719,242.85
	Tablet	2016	$196,009.74
		2017	$1,395,785.48
		2018	$3,123,898.72
		2019	$12,958,422.03
Media Player	Blu Ray	2014	$2,018,067.15
		2015	$3,237,933.79
		2016	$4,701,470.35
		2017	$6,554,474.17
		2018	$14,110,114.35
		2019	$21,149,135.32
	DVD Players	2014	$1,717,087.44
		2015	$142,558.37
	DVD Players - Portable	2014	$265,150.77
	Streaming	2014	$46,646.99
		2015	$107,489.05
		2016	$147,308.03
		2017	$176,395.88
		2018	$370,256.62
		2019	$1,088,490.08

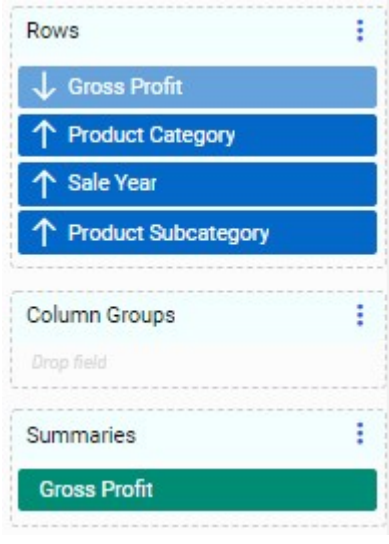
By default, field values are sorted into ascending order based on the numeric and alphabetical order defined in the code page that you are using. To reverse the sort order, right-click a field and click *Sort descending*. To return to the original sort order, right-click a field and click *Sort ascending*. You can also click the sort arrows on the fields in a bucket, as shown in the following image.



You can rearrange the fields within a bucket by dragging them, which allows you to prioritize certain information in the report. The previous example showed a report sorted by Product Category, then Product Subcategory, then Sale Year. If we move Sale Year to the top of the Rows bucket so that it is the primary sort field, the report becomes a breakdown of yearly sales, as shown in the following image.

Sale Year	Product Category	Product Subcategory	Gross Profit
2014	Accessories	Charger	$77,918.56
		Headphones	$943,893.37
		Universal Remote Controls	$536,815.64
	Camcorder	Handheld	$832,239.21
		Professional	$326,739.15
		Standard	$749,341.17
	Computers	Smartphone	$560,961.19
	Media Player	Blu Ray	$2,018,067.15
		DVD Players	$1,717,087.44
		DVD Players - Portable	$265,150.77
		Streaming	$46,646.99
	Stereo Systems	Boom Box	$546,423.99
		Home Theater Systems	$1,116,533.39
		Receivers	$673,700.84
		Speaker Kits	$1,010,824.45
		iPod Docking Station	$615,492.06
	Televisions	CRT TV	$602,419.65
		Flat Panel TV	$645,916.40
		Portable TV	$341,221.62
	Video Production	Video Editing	$706,553.17

You can sort by measure fields as well when they use the Summaries, Details, or Details with counter display options. To sort by aggregated measure values, right-click a field in the measure bucket and click *Sort ascending* or *Sort descending*. A hidden instance of the measure field is added to the top of the Rows bucket, as shown in the following image.



The result is a report that is sorted into rows based on the selected measure value, as shown in the following image.

Sale Year	Product Category	Product Subcategory	Gross Profit
2019	Media Player	Blu Ray	$21,149,135.32
2018	Media Player	Blu Ray	$14,110,114.35
2019	Computers	Tablet	$12,958,422.03
2019	Stereo Systems	Home Theater Systems	$11,437,009.44
2019	Stereo Systems	Speaker Kits	$10,556,588.15
2019	Accessories	Headphones	$10,077,097.59
2019	Camcorder	Handheld	$8,758,717.23
2019	Camcorder	Standard	$8,021,561.37
2018	Stereo Systems	Home Theater Systems	$7,662,268.78
2019	Video Production	Video Editing	$7,330,486.17
2018	Stereo Systems	Speaker Kits	$7,072,283.83
2018	Accessories	Headphones	$6,795,787.12
2019	Stereo Systems	Receivers	$6,759,172.56
2019	Televisions	Flat Panel TV	$6,560,087.29
2017	Media Player	Blu Ray	$6,554,474.17
2019	Stereo Systems	iPod Docking Station	$6,244,914.54
2018	Camcorder	Handheld	$5,839,787.45
2019	Computers	Smartphone	$5,719,242.85

In this example, sorting by the Gross Profit field from the Summaries bucket has allowed us to see at a glance that larger profits have been made in more recent years. You could change the sort order to see lowest profits first by clicking the sort arrow for the hidden Gross Profit field in the Rows bucket, just as you could for a visible field.

You can move this hidden field in relation to the other sort fields to change the sorting priority. In the following image, the hidden Gross Profit field has been moved to after Sale Year, allowing us to see the most profitable products in each year.

Sale Year	Product Category	Product Subcategory	Gross Profit
2014	Media Player	Blu Ray	$2,018,067.15
	Media Player	DVD Players	$1,717,087.44
	Stereo Systems	Home Theater Systems	$1,116,533.39
	Stereo Systems	Speaker Kits	$1,010,824.45
	Accessories	Headphones	$943,893.37
	Camcorder	Handheld	$832,239.21
	Camcorder	Standard	$749,341.17
	Video Production	Video Editing	$706,553.17
	Stereo Systems	Receivers	$673,700.84
	Televisions	Flat Panel TV	$645,916.40
	Stereo Systems	iPod Docking Station	$615,492.06
	Televisions	CRT TV	$602,419.65
	Computers	Smartphone	$560,961.19
	Stereo Systems	Boom Box	$546,423.99
	Accessories	Universal Remote Controls	$536,815.64
	Televisions	Portable TV	$341,221.62
	Camcorder	Professional	$326,739.15
	Media Player	DVD Players - Portable	$265,150.77
	Accessories	Charger	$77,918.56
	Media Player	Streaming	$46,646.99
2015	Media Player	Blu Ray	$3,237,933.79
	Stereo Systems	Home Theater Systems	$1,706,265.20
	Stereo Systems	Speaker Kits	$1,580,534.80
	Accessories	Headphones	$1,482,596.48
	Camcorder	Handheld	$1,325,634.44
	Camcorder	Standard	$1,235,711.67

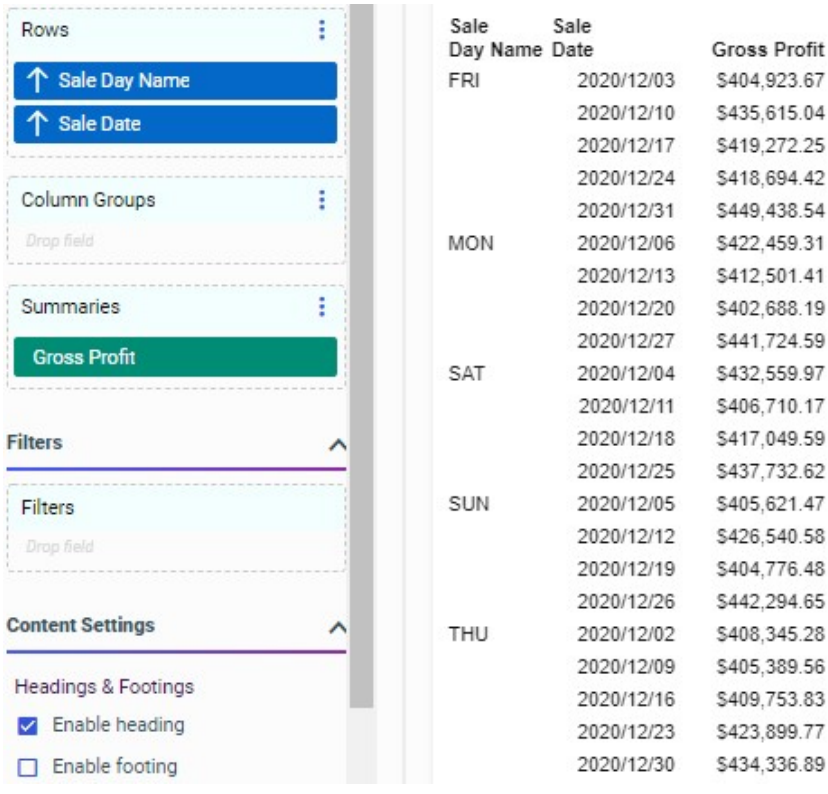
You can sort by multiple measures to have more granular control over how the report is sorted. If there are some matching values of the first sorting measure, the second sorting measure will sort those matching values.

When using the Details or Details with counter display option instead of the Summaries option, you can sort fields in the Details bucket in the same way. This can be helpful if you want to view a sorted list of all records for a field. Right-click a field in the Details or Details with counter bucket and click *Sort ascending* or *Sort descending* to sort the report using the values from that field.

You can remove the sorting effect of a field in the Summaries, Details, or Details with counter bucket by pointing to the invisible measure field in the Rows bucket and clicking the X, or by right-clicking the original field in the measure bucket and clicking *No sort*. The hidden field is removed from the Rows bucket, but the original field remains in the measure bucket. When you remove the original field from the measure bucket, the invisible field in the Rows bucket is automatically removed as well.

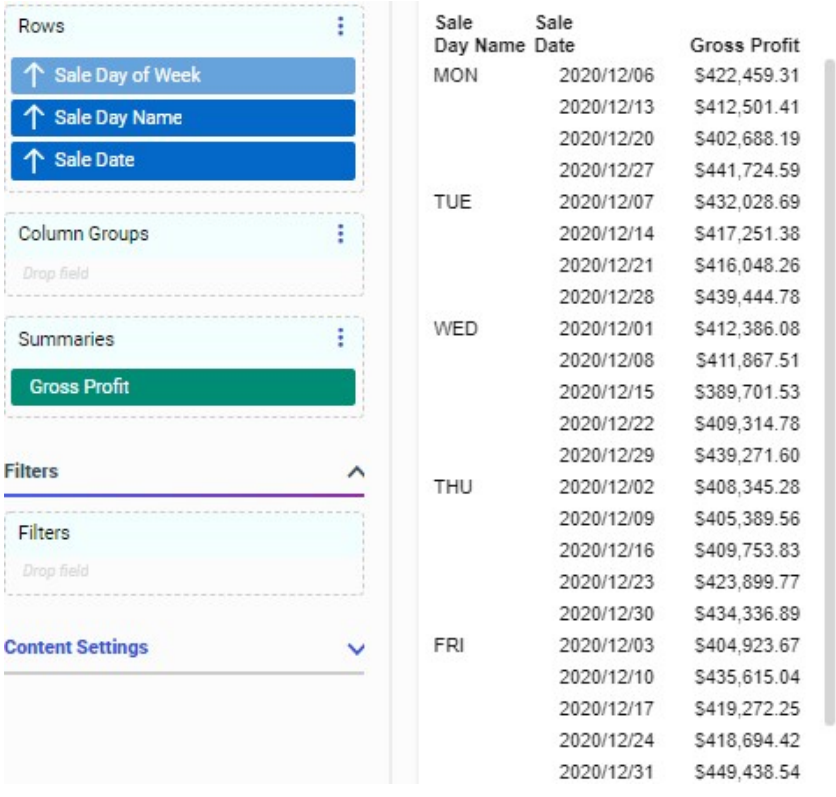
You can also sort by hidden dimension fields, if you do not want them to display in the chart. To hide a dimension field in your report, right-click the field in the Rows or Column Groups bucket and click *Hide*.

The following image shows a report sorted by Sale Day Name and Sale Date. We want to see sales information based on the day of the week. Notice, however, that Sale Day Name is sorted alphabetically, by default.



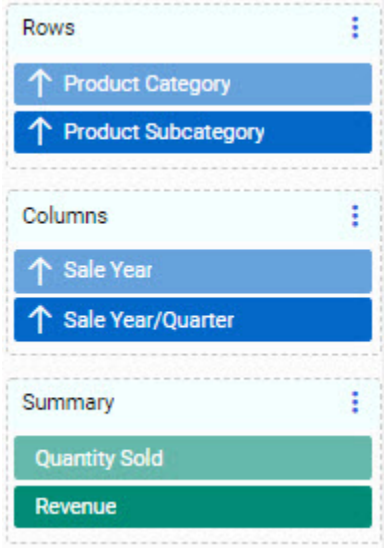
Sale Day Name	Sale Date	Gross Profit
FRI	2020/12/03	$404,923.67
	2020/12/10	$435,615.04
	2020/12/17	$419,272.25
	2020/12/24	$418,694.42
	2020/12/31	$449,438.54
MON	2020/12/06	$422,459.31
	2020/12/13	$412,501.41
	2020/12/20	$402,688.19
	2020/12/27	$441,724.59
SAT	2020/12/04	$432,559.97
	2020/12/11	$406,710.17
	2020/12/18	$417,049.59
	2020/12/25	$437,732.62
SUN	2020/12/05	$405,621.47
	2020/12/12	$426,540.58
	2020/12/19	$404,776.48
	2020/12/26	$442,294.65
THU	2020/12/02	$408,345.28
	2020/12/09	$405,389.56
	2020/12/16	$409,753.83
	2020/12/23	$423,899.77
	2020/12/30	$434,336.89

We can add the Sale Day of Week field, which assigns a number to each day, to the report as the primary sort field, and then hide it, so the days are listed in weekday order, as shown in the following image.



Using Hidden Fields in Reports

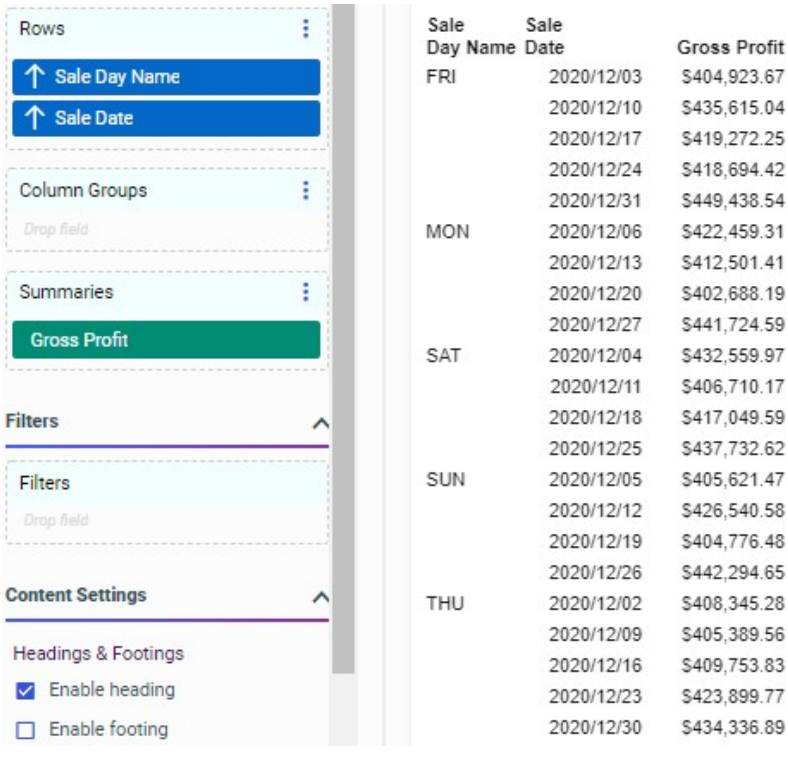
When creating a report in Db2 Web Query Designer, you can hide a field so that it exists in the report but is not shown as a column. The main advantage of doing this is that hidden fields are still used for sorting, which gives you more control over how the values in a report are displayed and organized. To hide a field in your report, right-click a field and click *Hide*. The hidden field appears slightly faded in its bucket, as shown in the following image.



You can display the field again by right-clicking it and de-selecting the *Hide* option.

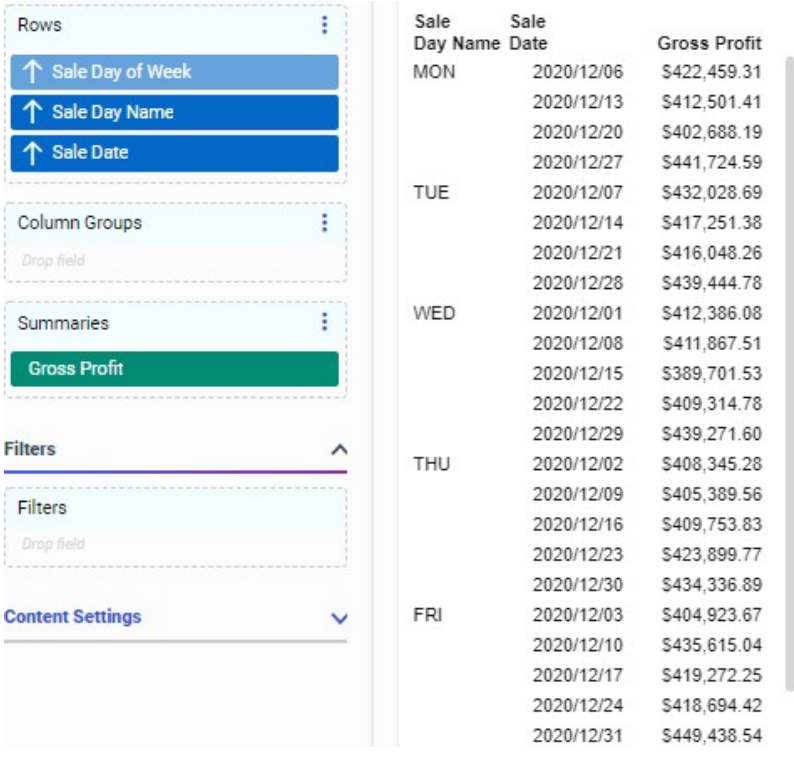
You can sort by hidden dimension fields if you do not want them to display in the chart, but still want to use the values in those fields to sort the values in the fields that do display.

The following image shows a report sorted by Sale Day Name and Sale Date. We want to see sales information based on the day of the week. Notice, however, that Sale Day Name is sorted alphabetically, by default.



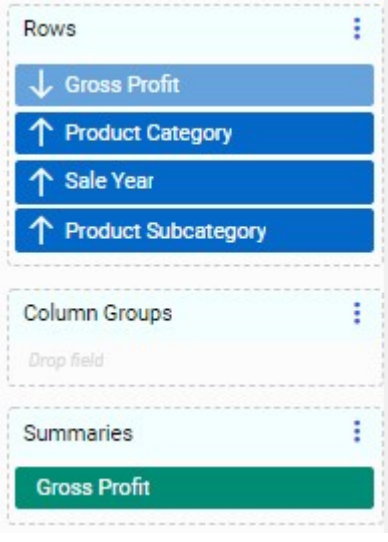
Sale Day Name	Sale Date	Gross Profit
FRI	2020/12/03	$404,923.67
	2020/12/10	$435,615.04
	2020/12/17	$419,272.25
	2020/12/24	$418,694.42
	2020/12/31	$449,438.54
MON	2020/12/06	$422,459.31
	2020/12/13	$412,501.41
	2020/12/20	$402,688.19
	2020/12/27	$441,724.59
SAT	2020/12/04	$432,559.97
	2020/12/11	$406,710.17
	2020/12/18	$417,049.59
	2020/12/25	$437,732.62
SUN	2020/12/05	$405,621.47
	2020/12/12	$426,540.58
	2020/12/19	$404,776.48
	2020/12/26	$442,294.65
THU	2020/12/02	$408,345.28
	2020/12/09	$405,389.56
	2020/12/16	$409,753.83
	2020/12/23	$423,899.77
	2020/12/30	$434,336.89

We can add the Sale Day of Week field, which assigns a number to each day, to the report as the primary sort field, and then hide it so that the days are listed in order, as shown in the following image.



Sale Day Name	Sale Date	Gross Profit
MON	2020/12/06	$422,459.31
	2020/12/13	$412,501.41
	2020/12/20	$402,688.19
	2020/12/27	$441,724.59
TUE	2020/12/07	$432,028.69
	2020/12/14	$417,251.38
	2020/12/21	$416,048.26
	2020/12/28	$439,444.78
WED	2020/12/01	$412,386.08
	2020/12/08	$411,867.51
	2020/12/15	$389,701.53
	2020/12/22	$409,314.78
	2020/12/29	$439,271.60
THU	2020/12/02	$408,345.28
	2020/12/09	$405,389.56
	2020/12/16	$409,753.83
	2020/12/23	$423,899.77
	2020/12/30	$434,336.89
FRI	2020/12/03	$404,923.67
	2020/12/10	$435,615.04
	2020/12/17	$419,272.25
	2020/12/24	$418,694.42
	2020/12/31	$449,438.54

A hidden field is also created automatically when you sort by a measure field. To sort by aggregated measure values, right-click a measure field in the Summaries bucket and click *Sort ascending* or *Sort descending*. A hidden instance of the measure field is added to the top of the Rows bucket, as shown in the following image.



The result is a report that is sorted into rows based on the selected measure value, as shown in the following image.

Sale Year	Product Category	Product Subcategory	Gross Profit
2019	Media Player	Blu Ray	$21,149,135.32
2018	Media Player	Blu Ray	$14,110,114.35
2019	Computers	Tablet	$12,958,422.03
2019	Stereo Systems	Home Theater Systems	$11,437,009.44
2019	Stereo Systems	Speaker Kits	$10,556,588.15
2019	Accessories	Headphones	$10,077,097.59
2019	Camcorder	Handheld	$8,758,717.23
2019	Camcorder	Standard	$8,021,561.37
2018	Stereo Systems	Home Theater Systems	$7,662,268.78
2019	Video Production	Video Editing	$7,330,486.17
2018	Stereo Systems	Speaker Kits	$7,072,283.83
2018	Accessories	Headphones	$6,795,787.12
2019	Stereo Systems	Receivers	$6,759,172.56
2019	Televisions	Flat Panel TV	$6,560,087.29
2017	Media Player	Blu Ray	$6,554,474.17
2019	Stereo Systems	iPod Docking Station	$6,244,914.54
2018	Camcorder	Handheld	$5,839,787.45
2019	Computers	Smartphone	$5,719,242.85

In this example, sorting by Gross Profit has allowed us to see at a glance that larger profits have been made in more recent years. You could change the sort order to see lowest profits first by clicking the sort arrow for the hidden Gross Profit field in the Rows bucket, just as you could for a visible field.

You can move this hidden field in relation to the other sort fields to change the sorting priority. In the following image, the hidden Gross Profit field has been moved to after Sale Year, allowing us to see the most profitable products in each year, as shown in the following image.

Sale Year	Product Category	Product Subcategory	Gross Profit
2014	Media Player	Blu Ray	$2,018,067.15
	Media Player	DVD Players	$1,717,087.44
	Stereo Systems	Home Theater Systems	$1,116,533.39
	Stereo Systems	Speaker Kits	$1,010,824.45
	Accessories	Headphones	$943,893.37
	Camcorder	Handheld	$832,239.21
	Camcorder	Standard	$749,341.17
	Video Production	Video Editing	$706,553.17
	Stereo Systems	Receivers	$673,700.84
	Televisions	Flat Panel TV	$645,916.40
	Stereo Systems	iPod Docking Station	$615,492.06
	Televisions	CRT TV	$602,419.65
	Computers	Smartphone	$560,961.19
	Stereo Systems	Boom Box	$546,423.99
	Accessories	Universal Remote Controls	$536,815.64
	Televisions	Portable TV	$341,221.62
	Camcorder	Professional	$326,739.15
	Media Player	DVD Players - Portable	$265,150.77
	Accessories	Charger	$77,918.56
	Media Player	Streaming	$46,646.99
2015	Media Player	Blu Ray	$3,237,933.79
	Stereo Systems	Home Theater Systems	$1,706,265.20
	Stereo Systems	Speaker Kits	$1,580,534.80
	Accessories	Headphones	$1,482,596.48
	Camcorder	Handheld	$1,325,634.44
	Camcorder	Standard	$1,235,711.67

You can sort by multiple measures to have more granular control over how the report is sorted. If there are some matching values of the first sorting measure, then the second sorting measure will be used as a secondary means of determining sort order.

When using the Details display option instead of the Summaries option, you can sort fields in the Details bucket in the same way. This can be helpful if you want to view a sorted list of all records for a field. Right-click a field in the Details bucket and click *Sort ascending* or *Sort descending* to sort the report using the values from that field.

You can remove the sorting effect of a field in the Summaries or Details bucket by pointing to the invisible measure field in the Rows bucket and clicking the X, or by right-clicking the original field in the Summaries or Details bucket and clicking *No sort*. The hidden field is removed from the Rows bucket, but the original field remains in the Summaries or Details bucket. When you remove the original field from the Summaries or Details bucket, the invisible field in the Rows bucket is automatically removed as well.

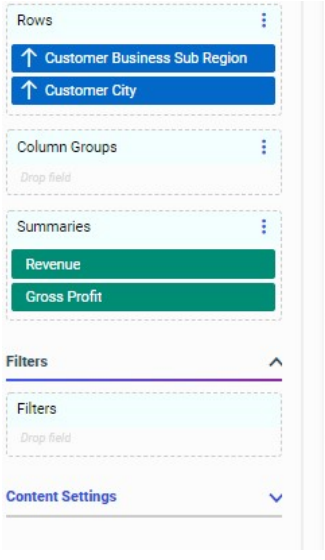
Using Sort Limits

You can use sort limits to control how many values to display in your content. While a filter allows you to limit your content by specifying which values should display, a sort limit allows you to limit it by specifying how many values should display, depending on the amount of information that you want to see.

To add a sort limit, right-click a field in a bucket, point to *Sort limit*, and select a value. Only fields in certain buckets, generally the default dimension and measure buckets, can have sort limits applied. When you add a sort limit to a measure field, that field is used to sort your content automatically.

When setting a sort limit, the values 5, 10, and 25 are provided for quick selection, but you can select *Custom* to specify a different number as the sort limit. You can remove the sort limit from a field by right-clicking the field, pointing to *Sort limit*, and clicking *No limit*.

When a sort limit is applied to a sort field, only the specified number of values is displayed for that field within each sort group. If a sort limit of 5 is applied to the primary sort field, then only the first five sort values display in the chart or report. If a sort limit of 5 is applied to a secondary sort field, then five values for that field display within each higher level sort value. In the following image, both the Customer Business Sub Region and Customer City fields have a sort limit of 5, so the report shows the first five Customer Business Sub Region values and the first five Customer City values within each subregion.

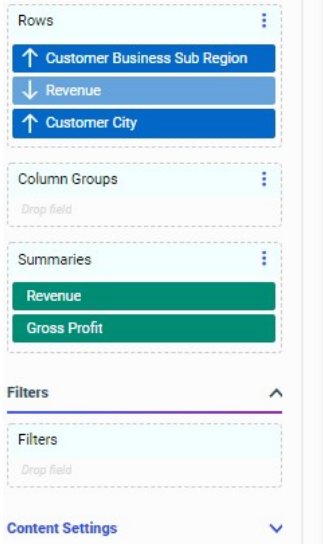


Customer Business Sub Region	Customer City	Revenue	Gross Profit
Africa	Abu Rudeis	$1,023.94	$314.94
	Abu Simbel	$3,864.95	$1,025.95
	Abu Suwayr	$1,599.94	$678.94
	Aldam	$858.99	$193.99
	Alexander Bay	$462.48	$72.48
Asia	Aamby Valley City	$663.98	$175.98
	Adana	$6,009.79	$1,259.79
	Adiyaman	$3,248.62	$1,048.62
	Afula	$1,108.40	$429.40
	Afyonkarahisar	$2,531.03	$903.03
Australia-New Zealand	Abrolhos	$779.98	$159.98
	Adelaide	$2,708.85	$674.85
	Agnew	$179.50	$59.50
	Airlie Beach	$189.99	$59.99
	Albany	$1,717.56	$293.56
Canada	Abbotsford	$13,006.15	$4,013.15
	Ailsa Craig	$776.19	$173.19
	Airdrie	$2,056.92	$594.92
	Ajax	$2,387.89	$660.89
	Albian Village	$359.96	$167.96

The values that display are based on the sort order of the field that has the sort limit applied. If an alphanumeric dimension field has a sort limit of 5 and is sorted ascending, then the first five alphabetic values for that field display. If the same field is sorted descending, then the last five alphabetic values display.

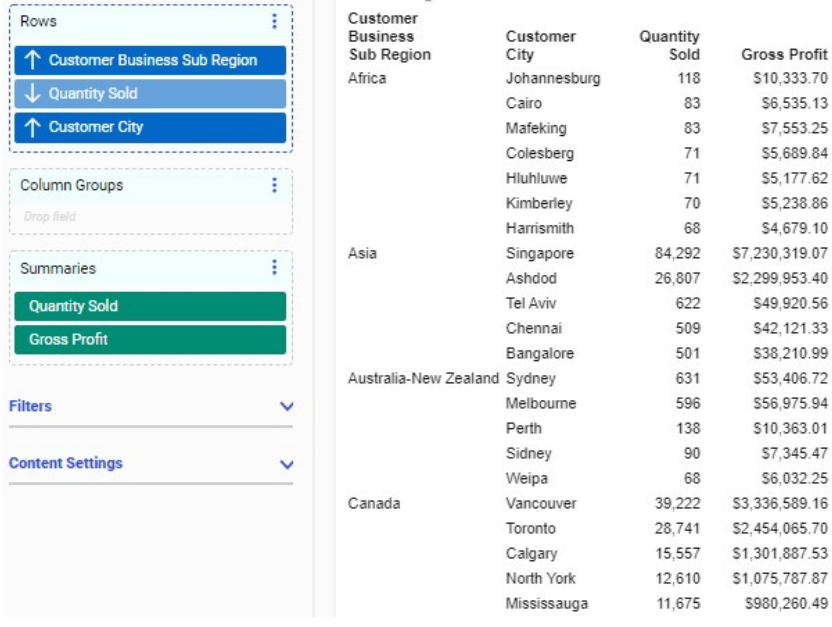
As a result, one of the most effective ways to use sort limits is to apply them to a sorting measure field, which allows you to limit the report to the highest or lowest aggregated values in each sort category. To do this, right-click a field in the measure bucket, point to *Sort limit*, and select a value. In a report, a hidden instance of the selected measure field is automatically added to the top of the Rows bucket, with the sort limit applied. You can click the arrow icon on the hidden field in the Rows bucket to change the sort order, and you can drag the hidden field into a different order in the Rows bucket to change the level at which the sort limit is applied. In a chart, you can right-click the measure field for which you created a sort limit and change the sort order from the shortcut menu.

In the following image, a sort limit of 5 has been applied to the Revenue field from the Summaries bucket of a report. The resulting Revenue sort field has been changed to descending order and moved to apply the sort limit after the Customer Business Sub Region field. As a result, the report shows the cities with the five highest Revenue values in each business subregion.



Customer Business Sub Region	Customer City	Revenue	Gross Profit
Africa	Johannesburg	$41,415.70	$10,333.70
	Mafeking	$25,034.25	$7,553.25
	Cape Town	$24,104.92	$5,771.92
	Colesberg	$21,378.84	$5,689.84
	Cairo	$21,197.13	$6,535.13
Asia	Singapore	$25,762,372.07	$7,230,319.07
	Ashdod	$8,129,348.40	$2,299,953.40
	Tel Aviv	$180,566.56	$49,920.56
	Chennai	$152,121.33	$42,121.33
	Bangalore	$140,988.99	$38,210.99
Australia-New Zealand	Melbourne	$199,733.94	$56,975.94
	Sydney	$188,734.72	$53,406.72
	Perth	$42,564.01	$10,363.01
	Port Lincoln	$31,157.87	$7,824.87
	Sidney	$26,763.47	$7,345.47
Canada	Vancouver	$11,767,731.16	$3,336,589.16
	Toronto	$8,666,439.70	$2,454,065.70
	Calgary	$4,613,966.53	$1,301,887.53
	North York	$3,804,215.87	$1,075,787.87
	Mississauga	$3,476,351.49	$980,260.49

If you are sorting by a measure field with a sort limit, and multiple rows within a sort group have the same value for that measure field, then they are all displayed. This may result in a number of rows higher than the sort limit. For example, the following image shows a report in which the Quantity Sold field has a sort limit of 5. Since multiple Customer City values in the Africa subregion have the same Quantity Sold value, seven values display, representing the cities with the five highest distinct Quantity Sold values in that subregion.

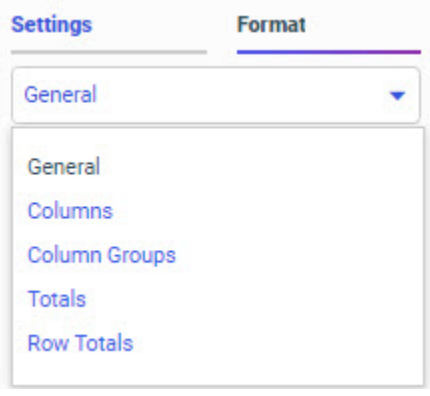


Customer Business Sub Region	Customer City	Quantity Sold	Gross Profit
Africa	Johannesburg	118	$10,333.70
	Cairo	83	$6,535.13
	Mafeking	83	$7,553.25
	Colesberg	71	$5,689.84
	Hluhluwe	71	$5,177.62
	Kimberley	70	$5,238.86
	Harrismith	68	$4,679.10
Asia	Singapore	84,292	$7,230,319.07
	Ashdod	26,807	$2,299,953.40
	Tel Aviv	622	$49,920.56
	Chennai	509	$42,121.33
	Bangalore	501	$38,210.99
Australia-New Zealand	Sydney	631	$53,406.72
	Melbourne	596	$56,975.94
	Perth	138	$10,363.01
	Sidney	90	$7,345.47
	Weipa	68	$6,032.25
Canada	Vancouver	39,222	$3,336,589.16
	Toronto	28,741	$2,454,065.70
	Calgary	15,557	$1,301,887.53
	North York	12,610	$1,075,787.87
	Mississauga	11,675	$980,260.49

Styling Reports in Db2 Web Query Designer

You can apply styling changes to a report to help it visually match the styling of your other content, and make it easier to read and more visually appealing. You can style a report from the Format tab on the Properties panel.

On the Format tab, you can use the quick access menu to select the section or component of the report whose styling properties you want to change, as shown in the following image.



You can style the following sections or components of a report:

- **General.** Set properties, such as a theme, font, or background color, that affect the entire report.
- **Headings.** Set text, border, background, and cell margin properties for report level and page level headings.
- **Columns.** Format the text and cells for column titles and data values.
- **Column Groups.** Format the text and cells for column group, also known as across column, field titles and data values. You can create column groups by adding dimensions to the Column Groups bucket in a report.
- **Totals.** Set text and cell properties for column totals and subtotals.
- **Row Totals.** Set text and cell properties for row totals.
- **Footings.** Set text, border, background, and cell margin properties for report level and page level footings.

If you are styling Columns, Column Groups, or Row Totals in a report, you can select a specific field whose title or values you want to style. You can revert the changes you made in any area by clicking *Reset styling* on the Format tab. Only the settings in the selected area are reset.

Setting General and Columnar Report Properties

When you select *General* from the quick access menu on the Format tab, you are presented with options to style and format the entire report. These options include the ability to set a theme, change the output format, change the font style and size, style cells and cell borders, set cell margins, and configure how column widths are set. Font and cell styling options can be set for the entire report, or for specific columns within it.

Applying Themes to Reports

On the Format tab, in the General settings, in the General Options section, you can select a theme (.sty file, or StyleSheet), to apply to your report from the Theme menu. Themes style multiple components of a report, such as headers, column titles, and data text, all at once. Themes include associated cascading style sheet files along with a StyleSheet to help coordinate styling between an individual report and the entire visualization.

When creating a stand-alone report, the default theme is Designer 2018. When you change a visualization into a page by adding a second new content item, the theme used for the report is applied to the page. When you add items to the page, either by creating them or adding them as external content, the page theme is used as the default for all content items. You then can change the theme for each individual item.

If you prefer, you can specify one of the themes included with Db2 Web Query, such as the Designer 2018, Light, Midnight, or Vivid theme, select a custom theme saved to the Global Resources area in the repository, or you can click *Custom* to select a legacy template or a StyleSheet saved to a workspace in your repository. When you select a StyleSheet using the Custom option, it is applied to the report and added to the Theme list.

To make a custom theme available directly from the Theme menu, create a folder for it in the Global Resources area, in the Custom folder within the Themes folder. In the new folder that you create inside the Custom folder, you can add a custom StyleSheet to use with charts and reports, and a custom CSS file to use for pages. The .sty file and .css file must both be named *theme*. An .sty file and .css file that share the same theme folder are associated. If you select a theme for a report, which uses the .sty file, then when you convert it to a page, the associated .css file is used as the page theme by default.

Tip: When creating a custom theme, you can copy the CSS and StyleSheet syntax from existing themes to use as a model.

Note: Charts and reports created for use on pages can use a transparent background to allow the defined background color of the page containers to show through. Since the themes used for charts and reports (.sty files) can be associated with themes for pages (.css files), you can coordinate the background, text, and element colors used in both themes to create content with unified styling. At design time, the page theme associated with the chart or report theme is used for the canvas background. This is for visibility purposes only, and shows how the chart or report will appear when added to a page with the associated theme. The stand-alone chart or report does not include this background.

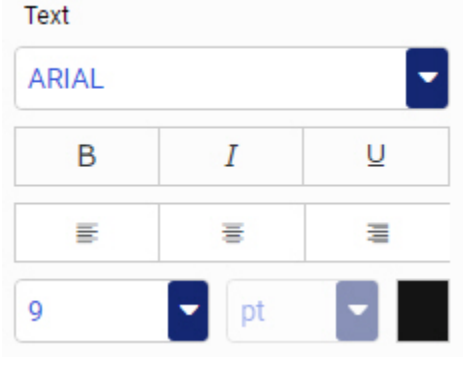
If a chart or report is run stand-alone instead of being added to a page, the run-time view displays a white background only. This means that if, in order to display on a dark colored page, the font color in the selected theme is defined as white and uses a transparent chart background, then the text will not be visible on the white preview background. An example of such a theme is the Midnight theme, provided as one of the default themes in the Global Resources folder. To view the white text, build your chart or report on the canvas, or add it to a page container with a dark background.

Formatting Text in a Report

You can use text formatting options to change the font, font style, alignment, size, and color of the text in your report. On the *Format* tab, in the *General* options, you can set these options for the entire report.

To set the same properties but only apply them to a specific area of your report, select a different option from the quick access menu. For example, select *Columns* to change the font in the body of the report. In the Select Elements and Columns area, you can specify whether your formatting should apply to the column titles, data values, or both, and which column should be affected. This allows you to set styling options that affect specific columns of the report, highlighting or distinguishing certain fields.

The text formatting options are shown in the following image.



A list of default fonts is provided. To add a font to this list, specify the font files for each font style, such as regular, bold, and italic, in the fontuser.xml file, in your server installation. This file is located in the etc subdirectory of the server configuration directory, for example, *drive*:\ibi\srv82\wfs\etc. If you are configuring a TrueType font, you do not need to specify the AFM font metrics file.

Formatting Cells in a Report

You can style the body of your report by applying cell border lines, specifying cell background colors, and setting cell margins. These options can help to make your report more legible by separating and spacing out the text, and by delineating different rows of data. On the *Format* tab, select *General* from the quick access menu to apply this formatting to the entire report. Select *Columns* and then make selections from the Select Elements and Column menus to apply cell formatting to the data values, column headers, or both areas of the selected column or columns.

You can add borders to the report to visually separate each value in the report. Borders are applied around each cell. Select the *Show Border* check box to enable cell borders. You can then set the border style, thickness, and color. The following border styles are available:

- **Solid.** Applies a solid line border.
- **Dot.** Applies a dotted-line border.
- **Dash.** Applies a dashed-line border.
- **Double.** Applies a two-line border.
- **Groove.** Applies a three-dimensional grooved border. Half of the border is shaded to make it appear three-dimensional.
- **Ridge.** Applies a three-dimensional ridged border. The shaded half of the ridged border is opposite to that of the grooved border.
- **Inset.** Applies a three-dimensional inset border. The inset border is shaded similarly to the ridged border.
- **Outset.** Applies a three-dimensional outset border. The outset border is shaded similarly to the grooved border.

Note that since these border options are applied around the entire cell, they are considered more general than side-specific borders that can be set in a theme or StyleSheet. If your theme or StyleSheet uses these side-specific borders, they will override the borders applied in Designer.

You can also change the background color that appears behind the entire report, only the column titles, or only the data values in one or more columns of a report. Click the color swatch next to Report, Title Row, or Data Row to change the background color for the associated area. If you change the color for Report, the background color of the entire report, including the column title area and data values, is changed. Alternatively, you can set the background color for just the column titles using just the Title Row color option, or for just the data values using the Data Row color option. If you select *Columns* from the quick access menu and then select a specific column from the Select Elements and Columns menus, the background color is only applied to a single column.

When setting the background color for the data values in the report, you can apply different colored bands to made it easier to differentiate different rows or sort groups. You can set alternating bands in a repeating pattern of up to 4 rows. To add bands, click the plus icon to the right of the Data Row option, then set a second color. To add another color to the band pattern, click the plus sign again. To remove a band color, click the minus sign. The following image shows a report with 4 Data Row colors set in a pattern of yellow, white, blue, and white.

Sale Year	Sale Quarter	Product Category	Quantity Sold	Revenue	Gross Profit
2015	1	Accessories	4,580	$1,125,123.02	$347,865.02
		Camcorder	3,873	$1,225,199.72	$406,657.72
		Computers	1,343	$302,839.60	$117,086.60
		Media Player	11,717	$3,427,197.08	$925,302.08
		Stereo Systems	15,000	$3,320,151.66	$1,072,105.66
		Televisions	3,925	$1,566,904.80	$385,015.80
		Video Production	1,720	$477,391.46	$154,764.46
	2	Accessories	4,662	$1,165,106.04	$362,612.04
		Camcorder	3,812	$1,244,408.92	$409,405.92
		Computers	1,235	$285,463.66	$110,264.66
		Media Player	11,618	$3,268,394.69	$894,116.69
		Stereo Systems	13,259	$3,026,456.46	$948,934.46
		Televisions	3,748	$1,577,021.42	$387,599.42
		Video Production	1,731	$480,282.56	$149,265.56

By default, each band spans a single row of the report. As an alternative, you can set each band to span a sort group, visually distinguishing values for different sort fields. To change the scope of each band, open the Alternate On menu and select a sort field in your report. The following image shows a report with 4 Data Row colors set in a pattern of yellow, white, blue, and white, alternating on each value of the Sale Quarter field.

Sale Year	Sale Quarter	Product Category	Quantity Sold	Revenue	Gross Profit
2015	1	Accessories	4,580	$1,125,123.02	$347,865.02
		Camcorder	3,873	$1,225,199.72	$406,657.72
		Computers	1,343	$302,839.60	$117,086.60
		Media Player	11,717	$3,427,197.08	$925,302.08
		Stereo Systems	15,000	$3,320,151.66	$1,072,105.66
		Televisions	3,925	$1,566,904.80	$385,015.80
		Video Production	1,720	$477,391.46	$154,764.46
	2	Accessories	4,662	$1,165,106.04	$362,612.04
		Camcorder	3,812	$1,244,408.92	$409,405.92
		Computers	1,235	$285,463.66	$110,264.66
		Media Player	11,618	$3,268,394.69	$894,116.69
		Stereo Systems	13,259	$3,026,456.46	$948,934.46
		Televisions	3,748	$1,577,021.42	$387,599.42
		Video Production	1,731	$480,282.56	$149,265.56
	3	Accessories	4,783	$1,270,872.45	$390,073.45
		Camcorder	4,346	$1,536,974.19	$484,041.19
		Computers	1,659	$349,989.27	$137,694.27
		Media Player	12,688	$3,585,613.72	$976,931.72
		Stereo Systems	10,607	$2,738,062.03	$817,195.03
		Televisions	4,301	$1,796,316.25	$443,139.25
		Video Production	1,909	$557,392.58	$170,352.58
	4	Accessories	6,127	$1,478,196.06	$458,077.06
		Camcorder	5,691	$1,871,848.70	$608,214.70
		Computers	2,493	$503,542.66	$195,915.66
		Media Player	14,943	$4,699,372.86	$1,250,601.86
		Stereo Systems	14,541	$3,790,147.58	$1,124,739.58
		Televisions	4,431	$1,540,975.20	$373,803.20
		Video Production	2,675	$753,824.57	$232,170.57

To better space out the values in your report, when using a paginated output format such as HTML, PDF, PowerPoint, or XLSX, you can change the cell margins. You can select preset small, medium, and large margin options, or click the ellipsis button to set custom cell margins. When setting custom margins, you can set different margin sizes for each side of the cells in your report. You can clear the check boxes for different sides of the cells to use default values for them. For example, if you clear the check box for the Top margin, the default margins are used for the top of each cell. Custom margin sizes are set inches. You can use the Cell Margins settings in the General options to set margins for the entire report, or set margins for each area of the report individually by selecting a different option from the quick access menu. When setting margins using the Columns-level options, it may be preferable to set them separately for the column titles and data values. Since each line of text in the column titles is treated as a separate cell, you may prefer to use smaller top and bottom margins for them than for the cells containing data values.

To undo all custom styling changes made in the General options or Columns options, click *Reset styling*. All options revert to their default values, which are dependent on the theme used in the report.

Controlling Column Width

When you create a report, the width of each column depends upon the values in the column, and the width of the page in which the report is displayed. Three options are available to set column width behavior. They are available in the Column Width menu, in the Other Options section of the General options on the Format tab.

The default Column Width option is *autofit*. When the autofit option is used, the width of each column is set to fit the column title or row with the most characters, minimizing the amount of space that each column uses while still displaying each value in its entirety.

If you change the Column Width option to *based on value*, the maximum width of each column is based on the format of each field used in the report. If the report is filtered so that the longest values are not included, the column width is still wide enough to include those values.

Select *fixed value* to create a report that always fills the width of the container into which it is placed, no matter how wide the container is.

Note that if your theme specifies values for the SQUEEZE or AUTOFIT options, that this may override the Column Width setting in Db2 Web Query Designer.

Adding Margins to Report Headings and Footings

When you edit the text in the heading or footing of a chart or report, a set of basic text styling options appears in the styling toolbar at the top of the canvas. This toolbar provides options to change the font, text size, font style, alignment, text color, and background color of the heading or footing text. For more information about these options, see *Adding Headers and Footers to Content*.

You can set margins for the headings and footings in a report from the Format tab. Open the *Format* tab and then select *Heading*s or *Footing*s from the quick access menu. In the Heading Options and Footing Options areas, you can apply a preset margin by selecting the preset *Small*, *Medium*, or *Large* options, or you can select the custom margin option and use a spinner control to set your own top and bottom margins separately. These can be set in intervals of 0.001 inches.

Formatting Column Group Labels in a Report

When you add a field to the Column Groups bucket in a report, measure columns are repeated for each value in that field. The column group, or across column, field values are shown above the column titles for each measure field, identifying the dimension values by which they are aggregated.

When creating a report with column group fields, such as a crosstab report, you can select *Column Groups* from the quick access menu on the Format tab to style the field names and values for each one. As when styling columns in a report, from the Select Elements and Columns menus, you can choose whether to style the field titles and values, or just one or the other. You can also choose whether to style the field titles and values for all column group fields, or a single column group field. Note that while the default field selection is *All Columns*, column group field names and values display in a row. *All Columns* in this case refers to all columns from your data source, and allows you to style column group field titles and values for all fields in the Column Groups bucket.

You can style column group field titles and values by changing the font, style, alignment, size, and color of the text; changing the background color of the title and values; and adjusting margins. When adjusting margins for column group labels, you can only set the top and bottom margins, since the left and right margins are based on the widths of the columns in the body of the report.

In the Other Options area, you can select *Show title on the side* to display the column group field titles and value in the same row of text. This is especially useful in Excel output, where placing the column group field title on a separate row from the values would result in empty cells. Select *Hide null columns* to hide column group values that only have null values on a page of a report, so that columns without values are not shown. For example, the following image shows a report with the Hide null columns option enabled and page breaks on the Customer Business Sub Region field. Since there are no values in the SA-Span subregion for the Sale Year value of 2015, the columns for that year are removed. Since there were sales in 2015 in the SA-Port region, the columns are still included on that page of the report.

Customer Business Sub Region	Customer Country	Sale,Year / Sale Quarter	2015 Quantity Sold	2015 Revenue	2016 Quantity Sold	2016 Revenue	2017 Quantity Sold	2017 Revenue	2018 Quantity Sold	2018 Revenue	2019 Quantity Sold	2019 Revenue	2020 Quantity Sold	2020 Revenue
SA-Port	Brazil	1	2,913	$758,872.92	2,424	$696,323.37	3,230	$977,632.64	3,992	$1,208,934.86	7,827	$2,338,258.15	11,506	$3,543,181.76
		2	2,704	$754,038.17	2,402	$726,464.44	2,965	$871,365.78	3,916	$1,135,701.57	7,513	$2,248,101.13	11,048	$3,370,391.00
		3	2,786	$830,428.29	2,476	$757,953.22	3,098	$929,426.40	3,892	$1,144,110.09	7,556	$2,266,851.43	11,202	$3,410,163.83
		4	3,261	$953,077.54	2,839	$843,447.26	3,613	$1,097,622.47	4,728	$1,415,255.60	8,695	$2,660,081.25	13,076	$4,057,437.51

Customer Business Sub Region	Customer Country	Sale,Year / Sale Quarter	2016 Quantity Sold	2016 Revenue	2017 Quantity Sold	2017 Revenue	2018 Quantity Sold	2018 Revenue	2019 Quantity Sold	2019 Revenue	2020 Quantity Sold	2020 Revenue
SA-Span	Argentina	1	121	$36,972.02	237	$71,371.51	451	$134,132.41	1,128	$331,643.90	2,305	$733,850.62
		2	36	$13,222.94	163	$45,623.08	273	$86,068.07	1,290	$388,889.87	2,359	$723,122.37
		3	31	$10,626.43	135	$49,648.69	365	$115,185.13	1,209	$383,173.44	2,315	$729,792.09
		4	69	$24,776.34	288	$83,087.18	486	$134,938.27	1,510	$448,663.33	2,500	$747,160.23
	Chile	1	26	$8,494.90	62	$21,456.32	128	$38,534.80	371	$100,920.15	1,672	$492,892.81
		2	20	$8,772.07	60	$17,561.90	98	$37,152.65	375	$111,845.71	1,585	$470,194.13
		3	24	$5,962.78	48	$11,319.72	124	$37,608.52	316	$103,306.90	1,635	$505,128.92
		4	16	$4,153.56	68	$22,154.70	134	$52,312.80	618	$173,818.12	2,066	$635,053.55
	Colombia	1	119	$32,515.48	248	$65,653.68	446	$125,805.02	1,195	$356,998.75	2,118	$661,305.33
		2	38	$10,115.36	192	$56,986.40	306	$88,305.99	1,141	$341,219.41	2,239	$671,470.67
		3	48	$12,757.68	154	$39,297.93	378	$117,021.59	1,084	$341,864.84	2,036	$634,554.16
		4	50	$15,558.34	311	$87,747.48	506	$144,973.88	1,374	$418,698.79	2,555	$798,390.36

You can also select *Repeat across values* to show the column group value above every measure column in the report instead of only once for each group.

Styling Column and Row Totals in a Report

As with the data values in a report, you can apply styling to the row and column totals and subtotals in a report to visually separate them from the rest of the values in your report and to draw attention to them. To add row and column totals to a report, on the Settings tab, in the Content Settings area, select *Enable column totals* and *Enable row totals*. To add subtotals, right-click a field in the Rows bucket of a report, point to *Insert breaks*, and select an option from the Subtotals section of the Insert breaks menu. To style your totals, on the Format tab, select *Totals* or *Row Totals* to display column or row total styling options. These options include text styling options, such as the font, style, alignment, size, and color; background color options; and cell margin sizing. Similar to when setting margins for column group labels, you can only set the top and bottom margins for column totals and left and right margins for row totals, since the other margins are based on the margins of the cells in the body of the report.

When styling row totals, from the Select Elements and Columns menu, you can choose whether the styling changes should affect the total label, values, or both. You can also choose which columns are affected if there are across columns in the report. When row totals are added to a report with column groups, a separate row total column is generated for each measure field in the report. Each of these row total columns can be styled separately by changing the text and cell styling. When there are no column group fields, all measure fields are summed into a single row total column to which your styling is applied.

Column totals, on the other hand, are arranged into a single row to which you can apply styling. You can style the grand totals or all subtotals, or you can select a specific sort field whose subtotals you want to style if you have multiple levels of subtotals for different sort fields. The following image shows different styling applied to the grand totals and subtotals in a report so that they can be easily distinguished.

2020	Accessories	209,571	$53,208,007.57	$16,362,313.57
	Camcorder	187,033	$63,107,166.95	$20,320,654.95
	Computers	188,736	$63,190,001.88	$18,677,664.88
	Media Player	315,783	$99,448,235.40	$22,237,625.40
	Stereo Systems	451,751	$118,579,626.69	$34,997,684.69
	Televisions	38,123	$30,964,700.29	$6,560,087.29
	Video Production	81,585	$23,810,094.17	$7,330,486.17
Subtotal: 2020		1,472,582	$452,307,832.95	$126,486,516.95
TOTAL		3,509,891	$1,061,192,925.20	$299,753,396.20

For column totals and subtotals, you style the total label and values separately using the Total Tag Options and Column Options areas. This allows you to differentiate between labels and values in your totals and subtotals. If you select a column in the Column Options area, you can apply different styling to the grand total or subtotal values for different measure fields. You can also change the background color for the grand total or subtotal rows and adjust the margins used for the grand total or subtotal cells.

Setting Page Layout Options

When creating reports for different types of output, you may want to change the page layout, depending on the type of file that will be generated. For example, PowerPoint slides are typically landscape oriented, and a smaller size than PDF pages, which tend to be vertically oriented. You can set options such as page orientation, page size, and margins, separately for each output format, by selecting *Output Settings* from the quick access menu on the Format tab.

The settings specified in the Output Settings options are specific to each output format. If you change the output format of your report, then a separate set of page settings appears. This allows you to ensure that the report displays properly in all output formats, even when user output format selection is enabled.

The following page layout options are available for each output format:

- **Page Size.** You can set the size of the page on which the report displays to the following common standards:
  - **A3.** Sets the size of each page containing the report to 297 by 420 millimeters, or 11.7 by 16.5 inches.
  - **A4.** Sets the size of each page to 210 by 297 millimeters, or 8.25 by 11.7 inches.
  - **A5.** Sets the size of each page to 148 by 210 millimeters, or 5.8 by 8.25 inches.
  - **Letter.** The default. Sets the size of each page to 8.5 by 11 inches, or 216 by 279 millimeters.
  - **Tabloid.** Sets the size of each page to 11 by 17 inches, or 279 by 432 millimeters.
  - **Legal.** Sets the size of each page to 8.5 by 14 inches, or 216 by 356 millimeters.
  - **PowerPoint Slide.** Sets the size of each page to that of a standard PowerPoint slide, which is 7.5 by 10 inches, or 191 by 254 millimeters. This page size, like all other report page size settings, is portrait oriented by default. Change the page orientation of your report to *Landscape* to match the default page orientation used in Microsoft PowerPoint.
  - **Large Size.** Sets the size of each page to the ANSI E architectural paper size, which is 34 by 44 inches, or 864 by 1118 millimeters.
- **Orientation.** The direction in which the page is oriented. Select *Portrait* to align the longer sides of the page vertically, or *Landscape* to align them horizontally.
- **Page Margins.** The amount of blank space between the report and the top, bottom, and sides of the page. Page margins can be set on each side in increments of 0.001 inches. The report is aligned to the top left corner of the page by default, meaning that the right and bottom margins are only used if the report is wide or long enough to occupy more than one page.

  Note: When a page margin is set to 0, the default margin size of 0.25 inches is used.

- **Cell Margins.** The amount of blank space between the top, bottom, left, and right sides and the text of each cell in the report. These margins affect the entire report when the selected output format is used, unless overridden by more granular cell margin settings, such as those set at the column or total level. [see spec for reason why this is here ** doesn't say; I guess you might just want to style different outputs differently? Seems reasonable enough to me. I assume these are page level (instead of, say, column level or something more granular)]

To revert the page layout settings for the selected output format to the default, click *Reset styling*. The default page layout settings are letter page size, portrait orientation, and 0.25 inch margins.

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