

# End-User Course

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## ARM Reports

## Training Guide

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# Copyright

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11235 SE 6th, Suite 140  
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Software Version - 2019 R1

# Introduction

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This course consists of four parts, each part providing a set of lessons that illustrate the ARM report creation and modification processes.

Part 1 illustrates the general information about ARM tools and forms used for creating an ARM report. Part 2 explains how to create a copy of an ARM report and illustrates how to use row sets and column sets in an ARM report. Part 3 deals with filtering ARM data and unit sets. Part 4 illustrates the process creation of an ARM report.

After you complete the course, you will have an understanding of how to perform basic operations in ARM forms while working with the existing ARM reports and creating your own ARM report.



While completing this course, you will use Acumatica ERP with all features available under the trial license. For production, each particular feature might be subject to additional licensing; please consult the Acumatica ERP sales policy for details.

Several lessons in the course are optional and can be skipped. Some lessons contain self-test exercises that you can complete based on the information given in the lessons.

# How to Use This Course

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This end-user course provides a set of lessons that illustrate the basic features of ARM reports. The course should be completed on Acumatica ERP 2019 R1. To complete the course, ask your system administrator to deploy an instance of Acumatica ERP for training and to create a tenant and preload the *I100* data set to it; this data set provides the pre-configured settings and entities you will need as you complete the course. (You can find detailed instructions on creating a tenant below.)

## What Is in a Lesson?

Each lesson provides a story describing a particular user scenario and an overview of the relevant features that have been enabled in the system; configuration settings that are related to the described scenario are also listed. The lesson provides a brief overview of the process that should be performed to complete the described scenario, and instructions that guide you through the process in Acumatica ERP. At the end of the lesson topics, you can find links to detailed information about the forms used in the lesson.



The lessons are independent and can be completed in any order.

## What Are the Documentation Resources?

All the links listed in the *Forms Used* sections of individual lessons refer to the form documentation available on the <https://help.acumatica.com/> website. The *Additional References* topic provides links to Acumatica ERP Help Portal, where you can find additional information on concepts and procedures that are included in this course. Complete documentation, which includes concept topics and form reference topics, is also included in the Acumatica ERP instance, and you can find these topics under the **Help** menu.

## How to Create a Tenant with the Needed Data

As mentioned, you should ask your system administrator to first deploy an instance of Acumatica ERP for training. The administrator should then add a tenant with the *I100* data to this Acumatica ERP instance by performing the following instructions:

1. Open the Acumatica ERP Configuration Wizard, and click **Perform Application Maintenance**.
2. On the **Application Maintenance** page of the wizard, click the **Tenant Maintenance** button.
3. In the **SQL Server Authentication** dialog box, which appears, specify the credentials for connecting to the database server, and click **OK**. The **Company Setup** page opens.
4. To create the new tenant, click **New**, and in the **Insert Data** column, select the *I100* data to be preloaded to the tenant.
5. Click **Next**, and on the **Confirm Configuration** page, click **Finish**.

The system adds the new tenant to the Acumatica ERP instance and preloads the selected data. In the first processing step of each lesson, you can find the user credentials to be used for sign-in.

# Part 1: ARM Overview

---

Analytical reports are a specific type of reports that you can construct in Acumatica ERP by using the Analytical Report Manager toolkit. Reports that are constructed with this toolkit are called *ARM reports* to distinguish them from the reports created in the Acumatica Report Designer.



For more information on developing reports with Report Designer, see the S130 Reporting: Inquiry, Report Writing, Dashboards course at Acumatica University.

The Analytical Report Manager toolkit is specially designed for the creation of financial reports that retrieve the amounts posted to particular general ledger accounts and subaccounts. We recommend using the ARM toolkit rather than Report Designer to create the following types of reports:

- Financial reports that display data that is posted to the general ledger accounts. The system gets the data of the general ledger accounts from the GLHistory table of the database. The transaction data is added to the table when the transactions are posted.
- Project accounting reports display data that is accumulated in the Project module. Such reports are build based on PM transactions.

There are several predefined ARM reports in the **Finance** workspace of Acumatica ERP, such as:

- Balance Sheet (GL634000)
- Profit and Loss (income statement) (RM000003)
- Cash Flow (GL636500)

## ARM Report Structure

An ARM report consists of the following elements:

The report in the following screenshot consists of a row set, a column set, and a unit set.

## Profit &amp; Loss

	YTD	PTD
<b>Revenue</b>		
Sales Revenue	12,619,601.05	
Sales - Freight	3,692.28	
Total Sales Revenue	12,623,293.33	
Other Revenue		
Returns and Allowances		
Discount Taken	-274,428.66	
Other Income/Interest Income	32,500.00	
Other Income	30,482.33	
Total Other Revenue	-211,446.33	0.00
<b>Total Revenue</b>	<b>12,411,847.00</b>	<b>0.00</b>
<b>Cost of Revenue</b>		
COGS - Inventory	7,574,546.49	0.00
COGS - Direct Labor Costs	1,000.00	0.00
COGS - Salaries and Wages	2,644.64	0.00
Standard Cost Adjustments	2,812.50	0.00
Landed Cost Variance	1,181.06	0.00
Total Cost of Revenue	7,582,184.69	0.00
<b>Gross Profit</b>	<b>4,829,662.31</b>	<b>0.00</b>
<b>Operating Expenses</b>		
Salaries	1,115,000.00	
Advertising	204,000.00	
Office and Supplies	88,000.00	
Services and Utilities	54,087.30	
Professional Expenses	24,000.00	
Other Expenses	4,335.70	349.51
Insurance	4,000.00	
Travel	2,682.13	
Bank Expenses	90.00	
Total Operating Expenses	1,496,195.13	349.51
<b>EBITDA</b>	<b>3,333,467.18</b>	<b>-349.51</b>
Depreciation and Amortization	16,099.96	
<b>EBIT</b>	<b>3,317,367.22</b>	<b>-349.51</b>
Net Interest Expense/Income	-50,000.00	
<b>Net Income (Loss)</b>	<b>3,267,367.22</b>	<b>-349.51</b>

Figure: Profit &amp; Loss report

- The *row set*, which defines the rows to be used in the report.
- The *column set*, which defines the report title, the column headers, and the columns of the report.
- The *report definition*, which identifies this particular report. The report definition links together the row set and the column set of the report and defines the report parameters. By using the report definition, you can easily add the report to the site map.
- Optionally, the *unit set*, which defines the units to be used for the report. With units, the user can quickly filter or consolidate the report data.

You can use each row set, column set, or unit set in one report definition or multiple definitions.

You can modify the predefined ARM reports and create new ones. To modify an existing report, we recommend that you create a copy of the predefined report and modify this copy. To create an ARM report from scratch, you need to perform the following steps:

- Create a row set.
- Create a column set.
- Optional: Create a unit set.

- Create a report definition, which uses the row set, the column set, and the unit set.

Further topics of this part briefly describe the tools of the Analytical Report Manager that are used to perform these steps.



## Row Sets

A row set defines the rows to be used in a report. You can create a row set on the Row Sets (CS206010) form, which is shown in the screenshot below.

Software Inc Row Sets

SAVE & CLOSE COPY ROW SET

\* Code: DBALSHEE \* Type: GL  
 \* Description: Balance Sheet

C + X COPY STYLE PASTE STYLE RENUMBER

* Code	Description	Type	Value	Format	Data Source	Style	Printing Control	Page Break	Height	Indent	Line Style	Suppress Empty	Hide Zero	Linked Row	Base Row	Column Group	Unit Group
00100	Assets	Caption				Bold	Line Break	<input type="checkbox"/>	18	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>				
00101		Caption					Line Break	<input type="checkbox"/>	10	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>				
00103	Current Assets	Caption				Bold	Line Break	<input type="checkbox"/>	16	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>	00198			
00110	Cash & Cash Equiv...	GL			CASHASSET		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00120	Account Receivable	GL			AR		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00121	Short-term Investm...	GL			STINV		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00125	Inventories	GL			WAREHOU...		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00130	WIP	GL			WIP		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00135	Prepaid Expenses	GL			PREPEXP		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00136	Due from Related	GL			RELCURAS		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00140	Other Current Assets	GL			OTHERCU...		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00196		Line				Black	Line Break	<input type="checkbox"/>	2	0	Solid	<input type="checkbox"/>	<input type="checkbox"/>	00198			
00198	Total Current Assets	Total	=sum('00100', '0019...			Bold	Line Break	<input type="checkbox"/>	16	0	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
00199		Caption					Line Break	<input type="checkbox"/>	10	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>	00198			

**Figure: The Row Sets form**

In the summary area of the form, you should specify the **Code**, the **Description**, and the **Type** of the data source. You can select the *GL* type to display in your report accounting data of the General Ledger module, or the *PM* type to display data of the Project module.

In the table at the bottom of the form, you can add rows of the row set.

The order of rows in a row set depends on the values you specify in the **Code** column in the table. The lower the code of a row, the higher the row will be listed in the row set. If you don't specify any sorting conditions for the row set, the rows will be printed in the report in the order in which they are listed in the row set.

You can renumber all rows of a row set if the code of the topmost row is an integer value. To renumber all rows, click the **Renumber** button on the table toolbar. In the dialog box, which opens, specify the number to be omitted after each row code in the **Numbering Step** box, and specify the length of codes in the **Length** box. When you confirm renumbering by clicking the **Renumber** button of the dialog box, the system will take the code of the topmost row, correct its length according to the specified **Length**, and sequentially renumber each next row by adding the specified **Numbering Step** to the previous row. The codes that are used in the **Linked Row**, the **Base Row**, and formulas of the row set will be changed appropriately.

In the **Description** column, you can specify the description of the row to be printed in the report or the description of a helper row (for example, the annotation of a sorting condition).



To print the descriptions in the report, you also have to include the description column in the column set.

In the **Type** column, you specify which type of data will be displayed in the particular row. You can select one of the following row types:

- **GL**: A row of this type contains accounting data that satisfies the filtering conditions specified in the **Data Source** column of the row.
- **Caption**: A row of this type is used to print in the report the text specified in the **Description** column of the row. With no description, the row of this type is printed as an empty line, which can be used to add space between groups of rows in the report.

- **Line:** A row of this type is printed in the report as a line. With these lines, you can improve the report readability and visually segregate groups of lines printed in the report. You can specify the line style in the **Line Style** column of the row and the thickness of the row in the **Height** column.
- **Total:** A row of this type is used when the **Value** column of the row contains a formula to calculate a sum or another calculated value.
- **Header:** A row of this type contains the report header—that is, all lines of the report title and the column headers, which are specified in the column set, are printed in this row.
- **Sort:** A row of this type contains the sorting conditions of some report rows in the **Value** column. A row of this type is not printed in the report; instead, it affects the order of the data printed in the report.

In the **Value** column, for rows of the *Total* type, you enter the formula that calculates a sum or another calculated value. For rows of the *Sort* type, you specify the sorting conditions.

The **Format** column of the row defines the format of the values printed in the row; this setting prevails over the format specifier of the column.

For rows of the *GL* type, you use the **Data Source** attribute to define the filtering conditions for data selection.

In the **Style** column, you can specify the style of the row when it is printed in the report; this setting prevails over the style specifier of the column.

You can select the check box in the **Page Break** column to start a new page of the report. The next row after the row with this check box selected will be printed on a new page. The report title and the column headers will be printed at the top of this new page automatically.

In the **Height** column, you can specify the row height.

In the **Indent** column, you can specify indentation for the row.

If the **Suppress Empty** check box is selected for a row of the *GL* or *Total* type and the row has no values to print, it won't be printed in the report.

If the **Hide Zero** check box is selected for the row, an empty value will be printed in this report line instead of a zero, if applicable.

You can use linked rows when some rows of the report should be printed depending on whether a particular row is printed. If the linked row isn't printed in the report, all the rows with the code of the linked row in the **Linked Row** column won't be printed in the report either.

In the **Base Row** column, you can specify the base row for the row to use the code or the value of this base row in formulas. You can retrieve the code of the base row by using the `@BaseRowCode` parameter, or the value of this base row by using the `Value(row, column)` function.




You can use the **Column Group** attribute of the row to print the values of this row in only the particular report columns.


You can use the **Unit Group** attribute of the row to print this row for only the particular report units.

## Column Sets


A column set defines the report title, the column headers, and the columns of the report. You can create a column set on the Column Sets (CS206020) form, which is shown in the screenshot below.

Software Inc ▾ Column Sets



← SAVE & CLOSE   +  ⏪ < > ⏩ COPY COLUMN SET MOVE

\* Code: DBALSHEE  \* Type: GL ▾

\* Description: Balance Sheet

C + X ← → ↓ ↑ COPY STYLE PASTE STYLE 

Height	Printing Group	A	B
18		=Report.GetDefUI('...	=User: ' + Report.G...
16		= 'Balance Sheet'	
16		= ' As of ' + Format( '...	
16			
1			
10			

C +  ← → COPY STYLE PASTE STYLE 

Attributes	A	B
Description		
Type	Calc	GL
Value	= IsNull(@Account...	
Rounding	No Rounding	No Rounding
Format		#,##0.00;(#,##0.00)
Width	600	140
Auto Height	<input type="checkbox"/>	<input type="checkbox"/>
Extra Space	10	0
Suppress Empty	<input type="checkbox"/>	<input type="checkbox"/>
Hide Zero	<input type="checkbox"/>	<input type="checkbox"/>
Suppress Line	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Printing Group		
Unit Group		
Printing Control	Print	Print
Visible Formula		
Page Break	<input type="checkbox"/>	<input type="checkbox"/>
Style		Right
Data Source		Ending Balance

Figure: A column set on the Column Sets form

In the summary area of the form, you should specify the **Code**, the **Description**, and the **Type** of the data source.

In the upper table of the form (item 1 in the screenshot above), you can define the report title, the column headers, and all the data that should be printed on every report page. In the lower table (item 2), you can add the report columns and define column attributes.

You click **+** in the toolbar of the upper table to add a line to the upper table—that is, to the report header. The added line is the bottom line of the upper table. You can move a selected line of the upper table up and down by clicking the appropriate arrow buttons on the toolbar of the upper table.

You click **+** in the toolbar of the lower table to add a column to far right of both the upper and the lower tables. In each table, you can move a selected column to the left and to the right by clicking the appropriate arrow buttons on the table toolbar. The columns are moved in each table independently from the columns in the other table of the form.

You can also move a column in either table by dragging its header to the needed position.

The **Type** attribute of the columns (shown in the lower table) specifies what data will be displayed in a particular column. You can select one of the following row types:

- *GL*: A column of this type contains the data of the row set that also satisfies the filtering conditions of the **Data Source** attribute of the column. The filtering conditions of rows of the *GL* type and the filtering conditions of the column are applied simultaneously.
- *Calc*: A column of this type is used to calculate values with the formula that is specified in the **Value** attribute.
- *Descr*: A column of this type displays the text of the **Description** attribute of the report row set.



You can also display the row description by using a formula with the @RowText parameter in a column of the *Calc* type as follows: =@RowText.

The **Value** attribute is used for columns of the *Calc* type to define the formula that calculates a sum or another calculated value.

You can round the values of a report column by specifying the **Rounding** attribute of the column. For example, suppose that the value of one of the column cells is 1,234,567,891.23. You can select one of the following types of rounding for the column and get the result shown:

- *No Rounding*: 1,234,567,891.23
- *Whole Dollars*: 1,234,567,891
- *Thousands*: 1,234,567.9
- *Whole Thousands*: 1,234,568
- *Millions*: 1,234.6
- *Whole Millions*: 1,235
- *Billions*: 1.2
- *Whole Billions*: 1

The **Format** attribute of the column defines the format of the values printed in the column; the format specifier of the row prevails over this setting.

You can use the **Printing Group** attribute of report columns to specify the conditional printing of rows in the particular columns.

You can use the **Unit Group** attribute of the column to print this column for only the particular report units.

The **Style** attribute of the column defines the font style of each column printed in the report. To specify the style of the report header and the column headers, in the upper table, you should specify the style





of each cell in the Formula Editor dialog box, which opens when you click the magnifier icon in the selected cell. The style specifier of the row prevails over this setting.

The **Data Source** attribute is used for columns of the *GL* type to define the filtering conditions for data selection. For a cell at the intersection of a row of the *GL* type and a column of the *GL* type, both the filtering conditions of the row and the filtering conditions of the column are applied.


## Report Definitions

A report definition links together the row set and the column set of the report and defines the report parameters. You can also use the report definition to add the report to the site map. You can create a report definition on the Report Definitions (CS206000) form.

Software Inc ▾ Report Definitions



← SAVE & CLOSE   +   ▾ |< < > >| COPY REPORT PREVIEW



### REPORT DEFINITION



\* Code:  


\* Description:

\* Type:


\* Row Set:   


\* Column Set:   


Unit Set:   


Start Unit:  


### DEFAULT DATA SOURCE SETTINGS


Ledger:   ☒ Request


Start Account:   ☐ Request


End Account:   ☐ Request


Start Sub.:   ☐ Request


End Sub.:   ☐ Request

Start Branch:   ☐ Request

End Branch:   ☐ Request

Start Period:   ☒ Request


End Period:  

Account Class:   ☐ Request

Amount Type:

☐ Apply Restriction Groups

### SITE MAP

Location:  

Title:

### PAGE SETTINGS

Paper Kind:

☐ Landscape

### MARGINS

Top:

Bottom:

Left:

Right:

### PRINT AREA

Width:

Height:

### DEFAULT FONT STYLE

Font:

Text Align:

Font Style:

Font Size:

Color:

Backgr. Color:

**Figure: The Profit and Loss report configured on the Report Definitions form**

In the **Report Definition** section of this form (item 1 in the screenshot above), you can specify the row set, the column set and the unit set; you also specify the following main settings of the report:

- **Code:** The report definition identifier, which can be up to 10 alphanumeric characters.
- **Description:** The report description. We recommend that you specify a report description that matches the title of the report in the site map (see the description of the **Title** setting below). This will help you find the report definition when you are selecting it in the **Code** box.
- **Type:** The data source of the analytical report. You can select one of the following options:
  - *GL*: The General Ledger module is used as the data source.
  - *PM*: The Projects module is used as the data source.

In the **Default Data Source Settings** section (item 2), you can specify report parameters and their default values. By using these parameters, the user can filter the report data. If you select the **Request**

check box to the right of any parameter, this parameter will appear on the **Report Parameters** tab of the report form, and the user will have to provide a value for this parameter to run the report.

In the **Site Map** section (item 3), you can select the **Location** of the report in the site map and specify the report **Title**. You must specify these settings to make the report available in the site map

In the **Page Settings** section (item 3), you can specify the paper size and orientation.

In the remaining sections of the form, you can define the margins, print area, and default font style, all of which determine how the text in the report will be formatted and printed.

To preview the report, on the form toolbar, you can click **Preview**.

The following screenshot shows a final report, which is affected by the settings specified during report configuration as follows:

<b>Software Inc</b> <b>Profit &amp; Loss</b> As of December 31, 2013			1
	<b>YTD</b>	<b>PTD</b>	2
Sales - Consulting Services	689,000.00	114,574.00	
<b>Total Sales</b>	<b>689,000.00</b>	<b>114,574.00</b>	
Cash Discount Received	480.00	48.00	
Overdue Charges Income	400.00	100.00	
<b>Total Other Revenue</b>	<b>880.00</b>	<b>148.00</b>	
Cash Discount Given	970.00	100.00	
<b>Total COGS</b>	<b>970.00</b>	<b>100.00</b>	
<b>Gross Profit</b>	<b>688,910.00</b>	<b>114,622.00</b>	
Salaries	518,000.00	52,000.00	
Services and Utilities	61,800.00	5,200.00	
Advertising	37,000.00	7,000.00	
Bank Expenses	840.00	70.00	
Other Expenses	-80.00		
<b>Total Operating Expenses</b>	<b>617,560.00</b>	<b>64,270.00</b>	
<b>EBITDA</b>	<b>71,350.00</b>	<b>50,352.00</b>	
<b>EBIT</b>	<b>71,350.00</b>	<b>50,352.00</b>	
Net Interest Expense/Income	6,000.00	1,000.00	
<b>Net Income (Loss)</b>	<b>77,350.00</b>	<b>51,352.00</b>	

**Figure: The Profit & Loss report (GL635000)**

1. The report title, which is specified in the upper table of the Column Sets (CS206020) form.
2. The column headers, which are specified in the upper table of the Column Sets (CS206020) form.
3. Report columns, which are specified in the lower table of the Column Sets (CS206020) form. Lines of these columns are the report rows, which are specified on the Row Sets (CS206010) form.
4. The descriptions of rows, which are specified on the Row Sets (CS206010) form for each row, and printed in a column for which the *Descr* type is specified in the lower table of the Column Sets (CS206020) form.

## Unit Sets

A unit set defines the units that the user can use directly on the report to quickly filter or consolidate the report data. You can create a unit set on the Unit Sets (CS206030) form.

Software Inc ▾ Unit Sets

NOTES FILES CUSTOMIZATION TOOLS ▾

← SAVE & CLOSE ↻ + 🗑️ ⏪ ⏩ COPY UNIT SET

\* Code:  \* Type:   
 \* Description:

← →
 

- ROOT
  - ALL
    - CONS
      - EAST
      - WEST
    - SOFT

* Code	* Description	Value	Printing Group	Data Source
EAST	Eastern Office			ACTUALCOMP, EAST
WEST	Western Office			ACTUALCOMP, WEST

**Figure: A unit set configured on the Unit Sets form**

In the summary area of the form, you should specify the **Code**, the **Description**, and the **Type** of the data source.

On the Unit Sets (CS206030) form and in the report, the units are organized in a hierarchical structure and ordered by unit code. On the left pane of the Unit Sets (CS206030) form, this hierarchical structure is reflected (item 1 in the screenshot above). You can select a unit in the left pane, and add child units to it in the right pane (item 2). In the report, the descriptions of units are shown.

The topmost unit is applied to the report by default when you run the report. You can select any unit to be applied to the report by default by selecting this unit in the **Start Unit** box on the Report Definition (CS206000) form.

Although you can have an unlimited number of units in a unit set, keep in mind that having too many units can significantly slow down the report performance, because the system generates the report corresponding to every single unit defined for the report when you run the report.

For every unit, you can specify either the formula (in the **Value** column) or the **Data Source** to define the data processing rules for the report.

You can print particular columns and rows in some units and hide those columns and rows for other units. In the **Printing Group** of a unit, you can specify a custom code that can be up to 10 symbols in length (only numbers and letters are allowed in the code). Then you can specify this code as the **Unit Group** of the rows and the **Unit Group** of the columns to be printed for only that unit. These rows and columns will be hidden for other units.



## Data Sources

For each analytical report, to retrieve the amounts posted to particular general ledger accounts and subaccounts, you select the *GL* type for the row or column. In the **Data Source** attribute of the row or column, you click the magnifier icon to bring up the dialog box, as shown in the screenshot below.

Software Inc - Row Sets

NOTES FILES CUSTOMIZATION TOC

SAVE & CLOSE COPY ROW SET

\* Code: ROWSET \* Type: GL

\* Description: A row set

COPY STYLE PASTE STYLE RENUMBER

* Code	Description	Type	Value	Format	Data Source	Style	Printing Control	Page Break	Height	Indent	Line Style	Suppress Empty	Hide Zero	Linked Row	Base Row
0100		GL							16	0	NotSet				

Ledger: Start Account: Start Sub.: Start Branch: Start Period: End Period: Expand: Nothing

Account Class: End Account: End Sub.: End Branch: Offset (Year, Period): Offset (Year, Period): Amount Type: Not Set

OK CANCEL

**Figure: The Data Source dialog box**

In this dialog box, you can specify the conditions under which the amounts should be retrieved and select the amount type, such as the ending balance or turnover. In the dialog box, you can specify the following conditions:

- A ledger
- An account class
- An account (in the **Start Account** box) or range of accounts (in the **Start Account** and **End Account** boxes)
- A range of non-segmented accounts (by using a mask in the **Start Account** box)
- A subaccount (in the **Start Sub.** box) or range of subaccounts (in the **Start Sub.** and **End Sub.** boxes)
- A range of non-segmented subaccounts (by using a mask in the **Start Sub.** box)
- A branch (in the **Start Branch** box) or range of branches (in the **Start Branch** and **End Branches** boxes)
- A financial period (in the **Start Period** box) or range of financial periods (in the **Start Period** and **End Period** boxes)
- A shift of the financial period by year or period (in the **Offset** box)
- An amount type

Also, for a row, in the **Expand** box of the data source, you can also select the expansion mode by account or subaccount—that is, whether the row should be displayed as multiple rows, each of which correspond to one account or subaccount from the specified range. If you use expansion of a row, in the **Row Description** field, you can select the source of the row description that will be displayed for each line of the expanded set.

## Best Practices

---

We recommend that you heed the following suggestions when you are developing an Analytical Report Manager (ARM) report.

### Proper Naming Conventions and Descriptions

You should develop naming conventions so that you can easily identify the report definitions, row sets, and column sets that are used together in the same reports. If you have multiple column sets that are used with the same row set in different report definitions, you can name the column sets with a prefix that helps you identify the row set with which each column set is used. For example, the names (codes) of the report definition, the row set, and the column set of each report can be similar. The codes of all the predefined reports—report definitions, column sets, row sets, and unit sets—start with *D*. For your reports, we recommend that you start the codes with any character except *D*.

Also, you should specify a report description that matches the report title. On the [Report Definitions](#) (CS206000) form, specify a description that matches the title of the report in the **Site Map** section of this form. This will help you find the report when you select its report definition code.

### Creating of a Copy for Modification

If you want to modify a default report, you should create a copy of it, including the row set and the column set, and modify the copy. This way, the changes you make will not affect the existing reports.

### Frequent Saving and Reviewing

While you are modifying a report, we recommend that you regularly save each portion of your changes to the row set or the column set. For example, save the row set after you have added each new row.

You should review your report regularly to see the changes you have made. These reviews will ease troubleshooting, because you can detect issues sooner and trace them more easily to their causes.

### Reserving Codes for Future Use

When you are creating a report, you should reserve row codes—that is, omit a particular number or a range of numbers after each row code. For example, if the code of the first row of your row set is *0010*, omit the numbers *0011* through *0019*, and add the next row with the *0020* code. Similarly, you should then omit the numbers *0021* through *0029* and use the *0030* code for the next row, and continue using multiples of 10 as the codes.

The order of rows in a row set depends on their codes. If you don't specify any sorting conditions for the row set, the rows are printed in the report in the order in which they are listed in the row set. Reserving row codes gives you the ability to add new rows between existing ones. For example, if you decide to expand a row of an existing report, you will be able to add a subtotal after this row.

### Using Sorting Conditions

You should keep all rows with sorting conditions together in a particular row set. The location of rows with sorting conditions in the row set doesn't affect sorting conditions. We recommend that you add the rows with sorting conditions to the end of the row set and keep all conditions listed together for easier maintenance of the row set.

### Using Templates for Quicker Review

We recommend that you save the parameters of a particular report, which are specified on the report form, as a template so that you can run the report quickly. For example, for test scenarios, you can save the report parameters to be used for testing as a default report template. Because you have created the default template, you can just open the report and then run it immediately without needing

to remember and specify all the report parameters. You can use templates for other routine tasks as well.

You can also specify default values of the report parameters in the report definition. If you do, and the values were specified for testing purposes, remember to clear these default values when you finish developing the report.

### Using Account Classes

You may want to use account classes to aggregate the data of some accounts instead of using complicated masks. Selecting accounts by account classes is a flexible approach that is also easy to use and maintain. Moreover, the selection of data by account classes works faster than selection by account-subaccount ranges specified in the data source does.

When you define the chart of accounts or any time after, you can define the account classes for further use in analytical reports. To select a set of particular accounts in the data source of a report row or a report column, you can create an account class and assign this class to the needed accounts. You can define any number of custom account classes.

### Using Formulas and the Sign of the Trial Balance

You need to use appropriate formulas for the analytical reports if the sign of the trial balance is reversed. The **Sign of the Trial Balance** option, which is specified on the [General Ledger Preferences](#) (GL102000) form, defines how the trial balance is displayed on reports and inquiries:

- If the sign of the trial balance is normal, the credit balances for liability and income accounts are displayed with the plus sign so that the following equation is adhered to: Assets + Expenses = Liabilities + Income.



YTD Net Income is excluded from these equations.

- If the sign of the trial balance is reversed, the credit balances for liability and income accounts are displayed with the minus sign so that the following equation is correct: Assets + Expenses + Liabilities + Income = 0. However, the reversed sign of the trial balance doesn't affect analytical reports, because analytical reports don't consider the type of accounts. That is, the second equation isn't correct for analytical reports, which always show the credit balance of liabilities and income with the positive sign.

You should use uppercase references to the codes of rows and units in formulas. The codes of rows in row sets and units in unit sets can be up to 10 alphanumeric characters. The letters of codes are always uppercase. Thus, it is very important to use the appropriate letter case of codes in formulas. For example, the expression `=@RowCode1+@RowCode2` in a formula would return an exception because lowercase letters are specified in the codes. In formulas, you have also to precede a row code and a unit code with the `@` character, such as `=@UNITCODE1+@UNITCODE2`.

However, you shouldn't use the `@` character with a row code or a unit code in functions. Thus, for example, you would use `=Sum('ROWCODE01', 'ROWCODE10')` in this function rather than `=Sum(@ROWCODE01, @ROWCODE10)`.

### Using Merged ARM Reports

Acumatica ERP supports merging multiple ARM reports to be sent as a single HTML or PDF file.

## Part 2: Getting Familiar with ARM

In this part of the course, you will create a copy of the Profit & Loss (GL635000) report and modify this copy to present actual balances that are compared to the budget. You will go through the whole process of modifying the analytical report to understand the report structure and the basic principles of working with analytical reports.

During the lessons, you will be encouraged to do practice exercises.

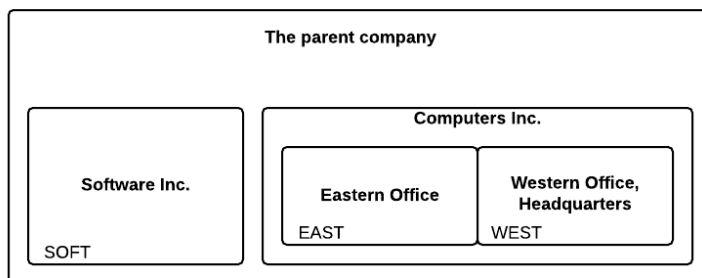
### Objectives

In this part, you will learn how to do the following:

- Make a copy of an analytical report
- Configure report rows
- Configure report columns
- Use aggregation by mask for non-segmented accounts
- Create totals for report rows
- Sort data of report rows
- Configure the visibility of report rows depending on visibility of the particular row
- Modify the report header and the column headers
- Calculate a percentage as a comparison of values of two particular rows
- Calculate a percentage as a comparison of values of two particular columns for each row

### Story

In this part of the course, you will develop Analytical Report Manager (ARM) reports for two related companies: Software Inc. and Computers Inc. The companies are separate legal entities managed by a parent company, which is outside of the scope of this course. Both companies are located in the United States. The Software company has one office, and the Computers company has two offices, eastern and western. The image below illustrates the organizational structure of the companies.



**Figure: The organization structure of the companies**

The following branches represent the companies in the system:

- The *SOFT* branch represents Software Inc.
- The *EAST* represents the eastern office of Computers Inc.
- The *WEST* branch represents the western office of Computers Inc.

The parent company wasn't configured for use in the course. For more information on the company's structure, see the F200 Financials: Intermediate course at Acumatica University.

## Lesson 1: Creating a Copy of the Report

Each analytical report consists of the report definition, the row set, the column set, and optionally the unit set. Thus, making a copy of a report entails copying all these objects.

### Process Overview

To create a copy of the Profit & Loss (RM000020) report, you should copy its report definition, row set, and column set. (This report does not have a unit set.)

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the 123 password.

### Step 2: Creating a Copy of the Report

Do the following:

- To find the code of the report definition, do the following:
  - On the [Site Map](#) (SM200520) form, in the left pane, open the following node: **Company > Finance > General Ledger > Reports > Financial Statements**.
  - In the table in the right pane, find the report whose **Title** is *Profit & Loss* (see the following screenshot).

The **Url** of the report, `~/Frames/RMLauncher.aspx?ID=DPL.rpx`, contains the report identifier *DPL.rpx* at the end. Here, *DPL* is the code of the report definition.

Software Inc - Site Map ★ CUSTOMIZATI

Screen ID	Title	Icon	Url	Graph Type	Expan
GL 63.40.00	Balance Sheet		~/Frames/RMLauncher.aspx?ID=DBSP.rpx	PX.CS.RMReportReader	<input type="checkbox"/>
GL 63.45.00	Balance Sheet - Comparative		~/Frames/RMLauncher.aspx?ID=DBS.rpx	PX.CS.RMReportReader	<input type="checkbox"/>
GL 63.50.00	Profit & Loss		~/Frames/RMLauncher.aspx?ID=DPL.rpx	PX.CS.RMReportReader	<input type="checkbox"/>
GL 63.55.00	Profit & Loss - Comparative		~/Frames/RMLauncher.aspx?ID=DPLP.rpx	PX.CS.RMReportReader	<input type="checkbox"/>
GL 63.60.00	Profit & Loss - Quarterly		~/Frames/RMLauncher.aspx?ID=DPLQ.rpx	PX.CS.RMReportReader	<input type="checkbox"/>
GL 63.65.00	Cash Flow		~/Frames/RMLauncher.aspx?ID=DCF.rpx	PX.CS.RMReportReader	<input type="checkbox"/>
RM.00.00.01	Balance Sheet Software & C...		~/Frames/RmLauncher.aspx?ID=CBSS	PX.CS.RMReportReader	<input type="checkbox"/>
RM.00.00.02	Profit and Loss Software & ...		~/Frames/RmLauncher.aspx?ID=CPLCONS	PX.CS.RMReportReader	<input type="checkbox"/>
RM.00.00.03	Profit and Loss Budget Perf...		~/Frames/RmLauncher.aspx?ID=CPLBUDG	PX.CS.RMReportReader	<input type="checkbox"/>

**Figure: The report definition code**

- Navigate to the [Report Definitions](#) (CS206000) form, and in the **Code** box select the *DPL*. You can find the code of the row set of the report in the **Row Set** box, and the code of the column set of the report in the **Column Set** box. They are *DPL* and *DPLP*, respectively.



You can omit Step 1 and open the report definition directly from the corresponding analytical report form, if the *ReportDesigner* role is assigned to your user. If you were to do that, you would click **Edit Report** on the report form toolbar, and the report Report Definitions (CS206000) form with the definition of the report would open in a new browser tab.

**3.** To copy the row set of the report, do the following:

- a. Navigate to the [Row Sets](#) (CS206010) form, and in the **Code** box select *CPL*.
- b. On the form toolbar, click **Copy Row Set**.
- c. In the **New Row Set Code** dialog box, which appears, specify *MYPL* as the **New Code**, and click **Copy**.
- d. In the **Description** box, type *My P&L*.
- e. On the form toolbar click **Save**.



We recommend that you save your changes quite often even when there are no steps in the lessons instructing you to do so.

**4.** To copy the column set of the report, do the following:

- a. Navigate to the [Column Sets](#) (CS206020) form, and in the **Code** box select *DPLP*.
- b. On the form toolbar, click **Copy Column Set**.
- c. In the **New Column Set Code** dialog box, which appears, type *MYPL* as the **New Code**, and click **Copy**.
- d. In the **Description** box, type *My Actual vs Budget*.
- e. On the form toolbar click **Save**.

**5.** To copy the report definition of the report, do the following:

- a. Navigate to the [Report Definitions](#) (CS206000) form, and in the **Code** box select *DPL*.
- b. On the form toolbar, click **Copy Report**.
- c. In the **New Report Code** dialog box, which appears, specify *MYPL* as the code, and click **Copy**. This closes the dialog box; you are now working with the copied version of the report with the *MYPL* code.
- d. In the **Report Definition** section, change the settings of the report as follows (see the screenshot below):
  - **Description:** *My P&L: Actual vs Budget*
  - **Row Set:** *MYPL*
  - **Column Set:** *MYPL*
- e. In the **Site Map** section, specify the following settings to add your report to the site map:
  - **Location:** *Company > Finance > General Ledger > Reports > Financial Statements*
  - **Title:** *My P&L: Actual vs Budget*

## Software Inc ▾ Report Definitions

← SAVE & CLOSE   +   ▾ |< < > >| COPY REPORT PREVIEW

REPORT DEFINITION		SITE MAP	
* Code:	MYPL	Location:	Financial Statements
* Description:	My P&L: Actual vs Budget	Title:	My P&L: Actual vs Budget
* Type:	GL	PAGE SETTINGS	
* Row Set:	MYPL - My P&L	Paper Kind:	Letter
* Column Set:	MYPL - My Actual vs Budget	<input type="checkbox"/> Landscape	
Unit Set:		MARGINS	
Start Unit:		Top:	20.00 Pixel

Figure: The definition of the My P&amp;L: Actual vs Budget report

- f. On the form toolbar click **Save**.
  - g. Add the newly created report to the Quick Menu of the **Finance** workspace.
6. Navigate to the My P&L: Actual vs Budget report (Finance > General Ledger > Reports > Financial Statements). Select **ACTUAL** as the **Ledger**, select **12-2018** as the **Financial Period**, and run the report to review it.



You may need to refresh the browser page to cause the newly created report to appear in the site map (in the classic UI) or in the **Finance** workspace (in the Modern UI).

My P&amp;L: Actual vs Budget ☆

    |< < > >| PRINT SEND EXPORT ▾

Revision Two Products			
Profit & Loss			
As of December 31, 2018			
	YTD	PTD	
<b>Revenue</b>			
Sales Revenue			
Sales Revenue	47,464,343.41	4,833,490.42	
Sales - Freight	5,650.01	50.00	
Total Sales Revenue	47,469,993.42	4,833,540.42	
Other Revenue			
Returns and Allowances			
Discount Taken	-498,371.89	-931.95	
Other Income	86,993.33	9,460.73	
Total Other Revenue	-411,378.56	8,528.78	
<b>Total Revenue</b>	<b>47,058,614.86</b>	<b>4,842,069.20</b>	
<b>Cost of Revenue</b>			
COGS - Inventory	28,082,565.23	2,801,899.57	
COGS - Direct Labor Costs	4,028.95	0.00	
COGS - Salaries and Wages	24,076.64	5,680.00	
Physical Inventory Adjustments	-14,989.70	0.00	
Standard Cost Adjustments	137,000.00	43,750.00	
Landed Cost Variance	3,674.50	0.00	
Total Cost of Revenue	28,236,355.62	2,851,329.57	
<b>Gross Profit</b>	<b>18,822,259.24</b>	<b>1,990,739.63</b>	
<b>Operating Expenses</b>			
Salaries	3,456,603.36	382,500.00	
Advertising	854,000.00	100,000.00	
Other Expenses	282,822.37	10,681.83	
Office and Supplies	271,000.00	23,000.00	
Services and Utilities	170,385.90	17,453.40	
Professional Expenses	52,000.00	6,000.00	
Insurance	12,000.00	1,000.00	
Travel	5,246.82	201.50	
Bank Expenses	270.00	22.50	
Total Operating Expenses	5,104,328.45	640,859.33	

Figure: My P&amp;L: Actual vs Budget ARM Report



You have created a report as a copy of an existing report and verified that the new report is available in the navigation pane. In the next step, you will modify the row set of the new report.

**Forms Used**

In this lesson, you have used the following forms:

*Site Map* (SM200520)

*Report Definitions* (CS206000)

*Row Sets* (CS206010)

*Column Sets* (CS206020)

## Lesson 2: Editing the Row Set

---

A row set defines the rows with row descriptions for the report.

### Process Overview

In this lesson, you will use [Row Sets](#) (CS206010) form to modify the rows of the report as follows:

- Expand the report line *Salaries* by subaccounts, and show the descriptions of the expanded subaccounts.
- Create a subtotal for the *Salaries* row.
- Expand the report line *Services and Utilities* by accounts, and show the descriptions and codes of the expanded accounts.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

### Step 2: Editing the Row Set

To modify the row set, do the following:

1. Open the My P&L: Actual vs Budget report (Finance > General Ledger > Reports > Financial Statements), select *ACTUAL* as the **Ledger**, select *12-2018* as the **Financial Period**, and click **Run Report** on the form toolbar.

Notice that the *Salaries* row is displayed as a single summary row.

2. Click the link in the *Salaries* row to review the details of salaries by department. Suppose that you have been asked to display salary rows by department in the report, and that departments correspond to the particular subaccounts to which the expenses are recorded. You can satisfy this requirement by configuring the row to expand automatically.
3. Navigate to the [Row Sets](#) (CS206010) form and in the **Code** box select *MYPL*.
4. To expand the report line *Salaries* by subaccount, do the following (see the screenshot below):
  - a. Double-click the **Data Source** column of the row with the *Salaries* description, and click the magnifier icon to bring up the dialog box for configuring the data source.
  - b. In the **Expand** box, select *Sub* to expand the row by subaccounts.
  - c. In the **Row Description** box, select *Description* to show descriptions of subaccounts in the report.

Software Inc ▾ Row Sets NOTES FILES CUSTOMIZ

← SAVE & CLOSE + COPY ROW SET

\* Code: MYPL \* Type: GL

\* Description: My P&L

C + X COPY STYLE PASTE STYLE RENUMBER

		* Code	Description	Type	Value	Format	Data Source	Style	Printing Control	Page Break	Height	Indent	Line Style	Suppress Empty	Hide Zero	Link Row
		0281		Line					Line Break	<input type="checkbox"/>	2	0	Double	<input type="checkbox"/>	<input type="checkbox"/>	
		0289		Caption					Line Break	<input type="checkbox"/>	10	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>	
		0300	Salaries	GL			EXPERS		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		0305	Bank Expenses	GL												
		0310	Professional Expen...	GL												
		0315	Advertising	GL												
		0320	Travel	GL												
		0325	Insurance	GL												
		0330	Licenses	GL												
		0335	Office and Supplies	GL												
		0340	Services and Utilities	GL												
		0345	Other Expenses	GL												
		0399		Line												

Ledger:

Start Account:

Start Sub.:

Start Branch:

Start Period:

End Period:

Expand: Sub

Row Description: Description

Account Class: EXPERS

End Account:

End Sub.:

End Branch:

Offset (Year, Period):

Offset (Year, Period):

Amount Type: Not Set

OK CANCEL

**Figure: Report line expanded by subaccounts**

- d. Click **OK** and then press Ctrl+Enter to close the dialog box and apply your changes to the data source.
  - e. Change the value of the **Indent** column of the *Salaries* row to 20 to increase the row indentation.
  - f. On the form toolbar, click **Save**.
- If you run the report, you would notice that salary amounts expanded by subaccount are sorted in descending order and aren't grouped. This happens due to the sorting conditions of the report, which you will improve further in Instruction 6 of this lesson.
5. To create a subtotal for the expanded rows, do the following (see the screenshot below):
    - a. On the table toolbar, click **Add Row**, and specify the following settings for the row to show the subtotal of the expanded rows:

- **Code:** 0302
- **Description:** Total Salaries
- **Type:** Total
- **Value:** =@0300
- **Style > Bold:** Selected
- **Indent:** 10
- **Suppress Empty:** Selected
- **Base Row:** 0400

The order of rows in which the system puts them when you save a row set depends on the values of the **Code** column. You have specified the 0302 code for the *Total Salaries* row to position the total row after the list of salary details (the *Salaries* row with the 0300 code).

Based on the *Total* row type and the expression specified in the **Value** column, the sum of values of the *Salaries* row is shown in this row.



In formulas, you have to precede a row code with the @ character, as in the following formula: `=@0301+@0302+@0303`. However, you shouldn't use the @ character with a row code in functions, so it would be correct to use `=Sum('0301','0303')`.

Based on the selection of the **Suppress Empty** check box, the empty row, which has no values to print, won't be printed in the report.

You will use the value you specified in the **Base Row** in Instruction 6 of this lesson.

- b. Add a row with the following settings to show a line that separates the expanded rows from the subtotal:

- **Code:** 0301
- **Type:** *Line*
- **Height:** 2
- **Line Style:** *Solid*
- **Linked Row:** 0302

You have specified a smaller code for this row to insert the row above the subtotal.

Based on the value you specified in the **Linked Row** column, if the row with the 0302 code isn't printed in the report, this row won't be printed in the report either.

- c. Add a row with the following settings to show an empty row between the expanded rows with the subtotal and the rows with other expenses:

- **Code:** 0303
- **Type:** *Caption*
- **Height:** 10
- **Linked Row:** 0302

Based on the type you specified for the row, the row is ordinary text. You also specified no value for the row—thus, an empty row is shown after the subtotal in the report.

Note that you shouldn't review and modify the formula of the 0400 total row, which uses the `Sum()` function, although the subtotal row is in the range of rows of the formula. This is because the `Sum()` function doesn't use the rows with the *Total* type.

Software Inc - Row Sets

← SAVE & CLOSE + > COPY ROW SET

\* Code: MYPL \* Type: GL  
\* Description: My P&L

C + X COPY STYLE PASTE STYLE RENUMBER

	* Code	Description	Type	Value	Format	Data Source	Style	Printing Control	Page Break	Height	Indent	Line Style	Suppress Empty	Hide Zero	Linked Row	Base Row
	0279		Line					Line Break	<input type="checkbox"/>	2	0	Solid	<input type="checkbox"/>	<input type="checkbox"/>		
	0280	Gross Profit	Total	=@0100+@0120+...			Bold	Line Break	<input type="checkbox"/>	16	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>		
	0281		Line					Line Break	<input type="checkbox"/>	2	0	Double	<input type="checkbox"/>	<input type="checkbox"/>		
	0289		Caption					Line Break	<input type="checkbox"/>	10	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>		
	0300	Salaries	GL			EXPERS		Line Break	<input type="checkbox"/>	16	20	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0400
	0301		Line					Line Break	<input type="checkbox"/>	2	0	Solid	<input type="checkbox"/>	<input type="checkbox"/>	0302	
	0302	Total Salaries	Total	=@0300			Bold	Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>		0400
	0303		Caption					Line Break	<input type="checkbox"/>	10	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>	0302	
	0305	Bank Expenses	GL			EXBANK		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0400

**Figure: Configured new lines**

- d. Save your changes.

6. To modify the sorting conditions of the report, do the following:

- a. In the row with the *0910* code, modify the expression of the **Value** column to the following: `=SortD('0305','0345','B')`. Save your changes.

The `SortD()` function sorts the values in the specified range of rows—which in this case starts at *0305*, thus excluding rows *0300* through *0304* (the salary rows and the subtotal row) from the sorting conditions—in the specified column in descending order. You have specified a range of rows by using the first two attributes of the function, and a column of the column set of the report by using the third attribute.



You can sort values in ascending order similarly by using the `Sort()` function instead of `SortD()`.

- b. Add a new row with the following settings to sort the values of the *Salaries* row:

- **Code:** 0901
- **Description:** *Sorting salaries*
- **Type:** *Sort*
- **Value:** `=SORTD('0300','0300','B')`



The location of the rows of the *Sort* type in the row set doesn't affect the sorting conditions.

- c. On the form toolbar, click **Save**.

7. Open the My P&L: Actual vs Budget report (Finance > General Ledger > Reports > Financial Statements). Select *ACTUALSOFT* as the **Ledger**, select *12-2018* as the **Financial Period**, and run the report.

Review all the changes you have made. Notice that the *Services and Utilities* row is displayed as a single summary row.



If you are keeping the report open in another tab, you should reopen the report to view the results of the modifications you have made.

8. Click the link in the *Services and Utilities* row to review the details of expenses by accounts. Suppose that you have been asked to display services and utilities rows by the type of expenses in the report. The types of expenses correspond to the particular accounts to which the expenses are recorded. You can satisfy this requirement by configuring the row to expand automatically.

9. To expand the report line *Services and Utilities* by account, do the following:

- a. On the [Row Sets](#) (CS206010) form, open the *MYPL* row set.
- b. In the row with the *Services and Utilities* description, double-click the **Data Source** column and click the magnifier icon to bring up the dialog box for configuring the data source.

The data source defines the data filtering criteria, which the system applies to select the data to be used in the report. Notice that the filtering criterion of the data source of the *Services and Utilities* row is the *EXSERVICE* account class. That is, the data on accounts of this class (see the screenshot below) is aggregated and presented in a single line in the report.

Software Inc ▾ Chart of Accounts ★

		*Account	Account Class	Type	Active	Description
>		610000	EXADVERT	Expense	✓	Advertising Expense
		615000	EXOTHER	Expense	✓	Small Balances Write-Off Expense
		620000	EXBANK	Expense	✓	Bank Service Charges
		630000	EXOTHER	Expense	✓	Royalty Fees
		631000	EXOTHER	Expense	✓	Bad Debts Write-offs
		675000	EXINTEREST	Expense	✓	Interest Expense
		740000	EXSERVICE	Expense	✓	Rent Expense
		745000	EXSERVICE	Expense	✓	Utilities Expense
		755000	EXSERVICE	Expense	✓	Office Supplies Expense
		758000	EXSERVICE	Expense	✓	Repair & Maintenance Expense
		760000	EXOTHER	Expense	✓	Overdue Charges Expense
		770000	EXPERS	Expense	✓	Salaries Expense
		790000	COGS	Expense	✓	Services Expense

**Figure: Accounts of the *EXSERVICE* account class**

Filtering the data by using the account class is quite convenient, but you can filter the data in other ways. You can specify the range of the accounts by using one of the following ways:

- Specify the range of accounts by the start account and the end account—that is, select *740000* as the **Start Account** and *758000* as the **End Account**.
- List all the accounts explicitly in the **Start Account** box separated by the comma as follows: *740000, 745000, 755000, 758000*.
- Specify the range of accounts by using the colon in a mask in the **Start Account** box, such as *740000:758000*.

The range *740000:758000* includes all the accounts between 740000 and 758000. This range returns the following accounts: *740000, 745000, 755000, 758000*.

- Use the *?* expanded wildcard character in a mask in the **Start Account** box as follows: *74?000, 75?000*.

The *?* wildcard character gives you the ability to match all possible options with any single character in the specific position where the *?* character is. For example, the range *74?000, 75?000* includes all the accounts starting with *74* and ending with *000* with a single character between them, and all the accounts starting with *75* and ending with *000* with a single character between them. This range returns the following accounts: *740000, 745000, 755000, and 758000*.

The range *7??000* includes all accounts starting with *7* and ending with *000* with two characters between them. This range returns the following accounts: *740000, 745000, 755000, 758000, 760000, 770000, and 790000*.



You can combine the *,* *:*, *"*, and *"?"* characters to create complicated masks.

You can use masks for only non-segmented accounts, such as those as in the configuration of the *I100* company, or subaccounts. For example, in the *I100* company, subaccounts are segmented, so you cannot specify a range of subaccounts, such as *CON??CA:CON??LA*.

You can also use a mask for only subaccounts with the *Unicode* edit mask. The other edit masks do not allow you to use special characters such as ,, ;, or ?.

- c. Clear the **Account Class** box.
  - d. In the **Start Account** box, type 74?000,75?000.  
You have specified this mask instead of the account class for training purposes only. With the current chart of accounts, results will be the same.
  - e. In the **Expand** box, select *Account* to expand the row by accounts.
  - f. In the **Row Description** box, select *Description-Code* to show the descriptions and codes of accounts.
  - g. Click **OK** and then press Ctrl+Enter to close the dialog box and apply your changes to the data source.
10. On the form toolbar, click **Save**.
  11. Open the My P&L: Actual vs Budget report (Finance > General Ledger > Reports > Financial Statements), select *ACTUALSOFT* as the **Ledger**, select *12-2013* as the **Financial Period**, run the report, and review the changes you have made.

Notice that salaries are expanded by subaccount and have a subtotal (item 1 in the screenshot below), and services and utilities are expanded by account (item 2).

<b>Software Inc</b> <b>Profit &amp; Loss</b> As of December 31, 2013				
			<b>YTD</b>	<b>PTD</b>
Sales - Consulting Services			689,000.00	114,574.00
Total Sales			689,000.00	114,574.00
Cash Discount Received			480.00	48.00
Overdue Charges Income			400.00	100.00
Total Other Revenue			880.00	148.00
Cash Discount Given			970.00	100.00
Total COGS			970.00	100.00
<b>Gross Profit</b>			<b>688,910.00</b>	<b>114,622.00</b>
Administrative			186,000.00	20,000.00
Consulting			128,000.00	12,000.00
Development			104,000.00	10,000.00
Sales			100,000.00	10,000.00
Total Salaries			518,000.00	52,000.00
Advertising			37,000.00	7,000.00
Utilities Expense-745000			36,000.00	3,000.00
Rent Expense-740000			16,200.00	1,400.00
Office Supplies Expense-755000			8,400.00	700.00
Repair & Maintenance Expense-758000			1,200.00	100.00
Bank Expenses			840.00	70.00
Other Expenses			-80.00	
Total Operating Expenses			617,560.00	64,270.00
<b>EBITDA</b>			<b>71,350.00</b>	<b>50,352.00</b>
<b>EBIT</b>			<b>71,350.00</b>	<b>50,352.00</b>
Net Interest Expense/Income			6,000.00	1,000.00
<b>Net Income (Loss)</b>			<b>77,350.00</b>	<b>51,352.00</b>

**Figure: The My P&L: Actual vs Budget report**

You have successfully modified the row set.

### **Form Used**

In this lesson, you have used the following form:

[Row Sets](#) (CS206010)



## Lesson 3: Editing the Column Set

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A column set defines the report header and the set of columns to be used in the report.

### Process Overview

In this lesson, you will use [Column Sets](#) (CS206020) form to modify the header and the columns of the copied report. You will do the following::

- Modify the report name in the report header.
- Change the value of the *PTD* column to the budget YTD amounts for the same period.
- Modify the headers of the YTD actual and budget columns to show a range of periods.
- Add a column after the actual YTD balance and calculate the percentage as a comparison of the amount of each income or expense row and the income subtotals or the expense total of the same column.
- Add a column after the budget column and calculate the percentage as a comparison of the values of the actual YTD amount and the budget YTD amount for each report row.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

### Step 2: Modifying the Column Set

To modify the column set, do the following:

1. Navigate to the [Column Sets](#) (CS206020) form, and in the Code box, select *MYPL*.

The upper table of the form displays the report header and the column headers. The lower table displays the columns included in the column set and their properties.

2. To modify the report name, in the upper table, in the second row, change the value in the **A** column to `'My P&L: Actual vs Budget'`.
3. To change the header of the YTD column and to present the range of periods in the header, do the following:
  - a. In the upper table, in the fourth row, change the value of the **B** column to `'YTD Actual'`.
  - b. On the table toolbar, click **New** to add a row to the report header. The added row is the bottom row of the upper table.
  - c. Select any cell of the added row.
  - d. On the toolbar of the upper table, click **Shift Up** to shift the selected row up by one position.
  - e. In the added row, select the cell in the **B** column, and click the magnifier icon to open the formula editor.
  - f. In the **Style** area of the formula editor, select *Right* in the **Text Align** box.
  - g. In the bottom area of the formula editor, enter the following expression.

```
=IIf(Left(@StartPeriod,2)='01',
    Left(Report.GetPeriodDescription(@StartPeriod),3)+
    ' '+Right(@StartPeriod,4),
```

```
Left(Report.GetPeriodDescription('01'+Right(@StartPeriod,4)),3)+
' '+Right(@StartPeriod,4)+'-'+
Left(Report.GetPeriodDescription(@StartPeriod),3)+
' '+Right(@StartPeriod,4))
```

This expression displays the range of the periods from the first period of the year to the period selected by the user. For example, if a user ran the report for the *03-2013* period, the header would show *Jan 2013-Mar 2013*.

The expression you have entered as the first argument of the `IIf()` function compares the two first characters of the **Start Period** parameter of the report (`@StartPeriod`) with the text *01*, which matches the first period of the financial year.

The expression you have entered as the second argument of the `IIf()` function is returned if the first argument of the `IIf()` function is *TRUE*—that is, if the user has selected the first period of the financial year as the **Start Period** parameter of the report. The `GetPeriodDescription()` function returns the description of the selected financial period specified on the Financial Periods from (GL201000). The `Left()` function returns the three leftmost characters of the period description. The `Right()` function returns the four rightmost characters of the period, which match the financial year of the period.

The expression you have entered as the third argument of the `IIf()` function is returned if the first argument of the `IIf()` function is *FALSE*—that is, if the user has selected as the **Start Period** parameter of the report any period of the financial year except the first period. The expression specified returns a range of the periods, where the last period is the selected period, and the first period is the first period of the financial year of the selected period.

- h. Click **OK** to apply your changes to the cell.
4. To present the budget YTD amounts for the same period, modify column **C** as follows:
    - a. In the upper table, change the column header as follows:
      - In the fourth row, change the value of the **C** column to `'YTD Budget'`.
      - In the fifth row, specify the following expression in the **C** column to show the range of periods in the header:

```
=IIf(Left(@StartPeriod,2)='01',
Left(Report.GetPeriodDescription(@StartPeriod),3)+
' '+Right(@StartPeriod,4),

Left(Report.GetPeriodDescription('01'+Right(@StartPeriod,4)),3)+
' '+Right(@StartPeriod,4)+'-'+
Left(Report.GetPeriodDescription(@StartPeriod),3)+
' '+Right(@StartPeriod,4))
```

- Select the fifth row of the **B** column. On the table toolbar, click **Copy Style**.
  - Select the fifth row of the **C** column. On the table toolbar, click **Paste Style**.
- b. In the lower table, change the **Data Source** attribute of the **C** column by clicking the magnifier icon and then specifying the following settings:
    - **Ledger:** *BUDGET*
    - **Amount Type:** *Ending Balance*

In the data source of column **B**, you have specified no ledger. Thus, column **B** will show account balances of the ledger selected at the **Ledger** parameter on the report form.
5. To calculate the percentage as a comparison of the amount of each income or expense row of the *YTD* column with the income subtotals or the expense total respectively, do the following:

- a. On the toolbar of the lower table, click **New** to add a column. The added column is the rightmost column of both the upper table and the lower table—that is, the **D** column.



When you add a column in the lower table, the column is added to both the upper table and the lower table.

- b. In the lower table, do the following:

- Click any cell of the added column to select the column.
- On the table toolbar, click **Shift Left** to shift the selected column to the left. The column becomes the **C** column.



You can also move columns by dragging their headers (such as **A**, **B**, or **C**) to the needed position in each of the tables of the form.

Columns are moved in each table individually; movements of columns do not affect the positioning of columns in the other table of the form.

- Specify the following attributes of the column that is now **C**:
  - **Type:** *Calc*
  - **Value:** `=B/Value (@BaseRowCode, 'B')`
  - **Format:** `#,##0.00%`
  - **Width:** 140

The `@BaseRowCode` parameter returns the code of the base row. For each row of the report, you can specify the base row in the **Base Row** column on the Row Sets form (CS206010). The `Value(row, column)` function returns the value of the specified `row` and `column`. Thus, the expression that you have specified divides the value of each row of column **B** by the value of the base row of column **B** associated with the row.



In the ARM reports, the system treats not-a-number (NaN) and infinity values as empty values instead of throwing an exception. When you are constructing a calculation formula in an analytical report, you don't need to handle the case of division by zero in the expression. Instead of the expression `=IIf (C>0, B/C, 0)`, you can use a simpler one: `=B/C`.

The format specifier you have entered in the **Format** attribute denotes rounding of the amount to hundreds with a period used as the decimal separator and a percentage character at the end. The values of this column will be formatted as shown in the following examples:

- 123.456 -> 123.46%
- 123 -> 123.00%
- .123456 -> 0.12%



For more information on formatting numeric values, see the documentation about custom date and time format strings in .NET Framework.

- c. In the upper table, configure the column header as follows:

- Select the added column, which is the rightmost column (**D**).
- On the table toolbar, click **Shift Left** to shift the selected column to the left. The column becomes the **C** column.
- In the fourth row of the column, type `='% Actual Total'`.
- Select the fourth row of the **B** column. On the table toolbar, click **Copy Style**.

- Select the fourth row of the **C** column. On the table toolbar, click **Paste Style**.
  - Select the sixth row of the **B** column. On the table toolbar, click **Copy Style**.
  - Select the sixth row of the **C** column. On the table toolbar, click **Paste Style**.
6. To calculate the percentage as a comparison of the values of the actual and budgeted YTD amounts for each report row, do the following:
- a. On the toolbar of the lower table, click **New** to add a column. The added column is the **E** column.
  - b. In the upper table, do the following:
    - In the fourth row of the **E** column, type the following header: `= '% Budget'`.
    - Select the fourth row of the **D** column. On the table toolbar, click **Copy Style**.
    - Select the fourth row of the **E** column. On the table toolbar, click **Paste Style**.
    - Select the sixth row of the **D** column. On the table toolbar, click **Copy Style**.
    - Select the sixth row of the **E** column. On the table toolbar, click **Paste Style**.
  - c. In the lower table, specify the following attributes of the **E** column:
    - **Type:** *Calc*
    - **Value:** `=B/D`
    - **Format:** `#,##0.00%`
    - **Width:** 140

You should use uppercase letters to specify columns in formulas, such as **A**, **B**, or **C**.

7. On the form toolbar, click **Save**.
8. Run the My P&L: Actual vs Budget report (Finance > General Ledger > Reports > Financial Statements) with the following parameters to review the report you have created (see the screenshot below):
- **Ledger:** *ACTUALSOFT*
  - **Financial Period:** *12-2013*

Notice that the values of the **% Budget** column are a result of a comparison of the values of the **YTD Actual** and **YTD Budget** columns (item 1). The values of the **% Actual Total** column are a result of a comparison of the row values and the subtotal of these rows (item 2).

**Software Inc**  
**My P&L: Actual vs Budget**  
 As of December 31, 2013

	YTD Actual Jan 2013-Dec 2013	% Actual Total	YTD Budget Jan 2013-Dec 2013	% Budget
Sales - Consulting Services	689,000.00	100.00%	714,000.00	96.50%
<b>Total Sales</b>	<b>689,000.00</b>		<b>714,000.00</b>	<b>96.50%</b>
Cash Discount Received	480.00	54.55%		
Overdue Charges Income	400.00	45.45%		
<b>Total Other Revenue</b>	<b>880.00</b>		<b>0.00</b>	
Cash Discount Given	970.00	100.00%		
<b>Total COGS</b>	<b>970.00</b>		<b>0.00</b>	
<b>Gross Profit</b>	<b>688,910.00</b>		<b>714,000.00</b>	<b>96.49%</b>
Administrative	186,000.00	30.12%	176,000.00	105.68%
Consulting	128,000.00	20.73%	108,000.00	118.52%
Development	104,000.00	16.84%	92,000.00	113.04%
Sales	100,000.00	16.19%	123,000.00	81.30%
<b>Total Salaries</b>	<b>518,000.00</b>	<b>83.88%</b>	<b>499,000.00</b>	<b>103.81%</b>
Advertising	37,000.00	5.99%	30,000.00	123.33%
Utilities Expense-745000	36,000.00	5.83%		
Rent Expense-740000	16,200.00	2.62%	54,000.00	30.00%
Office Supplies Expense-755000	8,400.00	1.36%	3,600.00	233.33%
Repair & Maintenance Expense-758000	1,200.00	0.19%	2,400.00	50.00%
Bank Expenses	840.00	0.14%		
Other Expenses	-80.00	-0.01%		
<b>Total Operating Expenses</b>	<b>617,560.00</b>		<b>589,000.00</b>	<b>104.85%</b>
<b>EBITDA</b>	<b>71,350.00</b>		<b>125,000.00</b>	<b>57.08%</b>
<b>EBIT</b>	<b>71,350.00</b>		<b>125,000.00</b>	<b>57.08%</b>
Net Interest Expense/Income	6,000.00			
<b>Net Income (Loss)</b>	<b>77,350.00</b>		<b>125,000.00</b>	<b>61.88%</b>

**Figure: The My P&L: Actual vs Budget report**

You have successfully modified the column set and the entire report.

### Form Used

In this lesson, you have used the following form:

[Column Sets](#) (CS206020)







## Self-Study: Copy ARM Report

Now that you have completed Lessons 1 to 3 of the Part 2 of the course, you know how to create a copy of an analytical report. To reinforce this knowledge, perform the following exercise on your own.

Your task is to create a copy of the Profit & Loss report (GL635000) by performing the following general instructions:

1. Copy the column set of the Profit & Loss report (GL635000), and specify the code as `MYPL2` and the description as `My P&L: Quarterly`.
2. Copy the report definition of the Profit & Loss report (GL635000), and specify the code as `MYPL2` and the descriptions and the title as `My P&L: Quarterly`.
3. In the report definition of the copied report, select `MYPL` as the row set and `MYPL2` as the column set.
4. In the **Page Settings** area of the report definition, select the **Landscape** check box to use landscape orientation for the copied report.
5. Add the report to the site map in the *Company > Finance > General Ledger > Reports > Financial Statements* node with the `P&L: Quarterly` title. The settings of the created report definition should be the same as the ones shown on the following screenshot.

Software Inc ▾ Report Definitions NOTES

← SAVE & CLOSE   +   ▾  < >  COPY REPORT PREVIEW

REPORT DEFINITION		SITE MAP	
* Code:	MYPL2	Location:	Financial Statements
* Description:	My P&L: Quarterly	Title:	P&L: Quarterly
* Type:	GL	<b>PAGE SETTINGS</b>	
* Row Set:	MYPL - My P&L	Paper Kind:	Letter
* Column Set:	MYPL2 - My P&L: Quarterly	<input checked="" type="checkbox"/> Landscape	
Unit Set:		<b>MARGINS</b>	
Start Unit:		Top:	20.00 Pixel

**Figure: My P&L: Quarterly report definition**

6. Execute the new P&L: Quarterly report with `ACTUALSOFT` selected as the **Ledger** and `12-2013` selected as the **Financial Period** parameters and make sure it looks as shown in the screenshot below.

Software Inc ▾ My P&amp;L: Quarterly ★








PRINT SEND EXPORT ▾

Software Inc			
Profit & Loss			
As of December 31, 2013			
		YTD	PTD
Sales - Consulting Services		<u>689,000.00</u>	<u>114,574.00</u>
Total Sales		<u>689,000.00</u>	<u>114,574.00</u>
Cash Discount Received		<u>480.00</u>	<u>48.00</u>
Overdue Charges Income		<u>400.00</u>	<u>100.00</u>
Total Other Revenue		<u>880.00</u>	<u>148.00</u>
Cash Discount Given		<u>970.00</u>	<u>100.00</u>
Total COGS		<u>970.00</u>	<u>100.00</u>
<b>Gross Profit</b>		<u><b>688,910.00</b></u>	<u><b>114,622.00</b></u>
Administrative		<u>186,000.00</u>	<u>20,000.00</u>
Consulting		<u>128,000.00</u>	<u>12,000.00</u>
Development		<u>104,000.00</u>	<u>10,000.00</u>
Sales		<u>100,000.00</u>	<u>10,000.00</u>
Total Salaries		<u>518,000.00</u>	<u>52,000.00</u>
Advertising		<u>37,000.00</u>	<u>7,000.00</u>
Utilities Expense-745000		<u>36,000.00</u>	<u>3,000.00</u>
Rent Expense-740000		<u>16,200.00</u>	<u>1,400.00</u>
Office Supplies Expense-755000		<u>8,400.00</u>	<u>700.00</u>
Repair & Maintenance Expense-758000		<u>1,200.00</u>	<u>100.00</u>
Bank Expenses		<u>840.00</u>	<u>70.00</u>
Other Expenses		<u>-80.00</u>	
Total Operating Expenses		<u>617,560.00</u>	<u>64,270.00</u>
<b>EBITDA</b>		<u><b>71,350.00</b></u>	<u><b>50,352.00</b></u>
<b>EBIT</b>		<u><b>71,350.00</b></u>	<u><b>50,352.00</b></u>
Net Interest Expense/Income		<u>6,000.00</u>	<u>1,000.00</u>
<b>Net Income (Loss)</b>		<u><b>77,350.00</b></u>	<u><b>51,352.00</b></u>

Figure: The My P&amp;L: Quarterly report

**Practice Exercise**

To reinforce your knowledge, perform this practice exercise on your own.

Your task is to modify the My P&L: Actual vs Budget report you have created in this lesson. You should expand the report line *Sales* by subaccount, and show the codes of the expanded subaccounts so that the report executed with *ACTUALSOFT* selected as the **Ledger** and *12-2013* selected as the **Financial Period** parameters looks as shown in the screenshot below.

**Software Inc**  
**My P&L: Actual vs Budget**  
 As of December 31, 2013

	YTD Actual Jan 2013-Dec 2013	% Actual Total	YTD Budget Jan 2013-Dec 2013	% Budget
000CO00	335,000.00	48.62%	323,000.00	103.72%
000TR00	310,000.00	44.99%	328,000.00	94.51%
000CU00	30,000.00	4.35%	37,000.00	81.08%
000SU00	14,000.00	2.03%	26,000.00	53.85%
<b>Total Sales</b>	<b>689,000.00</b>		<b>714,000.00</b>	<b>96.50%</b>
Cash Discount Received	480.00	54.55%		
Overdue Charges Income	400.00	45.45%		
<b>Total Other Revenue</b>	<b>880.00</b>		<b>0.00</b>	
Cash Discount Given	970.00	100.00%		
<b>Total COGS</b>	<b>970.00</b>		<b>0.00</b>	
<b>Gross Profit</b>	<b>688,910.00</b>		<b>714,000.00</b>	<b>96.49%</b>
Administrative	185,000.00	30.12%	176,000.00	105.68%
Consulting	128,000.00	20.73%	108,000.00	118.52%
Development	104,000.00	16.84%	92,000.00	113.04%
Sales	100,000.00	16.19%	123,000.00	81.30%
<b>Total Salaries</b>	<b>518,000.00</b>	<b>83.88%</b>	<b>499,000.00</b>	<b>103.81%</b>
Advertising	37,000.00	5.99%	30,000.00	123.33%
Utilities Expense-745000	36,000.00	5.83%		
Rent Expense-740000	16,200.00	2.62%	54,000.00	30.00%
Office Supplies Expense-755000	8,400.00	1.36%	3,600.00	233.33%
Repair & Maintenance Expense-758000	1,200.00	0.19%	2,400.00	50.00%
Bank Expenses	840.00	0.14%		
Other Expenses	-80.00	-0.01%		
<b>Total Operating Expenses</b>	<b>617,560.00</b>		<b>589,000.00</b>	<b>104.85%</b>
<b>EBITDA</b>	<b>71,350.00</b>		<b>125,000.00</b>	<b>57.08%</b>
<b>EBIT</b>	<b>71,350.00</b>		<b>125,000.00</b>	<b>57.08%</b>
Net Interest Expense/Income	6,000.00			
<b>Net Income (Loss)</b>	<b>77,350.00</b>		<b>125,000.00</b>	<b>61.88%</b>




**Figure: The My P&L: Actual vs Budget report**



## Lesson 4: Creating Financial Period ARM

In the *i100* data set that your instance is preloaded with, the financial year starts January 1 and consists of 12 financial periods that match the calendar months, as shown in the screenshot below. You can review the financial year structure on the Financial Year (GL101000) form.

Software Inc ▾ Financial Year ★




 GENERATE PERIODS    SHIFT THE FIRST YEAR







First Financial Year: 
 Number of Financial Periods :

Financial Year Starts On: 
☐ Has Adjustment Period

☐ Belongs to Next Year

Period Type:

First Period Start Date: 
☐ Adjust to Period Start

Period Nbr.	Start Date	End Date	Description
01	1/1/2013	1/31/2013	January
02	2/1/2013	2/28/2013	February
03	3/1/2013	3/31/2013	March
04	4/1/2013	4/30/2013	April
05	5/1/2013	5/31/2013	May
06	6/1/2013	6/30/2013	June
07	7/1/2013	7/31/2013	July
08	8/1/2013	8/31/2013	August
09	9/1/2013	9/30/2013	September
10	10/1/2013	10/31/2013	October
11	11/1/2013	11/30/2013	November
12	12/1/2013	12/31/2013	December

**Figure: The list of financial periods**

In the self-study exercise of the previous lesson, you created the My P&L: Quarterly report, which is a copy of the Profit & Loss report (GL635000) with the *MYPL* row set of the My P&L: Actual vs Budget report. In this lesson, you will learn how to use offsets and masks to select the needed periods in the data source of the columns.

### Process Overview

In this lesson, you will modify the My P&L: Quarterly report to show quarterly profits and losses from the first period of the selected financial year to the last period of the selected financial year. You will do the following:

- Change the *YTD* column to show the account balances at the end of the previous financial year.
- Change the *PTD* column, and add three more columns to show the turnover of each quarter of the selected financial year.
- Add a column to show the account balances at the end of the selected financial year.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

## Step 2: Modifying the Column Set of the My P&L: Quarterly report

To modify the column set of the My P&L: Quarterly report, do the following:

1. Navigate to the [Column Sets](#) (CS206020) form and in the **Code** box, select *MYPL2*.
2. To change the values of the *YTD* column to the ending balance of the last financial period of the previous financial year, do the following:
  - a. To modify the column header, in the upper table, change the value in the **B** column of the fourth row to `= 'FY-' + Report.FormatYear(@StartPeriod, -1)`.

The `FormatYear(period, shift)` function obtains the year of the specified `period` and shifts the obtained year to the value of the `shift` attribute of the function. For example, if a user select any financial period of the 2014 year, the expression you have specified returns *2013*.

- b. In the lower table, change the **Data Source** attribute of the **B** column, specifying the following settings (see the screenshot below):

- **Start Period:** 12
- **Offset (Year, Period):** -1 (year offset)
- **End Period:** 12
- **Offset (Year, Period):** -1 (year offset)
- **Amount type:** *Ending Balance*


The identifier of each financial period is a combination of the period number and the financial year. For example, the identifier of the first period of 2014 is *01-2014*. You have used the mask *12* to get the last period of the selected financial year. You also specified *-1* as the offset of the financial periods by a year to subtract this number from the year of the period.

Thus, the data that meets these filtering criteria is the account balances of the last financial period of the previous financial year relative to the selected financial period.

Ledger:		Account Class:	
Start Account:		End Account:	
Start Sub.:		End Sub.:	
Start Branch:		End Branch:	
Start Period:	12-	Offset (Year, Period):	-1
End Period:	12-	Offset (Year, Period):	-1
		Amount Type:	Ending Balance
		OK CANCEL	

Figure: The data filtering criteria

3. To present turnover amounts of the first quarter of the current financial year in the *PTD* column, do the following:
  - a. Change the column header for the **C** column to `= 'Q1-' + Report.FormatYear(@StartPeriod)`.
  - b. In the **Data Source** of the **C** column, specify the following settings:
    - **Start Period:** 01
    - **End Period:** 03
    - **Amount Type:** *Turnover*

4. To present the turnover amounts of the second quarter of the current financial year, in the lower table, add a column with the following **Data Source** settings:
    - **Start Period:** 04
    - **End Period:** 06
    - **Amount Type:** *Turnover*
  5. To present the turnover amounts of the third quarter of the current financial year, in the lower table, add a column with the following **Data Source** settings:
    - **Start Period:** 07
    - **End Period:** 09
    - **Amount Type:** *Turnover*
  6. To present turnover amounts of the fourth quarter of the current financial year, in the lower table, add a column with the following **Data Source** settings:
    - **Start Period:** 10
    - **End Period:** 12
    - **Amount Type:** *Turnover*
- 

When you specify an explicit range of periods in the data source and specify the end period number, you have to consider the financial year structure and make sure that you have specified the greatest possible end number of a period. For example, if you had an adjustment period number 13 in the financial year, you would have to specify 13 in the **End Period** of the data source to make the report cover all financial periods.
7. In the lower table, add a column with the following **Data Source** settings to show the account balances at the end of the selected financial year:
    - **Start Period:** 12
    - **End Period:** 12
    - **Amount Type:** *Ending Balance*
  8. To adjust the report layout, do the following:
    - In the upper table, do the following:
      - In the second row, change the value in the **A** column to `=My P&L: Quarterly'`.
      - In the fourth row, specify the value in the **D** column as `=Q2- '+Report.FormatYear(@StartPeriod).`
      - In the fourth row, specify the value in the **E** column as `=Q3- '+Report.FormatYear(@StartPeriod).`
      - In the fourth row, specify the value in the **F** column as `=Q4- '+Report.FormatYear(@StartPeriod).`
      - In the fourth row, specify the value in the **G** column as `=FY- '+Report.FormatYear(@StartPeriod).`
      - For the fourth row, copy style from the **C** column and paste the style to the **D, E, F,** and **G** columns.
      - For the fifth row, copy style from the **C** column and paste the style to the **D, E, F,** and **G** columns.
    - In the lower table, do the following:

- Set the **Width** attribute of the **A** column to 350.
- Set the **Width** attributes of the **B, C, D, E, F,** and **G** columns to 100.
- Set the **Format** attributes of the **D, E, F,** and **G** columns to #,##0.00.

9. Save your changes to the column set.

10. Run the My P&L: Quarterly report (Finance > General Ledger > Reports > Financial Statements) with the following parameters to review the changes you have made (see the screenshot below):

- **Ledger:** ACTUALSOFT
- **Financial Period:** 01-2014

<b>Software Inc</b> <b>My P&amp;L: Quarterly</b> As of January 31, 2014						
	FY-2013	Q1-2014	Q2-2014	Q3-2014	Q4-2014	FY-2014
000CO00	335,000.00	84,300.00	98,300.00	72,050.00	102,750.00	357,400.00
000TR00	310,000.00	75,000.00	76,500.00	61,300.00	85,400.00	298,200.00
000CU00	30,000.00	7,500.00	6,400.00	8,100.00	5,400.00	27,400.00
000SU00	14,000.00	2,500.00	3,400.00	2,800.00	3,100.00	11,800.00
<b>Total Sales</b>	<b>689,000.00</b>	<b>169,300.00</b>	<b>184,600.00</b>	<b>144,250.00</b>	<b>196,650.00</b>	<b>694,800.00</b>
Cash Discount Received	480.00	75.00	125.00	100.00	200.00	500.00
Overdue Charges Income	400.00	100.00	50.00		200.00	350.00
<b>Total Other Revenue</b>	<b>880.00</b>	<b>175.00</b>	<b>175.00</b>	<b>100.00</b>	<b>400.00</b>	<b>850.00</b>
Cash Discount Given	970.00	15.00	25.00	30.00	30.00	100.00
<b>Total COGS</b>	<b>970.00</b>	<b>15.00</b>	<b>25.00</b>	<b>30.00</b>	<b>30.00</b>	<b>100.00</b>
<b>Gross Profit</b>	<b>688,910.00</b>	<b>169,460.00</b>	<b>184,750.00</b>	<b>144,320.00</b>	<b>197,020.00</b>	<b>695,550.00</b>
Administrative	186,000.00	45,000.00	47,000.00	49,000.00	51,000.00	192,000.00
Consulting	128,000.00	36,000.00	28,000.00	35,000.00	37,000.00	136,000.00
Development	104,000.00	26,000.00	30,000.00	31,000.00	30,000.00	117,000.00
Sales	100,000.00	25,000.00	25,000.00	27,000.00	28,000.00	105,000.00
<b>Total Salaries</b>	<b>518,000.00</b>	<b>132,000.00</b>	<b>130,000.00</b>	<b>142,000.00</b>	<b>147,000.00</b>	<b>551,000.00</b>
Advertising	37,000.00	10,000.00	8,000.00	7,000.00	9,000.00	34,000.00
Utilities Expense-745000	36,000.00	9,000.00	9,000.00	9,500.00	10,000.00	37,500.00
Rent Expense-740000	16,200.00	4,200.00	4,100.00	4,100.00	4,200.00	16,600.00
Office Supplies Expense-755000	8,400.00	2,000.00	2,200.00	2,200.00	2,200.00	8,600.00
Repair & Maintenance Expense-758000	1,200.00	300.00	300.00	300.00	300.00	1,200.00
Bank Expenses	840.00	210.00	210.00	210.00	210.00	840.00
Other Expenses	-80.00		10.00			10.00
<b>Total Operating Expenses</b>	<b>617,560.00</b>	<b>167,710.00</b>	<b>153,820.00</b>	<b>166,310.00</b>	<b>172,910.00</b>	<b>648,750.00</b>
<b>EBITDA</b>	<b>71,350.00</b>	<b>11,750.00</b>	<b>30,930.00</b>	<b>-20,990.00</b>	<b>24,110.00</b>	<b>45,800.00</b>
<b>EBIT</b>	<b>71,350.00</b>	<b>11,750.00</b>	<b>30,930.00</b>	<b>-20,990.00</b>	<b>24,110.00</b>	<b>45,800.00</b>
Net Interest Expense/Income	6,000.00					
<b>Net Income (Loss)</b>	<b>77,350.00</b>	<b>11,750.00</b>	<b>30,930.00</b>	<b>-20,990.00</b>	<b>24,110.00</b>	<b>45,800.00</b>

**Figure: The My P&L: Quarterly report**

You have created the report that shows quarterly profits and losses. In the report, you have reused the MYPL row set that you had created for the budget performance report.

### Form Used

In this lesson, you have used the following form:

[Column Sets](#) (CS206020)

## Part 3: Filtering Data in Reports by Using Unit Sets

---

In this part, you will import My P&L: Quarterly report as XML file and add a unit set to it to be able to switch between the consolidated report of both companies (Software Inc. and Computers Inc.) and the detailed quarterly report of each company. You will do the following:

- Create and configure a unit set with three units:
  - For the first unit, you will show only the columns with the account balances of financial years. In these columns, you will present consolidated data of the *ACTUALCOMP* and *ACTUALSOFT* ledgers.
  - For the second unit, you will show all the columns of the column set with the data of the *ACTUALCOMP* ledgers.
  - For the third unit, you will show all the columns of the column set with the data of the *ACTUALSOFT* ledgers.
- Hide the **Ledger** parameter on the report form because the ledgers used will be determined by the settings of the units themselves.
- Add a column to the column set to calculate the percentage, which shows the account balances of the selected financial year to the account balances of the previous financial year. You will also show this column for only the first unit of the unit set.

### Objectives

In this part, you will learn how to do the following:

- Create and configure a unit set
- Apply the unit set to the report
- Configure the visibility of report columns depending on the particular unit of the unit set
- Show data from different data sources by using the unit set

## Lesson 5: Configuring a Unit Set

---

You can use a unit set to organize the report structure in the following cases:

- When the groups of rows and columns included in the report use data from different data sources
- When formulas must be applied to calculate the report values based on the data from the explicitly defined groups of columns and rows

A unit set can include one or more units that specify how the data is selected, calculated, and displayed in reports. In the report, you can view data for each individual unit, which could be a branch or a cost center, as well as data consolidated for all the units.

### Process Overview

To define the data that should be included in the unit set and set up the formatting for the rows and columns, you use the [Unit Sets](#) (CS206030) form.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

### Step 2: Configuring the Unit Set

To create and configure the unit set, do the following:

1. Navigate to the [Unit Sets](#) (CS206030) form, and create a unit set with the following attributes:
  - **Code:** MYPL
  - **Description:** Companies
2. In the left pane, select the *ROOT* node of the unit set, which is the topmost system node, which is not shown in the report.
3. In the table in the right pane, add a new row, and specify the following settings:
  - **Code:** U1
  - **Description:** Computers and Software Consolidated
  - **Value:** =@U2+@U3
  - **Printing Group:** 1

In the unit set and the report, the units are organized in a hierarchical structure and ordered by unit code. You can select a unit in the left pane (which is called the *parent unit* in this context), and add units to this selected unit in the right pane (which are called the *child units* in this context). When you save the unit set, these child units will appear in the left pane under the parent unit.

The topmost unit of the left pane excluding *ROOT* is applied to the report by default when you run the report.



You can use the arrow buttons in the toolbar of the left pane to change the position of a unit in the hierarchy.

You will use the *U1* unit to show the consolidated account balances of the related companies (Software Inc. and Computers Inc.). You will present the data of the *ACTUALCOMP* ledger in the second unit, *U2*, and the data of the *ACTUALSOFT* ledger in the third unit, *U3*. The expression

=@U2+@U3 that you have entered as the value of the parent unit *U1* consolidates the data of the second and third units.

In formulas, you have to precede a unit code with the @ character, as you've done in the expression =@U2+@U3. The letters of codes are always uppercase, so it is important to use the appropriate letter case in formulas. The expression =@u2+@u3, for example, returns an exception.

You will use the value you specified for the **Printing Group** attribute in the column set of the report to determine which columns will be printed in the report for the *U1* unit.

4. Save your changes to the unit set. The *U1* unit appears in the left pane.
5. In the left pane, select the *U1* unit.
6. In the table in the right pane, add two rows with the settings shown in the following table.

Code	Description	Printing Group	Data Source > Ledger
U2	Computers Inc.	2	ACTUALCOMP
U3	Software Inc.	2	ACTUALSOFT

You will use these units to show all the columns of the report with the individual companies' data.

7. Save your changes to the unit set.

Unit Sets

SAVE & CLOSE    COPY UNIT SET

\* Code: MYPL    \* Type: GL

\* Description: Companies

ROOT

- U1
  - U2
  - U3

Code	Description	Value	Printing Group	Data Source
U2	Computers Inc.	2		ACTUALCOMP
U3	Software Inc.	2		ACTUALSOFT

**Figure: MYPL Unit Set**

You have created and configured the unit set. Now you will apply this unit set to the My P&L: Quarterly report.

### Form Used

In this lesson, you have used the following form:

[Unit Sets](#) (CS206030)

## Lesson 6: Applying the Unit Set to the Report

---

Each unit set can be used in a report or a group of reports, and each report can use only one unit set.

### Process Overview

To define an ARM report with a unit, you use [Report Definitions](#) (CS206000) form.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

### Step 2: Applying the Unit Set


To apply the unit set to the My P&L: Quarterly report, and to make the needed changes to the report, do the following:

1. To apply the unit set to the report and hide the **Ledger** parameter on the report form, do the following:
  - a. Navigate to the [Report Definitions](#) (CS206000) form and in the **Code** box select *MYPL2*.
  - b. In the **Unit Set** box, select *MYPL* to apply the unit set.
  - c. Clear the **Request** check box to the right of the **Ledger** box to hide the **Ledger** parameter on the report form.
  - d. Save your changes to the report definition.
2. To configure the column set of the report, do the following:
  - a. Navigate to the [Column Sets](#) (CS206020) form and in the **Code** box, select *MYPL2*.
  - b. To modify the report name, in the second row of the upper table, change the value in the **A** column to `=My P&L: '+@UnitText`.  
 The `@UnitText` parameter returns the unit description specified on the Unit Sets (CS206030) form. Based on the expression you have specified, the report header will be changed when you select a unit.
  - c. To calculate the year over year (YOY) annual performance, do the following:
    - In the lower table, add a column, which will be the rightmost **H** column, with the following attributes:
      - **Type:** *Calc*
      - **Value:** `=G/B`
      - **Format:** `#,##0.00%`
      - **Width:** `100`
      - **Unit Group:** `1`

Based on the value you have specified for the **Unit Group** attribute of the column, the column will be printed only for the first unit whose **Printing Group** value is the same.

- In the upper table, do the following:
  - In the fourth row of the **H** column, type the following header: `= '% YOY'`.



- For the fourth row, copy the style from the **G** column and paste the style to the **H** column.
  - For the fifth row, copy the style from the **G** column and paste the style to the **H** column.
- d. To show the quarterly columns for only the second and third units of the unit set, for the quarterly columns **C-F**, specify 2 as the **Unit Group**, which is the **Printing Group** value of the second and third units.
- e. On the form toolbar, click **Save**.
3. Run the My P&L: Quarterly report (Finance > General Ledger > Reports > Financial Statements) with the **Financial Period** parameter as *01-2014*.
4. In the report toolbar, click  to open the left pane with the report units (see the screenshot below). Notice that the *Computers and Software Consolidated* unit is selected by default.

Software Inc - My P&L: Quarterly ★

PRINT SEND EXPORT ▾ Type your query here

Software Inc			
My P&L: Computers and Software Consolidated			
As of January 31, 2014			
	FY-2013	FY-2014	% YOY
Sales - Details	697,700.00	724,399.00	103.83%
<b>Total Sales</b>	<b>697,700.00</b>	<b>724,399.00</b>	<b>103.83%</b>
Other Revenue - Details	897.41	911.00	101.51%
<b>Total Other Revenue</b>	<b>897.41</b>	<b>911.00</b>	<b>101.51%</b>
COGS - Details	1,165.00	148.00	12.70%
<b>Total COGS</b>	<b>1,165.00</b>	<b>148.00</b>	<b>12.70%</b>
<b>Gross Profit</b>	<b>697,432.41</b>	<b>725,162.00</b>	<b>103.98%</b>
Salaries	522,500.00	569,000.00	108.90%
<b>Total Salaries</b>	<b>522,500.00</b>	<b>569,000.00</b>	<b>108.90%</b>
Services and Utilities	64,470.00	74,820.00	116.05%
Advertising	37,195.00	34,770.00	93.48%
Bank Expenses	855.00	882.00	103.16%
Other Expenses	-60.00	10.00	-16.67%
<b>Total Operating Expenses</b>	<b>624,960.00</b>	<b>679,482.00</b>	<b>108.72%</b>
<b>EBITDA</b>	<b>72,472.41</b>	<b>45,680.00</b>	<b>63.03%</b>
<b>EBIT</b>	<b>72,472.41</b>	<b>45,680.00</b>	<b>63.03%</b>
Net Interest Expense/Income	5,995.00		
<b>Net Income (Loss)</b>	<b>78,467.41</b>	<b>45,680.00</b>	<b>58.22%</b>

**Figure: The My P&L: Quarterly report consolidated for the two companies (unit U1)**

5. In the left pane, select Software Inc. company that corresponds to the *U3* unit, as shown in the screenshot below, and review the report.

Software Inc - My P&L: Quarterly ★ TOOLS ▾

🔍
C
🖨️
⚙️
⏪
⏩
⏴
⏵
PRINT
SEND
EXPORT ▾
Type your query here Find

Print All

COMPUTERS AND SOFTWARE CONSOLIDATED

- Computers Inc
- Software Inc**

Software Inc		FY-2013	Q1-2014	Q2-2014	Q3-2014	Q4-2014	FY-2014
<b>My P&amp;L: Software Inc</b>	As of January 31, 2014						
000CO00		335,000.00	84,300.00	99,300.00	72,650.00	102,750.00	357,400.00
000TR00		310,000.00	75,000.00	78,500.00	61,300.00	85,400.00	298,200.00
000CU00		30,000.00	7,500.00	8,400.00	8,100.00	5,400.00	27,400.00
000SU00		14,000.00	2,500.00	3,400.00	2,800.00	3,100.00	11,800.00
<b>Total Sales</b>		<b>689,000.00</b>	<b>169,300.00</b>	<b>184,600.00</b>	<b>144,250.00</b>	<b>196,650.00</b>	<b>694,800.00</b>
Cash Discount Received		480.00	75.00	125.00	100.00	200.00	500.00
Overdue Charges Income		480.00	100.00	50.00		200.00	350.00
<b>Total Other Revenue</b>		<b>880.00</b>	<b>175.00</b>	<b>175.00</b>	<b>100.00</b>	<b>400.00</b>	<b>850.00</b>
Cash Discount Given		970.00	15.00	25.00	30.00	30.00	100.00
<b>Total COGS</b>		<b>970.00</b>	<b>15.00</b>	<b>25.00</b>	<b>30.00</b>	<b>30.00</b>	<b>100.00</b>
<b>Gross Profit</b>		<b>688,910.00</b>	<b>169,460.00</b>	<b>184,750.00</b>	<b>144,320.00</b>	<b>197,020.00</b>	<b>695,550.00</b>
Administrative		186,000.00	45,000.00	47,000.00	49,000.00	51,000.00	192,000.00
Consulting		128,000.00	36,000.00	28,000.00	35,000.00	37,000.00	136,000.00
Development		104,000.00	26,000.00	30,000.00	31,000.00	30,000.00	117,000.00
Sales		100,000.00	25,000.00	25,000.00	27,000.00	29,000.00	108,000.00
<b>Total Salaries</b>		<b>518,000.00</b>	<b>132,000.00</b>	<b>130,000.00</b>	<b>142,000.00</b>	<b>147,000.00</b>	<b>561,000.00</b>
Advertising		37,000.00	10,000.00	8,000.00	7,000.00	9,000.00	34,000.00
Utilities Expense-745000		36,000.00	9,000.00	9,000.00	9,500.00	10,000.00	37,500.00
Rent Expense-740000		16,200.00	4,200.00	4,100.00	4,100.00	4,200.00	16,800.00
Office Supplies Expense-755000		8,400.00	2,000.00	2,200.00	2,200.00	2,200.00	8,800.00
Repair & Maintenance Expense-758000		1,200.00	300.00	300.00	300.00	300.00	1,200.00
Bank Expenses		840.00	210.00	210.00	210.00	210.00	840.00
Other Expenses		-80.00		10.00			10.00
<b>Total Operating Expenses</b>		<b>617,560.00</b>	<b>157,710.00</b>	<b>153,820.00</b>	<b>165,310.00</b>	<b>172,910.00</b>	<b>649,750.00</b>
<b>EBITDA</b>		<b>71,350.00</b>	<b>11,750.00</b>	<b>30,930.00</b>	<b>-20,990.00</b>	<b>24,110.00</b>	<b>45,800.00</b>
<b>EBIT</b>		<b>71,350.00</b>	<b>11,750.00</b>	<b>30,930.00</b>	<b>-20,990.00</b>	<b>24,110.00</b>	<b>45,800.00</b>
Net Interest Expense/Income		6,000.00					
<b>Net Income (Loss)</b>		<b>77,350.00</b>	<b>11,750.00</b>	<b>30,930.00</b>	<b>-20,990.00</b>	<b>24,110.00</b>	<b>45,800.00</b>

Figure: The My P&L: Quarterly report for Software Inc. (unit U3)

## Forms Used

In this lesson, you have used the following forms:

[Report Definitions](#) (CS206000)

[Column Sets](#) (CS206020)

# Part 4: Creating ARM Report

In this part, you will create a gross sales report, which shows the sales amounts broken down by regions and service types. You will build a report whose rows correspond to regions and columns correspond to different services. Each report cell shows the gross amount of the sales of services in the region. You will do the following:

- Create the report definition
- Create the row set with a row for each region
- Create the column set with a column for each service
- Configure the report header

## Objectives

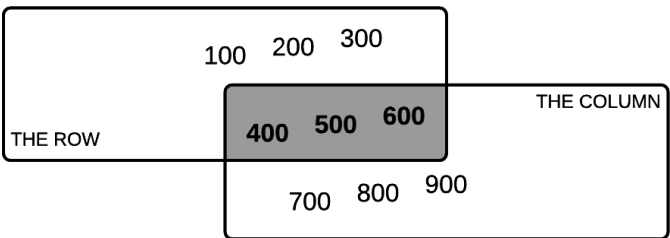
In this part, you will learn how to do the following:

- Create a new analytical report
- Present the amounts aggregated by particular subaccount segments
- Retrieve the amounts posted to particular accounts and subaccounts, which belong to the intersection of account and subaccount ranges specified in the column and the row
- Format the string values that are printed in the report

## An Overlap of Data Sources

To retrieve to a report the amounts posted to general ledger accounts and subaccounts, you specify the conditions in the data source of the report definition, row, column, or unit. If these data sources overlap, the system retrieves the data by using the following rules:

- Accounts, subaccounts, branches, and their ranges of all data sources are merged. The system retrieves the intersecting data that results from this merge. For example, if you have specified the 100–600 range of accounts for a row and the 400–900 range of accounts for a column and run a report that uses the row set and the column set with these settings, the system will retrieve the data for the 400–600 range of accounts. The image below illustrates this overlap.



**Figure: The overlap of accounts**

- The ledger, account class, financial periods, offsets of financial periods, and amount type are used from only one data source. If conditions overlap between the unit, row, column, and report definitions, the system uses the condition specified for the unit (if any). If no condition is specified for the unit or there is no unit set in the report, the system uses the condition of the row. If no condition is specified for the row, the system uses the condition of the column. If no condition is specified in the unit, row, or column of the report, the condition from the report definition (if any) is used. Thus, the data sources of an analytical report have the following level of priority, from the highest to the lowest:

1. The unit

2. The row
3. The column
4. The report definition

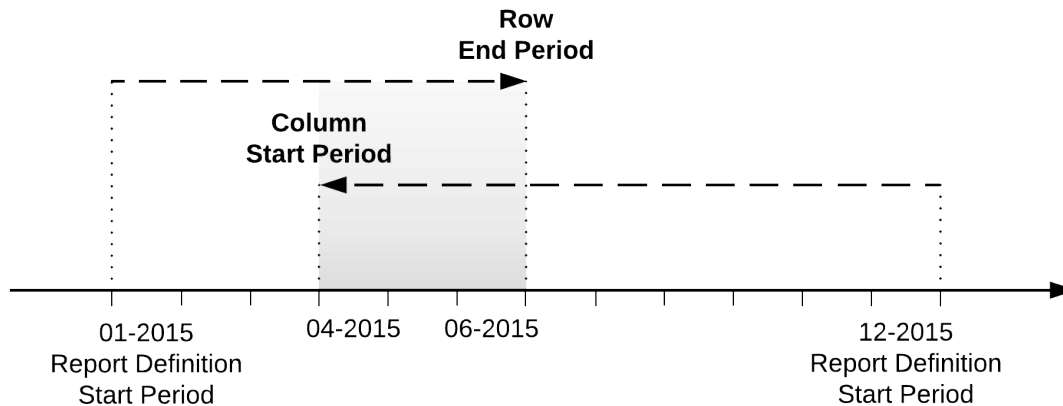
The table below illustrates an example of how these rules work.

Data Source parameters	The unit	The row	The column	The report definition
<b>Ledger</b>	ACTUAL	BUDGET		
<b>Account Class</b>		EXOFFICE	EXBANK	
<b>Account Type</b>			Ending Balance	Turnover
<b>Start Period</b>			04-2015	01-2015
<b>End Period</b>		06-2015		12-2015

For this example, the system uses the following consolidated conditions in the report:

- **Ledger:** *ACTUAL* (from the unit)
- **Account Class:** *EXOFFICE* (from the row)
- **Account Type:** *Ending Balance* (from the column)
- **Start Period:** *04-2015* (from the column)
- **End Period:** *06-2015* (from the row)

The image below illustrates the overlap of date ranges of the example above.



**Figure: The overlap of date ranges**

## Lesson 7: Creating an Empty Report

---

In this lesson, you will build an empty ARM report.

To create the report, do the following:

### Process Overview

To create the ARM report, you use [Row Sets](#) (CS206010), [Column Sets](#) (CS206020) and [Report Definitions](#) (CS206000) forms.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

### Step 2: Creating the Report

1. Navigate to the [Row Sets](#) (CS206010) form and create a row set with the following settings:

- **Code:** MYGS
- **Description** Sales by Region

2. On the form toolbar, click **Save**.

3. Navigate to the [Column Sets](#) (CS206020) form and create a column set with the following settings:

- **Code:** MYGS
- **Description:** Sales by Service

4. On the form toolbar, click **Save**.

5. Navigate to the [Report Definitions](#) (CS206000) form and create a report definition with the following settings, as shown in the screenshot below:

- **Report Definition:**

- **Code:** MYGS
- **Description** Gross Sales by Region and Service
- **Row Set:** MYGS
- **Column Set:** MYGS

- **Default Data Source Settings:**

- **Ledger > Request:** Selected
- **Start Period > Request:** Selected
- The drop-down box on the right next to **End Period:** *Request*

- **Site Map:**

- **Location:** *Company > Finance > General Ledger > Reports > Financial Statements*
- **Title:** *Gross Sales by Region and Service*

- **Page Settings:**

- **Paper Kind:** *Letter*

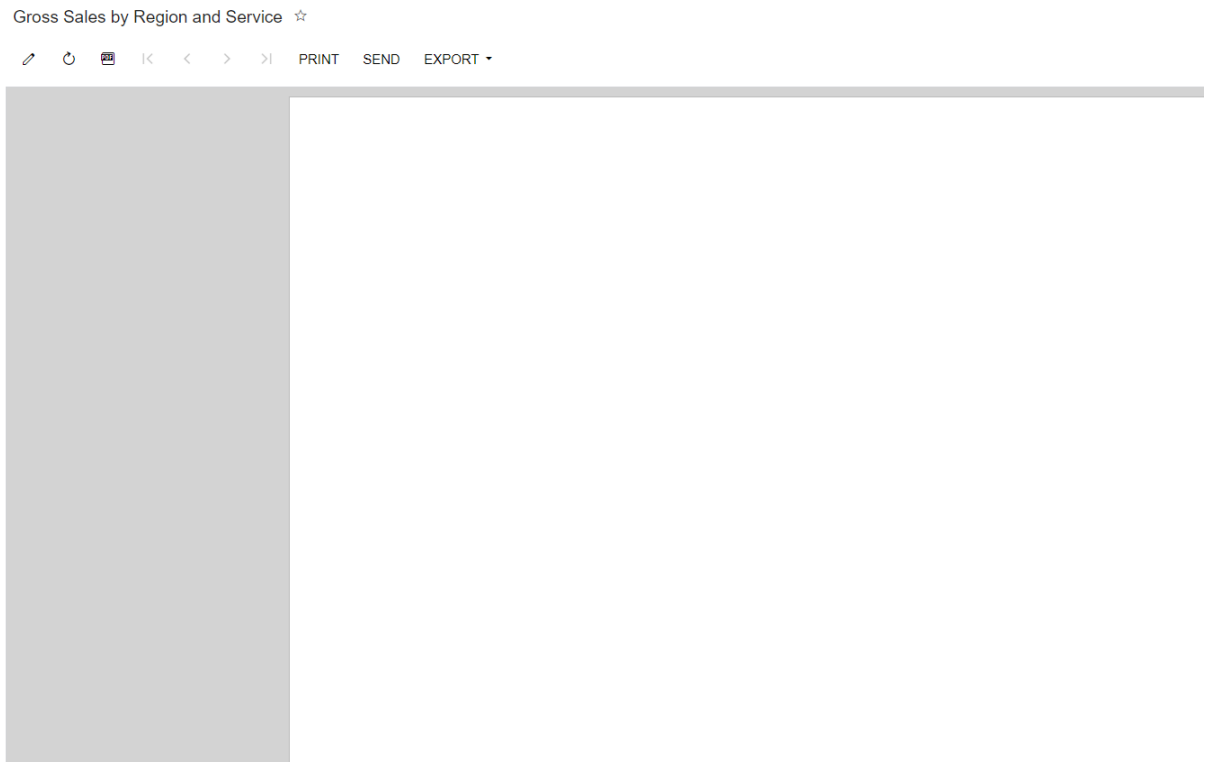
- **Landscape:** Selected
- **Default Font Style:**
  - **Font:** *Arial*
  - **Font Size:** *11*

Software Inc ▾ Report Definitions

<b>REPORT DEFINITION</b>		<b>SITE MAP</b>	
* Code:	<input type="text" value="MYGS"/>	Location:	<input type="text" value="Financial Statements"/>
* Description:	<input type="text" value="Gross Sales by Region and Ser"/>	Title:	<input type="text" value="Gross Sales by Region and Ser"/>
* Type:	<input type="text" value="GL"/>	<b>PAGE SETTINGS</b>	
* Row Set:	<input type="text" value="MYGS - Sales by Region"/>	Paper Kind:	<input type="text" value="Letter"/>
* Column Set:	<input type="text" value="MYGS - Sales by Service"/>	<input checked="" type="checkbox"/> Landscape	
Unit Set:	<input type="text"/>	<b>MARGINS</b>	
Start Unit:	<input type="text"/>	Top:	<input type="text" value="0.00"/> <input type="text" value="Pixel"/>
<b>DEFAULT DATA SOURCE SETTINGS</b>		Bottom:	<input type="text" value="0.00"/> <input type="text" value="Pixel"/>
Ledger:	<input type="text"/>	Left:	<input type="text" value="0.00"/> <input type="text" value="Pixel"/>
Start Account:	<input type="text"/>	Right:	<input type="text" value="0.00"/> <input type="text" value="Pixel"/>
End Account:	<input type="text"/>	<b>PRINT AREA</b>	
Start Sub.:	<input type="text"/>	Width:	<input type="text" value="0.00"/> <input type="text" value="Pixel"/>
End Sub.:	<input type="text"/>	Height:	<input type="text" value="0.00"/> <input type="text" value="Pixel"/>
Start Branch:	<input type="text"/>	<b>DEFAULT FONT STYLE</b>	
End Branch:	<input type="text"/>	Font:	<input type="text" value="Arial"/>
Start Period:	<input type="text"/>	Text Align:	<input type="text" value="Not Set"/>
End Period:	<input type="text"/>	Font Style:	<input type="text" value="Regular"/>
Account Class:	<input type="text"/>	Font Size:	<input type="text" value="11"/> <input type="text" value="Pixel"/>
Amount Type:	<input type="text" value="Not Set"/>	Color:	<input type="text"/>
<input type="checkbox"/> Apply Restriction Groups		Backgr. Color:	<input type="text"/>

**Figure: The definition of the Gross Sales by Region and Service report**

- 
- 
- 
- 
- 
6. On the form toolbar, click **Save**.
7. Refresh the page in the browser and find the Gross Sales by Regions and Service report (Finance > General Ledger > Reports > Financial Statements) to make sure the reference to the new report has been added to the menu. If you run the report, you will see a blank page because the row and column sets of the report are empty.



**Figure: Gross Sales by Region and Service Empty Report**

You have created an empty report. In the next lessons, you will configure the row and column set of this new report.

### Forms Used

In this lesson, you have used the following forms:

[Report Definitions](#) (CS206000)

[Row Sets](#) (CS206010)

[Column Sets](#) (CS206020)

## Lesson 8: Configuring the Row Set

In this lesson, you will configure the row set for the gross sales report, which shows the sales amounts broken down by regions and service types. The rows will correspond to regions, so you need to configure the row set with a row for each region.

### Process Overview

To configure the ARM report row set, you use [Row Sets](#) (CS206010) form.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the *123* password.

### Step 2: Configuring the Row Set

To configure the row set of the report, do the following:

1. Navigate to the [Row Sets](#) (CS206010) form and in the **Code** box, select *MYGS*.
2. To show an empty line, which separates the report header from the report data, add a row with the following attributes:
  - **Code:** 0090
  - **Type:** *Caption*
  - **Height:** 6
  - **Linked Row:** 0210
3. To show sales by each region, add to the row set the rows with the settings shown in the following table.

Code	Description	Type	Data Source Account Class	Data Source > Start Sub.	Indent	Suppress Empty	Hide Zero	Base Row
0105	California	GL	Sales	???-??-CA	10	Selected	Selected	0210
0110	District of Columbia	GL	Sales	???-??-DC	10	Selected	Selected	0210
0115	Florida	GL	Sales	???-??-FL	10	Selected	Selected	0210
0120	Louisiana	GL	Sales	???-??-LA	10	Selected	Selected	0210
0125	Nevada	GL	Sales	???-??-NV	10	Selected	Selected	0210
0130	New York	GL	Sales	???-??-NY	10	Selected	Selected	0210

The third segment of each subaccount is the sales region. By using appropriate masks in the data source of the columns, you filter sales by region.

4. Add a row with the following attributes to show a line that separates the expanded rows from the total:
  - **Code:** 0205
  - **Type:** *Line*



- **Height:** 2
  - **Line Style:** *Solid*
  - **Linked Row:** 0210
5. Add a row with the following attributes to show the total:
- **Code:** 0210
  - **Description:** Total by Service
  - **Type:** *Total*
  - **Value:** `=sum('0100', '0200')`
  - **Style > Bold:** Selected
  - **Suppress Empty:** Selected
6. Add a row with the following attributes to show a line that separates the total and the percentage, which shows the amount of each service to the total sales amount:
- **Code:** 0215
  - **Type:** *Caption*
  - **Height:** 3
  - **Linked Row:** 0210
7. To calculate the percentage of the sales by service relative to the total sales for each report column, add a row with the following attributes:
- **Code:** 0220
  - **Description:** Service % of Sales
  - **Type:** *Total*
  - **Value:** `=Value('0210', @ColumnCode)/Value('0210', 'F')`
- The `@ColumnCode` parameter returns the code of the current column. The `Value(row, column)` function returns the value of the specified row and column. The 0210 row of the report shows sales by service. In the **F** column of the report, you will calculate sales by region. In each cell, the total sales is printed. Thus, the expression that you have specified divides the sales by service by the total sales.
- **Format:** `#,##0.00%`
- The format specifier of the row prevails over the format specifier of the column. Thus, the format of this row will differ from the format specified in the column set for the other row.
- **Style > Bold:** Selected
  - **Suppress Empty:** Selected
  - **Linked Row:** 0210
  - **Column Group:** 1
- You will use the value of this **Column Group** attribute in the column set of the report to print the values of this row in only the particular columns.
8. Add a row with the following attributes to sort the total sales by region:
- **Code:** 0900
  - **Description:** Sorting sales

- **Type:** *Sort*
- **Value:** =SORTD('0105','0130','F')

9. Save your changes to the row set. The resulting row set configuration is shown in the screenshot below.

Software Inc - Row Sets

NOTES FILES CUSTO

SAVE & CLOSE COPY ROW SET

\* Code: MYGS \* Type: GL

\* Description: Sales by Region

C + X COPY STYLE PASTE STYLE RENUMBER

	* Code	Description	Type	Value	Format	Data Source	Style	Printing Control	Page Break	Height	Indent	Line Style	Suppres Empty	Hide Zero	Linked Row	Base Row	Column Group
>	0090		Caption					Line Break	<input type="checkbox"/>	6	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>	0210		
	0105	California	GL			SALES, ?????CA		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0210	
	0110	District of Columbia	GL			SALES, ?????DC		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0210	
	0115	Florida	GL			SALES, ?????FL		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0210	
	0120	Louisiana	GL			SALES, ?????LA		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0210	
	0125	Nevada	GL			SALES, ?????NV		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0210	
	0130	New York	GL			SALES, ?????NY		Line Break	<input type="checkbox"/>	16	10	NotSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		0210	
	0205		Line					Line Break	<input type="checkbox"/>	2	0	Solid	<input type="checkbox"/>	<input type="checkbox"/>	0210		
	0210	Total by Service	Total	=sum('0100', '0200')			Bold	Line Break	<input type="checkbox"/>	16	0	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	0215		Caption					Line Break	<input type="checkbox"/>	3	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>	0210		
	0220	Service % of Sales	Total	=Value('0210', @ColumnCode)/Value('0210', 'F') ###0.00%			Bold	Line Break	<input type="checkbox"/>	16	0	NotSet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0210		1
	0900	Sorting sales	Sort	=SORTD('0105','0130','F')				Line Break	<input type="checkbox"/>	16	0	NotSet	<input type="checkbox"/>	<input type="checkbox"/>			

Figure: Row set configuration

You have successfully configured the row set. In the next lesson, you'll configure the column set of the report.

Form Used

In this lesson, you have used the following form:

Row Sets (CS206010)

## Lesson 9: Configuring the Column Set

In this lesson, you will configure the column set for the gross sales report sales report, which shows the sales amounts broken down by regions and service types. The columns will correspond to different services, so you need to configure the column set with a column for each service.

### Process Overview

To configure the ARM report column set, you use [Column Sets](#) (CS206020) form.

### Step 1: Preparing the System

Do the following:

- Launch the Acumatica ERP website, and sign in as a sales manager by using the *admin* login and the 123 password.

### Step 2: Configuring the Column Set

To configure the column set, do the following:

1. Navigate to the [Column Sets](#) (CS206020) form and in the **Code** box, select *MYGS*.
2. In the upper table, configure the report header as follows:
  - a. To present the company name, in the first row, do the following:
    - a. In the **A** column, select the cell and click the magnifier icon to open the formula editor.
    - b. In the bottom area of the formula editor (item 1 in the screenshot below), enter `=Report.GetDefUI('RowCompanyBAccount.AcctName')`.  
  
GetDefUI(object field) is an application function you can use to get the value of the object field. Based on the value you entered, the expression returns the company name.
    - c. In the **Style** area (item 2 in the screenshot below), select **14** as the **Font Size**, and select the **Bold** check box.
    - d. Click **OK** to apply your changes to the cell.

The screenshot displays the formula editor interface. On the left, a tree view shows categories like Globals, Parameters, Operators, and Functions. The main area contains the formula `=Report.GetDefUI('RowCompanyBAccount.AcctName')`, which is highlighted with an orange box and labeled with a red '1'. To the right, the 'Style' panel is open, showing settings for Text Align (Not Set), Color, Backgr. Color, Font, and Font Size (14 Pixel). The 'Bold' checkbox is checked, and the 'Strikeout' and 'Underline' checkboxes are unchecked. This panel is also highlighted with an orange box and labeled with a red '2'. At the bottom, there is a text box with a hint: 'Use /\* commented line \*/ to comment the text in the formula.', and three buttons: VALIDATE, OK, and CANCEL.

**Figure: Specifying the value and the style of a cell of the report header**

- b. To show the report name, add the second row. In the **A** column, enter `= 'Gross Sales by Region and Service'`, select **14** as **Font Size**, and select the **Bold** check box.
- c. To show the selected period range, add the third row. In the **A** column, select the **Bold** check box, and enter the following expression.

```
=Format('For the period of {0: MMMM d, yyyy} to {1: MMMM d, yyyy}',
    Report.GetPeriodStartDate(@StartPeriod),
    Report.GetPeriodEndDate(@EndPeriod))
```

The `GetPeriodStartDate(period)` application function obtains the start date of the specified period. Similarly, the `GetPeriodEndDate(period)` function obtains the end date of the period.

The `@StartPeriod` parameter returns the financial period that a user selected as the value of the **Start Financial Period** parameter on the report form. The `@EndPeriod` parameter returns the financial period that a user selected as the value of the **End Financial Period** parameter on the report form.

The `Format(string, argument(s))` function replaces the format item in a specified formatting string with the text equivalent of the arguments.

In the expression you have entered, the formatting string is `'For the period of {0: MMMM d, yyyy} to {1: MMMM d, yyyy}'`, the first argument is `Report.GetPeriodStartDate(@StartPeriod)`, and the second argument is `Report.GetPeriodEndDate(@EndPeriod)`. To paste an argument to the string, you should use the following syntax: `{argument number: formatting rules}`. The numbering of the arguments starts with 0. Thus, the `{0: MMMM d, yyyy}` piece of the string will be replaced with the first argument, and the `{1: MMMM d, yyyy}` piece of the string will be replaced with the second argument. `MMMM d, yyyy` represents the formatting rules to be applied to the argument, where `MMMM` is the full name of the month, `d` is the day of the month (from 1 through 31), and `yyyy` is the year as a four-digit number. For more information on formatting date values, see the documentation about custom date and time format strings in .NET Framework.

- d. To separate the report header and the column headers with an empty line, add the fourth row, and specify **10** as its **Height**.
  - e. For the column headers, add the fifth line. In the **A** column, select **12** as the **Font Size**, and select the **Bold** check box.
  - f. To add a line that separates the column headers from the report data, add the sixth line, and specify **1** as its **Height**. In the **A** column, select *Black* as **Backgr. Color**.
3. In the lower table, configure the report columns as follows:
    - a. To present descriptions of the rows of the row set, in the **A** column, specify the following attributes:
      - **Type:** *Descr*  
You can use columns of the *Descr* type to print descriptions of rows specified in the row set.
      - **Width:** 300
      - **Extra Space:** 10  
You can specify indentation for the column by using this attribute.
      - **Suppress Line:** Selected  
Based on this selection, the report rows of the line type won't be printed in this column.

- **Printing Group:** 1

Based on the specified **Printing Group**, the 0220 row whose **Column Group** attribute has the same value will be printed in this column.

- b. To show sales by service, add four columns from **B** to **E**—one column for each service—with the attributes shown in the following table.

Attributes	B	C	D	E
Type	GL	GL	GL	GL
Format	#,##0.00	#,##0.00	#,##0.00	#,##0.00
Width	110	110	110	110
Printing Group	1	1	1	1
Data Source > Start Sub.	???-CU-??	???-TR-??	???-SU-??	???-CO-??
Data Source > Amount Type	Turnover	Turnover	Turnover	Turnover

The second segment of each subaccount is the revenue source—*CU* is customization, *TR* is training, *SU* is support, and *CO* is consulting. By using appropriate masks in the data source of the columns, you filter sales by type of service.

- c. To show a total by region, add a new column, which will be **F**, with the following attributes:

- **Type:** *GL*
- **Format:** #,##0.00
- **Width:** 130
- **Style > Bold:** Selected
- **Data Source > Amount Type:** *Turnover*

You have specified no mask in the data source. Thus, this amount is a total amount of all the services, which is retrieved from the general ledger.

You have also specified no value for the **Printing Group** attribute. So the 0220 row of the row set won't be printed in this column.



Alternatively, you could calculate this total by selecting the *Calc* type for the column and specifying one of the following expressions:


- =SUM('B', 'E')
- =B+C+D+E

- d. To calculate the percentage as sales by region relative to total sales for each report row, add a column, which will be **G**, with the following attributes:

- **Type:** *Calc*
- **Value:** =F/Value(@BaseRowCode, 'F')
- **Format:** #,##0.00%
- **Width:** 140

4. To configure the column headers, in the upper table, do the following:

- In the fifth row, enter the following values for the columns:
  - **A:** =Region'

- **B:** ='Customization'
  - **C:** ='Training'
  - **D:** ='Support'
  - **E:** ='Consulting'
  - **F:** ='Total by Region'
  - **G:** ='Region % of Sales'
- In the fifth row, specify the following style settings for the **B** column:
    - **Text Align:** *Right*
    - **Font Size:** *12*
    - **Bold:** Selected
  - For the fifth row, copy the style from the **B** column and paste the style to the **C, D, E, F,** and **G** columns.
  - For the sixth row, copy the style from the **A** column and paste the style to the **B, C, D, E, F,** and **G** columns.
- 5.** In the upper table, finish configuring the report header. Do the following:
- a.** To show the name of the user who executed the report, in the first row, enter the following value in the **G** column: ='User: ' + Report.GetDefUI('AccessInfo.DisplayName').  
 You can use the fields of the AccessInfo class to get information as follows:
    - AccessInfo.DisplayName: The user login
    - AccessInfo.CompanyName: The company name
    - AccessInfo.BusinessDate: The Acumatica ERP business date
    - AccessInfo.BranchID: The branch identifier
  - b.** To show the printing date, in the second row, enter the following value in the **G** column: =Today().  
 Today() is a date and time function that returns the current date according to the system date on the local computer. Alternatively, you can use the @Today predefined parameter to get the same result.  
 If you also want to print the time, use the Now() date and time function. The Now() and Today() functions return the date and time in the system time zone of the user's computer. You can also use the NowUTC() and TodayUTC() functions to get the UTC date and time without offset.  
 Instead of the current date, you can present the Acumatica ERP business date by using the GetDefUI() function as follows: =Report.GetDefUI('AccessInfo.BusinessDate').
- 6.** On the form toolbar, click **Save**. The resulting column set configuration is shown in the screenshot below.

Software Inc ▾ Column Sets



← SAVE &amp; CLOSE COPY COLUMN SET MOVE

* Code:	MYGS	* Type:	GL
* Description:	Sales by Service		

							COPY STYLE	PASTE STYLE	
Height	Printing Group	A	B	C	D	E	F	G	
16		=Report.GetDefUI('...						=User: ' + Report.G...	
16		='Gross Sales by R...						=Today()	
16		=Format('For the pe...							
10									
16		=Region'	=Customization'	=Training'	=Support'	=Consulting'	=Total by Region'	=Region % of Sales'	
1									

					COPY STYLE	PASTE STYLE	
Attributes	A	B	C	D	E	F	G
Description							
Type	Descr	GL	GL	GL	GL	GL	Calc
Value							=F/Value(@BaseRo...
Rounding	No Rounding	No Rounding	No Rounding	No Rounding	No Rounding	No Rounding	No Rounding
Format		###0.00	###0.00	###0.00	###0.00	###0.00	###0.00%
Width	300	110	110	110	110	130	140
Auto Height	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra Space	10	0	0	0	0	0	0
Suppress Empty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hide Zero	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppress Line	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printing Group	1	1	1	1	1		
Unit Group							
Printing Control	Print	Print	Print	Print	Print	Print	Print
Visible Formula							
Page Break	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Style							Bold
Data Source		???CU??	???TR??	???SU??	???CO??	Turnover	

**Figure: Column set configuration**

7. Run the Gross Sales by Region and Service report (Finance > General Ledger > Reports > Financial Statements) with the following parameters to review the report (see the screenshot below):

- **Ledger:** *ACTUALSOFT*
- **Start Financial Period:** *01-2015*
- **End Financial Period:** *03-2015*

You can click the amount and review transactions of any cell, the total column, and the total row.

Software Inc ▾ Gross Sales by Region and Service ★




 |< < > >| PRINT SEND EXPORT ▾

Type your query

<b>Software Inc</b> <b>Gross Sales by Region and Service</b> For the period of January 1, 2015 to March 31, 2015						User: admin, admin 11/7/2017 12:00:00 AM	
Region	Customization	Training	Support	Consulting	Total by Region	Region % of Sales	
California	2,000.00	52,220.00			54,220.00	32.03%	
Nevada		22,780.00		21,910.00	44,690.00	26.40%	
Florida			1,000.00	36,710.00	37,710.00	22.27%	
District of Columbia			800.00	25,680.00	26,480.00	15.64%	
Louisiana	5,500.00		700.00		6,200.00	3.66%	
Total by Service	7,500.00	75,000.00	2,500.00	84,300.00	169,300.00		
Service % of Sales	4.43%	44.30%	1.48%	49.79%			

**Figure: The Gross Sales by Region and Service report**

You have successfully configured the column set and created the report.

**Form Used**

In this lesson, you have used the following form:

[Column Sets](#) (CS206020)