evisions

argos

Enterprise Reporting Solution

Report Writer Guide

Document version 1.0

Last Updated 8/7/2013

Trademark, Publishing Statement, and Copyright Notice

© 2013 Evisions, Inc. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. No part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Evisions, Inc.

The information contained herein is subject to change without notice and is not warranted to be error-free. Product features referenced herein for a period of time may not match product contents. Evisions, Inc. does not warrant that the functions contained in the software will meet your requirements or that the operation of the software will be uninterrupted or error free. Evisions, Inc. reserves the right to make changes and/or improvements in the software without notice at any time.

This software and documentation may provide access to or information on content, products, and services from third parties. Evisions, Inc. and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Evisions, Inc. and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services. Evisions, Inc. does not endorse the content or developer of any products or web sites mentioned.

All information in this guide is designed for instructional purposes only. Evisions, Inc. makes no guarantees regarding the accuracy or performance of any techniques used in this guide. Software configurations and environments may vary, and some techniques used in this guide may not operate efficiently under all configurations. This guide may contain examples of various technologies or products, which are the sole property and responsibility of their creators.

Trademarks are the property of the respective owners for any products mentioned herein.

Table of Contents

Introduction **7**

Evisions Support Site 7

In Product Help 7

Security 7

Sample Database 8

Getting Started **9**

Starting Argos 9

Connect to the Server 9

Start Argos 9

Change Password 9

Navigation **10**

Action Area 10

Navigation Area 10

Explorer view 10

Shortcuts View 11

DataBlocks **12**

Dashboards **13**

Default Dashboard 13

Running a Dashboard 14

Reports **15**

CSV Report 15

Banded Report 15

Extract Report 16

Creating a Dashboard **17**

Refresh Tab 18

API Tab 18

Saved States Tab 19

Executing a Dashboard 19

Creating a CSV Report **20**

Report Name and Description 20

Choose the Database Fields to Use 21

Execute the Report 22

Add Additional Fields Using Expressions 22

Filter and Sort the Data 26

Filters 27

Sort 28

Creating a Basic Banded Report **29**
Basic Banded Report 30
Select the Report Type 30
Including the Database Fields in the Report 31
Adding Bands 32
Editing the Report Design 33
Resizing and Aligning Fields 35
Resizing Objects 35
Aligning Fields 36
Selecting and Aligning Multiple Fields 36
Enhancing the Report 37
Sort Employees by Department Name 37
Add Date, Page Number, and Page Count 38
Creating the Group Bands 42
Moving Dept. Name to Group Header Band 45
Add Child Band Following the Group Header Band 46
Add Employee Count and Salary Sum 47
Create Sum of Salaries Expression 48
Adding the Summary Band 51

Formatting Numeric Output **53**
Selecting/Creating the Format Mask 53

Group By Expression **56**
Create the Basic Report 57
Create a Band Group 57
Create the Expression 58
Place Expression into Group Header Band 59

Creating Mailing Labels **61**
Select the Mailing Labels Report Type 61
Select the Fields to Use 61
Edit the Fields 62
Suppress Printing of Empty Lines 64

Printing Groups on a New Page and Resetting the Page Count **66**
Force Group Header on new page 67
Reset the COUNTER expression 68

Conditional Printing **69**

Starting with a Blank Report Type **72**
Create a New Report 72
Adding Bands 72

Using Sub-Detail Bands **73**
The Report Contents 73
Create the Title and Detail Bands 74
Create the datasets 75
Create the Four Sub-Detail Bands 79
Move fields into the Sub-Detail Bands 79
Obtaining tables from an external database 81

Adding Parameter Input to the Report **82**

Link with Band **84**
Lonely Group Header Band 84
Lonely Group Footer Band 84

Creating a Chart **87**
Create the Title, Column Header, and Detail Bands 87
Add a Summary Band 88
Add a Chart Object 88
Follow the Chart Wizard 88

Creating an Extract Report **91**
Introduction 91
Sections in the Extract Report 91
The Report Specification 92
Report Creation Steps 94
Create a New Report 94
The Extract Report Editor 96
Configure the Report 97
Add Datasets 98
Add the section for the T Record Type (Title Section) 100
Add the section 100
Add fields to the section 101
Save your work and test the report 104
Add the section for the A Record Type (Detail Section) 105
Add the section 105
Add the fields 105
Add the section for the B Record Type (Detail Section) 107
Add the section and fields 107
Save your work and test the report 108
Add the Sections for the C Record Type (Header and Footer Sections) 108
Add a Header Section 108
Add a Footer Section 109
Add the fields to the C Record 109
Add the Section for the F Record Type (Summary Section) 111
Add the fields 111

Save your work and test the report ... 111
Execute the Report ... 112
The Report in Delimited Report Format ... 112
The Report in XML Report Format ... 113

The API Interface ... 114

Introduction ... 114
Step 1: MAPS API HTTP Referrer ... 114
Step 2: Enabling API on a Report ... 115
Step 3: Execute the Report using the Report Unique Identifier ... 116
API Automatic Mode ... 116
Sample Get ... 116
Sample POST ... 116
GET/POST Parameters ... 116
API Interactive Mode ... 117
Sample Interactive ... 117
Examples ... 117
MAPRAPI (MAP Report API) ... 118

Argos Resources ... 119

Support Site ... 119
CO-OP User Community ... 119
Important Links ... 120

Getting Help ... 121

Introduction

Argos is a powerful reporting solution designed for everyone from novice users to the most seasoned technical experts. For ease of use, Argos users are divided into three distinct types:

DataBlock Designers: Argos "power users" who create DataBlocks.

Report Writers: Intermediate users who use DataBlocks to build a variety of reports.

Report Viewers: Casual users who are able to run reports, then save and distribute the output in a variety of useful formats.

Each user type has a corresponding guide associated with it. This guide is intended for Report Writers. Regardless of your level of expertise, Evisions recommends that you become familiar with this guide before moving on to more advanced features.

A prerequisite to reading this guide is reading the Argos Report Viewers Guide. This guide describes how to log into Argos, how to navigate through the Argos User Interface, and how to execute reports. Therefore, this basic information need not be repeated in this guide.

Once you have completed this guide, you should be able to:

- Create a Dashboard
- Design a Comma Separated Value report
- Design a Banded report
- Design an Extract report

This guide is not intended to be a comprehensive reference guide that covers each and every option within Argos. The intent is to provide a sufficient number of examples to aid a new Argos user to get started quickly, with the In-Product Help used as a reference for each feature within Argos.

Argos

Evisions solution for building and deploying reports and dashboards across the enterprise.

DataBlock

DataBlocks are the foundation of Argos. They contain user input forms and queries to retrieve information from one or more data sources. Reports in Argos have a DataBlock as their "parent" and each DataBlock can contain multiple reports.

Explorer Tree

The Argos Explorer Tree is a way to view and navigate the folders, DataBlocks, and reports in Argos.

Support icon on Argos toolbar

Evisions Support Site

The easiest way to get to the Evisions support site is to access it through Argos. Under the Help menu is a link to the Support page. A link to the Support page also exists on the Argos toolbar. All the technical documentation available for download is found under the Support page.

Evisions can also provide more in-depth and even customized training via our Professional Services department. Visit the Consulting Services page on the Evisions web site at

http://www.evisions.com/Services/Overview.aspx

In Product Help

In addition to the Support site is In-Product Help. You can get to In-Product Help a few different ways. There is a link under the Help menu to Argos Help. There is a button on the toolbar, and you can also use your F1 key. Most screens within Argos have a link to Argos Help as well.

Security

Access to reports is managed by DataBlock Designers and Administrators by permitting or denying access to Argos objects. The only level of security available to report writers is a private report. Making a report private is an action reserved to the user types that can edit a

report. So this means a few things. You cannot create a private report for someone else. And only report writers and above can create private reports. Report Viewers, since they cannot create or modify reports, cannot make a report private.

The next security concept is for your information only. You will not be able to implement it, since it is implemented within the DataBlock. The DataBlock Designer has the ability to restrict access to a piece of data based on who runs the report.

Sample Database

The examples in this guide are based on an MS Access database that was created to assist you with becoming familiar with Argos. The database can be downloaded from the Evisions web site at:

http://www.evisions.com/Default.aspx?tabid=67&id=745.

The name of the file is "Sample_Database_and_DataBlocks.zip" and after unzipping the file name of the database will be "Sample.accdb". Five DataBlocks are included in the zip file that were used to create Banded Reports in examples 1, 3, 4, 5, 6, 8, 9, and 11 in this guide. The DataBlocks are named as follows:

Example 1_3_4_9 - basic banded 20100526.argosexport (used by examples 1, 3, 4, and 9)

Example 5 – resetexpr 20100526.argosexport

Example 6 – conditional print 20100526.argosexport

Example 8 – sub-detail 20100526.argosexport

Example 11 – chart 20100526.argosexport

Example 12 – Extract Report.20100929.argosexport

Each DataBlock contains the reports that were created within each example.

You can use the database and DataBlocks to follow along with the examples in this guide. If you choose to do so, import the five DataBlocks into Argos and follow the examples to create the reports.

A description of the database contents (.pdf file) can be downloaded from the Evisions web site and is named "Argos User Guides Sample Database Description" and is located at http://www.evisions.com/Default.aspx?tabid=67&id=746. The document also describes how to create the ADO connection to the sample database.

Contact your MAPS Administrator to install the database and create the ADO connection.

Importing a DataBlock

To import a DataBlock, select a folder within the Explorer tree where you want the DataBlock to reside under, right-click and select Import. You can then enter the location and file name of the DataBlock to import. You can also find the Import option under the File Menu in the Argos Main Interface.

Getting Started

Starting Argos

Argos is Windows PC software which is web-enabled, meaning it is accessible from your web browser via an Internet connection. Before launching Argos, you may need to disable any pop-up blockers running on your computer. To disable the pop-up blocker in Microsoft (MS) Internet Explorer, select Tools, Pop-up Blocker, Turn off Pop-up Blocker. You should be able to re-enable the pop-up blocker once you have downloaded the software.

Connect to the Server

Type the web address provided by your system administrator into the address bar of your browser to access the Multiple Application Platform Server (MAPS) launch page. This webpage provides a central access point for all MAPS applications, including Argos, FormFusion, IntelleCheck, Datamasque and the MAP Server Configuration Tool.

Start Argos

Click **Argos** from the list of Evisions applications.

Click the **Argos** button to launch Argos.

Enter your user name and password (obtained from your system administrator) in the Login box. The **Remember this user** and **Remember the password for this user** are check boxes (available as determined by the MAPS Administrator) that are optional and should not be used on shared computers. Check them as desired.

Click the Login button.

Change Password

To change your password, select Tools from the menu at the top of the screen and then select Change Password. You must know your current password in order to change it. The password strength indicator will help you determine if your password is secure enough. It is advisable to contact your system administrator before changing your password to verify that the change will not produce any undesirable results.

Browser support

Argos is designed to operate using MS Internet Explorer, Mozilla Firefox, Google Chrome, and Apple Safari browsers.

Java

Launching applications is done via Java. If Java is not installed on your PC, you will be prompted to install it.

Multiple Application Platform Server

MAPS is the server that delivers the Argos software to users. Once Argos is installed, users connect to MAPS which fetches data and performs other tasks for them.

FormFusion

Evisions' solution for enhancing documents and managing distribution via email, imaging software, print, etc. Users can rearrange and add data and images, change the layout, format fonts, etc.

IntelleCheck

Evisions solution for payment processing – Accounts Payable, payroll and refund checks, Direct Deposit Advices and electronic refunds.

DataMasque

Evisions solution for removing Personally Identifiable Information from any SQL-compliant database.

Password Strategies

The following strategies will help you make a more secure password.

- Increase password length.
- Include letters and numbers.
- Use both upper and lower case.
- Use special characters [,{!?, etc.

Navigation

Argos has been designed with an intelligent interface that knows your user type and configures menus and buttons to show only those actions permitted.

Menus across the top allow you to take simple actions such as logging in to the product, finding items in the Explorer, customizing your Argos toolbars and changing your password. You can also access the integrated Help system or visit the Evisions web site that has many helpful resources available. The most common actions are replicated as buttons just beneath the menus.

At the very bottom of the screen, the status bar tells you what server you are logged in to, your username and user type.

Between the top and bottom toolbars is the Argos work area. The work area is broken into two halves. The left half contains the Navigation area while the right half contains the Action area.

Action Area

The right hand side of the screen will have buttons for any actions you can take on a selected object. The buttons that show will depend on the type of object you select in the Navigation area.

Navigation Area

This area contains the objects that you can perform actions on. There are three different views you can use for the Navigation area by clicking the desired tab (Explorer or Shortcuts). Each of these views is described below.

Explorer view

The Explorer is the default view for the Navigation area, in which a simple menu of available folders and objects is displayed. Argos objects that can be found in the Explorer include:

Folders – Contains objects, including other folders

DataBlocks – The "parent" object for one or more reports

Dashboards - Display-only reports for quick reference.

CSV Report – A comma-separated values report

Banded Report – A fully-formatted report

Extract Report - A text report that meets pre-defined specifications

Schedule – Reports may be scheduled to run automatically

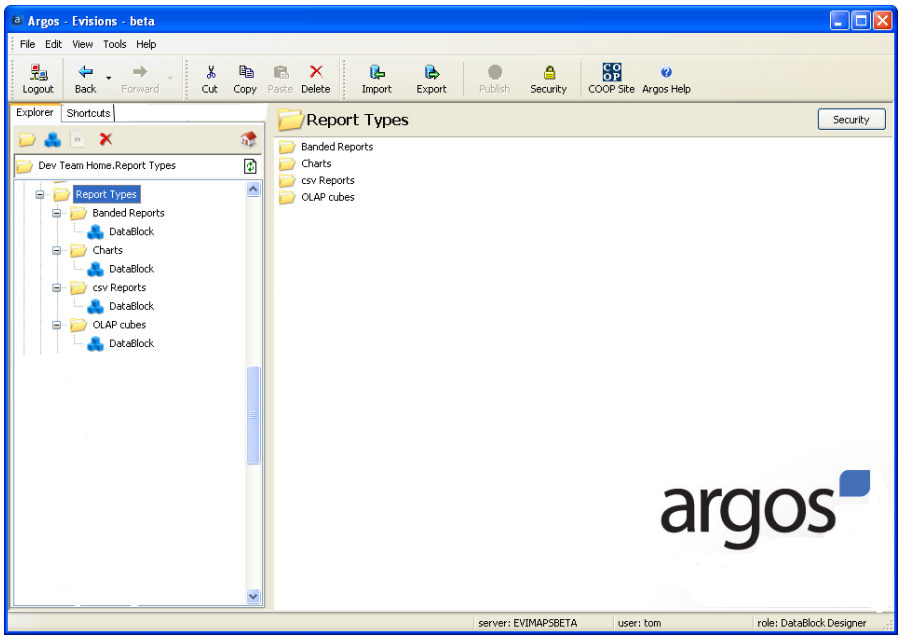
Some objects can be flagged as private. Private objects will not show up in the Explorer for users other than the creator and the administrator. These objects will have the "private eye" icon like the sample private Banded report icon on the list to the right.

Within the Explorer tree, reports always reside beneath a DataBlock parent. A DataBlock can have many "child" reports. Any object that has child objects will have a "+" next to it. Simply click the "+" to expand the object to view its children.

Icon	Explorer Objects
	Folder
	DataBlock
	CSV Report
	Banded Report
	Extract Reports (Delimited, Fixed Width, XML)
	Private Report (Banded)
	System created Dashboard
	User created Dashboard
	Schedule

Explorer objects

Report Viewers do not have privileges to add, modify, or delete objects within the Explorer tree.

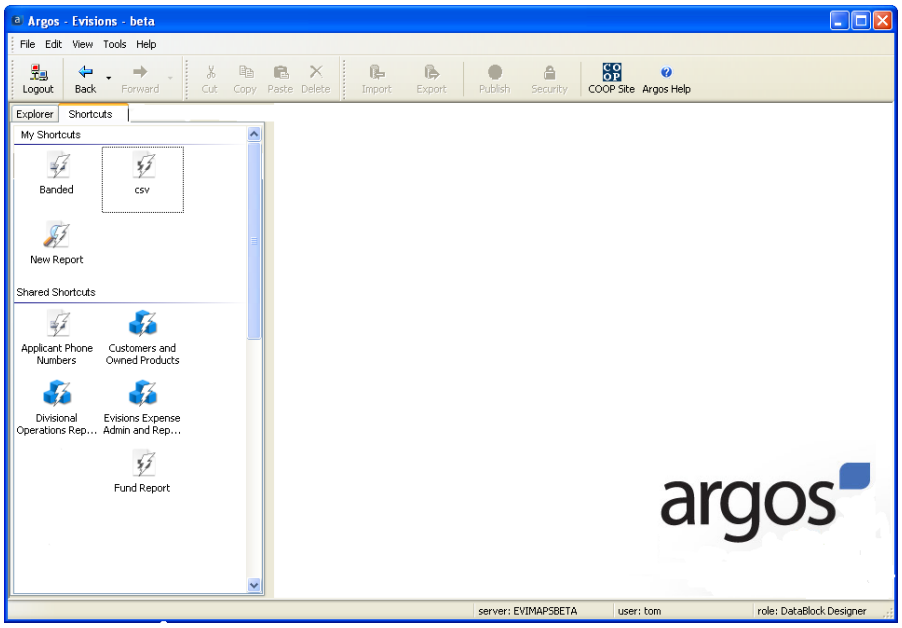


Explorer Navigation

If you use a DataBlock or report frequently, you can right-click on it and choose "Add to Shortcuts". Adding objects to the Shortcuts makes it easier to find what you need.

Shortcuts View

This view can be very convenient as it shows only your available shortcuts. You can even rename a shortcut to something other than the original name. To find the original object in the Explorer view, right-click a shortcut and choose "Locate" (see figure on the right). Deleting or renaming a shortcut has no effect on the original object.



Are my reports secure?

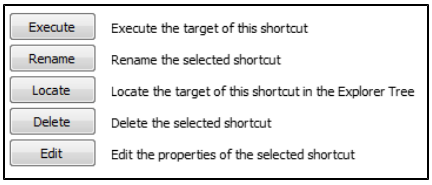
You may be wondering about the security of reports in Argos. Each object can be assigned to groups or individuals as needed. Unauthorized users would not be able to see objects they lack permissions for. It is even possible to have security all the way down to individual fields in a CSV or Banded report.

Is my data secure?

All data transmitted from the server to Argos is "point-to-point" encrypted, meaning that anyone other than the intended user would see only gibberish. Once a report is created, care should be taken with resulting file(s) to ensure data security.

Shortcut

A Shortcut is a reference to a DataBlock or Report. It can be shared (so all users can see it) or private (My Shortcuts) so only the creator can see it. Click the Shortcuts tab to switch to the Shortcuts view.



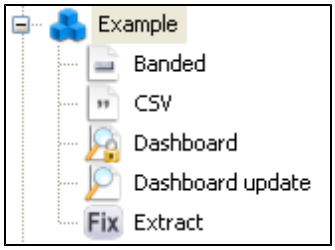
Options for Shortcuts

DataBlocks

Although Report Viewers and Report Writers do not create DataBlocks, an understanding of the components of the DataBlock can be helpful in understanding the relationship between DataBlocks and the various report types.

The DataBlock is the foundation from which all reports are created and contains **Forms** and **Queries**. Only users with DataBlock Designer privileges can create DataBlocks.

Queries obtain data from a database. The results of a query may be displayed on-screen on a dashboard, or output to a CSV, banded, or extract report. Dashboards and reports are "child" objects of the DataBlock in the Argos Explorer tree.



Reports associated with a DataBlock

Formshold the information that you see on a dashboard when you run it. Dashboards are used for two purposes:

- To obtain input selections from the user executing the report. The input selections can be passed to the queries to limit the results.
- To display results on the screen.

A dashboard can have multiple forms, and may provide a way of switching between forms.

When you run a report, it launches the default dashboard associated with that DataBlock. The dashboard allows you to enter any parameters that are needed to run the report. These parameters are then passed to the queries that retrieve the data. Depending on how the dashboard is configured, you may see the query results on the screen, or you may need to run the report using the report options at the top of the dashboard to get your results.

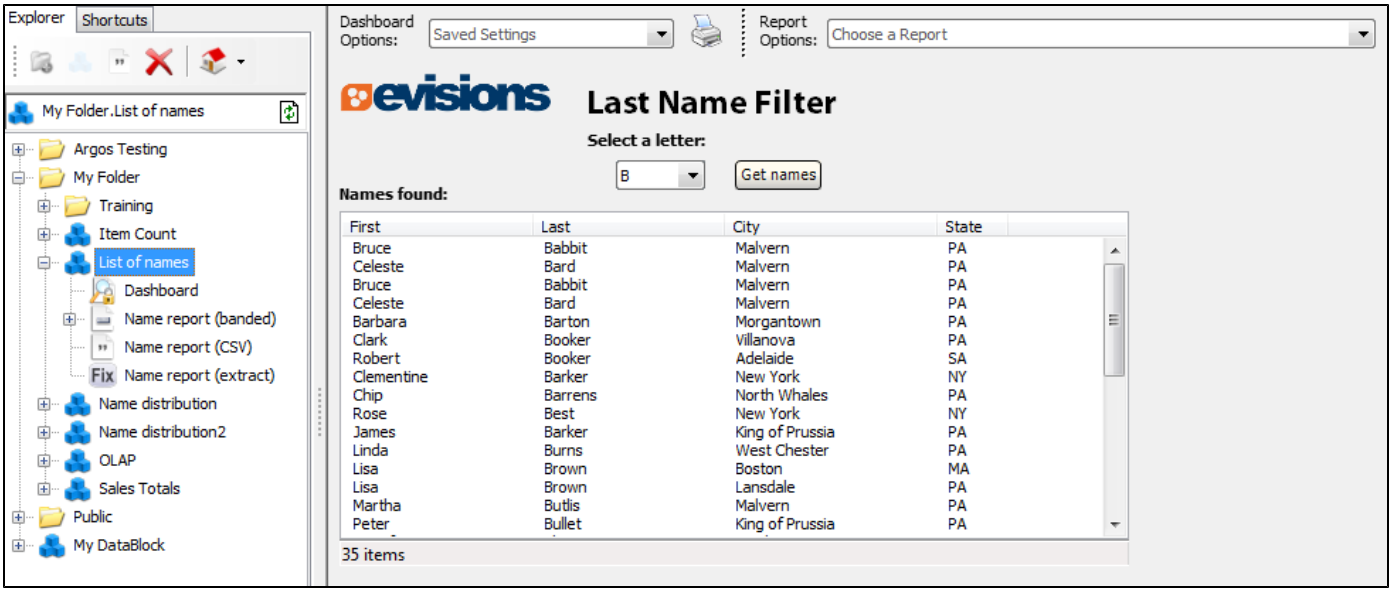
All reports underneath a DataBlock (CSV, banded, or extract) use the same queries in that DataBlock. The difference between the report types is in how the data (query results) are displayed.

Dashboards

All DataBlocks have at least one **dashboard** which is created along with the DataBlock. The dashboard is used to gather any input parameters that are needed when you run a report. Dashboards can also display results on the screen, if the DataBlock designer configured it to do so.

Dashboards are a good choice when you need to access information quickly, but do not need to save results as you might when running a report. A good example is a situation where you want to view sales results for the organization. The dashboard could display a sales summary by region for each quarter. It may have additional "drill down" functionality on the dashboard, such as the monthly sales results for each salesperson. The results display on the screen immediately.

In order to save and share data with other users, you can run a report to generate a PDF of the same data, based on the information and options entered into the dashboard. In this case, you can run a banded report from the dashboard, and then send this PDF to the desired recipient.

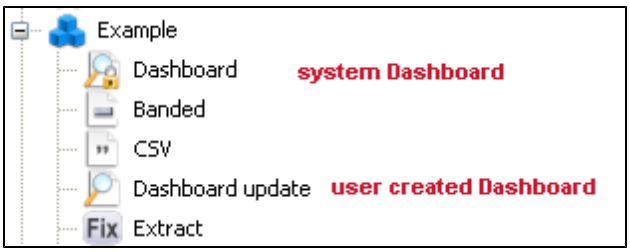


Running the default dashboard for the "List of Names" DataBlock

In the screenshot above, the dashboard on the right executes when launching the "List of names" DataBlock. This dashboard is the default (system) dashboard for this DataBlock. You can run any of the reports associated with this DataBlock by selecting the appropriate report in the **Report Options** drop down at the top of the dashboard. The report will include names beginning with the same letter you selected on the dashboard.

Default Dashboard

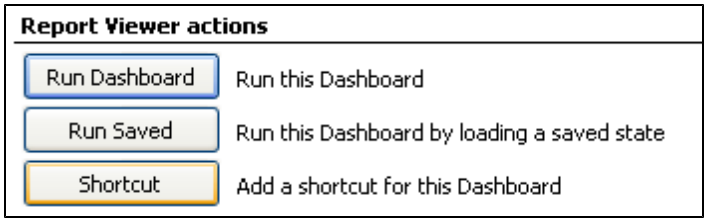
When a DataBlock is created, Argos also creates a default (system) dashboard, which is shown with a small padlock. The system dashboard is named "Dashboard" and cannot be renamed or deleted.



Running a Dashboard

You may run a dashboard by any of the following methods:

1. Click on the **Run Dashboard** button when the dashboard is selected.



2. Right-click on the dashboard icon and select **Run Dashboard** from the menu.
3. Double-click on the dashboard.
4. Right-click on the DataBlock and select **Run Dashboard** from the menu to run the default dashboard for that DataBlock.

Reports

Argos reports exist underneath a DataBlock, and use data from that DataBlock and/or its dashboard to generate the report. There are three different types of Argos reports: CSV, banded, and extract.

CSV Report

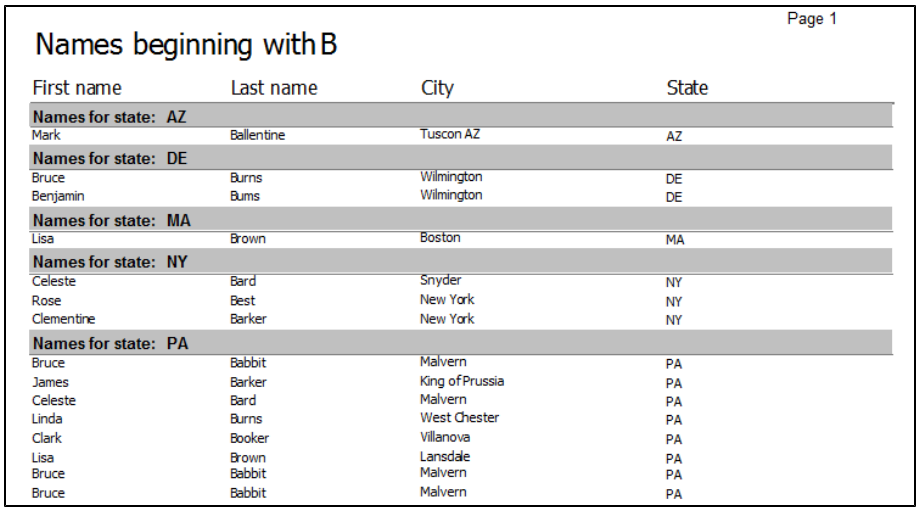
A “Comma Separated Value” or “CSV” report is the simplest of the Argos report types. A comma delimited file is a text file that separates the desired columns with a comma or other specified delimiter. This type of report is especially useful when obtaining data for manipulation in spreadsheet software such as Microsoft Excel. It is also useful when creating files used by third party applications.

```
"SPRIDEN_FIRST_NAME","SPRIDEN_LAST_NAME","SPRADDR_CITY","SPRADDR_STAT_CODE"
Bruce,Babbit,Malvern,PA
Celeste,Bard,Malvern,PA
Bruce,Babbit,Malvern,PA
Celeste,Bard,Malvern,PA
Barbara,Barton,Morgantown,PA
Clark,Booker,Villanova,PA
Robert,Booker,Adelaide,SA
Clementine,Barker,"New York",NY
Chip,Barrens,"North Whales",PA
Rose,Best,"New York",NY
James,Barker,"King of Prussia",PA
```

Banded Report

Banded reports are fully-formatted PDF reports that give the report writer complete control over the location and appearance of the information in the report. The term "banded" comes from the fact that the report is organized into logical bands (groups) of data. For example, a "title" band may contain the title of the report, report date and logo. A "page header" band could hold the page number. Similarly, the report data is organized into "group" bands, "detail" bands, and other logical groupings.

Banded reports may also include custom fonts, rich text, charts, images, and other information. They can be used to create mailing labels, letters, and many other output formats that can be printed or emailed directly to recipients.



Page 1

Names beginning with B

First name	Last name	City	State
Names for state: AZ			
Mark	Ballentine	Tuscon AZ	AZ
Names for state: DE			
Bruce	Burns	Wilmington	DE
Benjamin	Bums	Wilmington	DE
Names for state: MA			
Lisa	Brown	Boston	MA
Names for state: NY			
Celeste	Bard	Snyder	NY
Rose	Best	New York	NY
Clementine	Barker	New York	NY
Names for state: PA			
Bruce	Babbit	Malvern	PA
James	Barker	King of Prussia	PA
Celeste	Bard	Malvern	PA
Linda	Burns	West Chester	PA
Clark	Booker	Villanova	PA
Lisa	Brown	Lansdale	PA
Bruce	Babbit	Malvern	PA
Bruce	Babbit	Malvern	PA

Dashboard

A "screen-only" view of the DataBlock form, which can be used to enter parameters and/or display information and results.

CSV Report

A “Comma Separated Value” file is generated by the report, which can then be viewed in spreadsheet software such as MS Excel.

CSV Report Delimiters

A “Comma Separated Value” file generally has fields separated by a comma. However, other characters can be used to distinguish the fields. Other common delimiters are:

- spaces
- tabs
- periods
- quotation marks

…but we still call them CSV files.

Banded Report

Argos’ fully formatted report.

Extract Report

Creates text reports that meet pre-defined specifications.

Extract Report

An Extract Report is designed to create output files that meet pre-defined specifications. This feature is especially useful for creating delimited output that is more complex than a simple comma-separated file (CSV), for creating a fixed-width file in which each field is precisely positioned on a given line, or for creating an XML file. This could include files that you might upload to a government agency, clearinghouse, or service bureau.

Extract Reports are somewhat similar in design to a banded report. They are comprised of several *sections*, which behave like the bands in a banded report. There are two important differences, however:

- Extract reports are not divided into "pages". They are designed to create an output file, not printed output.
- Extract reports can loop through multiple datasets. In contrast, a banded report can only process each record in a dataset once.

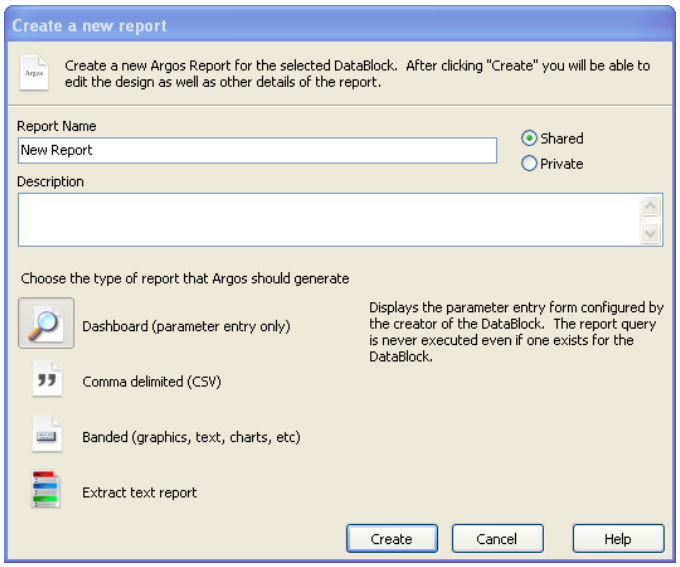
1	Mark	Ballentine	Tuscon AZ	AZ
2	Jennifer	Bloom	Washington	DC
3	Bruce	Burns	Wilmington	DE
4	Benjamin	Bums	Wilmington	DE
5	Lisa	Brown	Boston	MA
6	Christine	Bushar	Duluth	MN
7	Celeste	Bard	Snyder	NY
8	Rose	Best	New York	NY
9	Clementine	Barker	New York	NY
10	Bruce	Babbit	Malvern	PA
11	James	Barker	King of Prussia	PA
12	Celeste	Bard	Malvern	PA

Creating a Dashboard

If you highlight a DataBlock you can see the option to create a new report in the detail pane.

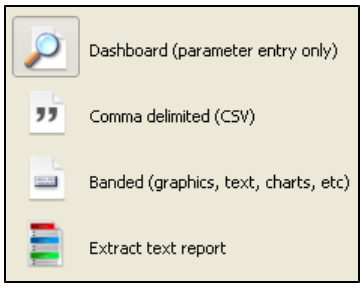
You can also right-click on the DataBlock and go to New Report. The "Create a New Report" dialog box appears. Give the report a name and a description if desired.

Next, choose what kind of report you want to create: Dashboard, CSV, Banded, or Extract. As you select each report a description of the report type is shown to the right. (Select Dashboard). If the DataBlock does not contain a report query, the CSV and banded reports are not accessible and will be greyed out.



Dashboard Report

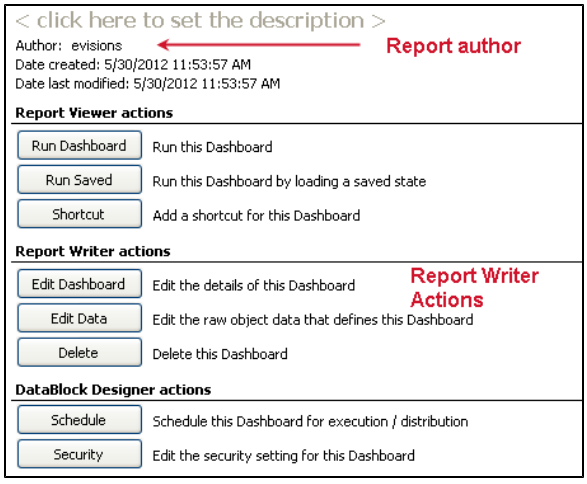
Displays results on the user's browser



Icons used to represent the report types

Click **Create**.

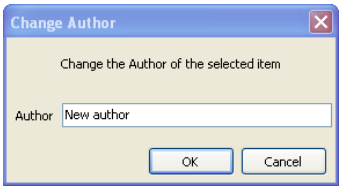
If you highlight the new report you will see 3 options in the detail pane. You can Edit the Report, Edit the Data, and Delete the Report. The Edit Data button is for XML experts who want to edit the underlying object XML.



Report Writer Actions

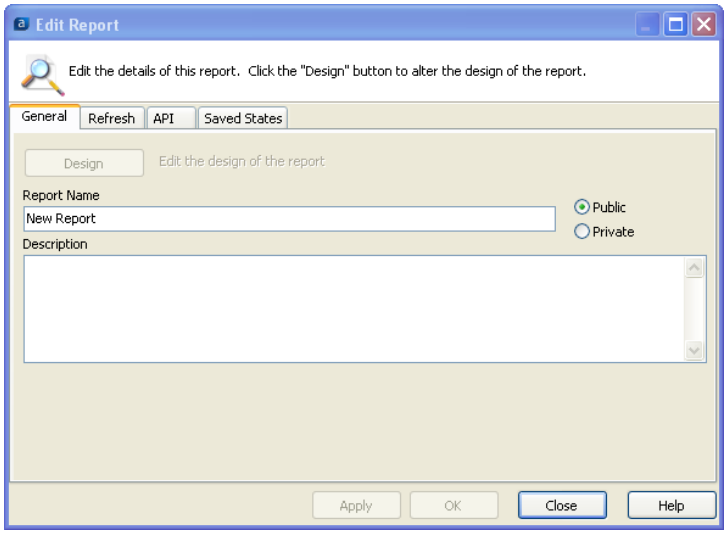
Edit the Author of the report

Note the Author of the report shown in the figure to the left. By default, Argos sets the Author to the user name of the person logged in. Click "Author" to change the Author of the report as shown below



Editing the author of the report

Dashboards are shortcuts to the form created by the DataBlock Designer, so there isn't much more you can do other than create it. If you click Edit Report you can edit the report. The Design button is grayed out and you don't have access to it. There are a few tabs: the Refresh, API, and Saved States.



Editing the details of the Dashboard Report

Refresh Tab

The Refresh tab allows you to refresh the variables within the DataBlock. This is mostly only useful for Dashboards.

API Tab

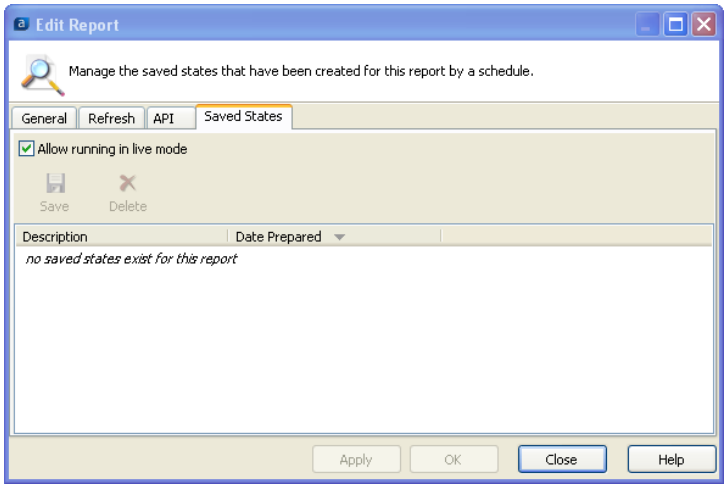
The API tab is part of the optional Advanced Reporting module. API stands for Application Programming Interface which allows a report to be called from a web page or portal, or even a third party application. Only Administrators can configure and access the API tab. Making a report API accessible is a very useful feature when you want people to have access to a report created by Argos, but you don't want to give them Argos access. All the different types of reports, Dashboard, CSV, Banded, and Extract can be called using the API. Making a report API accessible does have significant security implications, which is why it can only be done by an Administrator.

Saved States Tab

The last tab is the Saved States tab. A Saved State is a point in time snapshot of a Dashboard or an OLAP cube or chart. The data is saved as a file that can be viewed at any time. Saved States are configured via the scheduler by an Argos Administrator or a DataBlock Designer. As a Report Writer you can allow or disallow the running of the Dashboard by checking or un-checking this box.

You can also manage the Saved States files by deleting any that you don't want. The states shown are stored on the MAP Server, however you can also copy a Saved State onto a PC by clicking the 'Save' icon. You will then be able to supply the destination and file name of the Saved State.

The Report Viewer can choose whether to execute a state stored on the MAP Server or one stored on any PC. The Argos Report Viewers Guide provides an explanation of this.



The Saved States Tab

Creation and execution of Saved States is described in the Argos Report Viewer Guide.

Executing a Dashboard

After making the desired changes within any of the tabs described above, click OK to complete the creation of the report.

The Dashboard will now appear under the associated DataBlock and can be executed by selecting the appropriate action listed under Report Viewer Actions. Execution options are fully explained within the Argos Report Viewers Guide.

The created Dashboard

Creating a CSV Report

For this example, the Employees table within the sample database will be used. The table contains the following fields which are all used in the Report query.

Field name	Description
emp_id	Employee Number
last_name	Employee Last Name
first_name	Employee First Name
hire_date	Hire Date
salary	Salary
dept_id	Department ID
location_id	Location ID (a department can exist in several locations)
Street_Line1	1st line of address
Street_Line2	2nd line of address
Street_Line3	3rd line of address
city	City
state	State
zip	Zip Code

Field Names in Employee Table

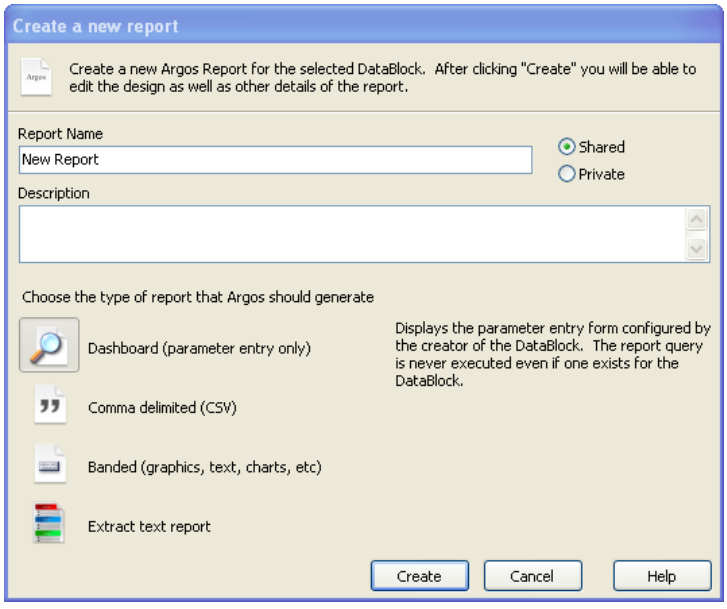
CSV Report

A "Comma Separated Value" file is generated by the report, which can be viewed in MS-Excel or other similar spreadsheet applications.

Report Name and Description

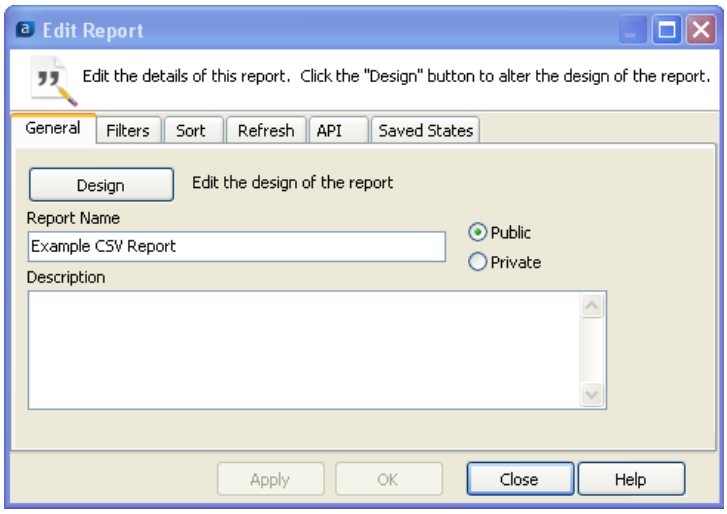
To create a CSV report you start the same way you did the Dashboard. Highlight the DataBlock and click on New Report.

Give it a name and a description, and click the "Comma delimited" icon.



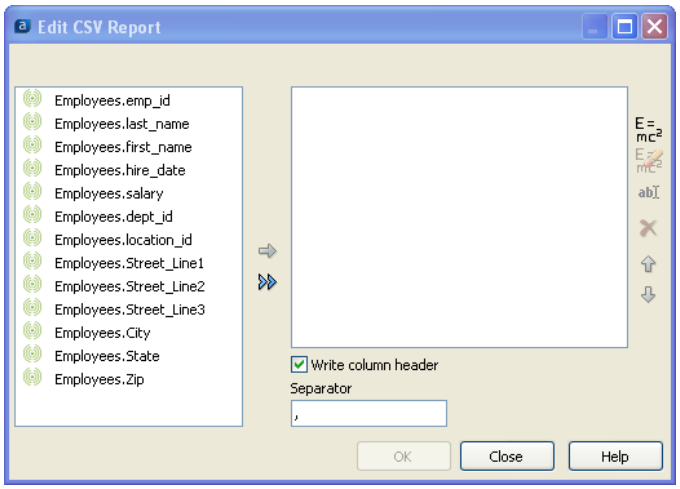
Creating a new CSV Report

Click Create, then the following dialog box will appear.



Editing the Report

Click the Design button which brings up the following dialog box:



Choosing the fields to appear within the report

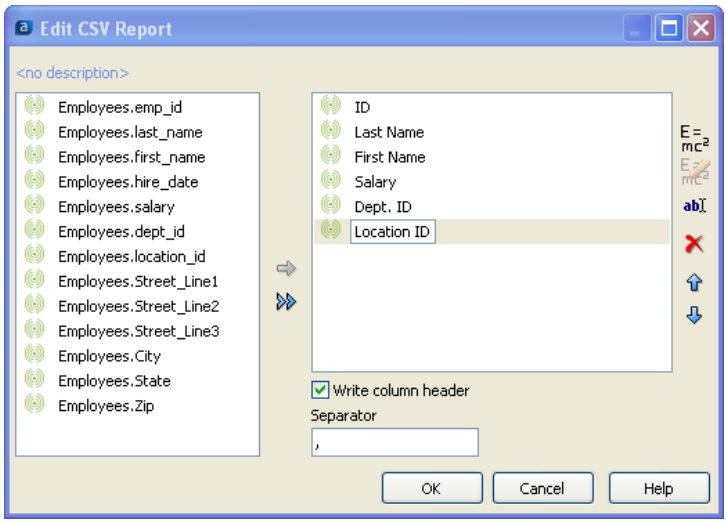
Choose the Database Fields to Use

This dialog box above allows you to specify which fields within the Report Query will appear in the report. For this example the emp_id, last_name, first_name, salary, dept_id, and location_id fields will be used. Double-click each field name to move the field to the window on the right as shown in the figure below. The fields within the window on the right will then appear in the report. You can also single-click each field name then click the right arrow to move the fields to the right.

You can change the name of each field to something more meaningful since this name will appear in the column header in the spreadsheet application. Right-click on each field or highlight the field and click '**ab**' to create an editable box where you can change the names as shown in the following figure:

After fields are moved to the window in the right you can:

Click the red **X** to delete a field from the report.



Changing the field names

Use the up/down arrows to move a field up or down.

Editing fields

To change the name of a field within the right hand window, click the "ab" item, then change the name of the field.

Right-clicking on any field provides all available editing features

Execute the Report

Click OK to complete the report design. You can now execute the report using the methods described within the Argos Report Viewers Guide. The figure below shows the resulting CSV file imported into Excel. Note that the column titles within the first row match the field names that were modified above.

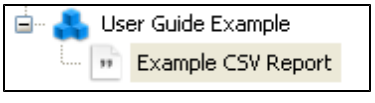
	A	B	C	D	E	F
1	ID	Last Name	First Name	Salary	Dept. ID	Location ID
2	102	Washington	Mark	80000	dep03	loc09
3	150	Brown	Bill	75000	dep01	loc01
4	155	Green	Harold	60000	dep02	loc01
5	25	Smith	John	50000	dep01	loc02
6	501	Orange	Herbert	40000	dep04	loc01
7	55	Strauss	Jane	55000	dep01	loc01
8	600	Morgan	Howard	50000	dep04	loc01
9	650	Jackson	Mary	50000	dep05	loc08

The CSV report within Excel

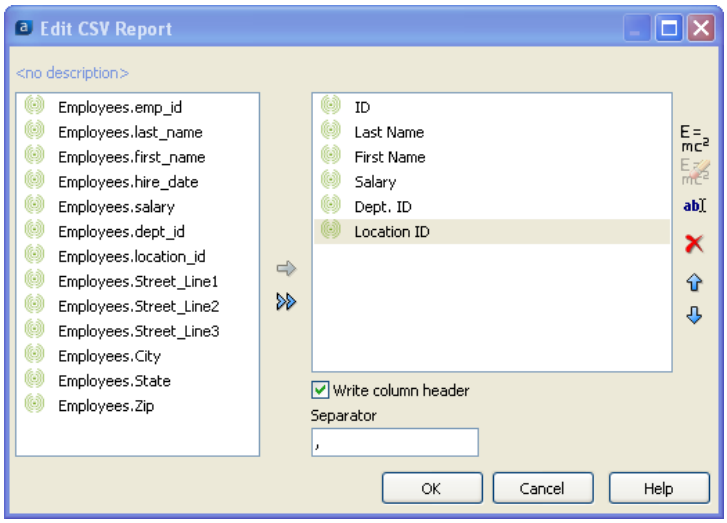
Add Additional Fields Using Expressions

Even though the report has been created, you can edit the report to add fields from the DataBlock or add fields created from expressions. To illustrate this, two fields will be added to the report. The first field will have the last name and first name concatenated into one field (with a space between the names). The other field will contain the date the report was run. This will illustrate how to utilize the Expression Builder.

Highlight the report within the Navigation Pane, click Edit Report, then click the Design Button to bring up the "Edit CSV Report" dialog box again as shown in the following figure.



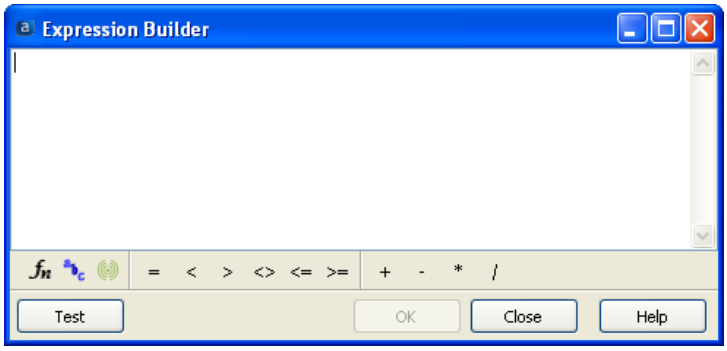
The completed CSV report available to be executed



Preparing to add new fields

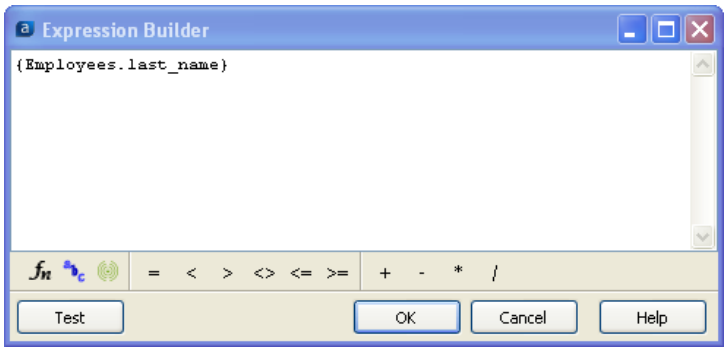
To add the first field, click **E=mc²** (in the upper right of the dialog box) which brings up the Expression Builder dialog box shown below.

icon	Function
	Choose functions from library
	Add system variables.
	Lists available database fields.
+	Concatenate fields. Leading/trailing spaces are removed.



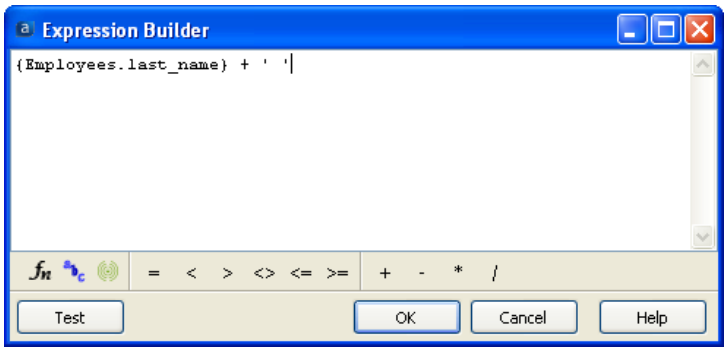
The Expression Builder dialog box

Click the Green circular icon which brings up the list of database fields, then double-click on Employees.last_name which places the field within the Expression Builder.



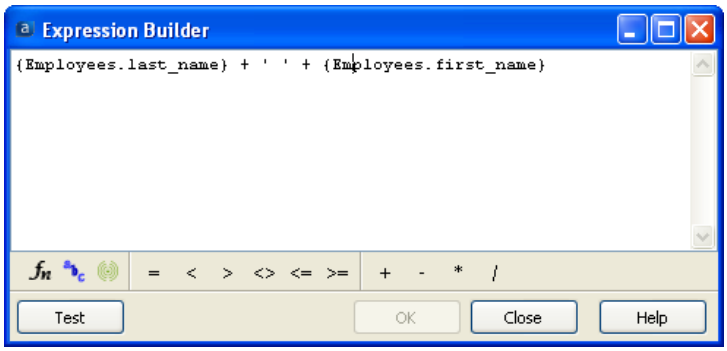
Expression Builder (first item in expression)

Click on the plus sign (to concatenate) and a blank space (surrounded by single quotes) to leave room between the last and first name.



Expression Builder (second item in expression)

Click the green circular icon to display the list of fields, then add the first_name field.

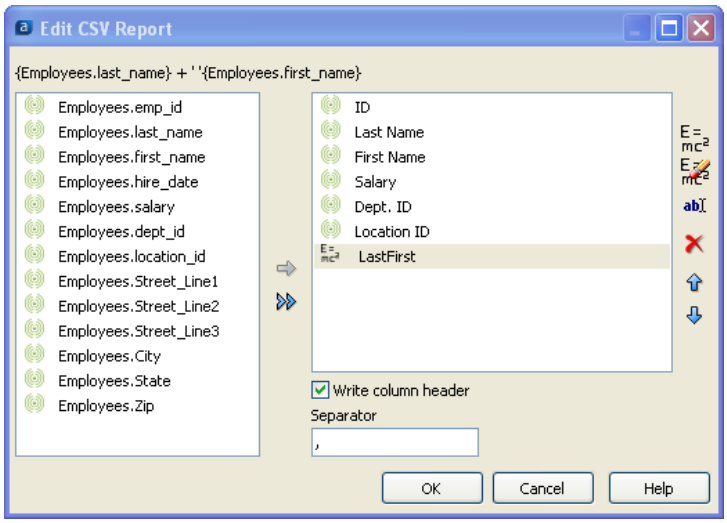


Expression Builder (final item in expression)

Click OK then enter the name for this new field.

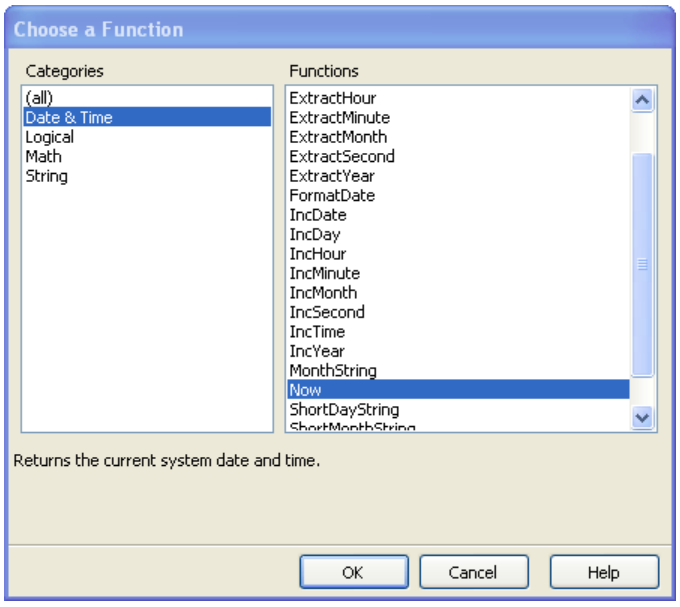
Entering a name for the new field

The figure below shows the new field (lastfirst) added to the original list of fields.



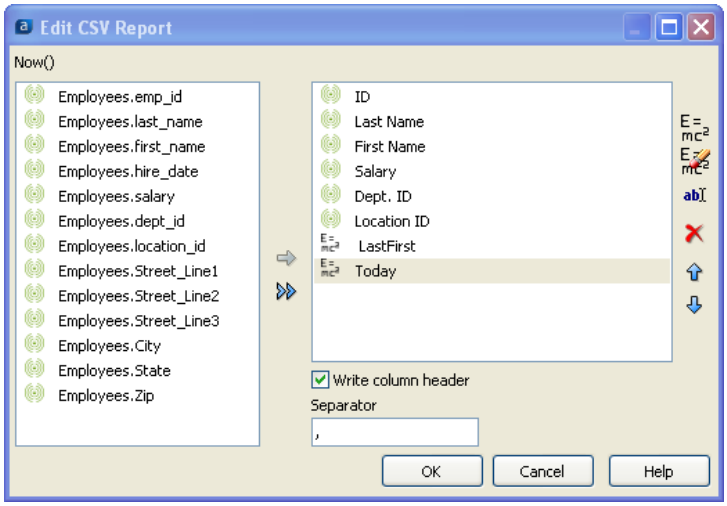
The new field concatenating last/first name

To create the other field which will contain today's date, a similar process is used. Within the above dialog box click **E=mc**^{2} then click the **f**$_n$ item to display a list of available functions.



The list of Date & Time Functions

Click **Date&Time**, then **Now** to obtain today's date. Click OK and name the field "Today".



New field containing today's date/time

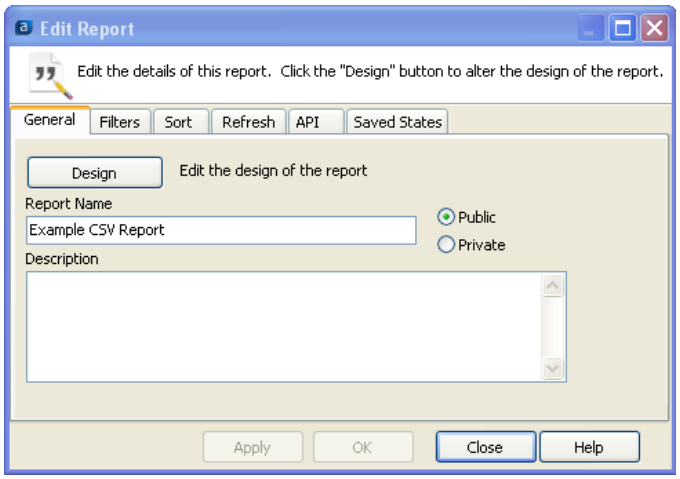
Run the report and you will now see the concatenated last/first name in column G and today's date/time in column H.

	A	B	C	D	E	F	G	H
1	ID	Last Name	First Name	Salary	Dept. ID	Location ID	LastFirst	Today
2	102	Washington	Mark	80000	dep03	loc09	Washington Mark	2/17/2010 10:45
3	150	Brown	Bill	75000	dep01	loc01	Brown Bill	2/17/2010 10:45
4	155	Green	Harold	60000	dep02	loc01	Green Harold	2/17/2010 10:45
5	25	Smith	John	50000	dep01	loc02	Smith John	2/17/2010 10:45
6	501	Orange	Herbert	40000	dep04	loc01	Orange Herbert	2/17/2010 10:45
7	55	Strauss	Jane	55000	dep01	loc01	Strauss Jane	2/17/2010 10:45
8	600	Morgan	Howard	50000	dep04	loc01	Morgan Howard	2/17/2010 10:45
9	650	Jackson	Mary	50000	dep05	loc08	Jackson Mary	2/17/2010 10:45

The CSV report showing the two new fields

Filter and Sort the Data

When you first create the report (or edit an existing report) you see the Edit Report dialog box shown below containing the Filters and Sorts tabs.

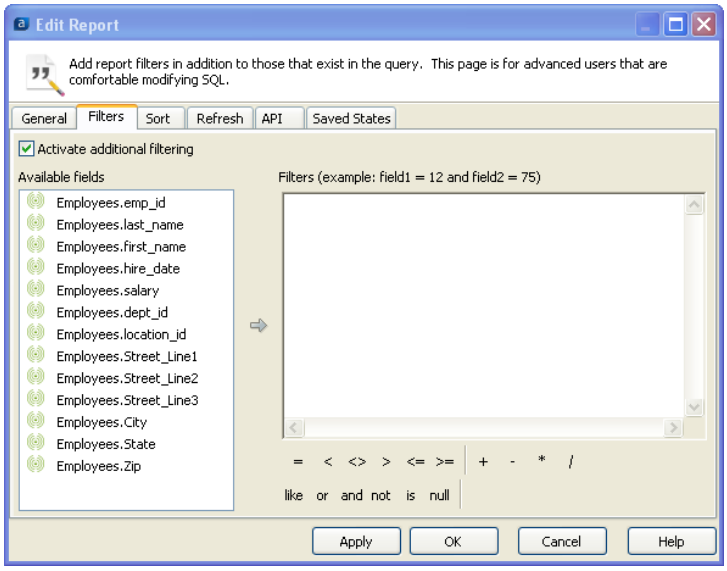


Contact your DataBlock Designer if you receive the following pop-up message when using the Filters or Sort Tabs:

"To use this feature edit the DataBlock and insert special character sequences into the Free Type SQL so Argos will know where to place the overrides at runtime"

Filters

The Filters tab allows the report writer to activate **additional** filters to the report query. Any filters here are run after the filters in the DataBlock report query are run.

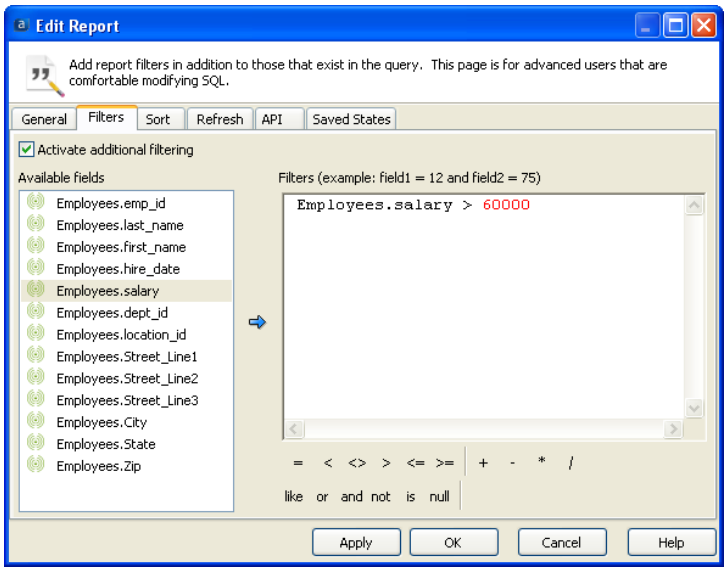


Creating a filter

The Filters tab allows you to activate additional data filters at the report level rather than having to modify the WHERE clause of the DataBlock's report query.

To add a filter you need to activate additional filtering by checking the "Activate additional filtering" box.

You can create filters by selecting the list of fields and filtering them by the expression operators (+ < <>, and, or, etc.). For example to view salaries above 60,000, double-click on Employees.salary, click >, then enter 60000. The resulting filter is shown below.



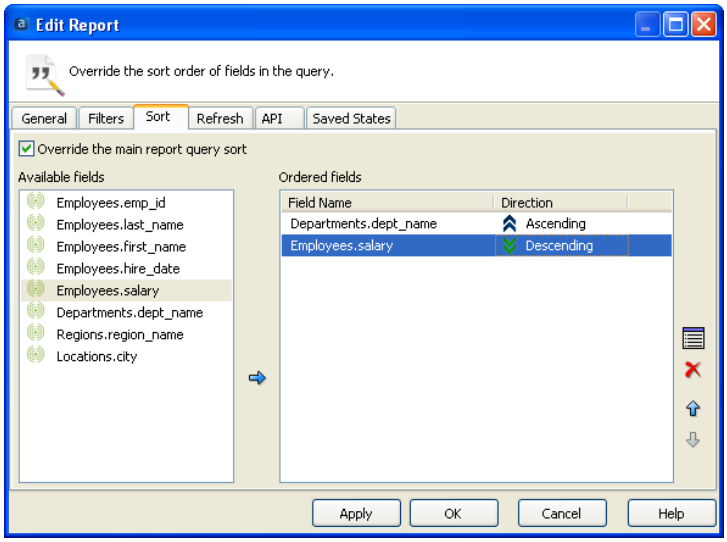
Filtering salaries above 60,000

Although in this example filtering is done using only one field, a filter can consist of multiple fields with associated operators (=, <, <>, etc.)

Click OK and run the report to view the application of the filter.

Sort

Click on the Sort tab and the following will appear.



The Sort Tab within the Edit Report dialog box

You need to activate sorting by clicking the "Override the main report query sort" box

Move items over that you wish to sort on by double-clicking on the item or single-click then clicking the arrow pointing to the right.

You can reorganize fields by clicking the up or down arrow. You can change the sort order to ascending and descending by clicking on the double arrows.

Filters and sorts involve editing the report so once they are turned on, only a Report Writer can deactivate or change them, and Report Viewers cannot. To deactivate a filter or sort just uncheck the activate box. You do not need to clear out the filters and sorts. The Filters tab adds filters to the Report query, so all the conditions and filters in the DataBlock run, and then your additional filters are applied.

Note: If you define a sort order by using the sort tab, you will override the sort order in the DataBlock, so you essentially will be ordering the recordsets twice. The DataBlock will sort based on whatever sort order it is using. When the report is created it will reorder the recordsets based on the report sort order.

After choosing your sort options, click OK then execute the report to see the results of your specified sort.

Sorting Options

Double-click Ascending/Descending to toggle sort by ascending or descending order.

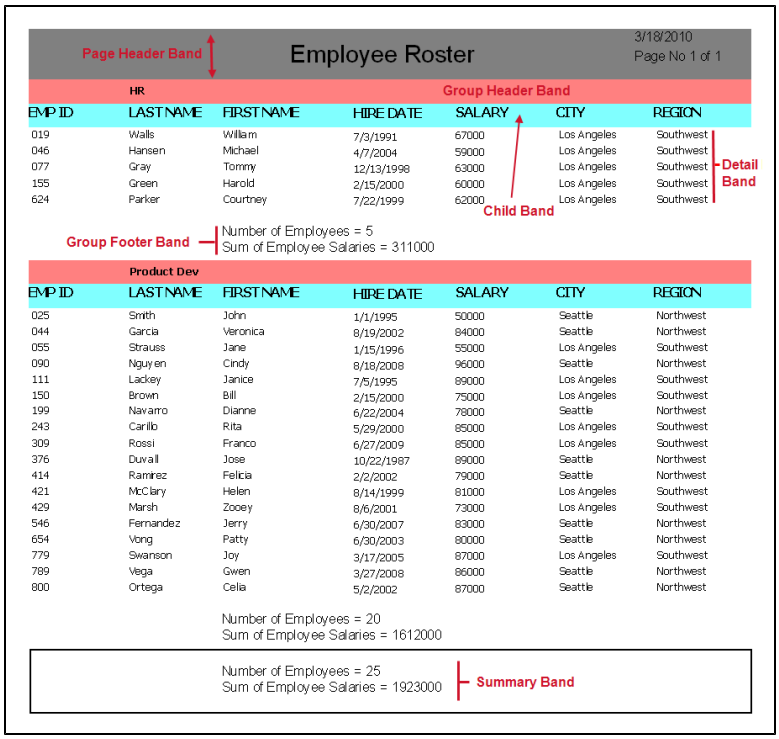
As shown in the figure at the left, you can sort using multiple fields. The figure illustrates sorting by department name (ascending), then by salary within the department (descending).

Creating a Basic Banded Report

Example 1

Introduction

This example utilizes the Employees table within the sample database and will produce a report (see figure below) of employees grouped by Department Name. The example demonstrates the use of a Page Header Band, Group Header Band, Child Band, Detail Band, Group Footer Band, and Summary Band.



Banded report using various Band Types

The figure above illustrates the band types that are used in this example as follows:

- The Page Header Band (Employee Roster) prints at the top of the page and contains the date and page number of the report.
- The Detail Band contains the data obtained from the Report query.
- The Detail Band is surrounded by Group Header and Group Footer Bands. Grouping is done by Department Name.
- The Group Header Band contains the name of the department.
- The Child Band always prints beneath the Group Header Band and contains column titles
- The Group Footer Band shows the number of employees and sum of salaries for that department.
- The Summary Band prints at the end of the report and contains the total number of employees and salaries for the entire company.

Definition of Bands:

Page Header Band

Prints at the top of every page.

Page Footer Band

Prints at the bottom of every page.

Title Band

Prints on the first page immediately below the page header band.

Summary Band

Always prints on the last page, immediately before the Page Footer Band.

Column Header Band

Always prints at the top of the page after the Title Band.

Detail Band

This is where the data from the Report query is printed. The band will print repeatedly for each record. It will keep printing between the other bands until it runs out of room, then a new page will start.

Child Band

Linked to any other band and prints immediately after it. The band that it is linked to is called its parent band.

Group Bands(Group Header/Footer)

Group Header and Group Footer bands surround a detail band. Used to structure data into groups, based on a data field or expression.

Sub-Detail Band

This band displays one dataset while being linked to another dataset (called the Master). As each record is printed in the Master dataset, Argos will loop through the Sub Detail dataset.

Sub-Detail Bands are not as efficient as other methods and should be used only when other methods cannot be used.

Loop Band

Contents of a loop band will be printed repeatedly. The user inputs the number of times the band is repeated.

Basic Banded Report

Before creating the complete report above, a simple banded report of the Employees table (see figure below) will first be created to enable a new user to quickly become familiar with the process of creating a basic banded report. This report will then be enhanced to create the report shown above.

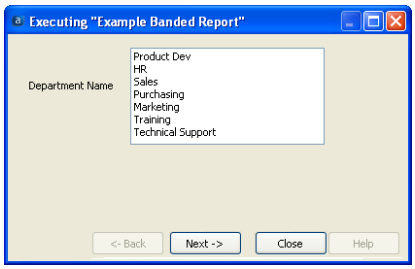
Employee Roster

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	DEPT NAME	CITY	REGION
102	Washington	Mark	2/1/2000	80000	Sales	Miami	Southeast
150	Brown	Bill	2/15/2000	75000	Product Dev	Los Angeles	Southwest
155	Green	Harold	2/15/2000	60000	HR	Los Angeles	Southwest
025	Smith	John	1/1/1995	50000	Product Dev	Seattle	Northwest
501	Orange	Herbert	1/15/1995	40000	Purchasing	Los Angeles	Southwest
055	Strauss	Jane	1/15/1996	55000	Product Dev	Los Angeles	Southwest
600	Morgan	Howard	1/1/1995	50000	Purchasing	Los Angeles	Southwest
650	Jackson	Mary	1/1/1995	50000	Marketing	Atlanta	Southeast
700	Ford	Jeremy	2/15/1990	50000	Training	Houston	South

The simple Banded Report

The DataBlock form used for this example

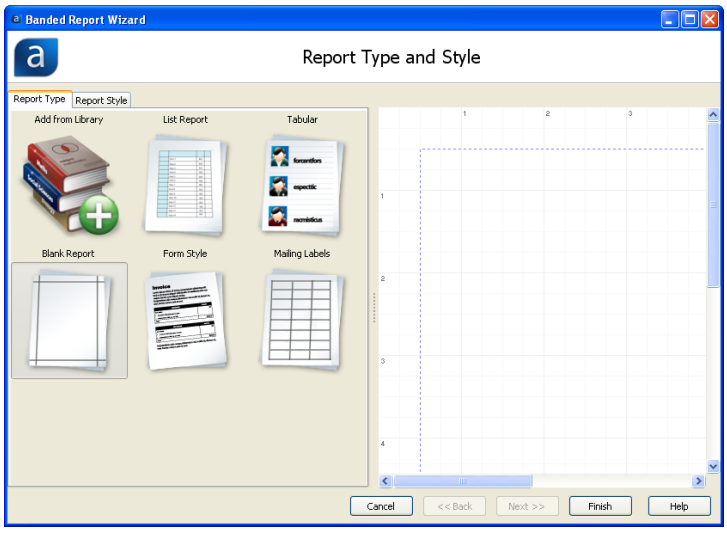
One or more departments can be selected when executing the report.



The DataBlock form is created by the DataBlock Designer.

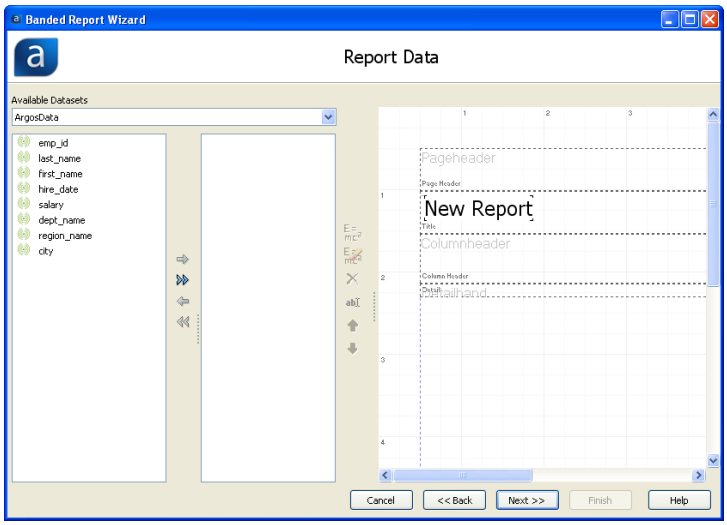
Select the Report Type

Begin by creating a new report using the same method used for Dashboards and CSV reports, but this time select "Banded" and name it "Example Banded Report". Then, within the Edit Report dialog box, click the Design button to launch the Banded Report Wizard as shown in the figure below.



Selecting the Banded Report Type

For this example, click the "List Report" image, then click Next which brings up the following screen in which you specify which fields are to be included within the report.



Selecting fields to include within the report

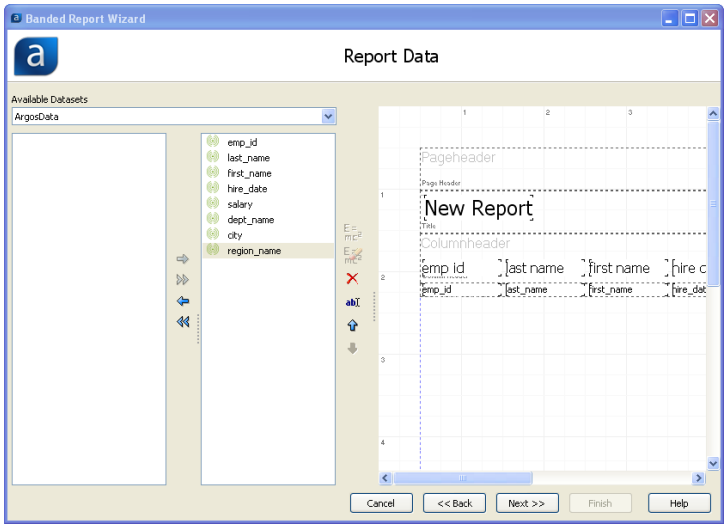
Including the Database Fields in the Report

Move emp_id, last_name, first_name, hire_date, salary, dept_name, city, and region_name to the area on the right by double-clicking each field name.

To move a field to the right or left, highlight the field then click the appropriate blue arrow. Clicking the double blue arrows moves all fields at once.

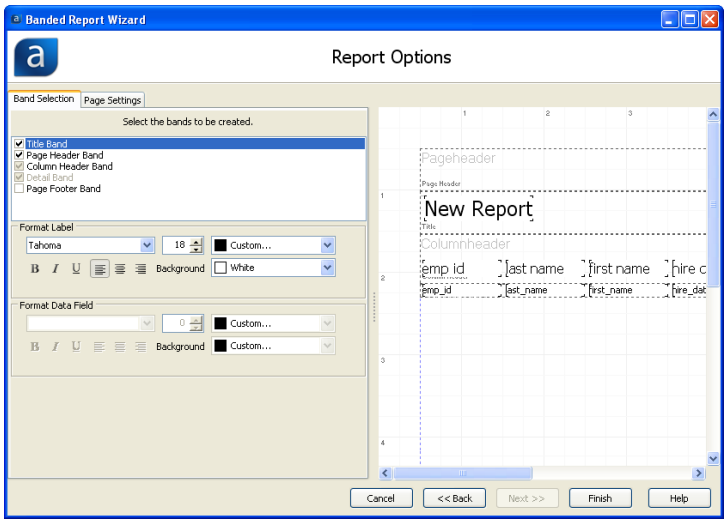
When moving fields, click **city** prior to **region_name** to order them in that fashion within the report. After moving the fields to the area on the right you can rearrange the order of fields by highlighting a field then click the up/down arrows to change the order that the fields will appear in the report.

This moves the fields (and corresponding Column Headers) onto the report as shown on the right of the Report Data Window. The Column Headers were generated by DataBlock Designer; however you can change the Column Headers as shown later in this example. Scroll to the right to view the entire width of the report.



Specifying which fields will exist within the report

Click Next to bring up the Report Options window shown below.



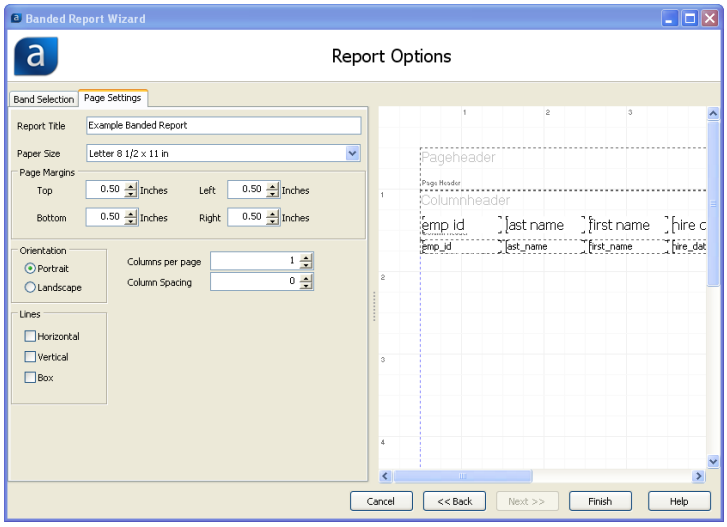
Identifying which bands will be utilized

The Page Settings Tab provides options such as paper size, margins, orientation (portrait/landscape), etc.

Adding Bands

Under the Band Selection tab shown above you can decide which bands to include in the report. For the simple example the Page Header Band, Column Header Band, and Detail Band will be utilized. Therefore place check marks into the corresponding boxes.

You can also click the Page Settings tab which allows you to specify various page settings as shown in the figure below.



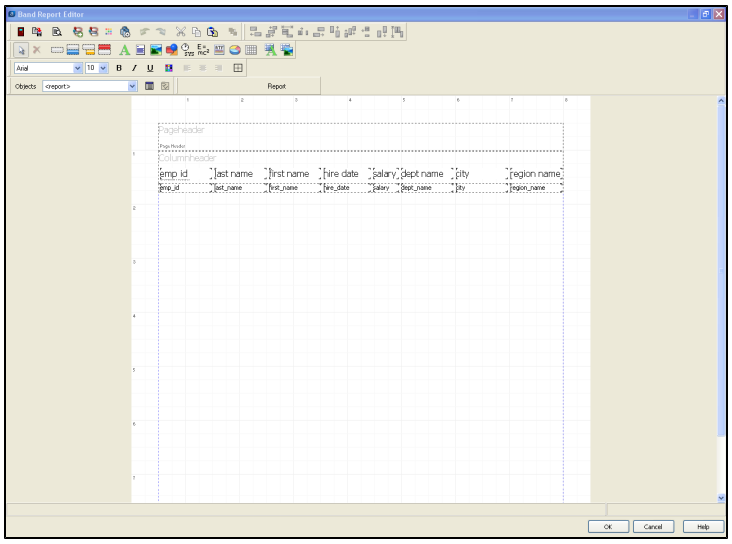
Selecting Page Settings

Click Finish to launch the Band Report Editor where you can customize the look of the report further.

Band Names

Note the names assigned by Argos (Pageheader, Columnheader, and Detail) to the various bands.

Band names can be changed by right clicking within the band, selecting Options, then entering the new band name. Creating meaningful band names is valuable when creating bands that reference other bands.



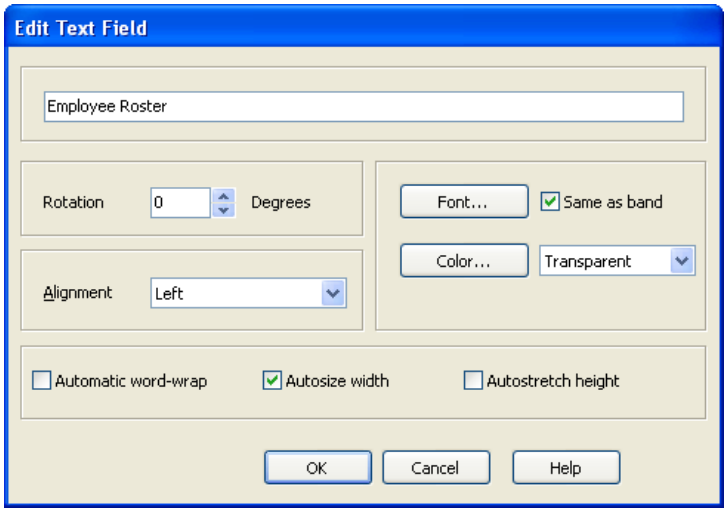
The Report Format showing Column Headings and Fields

The Band Report Editor shows the current appearance of the report and contains the column headers positioned above the fields to be printed in the report. Note the existence of the three bands (Page Header, Column Header, and Detail).

Editing the Report Design

There are a number of toolbar icons within the Editor that will be discussed further in the next example, but for this report a title will be added to the Page Header band by clicking the **A** icon (Text Field Object) on the toolbar then clicking anywhere within the Page Header band.

The Edit Text Field dialog box will appear in which you can create text for the band as well as change the font size, color, etc. You can also change the background color of the band. Enter "Employee Roster" into the textbox as shown below. Click the font button to change the font size to 18.



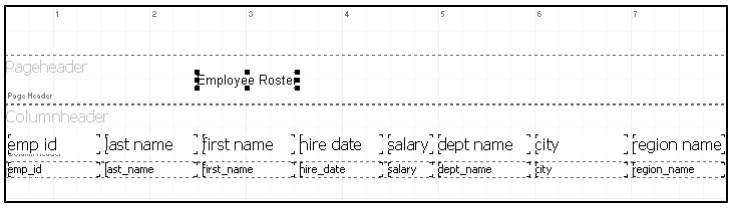
Properties of the Text Field

Adding objects to a Band

Objects are added to various bands within the report by clicking the object on the toolbar, then clicking anywhere within the band where you want the object to be placed. A corresponding dialog box will appear in which you specify the properties of the object.

The In Product Help (F1 key) contains a complete list and description of the available objects.

The Add a Text Field icon within the Band Report Editor toolbar

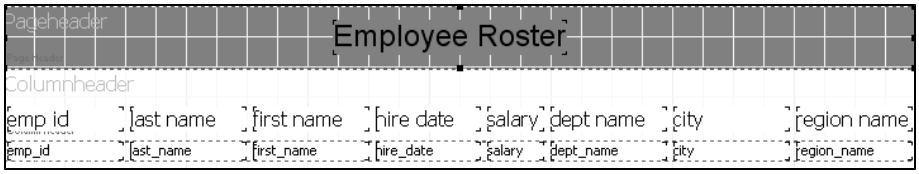


The text field added to the Page Header Band

The title "Employee Roster" will now appear in the Page Header band. Note that the title is not centered, so click within the "Employee Roster" box and drag the field to the desired location. Alternatively you can highlight the field and click the "centering text" icons shown at the right.

You can also right click on the field which brings up a list of properties for the field that can be modified.

You can change the background color of the band by positioning the cursor anywhere within the band (but not on the field just created), right-click then select Edit. Click on the "Color" button to select a background color for the band. For this example, dark grey is selected. The report design now appears as follows:



Background color of Page Header Band changed

Next the text for the labels in the Column Header will be changed. Right-click on each label, select edit, then type in the new name for the label. In this example, the text for each label will be capitalized.

Execute (or preview) the report and it will look like this (larger font for "Employee Roster") and all titles capitalized. You may need to reduce the font size of the Column Header fields to 10 to make the report look more readable. Also make the font bold.

Employee Roster

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	DEPT NAME	CITY	REGION
150	Brown	Bill	2/15/2000	75000	Product Dev	Los Angeles	Southwest
025	Smith	John	1/1/1995	50000	Product Dev	Seattle	Northwest
055	Strauss	Jane	1/15/1996	55000	Product Dev	Los Angeles	Southwest
044	Garcia	Veronica	8/19/2002	84000	Product Dev	Seattle	Northwest
090	Nguyen	Cindy	8/18/2008	96000	Product Dev	Seattle	Northwest
800	Ortega	Celia	5/2/2002	87000	Product Dev	Seattle	Northwest
654	Vong	Patty	6/30/2003	80000	Product Dev	Seattle	Northwest
111	Lackey	Janice	7/5/1995	89000	Product Dev	Los Angeles	Southwest
414	Ramirez	Felicia	2/2/2002	79000	Product Dev	Seattle	Northwest
376	Duvall	Jose	10/22/1987	89000	Product Dev	Seattle	Northwest
429	Marsh	Zooey	8/6/2001	73000	Product Dev	Los Angeles	Southwest
789	Vega	Gwen	3/27/2008	86000	Product Dev	Seattle	Northwest
476	Hayden	Paul	2/22/1994	80000	Product Dev	Seattle	Northwest
243	Carillo	Rita	5/29/2000	85000	Product Dev	Los Angeles	Southwest
546	Fernandez	Jerry	6/30/2007	83000	Product Dev	Seattle	Northwest
421	McClary	Helen	8/14/1999	81000	Product Dev	Los Angeles	Southwest

The report after adjusting the column headers

Centering the text in the title band

To quickly center the text within the title bar horizontally or vertically, click on the text, then click the "Align the selected control to the horizontal center of its parent" button, or click "Align the selected control to the vertical center of its parent" button.

Align to horizontal center of its parent

Align to vertical center of its paren

Preview the report

You can obtain a preview of the printed report by clicking the preview icon on the Band Report Editor toolbar.

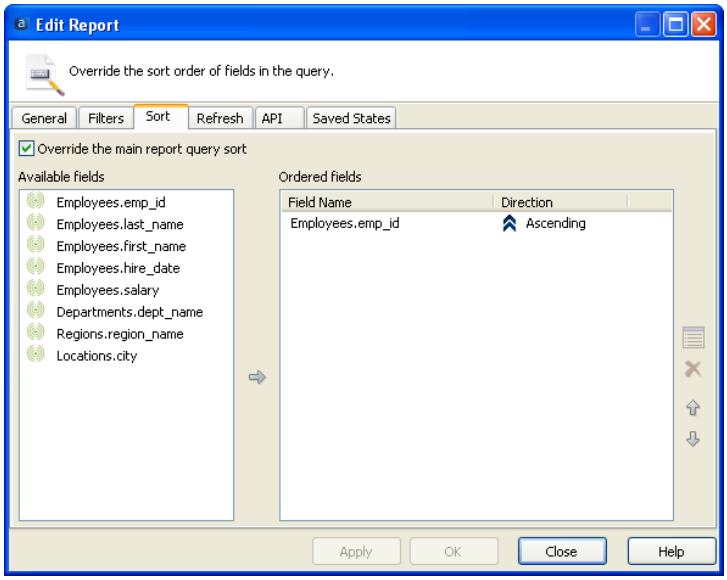
Saving the report

To save the report, click the Save icon on the Band Report Editor toolbar.

Closing the Band Report Editor

Click the icon on the Band Report Editor toolbar.

As a reminder, you can further edit or sort the report by returning to the Argos navigation pane, highlight the report, then click Edit Report. Click the Filters or Sort Tab to modify the report. For example, to sort the report by Employee ID, enter the Employee ID as shown in the figure below:



Sort options

After executing the report again you can see the report is now sorted by Employee ID.

Employee Roster

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	DEPT NAME	CITY	REGION
018	Johnson	Pricilla	1/1/2001	44000	Purchasing	Los Angeles	Southwest
019	Walls	William	7/3/1991	67000	HR	Los Angeles	Southwest
023	Cisneros	Kenny	3/17/2006	55000	Technical Support	Boston	Northeast
025	Smith	John	1/1/1995	50000	Product Dev	Seattle	Northwest
026	Patterson	Jane	2/4/2004	38000	Sales	New Orleans	South
036	Wilson	Andrew	2/28/1996	48000	Purchasing	Los Angeles	Southwest
044	Garcia	Veronica	8/19/2002	84000	Product Dev	Seattle	Northwest
046	Hansen	Michael	4/7/2004	59000	HR	Los Angeles	Southwest
055	Strauss	Jane	1/15/1996	55000	Product Dev	Los Angeles	Southwest
056	Kern	Doug	3/1/2001	36000	Sales	San Francisco	Southwest
072	Rodriguez	Jack	5/18/2003	49000	Technical Support	Boston	Northeast
077	Gray	Tommy	12/13/1998	63000	HR	Los Angeles	Southwest
089	Handy	Nina	2/14/2003	50000	Technical Support	Boston	Northeast
090	Nguyen	Cindy	8/18/2008	96000	Product Dev	Seattle	Northwest
101	Tisdale	Isaac	8/29/2000	32000	Sales	Portland	Northwest

The report after sorting by Employee ID

Your first simple Banded Report is now complete. The next step is to enhance the report to obtain the final report format.

Resizing and Aligning Fields

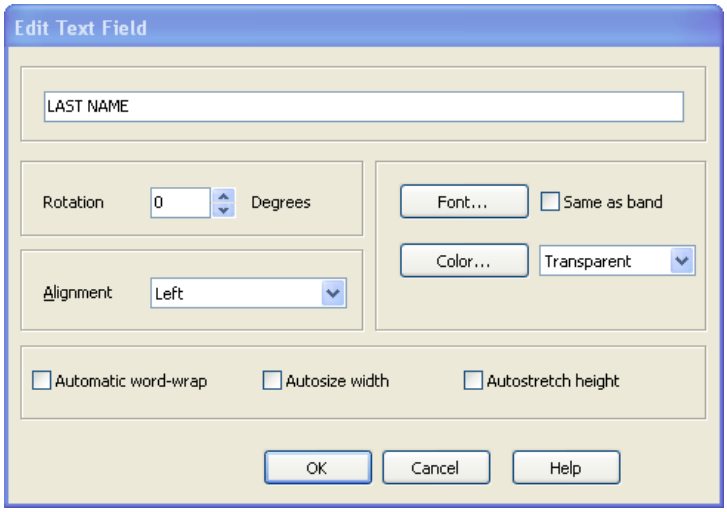
As fields are added to the report, you may need to resize them to ensure that the contents of the fields will fit into the space allocated by the editor. You will also want to align fields to each other horizontally and vertically to produce an attractive appearance.

Resizing Objects

Selecting an object (left mouse click) displays the boundary of the object with resizing handles. You can increase/decrease the size of the field by dragging the appropriate handle. You can also click on the field and drag it to another location.

Selected field

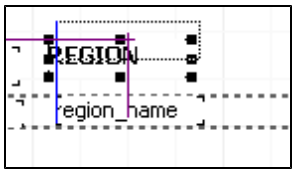
For additional resizing options, right-click on the field and select Edit. The Edit dialog box will appear shown in the figure below. Checking the "Autosize width" and "Autostretch height" check boxes will adjust the size of the field to fit the contents of the data, if necessary.



Field Editing options

Aligning Fields

When repositioning a field by dragging it, Argos will display blue horizontal or vertical alignment guidelines to assist you in aligning a field with other fields. In the figure below, note the blue vertical alignment line (to the left of the "R" in REGION) that appears when moving the REGION title to align it with the region_name field.



Alignment guidelines

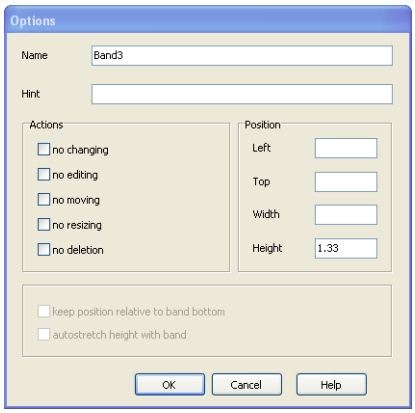
There are also alignment icons within the Band Report Editor Toolbar (shown below) that can be used to align multiple fields to each other. The methods for selecting multiple objects are described below.

Selecting and Aligning Multiple Fields

Resizing Bands

Bands can be resized using the same methods as resizing objects. Click anywhere within the band (but not on a field) and the boundary of the band will be shown with the sizing handles. The handles can be used to adjust the height of the band.

You can also right-click within the band, and select Options. The following dialog box appears where you can specify the band height as well as other options.



Multiple fields can be selected by depressing the shift key and clicking on the desired field (s). Each selected field will then be surrounded by a rectangle with small grey boxes on the corners. These fields can be moved or aligned as a group. In the figure below, all fields are surrounded by the small grey boxes, indicating that they are grouped together.

Grouping fields together

Multiple fields can also be selected by depressing the Ctrl key and dragging the cursor to create a rectangle around the fields that you want to include. All objects enclosed within the box will be individually surrounded by the small grey boxes described above and can be moved or aligned as a group. The rectangle shown in the figure below (created by dragging the cursor) shows seven fields that have been selected and will be treated as a group.

Selecting multiple objects

When using the alignment tools, select one object, then select additional objects to be aligned using either method described above. All objects will be aligned to the first object selected.

Icon	Usage
	Align by left sides
	Align by horizontal centers
	Align by horizontal center of parent
	Stretch to be same horizontal size
	Align by right sides
	Align by top sides
	Align by vertical centers
	Stretch to be same vertical size
	Align by bottom sides
	Align by vertical center of parent

Enhancing the Report

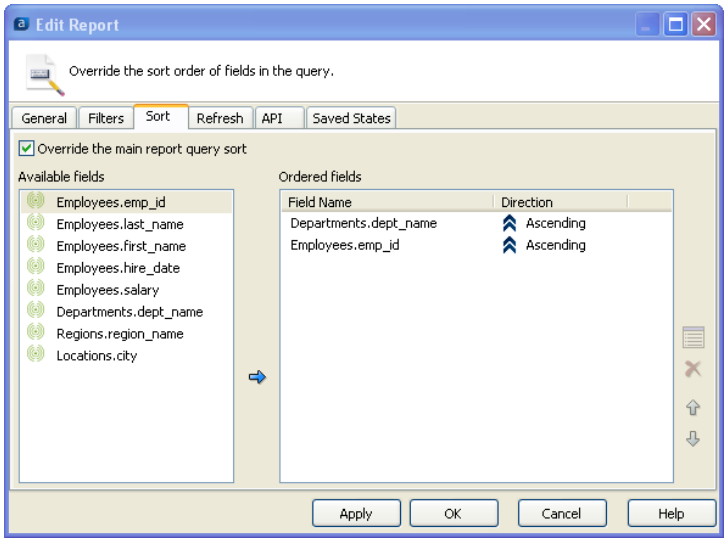
The report will now be enhanced to appear in its final form by:

- Sorting the employees by department name.
- Adding page counts and dates to the report.
- Creating and highlighting groups.
- Summing employee count and salaries by department and by entire company.

Sort Employees by Department Name

Begin by selecting the existing report from the Argos Navigation pane, highlight the report (Example Banded Report) then click Edit Report within the Detail Pane which brings up the Edit Report dialog box.

Since employees are to be grouped by department, click the Sort tab and move Departments.dept_name and Employees.emp_id into the right hand window. Argos will now sort by department name, then by employee ID within each department. Remember to check the "Override the main report query sort" check box, otherwise you will not be able to move any fields.

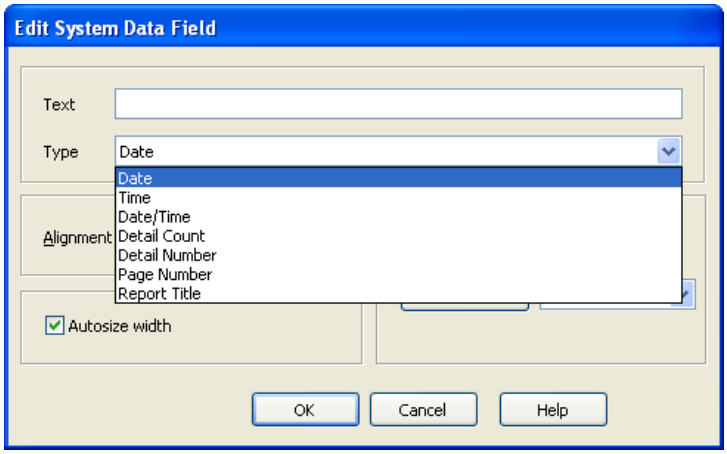


Sorting by Department Name then Employee ID

Click the Apply button, the General Tab, then the Design button. You will be brought back to the Band Report Editor.

Add Date, Page Number, and Page Count

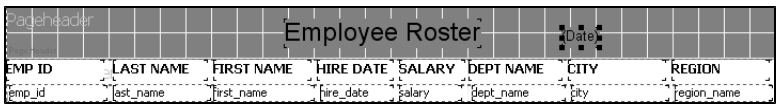
From within the Editor, click the "Add a System Data Field" icon on the toolbar, then click anywhere within the Page Header band.



Selecting the Date from the list of system data fields

Add System Data Field Icon on Band Report Editor Toolbar

There are a number of Date/Time selections, but select Date for this example. You need not enter anything into the Text field for this example. You will then see the following:

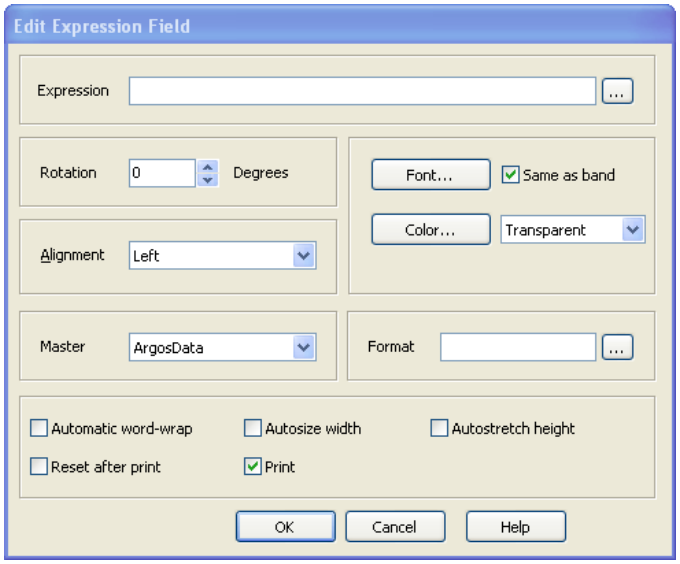


The Date field added to the Page Header Band

Note the addition of the date field in the Page Header band. Drag the field to the upper right corner of the band.

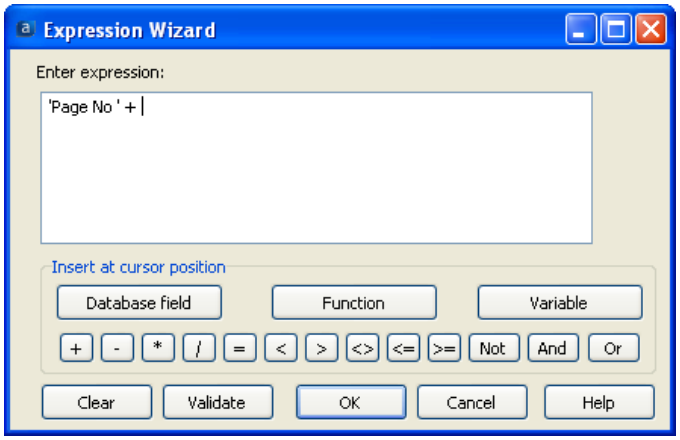
Next the string 'Page x of y' will be created and placed underneath the date within the Page Header band. Within the Band Report Editor, click the **E=mc²** icon, then click anywhere within the Page Header band.

Click the ellipsis (…) button shown in the figure below.



Building the expression

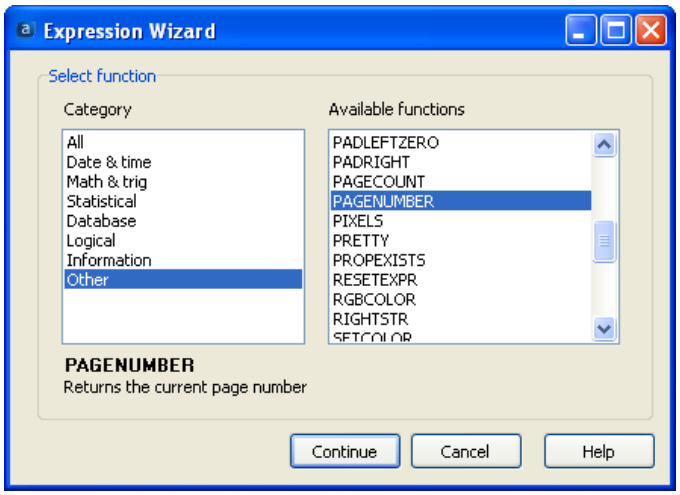
Enter the first segment of the expression which consists of the string 'Page No. ':



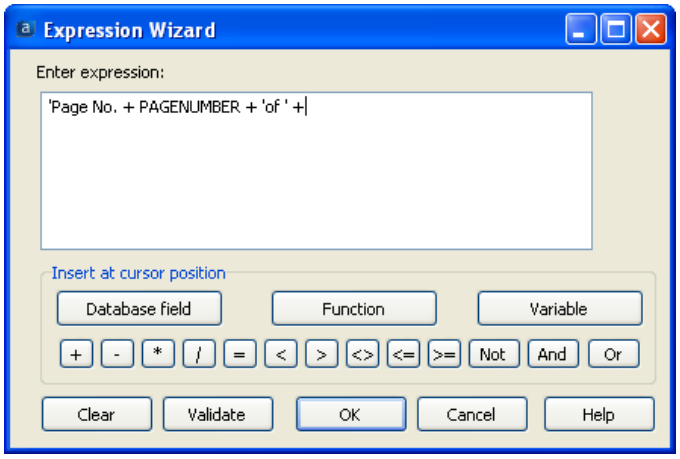
The + operator concatenates strings and eliminates leading/trailing spaces.

The first segment of the text string

Click the 'Function' button to display the list of available functions.

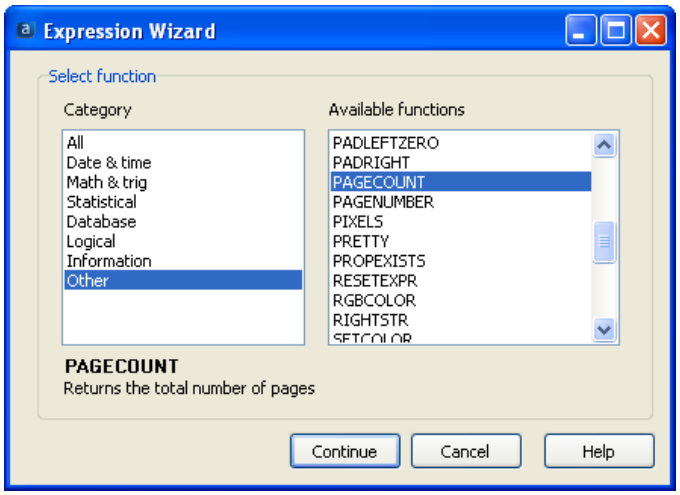


Select the PAGENUMBER function

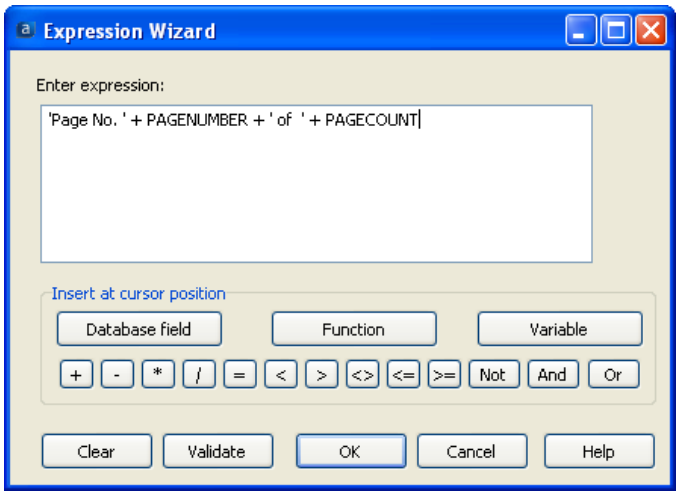


Enter the remaining segment of the expression

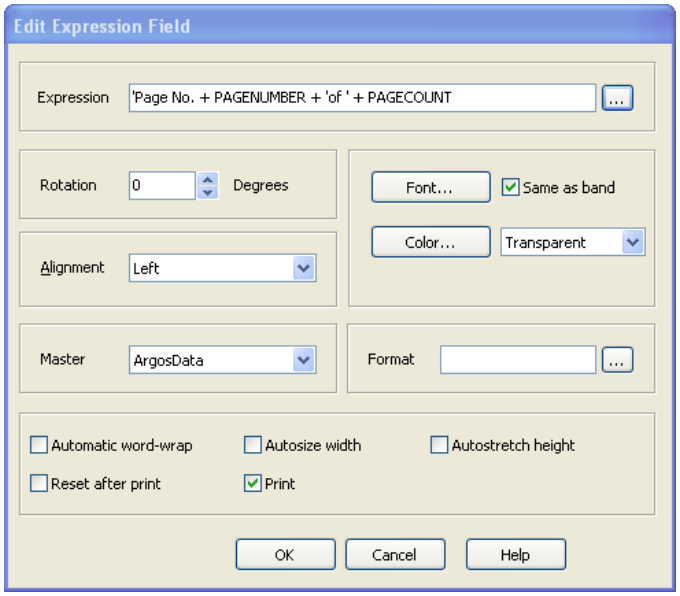
Click the Function button again to display the list of functions again.



Select the PAGECOUNT function



The completed expression



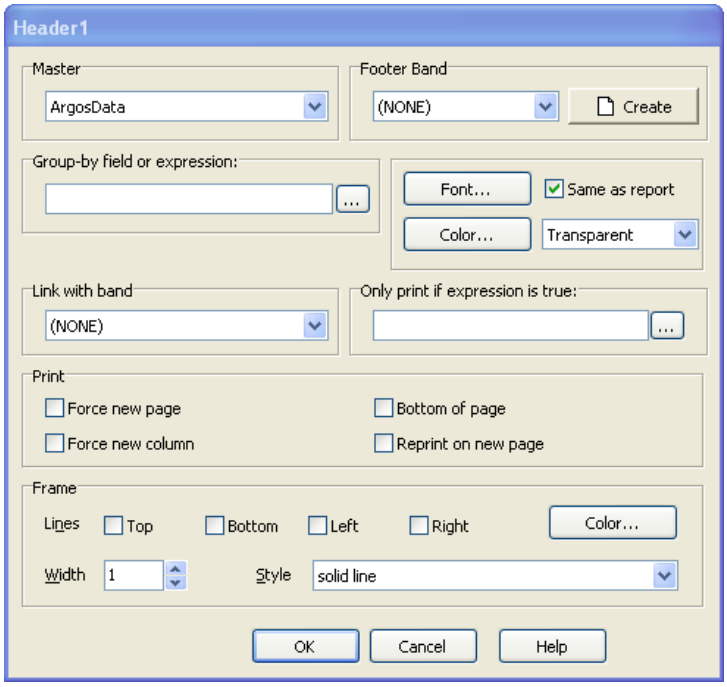
Select Autosize width to ensure the new field will fit

The new field is now positioned within the Page Header Band. If it is not positioned in the desired location, drag the field until it is underneath the date.

Creating the Group Bands

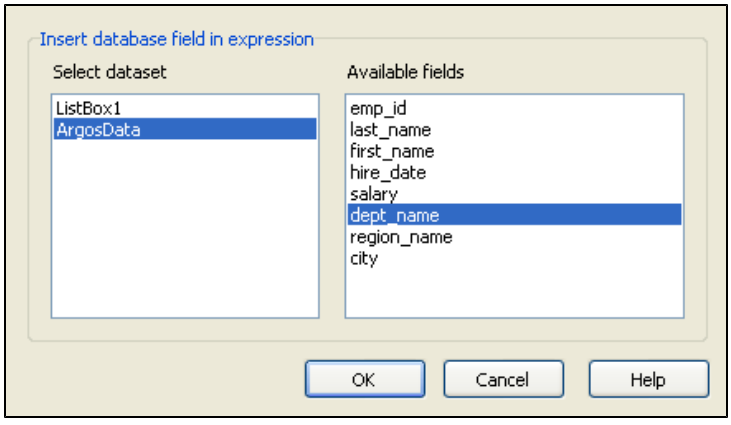
Next Group Header and Group Footer bands will be created which will surround the Detail Band. Since the report is structured to print employees by department name with an employee count and sum of salaries for each department, use of Groups is necessary.

Within the Band Report Editor, click the "Create a Band Group" icon, then click anywhere within the image of the report. The following dialog box will appear:



Adding the Group Header Band

Next, the item that the detail band will be grouped by needs to be entered, therefore click the ellipsis (…) button to the right of "Group by field or expression". After entering data into several dialog boxes that will appear in succession, you will ultimately cause Argosdata.dept_name to be placed into this field (since the grouping is to be done by department name).



Selecting Department Name as the database field to group by

Adding bands to the Report

Click on the desired band icon, then click anywhere within the report image displayed within the Editor. The band will then be added to the report.

"Create a Band Group" icon within Band Report Editor Toolbar

Band Groups are processed as follows:

Before printing the first record in the Detail band, the Group Header is printed.

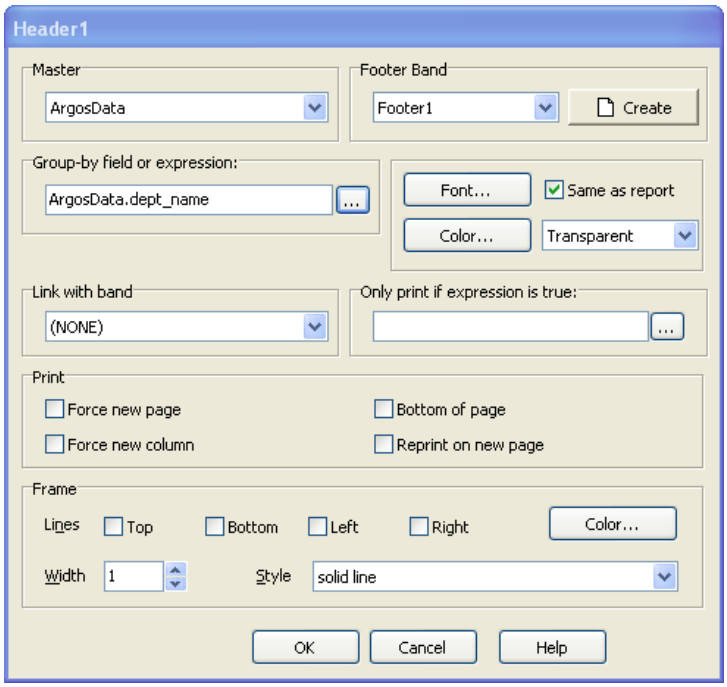
The first Detail record is printed.

The Group-by Field in the next Detail record is examined:

-If the Group-by Field has the same value as the previous detail record, the next Detail record is printed.

-If the Group-by Field has a different value than the previous record, the Group Footer is printed. A new Group Header and the next Detail record is printed.

The Group-by Field can be a simple Data Field from the dataset, or can be a complex Expression. If you wish to create a Band Group, you should ensure that your data is sorted (ORDER BY) on the Data Field(s) or Expressions(s) you wish to use.

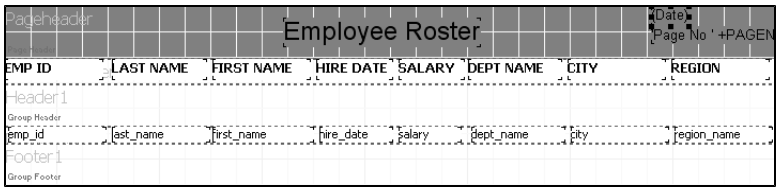


Adding the database field to Group-by field listbox

Enter dept_name into the group-by field or expression textbox. A later example will illustrate how to group by an expression as opposed to this example where grouping is done by database field.

Click the Create button at the upper right to create a corresponding Group Footer, then click OK.

The Banded Editor will now appear as follows:



The Banded Editor showing the Group Header/Footer Bands

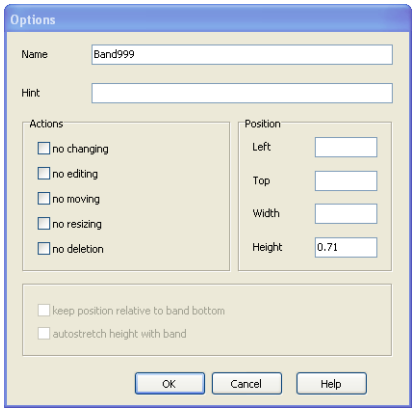
Note the existence of the Group Header (Header 1) and Footer Bands (Footer 1) surrounding the Detail Band.

Remember that when grouping by a particular field (dept. name in this example), the data must be sorted by the same field.

Renaming Bands

Argos generates names for each band. Note on the figure to the left that "Pageheader" is the label given to the Page Header Band and "Columnheader" is the name given to the Column Header Band.

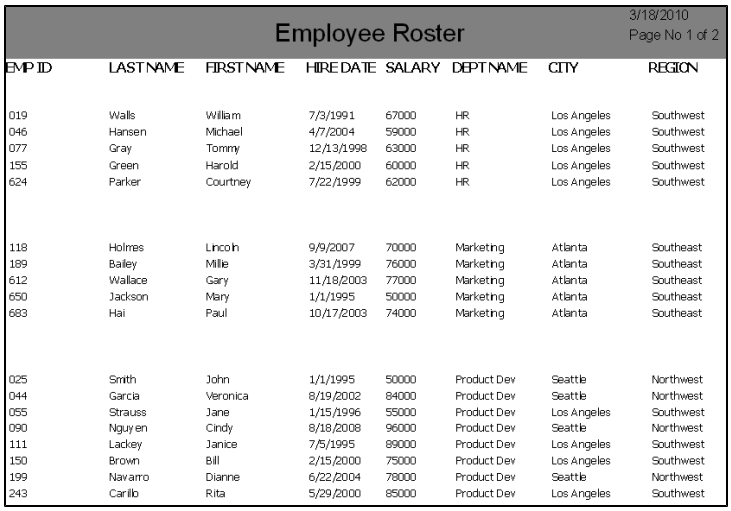
To change the name of the band, right click anywhere within the band and click on "Options"



Within the "Name" field enter the name of your choice (spaces between words are not permitted). The new name will replace the name given by Argos.

When many bands are created in a complex report, creating meaningful names will be useful when referencing bands.

At this point the report will look like this:



Employee Roster

3/18/2010
Page No 1 of 2

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	DEPT NAME	CITY	REGION
019	Walls	William	7/3/1991	67000	HR	Los Angeles	Southwest
046	Hansen	Michael	4/7/2004	59000	HR	Los Angeles	Southwest
077	Gray	Tommy	12/13/1998	63000	HR	Los Angeles	Southwest
155	Green	Harold	2/15/2000	60000	HR	Los Angeles	Southwest
624	Parker	Courtney	7/22/1999	62000	HR	Los Angeles	Southwest
118	Holmes	Lincoln	9/9/2007	70000	Marketing	Atlanta	Southeast
189	Bailey	Millie	3/31/1999	76000	Marketing	Atlanta	Southeast
612	Wallace	Gary	11/18/2003	77000	Marketing	Atlanta	Southeast
650	Jackson	Mary	1/1/1995	50000	Marketing	Atlanta	Southeast
683	Hai	Paul	10/17/2003	74000	Marketing	Atlanta	Southeast
025	Smith	John	1/1/1995	50000	Product Dev	Seattle	Northwest
044	Garcia	Veronica	8/19/2002	84000	Product Dev	Seattle	Northwest
055	Strauss	Jane	1/15/1996	55000	Product Dev	Los Angeles	Southwest
090	Nguyen	Cindy	8/18/2008	96000	Product Dev	Seattle	Northwest
111	Lackey	Janice	7/5/1995	89000	Product Dev	Los Angeles	Southwest
150	Brown	Bill	2/15/2000	75000	Product Dev	Los Angeles	Southwest
199	Navarro	Dianne	6/22/2004	78000	Product Dev	Seattle	Northwest
243	Carillo	Rita	5/29/2000	85000	Product Dev	Los Angeles	Southwest

The Report showing the grouping by Department Name

Note the grouping by Department Name as well as the existence of the date and page count at the top right of the report.

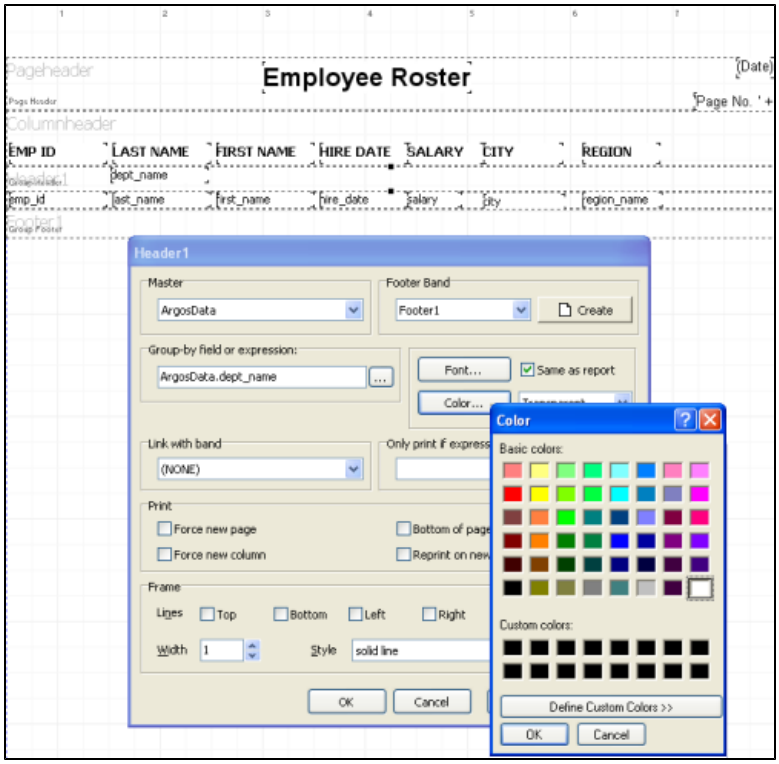
The following will now be done:

- Move the department name into the Group Header Band
- Add background color to the Group Header Band
- Add a child band after the Group Header band which will contain column headers. The existing column header band will then be removed.
- Add employee count and sum of salaries for each department in the Group Footer Band.
- Add a summary band containing a total employee count and sum of salaries.

Moving Dept. Name to Group Header Band

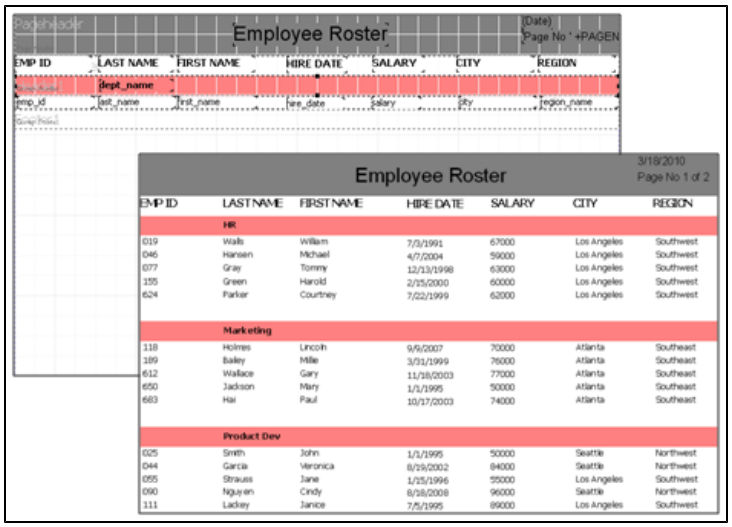
You cannot drag a field from one band to another, so cut and paste the dept_name field from the Detail Band to the Group Header Band. You will need to move the city and region fields to the left due to the removed dept_name. Also, drag the dept_name field that now resides within the Group Header Band to the desired location.

Right-click the Group Header Band, and click Edit. Then choose a background color using the color button.



Adding a background color to the Group Header Band

Next, delete the department name column header. After some resizing and repositioning of fields, the report should look like this:

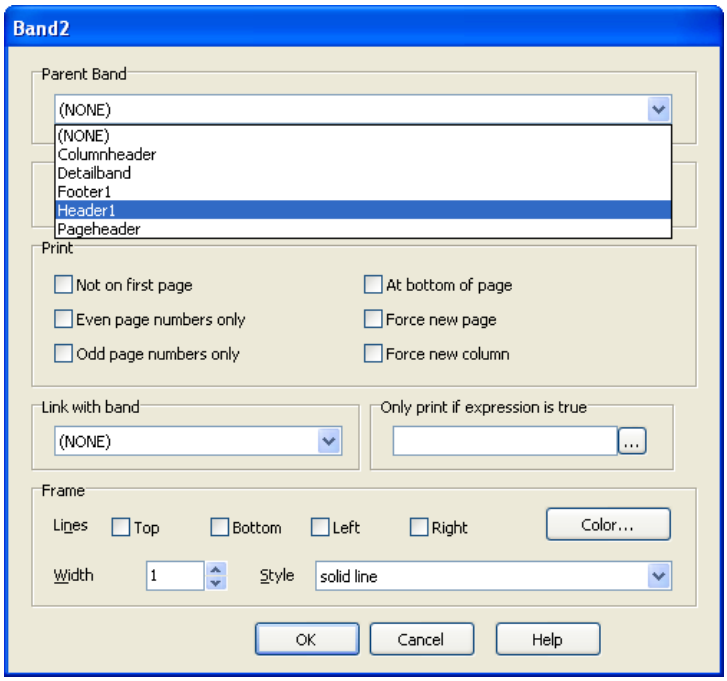


Highlighting the Group Header Band

Add Child Band Following the Group Header Band

Rather than printing the column headings at the top of each page, it is desired to print them immediately after the Group Header Band. Therefore a Child Band will be used to accomplish this.

Within the Band Report Editor click the "Create a New Child Band" icon, then click anywhere within the report image. The following dialog box will be displayed. You must enter the Parent Band, therefore select "Header 1" (which is the name of the Group Header band) as shown in the figure below.



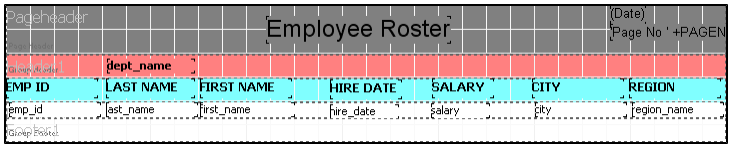
Adding a Child Band beneath the Group Header Band

After clicking the OK button, a Child Band named Band2 now exists underneath the Group Header Band. The column headers will now be copied from the Column Header Band into the Child Band. After this is done, you may need to resize/reposition the fields within the Child Band. You can delete the Column Header Band by right-clicking on it and selecting delete.

Create a new child band using the icon within the Band Report Editor toolbar

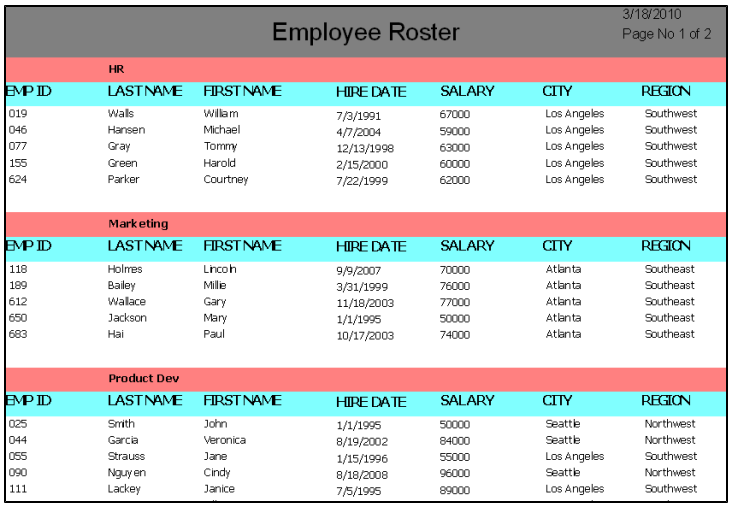
Finally, change the background color of the Child Band to blue.

The resulting report format within the Editor appears as follows:



The report format with the Child Band

Note the Child Band (Band2) beneath the Group Header Band.



Employee Roster

3/18/2010
Page No 1 of 2

HR

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
019	Walls	William	7/3/1991	67000	Los Angeles	Southwest
046	Hansen	Michael	4/7/2004	59000	Los Angeles	Southwest
077	Gray	Tommy	12/13/1998	63000	Los Angeles	Southwest
155	Green	Harold	2/15/2000	60000	Los Angeles	Southwest
624	Parker	Courtney	7/22/1999	62000	Los Angeles	Southwest

Marketing

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
118	Holmes	Lincoln	9/9/2007	70000	Atlanta	Southeast
189	Bailey	Millie	3/31/1999	76000	Atlanta	Southeast
612	Wallace	Gary	11/18/2003	77000	Atlanta	Southeast
650	Jackson	Mary	1/1/1995	50000	Atlanta	Southeast
683	Hai	Paul	10/17/2003	74000	Atlanta	Southeast

Product Dev

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
025	Smith	John	1/1/1995	50000	Seattle	Northwest
044	Garcia	Veronica	8/19/2002	84000	Seattle	Northwest
055	Strauss	Jane	1/15/1996	55000	Los Angeles	Southwest
090	Nguyen	Cindy	8/18/2008	96000	Seattle	Northwest
111	Lackey	Janice	7/5/1995	89000	Los Angeles	Southwest

The report showing the Group and Child Bands

Note that the column headers are now printed under each Group Header Band.

Add Employee Count and Salary Sum

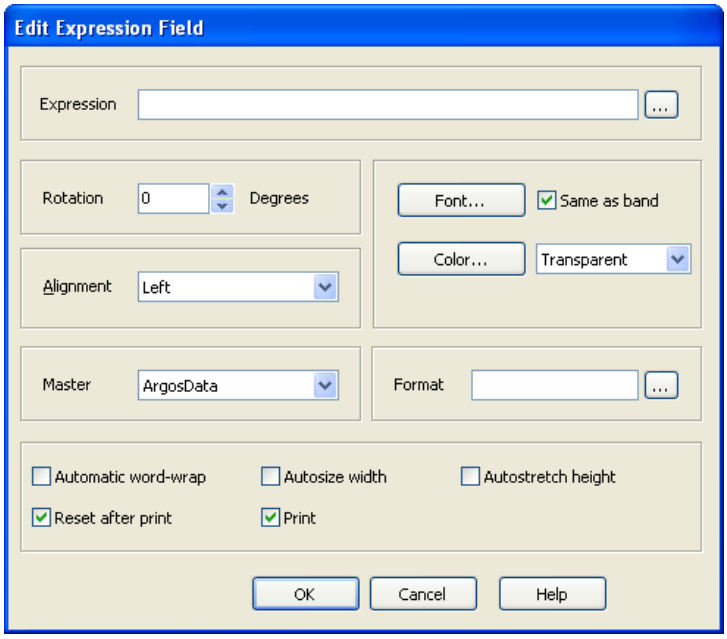
Next a count of employees and sum of salaries for each department will be placed within the Group Footer Band and will print after the Detail Band for each department.

The employee count and salary sum will be done using the Expression Wizard.

Click on the "Add an Expression Field" icon on the Band Report Editor toolbar, then click anywhere within the Group Footer Band. The following dialog box will appear. Click the ellipsis button (…) to bring up the Expression Wizard.

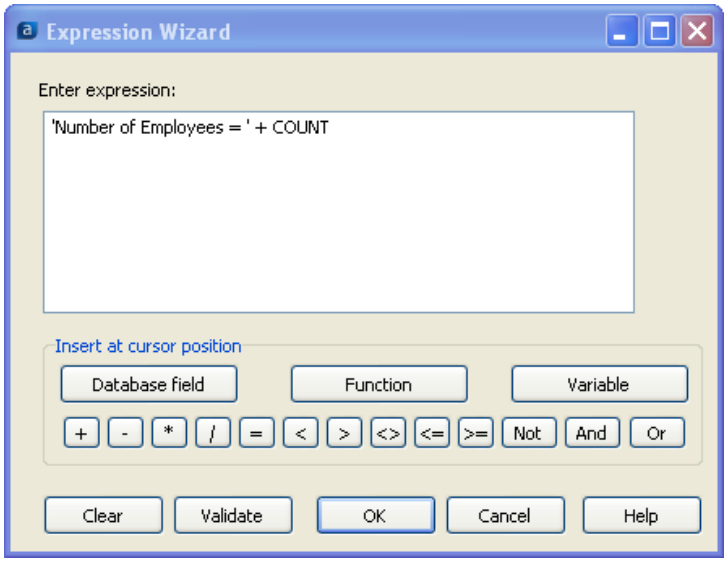
Add an Expression Field icon within the Band Report Editor toolbar

Since the count must be reset to zero for each band group, you need to check the "Reset after print" box.



Resetting values of expression after printing

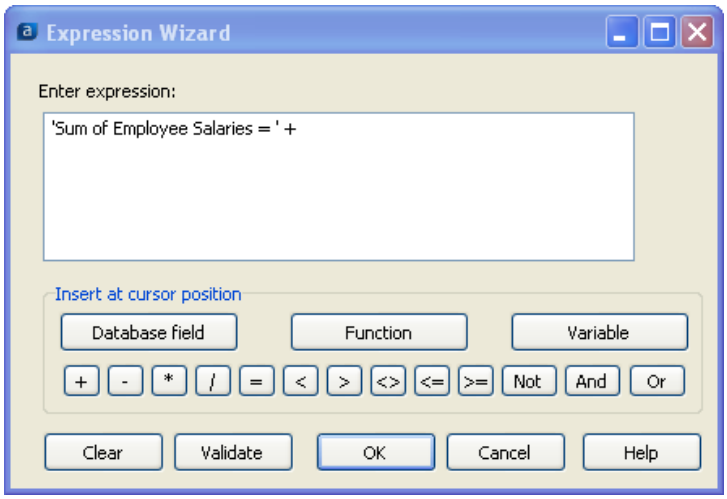
Build the following within the Expression Wizard using the same procedure as described above for the PAGENUMBER and PAGECOUNT fields. The COUNT function is found under the Statistical category within the Wizard. You may need to extend the width of the field to have it print correctly (or check the "Autosize width" box in the previous figure to allocate sufficient room for the field.



Creating an expression for Employee Count

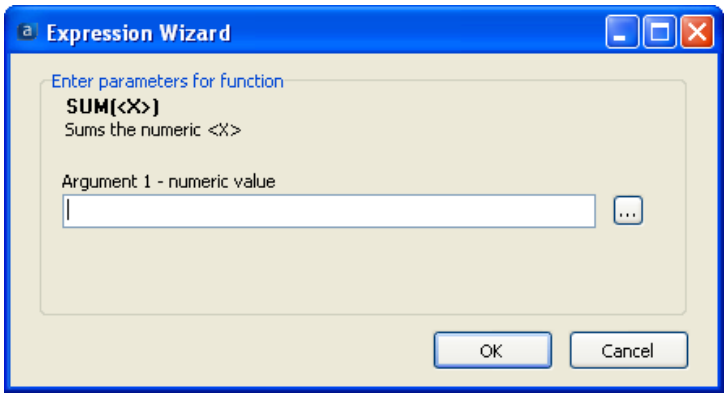
Create Sum of Salaries Expression

In a similar fashion use the Expression Wizard to create a sum of salaries. This is a bit more involved than the COUNT function since the SUM function requires additional input. You will need to select the DataBlock field 'salary' as the parameter to be used in the SUM function, as summarized below (not all steps are shown since they are used in the expressions illustrated earlier).



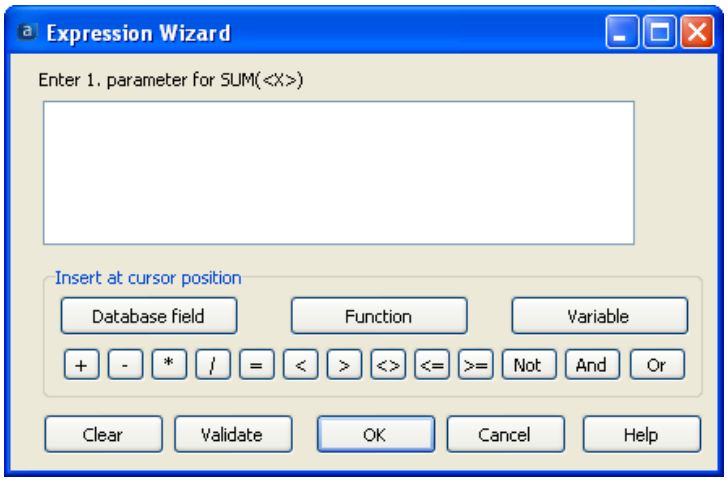
Enter the first segment of the expression

Click Function to continue.



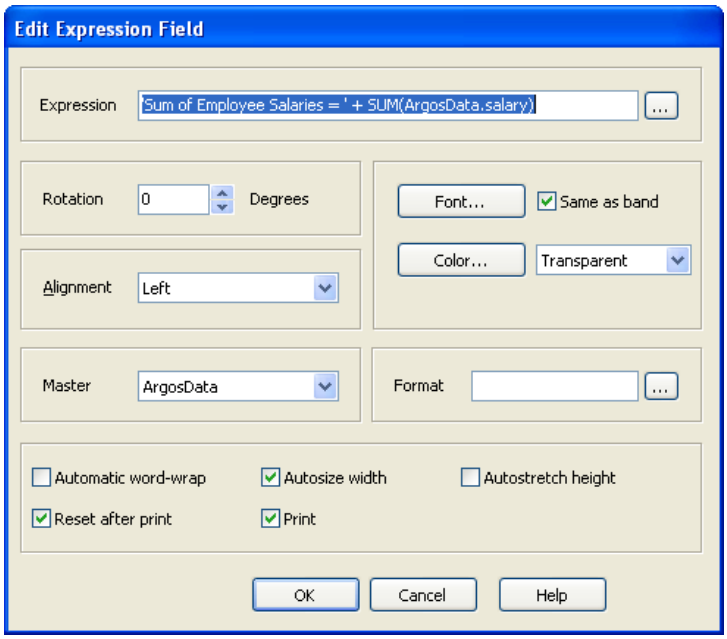
Selecting the parameter for SUM function

Click the ellipsis button.



Selecting the database field

Select "Database field" since the parameter for the SUM function is the employee salary and comes from the DataBlock.



The completed expression

As was done with the COUNT function, check the "Reset after print" box to reset the sum to zero for each band.

Also, check "Autosize width" to guarantee that enough room will be set aside for the new field to print.

This item will be placed under the employee count field, thus you may need to increase the height of the band for the new field to fit. You may also select "Autostretch height" and the height of the band will be increased for you.

Position the new fields just created by clicking each field then dragging it to the desired location within the band.

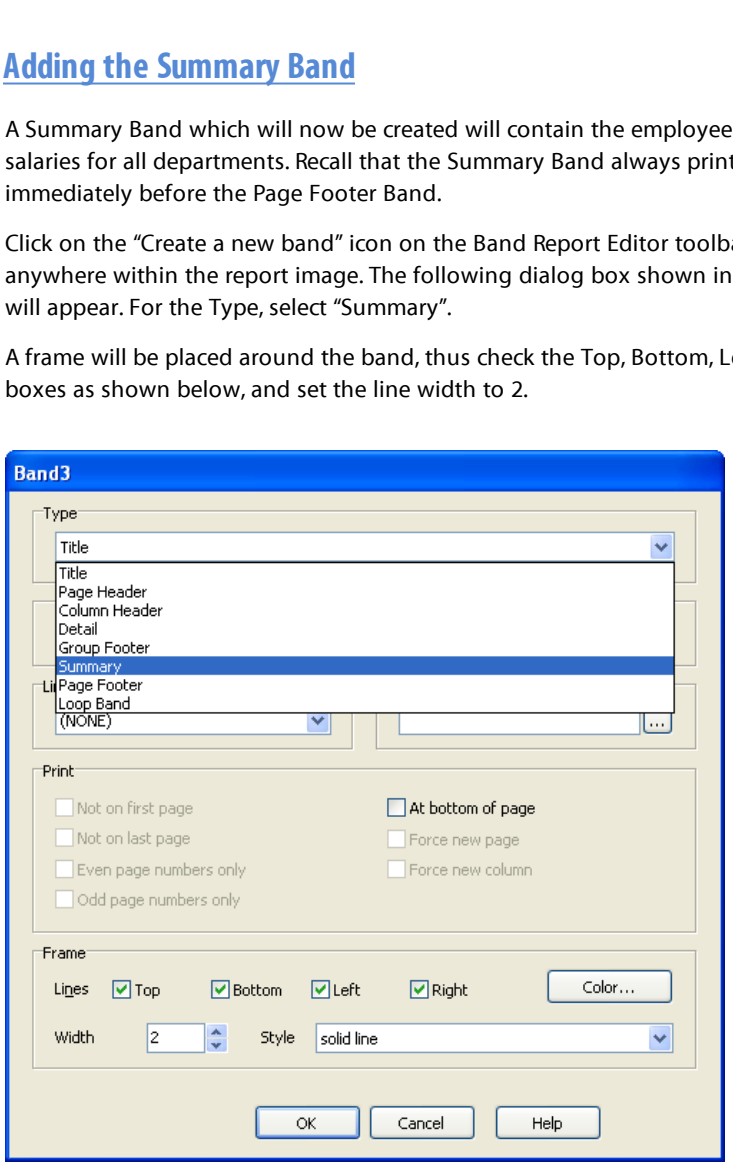
Adding the Summary Band

A Summary Band which will now be created will contain the employee count and sum of salaries for all departments. Recall that the Summary Band always prints on the last page, immediately before the Page Footer Band.

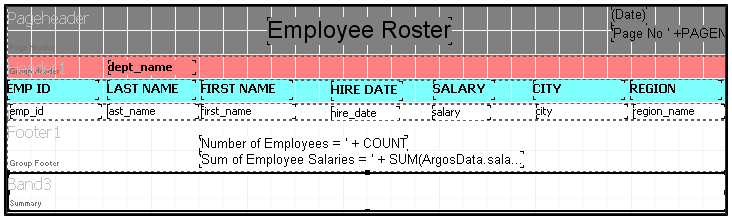
Click on the "Create a new band" icon on the Band Report Editor toolbar, then click anywhere within the report image. The following dialog box shown in the figure below will appear. For the Type, select "Summary".

A frame will be placed around the band, thus check the Top, Bottom, Left, Right check boxes as shown below, and set the line width to 2.

Create a new Summary Band using the icon within the Band Report Editor toolbar



Adding the Summary Band

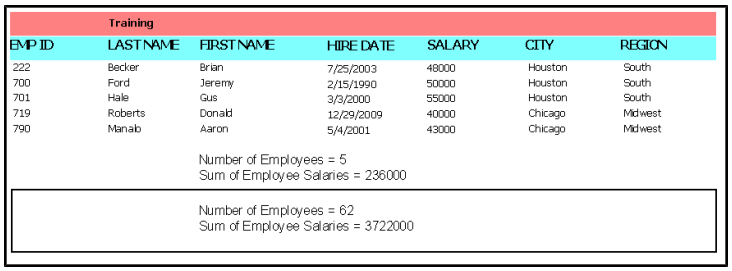


The Report Format after adding the Summary Band

Notice the new Summary Band at the bottom of the report with the solid line surrounding the band.

Now add the employee count and sum of salaries to the Summary Band by copying the expressions from the Group Header Band and pasting them into the Summary Band.

The final page of the report will now appear as follows:



Training

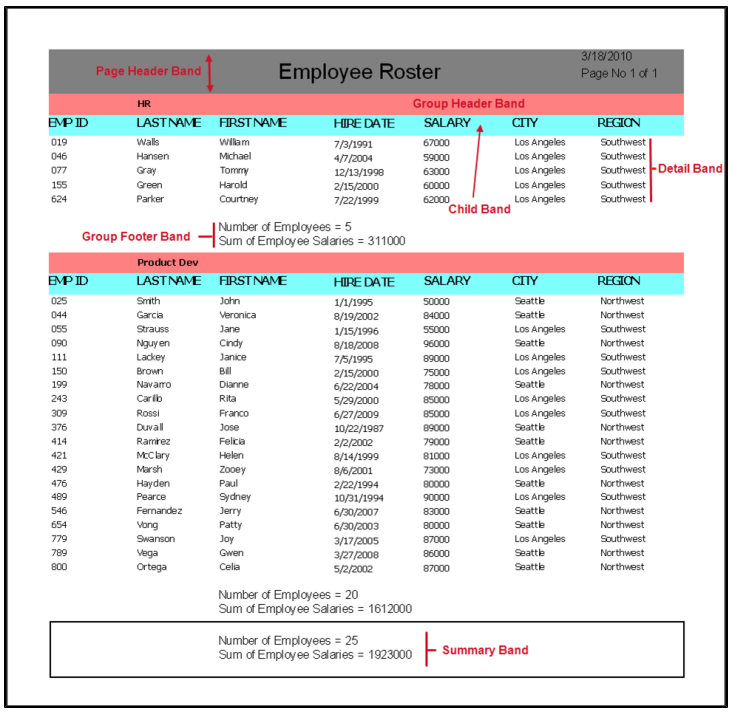
EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
222	Becker	Brian	7/25/2003	48000	Houston	South
700	Ford	Jeremy	2/15/1990	50000	Houston	South
701	Hale	Gus	3/3/2000	55000	Houston	South
719	Roberts	Donald	12/29/2009	40000	Chicago	Midwest
790	Manalo	Aaron	5/4/2001	43000	Chicago	Midwest

Number of Employees = 5
Sum of Employee Salaries = 236000

Number of Employees = 62
Sum of Employee Salaries = 3722000

Employee count and salary sum within Group & Summary Bands

Note the total employee count and sum of salaries as well as the frame around the Summary Band. The final report now appears as shown below.



EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
019	Walls	William	7/3/1991	67000	Los Angeles	Southwest
046	Hansen	Michael	4/7/2004	59000	Los Angeles	Southwest
077	Gray	Tommy	12/13/1998	63000	Los Angeles	Southwest
155	Green	Harold	2/15/2000	60000	Los Angeles	Southwest
624	Parker	Courtney	7/22/1999	62000	Los Angeles	Southwest

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
025	Smith	John	1/1/1995	50000	Seattle	Northwest
044	Garcia	Veronica	8/19/2002	84000	Seattle	Northwest
055	Strauss	Jane	1/15/1996	55000	Los Angeles	Southwest
090	Nguyen	Cindy	8/18/2008	96000	Seattle	Northwest
111	Lackey	Janice	7/5/1995	89000	Los Angeles	Southwest
150	Brown	Bill	2/15/2000	75000	Los Angeles	Southwest
199	Navarro	Dianne	6/22/2004	78000	Seattle	Northwest
243	Carlib	Rita	5/29/2000	85000	Los Angeles	Southwest
309	Rossi	Franco	6/27/2009	85000	Los Angeles	Southwest
376	Duvall	Jose	10/22/1987	89000	Seattle	Northwest
414	Ramirez	Felicia	2/2/2002	79000	Seattle	Northwest
421	McClary	Helen	8/14/1999	81000	Los Angeles	Southwest
429	Marsh	Zooey	8/6/2001	73000	Los Angeles	Southwest
476	Hayden	Paul	2/22/1994	80000	Seattle	Northwest
489	Pearce	Sydney	10/31/1994	90000	Los Angeles	Southwest
546	Fernandez	Jerry	6/30/2007	83000	Seattle	Northwest
654	Vong	Patty	6/30/2003	80000	Seattle	Northwest
779	Swanson	Joy	3/17/2005	87000	Los Angeles	Southwest
789	Vega	Gwen	3/27/2008	86000	Seattle	Northwest
800	Ortega	Celia	5/2/2002	87000	Seattle	Northwest

The completed report

The report above consists of only one page because in the parameter query for this particular figure, only the HR and Product Development Departments were selected. There are actually 7 departments within the sample database that could have been chosen for this report.

Additional Group Bands

This example utilizes a single Group Band to group employees by department name. If desired, additional Group Bands could be created to group, for example, by Region. Thus, nesting of Group Bands provides multi-levels of grouping.

When creating an additional Group Band, if Argos does not place the band in the desired order, you can drag the band to the correct location. Argos will always place the new group band immediately in front of the detail band.

It is recommended that the outermost group be created first, followed by inner groups. Using this method generally does not require that group bands be moved.

Not all bands are movable due to the nature of the various band types. For example the Summary Band always exists at the bottom of the report and cannot be moved.

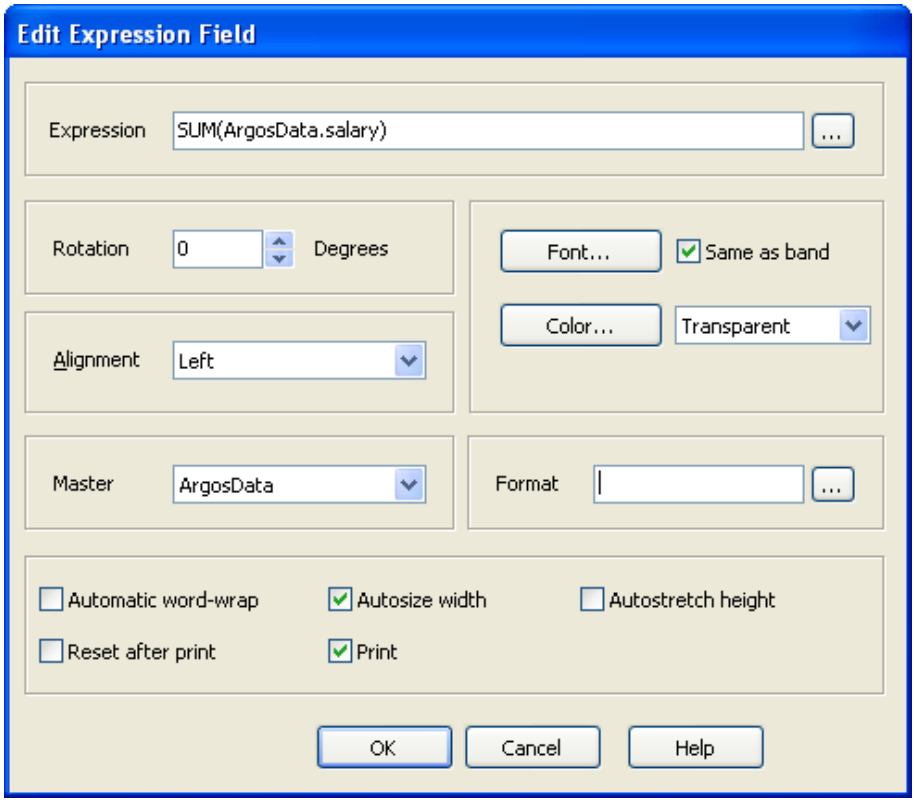
Formatting Numeric Output

Example 2

Introduction

The Banded Report in the previous example shows the sum of salaries without any formatting, that is, without dollar signs or commas. Instead of printing "Total Sum of Employee Salaries = 1923000 in the Summary Band, it is desired to print it as $1,923,000.

To format the output you need to edit the field within the Band Editor. Right-click the field to be formatted which brings up the Edit Expression Field dialog box shown below.

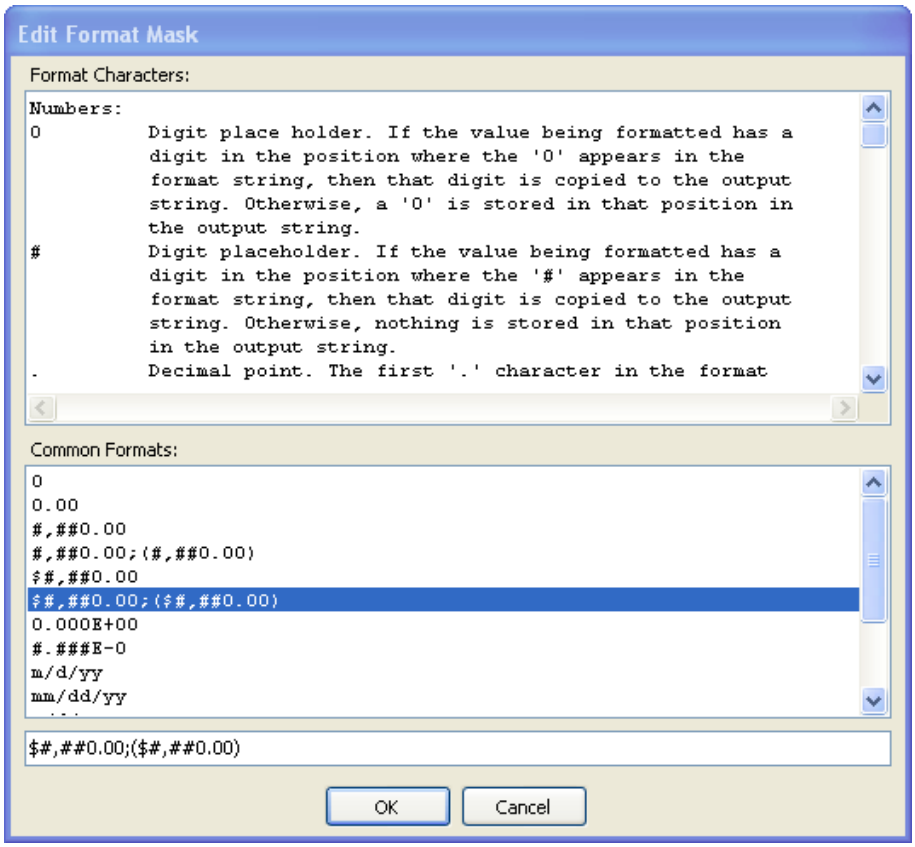


Choosing the field to be formatted

Selecting/Creating the Format Mask

To format the field, click the ellipsis button to the right of "Format" which brings up the "Edit Format Mask" dialog box (shown below) that provides options for formatting both numeric and date fields.

You can select one of the pre-existing formats or create your own mask. To select one of the pre-existing formats, double-click the desired format shown within the lower window. The selected option will then appear in the box at the bottom of the window as shown below. You can also create your own format by using the formatting characters described at the top of the Edit Format Mask dialog box.



Selecting the formatting option

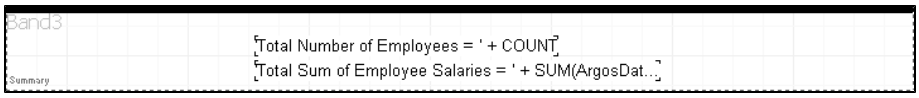
Edit Format Mask

Choose one of the existing formats (double-click) or enter your desired mask in the text box at the bottom of the Edit Format Mask dialog box.

The field being edited will then be displayed using the format chosen.

However, the example above needs to be modified in order to use the formatting since the field containing the sum also contains a leading string "Total Sum of Employee Salaries". Argos cannot format the entire field since the expression also contains a string.

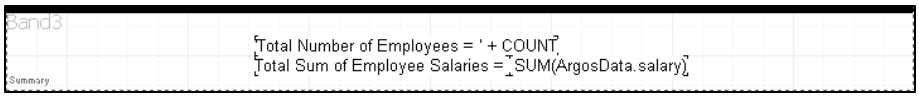
Therefore the leading string must be separated from the SUM, and only the SUM field should be formatted.



The expression as one string

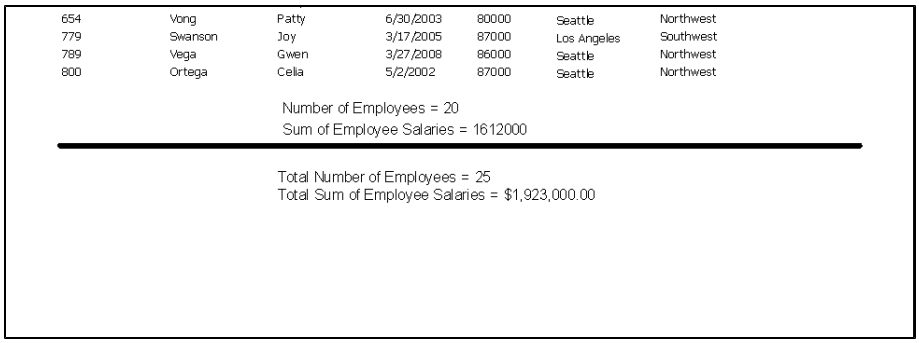
To accomplish this, edit the field above to remove the leading string. Then apply the format to the SUM function. To replace the leading string you will need to add a new text field and position it immediately to the left of the SUM function.

The figure below shows that there are now two separate fields (the leading string and the SUM field).



The expression separated into 2 fields

The new fields will print as shown below and contains the dollar sign and commas:



The formatted numeric output printed

The same procedure can be used to format the Sum of Employees' Salaries within the Group Footer Band.

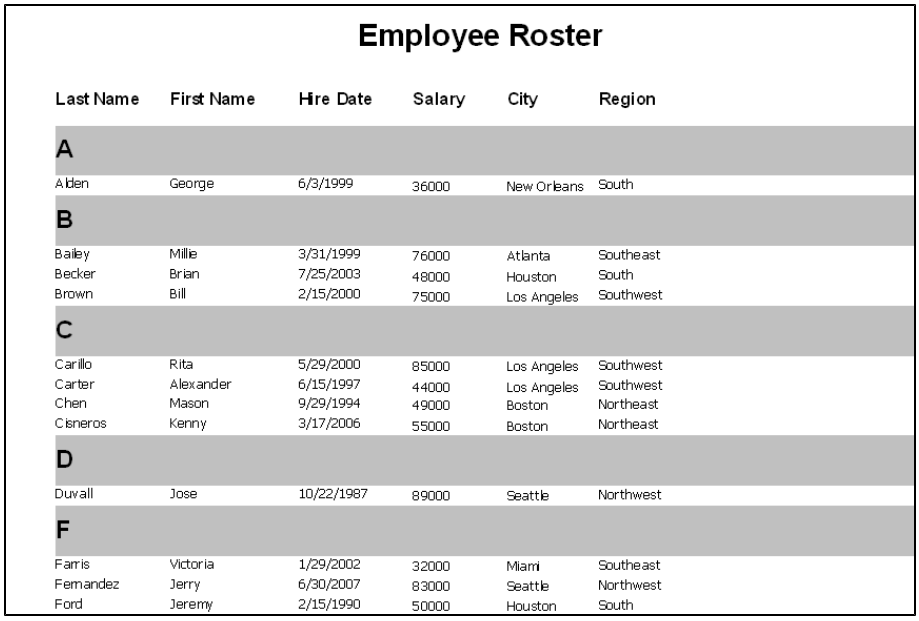
Group By Expression

Example 3

Introduction

The previous examples illustrated how to group employees by department, where the database field dept_name was used as the field to group by. It is also possible to group where an expression defines the grouping criteria. This will be demonstrated in this example where the employee list will be grouped by the first letter of the employee last name. An expression will be developed to be used as the criteria for grouping.

The desired output is shown in the figure below



Employee Roster

Last Name	First Name	Hire Date	Salary	City	Region
A					
Alden	George	6/3/1999	36000	New Orleans	South
B					
Bailey	Millie	3/31/1999	76000	Atlanta	Southeast
Becker	Brian	7/25/2003	48000	Houston	South
Brown	Bill	2/15/2000	75000	Los Angeles	Southwest
C					
Carillo	Rita	5/29/2000	85000	Los Angeles	Southwest
Carter	Alexander	6/15/1997	44000	Los Angeles	Southwest
Chen	Mason	9/29/1994	49000	Boston	Northeast
Cisneros	Kenny	3/17/2006	55000	Boston	Northeast
D					
Duvall	Jose	10/22/1987	89000	Seattle	Northwest
F					
Farris	Victoria	1/29/2002	32000	Miami	Southeast
Fernandez	Jerry	6/30/2007	83000	Seattle	Northwest
Ford	Jeremy	2/15/1990	50000	Houston	South

Grouping by First Letter of Last Name

The steps to follow are:

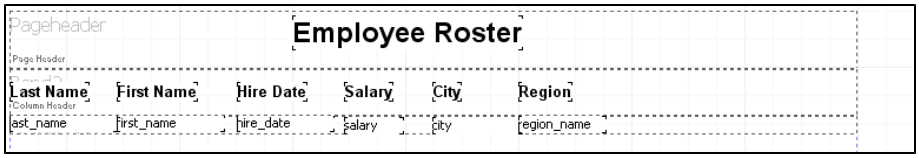
- Sort by Employee Last Name.
- Create a Group Band and set its background color to light grey.
- Create an expression to obtain the first letter of the last name and place it within the "Group-by-field or expression" box.
- Place the expression into the Group Band Header to highlight the groupings (see the bold letters in the above figure).

When grouping by a particular field (Employee last name in this example), the data must be sorted by the same field.

Create the Basic Report

Begin by creating a report and within the "Edit Report" dialog box click the Sort Tab and sort by Employee Last Name.

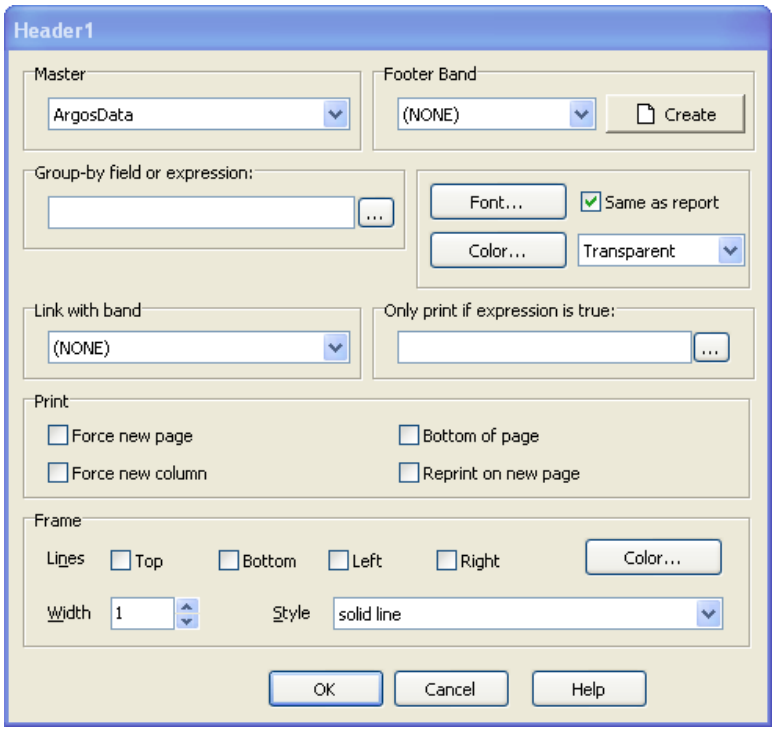
Within the Edit Report dialog box, click the Design button to bring up the Band Report Editor and create a simple report as shown in the figure below:



The format of the report prior to creating groups

Create a Band Group

Create a band group by clicking the "Create a Band Group" icon on the Band Report Editor toolbar. The Header dialog box will appear as shown below. Since grouping by the first letter of the employee last name is to be done, you need to enter an appropriate expression into the "Group-by-field or expression" box.

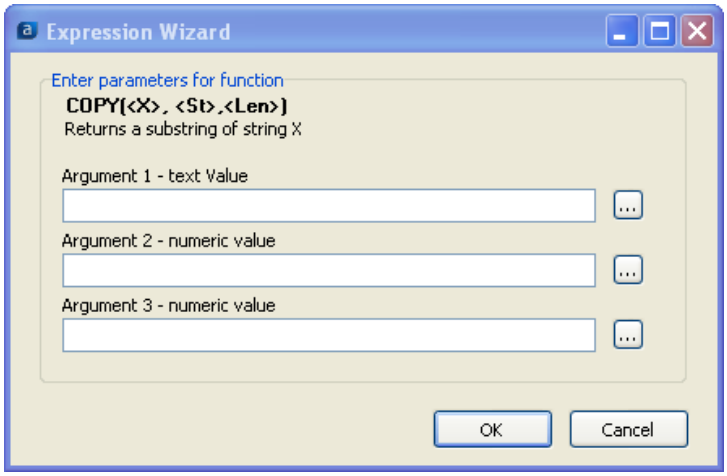


Creating the Group Header Band

Add a color to the band by clicking the "Color" button, then select light grey.

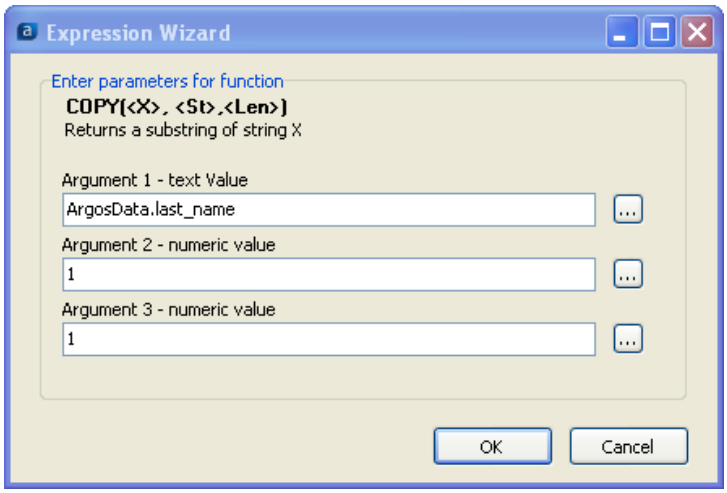
Create the Expression

To create the expression, click the ellipsis button then select the COPY function via double-click.



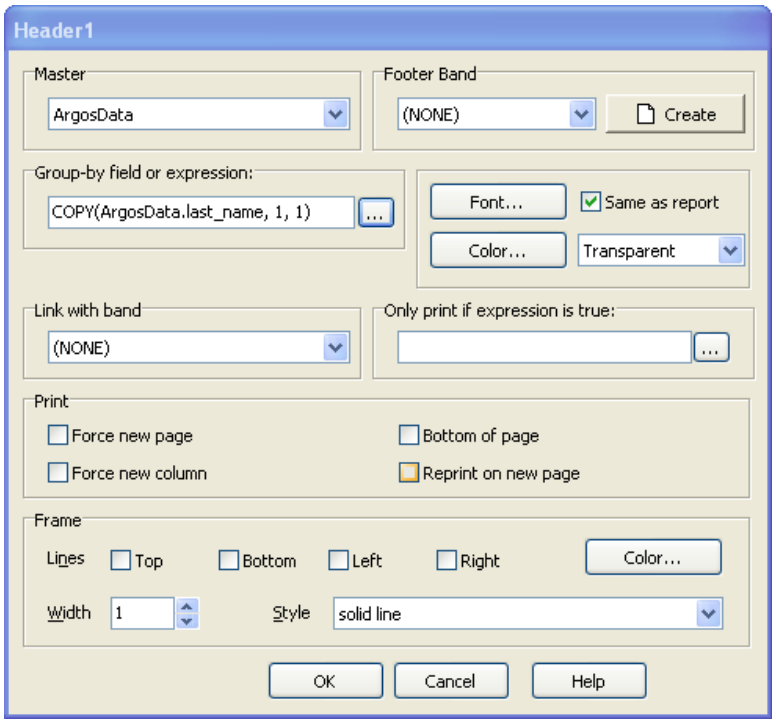
Selecting the COPY function

The COPY function returns a substring, and for this example you need to choose the Employee Last Name field from the database (using the same method as in previous examples) and return the first character from the string by entering the following:



Obtaining the first letter of the last name

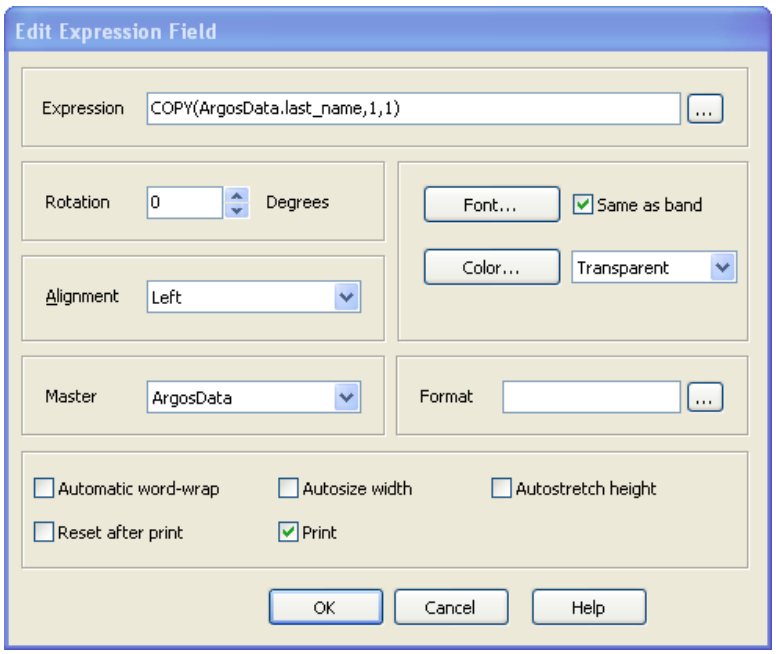
The expression to return the first letter of the last name has now been inserted into the Group-by-field or expression box. The grouping is now handled by an expression, as opposed to an earlier example where grouping was done by a database field name.



The expression entered into the Group-by-field or expression box

Place Expression into Group Header Band

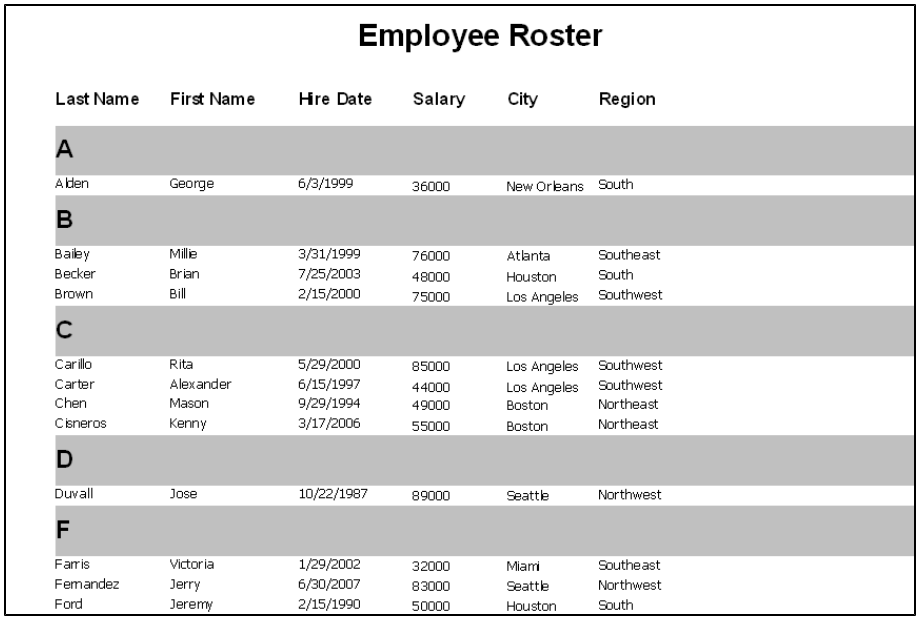
The final step is to place the same expression into the Group Header such that the first letter of the last name is displayed within the Group Header. To accomplish this, click **E=mc**^{2} on the toolbar, then click within the Group Header Band. Then enter the same expression as before.



Adding the expression to print within the Group Header

Drag the field containing the expression to the left edge, then set the font to 14 point bold.

The desired report will print as follows:



Employee Roster

Last Name	First Name	Hire Date	Salary	City	Region
A					
Alden	George	6/3/1999	36000	New Orleans	South
B					
Bailey	Millie	3/31/1999	76000	Atlanta	Southeast
Becker	Brian	7/25/2003	48000	Houston	South
Brown	Bill	2/15/2000	75000	Los Angeles	Southwest
C					
Carillo	Rita	5/29/2000	85000	Los Angeles	Southwest
Carter	Alexander	6/15/1997	44000	Los Angeles	Southwest
Chen	Mason	9/29/1994	49000	Boston	Northeast
Cisneros	Kenny	3/17/2006	55000	Boston	Northeast
D					
Duvall	Jose	10/22/1987	89000	Seattle	Northwest
F					
Farris	Victoria	1/29/2002	32000	Miami	Southeast
Fernandez	Jerry	6/30/2007	83000	Seattle	Northwest
Ford	Jeremy	2/15/1990	50000	Houston	South

The final report grouped by first letter of employee last name

Creating Mailing Labels

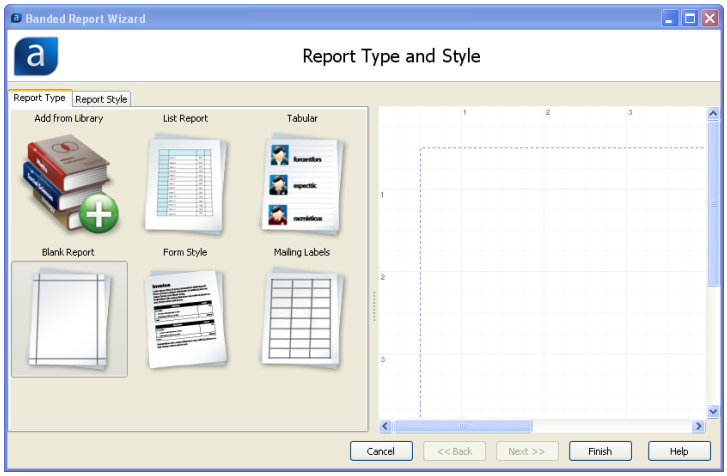
Example 4

Introduction

The **Argos** Band Editor can be used to generate labels for an extensive list of labels from many different manufactures. You can also create your own custom label size as well.

Select the Mailing Labels Report Type

To use the Band Editor to generate labels, begin the report creation using procedures outlined in previous examples. However, on the form where you select the Report type, choose the 'Mailing Labels' option.



Selecting the Mailing Label Report Type

Click Finish to continue.

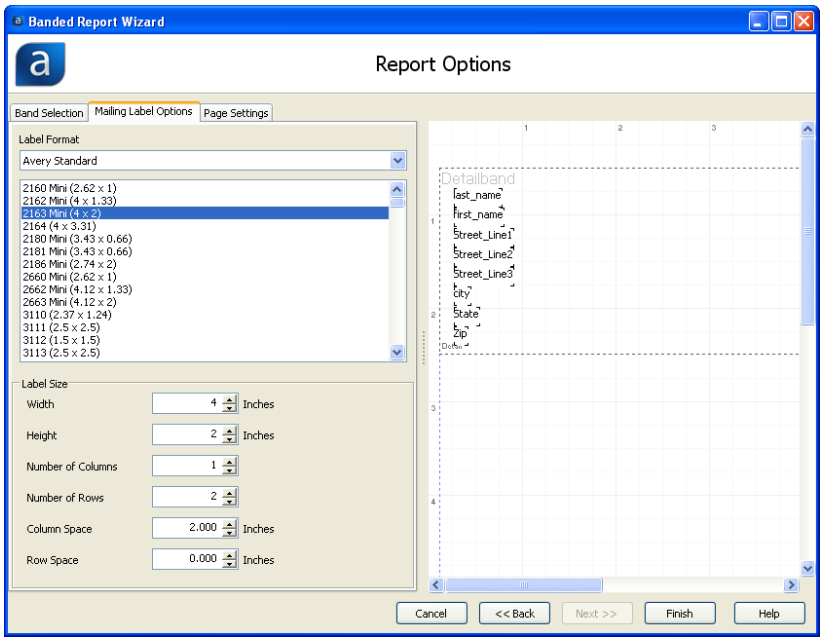
Select the Fields to Use

On the next form, select the fields that you would like to appear on the label.

This example will once again use the Employees table in the sample database.

Select last_name, first_name, city, Street_Line1, Street_Line2, Street_Line3, State, and Zip. Click Next to continue.

The next form allows you to choose the Label Format. First select the Vendor, and then the Format. For this example select the vendor Avery Standard, using the 2163 layout. Click Finish to continue.



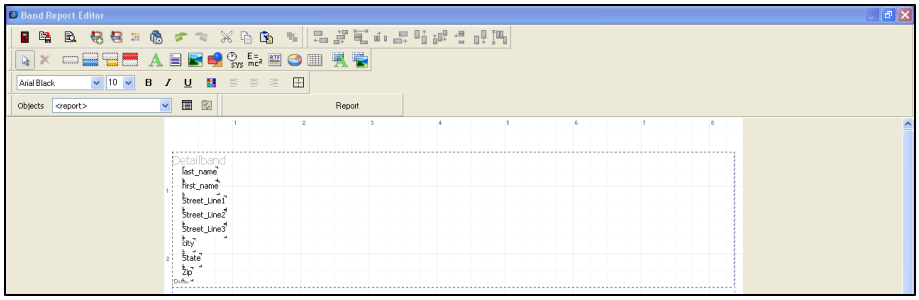
Selecting the Mailing Label Type

Note: If the label you are using is not listed, select one that is similar, as you can change the size and position of the individual labels later.

The figure above shows a sample layout. The Band Editor has already defined the margins for the selected label, but you can change these if needed. Click Finish to continue.

Edit the Fields

The Band Report Editor is then displayed with the label existing within the Detail Band. You are now free to change the characteristics of the data (font size, font color, etc) within the Band by right-clicking anywhere within the band.



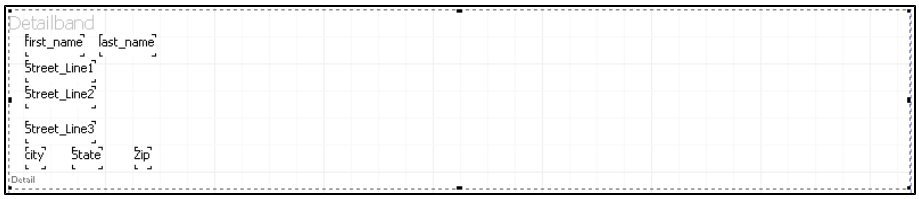
You will need to rearrange the fields to appear as follows on the label:

first name last name
Street 1
Street 2
Street 3
City, State Zip

By selecting a field and clicking and dragging, the field can be moved. Using the alignment tools, multiple fields can be selected and properly aligned.

For example, to make sure the all the fields are aligned on the same left margin, select the fields in question and press the Left Alignment icon.

Similarly, to make sure items are aligned across the bottom, use the Bottom Alignment tool. Position the fields as follows:



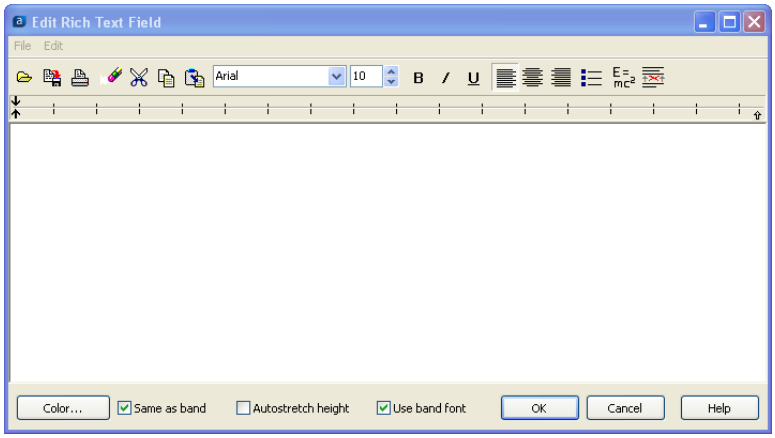
To preview the layout, click on the Preview button. Make sure to run with a good sample to ensure you test different possibilities. Any problems are quickly taken care of by using Rich Text Fields in conjunction with the Expression Builder. Return to the Report Editor to first take care of the formatting for all fields.

Next, select the existing fields, delete them and replace them with Expression Fields. Expressions will be used to:

- Add fields that were removed
- Concatenate the first and last name
- Concatenate City, State, and Zip

Concatenating is done using the + sign. When joining fields with the plus sign, all leading and trailing blanks will be removed. This means that you need to add a space between the first and last name.

The new fields will be created using Rich Text Fields. Therefore click the "Add a Rich Text Field" icon within the Band Report Editor Toolbar then click anywhere within the Band Report Editor. The Rich Text Editor will be displayed as shown below:

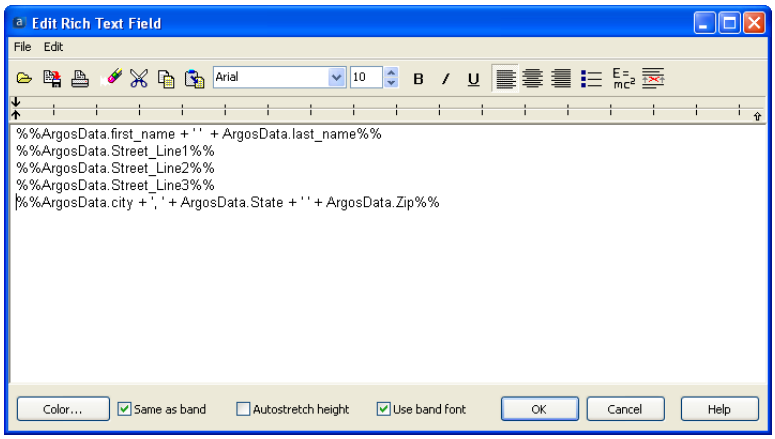


The Rich Text Field Editor

Use the Rich Text Field icon within the Band Report Editor toolbar

The RTF editor can be thought of a mini text editor and provides various text formatting features.

To add database fields to the label, place the cursor in the appropriate location and click the **E=mc**^{2} button. Then, select the desired field in the expression builder. In this way, add each of the fields needed for the label.



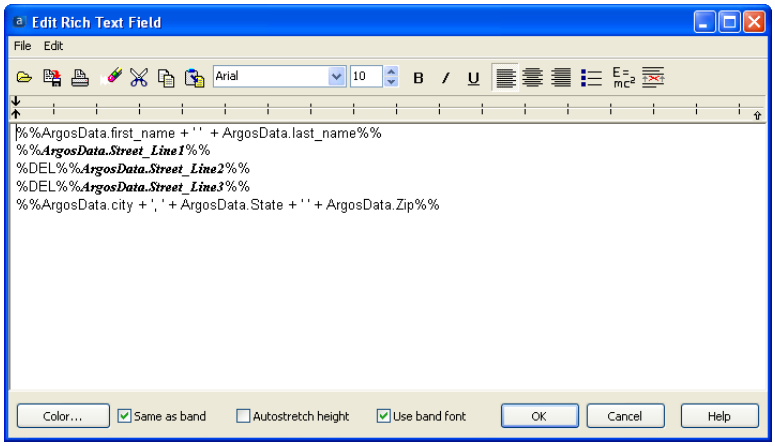
Expressions Added to the Report Format

You can now enhance the appearance of the label by changing the font, font size and font characteristics (bold, italics, underline) by selecting the appropriate icon on the toolbar. Additional commonly used formatting features can be selected (left, center, right justify), adding bullets, and setting background color.

For this example the street addresses will be bolded and italicized, and will be changed to Times New Roman font.

Suppress Printing of Empty Lines

Fields Street_Line2 and Street_Line3 may not contain data; therefore if they are empty these lines should not be printed. To accommodate this condition, click the red X icon (Remove Line if Empty) on the upper right of the dialog box. This will cause empty lines to not be printed. Highlight the 2 fields then click the red **X** on the toolbar (see figure in the sidebar) which results in the following:



Identifying lines not to print if empty

Remove Line if Empty icon within the Rich Text Field Editor

Street_Line2 and Street_Line3 now have DEL inserted, indicating that the line will be removed if it is empty.

Note the use of quotes to create blank spaces between fields when necessary.

Click OK, then the fields will be added to the selected band.

Drag the resulting field to the upper left of the Detail Band and resize it to accommodate the fields. You may also need to resize the Detail Band.

The final output is shown below. Note that for each label, there are no blank spaces between any of the lines.

George Alden
7893 Braemar Ranch Drive
Apt. 10
New Orleans, Louisiana 87780

Millie Bailey
45 Wilshire Drive
Atlanta, Georgia 32900

Brian Becker
783 Cresthrook Street
Suite 500
Attn:Jane Doe
Houston, Texas 18999

Bill Brown
11 Portofino Way
Los Angeles, California 92444

The completed mailing label

Resizing fields

A field can be resized manually by selecting the field, then dragging the handles of the box that surrounds the field.

Or, you can avoid manual resizing by selecting the "Autosize width" or "Autostretch height" selections that appear on the "Edit" dialog for a field.

Printing Groups on a New Page and Resetting the Page Count

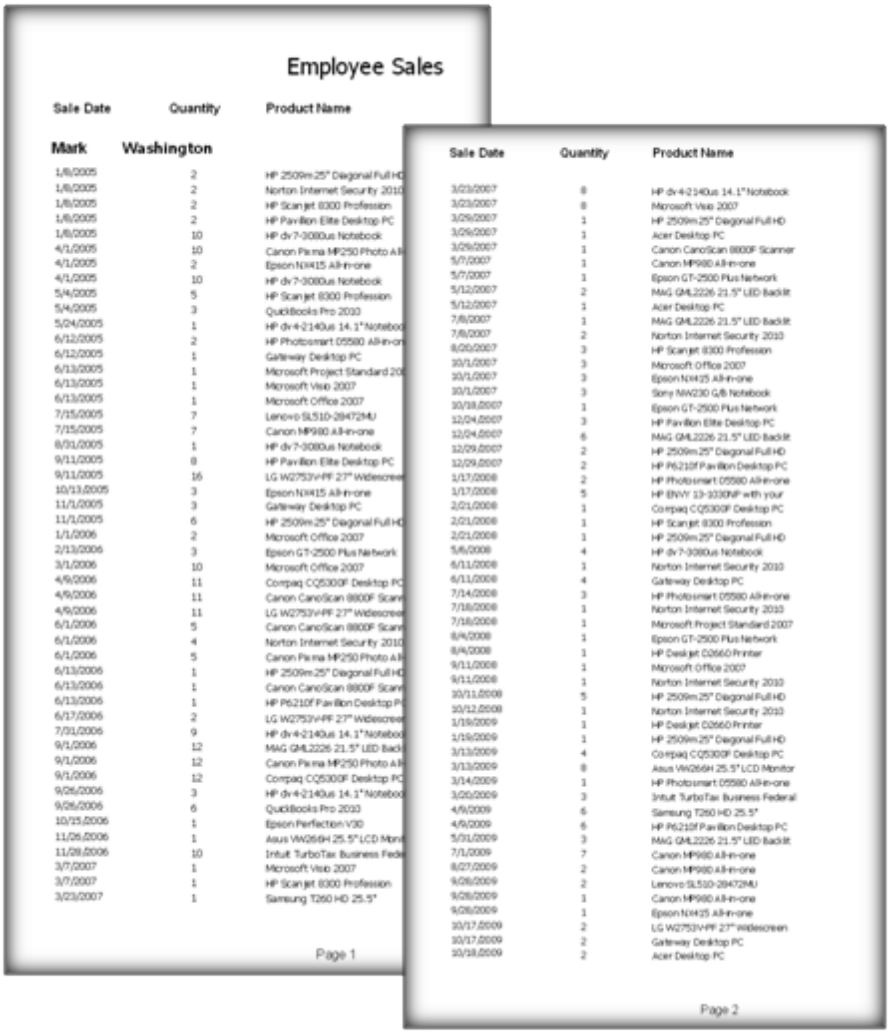
Example 5

Introduction

This example illustrates a situation where it is desired to print each group on a new page and to reset the page number to 1 for each group. The COUNTER and RESETEXPR functions will be utilized to accomplish this.

Example 1 showed how to reset the SUM and COUNT functions after printing (by selecting the "Reset after print" check box). For this example the PAGENUMBER function seemingly could be used to print the page number, however this function cannot be reset. Instead the COUNTER function is used to count pages since this function can be reset using the RESETEXPR function when required.

The Employees, Orders, Order_Details, and Products tables within the sample database are used within this example. The report will list all sales orders per employee as shown below:

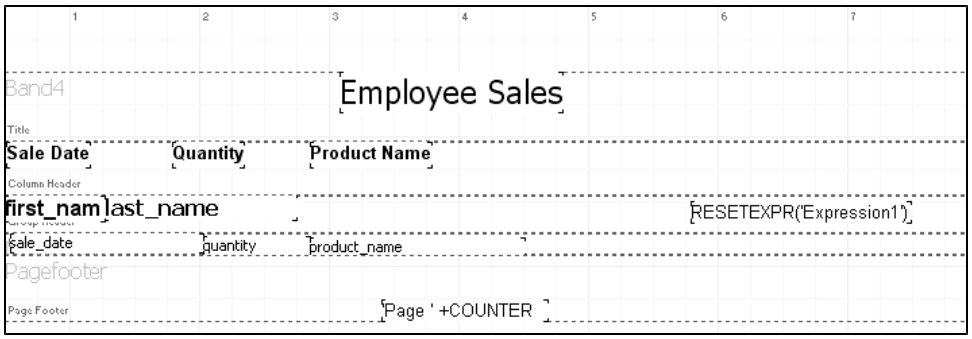


The printed report

Note that the page numbers increment for each employee, but reset to 1 for the next employee.

The following describes the format of the report.

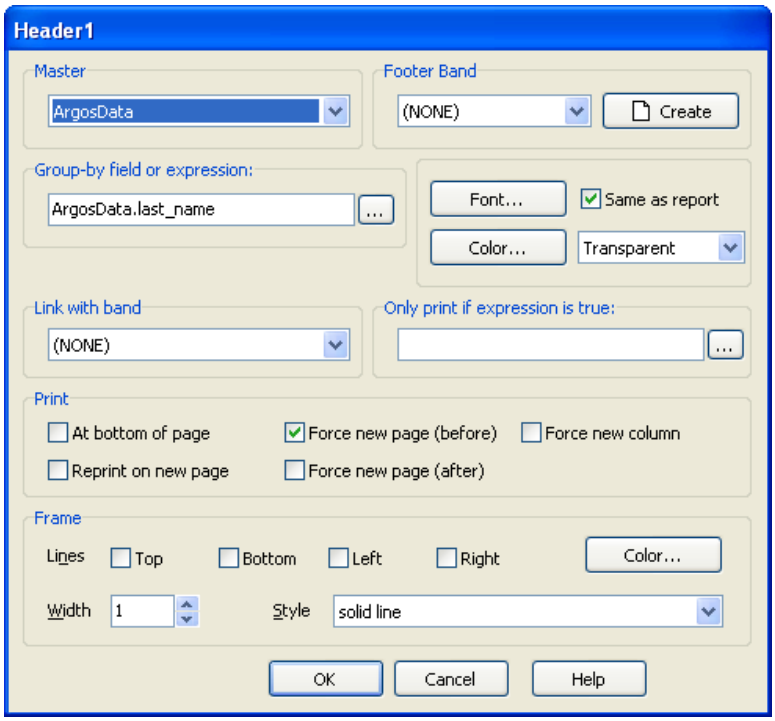
- The Title Band contains the text string “Employee Sales”.
- The Column Header Band contains the Sale Date, Quantity, and Product Name Headers.
- The Group Header Band contains the employee last name and first name. It also contains the function RESETEXPR.
- The Detail Band contains the sale date, quantity, and product name.
- The Page Footer Band contains the COUNTER function which represents the page number.



The Report Design

Force Group Header on new page

To force the Group Header to print on a new page, check the option to “Force new page (before)”.

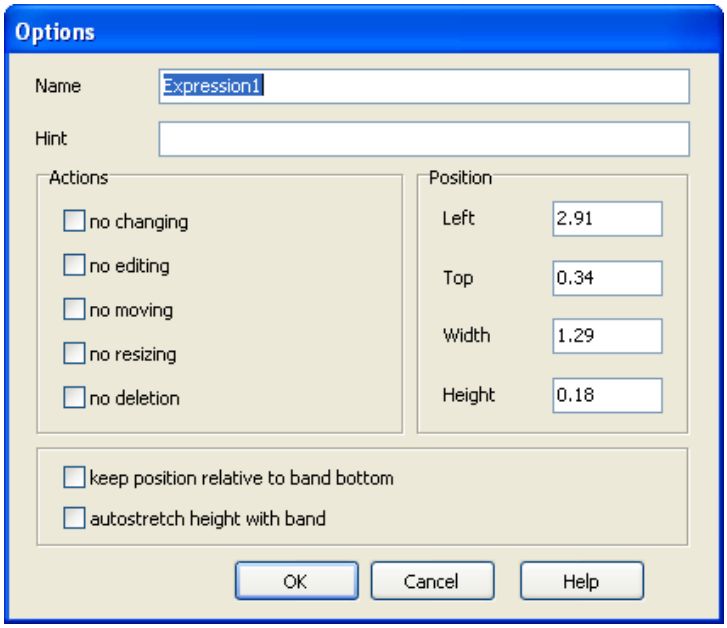


Forcing a New Page for the Group Header Band

The report design above shows a COUNTER function in the Page Footer band. Every time the band prints (once per page), the counter increments.

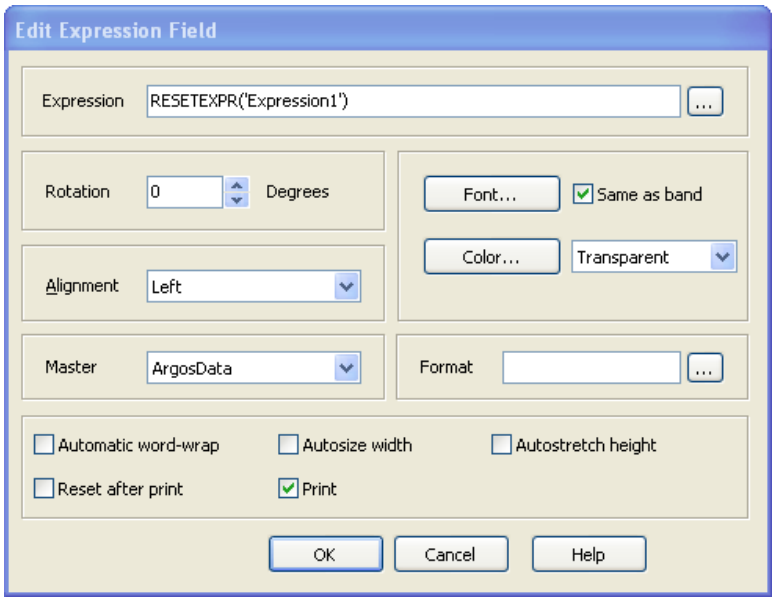
Reset the COUNTER expression

The name of the COUNTER expression must be obtained such that it can be reset within the RESETEXPR function. To obtain the name, right-click on the ['Page ' + COUNTER] expression then click "Options' to obtain the Expression Name, which in this case is Expression1.



Obtaining the name of the expression

To force the page counter to reset for each group, the RESETEXPR function must contain the expression to reset (the COUNTER expression) when this band (Group Header) is printed. Therefore 'Expression1' is entered as the parameter as shown in the figure below. The expression name must be enclosed within single quotes.



Entering the expression name into the RESETEXPR function

The report design is now complete.

Conditional Printing

Example 6

Introduction

When an Argos DataBlock is initially designed, the developer creates a form that the Report Viewer uses to filter or limit the data that will be displayed. There are times when it would be useful to run the same report, but filter the data on information not available on the form.

Consider the following report which lists vendors to which Purchase Orders have been submitted:

Pending Purchase Orders

PO Number	invoice recd	invoice paid	PO date	Total
United Cleaning Supplies				
1008	n	n	4/29/2005	$300.00
1009	y	n	4/30/2005	$75.00
1018	n	n	8/26/2005	$48.00
1033	y	n	5/5/2006	$470.00
1042	y	n	8/8/2006	$168.00
1043	y	n	8/19/2006	$160.00
1061	y	n	6/7/2007	$421.00
1062	y	n	6/23/2007	$450.00
1071	y	y	12/21/2007	$402.00
1078	y	n	6/2/2008	$5,535.00
Staples				
PO Number	invoice recd	invoice paid	PO date	Total
1000	n	n	1/21/2005	$150.00
1003	y	y	4/11/2005	$560.00
1011	n	n	6/1/2005	$2,300.00
1019	n	n	10/8/2005	$550.00
1030	y	n	2/14/2006	$157.00
1031	y	y	2/22/2006	$180.00

The report showing all Purchase Orders

For each PO listed, the field "invoice recd" indicates whether an invoice has been received from the vendor, and the field "invoice paid" indicates whether the invoice has been paid. This example uses the Purchase_Orders, Purchase_Order_Items, and Vendors tables from the sample database.

The report is to be modified to list only vendors for which invoices have been received, but not yet paid. Since these fields do not exist within the input selection form, filtering must be done using the "Only print if expression is true" selection within the dialog box that is displayed when editing a band.

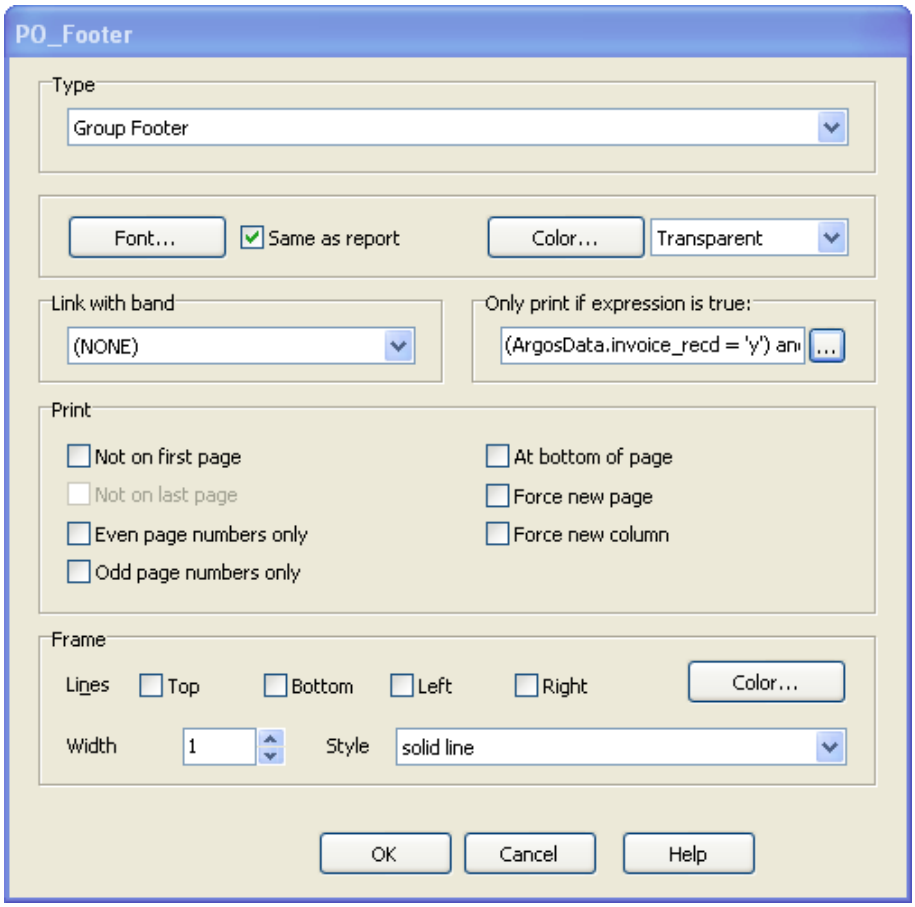
Bands used in this report

This report contains a Title Band, Group Header Band, Child Band, Detail Band, and Group Footer Band.

Each record in the Detail Band contains an item within a Purchase Order, but only the total of all items is of interest. The item sum is placed within the Group Footer Band and the Detail Band is not printed. This is why conditional printing is done for the Group Footer Band and not for the Detail Band.

To prohibit printing of the Detail Band, the band height is set to zero in the Options dialog box for the Detail Band.

Conditional printing is done by editing the band that the filtering is to be applied to and entering the condition within the "Only print if expression is true" text box as shown below (for this example filtering is done on the Group Footer Band).

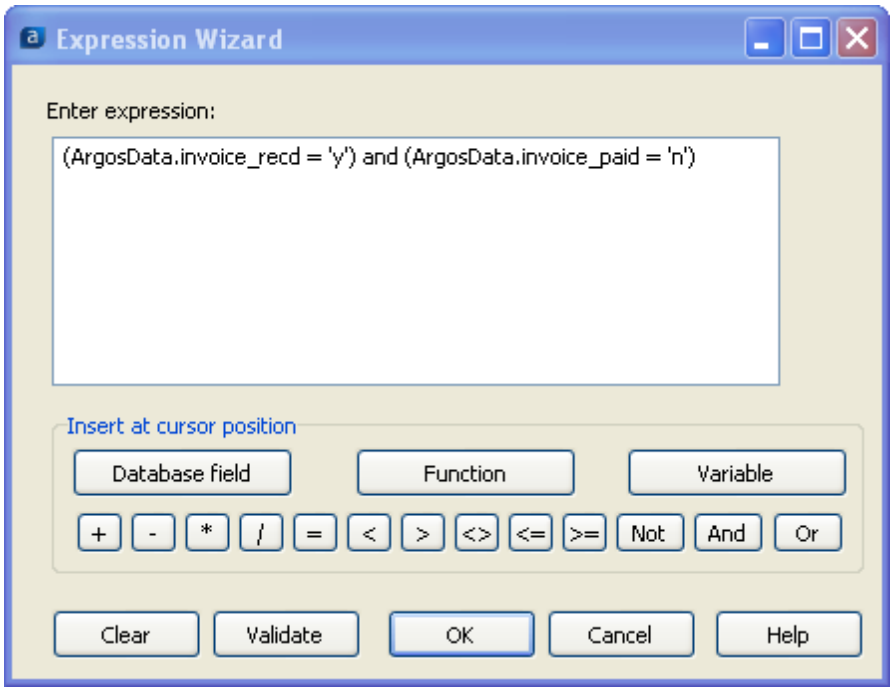


Entering the criteria for conditional printing

For this band (PO_Footer) an expression was entered to limit the printed information. The complete expression (shown in the following figure) satisfies the condition for printing as described above.

Conditional Printing can be used for any band type.

For Detail Bands, conditional printing is applied to each record within the band, but for other bands it applies to printing or not printing the entire band.



The complete expression used for conditional printing

After adding the expression, the report now appears in the figure below with Purchase Orders only printed if invoice received = 'y' and invoice paid = 'n'.

It is necessary to enclose each portion of the expression within parentheses.

Pending Purchase Orders

PO Number	invoice recd	invoice paid	PO date	Total
United Cleaning Supplies				
1009	y	n	4/30/2005	$375.00
1033	y	n	5/5/2006	$518.00
1042	y	n	8/8/2006	$168.00
1043	y	n	8/19/2006	$160.00
1061	y	n	6/7/2007	$421.00
1062	y	n	6/23/2007	$450.00
1078	y	n	6/2/2008	$5,937.00
Staples				
PO Number	invoice recd	invoice paid	PO date	Total
1030	y	n	2/14/2006	$3,717.00
1039	y	n	6/29/2006	$400.00
1049	y	n	12/24/2006	$85.00

The final report with conditional printing applied

Starting with a Blank Report Type

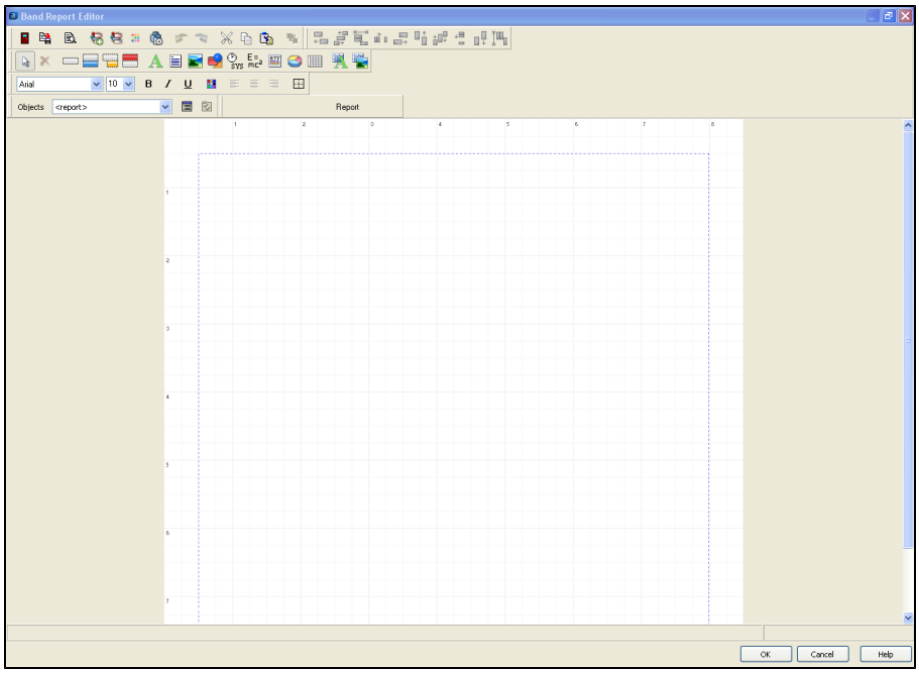
Example 7

Introduction

Previous examples showed how to creare a banded report using the List and Mailing Labels report types. The other report types available in the Banded Report Wizard include List, Tabular, Form Style, and Mailing Labels. If none of these report types suits your needs, you can create a custom report using the Blank report type.

Create a New Report

Select the Blank report type. The Band Report Editor appears as follows:



Band Report Editor with Blank Report Type selected

None of the bands or database fields are shown as is done with the other Report Types. With the Blank Report Type you must create bands and band contents manually.

Icons on Band Report Editor toolbar for creating bands

Create a new band

Create a new child band

Create a new sub detail band

Create a new band group

Adding Bands

To add bands, click the appropriate band (see band icons within the sidebar) then click anywhere within the Editor and the band will be created. Do this repeatedly for each band that you need to create.

To add database fields or text fields (to be used as headers or titles) click the corresponding icon (see sidebar) then click within the band that you wish the field to be inserted into. The field will then be added to the selected band. Use the same process to add other field types (expressions, images, etc.). Continue with this process until you have inserted all required bands and fields into your report.

Adding a database field

Adding a text field

Using Sub-Detail Bands

Example 8

Introduction

Sub-detail bands increase the Band Editor's functionality by allowing sub-reports that provide additional information for each record in the detail band. A sub-detail band prints one dataset while being linked to another dataset (called the *master*). As each record prints in the master dataset, Argos executes the dataset in the sub-detail band and prints the sub-detail band once for each row returned. Any number of sub-detail bands can be created, and they all follow the detail band.

In most cases, the master dataset is the main report query (ArgosData). The dataset displayed in a sub-detail band is a different dataset; in fact, it can be from a different database, as long as both datasets have a common field which can be used to link them.

Note: a sub-detail band always prints after the detail band and will loop through all records in its dataset before the master dataset increments to the next record. For this reason, this technique is less efficient than other methods and should be used only when required.

You should use sub-detail bands when:

- You need to loop through two or more datasets for each row in the detail band. Other methods only allow one dataset to be associated with each detail band.
- You need to loop through one or more datasets for each row in the detail band, but the data comes from a different database.

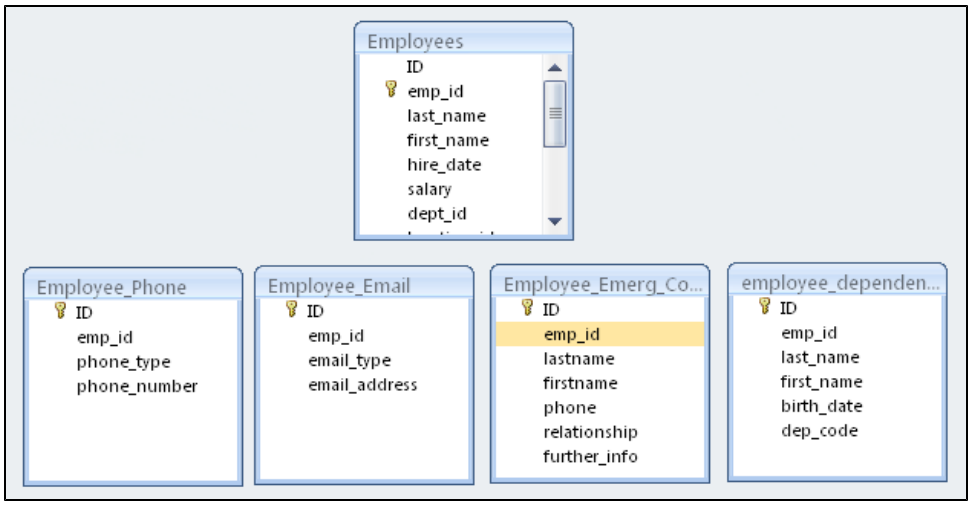
The Report Contents

In this example, we use sub-detail bands to add additional information to an employee list. This information includes employee contact information such as phone number, email address, contact information, and dependent information. Each type of contact appears in its own sub-detail band such that four sub-detail bands will be associated with the Employee information that appears in the detail band.

This example uses the Employee, Employee_Phone, Employee_Email, Employee_Emerg_Contact, and Employee_Dependents tables within the sample database.

Since four datasets are associated with and are printed immediately after the detail band, the use of sub-detail bands is required (other methods only allow one dataset to be linked to a detail band).

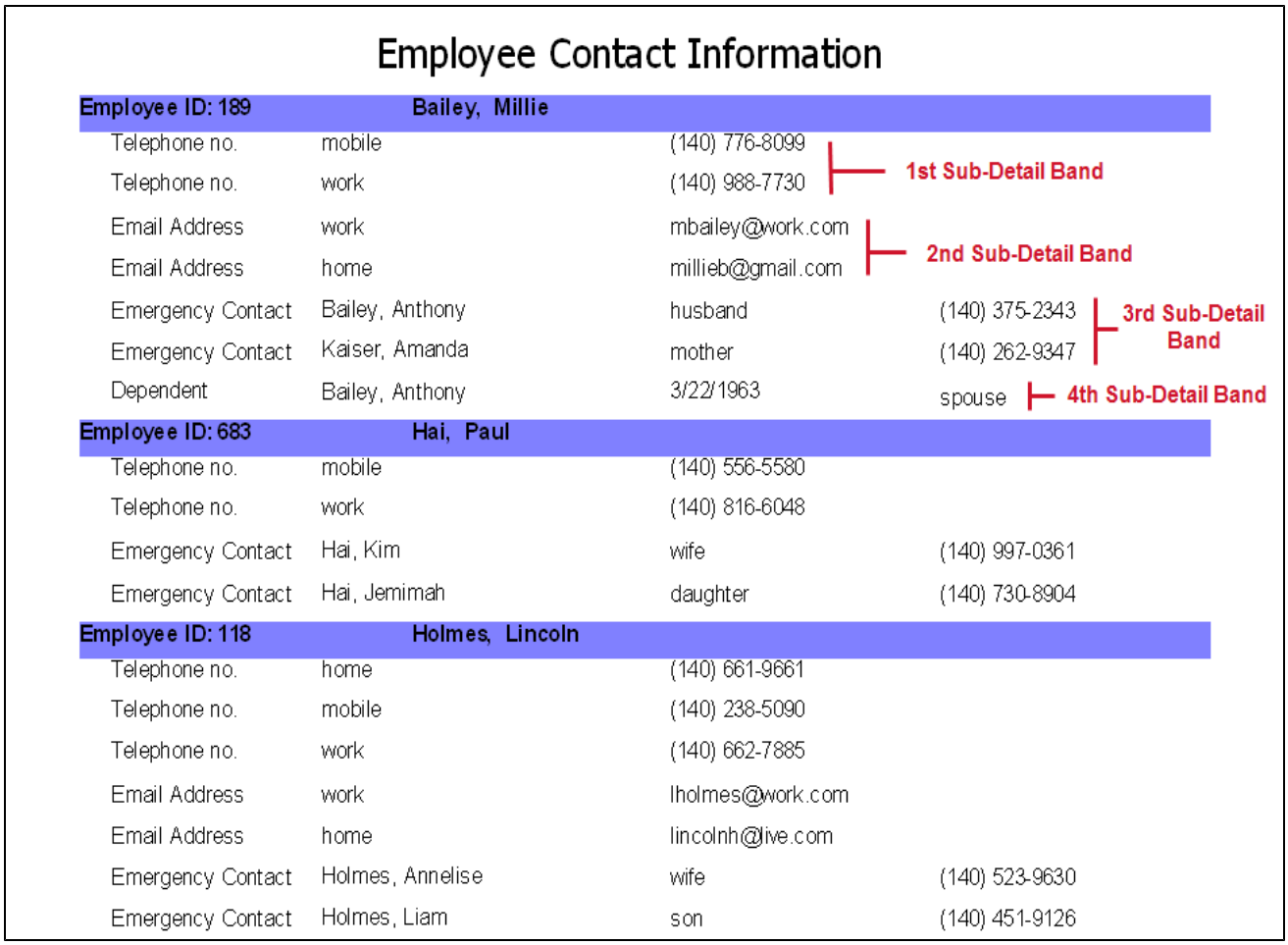
The figure below shows the relationships of the tables within the sample database that are used in this example.



Tables to be used to create datasets for sub-detail bands

Note that none of the tables are joined, since for this example these tables are considered separate datasets from the Main Report DataBlock. This also simulates the situation where the datasets exist in an entirely different database from the database used by the DataBlock.

A report is to be created such that for each employee within the Employees table, associated records within the other datasets will be printed. The emp_id is used as the field to link the datasets together. Each dataset will exist within its own sub-detail band. The report will appear as follows with each sub-detail band identified:



The Banded Report to be created

For each employee, the associated Telephone Number records, Email Address records, Emergency Contact records, and Dependent Information records are printed. If a particular dataset is empty it will not print (Employee 683 has no email or dependent information). Each employee record can have any number of telephone, email, emergency contact, and dependent records associated with it.

The process for creating the Banded Report shown above follows:

Create the Title and Detail Bands

First a List Report Type is chosen, with a Title Band and Detail Bands created. The Detail Band contains the Employee ID, and employee last name/first name concatenated. Also the band has been given a purple background color.

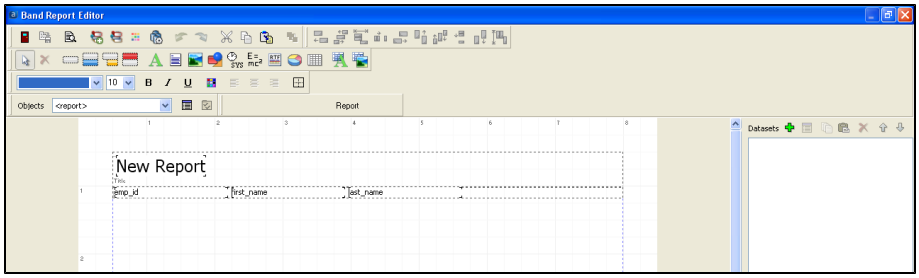
Employee Contact Information

Employee ID: 189	**Bailey, Millie**			
Telephone no.	mobile	(140) 776-8099		
Telephone no.	work	(140) 988-7730		1st Sub-Detail Band
Email Address	work	mbailey@work.com		
Email Address	home	millieb@gmail.com		2nd Sub-Detail Band
Emergency Contact	Bailey, Anthony	husband	(140) 375-2343	
Emergency Contact	Kaiser, Amanda	mother	(140) 262-9347	3rd Sub-Detail Band
Dependent	Bailey, Anthony	3/22/1963	spouse	4th Sub-Detail Band
Employee ID: 683	**Hai, Paul**			
Telephone no.	mobile	(140) 556-5580		
Telephone no.	work	(140) 816-6048		
Emergency Contact	Hai, Kim	wife	(140) 997-0361	
Emergency Contact	Hai, Jemimah	daughter	(140) 730-8904	
Employee ID: 118	**Holmes, Lincoln**			
Telephone no.	home	(140) 661-9661		
Telephone no.	mobile	(140) 238-5090		
Telephone no.	work	(140) 662-7885		
Email Address	work	lholmes@work.com		
Email Address	home	lincolnh@live.com		
Emergency Contact	Holmes, Annelise	wife	(140) 523-9630	
Emergency Contact	Holmes, Liam	son	(140) 451-9126	

Create the datasets

Four datasets will be created and named empl_phone, empl_email, Emergency, and Dependents.

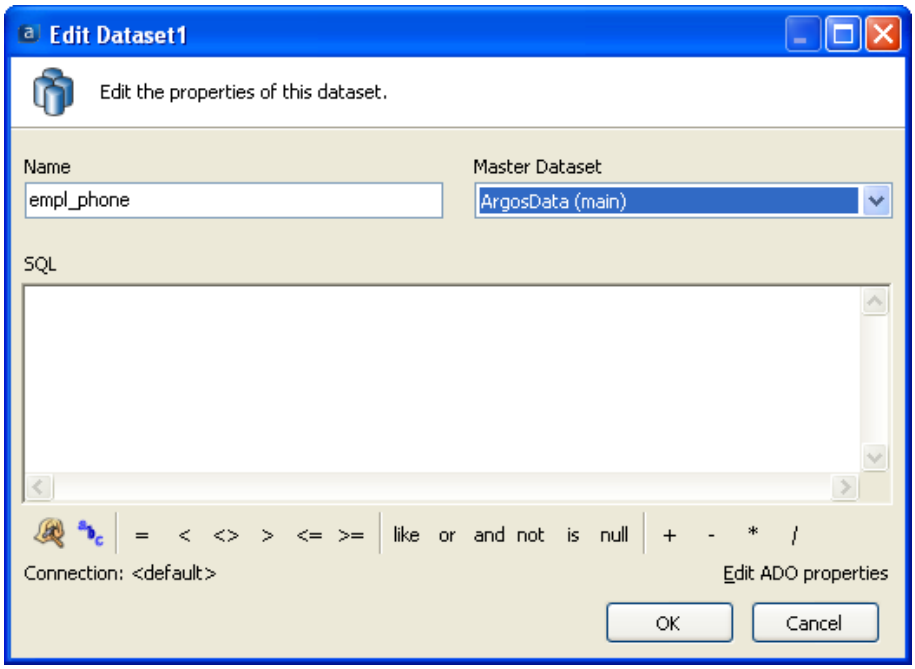
To add a dataset, click the Show/hide the dataset icon on the Band Report Editor Toolbar.



Clicking the Green Plus Sign to add a dataset

Show/Hide Dataset icon on Band Report Editor Toolbar

Click the green plus sign on the right to bring up the following dialog box in which you identify the properties of the dataset.

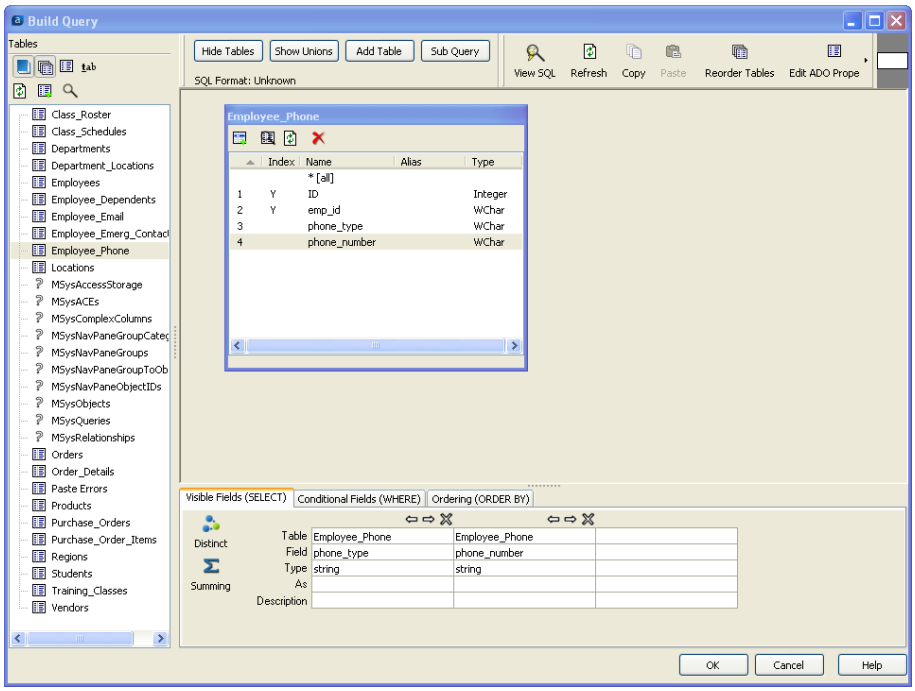


Building the dataset using the query builder

Name the dataset empl_phone and set the Master Dataset to ArgosData(main). ArgosData (main) is the dataset containing the Main Report query.

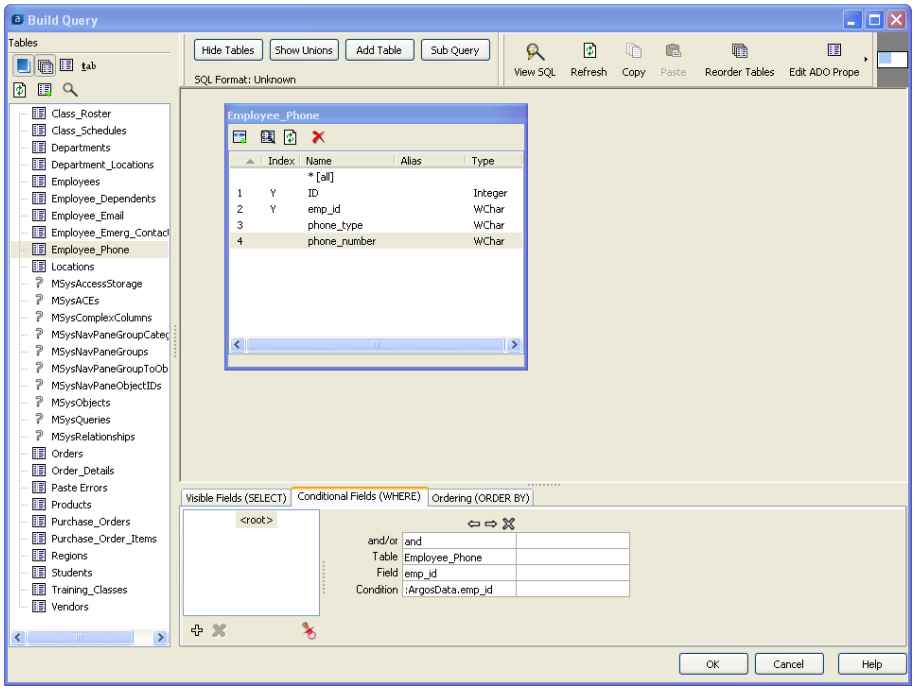
Click the "Build Query" icon (the hat with the hammer) to bring up the Build Query dialog box. Click "Show Tables" then select the Employee_Phone table. Double-click on the phone_type and phone_number fields which will place them into the tables at the bottom of the window.

Build Query icon



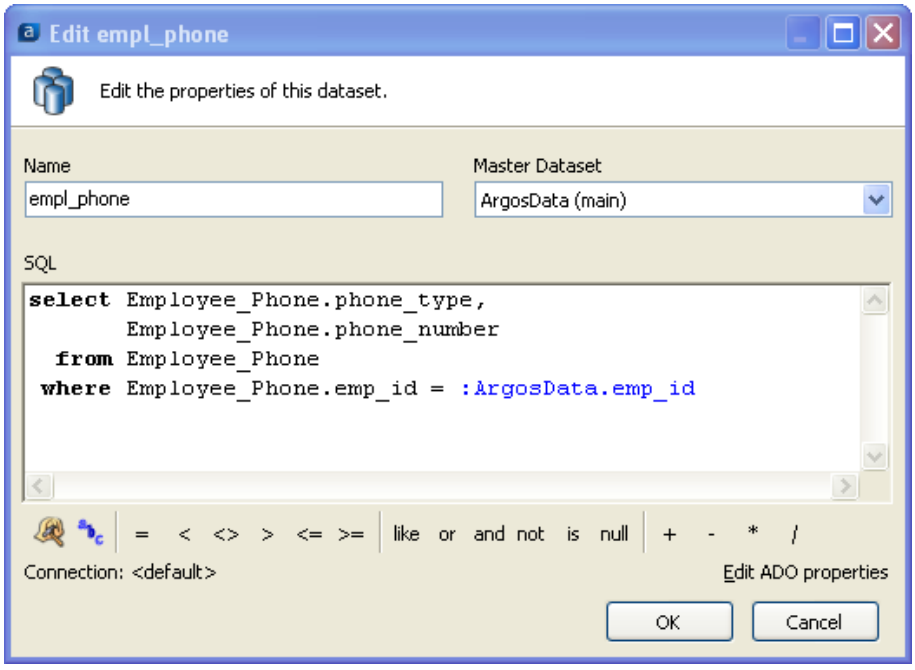
Selecting fields from the Employee_Phone table

Next the WHERE clause is utilized to link the emp_id field in this table to the emp_id field within the Employees table in the Main DataBlock.



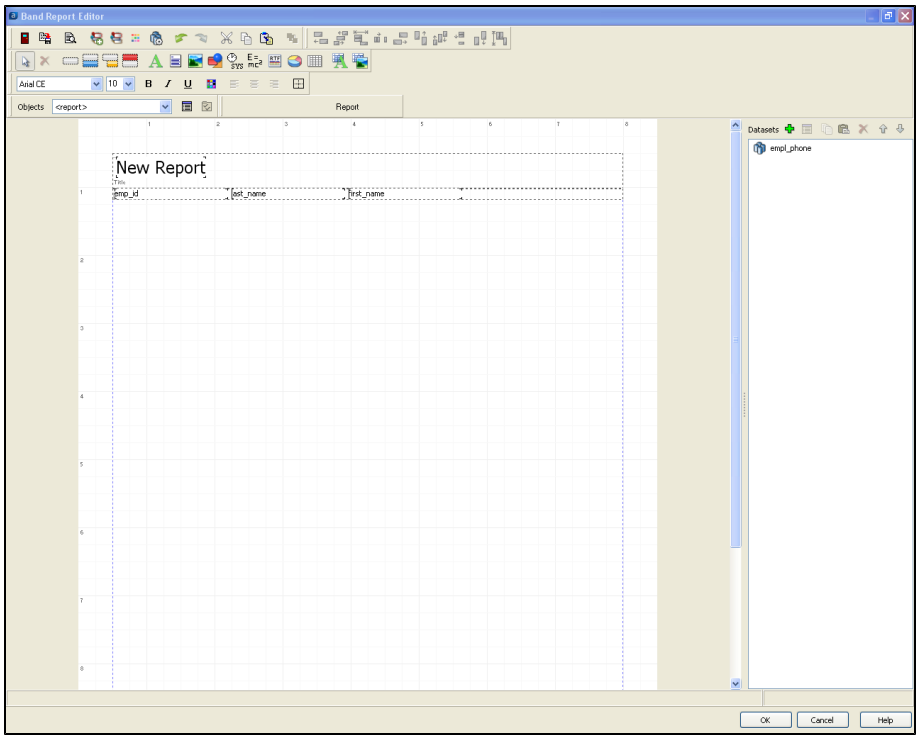
Linking the Employees table to the Employee_Phone table

After creating the WHERE clause, the SQL for the empl_phone dataset appears as follows:



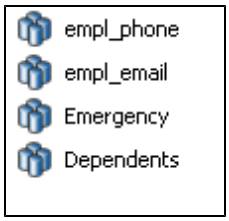
The query for the empl_phone dataset

Click OK. The Band Report Editor now shows the empl_phone dataset in the upper right portion of the window.



The empl_phone query shown in the Band Report Editor

Click the green plus sign to create the other three datasets (empl_email, Emergency, and Dependents) using the Employee_Email, Employee_Emerg_Contact, and Employee_ Dependents tables using the same method that was used to create the empl_phone dataset. When completed, the following datasets will then be displayed within the Band Report Editor.

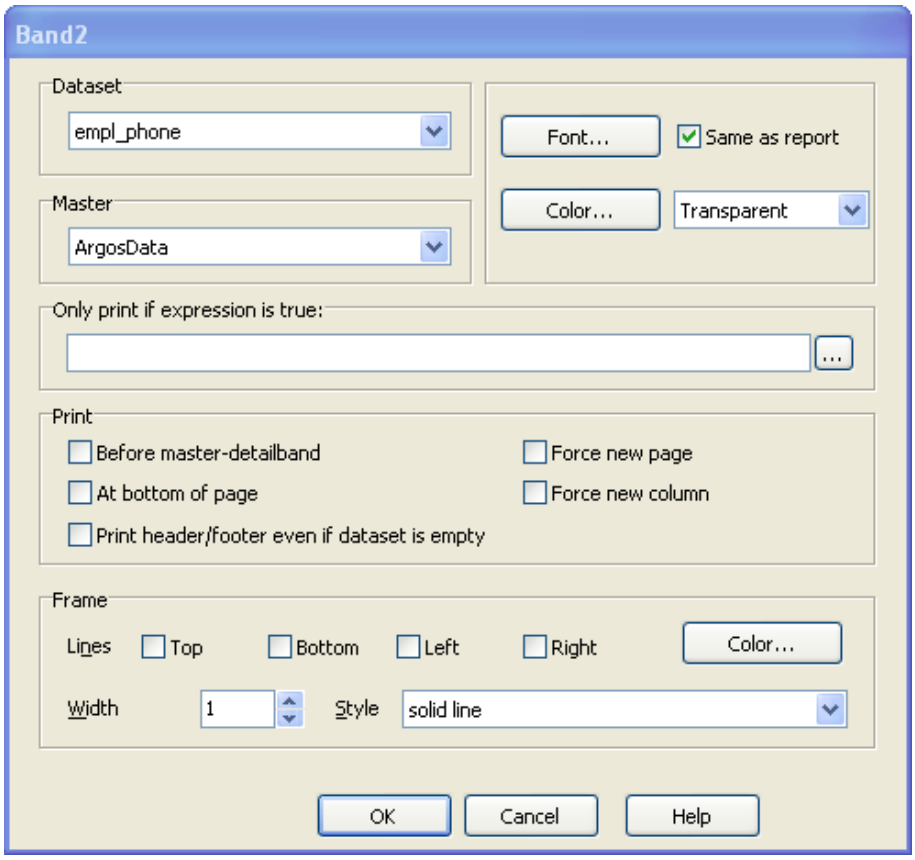


All datasets shown in the Band Report Editor

Create the Four Sub-Detail Bands

Now that all datasets have been created, the corresponding Sub-Detail bands can be created. To create the first band (which will contain the empl_phone dataset), click the "Create a new subdetail band" icon on the toolbar. Then click anywhere within the Band Report Editor. The following dialog box will be displayed:

Create a new Sub-Detail Band icon on the toolbar



Properties of the first Sub-Detail Band

Select empl_phone from the dataset drop-down menu since this is the dataset applied to this band. Also, uncheck the "Print header/footer even if dataset is empty" box. Unchecking the box will prevent the band from printing if there is no data within the dataset. Click OK to continue.

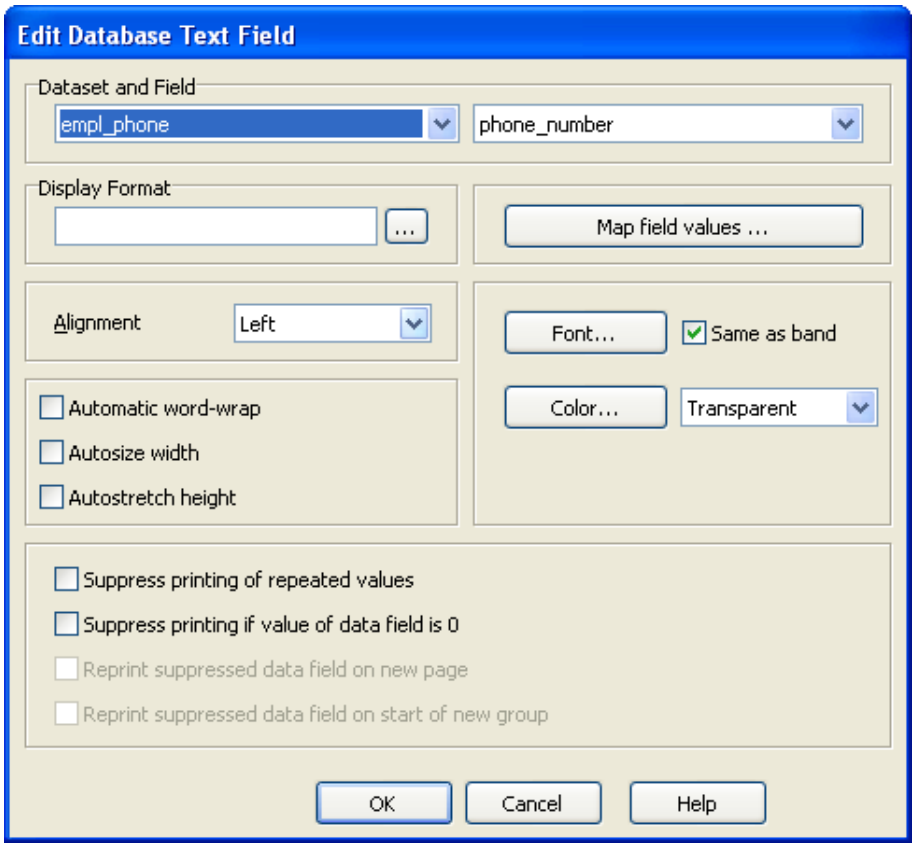
Move fields into the Sub-Detail Bands

Before adding fields into the Band, if you desire to change the name of the band to something more meaningful, right-click within the band then select "Options". Enter the desired name of the band.

The next step is to add fields and appropriate titles to the band. For the first band (empl_phone), click the "Add a database text field" icon from the toolbar then click anywhere within the band. The dialog box below will appear.

Add a database field icon on the toolbar

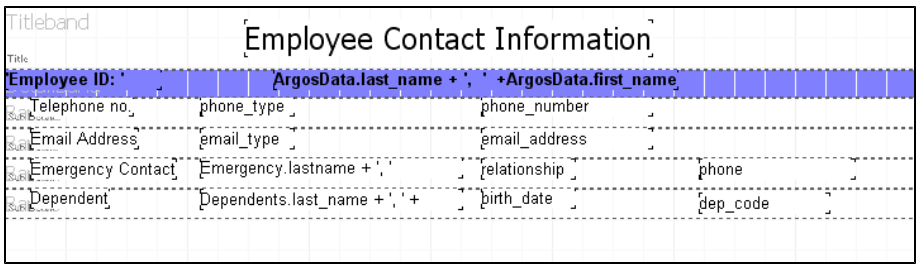
Add a text field icon on the toolbar



Adding database fields to the Sub-Detail Band

Select empl_phone as the dataset and the phone_number field then click OK. The phone_number field will be added to the band. Repeat the procedure to add the phone_type to the same band.

Repeat this procedure (adding fields) for each band. Add text fields to each band by selecting the "Adding a text field". After adding all fields and titles to each band, the report format appears as follows:



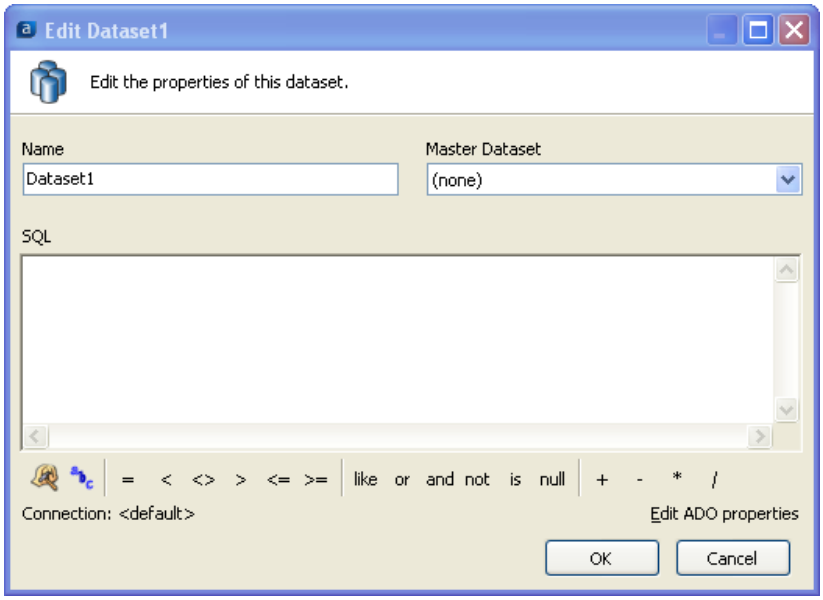
The final report design with all four Sub_Detail bands

Note the four Sub-Detail bands beneath the detail band. Each Sub-Detail band contains labels as well as fields from the empl_phone, empl_email, Emergency, and Dependents datasets.

Obtaining tables from an external database

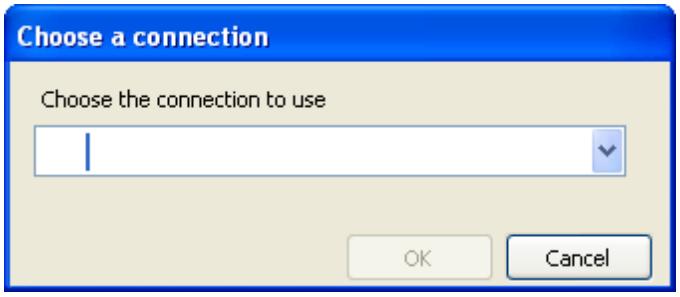
In this example, datasets were created from tables existing within the same database. However, as mentioned earlier, tables from external databases can be utilized to create datasets.

To access tables from an external database, after clicking the green plus sign to create a dataset, the following dialog box appears:



Dataset Properties – selecting another connection

Click "Connection :< default>" in the lower left of the dialog box to bring up the list of available connections created by your MAPS Administrator.



Choosing another connection

After choosing the appropriate connection you can then select the appropriate tables from the external database, build the dataset query, and add fields to Sub-Detail Bands using the same methods described in this example.

Adding Parameter Input to the Report

Example 9

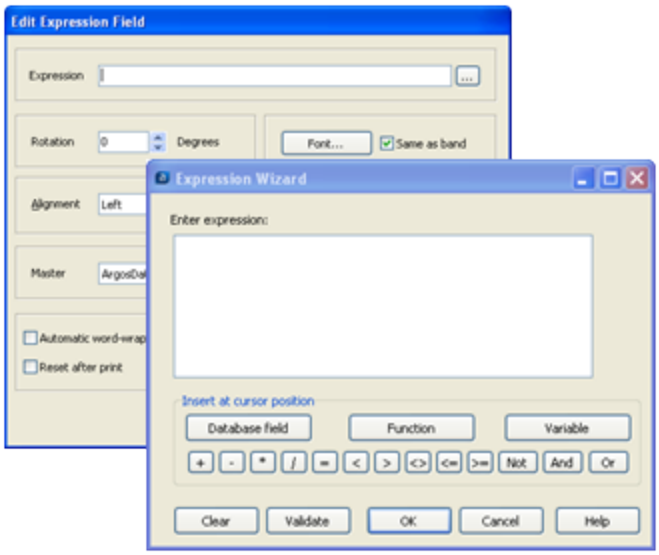
Banded Reports obtain query results from the DataBlock to report on the contents of a database. Other information not contained within the Report Query can be obtained and inserted into your report, including items such as:

- Date and time the report was generated
- Information about the database connection such as DataSource name, Driver file name and version, SQL format, etc.
- DataBlock name and path
- Report name and pathdata
- Username and user type
- **The search parameters chosen from the DataBlock form.**

Adding the selections made within the DataBlock form to the report provides very useful background information used to create the report.

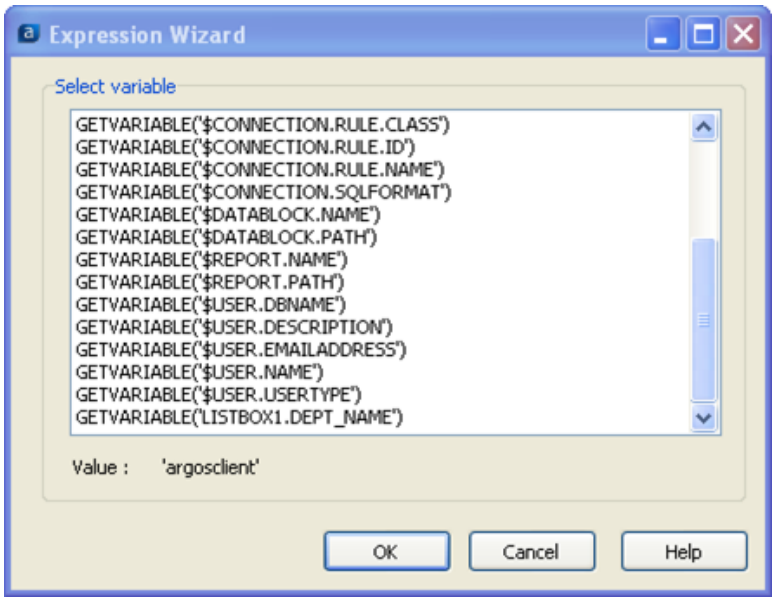
To obtain this information you need to add an expression field into the desired band using methods you are now familiar with. This is done by clicking the "Add an expression field" icon on the Band Report Editor Toolbar, then clicking within the band where you want the field to be placed.

The "Add an Expression Field" icon within the Band Report Editor Toolbar



Adding an expression

The Expression dialog boxes above are displayed. From the Expression Wizard, click the "Variable" button which displays the list of variables that can be inserted into the band. Variables preceeded with a $ are system variables. Variables without the $ are items selected from the DataBlock form used to create the report.



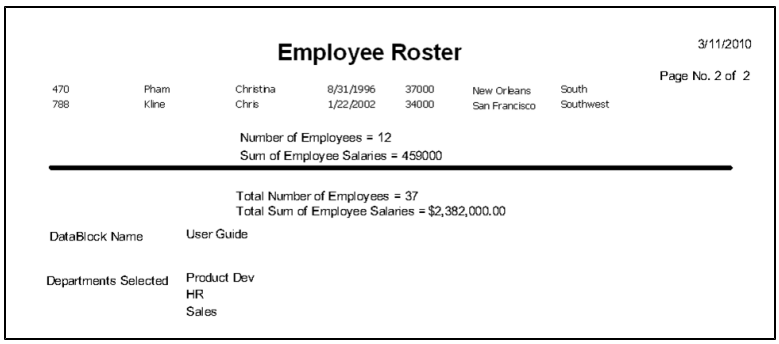
The list of system variables

For this example, the DataBlock name as well as the departments selected within the DataBlock form will be placed into Summary Band that was created in Example 1.

The DataBlock form for Example 1 consists of a list of department names which is contained in the variable LISTBOX1.DEPT_NAME shown at the bottom of the list in the above figure.

To add the selected department names into the Summary Band, click the LISTBOX1.DEPT_ NAME variable and it will be placed within the band. When adding the expression to the band, select the "Autostretch height" box which will increase the height of the band, if necessary, to accommodate the list of selections from the form.

To add the DataBlock name to the Summary Band, repeat the above process to add an expression field and select the variable GETVARIABLE('$DATABLOCK.NAME').



The Summary Band with the new fields

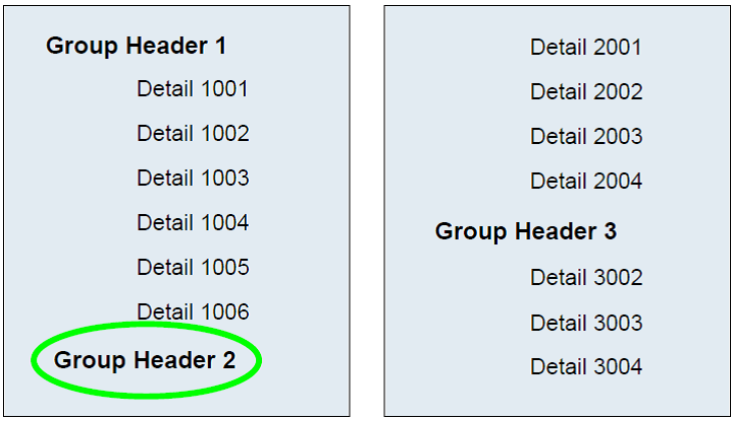
The DataBlock Name (User Guide) as well as the Departments selected within the DataBlock form (Product Dev, HR, Sales) now appear within the Summary Band. Labels ("DataBlock Name" and "Departments Selected") were added separately to describe the newly added information..

Link with Band

Example 10

Lonely Group Header Band

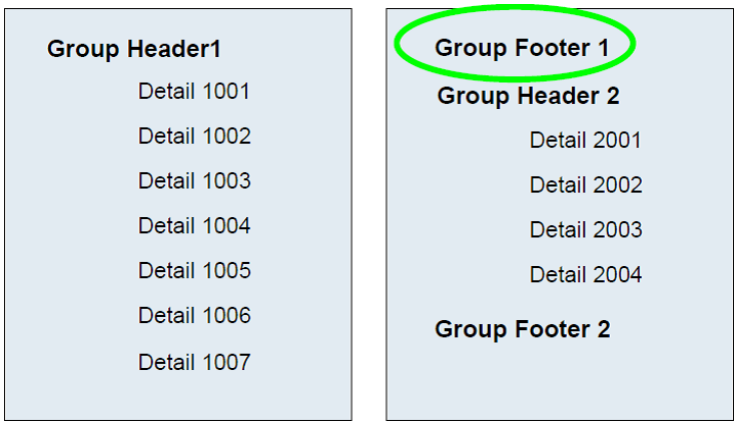
Occasionally, depending on the number and size of bands in your report, you may get pages that have Group Header Bands at the end of a page. Its corresponding Detail Bands are then printed on the following pages as illustrated in the figure below.



Lonely Group Header

Lonely Group Footer Band

In other cases, a page will have just enough room to print the last Detail Band. The Group Footer Band will be printed on the following page by itself as seen in the figure below.



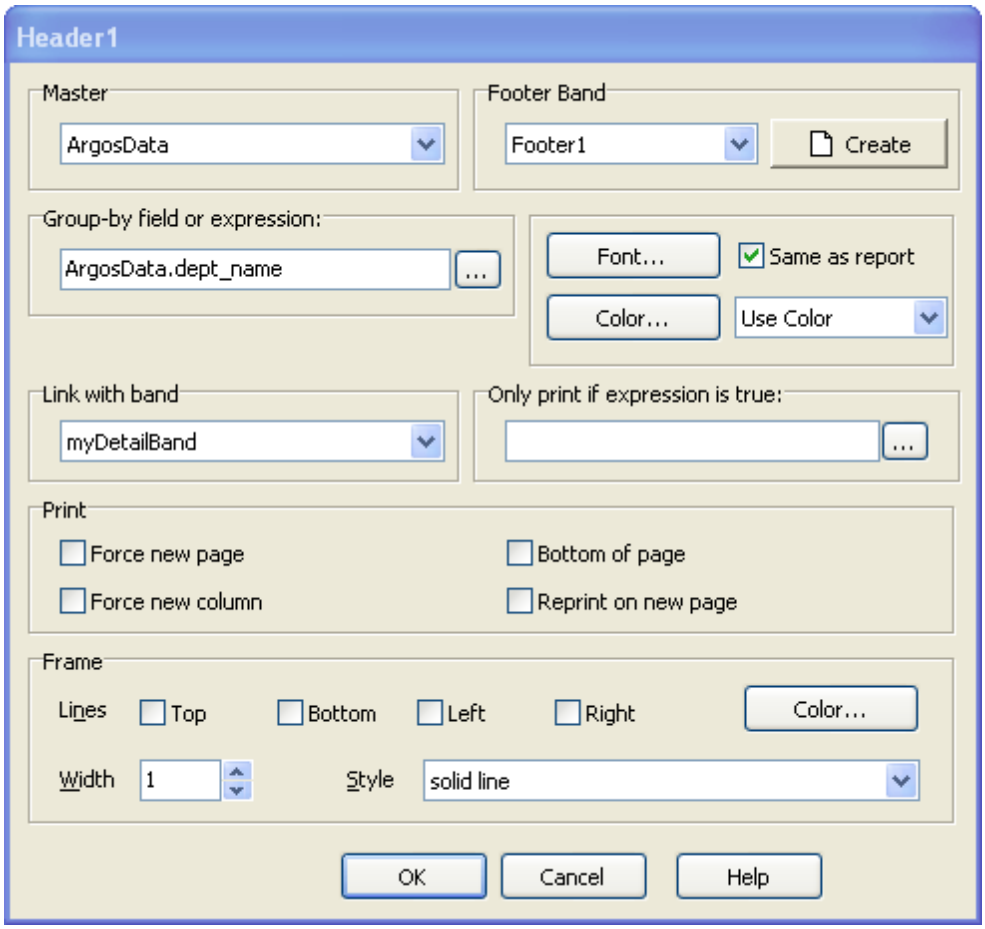
Lonely Group Footer

These situations are not desired and to overcome them, use the "Link with Band" feature.

This feature is available for all band types. Report Writers select which band to link the current band to so the above situations will not occur.

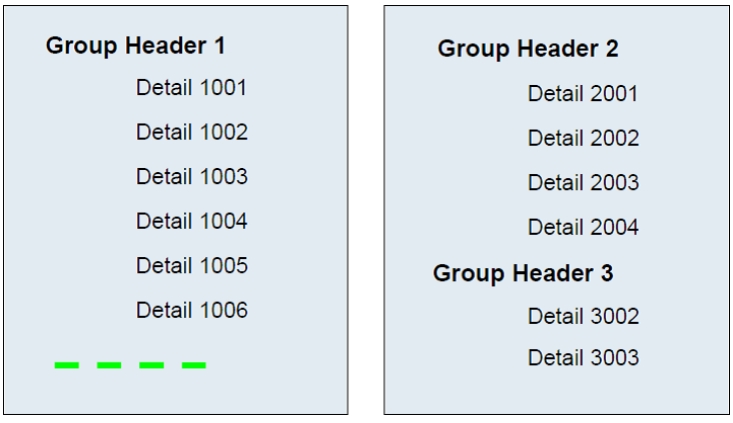
The method to use for this option is to set the link inside the band that comes first. For example, to fix the lonely group header, you would set the Link with band option in the Group Header Band since the Detail Band comes after the Group Header Band.

In the case of the lonely group footer, you would set the Link with band option in the detail band since the Group Footer Band comes after the Detail Band.

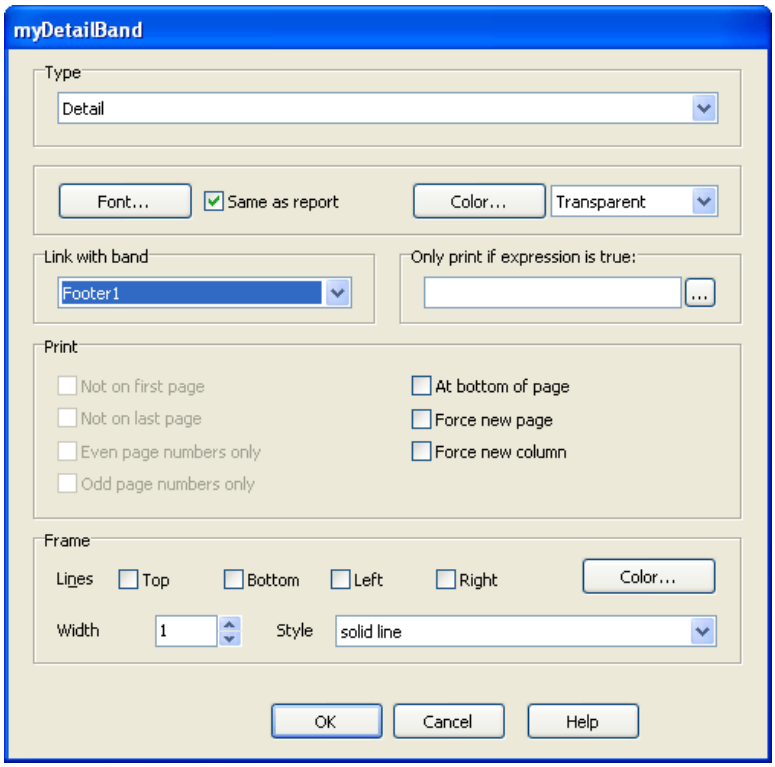


Group Header Linked to Detail Band

The data entered as shown in the figure above would produce the report in the figure below and corrects the lonely group header. In this case, the Header 1 band is linked to the detail band "myDetailBand". Notice how there is still room for more data on page 1, yet the second group header is printed on the next page.

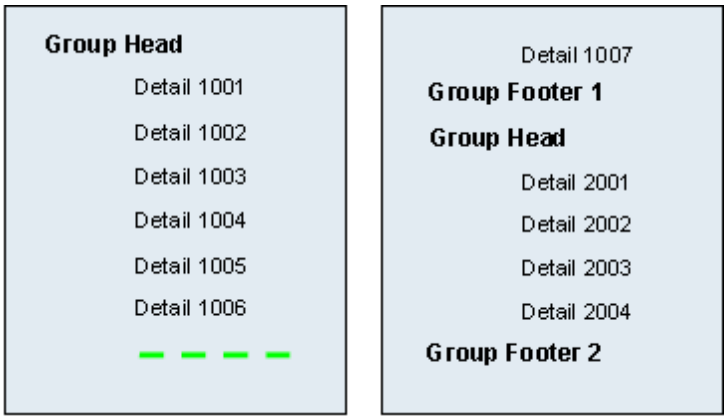


The Lonely Group Header corrected



Detail Band Linked to Group Footer

The data entered in the figure above would produce the report in the figure below and corrects the lonely group footer. In this case, the Detail Band was configured to link with the Footer 1 band. Notice how there is still room for more data on page 1, yet the last detail record for group 1 is not printed until page 2 with its group footer.

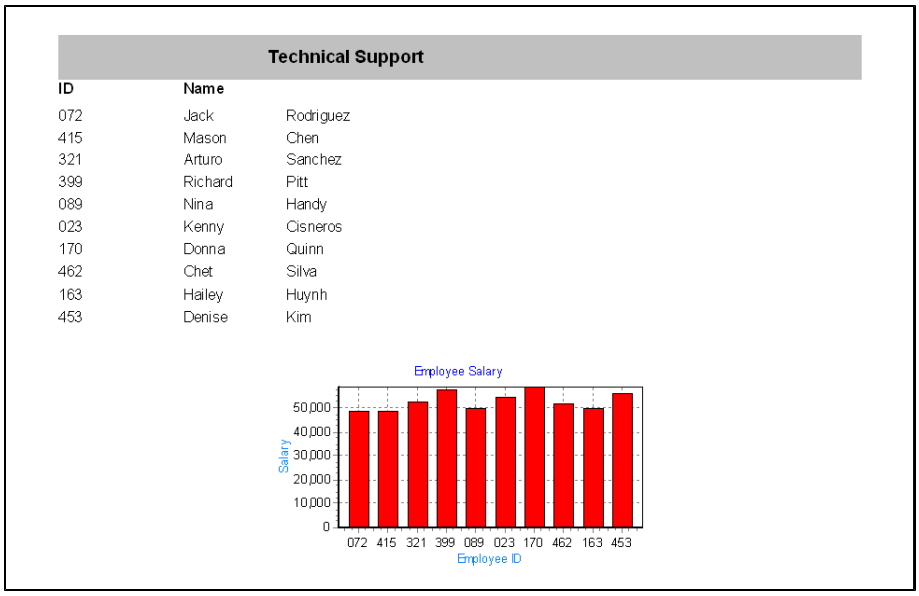


The Lonely Group Footer corrected

Creating a Chart

Example 11

This example will demonstrate how to add a simple chart to a Banded Report as shown in the figure below.



Banded Report with a chart

The report contains a list of employees (ID and name) within a department and a chart showing the salary of each employee.

The Employees Table within the sample database is the only table used in this example. A DataBlock form was created in which the user enters the department name.

Four bands are utilized as follows:

- Title band containing the department name (grey background color).
- Column Header band containing the "ID" and "Name" titles.
- Detail band containing the list of employees.
- Summary band containing the chart.

The steps to create the report follow.

Create the Title, Column Header, and Detail Bands

Create a new Banded Report, launch the Banded Report Wizard, then select a "Blank Report" Type.

Populate the Title, Column Header, and Detail Bands with the appropriate fields using methods described in previous examples. As a reminder, note that the Title Band contains the value selected in the DataBlock form using the procedure described in a previous example.

The remainder of this example is devoted to creating the chart that will be placed within

Charting in Argos

The chart to be created in this example is very simple and was included primarily to show how to add a chart to a Banded Report.

Chart icon on Band Report Editor toolbar

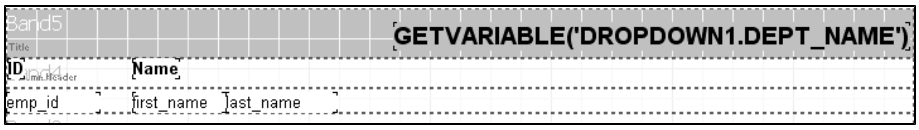
Centering the text in the title band

To quickly center the text within the title bar horizontally or vertically, click on the text, then click the "Align the selected control to the horizontal center of its parent" button, or click "Align the selected control to the vertical center of its parent" button.

Align to horizontal center of its parent

Align to vertical center of its parent

the Summary Band.



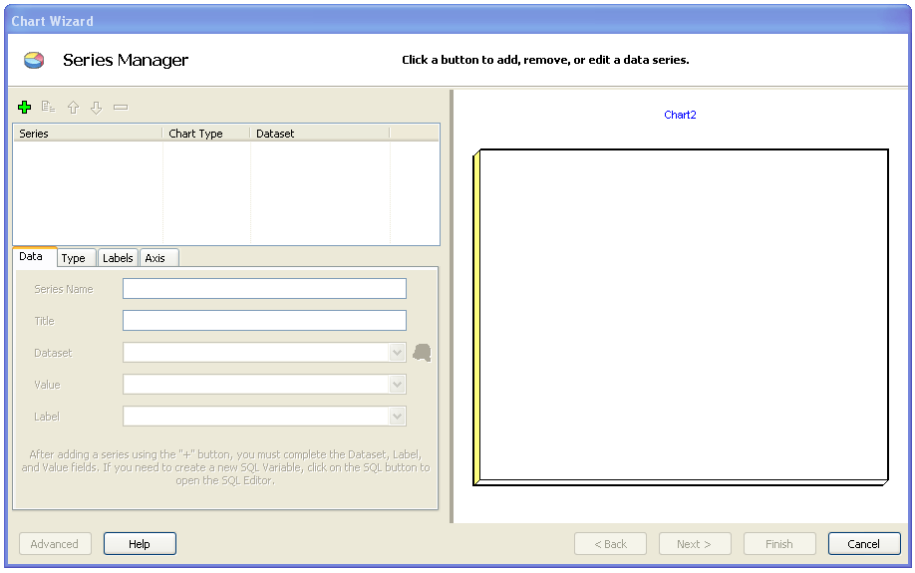
Report Design with Title, Column Header, and Detail Bands

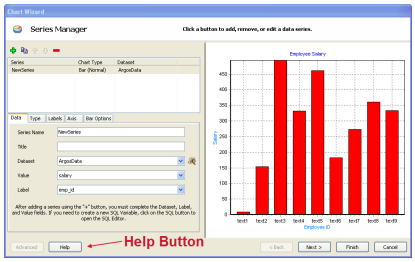
Add a Summary Band

A chart can be added to any type of band. For this example it is added to the Summary Band. Add the band using methods you are now accustomed to.

Add a Chart Object

Click on the Chart icon on the toolbar, then click anywhere within the Summary Band to add the chart object. The following dialog box will appear:





The Chart Wizard

Follow the Chart Wizard

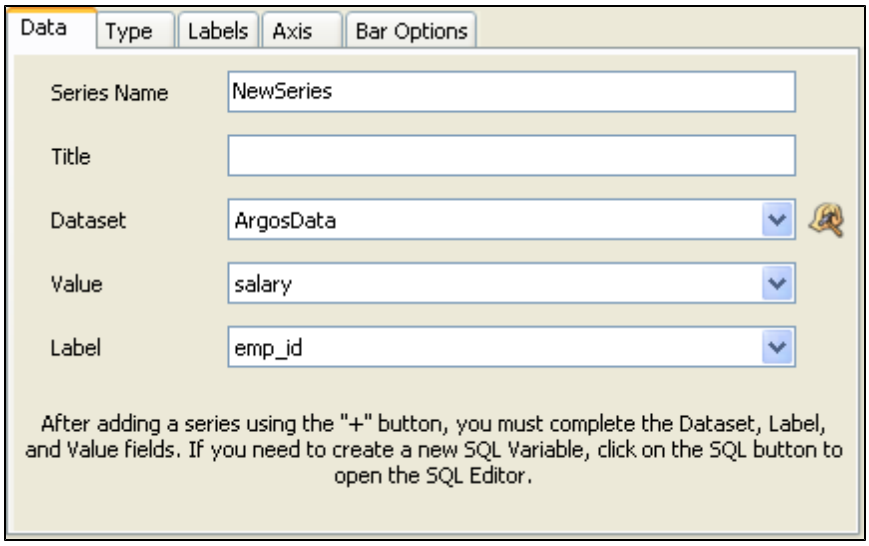
This dialog box is the Chart Wizard that will guide you through the process of creating a chart. All possible options will not be explained in this example, but only the options that apply to this example will be shown.

Click the Green Plus sign to add a series. Although more than one series of data can be displayed on a chart, for this example only one series is required.

Select "ArgosData" within the Dataset field.

Select "salary" for the Value field.

Select "emp_id" for the Label field.



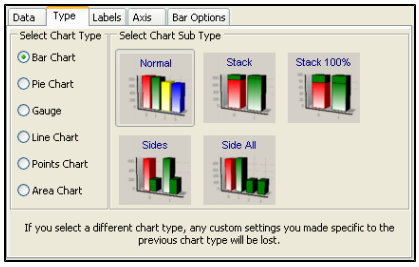
Adding information into the Data Tab

Click the "Type" tab where you can select various types of charts (Bar, Pie, Line, etc.). This example creates a bar chart which is the default selection, so no change is required.

Click on the "Labels" tab to display various label options. Uncheck the "Visible Label" box. The image on the right of the window will show the effect of checking/unchecking this box.

Click the "Bar Option" tab and uncheck the "3D" and "Color Each" boxes. Again, the image on the right of the window will show the effect of checking/unchecking these boxes. While on this tab, you can change the color of the bars by clicking the Color button.

Click Next to continue. The Chart Theme and Panel dialog box will appear. For this example, default values will be used, therefore click Next to continue.



Note the various sub types available when choosing a Bar Chart.

The Chart Legend and Titles dialog box will appear.

Highlight "Legend Style and Title", then uncheck the "Legend Visible" check box since the legend is not to be included.

Click "Main Title" then enter "Employee Salary" into the "Enter Title Here" box.

Click "Left Axis Title" then enter "Salary" for into the "Enter Title Here" box.

Click "Bottom Axis Title" then enter "Employee ID" into the "Enter Title Here" box.

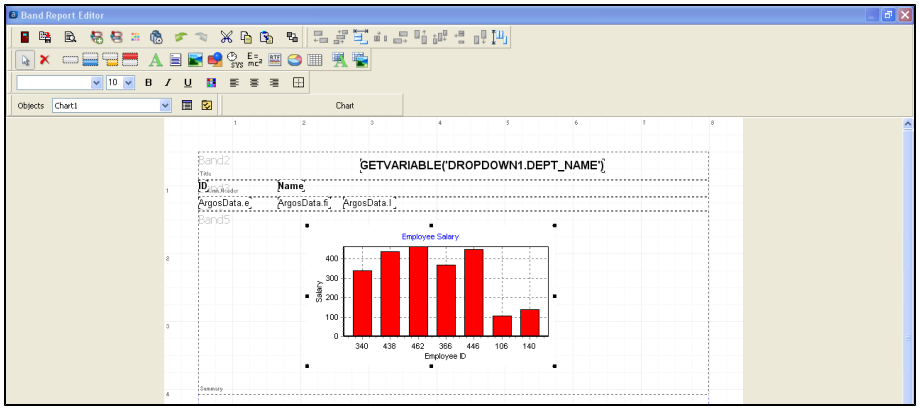
Select Object	Title
Legend Style and Title	
Main Title	Employee Salary
Sub Title	
Footer	
Sub Footer	
Left Axis Title	Salary
Bottom Axis Title	Employee ID

Adding Legend and Titles information

Click Finish to continue.

This completes the Wizard, and you will be brought back to the Band Report Editor.

Increase the height of the Summary Band to make room for the chart. Position the chart to the desired location.

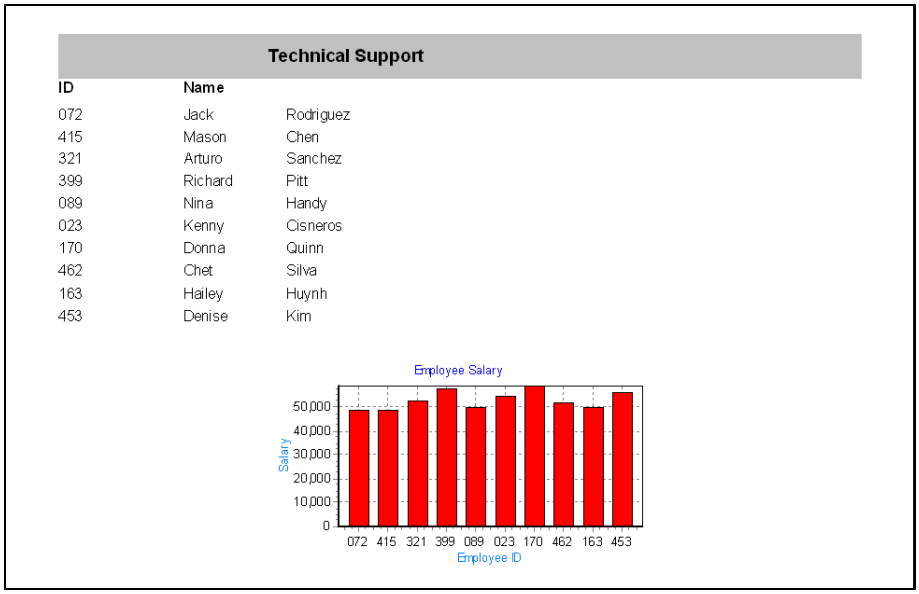


The completed report design

Run the report and select "Technical Support" for the Department Name. The parameter entered is shown below.

The query parameter

The resulting Banded Report with included chart is shown below.



The final report

See the Argos DataBlock Designers Guide (or Help) for a more complete description of Charting within Argos.

Creating an Extract Report

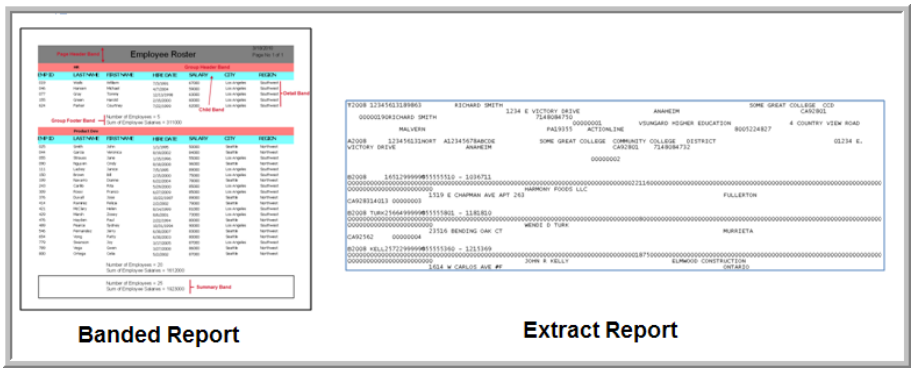
Example 12

Introduction

An Extract Report is designed to create output files that meet pre-defined specifications. This feature is especially useful for creating delimited output that is more complex than a simple comma-separated file (CSV), for creating a fixed-width file in which each field is precisely positioned on a given line, or for creating an XML file. This could include files that you might upload to a government agency, clearinghouse, or service bureau.

Extract Reports are somewhat similar in design to a Banded Report. Similar to bands within a Banded Report, an Extract Report has sections, each of which can include different data fields. However, in an Extract Report you can loop through as many datasets as your report requires, and you can precisely control the position of your data in the output file.

Unlike a Banded Report, there is no concept of a "page" in an Extract Report. Data is simply streamed into an output file.



Comparison of Extract and Banded Reports

Report Formats

There are three report formats available:

Fixed - The width of each field is a user defined fixed value.

Delimited - The width of each field is variable with each field separated by a user defined delimiter.

XML - Report output is in XML format.

Sections in the Extract Report

The output file from an Extract report is organized by sections. You can add as many sections as you like to the Extract Report design. The definition of each type of section is as follows:

Title - Always appears as the first section in the report. This section contains data obtained only from the current record of each dataset referenced by the section. Looping through the datasets to obtain data is not done for this section as only data from the current record of each dataset is obtained.

Detail – Used to loop through an associated dataset. Within this section, Argos will create one detail row for each record in the associated dataset. This is useful if you wish to create a list of vendors, for example.

You can create multiple Detail sections in an output file. You might have one simply follow another. For example, if you wanted a list of all regular checks, followed by a list of all voided checks, you would simply add a pair of Detail sections. Each Detail section is associated with its own dataset, and can be formatted however you require.

Another option is to make a Detail section a "parent" of a subsequent Detail section (referred to as the Sub-Detail section). For each record that is output in the parent Detail section, the Sub-Detail section will be executed and added to the file as well. In the vendor example from above, the vendor would be in the parent Detail section, with a list of invoices in the Sub-Detail section. You can have multiple "levels" of Sub-Detail sections. Like a Banded Report, using Sub-Detail sections in an Extract Report can significantly impact the amount of time needed to generate the report. Use this technique only if Headers and Footers (below) do not meet your requirements.

Header – A Header section is associated with a Detail section, and is used to group the Detail data by a selected field or expression. The Header section will print once anytime the value of the group-by expression changes. For example, if your data is organized by year, and you need a header row at the beginning of each year, you should add a Header section, grouped by year. Make sure your dataset is sorted by the fields you wish to group by. As an option, you can exclude the group-by field which will cause Argos to print a single group Header (and Footer if it exists).

Child – These sections will print directly after their parent section. They are not associated with a dataset, so any fields you add to a Child section will reflect whatever the current value of that dataset is. For example, in the vendor example, if you wanted to output each vendor, with the name on the first line, and the mailing address on the line just below, a Child section could be used.

Footer – A Footer section is always associated with a Header section. Each Header prints before a Detail section and its associated Footer will print just after the last record of the Detail section.

Summary - Always appears as the last section in the report. This section contains data obtained only from the current record of each dataset referenced by the section. Looping through the datasets to obtain data is not done for this section as only data from the current record of each dataset is obtained. A child section can be placed beneath a Summary section if necessary.

The Report Specification

This example will create an Extract Report loosely based on the Internal Revenue Service Publication 1120, Specifications for Filing Forms 1098, 1099, 3921, 3922, 5498, 8935, and W-2G. The intent of the example is not to create a file adhering to the entire specification, but to illustrate how the Extract Report could be used to create such a report. Therefore, not all aspects of the specification are included in this example.

The following tables describe the required Record Types within the IRS specification that will be created in this example.

Record Type	Usage
T	The first record in the file. Identifies the institution sending the file to the IRS.
A	Identifies the payer (the institution making payments to vendor). In this example, the payer is also the institution transmitting the file (same institution as in T record).
B	Identifies the payee (the vendor that received payments) and the payment amounts to each payee. One record for each payee.
C	Sum of B records (payment amounts) for the payees.
F	End of Transmission records. Contains total number of payers and payees.

The tables below show the fields that are used in each of the Record Types. The position and number of fields does not match the 1099 specification exactly to keep the example concise.

Each record in the report must contain a Record Sequence Number, beginning with "1" for the first record, and incremented by one for each record in the report.

T Record

Field Name	Width	Value	Fill character	Alignment
Record Type	1	T		
Payment Year	4	2009		
Record Sequence Number	10	Obtained from DataBlock	zero	right
Transmitter TIN (taxpayer ID)	9	Obtained from DataBlock		
Transmitter Name	20	Obtained from DataBlock	blanks	left
Number of Payees (B records)	10	Obtained from DataBlock	zero	right

A Record

Field Name	Width	Value	Fill character	Alignment
Record Type	1	A		
Payment Year	4	2009		
Record Sequence Number	10	Obtained from DataBlock	zero	right
Payers TIN	9	Obtained from DataBlock		
Payers Name	20	Obtained from DataBlock	blank	left
Type of Return	1	A (represents 1099-MISC form)		

B Record

Field Name	Width	Value	Fill Character	Alignment
Record Type	1	B		
Payment Year	4	2009		
Record Sequence Number	10	Obtained from DataBlock	zero	right
Payee TIN	9	Obtained from DataBlock		
Payee Name	20	Obtained from DataBlock	blank	left
Total payments to payee	12	Obtained from DataBlock – 12 numeric characters. No decimal points, commas or dollar signs. Rightmost 2 characters for cents	zero	right

C Record

Field Name	Width	Value	Fill character	Alignment
Record Type	1	C		
Payment Year	4	2009		
Record Sequence Number	10	Obtained from DataBlock	zero	right
Number of payees (B records)	10	Obtained from DataBlock	zero	right
Total amounts paid by payer	18	Obtained from DataBlock	zero	right

F Record

Field Name	Width	Value	Fill character	Alignment
Record Type	1	F		
Payment Year	4	2009		
Record Sequence Number	10	Obtained from DataBlock	zero	right
Number of A records	10	Obtained from DataBlock	zero	right
unused	21		blank	
unused	19		blank	
Number of B records	10	Obtained from DataBlock	zero	right

Again, the above is a small subset of the required fields, but demonstrates the types of fields, fill characters, and alignment required by the IRS specification. The field positions may not match the IRS specification in order to keep the report width such that it is easily viewable.

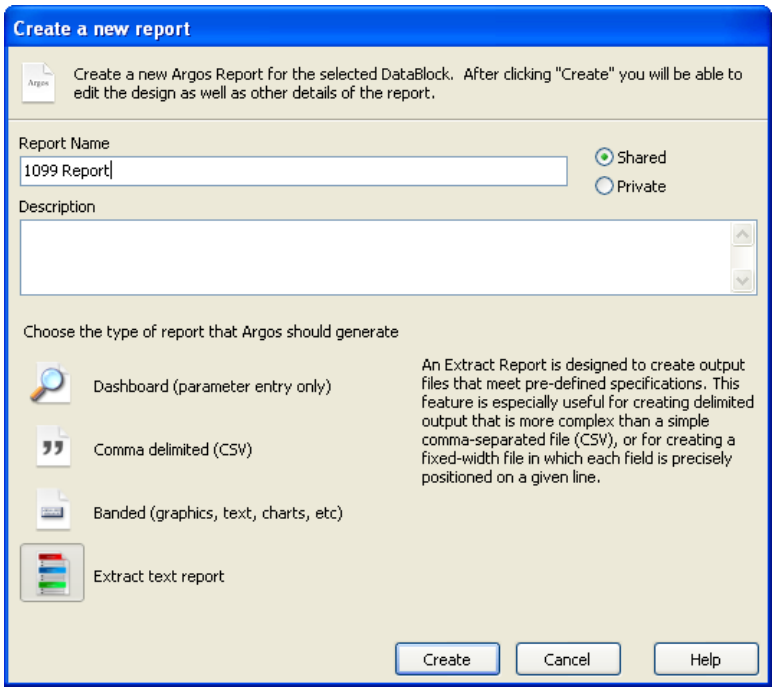
Report Creation Steps

The following steps are required to create the Extract Report for the above specifications and will be demonstrated in this example.

- Create the new report in the Argos Explorer and give it a name.
- Launch the Extract Report Editor, where the report design takes place.
- Configure the Report.
- Add datasets to be used in the report.
- Add the section and fields for the T Record Type (Title section).
- Add the section and fields for the A Record Type (Detail section).
- Add the section and fields for the B Record Type (Detail section).
- Add the section and fields for the C Record Type. This involves creating Header and Footer sections around the B Record Type detail section.
- Add the section and fields for the F Record Type.
- Execute the report.

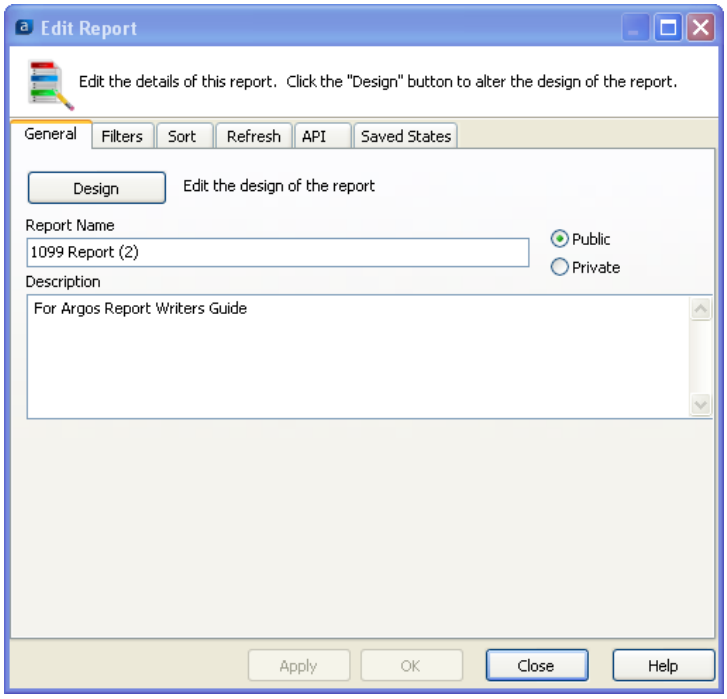
Create a New Report

As with other report types, go to the Argos Explorer, right-click on the DataBlock to be used for this report, then select "New Report". Give the report a Name and Description, click "Extract text report", then the "Create" button.



Create a new report dialog box

You can add additional Filters or Sort the data that comes from the Report Query by clicking the Filters and Sort tabs shown in the figure below. Refer to the Filters and Sort section in this guide for an explanation of this feature is used when creating CSV reports. This feature is also available to Banded and Extract Reports.



Adding the Report Name and Description

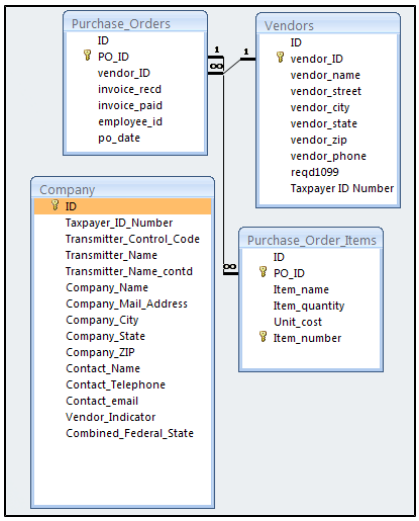
Click the "Design" button to begin the creation of the report.

The Extract Report Editor will then be displayed which is used to design the report.

The DataBlock used in this example

The Sample Database used for other examples in this guide will also be used here and will create 1099 forms for vendors that supplied services to the Company existing in the Sample Database. The Purchase_Orders, Vendors, and Purchase_Order_Items tables contain the vendor information. The "Company" table contains information about the company submitting the file to the IRS.

A DataBlock was developed to sum the Purchase Order records for each vendor that received a 1099 form. Vendors with the "reqd1099" field set to 'Y' will receive 1099s. This will be one of the Datasets used in the Extract Report. The Company table, which is not joined with any other table, will be one of the other Datasets used in the Extract Report.



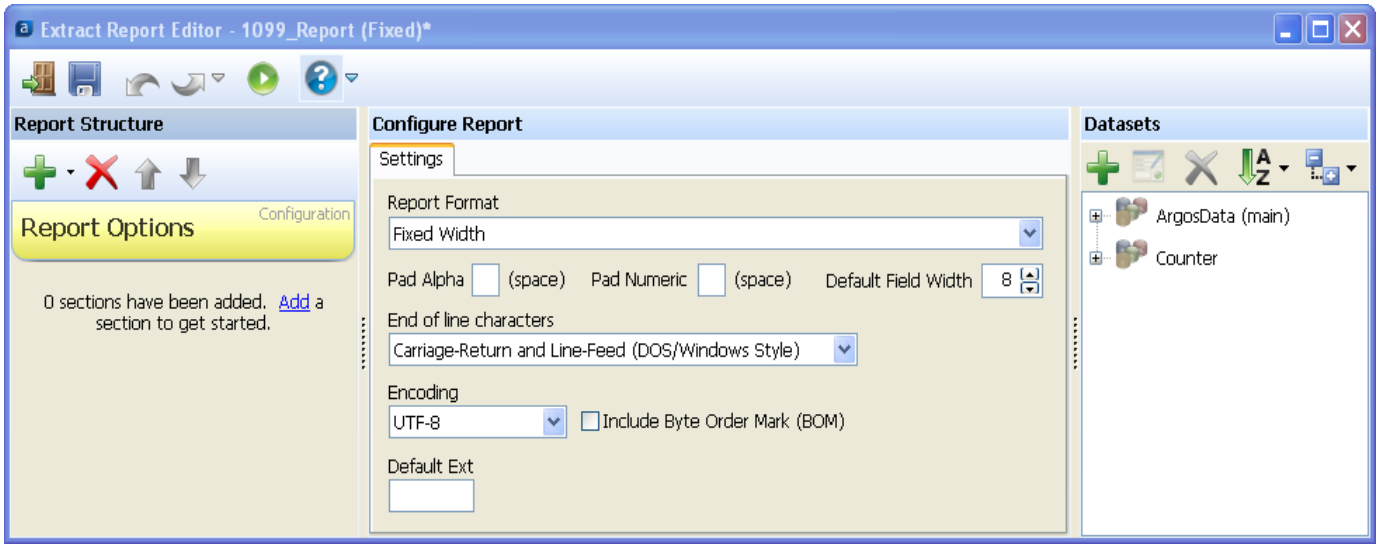
The Extract Report Editor

The Extract Report Editor is used to design the Extract Report. There are three areas within the editor shown in the figure below.

- **Report Structure**, which defines the *sections* used in the report. It also specifies properties that apply to all sections and fields.
- **Configure Report**, where properties of individual sections and fields are specified. Fields are also added in this area.
- **Datasets**, where datasets used in the report are created and displayed.

Title Bar: The title bar of the editor contains the report name followed by the report type. In the figure below, the name of the fixed-width report is "1099_Report". The other report types are *delimited* and *XML*. The asterisk next to the report type indicates that changes have been made but not yet saved.

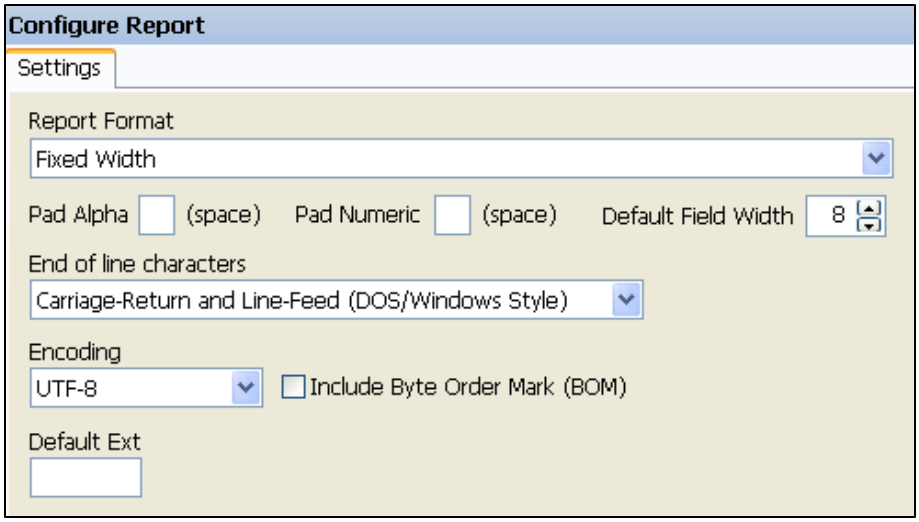
This example explains the various toolbar icons and options in the Report Editor. To view the options available for an object, right-click that object.



The Extract Report Editor

Configure the Report

The first step is to configure the report be selecting options shown within the "Configure Report" area. Click "Report Options" to display the options under the Settings tab.

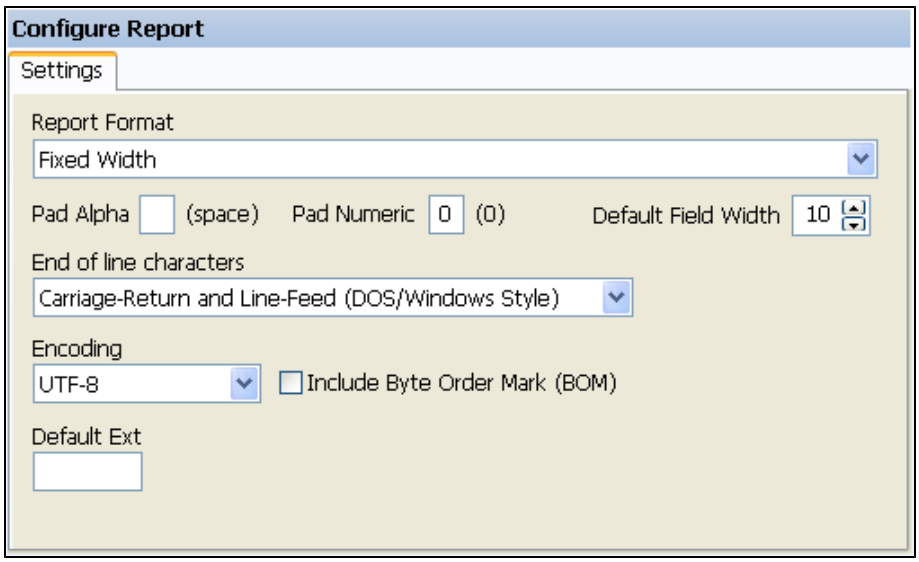


Configure Report (Settings Tab)

The Report Format field allows you to select from Fixed Width, Delimited, and XML formatted reports. For this example, the Fixed Width Report Format is being used.

Options under the Settings tab apply to all sections within the report, but can be overridden when configuring individual sections. This will be illustrated later in this example.

For this example, numeric characters will be padded with zeroes, and the Default Field Width is changed to 10. The extension can be left blank if you choose to use the default provided by Argos.



Entering pad character for numeric fields and default field width

The Report Formats

Although there are 3 different output report formats, the report design process is virtually identical for all report types.

Encoding

For the output file, if UTF-8 encoding is selected, you have the option of including the Byte Order Mark (Unicode character) at the start of the text stream.

Default file extensions

.txt for fixed width reports

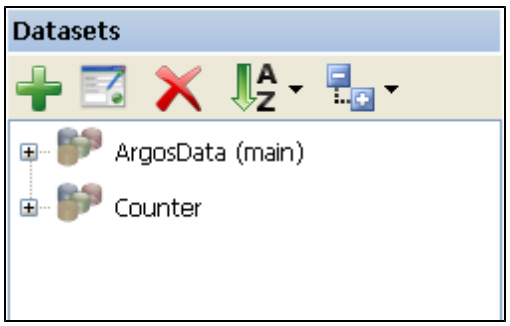
.txt for delimited reports

.xml for XML formatted reports

When saving a report after execution, Argos will use the default extensions shown above. If the default extension is entered here, when saving the report only this extension will be shown in the list of file types when saving the report.

Add Datasets

The next step is to add the datasets that will be used in the report. The datasets that were created in the DataBlock's Report Query are displayed as shown in the figure below. The ArgosData dataset is the main dataset that obtains payments made to vendors. The Counter dataset contains a count of the number of vendors that payments were made to. This value is used in several record types in the report (T and C records), and keeping the value as a variable allows you to place the variable into a number of sections.

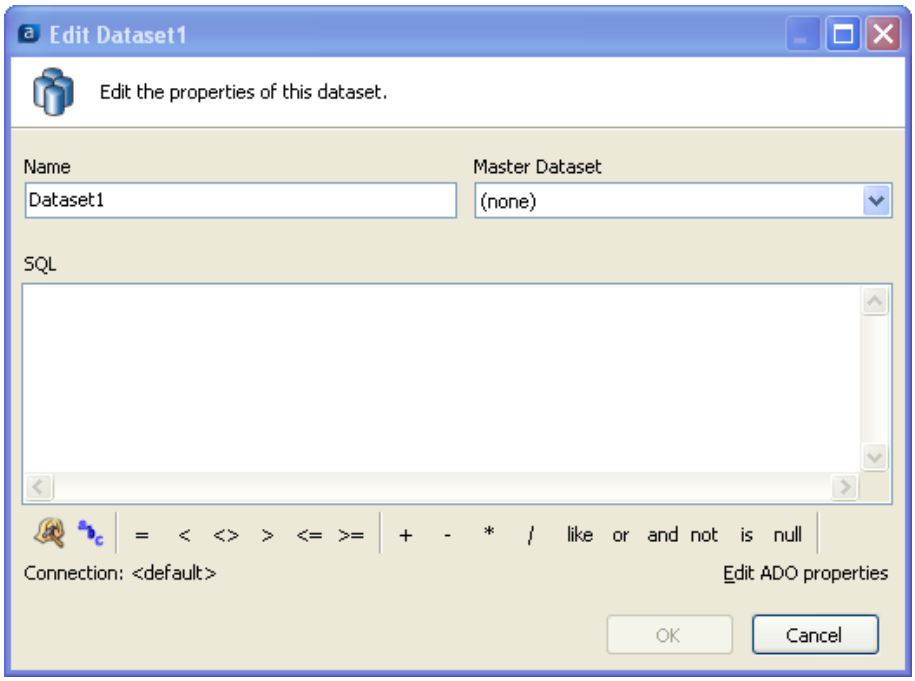


The datasets area with datasets in report query

A right click anywhere within the Datasets area displays menu items to Add, Edit, or Delete datasets.

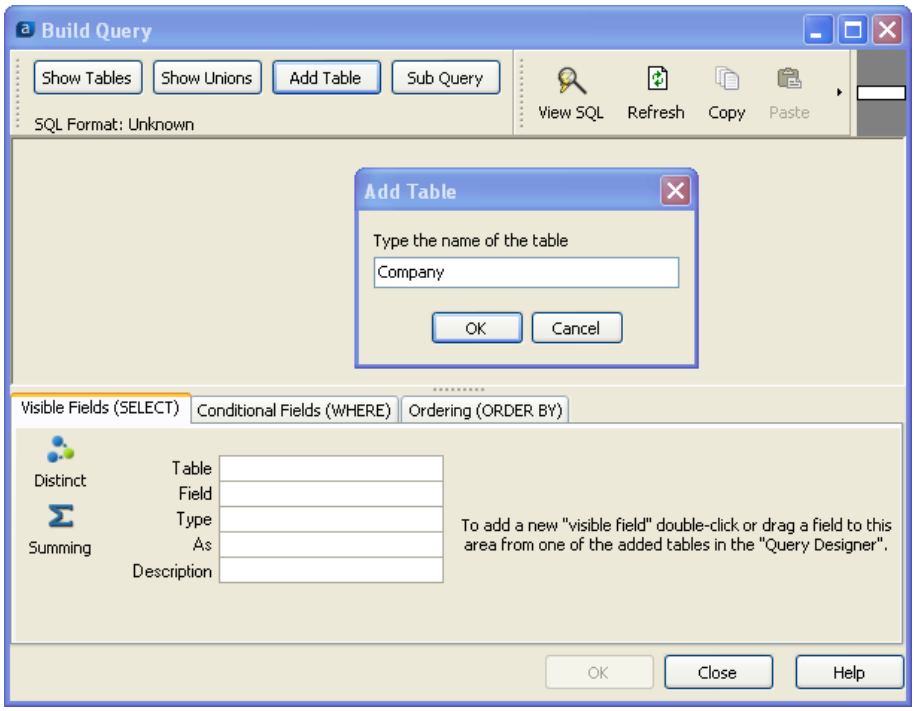
The T and A records contain information about the company submitting the report to the IRS. This information is contained in the "Company" table in the Sample Database, but this table is not included in the Report Query. Therefore this table must be added as a Dataset.

To add a dataset, click the green plus sign.



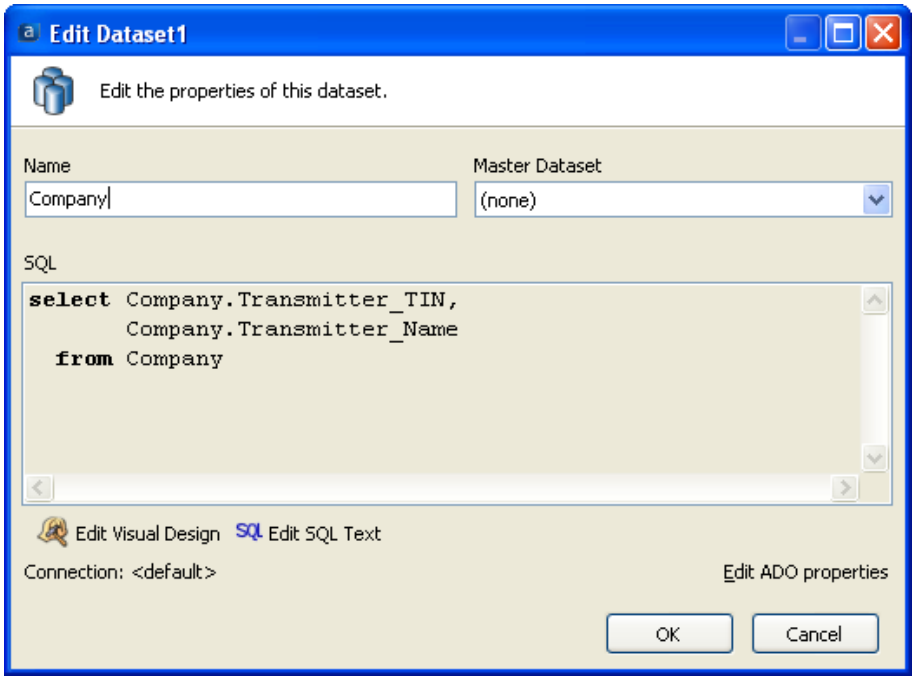
Creating a dataset

Name the dataset "Company", then click the hardhat/hammer icon to display the Build Query dialog. Click the "Add Table" button, enter "Company" for the name of the table, then click "OK".



Entering the table name

The "Company" table will be displayed. Double-click on Transmitter_TIN and Transmitter_Name as they will be used in the T and A records. Click "OK" to continue.



Entering the dataset name

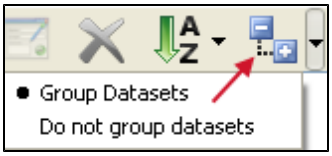
This Dataset is not a child of another Dataset; therefore leave the "Master Dataset" field as (none). After clicking "OK", you will be returned to the Main Interface with the newly added Company Dataset shown.

Added datasets vs. datasets in Report Query

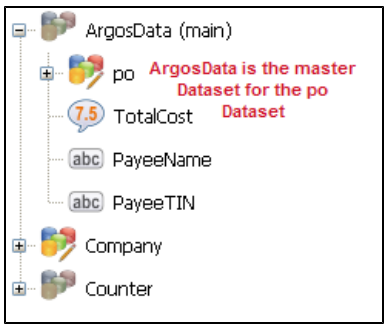
Datasets added during creation of the Extract Report are shown with a colored icon. Datasets contained in the Report Query are not colored. Datasets created in the Extract Report are editable, whereas datasets created in the Report Query are not editable within the Extract Report Editor.

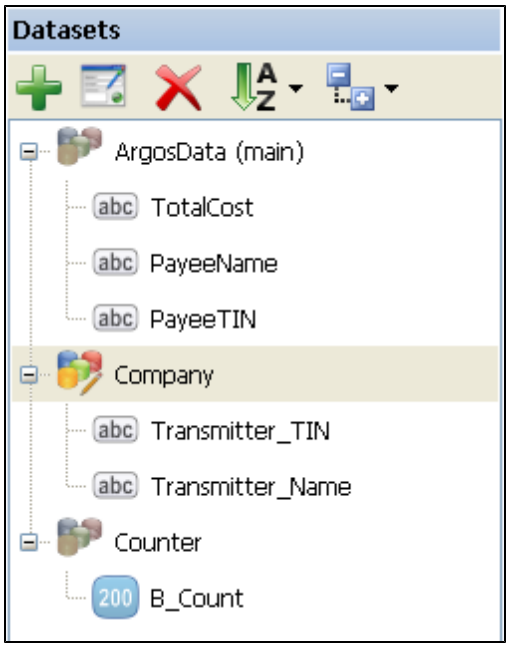
Dataset Grouping

Click the Group Datasets option shown below to choose if dataset groupings are to be displayed.



When Dataset grouping is selected, child datasets are indented relative to its master dataset. This is shown in the picture below.





The datasets area showing all datasets

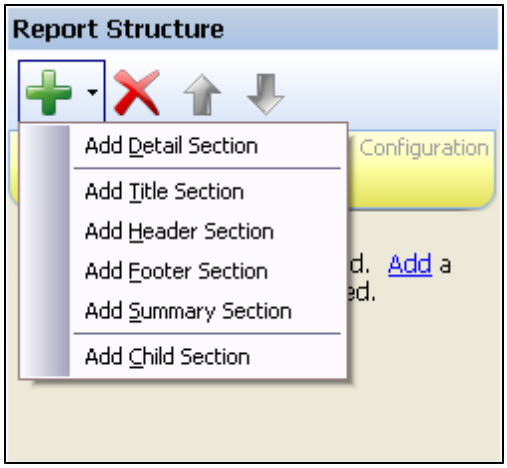
Note the field names under each Dataset. They will each be placed into various sections within the Extract Report. Now that the required Datasets exist, the sections and fields can be added to the report.

Add the section for the T Record Type (Title Section)

The first section in the report creates the T Record Type and reads the single record from the Company Dataset. This Dataset contains general information about the company submitting the 1099 file.

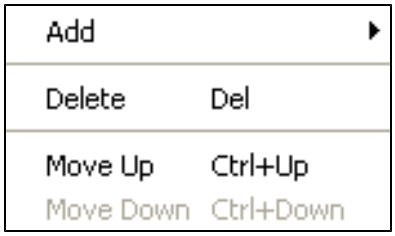
Add the section

To add the section, click the small down-arrow to the right of the green plus sign, then click on "Add Title Section" as shown in the figure below.

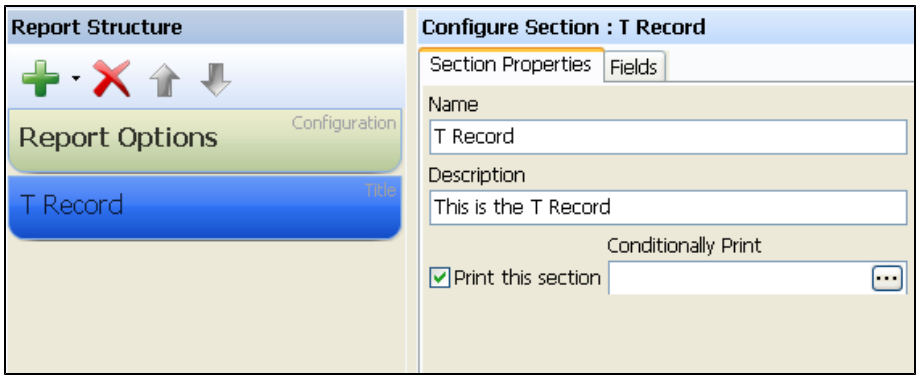


Adding a Title Section

A right-click anywhere within the Report Structure area displays the following menu items for adding, deleting, or moving sections.



Enter a Name for the section and a Description, if desired. Since this section is to be included in the report, do not uncheck the "Print this Section" box. The name entered is displayed in the Report Structure area for the section as shown below.

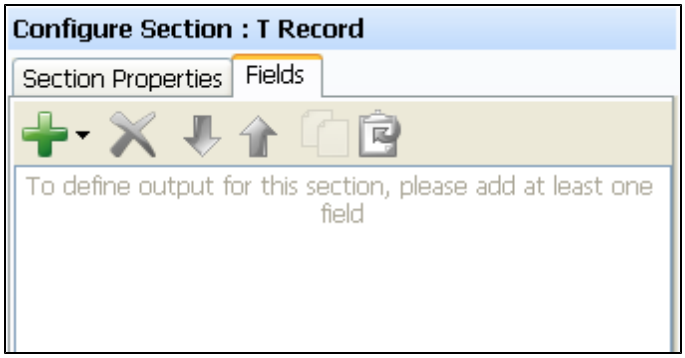


Entering Name and Description of Section

Add fields to the section

The next step is to add fields to this section. The fields to be added from the datasets are Transmitter_TIN and Transmitter_Name (from the Company dataset), and the number of payees (from the Counter dataset). Constant fields will be used for record type (T) and payment year (2009). Finally, an expression field (COUNT) will be used to create the Record Sequence Number.

Click on the Fields tab shown in the figure above to activate the area where fields are displayed and configured.



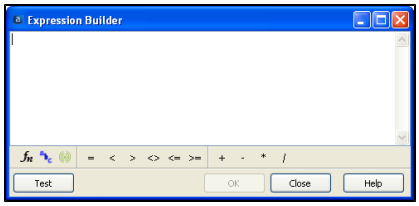
Adding fields to the section

Fields will now be added in the following order: Record Type, Payment Year, Record Sequence Number, Transmitter_TIN, _Transmitter_Name, number of payee records.

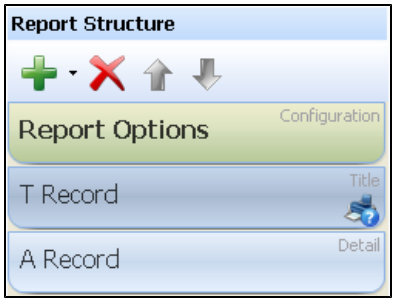
Record Type - Click the small down-arrow to the right of the green plus sign to display the list of field types and select "Add Constant Field". An area will be displayed beneath where you configure the field. For this field, enter "T" as the value. Also enter "1" as the field width. Change the name of the field from "Constant" to "T".

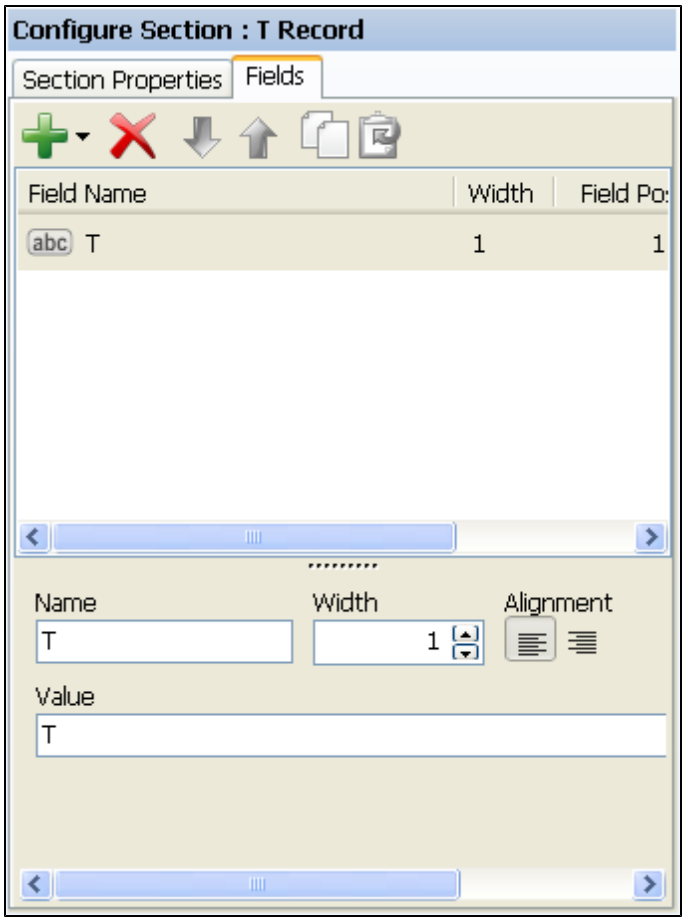
Conditionally Print

If you choose to print the section, you can also specify if the section is to be conditionally printed based on the results of an expression. Click the ellipsis button to launch the Expression Builder which is used to create an expression.



When Conditional Printing is selected for a section, the printer icon shown below with the blue question mark is displayed.

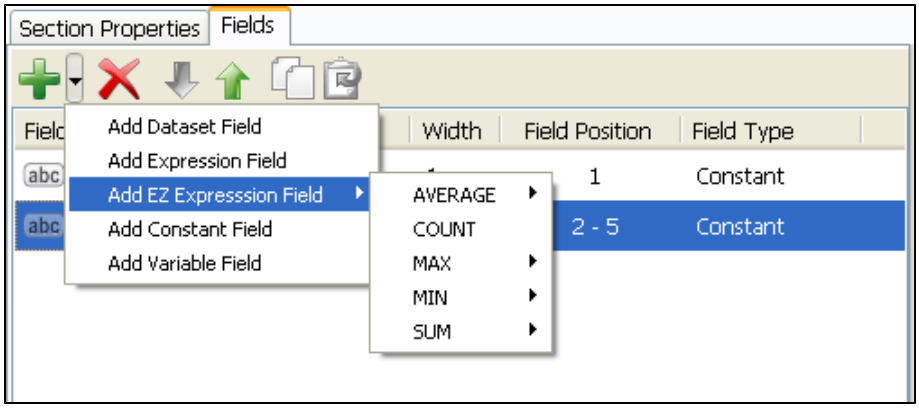




Adding the Record Type and renaming the field

Payment Year – repeat the same procedure to add a constant field with a value of 2009 and width of 4.

Record Sequence Number – Add a COUNT expression as shown below which will increment for each record.

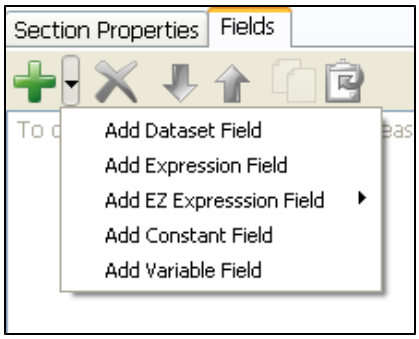


Adding the COUNT expression

Adding Dataset fields

Dataset fields can be added 3 ways:

- By double-clicking on the field displayed in the Datasets area.
- By dragging a field displayed in the Datasets area onto the Configure Section area. Multiple fields can be selected via CTRL-click then dragged into the Configure Section area
- By clicking the small down-arrow next to the green plus sign in the Configure Section area. This allows you to add all field types and not only Dataset fields. This is shown in the figure below.

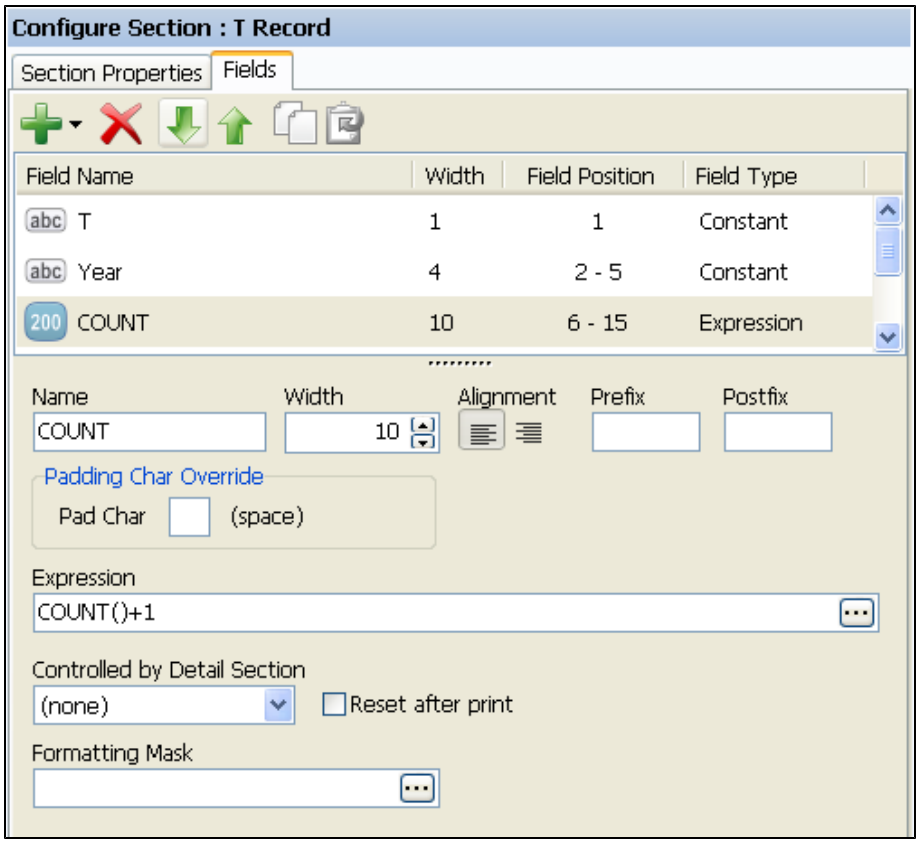


Right-clicking anywhere in the Configure Section area also displays these options.

Dragging Dataset fields

If you drag a Dataset field from the Datasets area to the Configure Section area, you will need to click on the field after dragging for the configurable properties to appear. This step is not required when using the other methods for adding fields to a section.

The COUNT field will then appear as shown in the figure below. Right align the field by clicking the alignment icon. For the expression value, add "+1" after COUNT to start the counter at 1.



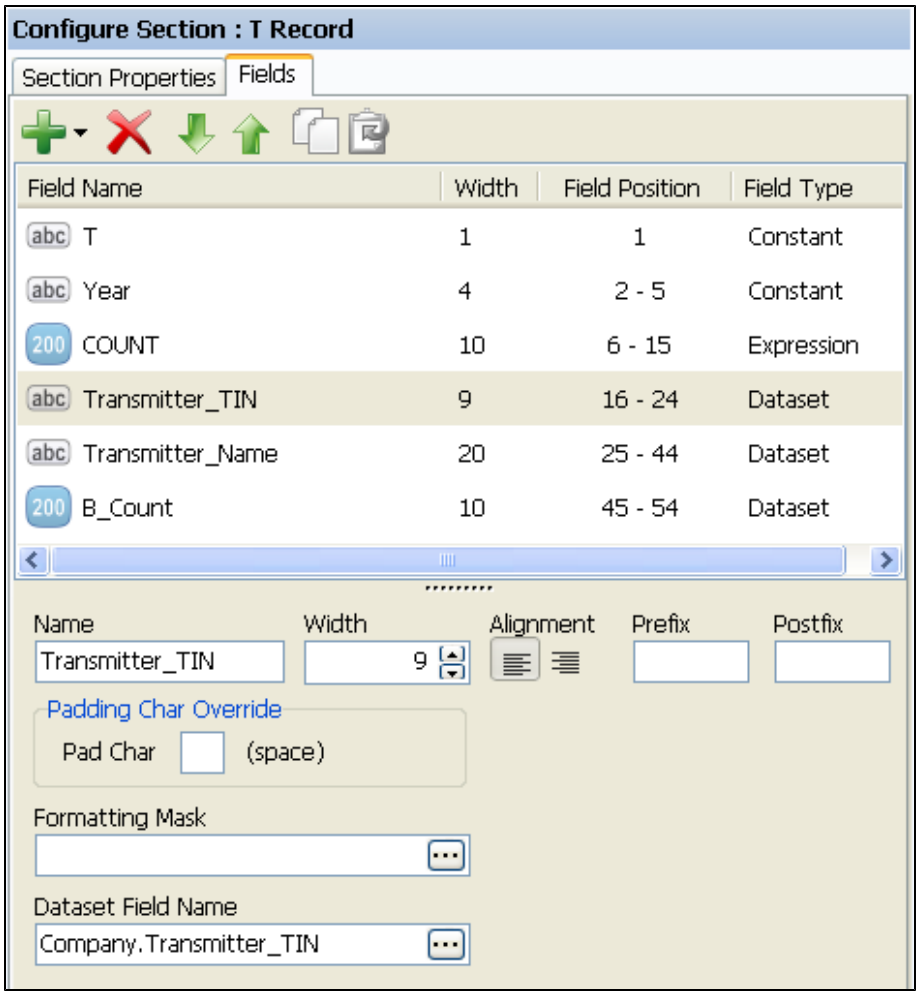
The section with 3 fields added

Note in the figure above that 3 fields have been added along with width, field position, and field type.

Transmitter_TIN and Transmitter_Name – add these dataset fields by double-clicking on them within the Datasets area. Increase the width of the Transmitter_Name field to 20. Set the width of Transmitter_TIN to 9.

Number of payees – add this dataset field by double-clicking on the B_Count field in the Counter dataset. This field contains the number of payees (also the number of B records).

The added fields are shown as follows. Take note of the width, field position, and field type fields to verify it they are correct.



The section with all fields added

Save your work and test the report

You can save your work at any time by clicking the save icon at the top left of the Report Editor. You can view the report by clicking the green circular icon containing an arrow. The icon is shown in the sidebar to the right.

A preview of the report at this stage appears as follows:

```
T2009000000000011234567890Company,Inc.          0000000012
```

Record Type = T

Year = 2009

Record Sequence Number = 1

Transmitter_TIN = 123456789

Transmitter_Name = ACompany,Inc.

Number of payees = 12

Icon	Description
	Close the Editor.
	Save your work.
	Undo the last operation.
	Redo the last undone operation. Click the small arrow to view undo history.
	Test the report.
	Open In-Product Help.

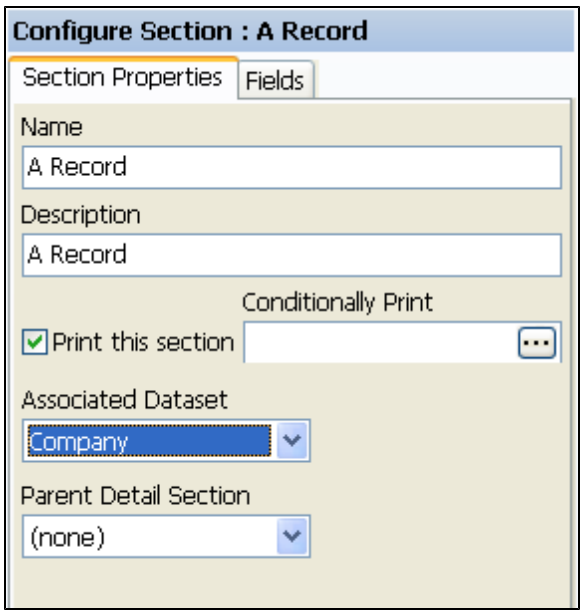
Extract Report Editor Icons

Add the section for the A Record Type (Detail Section)

This section identifies the institution making payments to vendors. For this example, the transmitter is the same institution as the institution making the payments. Therefore the company name and TIN for this record contains the same values used in the T record.

Add the section

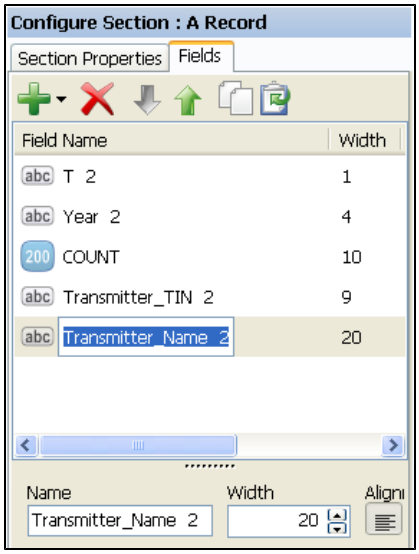
Add a Detail Section beneath the T Record and name it "A Record". Select "Company" as the Associated Dataset and leave the Parent Detail Section as (none) as shown in the figure below.



Adding a Detail Section for the A Record Type

Add the fields

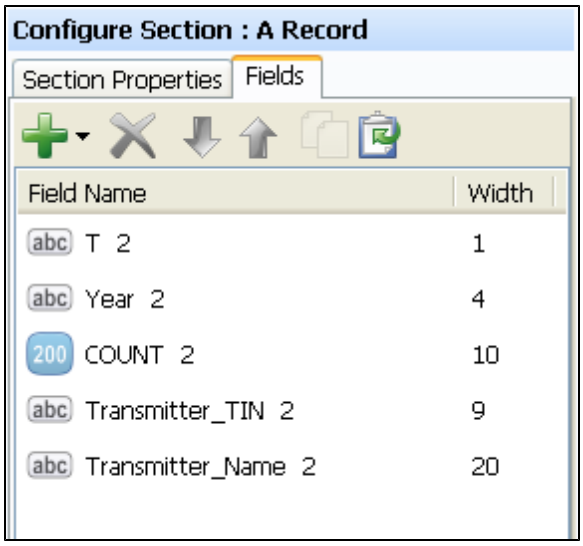
Since the first 5 fields are the same as used in the T Record, you can copy them from the T Record and paste them into this section. To do this, click on the T Record (in the Report Structure Area), click the Fields tab, highlight the first 5 fields using CTRL/click, then click the copy icon. Then click the A Record (in the Report Structure Area), click the Fields tab, then click the paste icon. All 5 fields will be pasted, with an integer number appended to the Field Name as shown below. You can then rename the fields as desired. See the sidebar which contains the various ways to rename fields.



Renaming fields

There are 3 ways to rename a field:

- Click on the field then change the name in the "Name" field at the bottom of the area. The figure below shows the Name field.
- Perform a slow double-click on the field. The field will then be surrounded by a box. You can then change any characters within the box. The figure below shows the selected field name surrounded by the box after a slow double-clicks.
- Select the field then click the F2 key. The field can then be edited.

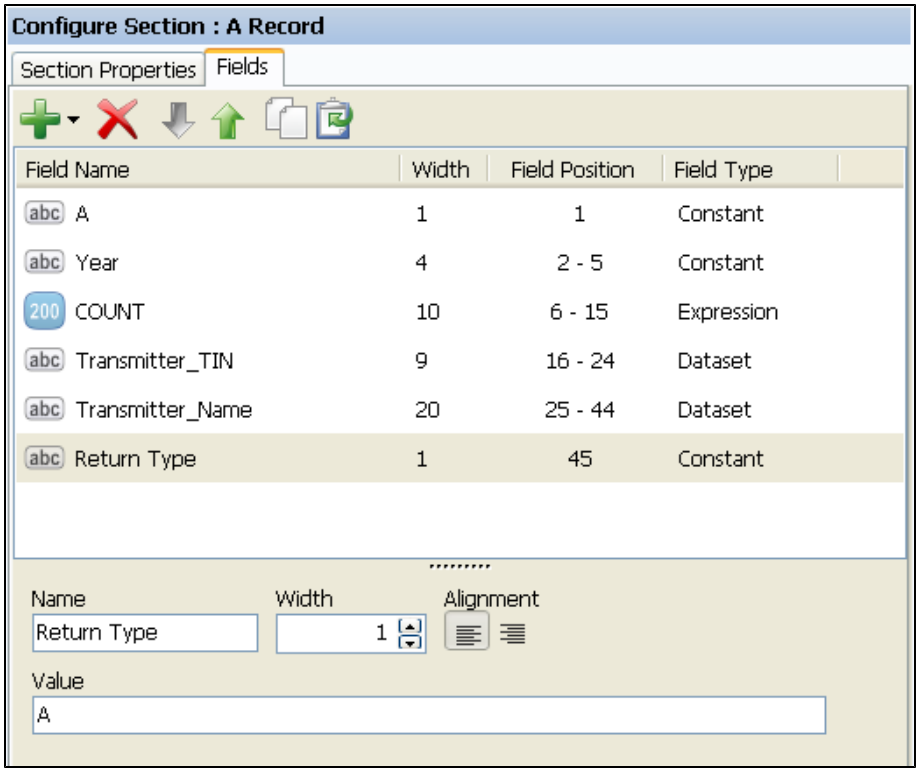


Copy/paste fields to this section

After the paste operation, change the field name from T to A, and change the value to A.

Then add the Return Type as a constant field, give it a value of A, and set the width to 1.

The fields within the A record should now appear as shown below:



The A Record with all fields added

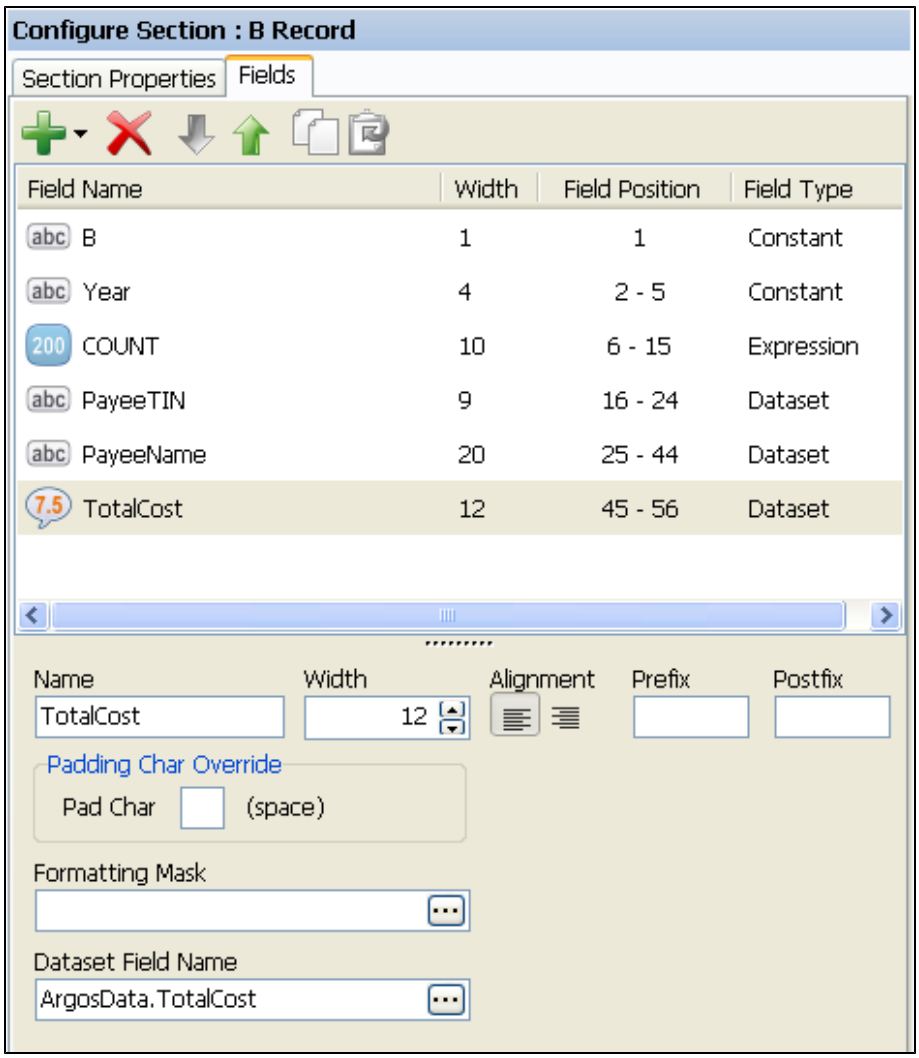
Add the section for the B Record Type (Detail Section)

This section contains the amount paid to each payee and loops through the Vendor table in the ArgosData dataset to obtain the Payee TIN, Payee Name, and total payments to each payee.

Add the section and fields

Add a Detail Section, name it "B Record" and select ArgosData as the Associated Dataset. Then add the Record Type = B, Payment Year, Record Sequence Number in the same fashion that was done for the T and A records. Then add the Payee TIN, PayeeName, and TotalCost fields from the ArgosData dataset. Right align the COUNT and TotalCost fields, and left align the PayeeTIN and PayeeName fields.

The fields contained within the B Record should appear as follows:



The B Record with all fields added

Icons used to represent data types

Icon	Data type
abc	string
7.5	float
200	integer
31	date

Save your work and test the report

At this point the report will appear as follows:

```
T2009000000000011234567890Company, Inc.          0000000012
A2009000000000021234567890Company, Inc.          A
B2009000000000039999999999Art Danielson          000000096000
B2009000000000049876543210Harold Brown           000000045000
B2009000000000058888888888Helen Jones            000000036000
B2009000000000061111111111Henry Garcia           000000030000
B2009000000000071234567890James Green            000000025000
B2009000000000082222222222James Tong             000000050000
B2009000000000093333333333Jane Smith             000000010000
B2009000000000106666666666Joe Orozsco            000000008750
B2009000000000117777777777Lousie Smart           000000012000
B2009000000000124444444444Mary Jones             000000010000
B2009000000000133111114444Rene Gould             000000044000
B2009000000000145555555555Stan Smith             000000007000
```

Testing the report

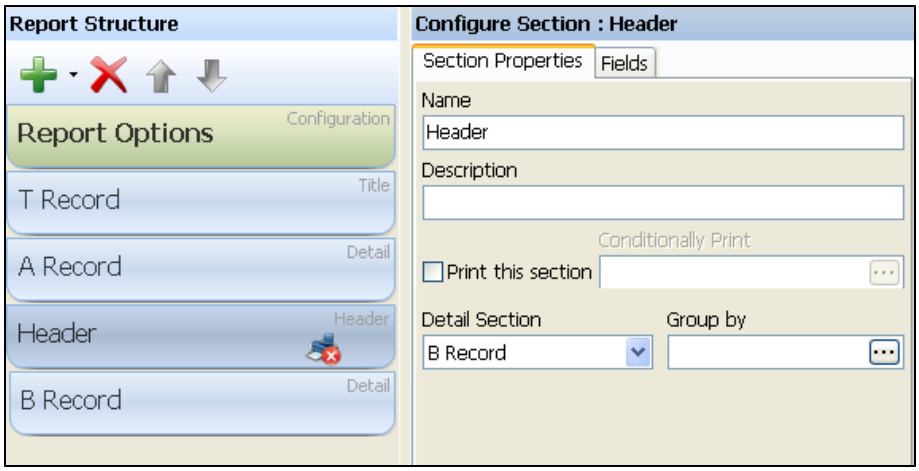
Add the Sections for the C Record Type (Header and Footer Sections)

The C record type contains the number of payees (B records) as well as the sum of all payments made by the payer. Therefore, Header and Footer sections will be created which will count the number of B records and will sum the payment amounts in the B records.

Note: although the B_Count variable also contains the number of B records and could be used here, the value will be computed again to demonstrate how Header and Footer Sections are used to count and sum data contained in details records.

Add a Header Section

Add a Header Section, name it "B Header", set Detail Section to "B Record", and uncheck the "Print this section" box.



Adding a Header Section

The printer with a red x indicates that the section is not to be printed

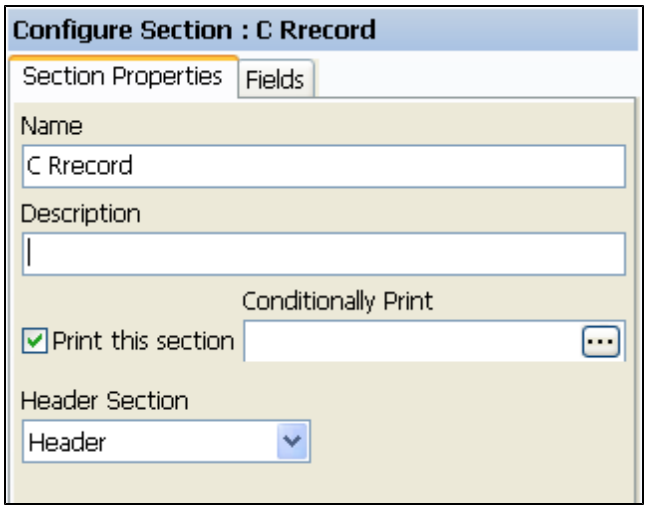
No fields will be placed in the Header Section, which is why the section is not to be printed. Note the image of a printer with the red x, which indicates that the section is not to be printed. Header and Footer Sections are used to group information in the Detail Section surrounded by the Header and Footer Sections in the same fashion as is used for the Banded Report Header and Footer Bands. You can group the data in the Detail Section by selecting one of the available functions that are displayed when clicking the ellipsis in the "Group by" field. The Expression Builder will be launched where you can create the expression used as the criteria for grouping.

This example does not require the B Records to be grouped since the order of data in this case is immaterial.

Add a Footer Section

A Footer Section will be added to count the number of detail (B) records and to sum the payment amounts in the B Records. COUNT and SUM expressions will be added to the Footer. The footer section becomes the C Record Type and will be printed.

Add the Footer Section and select "Header" as the Header Section that this Footer is associated with as shown in the figure below. Name the Section "C Record".



The Footer Section for the C Record Type

Add the fields to the C Record

Using methods shown above, add the Record Type, Payment Year, Record Sequence Number fields by copying them from other sections and pasting them into the C Record.

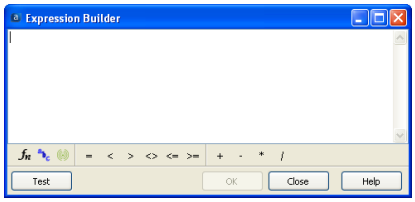
Add a COUNT expression, right align, and name it TotalBRecords. Select "B Record" for the "Controlled by Detail Section" field since the COUNT expression must count the number of records in the B (detail) section.

Add a SUM expression to sum the TotalCost fields in the B Records. Select "B Record" for the "Controlled by Detail Section" field such that the SUM expression will sum only values from the B section. The figure below shows the selections required when summing the TotalCost field using "Add EZ Expression Field".

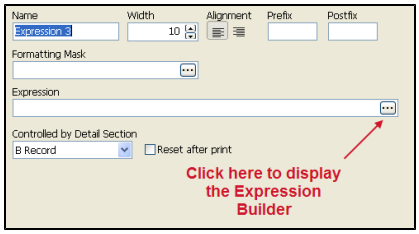
Adding Expressions

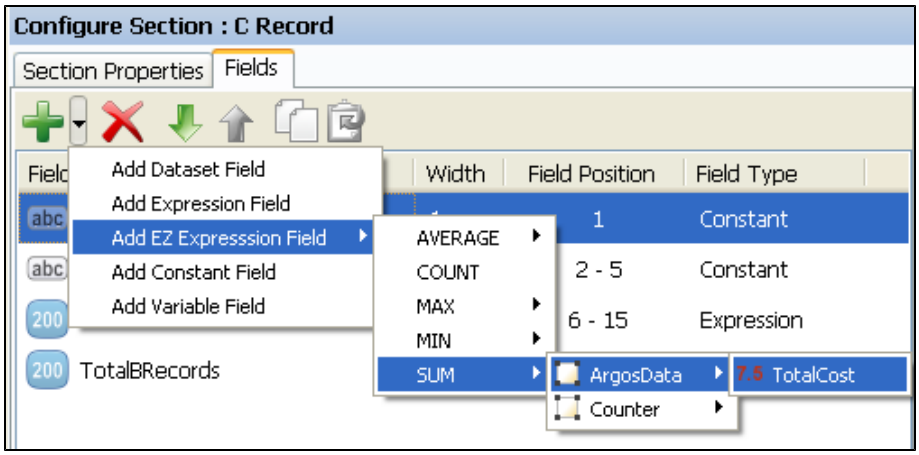
Expressions can be added using the Add EZ Expression Field option which allows you to quickly add the most commonly used Argos functions.

You can also add an expression by selecting "Add Expression Field", and the entire set of Argos functions is available to you via the Expression Builder shown below.



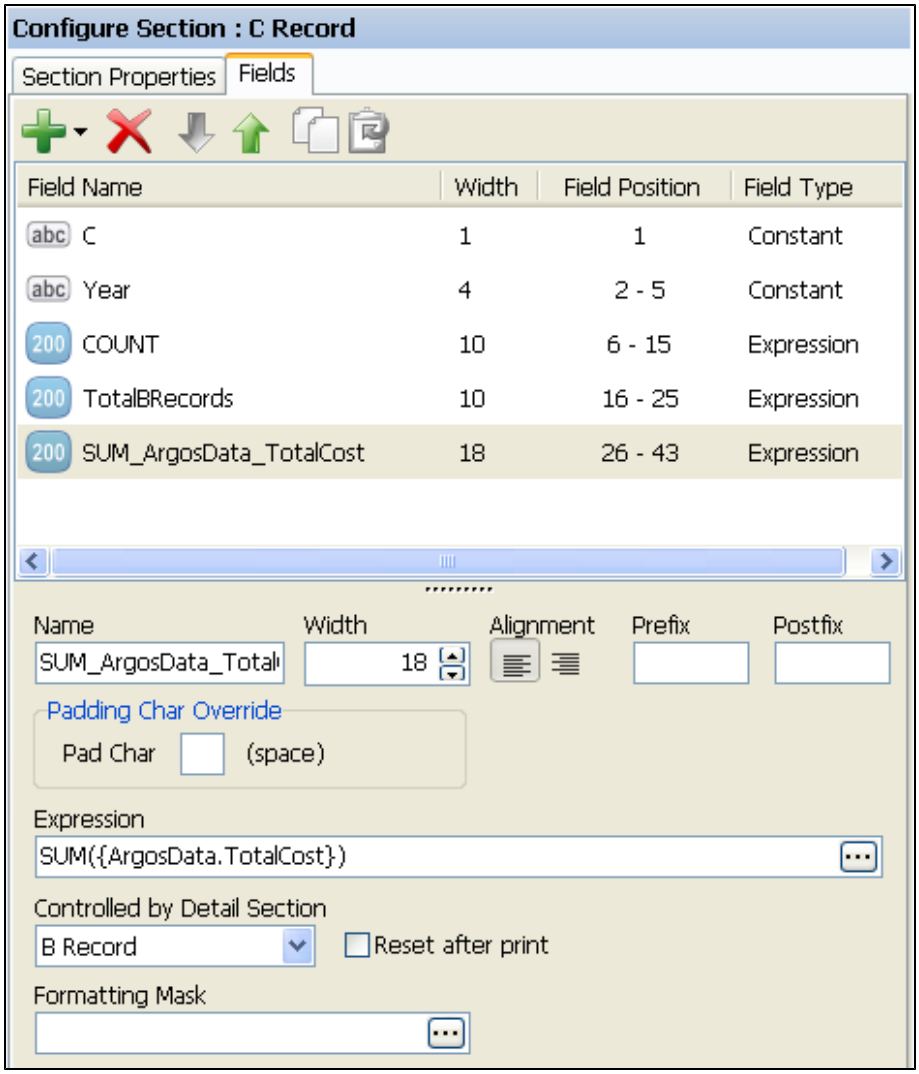
When using this method to add an expression, after clicking "Add Expression", click the ellipsis button at the right of the Expression field to launch the Expression Builder





Adding the SUM function

The figure below shows all of the fields after being added to the C Record.



After all fields added to the C Record

Add the Section for the F Record Type (Summary Section)

The F Record Type is the end-of-transmission record. We use a Summary section, which is the last record in the report.

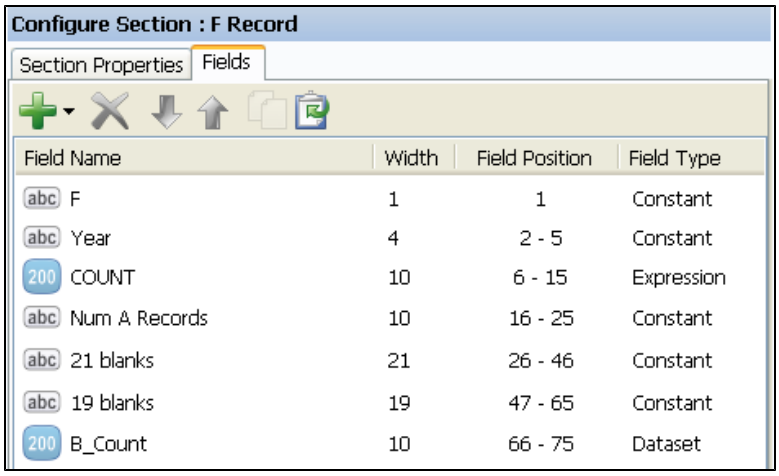
Add the Summary Section and name it "F Record". The record will be placed as the last section. Since this record contains fields to be included in the report, keep the "Print this section" box checked. At this point, all sections have been added and appear as shown at right.

The entire report structure

Add the fields

The first 3 fields in this Section (Record Type, Payment Year, and Record Sequence Number) have already been added to prior sections and can be copied into this section. After copying, change the value of the Record Type to "F".

After the Record Sequence Number field, add a constant field containing the number of A records, which is 1 for this example. The next field is 21 characters and is left blank. Therefore add a constant field with blanks for the value. Following this field is a 19 character field to be left blank, therefore add the appropriate constant field. Finally, the last field contains the number of B records, so move the B_Count field from the Datasets area into the list of fields. When completed, the fields should appear as show below.



Field Name	Width	Field Position	Field Type
abc F	1	1	Constant
abc Year	4	2 - 5	Constant
200 COUNT	10	6 - 15	Expression
abc Num A Records	10	16 - 25	Constant
abc 21 blanks	21	26 - 46	Constant
abc 19 blanks	19	47 - 65	Constant
200 B_Count	10	66 - 75	Dataset

Note: each field has been named to provide meaning to that field.

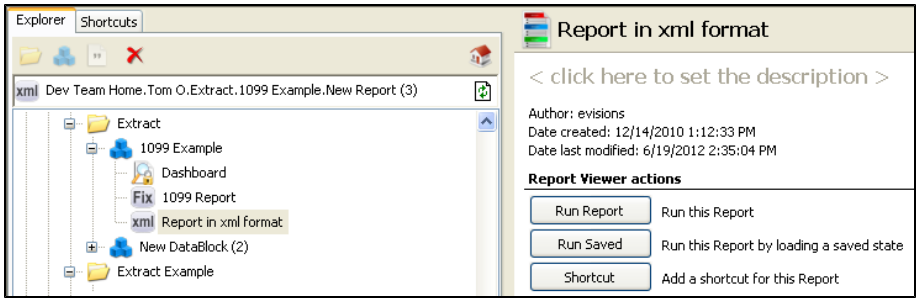
Save your work and test the report

The report is now complete. Save your changes, then click "Test this Report" to preview the report.

```
T2009000000000011234567890Company, Inc.        0000000012
A2009000000000021234567890Company, Inc.        A
B2009000000000039999999999Art Danielson        000000096000
B2009000000000049876543210Harold Brown         000000045000
B2009000000000058888888888Helen Jones          000000036000
B2009000000000061111111111Henry Garcia         000000030000
B2009000000000071234567890James Green          000000025000
B2009000000000082222222222James Tong           000000050000
B2009000000000093333333333Jane Smith           000000010000
B2009000000000106666666666Joe Orozsco          000000008750
B2009000000000117777777777Lousie Smart         000000012000
B2009000000000124444444444Mary Jones           000000010000
B2009000000000133111114444Rene Gould           000000044000
B2009000000000145555555555Stan Smith           000000007000
C2009000000000150000000120000373750
F20090000000016          1                                    0000000012
```

Execute the Report

Extract Reports are executed in the same fashion as other report types. Select the report from the Argos Explorer window, then click the **Run Report** button to execute the report.



Executing the report

After execution of the report you have the option of saving the report to a file, emailing the report, or have an application automatically launched to display the report. The application launched depends on the file extension chosen when the report was created. For example, if you chose a file extension of .xls, then MS-Excel will be launched.

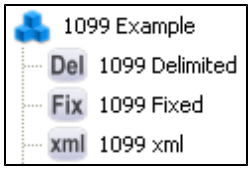
The Report in Delimited Report Format

The above report in delimited format would appear as follows (using comma as the delimiter).

```
T,2009,1,123456789,ACompany,Inc.,12
A,2009,2,123456789,ACompany,Inc.,A
B,2009,3,999999999,Art Danielson,96000
B,2009,4,987654321,Harold Brown,45000
B,2009,5,888888888,Helen Jones,36000
B,2009,6,111111111,Henry Garcia,30000
B,2009,7,123456789,James Green,25000
B,2009,8,222222222,James Tong,50000
B,2009,9,333333333,Jane Smith,10000
B,2009,10,666666666,Joe Orozsco,8750
B,2009,11,777777777,Lousie Smart,12000
B,2009,12,444444444,Mary Jones,10000
B,2009,13,111114444,Rene Gould,44000
B,2009,14,555555555,Stan Smith,7000
C,2009,15,12,373750
F,2009,16,1,,,12
```

Report in delimited format

The icons shown below are used to represent the Report Type.



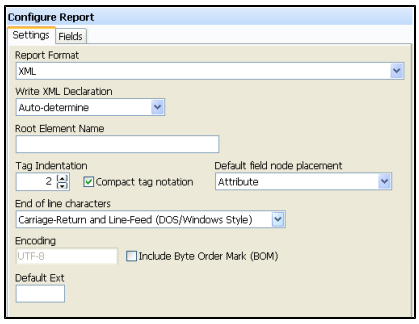
Del represents Delimited report format

Fix represents Fixed Width report format

xml represents XML report format

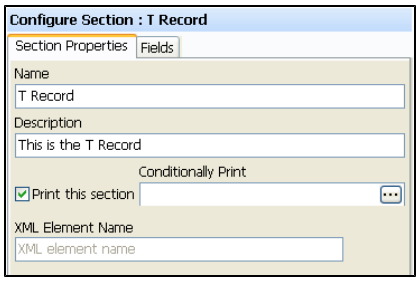
The Report in XML Report Format

In XML format, the report appears as shown below if defaults were used for the following fields:



- Write XML Declaration
- Root Element Name
- By default, the Root Element Name is "XML" as shown below
- Tag Indentation
- Compact tag notation
- XML Element Name for a section
- By default, the section name is used for the XML Element Name.
- XML Element Name for a field
- By default, the field name is used for the XML Element Name.
- Default field node placement (applies to each field)

The In-Product Help describes the location and use of these fields in detail.



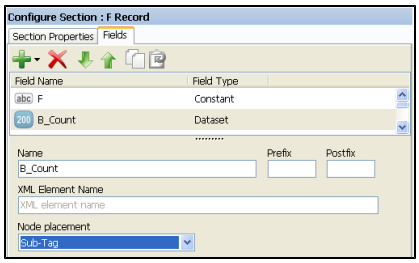

```
<XML>
  <T_Record T="T" Year="2009" COUNT="1" Transmitter_TIN="123456789" Transmitter_Name="ACompany,Inc." B_Count="12"/>
  <A_Record A="A" Year="2009" COUNT="2" Transmitter_TIN="123456789" Transmitter_Name="ACompany,Inc." Return_Type="A"/>
  <B_Record B="B" Year="2009" COUNT="3" PayeeTIN="999999999" PayeeName="Art Danielson" TotalCost="96000"/>
  <B_Record B="B" Year="2009" COUNT="4" PayeeTIN="987654321" PayeeName="Harold Brown" TotalCost="45000"/>
  <B_Record B="B" Year="2009" COUNT="5" PayeeTIN="888888888" PayeeName="Helen Jones" TotalCost="36000"/>
  <B_Record B="B" Year="2009" COUNT="6" PayeeTIN="111111111" PayeeName="Henry Garcia" TotalCost="30000"/>
  <B_Record B="B" Year="2009" COUNT="7" PayeeTIN="123456789" PayeeName="James Green" TotalCost="25000"/>
  <B_Record B="B" Year="2009" COUNT="8" PayeeTIN="222222222" PayeeName="James Tong" TotalCost="50000"/>
  <B_Record B="B" Year="2009" COUNT="9" PayeeTIN="333333333" PayeeName="Jane Smith" TotalCost="10000"/>
  <B_Record B="B" Year="2009" COUNT="10" PayeeTIN="666666666" PayeeName="Joe Orozsco" TotalCost="8750"/>
  <B_Record B="B" Year="2009" COUNT="11" PayeeTIN="777777777" PayeeName="Lousie Smart" TotalCost="12000"/>
  <B_Record B="B" Year="2009" COUNT="12" PayeeTIN="444444444" PayeeName="Mary Jones" TotalCost="10000"/>
  <B_Record B="B" Year="2009" COUNT="13" PayeeTIN="111114444" PayeeName="Rene Gould" TotalCost="44000"/>
  <B_Record B="B" Year="2009" COUNT="14" PayeeTIN="555555555" PayeeName="Stan Smith" TotalCost="7000"/>
  <C_Record C="C" Year="2009" COUNT="15" TotalBRecords="12" SUM_ArgosData_TotalCost="373750"/>
  <F_Record F="F" Year="2009" COUNT="16" Num_A_Records="1" 21_blanks="" 19_blanks="" B_Count="12"/>
</XML>
```

Report in XML format using defaults

If you override the defaults, the appearance of the report will differ. For example, if "Sub-Tag" is selected for "Default field node placement" for a given field, then the XML syntax for the field is:

<Field Name>field value</Field Name>

In this example, if "Sub-Tag" was selected within F Record for the B_Count field, the XML created is shown below and differs from the figure above.




```
  <F_Record F="F" Year="2009" COUNT="16" Num_A_Records="1" 21_blanks="" 19_blanks="">
    <B_Count>12</B_Count>
```

Additionally, if you enter values for XML Element Name for sections or fields, the defaults mentioned above will be replaced by the values that you enter.

The API Interface

Introduction

This optional add-on feature allows institutions to call ARgos reports without having to use the Argos Client, and to allow seamless integration of Argos iinto various portals, web pages, and 3rd party applications.

Running a report via the API is accomplished in three steps. The first step is adding the HTTP Referrer to MAPS. This allows the server to call an API enabled report. The next is enabling the API for a specific report. Once API access is enabled for a given report, a Report Unique Identifier is generated. The last step is using the Report Unique Identifier to execute the report from the authorized server specified in MAPS via an HTML GET, POST Form, Interactive Mode, or via a UNIX command line utility created by Evisions called MAPRAPI. Each of these steps will be discussed in more detail in the following sections.

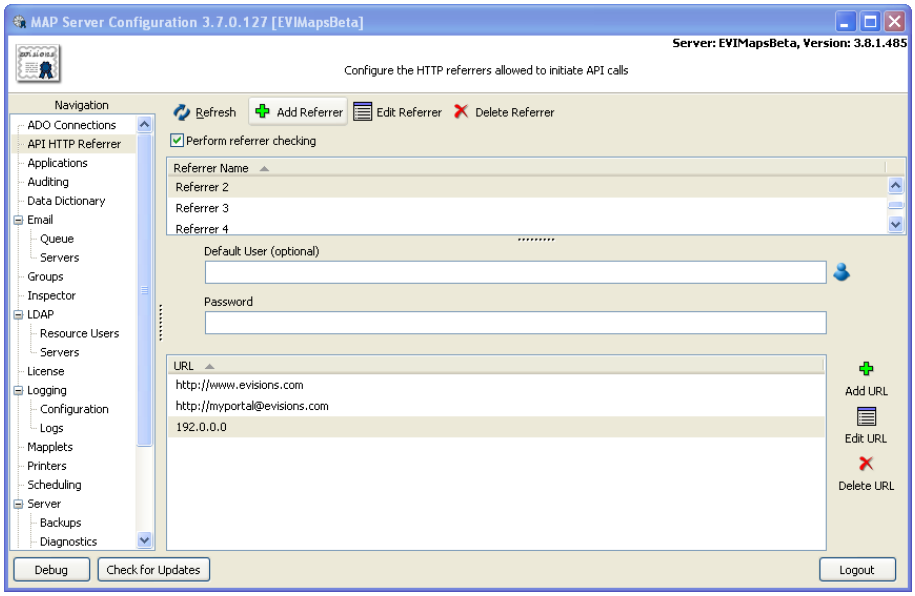
Securing API enabled reports

Argos reports enabled via API can represent security vulnerability if not configured properly. Evisions strongly recommends that the user credentials used for API-enabled reports be restricted to only those reports you wish to deploy via API. All other reports should not be accessible to the username you've selected.

Evisions supports Secure HTTP using SSL 3.0 and TLS 1.0. Previous versions of SSL are specifically NOT supported due to security vulnerabilities. Users should be advised to disable SSL 2.0 in their browser (SSL 2.0 is disabled by default in Internet Explorer 7.0 and later). This can be done by unchecking the SSL 2.0 box from Tools - Internet Options - Advanced in Internet Explorer.

Step 1: MAPS API HTTP Referrer

The ability to invoke a report via the API can be controlled by the MAPS configuration tool. The "API HTTP REFERRER" selection is used to grant the ability to call reports via the API to specific machines. This prevents arbitrary machines from executing reports, even if they have the Report Unique Identifier.



The API HTTP Referrer

To add a new approved HTTP Referrer, click on the green "Add Referrer" button at the top. Name the server, then add any URLs or IP addresses that the server might be using by clicking on the ADD URL button on the right hand side. On this form you may choose to enter a default username and password for API reports run on the specified server. Usernames and passwords that are passed in via GET, POST form, or MAPRAPI will override the username and password entered here.

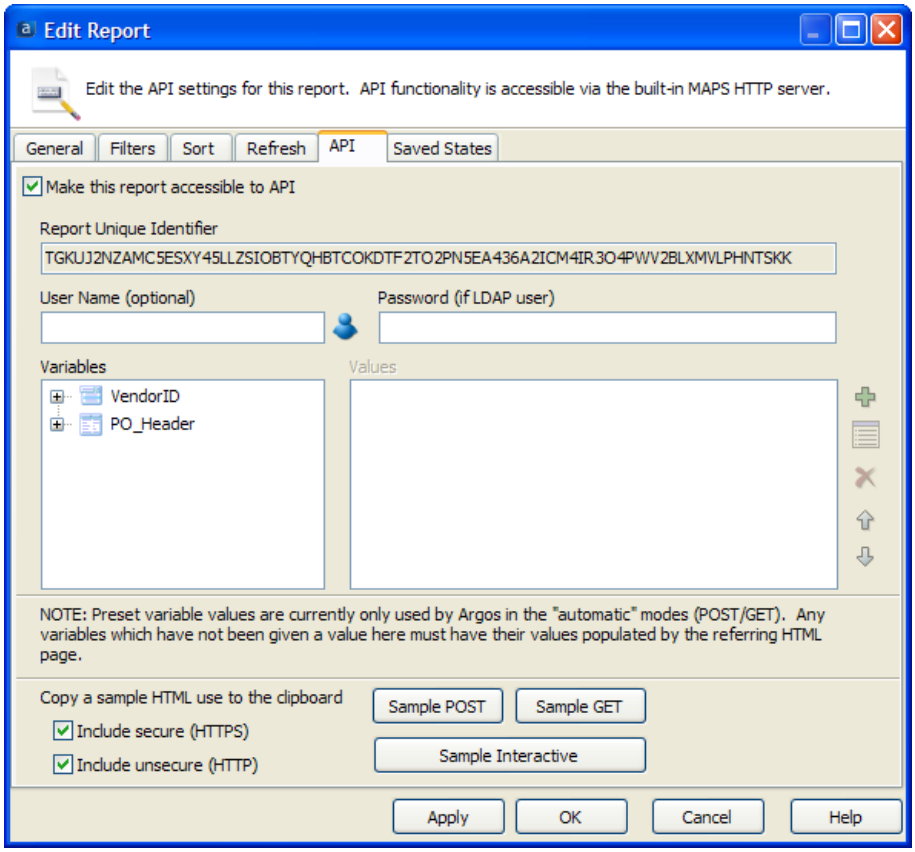
HTTP Referrer with Interactive Mode

When the API is run in Interactive Mode, the HTTP referrer would actually be the client PC. MAPS does not check the HTTP Referrers for Interactive Mode API calls. This eliminates the necessity for administrators to add all PCs that will be using Interactive Mode to the list of approved HTTP Referrers. However, IP Restrictions are still checked for all API modes.

To disable Referrer checking you will need to uncheck the **Perform referrer checking** box shown in the figure above. When unchecked, no checking for any of the listed referrers will be done.\

Step 2: Enabling API on a Report

Since the API can make the data available to a very wide audience via the web server, portal or 3rd party application server, an Administrator account must enable any report that is to be available via the API. To enable API access, any account with a user type of Administrator (it does not have the Administrator account itself) edits the report and goes to the API tab. This tab will not be visible to any non-administrator level users.



Enabling the API for a report

Administrator privilege is required to view the API tab.

On the API tab, check the **Make this report accessible to API** box. Once the check box is marked, MAPS will generate a Report Unique Identifier for the report. If the report or the DataBlock are moved, it will retain its Report Unique Identifier. If the report or DataBlock is copied, a new Report Unique Identifier will need to be created.

A default username and/or password for this report can be defined here. If there is a username and password that is passed in via the GET, POST form or the MAPRAPI application, it will override the username and password entered here. If the default user is an LDAP user, you must assign a password here or pass in the password via the API call. If you choose to default any parameter values you may do so in the Variables section at the bottom. Any parameter values passed in from the GET, POST, or MAPRAPI call will override the default values entered here.

Step 3: Execute the Report using the Report Unique Identifier

There are two ways to integrate an API enabled report with a portal or web page once you have the Report Unique ID. One method is the API Automatic Mode, and the other is the API Interactive Mode.

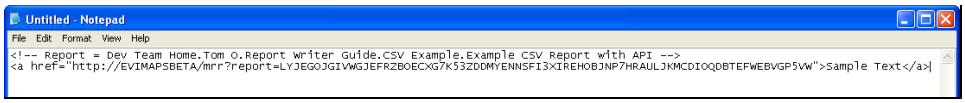
API Automatic Mode

When calling a report via Automatic mode, the report is generated without any user interaction. Required report parameters must be predefined or gathered by the calling application and passed to the API.

Automatic reports use either an HTTP GET request, which is a standard URL, or a POST form in which the calling webpage gathers needed parameters and passes them over when running the report. Click on the sample buttons to copy the desired HTML to the clipboard. Use the checkboxes to generate HTTP, HTTPS or both. You can modify the HTML as desired and place it into your application.

Sample Get

Clicking **Sample Get** copies an example of the HTML GET code to the clipboard for pasting into a webpage.



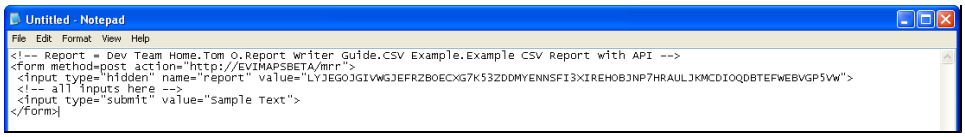
Obtaining sample HTML GET code

For more information on HTTP GET and POST requests and the user interface objects that you can create, you can refer to an HTML reference or go to:

http://www.w3.org/TR/html4/interact/forms.html

Sample POST

Clicking **Sample POST** generates an HTML POST Form in its simplest form. The POST form can be expanded to have check boxes, list boxes, dropdowns, and other controls. For more details, you may refer to the link at right from the World Wide Web Consortium.



Obtaining sample HTML POST code

GET/POST Parameters

Parameters that may be used in the GET/POST requests are shown in the table below.

Parameter	Description
REPORT	This is the Report Unique Identifier
FILENAME	This is the filename for the report when it is returned.
PASSWORD	This is the password for the user in this request.
USERNAME	This is the Username to use to run this report
REPORTFORMAT	This can be any of the valid output types of Argos: CSV, PDF, RTF, XLS, HTML, and TXT

API Interactive Mode

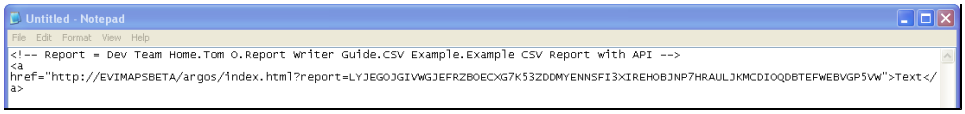
Interactive mode allows you to call any Argos report or Dashboard from portals, web pages, and 3rd party applications. Interactive mode deploys (via ActiveX) and launches Argos in a restricted mode to the client computer. The user must be able to install software on their computer to use a report in Interactive mode.

Variables defined on the API tab will be ignored when the report is called using Interactive mode. The user can enter or change parameter values once the report is called

Clicking on the Sample INTERACTIVE will generate an example of the HTML needed in its simplest form.

Sample Interactive

Clicking on the **Sample Interactive** button will generate an example of the HTML Interactive code in its simplest form.



Obtaining sample HTML code for API Interactive Mode

Examples

The examples below call a banded report that retrieves faculty members based on department (within a university) chosen from a list box, "DeptCode", in the DataBlock.

Example 1: Creates a pdf of faculty members for the Math department.

Default value for parameter SELDEPT.DEPTCODE is set to 'MATH' in the report's API tab

Math Faculty

Example 2: Creates a pdf of faculty members for the Accounting department.

The value for SELDEPT.DEPTCODE (ACCT) overrides the default value set at the report level

<a
href=”http://10.1.1.10:8080/mrr?report=WUH5C7TOR5MSZL6YSNYMC62WDVLCFOQXE6JD635WOKQILQ&SELDEPT.DEPTCODE=ACCT”>A-ccounting Faculty

Example 3: Creates an html page of faculty members for the Accounting department.

<a href=”http://10.1.1.10:8080/mrr?report=WUH5C7TOR5MSZL6YSNYMC62WDVLCFOQXE6JD635WOKQILQ&
SELDEPT.DEPTCODE=ACCT& REPORTFORMAT=HTML”>Accounting Faculty

Example 4: Using html forms and the POST method, gives the user a choice of 3 departments to retrieve a faculty listing for in xls format.

```
<form method=post action="http://10.1.1.10:8080/mrr">
<input type="hidden" name="report" value="WUH5C7TOR5MSZL6YSNYMC62WDVLCFOQXE6JD635WOKQILQ">
<select name="SELDEPT.DEPTCODE">
<option value="ACCT">Accounting</option>
<option value="MATH">Mathematics<option>
<option value="NURS">Nursing</option>
</select>
<input type="hidden" name="REPORTFORMAT" value="xls">
<input type="submit" value="Get Faculty">
</form>
```

Example 5: Overrides the default run-as user (which is currently "Argos1") with what the user enters on the web page. A pdf report of the Math faculty is returned.

Note: By removing Argos1 as the default username to use for this API call, the report will not run unless the user enters a valid Argos username and password on the web page.

```
<form method=post action="http://10.1.1.10:8080/mrr">
<input type="hidden" name="report" value="WUH5C7TOR5MSZL6YSNYMC62WDVLCFOQXE6JD635WOKQILQ">
<input type="text" name="username">Username
<input type="password" name="password" id="password">Password
<input type="submit" name="passwordbutton" value="Enter username and password">
</form>
```

MAPRAPI (MAP Report API)

Another method of accessing an API enabled report is by using an Evisions developed executable called the MAPRAPI (**MAP Report API**). This program is distributed as source code, and is to be compiled on a UNIX server. This program can be called by 3rd party applications to execute an API enabled Argos report and save the results into a specified location. This can be used in conjunction with shell scripts for maximum flexibility.

The Evisions HelpDesk

http://helpdesk.evisions.com

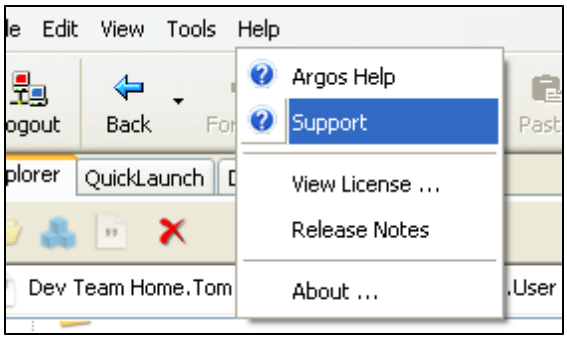
To obtain a copy, please open up a HelpDesk request and a copy of the most recent source code will be sent to you. Once compiled, run the program with no parameters or switches and the instructions will be displayed.

Argos Resources

Support Site

The Evisions support site is located at http://www.evisions.com/Support/Overview.aspx.

The site requires a login to access. If you are a registered Argos user, you can create an account for yourself by going to **Help** -> **Support** in Argos.



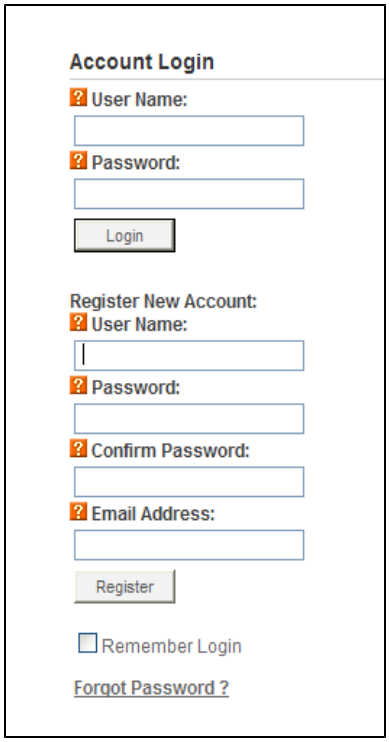
The first time you access the support site from Argos, you will be asked to log in or register a new account. Subsequent visits will use your Argos credentials to log you in automatically. The figure on the right shows the login screen that appears when accessing the support site for the first time.

Registering for a new account gives you a default set of permissions for the Evisions website. You may need to contact your administrator if you require additional permissions, such as HelpDesk access or the ability to upload items to the CO-OP Share.

After accessing the site, navigate around the site noting the available tools for Argos users.

The Argos support page contains links to many useful resources including:

- Release guides.
- Online and recorded training. Online live training is completely free and can be repeated as needed.
- Documentation such as upgrade guides and technical white papers.
- Pre-built DataBlocks provided by Evisions.
- FAQs.



Account registration screen

CO-OP User Community

The CO-OP user community is home to the Share and the product forums. The CO-OP Share contains a large number of pre-built DataBlocks that you can download and use in Argos. Evisions provides some of the DataBlocks; others have been uploaded to the Share by clients like yourself. We encourage you to take advantage of this collaborative space, and to upload any DataBlocks that you feel could benefit other Argos users.

You can access the CO-OP via the button on the Argos toolbar, or from the Support tab of the Evisions website. Again, if you do not have an account, you can register through the Argos software or your administrator can create an account for you. You may also need to contact your administrator to have upload permissions for the CO-OP added to your account.

The CO-OP icon on the Argos toolbar

Important Links

- Product Support
- Training - Free, live online training for all products.
- In-product Help - A complete description of all features in Argos. Also includes training videos and Argos user guides.
- Knowledge Base - Answers to common questions or problems.
- HelpDesk - Technical support.
- CO-OP Share - Pre-built DataBlocks and data dictionaries from Evisions and other clients.
- Forums - Collaborate with other Argos users, and receive information on product updates.

Getting Help

For information on using the software, please refer to the in-product Help, which contains detailed information on all aspects of the product.

If you are having problems with the installation or configuration, you can search our knowledge base of common issues and their resolutions at http://helpdesk.evisions.com. If you are unable to find the solution, submit a HelpDesk request with a detailed explanation of the problem you are experiencing.

Please do not hesitate to contact the Evisions HelpDesk if any questions or problems arise. We are here to help you and want to ensure your success.

If you find that areas of this documentation could benefit from additional detail or clarification, please let us know. We are constantly trying to improve the installation process to make it as easy as possible.