



Enterprise Reporting Solution

## Report Writer Guide

*Product Version 6.6.1*

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# Introduction

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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.

## Evisions Support Site

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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.

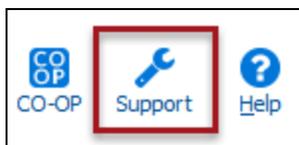
Evisions can also provide more in-depth and even customized training via our Professional Services department. Visit the Consulting Services page on the Evisions web site at

<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

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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

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The examples in this guide are based on an MS Access database that was created to assist you with becoming familiar with Argos. You can [download the sample database and DataBlocks](#) from the Documentation and Software section of the Evisions website.

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.

We have also provided a [Sample Database Description](#) that explains the structure of the database and provides instructions for creating the data connection to the sample database.

Contact your MAPS Administrator to install the database and create the data 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.

# Logging In

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## Logging In to the eLauncher

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The MAPS eLauncher provides a single location from which you can launch any of the MAPS applications, access online training and support resources, or see the new features in the latest releases.

In your web browser, navigate to the URL provided by your MAPS administrator. If you are prompted to log in at this time, do one of the following:

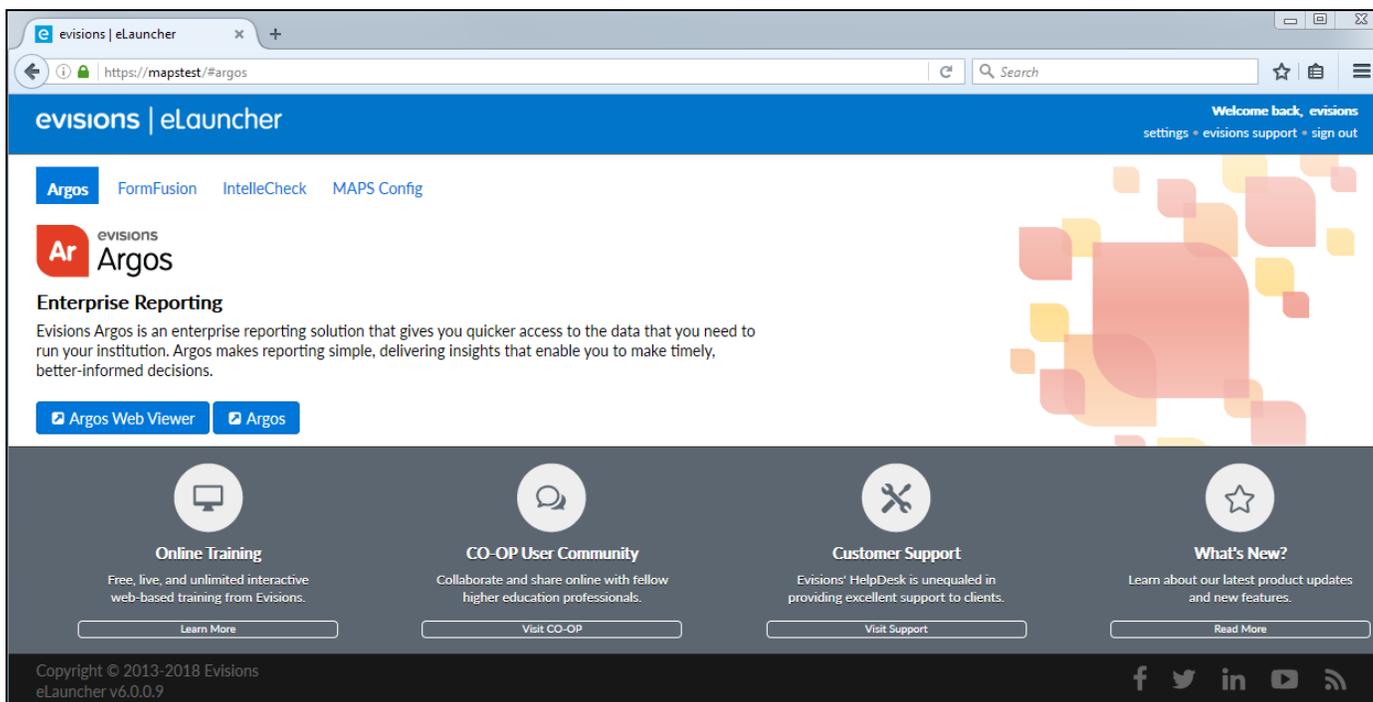
- For HTTPS, enter the username and password provided by your MAPS administrator.
- Enter your LDAP credentials if your institution uses LDAP for single sign-on.

If your institution has single sign-on configured for use with a SAML server, you do not need to enter your credentials here. Select the **Single Sign-On** button and enter your username and password on your institution's SSO page. (The Single Sign-On button is only displayed when SAML SSO is available.)



The screenshot shows the login interface for 'evisions'. It features a blue header with the 'evisions' logo. Below the header, there are two input fields: 'Username:' with the text 'evisions' and 'Password:' with a masked password of ten dots. A checkbox labeled 'Remember this user' is checked. At the bottom, there is a help icon (question mark in a circle), a button labeled 'Use Single Sign-On' with a key icon, and a blue button labeled 'Sign In' with a person icon.

The MAPS eLauncher displays after your credentials are validated.

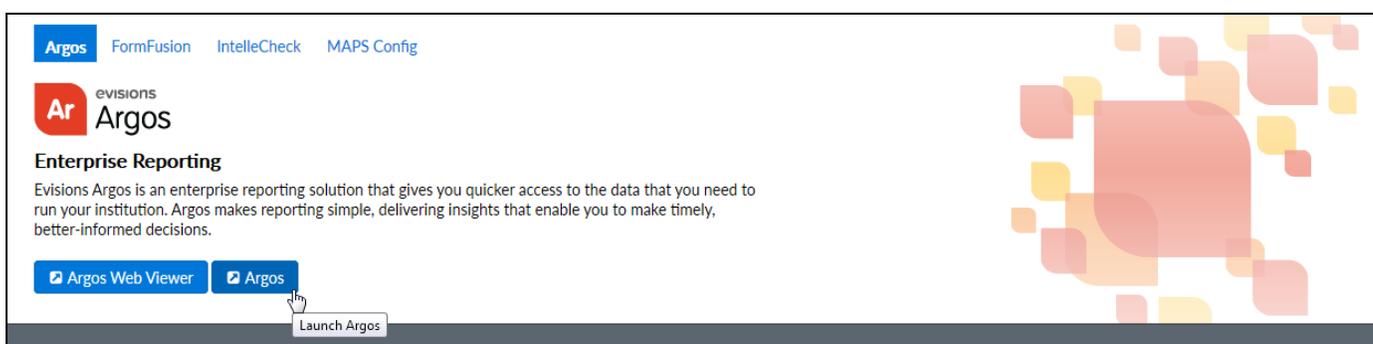


### Login Issues

If you cannot log in, it may be due to local or network firewall settings. You may need to configure your firewall to allow access on the selected port.

## Launching Application Clients

To launch an application client, navigate to the product you wish to use and then select the launch button for that product.



If you are prompted to install the **Evisions Application Launcher (EAL)**, follow the prompts on your screen to continue. Expand the link below, for more information.

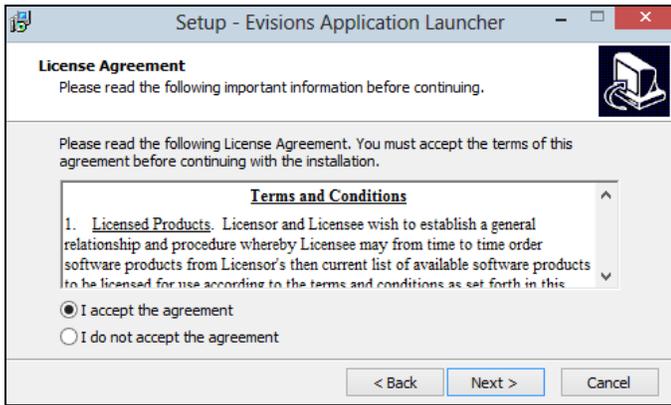
**Note:** If you do not have permission to install applications on your computer, you may need to consult with your IT department for assistance.

### Installing the Evisions Application Launcher

Select the link to download the **setup.exe** file. When it has finished downloading, open the file to run the installer.



Follow the prompts on the screen. Select **Next** to continue.

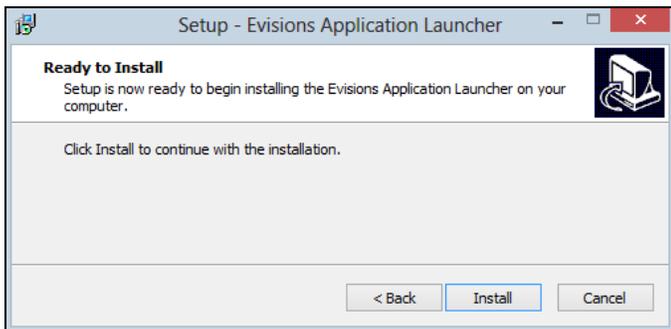


Review and accept the license agreement, then select **Next**.

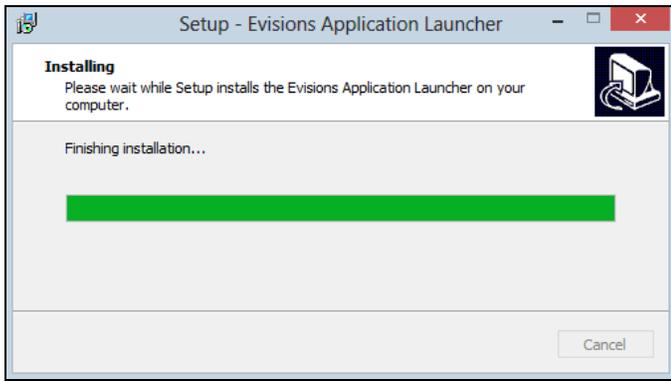
### ***Microsoft .NET Framework is Required***

If your computer does not have the Microsoft .NET framework already installed, you will be prompted to install it as part of the EAL setup.

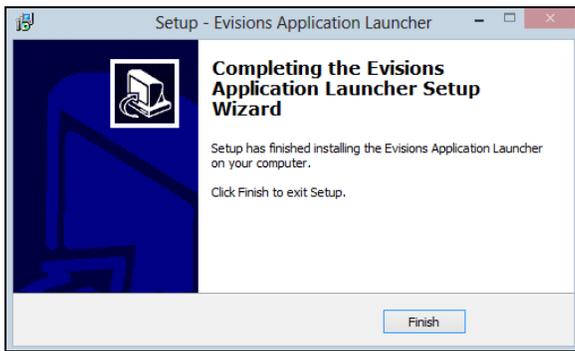
Review and accept its license agreement, then select **Install** to proceed.



Select **Install** to continue. If you are installing the Microsoft .NET Framework at the same time, it will install alongside the Evisions Application Launcher.

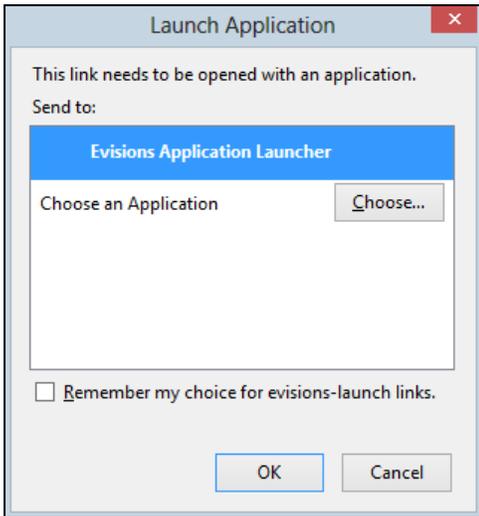


Once the installation is complete, select **Finish** to close the installer.

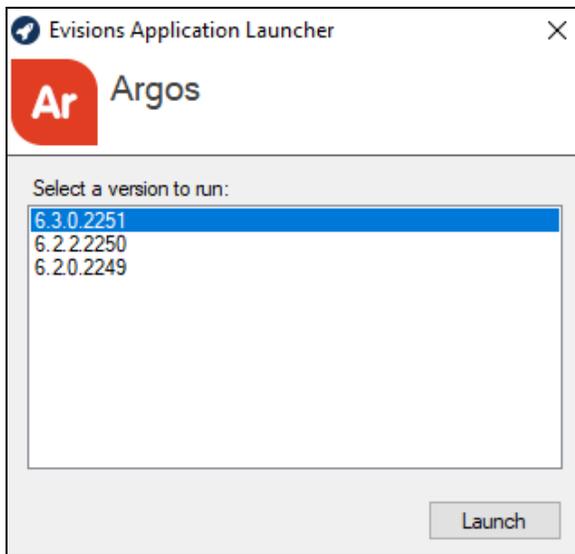


When you launch an application (Argos, for example) you may see a prompt informing you that the browser is trying to run an external program, and asking whether you want to proceed. Select **OK** or **Allow** to allow the launcher to run.

Note that the prompt is different in different browsers.



If there are multiple versions of the application available, choose the version to use, then select **Launch**.



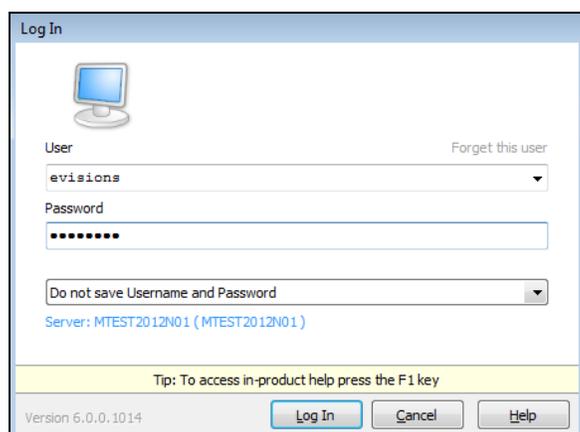
If the application or application version you selected is not already installed on your computer, it will download. This may take some time, especially over slow connections.

## Logging In to the Application Clients

If you have not yet logged in to the application, the main login screen displays. The screen for each MAPS application is similar to the one below. You must enter your credentials to access the application under the following circumstances:

- You did not use the HTTPS version of the eLauncher
- You did not log in through a single sign-on server
- You are logging in to MAPS as an administrator
- You are logging in to IntelleCheck (or accessing a secured area)

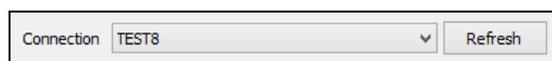
Otherwise, you do not need to enter your credentials again unless you are accessing a different secured program or feature, or need to reconnect.



There are several options you can configure on this screen:

- **Forget this user** - removes this user from the list of saved usernames in the dropdown list.
- **Do not save username and password** - do not save either the username or the password that you enter.
- **Save username** - adds this user to the list of saved usernames in the dropdown list.
- **Save username and password (if allowed by server)** - saves the password for this username, if password saving is enabled in MAPS.  
**Note:** for security reasons, you cannot save passwords when logging in to the MAPS Config application.
- **Server** - Click on the server name for additional options to change the server you are logging in to or the port number for that server.

IntelleCheck users have an additional option to select the database connection prior to login:



Your data connection permissions (established by the MAPS administrator) determine the connections displayed in the list. If you do not see the connection you want to use, enter your username and password and select **Refresh**. Your MAPS administrator can provide further assistance with data connection permissions.

Once you have entered all information, select **Log In** to launch the application.

### **Failed Login Attempts**

Your MAPS administrator determines how failed login attempts are handled, based on your institution's password policy. If allowed, you may be able to log in after waiting a period of time specified by the administrator (often an hour).

## Server Selection

Select the **Server** link on the Login dialog to select a different server, if necessary. Note that the Servers section looks slightly different depending on the product and version you are running:

The screenshot shows the 'Login' dialog box for version 4.3.0.588. It features a 'Username' field with a 'Forget this user' link, a 'Password' field, and a 'Save Username' dropdown menu. Below these are two server selection buttons labeled 'Production' and 'Testing'. The 'Server Address' field contains 'myschool.edu', and the 'Port' field is set to '27467'. A checkbox labeled 'Use the default port' is checked. At the bottom, there are 'Login', 'Cancel', and 'Help' buttons. A yellow tip bar at the bottom reads: 'Tip: To access in-product help press the F1 key'. The version number 'Version 4.3.0.588' is displayed in the bottom left corner.

The screenshot shows the 'Log In' dialog box for version 6.0.0.1014. It features a 'Pick a server' section with a list of servers: 'Production' and 'Testing'. Above the list are '+ Add' and 'X Delete' buttons. Below the list is a 'Server Address' field containing 'myserver.edu'. A checkbox labeled 'Use the default port' is unchecked, and the 'Port' field is set to '27467'. At the bottom, there are 'Use Server', 'Cancel', and 'Help' buttons. A yellow tip bar at the bottom reads: 'Tip: To access in-product help press the F1 key'. The version number 'Version 6.0.0.1014' is displayed in the bottom left corner.

The following actions are available from this area:

- **Green "+" sign / Add button** allows you to add a server to the list of available servers.
- **Red "X" / Delete button** deletes the selected server.
- **Server Address** enter the name/address of the server.
- **Use the default port** check this box to use the default port for the application (27467) or uncheck to enter a specific port number.
- **Port** allows you to enter a different port number, if your MAPS administrator has instructed you to do so.

# Navigation

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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

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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

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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:

<b>Icon</b>	<b>Explorer Object</b>	<b>Description</b>
	<b>Folders</b>	<i>Contains objects, including other folders.</i>
	<b>DataBlocks</b>	<i>The "parent" object for one or more reports.</i>
	<b>Dashboards</b>	<i>Display-only reports for quick reference.</i>
	<b>System Created Dashboard</b>	<i>The dashboard that is automatically created by Argos for every new DataBlock. The system dashboard is always called "Dashboard" and cannot be renamed or deleted.</i>
	<b>User Created Dashboard</b>	<i>This dashboard is created by users. Dashboards can be used to view information quickly without having to run a report.</i>
	<b>CSV Report</b>	<i>A comma-separated values report.</i>
	<b>Banded Report</b>	<i>A fully-formatted report.</i>
	<b>Extract Report</b>	<i>A text report that meets pre-defined specifications.</i>
	<b>Delimited Extract Report</b>	<i>An extract report that uses a user defined delimiter (tab, commas, and spaces are common delimiters).</i>
	<b>Fixed Width Extract Report</b>	<i>An extract report the width of each field is defined by the user.</i>
	<b>XML Extract Report</b>	<i>An extract report whose output is an XML file.</i>

<b>Icon</b>	<b>Explorer Object</b>	<b>Description</b>
	<b>Private Report (Banded)</b>	<b>A report that only appears for the report creator and the administrator. The eye icon on top of the regular report icon indicates that it is a private report.</b>
	<b>Schedule</b>	<b>Reports may be scheduled to run automatically.</b>
	<b>Trash Bin</b>	<b>Contains items deleted from the Explorer Tree.</b>

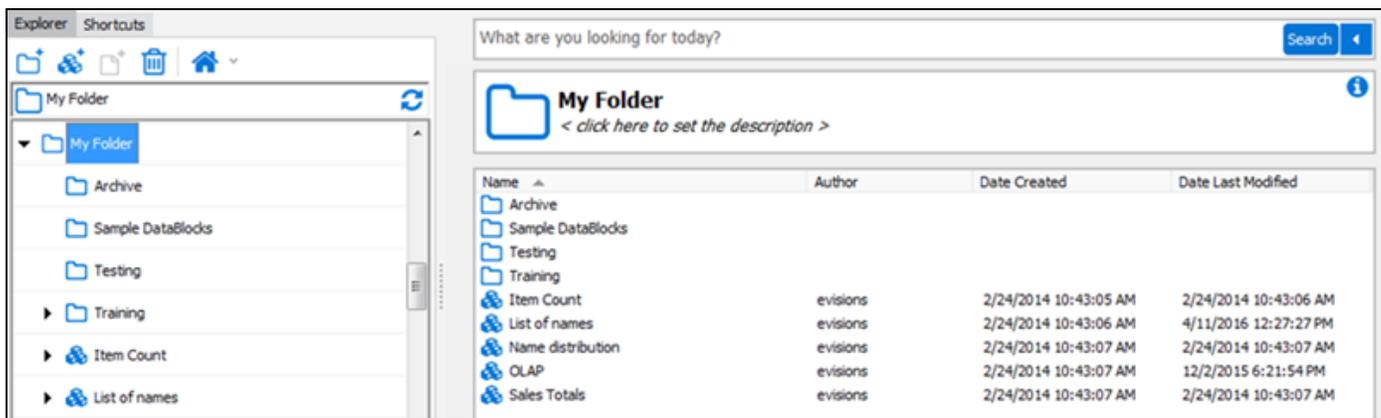
**Note:** Report Viewers do not have privileges to add, modify, or delete objects within the Explorer tree.

**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.

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 above.

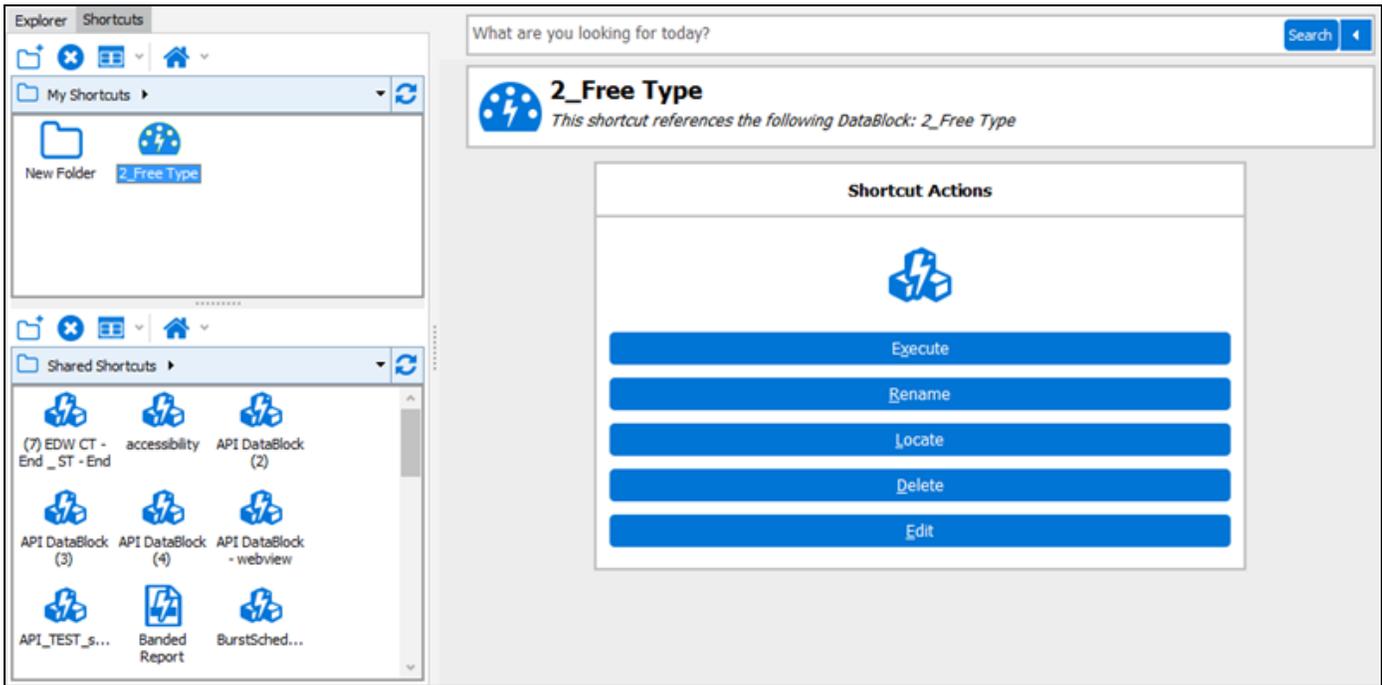
Within the Explorer tree, reports always reside beneath a DataBlock parent. A DataBlock can have many "child" reports. Any object that has child objects will have a "+" next to it. Simply click the "+" to expand the object to view its children.



## Shortcuts View

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. Click on the **Shortcuts** tab to view shortcuts.

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.



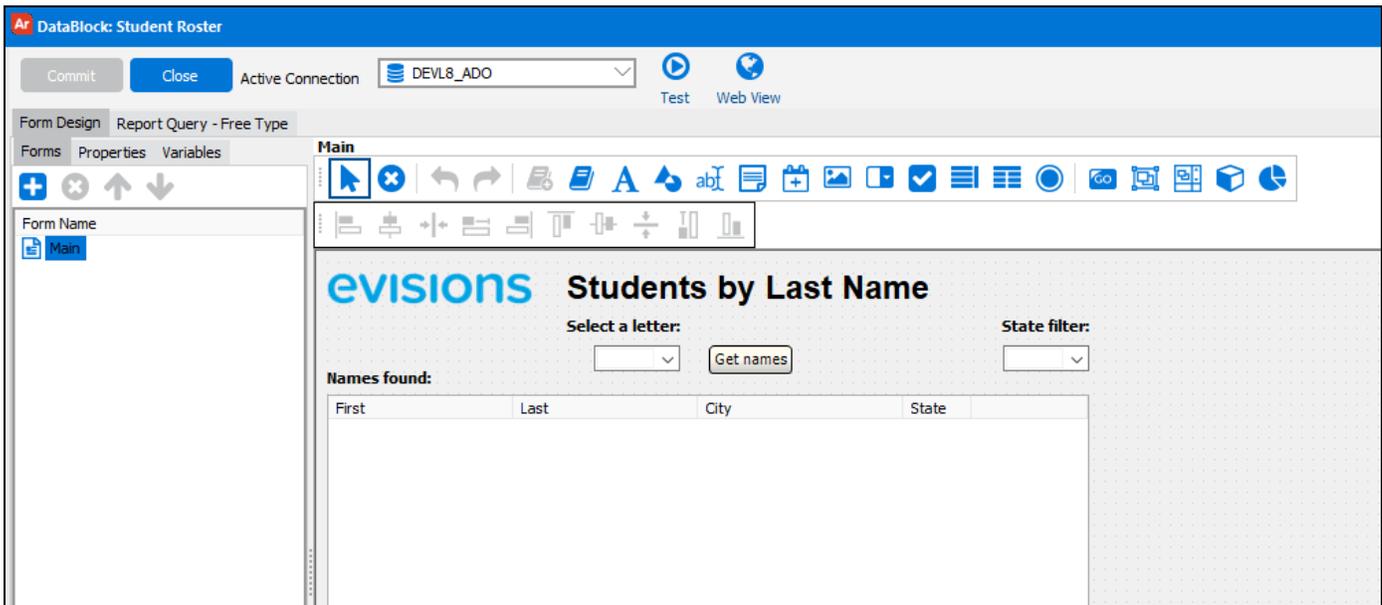
# DataBlocks

Whether you are a DataBlock Designer, Report Writer, or Report Viewer, it can be helpful to have an understanding of the components of the DataBlock and of the relationship between DataBlocks and the various report types.

The DataBlock is the foundation from which all reports are created. DataBlocks are comprised of one or more **forms** used to construct the DataBlock's **dashboard**, and a **report query**, which builds the dataset used for writing reports.

## Forms

Forms are created on the **Form Design** tab of the DataBlock. When a DataBlock is first created, the first form is created for you automatically. You can use this form to design the dashboard that users see when running the DataBlock or one of its reports.



Forms can contain many different types of objects, such as list boxes, dropdowns, radio buttons, charts, and more. The majority of these objects can be configured to pull information from the database automatically using a SQL query.

# Dashboards

Dashboards can be used to display information for the user, or may be used as parameter entry forms to customize the information shown on the dashboard or in the reports. Dashboards may have multiple forms, allowing users to switch between them to view different information.

Ar Student Roster.Dashboard

Dashboard Options: [dropdown] Report Options: [dropdown]

## evisions Students by Last Name

Select a letter: [C] [Get names] State filter: [PA]

Names found:

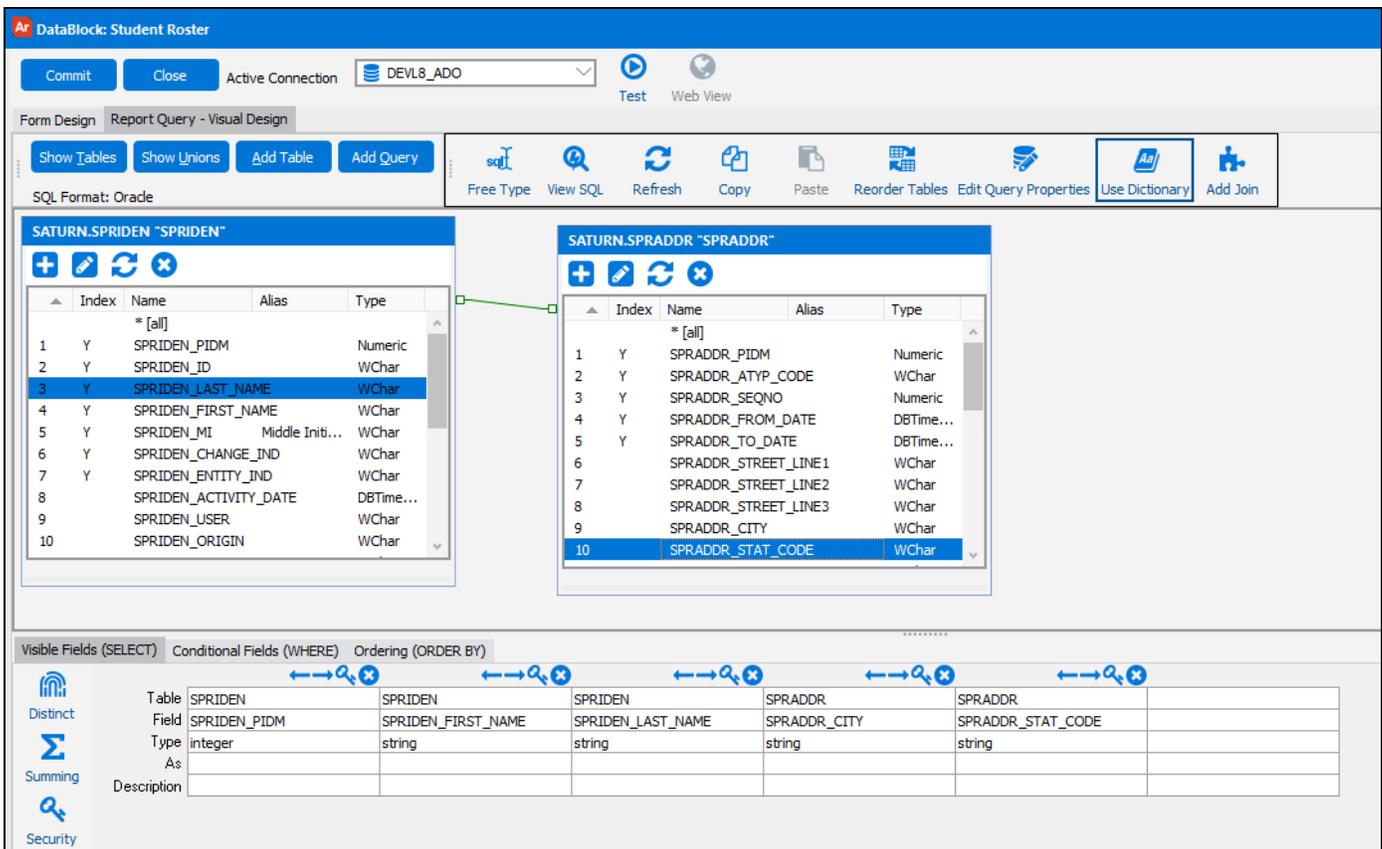
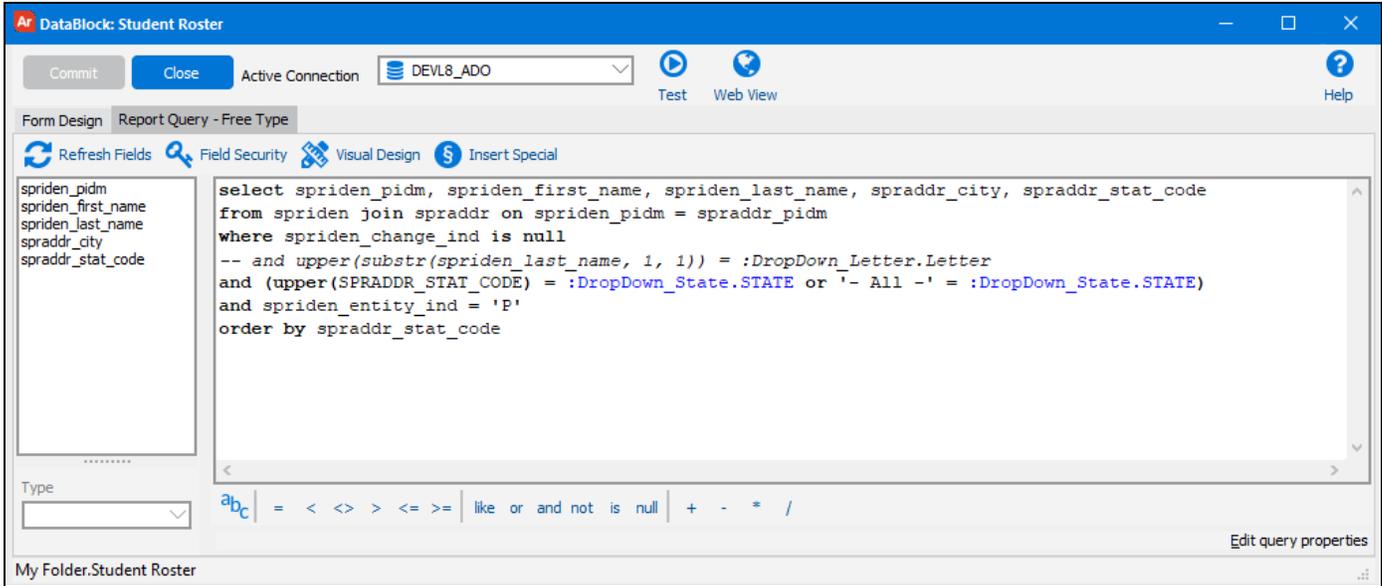
First	Last	City	State
Henry	Clark	Malvern	PA
Nick	Curtis	Malvern	PA
Germanicus	Caesar	Malvern	PA
Candace	Clark	Malvern	PA
Germanicus	Caesar	Malvern	PA
Candace	Clark	Malvern	PA
Henry	Clark	Malvern	PA
Nick	Curtis	Malvern	PA
Benjamin	Clark	Chester Heights	PA
Susan	Casey	Lincoln University	PA
Donald	Clark	Malvern	PA
Janice	Cory	West Chester	PA
Carla	Cooper	University Park	PA
Chapin	Counter	Malvern	PA
Michael	Chapin	West Chester	PA
Shantay	Compin	Malvern	PA

34 items

In this example, the dashboard waits for the user to enter a letter of the alphabet. After clicking the Get names button, a list of students whose last names begin with that letter is shown. Users can also filter the list by state, if they choose to select a state in the dropdown.

# Report Queries

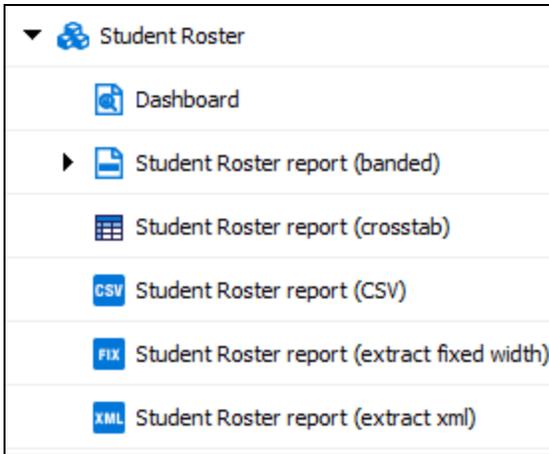
The Report Query tab in the DataBlock is where you design the SQL query that pulls the data that Report Writers will use to construct their reports. You can enter the query as free type SQL, or use the Visual Design tool to drag and drop the information you want and construct the SQL automatically.



## Report Tree

---

Dashboards and reports are children of DataBlocks in the report tree. All DataBlocks have a default dashboard, and Report Writers can create any number of reports.



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

# Dashboards

All DataBlocks have at least one **dashboard** which is created on the Form Design pane in 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.

The screenshot displays the Evisions software interface. On the left is an Explorer pane showing a file tree with folders like 'Argos Testing', 'My Folder', 'Archive', 'Sample DataBlocks', 'Testing', 'Training', 'Item Count', 'List of names', and 'Prod'. The 'List of names' folder is selected, showing sub-items like 'Dashboard', 'Name report (banded)', 'Name report (CSV)', 'Name report (extract)', and 'Student Roster'. The main window shows a dashboard titled 'Last Name Filter' with the Evisions logo. At the top, there's a search bar and a 'Report Options' dropdown set to 'All A' Users'. Below that, there's a 'Select a letter' dropdown set to 'B' and a 'Get names' button. To the right is a 'State filter' dropdown set to '- All -'. The main area displays a table of names found, with columns for First, Last, City, and State. The table lists 35 items, including names like Bruce Babbit, Celeste Bard, and Robert Booker. A '35 items' indicator is at the bottom of the table.

First	Last	City	State
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
Linda	Burns	West Chester	PA
Lisa	Brown	Boston	MA
Lisa	Brown	Lansdale	PA
Martha	Butlis	Malvern	PA
Peter	Bullet	King of Prussia	PA

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. DataBlock Designers may create additional dashboards by right-clicking on the DataBlock and selecting **New -> Report or Dashboard**.

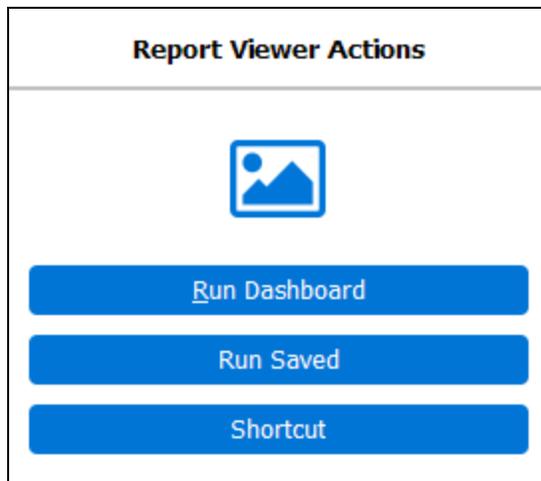


## Running a Dashboard

---

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

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

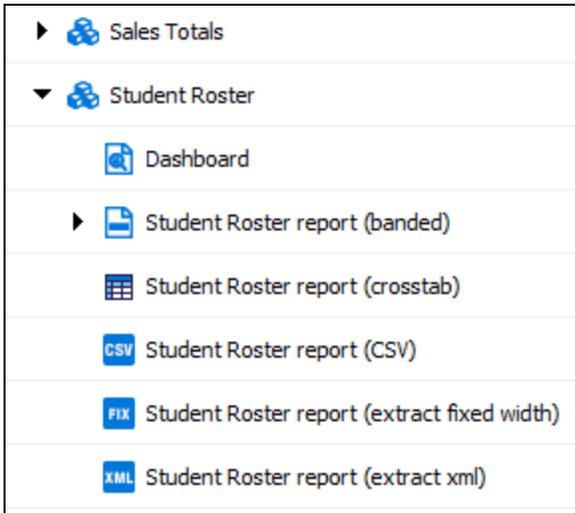


2. Right-click on the dashboard icon and select **Run Dashboard** from the menu.
3. Double-click on the dashboard.
4. Right-click on the DataBlock and select **Run Dashboard** from the menu to run the default dashboard for that DataBlock.

# Reports

---

Argos reports provide different views of the information retrieved by the DataBlock. Reports use the data from the report query in the DataBlock as their starting point, which may be combined with additional user-provided information from the dashboard. Reports are shown underneath the DataBlock they belong to in the Explorer Tree.



There are four different types of reports that can be created in Argos: CSV, banded, extract, and crosstab.

## CSV Reports

---

A Comma Separated Value (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 to be used in spreadsheet software such as Microsoft Excel. It is also useful when creating files used by third party applications.

```
1 "SPRIDEN_FIRST_NAME", "SPRIDEN_LAST_NAME", "SPRADDR_CITY", "SPRADDR_STAT_CODE"
2 Bruce, Babbit, Malvern, PA
3 Celeste, Bard, Malvern, PA
4 Bruce, Babbit, Malvern, PA
5 Celeste, Bard, Malvern, PA
6 Barbara, Barton, Morgantown, PA
7 Clark, Booker, Villanova, PA
8 Robert, Booker, Adelaide, SA
9 Clementine, Barker, "New York", NY
10 Chip, Barrens, "North Whales", PA
11 Rose, Best, "New York", NY
12 James, Barker, "King of Prussia", PA
```

## Banded Reports

---

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 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.

## Names beginning with B

First name	Last name	City	State
<b>Names for state: AZ</b>			
Mark	Ballentine	Tuscon AZ	AZ
<b>Names for state: DE</b>			
Bruce	Burns	Wilmington	DE
Benjamin	Bums	Wilmington	DE
<b>Names for state: MA</b>			
Lisa	Brown	Boston	MA
<b>Names for state: NY</b>			
Celeste	Bard	Snyder	NY
Rose	Best	New York	NY
Clementine	Barker	New York	NY
<b>Names for state: PA</b>			
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

## Extract Reports

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, 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

## Crosstab Reports

Crosstab reports provide a simple way to relate two or more data attributes in table format. The table is then output into a PDF document. In addition to specifying the rows and columns for the report, you can also apply basic formatting such as headers, text, and colors.

Product Name	Product Sales by Region and Sales Rep												Grand Total
	Northeast			South			Southeast		Southwest				
	Mendez	Tinoco	Total	Patterson	Pham	Total	Washington	Total	Atten	Farris	Kline	Total	
Microsoft Visio	249	4731	4980	1245	498	1743	2490	2490			45318	45318	55527
Norton Internet Security	280	1440	1720	4080		4080	480	480	120	80	4240	4440	11200
QuickBooks Pro		796	796	13731	398	14129	1791	1791			33631	33631	54526
Samsung T260 HD 25.5" Widescreen LCD Monitor	399	3192	3591	6783		6783	2793	2793	399		1995	2394	28329
Sony NW230 G/B Notebook		26486	26486	2337		2337	2337	2337	3895		142557	146452	184623
<b>Grand Total</b>	5412	218511	223923	431023	12870	443893	157225	157225	24168	10748	1913572	1948488	2964413

# Creating a Dashboard

If you highlight a DataBlock you will 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: CSV, banded, extract, or crosstab. There is also an option to create a new dashboard. 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 grayed out.

**Create a new report or dashboard**

Create a new Argos report or dashboard for the selected DataBlock. After clicking "Create" you will be able to edit the design as well as other details.

Name:   Shared  Private

Description:

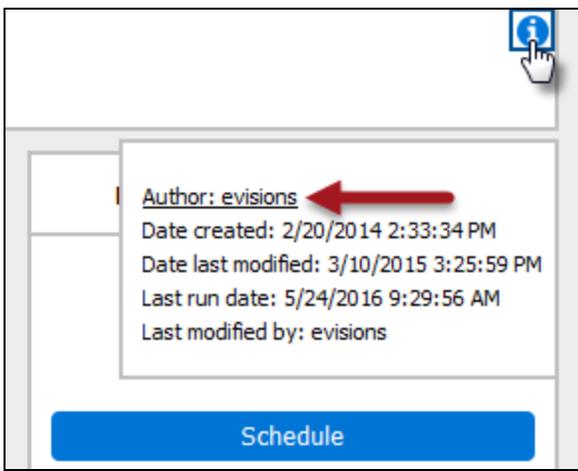
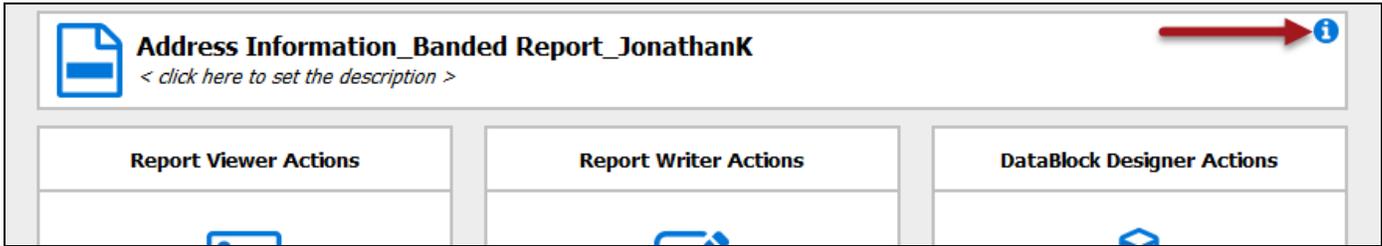
Choose the type that Argos should generate

- Dashboard** Displays the form configured by the creator of the DataBlock. The report query is never executed even if one exists for the DataBlock.
- CSV Comma delimited (CSV)
- Banded (graphics, text, charts, etc)
- Extract text report
- Crosstab report

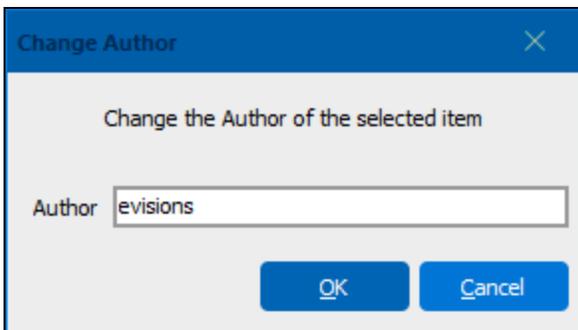
Select **Dashboard**, then click **Create**. Select the new report in the Explorer Tree to see options in the Action Area under Report Writer Actions. You can Edit the Report, Edit the Data, and Delete the Report. The Edit Data button is for XML experts who want to edit the underlying object XML.

**Report Writer Actions**

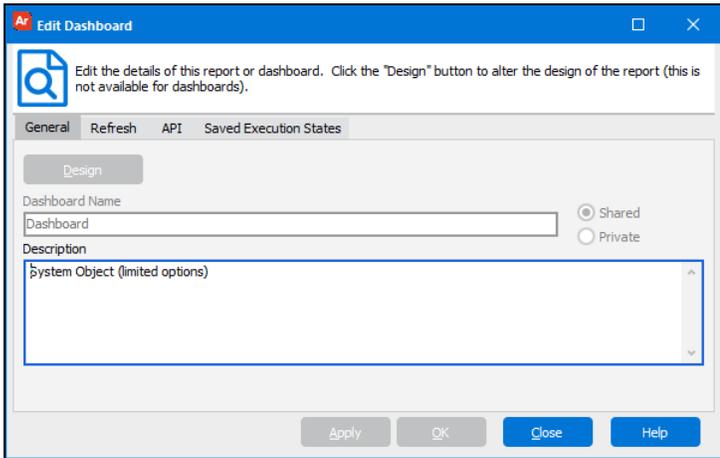
In the Action Area, above the Report Writer Actions, you can see the name of the dashboard or report along with a description. Click the "i" icon in the corner to view information on when the report or dashboard was created, when it was last modified, and by whom it was modified.



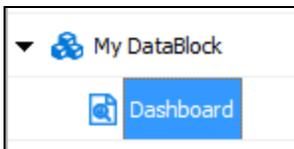
You can also edit the author of the report or dashboard by clicking on the author's name in the small pop-up that appears. Clicking on the author's name launches a dialog that will allow you to change the author's name. By default, Argos sets the author as the user who created the report.



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 Dashboard you can edit the dashboard. 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.



Once you have created your report or dashboard, you can find it in the navigation area.



## Refresh Tab

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

## API Tab

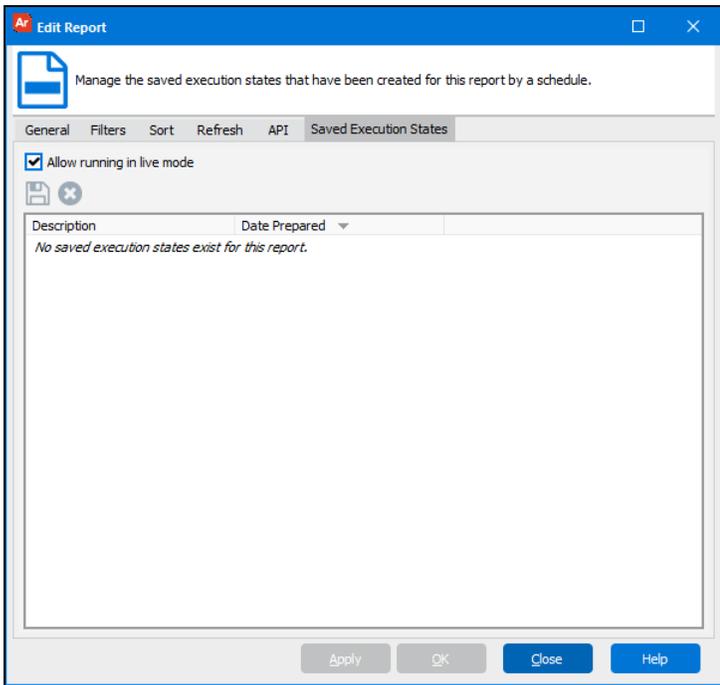
The API tab is part of the optional Advanced Reporting module. API stands for Application Programming Interface which allows a report to be called from a web page or portal, or even a third party application. Only Administrators can configure and access the API tab. Making a report API accessible is 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 Execution States Tab

The last tab is the Saved Execution States tab. A saved execution 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 execution 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 execution 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 execution state onto a PC by clicking the 'Save' icon. You will then be able to supply the destination and file name of the saved execution 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.



## 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.

# Creating a CSV Report

In this example, we will use the Employees table within the sample database to create a [CSV report](#). The table contains the following fields which are all used in the Report query.

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

## 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.

Create a new report or dashboard

Create a new Argos report or dashboard for the selected DataBlock. After clicking "Create" you will be able to edit the design as well as other details.

Name  
New Report

Shared  
 Private

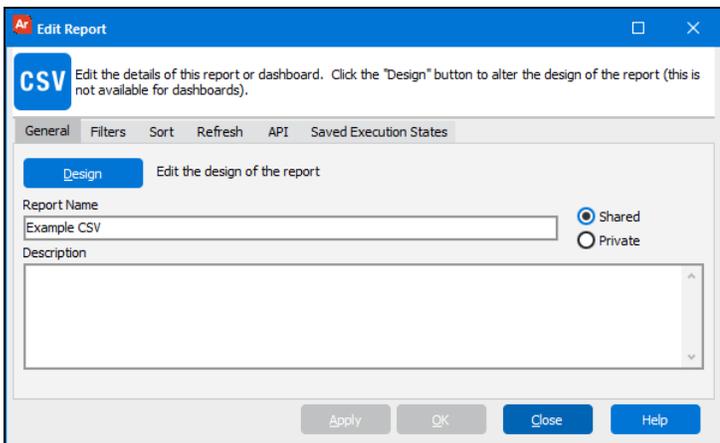
Description

Choose the type that Argos should generate

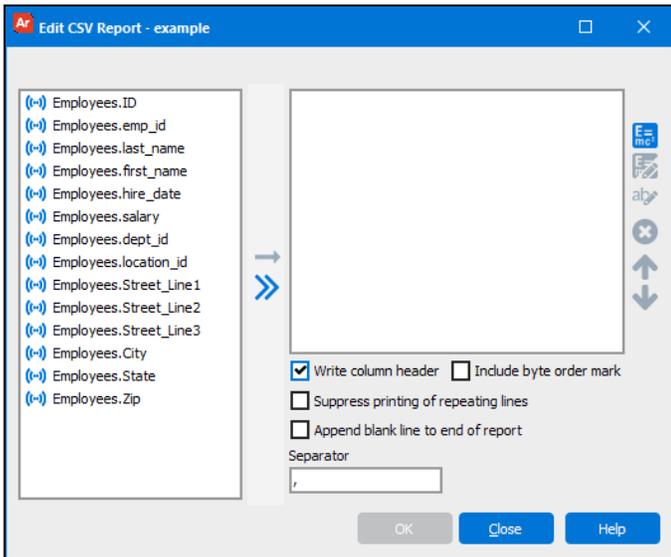
- Dashboard
- Comma delimited (CSV)**  
Follows the rules common to the comma delimited file format. The user can customize the number of columns per record used as well as the order each column is presented and the column name.
- Banded (graphics, text, charts, etc)
- Extract text report

Create Cancel Help

Click **Create**, then the following dialog box will appear.



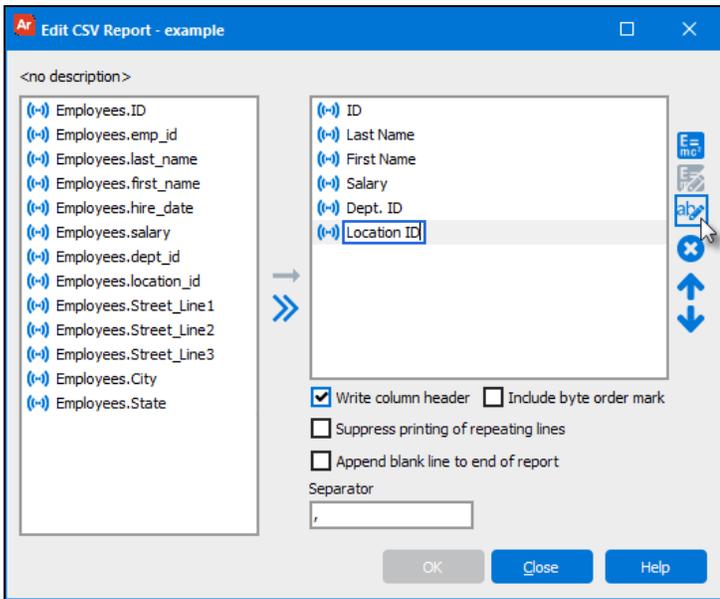
Click the **Design** button to launch the following dialog:



## Choose the Database Fields to Use

The Edit CSV Report dialog box allows you to specify which fields within the Report Query will appear in the report. The fields in the box on the right side 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 the Edit Field Name button  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 Delete Button  to remove a field from the report. You can also use the up and down arrows to reorder the fields in the report.

Click **OK** to finish the design, and click **Apply** on the Edit Report dialog.

## Execute the Report

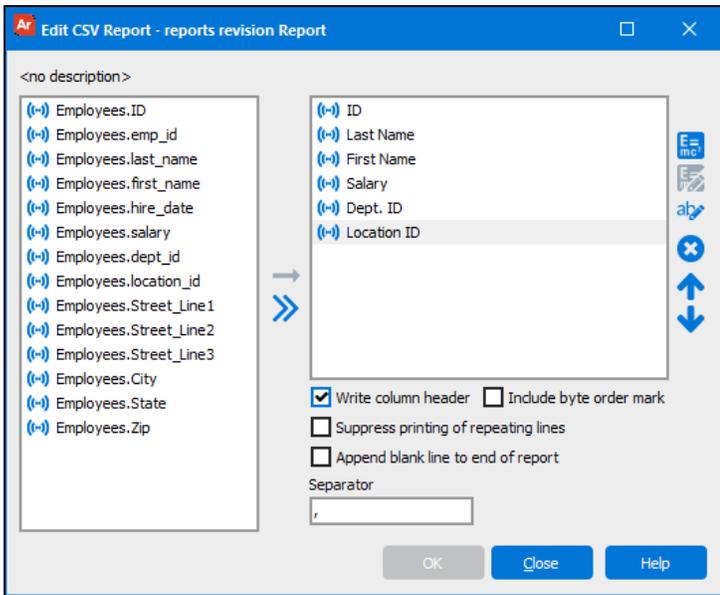
You can now execute the report using the methods described within the Argos Report Viewers Guide. The figure below shows the resulting CSV file imported into Excel. Note that the column titles within the first row match the field names that were modified.

	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

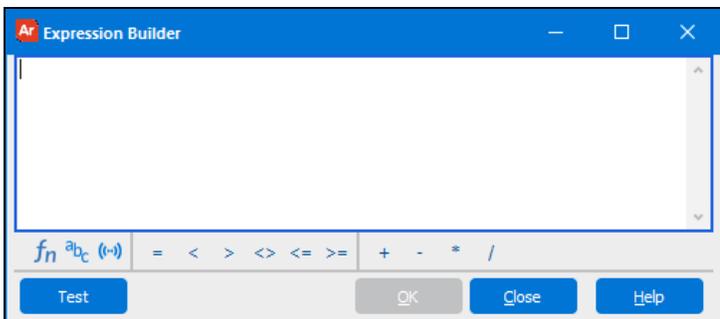
## Add Additional Fields Using Expressions

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.

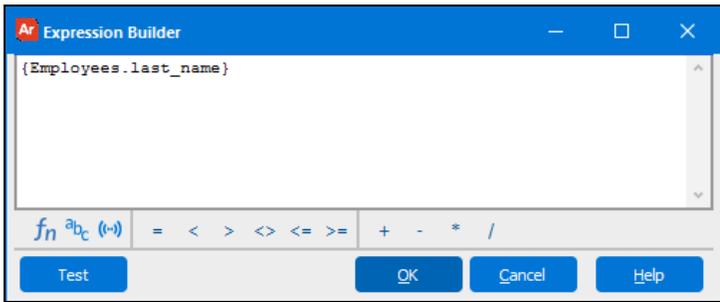


To add the first field, click the expression builder button , which brings up the Expression Builder dialog box shown below.



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

Click the database field icon  to bring up the list of database fields, then double-click on `{Employees.last_name}` to place the field in the Expression Builder.



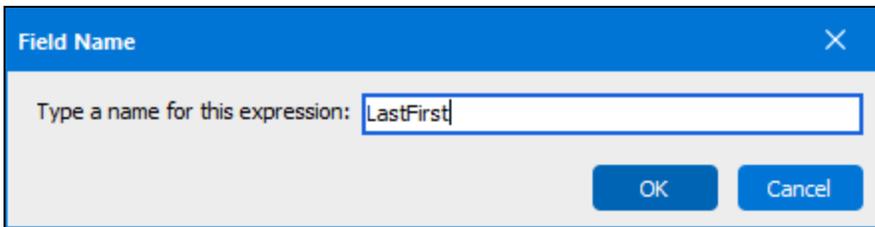
Click on the plus sign (to concatenate) and add a blank space (surrounded by single quotes) to leave room between the last and first name.

```
{Employees.last_name} + ' '
```

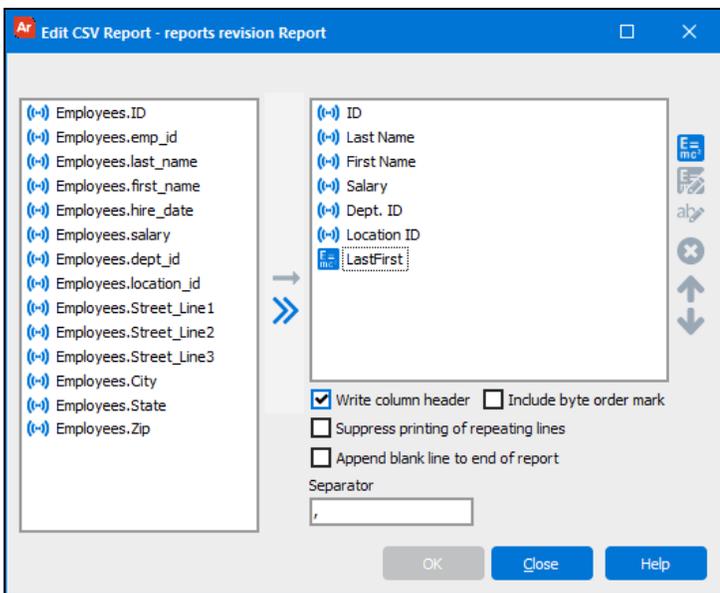
Click the database field icon  again to display the list of fields, then add the `{Employees.first_name}` field. The expression will look like this:

```
{Employees.last_name} + ' ' + {Employees.first_name}
```

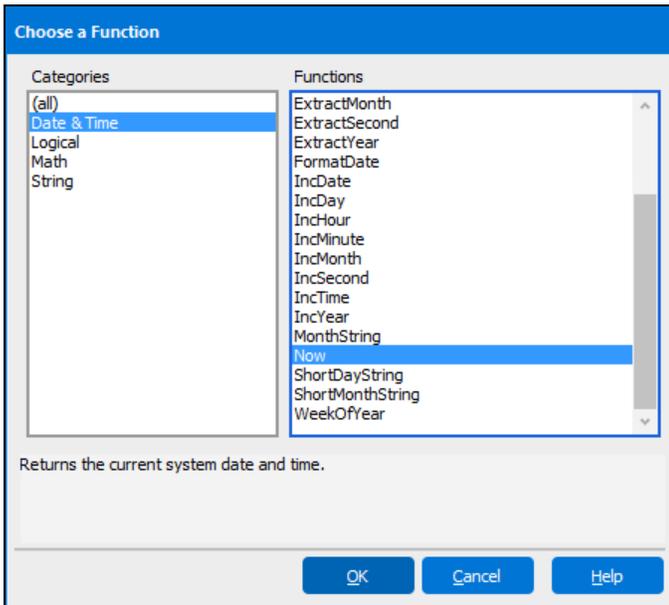
Click OK then enter the name for this new field.



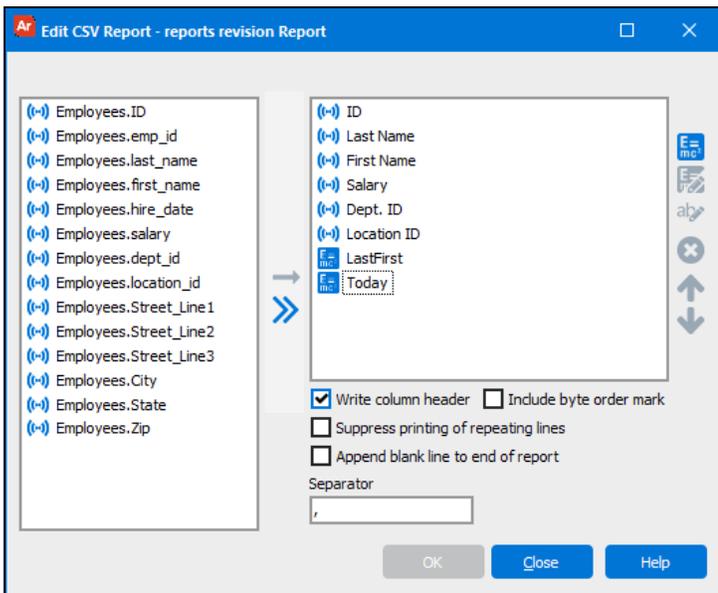
The figure below shows the new field (**lastfirst**) added to the original list of fields.



To create the other field which will contain today's date, a similar process is used. Within the above dialog box click the expression builder button  then click the *fn* button to display a list of available functions.



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

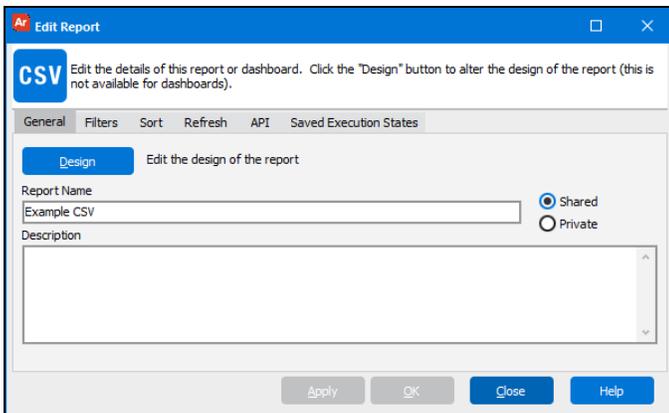


Run the report and you will now see the concatenated last/first name in column G and today's date/time in column H.

	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

## 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.

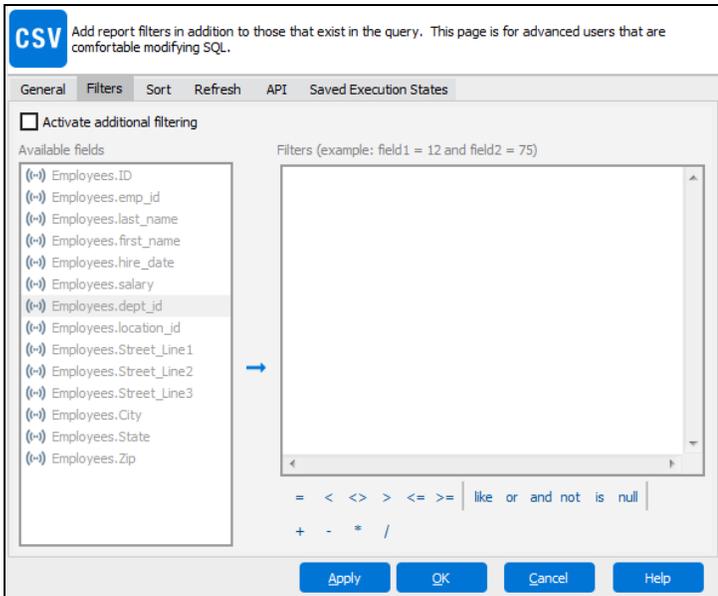


**Contact your DataBlock Designer if you receive the following pop-up message when using the Filters or Sort Tabs:**

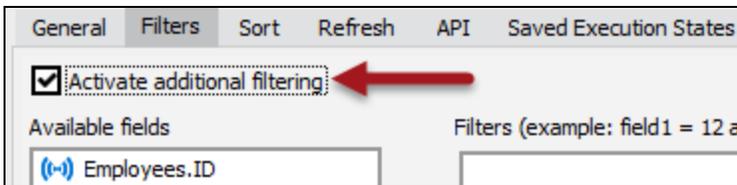
“To use this feature edit the DataBlock and insert special character sequences into the Free Type SQL so Argos will know where to place the overrides at runtime”

## Filters

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

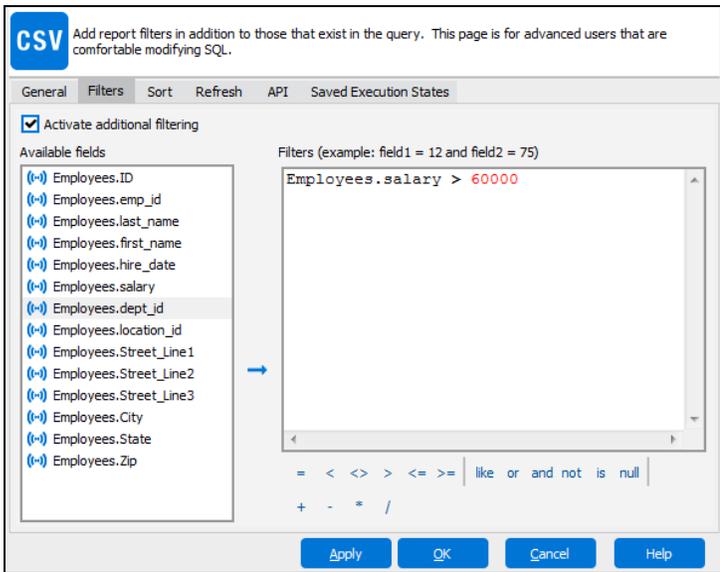


To add a filter you need to activate additional filtering by checking the **Activate additional filtering** box.



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

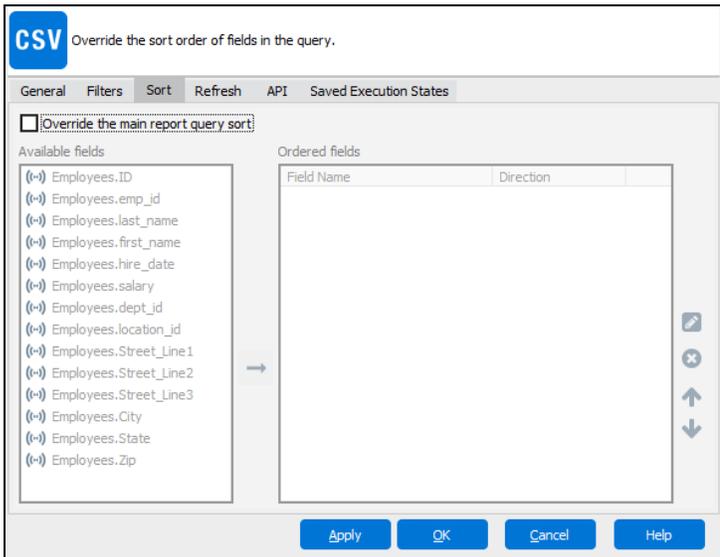
You can create filters by selecting the list of fields and filtering them by the operators (+, <, <>, **and**, **or**, etc.). For example to view salaries above 60,000, double-click on **Employees.salary**, click greater than (>), then enter 60000. The resulting filter is shown below.



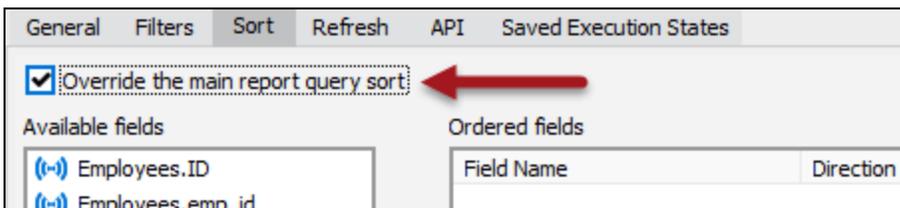
Click **OK** and run the report to view the application of the filter.

## Sort

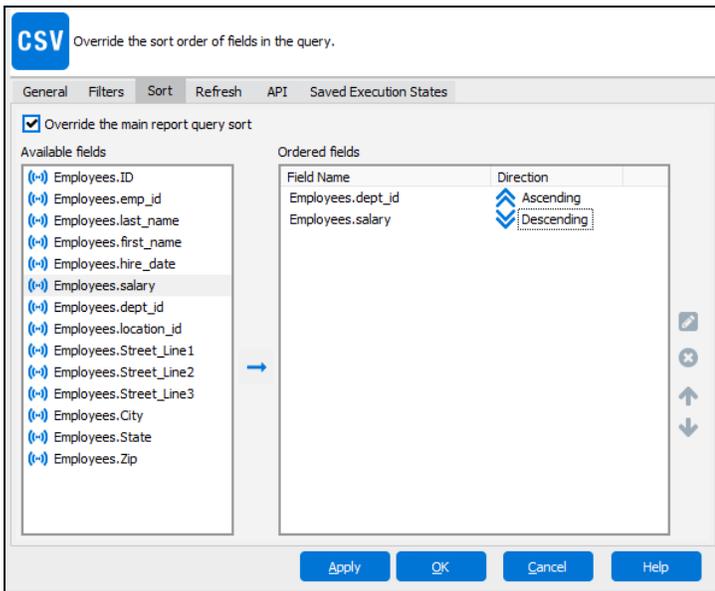
Click on the **Sort** tab to add custom sorting.



You will need to override the default sorting in order to add your custom sorting. Check the **Override the main report query sort** box.



Add Employees.dept\_id and Employees.salary by selecting them in the Available fields list and clicking the right arrow button → to add them to the Ordered fields list.



**Sorting Options:** Double-click Ascending/Descending to toggle sort by ascending or descending order.

You can sort using multiple fields. The figure illustrates sorting by department name (ascending), then by salary within the department (descending).

You need to activate sorting by clicking the “Override the main report query sort” checkbox at the top of the tab.

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 reorder fields by clicking the up or down arrow to the right of the Ordered Fields box. 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.

# Creating a Basic Banded Report

## 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. This example demonstrates the use of a Page Header Band, Group Header Band, Child Band, Detail Band, Group Footer Band, and Summary Band.

Employee Roster							3/18/2010 Page No 1 of 1
Product Dev							
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	
Number of Employees = 5 Sum of Employee Salaries = 311000							
Product Mktg							
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	Carillo	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	Zooney	8/6/2001	73000	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	
Number of Employees = 20 Sum of Employee Salaries = 1612000							
Number of Employees = 25 Sum of Employee Salaries = 1923000							

Band types:

- **Page Header Band:** prints at the top of the page and contains the date and page number of the report.
- **Page Footer Band:** prints at the bottom of every page.
- **Title Band:** prints on the first page immediately below the page header band.
- **Column Header Band:** always prints at the top of the page after the Title Band.
- **Detail Band:** contains the data obtained from the Report query. 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.
- **Group Header and Group Footer Bands:** surround the Detail Band. Grouping is done by Department Name. These are used to structure data into groups, based on a data field or expression.
- **Child Band:** always prints beneath the Group Header Band and contains column titles. Linked to any other band and prints immediately after it. The band that it is linked to is called its parent band.
- **Sub-Detail 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:** prints its contents a user-specified number of times.
- **Summary Band:** prints on the last page of the report, immediately before the Page Footer Band, and contains the total number of employees and salaries for the entire company.

## 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 in the introduction.

Employee Roster							
EMP ID	LASTNAME	FIRSTNAME	HIRE DATE	SALARY	DEPTNAME	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

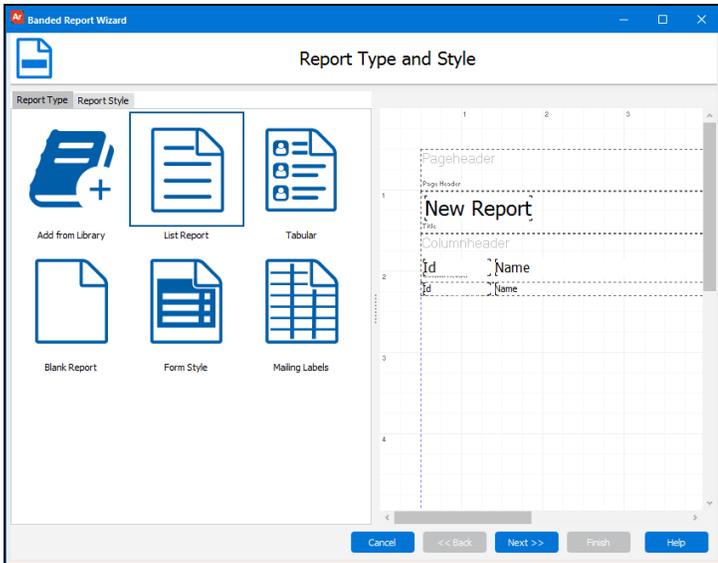
One or more departments can be selected when executing the report.

Department Name	Product Dev HR Sales Purchasing Marketing Training Technical Support
-----------------	--

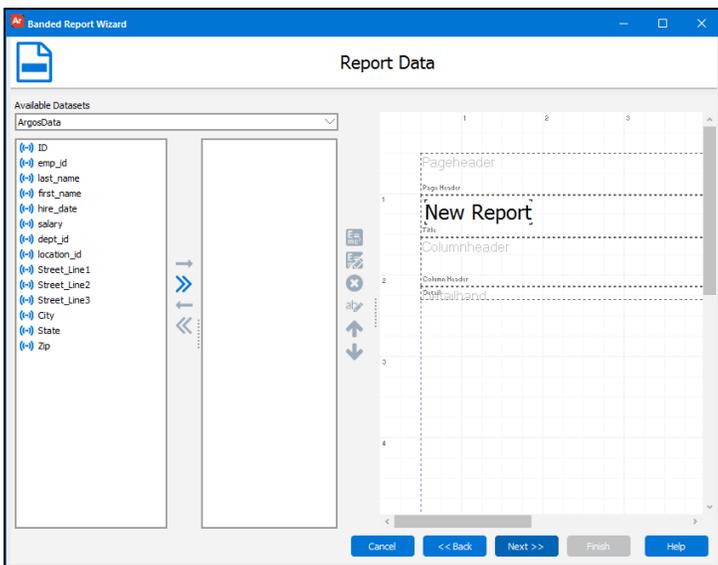
The DataBlock form is created by the DataBlock Designer.

## 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.



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.



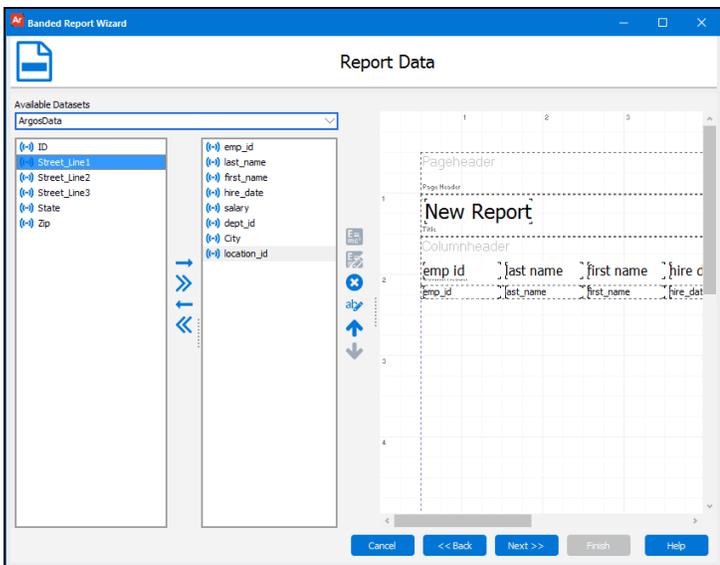
## Including the Database Fields in the Report

Move the emp\_id, last\_name, first\_name, hire\_date, salary, dept\_name, city, and location\_id fields to the area on the right by double-clicking each field name.

When moving fields, click city prior to location\_id to order them 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.

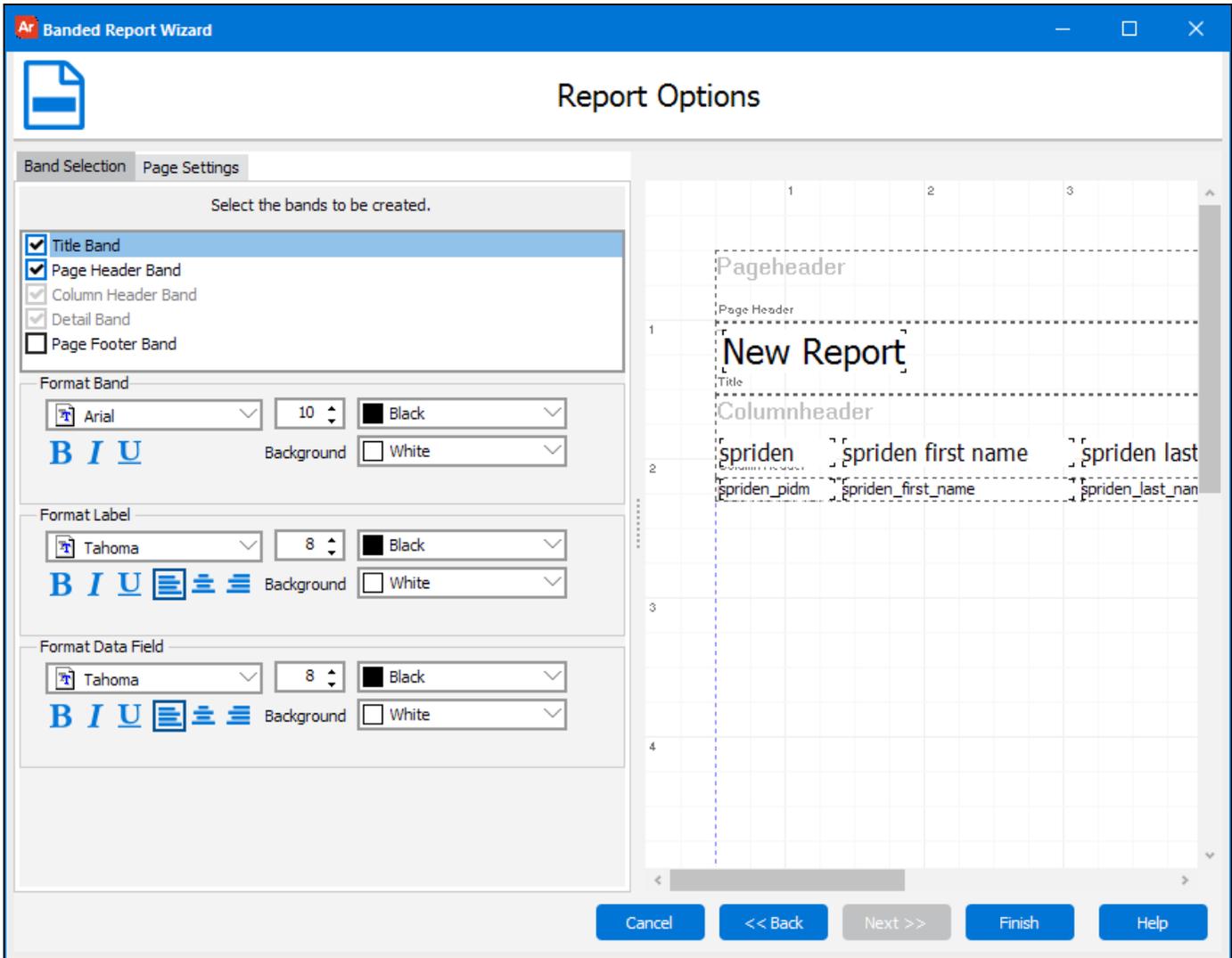
**Tip:** To move a field to the right or left, highlight the field then click the appropriate blue arrow (← or →). Clicking the double blue arrows (⇐ or ⇒) moves all fields at once.



Click **Next** to bring up the Report Options window to [add bands and adjust page settings](#).

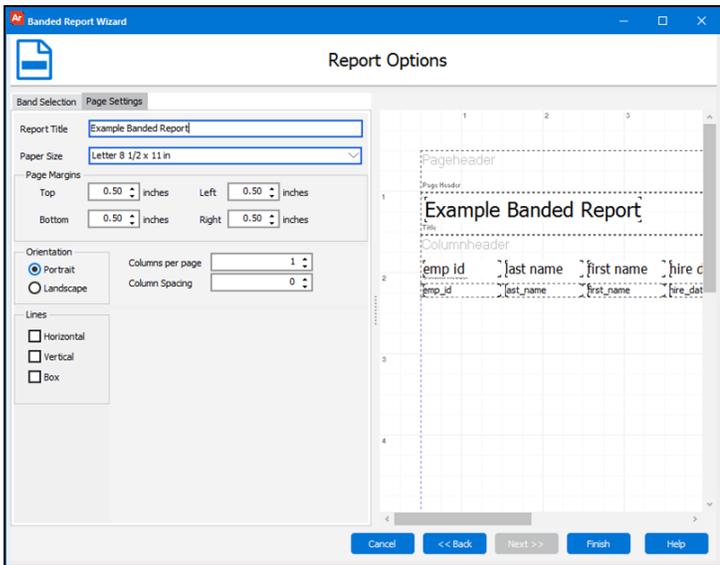
## Adding Bands

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.

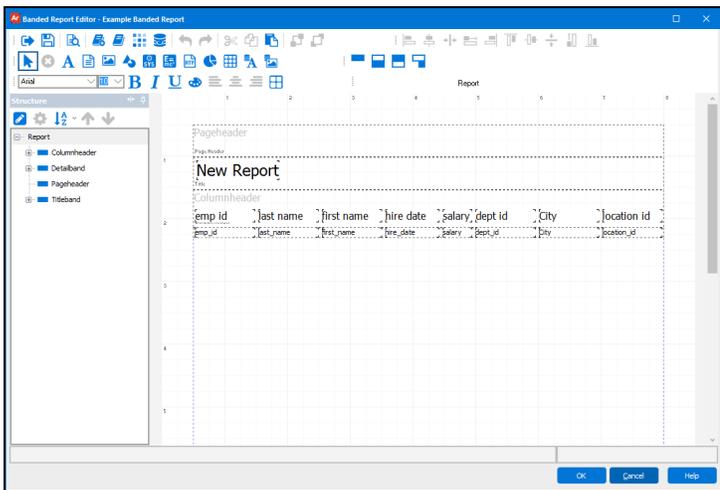


**Tip:** Band names can be changed by right clicking within the band, selecting Options, then entering the new band name. Creating meaningful band names is valuable when creating bands that reference other bands.

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



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



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.

**Edit Text Field**

Employee Roster

Rotation: 0 Degrees

Alignment: Left

Font... Same as band

Color... Transparent

Automatic word-wrap  Autosize width  Autostretch height

OK Cancel Help

emp_id	last_name	first_name	hire_date	salary	dept_name	city	region_name
emp_id	last_name	first_name	hire_date	salary	dept_name	city	region_name

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.

**Tip:** 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 .

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:

Employee Roster							
emp_id	last_name	first_name	hire_date	salary	dept_name	city	region_name
emp_id	last_name	first_name	hire_date	salary	dept_name	city	region_name

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.

Click the Preview button  to view the report and it will look like this (larger font for “Employee Roster”) and all titles capitalized. Adjust font size and appearance to ensure readability.

Employee Roster							
EMP ID	LASTNAME	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	Duval	Jose	10/22/1987	89000	Product Dev	Seattle	Northwest
429	Marsh	Zoey	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

When you are finished, click the **Save** button to save the report . After you have saved your report, click the close button  to close the editor.

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, add the Employees.ID field, as shown in the figure below:

 Override the sort order of fields in the query.

General Filters Sort Refresh API Saved Execution States

Override the main report query sort

Available fields

- (-) Employees.ID
- (-) Employees.emp\_id
- (-) Employees.last\_name
- (-) Employees.first\_name
- (-) Employees.hire\_date
- (-) Employees.salary
- (-) Employees.dept\_id
- (-) Employees.location\_id
- (-) Employees.Street\_Line1
- (-) Employees.Street\_Line2
- (-) Employees.Street\_Line3
- (-) Employees.City
- (-) Employees.State
- (-) Employees.Zip

Ordered fields

Field Name	Direction
Employees.ID	Ascending

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	Cieneros	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

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.



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.

Edit Text Field

LAST NAME

Rotation  Degrees

Alignment

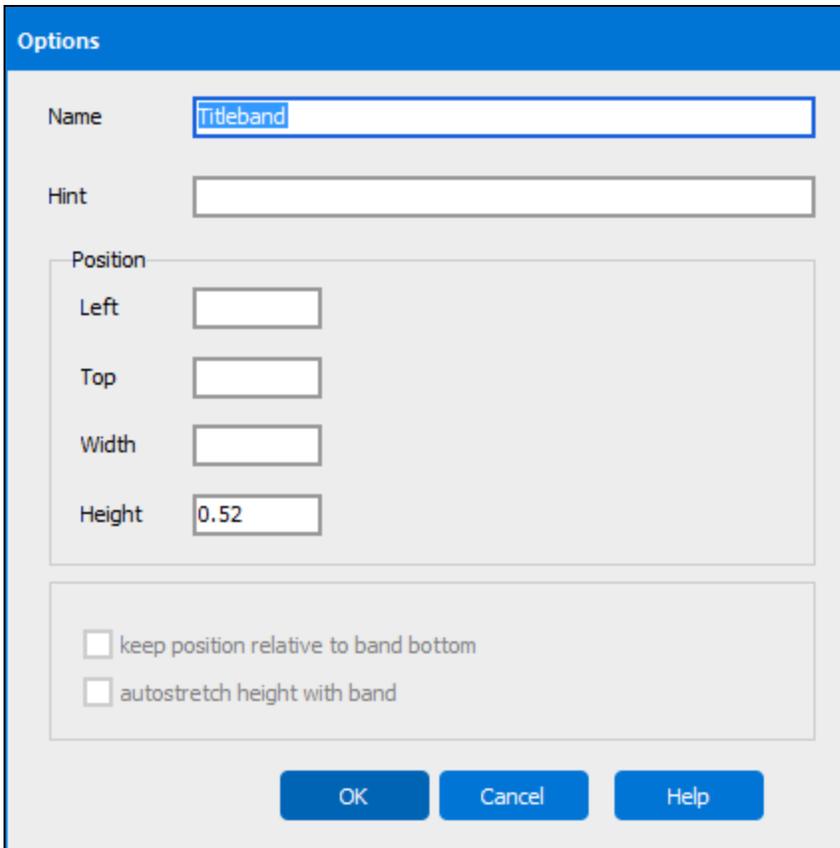
Same as band

Automatic word-wrap     Autosize width     Autostretch height

## 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.



**Options**

Name:

Hint:

Position

Left:

Top:

Width:

Height:

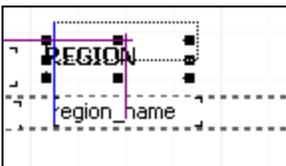
keep position relative to band bottom

autostretch height with band

OK Cancel Help

## 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.



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.



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

## Selecting and Aligning Multiple Fields

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 gray 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 gray boxes, indicating that they are grouped 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 gray 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.



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.

## Enhancing the Report

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

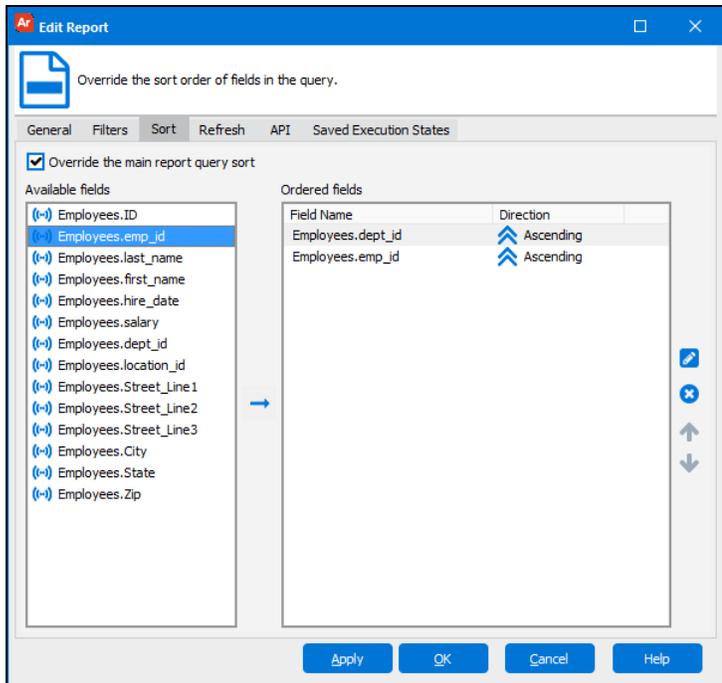
- Sorting the employees by department name.
- Adding page counts and dates to the report.
- Creating and highlighting groups.

- 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\_id and Employees.emp\_id into the right hand window. Argos will now sort by department ID, 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.



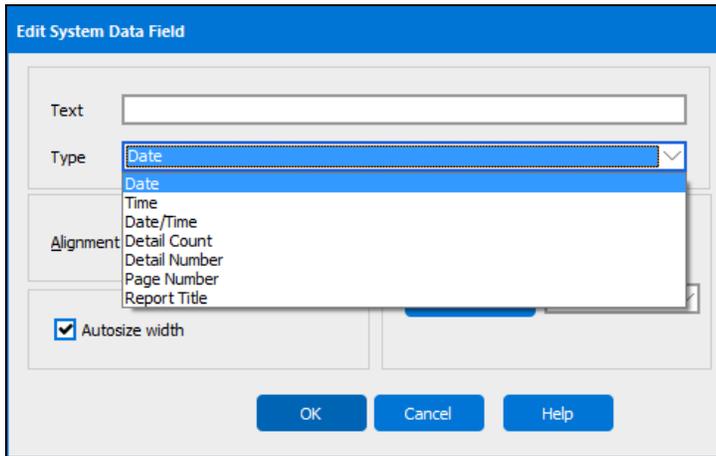
Click the Apply button, the General Tab, then the Design button. You will be brought back to the Band Report Editor.

# Add Date, Page Number, and Page Count

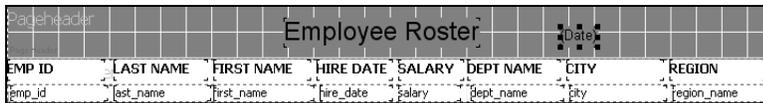
---

To add a date, page number, and page count to your banded report:

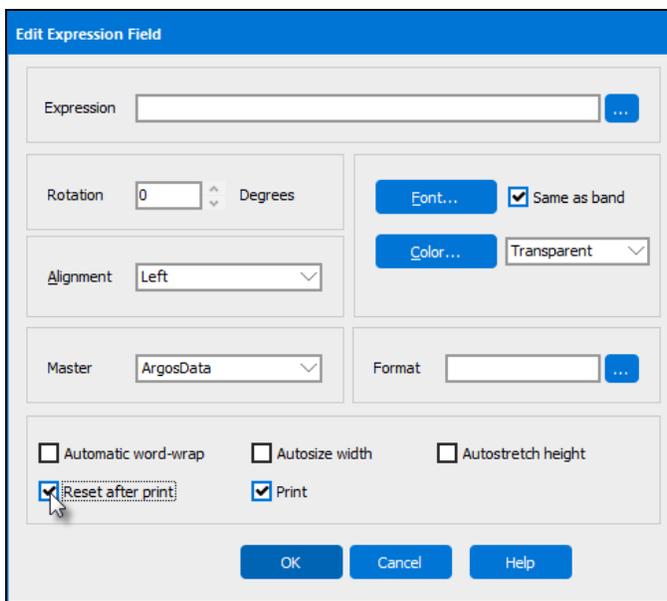
1. From within the Editor, click the "Add a System Data Field" icon  on the toolbar, then click anywhere within the Page Header band to place the object. Placing the object will open the Edit System Data Field dialog.



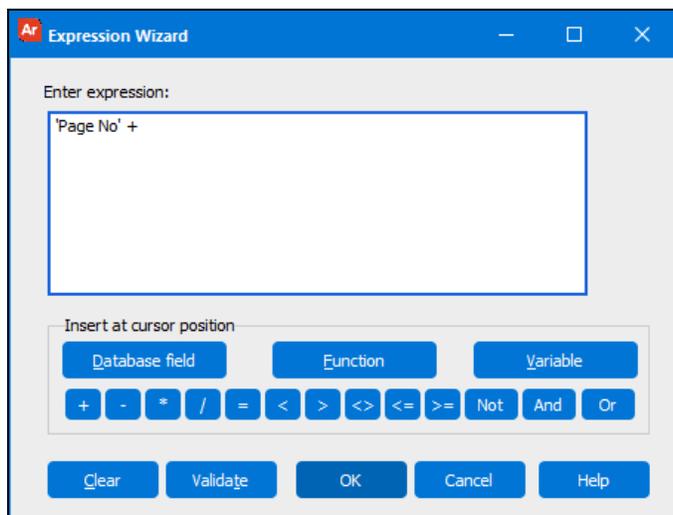
2. There are a number of Date/Time selections, but select **Date** for this example. You need not enter anything into the Text field for this example.



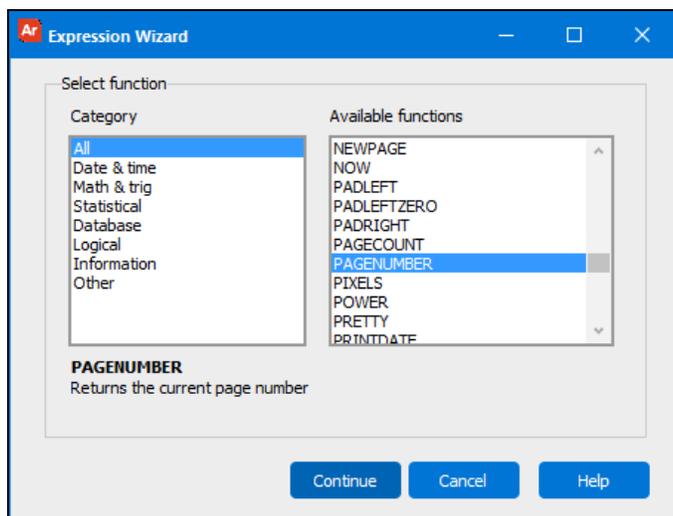
3. Note the addition of the date field in the Page Header band. Drag the field to the upper right corner of the band.
4. Next the string 'Page x of y' will be created and placed underneath the date within the Page Header band. Within the Band Report Editor, click the **E=mc<sup>2</sup>** icon , then click anywhere within the Page Header band.
5. Click the ellipsis button  to the right of the Expression field.



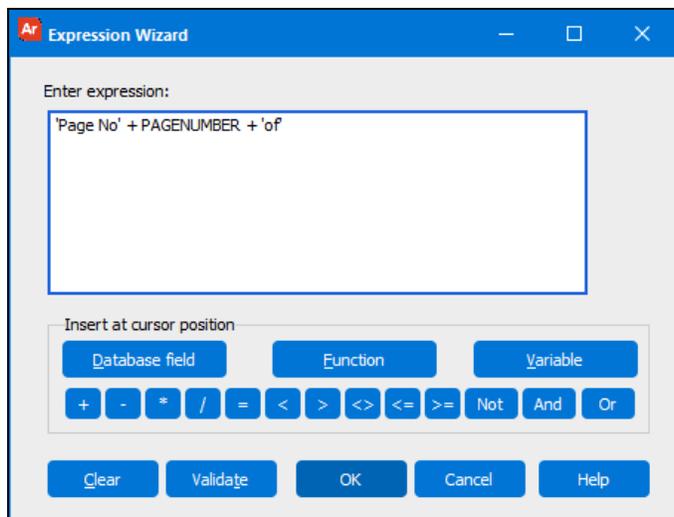
6. Enter the first segment of the expression which consists of the string 'Page No.' and the + operator: The + operator concatenates strings and eliminates leading/trailing spaces.



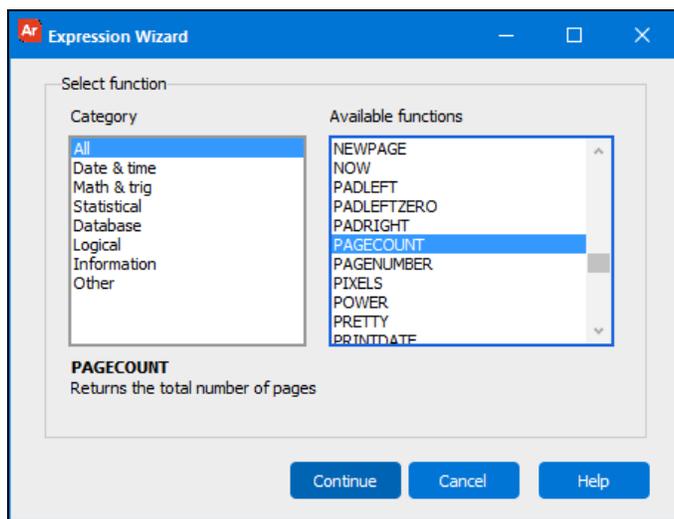
7. Click the **Function** button to display the list of available functions. Select PAGENUMBER from the list.



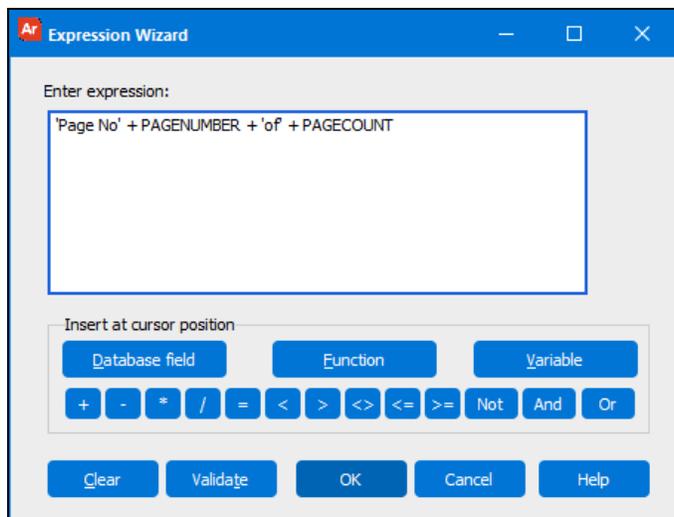
8. Click **Continue** to launch the Expression Wizard.



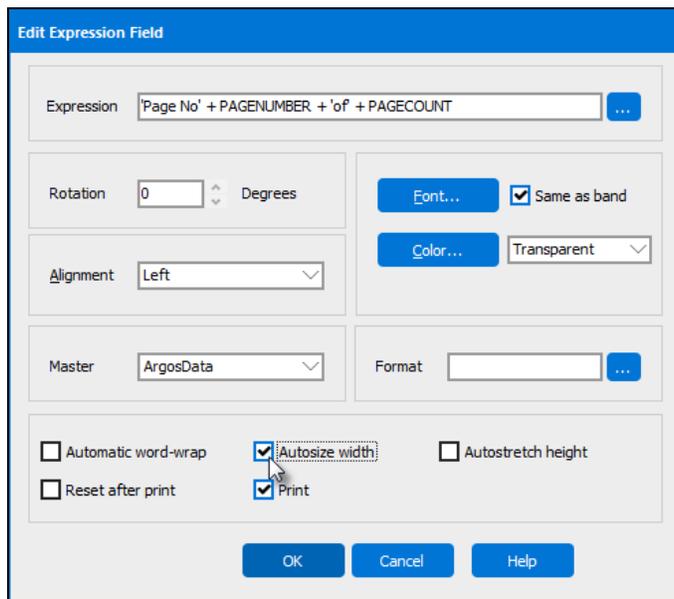
9. Click the **Function** button again to display the list of functions again. Select PAGECOUNT from the list.



10. Click **Continue** to return to the Expression Wizard.



11. Check your completed expression and click **OK** to return to the Edit Expression Field dialog.



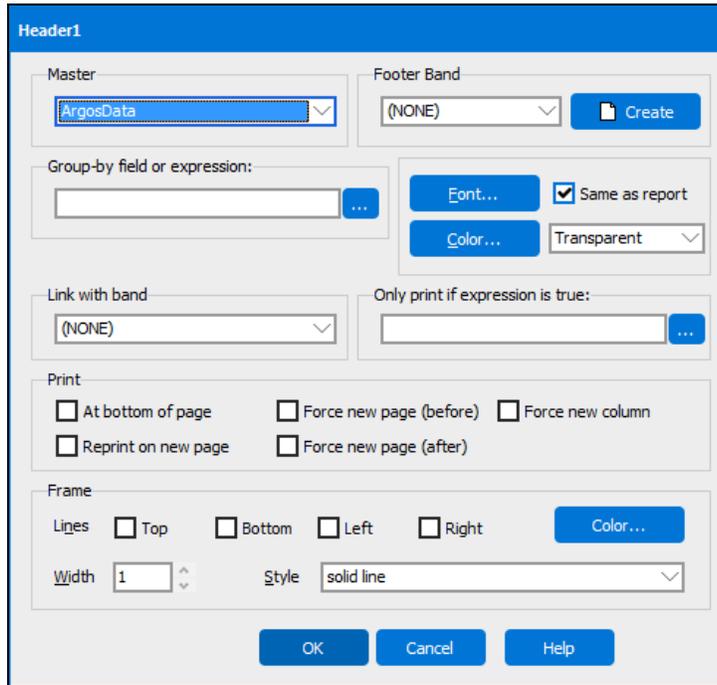
12. Check the "Autosize width" and "Print" checkboxes and click **OK**.

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

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.

1. 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:

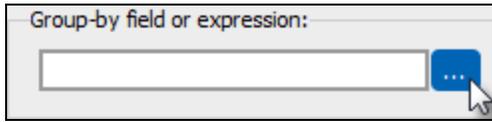


### Band Groups are processed as follows:

- 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.

**Note:** 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.

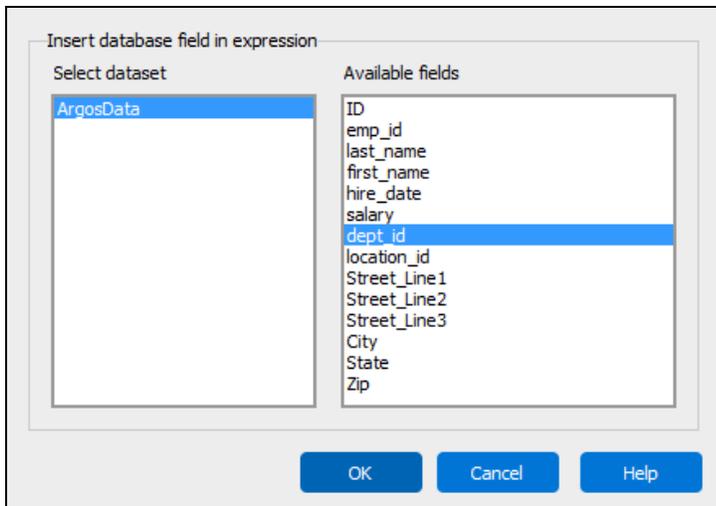
- To enter the item that the detail band will be grouped by, click the ellipses button  to the right of the "Group by field or expression" text field.



This will launch the Expression Wizard:



- Click the Database Field button and select dept\_id from the list of available fields. The dataset for this example is ArgosData.



**Remember:** When grouping by a particular field (dept\_id in this example), the data must be sorted by the same field.

- Click **OK**, then click **OK** on Expression Editor to exit and return to the group band options dialog.

You will see that your expression now appears in the "Group-by field or expression" field. 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 in the upper right corner of the dialog (in the Footer Band section) to create a corresponding Group Footer, then click **OK**.

The Banded Editor will now appear as follows:

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

**Tip:** Argos generates names for each band, but you can rename the bands. 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" to launch the Options dialog.
- 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.
- Click **OK**.

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	LASTNAME	FIRSTNAME	HIREDATE	SALARY	DEPTNAME	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	Mike	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

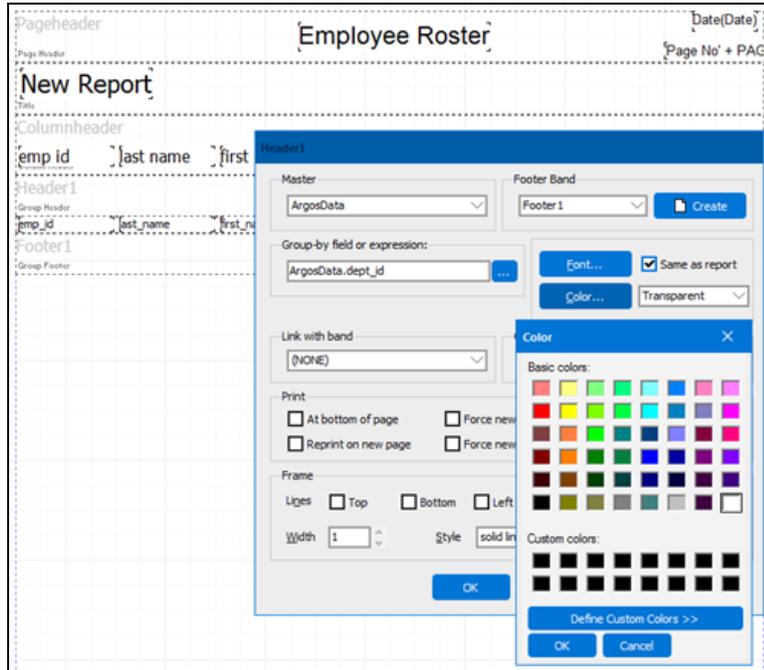
Note the grouping by Department Name as well as the existence of the date and page count at the top right of the report.

Next steps:

- 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 Department Name to Group Header Band

1. 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.
2. Move the city and region fields in the Detail Band 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.
3. Right-click the Group Header Band, and click **Edit**. Choose a background color using the **Color** button.



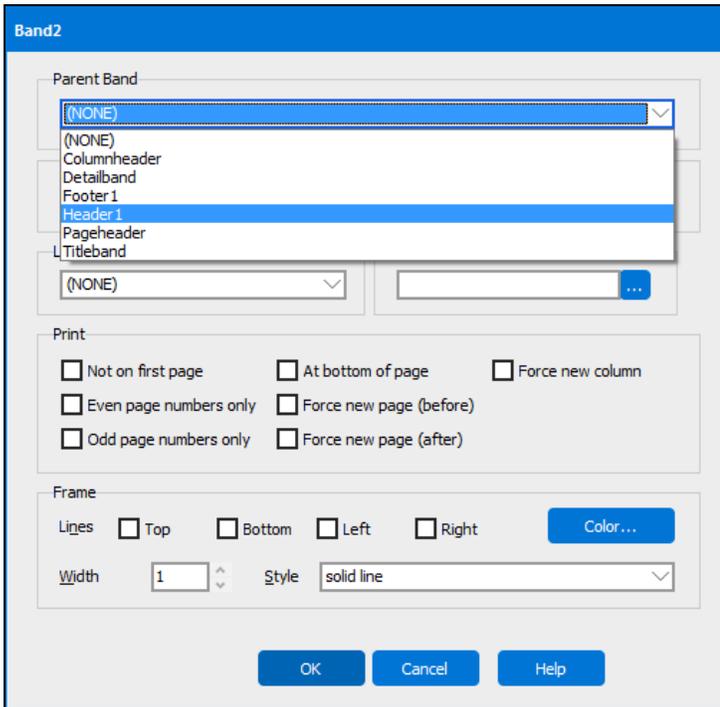
4. Delete the department name column header. After some resizing and repositioning of fields, the report should look like this:

EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
<b>HR</b>						
019	Walls	William	7/31/1991	67000	Los Angeles	Southwest
046	Hansen	Michael	4/7/2004	59000	Los Angeles	Southwest
077	Gray	Tommy	12/13/1998	63000	Los Angeles	Southwest
175	Green	Harold	2/15/2000	60000	Los Angeles	Southwest
624	Parker	Courtney	7/22/1999	62000	Los Angeles	Southwest
<b>Marketing</b>						
118	Holmes	Lincob	9/9/2007	70000	Atlanta	Southeast
189	Bailey	Mile	3/31/1999	76000	Atlanta	Southeast
412	Wallace	Gary	11/28/2003	77000	Atlanta	Southeast
650	Jackson	Mary	1/1/1995	50000	Atlanta	Southeast
683	Hai	Paul	10/17/2003	74000	Atlanta	Southeast
<b>Product Dev</b>						
025	Smith	John	1/1/1995	50000	Seattle	Northwest
044	Garcia	Veronica	8/29/2002	84000	Seattle	Northwest
095	Strauss	Jane	1/25/1996	55000	Los Angeles	Southwest
090	Nguyen	Cindy	8/18/2008	96000	Seattle	Northwest
111	Ladkey	Janice	7/5/1995	89000	Los Angeles	Southwest

## 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. A Child Band will be used to accomplish this.

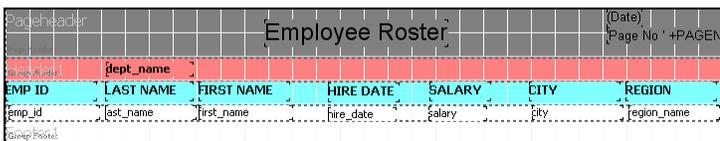
Within the Band Report Editor click the “Create a New Child Band” icon , then click anywhere within the report image. The following dialog box will be displayed. You must enter the Parent Band, therefore select “Header 1” (which is the name of the Group Header band) as shown in the figure below.



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.

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

The resulting report format within the Editor appears as follows:



EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
--------	-----------	------------	-----------	--------	------	--------

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

Employee Roster						
3/18/2010 Page No 1 of 2						
HR						
EMP ID	LASTNAME	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	LASTNAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
118	Holmes	Lincoln	9/9/2007	70000	Atlanta	Southeast
189	Bailey	Mille	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	LASTNAME	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

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

## Add Employee Count and Salary Sum

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.

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

**Edit Expression Field**

Expression  

Rotation  Degrees   Same as band

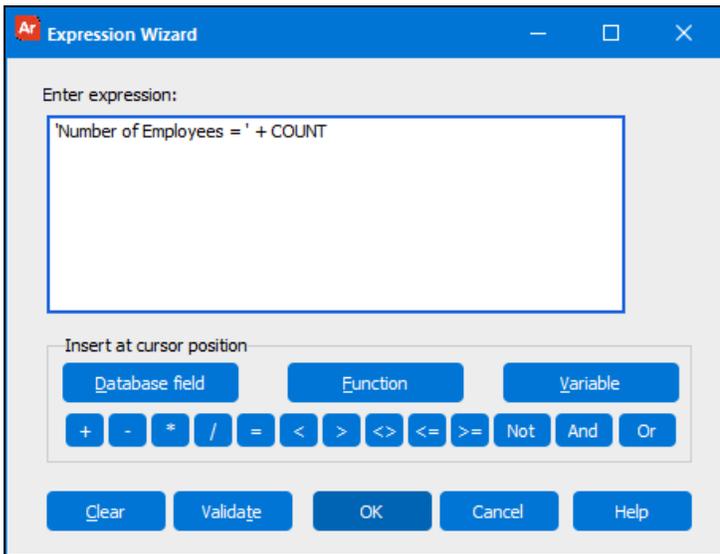
Alignment

Master   

Automatic word-wrap  Autosize width  Autostretch height

**Reset after print**  Print

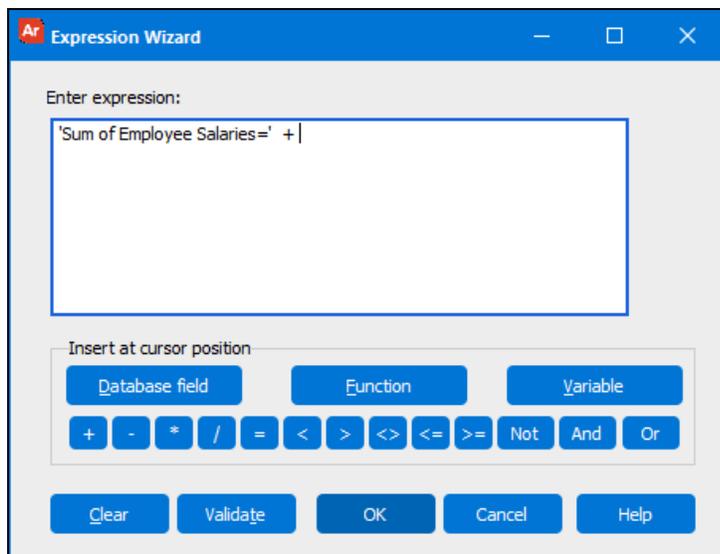
Build the following within the Expression Wizard using the same procedure as described above for the PAGENUMBER and PAGECOUNT fields. The COUNT function is found under the Statistical category within the Wizard. You may need to extend the width of the field to have it print correctly (or check the "Autosize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



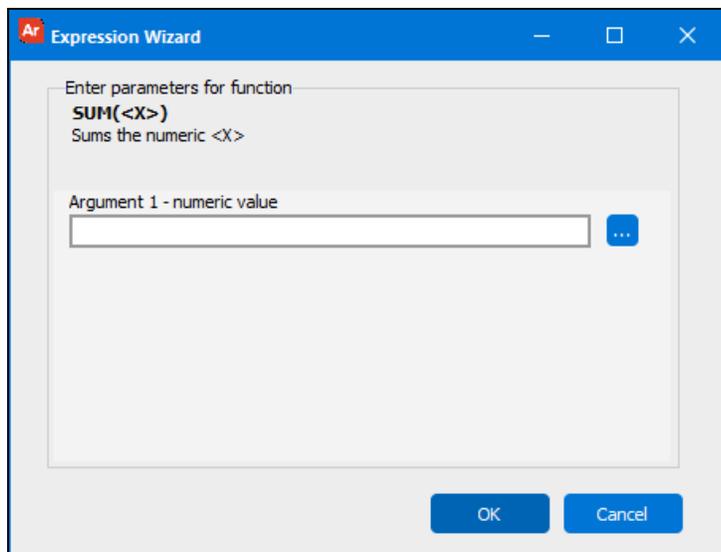
## Create Sum of Salaries Expression

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](#)).

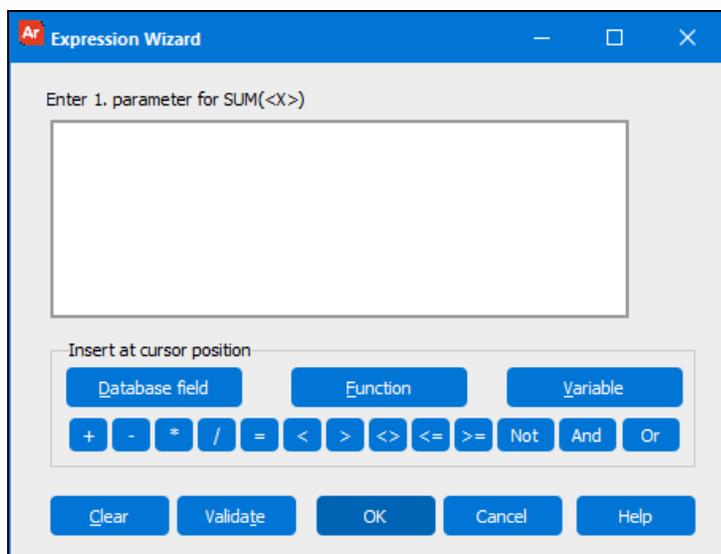
1. Start the Expression Wizard and type 'Sum of Employee salaries=' +. Be sure to include the single quotes for the text.



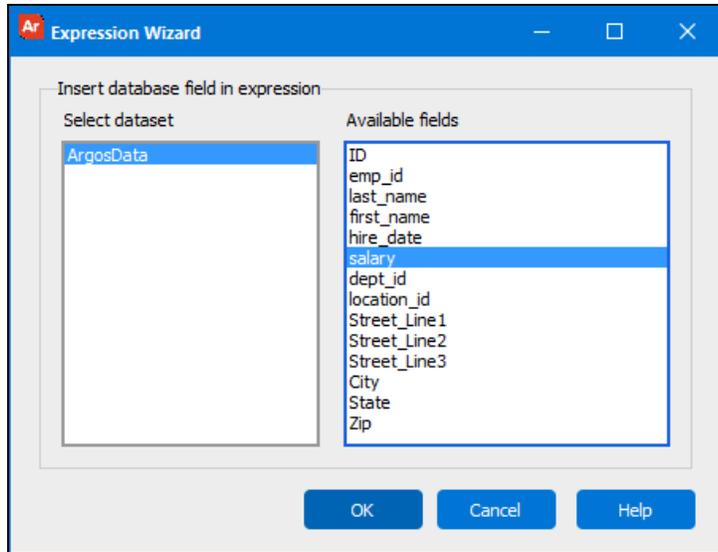
2. Click **Function** to continue. Select SUM from the list of available functions. Selecting SUM will launch the following window:



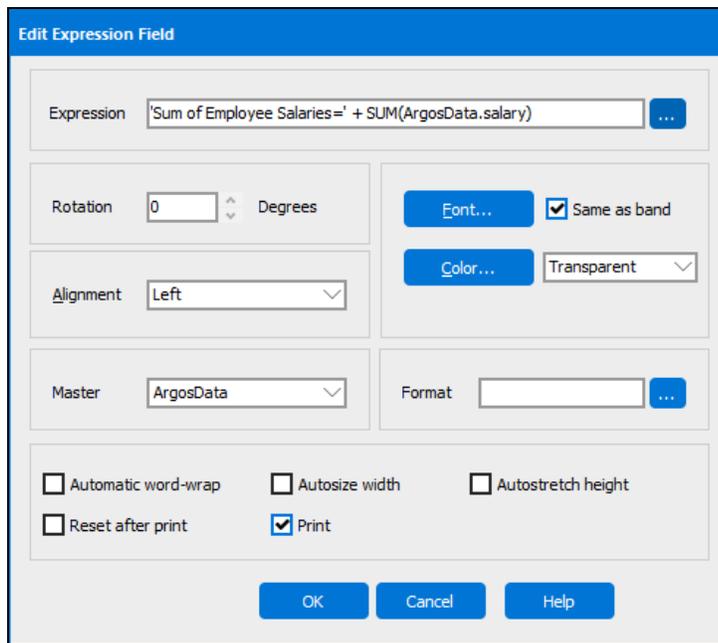
3. Click the ellipsis button  to launch the Expression Wizard for the SUM.



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



5. Select salary from the available fields and click **OK**.



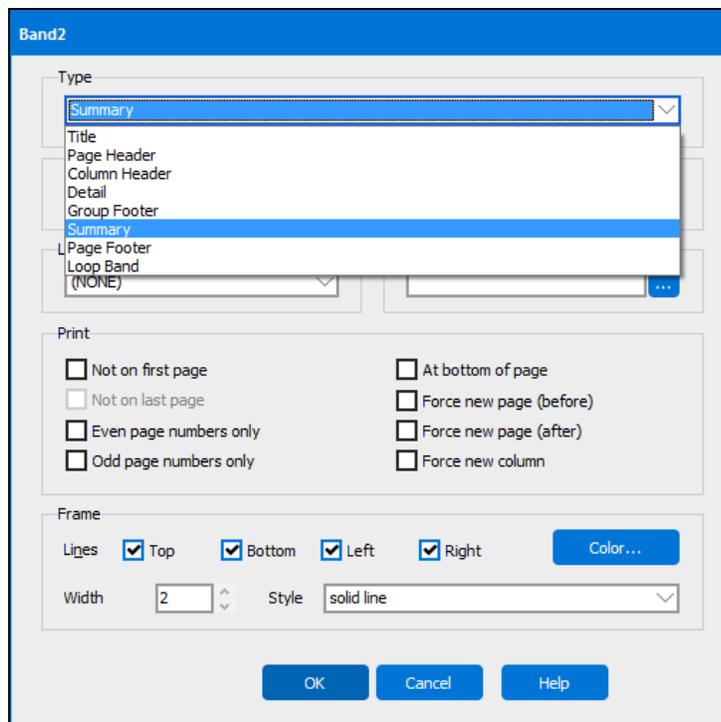
6. As was done with the COUNT function, check the "Reset after print" box to reset the sum to zero for each band.
7. Also, check "Autosize width" to guarantee that enough room will be set aside for the new field to print.
8. This item will be placed under the employee count field, thus you may need to 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.
9. Position the new fields just created by clicking each field then dragging it to the desired location within the band.

## Adding the Summary Band

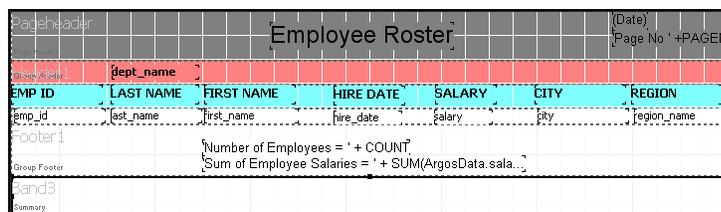
A Summary Band which will now be created will contain the employee count and sum of salaries for all departments. Recall that the Summary Band always prints on the last page, immediately before the Page Footer Band.

To create the summary band:

1. Click on the "Create a new band" icon  on the Band Report Editor toolbar, then click anywhere within the report image.
2. In the dialog box that appears For the Type, select "Summary".
3. A frame will be placed around the band. Check the Top, Bottom, Left, and Right check boxes. Set the line width to 2.



4. Click **OK** to return to the report designer. Notice the new Summary Band at the bottom of the report with the solid line surrounding the band.



EMP ID	LAST NAME	FIRST NAME	HIRE DATE	SALARY	CITY	REGION
emp_id	last_name	first_name	hire_date	salary	city	region_name

5. 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	Manab	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						

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:

Employee Roster							3/18/2010
Page No 1 of 1							
Page Header Band							
Group Header Band							
HR	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	
Child Band							
Group Footer Band							
Number of Employees = 5 Sum of Employee Salaries = 311000							
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	
150	Brown	Bill	2/15/2000	75000	Los Angeles	Southwest	
199	Nawano	Dianne	6/22/2004	76000	Seattle	Northwest	
243	Carlb	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	McCary	Helen	8/14/1999	81000	Los Angeles	Southwest	
429	Marsh	Zooney	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	
Number of Employees = 20 Sum of Employee Salaries = 1612000							
Number of Employees = 25 Sum of Employee Salaries = 1923000							
Summary Band							

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 seven 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

## Introduction

The banded report in the previous example shows the sum of salaries without any formatting (without dollar signs or commas). Instead of printing "Total Sum of Employee Salaries = 1923000" in the summary band, we want to print it as **\$1,923,000.00**.

To format the output, you need to edit the field within the banded report editor. Right-click the field to be formatted to bring up the Edit Expression Field dialog:

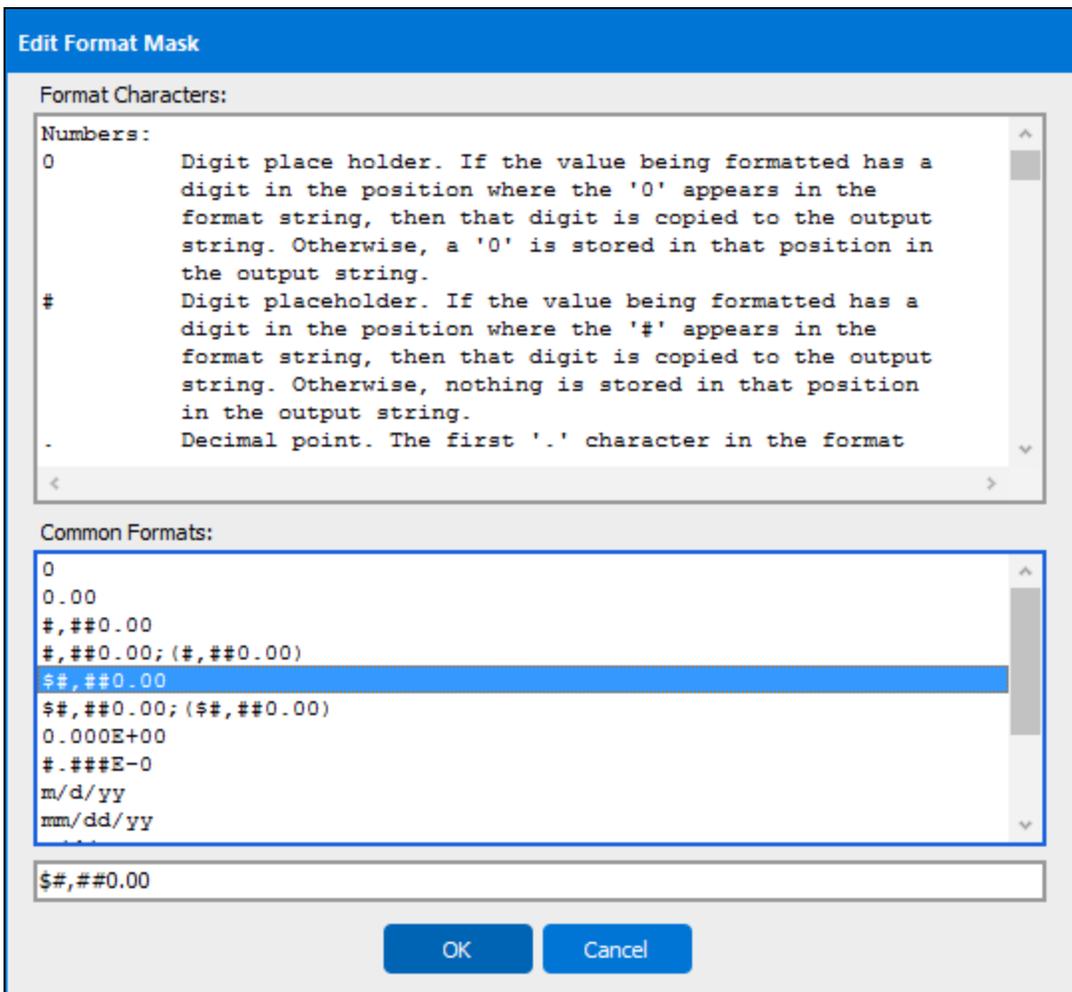
The screenshot shows the 'Edit Expression Field' dialog box. The 'Expression' field contains the text 'SUM(ArgosData.salary)'. Below this, there are several sections: 'Rotation' is set to 0 with a 'Degrees' label; 'Alignment' is set to 'Left'; 'Master' is set to 'ArgosData'; 'Format' is an empty field with an ellipsis button. To the right of the 'Format' field are buttons for 'Font...' and 'Color...', and a checked checkbox for 'Same as band' next to a 'Transparent' dropdown. At the bottom, there are checkboxes for 'Automatic word-wrap', 'Autosize width', 'Autostretch height', 'Reset after print', and 'Print' (which is checked). At the very bottom are 'OK', 'Cancel', and 'Help' buttons.

## 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 (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.

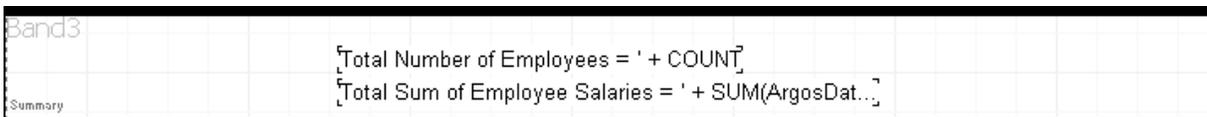
Choose one of the existing formats (double-click) or enter your desired mask in the text box at the bottom of the Edit Format Mask dialog.



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

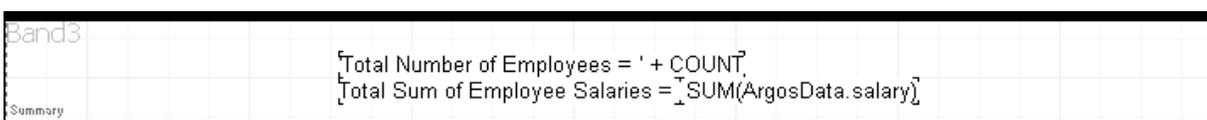
However, the example above needs to be modified in order to use the formatting since the field containing the sum also contains a leading string "Total Sum of Employee Salaries". Argos cannot format the entire field since the expression also contains a string.

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



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

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
Number of Employees = 20						
Sum of Employee Salaries = 1612000						
<hr/>						
Total Number of Employees = 25						
Total Sum of Employee Salaries = \$1,923,000.00						

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

# Group By Expression

## Introduction

The previous examples illustrated how to group employees by department, where the database field dept\_id 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:

Last Name	First Name	Hire Date	Salary	City	Region
<b>A</b>					
Alden	George	6/3/1999	36000	New Orleans	South
<b>B</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
<b>C</b>					
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
<b>D</b>					
Duvall	Jose	10/22/1987	89000	Seattle	Northwest
<b>F</b>					
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 steps to follow are:

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

**Note:** 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:

Employee Roster					
Last Name	First Name	Hire Date	Salary	City	Region
last_name	first_name	hire_date	salary	city	region_name

## 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.

Add a color to the band by clicking the “Color” button, then select light gray.

**Header1**

Master: ArgosData

Footer Band: (NONE) Create

Group-by field or expression: [ ] Font... Same as report  Color... Transparent

Link with band: (NONE)

Only print if expression is true: [ ]

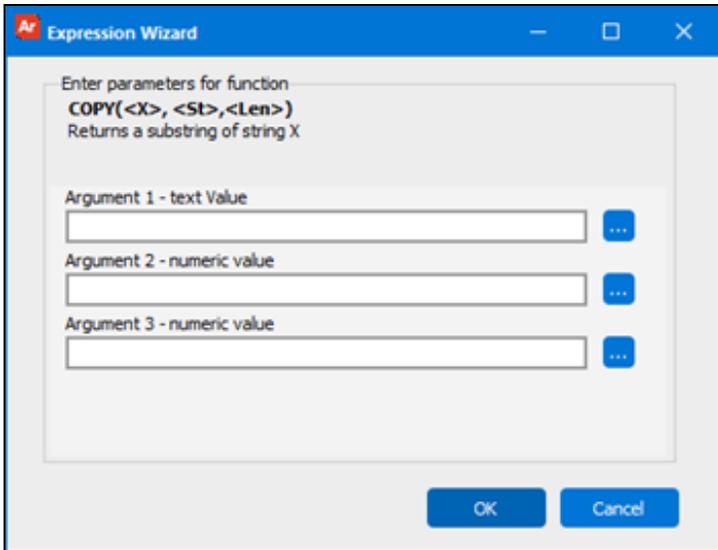
Print:  At bottom of page  Force new page (before)  Force new column  Reprint on new page  Force new page (after)

Frame: Lines  Top  Bottom  Left  Right Color... Width: 1 Style: solid line

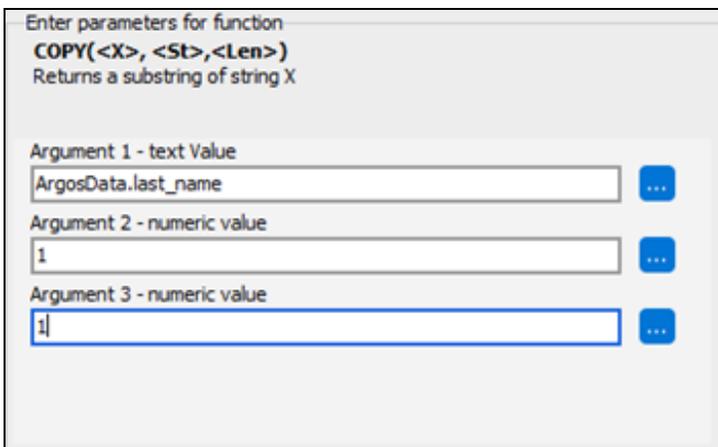
OK Cancel Help

## Create the Expression

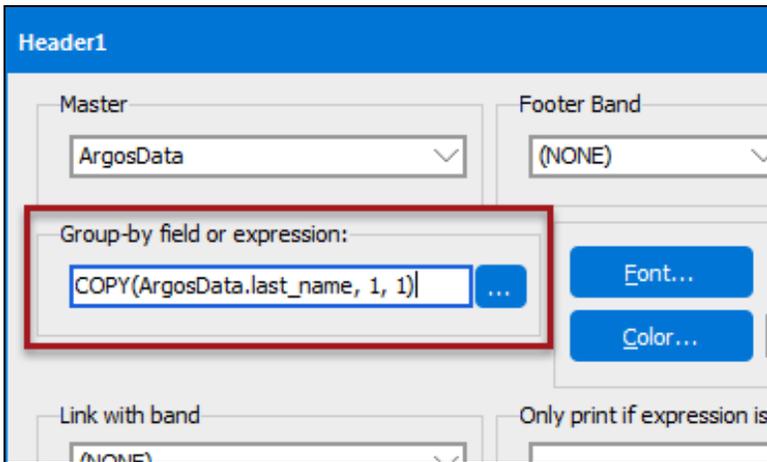
To create the expression, click the ellipsis button to the right of the "Group-by-field or expression" box to launch the Expression Wizard. Click **Function**, then select the COPY function.



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:

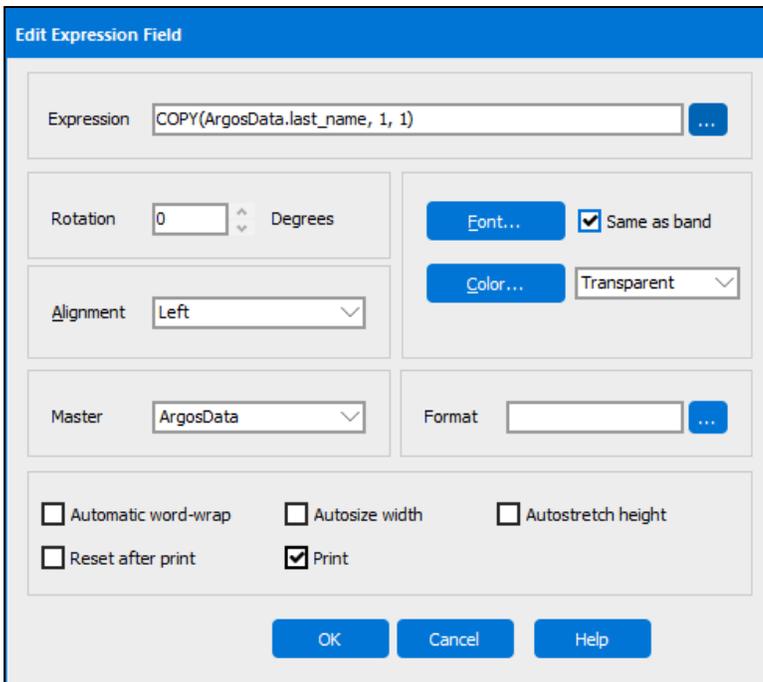


The expression to return the first letter of the last name has now been inserted into the Group-by-field or expression box. The grouping is now handled by an expression, as opposed to an earlier example where grouping was done by a database field name.



## 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<sup>2</sup>** on the toolbar, then click within the Group Header Band. Then enter the same expression as before.



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
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### 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

# Creating Mailing Labels

---

## Introduction

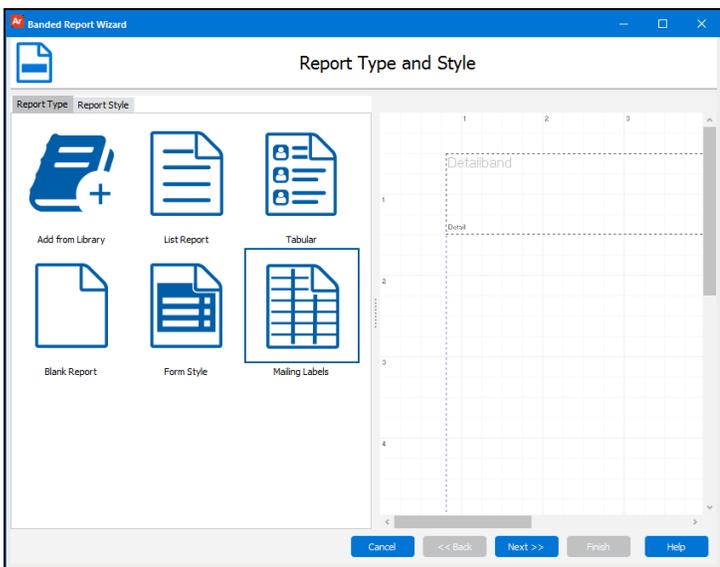
---

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.



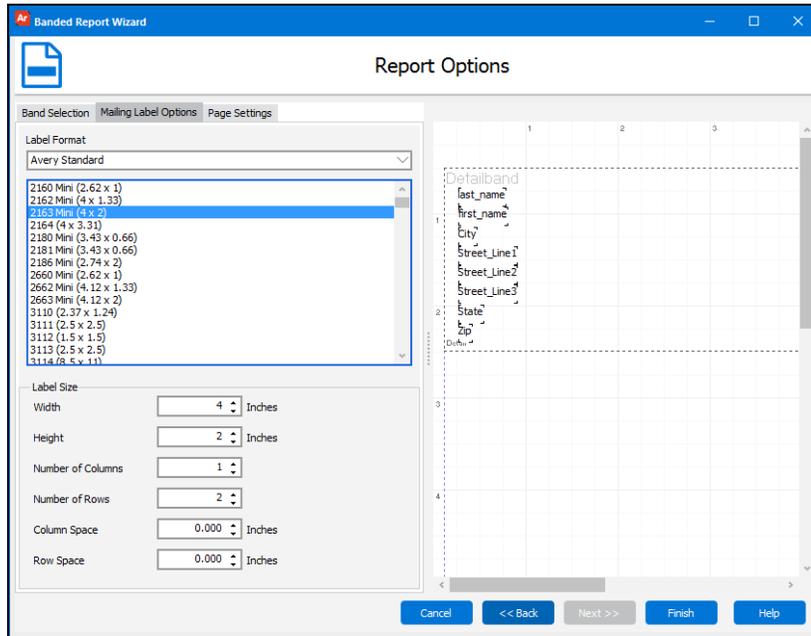
Click **Finish** to continue.

## Select the Fields to Use

---

1. On the next form, select the fields that you would like to appear on the label.
2. This example will once again use the Employees table in the sample database.
3. Select last\_name, first\_name, city, Street\_Line1, Street\_Line2, Street\_Line3, State, and Zip.
4. Click **Next** to continue.
5. The next form allows you to choose the Label Format. Select the Mailing Label Options tab.

- Select the Vendor, and then the Format. For this example select the vendor Avery Standard, using the 2163 Mini layout. Click **Finish** to continue.



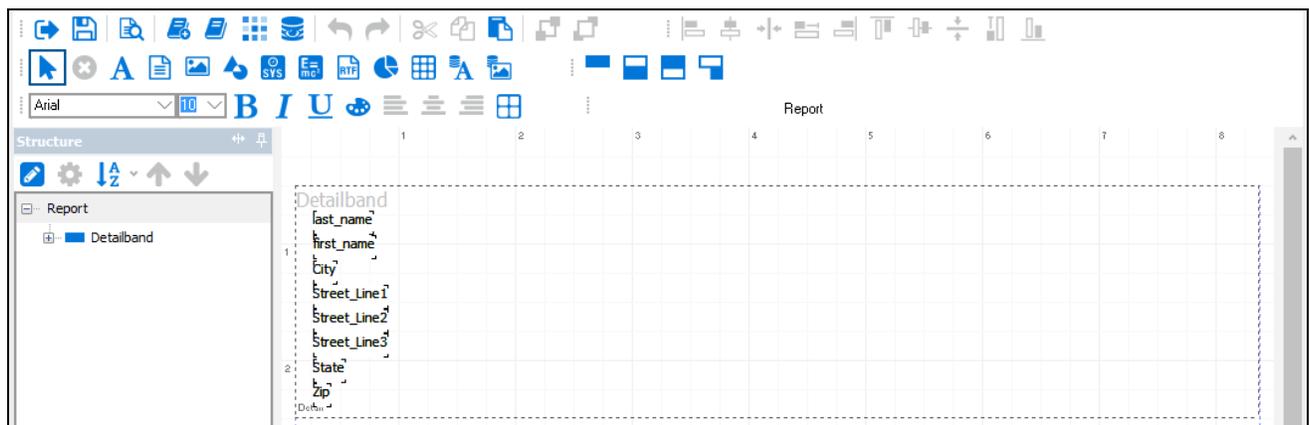
Note: If the label you are using is not listed, select one that is similar, as you can change the size and position of the individual labels later.

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.

## 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.

- Right-click anywhere within the detail band.



2. Rearrange the fields to appear as follows on the label:

**[first name] [last name]**

**[Street 1]**

**[Street 2]**

**[Street 3]**

**[City] [State] [Zip]**

- a. To move a field, select it, then click and drag to move it. Multiple fields can also be selected and properly aligned using the alignment tools.
- b. To make sure the all the fields are aligned on the same left margin, select the first\_name, Street\_Line1, Street\_Line2, Street\_Line3, and city fields and click the Left Alignment icon .
- c. Align City, State, and Zip across the bottom using the Bottom Alignment tool. Position the fields as follows:



3. Click the Preview button  to preview the lalyout. 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.

## Using Expressions to Format Fields

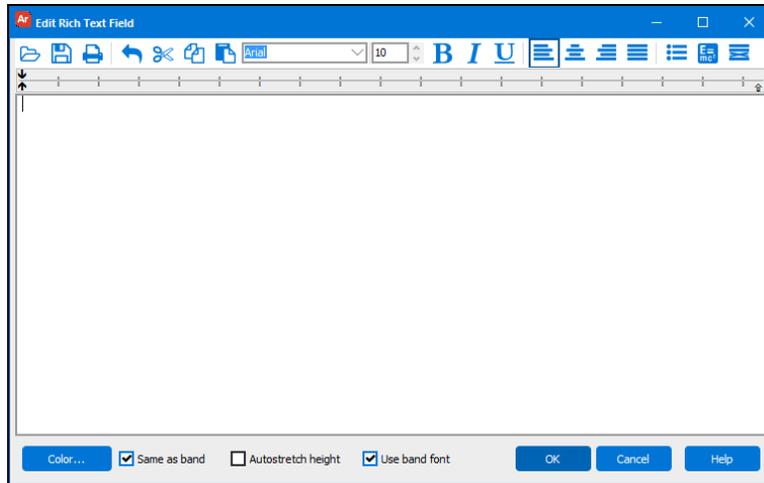
For more control over your customized label, use the Rich Text Editor to add fields to the label using expressions. Expressions will be used to:

- 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 expressions created with the Rich Text Editor.

1. Select your existing fields and delete them.
2. Click the “Add a Rich Text Field” icon  within the Band Report Editor Toolbar then click anywhere within the Detail Band. The Rich Text Editor will be displayed as shown below:



The Rich Text Editor can be thought of a mini text editor and provides various text formatting features.

3. To add database fields to the label, place the cursor in the appropriate location and click the  button.
4. Select the desired field in the expression builder.
5. Add each of the fields needed for the label. Use single quotes to create blank spaces between fields when necessary (such as the space between the first and last name). The rich text field should read:  
`%%ArgosData.last_name + ' ' + ArgosData.first_name%%  
%%ArgosData.Street_Line1%%  
%%ArgosData.Street_Line2%%  
%%ArgosData.Street_Line3%%  
%%ArgosData.City + ' ' + ArgosData.State + ' ' + ArgosData.Zip%%`

**Note:** Expressions embedded in text in Argos are surrounded by `%%`. For example, the expression `ArgosData.Street_Line1` would appear in the text editor as `%%ArgosData.Street_Line1%%`. If you use the expression editor to add expressions, the `%%` will be added automatically.

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. To avoid printing lines with no data, use the **Remove Line if Empty** icon . This will remove lines that have no data, as would typically happen with a residential address where the first line is used, but subsequent lines are not used.

```
%%ArgosData.last_name + ' ' + ArgosData.first_name%%  
%%ArgosData.Street_Line1%%  
%DEL%ArgosData.Street_Line2%%  
%DEL%ArgosData.Street_Line3%%  
%%ArgosData.City + ' ' + ArgosData.State + ' ' + ArgosData.Zip%%
```

Street\_Line2 and Street\_Line3 now have DEL inserted, indicating that the line will be removed if it is empty.

Click **OK** to add the fields 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.

**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.

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 Crestbrook Street*  
*Suite 500*  
*Attn: Jane Doe*  
Houston, Texas 18999

Bill Brown  
*11 Portofino Way*  
Los Angeles, California 92444

# Printing Groups on New Pages and Resetting Page Count

## 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:

Employee Sales		
Sale Date	Quantity	Product Name
<b>Mark Washington</b>		
1/6/2005	2	HP 2509n-25" Diagonal Full HD
1/6/2005	2	Norton Internet Security 2010
1/6/2005	2	HP ScanJet 8300 Profession
1/6/2005	2	HP Pavilion Elite Desktop PC
1/6/2005	10	HP dv7-3080us Notebook
4/1/2005	10	Canon PowerShot A910
4/1/2005	2	Epson N1415 All-in-one
4/1/2005	10	HP dv7-3080us Notebook
5/4/2005	5	HP ScanJet 8300 Profession
5/4/2005	3	QuickBooks Pro 2003
5/24/2005	1	HP dv4-2140us 14.1" Notebook
6/12/2005	2	HP Photosmart 05980 All-in-one
6/12/2005	1	Gateway Desktop PC
6/13/2005	1	Microsoft Project Standard 2003
6/13/2005	1	Microsoft Office 2007
7/15/2005	7	Microsoft Office 2007
7/15/2005	7	Lenovo S150-29472MU
8/31/2005	1	Canon MP980 All-in-one
8/31/2005	7	HP dv7-3080us Notebook
9/1/2005	8	HP Pavilion Elite Desktop PC
9/1/2005	16	LG W2753V-HF 27" Widescreen
10/1/2005	3	Epson N1415 All-in-one
11/1/2005	3	Gateway Desktop PC
11/1/2005	6	HP 2509n-25" Diagonal Full HD
1/1/2006	2	Microsoft Office 2007
2/1/2006	3	Epson GT-2500 Plus Network
3/1/2006	10	Microsoft Office 2007
4/5/2006	11	Compaq CQ5300F Desktop PC
4/5/2006	11	Canon CanoScan 8800F Scanner
4/5/2006	11	LG W2753V-HF 27" Widescreen
5/1/2006	5	Canon CanoScan 8800F Scanner
5/1/2006	4	Norton Internet Security 2010
5/1/2006	1	Canon PowerShot A910
5/13/2006	1	HP 2509n-25" Diagonal Full HD
5/13/2006	1	Canon CanoScan 8800F Scanner
5/13/2006	1	HP P6210F Pavilion Desktop PC
5/17/2006	2	LG W2753V-HF 27" Widescreen
7/31/2006	9	HP dv4-2140us 14.1" Notebook
9/1/2006	12	MAG G4L2226 21.5" LED Backlit
9/1/2006	12	Canon PowerShot A910
9/1/2006	12	Compaq CQ5300F Desktop PC
9/26/2006	3	HP dv4-2140us 14.1" Notebook
9/26/2006	6	QuickBooks Pro 2003
10/25/2006	1	Epson Perfection V30
11/26/2006	1	Asus W1669H 25.5" LCD Monitor
11/28/2006	10	Intuit TurboTax Business Federal
3/7/2007	1	Microsoft Vista 2007
3/7/2007	1	HP ScanJet 8300 Profession
3/23/2007	1	Samsung T260 HD 25.5"
<b>Page 1</b>		
<b>Page 2</b>		
3/23/2007	8	HP dv4-2140us 14.1" Notebook
3/23/2007	8	Microsoft Vista 2007
3/26/2007	1	HP 2509n-25" Diagonal Full HD
3/26/2007	1	Acer Desktop PC
3/26/2007	1	Canon CanoScan 8800F Scanner
3/26/2007	1	Canon MP980 All-in-one
5/7/2007	1	Epson GT-2500 Plus Network
5/7/2007	1	MAG G4L2226 21.5" LED Backlit
5/7/2007	2	Acer Desktop PC
5/7/2007	2	MAG G4L2226 21.5" LED Backlit
7/8/2007	2	Norton Internet Security 2010
7/8/2007	2	HP ScanJet 8300 Profession
8/25/2007	3	Microsoft Office 2007
10/1/2007	3	Epson N1415 All-in-one
10/1/2007	3	Microsoft Office 2007
10/18/2007	3	Sony MVA230 GB Notebook
10/18/2007	1	Epson GT-2500 Plus Network
10/24/2007	3	HP Pavilion Elite Desktop PC
10/24/2007	6	MAG G4L2226 21.5" LED Backlit
10/24/2007	2	HP 2509n-25" Diagonal Full HD
10/29/2007	2	HP P6210F Pavilion Desktop PC
10/29/2007	2	HP Photosmart 05980 All-in-one
1/17/2008	5	HP dv7-3080us with your
1/17/2008	1	Compaq CQ5300F Desktop PC
2/21/2008	1	HP ScanJet 8300 Profession
2/21/2008	1	HP 2509n-25" Diagonal Full HD
5/6/2008	4	HP dv7-3080us Notebook
5/11/2008	1	Norton Internet Security 2010
5/11/2008	4	Gateway Desktop PC
7/14/2008	3	HP Photosmart 05980 All-in-one
7/16/2008	1	Norton Internet Security 2010
7/16/2008	1	Microsoft Project Standard 2007
8/4/2008	1	Epson GT-2500 Plus Network
8/4/2008	1	HP DesignJet C2560 Printer
9/11/2008	1	Microsoft Office 2007
9/11/2008	1	Norton Internet Security 2010
10/11/2008	5	HP 2509n-25" Diagonal Full HD
10/12/2008	1	Norton Internet Security 2010
1/19/2009	1	HP DesignJet C2560 Printer
1/19/2009	1	HP 2509n-25" Diagonal Full HD
3/13/2009	4	Compaq CQ5300F Desktop PC
3/13/2009	8	Asus W1669H 25.5" LCD Monitor
3/13/2009	1	HP Photosmart 05980 All-in-one
3/14/2009	1	Intuit TurboTax Business Federal
3/25/2009	6	Samsung T260 HD 25.5"
4/9/2009	6	HP P6210F Pavilion Desktop PC
5/31/2009	3	MAG G4L2226 21.5" LED Backlit
7/1/2009	7	Canon MP980 All-in-one
8/27/2009	2	Canon MP980 All-in-one
9/26/2009	2	Lenovo S150-29472MU
9/26/2009	1	Canon MP980 All-in-one
10/17/2009	1	Epson N1415 All-in-one
10/17/2009	2	LG W2753V-HF 27" Widescreen
10/17/2009	2	Gateway Desktop PC
10/18/2009	2	Acer Desktop PC

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.

Band4						
Employee Sales						
Title						
Sale Date	Quantity	Product Name				
Column Header						
first_name	last_name	RESETEXPR(Expression1)				
Group Header						
sale_date	quantity	product_name				
Detail						
Page Footer						
Page ' +COUNTER						

## Force Group Header on new page

To force the Group Header to print on a new page, double-click on the Group Header to launch the Group Header options dialog. On the dialog, check the option to “Force new page (before)”.

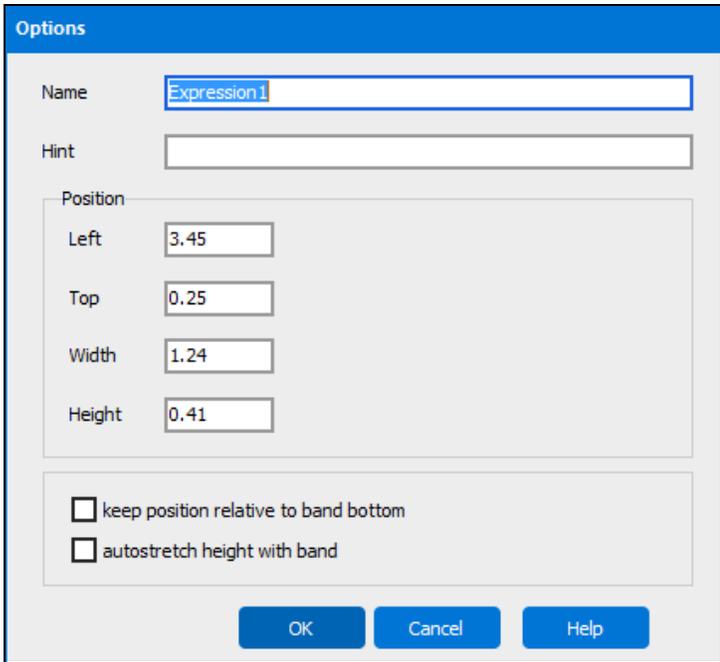
The dialog box 'Header1' contains the following settings:

- Master: ArgosData
- Footer Band: Footer1
- Group-by field or expression: ArgosData.last\_name
- Link with band: (NONE)
- Print:  Force new page (before)
- Frame: Lines (Top, Bottom, Left, Right), Width: 1, Style: solid line

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

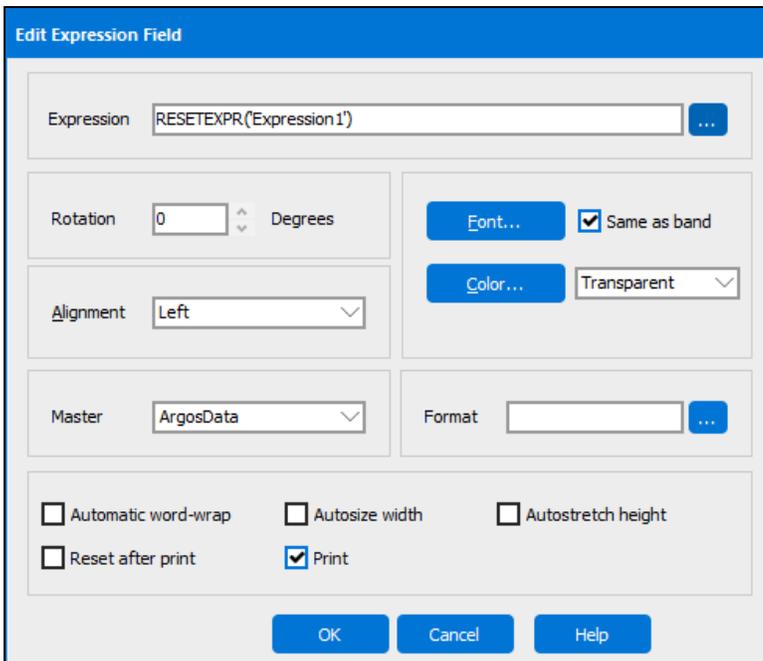
The name of the COUNTER expression must be obtained such that it can be reset within the RESETEXPR function. To obtain the name, right-click on the ['Page ' + COUNTER] expression then click "Options" to obtain the Expression Name, which in this case is Expression1.



The 'Options' dialog box is shown with the following fields and settings:

- Name: Expression1
- Hint: (empty)
- Position:
  - Left: 3.45
  - Top: 0.25
  - Width: 1.24
  - Height: 0.41
- keep position relative to band bottom:
- autostretch height with band:
- Buttons: OK, Cancel, Help

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.



The 'Edit Expression Field' dialog box is shown with the following fields and settings:

- Expression: RESETEXPR('Expression1')
- Rotation: 0 Degrees
- Alignment: Left
- Master: ArgosData
- Format: (empty)
- Font...:  Same as band
- Color...: Transparent
- Automatic word-wrap:
- Autosize width:
- Autostretch height:
- Reset after print:
- Print:
- Buttons: OK, Cancel, Help

# Conditional Printing

## 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:

<b>Pending Purchase Orders</b>				
<b>United Cleaning Supplies</b>				
PO Number	invoice recd	invoice paid	PO date	Total
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
<b>Staples</b>				
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

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.

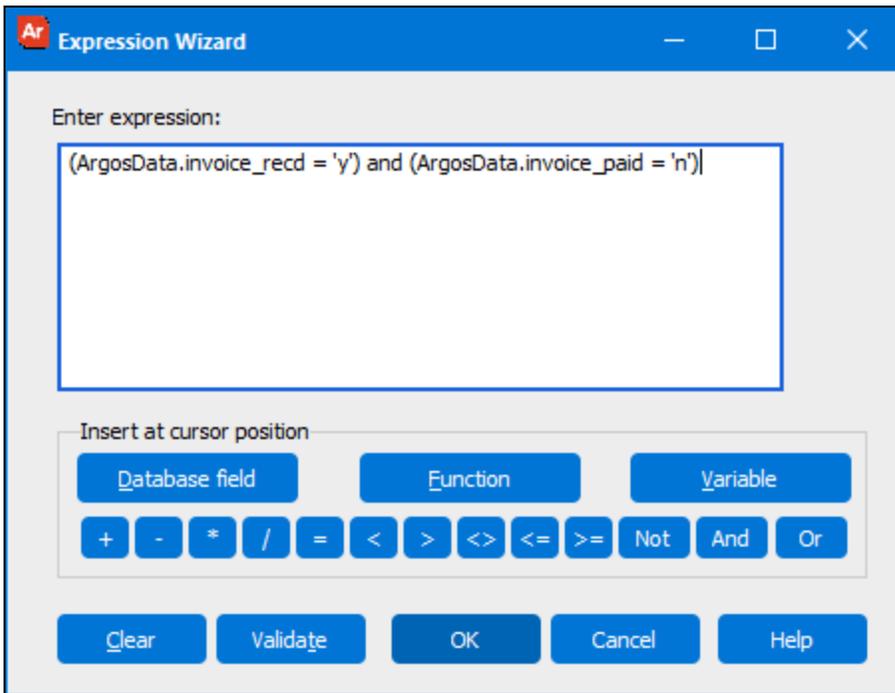
To prohibit printing of the Detail Band, the band height is set to zero in the Options dialog box for the Detail Band.

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).

The screenshot shows the 'PO\_Footer' Options dialog box. The 'Type' is set to 'Page Footer'. The 'Color' is set to 'Transparent'. The 'Link with band' is set to '(NONE)'. The 'Only print if expression is true:' field contains the expression '(ArgosData.invoice\_recd = 'y') and' and is highlighted with a red box. The 'Print' section has several checkboxes: 'Not on first page', 'Not on last page', 'Even page numbers only', 'Odd page numbers only', 'At bottom of page', 'Force new page (before)', 'Force new page (after)', and 'Force new column'. The 'Frame' section has checkboxes for 'Top', 'Bottom', 'Left', and 'Right', and a 'Color...' button. The 'Width' is set to '1' and the 'Style' is set to 'solid line'. The 'OK', 'Cancel', and 'Help' buttons are at the bottom.

**Tip:** 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.

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.



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				
<b>United Cleaning Supplies</b>				
PO Number	invoice recd	invoice paid	PO date	Total
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
<b>Staples</b>				
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

# Starting with a Blank Report Type

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## Introduction

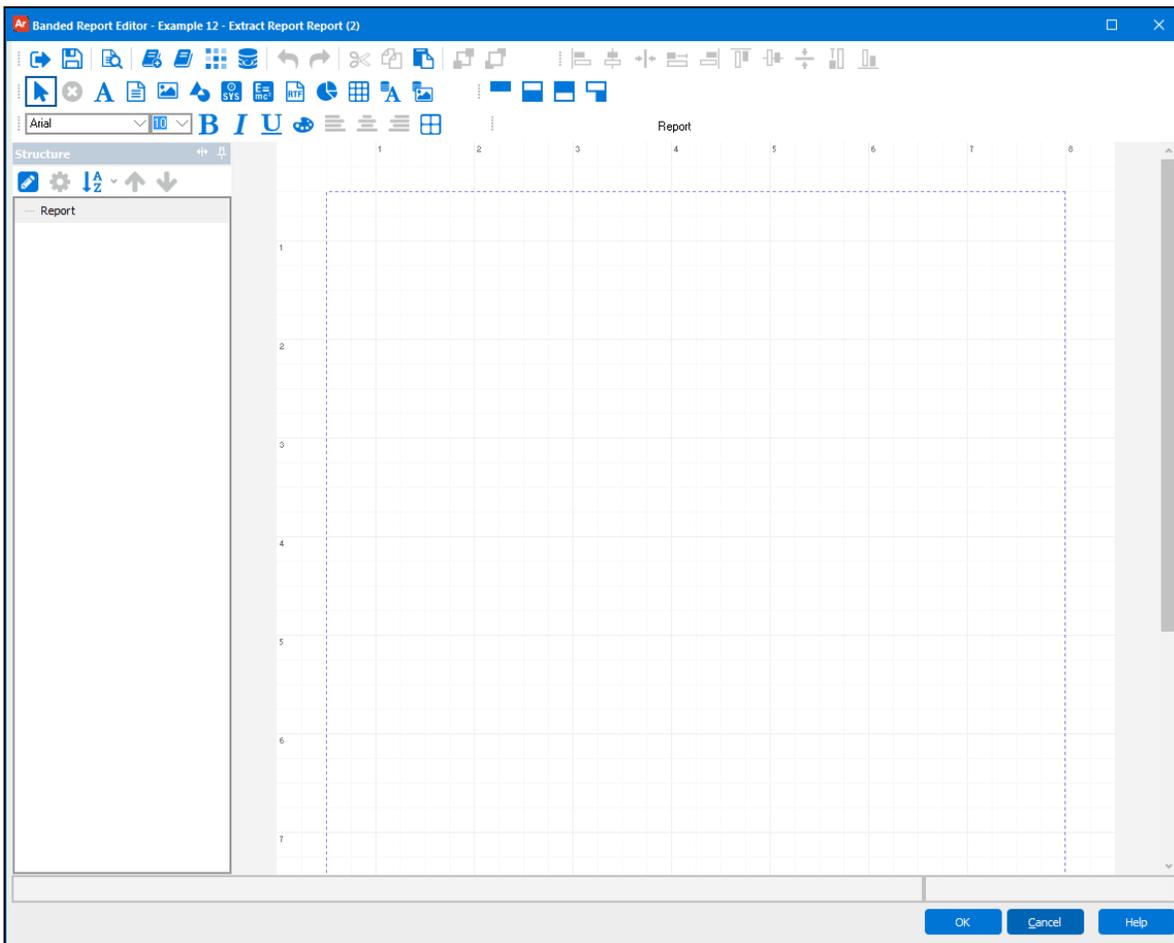
---

Previous examples showed how to create 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:



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.

## Adding Bands

---

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

The following are the icons for creating new bands. They are located on the Band Report Editor toolbar.

<b>Icon</b>	<b>Description</b>
	<b>Create a new band</b>
	<b>Create a new child band</b>
	<b>Create a new sub detail band</b>
	<b>Create a new band group</b>

## Adding Fields and Objects

---

To add a field or object, click the corresponding icon for the object (see the table below) then click in the band where you want the object to reside.

The icons below are located in the Band Report Editor toolbar.

<b>Icon</b>	<b>Description</b>
	<b>Add text field.</b>
	<b>Add a memo.</b>
	<b>Add an image.</b>
	<b>Add a primary shape.</b>
	<b>Add a system data field.</b>
	<b>Add an expression field. Also commonly referred to as the icon.</b>
	<b>Add rich text field.</b>
	<b>Add a chart,</b>
	<b>Add a line grid.</b>
	<b>Add a database field.</b>
	<b>Add an image from the database.</b>

# Using Sub-Detail Bands

---

## 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 parent 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](#) such as including additional information in a group header or footer band, 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

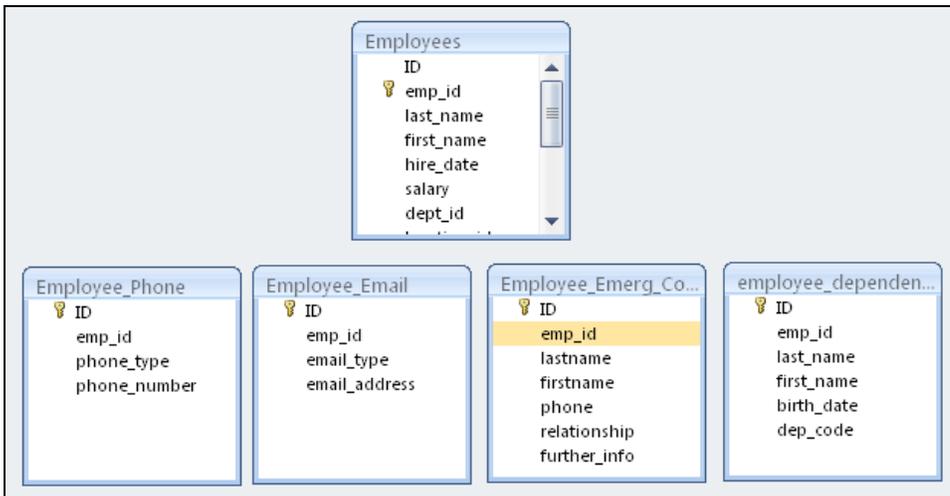
---

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, and each is associated with the detail band, which contains the employee name and ID number.

In this example, we will be using the Employee, Employee\_Phone, Employee\_Email, Employee\_Emerg\_Contact, and Employee\_Dependents tables within the sample database. The master dataset (ArgosData) contains the Employee table, which is linked to the other tables through the emp\_id column. The other four tables will be used in the queries for the datasets we will be creating [later in this exercise](#).

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.



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:

### Employee Contact Information

<b>Employee ID: 189</b>		<b>Bailey, Millie</b>		
Telephone no.	mobile	(140) 776-8099	1st Sub-Detail Band	
Telephone no.	work	(140) 988-7730		
Email Address	work	mbailey@work.com	2nd Sub-Detail Band	
Email Address	home	millieb@gmail.com		
Emergency Contact	Bailey, Anthony	husband	3rd Sub-Detail Band	
Emergency Contact	Kaiser, Amanda	mother		(140) 262-9347
Dependent	Bailey, Anthony	3/22/1963	spouse	4th Sub-Detail Band
<b>Employee ID: 683</b>		<b>Hai, Paul</b>		
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	
<b>Employee ID: 118</b>		<b>Holmes, Lincoln</b>		
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	lincoln@live.com		
Emergency Contact	Holmes, Annelise	wife	(140) 523-9630	
Emergency Contact	Holmes, Liam	son	(140) 451-9126	

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.

## 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.

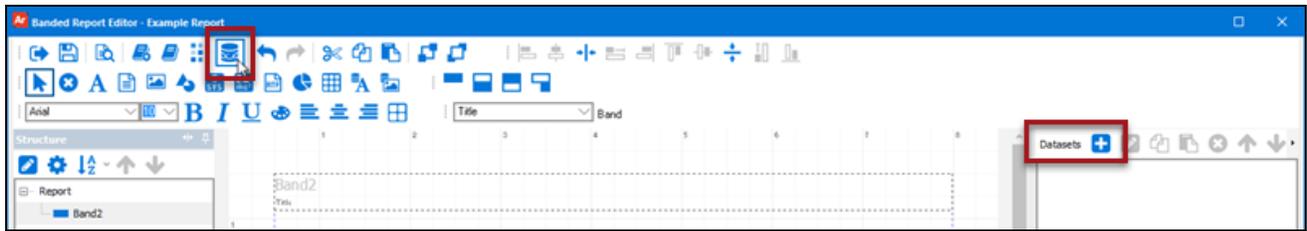
Employee Contact Information			
<b>Employee ID: 189</b>		<b>Bailey, Millie</b>	
Telephone no.	mobile	(140) 776-8099	
Telephone no.	work	(140) 988-7730	1st Sub-Detail Band
Email Address	work	mbailey@work.com	
Email Address	home	millieb@gmail.com	2nd Sub-Detail Band
Emergency Contact	Bailey, Anthony	husband	(140) 375-2343
Emergency Contact	Kaiser, Amanda	mother	(140) 262-9347
Dependent	Bailey, Anthony	3/22/1963	spouse 4th Sub-Detail Band
<b>Employee ID: 683</b>		<b>Hai, Paul</b>	
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
<b>Employee ID: 118</b>		<b>Holmes, Lincoln</b>	
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

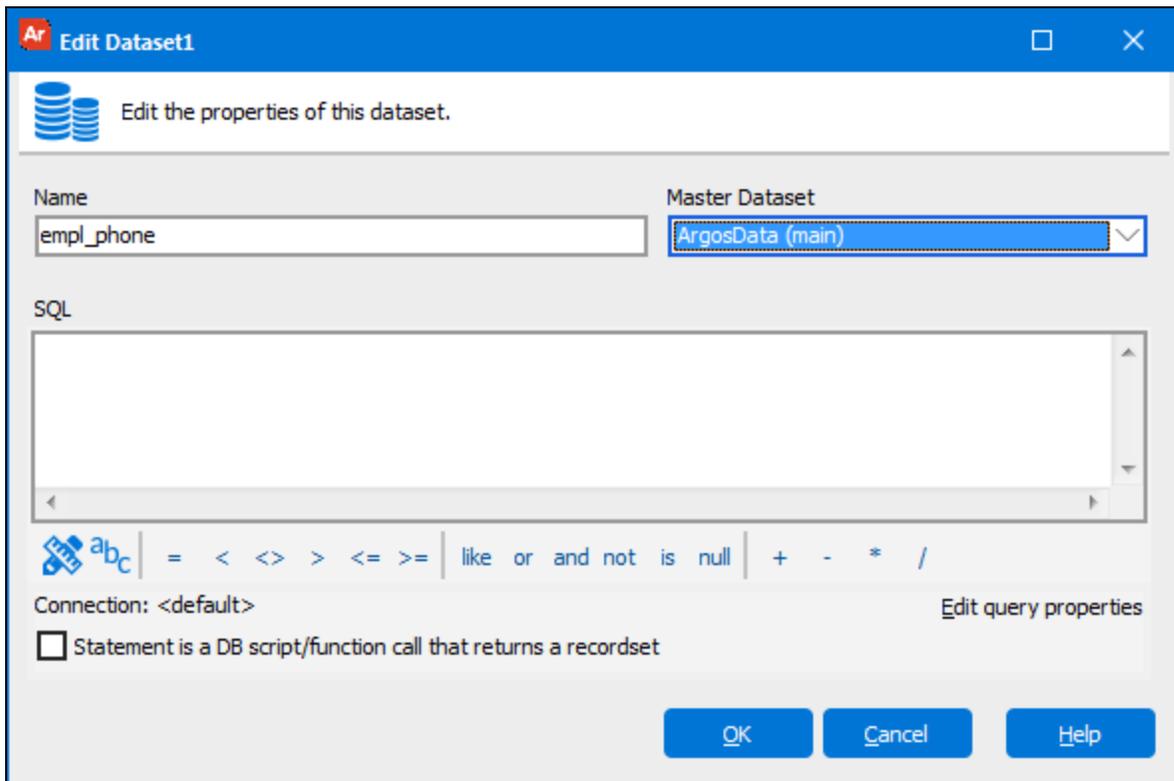
Four datasets will be created and named **empl\_phone**, **empl\_email**, **Emergency**, and **Dependents**. This procedure will walk you through creating the dataset for **empl\_phone**. Repeat the procedure for the remaining three datasets.

To add a dataset:

1. Click the Show/hide Dataset icon  on the Band Report Editor Toolbar. This will show the dataset pane on the right side of the screen.

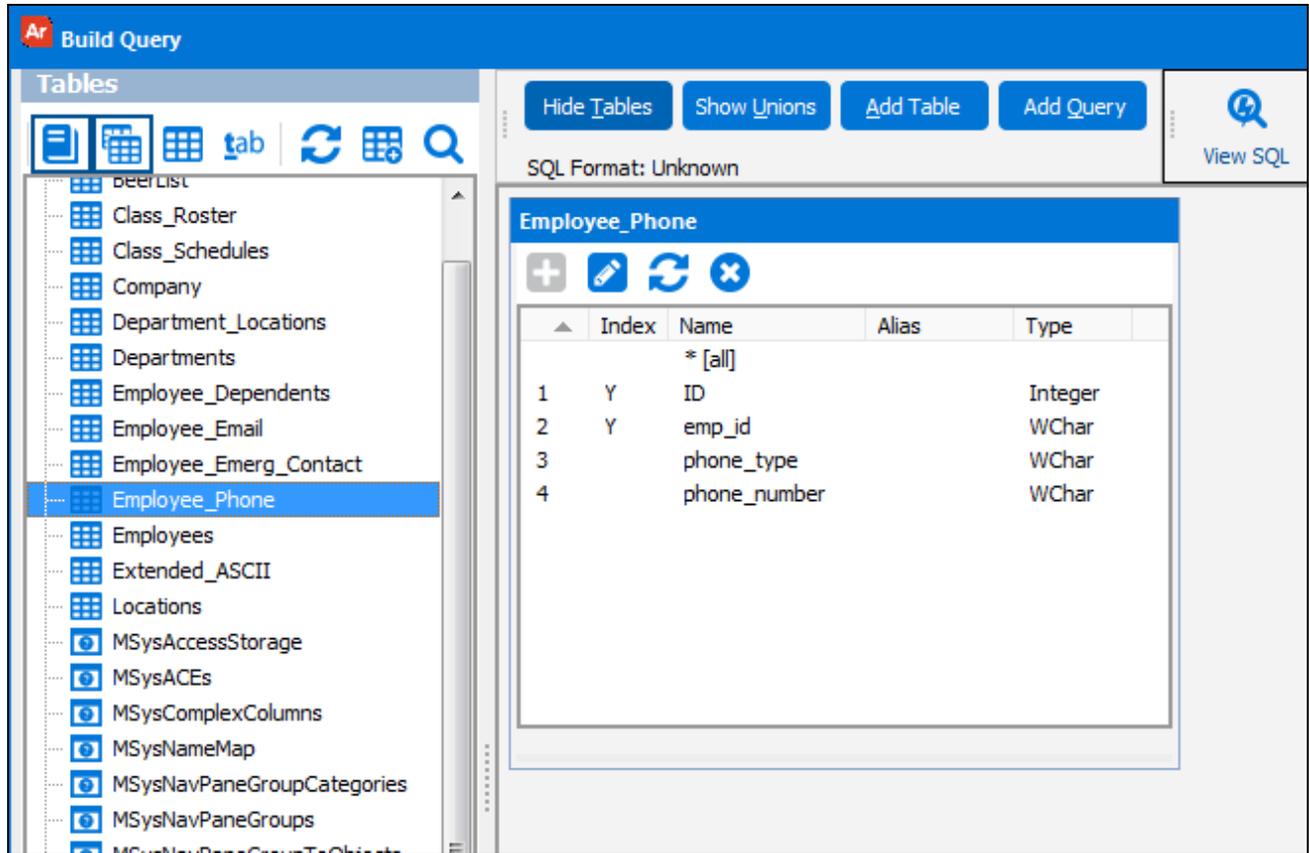


2. Click the blue plus icon  on the right to bring up the following dialog box in which you identify the properties of the dataset.
3. Name the dataset **empl\_phone** and set the Master Dataset to **ArgosData(main)**. ArgosData(main) is the dataset containing the Main Report query.

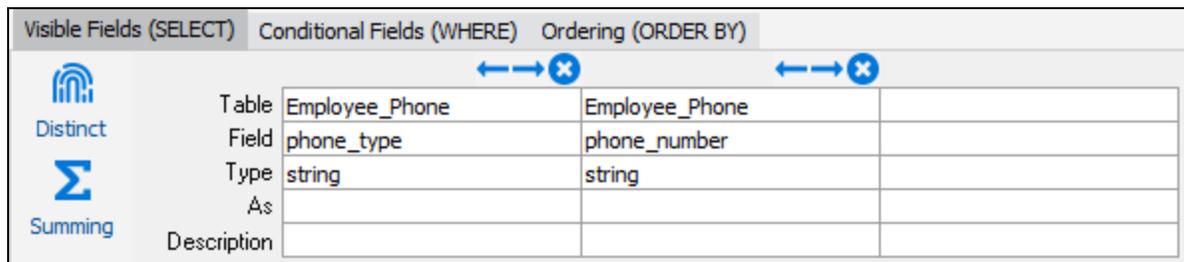


4. Click the Build Query icon  to bring up the Build Query dialog box. (This dialog builds the SQL query for your dataset.)

- Click the **Show Tables** button, then select the **Employee\_Phone** table.

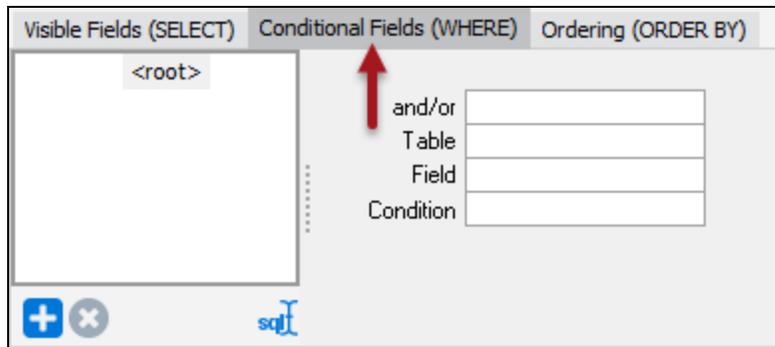


- In the **Employee\_Phone** table, double-click on the **phone\_type** and **phone\_number** fields which will place them into the tables at the bottom of the Build Query window.

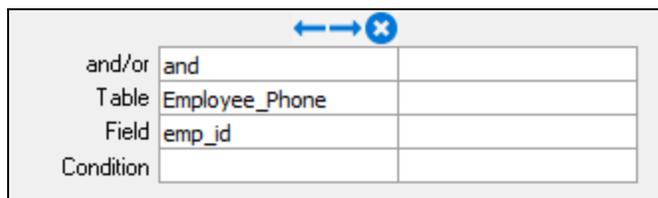


You will need to build the conditional (WHERE) clause next. The WHERE clause is utilized to link the **emp\_id** field in this table to the **emp\_id** field within the Employees table in the Main DataBlock.

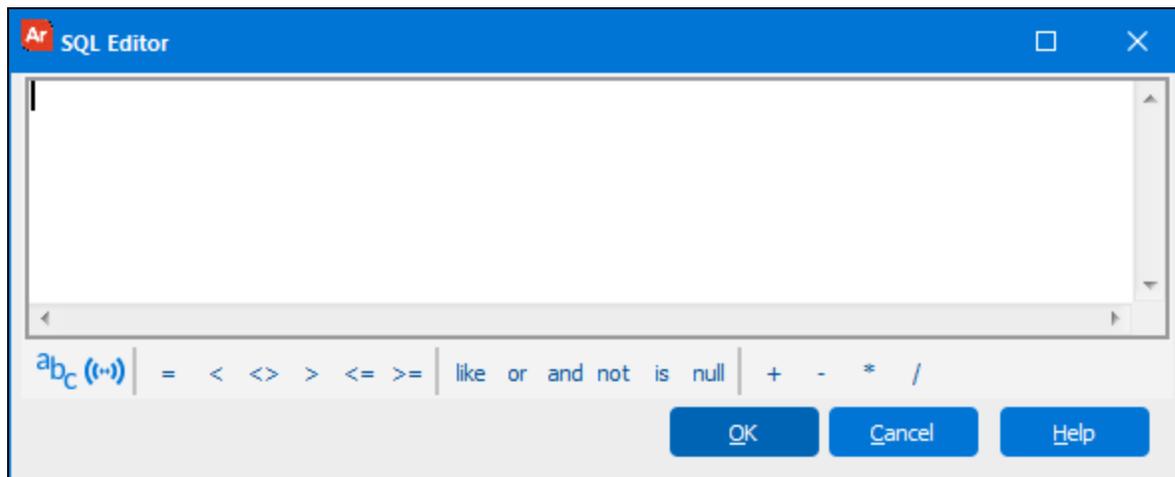
- Click on the Conditional Fields (WHERE) tab.



- In the **Employee\_Phone** table, double-click **emp\_id** to populate the **and/or**, **table**, and **field** fields.

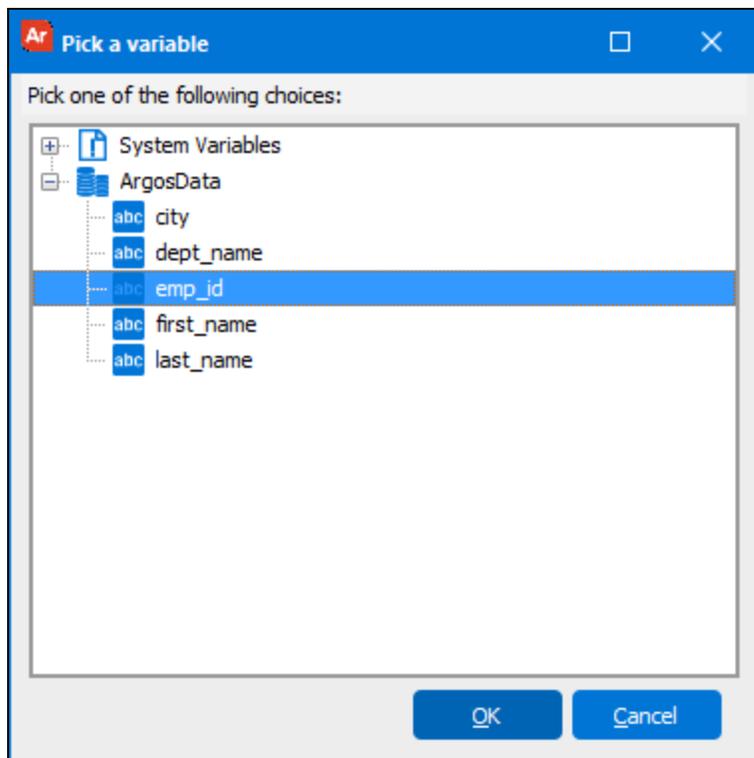


- In the **Condition** field, click the ellipses button **...** to open the SQL Editor window. (This is where you link the **emp\_id** field in this table to the **emp\_id** field within the Employees table in the Main DataBlock.)

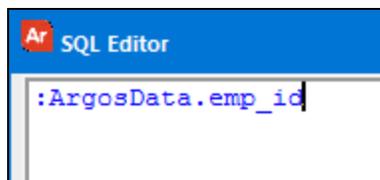


- Click the variable button **abc** to launch the **Pick a variable** dialog.
- Click the plus icon next to **ArgosData** to expand it.

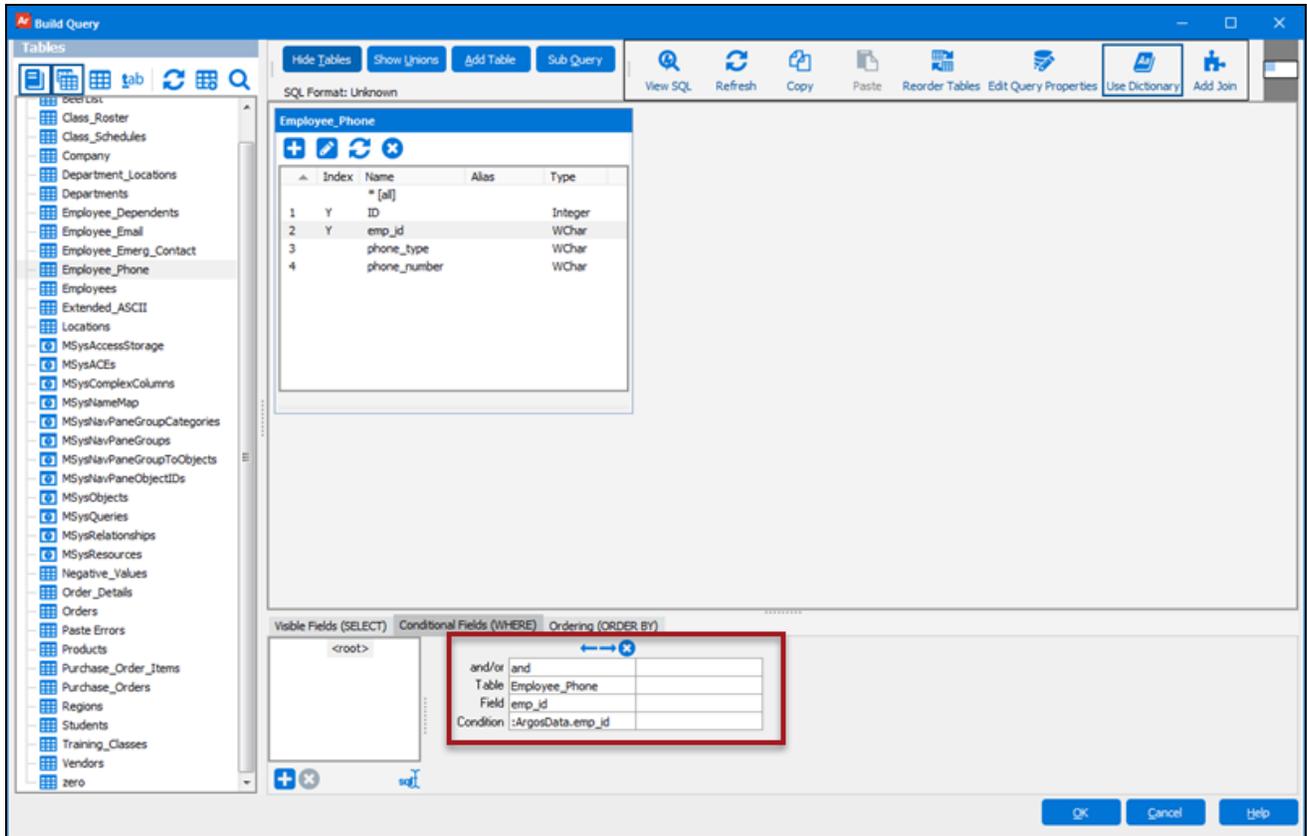
12. Select **emp\_id** from the list of variables.



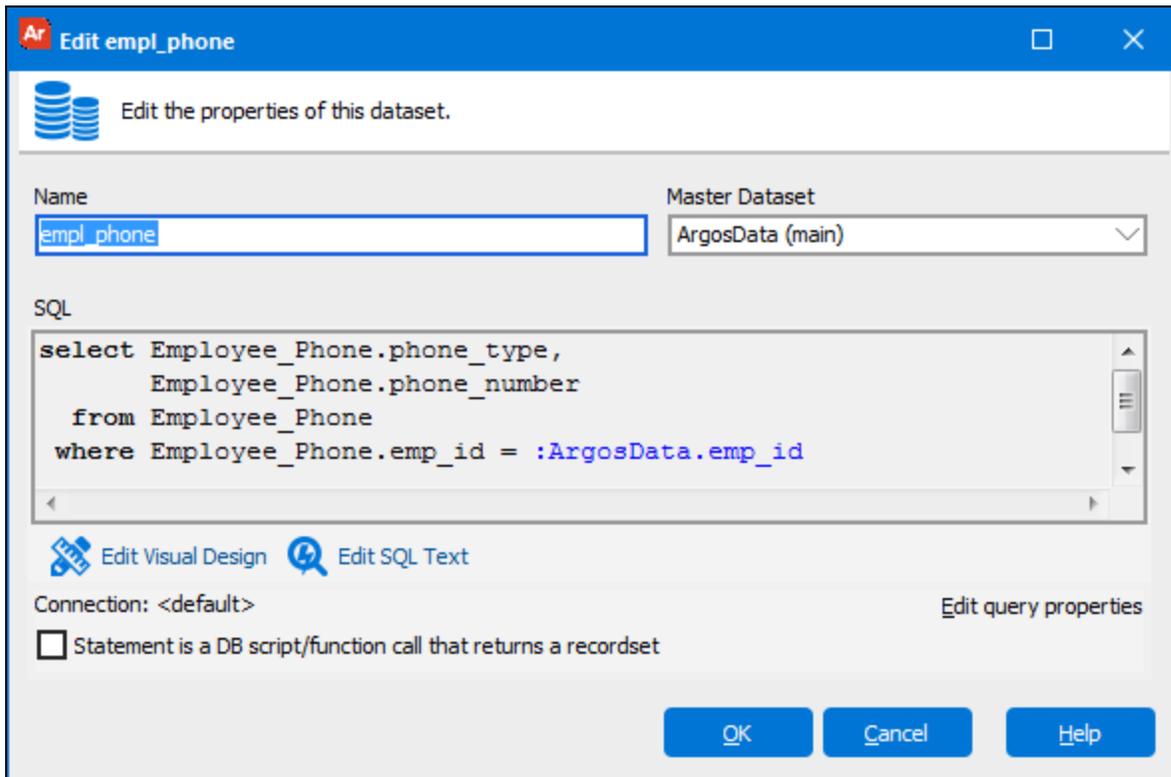
13. Click **OK** to return to the SQL Editor. The variable **ArgosData.emp\_id** is now in the text field of the SQL Editor.



- Click **OK** to return to the Build Query Window. All of the conditional fields are now populated.

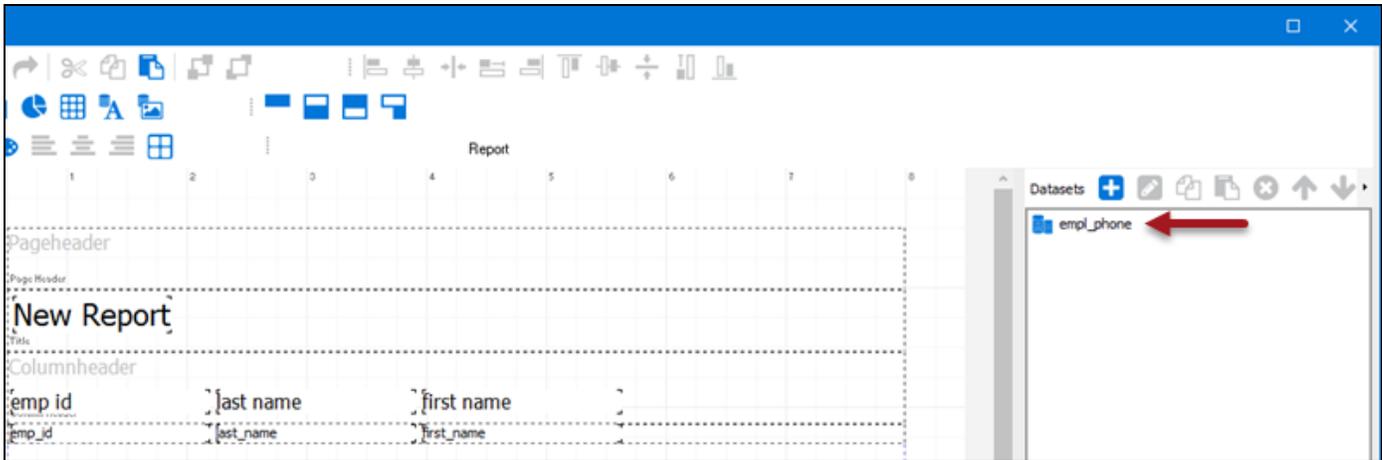


- Click **OK** to return to the Edit Dataset dialog. You will see the completed SQL query in the SQL text field.



16. Click **OK** to exit the dialog.
17. Click **Yes** to validate the query, then enter a test value for **emp\_id** when prompted.

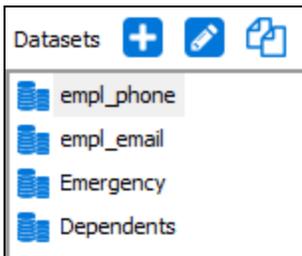
After the query is validated, you will be returned to the Banded Report Editor. The dataset you just created now appears in the Dataset pane on the right side of the window.



Use the above procedure to create the remaining datasets. Click the blue plus icon  to start creating the next dataset.

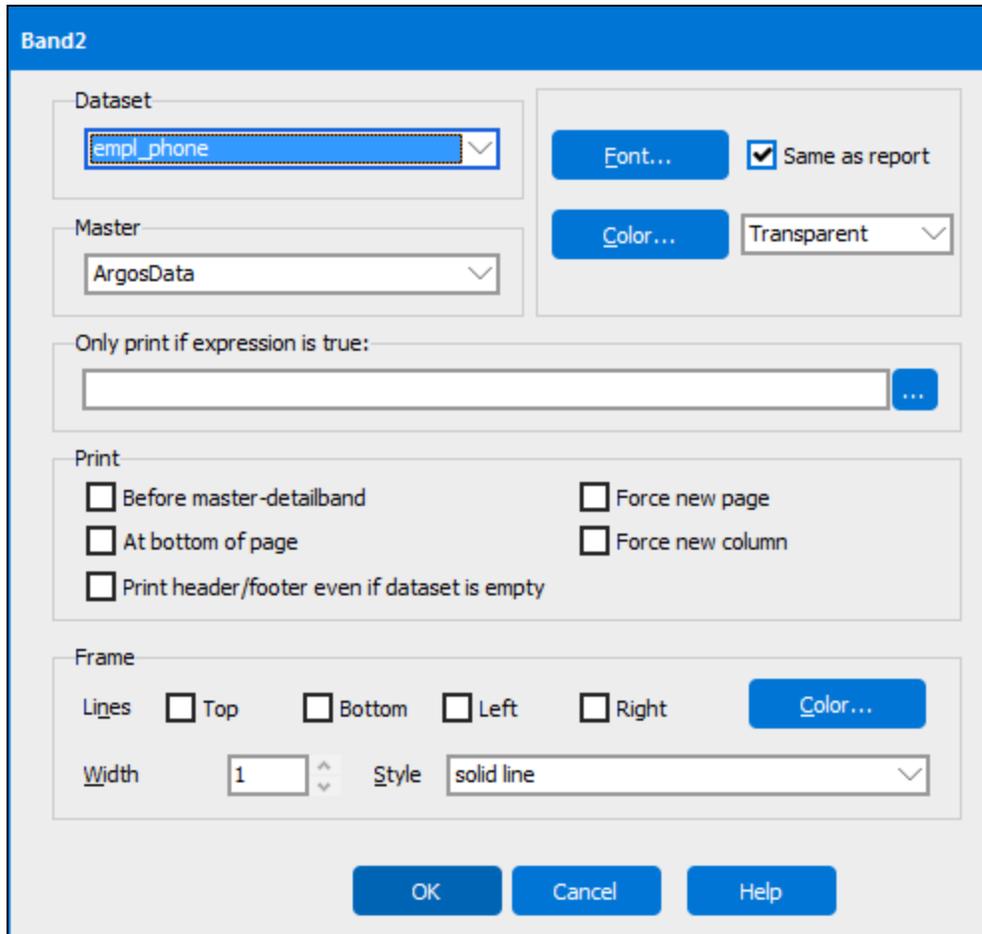
- Use the **Employee\_Email** table for the dataset named **empl\_email**.
- Use the **Employee\_Emerg\_Contact** table for the dataset named **Emergency**.
- Use the **Employee\_Dependents** table for the dataset named **Dependents**.

When you have finished creating the datasets, they will be displayed in the dataset pane on 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 sub detail band icon  on the toolbar. Then click anywhere within the Band Report Editor. The following dialog box will be displayed:



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.

Repeat the process for **empl\_email**, **Emergency**, and **Dependents**.

## 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 to launch the “Edit database text field dialog.

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:

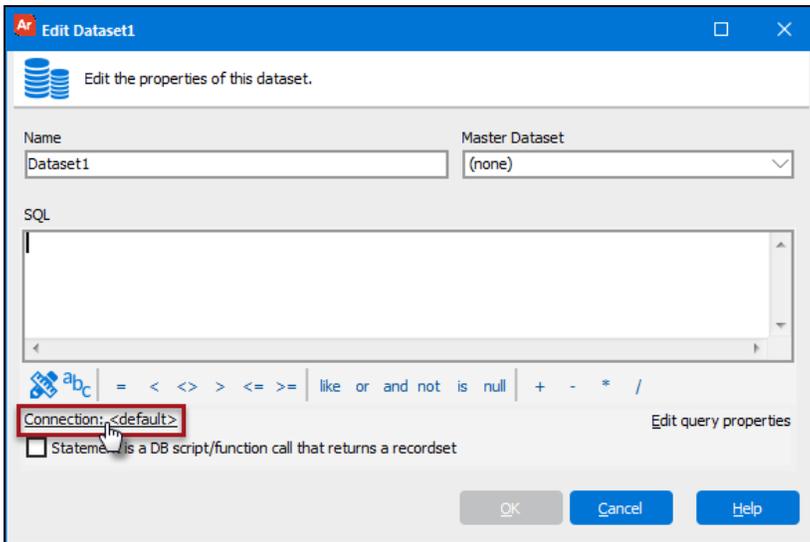
Titleband			
Title			
Employee Contact Information			
Employee ID:	ArgosData.last_name + ', ' + ArgosData.first_name		
Telephone no.	phone_type	phone_number	
Email Address	email_type	email_address	
Emergency Contact	Emergency.lastname + ', '	relationship	phone
Dependent	Dependents.last_name + ', '+	birth_date	dep_code

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.

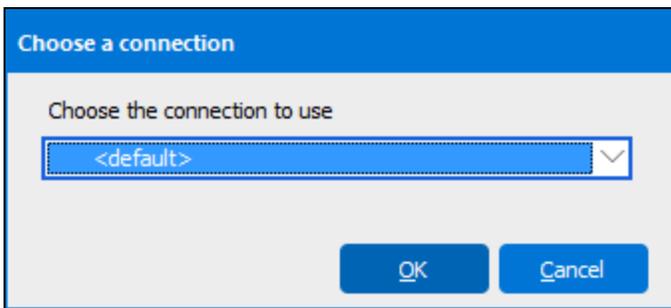
## Obtaining tables from an external database

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, click the blue plus icon  in the dataset pane to launch the Edit dataset dialog.



Click "Connection :< default>" in the lower left of the dialog box to bring up the list of available connections created by your MAPS Administrator. This will launch another dialog that allows you to choose an available connection from a drop-down list.



After choosing your connection, you can select tables from the external database, build the dataset query, and add fields to Sub-Detail Bands using the same methods described in [this example](#).

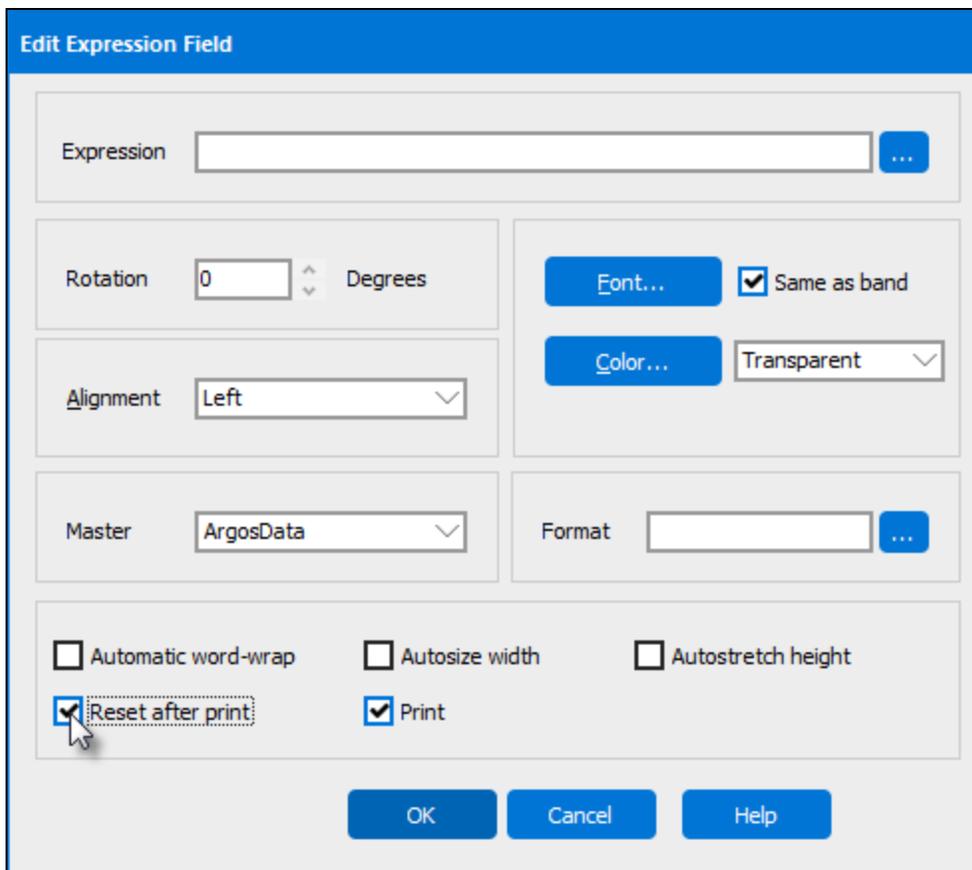
# Adding Parameter Input to the Report

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 the data source name, driver name and version, SQL format, etc.
- DataBlock name and path
- Report name and path
- Username and user type
- **The search parameters chosen from the DataBlock form.**

**Tip:** 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 **E=mc<sup>2</sup>** icon  on the Band Report Editor Toolbar, then clicking within the band where you want the field to be placed.



**Edit Expression Field**

Expression  ...

Rotation  Degrees

Alignment

Master

Format  ...

Automatic word-wrap  Autosize width  Autostretch height

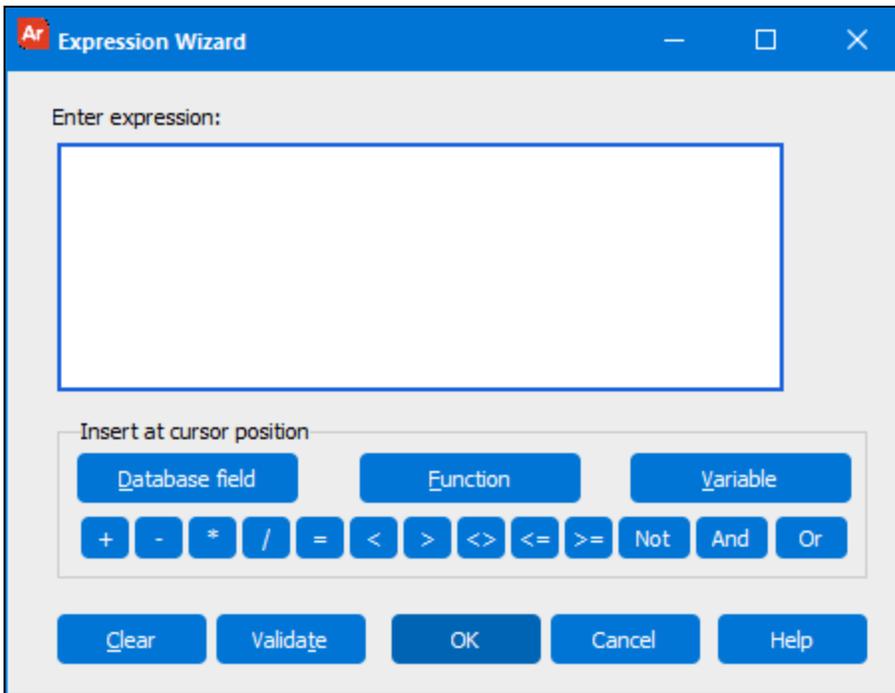
Reset after print  Print

Font...  Same as band

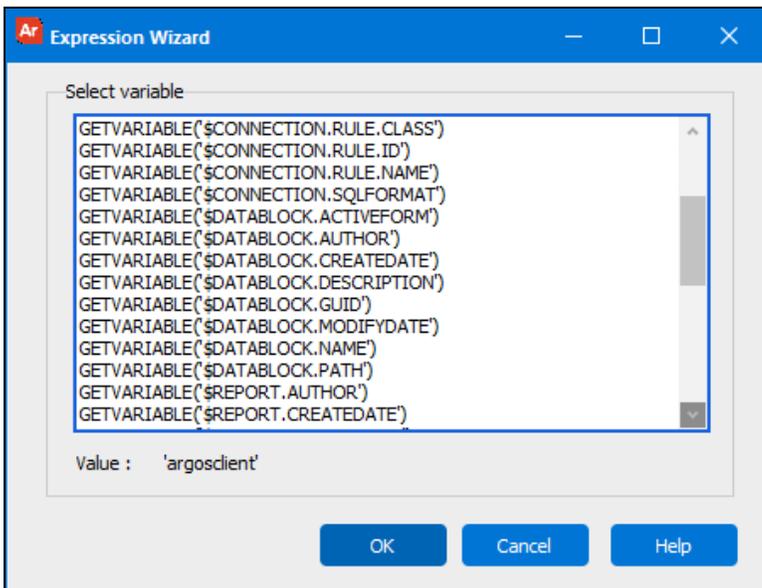
Color...

OK Cancel Help

Click on the ellipses icon  to the right of the expression box to launch the Expression Editor.



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 preceded with a \$ are system variables. Variables without the \$ are items selected from the DataBlock form used to create the report.



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 [this example](#).

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').

Employee Roster							3/11/2010
470	Pham	Christna	8/31/1996	37000	New Orleans	South	Page No. 2 of 2
788	Kline	Chris	1/22/2002	34000	San Francisco	Southwest	
Number of Employees = 12 Sum of Employee Salaries = 459000							
<hr/> Total Number of Employees = 37 Total Sum of Employee Salaries = \$2,382,000.00							
DataBlock Name	User Guide						
Departments Selected	Product Dev HR Sales						

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

---

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.

<b>Group Header 1</b>	Detail 2001
Detail 1001	Detail 2002
Detail 1002	Detail 2003
Detail 1003	Detail 2004
Detail 1004	<b>Group Header 3</b>
Detail 1005	Detail 3002
Detail 1006	Detail 3003
<b>Group Header 2</b>	Detail 3004

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.

<b>Group Header1</b>	<b>Group Footer 1</b>
Detail 1001	<b>Group Header 2</b>
Detail 1002	Detail 2001
Detail 1003	Detail 2002
Detail 1004	Detail 2003
Detail 1005	Detail 2004
Detail 1006	<b>Group Footer 2</b>
Detail 1007	

## Lonely Group Header Band

---

To format your report so that group header and footer bands appear with their data on the same page, use the "Link with Band" feature. This feature is available for all band types.

To use the "Link with Band" feature, set the link inside the band that comes first, and link that band to the very next band (e.g., link the group header to the detail band).

To fix a lonely group header:

1. Right-click on the group header and select **Edit** to launch the group header edit dialog.
2. From the "Link with band" drop-down, select the detail band for the group header.
3. Click **OK** to exit the dialog.

**Header1**

Master: ArgosData

Footer Band: Footer1 Create

Group-by field or expression: ArgosData.dept\_name ...

Font...  Same as report

Color... Use Color ...

**Link with band:** Detailband

Only print if expression is true: ...

Print

At bottom of page  Force new page (before)  Force new column

Reprint on new page  Force new page (after)

Frame

Lines  Top  Bottom  Left  Right Color...

Width: 1 ... Style: solid line ...

OK Cancel Help

Setting the link in the header band forces the header band to the page with the linked detail band (as shown in the image below). In this case, the group header band is linked to the detail band "Detailband". Notice how there is still room for more data on page 1, but the second group header is printed on the next page.

<b>Group Header 1</b>	<b>Group Header 2</b>
Detail 1001	Detail 2001
Detail 1002	Detail 2002
Detail 1003	Detail 2003
Detail 1004	Detail 2004
Detail 1005	<b>Group Header 3</b>
Detail 1006	Detail 3002
---	Detail 3003

**Note:** The linking must be done on the band that prints first-- it will not work if you attempt to link the detail band back to the group header band.

## Lonely Group Footer Band

In the case of the lonely group footer, you would set "Link with band" in the detail band because the group footer band comes after the detail band.

To fix a lonely group footer:

1. Right-click on the detail band and select **Edit** to launch the detail band edit dialog.
2. From the "Link with band" drop-down, select the footer band for your group header.
3. Click **OK** to exit the dialog.

**Detailband**

Type: Detail

Font...  Same as report Color... Transparent

Link with band: Footer 1 Only print if expression is true: [ ]

Print:

Not on first page  At bottom of page  
 Not on last page  Force new page (before)  
 Even page numbers only  Force new page (after)  
 Odd page numbers only  Force new column

Frame:

Lines  Top  Bottom  Left  Right Color...

Width: 1 Style: solid line

OK Cancel Help

Setting the link in the header band forces the last record of the detail band to the next page, so that it can appear with the footer band (as shown in the image below). In this case, the detail band was configured to link with the Footer 1 band. Notice that 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.

**Group Head**

Detail 1001  
Detail 1002  
Detail 1003  
Detail 1004  
Detail 1005  
Detail 1006

---

Detail 1007

**Group Footer 1**

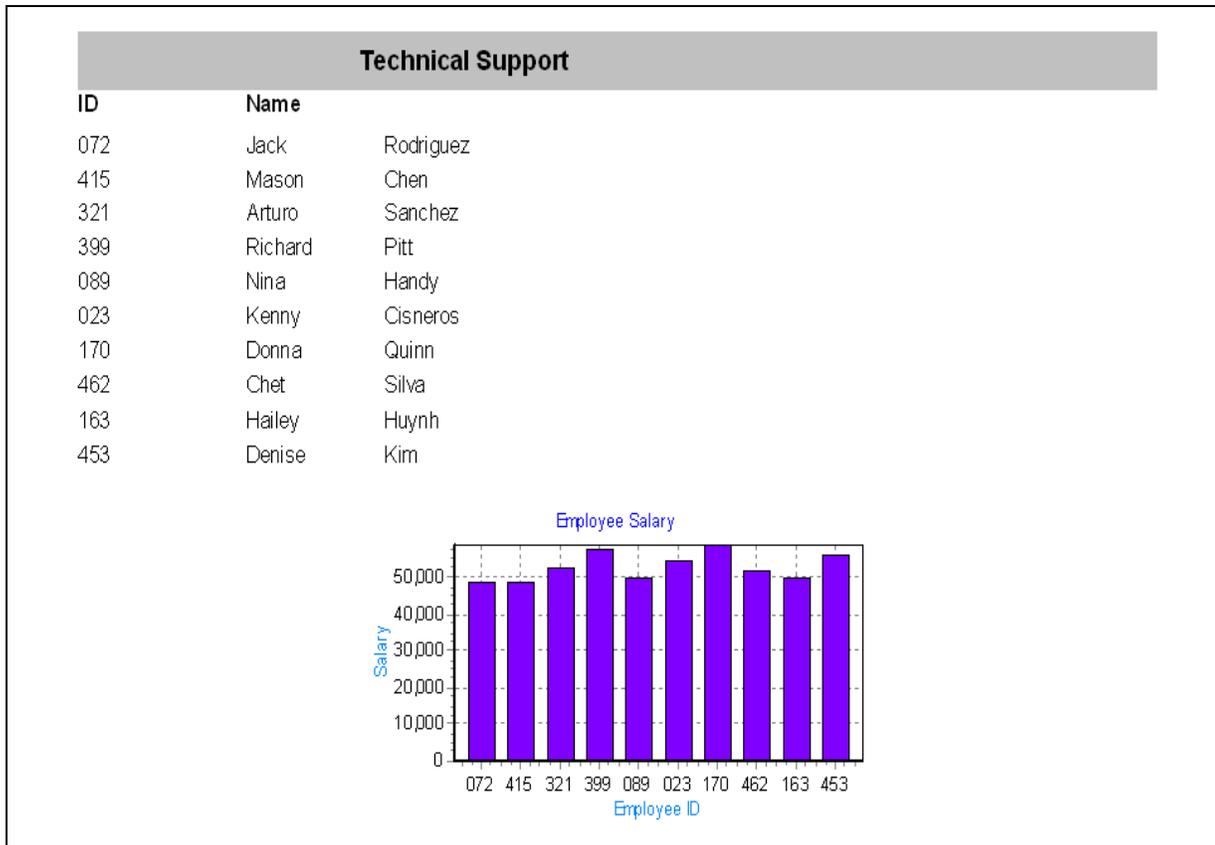
**Group Head**

Detail 2001  
Detail 2002  
Detail 2003  
Detail 2004

**Group Footer 2**

# Creating a Chart

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



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

## 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.

**Tip:** 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 remainder of this example is devoted to creating the chart that will be placed within the Summary Band.

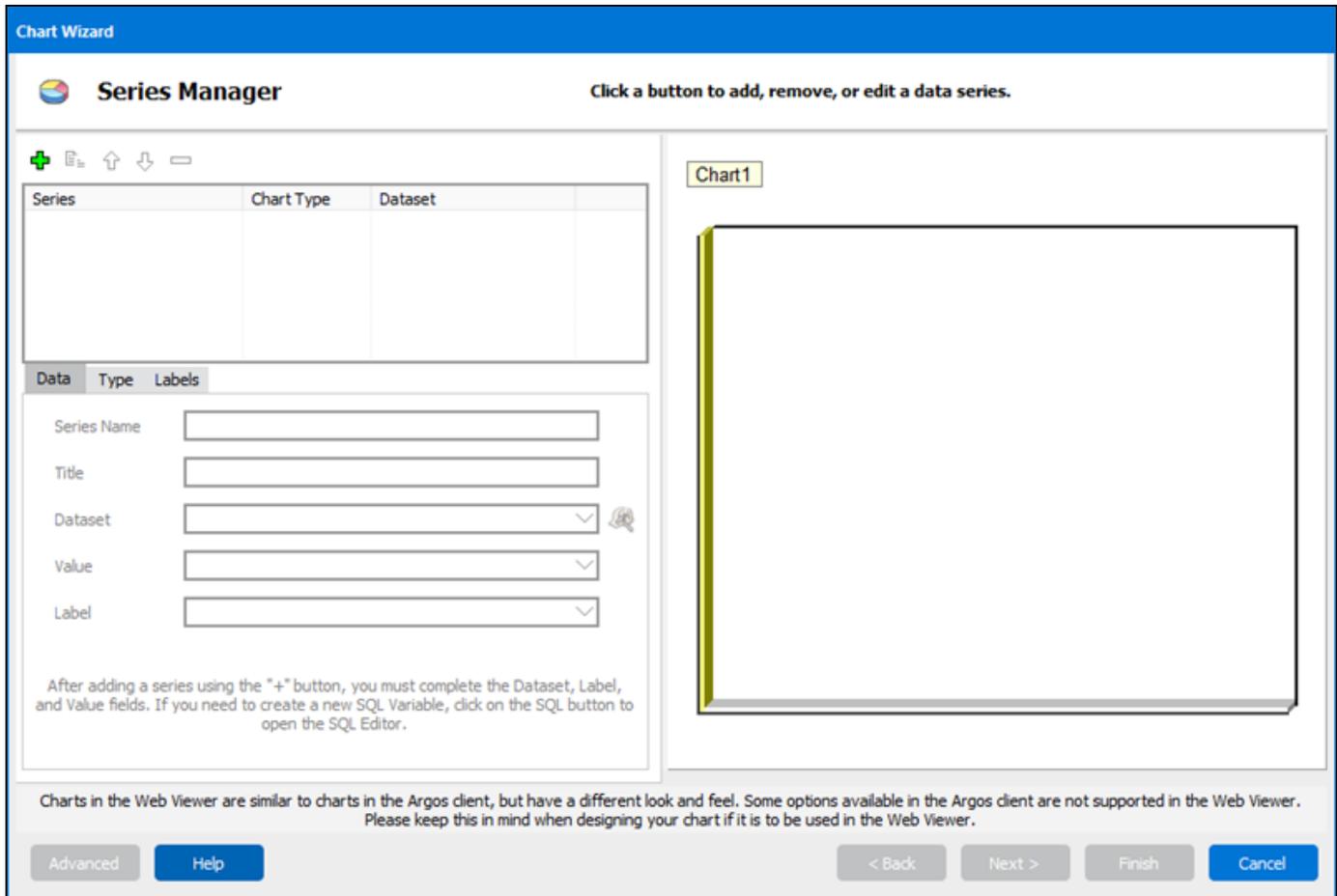
Band5		
Title		
GETVARIABLE('DROPDOWN1.DEPT_NAME')		
ID	Name	
emp_id	first_name	last_name

## Add a Summary Band

A chart can be added to any type of band. For this example it is added to the Summary Band. Click the "Create a new band" icon  and select **Summary** for the type.

## 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 chart wizard welcome screen will appear. Click **Next** to start the wizard.



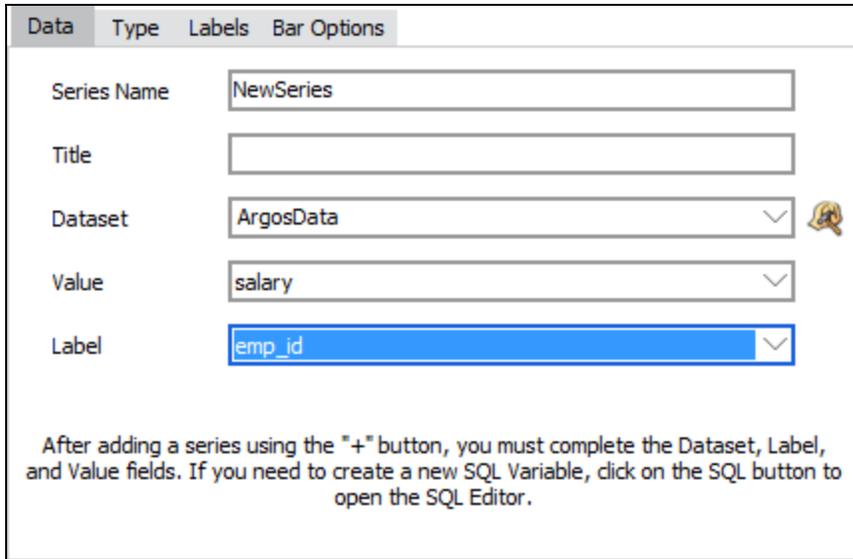
The screenshot shows the 'Chart Wizard' dialog box, specifically the 'Series Manager' tab. The title bar reads 'Chart Wizard' and the main title is 'Series Manager'. A subtitle says 'Click a button to add, remove, or edit a data series.' On the left, there is a table with columns 'Series', 'Chart Type', and 'Dataset'. Below the table are input fields for 'Series Name', 'Title', 'Dataset' (with a dropdown arrow), 'Value' (with a dropdown arrow), and 'Label' (with a dropdown arrow). A note at the bottom of the form states: 'After adding a series using the "+" button, you must complete the Dataset, Label, and Value fields. If you need to create a new SQL Variable, click on the SQL button to open the SQL Editor.' On the right, there is a preview area labeled 'Chart1' showing a large empty rectangular box. At the bottom of the dialog, there are buttons for 'Advanced', 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

## Follow the Chart Wizard

The Chart Wizard that will guide you through the process of creating a chart.

1. Click the Green Plus icon  to add a series. More than one series of data can be displayed on a chart, but for this example only one series will be used.
2. Select **ArgosData** within the Dataset field.
3. Select **salary** for the Value field.

4. Select **emp\_id** for the Label field.



Series Name: NewSeries

Title:

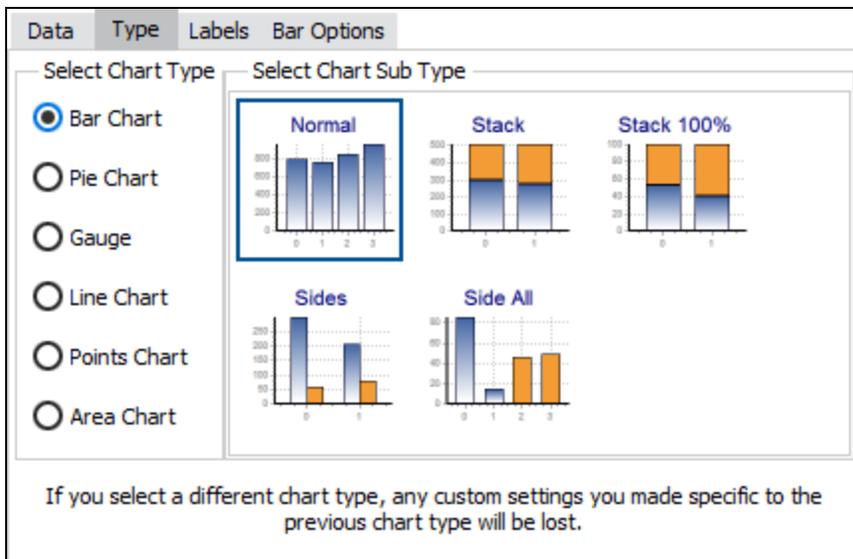
Dataset: ArgosData

Value: salary

Label: emp\_id

After adding a series using the "+" button, you must complete the Dataset, Label, and Value fields. If you need to create a new SQL Variable, click on the SQL button to open the SQL Editor.

5. 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.



Select Chart Type: Bar Chart

Select Chart Sub Type: Normal

If you select a different chart type, any custom settings you made specific to the previous chart type will be lost.

6. Click on the **Labels** tab to display various label options.
7. Uncheck the "Visible Label" box. This removes the label from the top of each bar in the chart. For more information about labels, refer to the [Chart Wizard documentation](#).

8. Click **Next** to continue to the Chart Theme and Panel screen. Here you can adjust the theme, colors, and borders. For this example, we will be using the default settings.

**Chart Wizard**

### Chart Theme and Panel

Select a predefined chart theme. (Optional)

**Apply a Theme**

- Default
- Microsoft Excel
- Classic
- Business
- Web
- Windows XP
- Blues
- Facts
- Dashboard

**Select a Palette**

- Web
- Modern
- Rainbow
- Win XP
- Mac OS
- Win Vista
- Gray Scale
- Opera
- Cool

**Format Background Panel**

**Color**

- Default
- Transparent

**Border Options**

Bevel Inner: None

Bevel Outer: Raised

Width: 1

Separation: 0

Round Border: 0

**Border**

**Chart1**

text1 text2 text3 text4 text5 text6 text7 text8 text9

text1 text2 text3 text4 text5 text6 text7 text8 text9

Charts in the Web Viewer are similar to charts in the Argos client, but have a different look and feel. Some options available in the Argos client are not supported in the Web Viewer. Please keep this in mind when designing your chart if it is to be used in the Web Viewer.

Advanced Help < Back Next > Finish Cancel

- Click **Next** to continue to the Chart Legend and Titles screen.

**Chart Wizard**

### Chart Legend and Titles

Configure details for the chart legend.

Select Object	Title
Legend Style and Title	
Main Title	Employee Salary
Sub Title	
Footer	
Sub Footer	
Vertical Axis Title	
Horizontal Axis Title	

**Legend Style and Position** | Title | Format

Legend Visible

Legend Style: Automatic

Label Style: Plain

Inverted

Font Series Color

Vert. Spacing: 0

Margin: 0

Position Offset %: 10

Legend Position:

Top

Bottom

Right

Left

Dividing Lines

Employee Salary

text1	text2	text3	text4	text5	text6	text7	text8	text9
360	130	480	190	210	50	450	240	40

Charts in the Web Viewer are similar to charts in the Argos client, but have a different look and feel. Some options available in the Argos client are not supported in the Web Viewer. Please keep this in mind when designing your chart if it is to be used in the Web Viewer.

Advanced Help < Back Next > Finish Cancel

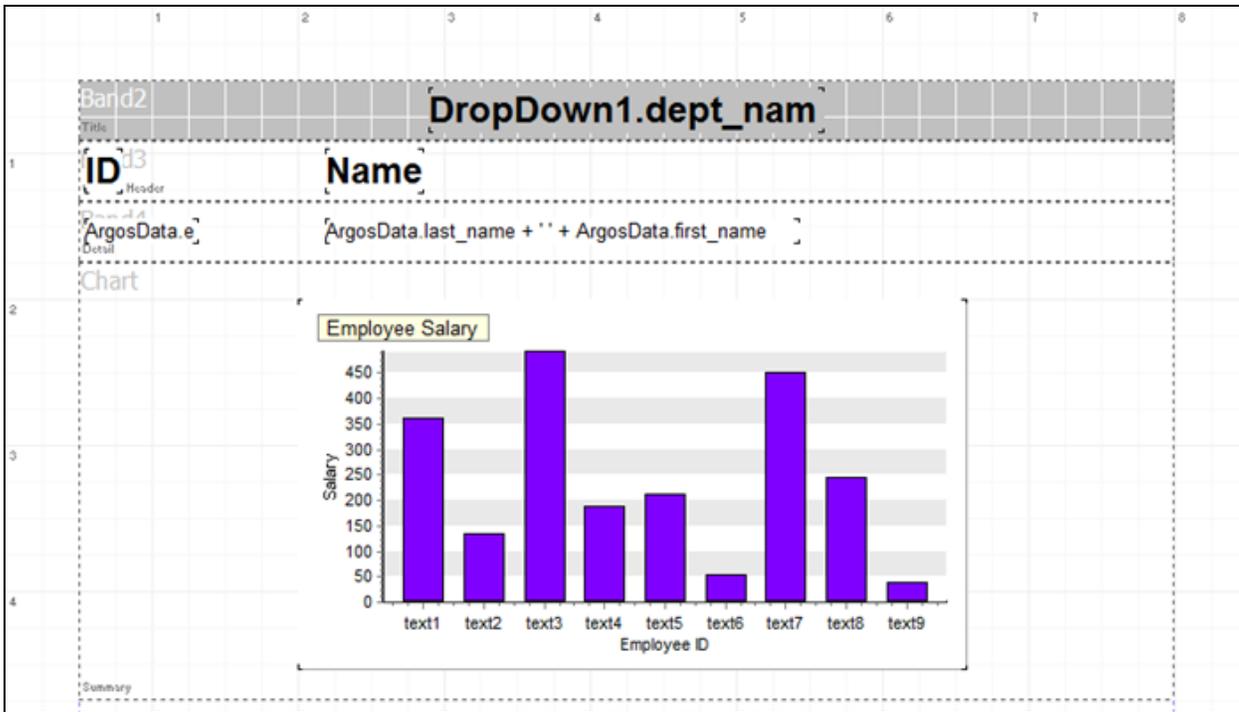
- Highlight **Legend Style and Title** in the object listbox in the upper left corner.
- Uncheck the **Legend Visible** check box. We will not be using the legend in this example.
- Click "Main Title" in the object listbox.
- Enter "Employee Salary" into the "Enter Title Here" box.
- Click **Vertical Axis Title** then enter "Salary" for into the "Enter Title Here" box.
- Click **Horizontal 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

- Click **Finish** to return to the Band Report Editor.

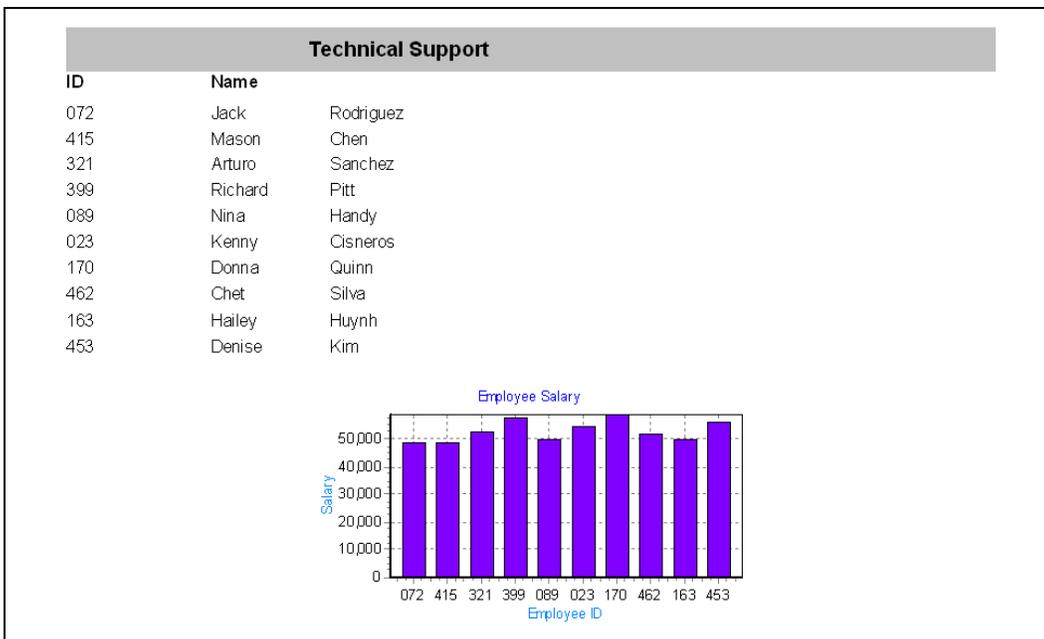
**Info:** See the [Argos DataBlock Designer Guide](#) for a more complete description of Charting within Argos.

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



Select "Technical Support" for the Department Name, then run the report.

Department Name



# Creating an Extract Report

## 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.

The image shows two report formats side-by-side. On the left is a 'Banded Report' titled 'Employee Roster'. It features a header band, a data band with columns for EMPID, LASTNAME, FIRSTNAME, HIRE DATE, SALARY, CITY, and REGION, and a summary band at the bottom. On the right is an 'Extract Report' showing a fixed-width text output with fields for employee ID, name, address, and company, separated by specific delimiters and positions.

Available report formats:

- **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.

<b>Record Type</b>	<b>Usage</b>
<b>T</b>	<b><i>The first record in the file. Identifies the institution sending the file to the IRS.</i></b>
<b>A</b>	<b><i>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).</i></b>
<b>B</b>	<b><i>Identifies the payee (the vendor that received payments) and the payment amounts to each payee. One record for each payee.</i></b>
<b>C</b>	<b><i>Sum of B records (payment amounts) for the payees.</i></b>
<b>F</b>	<b><i>End of Transmission records. Contains total number of payers and payees.</i></b>

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**

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

**A Record**

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

**B Record**

<b>Field Name</b>	<b>Width</b>	<b>Value</b>	<b>Fill Character</b>	<b>Alignment</b>
<b>Record Type</b>	<b>1</b>	<b>B</b>		
<b>Payment Year</b>	<b>4</b>	<b>2009</b>		
<b>Record Sequence Number</b>	<b>10</b>	<b>Obtained from DataBlock</b>	<b>zero</b>	<b>right</b>

<b>Field Name</b>	<b>Width</b>	<b>Value</b>	<b>Fill Character</b>	<b>Alignment</b>
<b>Payee TIN</b>	<b>9</b>	<b>Obtained from DataBlock</b>		
<b>Payee Name</b>	<b>20</b>	<b>Obtained from DataBlock</b>	<b>blank</b>	<b>left</b>
<b>Total payments to payee</b>	<b>12</b>	<b>Obtained from DataBlock – 12 numeric characters. No decimal points, commas or dollar signs. Rightmost 2 characters for cents</b>	<b>zero</b>	<b>right</b>

**C Record**

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

## F Record

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

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

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

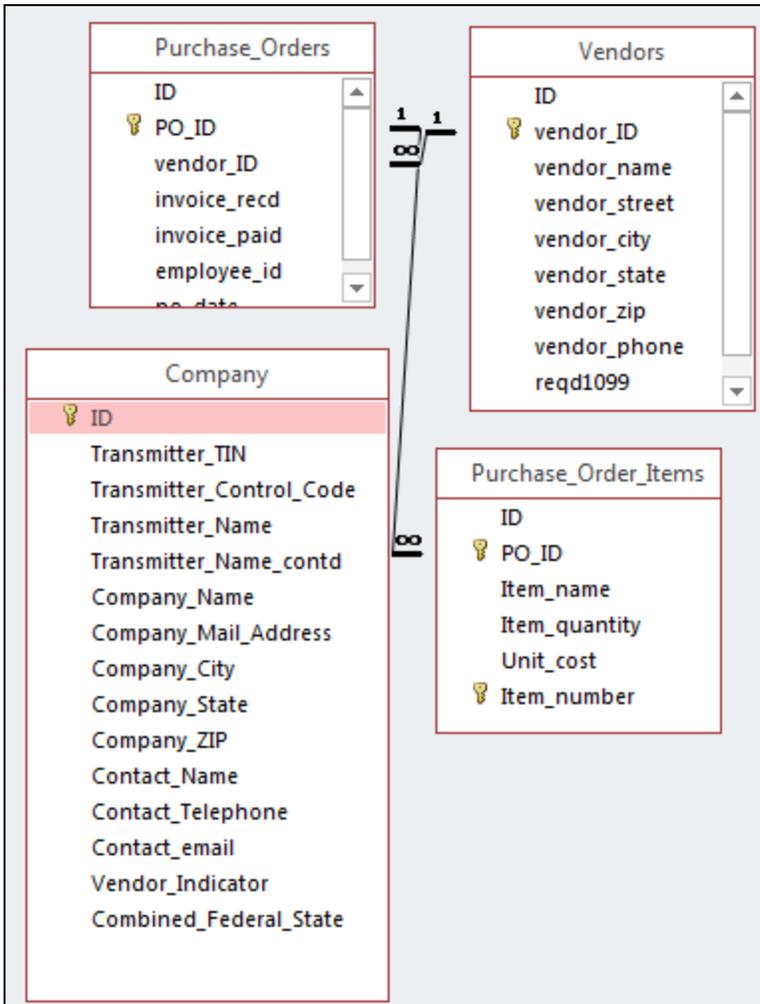
- [Create the new report](#) in the Argos Explorer and give it a name.
- [Launch the Extract Report Editor](#), where the report design takes place.
- [Configure the Report](#).
- [Add datasets](#) to be used in the report.
- [Add the section and fields for the T Record Type](#) (Title section).
- [Add 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

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.



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 or dashboard**

Create a new Argos report or dashboard for the selected DataBlock. After clicking "Create" you will be able to edit the design as well as other details.

Name:   Shared  Private

Description:

Choose the type that Argos should generate

- Dashboard
- Comma delimited (CSV)
 

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), or for creating a fixed-width file in which each field is precisely positioned on a given line.
- Banded (graphics, text, charts, etc)
- Extract text report

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.

**Edit Report**

Edit the details of this report or dashboard. Click the "Design" button to alter the design of the report (this is not available for dashboards).

General | **Filters** | Sort | Refresh | API | Saved Execution States

Edit the design of the report

Report Name:   Shared  Private

Description:

Click the **Design** button to launch the Extract Report Editor.

# The Extract Report Editor

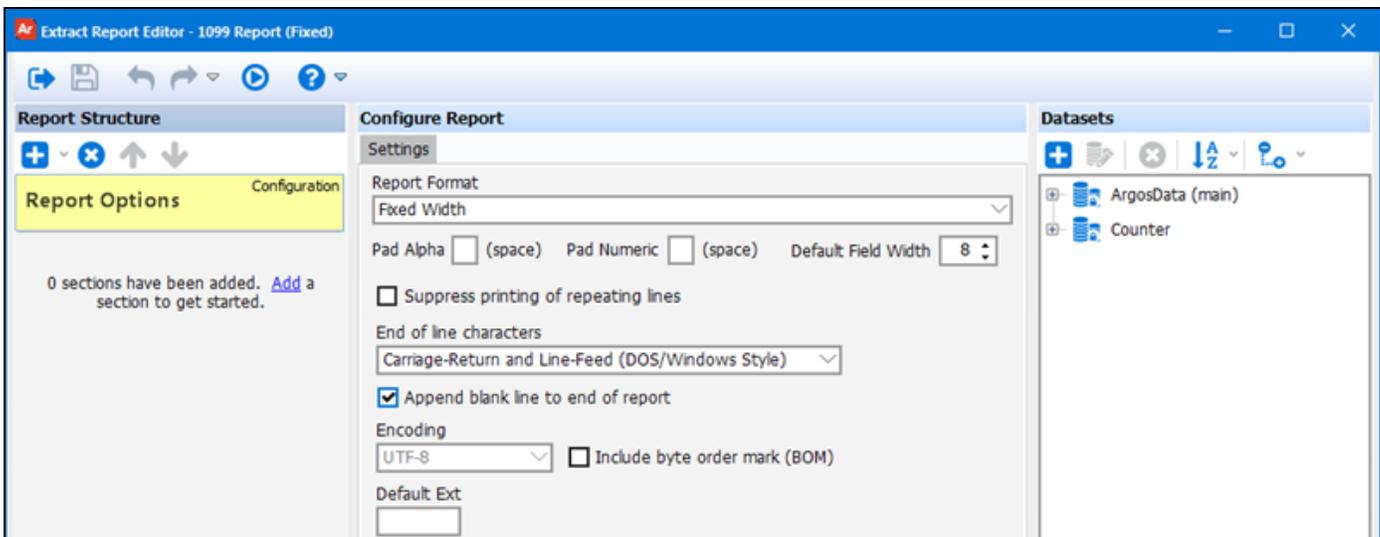
Click **Design** on the Edit Report dialog to launch the Extract Report Editor.

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:** Defines the sections used in the report. It also specifies properties that apply to all sections and fields.
- **Configure Report:** Specifies properties of individual sections and fields. Fields are also added in this area.
- **Datasets:** Creates and displays datasets used in the report.

**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.



## Toolbar

Below are descriptions of the tool icons found on the Extract Report Editor toolbar.

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

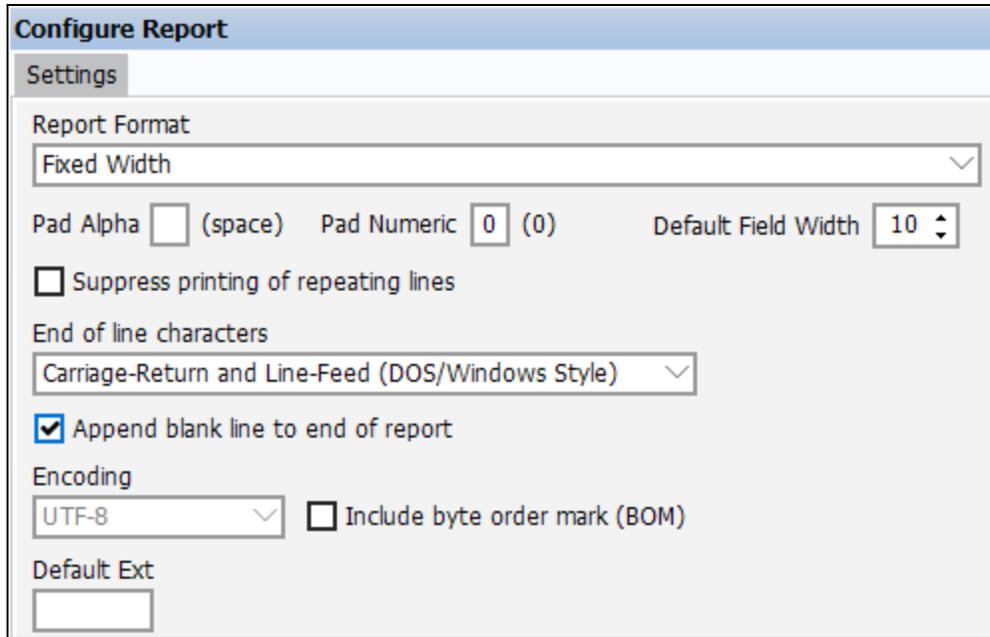
## Data Types

There are four data types that you will find in data sets: string, float, integer, and date. The string data type will contain regular written text and can contain anything; including, numbers, letters, and special characters. Sting is used for fields that contain things like names, ID numbers, and addresses. The float data type are your numbers that have decimal values; for example, a field containing a cost will be a float. The integer data type is a whole number (i.e. a number without a decimal). A field containing the number of employees or the number of records, for example, will use an integer as its data type. The date data type is for dates and times.

<b>Icon</b>	<b>Data type</b>
	<i>string</i>
	<i>float</i>
	<i>integer</i>
	<i>date</i>

## Configure the Report

The first step is to configure the report by selecting options shown within the “Configure Report” area of the Extract Report Editor. Click “Report Options” to display the options under the Settings tab.



The screenshot shows the 'Configure Report' dialog box with the 'Settings' tab selected. The 'Report Format' dropdown is set to 'Fixed Width'. The 'Pad Alpha' checkbox is unchecked, 'Pad Numeric' is set to '0' with '(0)' in parentheses, and 'Default Field Width' is set to '10'. The 'Suppress printing of repeating lines' checkbox is unchecked. The 'End of line characters' dropdown is set to 'Carriage-Return and Line-Feed (DOS/Windows Style)'. The 'Append blank line to end of report' checkbox is checked. The 'Encoding' dropdown is set to 'UTF-8', and the 'Include byte order mark (BOM)' checkbox is unchecked. The 'Default Ext' field is empty.

**Note:** Although there are three different output report formats, the report design process is virtually identical for all report types.

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.

**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**

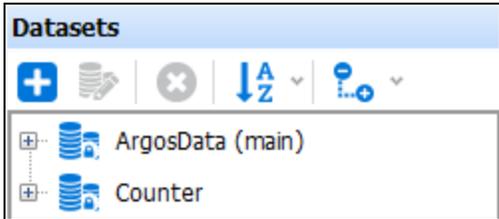
When saving a report after execution, Argos will use the following default file extensions:

- .txt for fixed width reports
- .txt for delimited reports
- .xml for XML reports

If a default extension is specified in the report configuration, the user will only see that extension in the list of file types when saving the report.

## Add Datasets

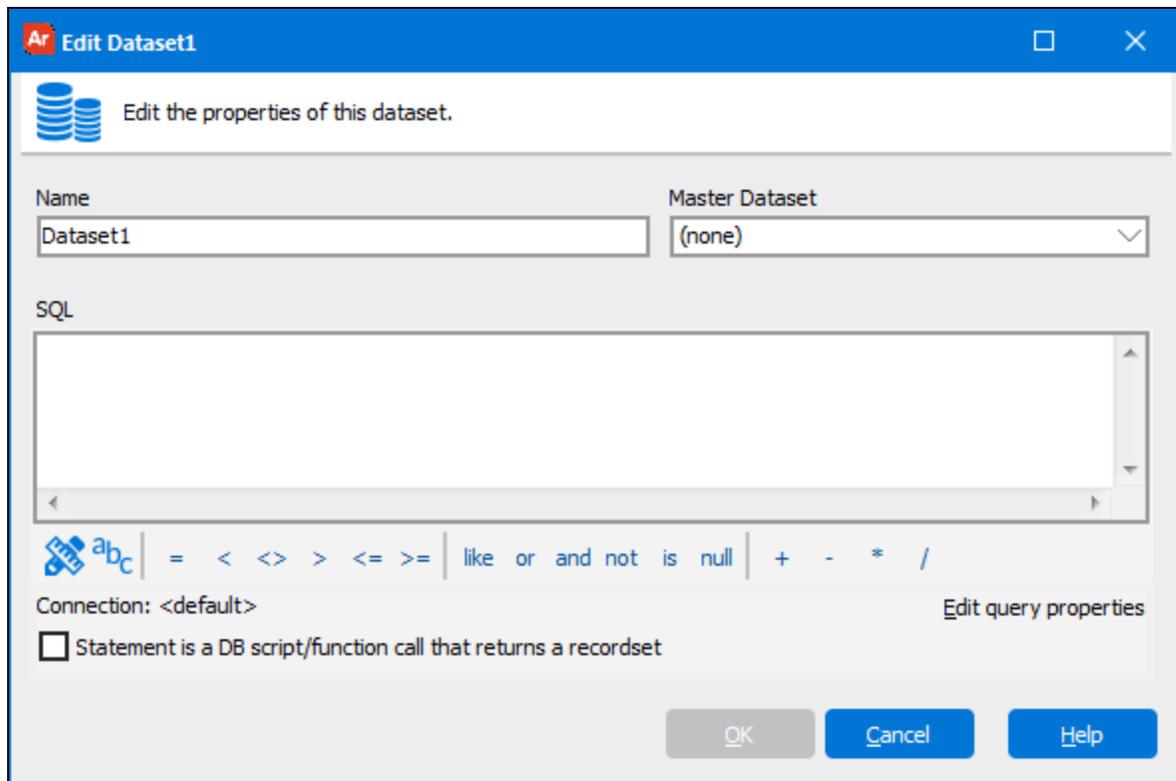
The next step is to add the datasets that will be used in the report. The datasets that were created in the DataBlock's Report Query are displayed as shown in the figure below. The ArgosData dataset is the main dataset that obtains payments made to vendors. The Counter dataset contains a count of the 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 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.

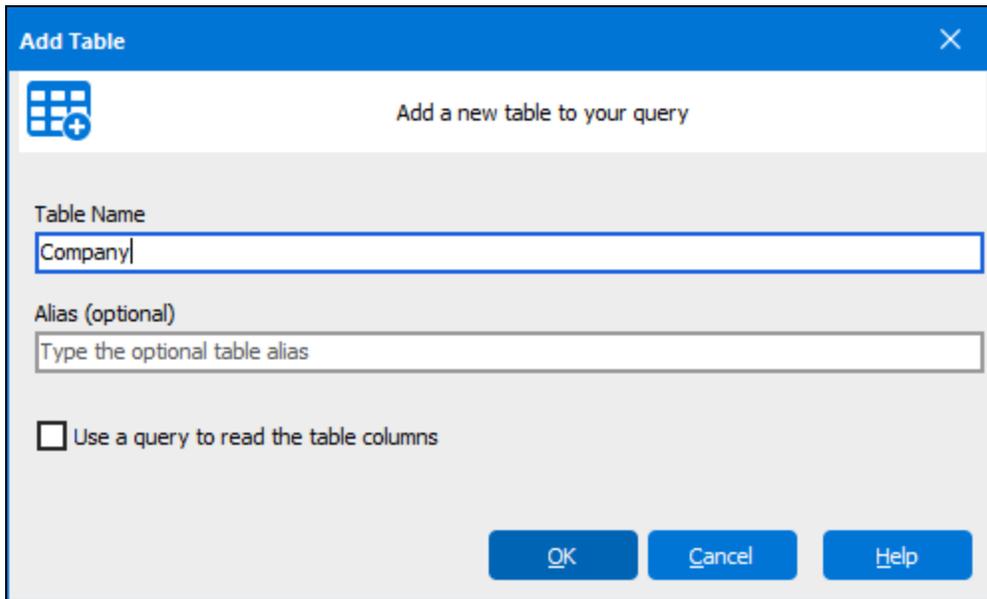
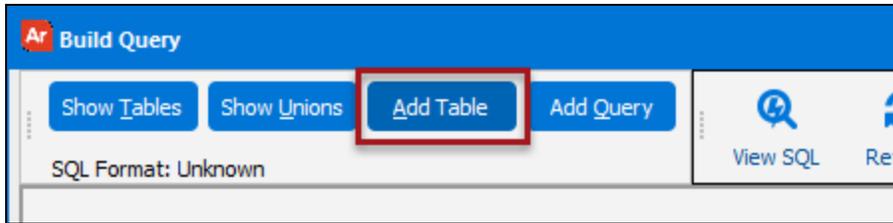
To add a dataset:

1. Click the blue plus sign .

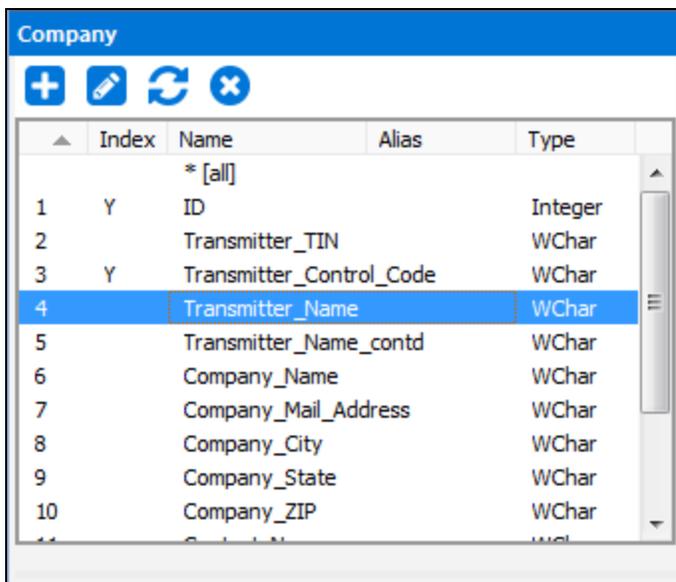


2. Name the dataset "Company",
3. Click the Build Query icon  to display the Build Query dialog. This Dataset is not a child of another Dataset; so leave the **Master Dataset** field as "(none)."

- Click the [Add Table](#) button, enter "Company" for the name of the table, then click **OK**.



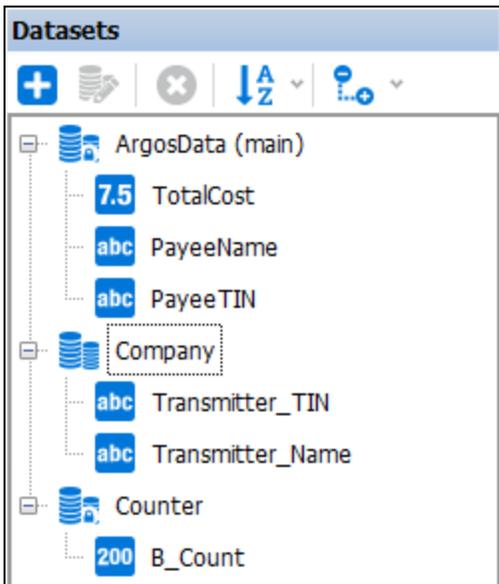
- The "Company" table will be displayed. Double-click on Transmitter\_TIN and Transmitter\_Name as they will be used in the T and A records.



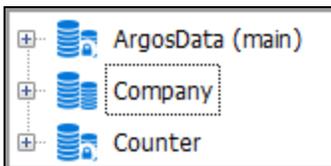
- Click **OK** to continue.

After clicking **OK**, you will be returned to the Main Interface with the newly added Company Dataset shown.

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.

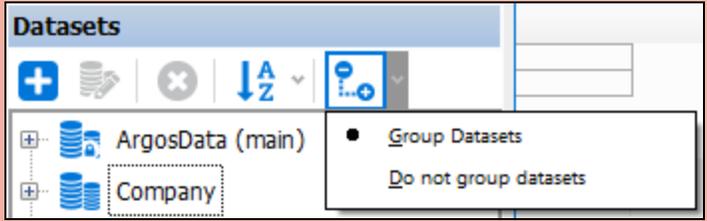


There are two types of dataset shown in the Datasets pane. Datasets created in the Extract Report are editable and are represented by this icon , whereas datasets created in the Report Query are not editable within the Extract Report Editor and are represented by this icon .

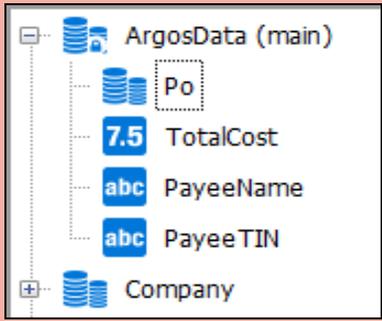


**Tip:**

Click the Group Datasets option shown below to specify how datasets should be displayed.



When Dataset grouping is selected, child datasets are indented relative to their master datasets (see below).

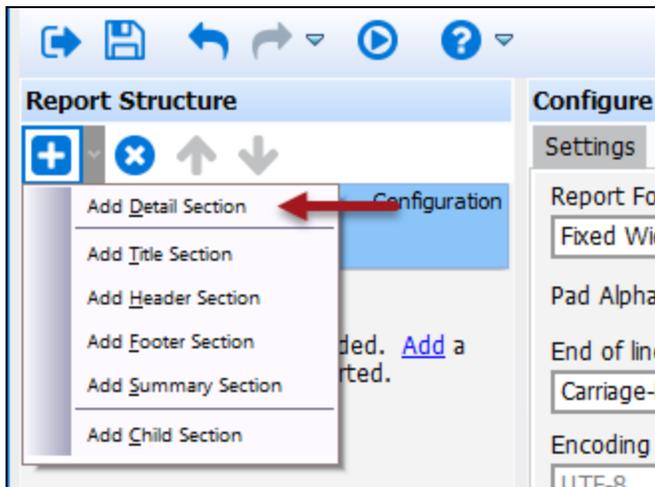


## Add the section for the T Record Type (Title Section)

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

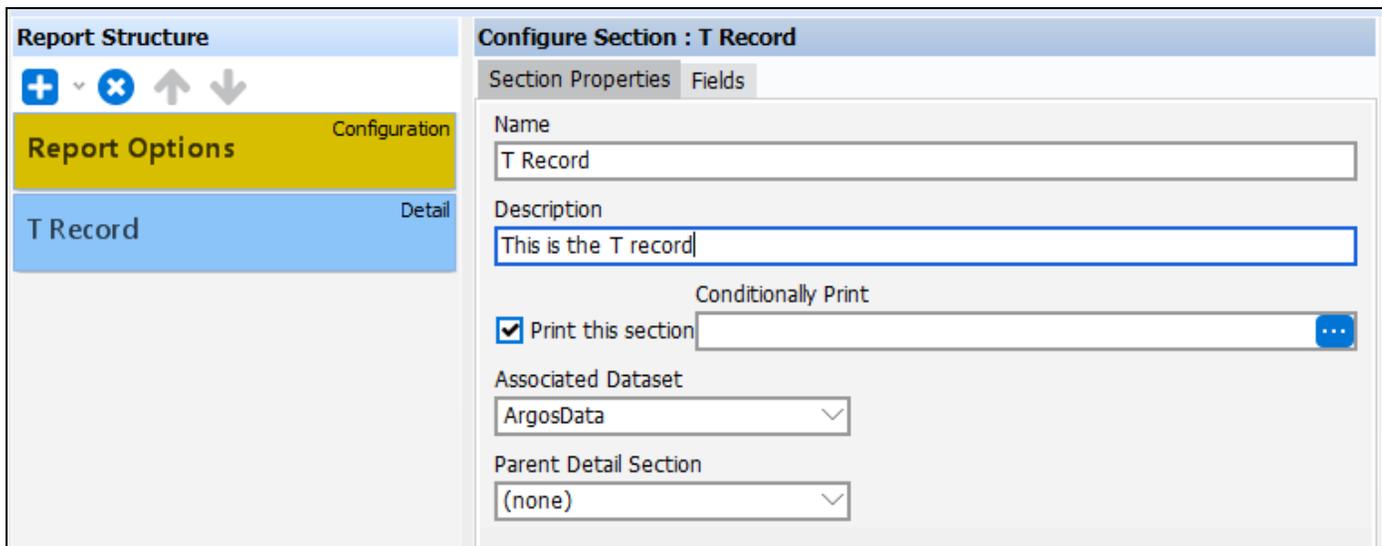
To add the section, click the small down-arrow to the right of the green plus sign, then click on “Add Title Section” as shown in the figure below.



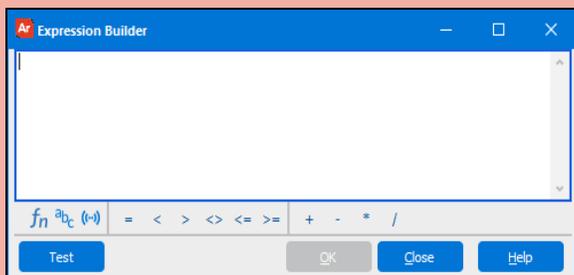
**Tip:** A right-click anywhere within the Report Structure area displays the following menu items for adding, deleting, or moving sections.



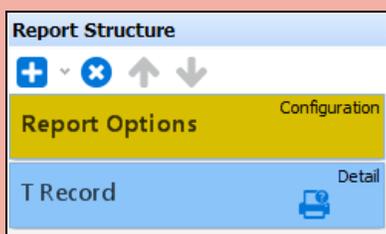
Enter a Name for the section and a Description, if desired. Since this section is to be included in the report, do not uncheck the “Print this Section” box. The name entered is displayed in the Report Structure area for the section as shown below.



**Tip:** If you choose to print the title section, you can also specify if the section is to be conditionally printed based on the results of an expression. Click the ellipsis icon (...) to the right of the **Conditionally Print** box to launch the Expression Builder, which is used to create a condition for printing the section.



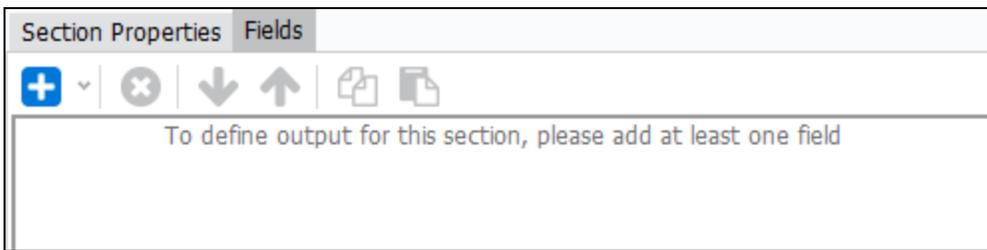
When Conditional Printing is selected for a section, the printer icon shown below with the blue question mark is displayed.



## Add fields to the section

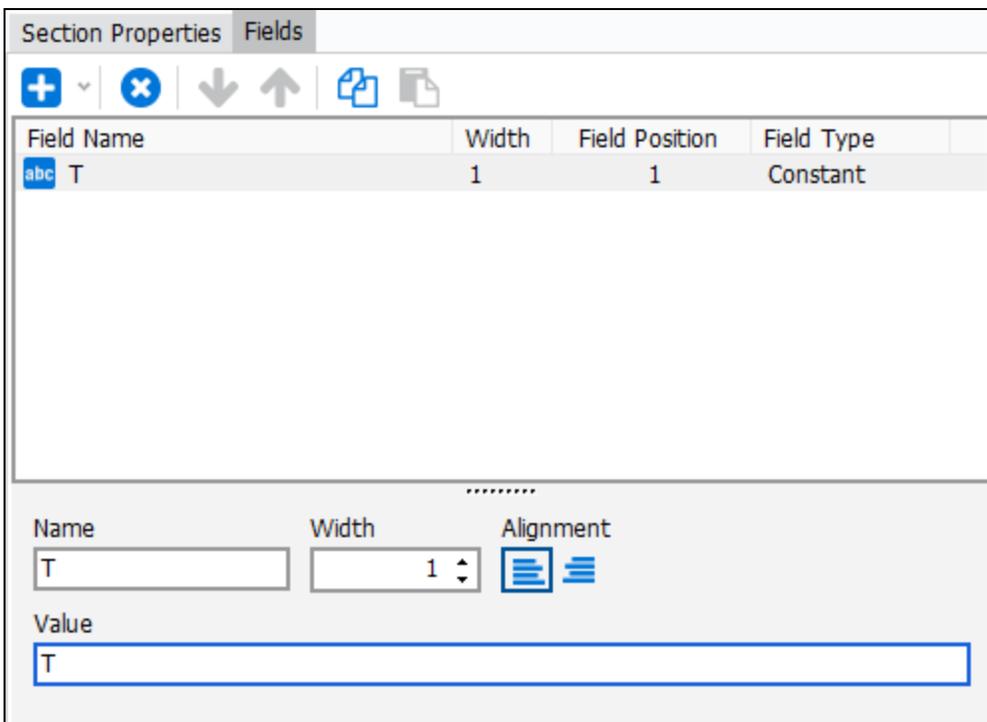
The next step is to add fields to this section. The fields to be added from the datasets are Transmitter\_TIN and Transmitter\_Name (from the Company dataset), and the number of payees (from the Counter dataset). Constant fields will be used for record type (T) and payment year (2009). Finally, an expression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

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



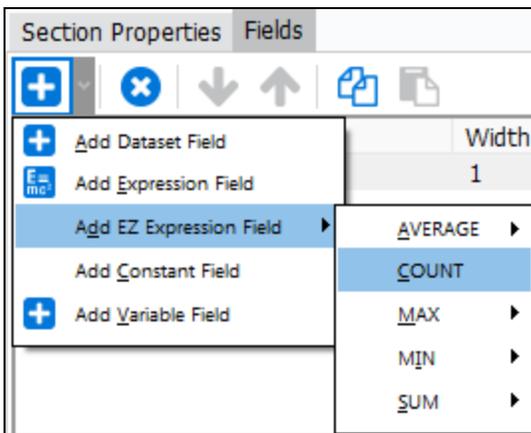
Fields will now be added in the following order: Record Type, Payment Year, Record Sequence Number, Transmitter\_TIN, \_Transmitter\_Name, number of payee records.

**Record Type:** Click the small down-arrow to the right of the blue 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".

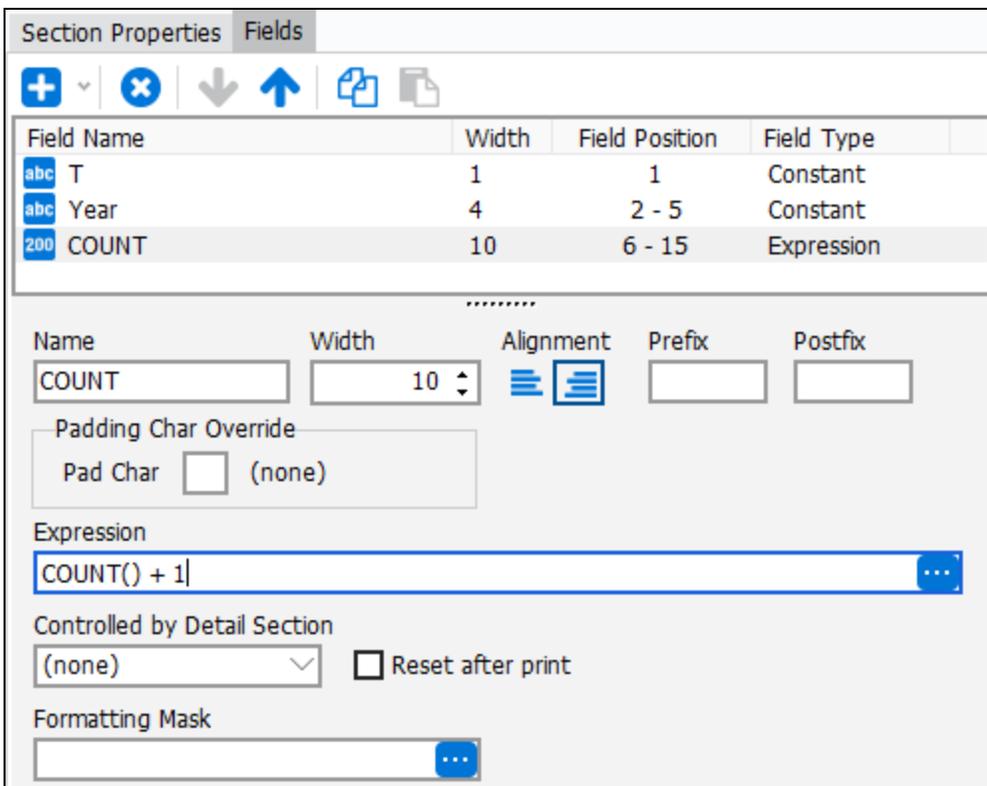


**Payment Year:** repeat the same procedure to add a constant field with a value of 2009 and width of 4.

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



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.



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.

**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.

**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.

Field Name	Width	Field Position	Field Type
T	1	1	Constant
Year	4	2 - 5	Constant
COUNT	10	6 - 15	Expression
Transmitter_TIN	9	16 - 24	Dataset
Transmitter_Name	20	25 - 44	Dataset
B_Count	10	45 - 54	Expression

Configuration for Transmitter\_TIN:

Name: Transmitter\_TIN | Width: 9 | Alignment: [Left] [Right] | Prefix: | Postfix: |

Padding Char Override: Pad Char [ ] (none)

Dataset Field Name: Company.Transmitter\_TIN

Formatting Mask: [ ]

**Tip:** There are three ways to add a dataset field.

- Double-click on the field displayed in the Datasets area.
- Drag 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.
- Click the small down-arrow next to the blue plus sign in the Configure Section area. This allows you to add all field types and not only Dataset fields.

- + Add Dataset Field
- E Add Expression Field
- Add EZ Expression Field ▶
- Add Constant Field
- + Add Variable Field

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

## [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:

T2009	2123456789ACompany, Inc.	12
-------	--------------------------	----

Record Type = T

Year = 2009

Record Sequence Number = 2

Transmitter\_TIN = 123456789

Transmitter\_Name = ACompany, Inc.

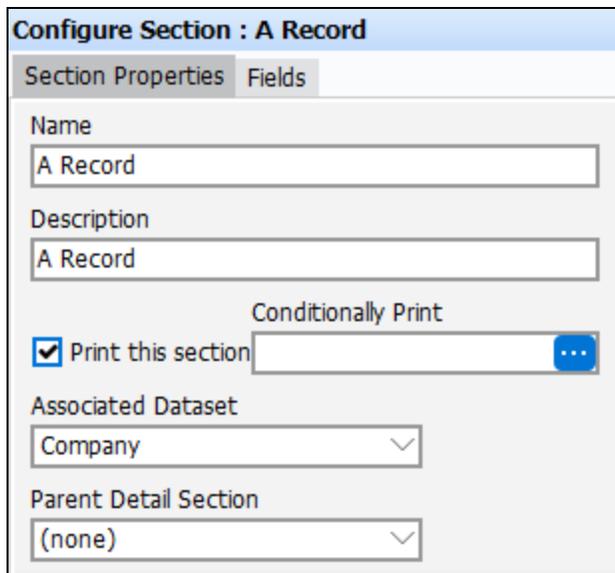
Number of payees = 12

## [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.



**Configure Section : A Record**

Section Properties Fields

Name  
A Record

Description  
A Record

Conditionally Print  
 Print this section

Associated Dataset  
Company

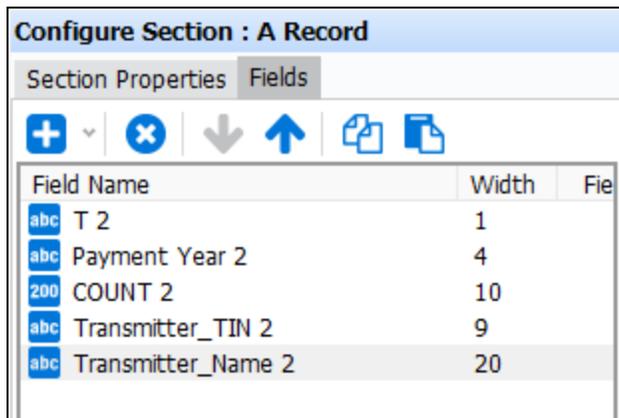
Parent Detail Section  
(none)

## 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 copy the fields from the T Record:

1. Click on the **T Record** in the Report Structure Area.
2. Click the **Fields** tab
3. Hold down the **CTRL** key and highlight the first 5 fields, then click the copy icon .
4. 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.

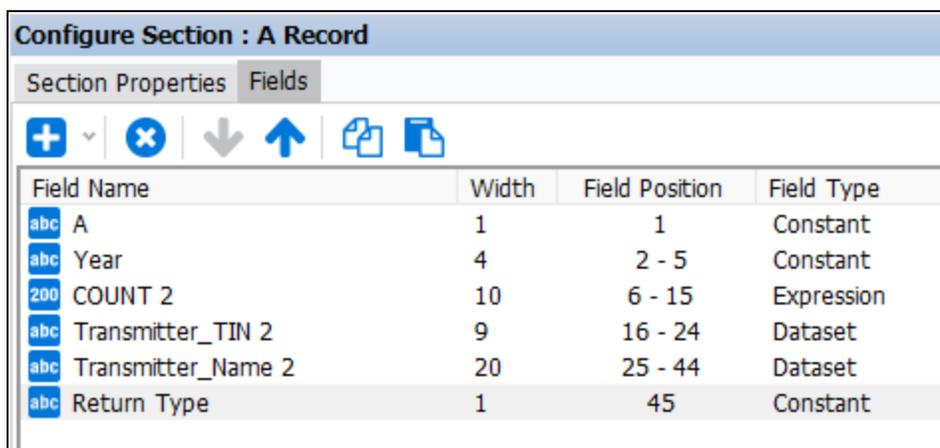


Field Name	Width	Field
abc T 2	1	
abc Payment Year 2	4	
200 COUNT 2	10	
abc Transmitter_TIN 2	9	
abc Transmitter_Name 2	20	

After the paste operation:

1. Change the T 2 field name from T 2 to A.
2. Change the value to A.
3. Add the Return Type as a constant field.
4. Give it a value of A and set the width to 1.

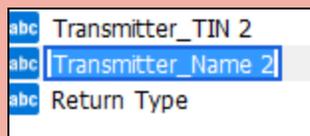
The fields within the A record should now appear as shown below:



Field Name	Width	Field Position	Field Type
abc A	1	1	Constant
abc Year	4	2 - 5	Constant
200 COUNT 2	10	6 - 15	Expression
abc Transmitter_TIN 2	9	16 - 24	Dataset
abc Transmitter_Name 2	20	25 - 44	Dataset
abc Return Type	1	45	Constant

**Tip:** 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.
- 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.



## 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:

**Configure Section : B Record**

Section Properties **Fields**

Field Name	Width	Field Position	Field Type
abc B	1	1	Constant
abc Year 3	4	2 - 5	Constant
200 COUNT 3	10	6 - 15	Expression
abc PayeeTIN	9	16 - 24	Dataset
abc PayeeName	20	25 - 44	Dataset
7.5 TotalCost	12	45 - 56	Dataset

---

Name:  Width:  Alignment:   Prefix:  Postfix:

Padding Char Override: Pad Char  (none)

Dataset Field Name:

Formatting Mask:

**Save your work and test the report**

At this point the report will appear as follows:

T20090000000001123456789ACompany, Inc.	0000000012
A20090000000002123456789ACompany, Inc.	A
B20090000000003999999999Art Danielson	000000096000
B20090000000004987654321Harold Brown	000000045000
B20090000000005888888888Helen Jones	000000036000
B20090000000006111111111Henry Garcia	000000030000
B20090000000007123456789James Green	000000025000
B20090000000008222222222James Tong	000000050000
B20090000000009333333333Jane Smith	000000010000
B20090000000010666666666Joe Orozco	000000008750
B20090000000011777777777Lousie Smart	000000012000
B20090000000012444444444Mary Jones	000000010000
B20090000000013111114444Rene Gould	000000044000
B20090000000014555555555Stan Smith	000000007000

## 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.

The screenshot displays the 'Report Structure' panel on the left and the 'Configure Section : Header' panel on the right. The 'Report Structure' panel shows a tree view with 'Report Options' (Configuration), 'T Record' (Title), 'A Record' (Detail), 'Header' (Header), and 'B Record' (Detail). The 'Header' section is highlighted in blue and has a printer icon with an 'X' over it. The 'Configure Section : Header' panel has two tabs: 'Section Properties' and 'Fields'. Under 'Section Properties', the 'Name' field is set to 'Header'. The 'Description' field is empty. The 'Conditionally Print' section has an unchecked checkbox for 'Print this section'. The 'Detail Section' dropdown is set to 'B Record'. The 'Group by' field is empty and has a blue ellipsis icon to its right.

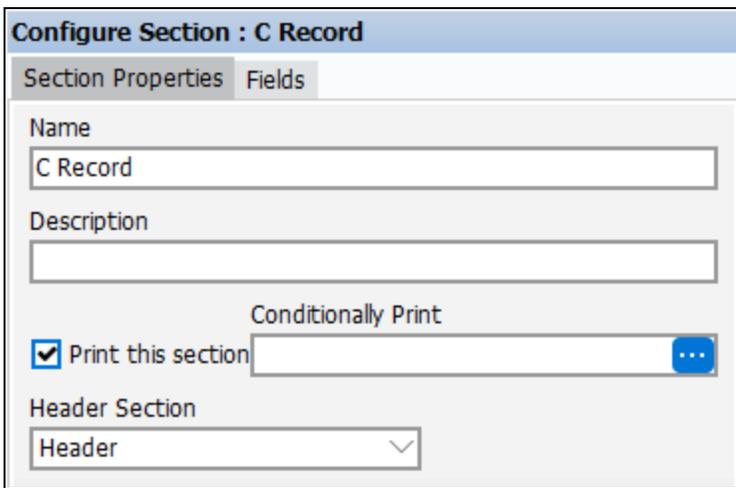
No fields will be placed in the Header Section, which is why the section is not to be printed. Note the image of a printer with an X , which indicates that the section is not to be printed. Header and Footer Sections are used to group information in the Detail Section surrounded by the Header and Footer 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

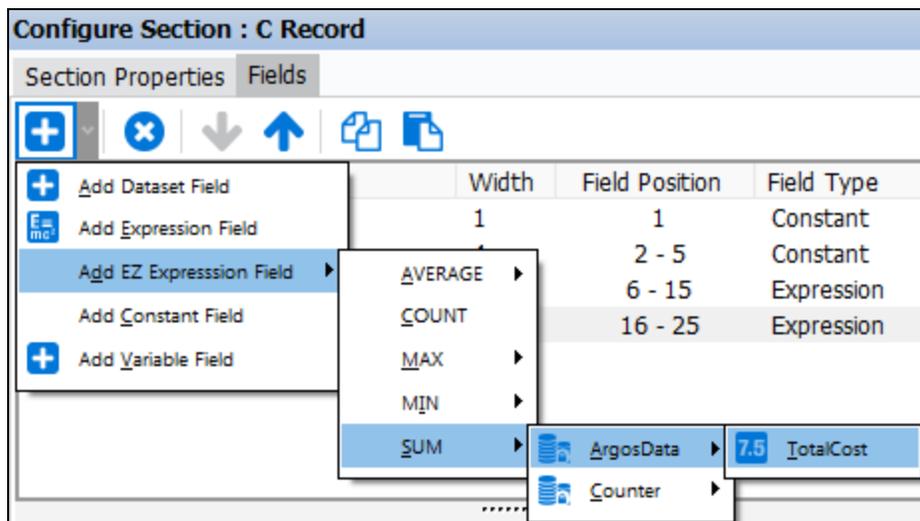
A Footer Section will be added to count the number of detail (B) records and to sum the payment amounts in the B Records. COUNT and SUM expressions will be added to the Footer. The footer section becomes the C Record Type and will be printed.

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".



## Add the fields to the C Record

1. Add the Record Type, Payment Year, Record Sequence Number fields by copying them from other sections and pasting them into the C Record.
2. Add a COUNT expression, right align, and name it TotalBRecords.
3. Select "B Record" for the **Controlled by Detail Section** field.
4. Add a SUM expression by clicking the down arrow next to the blue plus icon and selecting **Add EZ Expression Field >> SUM >> ArgosData >> TotalCost**. This will sum the TotalCost fields in the B Records.



5. Align left and set the width to 18.
6. 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 all of the fields after being added to the C Record.

**Configure Section : C Record**

Section Properties Fields








Field Name	Width	Field Position	Field Type
abc B 2	1	1	Constant
abc Year 3 2	4	2 - 5	Constant
200 COUNT 3 2	10	6 - 15	Expression
200 TotalBRecords	10	16 - 25	Expression
200 SUM_ArgosData_TotalCost	18	26 - 43	Expression

\*\*\*\*\*

Name:  Width:  Alignment:   Prefix:  Postfix:

Padding Char Override  
Pad Char:

Expression:  

Controlled by Detail Section:   Reset after print

Formatting Mask:  

## 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.

### Add the fields

The first 3 fields in this Section (Record Type, Payment Year, and COUNT) have already been added to prior sections and can be copied into this section.

1. Copy the Record Type, Payment Year, and COUNT fields from a previously created section.
2. Change the value of the Record Type to "F".
3. After the COUNT field, add a constant field containing the number of A records. Set the width to 10 and the value to 1.
4. Add a constant field named "21 blanks." Set the width to 21 and put a space in the value box (this will add 21 blank spaces to the record).
5. Add a constant field named "19 blanks." Set the width to 19 and put a space in the value box (this will add 19 blank spaces to the record).

- 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. Set the width to 10.

When completed, the fields should appear as shown below:

**Configure Section : F Record**

Section Properties Fields

Field Name	Width	Field Position	Field Type
abc F	1	1	Constant
abc Year F	4	2 - 5	Constant
200 COUNT F	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 2	10	66 - 75	Dataset

.....

## Save your work and test the report

The report is now complete. You can see the structure of the whole report in the report structure pane. Take this opportunity to look over your report.

**Report Structure**

<b>Report Options</b>	Configuration
T Record	Title
A Record	Detail
B Header	Header
B Record	Detail
C Record	Footer
<b>F Record</b>	Summary

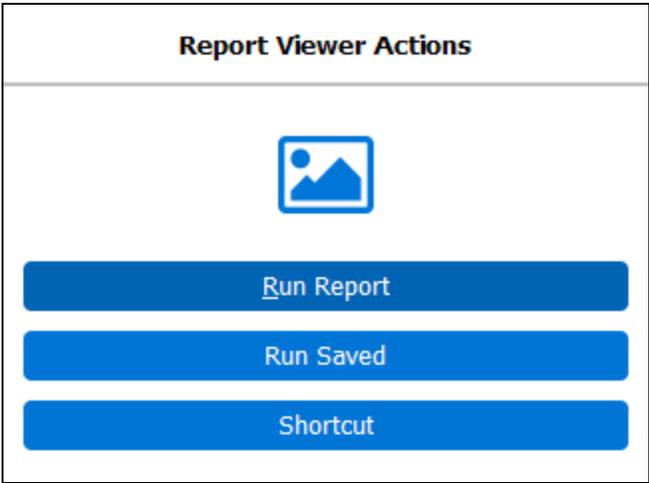
Save your changes, then click "Test this Report" to preview the report.

T2009	1123456789ACompany, Inc.		12
A2009	2123456789ACompany, Inc.	A	
B2009	3999999999Art Danielson		96000
B2009	4987654321Harold Brown		45000
B2009	5888888888Helen Jones		36000
B2009	6111111111Henry Garcia		30000
B2009	7123456789James Green		25000
B2009	8222222222James Tong		50000
B2009	9333333333Jane Smith		10000
B2009	10666666666Joe Orozco		8750
B2009	11777777777Lousie Smart		12000
B2009	12444444444Mary Jones		10000
B2009	13111114444Rene Gould		44000
B2009	14555555555Stan Smith		7000
C2009	14	12373750	
F2009	141		

12

## 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.



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 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
```

## 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)

### Configure Report

Settings Fields

Report Format

Write XML Declaration

Root Element Name

Tag Indentation  Default field node placement

Use auto-closing tags when possible  
 Insert space in auto-closing tags

End of line characters

Encoding  
  Include byte order mark (BOM)

Default Ext

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 Orozco" 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="111144444" 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>
```

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.

**Configure Section : F Record**

Section Properties Fields








Field Name	Field Type
abc F	Constant
abc Year	Constant
200 B_Count	Dataset
abc Num A Records	Constant
abc 21 Blanks	Constant
abc 19 Blanks	Constant

.....

Name:  Prefix:  Postfix:

XML Element Name:

Node placement:

```
<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.

# Argos APIs

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The Argos APIs provide ways for third-party applications, web pages, and portals to make calls to Argos to generate reports for users. Depending on how the developer configures the API call and the report, users may not need to log in at all, may log in only to the calling program, or may be prompted to log in with their Argos credentials.

There are three different methods of accessing the Argos APIs:

## Argos API

---

The Argos API is part of the [API module](#), which is one of the advanced features in Argos. To check if your institution is licensed for the API module, a MAPS administrator can go to the License screen in the MAPS Configuration and select *Argos*. DataBlock Designers and Argos Administrators can also check to see if they can view the **API** tab when editing a report. If you are not licensed for the API module, you will see a message on this tab instead of API configuration options.

The Argos API can be used when end users will be accessing reports on a Windows machine. Some API methods launch a restricted version of the Argos Windows Client, which prompts the users to enter the parameters needed to run the report. Other methods may launch the report directly, when no parameters are needed, or the calling program supplies all parameter values.

[Configuring the Argos API](#)

## MAPRAPI

---

MAPRAPI stands for MAPS Report API. It is an ANSI C command line utility for making API calls, and can be compiled on a variety of platforms. Similar to the Argos API, your institution must be licensed for the [API module](#) in order to use MAPRAPI.

[Configuring MAPRAPI](#)

## Web Viewer API

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The Argos Web Viewer has a separate API that allows developers to embed individual Web Viewer dashboards and reports into existing applications. Like the Argos API, developers can choose how to authenticate the users in the manner that best suits the institution's needs. You do *not* need to be licensed for the API module in order to use the Web Viewer API, but a MAPS Administrator must have configured HTTPS in MAPS in order to use the Web Viewer, and the reports you wish to access must be [made accessible to the Web Viewer](#). The Argos Web Viewer is supported on Windows, Macintosh, and various tablet devices.

[Using the Web Viewer API](#)

## Argos Connect

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For information on the Argos DataBlock Connector, Cloud Connector, and Salesforce Connector used to integrate Argos with various third-party applications, see [Argos Connect](#).

## Argos API

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Calling a report via the Argos API module requires Argos and MAPS Administrators to work together to configure each of the various components.

There are three steps that must be performed in order to run a report via the Argos API:

## 1. Configure the HTTP Referrer in MAPS

Before any reports can be called via the API, a MAPS Administrator must first [configure the HTTP Referrer\(s\) in the MAPS Configuration](#). An HTTP Referrer is a URL (web address, internal server location, etc.) that has been approved for making calls to the Argos API. When referrer checking is enabled, API calls will automatically fail if they are made from a location not in this list.

## 2. Make the Report Accessible to the API

Since the API can make data available to a very wide audience via a web server, portal, or third party application server, an Argos Administrator (or a user with a custom role that includes the "Edit Report API" permission) must specifically enable the API for each report they wish to make accessible via the API. To enable API access, edit the report and go to the **API** tab. Then, check the box to **Make this report accessible to API**.

**Edit Report**

Edit the API settings for this report. API functionality is accessible via the built-in MAPS HTTP server.

General Filters Sort Refresh **API** Saved Execution States

Make this report accessible to API

Report Unique Identifier  
DYF5JIPVPKNGYXIVJUHW6F3TV65VV23UOWQJ5W5ER47MBBSTB4VPULTVGNJ3PA5QBYJUDGDM4HT5W

User Name (optional) Password (if LDAP user)  
evisions

Variables Values

Drop Down1  
ListBox1

NOTE: Preset variable values are currently only used by Argos in the "automatic" modes (POST/GET). Any variables which have not been given a value here must have their values populated by the referring HTML page.

Copy a sample HTML use to the clipboard  
 Include secure (HTTPS)  
 Include unsecure (HTTP)

Sample POST Sample GET  
Sample Interactive

Apply OK Cancel Help

**Note:** Non-administrators will not be able to see any details on this tab when editing a report.

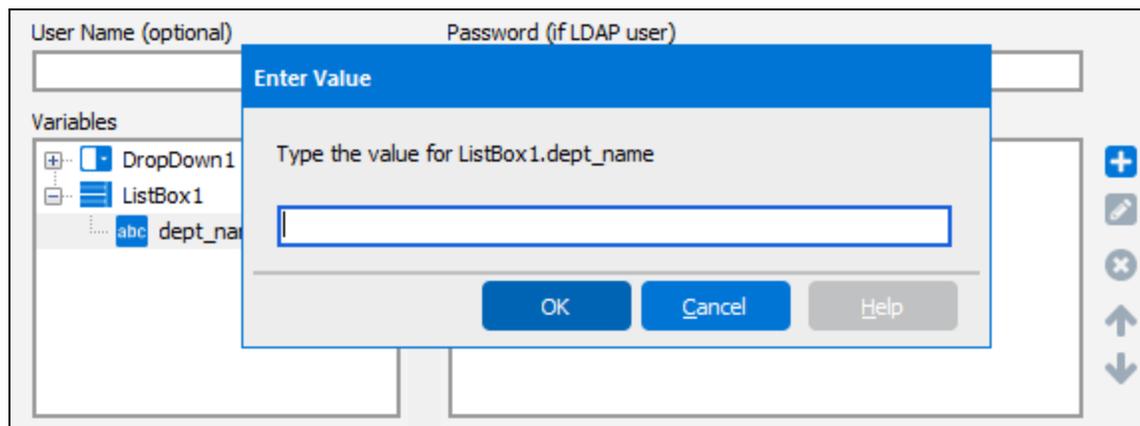
Once the box has been checked, MAPS generates a **Report Unique Identifier** for the report. This is the string that identifies this specific report when making an API call. If the report or DataBlock is moved at a later date, it will retain its Report Unique Identifier. If the report or DataBlock is copied, an Argos Administrator will need to generate a new Report Unique Identifier for the copy to make it accessible via the API.

### Username and Password

These fields allow you to specify a default username and/or password to use when calling this report. If there is a username and password that is passed in via the API call (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 enter the password here or pass in the password via the API call.

## Variables

If you want to choose default values for any of the Argos variables, you can do so in the Variables section. Select the variable you want to specify the value for, and then click the green plus button to add a value.



Any parameters passed in from the [GET](#), [POST](#), or [MAPRAPI](#) call will override the default values entered here. When calling a report via [Interactive mode](#), default parameter values will be ignored because the user inputs all data.

### 3. Create the API Call to Execute the Report

When making a call to the Argos API, you have a choice of *automatic mode* or *interactive mode*.

#### [Automatic Mode](#)

Automatic mode uses predefined parameter values supplied either on the API tab of the report, or by the HTML that is invoking the API.

- **HTML GET**

The easiest way to call the Argos API is with an HTML **GET** request, which is basically a standard HTML link. When following the link, the API executes using the parameters as defined in the Variables section of the API tab.

```
<a href="http://10.1.1.10:8080/mrr?report=WUH5C7TOR5MSZL6YSNYMC62WDVLCFOQXE6JD635WOKQILQ">Click here to execute the report</a>
```

- **HTML POST**

The other automatic mode method is via HTML **POST** request. A POST request is an HTML form which supplies the parameters to be used to generate the report. Note that it is the calling program or webpage that is specifying the parameters, *not* the end user (unless the user entered them somewhere in the calling program/webpage before the API call was made). Any variable values not specified in the form will use the values specified on the API tab.

```
<form method=post action="http://10.1.1.10:8080/mrr">
  <input type="hidden" name="report" value="WUH5C7TOR5MSZL6YSNYMC62WDVLCFOQXE6JD635WOKQILQ">
  <select name="PO_HEADER.DEPARTMENT">
    <option value="ACCT">Accounting</option>
    <option value="HR">Human Resources</option>
    <option value="RECP">Reception</option>
  </select>
  <input type="hidden" name="REPORTFORMAT" value="xls">
  <input type="submit" value="Get POs">
</form>
```

Click the **Sample Post** or **Sample Get** buttons to copy sample HTML to the clipboard. You can use this HTML as a starting point by pasting it into the calling webpage or application. Check the options to generate secure (HTTPS) or unsecure (HTTP) HTML as desired; the only difference is the protocol specified. For information on how to format the HTML in your calling webpage or application, consult an HTML reference such as <http://www.w3.org/TR/html4/interact/forms.html>.

The following is the list of parameters that you can specify when making GET and POST requests:

<b>Parameter</b>	<b>Description</b>
<b>REPORT</b>	<b><i>The Report Unique Identifier. Required.</i></b>
<b>FILENAME</b>	<b><i>The name of the file to be returned, if you do not want to use the default filename.</i></b>
<b>PASSWORD</b>	<b><i>The password corresponding to the provided username. Overrides the password on the API tab if one is specified.</i></b>
<b>USERNAME</b>	<b><i>The user to run the report as. Overrides the username on the API tab if one is specified.</i></b>
<b>REPORTFORMAT</b>	<b><i>This can be any of the valid Argos output types (CSV, PDF, RTF, XLS, HTM, or TXT).</i></b>

In the example POST shown above, the HTML form uses the REPORTFORMAT parameter to specify that the API should return an .xls file to the user.

In addition to the above parameters, if the report format is PDF, you can specify various [PDF Options](#) as parameters.

## Interactive Mode

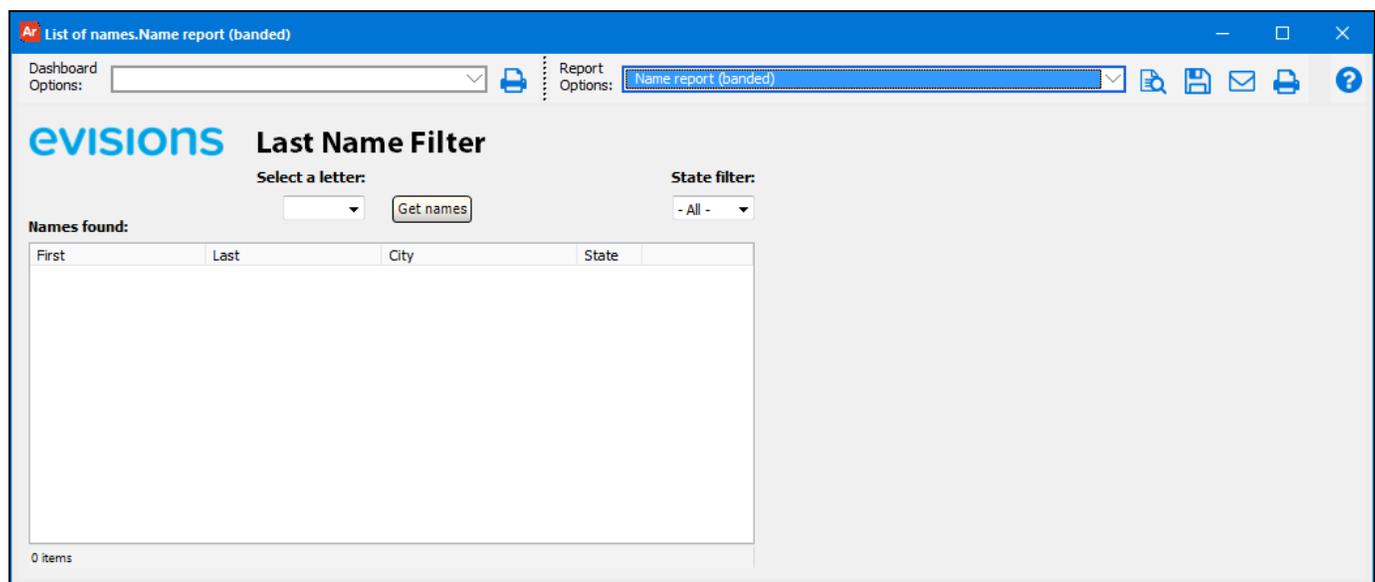
Interactive mode does not pass in any variables. Instead, the API launches a restricted version of the Argos dashboard, enabling the user to enter their desired parameters. Running a report in interactive mode is similar to running the report in the Argos Windows client, except that the user does not see the Argos interface. Users can only access the report specified by the API link and the dashboard (parameter entry form) needed to run that report. They are not able to see the Explorer tree in Argos, nor navigate to a different report or DataBlock.

### Interactive Mode Requirements

Since the Argos client is a Windows application, it only runs on devices using the Windows operating system. If your users may be on different platforms, you should consider using the [Web Viewer API](#) instead.

Interactive Mode API users must have the Evisions Application Launcher (EAL) and Microsoft .NET Framework installed on their machines. If users do not have the ability to install software on their machines, an alternative is for your IT department to install the EAL via Group Policy (available in MAPS 4.5 and higher). For more information, please refer to the [MAPS Help](#).

Calls to interactive API reports ignore any parameters that are specified on the API tab. Instead, the user enters parameter values in the dashboard after it loads:



Notice how the "Select a letter" and "State filter" dropdowns are in their default state, and the listbox is not populated with any data. Users can select the parameters of their choice before running the report selected in the Report Options dropdown at the top of the window. No other reports are available to the user.

## Creating the API Call

To specify that an API call should use interactive mode, include the **&AutoLogOn** parameter in the API call. To see an example, when you are editing a report, click the **Sample Interactive** button on the API tab of the Edit Report dialog to copy a simple HTML link to the clipboard. You can then paste this HTML into the calling application or web page.

```
<!-- Report = My Folder.List of names.Name report (banded) -->
<a href="https://myserver
/argos/index.html?report=USIXECCRQWTQY2C6IH6EMZXQFEB6TCA4DEQZ6N7UTKTK434Z2S2VSX6NANRUY7MONWZ
WYRQ73GQZQ&AutoLogOn">Text</a>
<!-- Report = My Folder.List of names.Name report (banded) -->
<a href="http://myserver
/argos/index.html?report=USIXECCRQWTQY2C6IH6EMZXQFEB6TCA4DEQZ6N7UTKTK434Z2S2VSX6NANRUY7MONWZ
WYRQ73GQZQ&AutoLogOn">Text</a>
```

You can choose either the HTTP or HTTPS link depending on your needs. Your MAPS administrator can advise you on the method(s) configured for your server.

There are two components to note in the URL:

- The long string after `?report=` is the Report Unique Identifier that identifies the report to be called.
- The `&AutoLogOn` parameter indicates that the report should be run in interactive mode.

## Passing Parameters in the Interactive API Call

If you would like to pre-populate some or all of the variables in the dashboard, Argos 4.3 and higher allows you to pass dashboard parameters in the URL. The dashboard in the screenshot above has three variables, two of which are used to generate the banded report. The first variable is the first letter of the students' last names. The second variable is the state of residency. Finally, the "Get names" button controls whether or not the list box populates, assuming the other two variables have been specified.

The screenshot shows the Argos dashboard interface. On the left, there is a 'Variables' panel with a tree view of variables. The main area displays the 'Last Name Filter' report. The report includes a 'Select a letter' dropdown, a 'State filter' dropdown, and a 'Get names' button. Below these controls is a table with columns for 'First', 'Last', 'City', and 'State'.

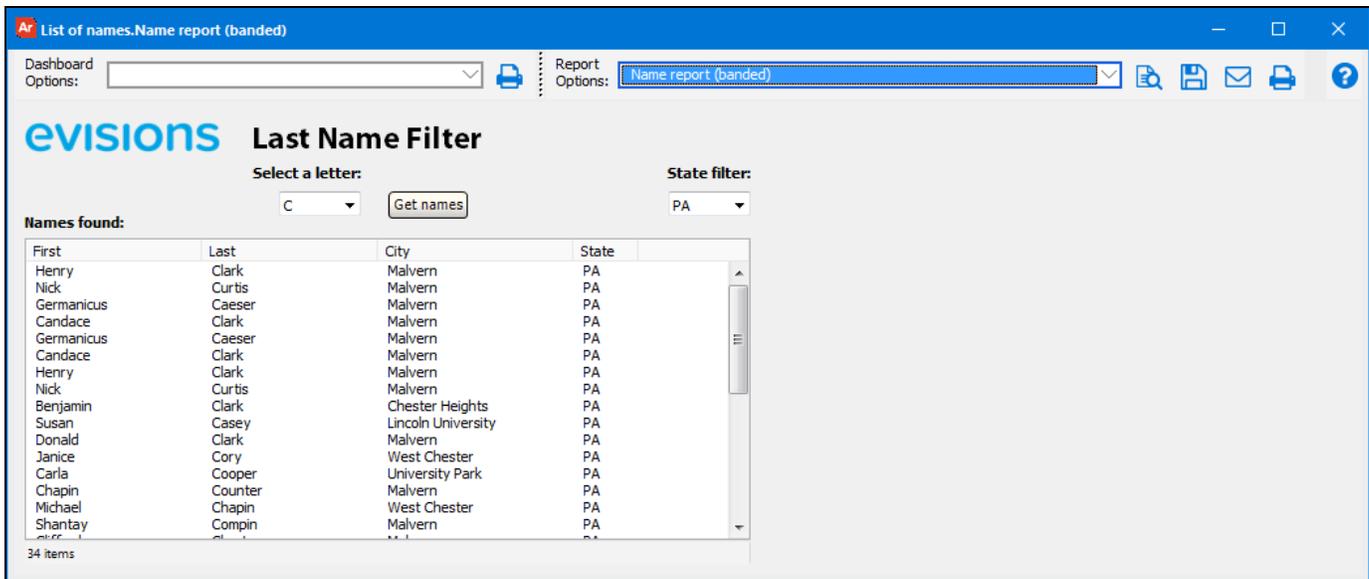
- **Parameter** - The name of the form object in Argos.
- **Field** - The name of the sub-variable in Argos. For a drop-down selection, this is the name of the column shown in the drop-down.

<b>Parameter</b>	<b>Field</b>	<b>Value</b>	<b>Function</b>
<b>DropDown1</b>	<b>Letter</b>	<b>C</b>	<b>Required to run report; selects the students' last initial.</b>
<b>DropDown2</b>	<b>State</b>	<b>PA</b>	<b>Optional; serves to filter report results by state.</b>
<b>GoButton</b>	<b>N/A</b>	<b>1</b>	<b>Not used by report. Setting this parameter to '1' means the "Get names" button is clicked and the results of the current parameter selection will appear on the dashboard without requiring any user input.</b>

To pass a parameter in the URL, append it to the report URL as follows:

```
<!-- Report = My Folder.List of names.Name report (banded) -->
<a href="http://myserver
/argos/index.html?report=USIXECCRQWTQY2C6IH6EMZXQFEB6TCA4DEQZ6N7UTKTK434Z2S2VXS6NANRUY7MONWZWY
RQ73GQZQ&AutoLogOn&DropDown1.Letter=C&DropDown2.State=PA&GoButton=1">Text</a>
```

When the user follows the link to the report, the dashboard variables prepopulate with the values specified in the URL (which may have been set elsewhere in the calling program and then passed in programmatically via the URL). The user can then click the **Save** button to download a PDF of the report, without needing to set the variables in the dashboard.



### Security Warning!

API-enabled Argos reports can represent a security vulnerability if not configured properly. Evisions **strongly** recommends that the 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.

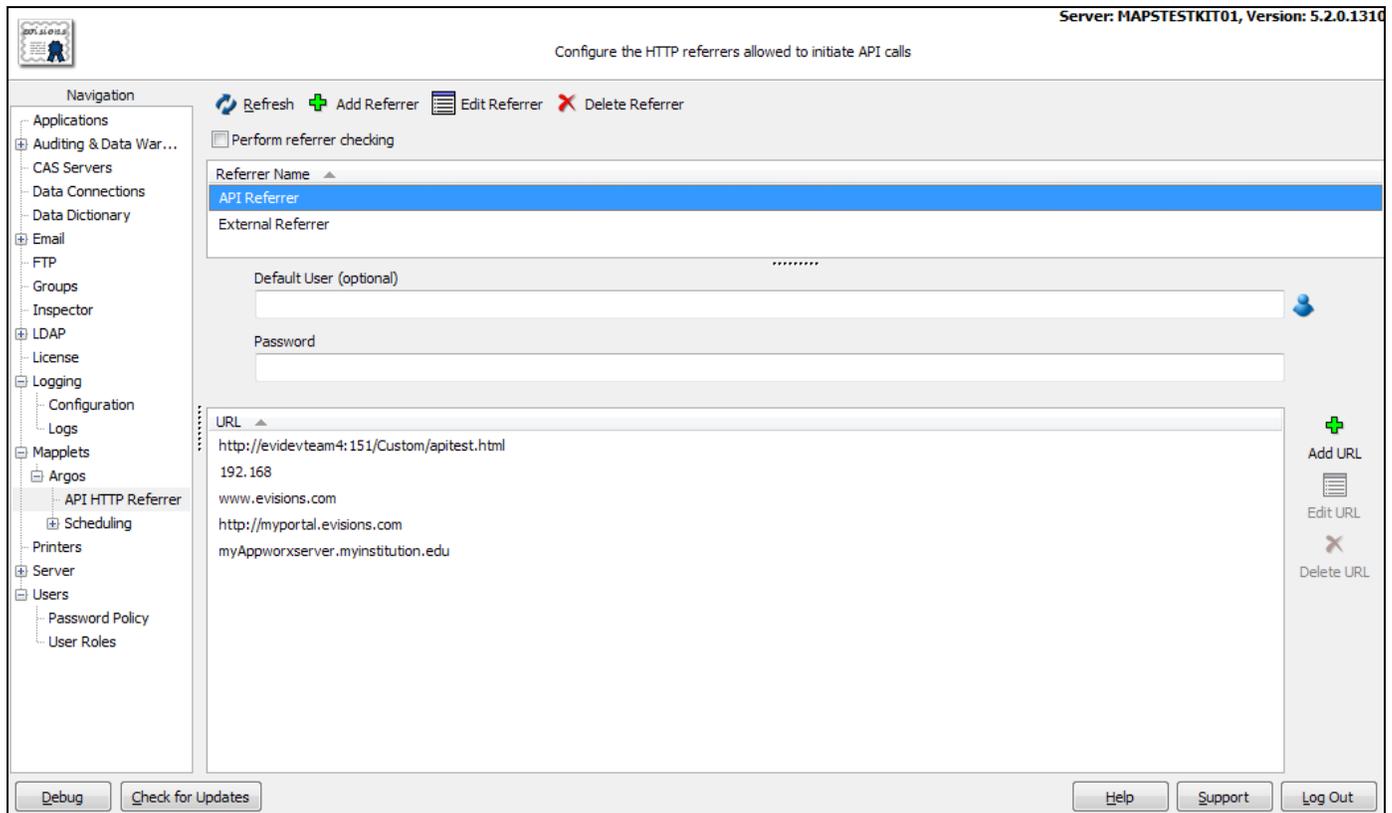
Evisions supports Secure HTTP using TLS. Previous versions of SSL should not be used due to security vulnerabilities. MAPS administrators can specify the version(s) of SSL to enable in the [MAPS Configuration](#).

## Security and User Configuration

There are three different places or levels where user security can be configured for an API report.

### HTTP Referrer Level

The first place is the [HTTP Referrer](#) level which is set up in the MAPS Config application. Here you can enter the default user name and password to be used for each HTTP Referrer. When setting up an LDAP user for authentication, the password is required. Otherwise, for a MAPS user, the password is not required.



**Note:** When the API is run in interactive mode, the HTTP referrer is actually the client PC. MAPS does not check the HTTP referrers for interactive mode API calls, since checking them would require that all users' PCs be added to the list of approved HTTP referrers. However, IP restrictions are still checked for all API modes.

## Report Level

The report level user security is configured on the API tab when editing an Argos report. When setting up an LDAP user for authentication at the report level, the password is required. Otherwise, a MAPS user can be entered in the API settings of a report without a password.

**Edit Report**

Edit the API settings for this report. API functionality is accessible via the built-in MAPS HTTP server.

General Filters Sort Refresh **API** Saved Execution States

Make this report accessible to API

Report Unique Identifier  
DYF5JIPVPKNGYXIVJUHWF3TV65VV23UOWQJ5W5ER47MBBSTB4VPULTVGNJ3PA5QBYJUDGDM4HT5W

User Name (optional) Password (if LDAP user)  
evisions

Variables Values

DropDown1  
ListBox1

NOTE: Preset variable values are currently only used by Argos in the "automatic" modes (POST/GET). Any variables which have not been given a value here must have their values populated by the referring HTML page.

Copy a sample HTML use to the clipboard  
 Include secure (HTTPS)  
 Include unsecure (HTTP)

Sample POST Sample GET  
Sample Interactive

Apply OK Cancel Help

## URL Level

Lastly, the URL link level is configured in the html page design. (See [Example 5](#)).

A user can authenticate at the report and URL link level with no HTTP Referrer level authentication configured.

- API report level authentication will override the HTTP Referrer level authentication.
- A URL level authentication will override both HTTP Referrer and report level authentication for an API report.

## API Examples

The examples below call a banded report that retrieves faculty members based on department chosen from a listbox, "DeptCode", in the DataBlock.

The screenshot shows the 'Edit Report' dialog box with the 'API' tab selected. The 'Make this report accessible to API' checkbox is checked. The 'Report Unique Identifier' field contains a long alphanumeric string. The 'User Name (optional)' field contains 'argos1'. The 'Password (if LDAP user)' field is empty. The 'Variables' list on the left includes 'SelDept', 'abc DeptCode', 'abc DeptDesc', '7.5 myOrder', and 'SelInst'. The 'Values' list on the right contains 'MATH'. Below the lists is a note: 'NOTE: Preset variable values are currently only used by Argos in the "automatic" modes (POST/GET). Any variables which have not been given a value here must have their values populated by the referring HTML page.' At the bottom, there are buttons for 'Sample POST', 'Sample GET', 'Sample Interactive', 'Apply', 'OK', 'Cancel', and 'Help'. There are also checkboxes for 'Include secure (HTTPS)' and 'Include unsecure (HTTP)', both of which are checked.

### Example 1: PDF of faculty members for the Math department

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

```
<a href="http://10.1.1.10:8080/mrr?report=DO2FZ6GGUKG7J6UT6PNCVEA22KTAXQIOLW7RVBJ7HPIBIJ5WZYJCK7CVG4CIARDPXBI53MVADNCNS">Math Faculty</a>
```

### Example 2: 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=DO2FZ6GGUKG7J6UT6PNCVEA22KTAXQIOLW7RVBJ7HPIBIJ5WZYJCK7CVG4CIARDPXBI53MVADNCNS&SELDEPT.DEPTCODE=ACCT">Accounting Faculty</a>
```

### Example 3: HTML page of faculty members for the Accounting department

```
<a href="http://10.1.1.10:8080/mrr?report=DO2FZ6GGUKG7J6UT6PNCVEA22KTAXQIOLW7RVBJ7HPIBIJ5WZYJCK7CVG4CIARDPXBI53MVADNCNS&SELDEPT.DEPTCODE=ACCT&REPORTFORMAT=HTM">Accounting Faculty</a>
```

### Example 4: HTML form using POST method to generate output based on user's specification

This method lets the user select one of three different departments and then retrieve a faculty listing for that department in .xls format.

```
<form method=post action="http://10.1.1.10:8080/mrr">
  <input type="hidden" name="report" value="DO2FZ6GGUKG7J6UT6PNCVEA22KTAXQIOLW7RVBJ7HPIBIJ5WZYJCK7CVG4CIARDPXBI53MVADNCNS">
  <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: Overriding the default run-as user

This method overrides the default run-as user (currently "Argos1") with the username that the user enters in their browser. The output is a PDF report of the Math faculty.

**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 webpage.**

```
<form method=post action="http://10.1.1.10:8080/mrr">
  <input type="hidden" name="report" value="DO2FZ6GGUKG7J6UT6PNCVEA22KTAXQIOLW7RVBJ7HPIBIJ5WZYJCK7CVG4CIARDPXBI53MVADNCNS">
  <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 (MAPS Report API)

MAPRAPI allows you to access an API-enabled report by using an Evisions-developed executable called MAPRAPI (MAPS Report API). This program is distributed as C source code and is intended to be compiled on a UNIX server. 3rd-party applications can use MAPRAPI to call an Argos report and save the results to a specified location. It may be used in conjunction with shell scripts for maximum flexibility.

You can download the [MAPRAPI source code and instructions](#) from the Evisions Support site.

### Compiling MAPRAPI

Place the .c file on the UNIX server in the location where you want to make the API call from. Rename it to `maprapimain.c`.

Navigate to the directory where `maprapimain.c` is located and compile it using the following command:

```
cc -DOPSYS_UNIX -omaprapapi maprapimain.c
```

**Note:** Update the command as necessary if you use a compiler other than cc.

Some flavors of UNIX may require one or more of the following flags:

```
-lsocket  
-lnsl
```

To enable debugging, compile with the following flag:

```
-DDEBUG
```

If compilation was successful, you will see an executable called `maprapi` in the directory. Run the program with no parameters or switches in order to verify it compiled correctly and to display the usage instructions.

## Executing MAPRAPI

A call to MAPRAPI takes the following form:

```
maprapi host port url output_file_name [optional]
```

where `maprapi` is the name of the executable, and each entry after it is a parameter.

### Required Parameters

- `host` – The IP address or host name of the server where MAPS is installed.
- `port` – The port that MAPS is listening on (specified on the Server screen in the MAPS configuration; the default is port 27467).
- `url` – The URL generated on the API tab of an Argos report that would be used for an HTTP GET request.
- `output_file_name` – The name of the output file that will be created for the report.

### Optional Parameters

- `timeout=##` – Specifies the number of minutes to wait before considering a connection lost in the event of a problem. The default is 15 minutes.

### URL Parameters

URL parameters are appended to the end of the url component of the MAPRAPI call. Each URL parameter must have an ampersand (&) before the name of the parameter.

- **DataBlock parameters** - The name of an Argos variable. Sub-variable names are specified using dot notation. Any number of DataBlock parameters can be supplied in the URL. Refer to [API Examples](#) for a demonstration of how Argos variables can be supplied in the URL.
- `REPORTFORMAT=XYZ` - Specifies the format of the report. The report format should be compatible with the file extension specified in `output_file_name`. Supported report formats include:
  - Banded report - HTM, PDF, RTF, XLS, and TXT.  
**Note:** Use HTM, not HTML.
  - CSV report - CSV and TXT.  
**Note:** XLS is not supported for CSV reports. You may be able to specify XLS as the file extension, but the REPORTFORMAT must be CSV.
  - Extract report - CSV, TXT, and XML.
  - Crosstab report - PDF

### Sample MAPRAPI Call

Depending on your configuration, a call to MAPRAPI will look similar to:

```
maprapi maps.school.edu 27467
```

'http://maps.school.edu:8080/mrr?report=DOJM5WFD6ALRNAFMTQTHYOCF2K6KVVWHTZSVL6LWQYXKFJIOAWEFJIF&PARAMETER1=AAA&PARAMETER2=BBB&REPORTFORMAT=PDF' ReportOutput.pdf timeout=60

## Web Viewer API

The Argos Web Viewer allows users to run reports and dashboards in their web browser. Users log in to the Evisions eLauncher page (or directly into the Web Viewer) and can navigate to any dashboard or report they have permission to view in Argos.

First	Last	City	State
Johnathon	Clark	Glen Bernie	MD
Henry	Clark	Malvern	PA
Nick	Curtis	Malvern	PA
Germanicus	Caeser	Malvern	PA
Candace	Clark	Malvern	PA
Germanicus	Caeser	Malvern	PA
Candace	Clark	Malvern	PA
Henry	Clark	Malvern	PA
Nick	Curtis	Malvern	PA
Benjamin	Clark	Chester Heights	PA
Susan	Casey	Lincoln University	PA
MaryAnn	Cooper	Janesville	WI
Donald	Clark	Malvern	PA
Janice	Cory	West Chester	PA
Carla	Cooper	University Park	PA
Charles	Carlson	Adelaide	SA
Nancy	Childress	Washington	DC

The Web Viewer API gives you a way to embed Argos reports and dashboards into another webpage or a third-party application or portal. Users navigate to the portal and click a link to load the desired page. The page then uses API calls to render a specific dashboard or report in an iframe. Users cannot return to the Explorer tree or navigate to other DataBlocks. You can allow users to run only a single report, or give them the option to select a different report for that dashboard.

The screenshot shows the Argos 'Last Name Filter' dashboard. At the top, there is a 'Run' bar with 'Saved Dashboard Settings', 'Reports', and 'Run' options, along with a 'Share' button. The dashboard title is 'Argos Last Name Filter'. Below the title, there is a 'Select a letter:' dropdown set to 'C' and a 'Get names' button. To the right is a 'State filter:' dropdown set to '- All -'. The main content is a table titled 'Names found:' with the following data:

First	Last	City	State
Johnathon	Clark	Glen Bernie	MD
Henry	Clark	Malvern	PA
Nick	Curtis	Malvern	PA
Germanicus	Caeser	Malvern	PA
Candace	Clark	Malvern	PA
Germanicus	Caeser	Malvern	PA
Candace	Clark	Malvern	PA
Henry	Clark	Malvern	PA
Nick	Curtis	Malvern	PA
Benjamin	Clark	Chester Heights	PA
Susan	Casey	Lincoln University	PA
MaryAnn	Cooper	Janesville	WI
Donald	Clark	Malvern	PA
Janice	Cory	West Chester	PA
Carla	Cooper	University Park	PA
Charles	Carlson	Adelaide	SA
Nancy	Childress	Washington	DC

At the bottom of the table, it says '52 items'. On the left side of the dashboard, there is a 'Menu' with links to Home, Admissions, Finance, HR, and Directory.

Notice how the embedded dashboard does not show the breadcrumb trail that would allow users to return to the Explorer, nor does it have a Close button. This example includes the Run bar at the top of the dashboard, which allows users to load saved dashboard settings or to select different reports to run from this dashboard.

## Advantages of an Embedded Implementation

There are several advantages to having users access Argos via an existing application or portal:

- Single, central point of access. Users only need to remember one address to access all of their information, including Argos reports.
- Ability to configure single sign-on through the portal or application. Depending on your existing setup, you may choose to have users only log in once to the calling application. The API allows you to authenticate through MAPS or through a series of API calls.
- Users have limited access to the specific dashboards and reports they need.
- Seamless integration with existing applications.
- Easy for users to access information—no need to navigate the Explorer or search for DataBlocks.

## Implementation Details

To integrate the Argos Web Viewer into a third-party application, you can embed the Web Viewer using a web element such as an <iframe> tag. Users first access the calling application or page, which then loads the specified dashboard in the iframe.

It is possible to use credentials obtained from the user through the calling application. It is up to the calling application to identify the user, and then specify the correct set of credentials when authenticating via the API.

Once authenticated, users interact with the dashboard similarly to how they would use it when logged directly into Argos. When the user finishes, they can simply navigate away from the embedded dashboard and continue working in the calling application.

For detailed instructions for back-end web developers and application programmers, refer to the [Web Viewer API Specification](#).

# Argos Support Resources

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Evisions provides several sources of support for Argos users, including in-product Help and user guides; live and recorded training; and a support website with many useful resources.

## In-Product Help

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The [Argos Help](#) serves as a reference guide for every feature in Argos. You can access Help by pressing the **F1** key, clicking the **Help** button in a dialog box, or by selecting **Help** from the Argos toolbar. The Help contains a table of contents, an index, and a search feature.

The [Argos Web Viewer Help](#) is separate from the main Argos Help, and is accessible from the Help menu in the Web Viewer. There is also a section in the main Argos help pertaining to Web Viewer settings in the Argos client.

## User Guides

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The Argos Help includes three user guides. Each guide contains step-by-step instructions for common and advanced tasks performed by that user type, and provides an excellent mechanism for getting started with Argos.

- [Argos Report Viewer Guide](#)
- [Argos Report Writer Guide](#)
- [Argos DataBlock Designer Guide](#)

## Training

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Evisions provides free, [live online training](#) for all products. Visit the Training page to register for a session, or watch [recorded training sessions](#) at your convenience.

## Additional Resources

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The [Support](#) page contains links to additional support resources:

- [Argos Installation](#) - Installation and upgrade information.
- [Release Documentation](#) - Release guides and release notes for all current and previous versions of Argos.
- [Knowledge Base](#) - Answers to common questions.
- [HelpDesk](#) - Technical support.
- [CO-OP Share](#) - Pre-built DataBlocks, data dictionaries, and other resources.
- [Forums](#) - Collaborate with other Argos users.

# Getting Help

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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 [support site](#), which includes a knowledge base of common issues. 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.

# Glossary

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## A

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### **Argos**

Evisions' software for building and deploying reports and dashboards across the enterprise.

## B

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### **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.

## C

---

### **Child Band**

A child band is a band in a banded report that is attached to another report band (its parent) and will always be printed below it.

### **Column Header Band**

A column header band is a band in a banded report that contains column headers for the detail bands in your reports. The column headers will be positioned above the corresponding fields in the detail band just below it.

### **CSV Report**

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

### **CSV Report Delimiters**

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

## D

---

### **Dashboard**

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

### **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.

### **Detail Band**

The detail band in a banded report contains the information pulled from the database fields that are placed in the band by the user designing the report.

### **Dimensions**

Fields by which data records are grouped in an OLAP cube.

## E

---

### **Explorer Tree**

The Explorer Tree is a tree view of all folders, DataBlocks, dashboards, and reports in Argos. Parent objects in the tree can be expanded to reveal their child objects, or collapsed to hide their children.

### **Extract Report**

Creates 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.

---

## **F**

### **Form**

Forms in Argos obtain input selections from users and contain queries to filter the results. Forms are created on the system dashboard and can be saved as dashboards for that DataBlock.

### **FormFusion**

Evisions' solution for enhancing documents and managing their distribution via email, imaging software, print, or other electronic methods. You can turn plain text input into a graphical layout with images, fonts, and color, with the data rearranged to suit your needs. FormFusion lets you retrieve additional data not in your input file from a database, and print it on the form along with the rest of the information.

---

## **G**

### **Group Bands(Group Header/Footer)**

The Group Band is a header and footer band that separates the Banded Report into sections. The band will group details by a field specified by the report writer. For example, you may want a banded report on employee salaries, with the report separated by department.

---

## **I**

### **IntelleCheck**

Evisions' payment processing solution – includes accounts payable, payroll, and refund checks; direct deposit advices; and electronic refunds.

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## **L**

### **Loop Band**

A Loop Band is a band in a banded report that prints after each detail row and will print as many times as indicated in the Print Count property.

---

## **M**

### **MAPS**

MAPS (Multiple Application Platform Server) 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.

### **Measure Manager**

Used to easily set the attributes of each measure, the displayed measure value and then the filtered valued.

### **Measures**

The numbers or values in the OLAP or cube. They are also referred to as facts.

---

## **O**

### **OLAP cube**

An OLAP (OnLine Analytical Processing) cube is an object that can be placed on a dashboard to present data in multiple dimensions that can be arranged by the person viewing the report. The DataBlock designer defines the dimensions that report viewers can use to sort the

data at run time. The designer also defines what is being measured. The report viewer can arrange the dimensions any way they need to (e.g. sales by region, sales by year, sales by employee) and view a quick graph of the data.

---

## P

### **Page Footer Band**

The page footer band in a Banded Report prints at the bottom of every page. This will typically include items such as the page count, document title, and report date.

### **Page Header Band**

The page header band in a banded report prints at the top of every page. Like the page footer band, the page header typically includes information such as the page count, document title, and report date.

---

## Q

### **Query**

The query obtains data from the database. In Argos, you can either write your own queries, or you can use the Build Query dialog to build the query. Queries are written in SQL.

---

## S

### **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.

### **Styles**

Styles are created within the Library of Objects Manager located under the Main Argos Interface under the Tools menu. Use of styles allows you to customize colors and fonts.

### **Sub-detail Band**

Sub-detail Bands are special detail bands that allow additional details to be added to each record in the detail band. Sub-detail bands print immediately after the detail band. Use sub-detail bands when you need to loop through more than one dataset to get all the data you need.

### **Summary Band**

The summary band in a banded report will always print at the bottom of the last page of a report. The summary band contains summary information about the report; for instance, the number of employees, or the sum of sales would be items that appear in a summary band.

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### **Title Band**

The title band in a banded report contains the title of the report.