

DYNAMIC AI

AUTOMATED INTELLIGENCE

Release 6.3

Dynamic AI release 6.3

Dynamic AI version 6.3 introduces a number of new features to help end-users and developers get faster results, overview and insight into data-sources connected to Dynamic AI.

The new features are:

- Column based (design) actions
- Drag-drop report columns
- Undo design feature
- AI – Automated Intelligence
- New graph styles
- New Flash-based world map

This document describes the new functionality in detail.

Column based actions

Dynamic AI version 6.3 includes several column based actions available in drop-down menus specific to each individual column header on reports and listings or available through drag-drop operations.

Apart from being directly available without having to enter the tools menu etc. the new column based design options support design changes at any level of a report. With the Ad-hoc menu only being available at the first level of a report, column actions are available at any level.

Column based actions are WYSIWYG – What You See Is What You Get – on the live report, resulting in the fastest report manipulation possible.

Example: clicking on the text column “First Name”, displaying available column based actions:

Employees

	Employee ID	First Name	Last Name	Depart
1	88	A-Z		Product
2	90	Z-A		Manag
3	91	Hide		Manag
4	92	Filter		Manag
5	94	Filter COMBO		Manag
6	96	Group A-Z		Accou
7	97	Group Z-A		Manag
8	98	Count		Product
9	99	Matthew	Hall	Accou



Column based actions differ depending on the type of the column and the function of the column on a report.

Different types of columns:

	Employee ID	First Name	Last Name	Depart
1	88	A-Z		Produ
2	90	Z-A		Manag
3	91	Hide		Manag
4	92	Filter		Manag
5	94	Filter COMBO		Manag
6	96	Group A-Z		Accou
7	97	Group Z-A		Manag
8	98	Count		Produ
9	99	Matthew	Hall	Accou

Text columns:

	Hired Date
	A-Z
	Z-A
illeg	Hide
Degree	Filter
gh School	Filter COMBO
Degree	Group A-Z
illeg	Group Z-A
Degree	Maximum
Degree	Minimum
ool	Count
Degree	2007-08-01

Date columns:

al Status	Total Children	Education
ed	A-Z	
ed	Z-A	
ed	Hide	age
	0.00 -> 0.0	egree
	0.0 -> 0.00	School
ed	Filter	egree
ed	Filter COMBO	age
	Group A-Z	egree
	Group Z-A	egree
ed	Sum	
	Running Sum	egree
ed	Prct Of Total	School
ed	Maximum	
	Minimum	egree
	STD	
ed	VAR	egree
ed	Count	
	Average	

Numeric columns (Integers and Numbers):



I.e. numeric columns offers more “total” options (Sum, Running Sum....etc.) as well as formatting options for the number of decimals to display (0.00 -> 0.0 (reduce number of decimals) and 0.0 -> 0.00 (increase number of decimals))

If a column has already been grouped or totaled, the options available will adapt.

With a simple report as an example:

Employees

Empl Country	Married	Single	Total Children
CA	2	3	5
CH	4		4
DK	7		7
GE	4	1	5
HU	3		3
IT	2	4	6
NO	8	2	10
SE	3	1	4
US	12	18	30
Total	45	29	74

The options are:

Columns grouped in rows (in the example “Empl Country”):

Employees

Empl Country	Married	Single	Total Children
Hide		3	5
Filter			4
Filter COMBO			7
Group Z-A		1	5
HU	3		3
IT	2	4	6
NO	8	2	10
SE	3	1	4
US	12	18	30
Total	45	29	74

Depending on the columns appearing on the report the options will vary.

When having just 1 row-level group and column groupings, hiding the Row-level column grouping (as in above example), will automatically convert the column-grouping to a row-grouping:

Employees

Marital Status	Total Children
Married	45
Single	29
Total	74

Column values grouped in columns (in the example above “Marital status”):

Employees

Empl Country	Married	Single	Total Children
CA	Hide		5
CH	Filter		4
DK	Filter COMBO		7
GE	Group A-Z		5
HU	Accumulate Cols		3
IT	Accum. Columns titles		6
NO	Hide Grand Row Totals		10
SE	Hide Grand Col Totals		4
US	Accumulate Col Totals		30
Total	45	29	74

Columns part of a total (in the example above “Total Children”):

Employees

Empl Country	Married	Single	Total Children
CA	2	3	Hide
CH	4		0.00 -> 0.0
DK	7		0.0 -> 0.00
GE	4	1	Filter
HU	3		Filter COMBO
IT	2	4	Running Sum
NO	8	2	Prct Of Total
SE	3	1	Maximum
US	12	18	Minimum
Total	45	29	STD
			VAR
			Count
			Average
			Accumulate Cols
			Accum. Columns titles
			Hide Grand Row Totals
			Hide Grand Col Totals
			Accumulate Col Totals

As illustrated above some new “Total options” are available that previously required access to Design.



The actions available from the drop-down menus at column level are:

Sort actions

- A-Z (sort values in this column in ascending order)
- Z-A (sort values in this column in descending order)
- No sorting

Group actions

- Group-by (in ascending order)
- Group- by Z-A (in descending order)
- Group in columns

Filter actions

- Filter (on this column)
- Filter COMBO (on this column using list selector)
 - Be aware that “Filter COMBO” will build the selector list on the available values from the data-source itself. In Server and Enterprise editions it is optional to define alternative report sources for “Filter COMBO”s. In case an alternative source for a “Filter COMBO” has been defined in the DICTIONARY, that definition will be used.

Display actions

- Hide (this column)
- 0.0 -> 0.00 (Increase number of decimals shown by 1 decimal)
 - If adjusting many decimal points it might be more efficient to use Ad-hoc or Design. In Ad-hoc the decimals can be set by selecting the column and typing the number (0-9) to set the number of desired decimals.
- 0.00 -> 0.0 (Decrease number of decimals shown by 1 decimal)
- Hide / Show Grand Row Totals
 - Previously available through Design / List options only. Will either display or hide the Row-level totals on pivot type reports.
- Hide / Show Grand Col Totals (Column Totals)
 - Previously available through Design / List options only. Will either display or hide the column total on reports.



- Accumulate Cols (Columns)
 - Previously available through Design / List options only. Will add and accumulate each single column sub-total from left to right in pivot type reports (e.g.: accumulating monthly sub-totals across the months of the year).
- Accum. Columns titles (Accumulate Columns and show as titles)
 - Same as above – however the accumulated amount is shown in a mouse-over title.
- Accumulate Col Totals (Column Totals)
 - Previously available through Design / List options only. Will add and accumulate each single column grand-total from left to right in pivot type reports in an additional grand-total row (e.g.: accumulating monthly results across the months of the year).
- Show as details

Total options

- SUM (Total summation of the column)
- Count using this column
- Running sum
- Prct Of Total (Percentage of Total)
- Average
- VAR
- STD
- Maximum
- Minimum

The total options are similar to what has previously been available through Ad-hoc (and Design), with the addition of “Running sum” and “Prct Of Total” which are now directly available as a column based action.



Choosing the “Top 10” option in this case where Employees are grouped by “Last name” and their number of children are summarized will produce the following result:

Employees
TOP 10

Last Name	Total Children
Chawes	4
Gordon	4
B. Fich	3
Delmann	3
Dolen	3
Erickson	3
Mortang	3
Palm	3
Sabel	3
Scheller	3
Total	32

The sum of children per “Last Name” is ranked from top to bottom and the first 10 Employees are displayed. Details are moved to the first drill-down level and the report caption now shows “TOP 10”. The light blue background indicates maximum values within that column.

The functionality of the drop-down actions in general is similar to the functionality available through Ad-hoc and Design as described elsewhere in the documentation.

Save or apply changes

As with Ad-hoc and Design/Apply the column based design changes are not saved to the report before the user chooses to do so using Ad-hoc or Design.

Column based actions controlled with user rights

In the Server and Enterprise editions, access to Column based actions can be enabled or disabled on individual users as well as enabled or disabled on individual reports (following the Ad-hoc design rights).

Column based actions can either be seen as a replacement for Ad-hoc design or an extension to Ad-hoc and Design rights. I.e. in the Server and Enterprise editions it is possible to control and assign user rights from simple mouse controlled drag-drop in-memory manipulation to Ad-hoc control with save options to full design or even owner rights on reports.



Combining Ad-hoc/Design with Column based actions

Although column based actions are powerful, some scenarios benefit from using Ad-hoc design. In situations where the underlying data-source contains a large number of records or a high number of columns, the Ad-hoc or Design approach where multiple columns can be selected and moved/removed in one operation and eventually previewed on a subset of records might be the optimal solution.

When columns have been added to the underlying data-source of an existing report or columns have been previously removed from a report, Ad-hoc or Design is needed to add the columns back into the report again if needed.

Example:

Employees

	Employee ID	First Name	Last Name	Department Name	Empl Country	Gender	Marital Status
1	88	Benn	Trautner	Production	DK	Male	Married
2	90	Harriett	Olofsson	Management	DK	Female	Married
3	91	Jamie	Dolen	Management	NO	Male	Married
4	92	Staveley Edmond	Johnsby	Management	GE	Male	Single
5	94	Caroline	Sander	Management	SE	Female	Single
6	96	Chigbo	Scheller	Accounting	SE	Male	Married
7	97	Morgan Davlin	Polk	Management	DK	Male	Married
8	98	Simon	McBride	Production	US	Male	Single

Use Ad-hoc to add the 2 missing columns (Total Children, Education) into the Details section of the list again.

Groups Totals **Details** Filters

Available fields: ☐ A-Z

- Employee ID (EmployeeID) [Indexed]
- First Name (FirstName)
- Last Name (LastName) [Indexed]
- Department Name (DepartmentName) [Indexed]
- Empl Country (Empl_Country)
- Gender
- Marital Status (MaritalStatus)
- Total Children (TotalChildren)**
- Education**
- Hired Date (HiredDate) [yyyy]
- Hired Date (HiredDate) [q]
- Hired Date (HiredDate) [mm]
- Hired Date (HiredDate)

Add Del

Up Down

Employee ID (EmployeeID)
First Name (FirstName)
Last Name (LastName)
Department Name (DepartmentName)
Empl Country (Empl_Country)
Gender
Marital Status (MaritalStatus)

Select the columns under “Available fields”, click Add (or press ENTER) to add the columns to the Details section. Complete your changes with Apply or Save.

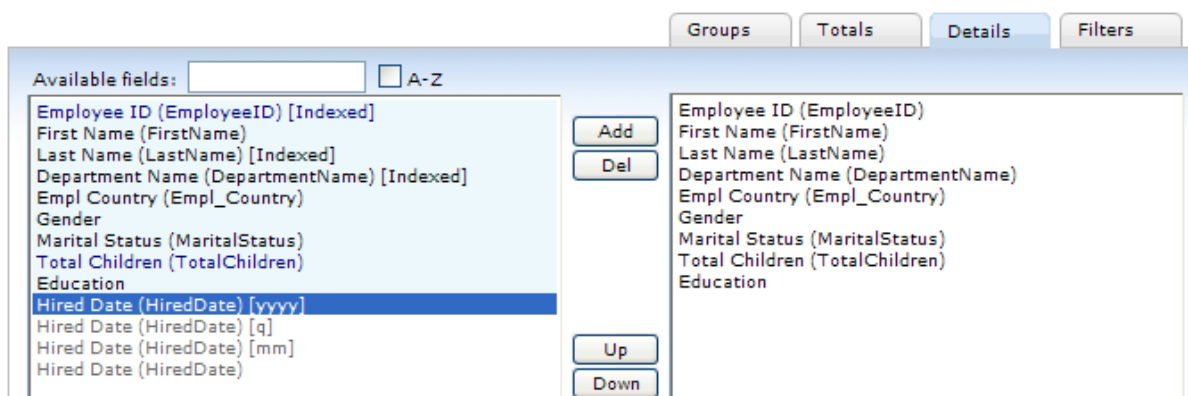
Employees

	Employee ID	First Name	Last Name	Department Name	Empl Country	Gender	Marital Status	Total Children	Education
1	88	Benn	Trautner	Production	DK	Male	Married	1	Bachelors
2	90	Harriett	Olofsson	Management	DK	Female	Married	0	Bachelors

If special manipulated columns are needed (like the year, quarter or month variation of a date column) Ad-hoc or Design is needed to add these types of columns to the report.



Example adding Year of Hired Date:



For developers and report owners a combination of column-based actions with Ad-hoc or Design will probably be the preferred solution. Utilizing Ad-hoc and Design for the basic design of the report, further refining drill-down listings using column based actions during test and prototype on the reports.

Apart from the drop-down options available, some new actions are directly available using drag-drop and double-click.

Change Caption: Double-click on column heading

Double-click on a column header in a report will change the column header to an INPUT text box where the column caption can be modified.

Department Name	Empl Country	Gender	Marital Status	Total
Production	DK	Male	Married	1
Management	DK	Female	Married	0
Management	NO	Male	Married	3
Management	GE	Male	Single	1

Double-click on the column heading “Empl Country” to change it to “Country”. Complete the change by pressing ENTER:

Department Name	Country	Gender	Marital Status	Total Ch
Production	DK	Male	Married	1
Management	DK	Female	Married	0
Management	NO	Male	Married	3
Management	GE	Male	Single	1

Drag-drop report columns

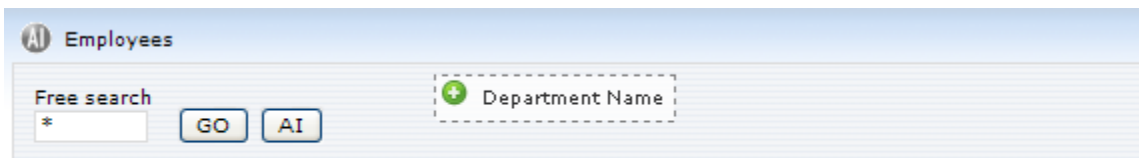
To allow for intuitive direct creation and manipulation of reports without the need to understand the terminology of Dynamic AI Ad-hoc and Design and without having to enter any script or coding, new drag-drop column actions are now available.

Apart from being fast and easy to use with a traditional PC setup using a mouse, the drag-drop functionality is also functional on touch-based PC screens, allowing users to create, manipulate and use reports and dashboards simply by touch-actions.

Dragging column headers have different functionality depending on the direction and length of the drag.

Direction upper left

Dragging a column header to the upper left (or North West) (where the Filters are located) will make a copy of the column as a Filter option on the listing or report. The dragged item will display a green add icon.



Free search

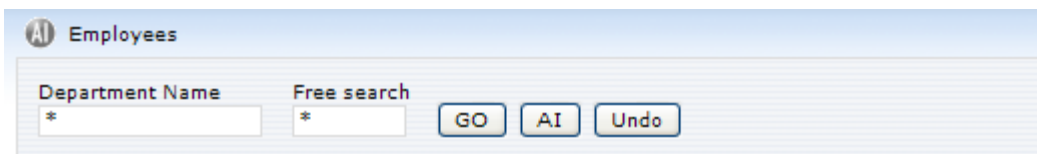
GO AI

+ Department Name

Employees

	Employee ID	First Name	Last Name	Department Name	Empl Country	Ge
1	88	Benn	Trautner	Production	DK	Mal
2	90	Harriett	Olofsson	Management	DK	Fen
3	91	Jamie	Dolen	Management	NO	Mal
4	92	Staveley Edmond	Johnsby	Management	GE	Mal
5	94	Caroline	Sander	Management	SE	Fen

When dropped the new “search by” filter is applied to the report:



Department Name

Free search

GO AI Undo

Employees

	Employee ID	First Name	Last Name	Department Name	Empl Co
1	88	Benn	Trautner	Production	DK
2	90	Harriett	Olofsson	Management	DK
3	91	Jamie	Dolen	Management	NO
4	92	Staveley Edmond	Johnsby	Management	GE
5	94	Caroline	Sander	Management	SE
6	95	Chika	Schaller	Accounting	CE



Direction upper right

Dragging in direction upper right (or North East) will hide the column from the listing. The dragged item will display a red close icon.



The screenshot shows the 'Employees' report interface. At the top, there is a search bar with the text 'Free search' and a dropdown menu showing '*'. Below the search bar are two buttons: 'GO' and 'AI'. To the right of the search bar, a dashed box contains a red close icon and the text 'Department Name'. Below the search bar, the report title 'Employees' is displayed. The report table has the following columns: Employee ID, First Name, Last Name, Department Name, Empl Country, Gender, and Marital Status. The data rows are:

	Employee ID	First Name	Last Name	Department Name	Empl Country	Gender	Marital Status
1	88	Benn	Trautner	Production	DK	Male	Married
2	90	Harriett	Olofsson	Management	DK	Female	Married
3	91	Jamie	Dolen	Management	NO	Male	Married

When dropped the column is hidden from the report:

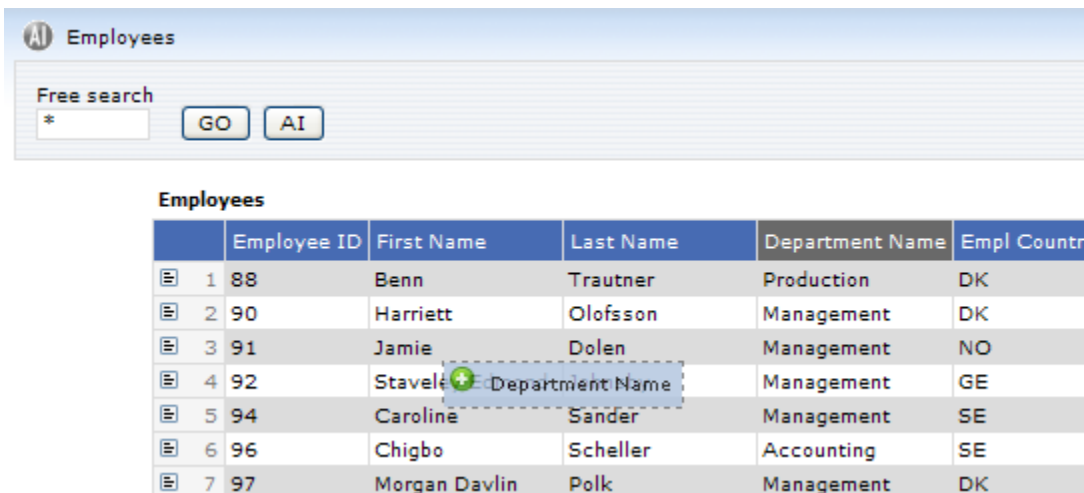


The screenshot shows the 'Employees' report interface. At the top, there is a search bar with the text 'Free search' and a dropdown menu showing '*'. Below the search bar are three buttons: 'GO', 'AI', and 'Undo'. Below the search bar, the report title 'Employees' is displayed. The report table has the following columns: Employee ID, First Name, Last Name, Empl Country, Gender, Marital Status, Total Children, and Education. The data rows are:

	Employee ID	First Name	Last Name	Empl Country	Gender	Marital Status	Total Children	Education
1	88	Benn	Trautner	DK	Male	Married	1	Bac
2	90	Harriett	Olofsson	DK	Female	Married	0	Bac
3	91	Jamie	Dolen	NO	Male	Married	3	Par
4	92	Staveley Edmond	Johnsby	GE	Male	Single	1	Gra

Direction lower left

Dragging down to the left (or South West) (where list groupings are normally located) will turn the dragged column item light-blue and when dropped turn the column into a group.



The screenshot shows the 'Employees' report interface. At the top, there is a search bar with the text 'Free search' and a dropdown menu showing '*'. Below the search bar are two buttons: 'GO' and 'AI'. Below the search bar, the report title 'Employees' is displayed. The report table has the following columns: Employee ID, First Name, Last Name, Department Name, and Empl Country. The data rows are:

	Employee ID	First Name	Last Name	Department Name	Empl Country
1	88	Benn	Trautner	Production	DK
2	90	Harriett	Olofsson	Management	DK
3	91	Jamie	Dolen	Management	NO
4	92	Staveley	Edmond	Management	GE
5	94	Caroline	Sander	Management	SE
6	96	Chigbo	Scheller	Accounting	SE
7	97	Morgan Davlin	Polk	Management	DK

Example of grouped listing:

AI

Employees

Free search

*

GO

AI

Undo

Employees						
	Department Name	Employee ID	First Name	Last Name	Empl Country	Gen
	Accounting					
1		96	Chigbo	Scheller	SE	Mal
2		99	Matthew	Hall	DK	Mal
3		102	Gloria	Pipino	US	Ferr
4		106	Christian	Pengelly-Bennett	US	Mal
5		110	Franz	Stabell	IT	Mal
6		114	Donald Warren	Coker	DK	Mal
7		116	Todd	Thomson	SE	Mal
8		121	Allen	Mortang	GE	Mal
9		139	Stephen	Tappert	NO	Mal
10		140	Alfred	Venuti	US	Mal
	Administration					
11		123	Garry	Wolff	CA	Mal

If an existing row grouping is dragged as a group (direction South West) and a preceding grouper exists, then the dragged grouper will become a caption to that preceding group. Example below:

AI

Products

Free search

Recs/page

From no.

*

20

1

GO

AI

Products					
	Product ID	Product Name	Product Group ID	Product Group Name	Material
1	1	Milano	1101	Chairs	Leather
2	2	Cittero	1101	Chairs	Fiber
3	3	Givonetti	1101	Chairs	Fiber
4	4	Kendo	1101	Chairs	Leather
5	8	Square	2003	Tables	Fiber
6	9	Board room	2003	Tables	Wood
7	10	Office Table elevation	2003	Tables	Wood
8	11	Desk	2003	Tables	Wood
9	12	Horizont	2550	Shelves	Wood
10	13	Vertical	2550	Shelves	Wood
11	14	Blue water	2550	Shelves	Steel
12	15	Globe	2550	Shelves	Steel
13	16	Emilio	3027	Sofas	Leather



The 2 columns Product Group ID and Name belong together and should therefore group as 1 entity. First the column Product Group ID is dragged to the lower left as a grouper:

AI Products

Free search Recs/page From no.

Products

Product Group ID	Product ID	Product Name	Product Group Name	Material
1101				
1	1	Milano	Chairs	Leather
2	2	Cittero	Chairs	Fiber
3	3	Givonetti	Chairs	Fiber
4	4	Kendo	Chairs	Leather
2003				
5	8	Square	Tables	Fiber
6	9	Board room	Tables	Wood
7	10	Office Table elevation	Tables	Wood
8	11	Desk	Tables	Wood
9	22	PC Rack	Tables	Wood
2550				
10	12	Horizont	Shelves	Wood
11	13	Vertical	Shelves	Wood

Next the column Product Group Name is dragged to the lower left to also produce a grouping:

AI Products

Free search Recs/page From no.
* 20 1 GO AI Undo

Products

Product Group ID	Product Group Name	Product ID	Product Name	Material
1101				
Chairs				
	1	2	Cittero	Fiber
	2	3	Givonetti	Fiber
	3	4	Kendo	Leather
	4	1	Milano	Leather
2003				
Tables				

Dynamic AI displays the 2 groupings as 2 individual group levels. To tell Dynamic AI that the groupings belong together, simply drag the “Product Group Name” column as a group again:

The screenshot shows the Dynamic AI interface for the 'Products' table. At the top, there is a search bar with 'Free search' and an asterisk, 'Recs/page' set to 20, and 'From no.' set to 1. Below this are buttons for 'GO', 'AI', and 'Undo'. The table below has columns 'Product Group ID', 'Product Group Name', and 'Product ID'. It is grouped by 'Product Group ID' with two main sections: '1101' and '2003'. Under '1101' is a sub-group 'Chairs' with 4 rows. Under '2003' is a sub-group 'Tables' with 2 rows. A context menu is open over the 'Product Group Name' column, showing a green plus icon and the text 'Product Group Name'.

Product Group ID	Product Group Name	Product ID
1101		
Chairs		
1		2
2		3
3		4
4		1
2003		
Tables		
5		22
6		8

Dynamic AI will now look up the preceding group and make the second grouping a group caption to the first:

The screenshot shows the Dynamic AI interface for the 'Products' table. At the top, there is a search bar with 'Free search' and an asterisk, 'Recs/page' set to 20, and 'From no.' set to 1. Below this are buttons for 'GO', 'AI', and 'Undo'. The table below has columns 'Product Group ID', 'Product ID', 'Product Name', and 'Material'. It is grouped by 'Product Group ID' with three main sections: '1101 Chairs', '2003 Tables', and '2550 Shelves'. Each section contains a list of products with their IDs, names, and materials.

Product Group ID	Product ID	Product Name	Material
1101 Chairs			
1	2	Cittero	Fiber
2	3	Givonetti	Fiber
3	4	Kendo	Leather
4	1	Milano	Leather
2003 Tables			
5	22	PC Rack	Wood
6	8	Square	Fiber
7	9	Board room	Wood
8	10	Office Table elevation	Wood
9	11	Desk	Wood
2550 Shelves			
10	14	Blue water	Steel



Direction lower right

Dragging down to the right (or South East) (where totals are normally located) will turn the dragged column item into a total –numeric columns are totaled as SUM, while non-numeric columns are totaled as a COUNT.

Employees									
Free search *									
GO AI Undo									
Employees									
Department Name	Employee ID	First Name	Last Name	Empl Country	Gender	Marital Status	Total Children	Education	Hired Date
Accounting									
1	96	Chigbo	Scheller	SE	Male	Married	3	Graduate Degree	2008-05-01
2	99	Matthew	Hall	DK	Male	Single	0	Graduate Degree	2007-01-01
3	102	Gloria	Pipino	US	Female	Married	1	Partial High School	2009-01-01
4	106	Christian	Pengelly-Bennett	US	Male	Married	2	Graduate Degree	2007-09-01
5	110	Franz	Stabell	IT	Male	Married	2	Bachelors	2007-02-01
6	114	Donald Warren	Coker	DK	Male	Married	2	Bachelors	2006-07-01
7	116	Todd	Thomson	SE	Male	Single	1	High School	2008-02-01
8	121	Allen	Mortang	GE	Male	Married	3	Bachelors	2007-05-01
9	139	Stephen	Tappert	NO	Male	Single	2	High School	2008-06-01
10	140	Alfred	Venuti	US	Male	Single	2	High School	2006-12-01
Administration									
11	123	Garry	Wolff	CA	Male	Single	3	Graduate Degree	2007-09-01

Example showing a summation total on the column “Total Children” after dragging the column to the lower right:

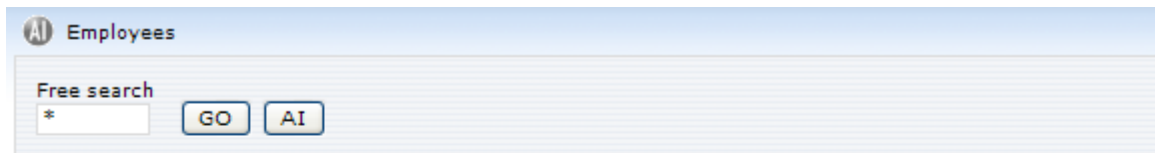
Employees									
Free search *									
GO AI Undo									
Employees									
Department Name	Employee ID	First Name	Last Name	Empl Country	Gender	Marital Status	Education	Hired Date	Total Children
Accounting									
1	96	Chigbo	Scheller	SE	Male	Married	Graduate Degree	2008-05-01	3
2	99	Matthew	Hall	DK	Male	Single	Graduate Degree	2007-01-01	0
3	102	Gloria	Pipino	US	Female	Married	Partial High School	2009-01-01	1
4	106	Christian	Pengelly-Bennett	US	Male	Married	Graduate Degree	2007-09-01	2
5	110	Franz	Stabell	IT	Male	Married	Bachelors	2009-02-01	2
6	114	Donald Warren	Coker	DK	Male	Married	Bachelors	2006-07-01	2
7	116	Todd	Thomson	SE	Male	Single	High School	2008-02-01	1
8	121	Allen	Mortang	GE	Male	Married	Bachelors	2007-05-01	3
9	139	Stephen	Tappert	NO	Male	Single	High School	2008-06-01	2
10	140	Alfred	Venuti	US	Male	Single	High School	2006-12-01	2
Total (Accounting)									18
Administration									
11	123	Garry	Wolff	CA	Male	Single	Graduate Degree	2007-09-01	3
12	124	Gerald	Chawes	US	Male	Married	Partial High School	2006-03-01	4
13	125	Tommy	Wennick	NO	Male	Married	Bachelors	2007-04-01	2
Total (Administration)									9
Management									
14	90	Harriett	Olofsson	DK	Female	Married	Bachelors	2006-05-01	0



Direction Up/Down short

Dragging directly down (South) will have 2 functions depending on the length of the drag. Dragging a column downwards will first turn green, indicating an A-Z sorting of the column. If dragged further down the dragged item will turn black indicating that all the details will be moved to the next list level as a drill-down specification.

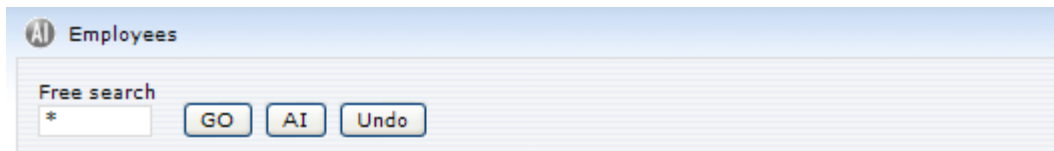
A-Z sorting:



Employees

	Employee ID	First Name	Last Name	Department Name	Empl Country	Gender
1	88	Benn	Trautner	Production	DK	Male
2	90	Harriett	Olofsson	Management	DK	Female
3	91	Jamie	Dolen	Management	NO	Male
4	92	Staveley Edmond	Johnsby	Management	GE	Male
5	94	Caroline	Sander	Management	SE	Female
6	96	Chigbo	Scheller	Accounting	SE	Male

After dropping the column, the new sorted report is produced. The A-Z sorting is indicated on the column header with a small triangle in the lower right corner.



Employees

	Employee ID	First Name	Last Name	Department Name	Empl Cou
1	96	Chigbo	Scheller	Accounting	SE
2	99	Matthew	Hall	Accounting	DK
3	102	Gloria	Pipino	Accounting	US
4	106	Christian	Pengelly-Bennett	Accounting	US
5	110	Franz	Stabell	Accounting	IT
6	114	Donald Warren	Coker	Accounting	DK
7	116	Todd	Thomson	Accounting	SE
8	121	Allen	Mortang	Accounting	GE
9	139	Stephen	Tappert	Accounting	NO
10	140	Alfred	Venuti	Accounting	US
11	123	Garry	Wolff	Administration	CA
12	124	Gerald	Chawes	Administration	US
13	125	Tommy	Wennick	Administration	NO
14	90	Harriett	Olofsson	Management	DK




Dragging directly up (North) will turn the dragged item red-brown, indicating a reversed sort order of that column.









Z-A sorting:

AI Employees

Free search
*









 Department Name

Employees

	Employee ID	First Name	Last Name	Department Name	Empl Country	Gender
 1	88	Benn	Trautner	Production	DK	Male
 2	90	Harriett	Olofsson	Management	DK	Female
 3	91	Jamie	Dolen	Management	NO	Male
 4	92	Staveley Edmond	Johnsby	Management	GE	Male
 5	94	Caroline	Sander	Management	SE	Female
 6	96	Chigbo	Scheller	Accounting	SE	Male
 7	97	Morgan Davlin	Polk	Management	DK	Male
 8	98	Simon	McBride	Production	US	Male

After dropping the column, the new sorted report is produced. The Z-A sorting is indicated on the column header with a small triangle in the upper right corner.

Employees

	Employee ID	First Name	Last Name	Department Name	Empl Country
 1	151	Emma	Gordon	Sales	CH
 2	150	Charley	Moore	Sales	US
 3	149	James	Sabel	Sales	NO
 4	148	Catherine	Rhouma	Sales	IT
 5	147	Leslie	Carstensen	Sales	GE
 6	146	Richard W	DeVeney	Sales	GE
 7	145	Mike	Erickson	Sales	HU
 8	144	Harry	Adriatico	Sales	NO
 9	143	Kirsten	Jackson	Sales	US
 10	142	Robert	Soltane	Sales	CA
 11	141	Brian	Fleischer	Sales	CA
 12	120	Maureen	Carlson	Production	US
 13	113	Paulette	H. Hanson	Production	DK
 14	109	Doug	Barker	Production	US
 15	105	Peter	B. Fich	Production	US
 16	101	Nora	Putkinen	Production	US
 17	98	Simon	McBride	Production	US
 18	88	Benn	Trautner	Production	DK
 19	122	Poul	Palm	Management	US



Direction Up/Down on grouped listings with details

If dragged further down the dragged item will turn black indicating that all the details will be moved to the next list level as a drill-down specification.

AI Employees

Free search
*

Department Name	Employee ID	First Name	Last Name	Empl Country	Gender	Marital Status	Education	Hired Date	Total Children
Accounting									
1	96	Chigbo	Scheller	SE	Male	Married	Graduate Degree	2008-05-01	3
2	99	Matthew	Hall	DK	Male	Single	Graduate Degree	2007-01-01	0
3	102	Gloria	Pipino	US	Female	Married	Partial High School	2009-01-01	1
4	106	Christian	Pengelly-Bennett	US	Male	Married	Graduate Degree	2007-09-01	2
5	110	Franz	Stabell	IT	Male	Married	Bachelors	2009-02-01	2
6	114	Donald Warren	Chapman	DK	Male	Married	Bachelors	2006-07-01	2
7	116	Todd	Todd	SE	Male	Single	High School	2008-02-01	1
8	121	Allen	Mortang	GE	Male	Married	Bachelors	2007-05-01	3
9	139	Stephen	Tappert	NO	Male	Single	High School	2008-06-01	2
10	140	Alfred	Venuti	US	Male	Single	High School	2006-12-01	2
Total (Accounting)									18
Administration									
11	123	Garry	Wolff	CA	Male	Single	Graduate Degree	2007-09-01	3
12	124	Gerald	Chawes	US	Male	Married	Partial High School	2006-03-01	4
13	125	Tommy	Wennick	NO	Male	Married	Bachelors	2007-04-01	2
Total (Administration)									9
Management									
14	90	Harriett	Olofsson	DK	Female	Married	Bachelors	2006-05-01	0

When the dragged column header is dropped the details are moved to the next list level and the consolidated group listing is produced:

AI Employees

Free search
*

Department Name	Total Children
Accounting	18
Administration	9
Management	18
Production	11
Sales	18
Total	74



Employees

Free search

*

GO

AI

Undo

Employees									
Department Name									
Management									
	Employee ID	First Name	Last Name	Empl Country	Gender	Marital Status	Education	Hired Date	Total Children
Ⓜ	1 90	Harriett	Olofsson	DK	Female	Married	Bachelors	2006-05-01	0
Ⓜ	2 91	Jamie	Dolen	NO	Male	Married	Partial College	2006-08-01	3
Ⓜ	3 92	Staveley Edmond	Johnsby	GE	Male	Single	Graduate Degree	2007-01-01	1
Ⓜ	4 94	Caroline	Sander	SE	Female	Single	Partial High School	2009-01-01	0
Ⓜ	5 97	Morgan Davlin	Polk	DK	Male	Married	Partial College	2008-10-01	2
Ⓜ	6 100	Tim	De Place	DK	Male	Married	High School	2007-05-01	1
Ⓜ	7 103	Alice	Johnson	US	Female	Married	High School	2009-03-01	1
Ⓜ	8 104	Ian Douglas	S. Murray	US	Female	Single	Graduate Degree	2006-07-01	0
Ⓜ	9 107	Frank Georg	A. Chabane	US	Male	Married	High School	2006-04-01	1
Ⓜ	10 108	Richard Dell	Mottelson	US	Male	Single	High School	2006-12-01	0
Ⓜ	11 111	Michael Daniel	Delmann	IT	Male	Single	Graduate Degree	2008-03-01	3
Ⓜ	12 112	Roberto	Vainer	US	Male	Single	Graduate Degree	2008-02-01	2
Ⓜ	13 115	Thomas	Dahman	US	Male	Single	High School	2008-01-01	1
Ⓜ	14 122	Poul	Palm	US	Male	Single	High School	2008-10-01	3
Total									19

Direction upper right Columns area

If a list has at least 1 grouping and a total then it will be possible to drag a column to the near upper right (North East) – further drag will hide the column – but when the column item change color to dark-blue, it will be turned into a column-grouping (pivot or cross-tab) listing.

Employees

Free search
*

Employees

Education

Department Name	Employee ID	First Name	Last Name	Empl Country	Gender	Marital Status	Education	Hired Date	Total Children
Accounting									
1	96	Chigbo	Scheller	SE	Male	Married	Graduate Degree	2008-05-01	3
2	99	Matthew	Hall	DK	Male	Single	Graduate Degree	2007-01-01	0
3	102	Gloria	Pipino	US	Female	Married	Partial High School	2009-01-01	1
4	106	Christian	Pengelly-Bennett	US	Male	Married	Graduate Degree	2007-09-01	2
5	110	Franz	Stabell	IT	Male	Married	Bachelors	2009-02-01	2
6	114	Donald Warren	Coker	DK	Male	Married	Bachelors	2006-07-01	2
7	116	Todd	Thomson	SE	Male	Single	High School	2008-02-01	1
8	121	Allen	Mortang	GE	Male	Married	Bachelors	2007-05-01	3
9	139	Stephen	Tappert	NO	Male	Single	High School	2008-06-01	2
10	140	Alfred	Venuti	US	Male	Single	High School	2006-12-01	2
Total (Accounting)									18
Administration									
11	123	Garry	Wolff	CA	Male	Single	Graduate Degree	2007-09-01	3
12	124	Gerald	Chaves	US	Male	Married	Partial High School	2006-03-01	4

Example showing the column Education being turned into a Column-grouped item:

Employees

Free search
*

Employees

Department Name	Bachelors	Graduate Degree	High School	Partial College	Partial High School	Total Children
Accounting	7	5	5		1	18
Administration	2	3			4	9
Management		6	7	5		18
Production	7	3			1	11
Sales	9		4	5		18
Total	25	17	16	10	6	74



Re-arranging the order of columns

Apart from changing the display type of a column, drag and drop actions can also be used to re-arrange the display order of columns. By dragging a column horizontal to the left/right (or East / West) will insert the column before the column dragged over.

Example dragging the column “Last Name”:

Employees

	Employee ID	First Name	Last Name	Department
1	88	Benn	Trautner	Production
2	90	Harriett	Olofsson	Management

To insert before the column “First Name”:

Employees

	Employee ID	Last Name	First Name	Department
1	88	Benn	Trautner	Production
2	90	Harriett	Olofsson	Management

After dropping the column:

Employees

	Employee ID	Last Name	First Name	Department Name
1	88	Trautner	Benn	Production
2	90	Olofsson	Harriett	Management
3	91	Dolan	Jamie	Management

Re-arranging column positions directly on the reports using drag-drop is a fast way to re-position a few columns. If many columns are to be re-arranged Ad-hoc or Design offers the possibility to move multiple columns.

Switching column and row-group columns

If grouped column headers are dragged on a pivot / column grouped listing, the following rules apply when only 1 row and 1 column grouping:

Dragging the row group to the column grouped section will switch the column group with the row group and make the row group a column grouping and the column group a row grouping item.

Example where Department is a row-grouping and Country is a column-grouping:

Employees

Department Name	CA	CH	DK	GE	HU	IT	NO	SE	US	Total Children
Accounting			2	3		2	2	4	5	18
Administration	3						2		4	9
Management			3	1		3	3		8	18
Production			2						9	11
Sales	2	4		1	3	1	3		4	18
Total	5	4	7	5	3	6	10	4	30	74

Dragging the Department column onto the Country groupings:

Employees

Department Name	CA	CH	DK	GE	HU	IT	NO	SE	US	Total Children
Accounting			2	3		2	2	4	5	18
Administration	3						2		4	9
Management			3	1		3	3		8	18
Production			2						9	11
Sales	2	4		1	3	1	3		4	18
Total	5	4	7	5	3	6	10	4	30	74

Will switch column/row groupings and produce this report:

Employees

Empl Country	Accounting	Administration	Management	Production	Sales	Total Children
CA		3			2	5
CH					4	4
DK	2		3	2		7
GE	3		1		1	5
HU					3	3
IT	2		3		1	6
NO	2	2	3		3	10
SE	4					4
US	5	4	8	9	4	30
Total	18	9	18	11	18	74



Dragging a column group to the row group header (from right to left) will change the column grouping to a second row-group item.

Example dragging the country column grouping to the Department row-group item:

Employees

Department	CA	CH	DK	GE	HU	IT	NO	SE	US	Total Children
Accounting			2	3		2	2	4	5	18
Administration	3						2		4	9
Management			3	1		3	3		8	18
Production			2						9	11
Sales	2	4		1	3	1	3		4	18
Total	5	4	7	5	3	6	10	4	30	74

Will produce the following row-grouped report:

Employees

Empl	Country	Department Name	Total Children
CA			
		Administration	3
		Sales	2
		Total (CA)	5
CH			
		Sales	4
		Total (CH)	4
DK			
		Accounting	2
		Management	3
		Production	2
		Total (DK)	7
GE			
		Accounting	3
		Management	1

If more than 1 row group and at least 1 column grouping:

If dragging a row grouper to the column group area when more than 1 row group exist, will turn the dragged row-grouper into an additional column grouping.

Dragging row-groupers onto other row-grouper will change the order of groups applied.



UNDO design feature

As changes to live reports and listings are now instant, Dynamic AI version 6.3 also introduces an UNDO design feature to allow undoing 5 design steps.

Design steps in terms of UNDO are:

- On an AI dashboard:
 - Closing/hiding a sub-report
 - Re-ordering the position of a report
 - Merging sub-reports
 - Change graph options on individual sub-reports
- On normal reports
 - All drop-down column actions
 - All drag-drop actions
 - Renaming column captions
 - The collective changes made using Ad-hoc followed by Apply
 - The collective changes made using Design followed by Apply

Apart from UNDO, the end-user always have the option to re-run a report in its original (last saved) design from the Reports menu.

In the Server and Enterprise editions the “re-load previous version” option from Design, allows reverting back to a previously saved design version of a report.



AI - Automated Intelligence

Dynamic AI includes a new unique feature: Automated Intelligence or AI.

AI is available on all reports and listings and offers the option to automatically analyze a data-source and create the most relevant reports presented in a flexible and intelligent dashboard directly to be used by end-users.

Automated Intelligence can be useful in many different scenarios:

- As an automated function to create reports
- To get the overview of a data-source
- To look for inconsistencies in underlying data
- To reduce complexity in analyzing
- To find patterns and combinations of entities that was previously unknown
- As a management dashboard
- Etc.

Apart from being an automated way to create reports, the new AI dashboards include some other new inventions:

- Measurement selector
- Time-dimension selector
- Auto-pairing of group captions
- Drill-up filtering
- Drill-down specifications
- Compressed Drill-down specifications
- Drag-drop re-arranging sub-reports
- Drag-drop sub-reports merging
- Multiple collapse/expand reports
- Auto chart types
- Individual chart options
- Country detection
- Open alone
- Remove AI

As described in the chapter “Column based actions” it is straight forward to create a report with Dynamic AI. Column based actions, Ad-hoc design and Design options however require that the user knows what to include on the reports and what design steps are necessary to achieve the results.

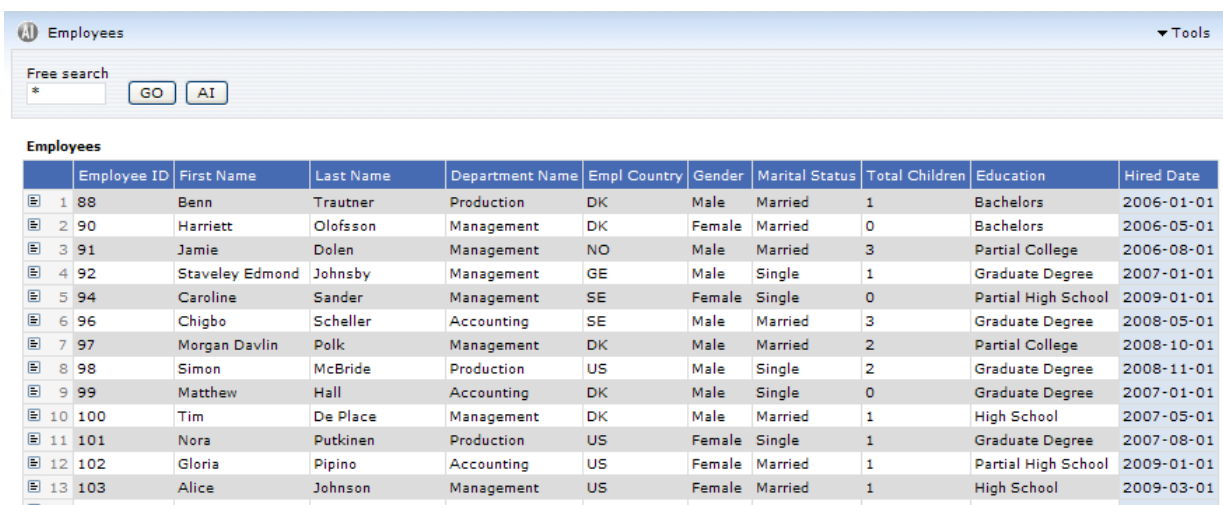


The new Automated Intelligence - AI button - functionality now is an automated “intelligent” way to achieve similar and in many cases much more flexible and interesting report designs without having to plan/design or visualize how such reports should look like or the steps involved in designing those.

With AI it is effortless to get Dynamic AI to produce a number of relevant report alternatives and either use these directly or use the automatically created dashboard as the basis for further customization of individual or multiple reports.

Automated Intelligence is an optional user right which can be assigned to individual users in the Server and Enterprise editions of Dynamic AI.

Automated Intelligence is executed by clicking the AI button on top of reports:



The screenshot shows the 'Employees' report interface. At the top, there is a search bar with the text 'Free search' and a dropdown arrow. Below the search bar are two buttons: 'GO' and 'AI'. The 'AI' button is highlighted with a blue border. Below the search bar is a table titled 'Employees' with the following columns: Employee ID, First Name, Last Name, Department Name, Empl Country, Gender, Marital Status, Total Children, Education, and Hired Date. The table contains 13 rows of employee data.

	Employee ID	First Name	Last Name	Department Name	Empl Country	Gender	Marital Status	Total Children	Education	Hired Date
1	88	Benn	Trautner	Production	DK	Male	Married	1	Bachelors	2006-01-01
2	90	Harriett	Olofsson	Management	DK	Female	Married	0	Bachelors	2006-05-01
3	91	Jamie	Dolen	Management	NO	Male	Married	3	Partial College	2006-08-01
4	92	Staveley Edmond	Johnsby	Management	GE	Male	Single	1	Graduate Degree	2007-01-01
5	94	Caroline	Sander	Management	SE	Female	Single	0	Partial High School	2009-01-01
6	96	Chigbo	Scheller	Accounting	SE	Male	Married	3	Graduate Degree	2008-05-01
7	97	Morgan Davlin	Polk	Management	DK	Male	Married	2	Partial College	2008-10-01
8	98	Simon	McBride	Production	US	Male	Single	2	Graduate Degree	2008-11-01
9	99	Matthew	Hall	Accounting	DK	Male	Single	0	Graduate Degree	2007-01-01
10	100	Tim	De Place	Management	DK	Male	Married	1	High School	2007-05-01
11	101	Nora	Putkinen	Production	US	Female	Single	1	Graduate Degree	2007-08-01
12	102	Gloria	Pipino	Accounting	US	Female	Married	1	Partial High School	2009-01-01
13	103	Alice	Johnson	Management	US	Female	Married	1	High School	2009-03-01

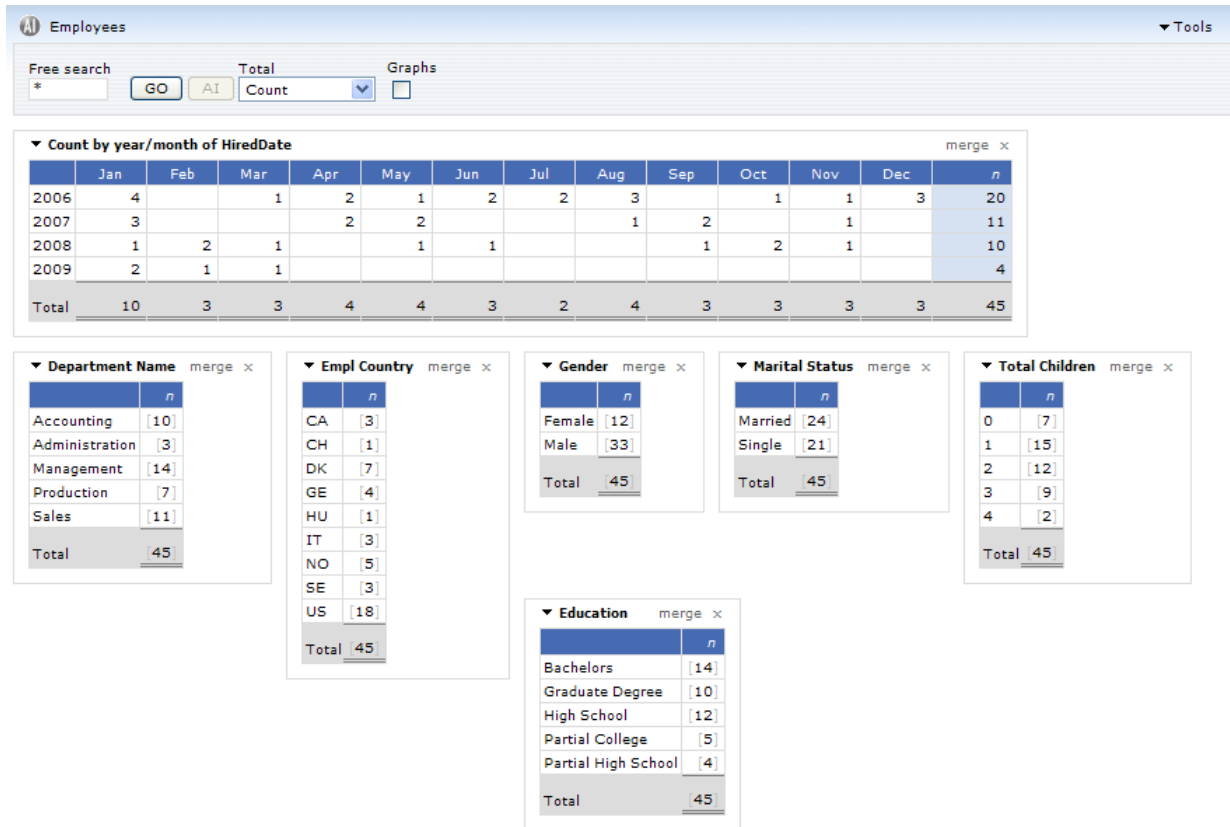
Running AI will analyze a sub-set of records from the underlying data-source, evaluate and select sub-reports to produce as well as execute these reports on the original data-source.

Depending on the number of underlying records, the number of columns in the data-source as well as the speed of the Dynamic AI server and the underlying database for the data-source, AI might take some time.

After the initial analysis, the reports will execute faster (when clicking GO, drill-up or drill-down) as AI doesn't have to analyze the data again and drill-up/drill-down will decrease the number of records affected by the sub-reports.



Running AI on the “Employees” table found in the DEMO included with Dynamic AI version 6.3 installations, produces the following AI-dashboard:



On top of the AI dashboard a Total measurement selector is presented (in this case AI has selected COUNT as the default measurement).

The sub-reports produced are:

“Count by year/month of HiredDate” : A count of employees by the year/month the employee was hired.

“Department Name”: A count of employees by department

“Empl Country”: A count of employees by country

Etc.

Each sub-report represents one or more dimensions to the total of the data-source. In above example each sub-report display’s a break-down of the total number of records (45) in the individual dimension (Department, Country, Gender etc.).



Measurement selector

When AI is executed on a data-source or existing report, all numeric columns are collected in a drop-down select listing and presented to the end-user at the top of the AI dashboard.

The screenshot shows the 'AI Employees' dashboard. At the top, there is a 'Free search' field with an asterisk, a 'GO' button, and an 'AI' button. To the right, there is a 'Total' dropdown menu currently set to 'Count', and a 'Graphs' checkbox. Below this, a table titled 'Count by year/month of Hire' is displayed. The table has columns for years (2006, 2007) and months (Jan, Feb, Mar, Apr, May). The data shows counts for each month: 2006 (Jan: 4, Mar: 1, Apr: 2, May: 1), 2007 (Jan: 3, Apr: 2, May: 2).

AI will pick the most relevant measurement for the dashboard using the following rules.

1. On existing reports the already specified measurement (if any) is selected and appears in the measurement selector as “As Defined”. I.e. if special formatting or manipulation (divide by, * -1) has been set on the report totals (measurement column(s)).
2. On reports without NUMBER type columns on the underlying data-source COUNT will be selected as the default.
3. On reports with NUMBER columns, the first NUMBER column will be automatically selected as measurement column.

A simple example of changing the meaning of a dashboard simply by changing measurement is the DEMO Employees example from above (in below example number of children has been selected instead of COUNT of employees):

The screenshot shows the 'AI Employees' dashboard with the 'Total' dropdown menu set to 'Total Children'. Below the dashboard, there are several reports displayed as tables, each with a 'merge x' button. The reports are:

- Sum of Total Children by year/month of HireDate**: A table with columns for years (2006, 2007, 2008, 2009) and months (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec). The data shows the sum of total children for each month. The total for 2006 is 30, for 2007 is 18, for 2008 is 22, and for 2009 is 4. The overall total is 74.
- Department Name**: A table with columns for Department Name and Total Children. The data shows the total children for each department: Accounting (18), Administration (9), Management (18), Production (11), Sales (18). The overall total is 74.
- Empl Country**: A table with columns for Country and Total Children. The data shows the total children for each country: CA (5), CH (4), DK (7), GE (5), HU (3), IT (6), NO (10), SE (4), US (30). The overall total is 74.
- Gender**: A table with columns for Gender and Total Children. The data shows the total children for each gender: Female (12), Male (62). The overall total is 74.
- Marital Status**: A table with columns for Marital Status and Total Children. The data shows the total children for each marital status: Married (45), Single (29). The overall total is 74.
- Total Children**: A table with columns for Total Children. The data shows the total children for each count: 0 (15), 1 (24), 2 (27), 3 (8). The overall total is 74.
- Education**: A table with columns for Education and Total Children. The data shows the total children for each education level: Bachelors (25), Graduate Degree (17), High School (16), Partial College (10), Partial High School (6). The overall total is 74.



Time-dimension selector

When AI is executed on a data-source or existing report, all DATE type columns are collected in a drop-down select listing and presented to the end-user at the top of the AI dashboard as a time-dimension.

AI will pick the first date occurring in the data-source as the default.

Free search: * GO AI Time: Dte Total: Amount Graphs: ☐

▼ Sum of Amount by year/month of Dte

	Jan	Feb	Mar	Apr	May	Jun	
2007	2,049,903	2,562,311	1,213,103	2,698,573	2,636,252	1,600,743	1
2008	1,578,076	2,065,580	1,747,366	2,434,452	2,451,675	1,563,475	2

If less than 2 DATE type column are found, no Time-dimension selector will be presented. If 1 date type column exists, that specific column is used for the first pivot/cross-tab sub-report on the AI dashboard showing the selected measurement column totals by YEAR and MONTH of the Time-dimension.

Free search: * GO AI Time: Dte Total: Amount Graphs: ☐

▼ Sum of Amount by year/month of Dte merge x

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Amount
2007	2,049,903	2,562,311	1,213,103	2,698,573	2,636,252	1,600,743	1,328,250	2,365,169	1,430,771	2,247,874	1,729,543	1,937,143	23,799,636
2008	1,578,076	2,065,580	1,747,366	2,434,452	2,451,675	1,563,475	2,452,297	1,666,021	1,383,560	2,535,531	1,065,557	1,499,342	22,442,931
2009	2,199,839	2,371,753	2,380,469	3,107,652	3,270,414	3,237,104							16,567,231
Total	5,827,817	6,999,644	5,340,937	8,240,678	8,358,340	6,401,322	3,780,547	4,031,190	2,814,331	4,783,405	2,795,100	3,436,485	62,809,798

Apart from offering new automated functionality to end-users the measurement selectors makes each report many times more flexible without the need for additional report copies (for other measurements) and without the need for writing any code.

Auto detected group captions

When AI (Automated Intelligence) is initially analyzes data, it will look for columns that seems to belong together such as “account number” and “account name”, “Customer ID” and “Name”, “Product Code” and “Product name” etc.

AI will look into the underlying data and test the pairing of columns before assigning dimensions together in the same sub-report.



In the DEMO example “Realized sales join”, AI e.g.: detects that: ID, Account number and Acc Name belongs together, that Company No and Name is the same entity and that Contact ID and Contact Name is a pair.

▼ ID - Acc Number /Name merge x			
ID	Acc Number	Acc Name	Amount
86	10000100	Furniture Sales	18,970,803
87	10000200	Furniture Sales (Export)	19,210,862
88	10000300	Other Equipment Sales	9,372,943
171	10000400	Other Equipment Sales (Export)	15,255,187
Total			62,809,798

▼ Company No /Name merge x		
Company No	Company Name	Amount
1	Furniture	26,562,526
2	Wholesale	18,755,269
3	Direct	17,492,003
Total		62,809,798

▼ Contact ID/Name merge x		
Contact ID	Contact Name	Amount
100010	Ana Trujillo Emparedados y helados	1,927,054
100011	Alfreds Futterkiste	814,091
100012	Around the Horn	1,673,670
100013	Antonio Moreno Taquería	1,236,702
100014	Berglunds snabbköp	1,760,755
100015	Cactus Comidas para llevar	1,508,528
100016	Du monde entier	868,060

By grouping values that belongs together (from the nature of the underlying data) the end-user gets a consolidated look at the data as well as an opportunity to discover differences or error in data that shouldn't be there.

Drill-up filtering

Another benefit of the AI-dashboards is the functionality to apply drill-up criteria's as overall filters for the full dashboard.

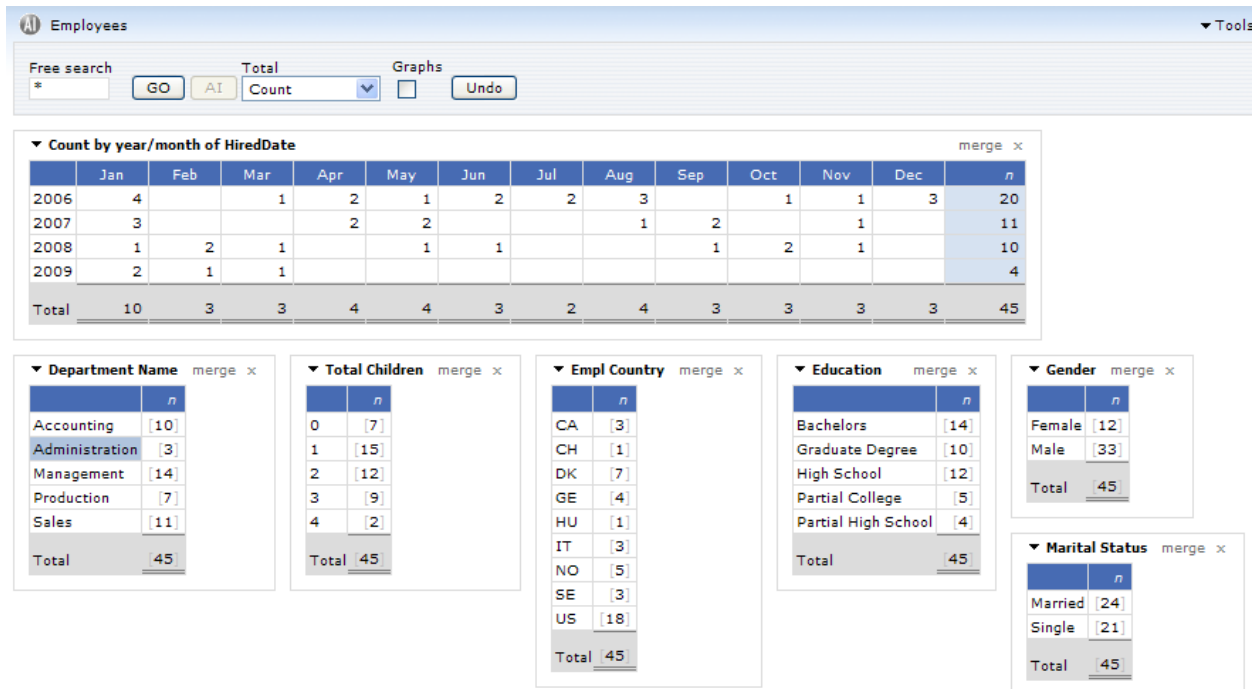
All group values on all sub-reports can be applied as overall dashboard filters simply by clicking on the values.

Drill-up will apply several rules:

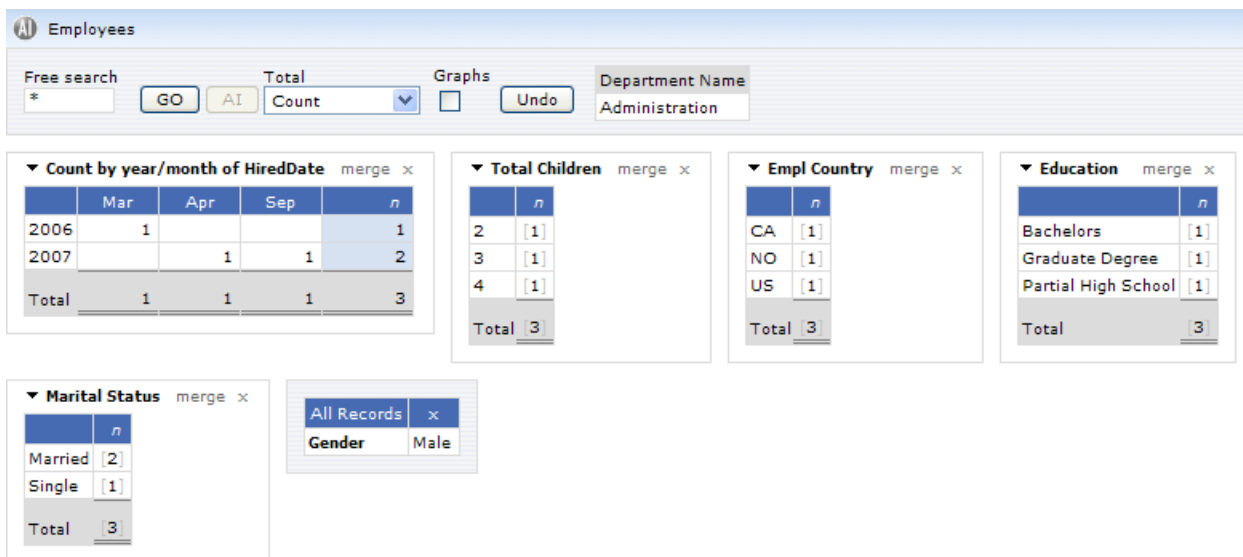
- All reports on the AI dashboard will be filtered with the drill-up criteria
- Reports that after being filtered only produce 1 group of information to make up the total will be collected in a special sub-report named “All Records”.
- The sub-report from which the drill-up is executed will be eliminated on the AI-dashboard.
- The complete filtered AI dashboard will be re-calculated and displayed.



Drill-up can be illustrated with the Employees AI dashboard example.



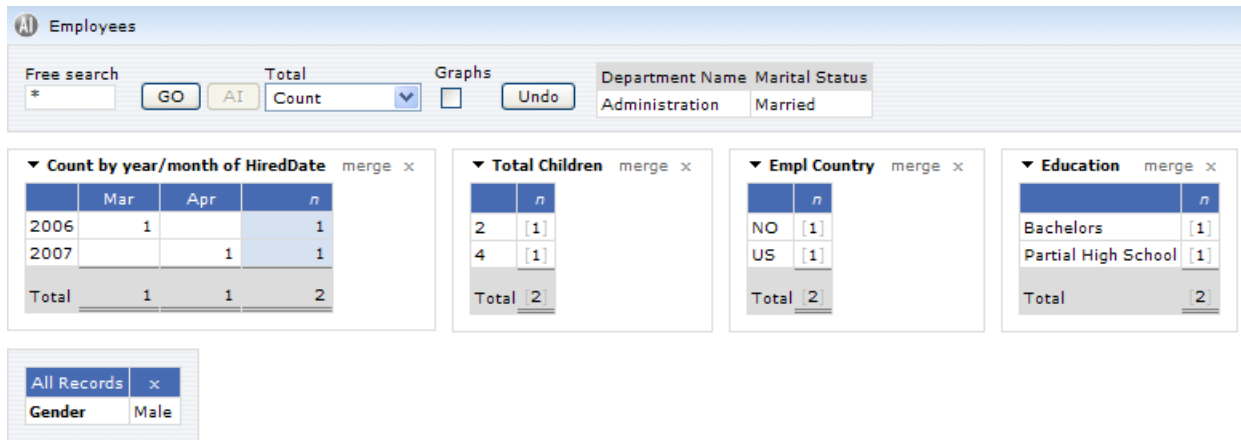
Clicking on the entity values (like e.g. “Administration” in “Department Name”) will reduce the data-source being used for the AI dashboard to records for Employees in the Administration Department:



From the first picture above the number of Employees in the Administration Department is 3, which becomes the total of Employees used in the filtered AI dashboard.



Further narrowing the AI dashboard by clicking “Married” in the Marital Status sub-report produces below dashboard:



As all “Married” employees of the “Administration” department are Male, this information is compressed in a sub-report named “All Records”. “All Records” is used to compress information and eliminate as much “noise” in the dashboard as possible.



Drill-down specifications

The AI dashboard is the top of the report hierarchy. Below you'll either find the detail records making up the individual reports on the dashboard or the initial level an existing report being analyzed with AI.

When drilling to detail records AI will automatically reduce the displayed records to the overall filters applied on the dashboard combined with the drill-down criteria's arising from the specific total that the user has selected.

If AI is applied on an existing report, the AI dashboard can be understood as an overall filter presentation that allows the end-user to select any combination of filters and "dimensions" for the underlying report via drill-down.

Employees

Free search: * Total: Count ☐ Department Name: Administration Marital Status: Married

	Mar	Apr	n
2006	1		1
2007		1	1
Total	1	1	2

	n
2	[1]
4	[1]
Total	2

	n
NO	[1]
US	[1]
Total	2

	n
Bachelors	[1]
Partial High School	[1]
Total	2

All Records x
Gender: Male

Employees

Department Name	Marital Status
Administration	Married

	Employee ID	First Name	Last Name	Empl Country	Gender	Total Children	Education	Hired Date
1	124	Gerald	Chawes	US	Male	4	Partial High School	2006-03-01
2	125	Tommy	Wennick	NO	Male	2	Bachelors	2007-04-01
Total								

Count of items: 2

Above example displays the drill-down specification for the "Total 2" of the sub-report Empl Country, showing the exact 2 records that makes up the total.



Clicking the 1 next to US in the “Empl Country” sub-report will apply the filter US to the records in the drill-down specification and only shows that 1 Employee of US that is Married and employed in the Administration department.

AI Employees

Free search

GO

AI

Total

Count

Graphs

☐

Undo

Department Name

Marital Status

Administration

Married

▼ Count by year/month of HiredDate

merge x

	Mar	Apr	n
2006	1		1
2007		1	1
Total	1	1	2

▼ Total Children

merge x

	n
2	1
4	1
Total	2

▼ Empl Country

merge x

	n
NO	1
US	1
Total	2

▼ Education

merge x

	n
Bachelors	1
Partial High School	1
Total	2

All Records x

Gender

Male

Employees

Department Name	Marital Status	Empl Country
Administration	Married	US

	Employee ID	First Name	Last Name	Gender	Total Children	Education	Hired Date
1	124	Gerald	Chawes	Male	4	Partial High School	2006-03-01
Total							

Count of items: 1

The overall rule in AI dashboards is that drilling on the numeric totals will produce a drill-down specification, clicking on entity group values will use the specific value as a drill-up filter for the entire dashboard.



Compressed Drill-down specifications

When drill-down to detail level records is executed from an AI dashboard, Dynamic AI will automatically evaluate the columns presented and compress the report by not displaying redundant record values equal to the drill-down criteria's applied. This functionality has been implemented in order to reduce the noise of redundant information, increase transfer speed, and ease the reading on smaller screens or from smaller windows.

A simple example of compressed drill-down in combination with AI:

AI Products

Free search Recs/page From no.
* 20 1 GO AI

Products

	Product ID	Product Name	Product Group ID	Product Group Name	Material
1	1	Milano	1101	Chairs	Leather
2	2	Cittero	1101	Chairs	Fiber
3	3	Givonetti	1101	Chairs	Fiber
4	4	Kendo	1101	Chairs	Leather
5	8	Square	2003	Tables	Fiber
6	9	Board room	2003	Tables	Wood
7	10	Office Table elevation	2003	Tables	Wood
8	11	Desk	2003	Tables	Wood
9	12	Horizont	2550	Shelves	Wood

Creating an AI dashboard on top of the Products table found in the DEMO database:

AI Products

Free search Total Graphs
* GO AI Count

Product Group ID/Name merge x

Product Group ID	Product Group Name	n
1101	Chairs	4
2003	Tables	5
2550	Shelves	4
3027	Sofas	5
5999	Other	2
Total		20

Material merge x

	n
Fiber	7
Leather	4
Steel	3
Wood	6
Total	20

Will display 2 sub-reports, 1 by Product Group ID/Name and 1 by Material.



Drilling to the details from the Product Group ID/Name on the 5 products in the group “3027/Sofas”:

AI Products

Free search

GO

AI

Total

Count

▼

Graphs

☐

▼ Product Group ID/Name

merge x

Product Group ID	Product Group Name	n
1101	Chairs	4
2003	Tables	5
2550	Shelves	4
3027	Sofas	5
5999	Other	2
Total		20

▼ Material

merge x

	n
Fiber	7
Leather	4
Steel	3
Wood	6
Total	20

Products

Product Group ID	Product Group Name
3027	Sofas

	Product ID	Product Name	Material
1	16	Emilio	Leather
2	17	Panorama	Fiber
3	18	Prodotto	Leather
4	19	Juice	Fiber
5	20	Giant pillow	Fiber
Total			

Count of items:

5

Will display the underlying products and eliminate the Product Group ID and Name columns. The reason being that the Product Group ID and Product Group Name for all 5 displayed records all belong to the drill-down group 3027/Sofas.



Drilling from the Material Sub-report on the 7 items in the Fiber group will produce the following details:

AI Products

Free search

GO

AI

Total

Count

▼

Graphs

☐

▼ Product Group ID/Name merge x

Product Group ID	Product Group Name	n
1101	Chairs	4
2003	Tables	5
2550	Shelves	4
3027	Sofas	5
5999	Other	2
Total		20

▼ Material merge x

	n
Fiber	7
Leather	4
Steel	3
Wood	6
Total	20

Products

Material

Fiber

	Product ID	Product Name	Product Group ID	Product Group Name
1	2	Cittero	1101	Chairs
2	3	Givonetti	1101	Chairs
3	8	Square	2003	Tables
4	17	Panorama	3027	Sofas
5	19	Juice	3027	Sofas
6	20	Giant pillow	3027	Sofas
7	23	Carpet - meeting room	5999	Other
Total				

Count of items: 7

In this case eliminating the Material column from the details but includes the Product Group columns.

Without any programming or any design decisions or actions made the Automated Intelligence functionality will in most cases produce meaningful results and help the user to get insight to the underlying data.



Drag-drop re-arranging sub-reports

On the AI dashboard, each individual sub-report is a separate element. Elements can be moved, re-ordered or removed from the dashboard.

Holding the mouse over the title of a sub-report will display a “move” cursor. Click the title and drag the sub-report over a target report located where the sub-report should be moved to. Drop the report and it will move in front of the drop-target.

Removed and re-ordered positions are kept when the AI dashboard is saved.

Example showing the move of the sub-report for “Education” in front of the “Empl Country” sub-report:

AI Employees ▼Tools

Free search: * GO AI Total: Count ▼ Graphs ☐

▼ Count by year/month of HiredDate merge x

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	n
2006	4		1	2	1	2	2	3		1	1	3	20
2007	3			2	2			1	2		1		11
2008	1	2	1		1	1			1	2	1		10
2009	2	1	1										4
Total	10	3	3	4	4	3	2	4	3	3	3	3	45

▼ Department Name merge x

	n
Accounting	[10]
Administration	[3]
Management	[14]
Production	[7]
Sales	[11]
Total	45

▼ Education merge x

	n
Bachelors	[14]
Graduate Degree	[10]
High School	[12]
Partial College	[5]
Partial High School	[4]
Total	45

▼ Empl Country merge x

	n
CA	[3]
CH	[11]
GE	[4]
HU	[14]
NO	[12]
OE	[5]
Partial High School	[4]
Total	45

▼ Gender merge x

	n
Female	[12]
Male	[33]
Total	45

▼ Marital Status merge x

	n
Married	[24]
Single	[21]
Total	45

Using drag-drop to re-arrange sub-reports on a dashboard is also supported on packaged reports in Dynamic AI. A dashboard created using the Package type report can present reports across several data-sources and connections.



Drag-drop sub-report merging

Additional to the automatically produced reports, the AI dashboard offers drag-drop features on the “merge” action next to the sub-report title, available on AI dashboards with more than 1 sub-report.

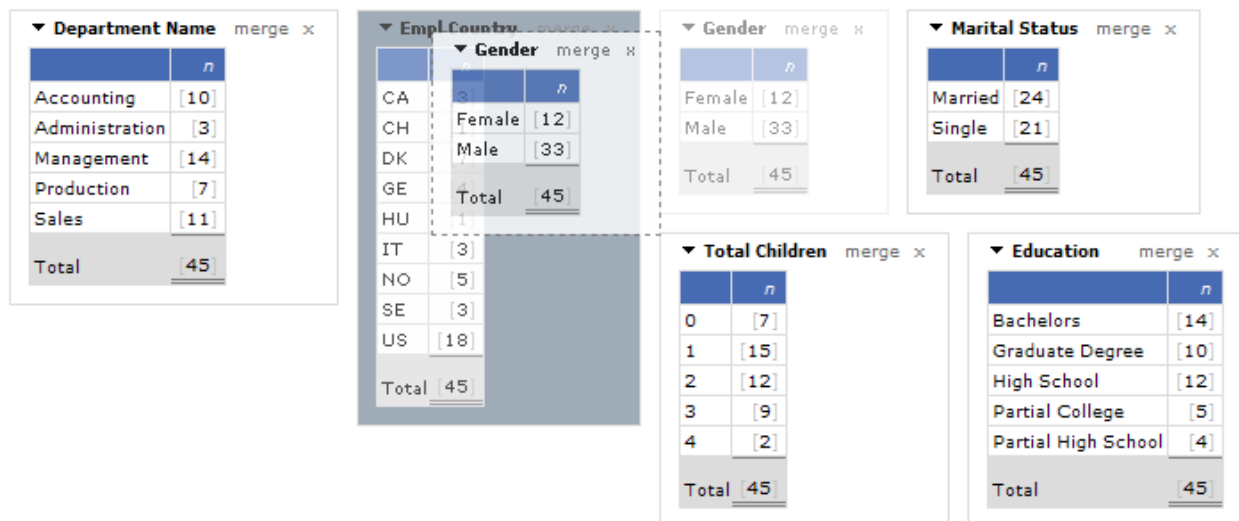
The merge action allows users to create additional reports simply by merging the “dimensions” of 2 existing sub-reports.

When drag actions are started from the word “merge”, the dashboard will merge the dragged report with the target report instead of re-positioning the report.

The “merge” has 2 basic functions:

Drag to the upper half of an existing report, the background turns dark-gray, and will produce a pivot/cross-tab report of the 2 reports having the drag-source as column grouping and the target report as row grouping for the selected measurement total.

Example showing a merge of the Gender sub-report with the “Empl Country” sub-report.



▼ Department Name merge x	
	n
Accounting	[10]
Administration	[3]
Management	[14]
Production	[7]
Sales	[11]
Total	45

▼ Empl Country merge x	
	n
CA	[3]
CH	[3]
DK	[3]
GE	[3]
HU	[3]
IT	[3]
NO	[5]
SE	[3]
US	[18]
Total	45

▼ Gender merge x	
	n
Female	[12]
Male	[33]
Total	45

▼ Marital Status merge x	
	n
Married	[24]
Single	[21]
Total	45

▼ Total Children merge x	
	n
0	[7]
1	[15]
2	[12]
3	[9]
4	[2]
Total	45

▼ Education merge x	
	n
Bachelors	[14]
Graduate Degree	[10]
High School	[12]
Partial College	[5]
Partial High School	[4]
Total	45

As the Gender report is dragged to the upper half of the “Empl Country” report, the new created sub-report should be a grouping by country in rows and Gender in columns illustrated below:

▼ Department Name merge x

	<i>n</i>
Accounting	[10]
Administration	[3]
Management	[14]
Production	[7]
Sales	[11]
Total	<u>45</u>

▼ Empl Country - Gender merge x

	Female	Male	<i>n</i>
CA		3	3
CH	1		1
DK	2	5	7
GE	1	3	4
HU		1	1
IT	1	2	3
NO		5	5
SE	1	2	3
US	6	12	18
Total	<u>12</u>	<u>33</u>	<u>45</u>

▼ Empl Country merge x

	<i>n</i>
CA	[3]
CH	[1]
DK	[7]
GE	[4]
HU	[1]
IT	[3]
NO	[5]
SE	[3]
US	[18]
Total	<u>45</u>

▼ Gender merge x

	<i>n</i>
Female	[12]
Male	[33]
Total	<u>45</u>

▼ Marital Status merge x

	<i>n</i>
Married	[24]
Single	[21]
Total	<u>45</u>

▼ Total Children merge x

	<i>n</i>
0	[7]
1	[15]
2	[12]
3	[9]
4	[2]
Total	<u>45</u>

▼ Education merge x

	<i>n</i>
Bachelors	[14]
Graduate Degree	[10]
High School	[12]
Partial College	[5]
Partial High School	[4]
Total	<u>45</u>

Drag a report to the lower half of an existing report, the background will turn light-blue, and will produce a new report on the target position having the dragged report as an additional row-group level.

▼ Department Name	merge x
	<i>n</i>
Accounting	[10]
Administration	[3]
Management	[14]
Production	[7]
Sales	[11]
Total	<u>45</u>

▼ Empl Country	merge x
	<i>n</i>
CA	[3]
CH	[1]
DK	[7]
GE	[4]
HU	[1]
IT	[5]
NO	[15]
SE	[12]
US	[18]
Total	<u>45</u>

▼ Gender	merge x
	<i>n</i>
Female	[12]
Male	[33]
Total	<u>45</u>

▼ Marital Status	merge x
	<i>n</i>
Married	[24]
Single	[21]
Total	<u>45</u>

▼ Total Children	merge x
	<i>n</i>
0	[7]
1	[15]
2	[12]
3	[9]
4	[2]
Total	<u>45</u>

▼ Education	merge x
	<i>n</i>
Bachelors	[14]
Graduate Degree	[10]
High School	[12]
Partial College	[5]
Partial High School	[4]
Total	<u>45</u>

Example showing the new sub-report created when merging Gender with “Empl Country” as a row-grouping:

▼ Department Name merge x	
	n
Accounting	[10]
Administration	[3]
Management	[14]
Production	[7]
Sales	[11]
Total	<u>[45]</u>

▼ Empl Country - Gender merge x		
+		
Empl Country	Gender	n
CA		
	Male	[3]
	Total (CA)	[3]
CH		[1]
DK		
	Female	[2]
	Male	[5]
	Total (DK)	[7]
GE		[4]
HU		[1]
IT		[3]
NO		[5]
SE		[3]
US		[18]
Total		<u>[45]</u>

▼ Empl Country merge x	
	n
CA	[3]
CH	[1]
DK	[7]
GE	[4]
HU	[1]
IT	[3]
NO	[5]
SE	[3]
US	[18]
Total	<u>[45]</u>

▼ Gender merge x	
	n
Female	[12]
Male	[33]
Total	<u>[45]</u>

If the target report already is part of a row/column group report or has more than 1 row-grouping, the target report will be replaced by the new report (if more than 1 existing dimension). If the target report is the original 1 dimension sub-report, then an additional merged report will be inserted leaving it up to the user whether to close and remove the original dimension reports or use them in combination with other sub-reports.

Multiple collapse/expand reports

With the introduction of report merging features the collapse/expand functionality in Dynamic AI has been adjusted to allow several individual reports to collapse/expand isolated from each other.

▼ Department Name - Total Children merge x		
+		
Department Name	Total Children	n
Accounting		
	0	[1]
	1	[2]
	2	[5]
	3	[2]
Total (Accounting)		10
Administration		[3]
Management		[14]
Production		
	1	[4]
	2	[2]
	3	[1]
Total (Production)		7
Sales		[11]
Total		45

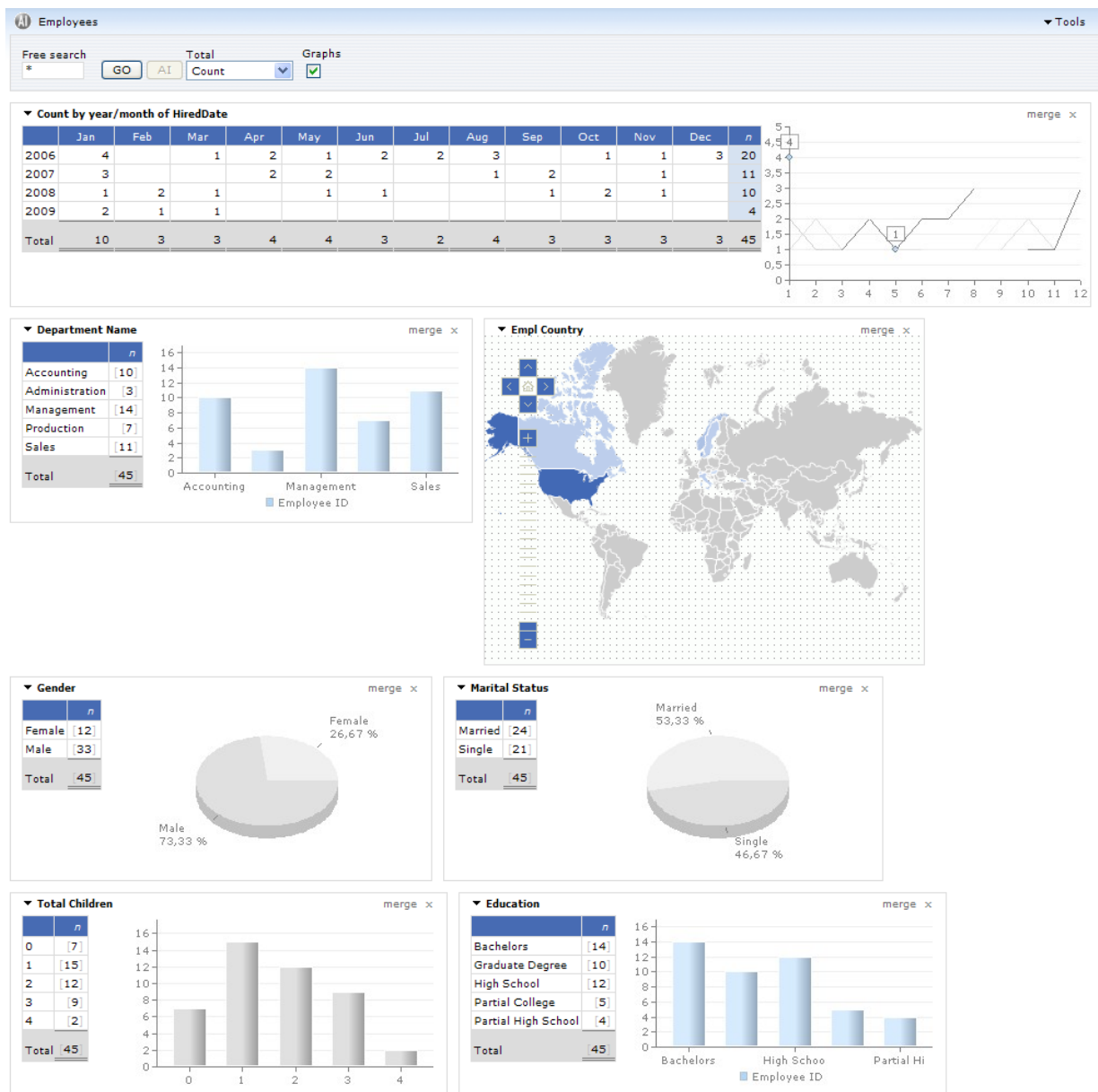
▼ Gender - Marital Status - Education merge x			
+			
	Married	Single	n
Female			
Bachelors	3	2	5
Graduate Degree		2	2
High School	1		1
Partial College		1	1
Partial High School	2	1	3
Total (Female)	6	6	12
Male	18	15	33
Total	24	21	45

▼ Education - Marital Status merge x		
+		
Education	Marital Status	n
Bachelors		
	Married	[11]
	Single	[3]
Total (Bachelors)		14
Graduate Degree		[10]
High School		[12]
Partial College		
	Married	[3]
	Single	[2]
Total (Partial College)		5
Partial High School		[4]
Total		45

Auto chart types

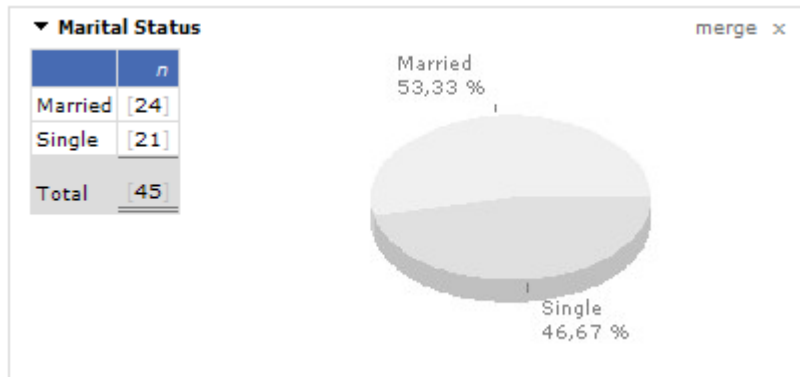
The AI dashboard offers an overall option to display or hide graphs. The option is turned off by default to allow the end-user to see as much of the dashboard on screen initially.

When checked, the AI dashboard will present charts next to each individual sub-report. The chart type used for each sub-report will depend on the number and type of grouped values. Ranging from pie-charts on sub-reports with only a few group values, to BAR charts for up to 10 values, to range and line chart types for time and numeric group values.

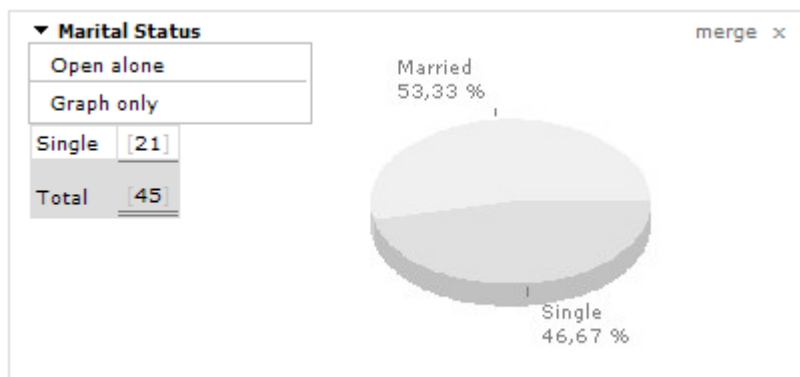


Individual chart options

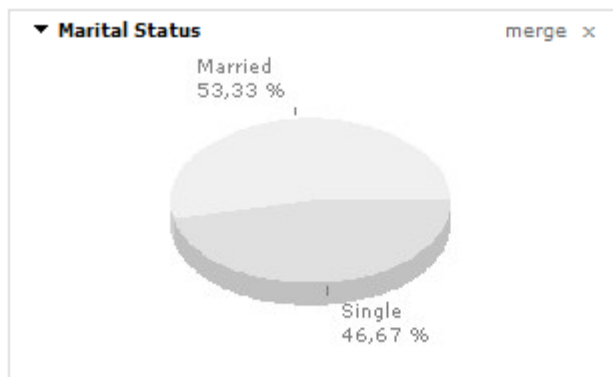
When the overall Graph option is checked, charts are displayed on the AI dashboard and the end-user now has the possibility to either hide the sub-report next to the graph (Graph only) or Remove the individual graph from a sub-report.



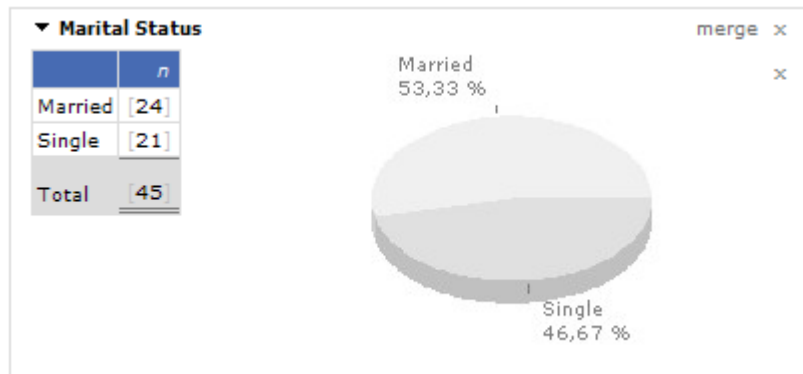
Use the drop-down menu next to the sub-report title to change a sub-report into a "Graph only" type.



Example of a "Graph only" type sub-report:



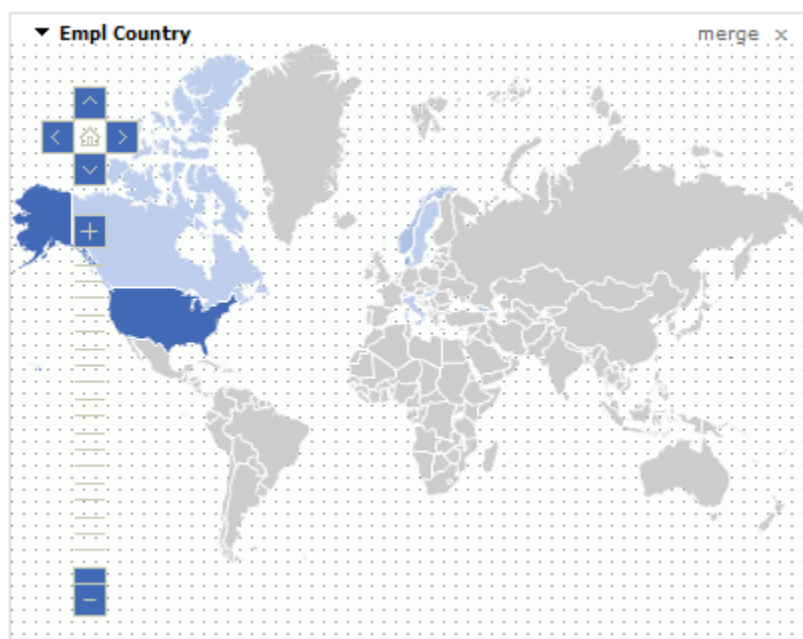
Move the mouse over an individual graph to display an “x” in the upper right corner of the graph to remove an individual graph from an AI dashboard.



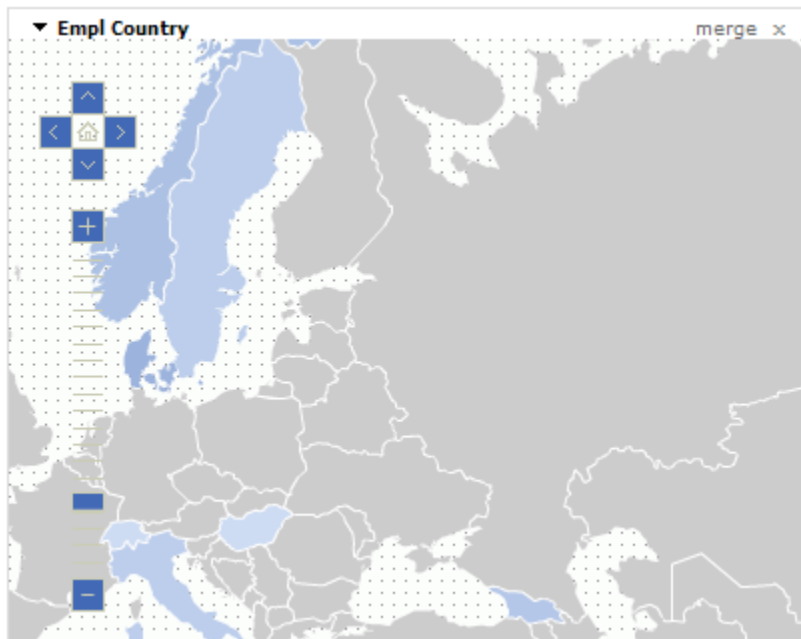
If the overall Graph option is checked and no graph is presented (as a result of a previous remove action), the graph can be displayed again by selecting the “Graph” or “Graph only” from the drop-down menu next to the sub-report title.

Country detection

The AI dashboard will look for sub-reports containing “country” as part of the column name and check whether it is possible to map the column data of the report into a general world-map and fill the data into a flash-based interactive world-map.



The chart can be zoomed and navigated using the tools in the left side of the chart or using scroll-wheel and mouse dragging.



When the map is part of an AI dashboard the strength of country colors will indicate the value of the measurement for the individual country.

Clicking on a specific country will be set the country as overall filter for the dashboard (drill-up).

Open alone

Next to each sub-report title a small drop-down triangle indicates the availability of a drop-down menu.

The drop-down menu specific to each individual sub-report offers the opportunity to open the sub-report “alone”. I.e. the selected sub-report will open as an individual report for further Ad-hoc or Design actions.

Be aware that the opened individual report will eventually overwrite the AI dashboard. Nothing is however overwritten before the new report is saved. In order to keep an existing (saved) AI dashboard after using “open alone” is to save the new opened report as a new report. The functionality to save reports is an optional user specific right that must be assigned on user accounts in Server and Enterprise editions of Dynamic AI.

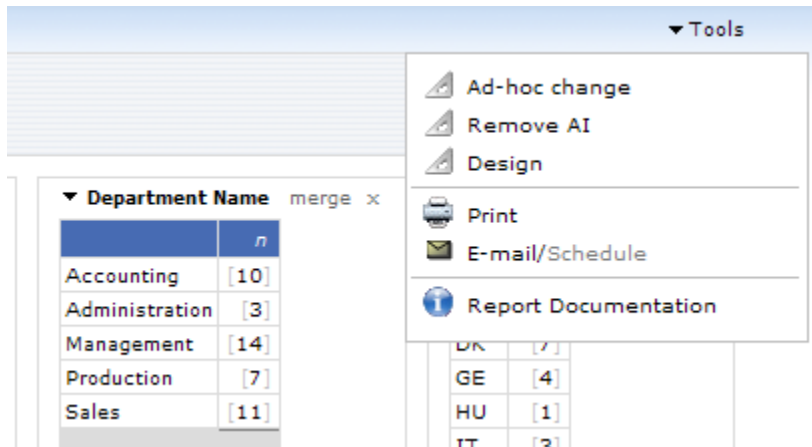
Using AI in combination with “Open alone” is a fast path to report design, combining automated intelligence with custom enhancements.

Remove AI

AI used on a report is not overwriting the existing report before saved using Ad-hoc or Design.

Users with the user-right to “Automated Intelligence” in combination with allowing “Access to Online and Ad-hoc Design” on the Options tab of a report Design will be allowed to run AI on top of a report.

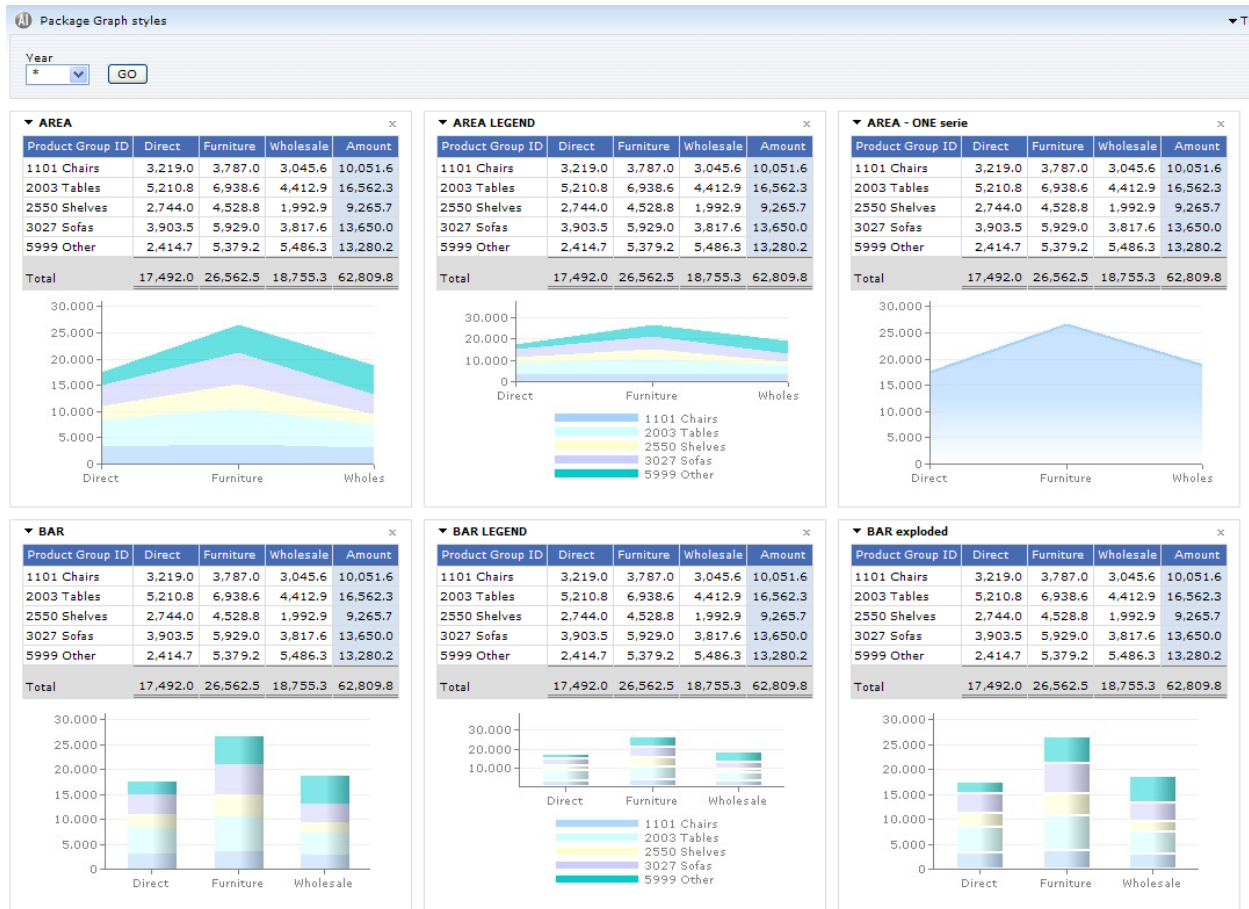
If AI should be removed from a report a “Remove AI” option is available on the Tools drop-down menu.



New graph styles

Dynamic AI version 6.3 introduces a number of new graph styles used on AI dashboards as well as for individual use. The new styles are very clean in colors and design as well as available in gray-shades to allow many graphs to be presented on dashboards without too much noise.

The new graph styles are all marked with a * in the style name.



The DEMO repository included in the Dynamic AI version 6.3 installation package include examples of the new graph styles as well as a gallery package.



New Flash-based world map

New interactive world-map graph styles are now also available in Dynamic AI.

The graph styles are named:

- World default Blue
- World default Gray
- World default Green
- World default Red

The “World” graph-type requires that values supplied to the graph can be mapped into standard ISO country codes.

Dynamic AI must be able to determine the correct country/region from the data in order to display the map correctly. Dynamic AI maintains a table of country names and variations in all supported languages.

This means that if your data contains a value such as “DE”, “Federal Republic of Germany”, “Alemanha”, “Alemania”, “Allemagne”, “Bundesrepublik Deutschland”, “Deutschland”, “Germania”, “Germany”, “Németország” or “Tyskland”, it will automatically be mapped to Germany.

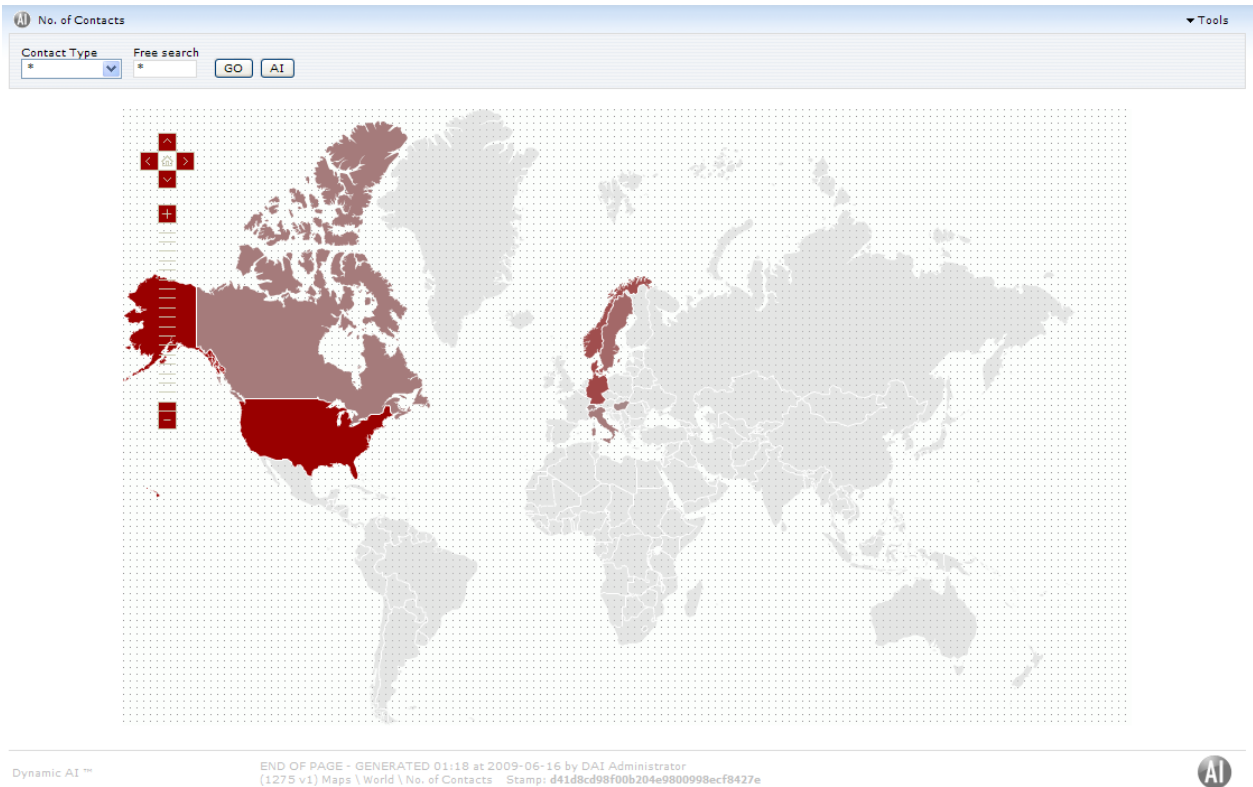
If a column contains unrecognized or misspelled country names, a text label, "Unmatched Countries: XX" will appear. Clicking the label bring up a list of the countries that could not be matched. Corrected variations of country names will be added to the list upon request.

The chart can be zoomed and navigated using the tools in the left side of the chart or using scroll-wheel and mouse dragging.

The data values control the color strength on the map so that higher values gives stronger(darker) colors. Exact values are shown when moving the mouse pointer over the different countries/regions.

The DEMO repository included in the Dynamic AI version 6.3 installation package include examples of the world map graph styles. Below example demonstrates the map-type graph used as a “Graph only” report with overall filtering available to end-users.





Use of the map style requires that a flash browser plug-in is available. The required plug-in will attempt to auto-install on most browsers if it's not already installed. Be aware that the World Map chart type is for interactive use in the browser. The map can't be e-mailed or exported.





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