HR
WSD Personnel

SAP Business Intelligence Reporting

BEx Ad Hoc Query Fundamentals - Part I

Washington State HRMS Business Intelligence (BI)
BI Power User Workshop Materials

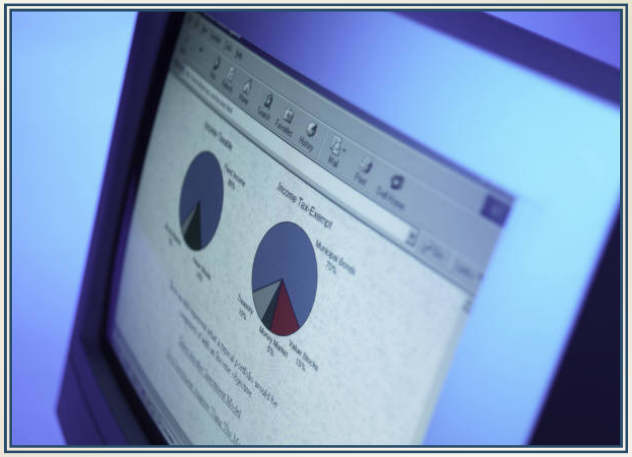
General Topics – BI Power Users

BEx Ad Hoc Query Fundamentals Overview

BEx Ad Hoc Query Fundamentals provides key terms and concepts BW/BI Power Users need to understand prior to creating an ad hoc query in BEx Query Designer.

BEx Ad Hoc Query Fundamentals are organized in multiple sections. Each section will build on the concepts covered in previous Fundamentals topics:

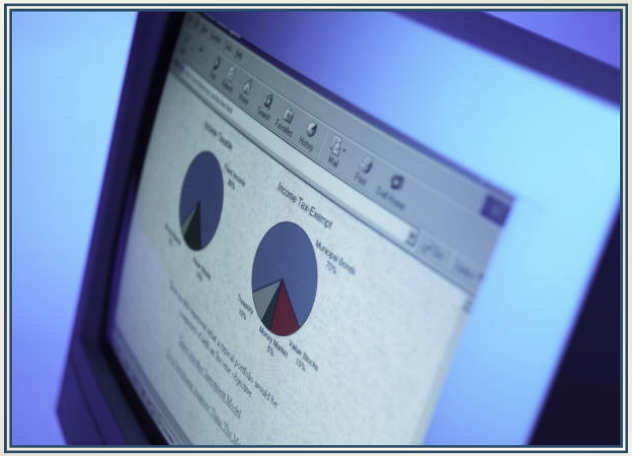
- BEx Ad Hoc Query Fundamentals – Part I:
  Provides an overview of basic key terms and concepts BW/BI Power Users need to understand prior to creating a basic ad hoc query in BEx Query Designer
- BEx Ad Hoc Query Fundamentals – Part II:
  Builds on the key terms and concepts covered in BEx Ad Hoc Query Fundamentals – Part I
- BEx Ad Hoc Query Fundamentals – Part III:
  Builds on the key terms and concepts covered in BEx Ad Hoc Query Fundamentals – Part I and Part II



BEx Ad Hoc Query Fundamentals – Part I

The BEx Ad Hoc Query Fundamentals – Part I section provides an overview of BEx Ad Hoc Query Fundamentals for creating a basic ad hoc query in BEx Query Designer.

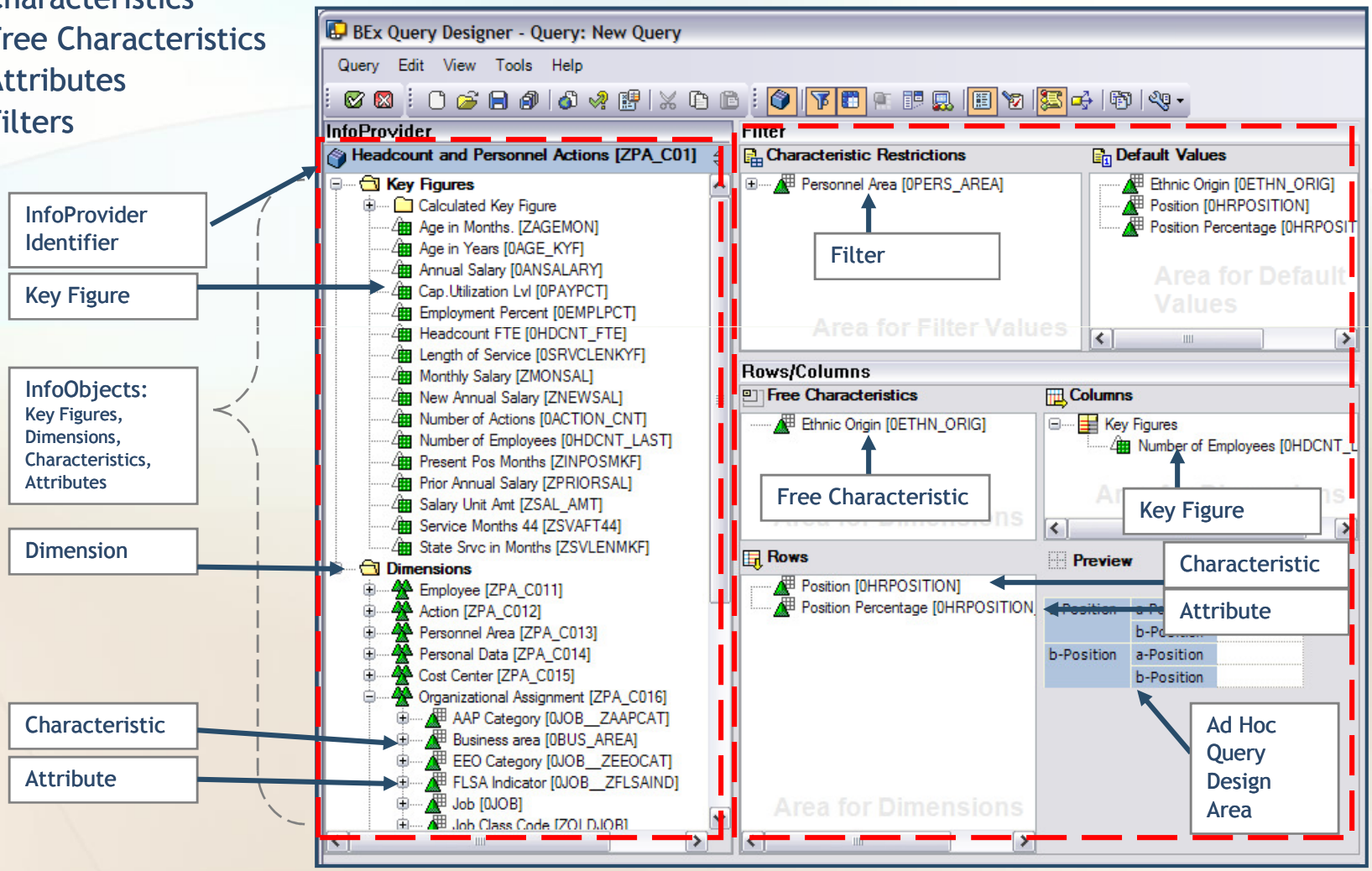
- Business Intelligence
- BW/BI Security
- BW/BI Environment
- Business Explorer (BEx)
  - What is BEx?
  - BEx Tools Overview
  - BEx Query Designer
    - BEx Ad Hoc Query Fundamentals Part I Overview
    - Key Figures
    - Dimensions
    - Characteristics
    - Free Characteristics
    - Attributes
    - Filters
  - BEx Query Analyzer



BEx Ad Hoc Query Fundamentals - Part I Overview

BEx Ad Hoc Query Fundamentals – Part I contains the following key terms and concepts:

- Key Figures
- Dimensions
- Characteristics
- Free Characteristics
- Attributes
- Filters



Key Figures

Key Figures are numeric InfoObjects that are the object of analysis in BW/BI reports, such as number of employees, number of positions, annual salary, etc. Key Figures quantify *Characteristics.

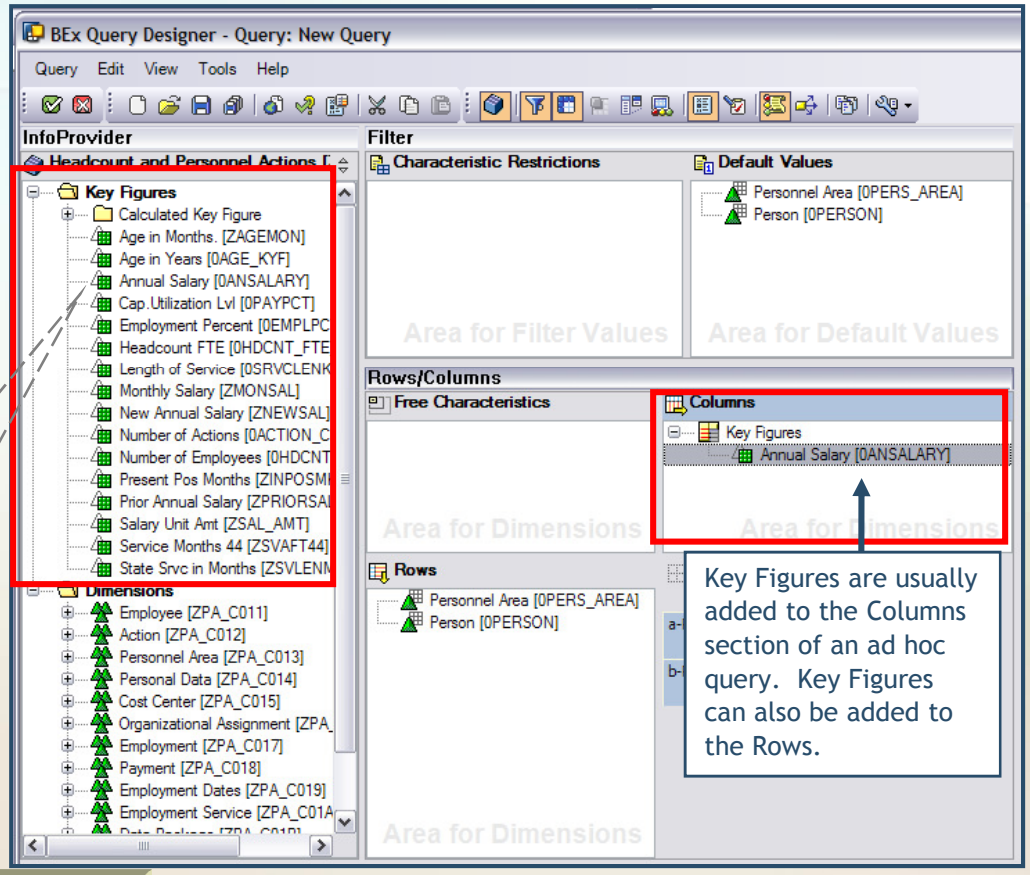
For example:

In the Headcount InfoCube, Key Figures include:

- Number of employees
- Annual salary

In the Quota Data InfoCube, Key Figures include:

- Compensated hours
- Donated hours
- Forfeited hours
- Accrued hours
- Taken hours



Key Figures are usually added to the Columns section of an ad hoc query. Key Figures can also be added to the Rows.

Indicates a Key Figure

*Characteristics are InfoObjects that describe the Key Figures and are usually added to the Rows section of the ad hoc query.

Continued…

Key Figures, Cont…

Key Figures are usually added to the Columns section of the query and Characteristics are usually added to the Rows. Key Figures can also be added to the Rows section and the Characteristics in the Columns.

The example below shows the difference between adding Key Figures in Columns and adding Key Figures to the Rows in the ad hoc query results:

Key Figures in Columns

Key Figures in Columns

Characteristics in Rows

Demo Key Figure Query

Display As Table | Information | Send | Print Version | Export to Excel | Comments

- Columns
  - Key Figures
- Rows
  - Gender
  - Ethnic Origin
- Free characteristics

Gender	Ethnic Origin	Total All Employees	Ttoal All Employees Average Salary
			$
Female	10/Not assigned	71	58,620.34
	American Indian/Alaskan	27	43,284.00
	Asian or Pacific Islander	30	14,895.20
	Black/Not Hispanic origin	32	45,929.13
	Hispanic	1	34,356.00
	White/Not Hispanic origin	392	43,702.58
	Result	553	44,146.59
Male	10/Not assigned	45	6,496.53
	American Indian/Alaskan	3	37,137.00
	Asian or Pacific Islander	3	31,352.00
	Black/Not Hispanic origin	33	40,726.91

Key Figures in Rows

Characteristics in Columns

Key Figures in Rows

Demo Key Figure Query

Display As Table | Information | Send | Print Version | Export to Excel | Comments

- Columns
  - Gender
  - Ethnic Origin
- Rows
  - Key Figures
- Free characteristics

	Gender	Female						
	Ethnic Origin	10/Not assigned	American Indian/Alaskan	Asian or Pacific Islander	Black/Not Hispanic origin	Hispanic	White/Not Hispanic origin	Result
Total All Employees		71	27	30	32	1	392	553
Ttoal All Employees Average Salary	$	58,620.34	43,284.00	14,895.20	45,929.13	34,356.00	43,702.58	44,146.59

Continued…

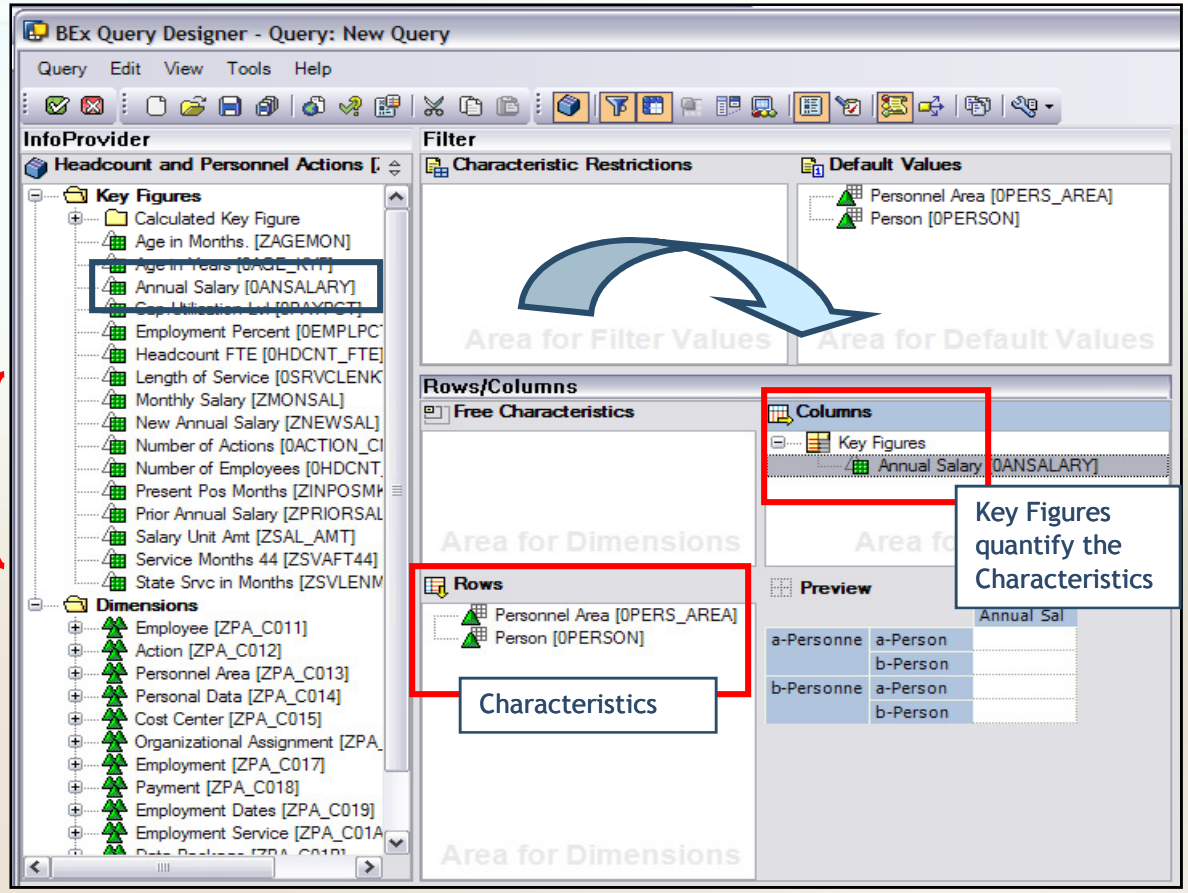
Key Figures, Cont…

Adding a Key Figure

The example below shows how to add the Annual Salary Key Figure to the Columns section of the ad hoc query.

To add a Key Figure to the Columns section:

1. *Drag&Drop the Annual Salary Key Figure from the Key Figure section of the InfoObjects list to the Columns section of the query.



*To Drag&Drop, left mouse-click and hold the Key Figure. Move the Key Figure to the Columns section and release the mouse.

Continued…

Key Figures, Cont…

Removing a Key Figure

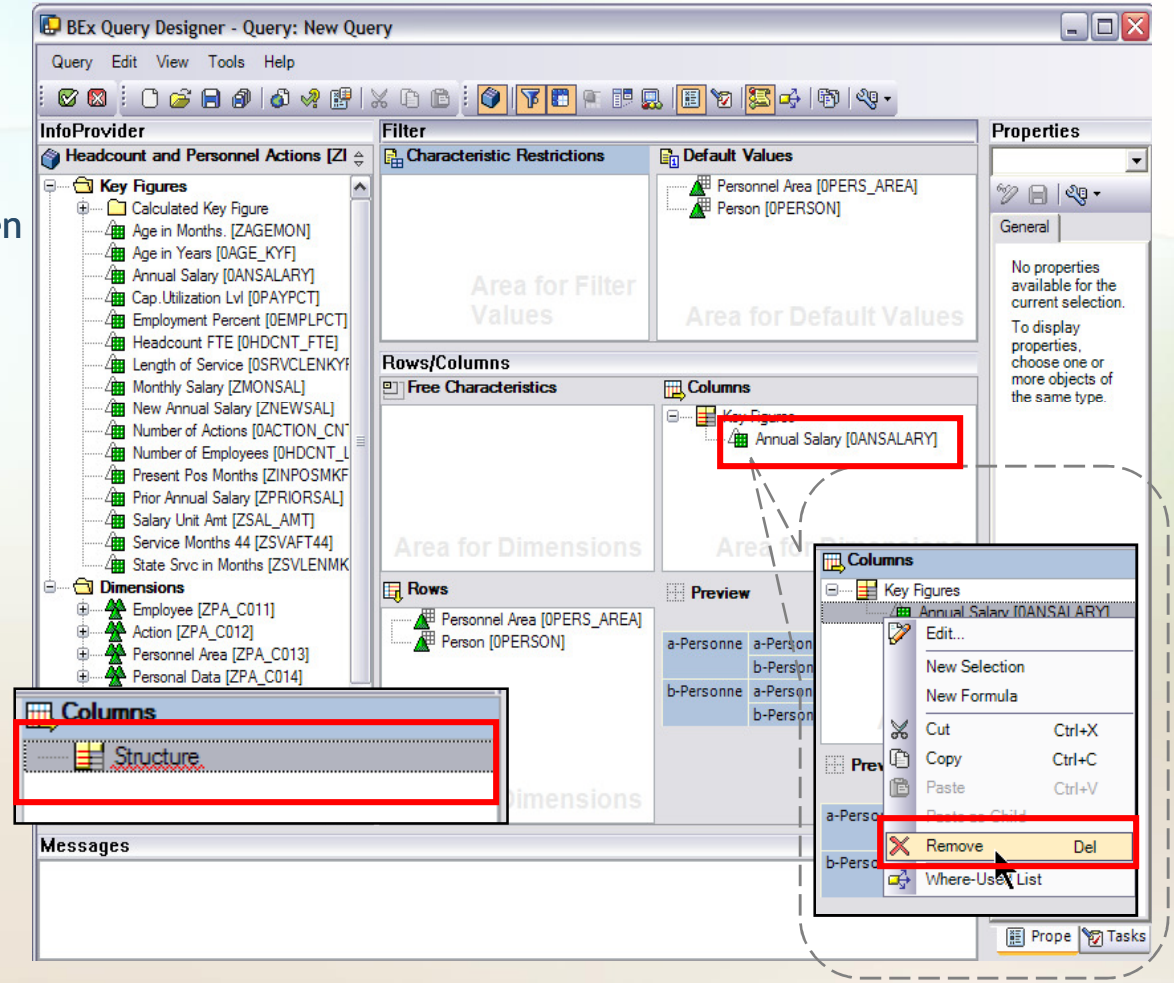
The example below shows how to remove a Key Figure from an ad hoc query.

To remove a Key Figure from the query:

1. Right mouse-click on the Key Figure in the ad hoc query to open the *Context Menu.

2. Select Remove.
   (This action does not remove the Key Figure from the InfoProvider. It is removed from the ad hoc query only)

Result: The Key Figure has been removed from the ad hoc query.

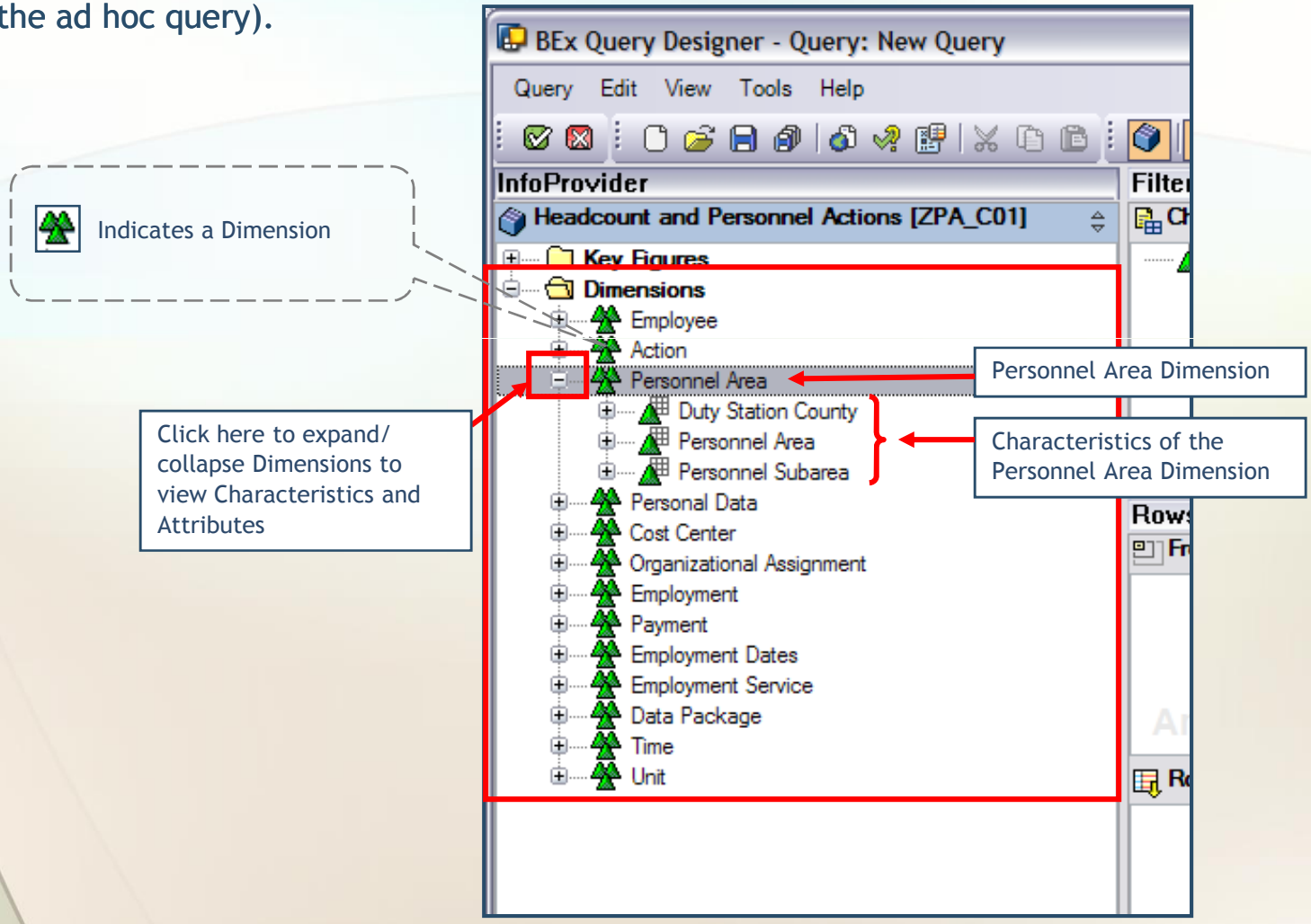


*A Context Menu is a list of commands and properties for a selected object.

Dimensions

Dimensions are logical groupings of Characteristics and Attributes in an InfoProvider. Dimensions can be found in the InfoObject section of BEx Query Designer.

Expand a Dimension to select Characteristics and Attributes within the Dimension (Dimensions cannot be added to the ad hoc query).

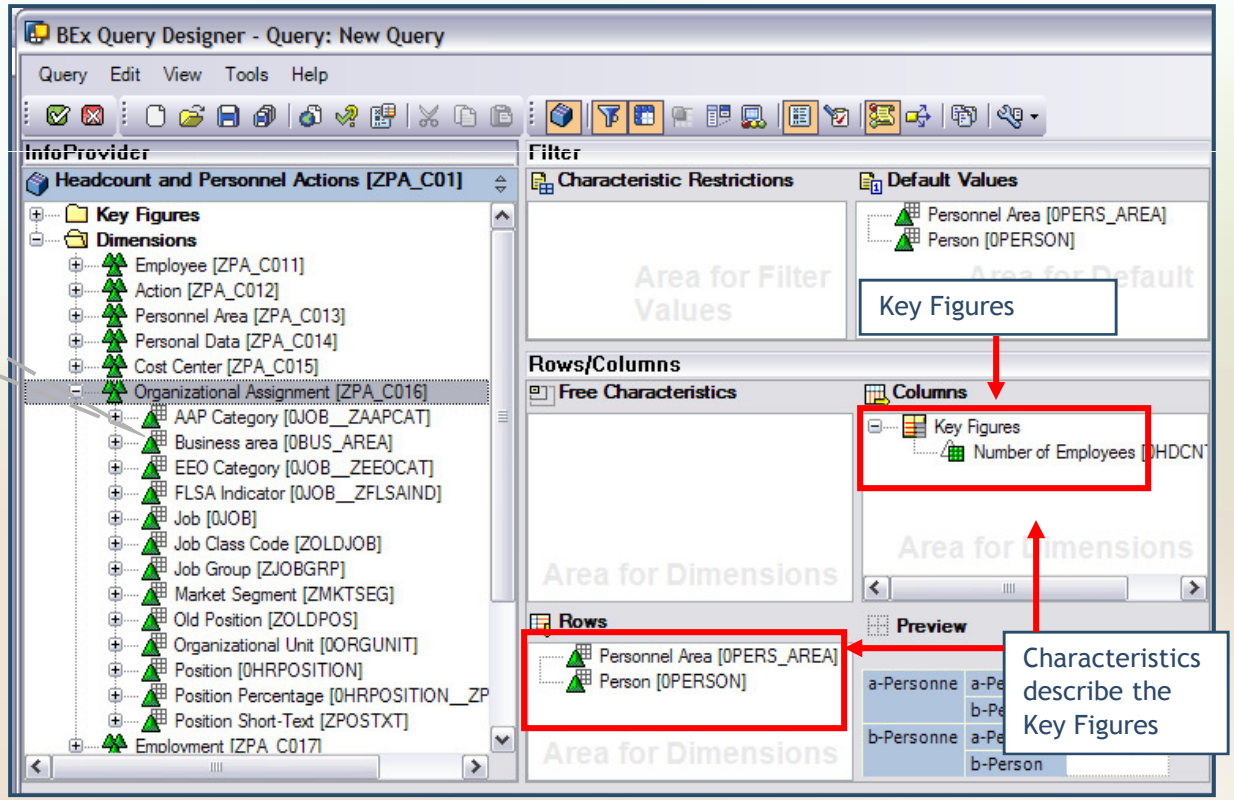


Characteristics

Characteristics describe the Key Figures. Characteristics are selected from the Dimensions of the InfoObjects list and added to the query.

The example below shows how a "Personnel Area" Characteristic and "Number of Employees" Key Figure will produce the following ad hoc query results if the Department of Personnel is selected for the Personnel Area:

	Characteristic = Personnel Area	Key Figure = Number of Employees
Result:	1110 – Department of Personnel	178 (example only)



Indicates a Characteristic or Navigation Attribute

Continued…

Characteristics, Cont…

Characteristics are usually added to the Rows section of the query and Key Figures are usually added to the Columns section. Characteristics can also be added to the Columns section and Key Figures in the Rows.

The example below shows the difference between adding Characteristics in Rows and adding Characteristics to the Columns in the ad hoc query results:

Characteristics in Rows

Demo Key Figure Query

Key Figures in Columns

Display As Table | Information | Send | Print Version | Export to Excel | Comments

Characteristics in Rows

- Columns
  - Key Figures
- Rows
  - Gender
  - Ethnic Origin
- Free characteristics

Gender	Ethnic Origin	Total All Employees	Ttoal All Employees Average Salary
			$
Female	10/Not assigned	71	58,620.34
	American Indian/Alaskan	27	43,284.00
	Asian or Pacific Islander	30	14,895.20
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	Hispanic	1	34,356.00
	White/Not Hispanic origin	392	43,702.58
	Result	553	44,146.59
Male	10/Not assigned	45	6,496.53

Characteristics in Columns

Demo Key Figure Query

Display As Table | Information | Send | Print Version | Export to Excel | Comments

Characteristics in Columns

Key Figures in Rows

- Columns
  - Gender
  - Ethnic Origin
- Rows
  - Key Figures
- Free characteristics

	Gender	Female						
	Ethnic Origin	10/Not assigned	American Indian/Alaskan	Asian or Pacific Islander	Black/Not Hispanic origin	Hispanic	White/Not Hispanic origin	Result
Total All Employees		71	27	30	32	1	392	553
Ttoal All Employees Average Salary	$	58,620.34	43,284.00	14,895.20	45,929.13	34,356.00	43,702.58	44,146.59

Continued…

Characteristics, Cont…

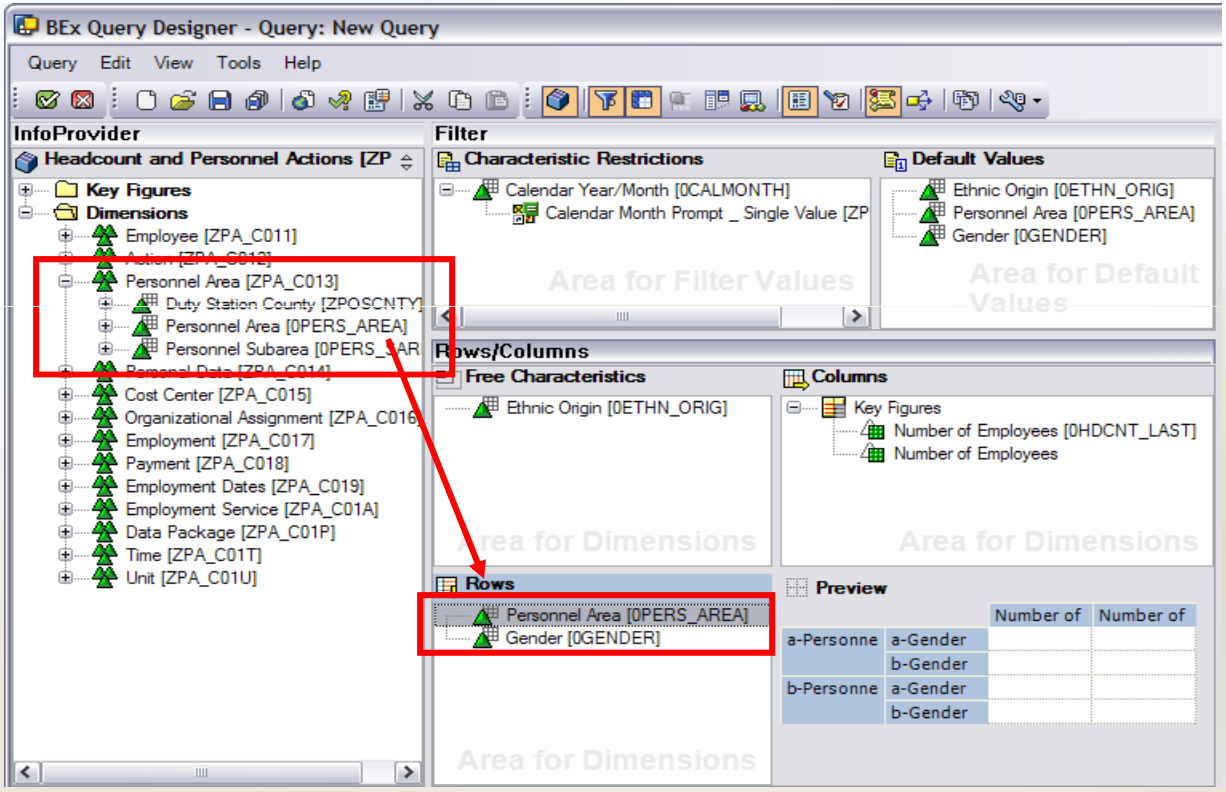
Adding a Characteristic

The example below shows how to add the Personnel Area Characteristic to the Rows section of the ad hoc query.

To add a Characteristic to the Rows section:

1. Expand the Personnel Area Dimension.

2. Drag&Drop the Personnel Area Characteristic from the Personnel Area Dimension to the Rows section of the query.



Continued…

Characteristics, Cont…

Removing a Characteristic

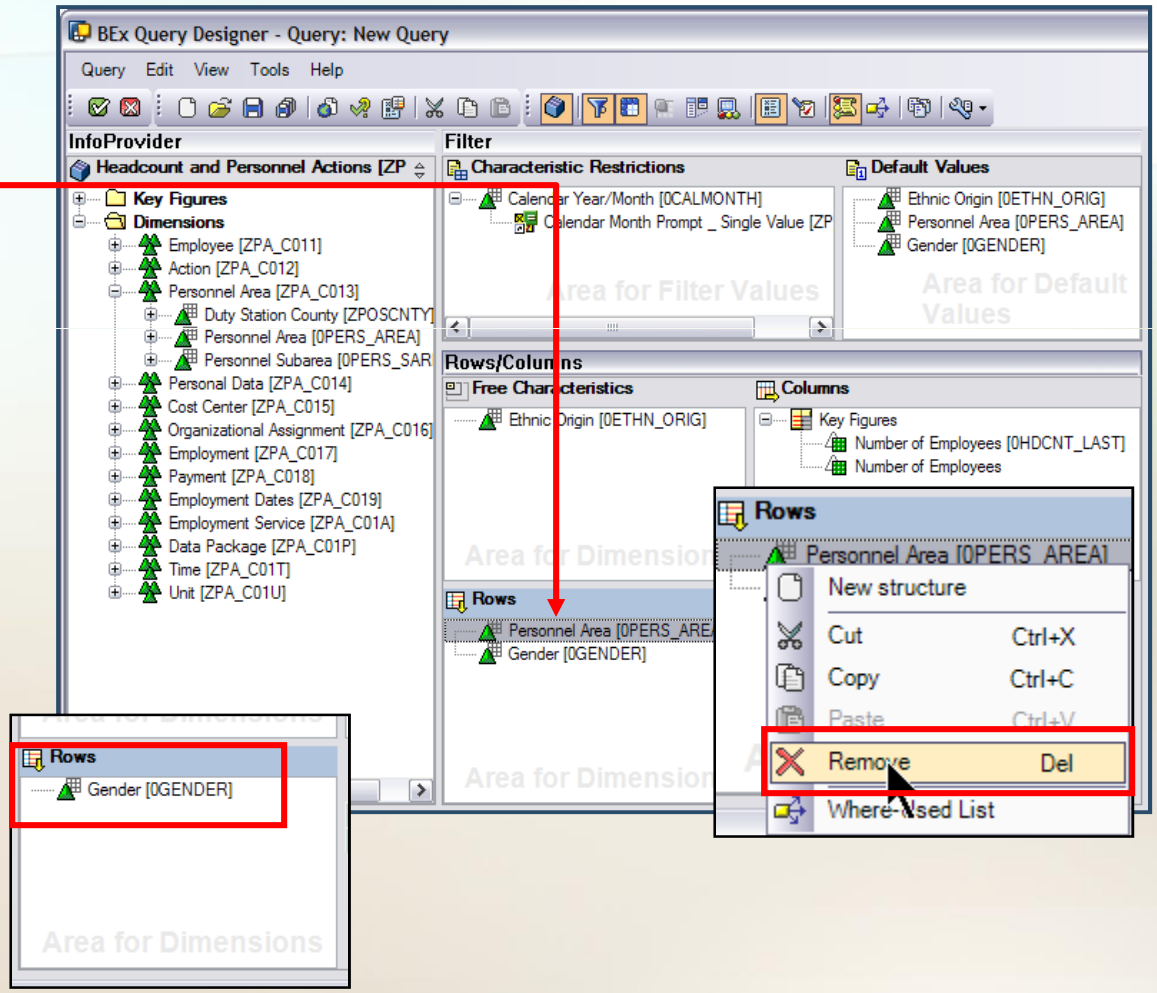
The example below shows how to remove a Characteristic from an ad hoc query.

To remove a Characteristic from the query:

1. Right mouse-click on the Characteristic in the ad hoc query to open the Context Menu.

2. Select Remove.
   (This action does not remove the Characteristic from the InfoProvider. It is removed from the ad hoc query only)

Result: The Characteristic has been removed from the ad hoc query.

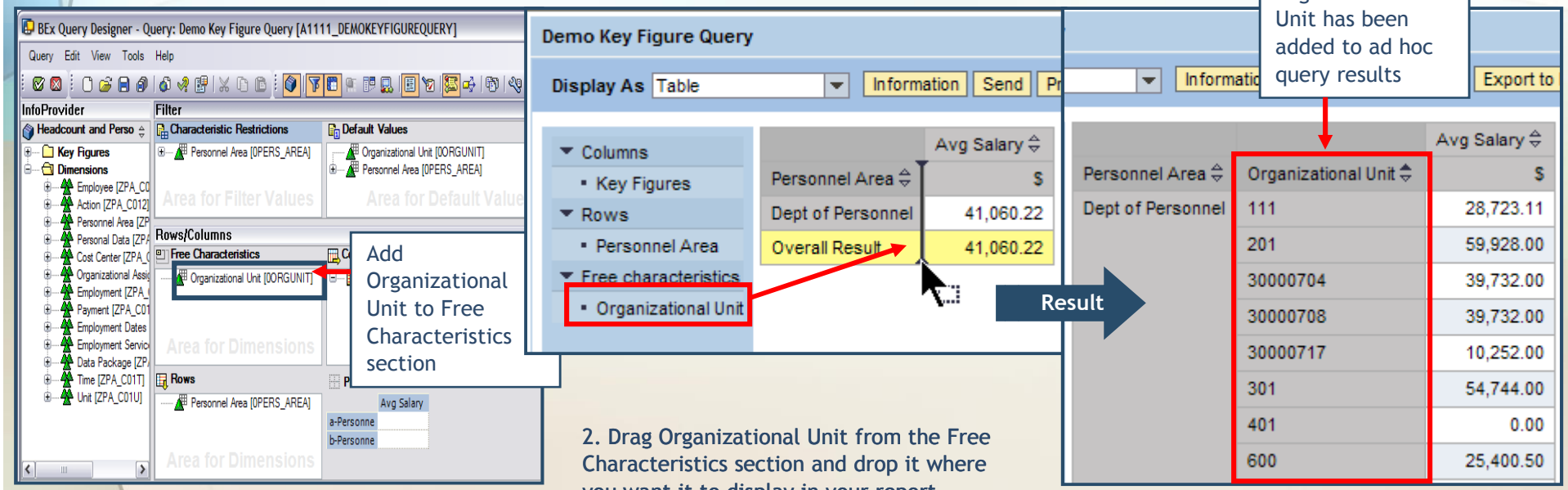


Free Characteristics

Free Characteristics are Characteristics or *Navigation Attributes in a query that do not display in the initial query results. Free Characteristics can be added to the query results at runtime.

In the example below, Organizational Unit has been added to the Free Characteristic section of the ad hoc query. As a Free Characteristic, Organizational Unit will not initially be displayed in the ad hoc query results.

To display the Organizational Unit in the ad hoc query results, drag and drop Organizational Unit to the section that you want it to display in your report.



1. Add Organizational Unit as a Free Characteristic and run query on the web

2. Drag Organizational Unit from the Free Characteristics section and drop it where you want it to display in your report

3. Organizational Unit has been added to results

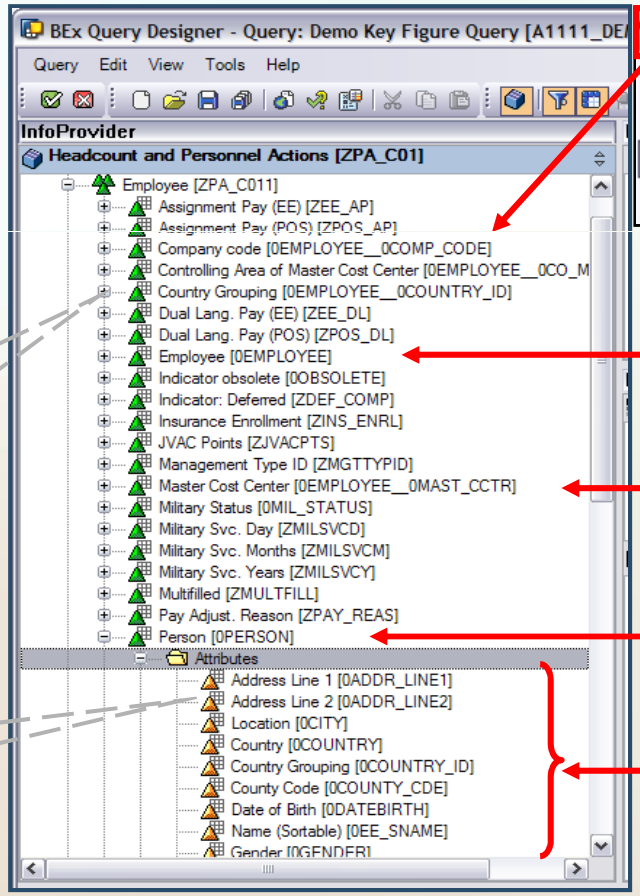
*A Navigation Attribute is a field that describes a Characteristic. It functions in the same manner as a Characteristic. It is "navigational" in that it can be drilled down on, filtered, sorted, etc.

Attributes

An **Attribute** is a field that describes a Characteristic. For example, Anniversary Date and Ethnic Origin are attributes of the Employee Characteristic.

There are two types of Attributes in the InfoObject List:

1. Navigation Attributes – Function in the same manner as Characteristics. Fields are "navigational" (can be drilled down on, sorted or filtered in the query results).
2. Display-Only Attributes – Must accompany the Characteristic it is an attribute of. Fields are not navigational and are for display purposes only.



Click Technical Names icon to toggle Technical Names of InfoObjects On/Off

Employee Characteristic

Navigation Attribute of Employee

Person Characteristic

Display-Only Attributes of Person (must include the Person Characteristic)

Indicates a Characteristic or Navigation Attribute

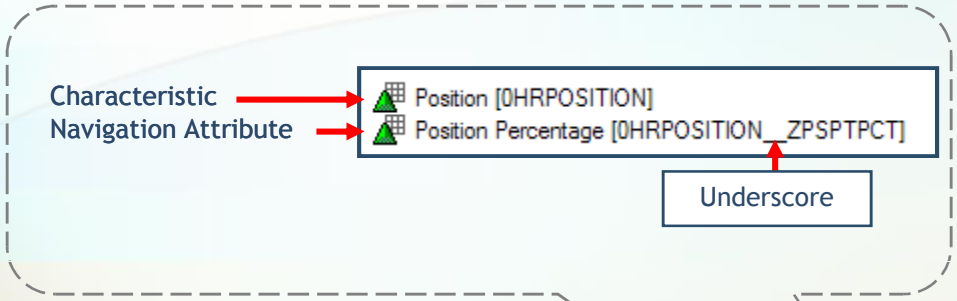
Indicates a Display-Only Attribute

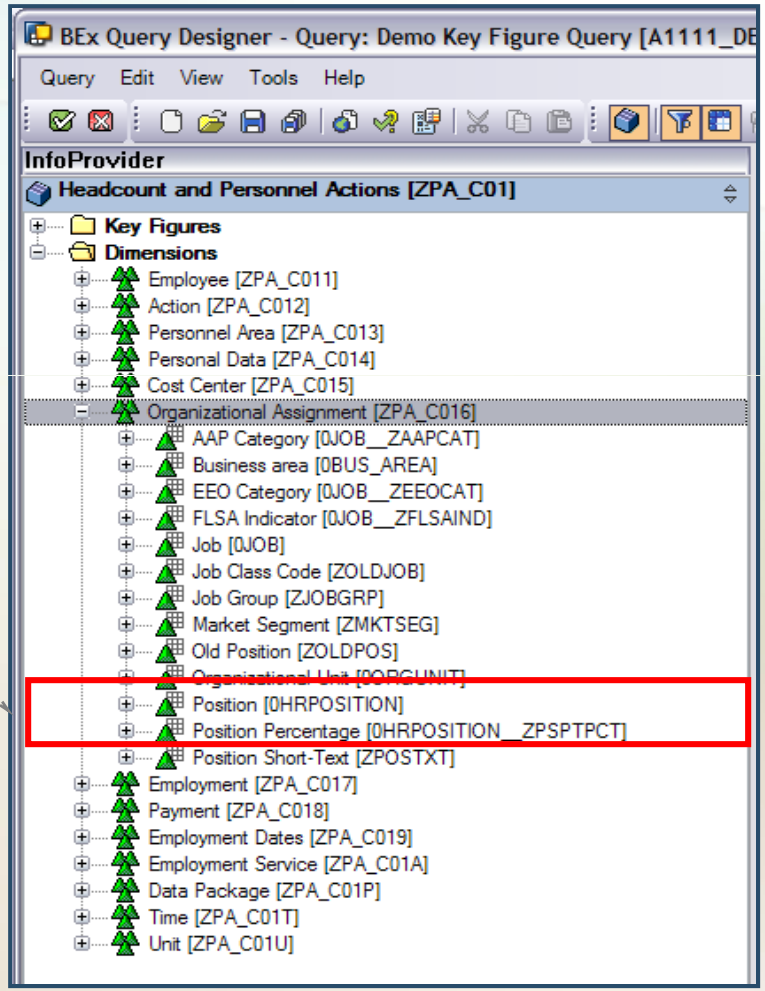
Continued…

Attributes, Cont…

To distinguish between a Characteristic and a Navigation Attribute, refer to the technical name:

- Characteristics have a single Technical Name.
- Navigation Attributes contain the Characteristic's Technical Name followed by an underscore (_) and the Attribute's Technical Name.





Filters

Filters are restrictions added to an ad hoc query that limit the results of the query to a value or multiple values of a selected Characteristic when the query is run.

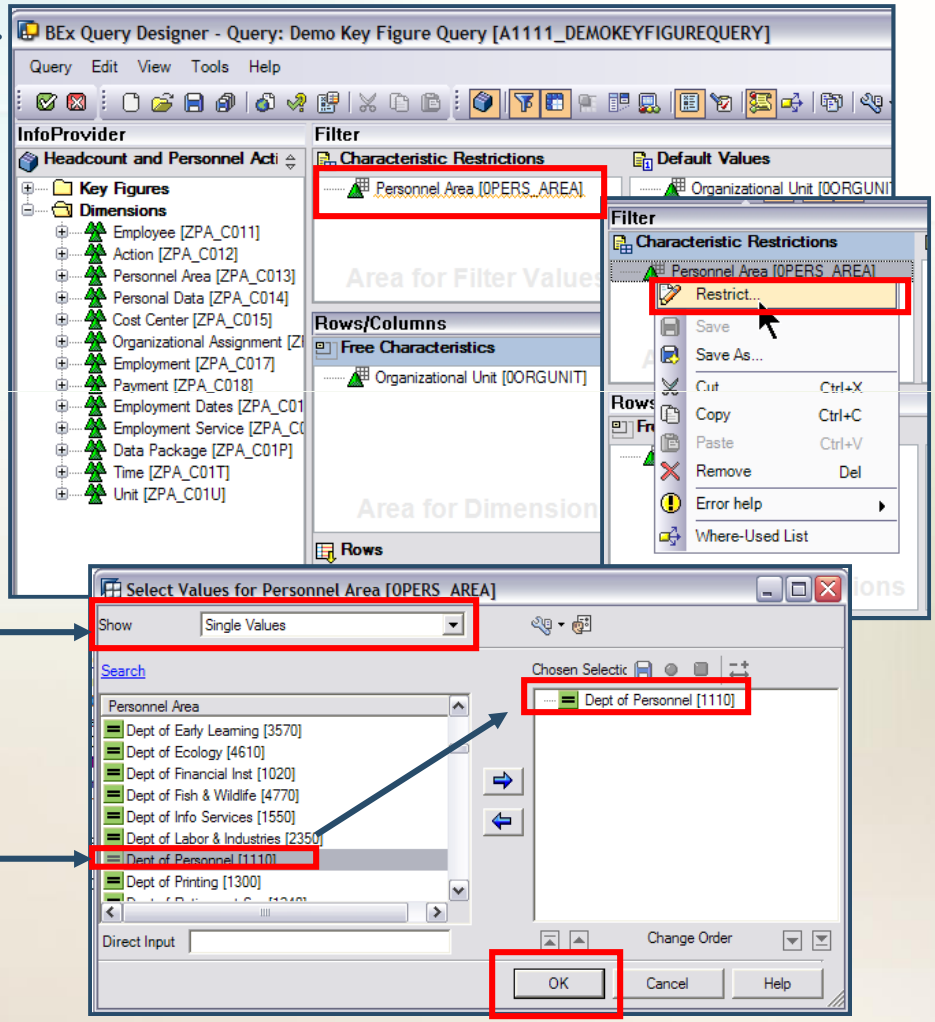
The example below uses the Headcount and Personnel Actions InfoCube to show how to add a filter to display results for the Department of Personnel only.

To apply a filter to the ad hoc query:

1. Drag&Drop the Personnel Area Characteristic to the Filter section of the query.
2. Right mouse-click the Personnel Area filter and select Restrict from the context menu.

Result: The "Select Values for Personnel Area" screen is displayed.

3. Click the drop down arrow, select Single Values and scroll through the list under the Description column.
4. Drag&Drop the "Dept of Personnel" value from the Description column to the Selection column.
5. Click OK.



Continued...

Filters, Cont…

Result: A Filter to in the ad hoc query results has been added.

Filter Indicator

BEx Query Designer - Query: Demo Key Figure Query [A1111_DEMOKEYFIGUREQUERY]

Query Edit View Tools Help

InfoProvider

Headcount and Personnel Actio

- Key Figures
- Dimensions
  - Employee [ZPA_C011]
  - Action [ZPA_C012]
  - Personnel Area [ZPA_C013]
  - Personal Data [ZPA_C014]
  - Cost Center [ZPA_C015]
  - Organizational Assignment [ZPA
  - Employment [ZPA_C017]
  - Payment [ZPA_C018]
  - Employment Dates [ZPA_C019
  - Employment Service [ZPA_C01
  - Data Package [ZPA_C01P]
  - Time [ZPA_C01T]
  - Unit [ZPA_C01U]

Filter

Characteristic Restrictions

- Personnel Area [0PERS_AREA]
  - Personnel Area - Select (Optional) [ZS_PAOP]

Area for Filter Values

Default Values

- Organizational Unit [0ORGUNIT]

Area for Default Values

Rows/Columns

Free Characteristics

- Organizational Unit [0ORGUNIT]

Area for Dimensions

Columns

- Key Figures
  - Total All Employees [0HDCNT_LAST]
  - Annual Salary [0ANSALARY]
  - Avg Salary

Area for Dimensions

Rows

Area for Dimensions

Preview

Avg Salary

Restrictions placed in the Filters section are hidden from the user running the ad hoc query. Restrictions can also be placed on Characteristics in the Free Characteristics, Rows or Columns section.