CA - Drilldown Reporting

HELP.CAREP

Release 4.6C

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Introduction to Drilldown Reporting

This chapter explains the basic concepts of drilldown reporting as well as the most important Customizing settings.

Functional Overview [Page 10]

Architecture of Drill-Down Reporting [Page 11]

Basic Concepts of Drill-Down Reporting [Page 12]

Basic Reports and Form Reports [Page 14]

Functional Overview

With drilldown reporting, SAP provides you with an interactive information system to let you evaluate the data collected in your application. This information system is capable of analyzing all the data according to any of the characteristics that describe the data. You can also use any key figures you wish to categorize your data. You can display a number of objects for a given key figure, or a number of key figures for a given object. In addition, the system lets you carry out any number of variance analyses (such as plan/actual comparisons, fiscal year comparisons, comparisons of different objects, and so on).

You can produce both simple, data-directed lists (**basic reports**) and complex, formatted lists in drilldown reporting (**form reports**).

Drilldown report provides you with comfortable functions for navigating through your data. For example, you can jump to the next level of detail or the next report object on the same level, hide individual levels and switch between the detail and drilldown lists. It also provides a number of additional functions which let you process lists interactively (sorting, conditions, ranking lists, and so on). SAP Graphics, SAPmail and the Excel List Viewer are also integrated into drilldown reporting.

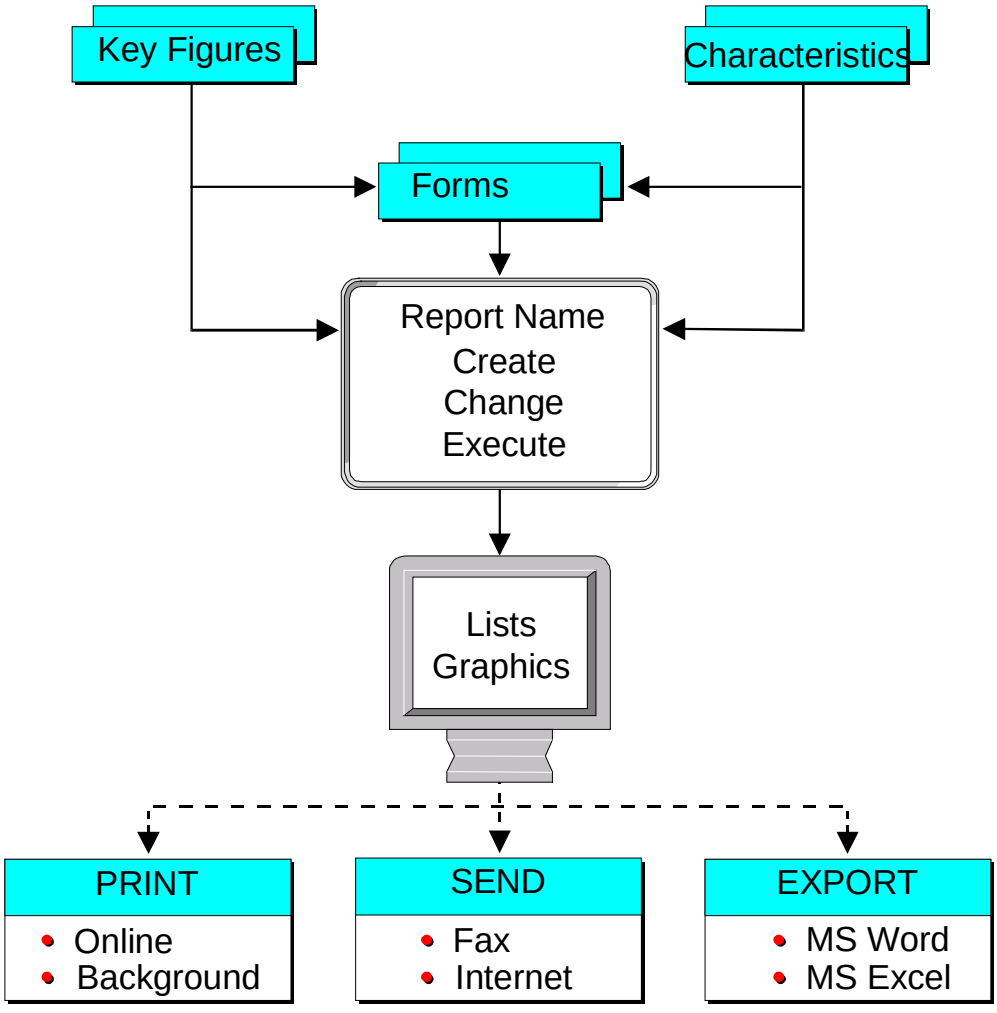
The drilldown functions are divided into three groups which differ in the number of functions available. That way each user can choose the functional level most suited for his requirements.

In addition to the online functions for displaying reports, drilldown reporting also provides functions which let you print reports. A number of formatting functions are available to let you determine the look of your printed reports (page breaks, headers and footers, underscores, and so on).

The menus and the functions available directly on the drilldown report make it easy to use the information system.

Architecture of Drilldown Reporting

As shown in the following diagram, you can use characteristics, key figures and forms to define your reports. When you create a report, the result is a series of lists and graphics which you can display on the screen. You can also print reports, send them by fax, e-mail them through the Internet, and save them as files for PC applications such as Microsoft Word or Excel.



Basic Concepts of Drilldown Reporting

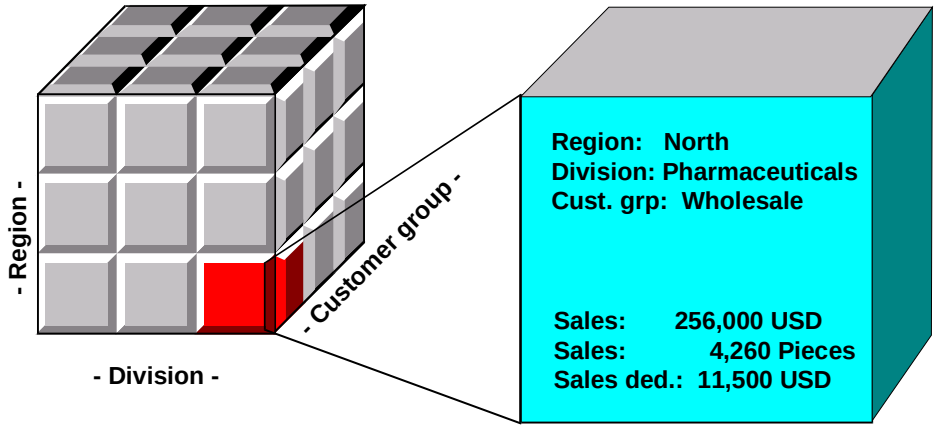
Characteristics and characteristic values

Characteristics determine how your data can be classified. The SAP organizational units **Controlling area**, **Company code**, **Business area**, and **Division** are examples of characteristics. The time reference (fiscal year, period) is also a characteristic.

The master data comprise the permitted values of a given characteristic, or so-called **characteristic values**. In this documentation, a combination of characteristics or characteristic values will be referred to as a **report object**.

A report object defined with three characteristics can be represented graphically in the form of a cube. The three dimensions of the cube represent the three characteristics: In the figure below, these characteristics are the region, the division, and the customer group. Each characteristic has a number of possible **characteristic values**, which are represented by the small cubes within the overall cube. Thus one possible report object could be the region "North", the division "Pharmaceuticals", and the customer group "Wholesale".

In a report, you could display the **Sales**, the **Sales quantity** the total **Sales deductions**, and other values for this combination of characteristics.



Key figures

Your application contains a number of key figures which may be relevant for analysis purposes. Key figures include not only stored values and quantities, but also values which are calculated from these based on formulas which you can define.

Examples of key figures:

- **Value:** Costs, sales, sales deductions
- **Quantity:** Number of employees, sales quantity
- **Calculated value:** Sales per employee and contribution margin

Forms

A form constitutes the basic content and formal structure of a report list. Forms can be seen as semi-finished products, which you complete when you define an individual report. You can use

characteristics both in the form and in the report itself. Likewise, you can choose key figures either in the form or in the report.

For information on the different types of forms, see Basic Reports and Form Reports [Page 14]. To learn how to create a form, see Forms [Page 88].

Drilldown and detail lists

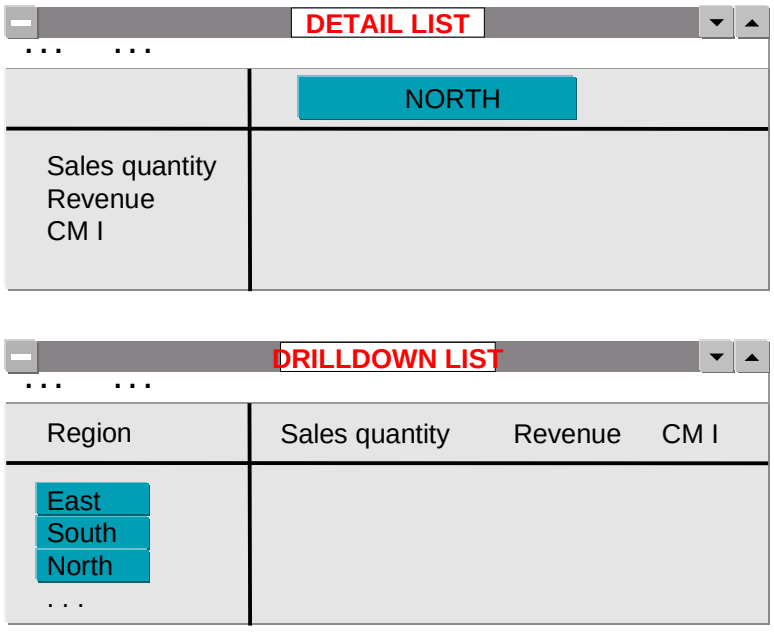
A distinction is made between two types of lists for a report, depending on what information is displayed there: drilldown lists and detail lists.

- **Detail list**

  A detail list contains either all the key figures or a selection of key figures for a single report object (such as "Pharmaceuticals/North"). The rows contain the key figures in a detail list. The columns can contain plan or actual values, or different fiscal years or periods.

- **Drilldown list**

  A drilldown list displays key figures for a number of report objects (such as "Pharmaceuticals/North", "Pharmaceuticals/South", "Pharmaceuticals/West"). The key figures form the columns of the list.



Basic Reports and Form Reports

Drilldown reporting is designed to make it easy for you to define simple, ad-hoc reports while still providing you with all the functionality required for more complex ones.

Consequently, you can define two different types of reports:

- **Basic report**

  This procedure is often useful when you spontaneously want to search for a specific effect in your data without knowing in advance precisely what you are looking for or where to find it. The structure of the lists is simple and of a more general nature.

- **Report with form** or **form report**

  In form reports the structure of the list is more complex but also allows you more flexibility. This type is often used for official company reports, and is especially suitable for printing reports.

Form reports are based on a structure of rows and columns called a “form”, which you define separately. Form reports are again divided according to the degree of complexity, depending on whether they one axis or two, and whether or not a key figure is used in the form definition.

You can define forms with one axis to define either the row structure or the column structure for reports, and then mix and match these to create complete forms with two axes. If you do this, you can use these one-axis forms as often as you wish.

Basic report

The following text refers to the graphic Example: Basic Report [Page 17].

You do not need a form to create a basic report. When you define a basic report, you select the characteristics you want to report on and the key figures you are interested in seeing.

In the drilldown list, the key figures are displayed in the columns. The rows contain all the characteristic values of a single characteristic. For example, in the graphic, the values of the characteristic “Company” are displayed in the rows.

In the detail list, the key figures for the selected characteristic are listed vertically in the rows. In the graphic, these are the key figures for the company “Chemtech USA”.

Report using a form with one axis and without key figure

The following text refers to the graphic Example: Report Using a Form With One Axis and Without Key Figure.

In the form itself you only select characteristics for the columns. These characteristics are used to specify the key figures more precisely (such as plan/actual or period from/to).

You choose the key figures and the drilldown characteristics (the characteristics through whose values you want to navigate in the report) when you define the report itself.

In the drilldown list, you obtain a two-line column header, in which the first line contains the key figures, and the second line contains the characteristics specified in the form. The values of the drilldown characteristic are contained in the rows.

In the detail list, the characteristics specified in the form are in the columns, while the key figures are listed in the rows. The detail list displays the results for one selected report object (“Chemtech USA” in the graphic).

Report using a form with one axis and key figure

The following text refers to the graphic Example: Report Using a Form With One Axis and Key Figure [Page 19].

Here the rows of the form contain the key figures (such as **Revenue** or **Percentage of total**). When you define the report, you choose the drilldown characteristics.

In the drilldown list, the key figures form the columns, while the values of the drilldown characteristics form the rows (regions “North” and “South” in the graphic).

The detail list has only one column, which contains the object which you are reporting on (region “North” in the graphic). The rows contain the key figures.

When you define a form, you define the **layout** of the **detail list**. That means that the position of the rows and columns in the form corresponds to their position later in the drilldown list.

Consequently, when you define a form with one axis and key figure, you define the key figures in the rows, whereas with a form without key figure, you define the selected characteristics in the columns.

Report using a form with two axes and key figure

The following text refers to the graphic Example: Report Using a Form With Two Axes and Key Figure.

In this type of form, you define both the rows and the columns. You can decide whether to put the key figures and the characteristics in the rows or in the columns of the form.
As with the other types of forms, you choose the drilldown characteristics when you define the report.

In the graphic, the columns of the drilldown list have two levels. In the first row are the key figures, in the second row the characteristics you chose in the form. The values of the drilldown characteristic go in the rows.

In the detail list, the characteristics you chose in the form go in the columns, and the key figures go in the rows. The detail list contains information on one selected report object (region “North” in the graphic).

To create a form, see Overview: Forms. To create a report, see Creating a Report [Page 25].

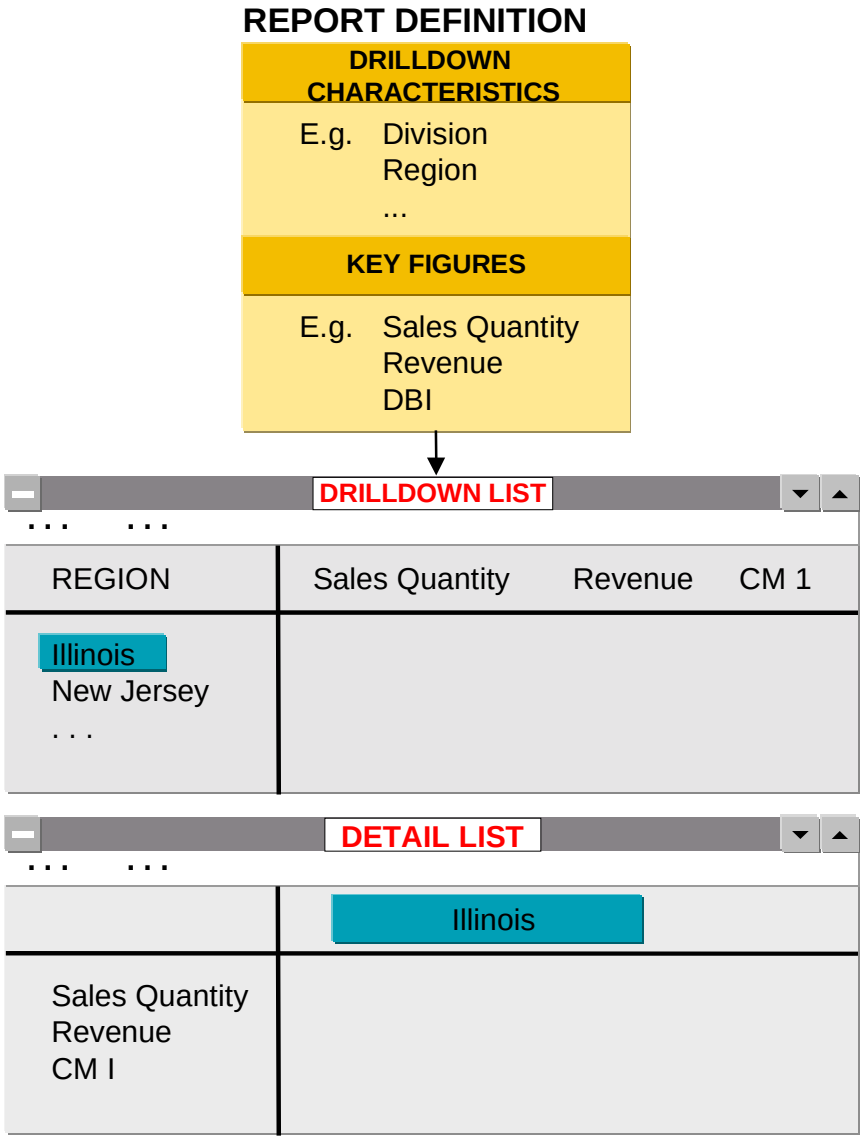
Basic Report

For basic reports, a form is not required. When defining a basic report, you choose the characteristics you want to report on. In addition to this, you choose the key figures you are interested in.

These key figures are placed in columns in the **drilldown list**. The rows contain all characteristic values of the expanded characteristics (here, the characteristic **Region**).

The **detail list** contains the key figures for the chosen object (here, the object **Illinois**).

Example: Basic Report



Report using a Form

Report using a single-axis Form without Key Figures

In a single-axis **form** without key figures, characteristics are only selected in the columns. Using a formula, it is possible to define additional characteristics in the form (such as the **variance** as a difference between plan and actual). The characteristics selected in the form (such as **plan/actual, plan/actual variance**) determine which data is shown in the columns.

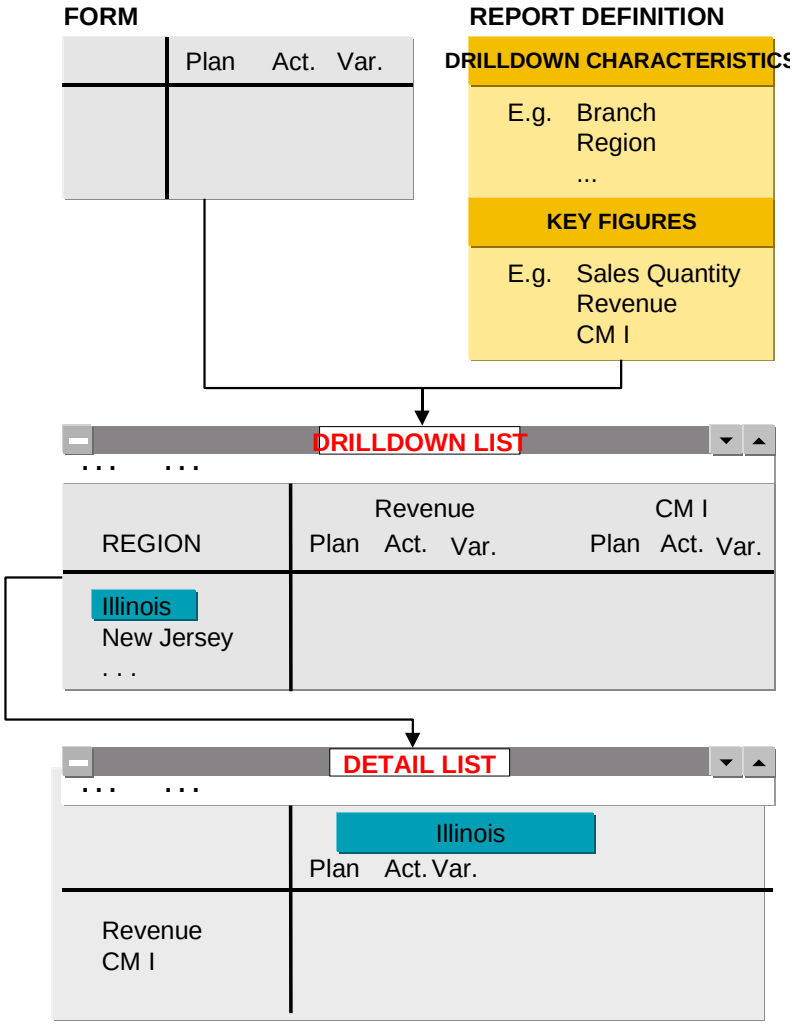
You choose the key figures and drilldown characteristics (that is, the characteristics whose values you want to choose to navigate through the report) during **definition of the report**. In the example below, the characteristics **branch** and **region** are selected, together with the key figures **revenue** and **contribution margin 1**.

The **drilldown list** contains a two-row column title. The first row contains the key figures (such as **revenue**) while the second row contains the selected characteristics (**plan, actual**, **variance**). The rows contain the values of the drilldown characteristics (here **Illinois** and **New Jersey**).

In the **detail list**, the columns contain the characteristics selected for the form, while the rows contain the key figures. The detail list shows the result for an object for which a search has been carried out (in this case, **Illinois**).

Report using a Form

Example: Report using a single-axis form without key figures



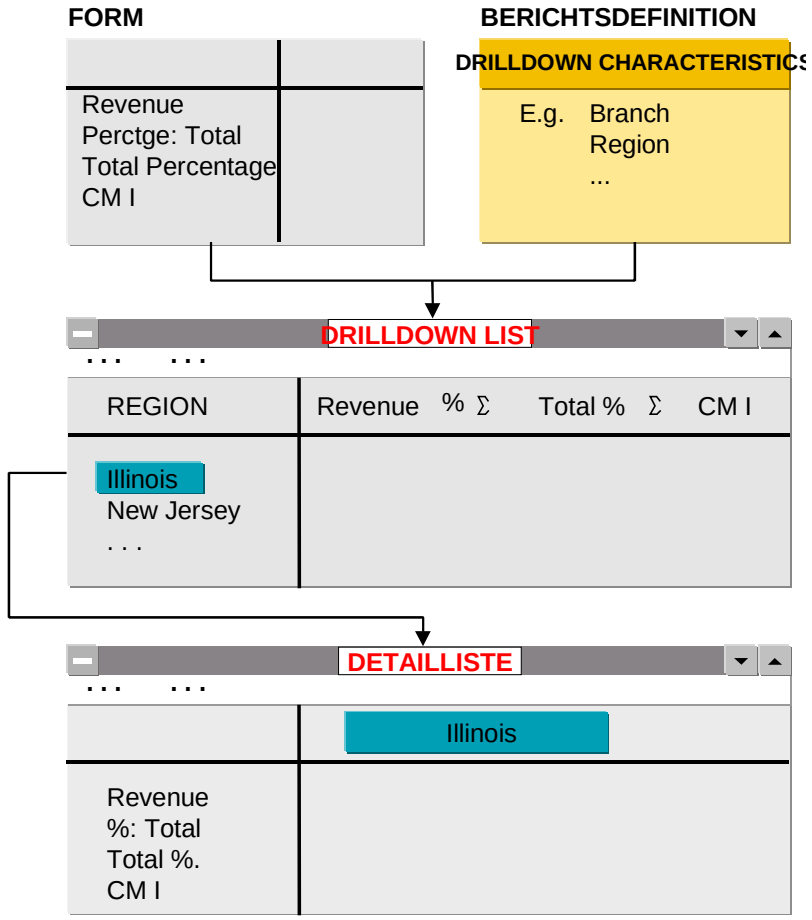
Report using a single-axis form with key figures

Here, the key figures (such as **revenue**, **percentage of total**) which appear in the rows within the **form** are determined. When **defining the report**, you choose the drilldown characteristics (e.g. **branch, region**).

In the **drilldown list**, the columns contains key figures, while the rows contain the values of the drilldown characteristics (here **Illinois** and **New Jersey**).

The **detail list** has only one column and contains the selected object (here **Illinois**) which you want to report on, while the rows contain the key figures.

Example: Report using a single-axis Form with Key



Figures

Note that you set the **detail list** when defining a **form**. This means that the position of the elements set in the form reflects those in the detail list.

For this reason, which a single-axis form with key figures, the key figures are set in the rows. This is in contrast to the single-axis form without key figures, where the characteristics selected in the form are set in the columns.

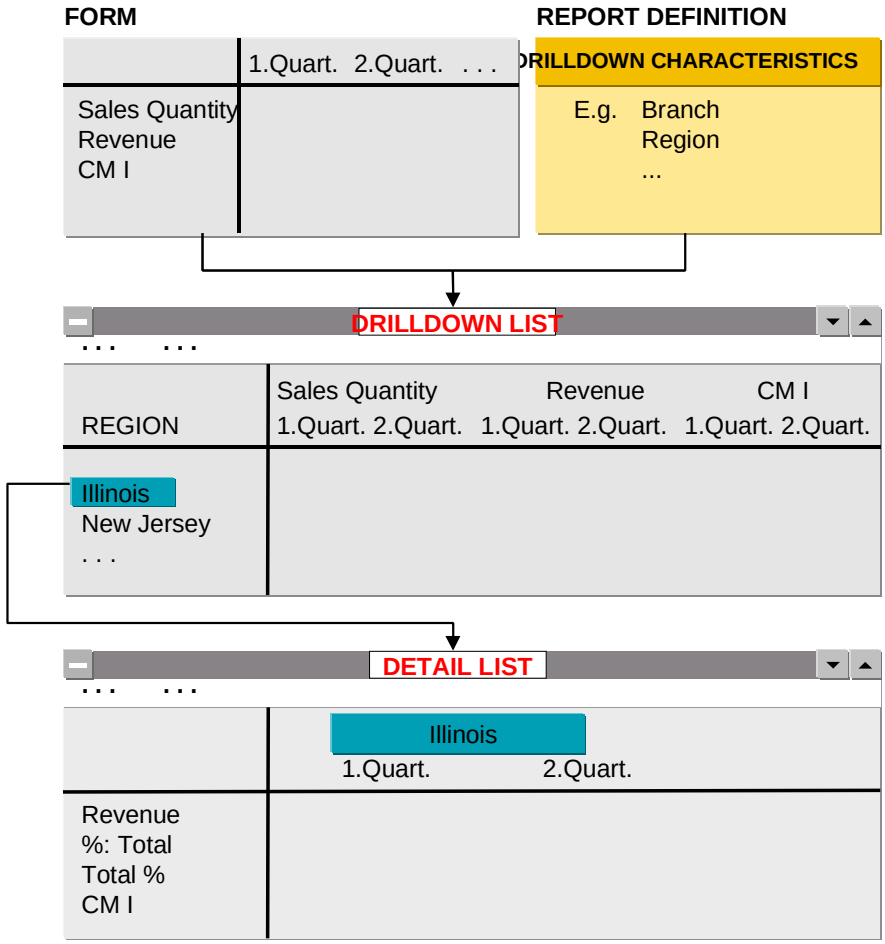
Report using a two-axis Form with Key Figures

In the two-axis **form** with key figures, both the rows and the columns are defines with key figures or characteristics. These key figures can appear either in the **rows** or in the **columns**. If you choose to have the key figures in the rows, the characteristics appear in the columns.

When **defining the report**, you choose the drilldown characteristics as with other types of report.

Report using a Form

Example: Report using a two-axis Form with Key Figures



In the graphic shown here, the columns in the **drilldown list** contain two rows. The first row contains the key figures (**sales quantity, revenue, contribution margin I**), while the second row contains the selected characteristics (**quarter**). The rows contain the values of the drilldown characteristics (**Illinois** and **New Jersey**).

In the **detail list**, the columns contain the characteristics selected for the form, while the rows contain the key figures. The detail list reports on a chosen object (in this case, **Illinois**).

For details of how to create a form, see Overview: Form.

Report

Function	What you need to know
Create report	You use this function if you want to create a new report. For detailed documentation about this function, see Creating Reports [Page 25].
Display report	You use this function if you want to display the definition of an existing report. If you choose this function from within the **definition of a report**, the system takes you to the initial screen of the function for displaying report definitions. If you choose this function in a **report list**, leave the report currently being executed and go to the initial screen of the function for displaying report definitions. Before leaving the current screen, you can save your entries using a dialog box. On the initial screen, enter the name of the desired report. You can display a list of existing reports using the *Possible entries* function. You can display the various report components by scrolling through the different screens. To switch back and forth between the change and display modes, choose *Report →Display <-> Change* .
Change report	You use this function if you want to change the definition of an existing report. If you choose this function from within the **definition of a report**, the system takes you to the initial screen of the function for displaying report definitions. If you choose this function in a **report list**, leave the report currently being executed and go to the initial screen of the function for displaying report definitions. Before leaving the current screen, you can save your entries using a dialog box. On the initial screen, enter the name of the report you want to change. You can display the various report components by scrolling through the different screens. You can change a number of **report settings** (such as the mass print settings) directly from the **report list**, so that you do not have to leave the list and go to the report definition. To do this, make the desired changes to the displayed report, and then choose the function *Save structure*. If you want to change the type of data selection (for example, by adding a characteristic or a key figure), you must use the function *Report →Change*.
Form settings	You can use these functions to remove all formatting settings made for the report, so that the system will again use the settings defined in the form.
Deleting report	If you want to delete a report, you can do this under *Change Report*. However, if you want to delete a number of reports at the same time, if is easier to do this using the *Reorganization* functions. For more information, see Reorganization and Conversion [Page 285]

See also:

Form [Page 88]

Report

Creating/Changing a Report

Procedure

1. Enter a name for the new report or the name of the report for which you wish to change the definition.
2. If you are creating a new report, decide whether you would like to create a basic report or a form report.
3. If you want to create a form report, you must also enter the desired form.
4. If you would like to copy an existing report, enter the report you want to copy.
5. If you are creating a new report, choose Create, to go to Report Definition. If you wish to change an existing report, choose *Change*. See the following sections:
   - Choosing Key Figures [Page 29]
   - Choosing Characteristics [Page 30]
   - Replacing Variables [Page 61]
6. Once you have specified the desired settings for the report, save the report.
7. Now you can execute the report. For more information about executing reports, see Executing a Report [Page 106] or the corresponding chapter in the online documentation for your application.

To read more about the different report types, see Basic Reports and Form Reports [Page 14]. For more on creating forms, see Overview: Forms [Page 89].

See:

Report/Report Interface [Page 158]

Functions for Defining Reports

The following table gives you an overview of the functions that you can use to define reports.

Display or change report definition	You use this function to display or change the characteristics of the selected report. You are taken to a screen where you can make all required settings, divided into the following sections: • Choose key figures [Page 29] • Choose characteristics [Page 30] • Restrict characteristics [Page 31] • Enter variables [Page 61] • Output type [Page 37]
Form settings	This function is only available when you define form reports. If you changed the formatting in your report, this function lets you change these settings back to those made in the definition of the form. The form settings thus become active again when you execute the report.

Display <-> Change	The function *Display <-> Change* lets you switch back and forth between the display and change modes without leaving the screen you are currently on. When you create a report you are always in the change mode. If you have made any changes to the report, the system first you if you want to save your changes before switching to the display mode.
Execute report	With this function you can execute the desired report. The system selects the data that meets the specified criteria and displays it in a number of report lists. For more information, see Executing a Report [Page 106].
Layout display	This function allows you to obtain a quick impression of the layout of the report, without having to make time-consuming data selections. For more information, see Layout display [Page 121].
Report parameters	This function displays a list containing all the information about the report and its definition. This includes specifications which do not always appear on the list. For more information, see Report and Cell Parameters [Page 112].
Choose hierarchy	This function is only active if hierarchies have been defined for characteristics. It lets you choose a specific hierarchy for display or switch between hierarchical display and a normal drilldown list. For more information, see Choose Hierarchy [Page 156].
Sort characteristics/key figures	This function lets you sort the drilldown characteristics that will appear in the navigation block of your report list. The first characteristic here is the one whose values are displayed on the initial drilldown list. The way in which the key figures are sorted affects the order of the columns in the report. For more information, see Sort Characteristics [Page 161].
Entering variables	On the *Variables* tab page, you can replace variables manually. You can only replace those variables which were defined with *Enter when executing*. Other variables are replaced automatically by the system. For more information, see Replacing Variables [Page 61].
Variable on/off	You can insert a variable for the characteristic on which the cursor is positioned. When you display the possible entries, the system displays any global variables which already exist for that characteristic. You can choose one of these, or you can enter a local variable. For more information, see Variable on/off [Ext.].

Functions for Defining Reports

Delete report	This function lets you delete the report which you are currently editing.
Maintain header	This function lets you create a header for the report. This header is shown on the printout when you print the report. You can also change existing headers with this function.
Maintain comment	This function lets you maintain a comment for the report. You can also change existing comments with this function.
Report Assignment	With this function you can assign receiver reports to your report so that you can call them up later through the report/report interface. For more information, see Report assignment [Page 46].
Translate	With this function, you can translate the texts which are displayed in a report into a target language of your choice. This is normally already done in Customizing. You can use the function, however, to translate newly created texts or to check the completeness of the translation.
Transport	With this function, you generate a transport request in order to transport a report from the implementation system into a productive system.
Other report	This function takes you back to the initial screen of the function for defining reports. There you can specify another report that you want to process. That report definition is then opened in the current mode (display or change mode).

Choosing Key Figures

You do not always need to specify which key figures you want to see when you define a report. If you are defining a report that uses a form that already contains key figures, it is not possible to choose key figures in the report definition.

When you create any other type of report, you **must** choose key figures here. On the *Key Figures* tab page, the system displays a list of all the available key figures. The symbol appears next to each key figure. If you click on this symbol, the system displays the formulas for calculated key figures. You can tell from this formula which basic key figures the key figure is calculated from.

Which key figures you can choose from depends on the field catalog (in Customizing). There you can define for each key figure whether that key figure should appear on this screen. You can also specify there that a key figure **must** be chosen on this screen. Key figures of this kind are automatically displayed here for informational purposes, and cannot be changed.

The definition of each key figure also determines how that key figure is **aggregated**. Aggregation types include summation, average, and last value. For example, the definition of a non-cumulative value might be "average".

Some key figures require you to choose a certain characteristic to determine the currency in which the values for those key figures are displayed. When you select such a key figure, the system requires that a unique value for that characteristic always be specified either in the form or in the report itself. It may happen that such a key figure is not offered on this screen (for example, if you have specified an interval instead of a unique value for the characteristic). If you choose such a key figure and have not yet chosen the relevant characteristic, the system automatically does so, and you are required to enter a value for that characteristic on the *Characteristic Values* tab page.

You can select key figures by **key figure group**. These key figure groups are defined in Customizing. If no field for the key figure group appears on this tab page, this is because no key figure groups have been defined for your application in Customizing.

Sorting Key Figures

You can use this function to sort the key figures into the desired order. This order determines the order in which they will appear in the rows or columns of your report list.

See also:

Choosing Characteristics [Page 30]

Choosing Characteristics

On the *Characteristics* tab page, the system displays a list of all the available characteristics. You can select those characteristics in the characteristics list which you want to use for your analysis, and add them to your report using the arrow keys. These are the **drill-down characteristics**, which you can navigate through freely in the report list.

The systems proposes characteristics depending on settings made in the field catalog (see Customizing). The settings made here determine - for each individual characteristic - whether it will be proposed when you are choosing characteristics. With Profitability Analysis reports, an additional column indicates whether each individual characteristic is article-related, customer-related or another type of characteristic. The type of characteristic displayed depends on the settings made in the table which the report accesses.

Here, you can also determine that a characteristic **must** be selected. In this case, the selection is only displayed in the report definition. It cannot therefore be changed. It cannot therefore be changed. If a key figure has been selected, for which the currency is dependent on a certain characteristic, this characteristic is automatically added to the characteristics selected by you. For example, if you have selected the key figure 'Sales in company code currency' the currency-bearing characteristic is now 'company code'. It will be **mandatory to enter** the characteristic which determines the currency, which must therefore be limited to an explicit value.

The characteristics can be proposed in **characteristic groups**. These groups are also created in Customizing. If there is no entry field for characteristic groups, this means that no characteristic group has yet been defined in Customizing.

With the function Choose hierarchy [Page 156] you can select one of the possible hierarchy variants for each characteristic for which hierarchies have been created.

With the function Sort Characteristics [Page 161] you determine the order of the characteristics in the navigation block of the report list in the executed report. The order of the characteristics is decisive for the standard drilldown.

Note that the number of characteristics offered in the characteristic selection is limited by the selection criteria created in the **form**. If you have already explicitly specified a characteristic in the form, this characteristic will no longer appear in the characteristic selection.

When you select a characteristic, all values of this characteristic will be taken account of in the report. There are a number of ways in which you can limit the value quantity of a characteristic for display in the report. For further information, see Characteristic Values [Page 31].

Characteristic Values

Use

On the *Characteristics* tab page, you can limit the characteristic values to be taken into account in the report for each drilldown characteristic selected. There are various possibilities, depending on the report definition and the selected characteristic. You can either make no entries, fix the characteristic to a characteristic value or a hierarchy node, use a variable for characteristic values or follow a system request to fix a characteristic to an explicit value.

Characteristics which been selected on the *variables* tab page previously, cannot be further limited on the *characteristics* tab page. In such cases, the corresponding entry fields are deactivated. For further information, see Replacing variables [Page 61].

- **No entry**

  If you do not specify a value for a characteristic here, the system selects all the characteristic values when you run the report. For the characteristic 'Sector', for example, you will see all sectors. Otherwise, you would see only the characteristic value(s) entered by you, in this case “Electronics” for example.

  It is recommended that you fix as many characteristic values as possible, as this reduces the amount data selected. This improves runtime.

- **Fixing the characteristic to a characteristic value**

  If, for example, the only value of interest to you in the **Sector** column is value **Electronics**, you can restrict the report to this. The characteristic and the characteristic value then appear above the navigation block in the report list, and are fixed, meaning that the characteristic is not available as a drilldown characteristic.

- **Fixing the characteristic to a hierarchy node**

  In the case of characteristics for which hierarchies have been defined, you can fix the characteristic to a hierarchy node. This allows you to report on a specific part of a characteristic hierarchy. You do this using the function Hierarchy node [Page 34].
  If, for example, a hierarchy has been defined for the characteristic ‘Customer', you could, for example, select the hierarchy node ‘Retail' and so obtain all customers which are assigned to this hierarchy node. For further information on hierarchy nodes, see Entering and Using a Hierarchy Node [Page 67].

- **Using a variable for characteristic values**

  Instead of a concrete value, you can also use a variable for characteristic values. By using a variable, you ensure that the characteristic value does not have to be specified until the report is executed. You can use global variables [Page 58], which you can obtain either form the system or using a user exit. For variables of this type, you can also define simple mathematical operations. For example, you can use a global variable for the period, which will provide the current month and subtract 1 from this value, to give you the value for the previous month.
  Alternatively, you can use variables (locale or global) which the user has to enter

manually. These variables are displayed on the *Variables* tab page or in a dialog box when you execute the report.

To enter variables, choose *Edit →Variable on/off* or the *Variable on/off* pushbutton. See Variable on/off [Ext.] for more information about this function. See also Variables for Characteristic Values [Page 52].

Note the difference between the *Variable entry* screen and the *Characteristic selection* screen:

A selection criterion which was entered under *Characteristic Values*, basically affects **all columns** and is therefore displayed in the list header. Settings made under *Variable entry* only affect the row or column in which the corresponding variable was used. For example, if the customer group **`Retail`** was set for column 1 in the variable entry, then the customer group **`Wholesale`** could appear in column 2, and **`all customer groups`** could appear in column 3.

- **The system requests that you fix a characteristic to an explicit value**

  In the field catalog (Customizing), a setting can be made that a characteristic must be restricted. If you find a characteristic in the list, which must be restricted, this might be because it is a currency-bearing characteristic. If you have chosen a key figure, for which the currency is dependent on a certain characteristic, this characteristic will be added to the report automatically by the system, and must be given an explicit value or a mandatory variable here. For example, if you have chosen the key figure ‘Sales in company code currency’, the currency-bearing characteristic will now be ‘company code’. This must always be selected and specified when the accompanying key figure is selected.

Choose Hierarchy

This function lets you choose a specific hierarchy for display or switch between hierarchical display and a normal drilldown list. This function is only active if hierarchies exist for a characteristic.

When you choose this function, the system displays a dialog box listing every characteristic in the report for which hierarchies exist. For each characteristic listed, you can choose one of the hierarchy variants or the option *No hierarchy*, or the option *Enter when executing*. (This last option only appears when you are defining the report.)

The system initially displays the hierarchy you chose in completely expanded form. You can then collapse and expand nodes using the corresponding functions.

You can also change the appearance of the hierarchy (see Hierarchy Display [Page 69]) or deactivate the hierarchy again to return to the “normal” non-hierarchical display.

To report only on a certain branch of a hierarchy, choose the hierarchy node [Page 34] function.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy display [Page 157]

Functions for Editing Hierarchies [Page 72]

Hierarchy Node

This function makes it possible for you to report on selected **parts** of hierarchies, or so-called “hierarchy nodes”.

To report on a hierarchy node, you need to enter a hierarchy node instead of a characteristic value for the desired characteristic when you define either the form or the report itself. You do this on the screen *Characteristic values* by pressing the icon.

when you drill down to that characteristic in the drilldown list, the system only displays those values that belong to the selected hierarchy node. For example, if you select the node “Wage costs” for the characteristic “Cost element”, the report will only contain those cost elements that represent wage costs.

You can also select an entire hierarchy instead of just one node using the Choose hierarchy [Page 156] function.

See also:

Overview: Characteristic Hierarchies [Page 64]

Entering and Using a Hierarchy Node [Page 67]

Replacing Variables

You can replace variables manually on the *variables* tab page. Only variables which can be replaced manually appear here. Other variables are replaced automatically and do not appear here.

Characteristics which are selected on the *variables* tab page cannot be further specified on the *characteristics* tab page. In such cases, the corresponding entry fields are deactivated. For further information, see Characteristic Values [Page 31].

The question of which variables you can enter depends on the type of report.

- For basic reports, there is no user-defined form. The systems proposes certain standard variables (such as fiscal year, period, value type) depending on the application.
- For form reports, the system displays those fields which were defined using variables in the form for this report. These fields appear in the order defined under *Extras →Variables →Sort* in the form definition. If the field customer group has been defined with a variable, you use the tab page to define which customer group you want to create the report for. When you have made this entry, the system will perform the corresponding replacement wherever the parameter appears in the report.
  If the form definition contains no variables, or only those which will be replaced automatically, the system does not display this tab page.

Readiness for Input

You can either specify the selected variables immediately or later, when you execute the report. If you do not wish to specify a variable until you execute the report, this variable must be **ready for input.** You can make each variable ready for input when the report is executed, by choosing *Enter when executing*. If at least one variable can be entered manually, the system displays a dialog box when you execute the report. There you can enter values for the variables or changes the defaults defined in the report definition. If you do not select the field *Entry when executing* for any variables, the system immediately executes the report and displays the resulting list.

When you enter variables, the system also replaces all variables which were set during definition of the report on the *characteristics* tab page, using the function Variable on/off [Ext.]. The status of these variables is always *Entry when executing*; this cannot be changed. With other variables, however, you can decide whether or not they are still ready for input when executing.

Sort variables

You can change the order of the variables by choosing the *sort variables* pushbutton. When you execute the report, the *enter variables* dialog box will display the variables in the order which you have specified.

See also:

Choosing Characteristics [Page 30]

Replacing Variables

Overview: Variables [Page 50]

Maintain Variables [Page 63]

Defining Global Variables [Page 58]

Output Type

Use

In this part of the report definition, you can decide how the report is to be displayed. The output type that you choose for the purpose of report definition is only a default setting here. When you execute the report, the output type chosen by you is already selected. However, you can deviate from this default setting and choose a different output type for the report. The following section is intended as a quick guide, to help you choose the output type most suited to your requirements:

- Graphical report output

  You use the graphical report output if you want the report data to be displayed attractively on the screen or if you require several views of the report data simultaneously (drilldown list and detail list, for example).

- Classic drilldown report

  You use classic drilldown reports if you require a high level of performance (for reports which analyze a large volume of data, for example) or if you want the report data to be printed.

- Object list

  You use object lists if you want to display the corresponding characteristic values for every report line. Object lists present the only possibility of displaying several characteristics simultaneously in the lead column, with the value combinations of the report characteristics multiplied together. For this reason, object lists are often considerably larger than classic or graphical reports using the same quantity of data.

- Transfer to XXL

  You transfer the report to XXL (Extended Export of Lists) if you wish to process the report data using a spreadsheet program, or if you wish to access the data when you have no access to the R/3 system.

Integration

The output type setting determines which type of display will be the default when the report is executed.

Prerequisites

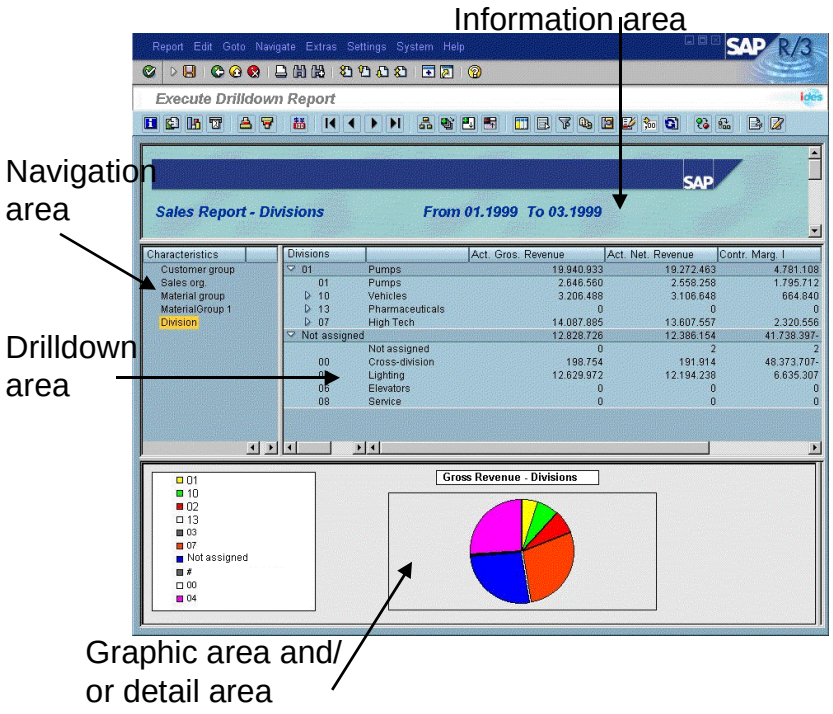
To use the graphical report output type, you should normally have defined a suitable HTML template and saved this in the SAP system using the Business Document Navigator. To access the Business Document Navigator, choose *Environment →HTML Templates*. For more information about the Business Document Navigator, see Help for the SAP ArchiveLink [Ext.]. Alternatively, you can use the SAP standard template. You can also change this template, if required.

Features

For the **graphical report output**, you can set the required output areas and decide which HTML template is to be used for the report header (info area). Here, for example, you can integrate your company logo into the report. The header and footer lines also appear here if they have been

Output Type

defined and the HTML template has been prepared accordingly. The graphic below shows an example of graphical report output from Profitability Analysis (CO-PA):



For **classic drilldown reports**, you can decide which list type is to be used as the basic lists, whether headers and footers should be printed, and what these should contain.

If required, you can enable viewing of **object lists** with the ABAP List Viewer. This makes it possible for you to generate reports containing several characteristic values in the lead column. You can also make use of the other functions in the ABAP List Viewer, such as flexible filter and sort options, definition of display variants and so on. For further information, see the documentation for the ABAP List Viewer [Ext.].

Finally, using the list export tool **XXL**, you can specify that the report is transferred directly to a spreadsheet program, without the report list being set up by R/3.

For further information, see Setting the Output Type [Page 39].

Setting the Output Type

Use

In this part of the report definition, you can decide how the report is to be displayed. The output type that you choose for the purpose of report definition is only a default setting here. When you execute the report, the output type chosen by you is already selected. However, you can deviate from this default setting and choose a different output type for the report.

Prerequisites

To use output type "graphical report output", an up-to-date SAP GUI (version 4.6 or higher) must be installed on the presentation server.

To use output type "XXL" one of the spreadsheet programs supported by XXL must be installed on the presentation server.

Procedure

- graphical report output

  1. Choose the combination of output areas you require from this list.
  2. If you have chosen a combination containing an info area, you must also choose the HTML template which you want to be displayed in the report header.

  The system only displays HTML templates which have been stored in the SAP system using the Business Document Navigator. You can use either the standard template or a modified one. For information on how to create an HTML template and store it in the SAP system, see Defining HTML Templates [Page 41].

- classic drilldown report

  1. Decide which list type you want to appear as the basic list when the report is executed. This setting also determines the list type of the report if it is executed in the background using background processing.
  2. In the *Layout* group box, decide whether the report is to have headers and footers. If required, choose *Maintain* to edit the text which you wish to display in the header and footer.
  3. Go to the *Options* tab page and make further settings in the *Print Layout* group box, to set the print view for the report.

- Object list

  You do not need to make any more entries. Note that the data import option *Read for each navigation step* is not suitable for reports of this kind.

- XXL

  You do not need to make any more entries. Note that the data import option *Read for each navigation step* is not suitable for reports of this kind.

Setting the Output Type

Output type XXL is different to all other output types in that the report list is not prepared and displayed by R/3. Instead, it is transferred directly to a spreadsheet program on the presentation server.

Result

Once you have set the output type, you need to save your entries. You can then execute the report with the new settings you have chosen.

Defining HTML Templates

Use

You define HTML templates in order to set the content and layout for the output type "graphical report output". The info area appears as a report header above the report list, and can contain the name of the report, graphics (your company logo for example) and other data.

You can avoid having to define your own HTML templates if you use the standard HTML template or if you use only those combinations of output areas which contain no info areas.

Prerequisites

To make your chosen HTML templates available for report definition, you must save the templates in the SAP system using the Business Document Navigator.

For more information about the Business Document Navigator, see Help for the SAP ArchiveLink [Ext.].

Procedure

1. Create an HTML file - either using an external HTML editor, or by programming the HTML code yourself - as a template for the report definition.
2. In the SAP R/3 report definition, choose *Environment →Maintain HTML templates*.

   You are now taken to the initial screen of the Business Document Navigator.
3. On the *Create* tab page, in the Business Document Navigator, double-click on the document type *HTML-Template*.

   A file selection dialog appears.
4. In the file selection dialog, enter the fully qualified name of the HTML file which you wish to take over into the SAP system, then close the dialog by clicking on *OK*.
5. Enter a descriptive text for the HTML template and choose the appropriate language. It is also recommended that you create keywords for the template, so that the document can later be found later from within a large number of documents. Confirm your entries.

   The name of the HTML template you created now appears in the list of available HTML templates.
6. Choose *Goto →Back* to leave the Business Document Navigator and return to the report definition.

Result

The newly created HTML template now appears in the *HTML template* list field on the *output type* tab page, and can be used for the info area of a graphical report.

See also:

Defining HTML Templates

Creating an HTML Template [Page 43]

Creating an HTML Template

Use

You create an HTML file outside the SAP system, in order to transfer it to the SAP system later as an HTML template, and to display it in the report header of graphical drilldown reports using the Business Document Navigator.

Prerequisites

You have an external HTML-editing tool and/or sufficient knowledge of HTML programming to create and format HTML files without an HTML editing tool.

Procedure

1. Create an HTML file on your PC or in a server directory.
2. Edit the file until it looks how you want it to: Enter text and graphics as required. When designing the page, note that the HTML template will be displayed in the horizontal info area on the report screen. This means that only a limited number of elements will be visible on the screen at any one time. If you place a large amount of information on the page, this will only be visible if the user scrolls up and down in the info area.
3. If required, you can enter special elements in the HTML code: The system interprets these as variables when you execute a drilldown report, and replaces them with values. The following information can be displayed: Header and footer, report comment and selection date, general selections. To find out how to integrate this information into an HTML template, see Creating an HTML Template: Special Information [Page 44].
4. Save the file.

Result

You can integrate your HTML file into the SAP system as an HTML template and assign it to reports in the report definition.

See also:

Defining HTML Templates [Page 41]

Creating an HTML Template: Special Information

Use

You can add special elements to an HTML template, so that further information can be displayed dynamically when the report is executed.

Prerequisites

You have an external HTML-editing tool and/or sufficient knowledge of HTML programming to create and format HTML files without an HTML editing tool.

Procedure

1. Call up the source code of the HTML file with an editing tool.
2. Add comment tags at the required positions in the HTML file. When you execute the report, the system will interpret these tags as variables and will replace them with corresponding values. In HTML files, comment tags must always be positioned at the very beginning of the line, before any other tags. This will ensure that they are recognized when the report is executed. The system can interpret the following comments:

Valid comment types:

Comment	Meaning
<!%001>	Report header
<!%002>	Text comment for the report and selection date of the displayed data
<!%003>	Values in the general report selections (fiscal year, controlling area etc.)
<!%004>	Report footer

Note that the system replaces the comments with values in the same order as they appear in the HTML code. This means that if you want to display the general report selections first, followed by the comment, for example, you can do so by entering comment <!%003> first and then entering comment <!%002>. For the same reason, it normally makes sense to place comment <!%001> before comment <!%002>.

3. Save the HTML file.

Result

Once you have integrated the HTML file into the SAP system as an HTML template, and assigned it to a report, the system will replace all comments in the template with current values when you execute the report.

The HTML code might look something like this:

```
<HTML>

<HEAD>

   <META HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=iso-
8859-1">
```

```
   <META NAME="Author" CONTENT="SAP AG">
   <META NAME="GENERATOR" CONTENT="Mozilla/4.05 [en] (WinNT; I)
[Netscape]">
   <TITLE>Demo HTML Template</TITLE>
</HEAD>
<A NAME="top"></A><IMG SRC=" enjoy_small.gif"
ALIGN=TEXTTOP> <FONT FACE="Tahoma" SIZE=+1>
</FONT><FONT SIZE=+2>New Reporting Style</FONT></FONT> 
<BR>
<HR>
<FONT SIZE=-2> <A HREF="#top">Go to top of page</A></FONT>


<hr>
<!%001>
<hr>
<!%002>
<hr>
<!%003>
<hr>
<!%004>

</HTML>
```

Report Assignment

Use

With this function you can assign receiver reports to your report so that you can call them up later via the report/report interface.

Prerequisites

Other reports must exists, which you can assign as receiver reports. The receiver reports should normally contain variables [Page 50], which should be filled with information from the sender report. Such variables are not mandatory, however.

Procedure

1. Define the sender report
2. Assign a receiver report to your report. To do so, choose *Extras -→Report assignment* in the report definition, or choose the function *Report*. You can also find this function on the *Options* tab page.
3. Repeat this assignment for all receiver reports which you want to be accessible from the current report.
4. Save your changes.

Result

To call up a receiver report from a displayed report list, press the icon or choose the function Call up report [Ext.].

See also:

Overview: Report/Report Interface [Page 79]

How to use the Report/Report Interface [Page 158]

Selecting Data Step by Step

When you define a report, you can specify whether the system should select all the data for the report when you execute it, or whether it should select the data for each navigation step when you carry out that step.

- **Select all data**
  When you execute the report, the system selects the data at the lowest level of detail required for that report and loads that data in the main memory. The system then displays the report. In comparison with the option "Select data step by step", this setting has the advantage that it does not prevent you from using any other report functions. However, performance problems may arise when processing large amounts of data.
- **Select data step by step**
  The system does not display all report data when you execute the report. At first, the system only displays data for the initial list. For each navigation function that you execute after that, the system selects the data required for the resulting list. This option improves response times, but does not allow you to use certain functions which require all of the report data at once (such as the download to XXL).

There are two places in which you can make these settings:

- On the *Options* tab page in the *Data import* group.
- In the dialog box when you first save the report definition (after creating a new report). Here, choose the required option.

See also:

Transfer report to XXL [Page 264]

Printing from the SAP System [Page 219]

Settings

When you create a report, you can also define special information for the report, such as a header and a footer. You can also make settings for the report, such as which list should be displayed first, or whether the header and footer should be displayed when you execute the report online. You can also make settings for when you print the drilldown lists and detail lists.

See also:

Maintain Header [Page 249]

Maintain Footer [Page 248]

Initial list [Page 139]

Totals Rows [Page 198]

Mass Print Settings [Page 251]

Number Format

The number format refers to the number of decimal places and the factor in which a figure is displayed.

The figure **one million**, displayed with one decimal place and a factor of 1000, reads: **1,000.0**.

You can define the number format separately for individual rows, columns and cells of a report. Settings are possible at the following levels:

- You can make rough settings to use in all reports in the report line structure or the field catalog. There, for example, you can specify that sales should always be displayed in 1,000,000s.
- You can make settings which apply to all the reports which use a specific form by defining the number format in the form itself. For example, you can specify that the third column of the form should always be displayed with no decimal places.
- You can make settings which only apply to a specific report in the report definition itself.

When you make settings at different levels, you define the number format separately for the detail list and the drilldown list. When you make these settings, observe the relationship between the column groups and the individual columns of the drilldown list and the rows, columns and cells of the form. For a form with two axes, this relationship is as follows:

Single column (drilldown list) <--> Cell (detail list)

Column group (drilldown list) <--> Row or column (detail list)

In case of conflicting number format settings, the system uses the setting which was **last made**.

Variables

Definition

Variables allow you more flexibility in defining your forms and reports. Variables are report parameters which you do not want to specify until you define or execute the report. You can use different methods for replacing variables. Depending on how often you want to use them, you can define your variables **globally** or **locally**.

Global variables

If you use a variable frequently, you should define it **globally**. This makes it possible to use the variable in all your forms and reports.

The entries you need to make may differ depending on the variable type you choose.

Note that when you change an existing global variable, this may affect a number of reports and forms which already use it.

You define global variables [Page 58] for most applications in **Customizing** by selecting *Information System* in the application in which you are working. The component EC-EIS is an exception. Here, you define global variables by choosing *Information System* →*Variables* →*Define Variables* in the application menu.

Local variables

If you want to create a variable which you only need in one particular form or report, you can create a local variable. Local variables are only known within the relevant form or report. If you define a local variable in a form, it is also valid for every report which uses that form. On the other hand, if you define a variable in the report definition, it is only valid for that one report.

The entries you need to make may differ depending on the variable type you choose. For information about the entry fields, see the online help by pressing F1 for those fields.

You maintain local variables when you define the form or report itself in your application.

Variable types

There are currently four different variable types:

- Variables for Characteristic Values [Page 52]
- Variables for Hierarchies and Hierarchy Nodes [Page 54]
- Variables for Texts [Page 55]
- Variables for Formulas [Page 57]

Replacement types

You are required to enter a replacement type when you define a variable. The replacement type determines how the variable should be replaced -- automatically by the system or by manual entry.

The following replacement types are available:

- automatic replacement (allowed only for variables for texts and formulas)
- replacement by manual entry (when you execute the report)
- replacement by user exit (see User Exits: Global Variables [Page 59])
- replacement by SAP exit
- replacement by fixed value (taken from table TKESV)

Online documentation exists for the field *Replacement type* as well as other fields available when you define variables.

Naming conventions

The following naming conventions apply for variables:

- Global variables begin with **&**. Variables which are defined by SAP have a number in the second position. For user-defined global variables, the second character must be a letter.
- Local variables which you define in the form begin with **&$**.

However, if the symbol "variable on" appears before a field for a variable, do **not** enter "**&**". In such cases, the sign is set automatically.

For information on how the different types of variables are used, see also Example: Use of Variables [Page 60].

Variables for Characteristic Values

If you do not want to specify a fixed value for a characteristic in a report, you need to use a variable for a characteristic value. You can use these variables in both basic and form reports, and can define them in the form or in the report itself. Global variables of this sort are generally used in the form, and replaced with a characteristic value in the report definition or when the report is executed.

Certain variables for characteristic values, such as the current fiscal period **&0FP** (current fiscal period), are delivered with the standard R/3 system. The standard variables differ from application to application. You can display these in variable maintenance. Use of variables for characteristic values

Using Variables for Characteristic Values

To define a variable for a characteristic value in a report, activate the indicator **Variable on/off** on the entry field for the characteristic value. and choose the function *Edit →Variable on/off*.

If you want to use a variable for a characteristic value in a form, choose the pushbutton *Variables on/off* in the dialog box for characteristic values. The system then shows a dialog field, where you can specify the variable to be used.

Global variables need to be defined in Customizing before you can use them in a report or form. For information about maintaining global variables, see Overview: Variables [Page 50].

Local variables are unique within the given form and for the given characteristic. Consequently, you can use the same variable name for local variables for two different characteristics.

Variables for characteristic values which apply to **numerical fields** (such as Year for the current fiscal year 1999) can be added to constants (such as Year 1 for the previous year 1998). This is possible for both global and local variables for characteristic values.

You want to create a form in which you define the first column with a variable for the year. The second column should contain the previous year.

In the first column, choose the characteristic **`Fiscal year`** and specify it using the variable Year. Year has already been defined as a global variable with mandatory entry.

In the second column, choose the characteristic **`Fiscal year`** again, and enter Year 1 as the variable. When you later create or execute a report which uses this form, the system will merely ask you to specify the variable Year, and determine the previous year automatically.

Maintaining local variables for characteristic values

You create **local** variables by determining that an element is to be defined by a characteristic value variable.

When editing a form using the function *Change form* or *Create form*, you can obtain an overview of all variables to be used in the form. To do this, click on or choose *Extras →Variables → Variable definition*. The system then displays a dialog box containing a list of the local and global variables used in the form. You can specify for each local variable whether or not it must be

replaced with a fixed value in the report. If you do not maintain this, the system will assume that it is a mandatory entry. You can also maintain texts for local variables here.

In the transaction *Create report*, you maintain local variables by setting the *Variable on/off* indicator for a characteristic and then making the required entries in the following dialog box.

For an example of how to use variables for characteristic values, see Example: Use of Variables [Page 60].

Variables for Hierarchies and Hierarchy Nodes

If you define a form or report with a characteristic hierarchy, the system asks you to enter a specific hierarchy variant or hierarchy node (see Entering and Using a Hierarchy Node [Page 67]). In this field you can also enter a variable instead of a fixed value.

Variables for hierarchies and hierarchy nodes work just like variables for characteristic values. For more information, see Variables for Characteristic Values [Page 52].

Special features of variables for hierarchies

When you maintain a **local** variable for a hierarchy node, you only need to enter the replacement type. If you want, you can also enter an identifier for the variable. For variables for hierarchies, you can only maintain an identifier, since replacement is automatically mandatory.

When you maintain **global** hierarchy variables and choose replacement type “2” (replacement by manual entry), be sure to enter “3” (Mandatory variable which is not blank (technical)) in the field *Optional entry*.

Variables for Texts

If you want to use variables to define the texts in the headers of columns or rows, you need to use text variables. For example, if you use a variable for a characteristic value when defining a report, the system does not yet know the text for this value. Here you can use a text variable.

Text variables can only be used in form reports. They are defined in the form itself and replaced when you execute the report.

Certain text variables, such as **&0RESULT** (text for the totals row in a report), are delivered with the standard R/3 system. You can which standard text variables exist in your application in the transaction for variable maintenance.

Using variables for texts

You can enter a text variable anywhere where you can enter texts in a form.

Global variables need to be defined in Customizing before you can enter them in a text field of a form. To maintain global variables, see Overview: Variables [Page 50].

For **local** variables, you need to enter **$** followed by a name for the variable. You can enter the local variable in the row or column text itself, or in the dialog box where you enter short, medium and long texts. Once you have entered a local variable, you need to maintain it.

Maintaining local variables for texts

Like variables for characteristic values, you can maintain local text variables under the menu option *Extras →Variables →Characteristic value →Maintain variable*. To edit local variables, click on or choose *Extras →Variables →Variable definition*. The system then displays a dialog box containing a list of the local and global variables used in the form. You can specify for each local variable whether or not it must be replaced with a fixed value in the report. If you do not maintain this, the system will assume that it is a mandatory entry. You can also maintain texts for local variables here.

For variables for texts, the **replacement type** determines how you need to proceed. In most cases you will probably choose to store a replacement path so that the system can determine the text automatically from the master data. Note that the system can only automatically replace those variables which refer to an element with characteristics, and only if you selected the desired characteristic when you defined the element.

You need to specify the text length when you define the variable. The name of a **local** variable can have up to 8 characters. If you choose, **replacement by manual entry**, the text length is identical with the length of the variable name.

Note that in the characteristic field **`Period/year`**, the period is at the end of the field. If you want to replace a text variable with the current period, you need to enter the following in the *Chosen field* group in the *Detail* dialog box: *value* 6*, length* 3.

For a detailed example of how to use variables for texts, see Example: Use of Variables [Page 60].

Variables for Texts

Variables for Formulas

If you want use variables in the formulas of a form, you need to use formula variables. You can use formula variables only in form reports, and must define them in the form itself. They can be replaced in the same ways as text variables when you execute the report.

Formula variables make it easy for you to simulate and project data.

Using variables for formulas

To use a formula variable in a form, call up the formula editor when you define the relevant element, and enter the variable there.

Global variables need to be defined in Customizing before you can use them in formulas. Using the pushbutton *Switch text*, you can display all the possible components of a formula. To maintain global variables, see Overview: Variables [Page 50].

For **local** variables, you need to enter **&$** followed by a suitable name.

To define the properties of a variable, click on or choose *Extras →Variables →Variable definition*. The system then displays a dialog box containing a list of the local and global variables used in the form.

For a detailed example of how to use formula variables, see Example: Use of Variables [Page 60].

Defining Global Variables

Use

If you use a variable frequently, you should define it globally rather than in the context of a report or a form. This makes it possible to use the variable in all your forms and reports. This is particularly useful for characteristics which commonly figure in the general report selection, such as period, business area etc.

Another reason for creating global variables is that it is only when using this type of variable that you can perform a multiple selection. This means that you can include or exclude freely selectable values or ranges of values when executing reports. The features available in multiple selection can vary from application to application. When using *local* variables, you cannot use multiple selection.

Procedure

1. Call up the initial screen for maintaining variables.

   In most applications, you define global variables by selecting *Information System* in the application in question. The component EC-EIS is an exception. Here, you define global variables by choosing *Information System* →*Variables* →*Define Variables* in the application menu.

2. To define a new variable, choose *Edit* →*New Entries*.

3. Enter the required variable type, a name and the replacement type.

   Note that the name you choose for a global variable must always begin with **&.** Depending on the variable type and replacement type you choose, the system will prompt you to make various entries in additional fields.

4. If you want to use the variable for general report selections, enter **S** in the field *Parameter/Selectopt*.

5. Make all necessary entries and save the variable.

Result

You can use the variable in forms or reports. In fields where it is technically possible to use the variable, it will be offered to you via possible entries (F4).

User Exits: Global Variables

When you work with global variables, you need to specify a **replacement type** to determine how the variable should be replace with a value. In most cases, the replacement types provided by the system (automatic, manual, SAP exit, fixed value from table) will be sufficient.

If you need to have a variable replace using a different method, you can program a **user exit** for global variables to define your own replacement type.

- deriving the current calendar year from the current fiscal year
- deriving a 7-digit period from the current period

You can read about the user exit by choosing *Tools →ABAP Workbench →Utilities → Enhancements →Definition (enhancement* **KKDR0001**) from the initial screen. There you will find the technical information necessary for programming an exit as well as a code example.

Example: Use of Variables

In a **form** with two axes, you want the rows to contain four fiscal years and the columns to contain revenues and a revenue value taking inflation into account, based on fiscal 2001:

Profitability report	Revenue	Test
$FYT	XXX,XXX,XXX	XXX,XXX,XXX
$FYT	XXX,XXX,XXX	XXX,XXX,XXX
$FYT	XXX,XXX,XXX	XXX,XXX,XXX
$FYT	XXX,XXX,XXX	XXX,XXX,XXX

The form contains variables for characteristic values, text variables and formula variables:

- The characteristic fiscal year is used in the rows. Four consecutive fiscal years will be displayed, the first of which you need to enter when you run the report.

  For this you enter local variable **&$FY** in the first line of the dialog box for characteristic values. You then enter **&$FY+1**, **&$FY+2** and **&$FY+3** in the second, third and fourth lines, respectively. You cannot see the variables in the rows of the form.

- In the dialog box where you enter texts, enter the text variable **$FYT** in the corresponding text fields. The text variable appears in the form (see above).

  The text variable is to be replaced automatically in the report by the value of the fiscal year in the row. To do this, choose or the menu option *Extras* → *Variables* → *Variables definition*. Set the variable $FYT to be replaced automatically with the value in the From field of the characteristic 'fiscal year' (beginning in position 1 with a length of 4 characters).

- The revenue value **Test** is adjusted for inflation by the formula:

  ```
  X001 / ( 1 + &$INFL) ** ( &$FYN - 2000)
  ```

  where X001 is the revenue column. You specify the inflation rate &$INFL. The variable &$FYN is replaced automatically by the fiscal year for the row.

  Nothing more needs to be specified for the formula variable **&$INFL**. You define the formula variable **&$FYN** to be replaced automatically by the value in the From field of the characteristic **Fiscal year** (beginning in the first position with a length of 4 characters).

If you run the report with the value **0.04** for &$INFL and **1998** for &$FY, you will thus receive the following detail list:

Profitability report	Revenue	Test
1998	950.00	1,155.82
1999	1,210.00	1,415.53
2000	1,380.00	1,552.31
2001	1,500.00	1,500.00

Replacing Variables

You can replace variables manually on the *variables* tab page. Only variables which can be replaced manually appear here. Other variables are replaced automatically and do not appear here.

Characteristics which are selected on the *variables* tab page cannot be further specified on the *characteristics* tab page. In such cases, the corresponding entry fields are deactivated. For further information, see Characteristic Values [Page 31].

The question of which variables you can enter depends on the type of report.

- For basic reports, there is no user-defined form. The systems proposes certain standard variables (such as fiscal year, period, value type) depending on the application.
- For form reports, the system displays those fields which were defined using variables in the form for this report. These fields appear in the order defined under *Extras →Variables →Sort* in the form definition. If the field customer group has been defined with a variable, you use the tab page to define which customer group you want to create the report for. When you have made this entry, the system will perform the corresponding replacement wherever the parameter appears in the report.
  If the form definition contains no variables, or only those which will be replaced automatically, the system does not display this tab page.

Readiness for Input

You can either specify the selected variables immediately or later, when you execute the report. If you do not wish to specify a variable until you execute the report, this variable must be **ready for input.** You can make each variable ready for input when the report is executed, by choosing *Enter when executing*. If at least one variable can be entered manually, the system displays a dialog box when you execute the report. There you can enter values for the variables or changes the defaults defined in the report definition. If you do not select the field *Entry when executing* for any variables, the system immediately executes the report and displays the resulting list.

When you enter variables, the system also replaces all variables which were set during definition of the report on the *characteristics* tab page, using the function Variable on/off [Ext.]. The status of these variables is always *Entry when executing*; this cannot be changed. With other variables, however, you can decide whether or not they are still ready for input when executing.

Sort variables

You can change the order of the variables by choosing the *sort variables* pushbutton. When you execute the report, the *enter variables* dialog box will display the variables in the order which you have specified.

See also:

Choosing Characteristics [Page 30]

Replacing Variables

Overview: Variables [Page 50]

Maintain Variables [Page 63]

Defining Global Variables [Page 58]

Maintaining Variables

With this function you can maintain **local** variables which you created when you defined the report. (Global variables are defined in Customizing.) For each variable you can decide whether the user executing the report has to enter a value or not.

It may occur that some of the variables defined in the report cannot be maintained here. This can be due to a number of reasons, such as that the variables involve compound characteristics or that the variables are replaced internally.

For further information on how to use variables when creating a report, see Replacing Variables [Page 61].

Characteristic Hierarchies

In both the Executive Information System (EC-EIS) and in Profitability Analysis (CO-PA), you can define hierarchical structures for characteristics for use in drilldown reporting. You can create characteristic hierarchies yourself in your own application. Alternatively, you can use hierarchy groups which are defined in other applications, such as the cost element groups in Cost Element Accounting or cost center groups in Cost Center Accounting. (For information about how to create master data hierarchies in EC-EIS, see Master Data Hierarchy [Ext.]. In CO-PA, you create these in Customizing.

In **account-based Profitability Analysis**, you can only use the cost element groups from Cost Center Accounting.

A hierarchy lets you group values of a single characteristic together into a hierarchical structure. For example, you can group cost elements together according to personnel costs, material costs, administrative costs, and so on, and then differentiate them within each of these categories by dividing personnel costs into wages, salaries and additional personnel costs, and so on. The group "Wages" might then contain direct labor costs, labor overhead, compensation for time lost, overtime and miscellaneous costs. Another good example is a hierarchy for the characteristic **Company**, which consists of various sub-groups.

Hierarchy nodes and end nodes

A characteristic hierarchy is made up of a number of **hierarchy nodes**. Hierarchy nodes are parts of a hierarchy and can contain further hierarchy nodes. Alternatively, if this is not the case, they can be **end nodes**. An end node can only contain values, either individual values or value intervals. The cost types "direct labor costs", "labor overhead" and "other labor costs" are examples of end nodes, as they contain only intervals of node values or individual values.

Hierarchy for the characteristic **Cost element**

- **PERSONNEL COSTS (hierarchy node)**

  Wages (hierarchy node)

  Direct labor costs **(end node)**

  420000 - 420999 **(interval of values)**

  Labor overhead

  421000 - 421999

  Other labor costs

  423000 **(single value)**

  Salaries

  ...

  Other personnel costs

- MATERIA COSTS
- ADMINISTRATION COSTS

and so on.

The *Choose hierarchy* function

If hierarchies exist for a characteristic, you can have the system display that characteristic in a hierarchy either when you define the report or after you have executed it. This function displays the chosen hierarchy in its entirety. The characteristic values not contained in the hierarchy appear in the report list in the row "Other characteristic values". You can also drill down on this row if you wish.

To do so, choose the function *Extras →Choose hierarchy* when you define the report or *Edit → Hierarchy →Choose...* after executing it. Both of these functions are also found under the pushbutton . In each case, the system displays a list of the existing hierarchies for that characteristic. This makes it possible to analyze the selected data interactively according to different hierarchies.

In addition, the option "No hierarchy" lets you return to a non-hierarchical display.

You can change the look of the hierarchy at any time from the report list using the function *Edit → Hierarchy →Display*. For more information, see Hierarchy Display [Page 69] and Functions for Editing Hierarchies [Page 72].

The function *Hierarchy node*

The function *Edit →Hierarchy node* lets you report on selected parts of a characteristic hierarchy.

To do so, choose the pushbutton *Hierarchy node on/off* when you define either the form or the report. Then you can enter a hierarchy node in place of a characteristic value for the selected characteristic. Instead of a characteristic value, choose a hierarchy node for the characteristic. When you execute the report, the system displays only those characteristic values that are

attached to that node. For example, you can report on all the cost elements that belong to the group **Wage costs**.

If, on the other hand, you either enter a single characteristic values or choose all characteristic values by leaving the field blank, to receive all values instead of a hierarchy node when you define the report, the system displays the data for that single value or for all values.

Note that when you enter a hierarchy node for a characteristic, that characteristic becomes **fixed**, which means that it can no longer be a drilldown characteristic. The characteristic name and the hierarchy node chosen appear above the navigation area.

To be able to choose a group (profit center group, cost center group, cost element group, and so on), you first need to set the controlling area.

See also:

Entering and using a hierarchy node [Page 67]

Entering and Using a Hierarchy Node

Entering a hierarchy node

You can enter a hierarchy node either in the form or in the report definition. First choose the characteristic for which you want to see a hierarchy node.

To choose a hierarchy node when you define a form, click on the pushbutton *Hierarchy node on/off* in the dialog box where you enter characteristic values. When you define the report, you can find this function on the screen *Characteristic Values*.

If more than one hierarchy class exists for the characteristic, the system displays a dialog box where you need to specify which you would like to use. For example, for the characteristic “Cost element”, you can choose between the class “Cost element group” from Cost Element Accounting and a user-defined master data hierarchy. (In Profitability Analysis this option is not available, since you can only use cost element groups from Cost Element Accounting.)

Next, you need to enter a node of the hierarchy. For master data hierarchies, you have to enter two things here: a node and a hierarchy variant. This makes it possible for you to analyze different variations of a hierarchy.

If you want to restructure the sales districts in your company, you can create different variants of your sales district hierarchy and then compare these in a report.

Hierarchy variant A	**Hierarchy variant B**
Main district NORTH	**Main district NORTH**
District 1	District 1
District 2	
Main district SOUTH	**Main district SOUTH**
District 3	District 2
District 4	District 3
	District 4

Variables for hierarchies and hierarchy nodes

You can enter either global variables or local variables for hierarchy nodes as well as complete hierarchies. Global variables [Page 58] for hierarchies or hierarchy nodes need to be defined already, whereas you define local variables directly in the form or report. You define and maintain variables for hierarchies and variables for hierarchy nodes the same way you do variables for characteristic values.

To use a variable for a hierarchy or hierarchy node, click on the pushbutton *Variable on/off* in the dialog box where you would enter the node or hierarchy. By choosing the *Possible entries* function, you can display a list of the existing global variables. To define a local variable, enter a name that complies with the naming conventions for variables, and then maintain the variable.

Entering and Using a Hierarchy Node

It makes sense to use variables for texts in connection with variables for hierarchies or hierarchy nodes. For example, if you want to enter a variable for a hierarchy variant, you can have the system enter the text for the variant automatically instead of having to specify it immediately. To do this, define a text variable with automatic replacement. When the system asks how the variable should be replaced, choose “Hierarchy field” and enter “Hierarchy variant”.

For more information about variables for hierarchies, see Variables for Hierarchies and Hierarchy Nodes [Page 54].

Display

In a basic report, the hierarchy node is displayed above the navigation area, just like the other fixed characteristics. Thus the hierarchy node is not available as a drilldown characteristic. The values in the report are shown summarized for that node.

If you entered a hierarchy node in the form, but then decide that you want to use it as a drilldown characteristic in the report, proceed as follows: When you define the report, choose the relevant characteristic but do not enter a characteristic value. Choose a type of display for the hierarchy using the function *Choose hierarchy*. This makes the characteristic available as a drilldown characteristic.

You can choose between four different ways of displaying the hierarchy: compact display, line display, asterisk display and line display with blank lines.

See also:

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Hierarchy Display

You can display the hierarchy of a characteristic in different ways:

- Compact display
- Asterisk display
- Line display
- Line display with blank line

Compact display

In compact display, the first column contains symbols which show whether a row can be expanded or collapsed, or whether a row has already been expanded as far as you can expand it. By double-clicking on one of these symbols you can expand an expandable row or collapse a collapsible row.

	Cost element			Value
-	1		Total costs	120,963.00
-	2		Material costs	109,563.00
>	3	400001	Raw materials	700.00
>	3	400004	Finished products	1,100.00
>	3	400005	Semi-finished products	107,763.00
-	2		Personnel costs	10,300.00
>	3	431000	Wages	3,000.00
>	3	439000	Salaries	7,300.00
+	2		Imputed depreciations	1,100.00
>	1		Other costs	27,520.00

The hierarchy shown above consists of two branches. A branch always begins with the first level. In the above graphic, the first branch contains a total of three levels. Level 2 (material costs) is expanded completely and can be reduced if desired (-). This would mean that the rows that follow, indicated with "Level 3" (raw materials, finished products and semi-finished products) would no longer be visible.

The item "Imputed depreciation" can be broken down further and is therefore displayed with the symbol for "collapsed" (+).

The row "Other costs" is a node at the highest level (Level 1) which cannot be broken down any further. Thus it is also a node at the lowest level and is consequently indicated with a (>).

The lead column (cost element) in compact display contains the hierarchy level in the form of a number. One (1) is always the highest level. The higher the number, the

deeper down the characteristic is divided. The lead column also contains the key and/or name of the characteristic value.

Asterisk display

In asterisk display as well, the first column contains symbols indicating whether the rows can be expanded or collapsed, or whether the lowest level has been attained.

	Cost element		Value
-	**	Total costs	120,963.00
-	*	Material costs	109,563.00
>	400001	Raw material	700.00
>	400004	Finished products	1,100.00
>	400005	Semi-finished products	107,763.00
-	*	Personnel costs	10.300,00
>	431000	Wages	3.000,00
>	439000	Salaries	7.300,00
+	*	Imputed depreciation	1.100,00
>	**	Other costs	27.520,00

Line display

Line display corresponds to the type of display which you find in SAPmail and in many other areas of the R/3 System. Symbols directly located on the nodes indicate whether the level can be expanded or collapsed, or whether the lowest level has been attained.

	Cost element		Value
-		Total costs	120,963.00
-		Material costs	109,563.00
>	400001	Raw material	700.00
>	400004	Finished products	1,100.00
>	400005	Semi-finished prod	107,763.00
-		Personnel costs	10,300.00
>	431000	Wages	3,000.00
>	439000	Salaries	7,300.00
+		Imputed depreciation	1,100.00
>		Other costs	27,520.00

Line display with blank line

This type of display is the same as normal line display except that a blank line separates rows of different levels. Line display with blank lines is easier to read compared to normal line display, but can also lengthen your report considerably in some cases.

	Cost element		Value
-	Total costs		120,963.00
-	Material costs		109,563.00
>	400001	Raw material	700.00
>	400004	Finished products	1,100.00
>	400005	Semi-finished prod	107,763.00
-	Personnel costs		10,300.00
>	431000	Wages	3,000.00
>	439000	Salaries	7,300.00
+	Imputed depreciation		1,100.00
>	Other costs		27,520.00

Functions for Editing Hierarchies

Characteristics are displayed hierarchically using different levels. As shown above, the number of levels to be displayed can be set using the symbols *collapsed* (**+**) and *expanded* (**-**).

- Expanding a hierarchy level means displaying one level below the level where the cursor is positioned.
- Collapsing means reducing the display by one level.

It is also possible to process the levels of a hierarchy in greater detail using the menu. These functions are cursor-sensitive. Thus they let you process the rows in a specific branch.

See the graphic exemplifying compact display in the section Hierarchy Display [Page 69].

- For example, in the graphic below, if you execute the function *Collapse* on Level 1 of the first branch, the system resets all the items which belong to that branch, and only displays Level 1 of the branch. Other branches are not affected. If you execute this function on the row "Material costs", the items "Raw material", "Finished products" and "Semi-finished products" disappear.

	Cost element			Value
-	1		Total costs	120,963.00
-	2		Material costs	109,563.00
>	3	400001	Raw material	700.00
>	3	400004	Finished products	1,100.00
>	3	400005	Semi-finished prod.	107,763.00
-	2		Personnel costs	10,300.00
>	3	431000	Wages	3,000.00
>	3	439000	Salaries	7,300.00
+	2		Imputed depreciation	1,100.00
>	1		Other costs	27,520.00

- The function *Expand* is likewise cursor-sensitive, and only applies to the next level.
  - The function *Expand all* always displays all the levels contained in the branch.
- *Expand to level* lets you hide levels of the hierarchy which are of no interest at the time or unimportant.
- The function *Set focus* lets you choose a specific level that you are particularly interested in. For example, if you position the cursor on the row "Personnel costs" in the graphic, and then choose *Set focus*, the system displays only the expanded level, i.e. the rows "Personnel costs", "labor costs" and "Salaries". You can jump from this focused view back to the hierarchy again by double-clicking on the corresponding field.

Sorting a hierarchy

You can sort a report according to different criteria. Depending on where the cursor is standing, you can sort the rows according to the key, the name or the values of a certain key figure in either ascending or descending order.

You can also sort a report hierarchically, provided that a characteristic was defined hierarchically. Again you can choose between ascending and descending order. The cursor must be positioned on a symbol (+, -, >) before you choose the function *Ascending* or *Descending*. The hierarchies shown in the figures here are all sorted in descending order.

In compact display and asterisk display, there are also two ways to display the hierarchy. You can have the highest level (Level 1) above the lower levels, or you can place it at the bottom of the branch. The first case is referred to as **top-down** display, the second as **bottom-up** display. The figures shown here are displayed top-down.

Graphics for hierarchy lists

Only the line-related graphic types are available in a hierarchy list.

If you want to observe just one level of a hierarchy, using the function *Hierarchy* → *Set level*, all graphic types are available - depending on the cursor position - as in a drilldown list without a hierarchy.

See also:

Hierarchy... [Page 149]

Graphics [Page 272]

Currencies and Units of Measure

When you define a form or report, you can determine whether different currencies and quantities should be allowed in different columns or rows of the report:

- If you want to allow different currencies in different **columns**, you can use the currency translation function in the report.
- If you want to allow different currencies in different **rows**, currency translation is not possible. In this case, you need to choose the currency as a drilldown characteristic in your report.

Currencies and units of measure are handled differently in different applications. For more information, see Customizing and the online documentation for your application.

Currencies

You can work with different currencies in drilldown reporting. Note that the currency settings you make are the same for both the drilldown and detail lists. That means that a single column of the drilldown list has the same target currency and currency translation key as the cell of the detail list which corresponds to that column.

Currency Translation

Currency translation is defined by the following values:

- Currency translation key
- Target currency

If a **form** contains formula columns which use different currencies, the system performs currency translation automatically using translation key **999**.

If you perform currency translation on the detail list of a report, the system also translates the corresponding column of the drilldown list.

If you use currency translation, it may make sense to define a **dummy column** which is ignored during translation. This makes it possible to still display the original currency.

(See also the standard report **0-SAP05** for account-based Profitability Analysis in operating concern S001.)

A report consists of the following four columns:

- Column A uses the controlling area currency, **USD**.
- Column B uses the transaction currency, **DEM**, which is translated into **USD** (based on column C).
- Column C is defined as A minus B in **USD**.

- Column D is defined as a dummy column with an additional characteristic to distinguish it from column B. The dummy column is not translated into **DEM**. Thus it still displays the original content of column B before translation.

Currency Translation Keys

Some currency translation keys already contain the target currency in their definition.

A few important currency translation keys are delivered with the standard R/3 System. These include:

Key:	Description:
1	Mean rate, cutoff date today
2	Selling rate, cutoff date today
3	Buying rate, cutoff date today
4	Selling rate, cutoff date start of period
5	Mean rate, cutoff date start of period
6	Buying rate, cutoff date start of period

You can also define your own currency translation keys. The functions which let you do this are found in Customizing.

The currency translation key fixes certain details of how the currency translation is to be carried out. It represents a summary of various rules when carrying out a currency translation. These details, which you can combine in a translation key, are:

1. The exchange rate type (such as the bank buying rate or the average rate)

   The valid exchange rate types are stored in a central R/3 table and can be maintained there.

2. The target currency into which you are translating

   A distinction is made here between fixed and variable target currency. With a fixed target currency, you can determine it later. It is recommended, however, that you leave this field blank in most cases. For example, in the transfer of external data to the transaction data table, the target currency is normally implicitly known and can be determined by the transfer program when it runs. If you often want to use the same translation key for different target currencies when translating currency-dependent values in drilldown reporting, then only currency translation keys without a specific target currency are suitable.

   With a variable target currency, you must create a reference to a characteristic by entering the name of a table or field. For example, if you want to determine that selection of the target currency is country-dependent, you enter the table with country data (T005) and the field with country keys (LAND1). To do this, the country key must be defined as a characteristic in the operating concern.

3. Flag which indicates whether this is a fixed or variable translation

   A fixed translation date is either the current date or a specific date from which the exchange rate is valid.

   With a variable translation date, you specify the time reference (i.e. period begin, year end).

4. Flag which indicates whether the rate is inverted. A currency type with inverted rate is useful if the amounts have already been translated and you want to display the original values again in drilldown reporting.
5. From-currency. You leave this field empty for currency translation keys for drilldown reporting as the source currency is known for all values.
6. The time reference (only for time-dependent currency translation).

   The following are supported:

a) Fiscal year end

b) Period end

c) Period begin

d) Week end

(not available for all applications)

e) Exact day

(only if the transaction data table contains characteristics with a time dimension - such as "trading day").

The requirement for using these options for the time reference in a drilldown report is, that the relevant characteristics have been chosen for the report. Where the period is concerned, note that it is only valid in the context of a fiscal year.

Inverse Exchange Rates

An exact reverse calculation is, however, only possible under certain conditions. In data transfer, several records with different exchange rates cannot be summarized to one record. The data for which the exchange rate is taken from the central SAP table, must either be a specific date (for example, 12/31/97) or be derived from a characteristic, that is contained in a sender record as well as in the drilldown report. To see how this works, see Example: Inverse Rates [Page 77].

Example: Inverse Rates

The three records to be transferred to the transaction data table should have the following structure:

Fisc. year	Period	Posting date	Sales area	Sales	Currency
1995	001	1/5/95	B3Z	100	DEM
1995	001	1/5/95	A3F	200	DEM
1995	002	2/7/95	27A	200	DEM

The records are to be posted in USD to the transaction data table, which does not contain the posting day as a characteristic. The following possibilities arise:

1. Translation on a specific date, e.g. 12/31/1994, using the bank buying rate.

   Example exchange rate is 0.7 USD/DEM.

   The records in the transaction data table then appear as follows:

Fiscal year	Period	Sales area	Sales
1995	001	B3Z	70
1995	001	A3F	140
1995	002	27A	140

   Sales of 350 USD for fiscal year 1995 will be displayed in the drill- down report. You can calculate this from the inverse exchange rate

   1 / (0.7 USD/DEM) = (1 DEM)/(0.7 USD)

   and get the value

   350 USD * (1 DEM)/(0.,7 USD) = 500 DEM

   i.e. the original amount.

   Note that, the reverse calculation always works if you have translated with an exchange rate unique to a specific date during the data transfer.

2. Time-dependent translation at period end using the bank buying rate.

   The example exchange rate for this is:

   0.6 DEM/USD for 1/31/1995
   0.8 DEM/USD for 2/28/1995.

   The records in the transaction data table appear as follows:

Fiscal year	Period	Sales area	Sales
1995	001	B3Z	60
1995	001	A3F	120
1995	002	27A	160

   Sales of 340 USD for fiscal year 1995 are displayed in the drill- down report. If you chose the fiscal year and the period or, alternatively, the 7-digit Period 'yyyymmm' when

defining the report, then you can also calculate the original amount from the inverse exchange rate. The drill down report works with the inverse period exchange rates

1 / (0.6 USD/DEM) = (1 DEM)/(0.6 USD) and
1 / (0.8 USD/DEM) = (1 DEM)/(0.8 USD)

and calculates the value

(60 USD + 120 USD) * (1 DEM) / (0.6 USD) + (160 USD) *
(1 DEM) / (0.8 USD) = 500 DEM,

i.e. the original amount.

3. Time-dependent translation for the posting date using the bank buying rate.

   Example exchange rates for this:

   0.6 DEM/USD for 1/5/1995
   0.8 DEM/USD for 1/9/1995
   0.8 DEM/USD for 2/7/1995.

   During data transfer the posting date will be ignored as this is not contained in the transaction data table as a characteristic. (see above)

   The records in the data transfer table will then appear as follows:

Fiscal year	Period	Sales area	Sales
1995	001	B3Z	60
1995	001	A3F	160
1995	002	27A	160

   Sales of 380 USD for fiscal year 1995 are displayed in the drilldown report. You cannot calculate the original amount using the inverse exchange rate, as the information about the translation date was lost during the summarization over posting date.

   You can calculate the original amount approximately by translating the amount using the mixed specific date exchange rates or period end exchange rates. The latter would provide the following result:

   (60 USD + 160 USD) * (1 DEM) / (0.6 USD) + (160 USD) *
   (1 DEM) / (0.8 USD) = 566.67 DEM

   that is, not the original amount of 500 DEM.

Overview: Report/Report Interface

Use

The report/report interface lets you link together a number of smaller reports each containing a limited number of characteristics so that you can report on a number of different combinations of data online.

This helps you to avoid the problem of having particularly large reports, whose large volume of data often means that they cannot be constructed online and have to be planned as a background job.

Integration

Among other things, the report/report interface lets you

- connect reports which contain characteristics from different applications. This makes it possible to report on more objects than you could with any individual report.
- connect reports which were created in different application classes

For an example of reports connected to other reports within an application class (costing-based Profitability Analysis), see the CO-PA example reports 0-SAP07 (sender report with the characteristics “Customer group” and “Product group”) and 0-SAP08 and 0-SAP09 (receiver reports with the characteristics “Customer” and “Product”).

Features

Exchange of data between reports

With the report/report interface, you can combine information from several reports. To do so, you need to define sender reports and receiver reports. The sender report sends data to the receiver reports using variables which you define either in the receiver reports or in the form they are based on. The sender report supplies values for these variables when you execute the receiver report.

See also:

Example: Report/Report Interface [Page 83]

How to Use the Report/Report Interface [Page 81]

Splitting reports

The function *Split report* offers you a simple alternative to the report/report interface for instances when you want to jump from one drilldown report to another. You can divide a “large” report -- which contains a large number of drilldown characteristics -- into two reports to make executing the report online more efficient. This also makes navigating between the report lists easier.

You can find this function under the menu option *Information system →Define report →Split*.

Overview: Report/Report Interface

Once you have made all the necessary entries and entered the name of the report, save your entries. Then execute the report and choose the drilldown characteristic which should go into the new report. Enter a name for the report which is created as a result of the split.

You can execute the report as soon as you have split the report. When you reach the lowest level of the first report, the system automatically calls up the second report using the report/report interface. You can navigate back and forth between the two reports as you wish.

It is also possible to split a report into more than two reports.

If you have only split the report once, the system automatically executes the new report when you click on the symbol for the report/report interface. If you have split the report more than once, you receive a dialog box where you can choose which report you want to see.

How to Use the Report/Report Interface

For an example, see also Example: Report/Report Interface [Page 83].

Assigning reports

Before you can use the report/report interface, you first need to define a receiver report with variables for the information you want to pass on from the sender report. Next, define a sender report. Before leaving the report, you need to assign it to the receiver report. To do this, call up the function *Extras →Report assignment*. The system will then display a dialog box in which you can enter the desired report. In another dialog box, you can enter a different application class to assign reports from that application to your sender report. Once you have done this, save your report.

Calling up a report

You can call up a receiver report from any level of the drilldown list of your sender report. To do so, choose the function *Call up report* (in some applications called *Other reports*) and choose the report you want to execute.

You can return to any previously executed report from a receiver report using the function *History*.

Prerequisites for using the report/report interface

Variables

For the system to send information from one report to another, the receiver report must contain variables for the data you want it to receive from the sender report. These can be either local or global variables, and you can define them in the report itself or in the form used by that report.

In order for the system to be able to replace the variables with characteristic values via the report/report interface, it is important that you select the **Enter when executing** flag on the screen *Enter variables*.

For more information about variables, see the following:

Overview: Variables [Page 50]

Variables for Characteristic Values

Variables for Texts

Variables for Formulas

Summarization levels (only CO-PA)

When you save a report after creating it, the system displays a dialog box with the title *Read Summarization Data*. As a default, the option here is set to *Error message*.

However, a **receiver report** usually only requires the system to read a small amount of data, since the information from the sender report limits the selection drastically. Consequently, it is not

always necessary to use summarization levels. It is therefore recommended that you change the option to either *Warning* or *No message*.

Since a **sender report** can sometimes require a large amount of data, you should always use a report which uses a summarization level. In the dialog box *Read Summarization Data*, you should accept the default setting, *Error message*, to avoid potential abends.

You can change this setting at any time in *Change report* under the menu option *Extras* → *Summarization level*.

If you work with summarization data instead of summarization levels, you receive the dialog box *Store Summarization Data* instead of *Read Summarization Level*. Here the following settings are recommended:

– **receiver report**: *No summarization data*

– **sender report**: *Store summarization data* and *Error message*

Example: Report/Report Interface

For an example of how you could use the report/report interface, see the CO-PA example report 0-SAP07 and its two receiver reports 0-SAP08 and 0-SAP09.

Report 0-SAP07 displays the characteristics “Customer group” and “Product group”.

The receiver reports contain local variables for the characteristics “Customer group” and “Product group”. In addition, report 0-SAP08 displays the characteristic “Customer” and report 0-SAP09 the characteristic “Product”.

You can display the parameters for each report by executing it and then choosing the menu option *Extras →Report parameters*.

Execute the report 0-SAP07. From the initial list, drill down to the characteristic “Customer group”. Then choose *Goto →Call up report...* to call up report 0-SAP09 or 0-SAP08. The system passes the characteristic values for “Customer group” and “Product group” to the receiver report, where you can then drill down through other characteristics.

If you have defined additional receiver reports, you can then call up another one using the same function (*Call up report*).

You can return to any previously executed report at any time using the function *History*, which is located under the menu *Goto*.

Report/Report Interface: Transformation of Selection Data

The report/report interface lets you call up receiver reports (ABAP reports, transactions, ABAP query, Report Writer reports and drilldown reports) from a sender report. The sender selection data is reproduced in the receiver selection data. The system performs the following steps to reproduce the sender fields in the receiver fields:

1. Firstly, the system performs transformation by data element equivalence. If the sender fields and the receiver fields have the same data element, and no other sender or receiver fields have the same data element (uniqueness) the sender value is taken over in the receiver field.
2. If transformation by data elements is not possible, the system carries out transformation in the same way by domain equivalence. You can control this procedure by defining virtual domains (see below).
3. If the system has still not found a sender value for a receiver field, it performs transformation by semantically equivalent domains. The domains in the sender and receiver fields which have not yet been transformed are replaced by equivalent domains, and processing is started as in 2. (see below).

In the procedures described below, it is important to note that the technical domains of the related data elements must have the same value (data type, field length etc.). Otherwise, the report/report interface will not be able to transfer data correctly.

Transformation by Domain Equivalence: Virtual Domains

You can influence how selection data is transformed in accordance with steps 2 and 3. In step 2, you can use virtual domains instead of real domains. A virtual domain is a definable name, which you can assign consistently to the data elements which you want to relate to one another. To do this, create a new data record in table TVIRTDOM for each affected data element, and enter the name of the data element and the virtual domain you want to use.. The system finds the correct data element assignment from the name equivalence of the virtual domains, when the report/report interface is called up.

Alternatively, you can enter the actual domain for data element A and enter the same domain for data element B, which you want to assign to data element A. In this case, the entry you make in data element B is a virtual domain, as a different technical domain is assigned to B's data element definition.

In some applications, for example, various data elements are used for the characteristic "period". To assure that the report data is still assigned correctly, make the following entries in table TVIRTDOM:

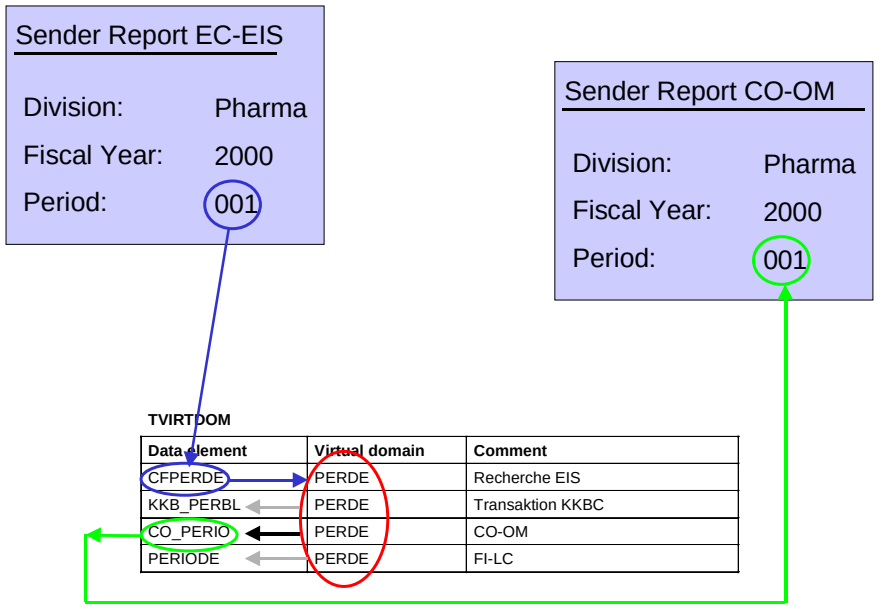
TVIRTDOM

Date element	Virtual domain	Comment
CFPERDE	PERDE	Drilldown EIS
CO_PERIO	PERDE	CO-OM

KKB_PERBL	PERDE	Transaction KKBC
PERIODE	PERDE	FI-LC

Entries in table TVIRTDOM are not client-specific. As a result, changes which you make here will not take effect in all applications which use the report/report interface.

The graphic below illustrates the use of virtual domains:



The sender report provides the period with data element CFPERDE. However, the receiver report expects data element CO_PERIO. Due to the non-equivalence of data elements, the report/report interface now finds the virtual domain which CFPERDE is assigned to. Using the relevant data elements which are also assigned to this virtual domain, the system chooses the data element CO_PERIO, and it is now possible to make an entry in the receiver report's period field.

Transformation by Domain Equivalence: Equivalent Domains

When attempting to find suitable data elements for the transfer of selection data, it might not be possible to find assignments to virtual domains. In this case, it is also possible to represent the "real" domains which are actually assigned to the data elements. These "real" domains are defined in the data dictionary, and form a component of the technical definition of the data elements in question. To define a relationship of equivalence between two domains, proceed as follows:

1. In table view maintenance (transaction SM31), open table TEQUIVDOM for editing.
2. Create a new data record for a pair which you want to flag as equivalent.
3. In the fields *Domain* and *Equivalent Domain*, enter the technical names of the two domains and, if required, add an explanatory note.

For technical reasons, it is not possible to determine whether a pair of domains you have entered is actually equivalent from a managerial viewpoint. For this reason, the system does not perform a consistency check. You must check the consistency of your entries yourself.

The relationship between the two domains is not fixed. This means that it is of no importance which of the two domains belongs to the sender field and which belongs to the receiver field.

Entries in table TEQUIVDOM are not client-specific. As a result, changes which you make here will not take effect in all applications which use the report/report interface.

Although they possess different data elements, the characteristics cost element (KSTAR) and general ledger account (SAKNR) are semantically equivalent.

Calling up Reports with Variants

You can use the report/report interface to call up ABAP reports, ABAP queries and drilldown reports from many applications with variants. When assigning the report, both the name of the report and the required variant have to be entered. The system then sends on the sender selection data to the receiver report and fills the entry fields in the receiver report automatically, meaning that you do not normally have to make any entries yourself on the selection screen for the receiver report.

If you also call up the receiver report with a variant, the system takes into account both the sender selection data and the variant values of the receiver report. The relationship between the sender selection data and the variant values of the receiver report is decided as follows:

- The sender selection data normally overwrites the variant values.
- Entry fields which are marked as "protected" in the variant definition are an exception to this rule. Consequently, they are not overwritten.
- If the entry field was marked as a "mandatory field" when the variant was defined, the system will also treat this field as a mandatory field when it is called up with the report/report interface. This means: If neither a sender value nor a variant value exist for this field, the system will display the selection screen and require the user to make entries here.

This functionality allows you to reproduce sender selection data more precisely in receiver entry fields. In particular, you can check the display of the receiver selection screen to a large extent:

- However, if the receiver report contains more entry variables than the sender report, the selection screen is not displayed, as the variables are filled with variable values.
- Previously, if the receiver report had two variables with the same data element, it was not possible to assign a sender value to the variables, as the system requires data element equivalence between the sender and receiver report when making the assignment. Now, however, it is possible to mark a variable as protected in the variant definition. In this way, the variable is removed from the assignment, and it is possible again to assign a sender value unambiguously.

Transformation of Global variables

In a drilldown report, it is possible to define more than one variable for the same characteristic. In two columns of a form, for example, the variables PER1 and PER2 could be defined for the characteristic "period", to represent a start period and an end period. If you use the report/report

interface to call up a report which uses this type of form, variables PER1 and PER2 cannot be filled at first, as data equivalence exists between the sender and receiver selection data, but not uniqueness (see above). A solution to this problem is to transform global variables.

Here, sender variables are reproduced in receiver variables if they both have the same global variable name. For example, if the sender report has global variable PER1, the receiver variable is entered as PER1. If the sender report still has global variable PER2, PER2 is also entered in the receiver report.

Calling up Reports from other Systems

The report/report interface also lets you call up reports (ABAP reports, transactions, ABAP query, Report Writer reports and drilldown reports) from other systems. To do this, proceed as follows:

1. Choose *Extras →Report Assignment*.
2. In the dialog box, choose *Add External Report*.

   Another dialog box appears.
3. Enter the name of the RFC destination with which you want to set up a connection to the other system. If you set up the connection successfully, a dialog box appears in which you can choose a receiver report from the reports available in the other system.

You can also assign and call up queries from a BW system. To do this, however, BW-ADD-ON must be installed in the sender system. It is possible to carry out transformation between the sender selection data and the receiver selection data from the BW system provided that the data in the corresponding BW InfoCube originates from the sender system.

Forms

Function	Menu path	Description
Create form	*Form →Create*	You create forms to define the basic structure of rows and columns for complex reports. You can use the same form in any number of reports. For detailed documentation on this function, see Creating a Form [Page 90].
Change form	*Form →Change*	You change a form when you want to change the structure of the reports that use that form. Any changes you make to the form affect **all** these reports. When deciding whether or not to change a form, observe the following: • If you want to change the layout for all these reports, go ahead and change the form. • If you do not want to change all the reports that use the form, you should create a new form. You can do this most easily by copying the existing form. The following settings are not affected by any changes you make to the form: • Number formats defined in the reports which use this form (see also Number Format [Page 193]) • The row and column sort orders defined in the reports If these reports cannot automatically adapt to the new form structure, the system displays a warning telling you so.
Check form	*Form →Check*	This function checks whether you have defined all the necessary report components.
Displaying a form	*Form →Display*	This function lets you display all the information pertaining to the definition of a form. If you wish to change the form from this transaction, choose the *Display* <-> *Change* button. To create a report from here, choose *Environment →Create report*.

See also:

Reports [Page 23]

Overview: Forms

A form determines the content and formal structure of a report. A form can be thought of as a semi-finished report, which you complete by specifying (additional) characteristics and key figures when you define the individual report. The content of a form should generally be fixed and change only under rare circumstances. When you change a form, it affects every report that uses that form.

Types of form

Forms are divided into forms with **one axis** and forms with **two axes**. Forms with one axis only consist of one dimension -- that is, either columns or rows. Forms with two axes contain both columns and rows. You can choose from the following form types:

- **form with one axis without key figure**

  In a form with one axis without key figure, you define either the rows or the columns of the form by choosing characteristics. When you press *Continue*, the system displays an empty structure of columns. You can “tip” this structure at any time by choosing *Goto* → *Row display* from the menu. You can therefore choose whether to define rows or columns for this type of form.

- **form with one axis with key figure**

  In a form with one axis with key figure, you define either the rows or the columns of the form by choosing key figures. When you press *Continue*, the system displays an empty structure of rows. You can “tip” this structure at any time by choosing *Goto* →*Column display* from the menu. You can therefore choose whether to define rows or columns for this type of form.

- **form with two axes with key figure**

  In a form with two axis with key figure, you define both the rows and the columns of the form by choosing key figures and characteristics. When you press *Continue*, the system displays an empty structure of rows and columns. You can define key figures in the rows or in the columns, depending on how you want to use the form.

Which type of form you want to use will depend on what type of layout and what content you require for your report.

You can find further information about the various types of forms in the section: Basic Report and Report with Form [Page 14].

See also the following topic areas, which are also of relevance for forms:

Overview: Variables [Page 50]

Entry and Use of Hierarchy Nodes [Page 67]

Creating/Changing a Form

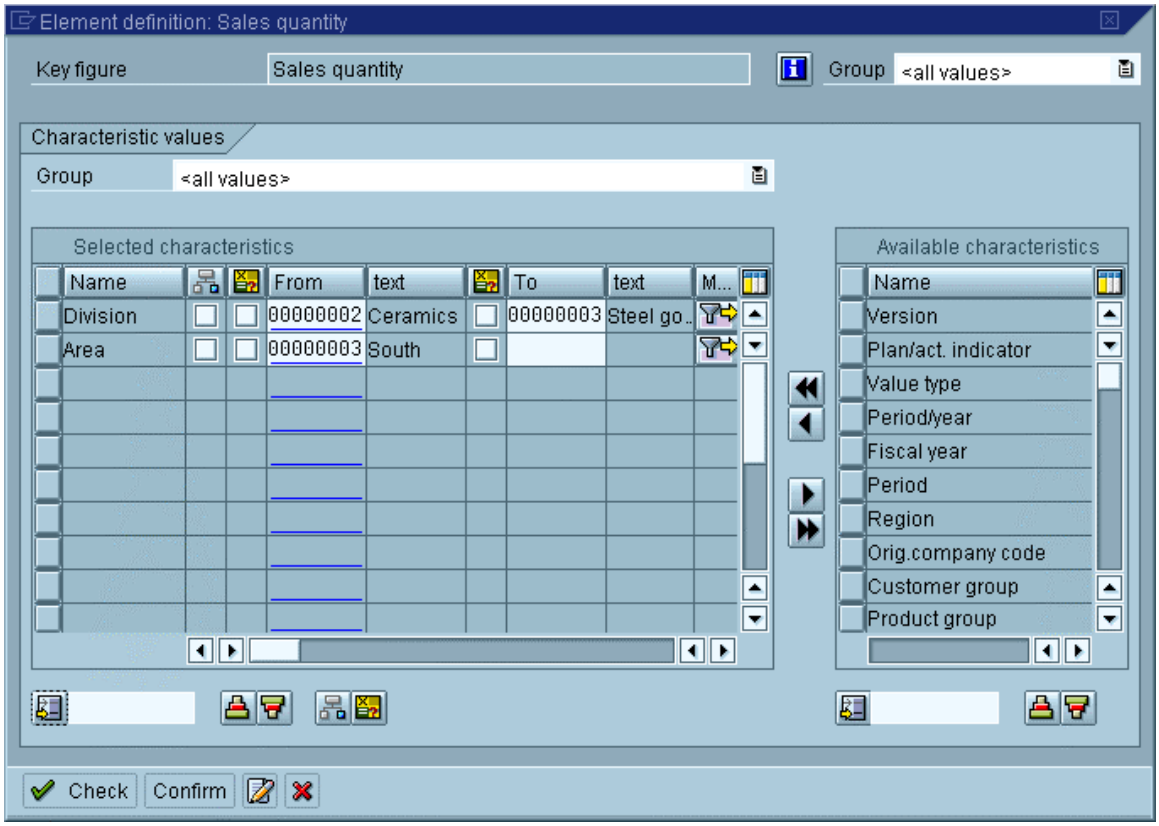
You can create a form by choosing *Environment →Create form* from the application, or in Customizing under *Information system →Form →Create form.* You need to specify the type of form and enter a new name. If you want to create a form that yields fully formatted detail lists, you need to choose the form type *Two axes (matrix)*.

Basic Screen

The function *Create* takes you to an empty list. When you press *Continue*, the system jumps to the next screen and displays an empty list structure of either four rows, four columns, or four rows and four columns, depending on the type of form you are creating. All definable fields on the screen are referred to as “elements”. Every row, every column and every individual cell is an element of the form.

Elements

You can define each row, column or cell of a form individually. To do so, position the cursor on the element you want to process, and then choose *Edit →Element →Define element* or *Create/change.* You can also define an element simply by double-clicking on that element. A dialog box now appears, in which you can define the element.



You can define elements anywhere on the form except where defined elements already exist. To add a new element, position the cursor between two defined elements or in the free space to the

right or below, and choose *Edit →Element →Insert element* or simply double-click where you want to insert the element. To change elements which have already been defined, double-click on them.

You cannot define a **cell** until you have defined the corresponding row and column. Specially defined cells are indicated as such with symbols.

If the total width of the columns you have defined exceeds 255 characters, the columns beyond this limit will neither be displayed on the screen nor printed. However, you can use the columns beyond this limit for help columns, where you can position formula calculations or other key figures which are referred to in the visible part of the report.

For information about processing rows, columns and cells, see Defining Elements [Page 98].

If you want a characteristic (or a single characteristic value) to apply to all the rows and columns of the form, you can define this centrally by choosing *Edit →General Data Selection*. Defining such characteristics in the general data selection also leads to improved system response times.

See also General Data Selection [Page 102].

For application-specific examples of how to define a form, see:

- Example: Creating a Form (CO-PA) [Page 92]
- Example: Creating a Form (EC-EIS / CO-PC) [Page 94]
- Example: Creating a Form (FI) [Page 96]

Example: Creating a Form (CO-PA)

1. You are processing a form with two axes and would like to define the first column. To do so, position the cursor on the column you want to define and double-click with the left mouse button.
2. Next, decide whether you want to define the element from nothing (choose *Characteristics*, *Value fields*, or *Element of a line structure*) or copy an element from a form with one axis (choose *Predefined element*). In this case we will choose *Characteristics*.

   If you choose *Characteristics*, the system displays a dialog box in which you choose the characteristics you require. Select as many as you wish from this list. As you continue defining your form, the system will ask you to specify a characteristic, an predefined element or a formula for each column you define. The value fields and the elements of the line structure will go in the rows.

   If you choose *Value fields*, the system displays a dialog box. Here, you choose a field and then define this using characteristic values. As you continue defining your form, you will need to specify a value field, a predefined element or a formula for each column you define.

   If you are working in costing-based CO-PA and you choose *Element of a line structure*, the system displays a list of all the line structures. Choose one from this list. In a different dialog box, now choose an element from this structure, which you can further define using characteristic values. As you continue processing your form the system will require you to choose a value field, a predefined element or a formula for each column.

   In this example, we will choose *Value fields*.

3. While defining the characteristic values, you can define variables as an alternative to fixed values. To do this, position the cursor on the desired field and choose *Variable on/off*. The system will automatically place a selected checkbox before that field, and the field length will change. If you want to use a local variable, you also need to begin the variable name with **$**. Otherwise the system will treat the variable as a global variable and check to make sure that it exists. If you want to specify fixed characteristic values, enter either an individual value or an interval. You can also enter several individual values or intervals by choosing the pushbutton.

   In account-based analysis, you **must** specify a single value for a characteristic which determines the currency of a selected value field. You are not allowed to enter an interval.

   If you change a characteristic value which you already entered, you can update the text display using *Refresh*.

4. Click on the symbol to enter texts of three different lengths which will be used as column headers for the element. If you are defining a new element, the system proposes the text of the from-value of the first characteristic as a default. You can later define which text should be displayed using the menu option *Text length*. If you want to define a two-line column header, be sure to indicate the line break with a "**;**" (semicolon).

5. When you define the second element and later ones in the same axis, the first dialog box lets you decide whether you want to define the element using value fields (or characteristics), predefined elements or a formula. If you choose *Formula*, the system takes you to the formula editor, where you can define the formula using the other elements of that axis and specially defined cells.

In account-based analysis, if you define more than one element with a value field whose currency is determined by the value of a characteristic, you can enter a different value of that characteristic in each element. That way you can display different currencies next to each other in the same report.

You can take over a complete key figure scheme [Ext.] into a report in one single editing stage. Proceed as follows: Choose *Edit → Lines → Replace all lines* and then *All characteristic values of a characteristic*. Now choose "Element of a key figure scheme" from the characteristic list. Once you have selected one of the available key figure schemes, the system inserts all key figures which belong to this scheme into the form.

Example: Creating a Form (EC-EIS/CO-PC)

1. You are processing a form with two axes and would like to define the first column. To do so, position the cursor on the column you want to define and double-click with the left mouse button.
2. Next, decide whether you want to define the element from nothing (choose *Characteristics* or *Key figures*) or copy an element from a form with one axis (choose *Predefined element*).

   If you choose *Characteristics*, the system displays a dialog box in which you choose the characteristics you require. As you continue defining your form, the system will ask you to specify a characteristic, an predefined element or a formula for each column you define. The key figures will go in the rows.

   If you choose *Key figures*, the system displays a dialog box. Here, you choose a field and then define this using characteristic values. As you continue defining your form, you will need to specify a key figure, a predefined element or a formula for each column you define.

   In this example we will choose *Key figures*.
3. While defining the characteristic values, you can define variables as an alternative to fixed values. You can also use variables instead of specifying individual values. To do this, position the cursor on the desired field and choose *Variable on/off*. The system will automatically place a selected checkbox before that field, and the field length will change. If you want to use a global variable, you can display possible entries using F4. If you want to use a local variable, you also need to begin the variable name with **$**. Otherwise the system will treat the variable as a global variable and check to make sure that it exists. If you wish to enter fixed characteristic values immediately, you can enter single values or an interval of values. You can also enter a number of values or intervals by choosing the pushbutton *More...*

   You **must** specify a single value for a characteristic which determines the currency of a selected value field. You are not allowed to enter intervals for characteristics of this kind.

   If you change a characteristic value which you already entered, you can update the text display using *Refresh*.
4. Click on the symbol to enter texts of three different lengths which will be used as column headers for the element. If you are defining a new element, the system proposes the text of the from-value of the first characteristic as a default. You can later define which text should be displayed using the menu option *Text length* (*Format* →*All columns* →*Text length...*). If you defined a variable for the characteristic value, it makes sense to define one for the text here as well.
5. When you define the second element and later ones in the same axis, the first dialog box also lets you decide whether you want to define the element using a formula. If you choose *Formula*, the system takes you to the formula editor, where you can define the formula using the other elements of that axis and specially defined cells.

If you define more than one element with a key figure whose currency is determined by the value of a characteristic, you can enter a different value of that characteristic in each element. That way you can display different currencies next to each other in the same report.

You maintain the rows in the same manner as columns. Row, column and cell processing are described in detail under Defining Elements [Page 98].

Example: Creating a Form (FI)

1. Choose *Edit form* in the Implementation Guide for Financial Accounting.
2. Choose the report type *Balance sheet analysis* and enter a name for the form and choose the form type *One axis with key figure*. This applies for all types of balance sheet analysis.

   The R/3 System contains standard forms which you can copy and then change to create your own forms. These are the forms 0SAPBLNCE-01 through 0SAPBLNCE-NN. These forms themselves cannot be used with reports.
3. Choose *Create*.

   By default, the system always takes you to the row display first. To see the column display, choose the menu option *Goto →Column display*.

Define characteristics for all columns:

4. First, define the characteristics which should apply for **all the columns** of your form. Since you want to show actual data in all the columns, you can specify the plan/actual indicator under *Edit →Gen. Data selection*.

   The system displays a dialog box in which you can choose the characteristics for the general data selection. Enter the characteristic *Plan/actual indicator* in the table *Selected characteristics* and set the value for the actual data to "0".

Define first column:

5. Once you have defined the general data selection, specify the characteristics you want to use in this first column. Position the cursor on the first column and choose *Edit →Element → Define element.*
6. In the next dialog box, choose the option *Key figure with characteristics*.
7. Another dialog box appear. Choose the characteristic *Balance sheet value* from the list of possible key figures. The key figure stands for the balance sheet values which you want to analyze in your report.

   For an actual comparison of different years, you also need to choose the characteristic *Fiscal year*. If you wanted to make a plan/actual comparison, you would also need to enter *Plan version* in the *Selected characteristics* table.

   Now enter the desired characteristics values in the following dialog box:

   – For the fiscal year, you can enter either fixed values or variables. To enter variables, position the cursor on the corresponding field and choose the pushbutton *Variable on/off*. The system then changes the length of the field accordingly. You can display a list of the existing global variables for the fiscal year using the *Possible entries* function (F4). For the first column, choose the variable "1FY".

     If you want to enter fixed values, enter the desired year in the corresponding field.

     Using variables has the advantage that you can then use the form for a number of different reports, since you do not have to specify fixed values until you define the report. For more on this topic, see Valuating Variables [Ext.] in the online manual FI - Financial Accounting Information System.

8. Click on the symbol , to enter texts of three different lengths to be used as column headers for the element. You can enter either a short, medium or long text. You can later determine which of these texts should appear in the displayed report. If you wish to use a two-line column header, place a ";" in the long text where you want the line breaks to occur.

   If you are working with variables, you also need to enter variables in the column header. For example, in a yearly comparison you could enter the following texts:

   – short text: FY;1FY
   – medium text: FiscYr;1FY
   – long text: Fiscal year;1FY

   You can change the column width using the menu option *Formatting →Column →Column width*. To change the text length on the screen, choose *Formatting →All columns →Text length*.

   Variables for the column texts are replaced when you execute your report.

Define second column:

9. Once you have defined the first column, you can define additional columns in the same manner as described above. However, you can also copy the attributes of a previously defined column.

   To do this, position the cursor on the new column and choose *Edit →Selected area → Copy.* The system copies the entire definition of the first column to the new column. You can then change the definition of the column as required.

   For the fiscal year comparison, you need to enter a different fiscal year in the second column. If you are using variables, enter “1FY-1” as the characteristic value.

Define variance:

10. The third column should contain the difference between the first and second columns.

    To do this, position the cursor on the third column and choose *Edit →Element →Define element.*

11. In the first dialog box, choose the element type *Formula*.
12. The system now displays the formula editor, where you can enter a formula for calculating the variance. Here, you can carry out standard operations (+, -, *,/) on any number of elements in the form.

    Choose the first value under *ID*, then choose the minus sign. Now choose the second value under *ID*.

13. In the next dialog box, enter texts for the column “Variance”.
14. Delete any columns you do not need by selecting the columns and then choosing *Edit → Delete*.
15. Save the form.

Defining Elements

Element types

When you define a row or column of a form, the system first displays a dialog box in which it asks you to specify an **element type**. Which element types are offered here depends on whether you are defining a row or a column as well as what elements you have already defined.

Element type:	Description:	Where offered:
Characteristics	**Values:** • one or more characteristics, • values of these characteristics and • the text that is to appear	in a dimension in which no key figure has yet been defined
Key figure (or Value field) with characteristics	**Values:** • one key figure, • characteristics that describe the key figure, • values of these characteristics and • the text that is to appear	in a dimension in which no (pure) characteristics have yet been defined

Element of the line structure
(only in CO-PA Profitability Analysis)
	Values:
	• a key figure that already exists as part of the line structure being used,
	  • characteristics that describe the key figure,
	  • values of these characteristics and
	  • the text that is to appear
		in a dimension in which no characteristics have yet been defined

Predefined Element	**Values:** any predefined element Here you can choose any element from any existing form with one axis. First you need to choose the desired form, and then the element you want to copy. You then receive the same sequence of dialog boxes as with the above options, where the data of the copied element is displayed as the default. You can change this data where necessary.	• if no dimension has been defined, all forms with one axis are offered • in a dimension in which key figures have been defined, only forms with key figure are offered • in a dimension in which characteristics have been defined, only forms without key figure are offered
Formula	**Definition** a formula that uses any existing elements in the same dimension.	• in any dimension where at least one element has been defined

Row processing

Under *Edit →Rows* you can find special functions for editing rows. *Insert blank line* and *Insert dividing line* insert the desired line directly above where the cursor is standing. *Insert text* gives you a field 40 characters in length beginning where the cursor is standing.

The function *Replace rows* lets you replace the rows of a form with all the values of a single characteristic or with a suitable form with one axis. A “suitable” form with one axis means either one with or one without key figure, depending on what type of columns you have already defined. If you have not defined any rows, the system offers both types of forms. However, if you have defined a column with a key figure, the system only offers you forms without key figure for the rows.

If the desired form with one axis contains columns instead of rows, you can tip the form under *Goto →Row display*.

The replace function is only available for forms with two axes. For forms with one axis, you can do this by specifying another form in the *Copy from* box on the initial screen.

The function *Edit →Rows →Hide* lets you hide the row where the cursor is standing. The definition of the hidden row remains active, however, so that you can still use it in formulas. You can edit hidden rows under *Edit →Hide →Hidden rows →Change.* You can also *Delete* and *Show* these rows.

Column processing

Under the function *Edit →Columns* you can find special functions for editing columns. *Replace all columns* lets you replace all the columns of a form with the elements of a suitable form with one axis. A “suitable” form with one axis means either one with or one without key figure, depending on what type of rows you have already defined. If you have not defined any rows, the system offers both types of forms. However, if you have defined a row with a key figure, the system only offers you forms without key figure for the columns.

If the desired form with one axis contains rows instead of columns, you can tip the form under *Goto →Column display*.

This function is only available for forms with two axes. For forms with one axis, you should create the form by specifying another form in the *Copy from* box on the initial screen.

The functions *Edit →Columns →Hide* and *Edit →Columns →Hidden rows* work the same way as the corresponding menu options for rows (see above).

Cell types in cell processing

The content of a cell is generally determined by the definitions of the row and the column which intersect there. If this definition is not sufficient, you can define the cell separately. To do so, position the cursor on the cell and choose *Define element...* or simply double-click on the cell. Then choose the cell type you wish to define in the dialog box.

The following describes the various cell types and explains when the system lets you use them.

- **Choosing row or column formula**

  The dialog box *Choose Row or Column Formula* appears when both the row and the column that make up the cell contain formulas. In this case you need to specify which formula you want to use to calculate the cell. *Use column formula* means that the value displayed in the cell will be the solution of the column formula, and *Use row formula* means it is the solution of the row formula. If you still have to choose which formula to use for a cell, that cell is indicated by a red question mark.

  Which formula is used for the cell is indicated on the screen by an arrow pointing up:(for the column formula) or to the left: ⇨(for the row formula). ⏵).

  In addition to these two options, you can also choose *No formula*.

  Since the system always uses the setting which was last made, you can use this option to reverse the previous setting.

- **Selection with key figure (value field)**

  Choose *Selection with key figure (value field)* if you want a separate selection to take place for that cell. When you choose this option and press *Confirm*, the system displays a series of dialog boxes in which you can choose a key figure, characteristics and characteristic values and define a text for the cell. The cell definition is indicated on the screen by a. ♣.

Note that the value in this cell need not necessarily reflect the intersection of the selections for the corresponding row and column.

- **Formula**

  The option *Formula* becomes available only when you have already defined at least one special cell. When you choose this cell type, the system displays the formula editor, where you can define a formula based on the special cells. You can also enter a special text to describe the cell. This cell definition is indicated by a.

  Note that the value in this cell need not necessarily reflect the intersection of the selections for the corresponding row and column.

  - **Inactive**

    Inactive lets you deactivate the cell if the value contained there is of no interest.

    A deactivated cell is indicated by a “0” in the form.

- **Selected**

  Choose *Selected* when you want to use this cell in formulas for other cells but do not want to define it separately. When you call up the formula editor, the system displays a list of all the selected cells for you to use in the formula. All cells for which you have defined special processing are “selected”.

  You can see which cells in the form have been selected in the select mode (*Extras* → *Select mode for cells*). To leave the select mode, choose *Save selections*.

  - **No special processing**

    No special processing deletes any special cell definition which you previously defined. The cell becomes a normal cell again, and its content is determined by the row and column to which it belongs.

    This cell type is not available for cells in which special processing is mandatory. That is the case when the cell forms the intersection of a formula row and a formula column, where at least one of those formulas contains non-additive elements.

    In contrast to the rows and columns, you can change the cell type at any time.

General Data Selection

Characteristics and characteristic values

You specify the characteristics and characteristic values which should apply for the entire form using the function *Edit →General data selection →Display/Change* or by double-clicking on the word ***Form***. For example, if you want the form to be used to report on one fiscal year, you can enter this fiscal year here. The characteristics you define in the general data selection can then no longer be used to define rows or columns.

You should always use the function *General data selection* when defining a characteristic that should apply for all rows and columns of the form. This is easier than defining the characteristic separately for each element, and leads to better response times when you execute the final report.

Row and column formulas

The function *Gen. data selection →Formula: row or column* handles conflicts which arise when the definition of a cell consists of both a row formula and a column formula. If you want the cell to contain the result of the row formula, choose *Use row formula*. This choice will be indicated on the screen by an arrow: ◗. If you want to use the column formula, choose *Use column formula*. The system will indicate this with the arrow ⇨. The choice you make using this function applies for the entire form.

You can also make the same setting for individual cells using the function *Edit →Element → Formula: row or column*. This setting overrides the setting made under *Gen. data selection* for that particular cell only.

If you want to change the setting for a single cell, you can do so simply by double-clicking on the cell.

In addition to these two options, you can also choose *No formula*.

Since the system always uses the setting which was last made, you can use this option to reverse the previous setting.

Drilldown List and Defining Percentage Shares

Defining a drilldown list for online display

Once you have defined a form, you can define how the drilldown list should be displayed online. To do so, choose *Extras →Drilldown display →Select rows/columns*.

Then select all the rows and columns which you want the system to display in the standard drilldown list. Once you have made your selections, choose the function *Save selections* (the green check mark in the red box), and the system will display the chosen layout for you to check. The system will save the drilldown list finally when it saves the entire form. This layout defines the formal structure of the reports which are based on that form.

Defining a drilldown list for printout

It may sometimes be useful to define a different drilldown list for printouts than for online display. For example, this might be the case if you want to limit the online display of a wide report to the most important columns, in order to make it easier to read, but still want to use the horizontal format to display additional columns in the drilldown list for the printout.

You define the drilldown list for the printout under *Extras →Drilldown printout* the same way you defined the drilldown list for online display.

Before you save the form, you should execute the function *Form →Check*. If you defined anything incorrectly or left anything undefined, the system displays a message informing you of this. Then you can make the necessary changes and thus be certain that the form is correct before you use it in a report.

Percentage columns and rows

You can define rows or columns of a form to contain percentages of sums by using the elements **Share of grand total** (Syntax*: **%T(ABC)**, where **ABC** is the “grand total”*) and **Share of sub-total** (Syntax: ***%S (XYZ)***, where **XYZ** is the “sub-total”) in the formula editor. The total here refers to the total for the highest drilldown characteristic, whereas the sub-total refers to the total for each characteristic (at each level) of the drilldown hierarchy.

For more information, see the online system Help (F1).

For an example of these functions, see the standard report **0-SAP05** for costing-based Profitability Analysis in operating concern S001.

Form Settings

When you create a form, you can make a number of settings to determine how individual rows or columns are to be displayed, or how numbers are formatted. These settings determine how reports that use this form appear on the screen. You can override these settings, however, by changing them in the definition of individual reports (see Functions for Defining Reports [Page 26]).

Procedure

To format an element of a form (color settings, number format, sign reversal, and so on), place the cursor on the element and choose the applicable menu option under the menu *Formatting*. The formatting becomes visible immediately.

You can also save time by selecting several elements and formatting them at the same time. The selected elements remain selected until you explicitly choose the function *Deselect all*.

- **Color settings**

  This function lets you change the color of the selected element(s).

- **Number format**

  This sub-menu contains all the functions which affect how numbers are displayed in the report. You can specify a display factor and the number of decimal spaces. The definition you make here always applies to a specific column group. You can define the number formats in greater detail once you have executed a report. There you can make different settings for individual columns. For more information on number formats, see Number Format [Page 193].

- **Reverse +/- signs**

  This function causes all the signs in the report to be reverse. Negative values appear positive, and positive values appear negative. This setting is indicated in the form by a “-”.

- **Suppress zeros**

  This function causes all the cells with a value of 0 to appear blank. This setting is indicated in the form by lower-case Xs: “xxx.xxx.xxx”.

- **Row**

  The function *Indent row* lets you indent the text for individual rows to give the report a more visual structure.

- **All rows**

  These functions apply to all the rows of the form.

  The function *Margin type* only works if you have already chosen the function *Indent row* for at least one row. It aligns all the rows of the report with the one indented the furthest.

  The function *Text length* determines which text (short, medium or long text) the system displays for the rows.

- **Column**

  With the function *Column width* you can change the width of individual columns. First select the column(s) you want to change, and then choose this function. Remember to choose *Deselect all* when you are finished formatting the columns.

- **All columns**

  These functions apply to all the columns of the form.

  The function *Align column text* determines whether the texts in the columns are left-justified, centered or right-justified.

  The function *Text length* determines which text (short, medium or long text) is displayed in the column headers. If you choose *Long text - two lines*, be sure to indicate where you want the line break by inserting a "**;**".

- **Initial settings**

  This function returns all your format settings back to the default.

  It is currently not possible to format cells individually.

Executing a Report

With the function you can execute a report. This means that the system selects the data that meets the specified criteria and displays it in a number of report lists. Since the procedure for executing reports is different in each application, see the corresponding chapter in the online documentation for your application.

If you are executing a report for which **variables** are defined, a selection screen appears, in which you can enter either individual values, intervals or complex selections for the variables. You can also set the final output type [Page 37] for the report here and, if required, you can deviate from the output type in the report definition.

Once you have executed a report, you can process the displayed report in a number of ways and navigate through the report data using the functions available. Navigation functions let you display a number of different lists to analyze the data from different viewpoints. For more information on the navigation functions, see Navigation [Page 130]. To read about how to navigate using the hotspots on the report list, see Hotspots on the Report List [Page 166] (applies only for the output type 'classic drilldown report'). For information on navigating in graphical report lists, see Navigation in Graphical Reports [Page 177].

For information on the report/report interface, characteristic hierarchies, exception reporting and the use of currencies and other settings for report lists, see How to Process Report Lists [Page 123].

In order to reduce runtime when executing reports, you can save report data in the background using variants and variant groups, **before** executing the reports. In the overview list of reports available in your application, the variants defined for each report are displayed as subnodes of the report.

See also:

Save [Page 213]

Creating Variants and Variant Groups [Page 108]

Read [Page 47]

Executing a Report with Selection Options [Page 107]

Executing Reports with "Selection Options"

When you execute a report that uses global variables [Page 58] that you replace manually, you can replace these using complex selection criteria.

How and when you can use selection options depends on the application you are working in. For more information, see the corresponding chapter in your application's documentation.

Using selection options, you can select more than one single value, an interval, or any combination of single values and intervals (as on ABAP selection screens). In addition, you can exclude certain values from the selection.

In the **header of the resulting report list**, the text *Complex selection* and the symbol appear next to the characteristic you used selection options for. Click on the symbol to display the selection options.

Saving Selection Options in Report Variants

You can also save your selection options as a variant and use these later for online or background processing.

See also:

Creating Variants and Variant Groups [Page 108]

For documentation on how to fill in the selection screen, click on the icon.

Creating Variants and Variant Groups

Use

Variants and variant groups let you execute and save or print reports in the background at pre-specified times. This is particularly advantageous if a report processes large quantities of data and requires longer processing times. You can also use variants to store regularly used combinations of characteristic for data selection, and so be able to call them up easily.

Variants and variant groups in Release 4.0 replace the variable groups used in earlier releases. For information about converting these from Release 3.x to 4.x, see the corresponding release note.

Features

Selection variants let you save entries for variables along with other settings for a report. You can group several reports along with their variants into a so-called "variant group". You can then execute the entire variant group in the background.

To save or print reports in the background using variants, you use the following functions:

Creating Variants

In the variant, define the selection criteria as you would for the report. Then specify how the report should be processed in the background, and save these settings as a variant for the report.

Executing Report with Variants

The variants which have been defined for a report are displayed as subnodes of the report in the report overview list. To execute a report with the settings which are stored in the variant, select the variant and choose *Run Report with Variant* in the variant context menu.

Creating Variant Groups

If you want to schedule more than one report together with their variants, you can group these reports and variants together in a variant group. Create a variant group. To do so, enter a name, a short text, and a description.

Maintaining Variant Groups

Here you enter all the desired variants and reports in your variant group.

A variant group lets you:

- process more than one variant of **one** report together
- process variants from **different** reports together

Enter the reports and variants in the table which you want to summarize under this variant group. Save you variant group.

Scheduling Variant Groups

Here you can schedule the entire variant group for processing in the background, or select and schedule only specific reports in the variant group.

The system schedules the selected reports or the whole variant at the specified time. You can also schedule the job for execution in regular intervals. For more information, see the documentation BC Computing Center Management System [Ext.].

Reorganizing Variants

This function lets you delete any variant groups that you no longer need.

Activities

Where you can find the functions for defining variants and variant groups differs from application to application. For details, see the corresponding documentation for your application.

See also:

Example of How to Use Variant Groups [Page 110]

Freezing Report Data in the Background Using Variants [Page 216]

Printing Reports in the Background Using Variants [Page 237]

Example of the Use of a Variant Group

Report REPORT1 contains one variable for the **period** and another for the **division** which you would like to analyze. A second report, REPORT2, contains variables for the **period** and the **sales region**.

The marketing department of your company is particularly interested in the division **Pharmaceuticals** and in the regions **Northeast** and **South** for period **1**. You create variant **MARKA** for this department. For this variant **MARKA** of report REPORT1, you define the period as period **1** and the division as **Pharmaceuticals**.

For **MARKB** in REPORT2, you define the variable combinations: period **1** and region **Northeast**, as well as period **1** and region **South**.

Then you create a variant group MARKET and enter the variants MARKA and MARKB for the reports REPORT1 and REPORT2.

In order to print or save the reports you schedule the variant group MARKET in the background processing.

Report Information

You can display the following report information both when you define the report and after executing it.

- Report Parameters [Page 112]
- Key Figure Information [Page 114]

There are also several ways you can enter and display additional information on the report. You can define and display texts and comments either when you define the report or after executing it, or you can create and display documents directly from the report list.

- Report Texts [Page 115]
- Maintain Comment [Page 116]
- Display Document [Page 118]
- Maintain Header [Page 249]
- Maintain Footer [Page 248]

Report and Cell Parameters

Features

The **report parameters** show you basic information about the report (basic list, currency handling, and so on), information about when and by whom it was created and changed, technical information (time required for data selection), and information about what data is selected. This information cannot normally be displayed in the report lists.

If you choose this function while the cursor is positioned on a cell, the system displays either the report parameters or the **cell parameters** for that cell. In form reports, you can use the cell information to find out what formula was defined for that cell.

The report parameters include the following:

- Report name and long text, along with short text and description
- Report type
- Author
- Date created
- Person who last changed
- Date last executed
- Number of times executed
- Basic list
- Currency handling
- Variables
- Selected characteristics
- Selected key figures
- Columns selected for the drilldown list
- Rows selected for the drilldown list

Choose *Technical information* to obtain the time required for data selection (for individual report variants), information on the generated report program, and the size of the internal table.

You can also display comments and key figure information for the individual fields in the report parameters. You can see what fields comments are defined for using the *Highlight comments* function.

To display information about the form used by the report, choose *Form*.

Activities

Cell parameters:

Position the cursor on a cell and choose *Report parameters*. The system displays an overview of the cell parameters, including the general data selection, the key figure and the number format.

You can display the report parameters from this screen by choosing the icon.

Report parameters:

Position the cursor on the header of the report list and choose *Report parameters*. The system displays an overview of the report parameters. You can display technical information, comments, and key figure and form information from this screen.

Key Figure Information

This function gives you information about the key figure on which the cursor is positioned. A dialog box appears containing the formula by which the system calculates the key figure.

If the cursor is positioned on a basic key figure, which is contained in the database, no additional information exists.

Report Texts

You receive a dialog box with which you can change or display three report texts of different lengths. These texts are displayed when you call up the report parameters.

Report Text On/Off

With this function you can display or hide the line which contains the report name and the time and date when the data was selected.

Writing Comments

With this function you can define comments for reports, report variants, and transaction data.

In **EC-EIS**, you can also write comments for individual objects in the report, such as characteristics or key figures. To do so, choose the function *Master data* → *Comments* →*Maintain* from the application menu.

You can create the comment in the text editor or (if you are working on a PC) import any other document type in the Microsoft Office suite. This function also lets you change existing comments.

Displaying Comment

This function lets you display an existing comment for the report.

If you have maintained comments for additional objects in SAP-EIS, you first need to position the cursor on the desired object before choosing this function.

The function Highlight Comments [Page 117] lets you see which objects in the report have comments.

Highlight Comment

In SAP-EIS, this function highlights all the currently displayed fields for which a comment exists. These fields are displayed inversely. It is recommended that you use this function before you use the function *Display Comment*, so that you do not try to display a comment where none exists.

If you change to another screen, or call up another function which changes the current screen, the normal display will return, without the inverted fields.

To learn about how to create comments in SAP-EIS, see Maintain Comments [Page 116].

Display Document

In some applications (such as EC-EIS), you can create documents for master data records. For more information about creating these documents, see the online documentation for your application.

The function *Display Document* lets you display a document from the report list if one exists.

The function *Highlight Document* lets you highlight a document from the report list if one exists.

Highlight Document

With this function, you can highlight all fields for which a document exists. These fields are displayed inversely. It is recommended that you use this function before you use the function *Display Document*, so that you do not try to display a comment where none exists.

If you change to another screen, or call up another function which changes the current screen, the normal display will return, without the inverted fields.

Maintain Header

This function lets you create a header for the report. The header is used in the printout.

Header on/off

This function lets you decide whether the header you have created will also appear in the online display.

Maintain Footer

This function lets you create a footer for the report. This footer is displayed in the printout when you print the report.

Footer On/Off

With this function you can specify whether the footer which you defined for the printout should also appear in the online report.

Layout Display

With this function you receive a preview of the report list, without having to load data in the report. This is handy for getting an idea of how the report will appear on the screen, as well as when no data is available or when loading the data would be too time-consuming.

In the report list, you can switch between the detail list and the drilldown list. In contrast to the function Execute Report [Page 107], you do not have to enter values in the report parameters for the layout display, as the system does not perform data selection. For the same reason, the layout display function displays existing navigation characteristics although navigation is not actually possible.

Function Levels for Different Users

The drilldown reporting functions are divided into three groups so that you can set up three different categories of users, depending on their tasks and what information they need. This enables users to learn how to work with drilldown reporting quickly. You can change the function level after executing a report by choosing *Extras →Additional functions*.

- **Level 1** contains the basic functions of drilldown reporting as well as the interface with SAPmail. These functions allow you to navigate within the displayed characteristic hierarchy. They also allow you to display detail lists in order to analyze your data more closely. This function level does not contain certain functions, such as those for maintaining the report or its settings, or those form transferring the report to other tools, such as the Excel List Viewer.

  This level is for users who want to analyze certain form reports occasionally but do not require the full navigation functionality of drilldown reporting.

- **Level 2** contains all of the navigation functions and functions for hierarchies, and allows you to download the report to the Excel List Viewer and to a PC file, and to change the display settings. It also lets you display exceptions. This function level does not contain certain functions for maintaining reports and for defining the print layout.

  This level is aimed at users who require the full functionality of drilldown reporting, including the additional download and display functions listed above.

- **All functions** provides you with all the functions of drilldown reporting: defining parameters for printouts, freezing report data, defining exceptions and maintaining reports directly from the report list.

  This level is for users who need to set up reports for printing or maintain reports in more ways than is possible under level 2.

Users can change their own function level from the report list by choosing *Extras →Additional functions*. However, the system checks their authorization for this before switching the level (see Customizing).

You can assign these levels to individual user master records by entering the parameter IDs **RLV1** (Level 1), **RLV2** (Level 2) and **RLV0** (All functions) using the function *System →User profile →User parameters*.

How to Process Report Lists

Use

This section contains descriptions of the functions you can carry out after executing a report online - that is, in the **report list**.

Prerequisites

To display the report list, you need to have defined the report and - where applicable - the form. You also need the data which you intend the report to display. If no suitable data exists, a page with report information will be displayed in place of the report.

Features

You can analyze your report data using functions for Navigation [Page 130], for Defining Display Conditions [Page 179] and for displaying Graphics [Page 272]. Using the Functions Available in Report Lists [Page 192], you can define how the data in the report list is displayed and printed. You can save, print, export and send report data, see Saving, Printing, Exporting, Sending Graphics [Page 212].

For more information about which functions are available as pushbuttons, see variation in Profit Center Accounting, see Report List: Pushbuttons [Page 124].

To find out about special functions, which are only used in conjunction with the report type "graphical report", see Navigation in Graphical Reports [Page 177].

See also:

Report Information [Page 111]

Functions for Report Lists

The following table gives you an overview of the functions that you can carry out when you execute a report. Most of these functions are represented by icons.

Report parameters	This function displays a list containing all the information about the report and its definition. This includes specifications which do not always appear on the list. For more information, see Report and Cell Parameters [Page 112].
Export Report	You can export reports or parts of a report. For example, you can download a report or a page of a report to XXL, save it in a file, transfer it to Microsoft Word, or copy it to the report portfolio (in EC-EIS). The system displays a dialog box in which you can choose how you want to export the report. If only one option is possible for the list currently displayed, the system automatically carries out that function without displaying the dialog box. For more information, see Export [Page 262].
Graphic	You can display and print graphics for your report lists. The graphic can refer to the values in a single row or column, a group of columns, or the entire report list. The system displays the available types of graphics in a dialog box, from which you choose the type you would like to see. If only one type of graphic is allowed for the selected data range, the system displays that graphic immediately. For more information, see Graphics [Page 272].
Send report	This function lets you send the current page of your report list to one or several recipients using SAPmail. For more information, see Send [Page 271].
Currency	This function translates the displayed currency to any other currency for the selected column(s). The currency translation key is used to automatically find the exchange rate. You define currency translation keys in Customizing.

Functions for Report Lists

First column	With this function you scroll sideways to the first column or column group. The number of columns displayed remains unchanged, and the first column or column group of the report is displayed on the far left of your screen.
Previous column	With this function you scroll one column or column group to the left.
Next column	With this function you scroll one column or column group to the right.
Last column	With this function you scroll sideways to the last column or column group of the report. The number of columns displayed remains unchanged, and the last column or column group of the report is displayed on the far right of your screen.
Sort ascending	With this function you can sort the rows of the list in ascending order according to the values contained in the column where you have positioned the cursor. The system displays a dialog box in which you can decide whether you want to sort the column or column group alphabetically according to the key or text of the characteristic values, the key figure or, where applicable, a hierarchy or hierarchy display.(Sorting by hierarchy display is only possible using asterisk display.)
Sort descending	With this function you can sort the rows of the list in descending order according to the values contained in the column where you have positioned the cursor. The system displays a dialog box in which you can decide whether you want to sort the column or column group alphabetically according to the key or text of the characteristic values, the key figure or, where applicable, a hierarchy or hierarchy display.(Sorting by hierarchy display is only possible using asterisk display.)

Choose hierarchy	This function is only active if hierarchies have been defined for characteristics. It lets you choose a specific hierarchy for display or switch between hierarchical display and a normal drilldown list. For more information, see Choose Hierarchy [Page 156].
Expand	This function lets you change the way a characteristic hierarchy is displayed. The function *Expand* expands the entire report hierarchy one level. That means that every "+" currently visible becomes a "-", and all the nodes one level below them become visible. If the cursor is positioned on a report row, this function only affects the branches which belong to that row. Otherwise all the report rows are expanded. For more information, see Expand [Page 150].
Collapse	With this function you can collapse branches of the displayed hierarchy. This function closes the lowest currently expanded level of the hierarchy. If the cursor is positioned on a report row, this function only affects the branches which belong to that row. Otherwise all the report rows are collapsed. For more information, see Collapse [Page 153].
Call up report	With this function you can call up those reports which have been assigned to the current report as receiver reports. To call up another report, position the cursor on the row of the current report which you want to use as parameters for the new report. If the system requires additional parameters for the new report, it displays a dialog box asking you to enter these. For more information, see Call up Report [Ext.].

Number format	You can change the number format and the +/- sign for individual columns. What settings you can make depends on the report and the list type displayed (drilldown or detail list). For more information, see Number Format [Page 193].
Other report	This function takes you back to the initial screen of the function for executing reports. There you can specify another report that you want to process.
Attributes	When you choose this function, the system displays all the attributes of the selected characteristic in a dialog box. For more information, see Attributes [Page 162].
Functions in the Navigation Block on the Report List Screen	
Drilldown list	This function takes you from the detail list to the drilldown list for the selected characteristic. For more information, see Drilldown List [Page 132].
Detail list	This function takes you to the detail list for a selected report object. For more information, see Detail List [Page 138].
Basic list	The function *Basic list* returns you to the list that the system displayed first when you executed the report. This may be a detail list or a drilldown list, depending on how the report was defined. For more information, see Basic List [Page 139].
Hide characteristic	This function clears the characteristic value specified for the current characteristic. Position the cursor on the characteristic or characteristic value that you want to hide, and then choose this function. Note that this is only possible with the characteristics in the navigation block. For more information, see Hide Characteristic [Page 160].

Next characteristic value	When you position the cursor on one of the specified characteristic values in this block and then choose the function *Next char. value*, the system scrolls to the next value of that characteristic and displays the corresponding list.
Previous characteristic value	When you position the cursor on one of the specified characteristic values in this block and then choose the function *Previous char. value*, the system scrolls to the previous value of that characteristic and displays the corresponding list.
Choose characteristic value	Position the cursor on the characteristic or characteristic value that you want to hide, and then choose this function. Note that this is only possible with the characteristics in the navigation block. The system displays a dialog box containing all the values of that characteristic that you can choose from. Then the system displays the corresponding list for the characteristic value you choose. For more information, see Choose Characteristic Value [Ext.].

Navigation

Drilldown reporting comes with a number of easy-to-use functions for navigating through your report data. Among other things, you can

- Create different types of report lists (see Report List [Page 131])
- Scroll back and forth through the report (see Scrolling Functions for Report Lists [Page 140])
- Choose among display variants for hierarchies (see Hierarchy... [Page 149]))
- Navigate from one report to another (see Report/Report Interface [Page 158])

In addition, the following functions are also available for working with the report:

Hide Characteristic [Page 160]

Sort Characteristics [Page 161]

Line Items [Page 163]

Display Master Data [Page 164]

Find string [Page 165]

For a description of the navigation functions available, see Hotspots on the Report List [Page 166] and Report List: Pushbuttons [Page 124].

Report List

There are two types of lists for a report –drilldown lists and detail lists –which display different types of information. These navigation functions let you jump back and forth between the different report lists in order to view your data from different angles.

- Drilldown List [Page 132]
- Choose Next Level [Page 133]
- Other Characteristic [Page 134]
- →Next Level [Page 135]
- ←Previous Level [Page 136]
- Period Screen [Page 137]
- Detail List [Page 138]
- Initial List [Page 139]

Drilldown List

This function takes you from the detail list to the drilldown list for the selected characteristic.

This function is only available when you are displaying the detail list.

You can switch from the currently displayed drilldown characteristic to any other characteristic in the report header, including the characteristics in the navigation block and those that have already been specified through navigation. When you switch characteristics, the "old" characteristic moves to the bottom of the drilldown characteristics.

You can also execute this function by clicking on the symbol and then selecting the desired characteristic from the navigation block.

For a detailed description of how to navigate using these and the other hotspots, see Hotspots on the Report List [Page 166].

See also:

Detail list [Page 138]

Choose next level

This function is only available on the drilldown list. It lets you choose which characteristic you would like to break down next.

First position the cursor to determine which row you wish to analyze more closely, and then choose this function. The system displays a dialog box in which you choose the characteristic you want to display. The selected characteristic value moves to the navigation block of the report, and the system displays the values of the characteristic you chose in the dialog box.

You can also rearrange the entire sequence of the characteristics using the function Sort characteristics [Page 161].

Other characteristic

With the function *Other characteristic*, you receive a dialog box containing the report characteristics which you did not define with a characteristic value in the report definition or in preceding navigation steps.

Choose one of these characteristics and the current list will be replaced by a breakdown according to the selected characteristic.

-> Next level

This function takes you down one characteristic in the drilldown sequence. The text for this menu function is always replaced dynamically in the system by the name of the characteristic to which it would take you.

The drilldown sequence is determined by the report definition. You can change the sequence of those characteristics through which you have not yet navigated in the displayed list using the function Sort characteristics [Page 161].

To execute this function, position the cursor on any row and then choose this menu option. The characteristic value in that row moves to the navigation block, and all the values of the next characteristic are displayed in the rows.

With the function <- Previous level [Page 136] you can navigate back in exactly the opposite direction.

If you want to break down the list by a different characteristic, use the function Other characteristic [Page 134].

<- Go to previous level

This function is the exact reverse of the function -> Next level [Page 135]. It takes you up one characteristic in the drilldown sequence. The text for this menu function is always replaced dynamically in the system by the name of the characteristic to which it would take you.

The drilldown sequence is determined by the report definition. You can change this sequence from the displayed list using the function Sort characteristics [Page 161].

To execute this function, position the cursor on any row and then choose the corresponding menu option. The previous characteristic value disappears from the navigation block, and all the values of that characteristic are displayed in the rows. The current characteristic moves to the navigation block.

If you want to break down the list by a different characteristic, use the function Other characteristic [Page 134].

The function <- *Previous level* is the same as the icon in the navigation block.

For detailed information about how to navigate using hotspots, see Hotspots on the Report List [Page 166].

Period screen

Using this function, you can drill down by period in the drilldown list. The row on which the cursor is positioned will then be broken down by period.

In order to do this, you must have selected characteristic “Period” on the *Characteristics* screen when you defined the report. The function is not active if the data is already broken down by period on the current level.

If you chose a period on an earlier level, the system summarizes this breakdown and drills down on the row where the cursor is positioned.

Detail List

This function takes you to the detail list for a selected report object.

The detail list contains all the key figures for the selected object. To select the object for which you want to receive a detail list, position the cursor on the corresponding row. The system displays all the columns for that object exactly as they were defined in the form.

You can also execute this function by clicking on the hotspot icon in the navigation block.

For a detailed description of how to navigate using these and the other hotspots, see Hotspots on the Report List [Page 166].

From the detail list you can switch to the drilldown list, which contains a selection of key figures for a number of different report objects. To do so, select the icon and one of the drilldown characteristics or a previously determined characteristic value in the navigation block.

See also:

Drilldown List [Page 132]

Initial list (Report List)

The function *Initial list* returns you to the list that the system displayed first when you executed the report. This may be a detail list or a drilldown list, depending on the setting made under Initial list (Report Definition).

Note that any changes you made to settings in the meantime remain. Consequently, the list which you receive may not be completely identical to the first list.

You can also execute this function using the hotspot icon in the navigation block.

For detailed information about how to navigate using hotspots, see Hotspots on the Report List [Page 166].

Scrolling Functions for Report Lists

The scroll pushbuttons available for displayed report lists let you scroll back and forth between the displayed columns, column groups, and pages.

You can also scroll between values of each characteristic using the function Other Characteristic Value [Page 147] or using the hotspots in the header of the report list.

First Column

With this function you scroll sideways to the first column. The number of columns displayed remains unchanged, and the first column of the report is displayed on the left.

Previous Column

With this function you scroll one column or column group to the left.

Next Column

With this function you scroll one column or column group to the right.

Last Column

With this function you scroll sideways to the last column. The number of columns displayed remains unchanged, and the last column of the report is displayed on the right.

Previous Page

With this function you scroll back to the previous page.

Next Page

With this function you scroll to the next page of your report.

Other Characteristic Value

Prerequisites

The navigation block shows you which characteristics you have already navigated through in the report list, and which characteristic values form the report object.

Procedure

To call up one of the functions listed below, position the cursor on one of the characteristics that you have already navigated through, and then choose *Navigate →Other characteristic value →* (the desired function) or click on the corresponding function (hotspot) in the navigation block.

Function	Menu or Hotspot	Description
First characteristic value	*Navigate →Other characteristic value →First characteristic value*	This function lets you scroll to the first characteristic value and displays the corresponding list for that value.
Last characteristic value	*Navigate →Other characteristic value →Last characteristic value*	This function lets you scroll to the last characteristic value and displays the corresponding list for that value.
Next characteristic value	*Navigate →Other characteristic value →Next characteristic value*	This function lets you scroll to the next characteristic value and displays the corresponding list for that value.
Previous characteristic value	*Navigate →Other characteristic value → Previous characteristic value*	This function lets you scroll to the previous characteristic value and displays the corresponding list for that value.
Choose characteristic value	*Navigate →Other characteristic value → Choose characteristic value*	This function lets you choose the characteristic value that you want to scroll to from a list of possible values. The system displays a dialog box containing all the values of that characteristic that you can choose from. Then the corresponding list for that value is displayed.

The menu paths in your application may differ from those shown above. For details, see the documentation for your application.

See also:

Hotspots on the Report List [Page 166]

Other Characteristic Value

Hierarchy

Use

The *Hierarchy* function ( ) lets you choose which characteristic hierarchy to display in what form in the report list using the characteristic hierarchy.

Integration

This function is only available if hierarchies have been defined for the characteristics used in the report.

Features

When you choose this function, the system displays a dialog box for each characteristic for which hierarchies exist. Here you can choose between different display variants of the hierarchy.

- You can also choose which hierarchy should be displayed or return to the “normal” non-hierarchical display using the function Choose Hierarchy [Page 156].
- You can also change how the hierarchy is displayed using the function Hierarchy Display [Page 157].
- Functions are also available to let you expand or collapse parts or all of the hierarchy for a characteristic. See also:

  Expand [Page 150]

  Expand to Level [Page 151]

  Expand All [Page 152]

  Collapse [Page 153]

  Set Focus [Page 154]

  Undo Focus [Page 155]

See also:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Expand

This function is only available if you have chosen a hierarchy for at least one characteristic. You can choose a hierarchy using the function *Extras* →Choose hierarchy [Page 156] in the report definition or *Edit* →*Hierarchy* →*Choose* from the report list.

The function *Expand* expands the entire report hierarchy one level. That means that every “+” currently visible becomes a “-”, and all the nodes one level below them become visible.

If the cursor is positioned on one row of the report, the system only expands that row.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Expand to level

This function is only available if you have chosen a hierarchy for at least one characteristic. You can choose a hierarchy using the function *Extras* →Choose hierarchy [Page 156] in the report definition or *Edit* →*Hierarchy* →*Choose* from the report list.

The function *Expand to level* expands the hierarchy down to a certain level and hides all the levels above it. This function is especially useful when you want to give structure to a hard-to-read report.

If the cursor is positioned on one row of the report, the system only expands that row and the ones which lie below it.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Expand all

This function is only available if you have chosen a hierarchy for at least one characteristic. You can choose a hierarchy using the function *Extras* →Choose hierarchy [Page 156] in the report definition or *Edit* →*Hierarchy* →*Choose* from the report list.

The function *Expand all* expands all the nodes of the report hierarchy.

If the cursor is positioned on one row of the report, the system only expands that row and the ones which lie below it.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Collapse

This function is only available if you have chosen a hierarchy for at least one characteristic. You can choose a hierarchy using the function *Extras* →Choose hierarchy [Page 156] in the report definition or *Edit* →*Hierarchy* →*Choose* from the report list.

This function closes the lowest currently expanded level of the hierarchy.

If the cursor is positioned on a report row, this function only affects the branches which belong to that row. Otherwise all the report rows are affected.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Set focus

This function is only available if you have chosen a hierarchy for at least one characteristic. You can choose a hierarchy using the function *Extras* →Choose hierarchy [Page 156] in the report definition or *Edit* →*Hierarchy* →*Choose* from the report list.

The function *Set focus* lets you display a particular branch of your report by itself in order to analyze it more closely. The rest of the report is not displayed.

To reverse this function and display the entire hierarchy again, choose the function Undo focus [Page 155] either from the menu or directly from the report list.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Undo focus

If you have already executed the function Set focus [Page 154] on a hierarchy, this function lets you display the entire report again or, if you choose, a larger section of the report.

When available, the function *Undo focus* appears directly on the report list.

For detailed documentation about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Choose Hierarchy

This function lets you choose a specific hierarchy for display or switch between hierarchical display and a normal drilldown list. This function is only active if hierarchies exist for a characteristic.

When you choose this function, the system displays a dialog box listing every characteristic in the report for which hierarchies exist. For each characteristic listed, you can choose one of the hierarchy variants or the option *No hierarchy*, or the option *Enter when executing*. (This last option only appears when you are defining the report.)

The system initially displays the hierarchy you chose in completely expanded form. You can then collapse and expand nodes using the corresponding functions.

You can also change the appearance of the hierarchy (see Hierarchy Display [Page 69]) or deactivate the hierarchy again to return to the “normal” non-hierarchical display.

To report only on a certain branch of a hierarchy, choose the hierarchy node [Page 34] function.

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy display [Page 157]

Functions for Editing Hierarchies [Page 72]

Hierarchy Display

Hierarchieauswahl [Page 156]

This function is only available if you have chosen a hierarchy for at least one characteristic. You can do this using the function Choose hierarchy [Page 156].

This function lets you change the way a characteristic hierarchy is displayed. The following types of hierarchy display are available:

- compact display
- asterisk display
- line display
- line display with blank lines

For detailed information about hierarchies, see:

Overview: Characteristic Hierarchies [Page 64]

Hierarchy Display [Page 69]

Functions for Editing Hierarchies [Page 72]

Report/Report Interface

Use

The report/report interface lets you connect information contained in several separate reports by sending the data in one report to be used as selection criteria in other reports. It also makes it possible to split a complex report into smaller reports and navigate between these.

For detailed information about the report/report interface, see Overview: Report/Report Interface [Page 79].

Prerequisites

Before you can navigate using the report/report interface, your report must be assigned to another report or other reports. You can make this Report Assignment [Page 46] as well as split a report when you define it.

Features

Function	Menu or Hotspot	Description
Calling up a report	*Goto →Call up report*	With this function you can call up any report that has been assigned to the current report. To call up another report, position the cursor on the row of the current report which you want to use as parameters for the new report. If the system requires additional parameters for the new report, it displays a dialog box asking you to enter these. The further you have navigated through your report, the more parameters are transferred automatically. If all the mandatory parameters can be transferred automatically, the system does not display the dialog box. The more parameters you specify, the less data the system needs to read when calling up the report. This can lead to improved response times.
History	*Goto →History*	When you choose this function, the system displays a dialog box listing all the reports you have called up thus far since executing the initial report. This is useful, for example, if you want to return to the initial report.

The menu paths in your application may differ from those shown above. For details, see the documentation for your application.

Hide Characteristic

The navigation block and the header of the list show the characteristics for which you have specified a fixed characteristic value. You specified these values either when you defined the report or by navigating in the displayed drilldown list.

This function makes it possible to deactivate any of the characteristics you specified in a drilldown report. Position the cursor on the characteristic or characteristic value which you want to hide, and then choose this function. Note that this is only possible with the characteristics in the navigation block.

Once you have done this, the system totals the values of that characteristic and displays the new results. New rows may also appear as a result. You can now use the hidden characteristic anywhere at a lower level of the drilldown report. This means that you can display the selected report data according to any report hierarchy.

You can also execute this function by clicking on the hotspot icon symbol and then selecting the desired characteristic from the navigation block.

For a detailed description of how to navigate using these and the other hotspots, see Hotspots on the Report List [Page 166].

Sort Characteristics

This function lets you determine the order in which the drilldown characteristics will appear in the navigation block of the executed report. This determines the order in which you drill down by double-clicking on rows with the mouse. You can define a different order for the online display (menu *Navigate →Sort characteristics*) and for printing (menu *Report →Print setup →Drilldown + detail →Mass print settings*).

Note that characteristics for which you specified a characteristic value in the report definition are always displayed at the beginning of the list and cannot be sorted. Likewise, those characteristics through which you have already drilled down in the report also cannot be sorted. You can change the latter, however, by returning to the initial list and then choosing *Sort characteristics*.

Characteristics not needed in the drilldown report should be deleted to improve performance. Likewise, only the most necessary characteristics should be active for printing, otherwise unnecessary subtotals are printed.

Attributes

There are two fundamental types of attributes:

- **Display attributes**

  Display attributes can be displayed either in a lead column of a report or in a dialog box. To be able to display attributes, you must have specified a single characteristic value for the characteristic.

- **Navigation attributes** (such as those used in EC-EIS)

  Navigation attributes can be selected from the field catalog like characteristics, and can be used for navigation in reports. They can also be passed on to the report/report interface as selection criteria.

Display Attributes in the Lead Column

You can display attributes as well as keys and texts of characteristic values in the lead columns of a report list. To display attributes in the lead column, select a characteristic value in the lead column and choose *Settings →Characteristic display →Lead column*. Then you can select one or more attributes to be displayed.

Display Attributes in a Dialog Box

You can display all the attributes that exist for a characteristic value in a dialog box. To do so, position the cursor on the characteristic value and choose the symbol. The attributes are displayed in a dialog box.

If you have defined a form that contains different characteristic values with attributes in one element, you can see the attributes of all those characteristic values in a dialog box by positioning the cursor on the desired cell of the **detail list**.

Line Items

This function displays the line items for your report.

Note that you should limit the amount of line items to be displayed through navigation and by positioning the cursor on a row. If the selection parameters are not sufficiently specified to allow adequate runtimes, the system displays a warning and a recommendation.

Display Master Data

This function lets you display the master data for the characteristic value on which the cursor is positioned. To find this function for reports in Profitability Analysis (CO-PA), choose *Goto -> Display master data*.

Find string

The function *Find string...* lets you search for a character string in the displayed list. The system displays the lines which contained the string you were looking for in a dialog box. You can then position the list on one of the lines by double-clicking on that line in the dialog box.

Hotspots on the Report List

Hotspots

A hotspot can appear as a text, a number or a symbol. Hotspots influence the **appearance of the cursor** and the **effect of clicking**. When you run the cursor over a hotspot, it appears as a hand with the index finger raised. When you click on a hotspot, the system carries out a specific function (either highlights the field(s) or switches to a different list).

To understand how hotspots work, you need to know the difference between one-step and two-step navigation functions.

One-step and two-step navigation

- You execute a **one-step** hotspot by clicking once with the mouse. One-step functions include *Back one level*, scrolling between characteristic values and *Initial list*).
- Some navigation functions on the report list are **two-step functions**. These include calling up a detail list, drilling down to another characteristic, and calling up a drilldown list from a detail list. For these functions, you need to click on both the function itself as well as the element for which you want to execute the function.

  When you click on one of these, the system highlights the other hotspots it would make sense to choose in connection with that hotspot. The hotspot you clicked on is also highlighted, albeit less brightly.

  If you click on a hotspot which is part of a two-step function, and then click on it again, the second click “deactivates” it.

  One-step and two-step navigation is described again under Example: Navigating Using Hotspots [Page 168] using practical examples and graphics.

Symbols

Hotspots can be texts, numbers or symbols. Texts and numbers that are hotspots are highlighted when they are **active**. The most important symbols used in drilldown reporting are:

Symbol	Meaning	Number of steps	Possible “partner” hotspots
	Detail list	2	all rows marked with ◊ all symbols for “Special row” ♦
	Drilldown list	2	Current characteristic All non-specified characteristics
◊	Select normal row	2	Symbol for “Detail list” All non-specified characteristics

O	Select column group	2	All the columns in that group
	Back one level	1	
	Return to initial list	1	
	Hide characteristic	1	
	Next characteristic value	1	
	Previous characteristic value	1	
	Choose characteristic value	1	Dialog box containing all values of that characteristic
	Call up default report	1: detail list 2: drilldown list	All rows marked with ◊

In addition to these symbols, a number of other symbols sometimes appear on the screen:

- The symbol ♦ indicates a “special row”, such as a totals or sub-totals row or the value “All others”.
- Certain symbols may appear in cells to indicate non-allowed calculations (for example, ●/○ = “divided by zero”). You can click on these symbols to receive a brief explanation of the problem.

Special feature

Hotspots make it possible for you to carry out functions for specific objects. At any point, only those functions are active which it makes sense to execute for the selected object (column, column group, row, cell, characteristic, and so on).

Moreover, hotspots let you navigate easily and quickly through your report with simple clicks, without having to “navigate” your way through the menu as well.

The various symbols and their meanings are demonstrated again under Example: Navigating Using Hotspots [Page 168].

Example: Navigating Using Hotspots

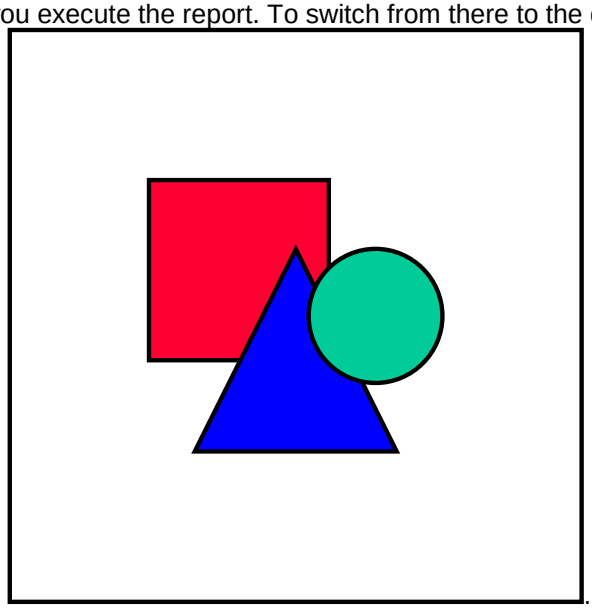
The following contains practical tips and examples that demonstrate how you can navigate through a report using hotspots. It also contains a description of all the hotspots that can appear on a report list.

Switching between the detail list and the drilldown list

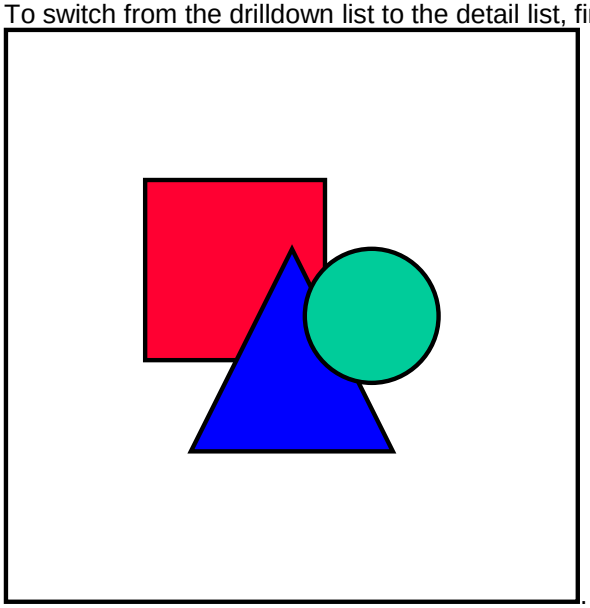
Symbols:

Drilldown list	
Detail list	
Row marker	
Initial list	

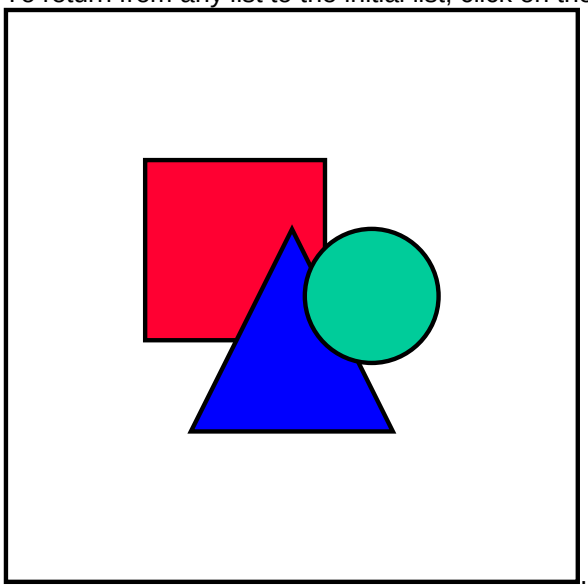
- **Detail list →Drilldown list**

  If the detail list for your report is defined as the initial list, the system displays this list first when you execute the report. To switch from there to the drilldown list, first click on the symbol  . The system will highlight all the characteristics in the navigation area. Then click once on the desired characteristic to go to the drilldown list for that characteristic.

- **Drilldown list →Detail list**

To switch from the drilldown list to the detail list, first click on the symbol  . The system will highlight all the ◊ symbols. Then click once on the desired line, and the system will display the corresponding detail list.

- **Back to Initial List**

  To return from any list to the initial list, click on the symbol  . Note that this does not undo any settings you have made in the report, such as number formats.

Navigation on the drilldown list

Symbol:	

Example: Navigating Using Hotspots

Row marker	
Next characteristic value	
Previous characteristic value	
Choose characteristic value	
Hide characteristic	

- **Switching the drilldown characteristic**

Business area 0001
Navigation

Customer group
Region
Product group

Division	**Revenue**
	1 USD
00000001 Glassware	**149.99**
00000014 Coffee products	**34.75**
00000016 Complete menus	**10.00**

Business area 0001
Navigation

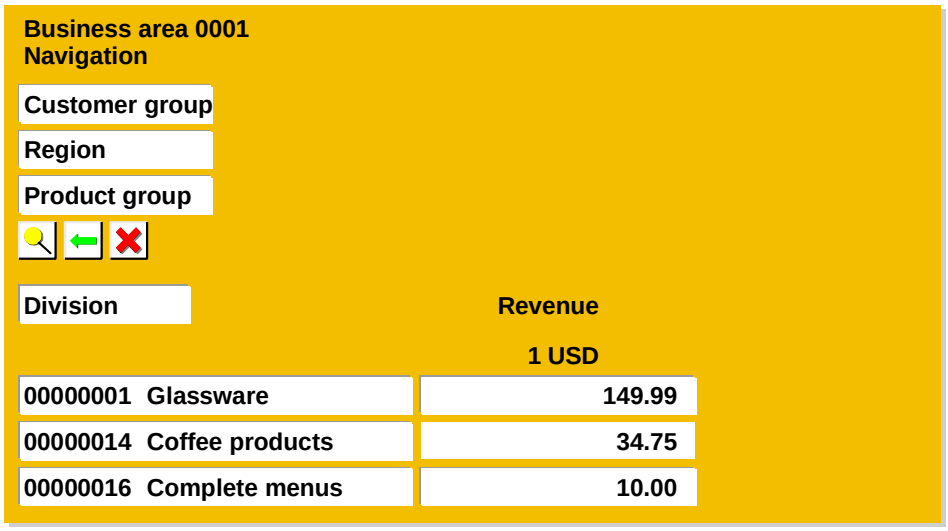
Customer group
Region
Division

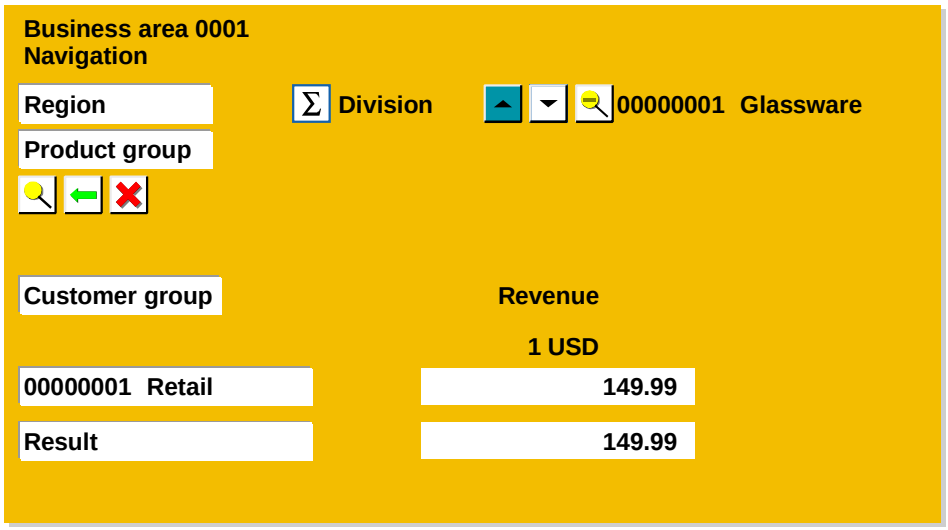
Product group	**Revenue**
	1 USD
00000010 Fruit	**149.99**
00000020 Vegetables	**34.75**

You are in the drilldown list that displays the individual divisions in the rows. Additional characteristics are available in the navigation area for drilling down. If you

would like to replace the characteristic **Division** with the characteristic **Product group**, select **Division** and then click on **Product group**. This causes the two characteristics to trade places: The characteristic **Division** is now found in the navigation area and is available for drilling down, while the individual **Product groups** are displayed in the rows.

- **Drilling down on a characteristic value**



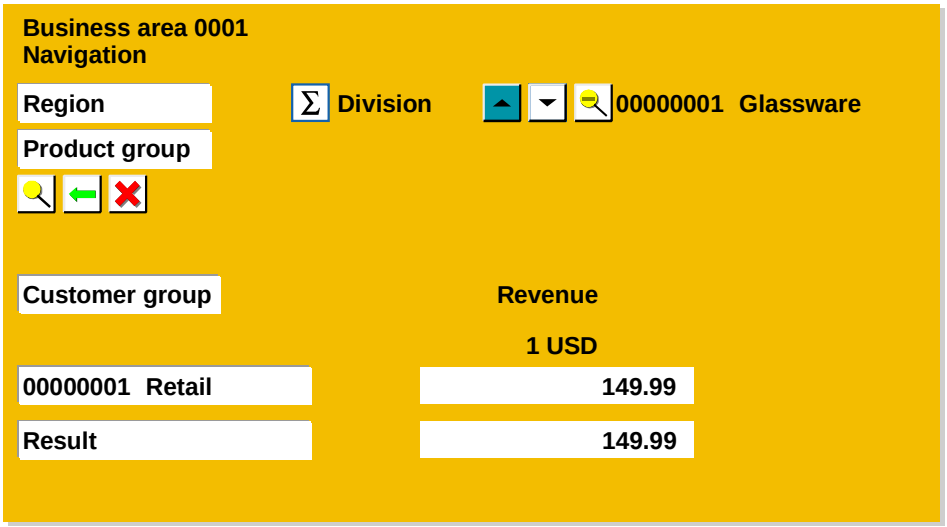


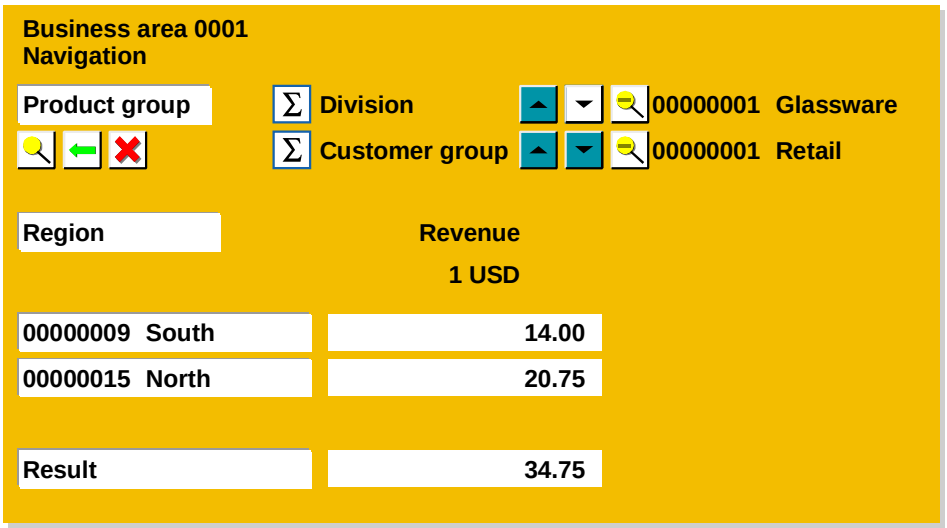
You are in the drilldown list that displays the individual divisions in the rows. If you want to drill down on one of the divisions -- say, **Glassware** -- simply double-click on that row. The system will display the division **Glassware** broken down according to the values of the next available characteristic -- in the graphic, this is the **Customer**

group. The characteristic **Division** and the value **Glassware** now appear in the header on the right.

If you want to drill down on **Glassware** but want to see a different characteristic than **Customer group**, select **Glassware** by clicking once on the ◊, and then click on the desired characteristic in the navigation area. That way you can see the division broken down by product groups.

If you want to drill down further -- say, to see **Retail** broken down by regions -- you can do this by double-clicking on the desired row.





- **Scrolling between characteristic values**

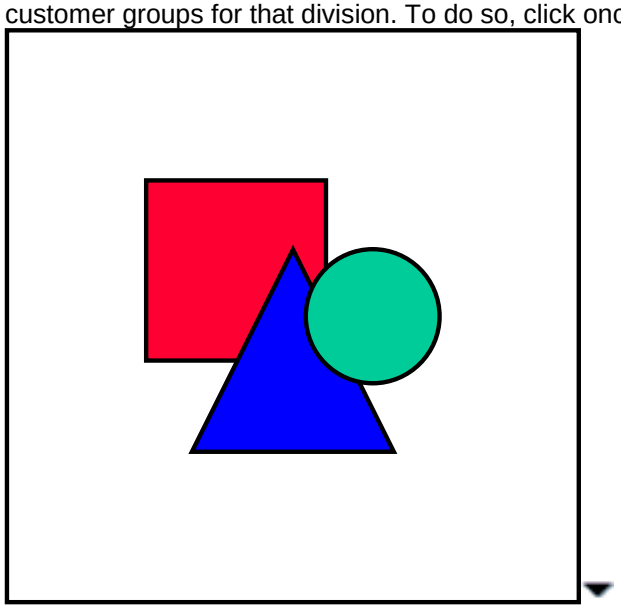
From a drilldown list displaying the divisions **Glassware**, **Coffee products** and **Complete menus**, you drilled down on **Glassware** to see the individual customer groups for that division

Business area 0001
Navigation

Customer group
Region
Product group

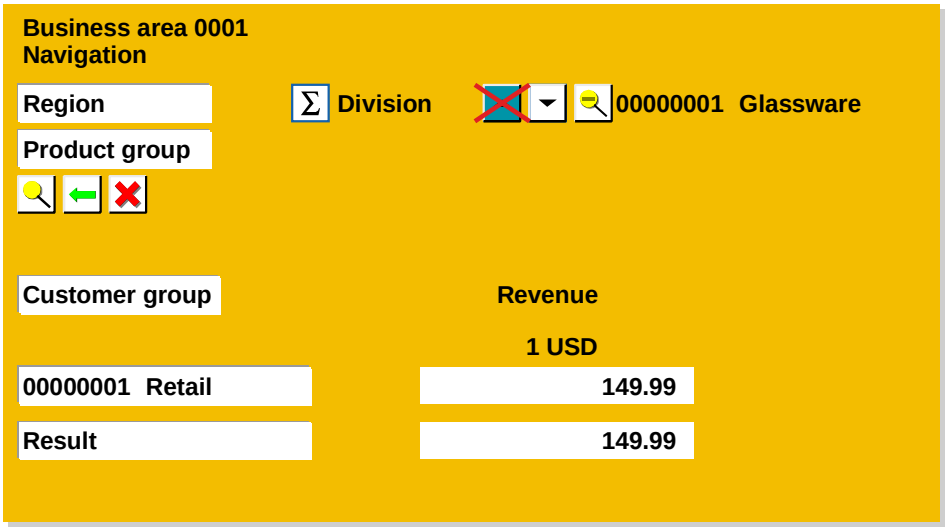
Division	Revenue
	1 USD
00000001 Glassware	149.99
00000014 Coffee products	34.75
00000016 Complete menus	10.00

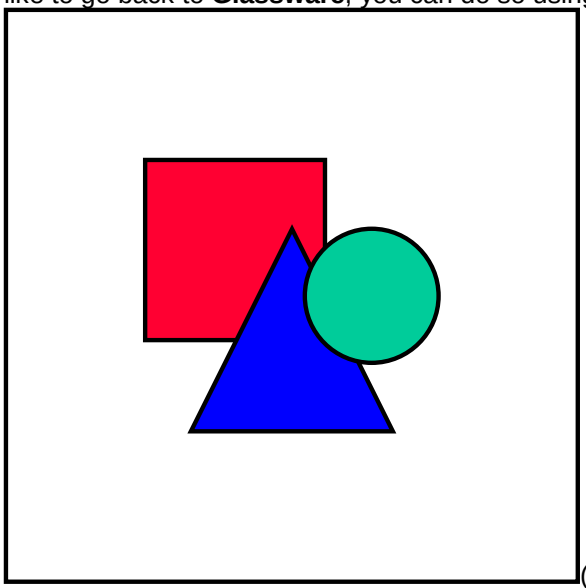
When you did this, **Glassware** moved to the right side of the navigation area. From here you can also "scroll" to the next division -- **Coffee products** -- to look at the customer groups for that division. To do so, click once on the scroll symbol

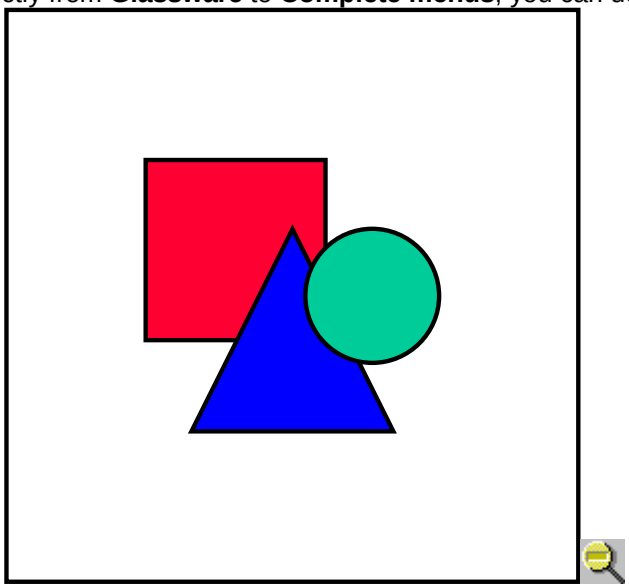


(= *Next characteristic value*). By continuing to scroll down, you can view all the customer groups for each division

Example: Navigating Using Hotspots



If you are looking at the customer groups in the division **Coffee products** and would like to go back to **Glassware**, you can do so using the symbol  (= *Previous characteristic value*). (Note that this symbol is not active if you are already looking at the first characteristic value, here **Glassware**. In the graphic, this function is marked with a red "X" to demonstrate this.)

If you would like to jump directly from **Glassware** to **Complete menus**, you can do so by clicking on the symbol  (= *Choose characteristic value*).

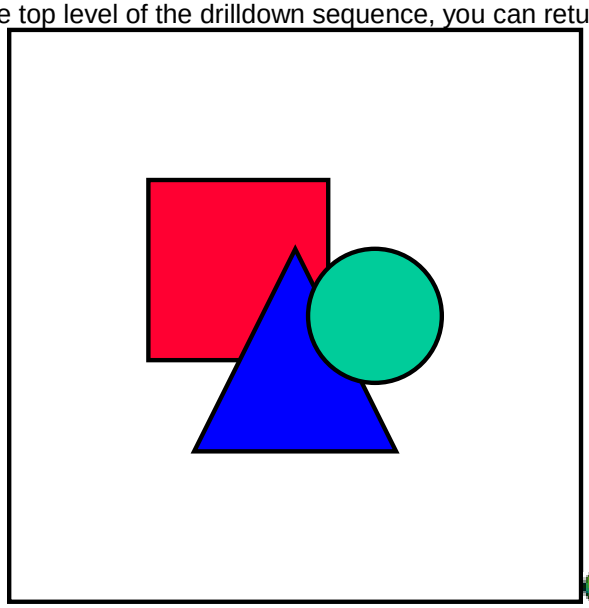
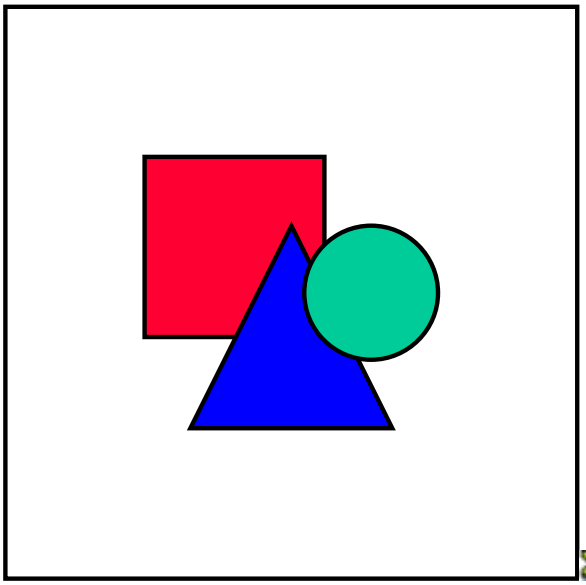
.

Business area 0001
Navigation

Region	Σ Division	00000001	Coffee products
Product group			

Customer group	Revenue
	1 USD
00000001 Retail	149.99
00000002 Wholesale	999.01
Result	1149.00

Example: Navigating Using Hotspots

Any time you are not at the top level of the drilldown sequence, you can return to the previous level by pressing  . And finally, you can deactivate any of the characteristics you have already drilled down to (that is, you can summarize the data for all values of that characteristic) by clicking on the symbol  (= *Hide characteristic*) next to that characteristic. Both of these two functions move the characteristic back to the navigation area on the left side.

Navigation in Graphical Reports

Use

With reports displayed using the output type [Page 37] "graphical report output" you can directly manipulate objects in the report list using drag & drop and by double-clicking on them.

Prerequisites

The methods described here can only be used with the graphical report type. You can use these methods if the output areas "drilldown area" and "navigation area" are available for the report.

Procedure

Drilldown switch

Drag & Drop

1. Click on a characteristic in the navigation area with the left-hand mouse button and drag it to the required place in the drilldown area with the mouse button pressed down.
2. Release the mouse button.

   The report data is broken down according to the values of the chosen characteristic.

Double-Click

1. Double-click on a characteristic in the navigation area.

   The report data is broken down according to the values of the chosen characteristic.

Drilldown

Drag & Drop

1. Click on a characteristic value in the drilldown area with the left-hand mouse button and drag it to a target characteristic in the navigation area with the mouse button pressed down.
2. Release the mouse button.

   The system performs a drilldown for the selected characteristic value and breaks down the report data according to the target characteristic. At the same time, arrow buttons are displayed in the navigation area for the characteristic whose value you dragged from the drilldown area to the navigation area in the previous step. You can use these arrow buttons to scroll through the values of the characteristic. As you do this, the drilldown area changes accordingly.

A report is broken down according to the characteristic "country". To find out which customers have their head office in Germany, drag the characteristic value "Germany" in the drilldown area to the characteristic "customer"' in the navigation area. The report now shows the data broken down according to German customers. You can also use the arrow buttons which are now visible next to the characteristic "country" to break down the data according to customers from other countries.

Navigation in Graphical Reports

Double-Click

1. Double-click on a characteristic value in the drilldown area.

   The system performs a drilldown for the selected characteristic value and breaks down the report data according to the values of the characteristic which comes next in the sequence of characteristics in the report definition. At the same time, arrow buttons are displayed in the navigation area for the characteristic whose value you double-clicked on. You can use these arrow buttons to scroll through the values of the characteristic. As you do this, the drilldown area changes accordingly.

Reset Drilldown

Drag & Drop

1. Click on a characteristic value in the navigation area with the left-hand mouse button and drag it to the required place in the drilldown area with the mouse button pressed down.
2. Release the mouse button.

   The drilldown is reset for the selected characteristic value, and the report data is broken down according to the characteristic to which the selected characteristic value belongs.

Double-Click

1. Double-click on a characteristic value in the navigation area.

   The drilldown is reset for the selected characteristic value and the current breakdown of report data is retained.

Defining Display Conditions

You can analyze the data in a report more easily by defining specific display conditions for the list. These conditions determine:

- Which functions are available for the user (see Function Levels for Different Users [Page 180])
- The highest or lowest values to be displayed in a specific column (see Creating a Ranking List [Page 181])
- Which values are displayed individually and which are added together (see Create Condition [Page 183])
- Which values should be highlighted to attract the viewer's attention (see Create Exception [Page 189])

Function Levels for Different Users

The drilldown reporting functions are divided into three groups so that you can set up three different categories of users, depending on their tasks and what information they need. This enables users to learn how to work with drilldown reporting quickly. You can change the function level after executing a report by choosing *Extras →Additional functions*.

- **Level 1** contains the basic functions of drilldown reporting as well as the interface with SAPmail. These functions allow you to navigate within the displayed characteristic hierarchy. They also allow you to display detail lists in order to analyze your data more closely. This function level does not contain certain functions, such as those for maintaining the report or its settings, or those form transferring the report to other tools, such as the Excel List Viewer.

  This level is for users who want to analyze certain form reports occasionally but do not require the full navigation functionality of drilldown reporting.

- **Level 2** contains all of the navigation functions and functions for hierarchies, and allows you to download the report to the Excel List Viewer and to a PC file, and to change the display settings. It also lets you display exceptions. This function level does not contain certain functions for maintaining reports and for defining the print layout.

  This level is aimed at users who require the full functionality of drilldown reporting, including the additional download and display functions listed above.

- **All functions** provides you with all the functions of drilldown reporting: defining parameters for printouts, freezing report data, defining exceptions and maintaining reports directly from the report list.

  This level is for users who need to set up reports for printing or maintain reports in more ways than is possible under level 2.

Users can change their own function level from the report list by choosing *Extras →Additional functions*. However, the system checks their authorization for this before switching the level (see Customizing).

You can assign these levels to individual user master records by entering the parameter IDs **RLV1** (Level 1), **RLV2** (Level 2) and **RLV0** (All functions) using the function *System →User profile →User parameters*.

Creating a Ranking List

Use

The functions *Top n*, *Top %*, *Last n* and *Last %* let you create a ranking list based on a single column of the report list. With these functions you can display those rows of the list that have the largest or smallest values in a single column. A subtotal is displayed for these rows, and the rest of the rows are added together and displayed in a row “Remainder”.

Each time you define a new display condition, this overwrites any previous condition, so that only one condition can be active at a time.

Activities

Position the cursor on the column for which you want to define the ranking list. The function is available for all the columns of the list.

For more information about changing or deleting ranking lists, see Editing Conditions [Page 184].

Features

Function	Menu path	Description
Top n	*Edit → Ranking list → Top n*	This function lets you display, for example, the top ten rows in the selected column. In the dialog box, enter the number of rows you want to see. The system displays the selected rows and a subtotal for those rows, followed by the subtotal for all rows not displayed (row *Remainder...*). The column for which you defined the condition is highlighted, and the rows are sorted so that the values in that column appear in descending order.
Top %	*Edit → Ranking list → Top %*	This function lets you those rows that add up to a certain percentage of the total in the selected column, starting with the highest value in that column and going down. In the dialog box, enter the desired percentage in the field *%*. The system displays the selected rows and a subtotal for those rows, followed by the subtotal for all rows not displayed (row *Remainder...*). The column for which you defined the condition is highlighted, and the rows are sorted so that the values in that column appear in descending order.

Creating a Ranking List

Last n	*Edit →Ranking list → Last n*	This function lets you display, for example, the ten worst rows in the selected column. In the dialog box, enter the number of rows you want to see. The system displays the selected rows and a subtotal for those rows, followed by the subtotal for all rows not displayed (row *Remainder...*). The column for which you defined the condition is highlighted, and the rows are sorted so that the values in that column appear in ascending order.
Last %	*Edit →Ranking list → Last n*	This function lets you those rows that add up to a certain percentage of the total in the selected column, starting with the lowest value in that column and going up. In the dialog box, enter the desired percentage in the field *%*. The system displays the selected rows and a subtotal for those rows, followed by the subtotal for all rows not displayed (row *Remainder...*). The column for which you defined the condition is highlighted, and the rows are sorted so that the values in that column appear in ascending order.

The menu paths in your application may differ from those shown above. For details, see the documentation for your application.

Create Condition

You can only define a condition for one column. Once you have defined a condition, the system only displays those objects that meet that condition. The other objects are added together and displayed in one line. Each new display condition deletes the previous condition, so that a maximum of one condition can be active.

This function is not available for report lists that contain hierarchies.

Procedure

1. Position the cursor on the column for which you want to define the condition.
2. You receive a dialog box in which you can enter an operation (such as “>“, “=“ or “<“) and a value.

Result

The system displays a list containing only those rows which fulfill the condition you defined. The system calculates subtotals for the displayed rows, and aggregates the hidden rows into a row called “Remainder...”. The column for which you defined the condition is highlighted, and the rows are sorted by the values in that column in either ascending or descending order.

See also:

Processing Conditions [Page 184]

Processing Conditions

Function	Menu path	Description
Create condition	*Edit →Condition →Create*	Use this function to create a new condition. For detailed documentation on this function, see Create Condition [Page 183].
Change condition	*Edit →Condition →Change*	With this function you can change the number, percentage or value of the condition that you defined using the function *Create condition*. You can also change the display conditions created using the ranking list functions (see Creating a Ranking List [Page 181]).
Delete condition	*Edit →Condition →Delete* or *Settings →Undo →All settings*	With this function you can delete the condition that you defined under *Create condition* or *Create ranking list*. See also: Undo all settings [Page 210]

The menu paths in your application may differ from those shown above. For details, see the documentation for your application.

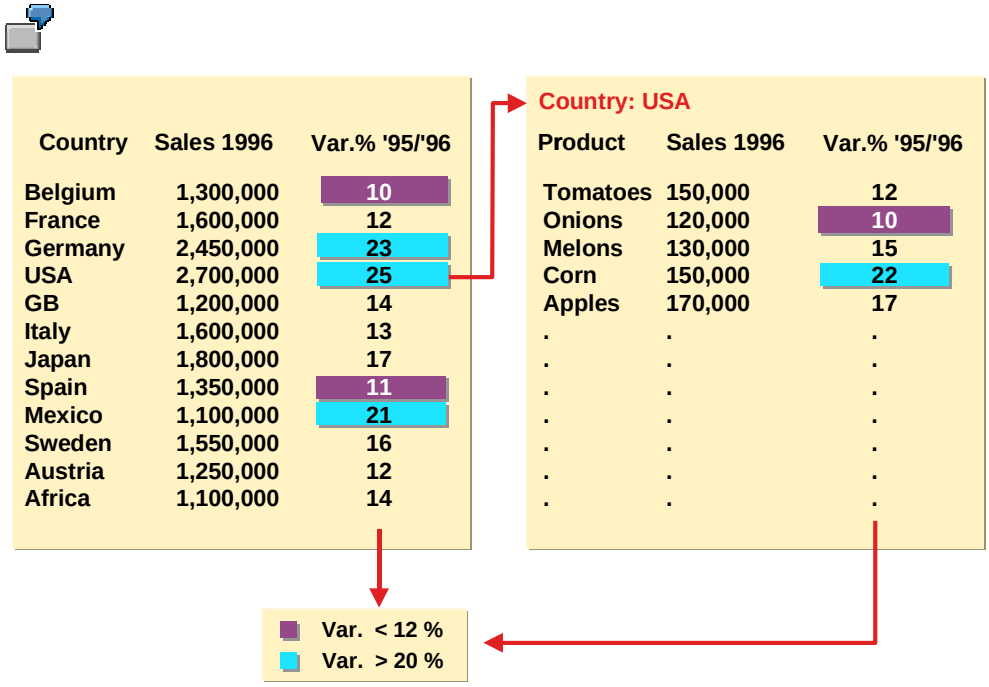
Overview: Exception Reporting

An exception is a condition which defines whether or not a value is worth paying particular attention to. You can create exception rules for any key figure in a cell or a column of a report. These exceptions comprise two **threshold values** which determine the maximum and minimum values for an acceptable range of variance. If a value for this object surpasses either one of these thresholds, the system displays that value in a different color (red or green).

There are two fundamental types of exceptions. You can define an exception either for a specific cell or for an entire column.

Exceptions for columns

Relative key figures, such as variances, are normally comparable at different drilldown levels of a report. It therefore makes sense to define a single exception for the entire column. This means that the exception is effective for every list of the report and independent of which drilldown level is currently being displayed.



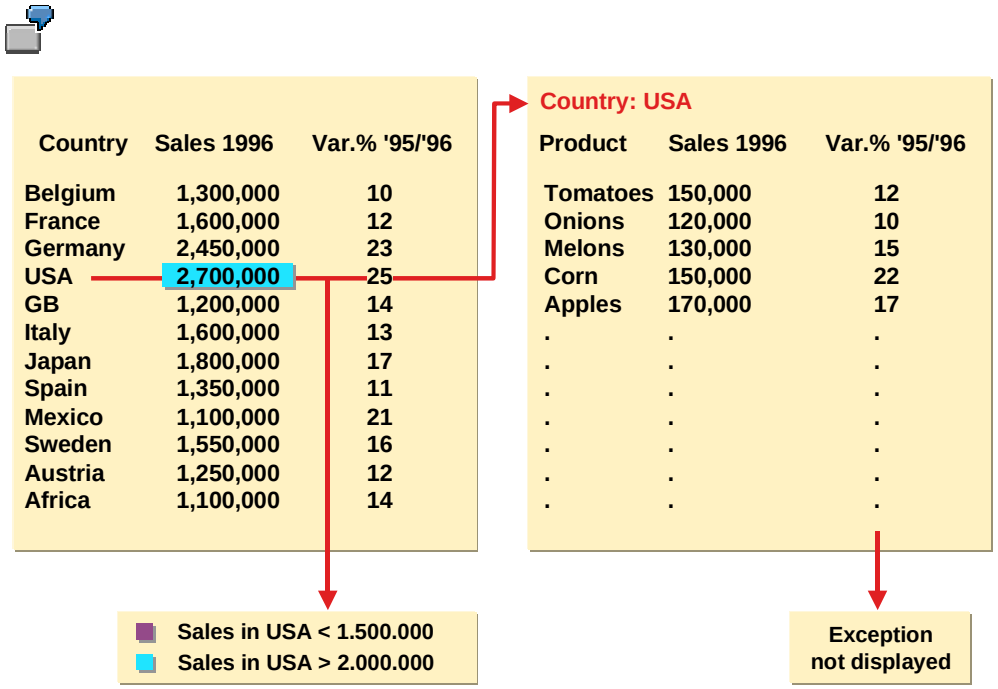
The graphic above shows sales for different countries for the year 1996 and the variance for each of these compared to 1994. For the column **% var. 95/96**, we define a lower threshold of -5 and an upper threshold of +10, thus defining the interval between -5 and +10 as "normal". In the report, variances greater than +10% are displayed in green, and those below -5 % are displayed in red. Variances between -5% and +10% appear in the normal background color.

When we drill down on the country USA, we see the products sold there, the sales figures for 1996 and the variances. The exception defined in the second column is also evaluated in the second list. That is, the exception is evaluated for both the countries and the individual products.

Exceptions for cells

Overview: Exception Reporting

The second type of exception applies only to a single cell and therefore makes sense to use with absolute key figures, such as sales.



This graphic shows an exception for the cell **USA/Sales 1996** defined with a lower threshold of -1,500,000 and an upper threshold of +2,000,000.

When we drilldown on the country "USA", we see that the exception is not applied to the second list. Since the figures have no relevance for the drilldown characteristic, it would make no sense to apply the exception here.

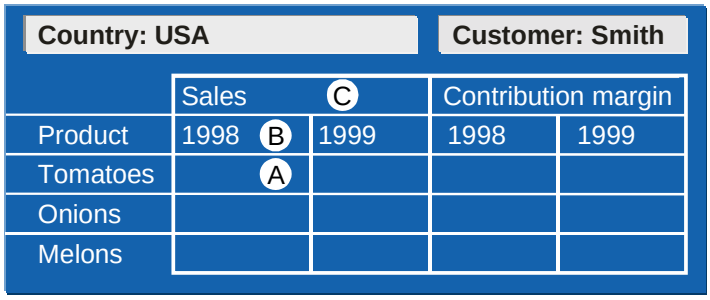
Since it can be quite time-consuming to define a large number of cell exceptions, there is also a third option. You can define an exception for all the cells of a column which appear in the same list. This exception is only evaluated on the list for which it was created. To define this type of exception, position the cursor on the column header (not on a single cell) and choose the area of validity *Cell*. Enter ***** instead of the content of a specific cell.

Using Exceptions

Creating an exception

You define an exception from the drilldown list. Once you have defined the exception, it also appears in the detail list and can be changed there.

The cursor position determines for which element the exception is to be defined. The area of validity for the exception is determined as in the following example. The example report has been defined to yield a two-line column header. Consequently, the columns are grouped together into column groups.



If you choose to define an exception for the range *Column*, the following scenarios are possible:

- If the cursor is positioned on A, the exception applies to "Sales 1998".
- If it is positioned on B, the exception applies to the column group "1998". Thus it applies to both "Sales 1998" and "Contribution margin 1998".
- If the cursor is positioned on C, the exception applies to "Sales". Consequently, it is valid for both "Sales 1998" and "Sales 1999".

If you define an exception for a *Cell*, it applies for a specific characteristic value. In the above example, it is clear from the header of the list which country and customer the exception is valid for, regardless of the cursor position. If the cursor is positioned on A, this means that it also applies to the product "Tomatoes".

Displaying, changing and deleting exceptions

You can display the exceptions which exist for a report under *Extras →Display exceptions*. You obtain a list of all the exceptions in the report. When you double-click on an exception, the system displays the parameters for that exception in a subsequent dialog box. If you have created other exceptions for this report, you can then display these using the functions *Previous exception* and *Next exception*. You can change and delete individual exceptions in a similar fashion under the menu option *Change exception*. If you want to delete all the exception in a report, choose *Delete exceptions*.

Use of exceptions in report lists

It is possible to define more than one exception for a single cell. It may then occur that one exception is "normal", the next one "green" and the third one "red". In this case the system follows the priority rule: red, green, normal. This means that if at least one exception has the condition "red", the system displays that cell in red. If "red" does not occur and one of the

Using Exceptions

exceptions has the condition "green", the cells appears in green. The normal color only appears when all of the exceptions for that cell have the condition "normal".

See also:

Creating Exceptions [Page 189]

Editing Exceptions [Page 190]

Create Exception

Use

An exception is a condition which determines when a value is to be regarded as worth taking note of in either a positive or a negative sense. When the value exceeds a predefined maximum threshold or falls below a predefined minimum threshold, the system displays it in a different color. You define these threshold values using the function *Create exception*. You can define as many exceptions in a report as you want.

Procedure

1. Execute a report.
2. Position the cursor on the value column for which you would like to define threshold values. The exception will depend on either the individual column or the column group, depending on whether you positioned the cursor on the column header or on the header of a group of columns. If you position the cursor on a row, you can define an exception for a certain characteristic value of the characteristic displayed.
3. Choose *Extras →Create exception*.
4. In the dialog box, click on the desired range of validity. Choose *Column* if you want to define the exception for one column in all the lists of the report. Choose *Cell* if you want to define it for one cell or all the cells of one column of one list. Press *Continue*.
5. In the next dialog box you can enter a description for the exception. The system displays the range of validity you chose. If you want the exception to apply for all the characteristic values in the column, enter *****.
6. In the next dialog box, you can define the thresholds and colors for the exceptions. You can define either one or two thresholds. Enter a value for the desired threshold(s) and set the threshold(s) to *active.* Choose the desired color. If you do not want to define one of the thresholds, make sure that it is not *active*. The following different combinations are possible: two red ranges, two green ranges, one red and one green range, or either one red or one green range.

Result

When you return to the report list, the system highlights those values that fulfill the conditions specified in the exception rule.

You can only create exceptions from the drilldown list of a report. However, you can change or display them from the detail list as well.

See also:

Editing Exceptions [Page 190]

Overview: Exception Reporting [Page 185]

Editing Exceptions

Function	Menu path	Description
Create exception	*Extras →Create exception*	Use this function to create a new exception. For detailed documentation on this function, see Create Exception [Page 189].
Display exceptions	*Extras →Display exception*	This function gives you a list of all the exceptions which have been defined for the report. From there you can choose one exception to obtain detailed information about it.
Change exceptions	*Extras →Change exceptions*	This function lets you change or delete exceptions. When you choose this function, the system displays a list of all the exceptions which exist for the report. Choose the exception you want to change from this list. The system then displays a dialog box in which you can change the threshold values and colors. You cannot change the area of validity for an exception once you have already created it. If you want to change the area of validity, you need to delete the exception and create a new one.
Delete exceptions	*Extras →Delete exception* or *Settings →Undo →All settings*	With this function you delete all the exceptions in the report. If you only want to delete one exception, use the function *Change exceptions*. See also: Undo all settings [Page 210]

The menu paths in your application may differ from those shown above. For details, see the documentation for your application.

See also:

Overview: Exception Reporting [Page 185]

Use of Exceptions in Report Lists [Page 187]

Analysis Functions

Under the menu path *Edit →Analysis* from the report list, you can analyze single characteristic values and display corresponding graphics.

The following analysis functions are available. For more information and examples, see the documentation for the functions.

- Cumulative curve [Ext.]
- ABC-analysis [Ext.]
- Classification [Ext.]

Functions Available on Report Lists

You can make a number of settings directly from a displayed report list to define how the data should be displayed and printed. These settings include changing the Currency [Page 194], the Characteristic Display [Page 195], how Totals Rows [Page 196] are displayed, sorting functions (such as Sort Columns [Page 255]), switching display variants (such as Cumulative Display On/Off [Page 200]), and various print settings (such as the Mass Print Settings [Page 251]).

You can also reverse all the settings you have made interactively (Undo All Settings [Page 210]) or return to the settings defined in the form used for the report (Form Settings [Page 211]).

See also:

Defining Display Conditions [Page 179]

Print Settings [Page 244]

Number Format

The number format refers to the number of decimal places and the factor in which a figure is displayed.

The figure **one million**, displayed with one decimal place and a factor of 1000, reads: **1,000.0**.

You can define the number format separately for individual rows, columns and cells of a report. Settings are possible at the following levels:

- You can make rough settings to use in all reports in the report line structure or the field catalog. There, for example, you can specify that sales should always be displayed in 1,000,000s.
- You can make settings which apply to all the reports which use a specific form by defining the number format in the form itself. For example, you can specify that the third column of the form should always be displayed with no decimal places.
- You can make settings which only apply to a specific report in the report definition itself.

When you make settings at different levels, you define the number format separately for the detail list and the drilldown list. When you make these settings, observe the relationship between the column groups and the individual columns of the drilldown list and the rows, columns and cells of the form. For a form with two axes, this relationship is as follows:

Single column (drilldown list) <--> Cell (detail list)

Column group (drilldown list) <--> Row or column (detail list)

In case of conflicting number format settings, the system uses the setting which was **last made**.

Currency

This function converts the displayed currency from that stored in the database to any other currency for one or all value columns. The currency translation type is used to automatically find the exchange rate. You define currency translation types in Customizing.

Undo Currency

This function allows you to reverse all currency conversions you have carried out for the report list. All key figures are displayed again in the database currency. Choose *Settings →Undo →Currency*.

For detailed documentation on currency translation, see Currencies [Page 74]

Characteristic Display

This function lets you decide how characteristic values should be represented in the report list. You can display the key and the text of the characteristic values in different combinations. The function *Settings →Characteristic display* displays a dialog box allowing you to choose between four possible display types.

Undo Characteristic Display

The function *Settings →Undo →Characteristic display* lets you reverse this setting.

The system displays the last option saved for this setting **for all characteristics**. If the last saved setting called for a text, any characteristics that do not have texts are displayed with the key only.

In some applications, such as SAP-EIS, you can define a default value for the characteristic display in the field catalog (field DIMPR). If a default value has been defined for a characteristic, the system displays this setting.

Totals row

You can determine the position of the totals row for a single characteristic or for all characteristics using this function. You can also hide the totals row completely. To apply the function to a single characteristic, position the cursor on that characteristic before choosing the function. If the cursor is not positioned on a characteristic, the function applies for all characteristics.

Undo totals row

This function reverses the last display option you set for the totals rows of all characteristics in the drilldown list.

If you hid the totals row for a hierarchical characteristic, this row remains hidden, regardless of the last setting.

Totals rows...

With this function you can insert underscores and blank rows either before or after totals rows. For the underscore, you need to enter the characters you want to use for the underscore. For blank rows, you need to enter the number of blank rows (up to 9).

In this dialog box, you can also determine the color and brightness of the totals rows. You can choose from seven different colors and between normal and highlighted.

You can make all these settings separately for each characteristic to be printed.

With the function *Order* you can determine whether the underscore should appear before or after a blank row, if you have set both.

Format Display On/Off

This function lets you display or hide the row containing the number format in the drilldown list. You define this separately for the screen display (*Settings →Format disp. on/off*) and for the printed report (*Report →Print setup →Drilldown + detail →Format disp. on/off*).

It is possible for each cell in the detail list to have its own display format. Consequently, it is not always possible to display all this information at once. When you choose this function, the system displays the format for each cell. The information disappears again automatically when you perform another function or press ENTER.

The row *Displayed in:* shows what the numbers on the screen refer to.

If sales revenue is displayed in “USD 1000” and the number 123 appears in the column “Sales revenue”, this means that the revenue is USD 123,000.

The row *Displayed in:* contains a combination of display factor and unit. The display factor is always a number, and the unit can be a currency, quantity, price or other value. In this example, the display factor is 1000 and the unit is USD.

Cumulative Display On/Off

This function lets you activate or deactivate the cumulative display in the drilldown list.

The drilldown list is sorted according to the keys of the rows. When this function is active, the system displays each row as the sum of its content plus the content of the rows above it.

Cumulative display not active:

Period	Revenue
001 January	992,110.00
002 February	1,776,200.00
003 March	60,100.00
004 April	4.346,236.10
005 May	822,747.37
006 June	15,442,985.93
007 July	18,831,728.88
008 August	82,962.57
009 September	68,100.00
010 October	49,431.00
011 November	71,040.00
012 December	77,100.00

Cumulative display active:

Period	Revenue
001 January	992,110.00
002 February	2,768,310.00
003 March	2,828,410.00
004 April	7,174,646.10
005 May	7,997,393.47
006 June	23,440,379.40
007 July	42,272,108.28
008 August	42,355,070.85
009 September	42,423,170.85
010 October	42,472,601.85
011 November	42,543,641.85
012 December	42,620,741.85

This option is especially useful for displaying the cumulative values for an individual year.

Zero Display On/Off

If values equaling zero appear in the displayed list, there are two ways to display it. You can either display the zeros or suppress them. The default setting is for the zeros to be displayed. With the function *Zero disp. on/off* you can switch from one display mode to the other.

If you choose not to displays the zeros, all rows containing only zeros in the displayed columns will disappear in the overview list.

Column(s) On/Off

This function lets you to hide or show columns of the report list.

This function is cursor-sensitive. If you have a report with more than one group of columns, the position of the cursor determines whether this function hides individual columns or column groups.

Your report shows different regions, each of which is divided according to several fiscal years. If the cursor is positioned on a region (the header of a column group), the system displays all the column groups in a dialog box, where you can choose which ones you want to display. If the cursor on positioned on a single year, you receive a dialog box where you can select the desired years.

Sort Columns

This function lets you change the order of the columns in the drilldown list.

This function is cursor-sensitive. If you have a report that contains groups of columns (two-level column headers), the position of the cursor determines whether this function applies to individual columns or column groups.

Your report shows different regions, each of which is divided according to several fiscal years. If the cursor is positioned on a region (the header of a column group), the system displays all the column groups in a dialog box, where you can define the order in which you want to display these. If the cursor on positioned on a single year, you receive a dialog box where you can sort the fiscal years.

If you have already hidden individual columns or column groups using the function *Column(s) on/off*, you cannot sort these hidden columns or column groups.

Percentage/Absolute

In the drilldown list, you can display any quantity or value column either as absolute values or as percentages of the total.

If you want a certain column always to appear as percentages, use the operator “%S” in the formula editor where you define the form.

Maintain Footer

This function lets you create a footer for the report. This footer is displayed in the printout when you print the report.

Footer On/Off

With this function you can specify whether the footer which you defined for the printout should also appear in the online report.

Maintain Header

This function lets you create a header for the report. The header is used in the printout.

Header on/off

This function lets you decide whether the header you have created will also appear in the online display.

Sort Ascending

With this function you can sort the rows of a report in ascending order according to the values contained in the column or column block where you position the cursor.

The system displays a dialog box in which you can decide whether you want to sort the column or column block alphabetically according to the key or text of the characteristic values, the key figure or, where applicable, a hierarchy or hierarchy display. (Sorting by hierarchy display is only possible using asterisk display).

Sort Descending

With this function you can sort the rows of a report in descending order according to the values contained in the column or column block where you position the cursor.

The system displays a dialog box in which you can decide whether you want to sort the column or column block alphabetically according to the key or text of the characteristic values, the key figure or, where applicable, a hierarchy or hierarchy display. (Sorting by hierarchy display is only possible using asterisk display).

Undo All Settings

This function reverse all the settings you have made on the report list. This includes conditions, ranking lists, exceptions, and all the settings you make under the menu *Settings*.

Form Settings

If you changed the number formats in your report, this function lets you change these settings back to those made in the definition of the form.

Saving, Printing, Exporting, Sending, Graphics

Drilldown reporting offers you a number of functions for processing report lists interactively, including the following:

- Freeze report data [Page 213] and save the report structure
- Print [Page 217] report lists
- Export [Page 262] report lists (to the XXL List Viewer, for example)
- Send report lists [Page 271] using SAPmail
- Display graphics [Page 272] using SAPgraphics

See also:

Working in Reports [Page 123]

Save

You have two options for saving a report after executing it.

- Using variants and variant groups, you can freeze the report data in the background so that you can display it later without the system having to select the data from the database again. This reduces the runtime for the report.
- After executing a report online, you have two options for saving the report:

  You can use the function Freeze Data [Page 214] to save the data selected for the report. When you choose this function, the system also saves any changes you have made to the report definition. You should use this function if you want to be able to call up the same set of data at a later point in time.

  The function Save Structure [Page 215] lets you save all changes you have made to the report definition, but not the report data itself. Use this function when you want to preserve the settings (conditions, currency changes, sort orders, and so on) you have made on the report lists.

See also:

Functions Available on Report Lists [Page 192]

Freezing Report Data in the Background Using Variants [Page 216]

Freeze data

When you execute a report, the system either selects the data from the database or reads it from a buffer (COIX_DATA).

This function lets you “freeze”, or save, the summarized report data in its current state. The function is only active if the system selected the data from the database, and can also only be performed once per session. When you use this function, the system also saves the current report definition -- including any changes you made during navigation (see Save structure [Page 215]).

If frozen report data already exists for this report from an earlier session, the system asks you whether you want to overwrite this data.

Save structure

This function lets you permanently save changes you made when executing the report. That way you can create a rough report structure when you define the report, and then make the fine adjustments when you execute it. The systems saves any changes you made using the following functions:

- sequence of the characteristics (*Extras →Sort characteristics...*)
- sort order of list (*Edit →Sort ascending* or *Sort descending*)
- conditions (*Edit →Condition →Create condition*)
- ranking lists (*Edit →Ranking list →Top n, Top %, Last n* or *Last %*)
- sort order of columns (*Edit →Sort columns*)
- characteristic display (*Settings →Characteristic disp.*)
- decimal places (*Settings →Number format*)
- display factor (*Settings →Number format*)
- currencies (*Settings →Currency*)
- display of units in drilldown list (*Settings →Format disp. on/off*)
- zero display (*Settings →Zero disp. on/off*)

Changes which you make in the report display have no influence on frozen report data (see Freeze data [Page 214]).

Freezing Report Data in the Background Using Variants

You can use variants and variant groups to freeze report data at specified times in the background. By freezing report data, you can execute the report online later **without** the system needing to read any data from the database. This reduces runtimes substantially when you execute reports online.

See also:

Creating Variants and Variant Groups [Page 108]

Printing Reports

Use

You can print reports using either:

- the **R/3 System** or
- **Microsoft Word for Windows**

When you print directly from the R/3 System, you can define the print layout yourself and print the entire report. When you print from Word for Windows, you have the option of modifying the layout manually in Word.

Features

The following table shows when you would normally want to print with which option:

Printing from the R/3 System:	Printing from Microsoft Word:
Mass Printing an Entire Report: ● Large data volume ● Background processing ● Periodic reports ● Simple printouts	**EC-EIS Report Portfolio for Printing Several Reports:** ● An entire user group ● An entire report class ● with table of contents ● with division into chapters/sections ● with graphics ● editable
Printing Individual Report Lists: ● Printing what is displayed ● Simple printouts	**Printing Individual Report Lists:** ● Printing what is displayed without navigation block ● Postediting in Word before printing

The different printout options differ in how the columns are built and what is contained. What options you have for printing depends on where you are in the report. The following table shows you what printing options you have and how they differ:

Printing Reports

Menu path	Function	Result	Features/comments
Report → Print →	***Columns displayed*** (drilldown and detail list)	Currently displayed report list is printed without navigation block or special characters	Only those columns **displayed on screen** are printed.
Report → Print →	***All columns*** (drilldown list)	Currently displayed report list is printed including any hidden columns, without navigation block and special characters	**All columns defined in the report** are printed. If page is not wide enough, row by row printing or printing of several rows used.
Report → Print →	***Mass print drilldown/ detail list***	Multiple levels of drilldown or detail list are printed according to settings made in *Report -> Print setup*	You can determine content and layout of printout. Printout usually is not identical with online display.
Report → Print →	***Transfer to Word***	• EC-EIS: Entire report portfolio report is printed • All other applications: Currently displayed list is printed without navigation block or special characters	You can edit the report list manually in Word before sending it to printer.
System → List	***Print***	**Screen capture**: currently displayed report list is printed **with** navigation block and special characters	Special characters may present problems.

The settings that you make with *Report →Print setup* determine how the report is printed using *Report →Print*. They have no influence on printouts created using *System →List*.

Activities

To print from the R/3 System, choose *Report →Print*. To print from Microsoft Word for Windows, choose *Report →Export*. Then choose *Transfer to Word*.

See also:

Printing from the R/3 System [Page 219]

Printing from Word for Windows [Page 225]

Printing Graphics [Page 227]

Print Settings [Page 244]

Sample Printout [Page 240]

Printing from the R/3 System

Use

You have two different options for printing report lists from the SAP system:

- **Printing the list as displayed**

  If you have reached the required drilldown level and would like to print the list that is currently displayed on the screen, choose one of the following functions:

  – *Report →Print →Columns Displayed*

  – *Report →Print →All Columns*

  The system prints the specified list as it is displayed on the screen. Only **one** drilldown level is printed.

- **Printing according to the print setup**

  If you want to define the content and layout of the printout before printing your report, you need to make the desired settings first by choosing *Report →Print setup*.

  The system generates and prints views of the report data at the drilldown levels specified and using the formatting setup defined with *Print setup*. The print layout is not displayed on the screen. A printout does not therefore necessarily reflect the current screen display.

  There are two functions for mass prints:

  – *Report →Print →Mass Print Drilldown*

  – *Report →Print →Mass Print Detail List*

  These functions let you print a large number or all of the drilldown levels in the report. Consequently, they could give you very large printouts, depending on what settings you made using *Print setup*. For more information on the print setup, see Print Setup [Page 228].

Features

You can access all of the printing functions by choosing *Report →Print* or the printer icon. When you choose this function, the system displays a dialog box containing the following options:

- Columns displayed
- All columns
- Mass print drilldown List
- Mass print detail list
- Transfer to Microsoft Word

  The *Mass print detail list* function is not available for basic reports and reports that use forms with one axis and key figure, since these would lead to unusable printouts

with only one column. However, you can still create single printouts of these reports using the function *Columns displayed*.

Columns displayed

This function lets you print the **currently displayed report columns**. The printout therefore looks like the displayed report.

Of the available print functions, this one is most suited for printing detail lists. It is also the simplest way to print the displayed list.

All columns

With this function you print the **report list** according to the current drilldown list and **all** the defined columns. If all the columns do not fit on the printout, the system prints either row by row or several rows, depending on which was chosen under *Report →Print Setup →Drilldown and Detail Lists →Other Settings.*

This allows you to print the entire list displayed, including any columns which are not visible.

This function is only available for printing drilldown lists, since the detail list usually only consists of one column. If you want to print a detail list as it appears on the screen, choose *Displayed columns*.

Mass print drilldown List

Mass print generally refers to a large printout that you receive when you print multiple drilldown levels of a report list. The system breaks down all the characteristics you specify for the printout, and prints them in hierarchical fashion.

Due the drilldown required when performing a mass print, this function is only available if you chose the setting "*Read all Data*" when making the performance settings. On the other hand, the mass print function cannot be performed if you chose the setting Read upon each Navigation Step [Page 47].

With this function you can print a drilldown list according to the settings you make using *Report → Print setup →Drilldown and detail lists*. These settings determine the size, content and layout of the printout and are not reflected by the list displayed on the screen.

The mass print functions may give you **very large printouts**. The size and content depends on the settings you make with the function *Report →Print setup →Drilldown and detail lists →Mass print settings...*, particularly the ***Sort characteristics***, ***Level of detail*** and ***Page break*** settings. These settings are not displayed on the screen. If you want to avoid unnecessary volume in your printout, be sure to check these settings.

- The setting *Level of detail* determines how many levels (characteristics) of the report the system should break down in the printout. For example, if you only want to see individual characteristic values for the first two levels, you need to set the second characteristic as the deepest detail level.
- This means that you have to you sort the characteristics into the desired order before you set the level of detail.

- Once you have made these settings, you need to decide on the characteristic values that you want to follow with a page break. The system inserts a page break after each line that represents a total for a value of that characteristic. For example, if your printout contains all customers broken down by products, you could insert a page break after each customer or after each combination of customer and product (all products for customer A, total of products for customer A, PAGE BREAK; then all products for customer B, total of products for customer B, PAGE BREAK; and so on). Choosing the latter would increase the volume of your printout considerably.

It is very important that you check the effects of these settings using the function *Report →Print setup →Drilldown list →Print preview* before actually printing the report. This allows you to see how large the printout will be. See Example: Mass Print Drilldown List [Page 222] for a detailed example of how this function works and how the print setup affects it. For a description of all the possible print settings, see Print Setup [Page 228].

The number of rows printed when you choose *Mass print drilldown list* depends largely on the number of levels you specified for the report as well as the number of characteristic values contained in each list of the report.

For example, if you drill down through four characteristic (level of detail is the fifth characteristic) and each characteristic has 10 values contained in each drilldown list, the system has to print **100,000 rows**, which - at 100 rows per page - yields a report of 1000 pages.

It is therefore recommended that you check the layout **before** printing, using *Report →Print Setup →Drilldown List →Print Preview*.

Mass print detail list

With this function you can print a **detail list** according to the settings made under *Report →Print Setup*. Again, the settings you make determine the volume, content, and layout of the printout. As with *Mass print drilldown list*, the system "drills down" according to the hierarchy you defined in the print setup to determine what to print.

This function is not available for basic reports and reports which use forms with one axis and key figure, since these would lead to nonsense printouts of single columns. However, you can still create single printouts of these reports using the function *Columns displayed*.

See also:

Print Setup [Page 228]

Setting the Print Parameters [Page 239]

Print Settings [Page 244]

Example: Mass Print Drilldown List [Page 222]

Example: Mass Print Drilldown List

The following section contains a detailed example of how the *Mass print drilldown list* function works and how the print setup affects it.

Settings in *Print Setup*

Sort characteristics

The report contains the 4 drill-down characteristics **Customer group**, **Product group**, **Region** and **Division** in that order. Note that the sort order for the printout (*Report →Print setup → Drilldown and detail lists →Mass print settings...*) can differ from that of the displayed list (*Navigate →Sort characteristics*). In this example, the sort order for the online list and the printout is the same.

Setting: Level of Detail and Page Break

The deepest level of detail is set at the third characteristic, **Region**, and a page break is defined following the first characteristic, **Customer group**. Note that you can only define a page break after characteristics that lie before last broken down characteristic in the sequence.

The following table shows these settings:

Characteristic	Position	Level of detail	Page break
Customer group	1		X
Product group	2		
Region	3	X	not possible
Division	4		not possible

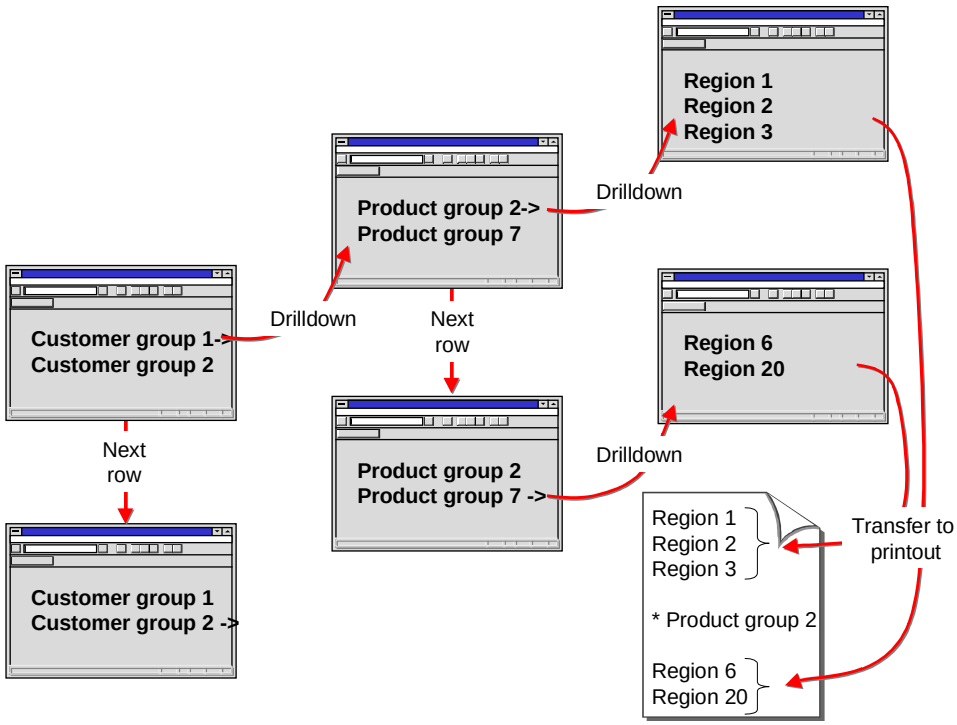
Preparation for Printing

1. The system starts by preparing the drill-down list broken down by **Customer group**.
2. Then the system "drills down" on the first row of that list (**Customer group 1**) to display the individual **Product groups**.
3. Then it drills down on the two product groups in this list (**2** and **7**) to display the individual **Regions**. The resulting lists are same two lists that would appear if you drilled down in that

sequence online. The figure below shows these steps. Since the characteristic **Region** is the finest level of detail, the system does not go on to break the regions down by division.

Printout

Drilldown Sequence for *Mass Print Drilldown List*



The third drill-down level contains two drilldown lists broken down by region. The lines of these lists appear in order on the printout.

The totals for the individual product groups as well as for the first customer group are also displayed. The row with the total for **Customer group 1** is followed by a page break, as was defined in the example. The totals are indicated on the printout with asterisks (*) that show the drilldown level for which the sum was calculated. Thus the sum for each product group is represented with one asterisk, the sum for the customer group with two asterisks, and the grand total for all customer groups with three asterisks.

The following table demonstrates how the system drills down in the report and sends the rows to the pages of the printout.

Example: Mass Print Drilldown List

Customer group Lists at level 1	Product group Lists at level 2	Region Lists at level 3	Rows of printout
Customer group 1 ->	Product group 2->	Region 1	Region 1
Customer group 2	Product group 7	Region 2	Region 2
...		Region 3	Region 3
			* Σ Product group 2
	Product group 2		
	Product group 7->	Region 6	Region 6
		Region 20	Region 20
			* Σ Product group 7
			** Σ Customer group 1
			Page break
Customer group 1			
Customer group 2 ->	Product group 2->	Region 2	Region 2
...	Product group 10	Region 4	Region 4
	Product group 12	Region 6	Region 6
			* Σ Product group 2
	Product group 2		
	Product group 10 ->	Region 14	Region 14
	Product group 12	Region 24	Region 24
			* Σ Product group 10
	Product group 2		
	Product group 10		
	Product group 12 ->	Region 2	Region 2
		Region 14	Region 14
		Region 23	Region 23
			* Σ Product group 12
			* Σ Customer group 2
			Page break

As you can see from this example, the number of rows printed depends on

- The number of levels drilled down for the printout
- The number of characteristic values that are displayed for each list

For example, if you drill down through four characteristic (level of detail is the fifth characteristic) and each characteristic has 10 values contained in each drilldown list, the system has to print **100,000 rows**, which - at 100 rows per page - yields a report of 1000 pages.

It is therefore recommended that you check the layout **before** printing using *Report → Print setup →Drilldown list →Print preview*.

Printing from Word for Windows

The function *Transfer to MS Word* (under *Report →Print*) lets you print the currently displayed report list (as with *Columns displayed* and *All columns*) by first transferring the report to Microsoft Word for Windows and then printing it from there.

You can only use this function if you have an English, German, or French version of Microsoft Word for Windows version 6.0 or 7.0 installed on your PC. The printing functions are only active if you are working in Windows, Windows 3.x, Windows NT, or Windows 95.

To install the SAP standard template SAP_REP.DOT and to set up the interface between the R/3 System and Microsoft Word for Windows, see Customizing.

When you choose the function *Transfer to MS Word*, the system displays a dialog box in which you can enter the following:

1. With the function *Direct Word call-up* you can download a report list to any directory on your local PC and then print it from there as a file. Enter the desired directory and a file name that ends with.**rtf**. The system downloads the current list to Word and opens it there.
2. With the function *Call up Word with additional settings* you can also send additional information to Word along with the report list, and then print it all together.

   – **WORD macro**

   If you want to print the report list using the default settings, leave the field *Word macro* blank. If you want to use a special **macro** which you have already defined in Word, enter the name of the macro here.

   – **Cover page**

   The standard SAP template SAP_REP.DOT contains a default **cover page**. You can modify this cover page in Word to meet your requirements, and print it together with the report.

   – **Print only**

   This function only makes sense to use with the option *Not interactive*. When you select this function, Word prints the report without saving it as a file on your PC. This prevents the report from being altered.

   The system writes the report list to a temporary file before printing. Since **all** the files are deleted again after printing, you need to make sure that the directory that you use for printing does not contain any other files with the following suffixes:.txt,.rtf,.ini,.doc,.wmf,.tmp and.log.

   – **Settings for interactive printing**

   Noninteractive printing

   If you do not print interactively, the system immediately sends the current report list to the specified path and opens it in Word for Windows under the specified document

name. You can then change the report as you need and then print it as you normally print documents in Word for Windows. You define the default path in Customizing.

Interactive printing

With this option you can choose the path in which to save the report yourself, and can open it under any name you wish in Word. Then you can modify it as above before printing it out.

Once you have entered the desired path and name, the system starts Word automatically.

In Word, choose *File →New*, and then choose the template SAP_REP.DOT. In the next dialog box, open the INI file (which was saved in the aforementioned path).

Then the system asks you to write a brief documentation.

After that you can enter the name of the document you want to open (as above, or any other name). Then Word opens the report, and you can modify and print it as above.

See also:

Transfer to Word [Page 268]

Printing Graphics

You can also print all types of graphics using Word for Windows. The procedure from there is the same as when you print a report list from Word for Windows.

First, you need to activate the print mode by choosing the menu option *Goto →Graphic →Graphic to WORD on*. Then choose the type of graphic you want to print under *Goto →Graphic → Graphics...*.

If you then only want to display a graphic on the screen, deactivate the print mode again by choosing *Goto →Graphic →Graphic to WORD off*. Then call up the desired graphic as described above.

See also:

Graphic to Word on/off [Page 269]

Printing from Word for Windows [Page 225]

Print Setup

Use

This section informs you about the various options available for formatting a report list specially for printing. You can change the **content** of the report (which lists and which characteristics you want to print) as well as the **layout** (page breaks, underscores, and so on).

You initially define the print layout when you define the report (under the menu option *Extras* → *Print setup*). However, if you later wish to change the print settings, you can do this from the report list under the menu *Report* →*Print setup*.

Activities

You can make the settings for printing in the form definition, the report definition, and the displayed report list:

- In the **form definition**, you can select the rows and columns to be printed in reports that use this form by choosing *Extras* →*Drilldown printout*. Then you can display the drilldown list as it will be printed to check your settings.
- In the **report definition**, you can make the settings by choosing *Extras* →*Print setup* or on the *Output* and *Options* tab pages.
- If you want to change the print settings later, you can do this from the **report list** by choosing *Report* →*Print setup*.

These settings are only relevant for **mass printing** (*Report* →*Print*, then *Mass print drilldown list* or *detail list*).

Print setup →Drilldown and detail lists

The functions found here let you set up the layout for both the drilldown and the detail list.

Mass print settings

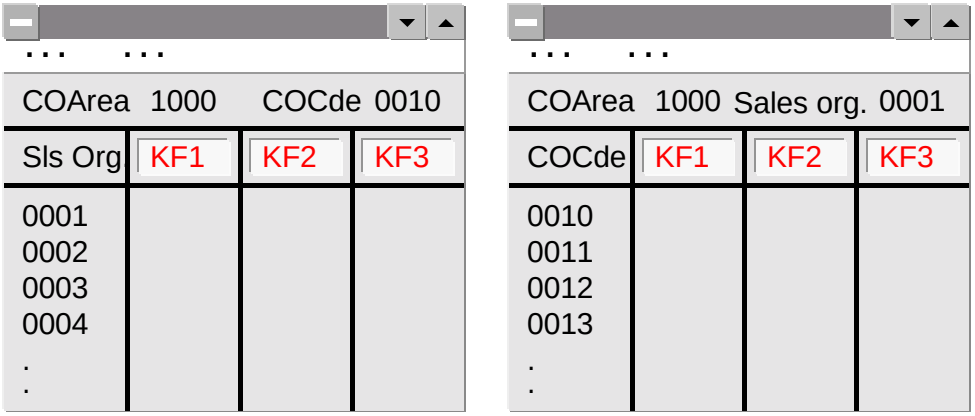
The function *Mass print settings* lets you make settings that determine the size, content and layout of your mass printouts:

- Sort characteristics
- Set level of detail
- Insert page breaks
- Hide totals rows

Note that the functions for sorting characteristics and setting the level of detail and page breaks are dependent on one another. For example, you can set a page break after those characteristics that lie above the deepest level of detail. Consequently, you cannot sort all the characteristics again once you have set the deepest level of detail, because this could possibly invalidate the settings you made for page breaks.

Sort characteristics lets you determine in which order the characteristics should be sorted for the printout.

The sequence of the characteristics in a report will depend on what you want to report on. For example, if you were primarily interested in the key figures for the individual sales organizations of a company code, you would place the characteristic "Company code" first and "Sales organization" second. On the other hand, if you want to see the key figures for the various company codes in each sales organization, "Sales organization" should be the first characteristic and "Company code" the second.



It is not possible to sort the characteristics which were specified in the form. Consequently, these characteristics are inactive in the sorting list (see the characteristic "Controlling area" in the graphic).

Changing the sort order of the characteristics for printouts does not change their order in the report definition. Consequently, the way the report appears on the screen is not the same as the printout.

- The function *Level of detail* lets you specify how far (down to which characteristic) the system should "drill down" for the printout. The characteristics below that level are disregarded. In some cases this can reduce the size of your printout considerably.

  If you only want to drill down for the first characteristic, you must select "No page break" in the *Page break* column.

  The page break lets you structure your report so that it is easier to read. For example, if your report contains the characteristics "Controlling area", "Company code" and "Sales organization", you can set a page break at the company code level. This means that a new page will begin for each new company code (see also Example: Mass Print Drilldown List).

It is recommended that you set the page break as high up in the sequence of characteristics as possible to keep the volume of the printout as small as possible.

- You can hide certain totals rows of your report, either dependent on or independent of whether the totals row contains the same value as that of the next level of the hierarchy. If you choose *cond.*, the system will not print the totals for that characteristic if the same totals appear for the characteristic above it in the drilldown hierarchy. If you choose *uncond.*, the system does not print any of the totals for that characteristic.

Other Settings

You can also make a number of *Other settings* to determine the layout of your printed report.

- You can decide whether the system should print the *Report parameters*, the *Header*, the *Footer*, and the *Title page*. You can maintain the header, footer and title page in the same submenu.

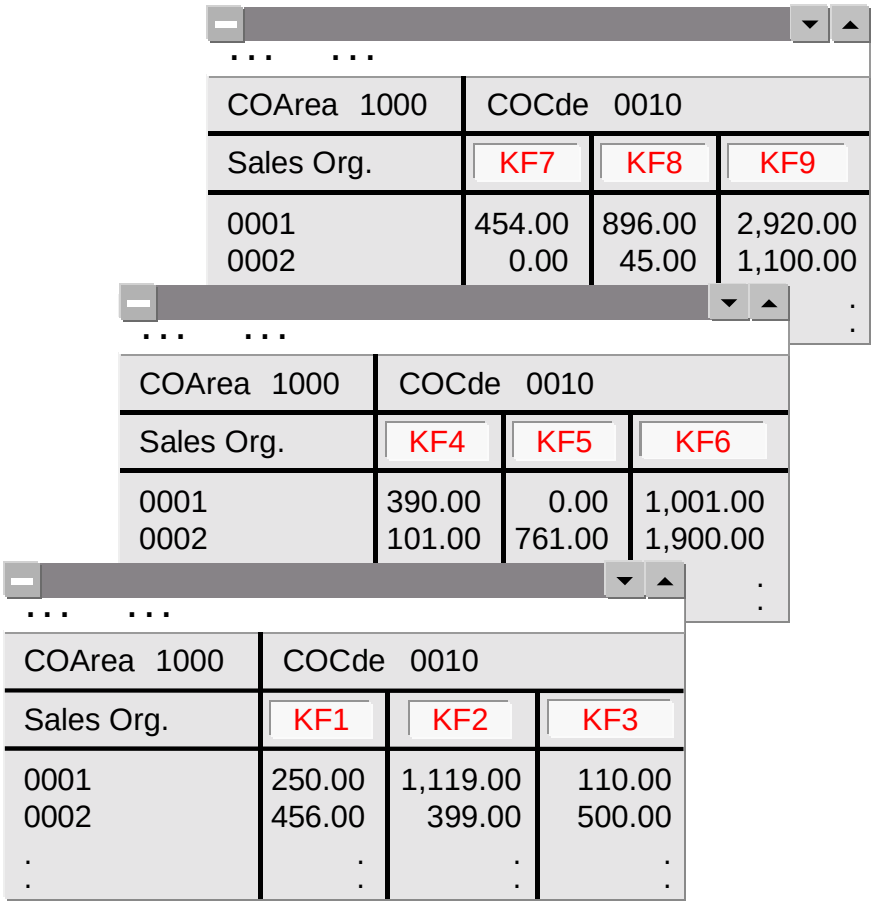
The header appears at the top of every printed page, while the footer appears everywhere where you explicitly defined the *Page break*.

These settings apply for both mass prints and report lists as displayed on the screen.

- In the *Hierarchy sorting* box you can decide whether each totals row should appear above (*Descending*) or below (*Ascending*) the figures that make up that total. For hierarchical lists, this also determines whether the hierarchies are to be sorted in ascending or descending order.
- If a report contains more columns than can fit on one page, you can decide whether the system should print row by row or several rows together. By default, the system prints several rows.

  – ***Print row by row***

    If you print a report row by row, the system groups together as many columns as it can side by side on one page. Consequently, the key figures for one row (here the characteristic value "Sales organization 0001") are spread out over several pages.



COArea 1000	COCde 0010		
Sales Org.	KF7	KF8	KF9
0001	454.00	896.00	2,920.00
0002	0.00	45.00	1,100.00

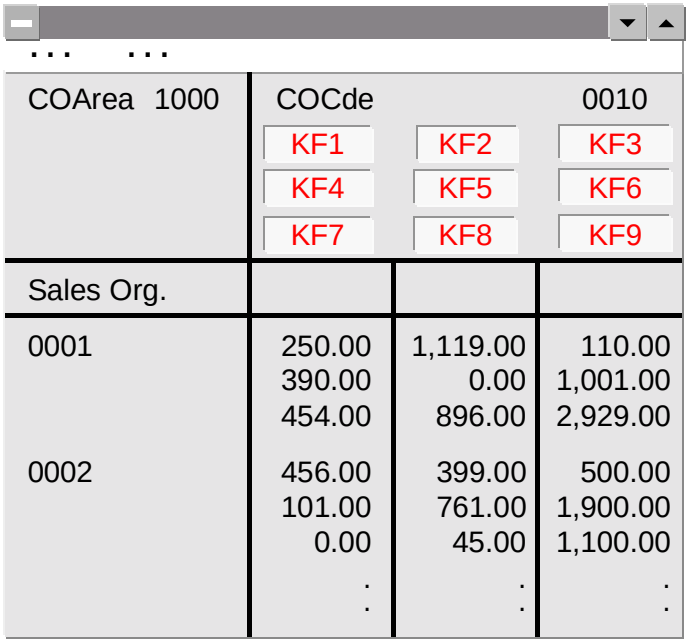
COArea 1000	COCde 0010		
Sales Org.	KF4	KF5	KF6
0001	390.00	0.00	1,001.00
0002	101.00	761.00	1,900.00

COArea 1000	COCde 0010		
Sales Org.	KF1	KF2	KF3
0001	250.00	1,119.00	110.00
0002	456.00	399.00	500.00

– ***Print several rows***

If you choose *Print several rows*, the columns (here the key figures 1 through 9) are printed below one another in different rows instead of next to one another. This makes it possible to print all the columns on one page. This setting is especially useful if you want to compare a large number of key figures for the same characteristic value at one glance.

Print Setup



COArea 1000	COCde		0010
	KF1	KF2	KF3
	KF4	KF5	KF6
	KF7	KF8	KF9
Sales Org.			
0001	250.00	1,119.00	110.00
	390.00	0.00	1,001.00
	454.00	896.00	2,929.00
0002	456.00	399.00	500.00
	101.00	761.00	1,900.00
	0.00	45.00	1,100.00

Note that if you choose to print several rows, the column header takes up more space on the page, thus reducing the amount of space available for the actual data. This becomes even worse if you have also defined a header or footer for the report.

To prevent the header from taking up the entire page, the system automatically switches to row-by-row printing if the column header reaches more than six lines.

- *Format disp. on/off* lets you decide whether or not to print the number format that you defined for the report. You define the number format in the same menu using the function *Number format.* The number format includes the number of decimal places displayed as well as the display factor (10s, 100s, 1000s, and so on). It also determines whether "-" (minus) signs should appear before or after the number, or whether they should appear in parentheses.
- If you select the *Expand all hierarchy nodes* box, the system prints all nodes of the hierarchy list in expanded form. If you do not select this field, the system prints the hierarchy list in a way so that no information is displayed more than once.

You can define the number format and total rows display for the online list separately in the *Settings* menu.

You can also display and hide the header and footer separately in the *Settings* menu.

Print layout →Drilldown list

The functions listed here are not suited for printing detail lists due to their predefined layout. Consequently, they are only available for printing drilldown lists.

- *Print preview*

This function lets you see the effects of your print settings on the screen without having to print it out each time. The system first displays the report parameters, so that you can verify them once again.

- *Totals rows*

This option lets you insert underscores and blank rows before or after totals rows. For underscores, you need to enter the characters that you want to appear for the underscore. You also need to enter the number of blank rows (up to 9).

In the field *Order* you can specify whether you want the underscore to appear before or after a blank row.

In the dialog box you can also define the color and intensity in which you want the characteristics to appear.

You can make all these settings separately for each characteristic.

Print setup →Column width (drilldown)

These functions let you decide how the column width for the printout should be determined.

- If you choose *Optimal*, the system determines the appropriate width dynamically. The optimal column width depends on the size of your R/3 window and the size of the numbers to be printed in the individual columns. Thus you can influence the column width by making your R/3 window larger.
- *Set* means that you can enter a set width for each type of column (quantity or amount columns). If you have not set a column width, the system uses a default of 10 characters.
- *Set to default* sets the width of all the columns to the default width.

See also:

Example: Mass Print Drilldown List [Page 222]

Printing Reports [Page 217]

Setting Print Parameters [Page 239]

Printing Reports with Characteristic Hierarchies

When you print a report that contains hierarchies of one or more characteristics, you need to observe certain special factors, including

- the level to which the hierarchy has been expanded
- the hierarchy display type
- the sort order of the hierarchy list

Level of Expansion of a Hierarchy

To prepare a report for printing, the system normally drills down on each line containing a characteristic that lies above the deepest level of detail (see also Example: Mass Print Drilldown List [Page 222]). This is not the case when you print a list containing a hierarchy.

When you print a hierarchy, you must first **expand** the hierarchy down to the level set under *Navigate →Hierarchy*.

The rows broken down after the following characteristic are:

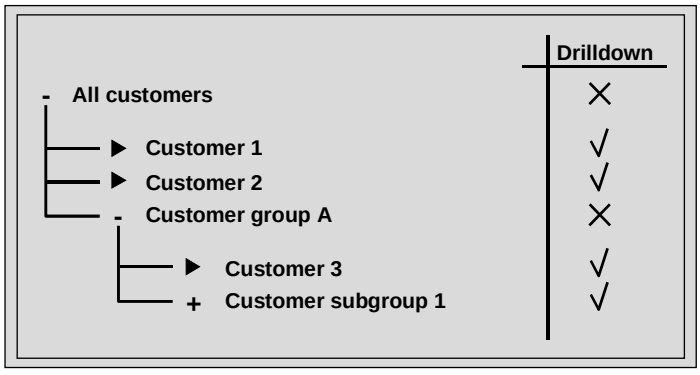
- all **end nodes** and
- all nodes at the **lowest level of the hierarchy**, i.e. those at the level set under *Navigate →Hierarchy*

The other nodes are not broken down.

The other nodes are not broken down.

The hierarchy displayed below is expanded down to the lowest level (level 3: customer subgroup). Since the nodes **All customers** and **Customer group A** are neither end nodes nor nodes at the lowest level, these are not broken down in the printout.

Expansion of a Hierarchical List



Hierarchy Display

Hierarchies are always printed with the display type **asterisk display**. The higher levels of the hierarchy are represented with asterisks in such a way that the higher a line is in the hierarchy,

the more asterisks it has. In the following graphic, the lines at the highest level are shown with two asterisks, while the lines directly below them are shown with one. The lines representing the lowest level of the hierarchy do not have asterisks. If any lines of the report have more than three asterisks, only one asterisk appears in the printout, and the actual number is shown next to the asterisk.

Sorting the Hierarchy List

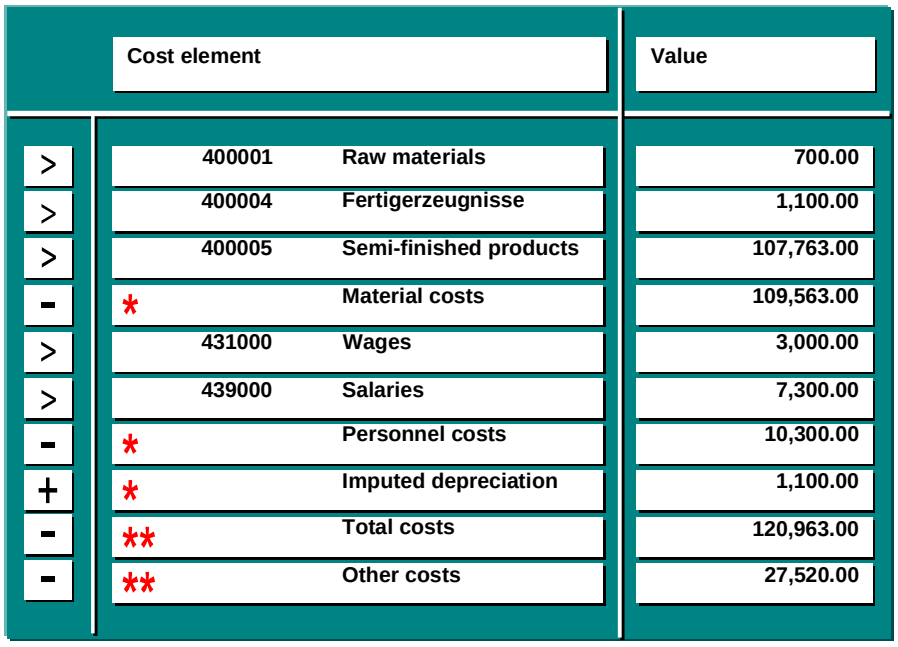
In addition, all the hierarchies that are to be printed must be sorted in the same way. If you choose asterisk display, you can sort in either ascending or descending order. Ascending order means that the higher nodes of the hierarchy appear above the lower nodes. Descending order means that the lower nodes appear first.

Hierarchy with Asterisk Display Sorted in Ascending Order

	Cost element		Value
-	**	Total costs	120,963.00
-	*	Material costs	109,563.00
>	400001	Raw materials	700.00
>	400004	Finished products	1,100.00
>	400005	Semi-finished products	107,763.00
-	*	Personnel costs	10,300.00
>	431000	Wages	3,000.00
>	439000	Salaries	7,300.00
+	*	Imputed depreciation	1,100.00
>	**	Other costs	27,520.00

Hierarchy with Asterisk Display Sorted in Descending Order

Printing Reports with Characteristic Hierarchies



	Cost element		Value
>	400001	Raw materials	700.00
>	400004	Fertigerzeugnisse	1,100.00
>	400005	Semi-finished products	107,763.00
-	*	Material costs	109,563.00
>	431000	Wages	3,000.00
>	439000	Salaries	7,300.00
-	*	Personnel costs	10,300.00
+	*	Imputed depreciation	1,100.00
-	**	Total costs	120,963.00
-	**	Other costs	27,520.00

Printing in the Background Using Variants

Use

You can print reports in the background to avoid long runtimes for online reports and to print reports on a periodic basis. You do this by defining variants and variant groups for the reports.

Variants and variant groups in Release 4.x replace the variable groups used in earlier releases. For information about converting these from Release 3.x to 4.x, see the corresponding release note.

In the Profitability Analysis (CO-PA) and Executive Information System (EC-EIS) applications, reports are printed in the background using programs RKEBATCH and RKCBATCH, respectively.

Prerequisites

Before you can print reports in the background, you must define variants for the reports and then assign them to variant groups. For detailed information, see Creating Variants and Variant Groups [Page 108].

Features

You print reports in the background by executing a variant group. A variant group can process multiple combinations of characteristic values for one or more reports at the same time.

Printing in the Background - Immediately and as Scheduled Job

When you print a report in the background, you can choose to print it **immediately**, or you can **schedule** it to print at a specific time.

Choose *Information system* or *Drilldown Reporting* →*Report data* → Schedule Variant Groups.

- To print the report **immediately**, choose Execute →*Start Time*, choose *Immediately* in the dialog box and save your entries.

- To **schedule** the report for printing at a later time, proceed as follows:

  1. Choose *Execute* →*Start Time* and then set the desired start time. If you would like to repeat the print periodically, choose *Execute Job Periodically*, then save your entries.
  2. Choose *Steps*. Select the desired job in the list and choose *Change*.
  3. Choose *ABAP/4*. Select a variant from the list of variants.
  4. Choose *Print specifications*. Enter the required printing specifications (see Setting the Print Parameters [Page 239]). Save your entries. Save your step entries. Press *Back*.
  5. By choosing *System* →*Services* →*Jobs* →*Job* Overview, you can check the job's processing status.

Printing in the Background Using Variants

For detailed information about background processing, see the online documentation *Computing Center Management System (R/3 Library →Basis →System Administration →Computing Center Management System →Background Processing*).

Setting the Print Parameters

Print Parameters

Whenever you print, the system asks you to enter print parameters or confirm the default parameters. Here you can specify what printer you want to use, enter a name and title for the spool request and set the output format.

The **default printer** is that specified in your user parameters (*System →User profile →Own data*).

The default **name** and **title** of the spool request are the report name and text, plus the type of printout you requested (such as "Mass Print Drilldown List").

Default Output Format

The default output format is determined by the number of columns and the specified format.

First, the printing program determines a default for the **number of columns**. This is either current width of the report or

- The page width specified in *Print setup →Drilldown and detail lists →Maintain* header or *footer* using the function *Edit →Page width*, if you have defined a header or footer for the report. The header or footer has a minimum width of 85 characters.

  If a page width of 85 is set in the header or footer, the printing program sets a default width according to the width of the report without a header or footer.

- The width of the current window or a minimum of 85 characters, if no header or footer is defined.

The system then chooses the first suitable **Format** supported by the printer you chose for the number of columns. The default for the number of lines is the maximum number of lines available for that format.

Note that the number of rows and columns determine the page size for the printout, and **not** the values shown for the format.

Sample Printout

The following sample was created using the function *Print →Mass print drilldown list*.

Report Definition

The report definition contains the following:

- **Characteristics**: Sales Office, Customer Group, and Industry
- **Key Figures**: Invoiced Quantity and Revenue

Print Settings

The following settings were made in the *Print setup*:

- The **characteristics** were **sorted** in the following order for the printout:
  1. Sales organization
  2. Customer group
  3. Industry
- The deepest **level of detail** is the characteristic **Industry**.
- No **page break** was defined.

The entire report was printed. That means that the system "drilled down" through all the levels of the report for the printout.

The Printout

The initial list shows the individual sales organizations, summarized across all the customer groups and industries.

The **sales organizations** are:

- North US Office, South US Office, East US Office, West US Office, Canada Office and Not assigned.

The customer groups include:

- Industrial customers, Wholesale/retail companies and Not assigned.

The list begins with the first sales organization, **Office North US**, and the first customer group **Industrial customers**, broken down by the individual industries **Chemical industry**, **High Tech**, **Manufacturing**, and so on. The individual industries are followed by the total for the customer group **Industrial customers**, which is indicated with an asterisk.

This is followed by the second customer group **Trading companies** in the first sales organization, **Office North US**, again broken down by the individual industries. After the individual industries comes the total for the customer group **Trading companies** in the sales organization **Office North US**, which is likewise indicated with an asterisk.

Finally, the values in the sales organization **Office North US** that are not assigned to a customer group are displayed under **Not assigned**.

The sum of all of these rows is then displayed in the totals row for the sales organization **Office North US**, which is indicated with two asterisks. This completes the information for that sales organization.

The other sales organizations, **Office South US, Office East US, Office West US, Office Canada** and **Not assigned**, are then broken down in the same fashion according to customer groups. The customer groups are likewise broken down according to industries.

At the bottom of the printout, the grand total for all sales organizations is displayed in the row “Result” and indicated with three asterisks.

Sales office **	Customer group *	
Industry	**Inv. Qty**	**Revenue**
CHEM Chemical Industry	**12.000**	**143,320.00**
HITE High Tech	**8,416.000**	**27,393,240.00**
MBAU Manufacturing	**4,916.000**	**15,092,464.00**
MEDI Media Industry	**2.000**	**6,720.00**
TRAD Trade	**1,235.000**	**4,607,864.00**
# Not assigned	**4,742.000**	**69,700.00**
* 01 Industrial customers	14,519.000	47,312,308.00
CHEM Chemical industry	**4,742.000**	**14,585,486.00**
HITE High Tech	**6,069.000**	**19,271,264.00**
TRAD Trade	**7.000**	**53,830.00**
* 02 Trading companies	10,818.000	33,910,580.00
# Not assigned	**0.000**	**24.66**
* Not assigned	0.000	24.66
** 0001 Office North US	25,409.000	81,222,912.66
CHEM Chemical industry	**4.000**	**36,800.00**
ENER Energy research	**6,049.000**	**19,364,676.00**
MBAU Manufacturing	**1,326.000**	**4,917,492.00**

Sample Printout

TRAD Trade	**4,843.000**	**14,998,692.00**
# Not assigned	**0.000**	**12,378.00**
* 01 Industrial customers	12,222.000	39,330,038.00
HITE High Tech	**6,105.000**	**18,021,071.50**
MBAU Manufacturing	**2,470.000**	**8,750,216.00**
TRAD Trade	**3,930.000**	**12,446,964.00**
* 02 Trading companies	12,505.000	39,218,251.50
** 0002 Office South US	24,727.000	78,548,289.50
MBAU Manufacturing	**80.000**	**813,077.06**
* 01 Industrial customers	80.000	813,077.06
MBAU Manufacturing	**24.000**	**204,230.79**
TRAD Trade	**102.000**	**1,008,938.49**
* 02 Trading companies	126.000	1,213,169.28
TRAD Trade	**61.000**	**308,758.70**
# Not assigned	**8.000**	**63,230.79**
* Not assigned	69.000	371,989.49
** 0003 Office East US	275.000	2,398,235.83
HITE High Tech	**25.000**	**76,937.46**
* 01 Industrial customers	25.000	76,937.46
TRAD Trade	**0.000**	**84,584.62**
* Not assigned	0.000	84,584.62
** 0004 Office West US	25.000	161,522.08
MBAU Manufacturing	**0.000**	**0.00**

* 01 Industrial customers	0.000	0.00
** 1010 Office Canada	0.000	0.00
ENER Energy research	**3.000**	**21,901.10-**
# Not assigned	**0.000**	**36,378.00-**
* 01 Industrial customers	3.000	58,279.10-
HITE High Tech	**0.000**	**45,000.00-**
TRAD Trade	**0.000**	**420.00-**
* 02 Trading companies	0.000	87,200.00-
CHEM Chemical industry	**11.000**	**134,339.73**
MBAU Manufacturing	**0.000**	**0.00**
TRAD Trade	**20.000**	**553,846.15**
# Not assigned	**144.000**	**312,770.00**
* Not assigned	175.000	1,000,955.88
** Not assigned	178.000	855,476.78
***** Result**	**50,614.000**	**163,186,436.85**

Print Settings

This section describes the settings that you can make when you want to print your report lists. The available functions are:

Print row by row/several rows [Page 245]

Print preview [Page 246]

Maintain footer [Page 248]

Maintain header [Page 249]

Blank rows [Page 250]

Mass print settings [Page 251]

Optimal/set column width [Page 252]

Other settings [Page 253]

Set column width to default [Page 256]

Set column width [Page 257]

SAP title page on/off [Page 258]

Maintain title page [Page 259]

Underscore [Page 260]

Number format [Page 261]

For detailed information about printing reports, see Print [Page 217].

Print row by row

This documentation is under construction.

Print Preview

This function displays how the overview list will be printed.

For detailed information about printing reports, see Printing, Exporting and Sending Reports [Page 212].

Format Display On/Off

This function lets you display or hide the row containing the number format in the drilldown list. You define this separately for the screen display (*Settings →Format disp. on/off*) and for the printed report (*Report →Print setup →Drilldown + detail →Format disp. on/off*).

It is possible for each cell in the detail list to have its own display format. Consequently, it is not always possible to display all this information at once. When you choose this function, the system displays the format for each cell. The information disappears again automatically when you perform another function or press ENTER.

The row *Displayed in:* shows what the numbers on the screen refer to.

If sales revenue is displayed in “USD 1000” and the number 123 appears in the column “Sales revenue”, this means that the revenue is USD 123,000.

The row *Displayed in:* contains a combination of display factor and unit. The display factor is always a number, and the unit can be a currency, quantity, price or other value. In this example, the display factor is 1000 and the unit is USD.

Maintain Footer

This function lets you create a footer for the report. This footer is displayed in the printout when you print the report.

Footer On/Off

With this function you can specify whether the footer which you defined for the printout should also appear in the online report.

Maintain Header

This function lets you create a header for the report. The header is used in the printout.

Header on/off

This function lets you decide whether the header you have created will also appear in the online display.

Page break

This function lets you define where a page break should occur in the printout.

The setting you make here is decisive for the size of the printout when you print using the options *Report as detail list* and *Mass print*.

Unless you specify otherwise, this occurs at the second to last characteristic, that is, whenever the value of the second to last characteristic changes.

The further down in the hierarchy you set the page break, the more pages your printout will have.

For detailed information about printing reports, see Printing, Exporting and Sending Reports [Page 212].

Mass print settings

These settings are important for determining the size and content of the printouts you create using the functions *Mass print drilldown list* and *Mass print detail list*.

- With *Sort characteristics* you can determine the order in which the characteristics should be broken down in the drilldown sequence.
- With *Deepest detail level* you determine how far down you want the system to break down the report in the printout.
- *Page break* determines which characteristic should be followed by a page break.
- *Hide total* lets you hide the totals rows by characteristic. If you select the field *cond.*, the system only hides the total if the next total up in the drilldown hierarchy contains the same value.

  If you select the field *uncond.*, the system hides all the totals rows for that characteristics.

  It is very important to check these settings before printing, by choosing *Report → Print layout →Drilldown list →Print view*. This allows you to control the print quantity. For information on how to use the Mass print drilldown list function and the significance of some of the parameters in the print layout, see Example: Mass Print Drilldown List [Page 222].

Optimal / set

This function lets you decide how the system should determine the width of columns for printing.

- If you choose *Optimal*, the system automatically finds the most suitable width.
- *Set* lets you display the fixed length entered manually under Set column width [Page 257]. If you have not entered one manually, the system uses a default width of ten characters.

Other settings...

The function *Other settings...* lets you make additional settings for mass printouts.

- In the *Print extras* box you can decide whether you want to print the report parameters, head, footer and title page with your report. You can also maintain the header, footer and title page in the submenu *Report →Print setup →Drilldown + Detail*.
- In the *Totals rows* box you can determine whether each totals row should appear above or below the rows that make up that total. For hierarchy lists, this setting also determines whether the hierarchy should be printed in ascending (“Totals row below”) or descending (“Totals row above”) order.
- The *Line break* box determines how the system prints columns if not all the columns can fit next to each other on the page.

  Several rows means that the system prints all the columns for each row, broken down to the next line where necessary. This makes it easy to fit all the columns on the same page. This setting is especially useful if you want to analyze all the key figures for individual characteristic values.

  It is generally recommended that you use this setting where possible, since it is in most cases easier to read.

  Row by row means that all the columns are printed side by side, stretching over several pages where necessary.
- If you select the *Display format* field, the system print the number format you defined for each column in the header of that column.
- If you select the field, the system prints all the levels of the hierarchy in expanded form. Otherwise it prints the hierarchy in a way that no information is printed more than once.

Column(s) On/Off

This function lets you to hide or show columns of the report list.

This function is cursor-sensitive. If you have a report with more than one group of columns, the position of the cursor determines whether this function hides individual columns or column groups.

Your report shows different regions, each of which is divided according to several fiscal years. If the cursor is positioned on a region (the header of a column group), the system displays all the column groups in a dialog box, where you can choose which ones you want to display. If the cursor on positioned on a single year, you receive a dialog box where you can select the desired years.

Sort Columns

This function lets you change the order of the columns in the drilldown list.

This function is cursor-sensitive. If you have a report that contains groups of columns (two-level column headers), the position of the cursor determines whether this function applies to individual columns or column groups.

Your report shows different regions, each of which is divided according to several fiscal years. If the cursor is positioned on a region (the header of a column group), the system displays all the column groups in a dialog box, where you can define the order in which you want to display these. If the cursor on positioned on a single year, you receive a dialog box where you can sort the fiscal years.

If you have already hidden individual columns or column groups using the function *Column(s) on/off*, you cannot sort these hidden columns or column groups.

Set to default

The function *Set to default* sets the column width for printing to the default width of ten characters. This function overrides any other column width settings you have made.

See also:

Optimal / set [Page 252]

Set column width

This function lets you define the width of each column for when you print the drilldown list.

The function *Optimal / set* determines whether the system prints the columns in this width or in the optimal width.

See also:

Optimal / set [Page 252]

SAP Title Page On/Off

With this function you can specify whether you want to print the standard SAP title page when you print the entire report. The SAP title page contains all the parameters of the report.

If an individually defined title page already exists for a report, the system always prints that title page, regardless of whether or not you choose this function. To create a title page, see Maintain title page [Page 259].

Maintain Title Page

This function lets you create a title page for the report. This title page is the first page when you print out the report.

In the report page of the executed report, you can determine whether or not the title page is to be printed. Choose *Report →Print layout →Drilldown and detail list →Other settings*. A dialog box is displayed, where you can make the required setting.

Underscore

This documentation is under construction.

Number format

The number format consists of a display factor (10s, 100s, 1000s, and so on) and the number of decimal places displayed.

You can define the number format separately for the detail and drilldown lists.

You can also define separate number formats for printing (*Report →Print setup →Drilldown + detail →Number format*) and for the list displayed on the screen (*Settings →Number format*).

The system handles conflicting number format settings so that the setting last made always applies.

Exporting Reports

You can export report lists. Depending on the application and the settings in the report list, the system displays a dialog box from which you can choose the export function. If only one option is possible for the list currently displayed, the system automatically carries out that function without displaying the dialog box.

The following section is an explanation of which functions are available in which situations.

- Transfer report to XXL [Page 264]

  This function is not active for detail lists and for lists with percentage shares.

- Transfer Page to XXL [Page 266]

  This function is not active for detail lists and for lists that contain characteristic hierarchies.

- Save in PC file [Page 267]

  This function is active for both drilldown lists and detail lists.

- Transfer to MS Word [Page 268]

  This function is available when the following conditions are met:

  – You are working under one of the following operating systems: OS/2-Presentation Manager, DOS-Windows, 32-Bit Frontend under Windows-NT, Windows 32bit or Windows 95.

  – You have Microsoft Word on your presentation server.

  – You use Microsoft Word version 6, 7 or 8.

- Copy to Report Portfolio [Page 270]

  This function is only available in SAP-EIS.

  This function is not active when you are displaying a hierarchy list where the different branches are expanded to different levels. In this case, you should either change the display so that all branches are expanded equally, or display a different hierarchy or no hierarchy (*Navigate →Hierarchy →Expand to level...*).

- HTML Export

  This function is under *Report →HTML Export* and is only available with output type [Page 37] "graphical report". When you carry out HTML export, an HTML file is created for each output area of a graphical report. These files are stored together in a directory of your choice on your local hard drive. With these files, you can display the report output on any computer which has a Web browser. This means that it is not necessary to be connected to the SAP system.

Exporting options

You have three formatting options for exporting your report list: as a text file, spreadsheet file or report portfolio report in SAP-EIS.

- Export as text file

Choose *Save as file* to save the list in rich text format or ASCII format. Choose *Transfer to Word* to call up Word for Windows directly or to print from Word.

- Export as spreadsheet data

  Choose *Save as file* to download all the columns of the report list or all the currently displayed columns as a spreadsheet file. If you choose *Transfer report to XXL* or *Transfer page to XXL* from the drilldown list, the system opens the Excel List Viewer and displays the report in that format. XXL format has the following advantages:

  – The system downloads the characteristics as well, so that you can navigate on the spreadsheet.

  – You can download **all** the data in the report. All other export functions work only for the data displayed on the screen.

- Transfer to the SAP-EIS report portfolio

  Choose *Freeze data* if you want to save the report as it is on the screen, including data. Choose *Save definition* if you only want to save the report definition as it is currently displayed, but do not want to see the same data again.

For all the export functions, the system exports the report list as it appears on the screen according to the settings you have made. You should therefore check the list and make the desired settings **before** exporting the list. This is especially important with regard to +/- signs, decimal places, and the characteristic values.

Transferring Reports to XXL

This function lets you export the entire report in XXL format (a special format for transferring data to a spreadsheet). This means that **all** characteristics of the report are available in the Excel List Viewer. This function makes it possible to execute a drilldown report in the Excel List Viewer. This factor distinguishes this function from the one which you can call up with transfer page to XXL [Page 266].

Note that if you wish to transfer a drilldown list, it may contain no more than 16 384 lines / 256 columns. The exact formula for the data transferred by the application is:

26 + number of data columns + 5 * (1 + number of characteristics) < 256

As this function transfers all columns in the report list, all columns also go into the formula (not just the columns currently displayed).

Note that for each column transferred, an additional column is transferred for the unit of measure.

Prerequisites

You can only transfer a report to XXL under the following conditions:

- You are displaying a drilldown list in a report. This function is not possible for detail lists due to technical reasons.
- You have set the report display to “Absolute” using the function *Settings* → *Percentage/absolute*. Transfer to XXL is deactivated as soon as you switch the display to “Percentage”.
- You chose the setting '*Read all data*' in the performance settings for the report. Reports, for which data is dynamically reloaded at each navigation step, cannot be transferred to XXL.

Procedure

1. In a dialog box, choose the characteristics you want to transfer. It is recommended that you choose the option “All characteristics”. If the report list is so large that your spreadsheet program cannot process it, you should only choose some of the characteristics.

   When you transfer a report to Microsoft Excel, the data you transfer can consist of up to 16,384 rows or 256 columns. The formula for calculating the amount of data transferred from the application is:

   26 + number of data columns + 5 * (1 + number of characteristics) < 256

   Since this function transfers all the columns of the report list, you can use all the columns in formulas, not just those on the displayed list.

   Note that an additional column for the unit is transferred along with each normal column transferred.

If you have chosen a characteristic with a hierarchy display, you should note that it is not possible to display hierarchy lists in XXL in the same form as in R/3. The data is therefore transferred as if there were no hierarchical structure for this data.

2. If you use an operating system which does not let you operate a spreadsheet program, you can still transfer the report to XXL; however, you can only store the XXL object in SAPoffice or in a PC file.

Transfer Page to XXL

This function lets you transfer the page currently being displayed to the Excel List Viewer (XXL).

The “page‟ is the entire list you can reach using the scrolling functions. If you want to be able to carry out a drill-drown in the Excel List Viewer, use the function Transfer report to XXL [Page 264].

When you transfer a report or a page to Microsoft Excel, the data you transfer can consist of up to 16,384 rows or 256 columns. The formula for calculating the amount of data transferred from the application is:

26 + number of data columns + 5 * (1 + number of characteristics) < 256

Since this function transfers all the columns of the report list, you can use all the columns in formulas, not just those on the displayed list.

Note that an additional column for the unit is transferred along with each normal column transferred.

Prerequisites

You can transfer a report to XXL when:

- You are displaying a drilldown list. This function is not possible for detail lists due to technical reasons.
- You have set the report display to “Absolute” using the function *Settings* → *Percentage/absolute*. You cannot transfer the list to XXL if you have switched the display to “Percentage”.

Procedure

Choose a processing type. If you use an operating system in which a spreadsheet program cannot be run, you can still transfer lists to XXL; however, you can only store the XXL object in Office or in a file.

Save as File

This function lets you export the displayed report page to your local PC, presentation server or application server.

You can choose from the following formats:

- **Table** (file with the extension.dat)

  You can download either the columns currently displayed or all columns.

- **Text** (file with the extension.txt)

  You can download either the columns currently displayed or all columns.

- **Rich text format** (rile with the extension.rtf)

  Rich text format is only available if your are downloading to a presentation server. You can only export the columns displayed.

  You should not choose All columns unless you are sure that your server can handle a large number of columns.

Procedure

1. Choose a format.
2. Choose which elements of the report you would like to download (such as the list header). Different elements are possible, depending on which format you chose.
3. Enter a path and file name for the file.

   You can define a default path name for the files you download. Choose *System* → *User defaults* →*User parameters* and enter the desired path under the parameter DLF.
4. Specify whether undefined values in the report list should be displayed as zeros or as text (such as “Division by zero”).
5. If you save the file on your presentation server, you can also decide whether or not you want to process the exported data immediately in a PC application.

Transfer to MS Word

This function lets you transfer the current report page to Microsoft Word for Windows and prints it from there. The system displays a dialog box in which you can choose to call up Word directly or to call it with additional settings.

Procedure

1. Choose *Direct Word call-up* to transfer the report list to a file and call it up in Word from there for editing and/or printing.
2. Choose *Call up Word with additional settings* to transfer the report list to Word, edit it there and then print it when desired. However, this function also sends additional information to Word, such as a special Word macro or a title page.
3. Choose how you want to print the exported file. You can transfer the list to Word with the standard settings (*Non-interactive printing*) or enter a name and path in which you want to save the file (*Interactive printing*). If you want the system to print the list directly from Word without saving it in a file first, select the *Print only* field.

   If you select *Print only*, the system transfers the report list to a temporary file on your PC. After printing, the system deletes **all** the files in that directory. You should therefore make sure that you have no other files with the following suffixes in your temporary directory:.txt,.rtf,.ini,.doc,.wmf,.tmp or .log.

Graphic to Word On/Off

This function makes it possible to transfer graphics from drilldown reporting to Microsoft Word for Windows for the purpose of printing. Once you have selected this function, a dialog box appears the next time you call up a graphic. There you can make a number of settings. For more information, see Printing Reports [Page 217].

The system then displays the graphic and simultaneously downloads it to your PC. The graphic window closes again automatically when the system is finished downloading.

Copy to Report Portfolio

Prerequisites

With this function you can copy a report into the report portfolio. If this function is not available when you try to find it, that means that you are currently displaying a list that cannot be used as the initial list for a report portfolio report. This only occurs with hierarchical lists in which different branches are expanded to different levels. To be able to copy the report to the report portfolio switch to either the detail list or to a nonhierarchical display, or expand all the branches to the same level.

Procedure

1. Enter a name, a user group and a report class.
2. Specify whether you wnat to transfer a single screen or a series of screens. If you want to record a series of screens, the subsequent screens are stored until you choose *Copy to report portfolio* again. You then receive another dialog box, in which you can decide whether you want to store the screen sequence or not. You can scroll back and forth between the screens using the scroll buttons.

   Note that the report is first assigned to one user group only. With the function *Change report* in the report portfolio, you can make the same report available to other user groups. This means that you do not have to copy the same screen sequence over and over again.
3. Specify whether you want to save the report structure only or if you also want to freeze the data. If you freeze the report data, a document is created which contains the data currently displayed on the screen. However, if you save the structure (that is, the report definition), only the functions in the report are saved. This means that the data can be selected again each time you call up the report.

   The system tries to compensate for any changes made to the form, the key figures or the variables. However, any such changes (deletion of a row or column in the form, for example) may make it impossible for the system to execute the report again.

Send

This function lets you send the currently displayed page of your report to one or more receivers via SAPmail. Receivers of the report can be users of the same or another R/3 or R/2 system or users of external systems. You can also send the report via the Internet or as a fax.

The system places the current report page and the report parameters in an attachment.

You can also write a note to the receiver and send it with the report.

Once you have sent the document, the receiver can access it using the menu *Office* and the function *Inbox*. The receiver can also go to that transaction in which you created the report using the function *Edit →Process* to obtain more information.

Graphics

By clicking on the graphic symbol or by choosing the menu path *Goto →Graphic*, you can display a graphical representation of your report data in a separate window. You can choose from a number of different types of graphics, depending on where the cursor is located. The graphic can refer to the values in a single row or column, a group of columns, or the entire report list. The system displays the available types of reports in a dialog box, from which you choose the type you would like to see.

The following types of graphics are available:

- **Graphics for rows**
- 2D graphic row
- Graph - row
- **Graphics for columns**
- 2D graphic column
- Graph - column
- **Graphics for column groups**
- 3D graphic column group
- **Graphics for the entire report**
- 3D graphic
- Graph - all col./row
- Portfolio graphic

Note the following exceptions to the above graphic types:

- Since it does not make sense to display a graphic for a single row or column, the graphic types for rows and columns are not offered if only one row or column is selected.
- Portfolio graphics cannot be displayed from the detail list.
- Only graphics for rows are available for hierarchical lists.

If you set exactly one level of the hierarchy using the function *Hierarchy →Set level*, the system may make all types of graphics available depending on the cursor position.

Presentation graphic

Both two-dimensional and three-dimensional graphics are available as presentation graphics.

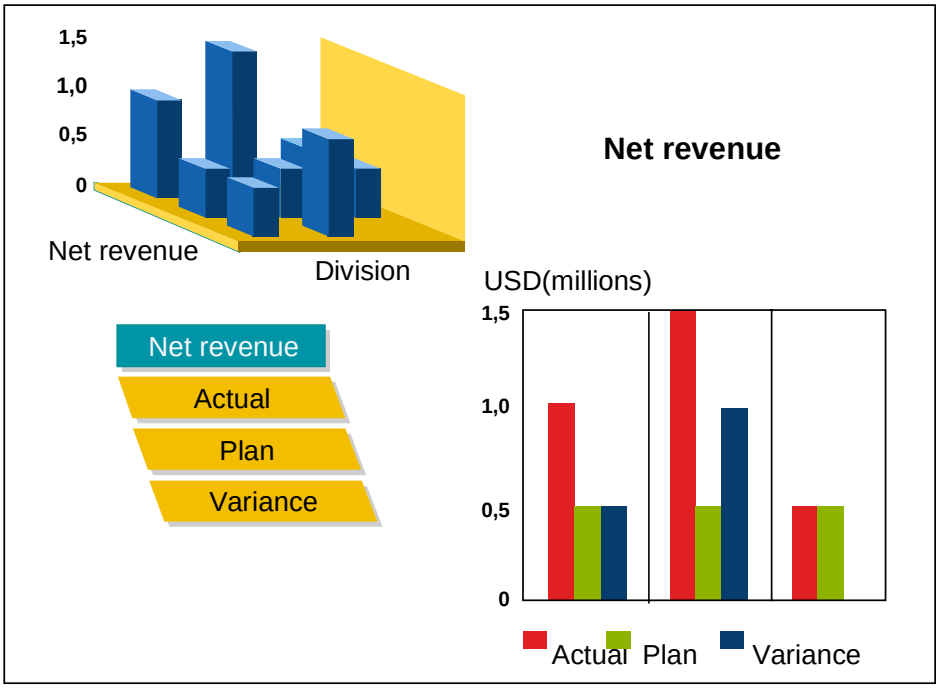
2D graphic

A 2D graphic is a simple two-dimensional display of values (in bars, columns or pies). It displays the information contains in individual rows or columns.

Depending on the graphic type, some texts may not be displayed due to lack of space. The graphic type "Horizontal bars" is especially good for displaying the texts.

3D graphic

A 3D graphic is a complex graphic representation that consists of a 2D representation and a 3D representation and displays the information contained in all rows and columns. It lets you change views to look at an overview of all the columns and rows, a view of all the columns for a single row, and so on.



On the upper left-hand side of the graphic window, the system displays a three-dimensional graphic. On this graphic you can click on the element that you want to see in the two-dimensional graphic, which is displayed below and on the right. In the lower left-hand corner you see a list of all the values of one dimension of the graphic (maximum of 30 displayed). You can also click here to display the desired object in the two-dimensional graphic.

Scroll functions for the presentation graphic

When part of either the 2D graphic or the 3D graphic is hidden from view, scroll bars appear in the window to let you scroll to the rest of the graphic.

Graphics

If you are displaying a 2D graphic for a row or column or a 3D graphic for a column group, you can display a graphic the next row, column or column group directly from this graphic using the *First*, *Previous*, *Next* and *Last row/column/column group* functions.

A maximum of 30 characteristic values can be displayed for a single dimension in each graphic. If the report list has more than 30 characteristic values, you can display these using the *First*, *Previous*, *Next* and *Last* buttons. These functions correspond to scrolling vertically through the report list.

In 3D graphics, you can switch between different forms of representation using the pushbuttons at the top of the window or using the *Goto* menu. The functions *2D display* and *3D display* let you view an enlarged 2D or 3D graphic. The *Groups* function displays a series of 2D graphics at the same time.

Graphic settings for the presentation graphic

You can make a number of settings for your graphic under the menu *Settings*.

For technical reasons any interactive changes you save in the graphic (*Settings →Save settings*) are valid only for the presentation graphic. When you save, the system saves all the changes you have made except to the window size and position. The saved settings are used again whenever you call up the same type of graphic for that report.

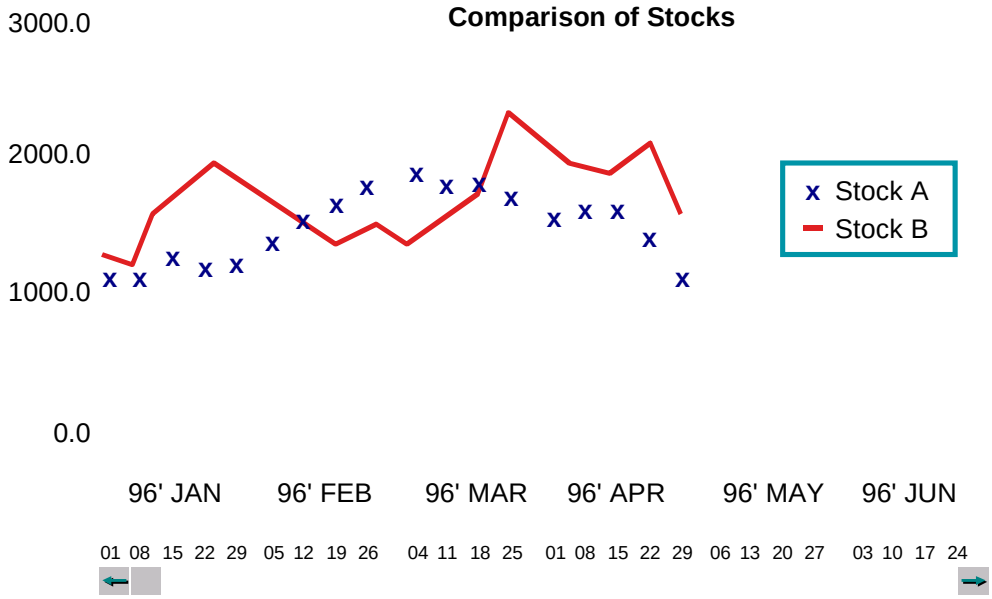
You can save the window position and size using the function *System →User profile →User parameters*. By default, the graphic window appears is centered and takes up the entire screen. You can change these settings as follows:

- WIP: Window position, values 1 through 9
- WIX: Window width, values < 100 (% of screen width)
- WIY: Window height, values < 100 (% of screen height)

When you make these settings in your user parameters, the system uses them whenever you call up any graphic.

Line Diagram

A line graph (also called a statistic graphic) is a two-dimensional representation of statistical values in the form of a curve. This type of graphic is most suited for representing a large number of values. It also lets you represent trends over time for values such as stock prices.



Portfolio Graphic

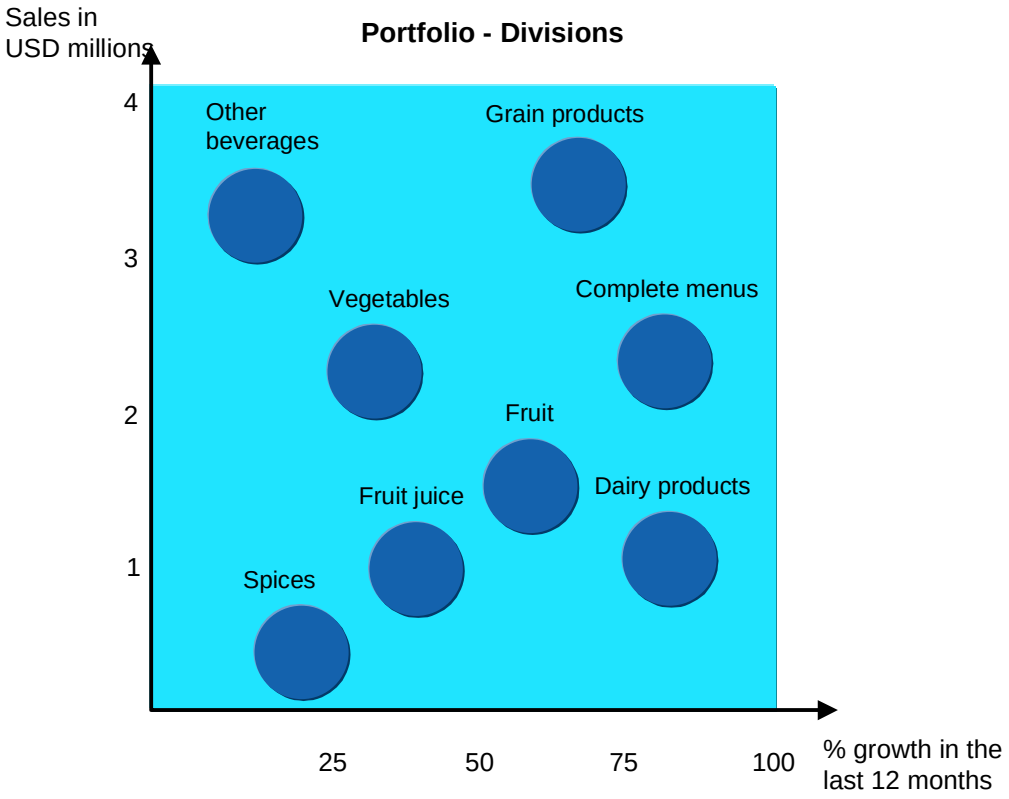
A portfolio graphic is a graphic representation that lets you depict multidimensional report objects. Two of the dimensions of the object are represented by the X and Y axes. The object itself is often displayed as a circle, but may also be represented by a rectangle.

In addition to the X and Y coordinates, the radius or the length of each side of the object can represent the third dimension. A pie chart or bar chart can represent the fourth dimension.

You can also place arrows on the objects in the graphic to emphasize trends or other aspects.

When you call up a portfolio graphic, the system first displays a dialog box in which you can make a number of settings. For example, you can specify which column of your report list should be represented by which dimension in the graphic. For more information on the individual fields in this dialog box, see the online field Help (F1 Help).

Graphics



For detailed documentation on the various graphic types, settings, and the various export and sending functions, see the online documentation SAP Graphics: User's Guide [Ext.].

Printing Graphics

You can print all the available types of graphics directly from the graphic window. To do so, choose *Graphic →Print*.

If you want to alter a graphic before printing it, choose *Goto →Graphic →Graphic to WORD on* from the report list. This activates the download and print function for graphics. Then when you call up the graphic (*Goto →Graphic →Graphics...* or the corresponding symbol) and choose the type, the system displays the same dialog box as when you send a report list to Microsoft Word for Windows. Once you have made the desired settings, the system sends the graphic to Word for Windows, where you can alter it as desired and then print it. For more information on this procedure, see Printing Reports [Page 217].

If, after printing, you want to display a graphic on the screen again, you need to deactivate the print mode by choosing *Goto →Graphic →Graphic to WORD off*. Then choose *Goto →Graphic →Graphics...* or the corresponding icon to display the graphic.

Optimizing Performance

Use

When you execute a report, the system reads the transaction data records and summarizes them so that the user can navigate as he or she wishes through the free characteristics selected in the report definition. Further summarizations over the free characteristics take place during the terminal session, in order to build up the lists. This data is contained in the main memory. This can create a large volume of data and cause long response times. In order to read 100,000 records of a length of 500 bytes from the hard-drive, the system typically requires about three minutes. The quantity of data is often much larger than this. This means that, in many cases, executing reports online takes too long. The following section describes a number of possibilities for obtaining optimal response times in reporting.

Executing the Report Online

To achieve a reasonable response time when calling up a report which reads data from the transaction database, the amount of data to be read should be as small as possible. As a rule, it makes sense to execute reports of up to 20,000 records online. With special tuning measures, this figure can be higher, for example when the database buffer is enlarged and access to the hard drive is no longer required. You can also make improvements by creating special indices. The details of the tuning measures are dependent on the database system and the operating system.

Executing the Report in the Background and Saving Data

You can execute a report in the background and save the data contained in the main memory. This data is then known as **saved data**.

This method has the advantage that the end user does not have to wait for the transaction data to be read. The report can be scheduled in the background and the end user automatically receives the data from the most recently saved data. The saved data is also in exactly the level of detail which the end user requires. A report with saved data can be called up much more quickly than a report which is executed online, since little demand is placed on the database server.

The disadvantage of this method is that you must create a variant for each variable combination. This can be troublesome if a large number of different variable combinations are required. However, these variants can be summarized in one variant group and executed together in the background.

It is also important to realize that a report with saved data might not contain the most up-to-date data in the R/3 system. One thing is certain, however: with larger and more complex reports, saved data is a useful means of improving response times.

Avoiding Characteristic Hierarchies

The R/3 system allows you to arrange characteristic values hierarchically in order to show the contextual dependencies which exist in the system. Within the system, you do this by maintaining a separate table, which you need to access in addition to the actual table of characteristics. These extra database accesses can have a negative effect on report performance. You must therefore consider whether or not the benefits of characteristic hierarchies outweigh the loss of performance.

Summarization Levels

You can reduce the quantity of data to be read (and, therefore, the response time of a report) by holding the dataset in a summarized form. These summarized datasets are called **summarization levels**. You can determine both the number of levels required and the respective degree of detail.

This process has the advantage that the data which is read from the summarization levels can be called up quickly. Also, the data is always up-to-date compared to the saved data. The data is always updated at the same time as the aspect transaction database. A disadvantage of this process is that the greater the number of summarization levels, the slower the data transfer will be.

The use of summarization levels makes sense if the data is required by several reports.

Since not every summarization level can produce an improvement in response time compared to a report executed online, there are guidelines for defining summarization levels.

Using the Report/Report Interface

With the report/report interface you can connect several individual reports, each with a limited number of characteristics, to one another like building blocks in order to be able to navigate from highly aggregated objects into detail, or to other types of objects. To achieve optimal response times, you start with a highly summarized report. Only a small number of free characteristics should be included in this report. Using the report/report interface, you can call up (connected) reports, which contain additional characteristics with which the objects are described in more detail. These connected reports normally have good response times, as only a small and very specific amount of data must be selected.

In many cases, these processes are not mutually exclusive. A better result is often attained with a combination of the methods, for example:

- saved data for a large, complex report, but a summarization level for a report using highly aggregated data.
- a report with summarized data, which calls up an online report using the report/report interface. See Example: Optimizing Performance [Page 284].

See also:

Freezing Report Data in the Background Using Variants [Page 216]

Summarization levels [Page 280]

Overview: Report/Report Interface [Page 79]

Summarization Levels

Definition

A summarization level saves transaction data in compressed form. In such transaction data, individual objects are described using a range of characteristics. Summarizing means that selected characteristics are left out. Objects from the original dataset which are no longer differentiated once characteristics have been left out are summarized in one object in the summarization level. The aggregated data is available to all reports. The summarization allows for quick access to the data in reporting-

Use

Typically, reports are required in which the end user can navigate from a high summarized level down to the level of detail which is of business interest to him or her. The selected report data is contained in the main memory. This can create a large volume of data and cause long response times. There are various alternatives for improving the response time of a report. See the section Optimizing Performance [Page 278]. In this section, the alternative using summarization levels is described, and the guidelines according to which you summarization levels are to be defined are also explained. For information about how to create and build up summarization levels, see Customizing.

The example below shows how the transaction data records can be summarized on the database in order to improve reading times in the report.

Employee xxx in cost center 100 in company code 1000 worked 50 hours overtime.

Employee yyy in cost center 100 in company code 1000 worked 30 hours overtime.

Employee zzz in cost center 200 in company code 1000 worked 20 hours overtime.

If the transaction data were transferred in this way, three records could be written in the transaction data table:

Employees	Cost center	Company code	Overtime
xxx	100	1000	50
yyy	100	1000	30
zzz	200	1000	20

As a rule, relatively few analysis paths are used in reporting, so you could define a summarization level for the example above.

A summarization level is formed at the cost center level, which means that a summarization is made over the characteristic employee. The records are compressed together and the following structure ensues:

Cost center	Company code	Overtime

100	1000	80
200	1000	20

In this case, you could set the summarization level even higher, by forming it at the company code level.

Company code	Overtime
1000	100

The more characteristics that are summarized, the higher the level of compression of the data and the more limited the use of the level. You must decide between the shortened response time because of the level of summarization, and the possible use of the level in reporting. Highly summarized data will not be of much use to you if it can only be used in very few reports.

At the definition stage, you have the following options:

1. Characteristics, over which the summarization will occur

   The key figure values are summarized over a characteristic.
   Afterwards, you can no longer evaluate the characteristic in the report.

2. Free characteristics

   The key figure values cannot be summarized over the characteristic.
   Afterwards, you can evaluate whatever characteristic values you like in the report.

3. Fixed characteristics

   The key figure values can only be retained for a certain characteristic value.
   Afterwards, you can only evaluate this characteristic value in the report.

Depending on how you have specified a characteristic in your report, you decide whether a characteristic is to be summarized, given a fixed value, or left free. You define the summarization levels in Customizing. To ensure that the summarization levels can be used by reports, the levels have to be supplied with data. To do this, you schedule a job in the background processing to build up the summarization levels. Only then can the levels be used by reports. After the levels have been built up, the system always updates data as soon as changes occur in the transaction database. The summarized data is therefore always as up-to-date as the transaction data. For more information, see Customizing.

When executing a report, the system checks whether saved data is available for the report. If data has already been saved, it will be displayed. If no data has been saved for the report, but a suitable summarization level exists, the data from the summarization level will be called up. If neither saved data nor a suitable summarization level are available, the data is selected as new.

When Do I Use Summarization Levels?

If you are not satisfied with the response times of the reports in you system, you should consider defining some summarization levels.

However, before you decide on summarization levels, you should read about other ways of improving response times. See the section Optimizing Performance [Page 278]/SAPIrExtHelp/IWB_EXTHLP.asp?_LOIO=5CC1C7BC445F11D189F00000E81DDFAC [Ext.].

Guidelines for Creating a Summarization Level

When defining a summarization level, there are often several possible combinations of characteristics. Since not every summarization level can produce an improvement in response times compared to a report executed online, there are guidelines for defining summarization levels. To obtain the optimum summarization effect, you must analyze the desired report for each summarization level, determine which master and transaction data is affected and consider the following points:

1. A summarization level should contain as few records as possible compared to the number of records in the transaction data.

   Estimate the number of records to be read on the database, and the number of records in your planned summarization level. A minimum factor of 10 should be attained.

   Where possible, summarization levels should be defined over characteristics with a large number of values. You can attain a greater summarization effect if you summarize over the characteristics **article** and **product**, as these characteristics typically contain a large number of values.

   If your summarization level contains a large number of records, the corresponding report must be defined in such a way that it does not have to read more than 10,000 to 20,000 records from the summarization level.

2. As few summarization levels as possible should exist

   Since the summarization levels are updated automatically, each change in the transaction data leads to an update in all summarization levels. This means that a change to one transaction data record leads to several writing processes in the database. If there are a large number of summarization levels, this will impair performance in data transfer.

   If you generate a proposal for a summarization level, you should edit it manually. You should also check whether a similar summarization level already exists. You will find this information when maintaining the summarization levels in the overview and detail screen. You should check this data occasionally for all summarization levels, as the number of accesses, for example, can help you to decide whether a particular level is still required. For more information, see Customizing.

3. Dependent characteristics should always be included in a summarization level.

   In many cases there is a dependency between several characteristics. If, for example, the product group is derived from the product number, then the product group is dependent on the product. The volume of data in the summarization level is not enlarged by the inclusion of the product group and therefore does not impair performance. The advantage is that the summarization level can also be used by reports which contain these dependent characteristics.

   The dependency between two characteristics normally exists because of derivation or is already given by previous systems, for example a representative for customers in a customer master.

A detailed description of how you create and build up summarization levels is given in Customizing.

For an example of defining a summarization level, see Example: Optimizing Performance [Page 284].

Example: Optimizing Performance

Suppose you have the following characteristics:

- 10 product master groups (each containing 10 product groups)
- 100 product groups (each containing 10 products)
- 1,000 products
- 100 customer groups (each containing 10 customers)
- 1,000 customers

In this example, the product master group is dependent on the product group, and the product group is dependent on the product. Furthermore, the customer group is dependent on the customer. No dependence exists between any other characteristics. Each customer purchases each product. This results in a million records (1000 products * 1000 customers) in the transaction database.

In your report, you wish to navigate from the list of product master groups over the characteristics product group, product and customer group to the customer. If, for this purpose, you define a report with all characteristics, this would lead to long response times when you execute the report online, as the data would be loaded at the lowest level of detail in the memory.

You can solve this problem as follows:

1. Define the first report over the free characteristics product master group, product group and product.
2. Now define the second report over all five characteristics, while defining the characteristics product master group, product group and product as reqiured entry fields. Define the characteristics customer group and customer as free characteristics.
3. Combine the reports using via the report/report interface.
4. For the first report, create a summarization level with the characteristics product master group, product group and product.

When you execute the first report, the system reads 1,000 records from the summarization level, as the product group and product master group are dependent on the product, and there are 1,000 products.

To navigate to the customer, navigate to a product in the first report. Now call up the second report using the report/report interface. As the three required entry fields are transferred from the first report, no more than 1,000 records can be read from the transaction database. For this product, you can now navigate to the customer.

In contrast to the single report with all characteristics, where the system reads a million records, in this case the system only reads 1,000 records twice. You can therefore execute the reports online.

Reorganization and Conversion

Use

Reorganization (deleting large numbers of reports, forms and report data) and conversion of reports are both functions which normally only use if changes within your company render such steps necessary.

To cite an example, it might be necessary to carry out reorganization if your company's Reporting has been restructured, thus making a large number of reports redundant or superfluous.

It is always necessary to convert reports if your SAP system has been upgraded to a new release, and you wish to use existing reports in the new release.

Features

Reorganization

The functions *Reorganize report data*, *Reorganize reports* , *Reorganize forms* and *Reorganize variant groups* let you specify a number of report data, reports, forms and so on, and then delete these from an overview list.

You can only delete a form if it is no longer used in any reports.

For application-specific information about Reorganization, see the section **Information System** in Customizing.

Conversion

When you upgrade your system to a new release, it may be necessary to convert reports you defined in the earlier release before you can use them in the new release.

The system automatically converts each report the first time you execute it following the upgrade to the new release. If the automatic conversion does not work, you can convert the report manually. For more information, see *Customizing* or the corresponding section in your application-specific documentation.

When you convert a report, you merely adapt the report's technical structure so that it conforms to the new release. **Report data is deleted during the conversion**. The system then reselects the report data when you execute the report in the new release.

Conversion of all reports

As an administrator, you can plan conversion of all reports centrally as a background job. The report `RKD_REGENERATE_ALL_REPORTS` has been created for this purpose. You can call up this report using the monitor (transaction KEMO in CO-PA, transaction KCW0 in EC-EIS, choose *Goto -> Generate All Reports*) or directly using the ABAP Editor (transaction SE38).

Conversion of all reports must be schedules as a background job, as it is normally a very time-consuming function.