

How to...

CO-PA Retraction

BUSINESS INFORMATION WAREHOUSE



ASAP “How to...” Paper



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1 BW Retraction into CO-PA

This document provides you with information about how you set up the connection between Profitability Analysis (CO-PA) and SAP BW for data retraction from BW Release 2.0. Such a connection allows you to load report data from SAP BW into CO-PA. Here are some examples of how this connection can also be used:

- Statistical key figures from SAP BW need to be made available as actual data under record type "H" in CO-PA. This can be done using the retractor.
- A planning function (such as sales planning) is to be performed on planning data from SAP BW. For this, you can use the retractor to load the data into CO-PA under any desirable record types, before performing planning in CO-PA on that data. The data can then be extracted back into SAP BW using the CO-PA Extractor.

The data is retracted from SAP BW at the level of the queries that need to be defined on the relevant InfoCubes or ODS objects. You use field assignments between InfoObjects and CO-PA fields in CO-PA Customizing to determine how the data from SAP BW is assigned in CO-PA. The data is transferred to CO-PA at the most detailed level of the query. In other words, a drilldown is performed internally on the free characteristics of the query.

A special feature of the connection of CO-PA to SAP BW resides in the fact that CO-PA is a generating application, which means it does not deliver structures or tables. Structures and tables are defined specifically for each customer when the organizational unit for Profitability Analysis is defined as part of Customizing. Since the structures of the operating concern are not known, no InfoCube or query - and consequently no BW Content - can be delivered for a retraction.

2 Restrictions and Prerequisites

The following **restrictions** apply for retractions:

- Data transfers are only possible for costing-based CO-PA.
- With the data transfer, the current status of the query in SAP BW is transferred. Due to technical restrictions, it is not possible to have a delta procedure of the kind available for the CO-PA extraction, for example. For any necessary corrections, however, transfer runs can be cancelled.
- On the BW side, the restrictions detained in note 605208 as well as those in the BW “How To” paper “Schedule Query Extracts using RSCRM_BAPI” must be observed because the CO-PA Retractor uses this interface for reading the data from SAP BW.

Furthermore, the following **prerequisites** must be met for a successful retraction:

- The query must be RFC-enabled, that is, the *Release for OLE DB for OLAP* indicator must be set.
- The query can contain a maximum of one structure.
- There must be a field assignment defined for the query.
- Since the transfer posts actual data with record type “H”, a number range must be assigned to this record type.
- The CO-PA field *Company Code* and a time dimension (*Posting Date* or *Period/Year*) must be filled either from the query via the field assignment in CO-PA Customizing or must be entered there as a fixed value.
- The user for the RFC connection to the SAP BW System must have the user type *Dialog* or *Service*. If this is not the case, input help for the queries does not work in Customizing for the field assignment. Furthermore, the variables dialog box cannot be called in the foreground when the retraction is started for a query with variables.

3 Procedure for Setting Up the Retraction

This section describes the procedure for setting up the connection between SAP BW and your CO-PA in the R/3 System for a retraction.

The activities necessary for setting up the connection between SAP BW and R/3 are performed for the most part in the R/3 System. You only define the query in SAP BW.

3.1 Defining the Query

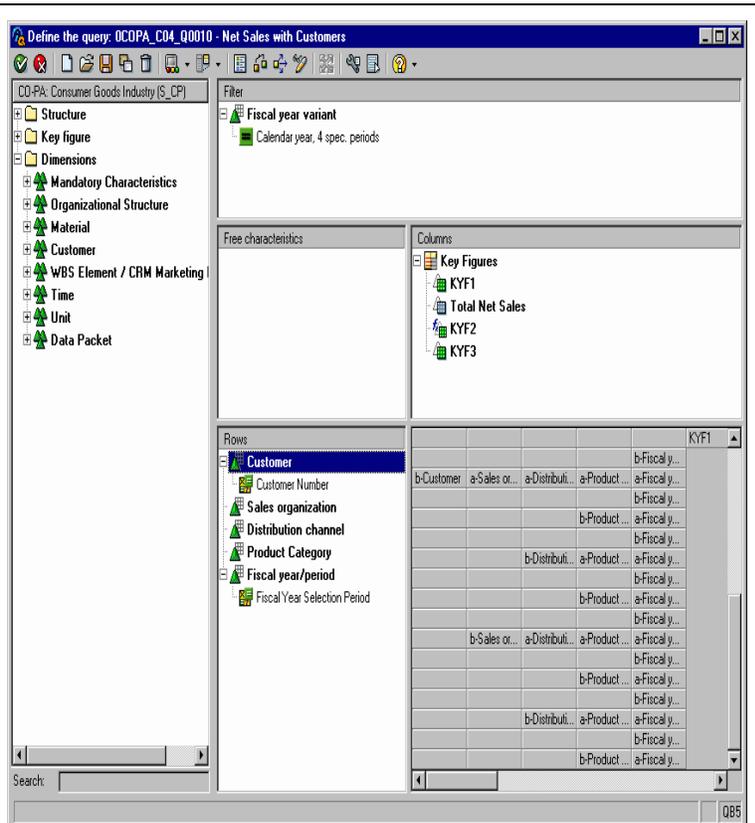
Define a query in the SAP BW system using the BEx Analyzer.

You find the BEx Analyzer in the application menu of the SAP BW system by choosing *Business Explorer -> Analyzer*.

Choose *Open -> Query* and then choose *New*.

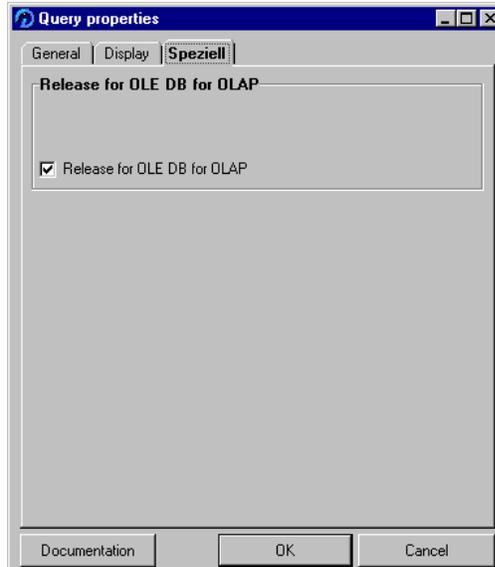
In the dialog box that appears, enter an InfoCube or an ODS object on which the query is to be defined.

Then define a query, observing the restrictions mentioned above.



Choose the *Query Properties* pushbutton and set the *Release for OLE DB for OLAP* indicator on the *Special* tab page.

Generate the query and save it.



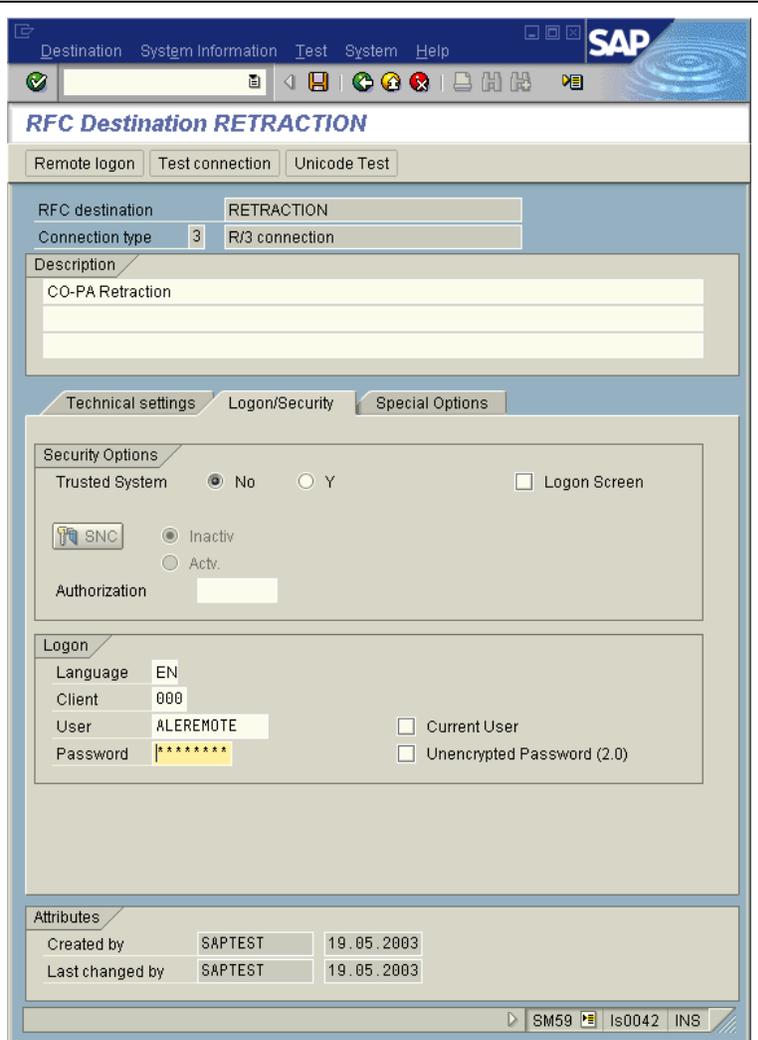
3.2 Creating an RFC Connection

In the R/3 System, create an RFC connection to the SAP BW system.

You find the administration of the RFC connections in the SAP application menu by choosing *Tools -> Administration -> Administration -> Network -> RFC Destinations*.

Under *R/3 Connections*, define a connection to your SAP BW system.

Ensure that the user specified under *Logon* has user type *Dialog* or *Service* in the SAP BW system, as described in note 545223.



3.3 Defining Field Assignments

In the R/3 System, define the field assignments between the InfoObjects of the query and the CO-PA fields of your operating concern.

You can choose between two options for this:

- The assignment is specified at the query level and is valid for a specific query.

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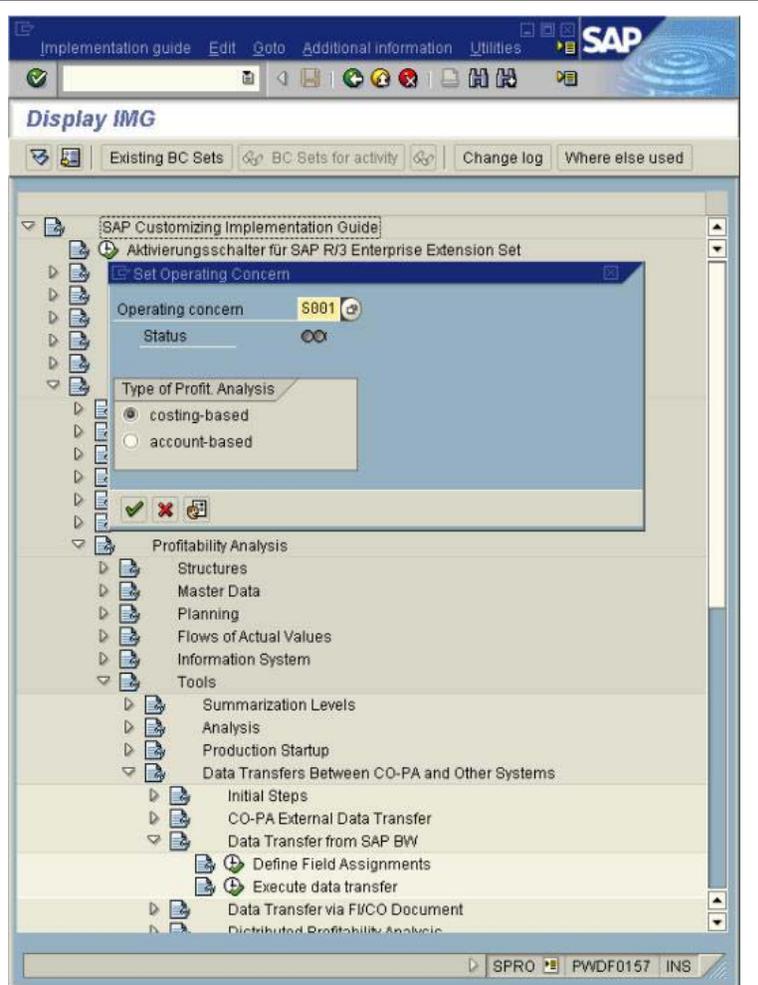
- You specify the assignment at the SAP BW system level. In this way, it is valid for all queries in the SAP BW system. Using this option reduces the maintenance effort if an assignment is to be the same for all queries of an SAP BW system.

Special Features:

- If a field assignment exists for an InfoObject at the query and SAP BW system level, then the detailed assignment at the query level takes priority.
- The key figures of a query can **ONLY** be assigned at the query level (as described in note 592680).
- Currencies and units of quantity are assigned automatically.
- During the transfer, the posting period is interpreted based on the fiscal year variant of the operating concern.
- To implement additional functions, such as an assignment of BW master data to R/3 master data or the subsequent processing of query data, the R/3 System provides you with the SAP customer enhancement COPA00RE (alongside another one). Both enhancements are described in note 326747.

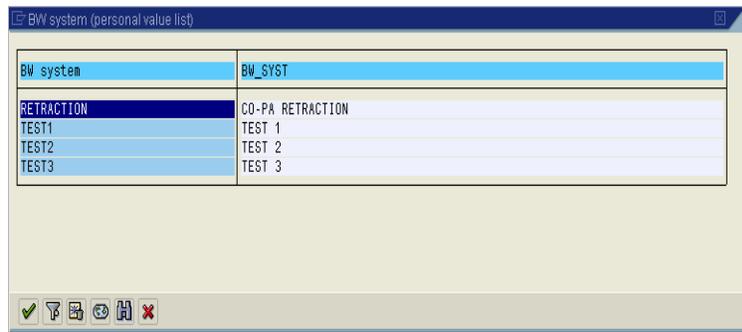
To access the maintenance transaction in CO-PA Customizing, choose *Tools -> Data Transfers Between CO-PA and Other Systems -> Data Transfer from SAP BW -> Define Field Assignments*.

For this, first enter the operating concern.

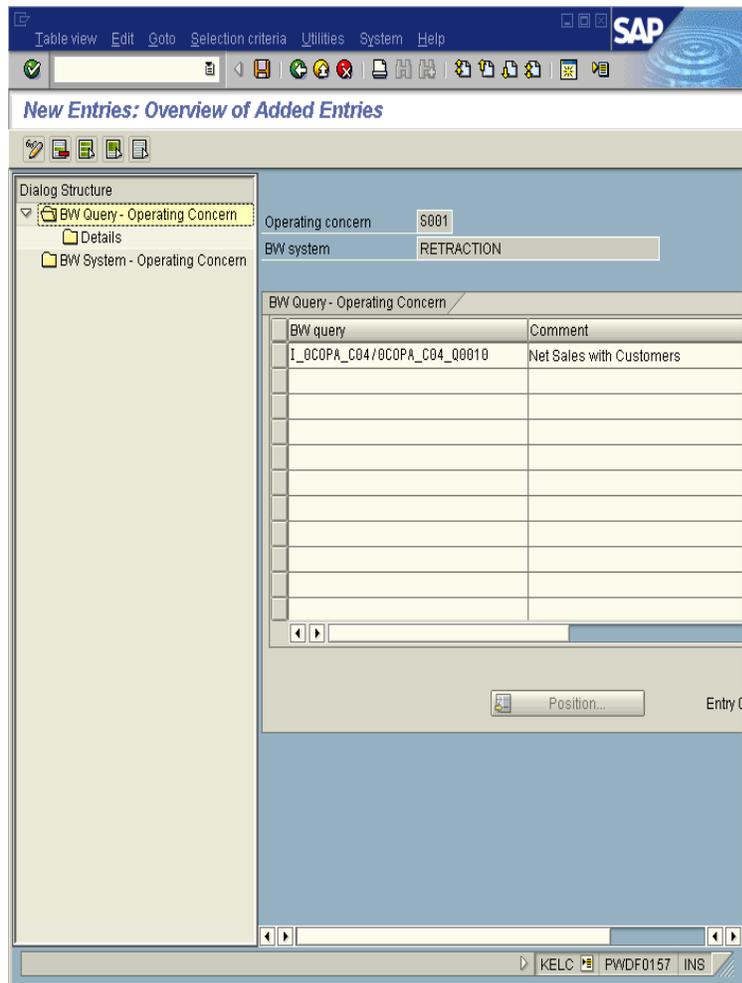


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Choose the RFC connection that you have just created.



Choose the query from which the data is to be transferred.



In the Detail Screen, you can assign the BW objects of the query to the fields in CO-PA.

These BW objects include:

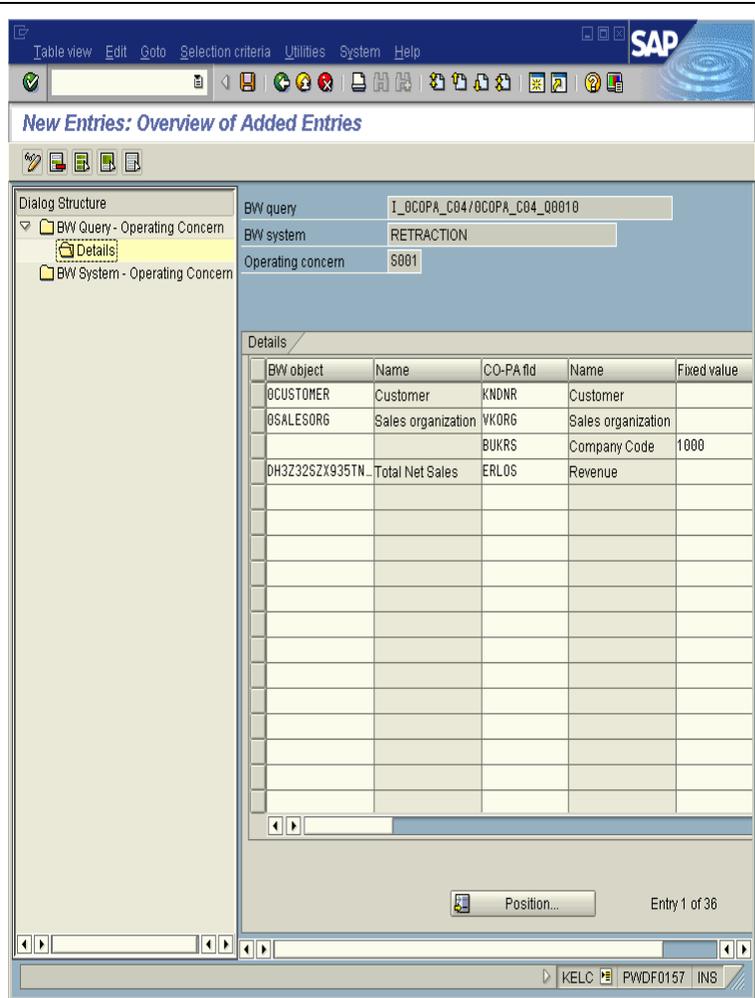
- All InfoObjects of the query
- Formulas of the query
- Attributes of the InfoObjects
- InfoObjects that define a restriction to a key figure, whereby the restriction must constitute a single value

However, filter values that are defined in the query **cannot** be transferred.

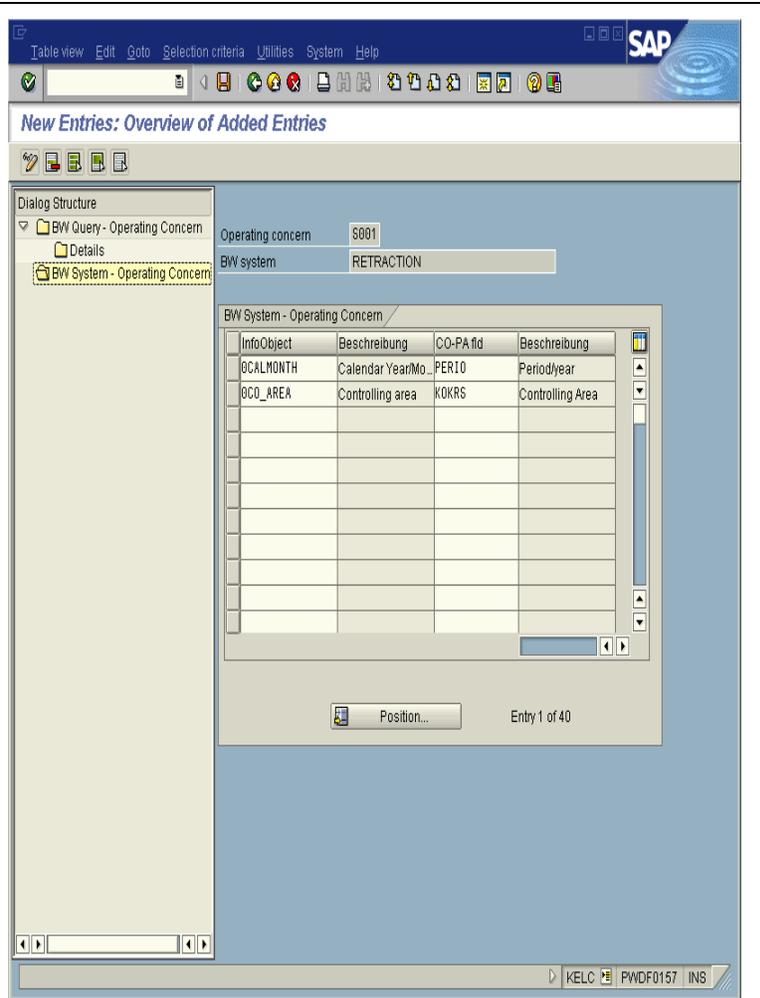
In CO-PA, the following objects are available for the assignment:

- Characteristics
- Value fields
- Quantity fields
- Some technical fields, such as the posting date (BUDAT)

If a value cannot or should not be transferred, you can enter a fixed value for a CO-PA field. This can be the case for the field *Company Code* (BUKRS), for example, which is a mandatory field in CO-PA but does not have to exist in the query if it also cannot be determined by CO-PA characteristic derivation.



For the field assignment at SAP BW system level, all InfoObjects in the SAP BW system are available as BW objects on the BW side and all CO-PA fields are available on the CO-PA side. As mentioned above, these assignments become invalid if corresponding assignments exist at the query level.



3.4 Executing Retraction

In the R/3 System, execute the transfer into CO-PA of data for the SAP BW query.

With the retraction, the query is expanded to its greatest level of detail and the data is transferred to CO-PA. On the basis of the field assignments defined in Customizing, CO-PA builds line items from the data. The following are executed automatically:

- CO-PA Characteristic Derivation
- CO-PA Valuation (mandatory for actual data, optional for planning data)
- CO-PA Validity Check for Characteristic Values

If errors occur during the data transfer, they are subsequently issued in a log. No line items are posted in an update run if errors occur. An exception to this rule is the retraction of planning data if the *Update of Correct Line Items Despite Error Messages* indicator is set. In this case, the correct plan line items are posted, and any containing errors are ignored.

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As mentioned above, each retraction transfers all data of the query, which means that, in the case of multiple transfers for the same query, the redundant data is available in CO-PA. For this instance, it is possible to reverse retraction runs.

To access the transaction for executing the retraction in CO-PA Customizing, choose *Tools -> Data Transfers Between CO-PA and Other Systems -> Data Transfer from SAP BW -> Execute Data Transfer*.

Enter a description for the retraction run and specify the SAP BW system and the query for which you have defined a field assignment.

The following distinction is made between actual and planning data for the postings:

- Actual data is always updated using record type H. No other settings are necessary. As mentioned above, CO-PA Derivation, CO-PA Valuation, and CO-PA Validity Check for Characteristic Values are performed automatically.
- In the case of planning data, a record type as well as the plan version can be specified with which to post the data. If planning data is to be transferred on a weekly basis, you need to set the *Transfer Planning Data on Weekly Basis* indicator. CO-PA Derivation and CO-PA Validity Check for Characteristic Values is performed automatically, but not CO-PA Valuation. If CO-PA Valuation is to be performed for the transferred data, you have to activate the

The screenshot shows the SAP 'Retraction: Query Data Transfer' dialog box. The window title is 'Retraction: Query Data Transfer'. It has a menu bar with 'Program', 'Edit', 'Goto', 'System', and 'Help'. Below the menu bar are icons for 'Logs', 'Reverse', and 'Query Variable'. The main area is divided into sections:

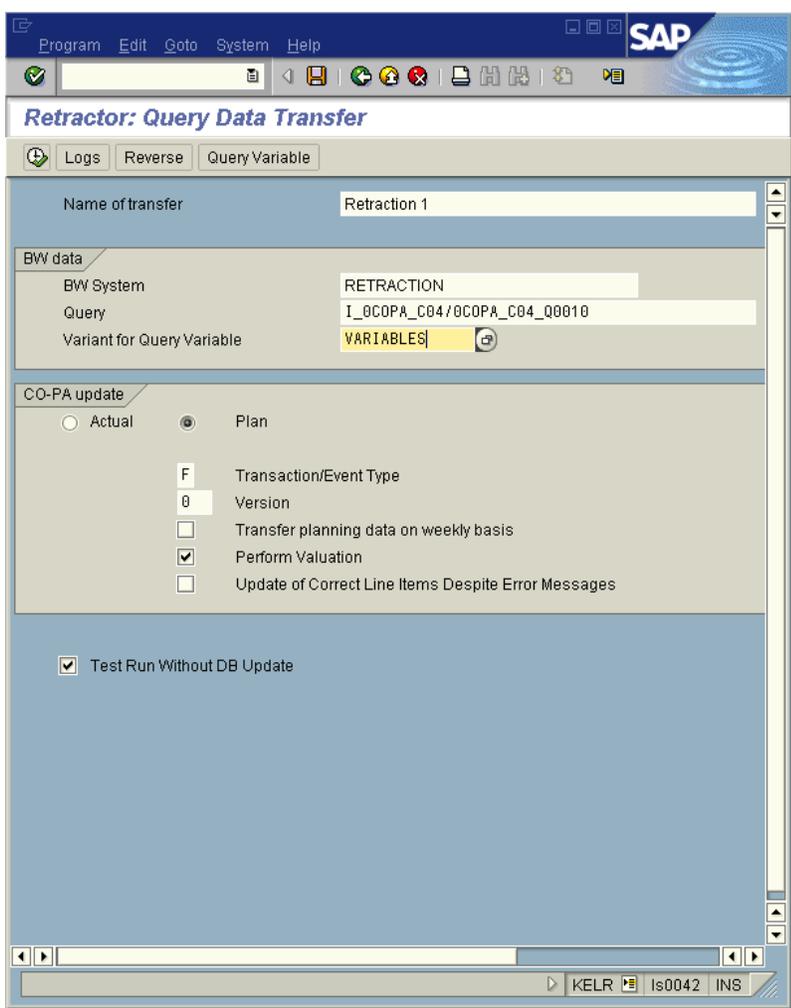
- Name of transfer:** Retraction 1
- BW data:**
 - BW System: RETRACTION
 - Query: I_0COPA_C04/0COPA_C04_Q0010
 - Variant for Query Variable: (empty)
- CO-PA update:**
 - Actual:
 - Plan:
 - F: Transaction/Event Type
 - 0: Version
 - Transfer planning data on weekly basis:
 - Perform Valuation:
 - Update of Correct Line Items Despite Error Messages:
- Test Run Without DB Update

At the bottom right, there is a status bar with 'KELR', 'Is0042', and 'INS'.

<p>option <i>Perform Valuation</i>.</p> <p>If the <i>Test Run Without DB Update</i> indicator is activated, the data transfer is only performed in the test run, but no data is posted.</p> <p>Otherwise, the line items created are written to the database (provided no errors occurred during processing).</p> <p>If, however, a error occurs for at least one of the line items during their creation, no data is posted, unless you have set the <i>Update of Correct Line Items Despite Error Messages</i> indicator. In this case, the system posts all correct line items and ignores anywhere an error occurred.</p>	
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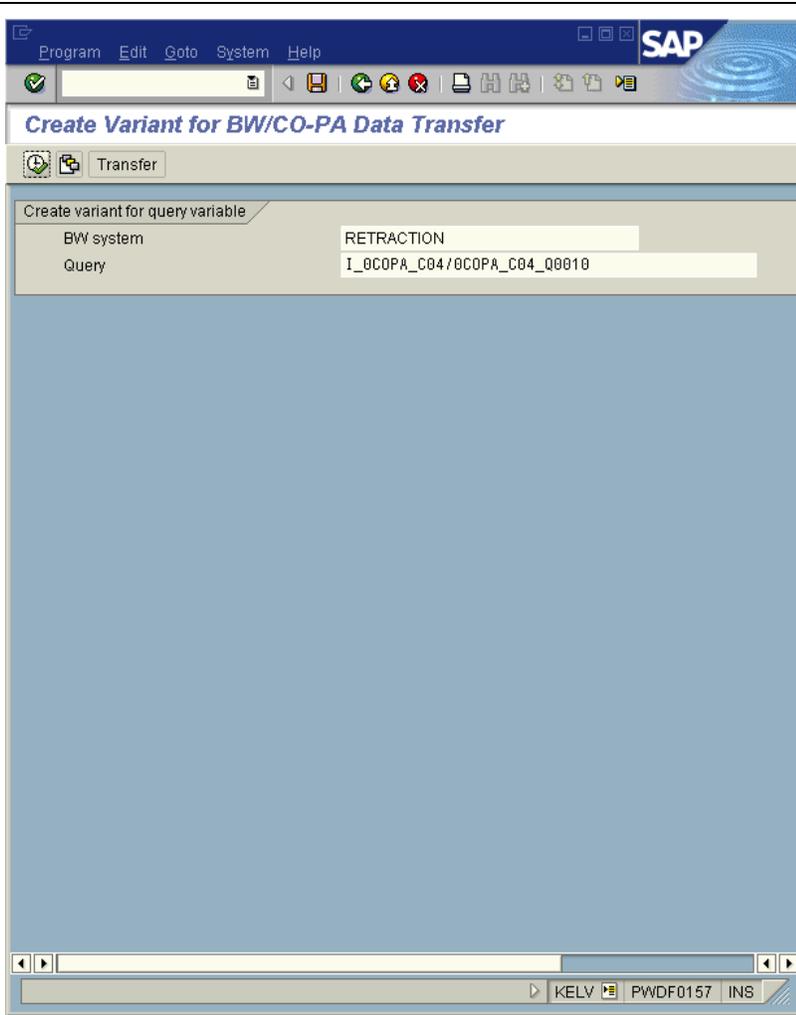
If the query contains variables, they can be specified in two ways, depending on the processing mode.

When performing the retraction in the background, you can specify a variant for the query variables.



You can define such a variant by choosing the *Query Variable* pushbutton (STRG+F3).

A new screen appears on which you have to specify the SAP BW system and the query for which you want to define a variant.



When you execute the report, a dialog box appears on which you can enter values for the query variables.

By choosing the *Save as Variant* pushbutton, you can store a variant for the query variables.



When the retraction is executed in the foreground, a dialog box automatically asks if no variant was entered for the query variables.

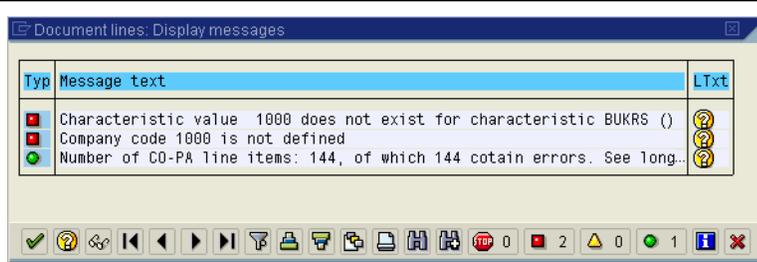


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Once the retraction run has been performed, the system issues a log.

The log contains any errors that occurred when the line items were processed.

In an update run, the retraction run is also saved in an administration table if line items were posted. This allows the run to be subsequently reversed if required.



The screenshot shows a window titled "Document lines: Display messages" with a table of messages. The table has two columns: "Typ" and "L.Txt". The messages are as follows:

Typ	L.Txt
■	Characteristic value 1000 does not exist for characteristic BUKRS ()
■	Company code 1000 is not defined
●	Number of CO-PA line items: 144, of which 144 contain errors. See long...

At the bottom of the window, there is a toolbar with various icons and a status bar showing counts: 0 errors, 2 warnings, 0 messages, and 1 information.

Update Run: Display Log and Reverse Retraction Run

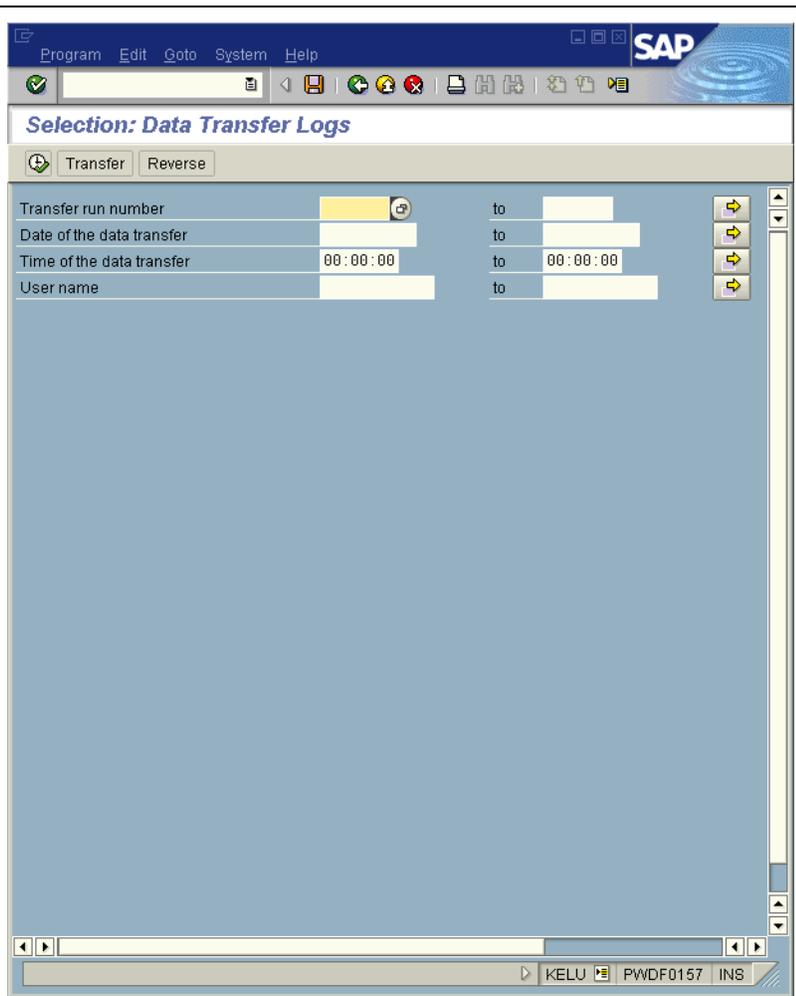
If the data from a query accidentally gets transferred twice or if the data transferred in a retraction run needs to be deleted from CO-PA for other reasons, you can first view in the R/3 System the retraction runs performed in the update run before reversing them.

When you reverse a retraction run for planning data, the data is not reconciled with the planning function *Delete Planning Data*. For this reason, you should use the function *Delete Planning Data* to delete the planning data of a retraction run and then reverse the retraction run. In this way, the planning data now has a reversed sign (compared to the status prior to the retraction run being executed).

To display the logs for the transfer runs, first choose *Logs* (STRG+F1) on the execution screen.

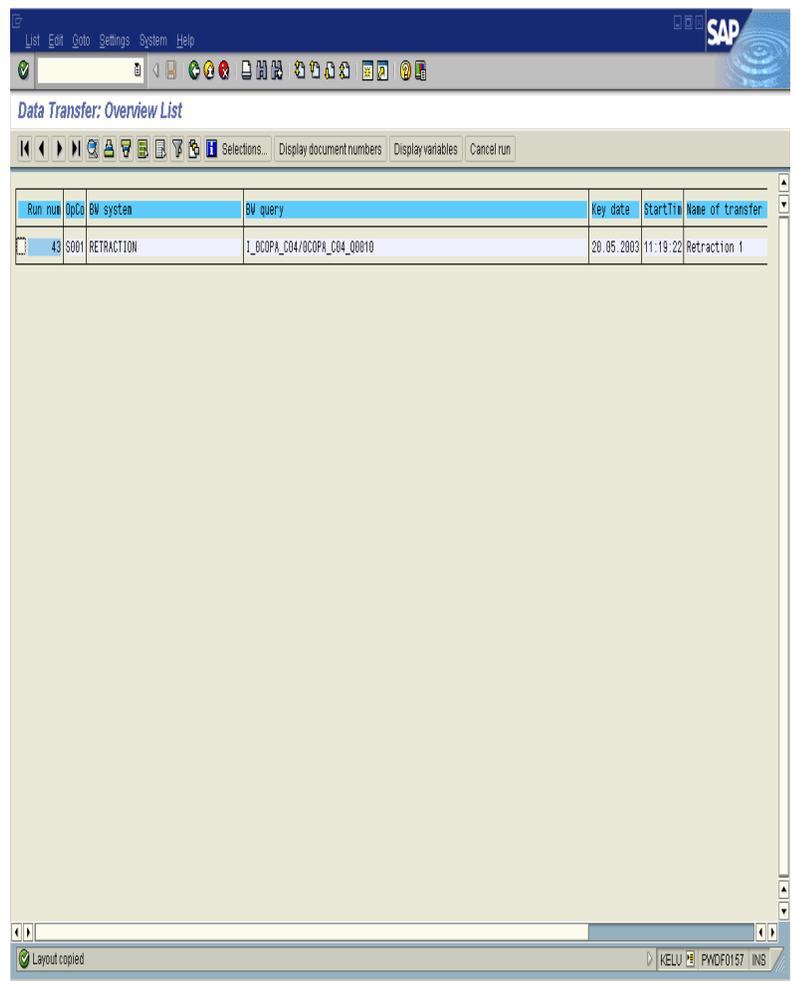
The screen shown here then appears.

On this screen, you can restrict the selection of the transfer runs to be displayed.



You obtain a list of the transfer runs performed in the update run.

By choosing *Layouts...* (STRG+F8), you can display additional information on the retraction runs.



By choosing *Display Document Numbers* (STRG+F9), you can display the CO-PA document numbers (field CE1XXXX-BELNR or CE2XXXX-BELNR, whereby XXXX stands for the operating concern) with which the retraction run was updated. You also see here the corresponding reverse document numbers if the retraction run was reversed.

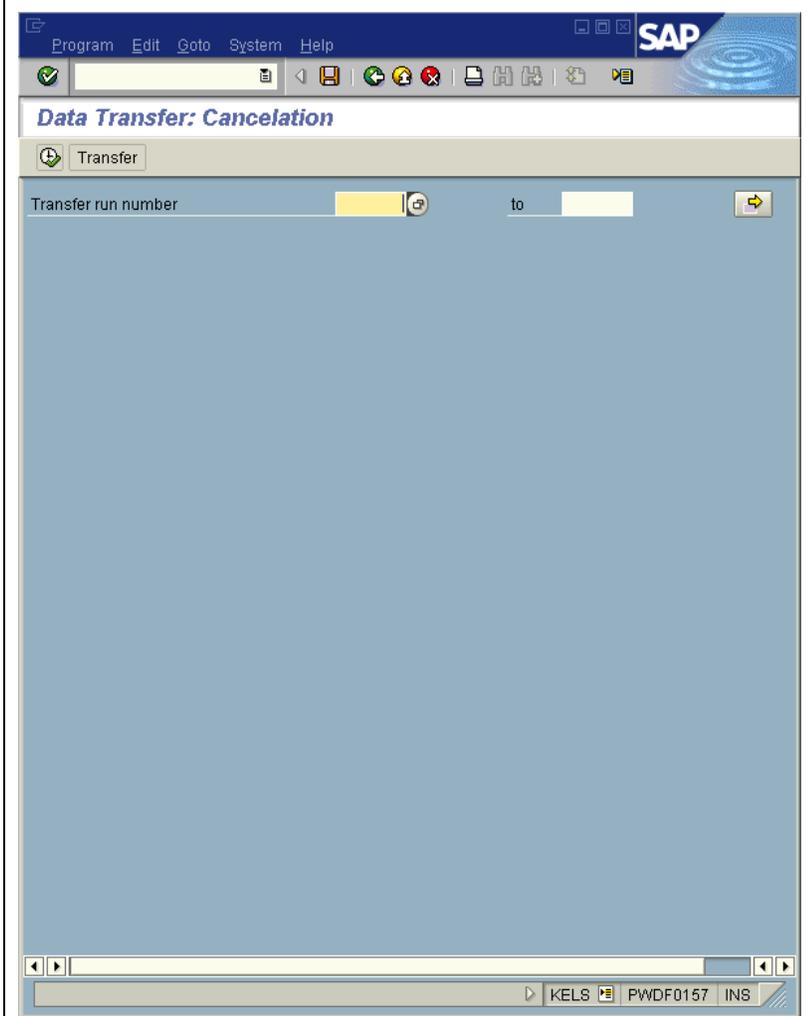
Run num	Fr. doc. no.	To doc. no.	Fr. rev. doc.	To rev. doc.
43	173	244		

To reverse one or more runs, choose *Cancel Run* (STRG+F11) in the list of transfer runs.

You can access the same function from the execution screen by choosing *Reverse* (STRG+F2).

The screen shown here then appears.

On this screen, you can select the runs to be reversed.



4 Additional Important Information

This section provides some additional important information about the CO-PA retraction.

4.1 Update Run: Display Log and Reverse Retraction Run

When performing a retraction run in an update run, the system records the CO-PA document numbers (field CE1XXXX-BELNR or CE2XXXX-BELNR, whereby XXXX designates the operating concern) that are written. As mentioned above, you can display these numbers from within the log. The retractor uses these document numbers to reverse the retraction run. In this process, the line items to be reversed are read using the CO-PA document numbers. For performance reasons, therefore, we recommend that you use the fields *Client* (MANDT) and *Document Number* (BELNR) to create a secondary index before reversing a retraction run in the CO-PA line item tables CE1XXXX or CE2XXXX.

4.2 Interface Between SAP BW and R/3

The query data is transferred from SAP BW into the CO-PA retractor in one go, not in individual data packages. Consequently, this imposes technical restrictions on the level of the data volume to be transferred. We therefore recommend that, if variables are defined for the query and the query has a considerable data volume, you start several retraction runs for separate amounts of data that can be divided up on the basis of the variables.

4.3 Performance when Posting Line Items

To ensure optimum performance for the processing of line items, ensure that notes 521783 and 523689 have been implemented.

4.4 Performance in SAP-BW

To improve the performance of reading data in SAP BW, apply note 605213 and consult the section on performance in the BW "How To" Paper *Schedule Query Extracts Using RSCRM_BAPI*, since the CO-PA retractor uses this interface to read the data.

4.5 Conversion of Characteristic Values

The data in SAP BW is often displayed differently to how it is displayed in CO-PA.

For example, *Material Number* (ARTICLE) can take 20 characters in SAP BW, whereas the CO-PA field for *Material Number* (ARTNR) only has 18 characters. To ensure that ARTICLE and ARTNR are assigned correctly, a conversion needs to be performed. For this conversion, there are two customer enhancements (described in note 326747).

There are also some InfoObjects that the retractor converts automatically so that they can be transferred into the corresponding CO-PA fields. These InfoObjects include:

- The InfoObject *CRM Marketing Element* (0CRM_MKTELE)
- The InfoObject *Calendar Year / Month* (InfoObject 0CALMONTH), provided it is assigned to the CO-PA field *Period / Year* (PERIO)
- The InfoObject *Week*, provided it is assigned to the CO-PA field *Period / Year in 2nd Period Type* (ALTPERIO).

4.6 Transporting Retractor Customizing

The customizing settings for the CO-PA retractor are always dependent on the SAP BW system from which the data is to be transferred. For this reason, the RFC connection used is also stored in the administration tables of the retractor.

Consequently, when the Customizing settings are transported into an SAP R/3 System using an RFC connection with a different name, the Customizing settings cannot be used. For this reason, the CO-PA retractor does not have a standard transport connection.

Note 540278 provides a solution to this problem. Using program ZRKEBW3S (specified in the note), you can alter the RFC connection in the Customizing entries.

4.7 Currencies without decimal places

Retracting data in currencies without decimal places only works after implementation of note 668854. Before the currency amounts posted to CO-PA are multiplied by 100. Thus, please implement this note if not yet contained in your system.

5 Important Notes

Here is a list of the most important notes concerning the CO-PA retractor, as well as two notes for the read interface on the SAP-BW side.

5.1 Program Errors

Note Number	Description
447282	Retractor: Key figures not assignable in Customizing
483904	Retractor: Missing consolidation
489018	Retractor: RD401 / RD403 with data transfer
495272	Retractor: Structure GLOBAL not filled in derivation
506979	Retractor: Text is missing in transaction KELR
515267	Retractor: Incorrect error RD400 in KELR
520104	Retractor: Missing variable dialog box
521783	Retractor: Performance and incorrect processing
548924	Retractor: Syntax error in program RK6OXXXX
550882	Retractor: Syntax error in program RK6GXXXX
552086	Retractor: Validation for dependent characteristic KOKRS
569742	Retractor: Short dump DYNPRO_MSG_IN_HELP in F4 help
569922	Retractor: Error KE0C133 for characteristic value '#'
573159	Retractor: KF557 when deleting operating concern
625564	Retractor: Unwanted zero items in plan
626145	Retractor: More than 100 field assignments
668854	Retractor: Currency amounts increased by hundredfold

5.2 Notes Concerning Performance

Note Number	Description
521783	Retractor: Performance and incorrect processing
523689	Retractor: Performance

5.3 Consultancy Notes

Note Number	Description
326747	Retractor: Conversion for data transfer
540278	Retractor: Changes to SAP-BW system after Customizing transport
545223	Retractor: Error message RD403
563275	Retractor: Own record type with actual data
592680	Retractor: Assignment of key figures on header level

5.4 SAP BW Notes Concerning the Read Interface

Note Number	Description
605208	RSCRM - Restrictions
605213	RSCRM: Performance