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ABAP Post-Copy Automation for SAP BW Configuration Guide

THE BEST RUN SAP

Content

1 Introduction

ABAP Post-Copy Automation for SAP Business Warehouse and SAP BW/4HANA (in short “BW PCA”) is an enhancement of the ABAP Post-Copy Automation (ABAP PCA), which is part of SAP Landscape Management, enterprise edition solution and SAP Landscape Management Cloud software.

To use ABAP PCA, you must either own a SAP Landscape Management, enterprise edition license or a SAP Landscape Management Cloud subscription.

To run ABAP PCA task lists, you use the following:

- SAP Landscape Management, enterprise edition
  You start the execution of a task list in the SAP Landscape Management environment directly.
- ABAP task manager for lifecycle management automation
  From a specific release and Support Package level, the ABAP task manager for lifecycle management automation is part of every ABAP system. In addition to the licensed ABAP PCA configuration tasks, SAP offers several non-licensed ABAP automation tasks for an automated initial setup.

Disclaimer: Unlicensed usage and storage of ABAP post-copy automation tasks and task list is strictly forbidden. Before you unsubscribe from SAP Landscape Management Cloud or return your SAP Landscape Management, enterprise edition license, you must uninstall all ABAP post-copy automation tasks and task list.

This documentation explains how to use BW PCA for the first time. BW PCA provides task lists with a predefined sequence of configuration tasks to configure extensive technical scenarios automatically before and after a system copy or refresh. To run these task lists, you use the ABAP-based tool task manager for technical configuration. In the SAP Landscape Management environment, you induce the execution of a task list without calling the task manager for technical configuration directly.

> ⚠ Caution
>
> Before you start, make sure you have the latest version of this document. You can find the latest version at the following location:https://help.sap.com/lama

1.1 Basic Concepts and Terminology

There are two principal system copy scenarios for BW PCA:

- Initial System Copy
  An initial system copy is done to create a new system from a copy of an existing system. After a system copy, you have to carry out several cleanup and configuration steps in the new target system. BW PCA offers predefined task lists to run the required cleanup and configuration steps for new installed target systems automatically. You can use BW PCA when copying a system group, a BW system or a BW source system.
- System Refresh

A system refresh is done to overwrite an already existing target system with the latest data from an original system while keeping the configuration. BW PCA offers a predefined task list to run the required cleanup steps before the system refresh and the configuration steps after the system refresh.

For better readability, both BW NetWeaver and BW/4HANA will be referred to as "BW" in this document, where not stated explicitely otherwise.

The BW PCA task lists for the automated solution can contain tasks of the ABAP post copy automation. In the documentation for the ABAP PCA tasks and configuration guide, you will find the ABAP PCA terminology.

The system to be copied is referred to as the source system in ABAP post copy automation. In BW post copy automation, this system is referred to as the original system. This avoids confusion with the term BW source system, which provides BW with data. The generated copy is referred to as the target system in both environments:

ABAP PCA	BW PCA
Source System	Original System
Target System	Target System

BW PCA must be used for all systems belonging to a BW system landscape. This includes BW systems and ECC systems used as source for data load to a BW system. In BW terminology, the ECC system is called BW source system:

ABAP PCA	BW PCA	
	BW	ECC
Source System	Original BW System	Original BW Source System
Target System	Target BW System	Target BW Source System

1.2 Covered BW Connection Types

The various connection types are covered by BW-PCA as follows:

Outgoing (i.e. sending data into remote system)

Connection Type	Available in	Coverage by BW-PCA
SAPI	BW NW	Full
BW-SAPI	BW NW	Full
ODP (receiver system is BW NW or BW/4HANA)	BW NW & BW/4HANA	Full

Connection Type	Available in	Coverage by BW-PCA
ODP (receiver system is SAP Data Services, HANA or other subscriber types)	BW NW & BW/4HANA	Not covered. The remote system must be manually adjusted to extract from the new system

Ingoing (i.e. loading data from a remote system)

Connection Type	Available in	Coverage by BW-PCA
SAPI	BW NW	Full
BW-SAPI	BW NW	Full
Myself	BW NW	Full
ODP-SAPI	BW NW	Full
Other ODP Contexts	BW NW & BW/4HANA	Full
WebServices	BW NW	Not covered. The remote system must be adjusted manually to send data to the new BW system
UD Connect	BW NW	Partially covered. RFC Destinations are exported and imported during refresh. For initial copy, the same remote system will be accessed by the copied BW system
DB Connect	BW NW	Partially covered. DBCON table is exported and imported during refresh. For initial copy, the same remote database will be accessed by the copied BW system
HANA	BW NW & BW/4HANA	Partially covered. See 2821852
File	BW NW & BW/4HANA	No applicable. These connections do not require adoptions during system copy

1.3 BW PCA Task List Overview

The following task lists are delivered for BW PCA:

- Preparation for Initial Copy of a BW system (SAP_BW_COPY_INITIAL_PREPARE)

With this task list, you can prepare an original BW system before the system copy. Therefore, this scenario should be run before the actual system copy in the original system.

- Configuration for Initial Copy of BW/BW source systems (SAP_BW_BASIS_COPY_INITIAL_CONFIG)
  With this task list, you can clean up and configure a new installed target system. This scenario should be run after the actual system copy in the target system(s). It can be used for the following copy scenarios:
  - Copying a System Group
    The BW system and one or more BW source systems are copied.
  - Copying a BW System only
  - Copying a BW Source System only
- Configuration for System Refresh of BW/BW source systems (SAP_BW_BASIS_COPY_REFRESH_CONFIG)
  With this task list, you can configure a target system before and after the system refresh. This task list should be run before the actual system refresh to prepare and export configuration data from the target system. After the actual system refresh, the task list should be continued to import the data again. It can be used for the following refresh scenarios:
  - Refreshing a System Group
    The BW system and one or more BW source systems are refreshed.
  - Refreshing a BW System only
  - Refreshing a BW Source System only

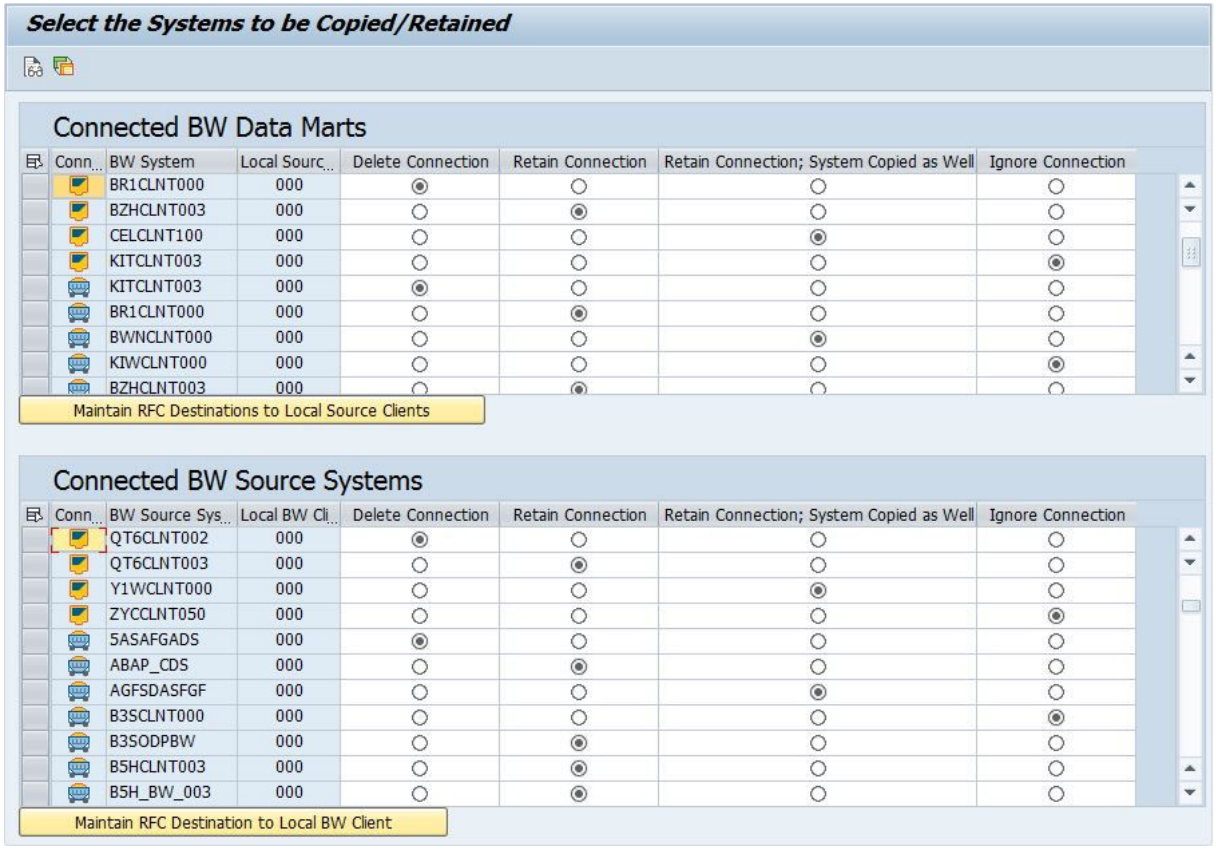
The following table gives an overview about the BW PCA task lists, the relevant scenarios and their execution location:

BW PCA task lists	Scenario	When to Execute	Where to Execute (BW)	Where to Execute (ECC)
Preparation for Initial Copy of a BW System (SAP_BW_COPY_INITIAL_PREPARE)	Initial copy	Before copy	Original BW system	
Configuration for Initial Copy of BW/BW Source Systems (SAP_BW_BASIS_COPY_INITIAL_CONFIG)	Initial copy	After copy	Target BW system	Target BW source systems
Configuration for Refresh of BW/BW Source Systems (SAP_BW_BASIS_COPY_REFRESH_CONFIG)	System refresh	Before and after refresh	Target BW system	Target BW source systems

BW PCA in your BW System Landscape

For the different scenarios, you can select if existing connections in your BW system landscape should be retained or deleted in the target system. Therefore, every BW PCA task list contains the task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION). In this task, you can select which system connections to a BW system or a BW source system should be deleted or retained. You can also select to retain the connections to a system that is copied as well. In the task, only connected BW systems and SAP source systems are considered.

The following example shows the selection in a system that is used as BW source system for a number of other BW systems (Upper Table *Connected BW Data Marts*) and as BW system for some other systems (Lower Table *Connected BW Source Systems*):



- The first column shows, whether the connection is of type SAPI (SAP-Source-System-Icon) or of type ODP (Lorry-Icon). If the other system is connecting to this system via more than one ODP connection (to access different contexts e.g.), still the other system is displayed only once per connected client in the upper section *Connected BW Data Marts*, because the other system is treated as one physical unit.
- The second column shows the logical system name of the target system (upper table) resp. the name of the source system connection (lower section).
- The third colum shows which client of the local system is connected to the other system.
- The next three radiobutton columns let you define whether the connection should be deleted by the BW-PCA procedure (i.e. is no longer required after the copy), shall be retained, or whether the other system is copied as well during the planned system copy project. It is important to distinguish between these two “Retain Connection” and “Retain Connection; System copied as well” because the steps executed by BW-PCA in either case are fundamentally different. Choosing the latter option also requires, that BW-PCA is

executed in the other system as well (not necessarily at the very same time but before the connection is used again after the copy). Find more information in the chapters below.

- The last column allows you to ignore the connection during the BW-PCA procedure. This must be used as a workaround only if the required notes cannot be installed in the other system in time, or if the other system is not physically reacheable during the BW-PCA procedure. The result of this “Ignore Connection” option will leave the connections in an unusable state, and manual repairs will be necessary along note 886102 after the copy. This option can also be switched on when the BW-PCA procedure has already started as a last resort for unexpected system unavailability.

1.4 Examples for BW PCA Scenarios

The following examples show for which scenarios the BW PCA task lists could be used:

- Initial Copy of a system group [page 8]
- Initial Copy of a BW system only [page 9]
- Initial Copy of a BW source system only [page 10]
- Refresh of a system group [page 10]
- Refresh of a BW system only [page 11]
- Refresh of a BW source system only [page 11]

1.4.1 Initial Copy of a system group

You want to copy a whole system group, for example a BW system and all its connected BW source systems.

Before the system copy, implement the SAP Notes required for BW PCA in the BW system and all BW source systems (See chapter *Analyzing and Implementing SAP Notes* in this guide).

After the system copy, execute the task list*Configuration for Initial Copy of BW / BW Source Systems* (SAP_BW_BASIS_COPY_INITIAL_CONFIG) in the target BW system and all target BW source systems. In task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) make the following selections:

- In the target system, select *Retain Connection; System Copied as Well* for all connected BW source systems.
- In the target BW source systems, select *Retain Connection; System Copied as Well* for the connected BW system.

Related Information

Task List 'Configuration for Initial Copy of BW/BW Source Systems' [page 19]
Executing Task List for Initial System Copy [page 22]

1.4.2 Initial Copy of a BW system only

You want to copy a BW system that is, for example, connected to four BW source systems. The connections to two BW source systems should be retained, the other two connections shall be deleted.

Before the system copy, implement the SAP Notes required for BW PCA in the BW system and the BW source systems that should maintain connections to the target system (see chapter *Analyzing and Implementing SAP Notes* in this guide). Only a few SAP Notes are required in the BW source systems to automate the remote operations.

Before Copying a BW System

The original system has to be prepared before the copy. With this preparation, original and target BW system can maintain connections to BW source systems without re-initializing the delta processes. A special use case for this preparation is the migration from BW to BW on SAP HANA.

Before the system copy, execute the task list *Preparation for Initial Copy of a BW System* (SAP_BW_COPY_INITIAL_PREPARE) in the original BW system. In task *Select System Connections to be retained after Copy* make the following selections:

- Select *Retain Connection* for the two *Connected BW Source Systems* that should maintain connections to the original and the target BW system after the system copy.
- Select *Delete Connection* for the connections which are not required.

Your selection in this task will also be available in the target BW system when you execute the task list *Configuration for Initial Copy of BW / BW Source Systems*.

After Copying a BW System

After the system copy, execute the task list *Configuration for Initial Copy of BW / BW Source Systems* (SAP_BW_BASIS_COPY_INITIAL_CONFIG) in the target BW system. In task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) make the following selections:

- Select *Retain Connection*for the two *Connected BW Source Systems* that should maintain connections to the target BW system after the system copy.
- Select *Delete Connection* for the two *Connected BW Source Systems* that should be disconnected from the target BW system after the system copy.

Related Information

Task List 'Preparation for Initial Copy of a BW System' [page 15]
Executing Task List for Initial System Copy Preparation [page 17]
Task List 'Configuration for Initial Copy of BW/BW Source Systems' [page 19]
Executing Task List for Initial System Copy [page 22]

1.4.3 Initial Copy of a BW source system only

You want to copy a BW source system that is, for example, connected to one BW system. After the copy, the original BW source system and the target BW source system should be connected to the BW system. This scenario includes complex modeling aspects in the connected BW system and therefore the new target BW source system needs to be connected to the BW system manually.

Before the system copy, implement the SAP Notes required for BW in the BW source system (see chapter Analyzing and Implementing SAP Notes in this guide).

After the system copy, execute the task list *Configuration for Initial Copy of BW / BW Source Systems* (SAP_BW_BASIS_COPY_INITIAL_CONFIG) in the target BW source system. In task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) make the following selection:

- Select *Delete Connection* for the *Connected BW System* to delete the copied connections to the BW system and prepare the target BW source system to be connected to the BW system manually.

Related Information

Task List 'Configuration for Initial Copy of BW/BW Source Systems' [page 19]
Executing Task List for Initial System Copy [page 22]

1.4.4 Refresh of a system group

You want to refresh a complete system group, for example a BW system and two connected BW source systems.

Before the system refresh, implement the SAP Notes required for BW PCA in all target systems: the BW system and the two BW source systems (see chapter *Analyzing and Implementing SAP Notes* in this guide).

Before the system refresh, execute the task list *Configuration for Refresh of BW/BW Source Systems* (SAP_BW_BASIS_COPY_REFRESH_CONFIG) in the target BW system and the two target BW source systems to preserve the configuration data of the target system. In task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) make the following selections:

- In the target BW system, select *Retain Connection; System Copied as Well* for all connected BW source systems.
- In the target BW source systems, select *Retain Connection; System Copied as Well* for the connected BW system.

Then you copy the original system to refresh the target system.

After the system refresh, continue the same task list run for *Configuration for System Refresh of BW/BW Source Systems* in the target BW system and the two BW source systems to perform the cleanup, import and configuration steps in the target system. You might need to import the task list run back into the task manager after the refresh.

This procedure can be done for each of the three systems independently from the other ones. However none of the three systems must be used by the end user before the procedure has been finished in all of them.

Related Information

Task List 'Configuration for System Refresh of BW/BW Source Systems' [page 24]
Executing Task List for System Refresh [page 27]

1.4.5 Refresh of a BW system only

You want to refresh a BW system that is, for example, connected to four BW source systems. The connections to two BW source systems should be retained, the other two connections shall be deleted.

Before the system refresh, implement the SAP Notes required for BW PCA in the BW system and the BW source systems that should maintain connections to the target system (see chapter *Analyzing and Implementing SAP Notes* in this guide). Only a few SAP Notes are required in the BW source systems to automate the remote operations.

Before the system refresh, execute the task list *Configuration for System Refresh of BW/BW Source Systems* (SAP_BW_BASIS_COPY_REFRESH_CONFIG) in the target BW system to preserve the configuration data of the target system. In task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) make the following selections:

- Select *Retain Connection* for the two *Connected BW Source Systems* that should maintain connections to the target BW system after the system copy.
- Select *Delete Connection* for the connections which are not required.

After the system refresh, continue the same task list run *Configuration for System Refresh of BW/BW Source Systems* in the target BW system to perform the cleanup, import and configuration steps in the target system. You need to import the task list run back into the task manager after the refresh.

Related Information

Task List 'Configuration for System Refresh of BW/BW Source Systems' [page 24]
Executing Task List for System Refresh [page 27]

1.4.6 Refresh of a BW source system only

You want to refresh a BW source system that is, for example, connected to one BW system. After the copy, the target BW source system should still be connected to the BW system.

Before the system copy, implement the SAP Notes required for BW PCA in the original and target BW source system and in the connected BW system (see chapter *Analyzing and Implementing SAP Notes* in this guide).

Before the system refresh, execute the task list *Configuration for System Refresh of BW/BW Source Systems* (SAP_BW_BASIS_COPY_REFRESH_CONFIG) in the target BW source system to preserve the configuration data of the target system. In task *Select System Connections to be retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) make the following selection:

- Select *Retain Connection* for the *Connected BW System* that should maintain connections to the target BW source system after the system copy.

After the system refresh, continue the same task list run *Configuration for System Refresh of BW/BW Source Systems* in the target BW source system to perform the cleanup, import and configuration steps in the target system. You might need to import the task list run back into the task manager after the refresh.

Related Information

Task List 'Configuration for System Refresh of BW/BW Source Systems' [page 24]
Executing Task List for System Refresh [page 27]

2 Prerequisites

For installation, you have read the ABAP Post-Copy Automation Installation Guide.

For configuration and security considerations, you have read the ABAP Post-Copy Automation Configuration Guide.

The guides are available on the SAP Help Portal at http://help.sap.com/nwlvm.

3 Using the Task Manager for BW Post Copy Automation

SAP offers the following predefined task lists for BW PCA using the task manager for technical configuration as standalone tool:

- Preparation for Initial Copy of a BW System (SAP_BW_COPY_INITIAL_PREPARE)
- Configuration for Initial Copy of BW/BW Source Systems (SAP_BW_BASIS_COPY_INITIAL_CONFIG)
- Configuration for System Refresh of BW/BW Source Systems (SAP_BW_BASIS_COPY_REFRESH_CONFIG)

> **i Note**
>
> - Task lists are proprietary to SAP and can be overwritten during an upgrade. Like for example, ABAP programs, this will affect future executions of the task list only, it will not affect executions, which were started before the upgrade of the task list. If you want to preserve the current state of the task list, we recommend, to copy SAP task lists into your own name space via Transaction STC01 and save them prior to execution.
> - Task lists for BW post copy automation can contain tasks of the ABAP post copy automation. The system that is copied is referred to as the source system in ABAP post copy automation. In BW post copy automation, this system is referred to as the original system. This avoids confusion with the term BW source system, which provides BW with data. The generated copy is referred to as the target system in both environments.
> - The list of tasks of the mentioned task lists differes slightly in a BW on HANA and a BW/4HANA system. In BW/4HANA, some of the tasks are obsolete and have been removed.

The following sections describe the BW PCA task lists delivered by SAP. For more information about single tasks, see the description of each task, which is available in the *Help* column of a task list in the task manager in the system.

3.1 Preparation for Initial Copy of a BW System

You can execute the task list *Preparation for Initial Copy of a BW System* (SAP_BW_COPY_INITIAL_PREPARE) on a running BW system to prepare a system copy.

Related Information

Task List 'Preparation for Initial Copy of a BW System' [page 15]

Executing Task List for Initial System Copy Preparation [page 17]

3.1.1 Task List 'Preparation for Initial Copy of a BW System'

Purpose

This task list (SAP_BW_COPY_INITIAL_PREPARE) is executed on a running BW system as preparation. Only for database copy or export, you might have to shut down and restart the ABAP system.

Before you initially copy a productive BW system, the original BW system should be prepared. With this preparation, you can maintain connections to BW source systems from both BW systems, the original and the target system, without re-initializing the delta processes. This is accomplished by cloning the delta queues in the selected BW source systems and anticipating the connection to the target BW system before the actual system copy is done.

After the preparation is successfully completed (step 1- 6 of this task list) the database can be copied or exported. Then the task list *Configuration for Initial Copy of BW/BW Source Systems* (SAP_BW_BASIS_COPY_INITIAL_CONFIG) should be executed in the target BW system. Your selection and entered values in the task list SAP_BW_COPY_INITIAL_PREPARE are transferred automatically to the task list SAP_BW_BASIS_COPY_INITIAL_CONFIG. The execution of the remaining tasks in this task list is completed in the original system after the database export.

A special use case for this preparation is the migration from BW to BW on SAP HANA. The preparation allows you to run your productive BW, while upgrading a copy of it to SAP NetWeaver BW 7.3 SP 5 (or higher) and migrating the database to SAP HANA. You can even run your old productive BW and your new BW on SAP HANA in parallel, without re-initializing the delta processes for the BW on SAP HANA.

The steps for preparing an initial copy should always be performed in the following sequence that is preconfigured in this task list:

1. Select System Connections to be retained after Copy (CL_RSAPI_GET_SYSTEM_SELECTION)
   With this task, you specify for each connected BW system and BW source system whether the connection is retained and whether the system is copied as well. If you choose to retain the connection but not to copy a source system, the delta queues in this source system will be cloned and synchronized with the original BW system in the following steps. Your selection in this task will also be available in the copied system when you execute the task as a post-copy step.
2. Clone Delta Queues before System Copy (CL_RSO_DELTA_QUEUE_CLONE)
   With this task, you enter the new logical system name for the copy of the original BW system. The task execution disables the creation of delta-initialization requests until the successful completion of the task list and checks if the recently started delta-initialization requests have completed successfully. If this is the case, the delta queues for this BW system are cloned, within the chosen BW source systems, using the new logical system name.
3. Confirmation: Requests for All Delta Queues Created? (CL_RSO_DELTA_TRIGGER)
   After the delta queues are cloned in the chosen BW source systems, you must trigger delta requests in the original BW system for all the cloned delta queues. The task list execution is interrupted at this task, and you can resume execution of the task list by confirming this task manually after all the required delta requests are created.

4. Stop RDA Daemons and Process Chains (CL_RSO_SYSTEM_SHUTDOWN)
   After you have loaded delta for all cloned delta queues, the system is prepared for the database export (for the actual copy). This step requires that no data loads or process chains are currently running, in order to have the target system in a clean state. This task prevents the creation of new process chain runs and stops the RDA daemons, then it waits until all currently running process chains and daemons are finished.
5. Synchronize Delta Queues before System Copy (CL_RSO_DELTA_QUEUE_SYNCH)
   This task checks whether delta requests have been triggered and completed successfully and the creation and repetition of delta requests is disabled until the successful completion of the task list. If this is true, the cloned delta queues for the new logical system names are synchronized with those of the original BW system.
6. Confirmation: Database Copied or Exported? (CL_RSO_CONFIRM_DB_EXPORT)
   This task confirms that the actual system copy is complete. The database copy or export can be started before or during the execution of this task list. After the synchronization of the delta queues, you have to make sure that the latest changes are included in the copy. Then you have to manually confirm that the database has been copied or exported completely before the execution of the task list can continue.
7. Resume Request Processing after Delta Queue Cloning (CL_RSO_DELTA_QUEUE_RESUME)
   The creation of delta-initialization, delta and repeat requests is enabled again.
8. Restart RDA Daemons and Process Chains (CL_RSO_SYSTEM_STARTUP)
   Finally, the execution of process chains is continued, and RDA daemons are started again.

With the exception of the actual system copy, the task list execution only affects the data staging part of the productive BW system but not the reporting part.

For more information about the preparation for BW initial copy, see the description of each task, which is available in the *Help* column of the task list.

Prerequisites

The following requirement applies to the BW system which you want to copy:

The system has at least SAP BW 7.0 with support package 17. Implement note 1707321 in the BW (or a development system for this BW) and run the program mentioned in the note. In the program selection screen, choose the option *BW system (Basis and BW notes)*. The program downloads the required notes and asks you to implement them.

The following requirement applies to the BW source systems that you want to connect to the original and the target BW system without reinitializing the delta processes:

The system has at least SAP Netweaver 7.0 with Plug-In-Basis 2005.1 (PI_BASIS 2005_1_700). Implement note 1707321 in the BW source system (or a development system for this BW source system) and run the program mentioned in the note. In the program selection screen, choose the option *Basis system that is connected to a BW system and not copied (PI-Basis notes)*. The program downloads the required notes and asks you to implement them.

3.1.2 Executing Task List for Initial System Copy Preparation

Context

Procedure

1. Log on to your original BW system.

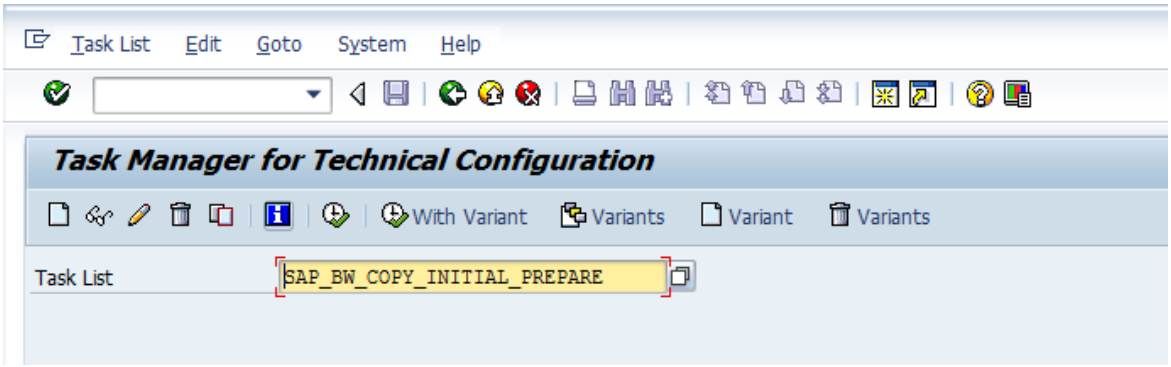
   > **i Note**
   >
   > Ensure to execute your default task list on client 000.

   Some BW tasks need to be executed in different clients of the target system. The task *Select System Connections to be Retained after Copy* will ask you for and check RFC destinations that enable access to these local clients. Thus, the respective tasks will be executed automatically in the correct client.

2. Call transaction STC01.

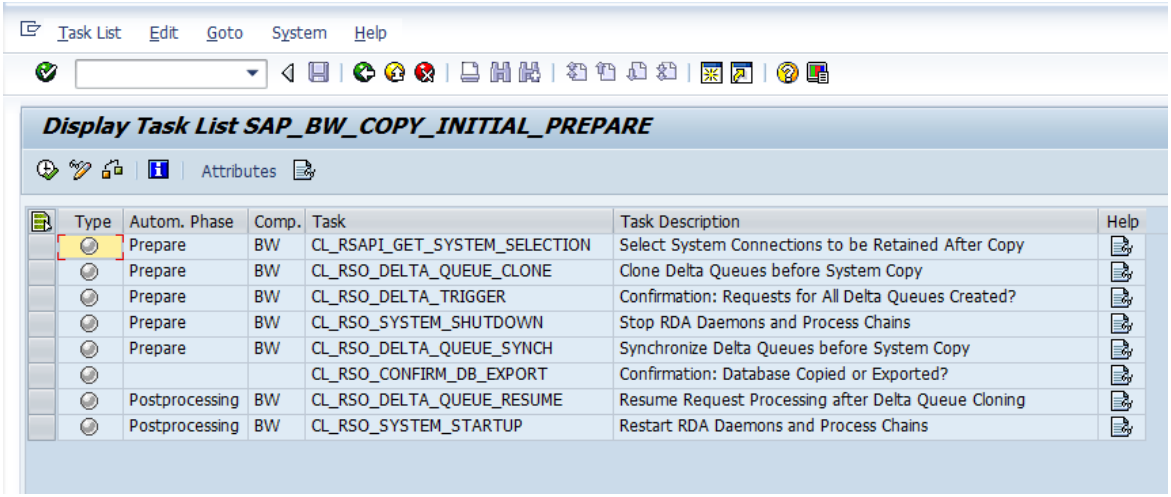
   You start the first task list execution with transaction STC01. If you have to leave the transaction, e.g. to export the database, you have to call transaction STC02 to continue the task list execution.

3. Enter `SAP_BW_COPY_INITIAL_PREPARE` in the *Task List* field.



4. Choose *Display Task List*.

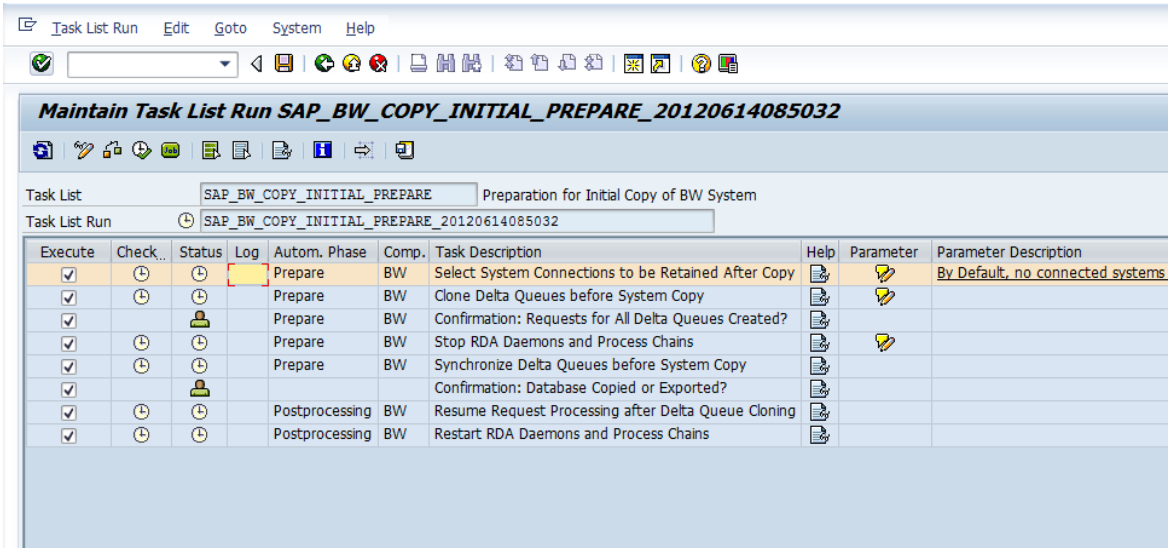
   You see the task list with *Task Type*, *Automation Phase*, *Component*, technical name of the *Tasks*, *Task Description* and a link to the task documentation.



This task list only contains task of the BW component.

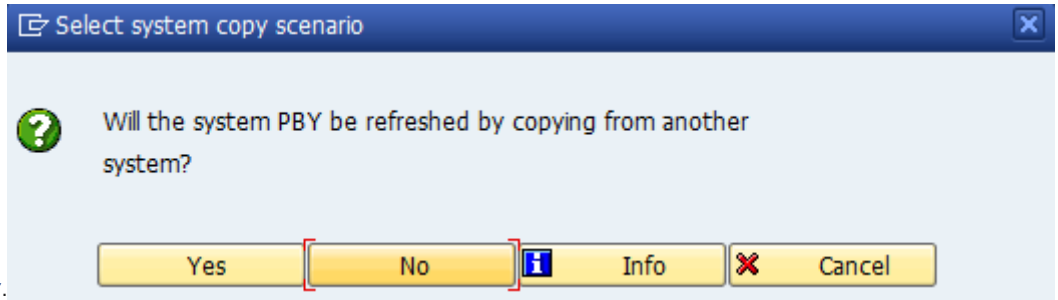
5. Choose *Execute Task List*.

   The task manager automatically assigns a name to the task list run and displays a list of the tasks that are defined for the preparation of a BW system for the initial system copy scenario in the order of their execution. Mandatory and necessary tasks are preselected for execution.



6. Select the system copy scenario.

   Choose *Fill Parameter* in the *Parameter* column of task *Select System Connections to be Retained after Copy*.



7. Some tasks require your input.

   Choose *Change Parameter* in the Parameter column of each task, if applicable. Decide for each task if you want to edit the parameters or copy the settings from an existing variant. If you do not maintain mandatory parameters, the task manager uses default settings, if any, or stops and prompts for your input. After you have made your settings, save them and go back to the task list.
8. Choose *Start/Resume Task List Run in Dialog* or *Start/Resume Task List Run in Background*.

> **i Note**
>
> When started a task list run in background, choose Refresh Task List to get the current status of the task list run.

3.2 Configuration for Initial Copy of BW/BW Source Systems

You can use the task list *Configuration for Initial Copy of BW/BW Source Systems* (SAP_BW_BASIS_COPY_INITIAL_CONFIG) if you want to copy a BW system, BW source system or the entire system group (BW and BW source system).

Related Information

Task List 'Configuration for Initial Copy of BW/BW Source Systems' [page 19]
Executing Task List for Initial System Copy [page 22]

3.2.1 Task List 'Configuration for Initial Copy of BW/BW Source Systems'

Purpose

For a BW initial copy, you can decide if you want to copy a BW system, BW source system or the entire system group (BW and BW source system). After the actual system copy has finished, you have to carry out several cleanup and configuration steps in the new installed target systems.

You can use this task list (SAP_BW_BASIS_COPY_INITIAL_CONFIG) to run the required cleanup and configuration steps automatically in every new installed target system. The task list contains all basis-component-related tasks needed for the configuration of an ABAP system, plus all tasks needed to re-enable connections to BW systems and BW source systems.

Currently, the task list does not contain tasks needed for database or OLAP configuration, for example, creating DDL statements and reducing table content size.

Also, not automated is the adoption of source system connections within not copied remote BW systems. There are two scenarios:

1. Within the remote BW system, both BW source systems (the original system and its copy) should be connected. In the remote BW system, this scenario means connecting a new BW source system (namely the target system of the copy), and doubling all data flows. Due to the complex modeling aspects with this scenario, this can only be executed with manual configuration. However, this scenario can be prepared in the target BW source system by selecting the option *Delete Connection* for this remote BW system in the task *Select System Connections to be Retained after Copy*.
2. Within the remote BW system, the connection to the BW source system should be switched from the original BW source system to the target BW source system. This scenario can be prepared in the target BW source system by selecting the option *Retain Connection* for this remote BW system in the task *Select System Connections to be Retained after Copy*. Afterwards, within the remote BW system, the conversion of the logical system name (BDLS) must be executed for the logical name of the original BW source system to the target BW source system and the destinations to the original BW source system must be adjusted, so that they point to the target BW source system instead (entering the new host and system number).

Each task is assigned to a component and a phase:

- Basis Components
  In the first part, some basis parts of an SAP system should be configured after a system copy. Before the execution, you should check wether all tasks that are needed to get a system up and running are selected for execution by default (*Execute* checkbox). The cleanup and configuration of the Secure Store is essential. Otherwise RFC connectivity in the copied system or RFC connectivity to remote systems is not possible which is needed by the BW tasks to follow. The task SGEN is optional and is positioned at the end of the list due to the long execution time.
- BW and BW_SAPI component related configuration steps
  These tasks have two purposes:
  - Cleanup and repair of connections between BW (component BW) and BW source systems (component BW_SAPI)
  - Cleanup and update of BW configurations (component BW)

  The order of the tasks is relevant. Changing the order of tasks in the task list may cause problems and is not recommended. In many cases changes are prohibited by the system to avoid subsequent errors.
  The BW tasks themselves decide for which connected system they need to be executed, depending on your selection in the task *Select System Connections to be Retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION).
  If a system is not used as BW, the corresponding tasks do not perform any action and only the tasks needed in a BW source system make changes. Therefore, they even do not need to be installed in a 'pure' BW source system. In that case, they are displayed in the task list with description 'Task object <class_name> does not exist in system'.
  Some tasks in the task list execute configuration(s) remotely into not copied systems when the connections should be retained (landscape configuration after system copy).
  The position of the BDLS task in the middle of the task list is on purpose. The BDLS conversion must run before most BW configuration tasks. However, some cleanup tasks require the old logical system names.
  The user interface of the BDLS task is filled with suggested 'from' (or 'lower limit') values, depending on what you have configured in the task *Select System Connections to be Retained after Copy*. You will need to enter the 'to' (or 'upper limit') values (logical system names for the copied systems). These 'from' values are also checked by the task *Delete Connections of this BW System to Obsolete Source Systems*

(CL_RSO_LOGICAL_SYSTEM_DELETE) on BW side and *Disconnect this Source System from Not Copied BW Systems* (CL_RSAPI_BIW_DISCONNECT) on BW source system side (refer the task documentation of the mentioned task).

> **i Note**
>
> Later changes in task *Select System Connections to be Retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) are transferred into the BDLS UI only if you chose *Retain Connection* or *Retain Connection; System Copied as Well*. If you decide to delete or ignore a connection, the old entry in the BDLS remains and must be deleted manually.

Each task belongs to one of the following phases:

1. Preparation phase
   You can select which system connections should be retained and which system you are copying as well (landscape copy). If you have executed the task list *Preparation for BW Initial Copy* (SAP_BW_COPY_INITIAL_PREPARE) before the actual system copy, your selections are still available.
2. Cleanup phase
   Data cleanup is required to clear the content of tables (in the target system) that contain obsolete information from the original system. Depending on what you have configured in the preparation phase, obsolete system connections and RFC destinations in the BW system group are deleted.
   Before the BW configuration part can start (system connections are needed for this), you have to manually confirm that the firewall is disabled (if the target system was started in a firewall) and resume the task list run.
3. Configuration phase
   The connections to be retained, as specified in task *Select System Connections to be Retained after Copy*, are restored. New destinations to the remote systems are checked. Next, any naming conflicts for the connection prefix are resolved, and the connection is re-established on the source system. Then the DataSources and transfer structures are re-activated. Finally, source-system-dependent BW configurations are updated and BW processing is restarted.

Each task contains a description of the implemented activities, which is available in the *Help* column of the task list.

Prerequisites

The following requirements apply to the original system which you want to copy:

- The system has at least SAP BW 7.0 with support package 17 (if it is a BW system) or Plug-In-Basis 2005.1 (if it is not used as BW).
- Implement note 1707321 in the system (or a development system to this system) and run the program mentioned in the note. In the program selection screen, choose the option *BW system (Basis and BW notes)* or *Basis system that is connected to a BW system (Basis and PI-Basis notes)*, depending on whether the system you want to copy is a BW or not. The program downloads the required notes and asks you to implement them.

Make sure that the system is changeable in the client of the BW system and the BW source system that you want to reconnect (systems selected with 'Retain' in the task Select System Connections to be retained after Copy), especially

- in transaction SCC4:
  - Changes and Transports for Client-Specific Objects: Automatic recording of changes
  - Cross-Client Object Changes: Changes to Repository and cross-client Customizing allowed
- in transaction RSWBO004:
  - Global Setting: Modifiable
  - Local Developments (LOCAL): Modifiable
  - Customer Name Range: Modifiable

Some of the BW tasks mentioned above need to be executed in dedicated clients of the target system, whereas the task list itself is usually executed in client 000. The task *Select System Connections to be Retained after Copy* in particular will ask you for RFC destinations that enable access to these local clients. The destination maintained in transaction RSTPRFC is used to access the BW client. You can check the selected RFC destination in table RSADMINA and field TPBWMANDTRFC.

The user that you enter in these RFC destinations should have the usual authorization profiles for BW background execution, S_BI-WX_RFC and S_BI-WHM_RFC. This allows you to enter the usual extraction and BW background users. For BDLS execution, the authorization object S_CTC with activity 16 (execution) is checked (if available, otherwise S_RZL_ADM with activity 01). This must also be assigned to the relevant user.

3.2.2 Executing Task List for Initial System Copy

Context

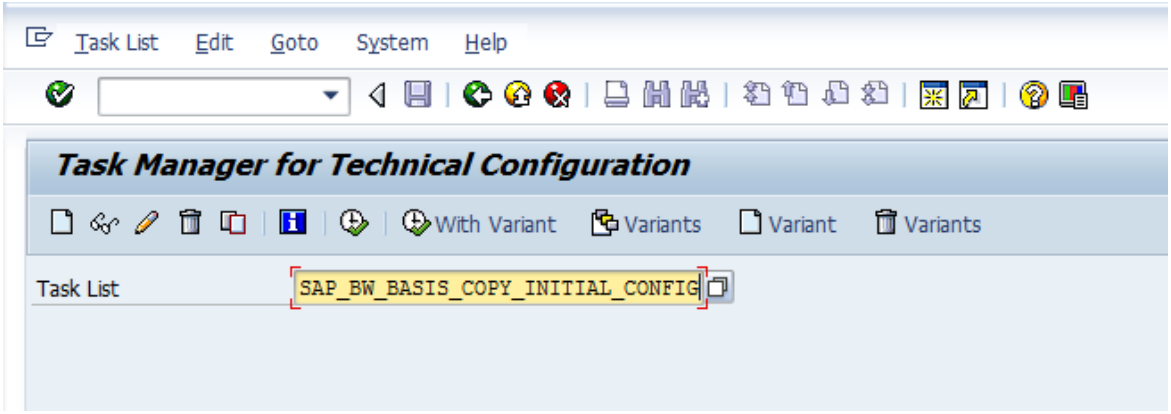
Procedure

1. Log on to your target BW system or target BW source system.

   > **i Note**
   >
   > Ensure to execute your default task list on client 000.

   Some BW tasks need to be executed in different clients of the target system. The task *Select System Connections to be Retained after Copy* will ask you for and check RFC destinations that enable access to these local clients. Thus, the respective tasks will be executed automatically in the correct client.
2. Call transaction STC01.

   You start the first task list execution with transaction STC01. If you have to leave the transaction, e.g. to export the database, you have to call transaction STC02 to continue the task list execution.
3. Enter `SAP_BW_BASIS_COPY_INITIAL_CONFIG` in the *Task List* field.



4. 4. Choose *Display Task List*.

   You see the task list with *Task Type*, *Automation Phase*, *Component*, technical name of the *Tasks*, *Task Description* and a link to the task documentation.

   This task list contains task of BW and different basis components.

5. Choose *Execute Task List*.

   The task manager automatically assigns a name to the task list run and displays a list of the tasks that are defined for the the initial system copy scenario of a BW system or a BW source system in the order of their execution. Mandatory and necessary BW tasks are preselected for execution. Basis tasks that require input are not selected for execution by default. Select the relevant tasks to be executed.

6. Select the system copy scenario.

   Choose *Fill Parameter* in the *Parameter* column of task *Select System Connections to be Retained after Copy*:

7. Some tasks require your input.

   Choose *Change Parameter* in the *Parameter* column of each task, if applicable. Decide for each task if you want to edit the parameters or copy the settings from an existing variant. If you do not maintain mandatory parameters, the task manager uses default settings, if any, or stops and prompts for your input. After you have made your settings, save them and go back to the task list.

8. Choose *Start/Resume Task List Run in Dialog* or *Start/Resume Task List Run in Background*.

> **i Note**
>
> When started a task list run in background, choose *Refresh Task List* to get the current status of the task list run.

Results

For more information about using the task manager for technical configuration, choose the *Online Help* pushbutton or see section *Performing Configuration Tasks with the Task Manager* under the SAP NetWeaver Library documentation in the SAP Help Portal.

3.3 Configuration for System Refresh of BW/BW Source Systems

You can use the task list *Configuration for System Refresh of BW/BW Source Systems* (SAP_BW_BASIS_COPY_REFRESH_CONFIG) through the whole refresh process before and after the copy activity.

Related Information

Task List 'Configuration for System Refresh of BW/BW Source Systems' [page 24]
Executing Task List for System Refresh [page 27]

3.3.1 Task List 'Configuration for System Refresh of BW/BW Source Systems'

Purpose

The system refresh overwrites an already existing target system with the latest data from an original system while keeping the system configuration and system connections. In order to prevent overwriting the target system configuration by the system refresh, you need to export the target system tables that contain configuration information to an external file system before the actual system copy can be started.

Once the system refresh is finished, you need to import the target system tables again. For a system refresh in a BW landscape, one has to distinguish whether a BW system, BW source systems or an entire system group (BW and its connected BW source systems) will be refreshed (overwritten) and therefore particular configuration tasks to restore the connections to other systems must be executed. It is recommended to delete the exported configuration data manually from the file system after the completed system landscape configuration.

The task list SAP_BW_BASIS_COPY_REFRESH_CONFIG will be used through the whole refresh process before and after the copy activity. The User shall maintain all selection User Interfaces before the system copy. These settings are saved in the task list run (TLR) which will be exported automatically to the external file system.

After confirmation of the copy step, the exported files must be imported again (refer section execution below) so that the same task list run (with stored user inputs) can be used for execution after copy on the refreshed target system.

You can use the task list SAP_BW_BASIS_COPY_REFRESH_CONFIG to run

- the required export steps before refresh
- cleanup, import and configuration steps after refresh

The task list contains all tasks of basis components that are needed for refreshing an ABAP system, plus all tasks needed for refreshing BW systems and BW source systems.

Each task is assigned to a component and a phase:

1. Basis Components:
   Basis component tasks, which run before refresh, export the content of basis tables before the refresh. After refresh, tasks shall cleanup basis tables, import content of basis tables and perform basis configurations.
   Some tasks are not selected for execution by default (*Execute* checkbox). However, these tasks may be needed in a particular system, so it is advised to examine carefully which tasks shall be executed. For instance, the cleanup and configuration of the Secure Store is essential. Otherwise RFC connectivity in the copied system or RFC connectivity to remote systems is not possible which is needed by the BW tasks to follow. The task SGEN is optional and is positioned at the end of the list due to the long execution time.
2. BW and BW_SAPI component related configuration steps:
   These tasks have two purposes:
   - Cleanup and repair of connections between BW (component BW) and BW source systems (component BW_SAPI)
   - Cleanup and update of BW configurations (component BW)

   The order of the tasks is relevant. Changing the order of tasks in the task list may cause problems and is not recommended. In many cases changes are prohibited by the system to avoid subsequent errors.
   The BW tasks themselves decide for which connected system they need to be executed, depending on your selection in the task *Select System Connections to be Retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION).
   If a system is not used as BW, the corresponding tasks do not perform any action and only the tasks needed in a BW source system make changes. Therefore they even do not need to be installed in a 'pure' BW source system. In that case, they are displayed in the task list with description 'Task object <class_name> does not exist in system'.
   Some tasks in the task list execute configuration(s) remotely into not copied systems when the connections should be retained (landscape configuration after system copy).
   The position of the BDLS task in the middle of the task list is on purpose. The BDLS conversion must run before most BW configuration tasks. However, some cleanup tasks require the old logical system names.
   The User Interface of the BDLS task is filled with suggested 'to' (or 'upper limit') values, depending on what you have configured in the task *Select System Connections to be Retained after Copy*. You will need to enter the 'from' (or 'lower limit') values (logical system names from the original system). These 'from' values are also checked after system refresh by the task *Delete Connections of this BW System to Obsolete Source Systems* (CL_RSO_LOGICAL_SYSTEM_DELETE) on BW side and *Disconnect this Source System from Not Copied BW Systems* (CL_RSAPI_BIW_DISCONNECT) on BW source system side (refer the task documentation of the mentioned task).

> **Note**
>
> Later changes in task *Select System Connections to be Retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) are transferred into the BDLS UI only if you chose *Retain Connection* or *Retain Connection; System Copied as Well*. If you decide to delete a connection, the old entry in the BDLS remains and must be deleted manually.

Each task belongs to one of the following phases:

1. Preparation phase:
   In the task *Select System Connections to be Retained After Copy* (CL_RSAPI_GET_SYSTEM_SELECTION), you must choose System Copy Scenario as Refresh. Then you select which system connections should be deleted, ignored, retained and which connected system you are copying as well (landscape copy).
   Pre-check tasks run on the target system before refresh to determine system consistency.
2. Export phase:
   This phase occurs before the physical system refresh. To preserve the configuration data of the target system, the tasks in this phase export the configuration data in form of table content via r3trans to the file system. Basis configurations (e.g. Users, RFC connections) and BW tables that contain configuration data (e.g. RSADMIN, RSLOGSYSDEST) are exported.
3. Copy phase:
   The task list run stops to allow the administrator to perform the physical system copy (Task: CL_STCT_SC_CONFIRM_COPY). This task exports the task list run automatically to an external file system before it stops. The physical system copy (refresh) must be done manually. After copy the task list run must be imported back into the system after system refresh (refer section execution below). To resume execution of task list run, user will have to manually confirm this task in the task list run.
4. Cleanup phase:
   Cleanup tasks delete content of tables that contain obsolete information of the original system (e.g. Batch jobs, old connections to BW or BW source systems). If the system to be refreshed is a BW system, obsolete source system connections are removed. This has to be carried out in the BW client. The RFC destination to the BW client is not updated before the Import phase. The task *Update host details of BW RFC destination* updates the copied RFC destination which can be found in transaction RSTPRFC with the target host name, system number, user password and system ID of the BW client.
5. Import phase:
   As configuration data is overwritten with information of the original system, the tasks import the BW and Basis configuration data in form of table content via r3trans from the file system. Configuration data saved during export phase are written back to the respective tables (e.g. Users, RFC connections present before System Copy are retrieved). If you select or deselect any export tasks, make sure that always the corresponding import tasks are selected or deselected accordingly. Otherwise some old tables could be imported. If you have the same clients in original and target system, make sure the SCC4 import task is selected.
6. Configuration phase:
   In this phase, most BW related tasks are executed. Connections are restored as specified in task *Select System Connections to be Retained after Copy* (CL_RSAPI_GET_SYSTEM_SELECTION) in the preparation phase and further BW related configurations are executed.

The predefined task list offers the possibility to select or deselect tasks. If tasks depend on each other, the task manager for technical configuration allows only joint selecting or deselecting.

Each task contains a description of the implemented activities, which is available in the *Help* column of the task list.

Prerequisites

The following requirements apply to the original and target system which you want to do system refresh:

- The system has at least SAP BW 7.0 with support package 17 if it is a BW system or SAP Netweaver 7.0 with Plug-In-Basis 2005.1 (PI_BASIS 2005_1_700) if it is not used as BW).
- Implement note 1707321 (Note analyzer Post Copy Automation) in the system (or a development system to this system) and run the program mentioned in the Note. Be sure to implement the note also in the connected BW source system(s).

Make sure that the system is changeable in the client of the BW system and the BW source system that you want to reconnect (i.e. those connected systems, that are selected with 'Retain' in the task *Select System Connections to be retained after Copy*), especially

- in transaction SCC4:
  - Changes and Transports for Client-Specific Objects: Automatic recording of changes
  - Cross-Client Object Changes: Changes to Repository and cross-client Customizing allowed
- in transaction RSWBO004:
  - Global Setting: Modifiable
  - Local Developments (LOCAL): Modifiable
  - Customer Name Range: Modifiable

Some of the BW tasks mentioned above need to be executed in local clients of the target system whereas the task list itself is executed in client 000. Therefore, the task *Select System Connections to be Retained after Copy* in particular demands and checks RFC destinations that enable access to these local clients. The destination maintained in transaction RSTPRFC is used to access the BW client. You can check the selected RFC destination in table RSADMINA and field TPBWMANDTRFC.

The user that you enter in these RFC destinations should have the usual authorizations profiles for BW background execution, S_BI-WX_RFC and S_BI-WHM_RFC. This allows you to enter the usual extraction and BW background users. For BDLS execution, the authorization object S_CTC with activity 16 (execution) is checked (if available, otherwise S_RZL_ADM with activity 01). This must also be assigned to the relevant user.

3.3.2 Executing Task List for System Refresh

Context

Procedure

1. Log on to your target BW system or target BW source system.

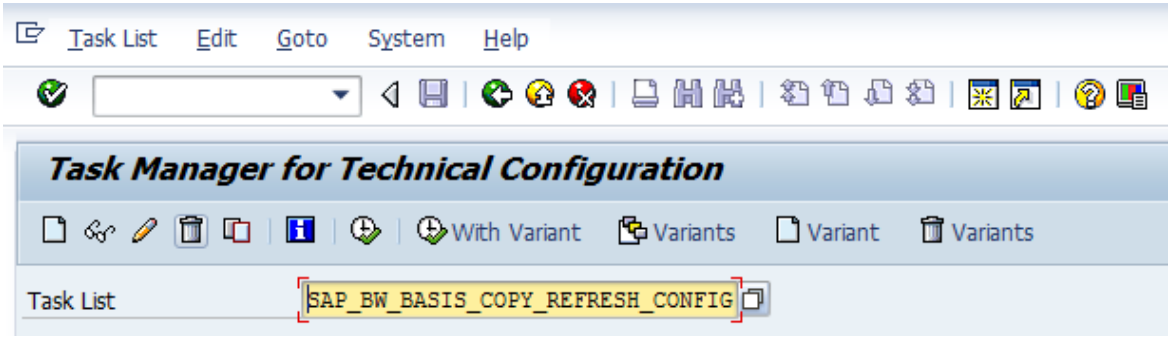
> **Note**
>
> Ensure to execute your default task list on client 000.

Some BW tasks need to be executed in different clients of the target system. The task *Select System Connections to be Retained after Copy* will ask you for and check RFC destinations that enable access to these local clients. Thus, the respective tasks will be executed automatically in the correct clients.

2. Call transaction STC01.

   You start the task list execution with transaction STC01. If you have to leave the transaction, e.g. to export the database, you can continue with the task list run execution via transaction STC02.

3. Enter `SAP_BW_BASIS_COPY_REFRESH_CONFIG` in the *Task List* field.



4. Choose *Display Task List*.

   You see the task list with *Task Type*, *Automation Phase*, *Component*, technical name of the *Tasks*, *Task Description* and a link to the task documentation.

   This task list contains task of BW and different basis components.

5. Choose *Execute Task List*.

   The task manager automatically assigns a name to the task list run and displays a list of the tasks that are defined for the system copy refresh scenario of a BW system or a BW source system in the order of their execution. Mandatory and necessary tasks are preselected for execution. Basis tasks that require input are not selected for execution by default. Select the relevant tasks to be executed.

6. Select the system copy refresh scenario.

   Choose *Fill Parameter* in the *Parameter* column of task *Select System Connections to be Retained after Copy*:

7. Some tasks require your input.

Choose *Fill Parameter* in the *Parameter* column of each task, if applicable. Decide for each task if you want to edit the parameters or copy the settings from an existing variant. If you do not maintain mandatory parameters, the task manager either uses default settings or stops and prompts for your input. After you have made your settings, save them and go back to the task list.

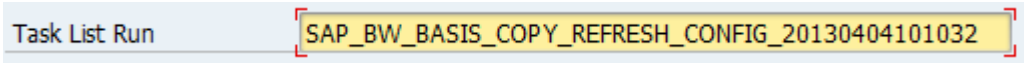
The settings made are saved in the task list run (TLR) and are automatically exported before the copy to an external file system. After the execution of the system copy the settings are imported again during the same task list run. Remember the task list run identifier for later importing.

8. Choose *Start/Resume Task List Run in Dialog* or *Start/Resume Task List Run in Background* to perform the preparation and export steps.

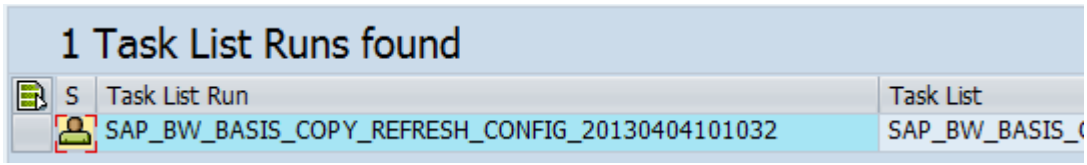
> **i Note**
>
> When started a task list run in background, choose *Refresh Task List* to get the current status of the task list run.

After the completion of the preparation and export steps, the task list execution stops automatically.

9. Perform the system copy.
10. Call transaction STC02 to import the task list run.
11. Choose *Task List Run* > *Import*.
12. Enter the task list run identifier and import it.



13. Search for the task list run in STC02.



14. Select the task list run (double click) and switch to change mode.

15. Confirm the manual step *Confirmation: System Copy executed*.
16. Choose *Check Task List Run* to check the parameters before continuing the task list execution.
17. Choose *Start/Resume Task List Run in Dialog* or *Start/Resume Task List Run in Background* to perform the cleanup, import and configuration steps.

Results

For more information about using the task manager for technical configuration, choose the *Online Help* pushbutton or see section *Performing Configuration Tasks with the Task Manager* under the SAP Library documentation in the SAP Help Portal.

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