

Manually Restoring Lost Delta Data from ECC.



Applies to:

SAP NetWeaver BW 3.x and 7.0. For more information, visit the [Business Intelligence homepage](#)

Summary

We are here simulating the scenario where this delta data queues / entries gets corrupted or deleted and contemplating the possibility of recovering this lost data manually.

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Author Bio

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Manually Restoring Lost Delta from ECC.

The Success of any BW Implementation is measured primarily by the availability of Right Data at the Right time for reporting. This data is essentially the base on which informed decisions can be taken by Leadership. The major quantum of this data is the Current or Daily delta data. This is normally provided by Delta capable DS to BW. In most cases this comes thru R/3 RSA7 which captures Delta data as well as Repeat Delta data.

We are here simulating the scenario where this delta data entry gets corrupted or deleted and contemplating the possibility of recovering this lost data manually.

This delta corruption can happen due to Improper Upgrade / Patch application / Add-on installation practices, incorrect transports or due to human mistake.

Resolution

This first step is to identify the DS / Application areas / Queues / TCodes which have been affected. This may be found out from RSA7 / LBWQ / SMQ1 / SLG1 / SM21 / Other logs etc and with the help of System admin.

Once the issue is identified as deletion of Delta data from Delta Queue (RSA7) and SMQ1 (QRFC Monitor/Outbound Queue) the priority is given to find the delta data that got deleted.

Further analysis reveals that the Delta queue deletion may only have impacted DS that functions based on Push Mechanism (LO) and where delta data comes through RSA7 Delta queue. DS based on Pull Mechanism (Generic, FI, COPA) may not get affected as delta queue for those stores Repeat delta information alone and not delta. This necessitated immediate action to recover data for DS with Push mechanism.

First step is to identify the affected DS for which the delta needs to be restored. This information was gathered by collecting data from multiple sources like RSA7, Data flow in Daily Batch Network, Process chains, Design documents, TO, system logs etc.

The second task was to identify the delta data for these DS. As delta contains any newly created or any changed records the foremost importance was to find these records.

For this we undertook multiple approaches. The starting point is finding out the application / base tables from which these DS are being populated and the timestamp / date or similar fields which can be effectively utilized to determine the deltas.

This can be finalized after consulting SAP documents / Consulting Techno-Functional Consultants. Each DS, the related application tables / base tables, possible time stamp fields (created on / changed on etc) need to be categorized.

Wave 1 (Delta data) reloads.

From Application / Base tables

Newly created records can be identified using Date/Timestamp fields available in the application tables. Application tables for each application tables have created date / Changed date fields. This gave a relatively complete set of records that were newly created records and any old that records that got changed during this period.

CDHDR and CDPOS

Another approach was to identify the changed records from R/3 tables CDHDR and CDPOS. We need to have the object class for each application to fetch the information from CDHDR and CDPOS tables. The object class for each application can be identified from TCode SCDO / Table TCDOB, TCDRP, TCDRS in ECC and the records fetched from the above mentioned tables. This is better done with the assistance a functional expert. It may not be very easy to retrieve this information from ECC base tables without the help of an ECC Consultant.

A list of all those records created / changed can be compiled through the above mentioned steps. The record numbers should be tallied with the load history of each of these Datasource to confirm that the data volume is matching approximately.

Once the entire missing delta data is identified the next priority is identified as extracting the same from R/3. As these were LO Datasources this will necessitate filling up of setup tables for these applications with these records and pulling them into BW.

This was done for all the LO Datasources.

Examples of Application area and related base tables.

Application	List of base tables
Purchasing	EKKO, EKPO
Manufacturing	CAUFV, AUFK, AFRU, AUFM, AFKO, AFPO
QM	QALS, QMEL, QAVE
Billing	VBRK, VBRP
PM	AFIH, QMEL

More information on this can be found SAP documentation.

Examples of Applications and related object class from SCDO.

Application	Object class
Sales Order	VERKBELEG
Billing Document	FAKTBELEG
Delivery	LIEFERUNG
Purchasing	EINKBELEG

Wave 2 (Full Loads) reloads.

The third step was to perform full / Repair Full loads for a minimum credible period.

The first set of reloads (Wave 1 for delta data alone) is to be followed by Wave 2 full / Repair Full Reloads. This can be done over an extended period of time as this is more time consuming given the considerable increase in data volume for each application. From a practical perspective this full reloads may be only be necessary for critical applications and applications where data volume is considerable lesser.

During Wave 2 Reloads we need to perform full data reload for affected applications from R/3. This should ensure that all the data in R/3 has been loaded into BW and there are fewer chances of data integrity issue in the future and to load any delta that could have been missed out during Wave 1 delta load.

Data Validation

Data Validation was done by primarily done checking the data in the reports and also by Interacting with Business. Secondary data validation can be done by comparing ECC and BI data randomly.

Additional Information

ECC Tables

Object class - Application

TCDOB / TCDRP / TCDRS

Change documents

CDHDR	Change document header
CDHDRDISP	Change document header display structure
CDHDRH	Change Document Header Per Point in Time
CDHDR_ALV	Change Document Header Shipment
CDHDR_OLD	Change document header
CDPOS	Change document items
CDPOS_OLD	Change document items
CDRED	Change documents, display structure
CDREDDISP	Change document display structure
CDTXT	Change documents: Text changes

TCodes / Programs

SCDO CHDO AENDBELEG => Gen. by RSSCD000

AENDBELEG_WRITE_DOCUMENT CHDO AENDBELEG => Gen. by RSSCD000

Related Contents

Documents: How to track changes through ABAP?

<https://www.sdn.sap.com/irj/scn/weblogs?blog=/pub/wlg/6054>

Note [1008250](#) - Backup table for the queues of logistics extraction into BI

http://help.sap.com/saphelp_nw04/helpdata/en/2a/fa015b493111d182b70000e829fbfe/frameset.htm

<http://wiki.sdn.sap.com/wiki/display/ABAP/Change+Document>

<http://wiki.sdn.sap.com/wiki/display/Snippets/Steps+to+enable+logging+of+changes+in+change+documents>

A Safety Belt for Logistics Extraction Queues

<http://www.sdn.sap.com/irj/scn/weblogs?blog=/pub/wlg/5316>

For more information, visit the [Business Intelligence homepage](#).

Note: The same method can be also employed during ECC – BI Reconciliation or to identify missing deltas and perform Full repair loads to BI.

OSS Note 1008250 mentions about an automated approach. It would be useful if we explore the possibility mentioned in this note before trying the manual approach or along with this.

This methodology deals with an unexpected and unwelcome scenario. So my advice would be to try this only when you have a genuine requirement. It may not be a good idea to try this out in a live system just for educational or learning purposes.

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