

Non Cumulative Backup Management – Part 1: How to Handle Inventory Backup Scenario



Applies to:

NetWeaver SAP BW 7.0. For more information, visit the [EDW homepage](#).

Summary

Inventory Cube, 0IC_C03, becomes the cynosure for many clients when they begin to realize that the data volume is taking a toll on the reporting performance and something needs to be done about it.

There are options like NLS DAP (Data Archiving Process) but that is not supported for non cumulative as of SAP NW BW 7.0. So what we are left with is the age old process of ...Backup!

But hold on...Inventory backup is not plain vanilla like any other basic cube. We need to acknowledge and deal with the following aspects when working with the inventory cube:

1. The inventory cube is the house of non-cumulative which are not stored in the Fact table and are instead calculated at query runtime.
2. There are two types of records which are stored in the inventory cube:
the current marker values (Record type = 1) and
the movements'/revaluations (Record type = 0)

Bearing the above points in mind, let's see how we can take the backup of the inventory cube.

In this part 1, we will see how the backup is taken for Inventory cube. In the next part, we will deal with the deletion and restoration of the marker and movements' data from 0IC_C03.

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Purpose:

The inventory backup cube solves 2 purposes:

1. The purpose of serving as a fall back option in case the data in the main cube become inconsistent and the marker values needs to be restored.
2. The purpose of enabling the clients' to delete data from the main cube, 0IC_C03, according to the retention period and keep the query performance healthy.

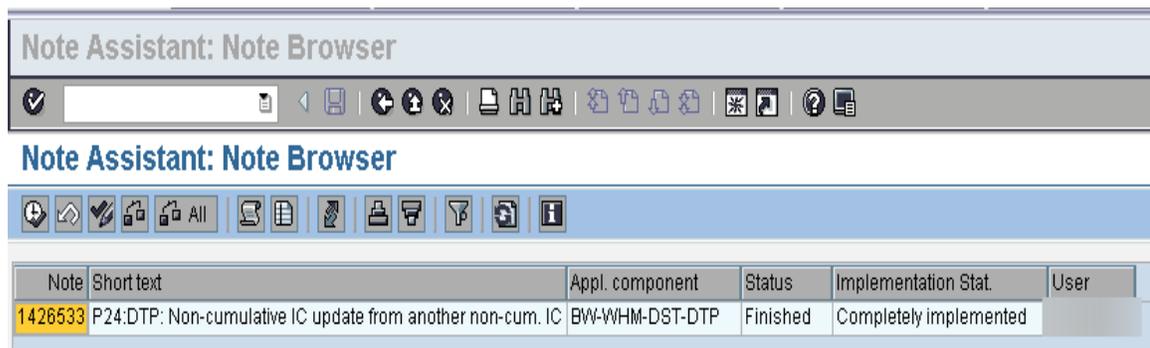
Prerequisites:

Before we jump to the requisite steps for taking the backup, we need to ensure that the following points are taken care of:

1. All the data in the main cube, 0IC_C03 should be compressed.
This is a must and failing to do this before the backup will result in inconsistent data.
2. Need to peruse through the SAP note – [“375098 - Data mart extraction from non-cumulative InfoCubes”](#) carefully to understand the steps for BW 3.5 and for BW 7.x as we don't have DTPs in 3.x and we need to create a start routine in the update rules. In the start routine, the internal update mode of the request is changed from 'FULL' to 'Non-cumulative initialization' and the time reference characteristic is mapped to SY-DATUM if the extracted data consists of reference points.
3. Need to implement the SAP Note – [“Note 1426533 - P24:DTP: Non-cumulative IC update from another non-cum. IC”](#) in the BW system. This note will ensure that we are able to extract the marker values as well as movements' data accurately to the backup cube.
If we do not implement this note, the initial non cumulative DTP will not fetch the marker values correctly and will result in inconsistent data in the backup cube.
Therefore the basis /BW team needs to implement the note in the BW system.

We can check if the note is already implemented or not in the SNOTE tcode.

Go to SNOTE Tcode -> Note browser () -> Provide the Note number and execute.
If it is implemented, a similar record will be shown in the SAP note browser:



Note	Short text	Appl. component	Status	Implementation Stat.	User
1426533	P24:DTP: Non-cumulative IC update from another non-cum. IC	BW-WHM-DST-DTP	Finished	Completely implemented	

Milieu:

Before we commence the actual development for the backup cube, we need to acknowledge and appreciate the way SAP BW manages inventory non-cumulatives.

The inventor cube, 0IC_C03, stores non-cumulatives with reference to a time characteristic which is, by default, the most detailed time characteristic in the cube definition. These non-cumulatives (Total stock, Stock in transit, QI stock etc) are calculated based on the inflow and outflow inferring that for every non-cumulative KPI there would be one inflow (receipt) and one outflow (issue) which are then subtracted to get the stock value as of a particular day when the query executes.

The vital point to note is that inventory cube stores the movements'/revaluations differently than the marker

values. Marker value is the current stock position. If the cube is completely compressed, the marker value will show the current stock value. These marker values are stored with Record type 1 and the movements/revaluations are stored as Record type 0. These record types are used when the inventory queries perform calculations based on the marker value in cube.

Assumptions and Naming conventions:

1. Naming convention: The naming conventions used are as per the standard followed by the Organization. It will differ for different organizations. Please use the naming convention used by your respective Organization.
2. As the ECC switch is set to “Retail” the names article and site are used instead of material and plant.
3. We are terming 0IC_C03 as the main cube and ZIC_C03B as the backup cube.
4. For demonstration, article 20000067001 and site 5636 are used. It will be different for different organizations.
5. We will refer to movements’ + revaluations data as movements’ data throughout the article.

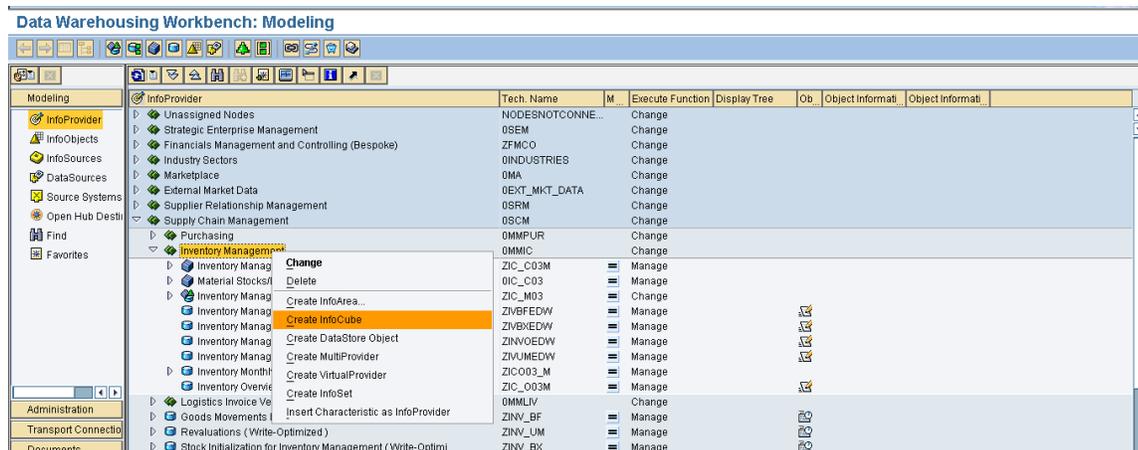
Steps:

Once we have taken care of the prerequisites and understood the way marker values are stored, we are ready to commence the backup procedure for the famous inventory cube - 0IC_C03.

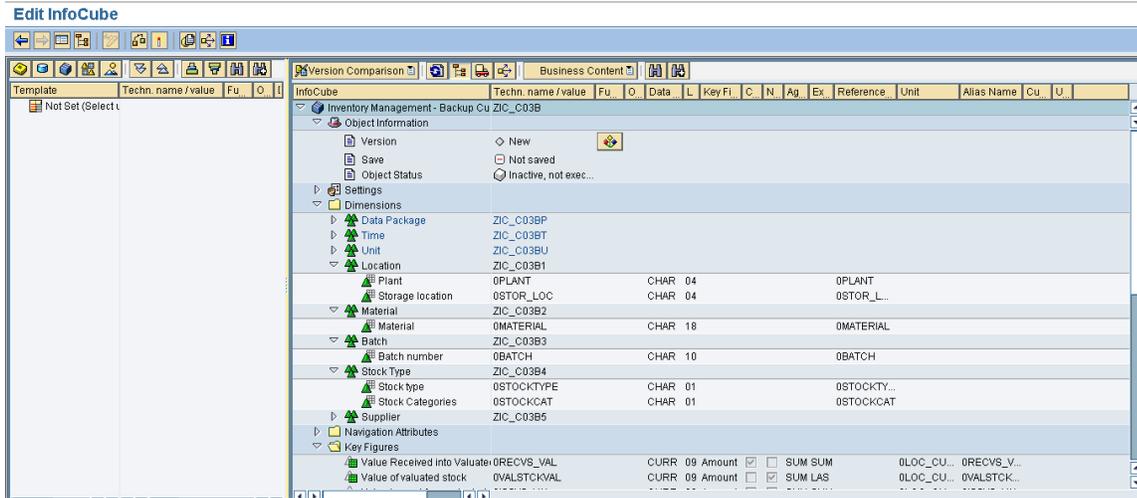
Let’s begin:

Step 1

First we need to create the backup cube – ZIC_C03B (Use the naming convention suggested by your organization)



This cube will have identical dimensions, characteristics and KPIs (Key figures) with that of 0IC_C03.



After creating the backup cube, ensure that it is created as a non cumulative. You can check this in the table RSDCUBE where the field- NCUMTIM is filled with the non cumulative time characteristic. Usually this would be 0CALDAY.

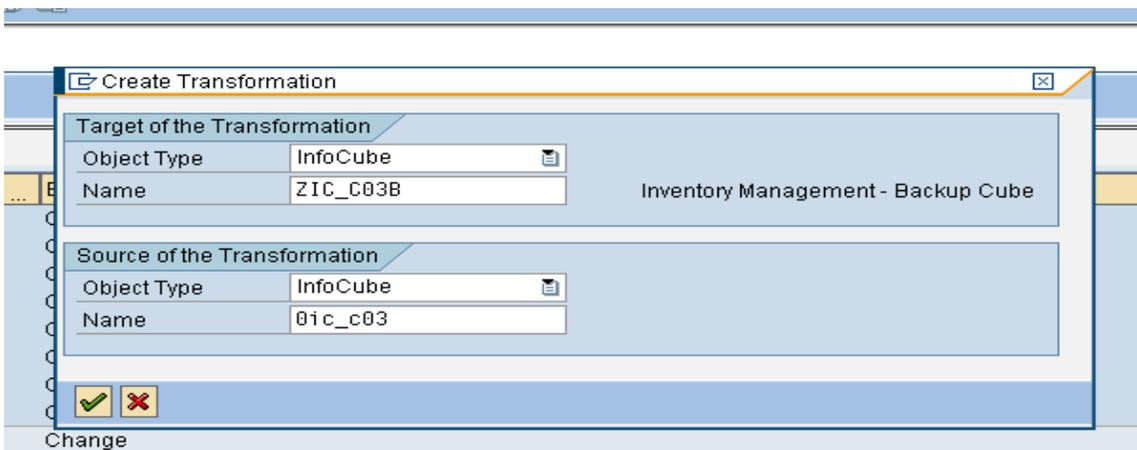
Other basic cubes will have blank for this field in the table

Data Browser: Table RSDCUBE Select Entries 2

INFOCUBE	OBJVERS	OBJSTAT	INFOAREA	NCUMTIM	CUBETYPE	BWAPPL	TXTLG
0IC_C03	A	ACT	0MMIC	0CALDAY	B	BW	Material Stocks/Movements (as of 3.0B)
ZIC_C03B	A	ACT	0MMIC	0CALDAY	B	BW	Inventory Management - Backup Cube

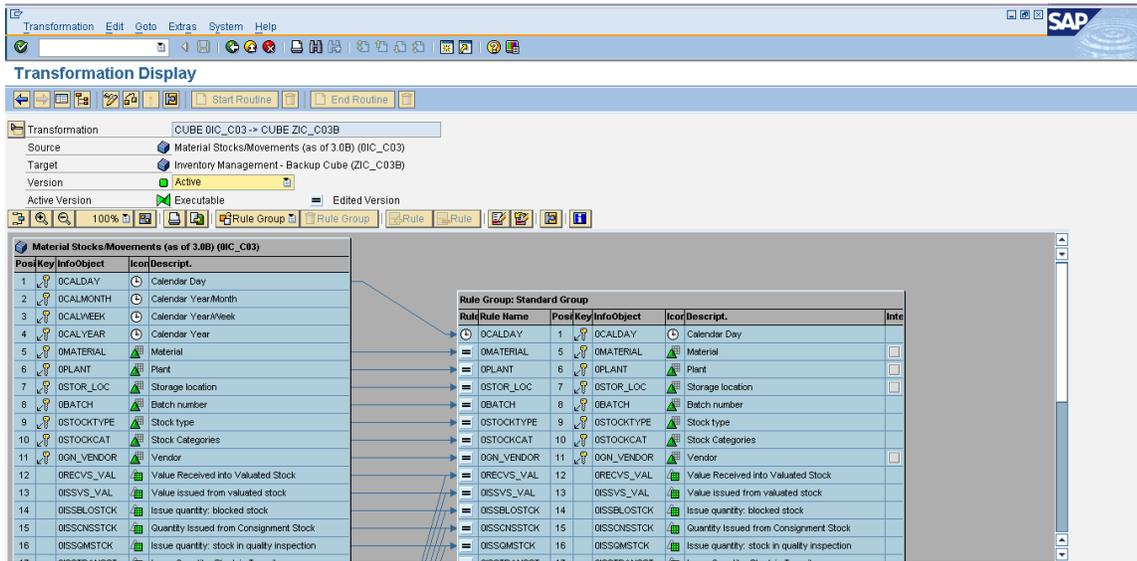
Step 2

Create transformation between the 0IC_C03 and ZIC_C03B cubes.



Save and activate the transformation.

Note: You will see that only Calday is presented for mapping in the backup cube ZIC_C03.



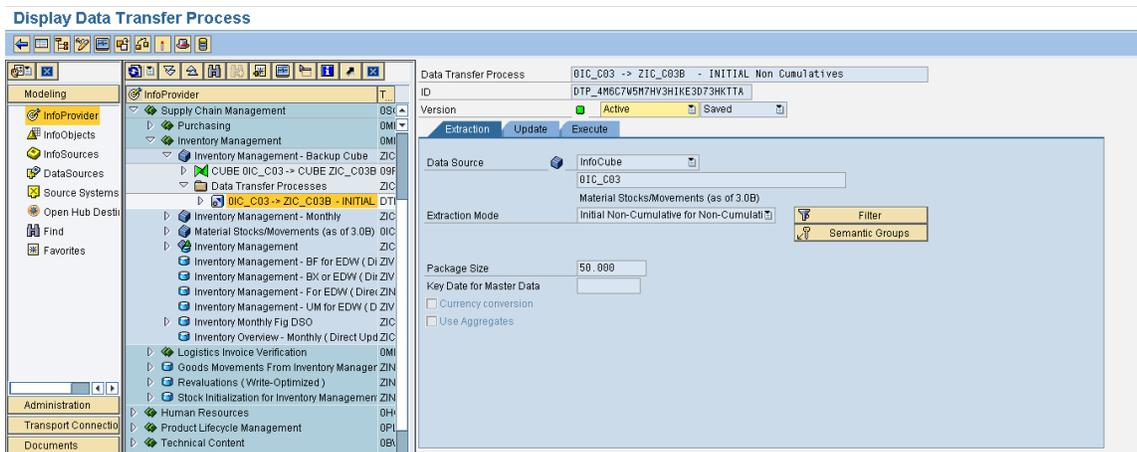
Step 3

Create DTP for INITIAL Non cumulatives (Marker values).

Now if both, the target and the source, cubes contain non-cumulative key figures (system checks whether the field NCUMTIM in table RSDCUBE is filled) the DTP offers the extraction mode 'Initial Non-Cumulative for Non-Cumulative values' in addition to the FULL and Delta modes. This mode has to be taken for the stock initialization. Then the system reads automatically all records with 0RECORDTP=1 from the source and updates the data records correctly into the target.

So let's create DTP for INITIAL Non cumulatives (Marker values).

While creating it the extraction mode should be **“Initial Non-Cumulative for Non Cumulatives”**



Step 4

Creating the delta flow.

Create DTP for Delta mode. This will be used to transfer all the movements' coming into the main cube 0IC_C03 to the backup cube.

DTP Request 111.382

Debugging Job Overview Error Stack

Request ID: 111.382
 Start Time: 16.06.2011 11:38:51
 Finish Time: 16.06.2011 11:39:17

Header Details

Key Date / Time: 16.06.2011 11:39:48 | Run: Current Run

Request Processing	Me...	Da...	Time Stamp	Duration
Request 111382			16.06.2011 11:38:51	
Generate Request			16.06.2011 11:38:52	6 Sec.
Set Status to 'Executable'			16.06.2011 11:38:57	
Process Request			16.06.2011 11:39:17	22 Sec.
Data Package 1 (920 Data Records)			16.06.2011 11:39:20	18 Sec.
End of Main Process			16.06.2011 11:39:31	8 Sec.
Set Technical Status to Green			16.06.2011 11:39:38	
Set overall status to 'Green' (user P1293083)			16.06.2011 11:39:38	

Step 6

Compressing the marker values.

We can now compress this request **with marker update** (No marker checkbox unchecked).

InfoProvider Administration

Selectable Data Targets for Administration

Name	D.	Technical Name	Table Type
Inventory Management - Backup Cube		ZIC_C03B	InfoCube

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Compression of InfoCube:Inventory Management - Backup Cube(ZIC_C03B)

Selection Subsequent Proc. Process Chain Maint.

Job Name: BI_COMP_L111402_MARKER

Request ID: 111402

With Zero Elimination
 No Marker Update

Release Stop Job Log

Check the job is successful and the marker is set or not. This can be checked by finding the “marker” literal in the job log:

Job Log Entries for BI_COMP4M9L6B3QRNWYM5GV1TRX4DE5Q / 16002300

Long text Previous Page Next page

Job log overview for job: BI_COMP4M9L6B3QRNWYM5GV1TRX4DE5Q / 16002300

Date	Find	Message class	Message no.	Message type
27.06.20	marker	00	516	S
27.06.20		00	550	S
27.06.20		RSM1	490	S
27.06.20		RSM	053	S
27.06.20		RSM	054	S
27.06.20		RSM	055	S
27.06.20		RSAR	051	S
27.06.20		RSAR	051	S
27.06.20		RSBK	222	S
27.06.20		RSAR	051	S
27.06.20		DBMAN	099	I

Step 7

Transferring the movements' data.

Execute the delta DTP extraction without any selection (same as with 0RECORDTP = 0).

DTP Request 111.403

Debugging Job Overview Error Stack

Request ID: 111.403
 Start Time: 27.06.2011 16:13:37
 Finish Time: 27.06.2011 16:13:39

Header Details

Overall Status:

Technical Status:

Validity Period: 8s

Source: IIC_C03 (Material Stocks/Movements (as of 3.0B))

Transformation: CUBE IIC_C03 -> CUBE ZIC_C03B (09R407RCA0ZCDHETU7VZU5X6H2XS)

Target: ZIC_C03B (Inventory Management - Backup Cube)

Selections: REQUID = 111400 ; REQUID = 111399 ; REQUID = 111387 ; REQUID = 111386

Data Transfer Proc.: DTP_4M6BTN25FKEW02GHEH8WKK35A (IIC_C03 -> ZIC_C03B - Delta)

User: P1293083

Extraction Mode: Delta Deltainit

Package Size: 50.000

Error Handling: No Update, No Reporting

Processing Mode: Serial Extraction, Immediate Parallel Processing

Inserted Data Records: 1.644

Request ID: DTPR_4M9L8DZVN1KR7X3FXLNS1VHQ

Step 8

Compressing the movements' data.

We must compress this delta DTP request in the target Infocube **without marker update** (No marker checkbox checked)

InfoProvider Administration

Selectable Data Targets for Administration

Name	D	Technical Name	Table Type
Inventory Management - Backup Cube	<input checked="" type="checkbox"/>	ZIC_C03B	InfoCube

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Compression of InfoCube:Inventory Management - Backup Cube(ZIC_C03B)

Selection Subsequent Proc. Process Chain Maint.

Job Name: BI_COMP

Request ID: 111403

Calculated request ID

With Zero Elimination

No Marker Update

Release Stop Job Log

Now we have both marker values and the movements' transferred and compressed successfully:

InfoProvider Administration

Selectable Data Targets for Administration

Name	D	Technical Name	Table Type
Inventory Management - Backup Cube	<input checked="" type="checkbox"/>	ZIC_C03B	InfoCube

Contents Performance Requests Rollup Collapse Reconstruction

InfoCube requests for InfoCube:Inventory Management - Backup Cube(ZIC_C03B)

Request ID	R	C	D	R	Re	Loa	DTP/InfoPackage	Request D.	Update Date	Selection Conditions	Transferred	Added Rec.	Type of Data Update	Source/InfoSource	N
111403	<input checked="" type="checkbox"/>	IIC_C03 -> ZIC_C03B - D	27.06.2011	27.06.2011		1644	1644	Delta update	CUBE	lr					
111402	<input checked="" type="checkbox"/>	IIC_C03 -> ZIC_C03B - I	27.06.2011	27.06.2011		920	920	Generate Initial Status	CUBE	lr					

Step 9

Executing the validity function module.

The next step is to execute the Function module - RSDV_VALID_RECREATE in SE37. This function module will recreate the validity table. We use the parameter "X" in the parameter I_REBUILD_FROM_FACT in order to read the complete fact table

The parameter I_INFOCUBE must contain the name of the Infocube and the indicator I_REBUILD_FROM_FACT must be set to 'X'.

Test Function Module: Result Screen

Import parameters	Value
I_INFOCUBE	ZIC_C03B
I_REBUILD_FROM_FACT	X
I_SHOW_STATEMENT	

The new backup cube is now ready for the daily data loads. New transactions in the source cube can now be loaded into the target Info Cube using a delta request. These requests must then be compressed "with marker update".

Step 10

Run your daily deltas in the main cube and transfer those records into the backup cube through the delta DTP. Once we have successfully taken backup, we need to delete the data and test the restoration. This will be dealt with in the next part.

Related Content

[Non-cumulatives / Stock Handling](#)

[Note 375098 - Data mart extraction from non-cumulative InfoCubes](#)

[Note 1426533 - P24:DTP: Non-cumulative IC update from another non-cum. IC](#)

For more information, visit the [EDW homepage](#)

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