

Boosting Performance of Network Activity Commitment Data Source -0CO_OM_NWA_3



Applies to

SAP BW / BI , SAP R/3. For more information, visit the [EDW homepage](#).

Summary

This document will talk about how to – boost performance of Network Activity: Commitment Line Items data source - 0CO_OM_NWA_3.

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Author Bio



Nilesh Ahir has completed his masters in Software System from BITS Pilani. He has total 5 years of SAP experience. He has been working as SAP NW BI Package Solution Consultant for IBM India for last couple of years. Prior to this he was working with Intel India. He has experience in ABAP, BW3.5 / BI7.0 and Data mining. He has worked on other non-SAP technologies like TIBCO and Web Services.

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Introduction

Data Source : 0CO_OM_NWA_3 (Network Activity: Commitment Line Items) is used for fetching the all costs and quantities (Commitments) of the Network Activity from SAP ERP system into SAP BW/BI system.

Technical Details are as below:

Technical Name	:	0CO_OM_NWA_3
Description	:	Network Activity: Commitment Line Items
Function Module	:	BWPSO_GET_NWACSTC1
Extract Structure	:	ICNWACSTC1
Application Component	:	CO-OM-PRO
Data source Type	:	TRAN
Delta capability	:	NO

BW Metadata: Display DataSource

BW Metadata: Display DataSource

Hierarchy Info
DataSource Events
Segments

DataSource	<input type="text" value="0CO_OM_NWA_3"/>	
Package	<input type="text" value="ABC"/>	Language <input type="text"/>
Last Changed By	<input type="text" value="NILESH"/>	<input type="text" value="27.11.2007"/>
Long description	<input type="text" value="Network Activity: Commitmt Line Items"/>	
Medium description	<input type="text" value="Network Activity: Commitmt Line Items"/>	
Short Description	<input type="text" value="Commts Line Items"/>	

Semantic Attributes <table style="width: 100%; border-collapse: collapse;"> <tr> <td>DataSource Type</td> <td>TRAN Hier. Info</td> </tr> <tr> <td>Appl. Component</td> <td>CO-OM-PRO</td> </tr> <tr> <td>Content Version</td> <td><input type="text"/></td> </tr> <tr> <td>Data Reconciliation</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Internal Name</td> <td><input type="text"/></td> </tr> <tr> <td>Canc. Fld Name</td> <td><input type="text"/></td> </tr> <tr> <td>Single Client</td> <td><input type="checkbox"/></td> </tr> </table>	DataSource Type	TRAN Hier. Info	Appl. Component	CO-OM-PRO	Content Version	<input type="text"/>	Data Reconciliation	<input type="checkbox"/>	Internal Name	<input type="text"/>	Canc. Fld Name	<input type="text"/>	Single Client	<input type="checkbox"/>	Extraction <table style="width: 100%; border-collapse: collapse;"> <tr> <td>Extraction Methods</td> <td>F1</td> </tr> <tr> <td>Extractor</td> <td>BWPS0_GET_NWACSTC1</td> </tr> <tr> <td>Extract Structure</td> <td>ICNWACSTC1</td> </tr> <tr> <td>Gen. Interface</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Direct Access</td> <td><input type="checkbox"/> Duplicate Records <input type="checkbox"/></td> </tr> <tr> <td>INIT. Non.-Cum.</td> <td><input type="checkbox"/></td> </tr> </table>	Extraction Methods	F1	Extractor	BWPS0_GET_NWACSTC1	Extract Structure	ICNWACSTC1	Gen. Interface	<input type="checkbox"/>	Direct Access	<input type="checkbox"/> Duplicate Records <input type="checkbox"/>	INIT. Non.-Cum.	<input type="checkbox"/>
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Extraction from Archives <ul style="list-style-type: none"> <input checked="" type="radio"/> No Archive Connection <input type="radio"/> With Manual File Selection <input type="radio"/> With Automatic File Selection 	Delta Extraction <table style="width: 100%; border-collapse: collapse;"> <tr> <td>Delta Process</td> <td><input type="checkbox"/></td> <td><input type="button" value="Setting-Up ALE Delta"/></td> </tr> <tr> <td>Delta Test Possible</td> <td><input type="checkbox"/></td> <td><input type="button" value="Setting Up GEN Delta"/></td> </tr> <tr> <td>Commit After Init.</td> <td><input type="checkbox"/></td> <td>ZDD Able <input type="checkbox"/></td> </tr> <tr> <td>Deltainit Simu</td> <td><input type="checkbox"/></td> <td>Realtime-Enabled <input type="checkbox"/></td> </tr> </table>	Delta Process	<input type="checkbox"/>	<input type="button" value="Setting-Up ALE Delta"/>	Delta Test Possible	<input type="checkbox"/>	<input type="button" value="Setting Up GEN Delta"/>	Commit After Init.	<input type="checkbox"/>	ZDD Able <input type="checkbox"/>	Deltainit Simu	<input type="checkbox"/>	Realtime-Enabled <input type="checkbox"/>
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Field name	Data eleme...	Field Attr	Sel. Opt...	Key ...	+/-	Ref. field	F4 Fi...	F4 Help Extractor	Not Trn...
AUFNR	AUFNR	X	0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
BEKNZ	BEKNZ		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
BLDAT	BLDAT		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
BUDAT	CO_PODAT		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
BUKRS	BUKRS		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
CURTYPE	COCURTYPE	X	0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
DABRZ	DABRBEZ	A	0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
FISCPER	RSFISCPER	X	0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
FISCVAR	RSFISCVAR		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
HRKFT	HRKFT	A	0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
KOKRS	KOKRS	X	0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
KSTAR	KSTAR		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
LIFNR	LIFNR		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
LOEKZ	ELOEK		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
MATKL	MATKL		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
MATNR	MATNR		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
MEASTYPE	RSMETYP		0	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>

Low lights of 0CO_OM_NWA_3 (Network Activity: Commitment Line Items)

- No delta capability even though it is a transaction type data source. As the result of this, huge of amount of redundant data loads on daily basis.
- Code written in function module uses macros thus this makes debugging very difficult.
- There is a scope of performance improvement with current logic and code of this data source .

Proposed Design

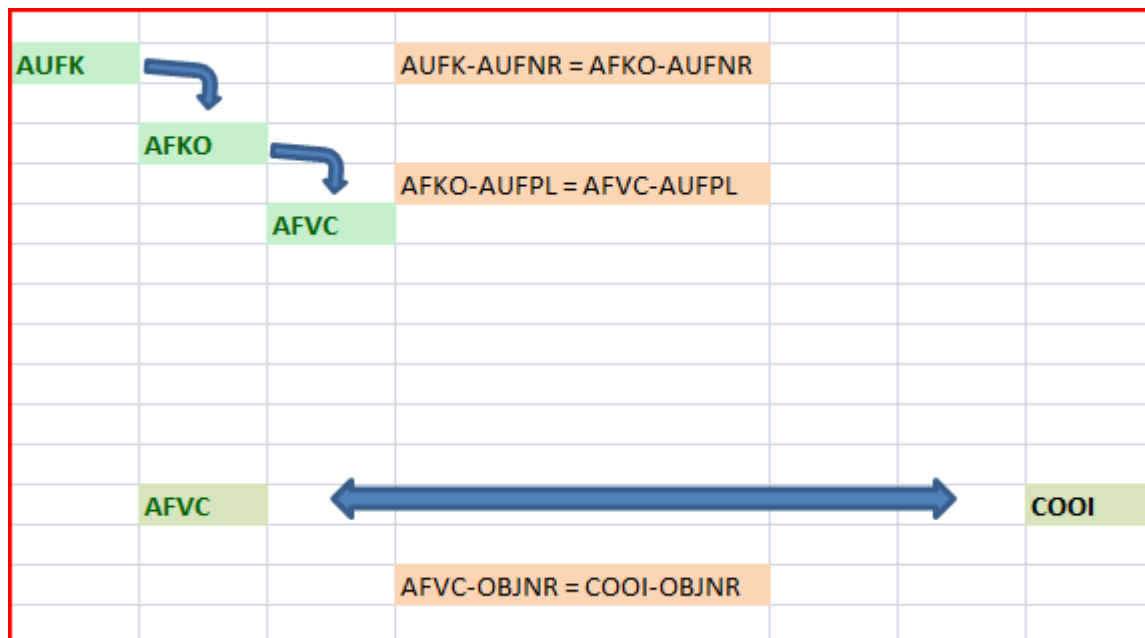
Create new custom data source with delta capability.

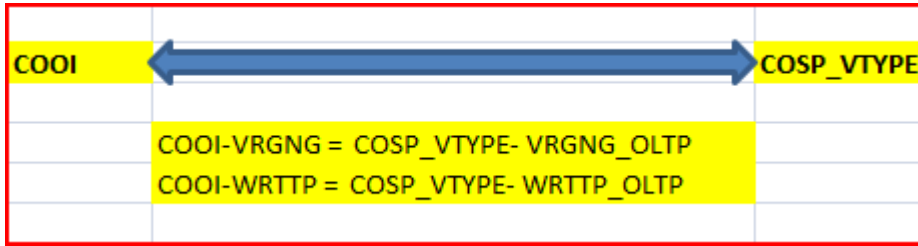
Technical Details are as below:

Technical Name : ZCO_OM_NWA_3
 Description : Network Activity: Commitment Line Items
 Function Module : YBWPSO_GET_NWACSTC1
 Extract Structure : YICNWACSTC1 (Copy of ICNWACSTC1 with additional data element TIMESTMP from COOI table)
 Application Component : CO-OM-PRO
 Data source Type : TRAN
 Delta capability : YES (Based on Timestamp i.e. COOI- TIMESTMP)

Parent child relationship.

Below pictures will give you parent child relationship of SAP tables hold Network Activity commitments data





Flow logic

I. Fetch Conversion of OLTP (Value Type, Bus. Trans.) in BIW records

```
Select  VRGNG_OLTP    "CO Business Transaction
        WRTPP_OLTP    "Value Type
        MEASTYPE_BIW   "Key Figure Category
        VTYPE_BIW     "Detailing the value type
        VTSTAT_BIW    "Statistics indicator for value type
```

```
Into    itab_COSP_VTYPE
```

```
From    COSP_VTYPE
```

```
Where   VTYPE_BIW = '040' . " Network
```

II. Fetch new/changed records from COOI

```
Select  SAKTO    "Cost Element
        VERSN    "Version
        GJAHR    "Fiscal year
        PERIO    "Period
        REFBN    "Reference Document Number
        RFPOS    "Item number of reference document
        LOEKZ    "Deletion indicator in purchasing document
        WRTPP    "Value type for Reporting
        WKGBTR   "Amount
        MEGBTR   "Consumption quantity
        MEINH    "Unit of measure
        BUDAT    "Expected debit date
        LIFNR    "Account Number of Vendor or Creditor
        REFBT    "Reference document category (conversion exit; c.f. REFBTYP)
        RFKNT    "Account assignment number of reference document
        RFTRM    "Deadline item of reference document
        RFART    "Reference document type
        HRKFT    "Origin Group as Subdivision of Cost Element
        VBUND    "Company ID of Trading Partner
        PARGB    "Trading Partner's Business Area
        BEKNZ    "Debit/credit indicator
        UNAME    "User Name
        BLDAT    "Document Date in Document
        BUKRS    "Company Code
        MATNR    "Material Number
        MATKL    "Material Group
        SGTXT    "Segment text
```

DABRZ "Reference date for settlement
 TIMESTMP "Seconds since 1.1.1990,0:00 GMT * 10000
 LEDNR "Ledger for Controlling objects
 OBJNR "Object number

Into itab_COOI

From COOI

For all entries in itab_COSP_VTYPE

Where OBJNR = NV* and
 VRGNG = itab_COSP_VTYPE- VRGNG_OLTP and
 WRTTP = itab_COSP_VTYPE- WRTTP_OLTP and
 TIMESTMP = Time stamp range(delta).

Transfer OBJNR from itab_COOI to itab_COOI_objnr and make list of unique OBJNR.

Thus itab_COOI_objnr will have list of unique OBJNR.

III. Fetch Operation within an order data records from AFVC

Select OBJNR "Object number
 VORNR "Operation/Activity Number

Into itab_AFVC

from AFVC

for all entries in itab_COOI_objnr

where SUMNR (Node number of the superior operation) = '0' and

OBJNR (Object Number) = itab_COOI_objnr- OBJNR.

Transfer AUFPL from itab_AFVC to itab_AFVC _ AUFPL and make list of unique AUFPL.

Thus itab_AFVC _ AUFPL will have list of unique AUFPL.

IV. Fetch Order header data PP orders data records from AFKO.

Select AUFNR "Order Number
 AUFPL "Routing number of operations in the order
 PRONR "Project Definition

Into itab_AFKO

from AFKO

for all entries in itab_AFVC _ AUFPL

where AUFPL = itab_AFVC _ AUFPL- AUFPL.

Transfer AUFNR from itab_AFKO to itab_AFKO _ AUFNR and make list of unique AUFNR.

Thus itab_AFKO _ AUFNR will have list of unique AUFNR.

V. Fetch Order master data records from AUFK

Select OBJNR "Object number
 AUFNR "Order Number
 KOKRS "Controlling Area

WAERS "Order Currency
Into itab_AUFK
from AUFK
for all entries in itab_AFKO _ AUFNR
where AUFNR = itab_AFKO _ AUFNR-AUFNR and
AUTYP (Order category) = 20 (Network).

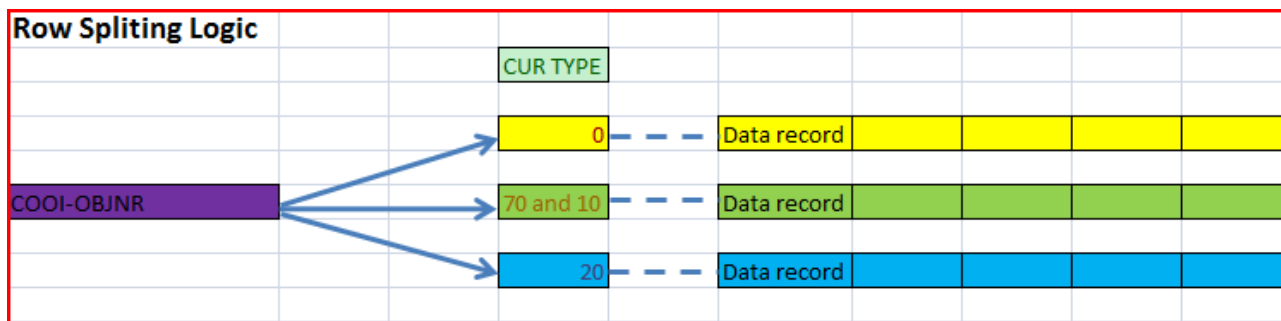
Merge data collected in different buckets considering AUFNR in itab_AUFK to be the final set to be processed and send to BW system

Fields of Origin in Extract Structure

Field in Extract Structure	Description	Source Field name of R/3	R/3 Table / View	Is the field Derived?	Derivation Logic
KOKRS	Controlling Area	KOKRS	AUFGK		
POSID	Work Breakdown Structure Element (WBS Element)	POSID	BIW_PS24	Yes	PSPNR = COOI- OBJNR+2(8). SELECT PSPID POSID FROM BIW_PS24 WHERE PSPNR = PSPNR.
PSPID	Project Definition	PSPID	BIW_PS24	Yes	PSPNR = COOI- OBJNR+2(8). SELECT PSPID POSID FROM BIW_PS24 WHERE PSPNR = PSPNR.
AUFNR	Order Number	AUFNR	AUFGK		
VORNR	Operation/Activity Number	VORNR	AFVC		
KSTAR	Cost Element	SAKTO	COOI		
VERSN	Version	VERSN	COOI		
CURTYPE	Currency Type	NA	NA	Yes	* Pseudo logic 1
FISCPER	Fiscal year / period	GJAHR+PERIO	COOI	Yes	Concatination : GJAHR+PERIO
FISCVAR	Fiscal year variant	PERIV	T001		
REFBN	Reference Document Number	REFBN	COOI		
RFPOS	Item number of reference document	RFPOS	COOI		
LOEKZ	Deletion indicator in purchasing document	LOEKZ	COOI		
MEASTYPE	Key Figure Category	MEASTYPE_BIW	COSP_VTYPE		
VTDETAIL	Detailing the value type	VTYPE_BIW	COSP_VTYPE		
VTSTAT	Statistics indicator for value type	VTSTAT_BIW	COSP_VTYPE		
VTYPE	Value type for Reporting	WRTPP	COOI		
WAERS	Currency Key	WAERS	AUFGK	Yes	* Pseudo logic 1
SWG	Amount	WKGTR	COOI	Yes	* Pseudo logic 1

SMEG	Consumption quantity	MEGBTR	COOI		
MEINH	Unit of measure	MEINH	COOI		
BUDAT	Expected debit date	BUDAT	COOI		
LIFNR	Account Number of Vendor or Creditor	LIFNR	COOI		
REFBT	Reference document category (conversion exit; c.f. REFBTYP)	REFBT	COOI		
RFKNT	Account assignment number of reference document	RFKNT	COOI		
RFTRM	Deadline item of reference document	RFTRM	COOI		
RFART	Reference document type	RFART	COOI		
HRKFT	Origin Group as Subdivision of Cost Element	HRKFT	COOI		
VBUND	Company ID of Trading Partner	VBUND	COOI		
PARGB	Trading Partner's Business Area	PARGB	COOI		
BEKNZ	Debit/credit indicator	BEKNZ	COOI		
UNAME	User Name	UNAME	COOI		
BLDAT	Document Date in Document	BLDAT	COOI		
BUKRS	Company Code	BUKRS	COOI		
MATNR	Material Number	MATNR	COOI		
MATKL	Material Group	MATKL	COOI		
SGTXT	Segment text	SGTXT	COOI		
DABRZ	Reference date for settlement	DABRZ	COOI		
UPDMOD	BW Delta Process: Record Mode				
TIMESTMP	Seconds since 1.1.1990,0:00 GMT * 10000	TIMESTMP	COOI		

While extracting data from R/3 system data records will be divided into three data records depending on currency type. For row splitting logic you can refer **Pseudo Logic 1**.



Pseudo logic 1

```
CONSTANTS: CURTYPE_TWAER(2) TYPE C VALUE '00',
            CURTYPE_BUKRWAER(2) TYPE C VALUE '10',
            CURTYPE_KWAER(2) TYPE C VALUE '20',
            CURTYPE_OWAER(2) TYPE C VALUE '70'.
```

* determine object currency

```
owaer = AUFK-WAERS
```

* determine controlling area currency.

```
SELECT SINGLE FROM TKA01 WHERE KOKRS = AUFK-KOKRS.
KWAER = TKA01-WAERS.
```

* read curtype for owaer from Customizing

```
SELECT SINGLE * FROM BWOM_SETTINGS INTO LS_SETTINGS
WHERE OLTPSOURCE = SPACE
AND PARAM_NAME = LC_PARAM.
```

```
IF SY-SUBRC = 0.
    SD_CURTYPE = LS_SETTINGS-PARAM_VALUE{2}.
ELSE.
    SD_CURTYPE = LC_DEF_CURTYPE.
endif.
```

```
IF CURTYPE_KWAER IN R_CURTYPE.
    SWG = COOI-WKGBTR.
    WAERS = KWAER.
    CURTYPE = CURTYPE_KWAER.
ENDIF.
```

```
IF CURTYPE_OWAER IN R_CURTYPE OR CURTYPE_BUKRWAER IN R_CURTYPE.
    SWG = COOI-WOGBTR.
    WAERS = OWAER.
    CURTYPE = SD_CURTYPE.
ENDIF.
```

```
IF CURTYPE_TWAER IN R_CURTYPE.
    SWG = COOI-WTGBTR.
    WAERS = COOI-TWAER.
    CURTYPE = CURTYPE_TWAER.
ENDIF.
```

Note : Above logic if cur type is specified as filter criteria while extraction. if no cur type is specified then three records will be generated for each COOI-OBJNR for each cur type i.e. 00,10,20.

Related Content

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