

Simplification List – TOP Items

New MM-IM data model

June, 2016



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TOP Item: General Information

TOP Item Information

General

Presentation

Specific

See the following central SAP Note related to the Simplification Item: [2206980 \(*\)](#)

Simplification List Item Description

- In SAP ERP6.0 the material document data have been stored in a header table and an item table. Additionally stock aggregate information's have been stored in columns of various material master data tables or in specific stock aggregate tables.
- In S/4HANA the material document data will be stored in a single de-normalized table. This table is called MATDOC.
- Stock aggregate information's will be calculated on-the-fly from table MATDOC.
- Core Data Service (CDS) views are assigned to all affected tables as proxy objects to enable non-disruptive operation for customers

Business Impact

- Customer APPENDs or INCLUDEs on especially tables MKPF, MSEG, MARC, MBEW, EBEW, OBEW or QBEW require manual DDIC adjustments; please see note [2242679](#)
- The on-the-fly calculation of actual stocks reduces the performance somehow if the data will be fetched from the material master data tables. For performance critical customer coding it is recommended to rework such codings and to use special provided views for material master data if only material master data are required

Required and Recommended Action(s)

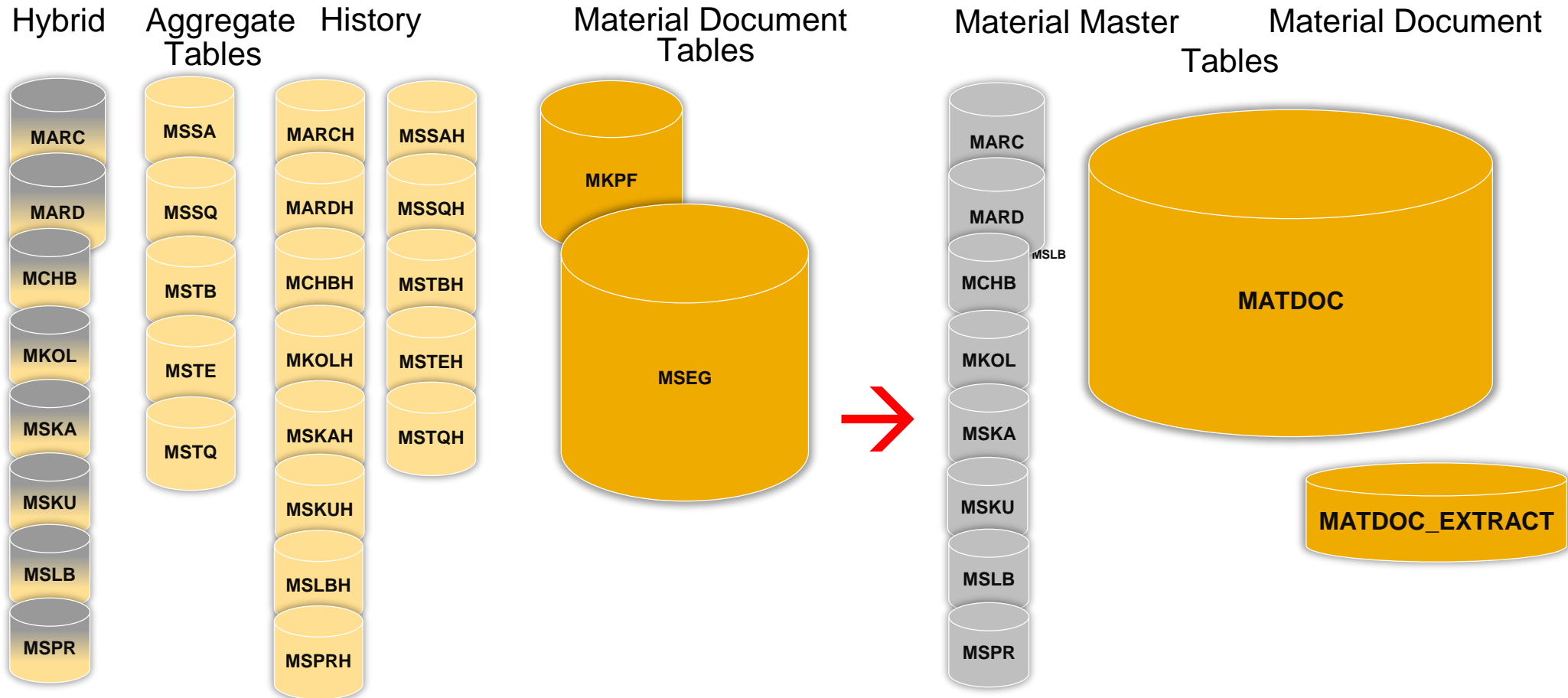
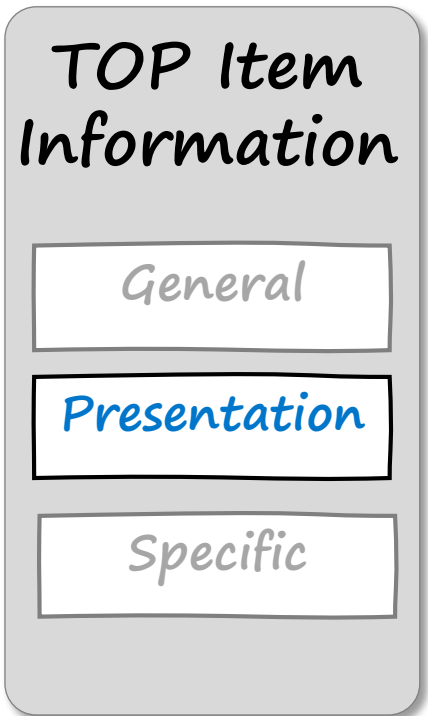
- Execute the related conversion pre-checks. Adaption required in dependency to the pre-check results. See note [2194618](#)

(*) SAP Note created to store the textual information of the Simplification Item Business. Information stored in the Transition DB [\[Link\]](#). SAP Note will be released to customer with FPS2

TOP Item: ERP vs. S/4HANA MM-IM data model

ERP/SoH

S/4HANA



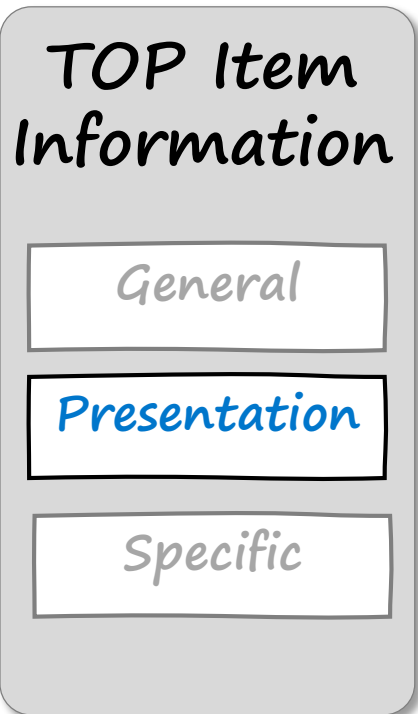
TOP Item: ERP vs. S/4HANA MM-IM data model

Issue:

- Mixture of material master data and transactional data as key figures in the Mxyz tables.
- Actual stock data are redundant in hybrid-, aggregate and history tables because SUM over all material documents would return the same information.
- Low performance in stock reporting due to a lot of (customizing) tables to be evaluated.
- Locks on DB for UPDATE operation required as well as locks from business process.

Solution:

- Having all data to calculate actual stock and for any stock reporting in one table in an account model and doing INSERT only.



TOP Item: ERP vs. S/4HANA MM-IM data model

Challenge:

Ensure compatibility for consumers in higher layers, partner solutions and customers

- Introduction of proxy objects which are realized as CDS views which calculate actual stock data on-the-fly from the new table and JOIN the master data from the old Mxyz tables.
- If such a proxy is assigned to a table, each SELECT to the table will be redirected in the data base interface layer of NetWeaver to the assigned proxy view
- Unfortunately this on-the-fly calculation is slower than fetching already aggregated data and performance correlates with # of records.
- Mitigated by introduction of a second table which is a sub set of MATDOC.

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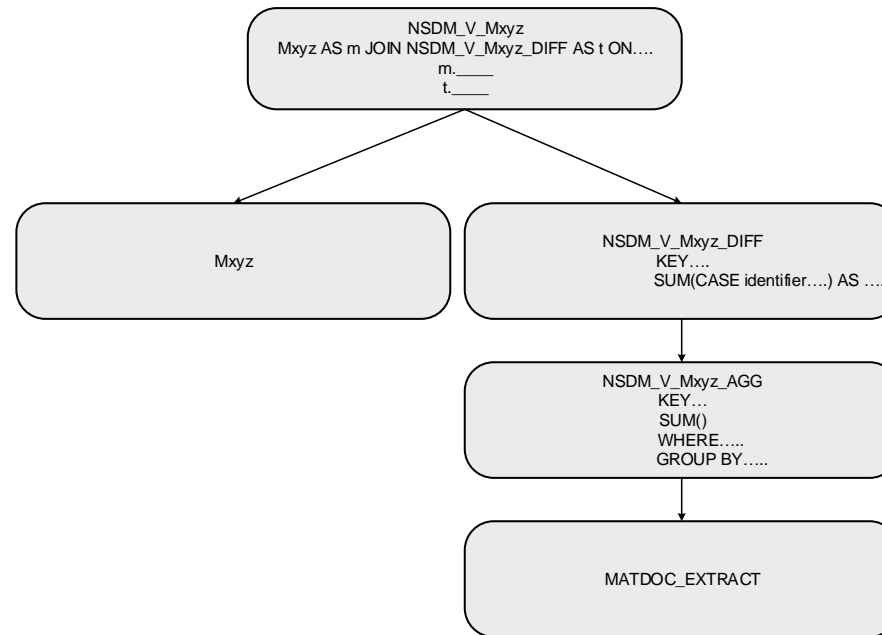
General

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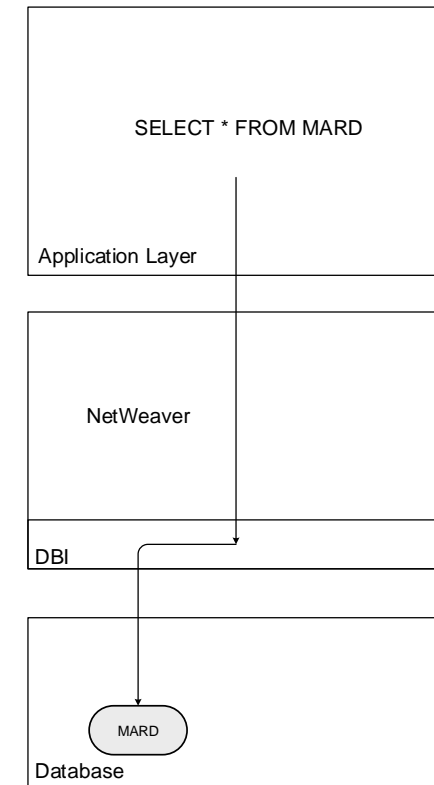
Specific

TOP Item: ERP vs. S/4HANA MM-IM data model

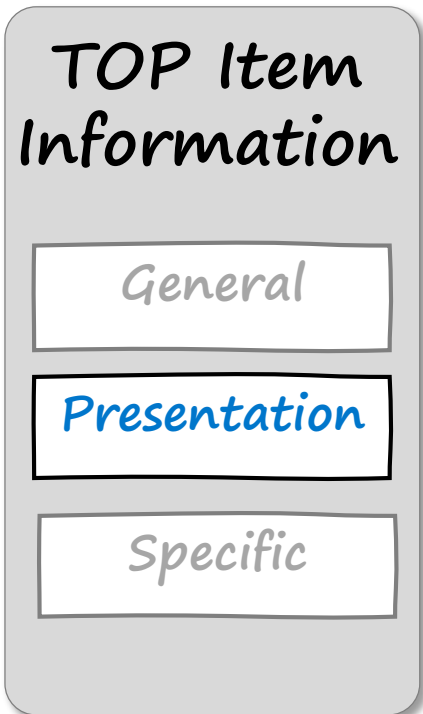
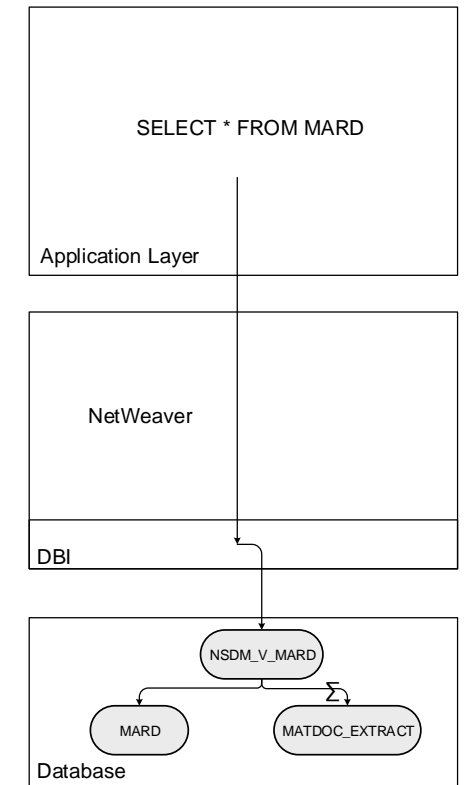
CDS View Stack



ERP ECC



S/4 HANA



TOP Item: ERP vs. S/4HANA MM-IM data model

Structure compatibility between table and CDS proxy view

The table and the assigned CDS proxy view has to be compatible regarding the structure. That means that fields in the table also have to exist in the proxy object (for S/4HANA 1511 also the sequence of fields has to be the same).

This requirement is broken if customers have APPENDs or INCLUDEs on the tables with an assigned proxy object or in case of table MSEG an implemented CI_COBL include. Structure compatibility need to be recreated in this case by defininig EXTEND VIEWs to the CDS proxy views delivered by SAP. Please see note [2242679](#) about how to do and which tables are affected.

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TOP Item: ERP vs. S/4HANA MM-IM data model

Selectively adjusting READ access

Read access to simplified tables should be adjusted for performance reasons.

E.g. a `SELECT * FROM MARD` would:

- Access table MARD to get the storage location material master data entities
- Perform aggregations on table MATDOC_EXTRACT to get the actual stock level
- Join both results

For performance critical coding parts it makes sense to analyse them and to check which fields are actually required. If no stock information is used, the `SELECT` can be replaced by a `SELECT` that fetches only the master data part. Special views `V_Mxyz_MD` have been provided for this. If material master as well as stock data are required no adjustment is necessary. Furthermore special access methods in classes `CL_NSDM_SELECT_Mxyz` can be used to either fetch material master or material stock data.

This should be done for all tables which have been split up in a master data part and an aggregation part based on table MATDOC (grey shaded tables in the data model picture above).

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TOP Item: ERP vs. S/4HANA MM-IM data model

New potentials :

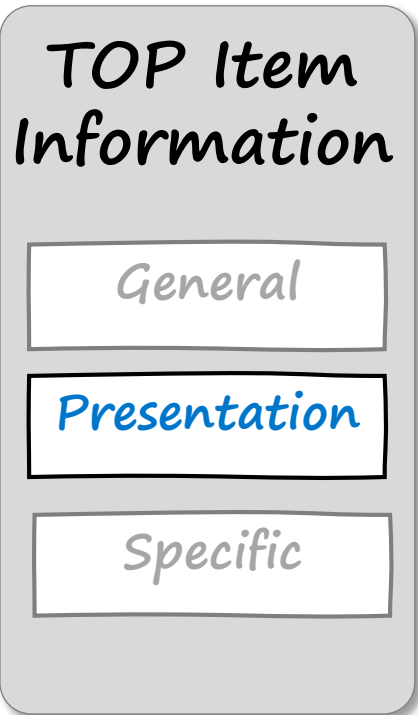
No locks on DB make (business) lockless processing of material documents feasible.

→ That enables parallel processing of material documents → will be provided with S/4HANA 1610

Determination of specific actual stock only for stock decreasing processes.

→ Bring back the performance to the level of SoH or beyond → will be provided with S/4HANA 1610

→ Increase of throughput and performance for material document processing and reporting.



TOP Item: Conversion; the way from ERP to S/4HANA

TOP Item Information

General

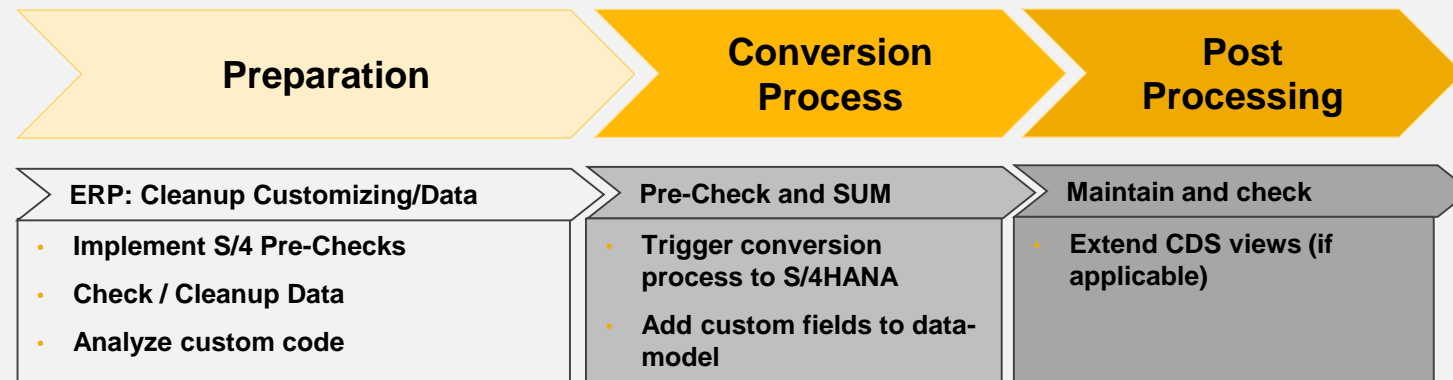
Presentation

Specific

SAP S/4HANA using the new MM-IM data model

- The new data model requires a conversion of data from the old model tables to the new table MATDOC
- That does not only mean that data from the former document tables MKPF and MSEG must be converted to MATDOC
- Also stock data in the former aggregate and hybrid tables (especially the history tables) have to be converted into data of table MATDOC to ensure an all time correct stock information

The transformation requires the following steps



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Preparation

Pre-Checks

Check / cleanup data

Task:

- Implement SAP S/4HANA pre-checks according to the SAP S/4HANA conversion guide chapter "Pre-Checks"
- Check data (e.g. MB5L / MB5K)
- Consider archiving of old material documents / materials
- Analyze custom code

Conversion

Add custom fields to data-model

Task:

- Add custom fields on tables MKPF / MSEG to MATDOC
See SAP Note [2242679](#)

Post Processing / Test

Extend
CDS Views

Test

Task:

- Add custom fields on to CDS compatibility views if applicable
See SAP Note [2242679](#)
- Test adjustments of custom code in test system

ERP

SAP S/4 HANA

TOP Item: Item Overview presentation

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Total transformation time

- The total transformation time depends on different factors, such as
 - Number of custom fields in material document, stock aggregate and history tables
 - Data volume (Number of material document items in the system and number of entries in stock aggregate and history tables)

TOP Item: Specific Information

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Pre-Checks

[SAP Note 2194618](#)

[SAP Note 2197392](#)

Additional Information

[SAP Note 2206980](#)

[SAP Note 2238690](#)

[SAP Note 2236753](#)