Software Update Manager (SUM) as Part of System Conversion

Dr. Boris Rubarth, SAP SE
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System Conversion - Recap

- System Conversion is a *transition scenario*: SAP ECC ⇛ SAP S/4HANA (on-premise)
- SAP ECC source system requirements: SAP ERP 6.0+, Unicode, ABAP single stack, anyDB
- SAP S/4HANA comes with Simplifications, e.g. a simplified data model
Software Update Manager (SUM) as part of der System Conversion

Software Update Manager (SUM)

Downtime aspects

Project aspects
**SAP S/4HANA system conversion**

Technical conversion by Software Update Manager (SUM)

- **Conversion tasks for SUM:**
  - **Software update**
    - Provide new applications and new tables
  - **Data conversion**
    - Conversion of table content to new data model
  - **Database migration**
    - Migrate to SAP HANA database (if required)

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![Diagram](https://via.placeholder.com/150)

- **PAS Host**
  - SUM
  - Source = Target DB Host

- **PAS Host**
  - SUM
  - Source DB Host
  - Target DB Host

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SAP S/4HANA System Conversion
Technical conversion prerequisites

- **Maintenance planner:** provides stack.xml and software archives
- **SI checks:** will be executed by SUM as well -> solve all issues before

**Optional activities (depending on system type)**

- **Readiness check:** is optional, but strongly recommended!
- **Custom code check:** may be ignored, e.g. for a sandbox conversion run
- **SUM prerequisite check:** check of OS/DB- and SPAM requirements
  See SUM conversion guide: [https://support.sap.com/sltoolset](https://support.sap.com/sltoolset) -> Maintenance area
Main technical conversion steps
Partially related to Software Update Manager (SUM)

Business Downtime

Technical Downtime

SUM Uptime Processing
Ramp Down
SHD

Technical SUM Downtime
Migration Update Conversion

Post Activities
FI & ML Data Conversion
Business Validation
Ramp Up

Database migration
(if source is not yet SAP HANA)

Data conversion
Convert table content to new data model
Partially triggered by SUM, partially after SUM

FIN data conversion:
1) FIN Customizing
2) FIN Data migration
3) Post activities

Software update
Add / update components

FIN data conversion: IMG activities
1) FIN Customizing
2) FIN Data migration
3) Post activities
DMO with system move
Possible option for a system conversion

DMO with system move allows to switch the complete system (esp. AppServer host):
- From one host to a different host (e.g. hardware change)
- From one data center to a different one
- From on-premise to Cloud (IAAS)

Note:
DMO with system move for target SAP S/4HANA 1909 is not supported with SUM 2.0 SP 06, but it will be supported with a later SUM SP version
SUM Prerequisite Check provided with SUM 2.0

Allows quick and non-invasive check for requirements, e.g.:

- Source OS version
- Source database version
- SPAM patch level

New with **SUM 2.0 SP 06** (and higher):

- Unique URL for all scenarios
  *sumabap* used for precheck, conversion, benchmarking, …
Conversion to SAP S/4HANA 1909
SUM 2.0 SP 06 creates shadow repository on target database

- SAP Kernel 7.77 only supports SAP HANA database -> shadow repository not possible on source database
- SUM 2.0 SP 06 creates SHD REP on target, but not for previous SAP S/4HANA releases
- No manual interaction or dialog parameters required
- Potentially lower source database requirements, but Unicode requirement for source system remains
- Restrictions with SUM 2.0 SP 06 on downtime-optimized DMO and “DMO with System Move”: will not be supported for targeting SAP S/4HANA 1909 immediately, but with later SP version

Software Update Manager (SUM) as part of der System Conversion

Software Update Manager (SUM)

Downtime aspects

Project aspects
Properties of the source system that impact the technical downtime

- System performance
- Quality of data
- Database size

Any DB

Source DB

SAP ECC

(Migration)

Data Conversion

SAP HANA

SAP S/4HANA

FI conversion:
inconsistencies coming up in FI conversion have to be corrected,
this happens in downtime of test conversion
(not relevant for PRD conversion)

Second run is always faster → decide on approach only after second run
Downtime optimization approaches

Overview

- **Standard approach**
  using Software Update Manager (SUM) with several optimizations

- **Downtime-optimized conversion approach**
  downtime is reduced by moving data conversion and migration partly to uptime (currently only piloted);
  (subset: Uptime Migration i.e. downtime-optimized DMO)
  see [SAP Note 2293733](https://www.sap.com)

- **Near-Zero Downtime Technology approach**
  allows further reduction of downtime by executing the conversion on a clone;
  it is a consulting service project (aka NZDT),
  see [SAP Note 693168](https://www.sap.com)

Decision about approach depends on several factors and should be taken after a migration planning workshop. (Service component of SAP Value Assurance for SAP S/4HANA)
Tuning the standard approach

- **DMO optimization**: see blog in SAP Community: [https://blogs.sap.com/?p=135725](https://blogs.sap.com/?p=135725)
- **SAP Note 2351294** – SAP S/4HANA System Conversion / Upgrade: Measures to reduce technical downtime
- **SAP Note 1616401** – Parallelism in the Upgrades, EhPs and Support Packages implementations

### Database size: consider archiving

#### Number of background and dialog processes

**FIN data conversion: IMG activities**
1. FIN customizing
2. FIN data migration
3. Post activities
Downtime-optimized conversion approach
Migration and conversion happens partly in uptime

- **Table conversion** moved to uptime processing
- **Field conversion** moved to uptime processing (KONV and VBFA tables)
- **Uptime migration** for selected big application tables (which are not part of the data conversion)

**Conversion partially moved to uptime** for:
- FIN and Material Ledger (MM-ML)
- & Inventory Management (MM-IM)
- KONV and VBFA tables

Migration is only relevant for source systems on non-HANA database

SAP Note 2293733 on prerequisites and restrictions

Uptime Migration (Downtime-optimized DMO approach)

- **Uptime migration** for selected big application tables, general available with SUM 2.0 SP 06
  - Only applies to tables that are not affected by the data conversion / new data model
  - Only applicable if source is on non-HANA database (otherwise no migration is required)

- Option is offered on SUM dialog on scenario strategy
- Report available to select appropriate tables for uptime migration
- Uptime processing: initial migration and delta migration
- Downtime: remaining delta migration and migration for remaining tables
- Replication monitoring is part of SUM Utilities
Dialog sequence for a System Conversion

- **Scenario category** (with or without stack.xml)
  - System Conversion requires a stack.xml

- **Scenario strategy: standard or downtime-optimized:**
  - Conversion from SAP HANA database: nZDM
  - Conversion from non-HANA database: downtime-optimized DMO
  - SUM prerequisite check is offered on that dialog as well

- All SUM scenarios use same URL now (apart from Observer mode)
- nZDM is no longer hidden in Advanced Mode
# Approaches for downtime optimization


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* Current status of planning, may be adapted by SAP without further notice.
** This is different to nZDM for SAP HANA database
Software Update Manager (SUM) as part of der System Conversion

Software Update Manager (SUM)

Downtime aspects

Project aspects
Aspects of project planning

Goal: SUM SP version shall not be switched in critical phase
4 to 8 months maintenance => relevant systems to be converted therein

- Familiarize
- Iterate
- Refine project plan afterwards

- Create transports for custom code adaption
- Consider dual maintenance
- Business function testing of new/adapted processes
- Consider dress rehearsal

SUM 2.0 SP 06 in maintenance
SUM 2.0 SP 06 patch on request
SUM 2.0 SP 05 in maintenance
SUM 2.0 SP 05 patch on request
SUM 2.0 SP 05 out of maintenance
SAP S/4HANA system conversion

Transition paths overview

Notes on source system
- Unicode is required
- ABAP single stack required
- SAP HANA database not required

Notes on target system
- SAP S/4HANA 1909 is based on ABAP Platform 1909
- Consider different OS coverage since ABAP Platform 1809

Conversion requirements incl. min./max. SP-level on source system:
2769531 - SAP S/4HANA 1909: Release Information Note

Recommended Application Server Platforms
Dual Maintenance (see Conversion Guide)

Conversion in a Distributed System Landscape
**Key Takeaways**

- SUM conducts Update, Conversion (partially), Migration (if required)
- Downtime: “SUM technical” < technical < business
- nZDM & downtime-optimized DMO (available)
- Downtime-optimized Conversion (pilot)
- DEV: consider Dual-Maintenance
- SUM: use supported version
Additional Information Sources

- Support Portal Entry page on SL Toolset & SUM
  [http://support.sap.com/sltoolset](http://support.sap.com/sltoolset)
- Conversion Guide (SUM&DMO extract)
- Blog: SUM as Tool for technical conversion
- Blog: downtime-optimized Conversion
- Blog: DMO with System Move
- Blog: ASCS Instance Move
Thank you.

Contact information:

Dr. Boris Rubarth
Product Management, Software Logistics, SAP SE
boris.rubarth@sap.com