TEC206 – Architecture and Components of SAP S/4HANA
Speakers

Las Vegas, Oct 19 - 23
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Barcelona, Nov 10 – 12
• Stefan Elfner
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Agenda

- SAP S/4HANA – Main architecture principles
- Cloud first is a must
- Relation between SAP ERP and SAP S/4HANA
- Extensibility capabilities of SAP S/4HANA
- Major simplifications and its management
SAP S/4HANA – Main architecture principles
Principle of ONE – The key driver for simplification

Many of redundant frameworks, data models, user interfaces and its derived complexity is based on the fact that in former times similar solutions have been build based on different technologies. One prominent example is the Dual Stack of AS ABAP and AS JAVA where at the beginning a lot of synergies where planned but have never been realized. As a result we got different development languages and environments, different software production processes, software lifecycle mechanisms, software qualities/standards, and user managements, etc.

It is the clear goal of SAP S/4HANA to avoid any of such divergent and redundant development from the beginning.

This Principle has no limitations and is valid on each level - from the bottom of the stack (the HANA Database) to the top of the user interface (Fiori UIs).

Each deviation has to be evaluated for its negative long term aspects in simplification and generated costs out of that.
Business Suite 7i2013 reference landscape
Business Suite on HANA: Current stack ERP EHP7 on-premise

Simple Finance exchange AddOn

ELIGIBLE FOR BI AND SIMPLIFICATION

ERP

83% Objects

Technology

17% Objects

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Cutoff of non interwoven software components

Simple Finance exchange AddOn

ERP

47% Objects

Technology

17% Objects

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Reduced S/4HANA Core Stack ➔ Merged to simple Components

Simple Finance exchange AddOn

ERP

47% Objects

Technology

17% Objects
SAP S/4HANA Stack ➔ ‘Cloud first’

Simplification & Cloudification Layer
- OData + Fiori
- Simple Configuration
- Cloud Qualities
- Semantic Compatibility to SoH
- Principle of ONE
- Business Function Freeze

HIDDEN (virtual)
- EA-FINSERV
- FINBASIS
- SAP_HR
- SEM-BW
- WEBCUIF

S/4CORE
(SAP_FIN, SAP_APPL, …)

SAP NETWEAVER

SAP HANA DATABASE

S/4HANA Core
delivered

S/4HANA Core
used

Technology
17% Objects

ERP
83% Objects

technology

Technology
17% Objects

Technology
18% Objects

Technology
18% Objects

Technology
17% Objects

OData + Fiori
Simple Configuration
Cloud Qualities
Semantic Compatibility to SoH
Principle of ONE
Business Function Freeze

QRT_STAGING

12% Objects

18% Objects

17% Objects

17% Objects

20%
High-level stack architecture SAP S/4HANA
Logical view

SAP S/4HANA Architecture is much simpler as the classical Business Suite architecture

- Data structures
  (Compatibility provided through Core Data Services)
- Application engines
- Launchpad / Fiori
  (SAPGUI for Windows still available for compatibility reasons On Premise)
Investment protection
Non-disruptive with CDS Compatibility Views

Program Reading
Master Data + Aggregate

Compatibility views calculate on the fly

Master Data + Aggregate

Master Data

Aggregates

DB Tables

Suite on HANA

SAP S/4HANA
Cloud first is a must
Cloud qualities do benefit also for on-premise ➔ Cloud first

- Simple configuration ➔ Reduce implementation complexity
- New extension concept ➔ As guideline On-Premise for low TCO
- LM automation ➔ Reduced Lifecycle Management cost if guidelines are kept
- Principle of one ➔ Investment protection
- Automated test environment ➔ Increased test efficiency = Speed to adopt innovation
- Cloud first delivery ➔ Well proven innovation
Relation between SAP ERP and SAP S/4HANA
Relation between SAP ERP and SAP S/4HANA

SAP Business Suite

ERP

On-Premise EHP7

Classical ERP on any DB incl. HANA

SAP S/4HANA

SAP S/4HANA Finance

On-Premise EHP7/8

SAP S/4 HANA Finance as innovation package

Compatibility Scope

SAP S/4 HANA On-Premise Edition Compatibility scope to support system conversion

Cloud Editions

SAP S/4 HANA Cloud Editions Cloud Qualities also available On-Premise

SAP HANA only
Extensibility Capabilities of SAP S/4HANA
Overview of the extensibility capabilities of SAP S/4HANA

**SAP S/4HANA**

In-app extensibility:
Context-aware extensions, focus on tight integration

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**Key User Extensibility**

- Custom fields and tables, analytics and forms extensibility
- Change or add business rules and business logic (cloud ABAP Web editor)

**Managed Extensibility**

- Designed with ABAP programming language to be cloud lifecycle-stable

**Classic Extensibility**

- Full access to ABAP (for example, Eclipse)

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**Side-by-side extensibility with SAP HANA Cloud Platform:**
Learn from the outside, weave external content into your solutions

**Extensibility based on SAP HANA Cloud Platform**

- Enable an SAP Fiori® and mobile user experience
- Integrate with other cloud solutions (for example, from SuccessFactors and Ariba, both SAP companies) and third-party solutions
- Take advantage of application services for SAP HANA Cloud Platform (cloud portal, mobile documents, output management, etc.)
- Use a full-fledged development platform to build extension applications (Java, SAP HANA native development)
## SAP S/4HANA

### ABAP Custom Code has to be adapted

### Technical Requirements for Custom Code

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Driver</th>
<th>Classic Extensibility (On-Premise)</th>
<th>Managed Extensibility (Cloud)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unicode enablement, in scope of SAP S/4HANA, adapt to simplification change (e.g. deletion of index/aggregate tables), HANA enabled (mandatory changes, e.g. order by, …)</td>
<td>Simplification</td>
<td>Must</td>
<td>Must</td>
</tr>
<tr>
<td>Blacklisted technology that is not allowed according to SAP S/4HANA architecture guidelines (no batch input, no workflow technology besides SAP Business Workflow)</td>
<td>Simplification</td>
<td>Should</td>
<td>Must</td>
</tr>
<tr>
<td>Check that custom code is still required (not unused, not in standard)</td>
<td>Effort Reduction</td>
<td>Should</td>
<td>Should</td>
</tr>
</tbody>
</table>

### General Migration Topics for Custom Objects

- No modifications
- Only allowed extension techniques (clearly modification free: no implicit enhancement spots)
- No blacklisted techniques that prevent scannable code (no dynamic programming, no code generation)
- Only SAP objects used that are whitelisted

### Reduce Operation Cost for Custom Code

- SAP S/4HANA product (security) and quality standards
- Optimized for HANA (recommended changes)

### Quality Standards

- Fiori user interfaces (no Dynpro, WebDynpro)

### Fiori

Optimized for HANA (recommended changes)

Product Quality

Simplification

Should | Should | Should

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Major Simplifications and its management
Major simplifications of SAP S/4HANA as of today

- Data model simplification of financials and inventory management
- One single valuation ➔ Material Ledger (no moving average price on MBEW)
- Business Partner is Leading ➔ Customer Vendor Integration (CVI) mandatory
- Discrete Industry Mill Products (DIMP) back to Core Application Layer
- Simplification of LAMA ➔ Long Material Number MATNR
- Deprecation of embedded BW based on redundant data
- Planned Deprecation of Logistic Information System (LIS)
- General Deprecation process ~ 70,000 Main Repository Objects
  - E.g. Deprecation of Foreign Trade (SD-FT)
  - E.g. Remaining Beverage Solution (SD-SLS-PLL)
SAP S/4HANA
Simplification list

SAP Business Suite
- Master Data
- CRM
- SD
- Procurement
- MM / SRM
- Logistics
- FIN
- HCM
- Cross Topics
- Basic Topics

SAP S/4HANA
- Core ERP
- Core Finance
- Optimized Order to Cash
- Simplified Human Resources
- Streamlined Procure to Pay
- Accelerated Plan to Product
- Enhanced Request to Service

Simplification List

Area
- Simplification Item
- Simplification Item
Area
- Simplification Item
- Simplification Item
Area
- Simplification Item
- Simplification Item

SAP Business Suite

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Transition to SAP S/4HANA
Major elements of deploy phase in transition process

1. Preparation

Preparation steps on start release

- Analysis of used business processes – mapping to SAP S/4HANA innovations
- Identify required integration scenarios of target state
- Run pre-Transformation Checks on source system
  - Used functionality, supported industries, available add-on, custom code …
- Mandatory preparation steps to be executed on source system

2. Technical Implementation

- “Installation” of SAP S/4HANA
  - HANA Database
  - SAP S/4HANA application core
- Customizing adjustment
- Adjustment of technical infrastructure

3. Semantical Adoption

- Adapt custom code to comply with SAP S/4HANA scope & data structure
- Adapt business processes to leverage new SAP S/4HANA innovation functionality
- Adapt integration (if applicable)
- Implement Fiori UIs
- Introduce new SAP S/4HANA innovation scenarios
Further information

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Thank you

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