SAP Runs SAP

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SAP Runs SAP
Internal HANA adoption roadmap

- Real time Sales pipeline reporting
- Profitability analysis and Profit center accounting reporting real time
- Receivables Manager

- BPC integrated to SAP NetWeaver BW
- Change of currency evaluation for constant currency calculation to document currency
- SAP Fraud Management

- ERP & CRM on HANA
- Invoice and Goods Receipt Reconciliation
- Receivables Manager & Financial Fact Sheet
- Type Ahead / Fuzzy Search

- Integration of legal & internal views on line item level / Universal Journal
- No more aggregates / indices in FI & CO
- Fiori Applications
- SAP enterprise search
SAP Business Suite powered by SAP HANA
• Real time Sales pipeline reporting
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SAP Runs SAP
Internal HANA adoption roadmap
SAP’s Internal ERP on HANA: Key Implementation Highlights

SAP ERP on HANA in less than 5 months – Go Live August 21st, 2013

Business Highlights

• First global Go Live of SAP ERP on HANA
• 67,000 ERP user worldwide
• Implementation in 5 months
• Enables effective and close collaboration between all business areas

Technical Highlights

• Significantly faster database request time of single processes
• Data volume reduced from 7.1 TB to 3.7 TB, down to 1.8 TB in HANA
• More than 3,000 unused custom code objects retired
• HANA import runtime reduced by ~40 hours
## Focus Topic 1: Testing

<table>
<thead>
<tr>
<th>Test type</th>
<th>Description</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User Acceptance Test</strong></td>
<td>▪ Functional tests</td>
<td>▪ Confidence for business operations</td>
</tr>
<tr>
<td><strong>Single Performance Test</strong></td>
<td>▪ Dedicated single processes, selected by business relevance and criticality</td>
<td>▪ Process performance improvements</td>
</tr>
<tr>
<td></td>
<td>▪ Comparison of relational and HANA DB performance</td>
<td>▪ Database response time improvements</td>
</tr>
<tr>
<td><strong>Mass Load Performance Test</strong></td>
<td>▪ Stress test for the HANA DB, executing reports, Load Runner and other tools at the same time</td>
<td>▪ Simulation of „close-to-real“ conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Confirmation that hardware can handle load also during peak times</td>
</tr>
<tr>
<td><strong>Cutover Dry-run / Rehearsal</strong></td>
<td>▪ Test of technical and handover procedures during cutover</td>
<td>▪ Routine for real cutover</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Optimized procedures, clear responsibilities</td>
</tr>
<tr>
<td><strong>Regression Test</strong></td>
<td>▪ Technical test to uncover bugs after system changes such as enhancements, fixes</td>
<td>▪ Technical system readiness of ERP</td>
</tr>
<tr>
<td><strong>Integration Test</strong></td>
<td>▪ Test of ERP in interaction with other dependent systems and over 150 interfaces</td>
<td>▪ Technical readiness of ERP as part of the overall system landscape</td>
</tr>
</tbody>
</table>
Focus Topic 2: Custom Code

Get transparency
- Identify the Custom code footprint
- Usage analysis
- Code analysis based on new developing guidelines

Identify the hotspots
- Prioritization based on usage analysis

Get the most out of it
- Efficient & effective custom code performance
- Avoidance of adoption & test efforts for unused custom code objects
- Sustainable and final remediation of performance & security findings

Custom Code Management - Technical Components
- Clone-Finder and Modification / Interface Overview
- Code inspector / ABAP Test Cockpit and Custom Code Lifecycle Management
- In Use now: ABAP Procedure Monitoring and ABAP SQL Monitoring
Focus Topic 3: Data Volume Management

Preparation
- Net size of the ERP before migration: 7.1 TB (deep compression)
- Reduction to 3.7 TB via archiving/deletion and database reorganization
- Static memory consumption is increased by normal monthly growth incl. month end closing activities and release deliveries
- Normal growth of ERP system on HANA of 30-60 GB / month

Production
- Utilization of hardware memory relatively stable since go-live with 1.8 to 2.3 TB memory consumption

### Graph
- **Volume database DB6 [TB]**
  - ISP Start: 6.2
  - ISP Target: 4.0
  - ISP extended Target: 3.8 – 3.9
  - ISP now (15.08.2013): 3.7
- **Maximum static memory consumption on HANA [TB]**
  - ISP after migration (please see that dynamic load comes on top): 1.8
Focus Topic 4: Cutover Process

**Timeline**

- **Friday**
  - Ramp down/ User Lock
  - Upgrade
- **Saturday**
  - Migration
- **Sunday**
  - Post-Steps
  - Consistency Checks
  - Transports
  - Spot Checks
  - 10pm
  - 9am
- **Monday**
  - Controlled Ramp-up
  - 8pm
- **Tuesday**
  - Full Ramp-up
  - 3am
- **Wednesday**
  - Safeguarding

**ERP@SAP**

- **Ramp down/ User Lock**
- **Up- grade**
- **Migration**
- **Post-Steps**
- **Consistency Checks**
- **Transports**
- **Spot Checks**
- **3pm CEST**

**Down Time for End Users**

**accelerated cutover option**

- **Ramp down/ User Lock**
- **Up-grade**
- **Migration**
- **Post-Steps**
- **Consistency Checks**
- **Spot Checks**
- **Controlled Ramp-up**
- **Full Ramp-up**
- **Safeguarding**

**Down Time for End Users**

**Point of no return**
Focus Topic 5: Disaster Recovery

Replication of data and logs only

**Warm standby** server
Fast failover: HANA database already partially started

Hardware **vendor independent**
Focus Topic 6: Ongoing Operations

Controlled Run and Quarter-End Safeguarding Support

24*7 System Monitoring, via SAP Early Watch & Solution Manager Toolsets

SAP IT Operations Control Center
(established across all involved development and support organizations)

Continuous Performance and Database Improvements

Technical Safeguarding and IT Incident Management
SAP’s ERP journey @ a glance – Simple Finance as driver for excellence

### Main Technical Value
- **Data footprint reduction** from 7.1 TB to 3.7 through rigid data management
- **HANA database compression** from 3.7 TB to 1.8 (factor > 2.5)
- **Significant less storage space** on disk needed in comparison to previous database system
- **New monitoring and analysis features** with HANA studio

### Main Business Value
- **Fast close enablement** - 28% of processing time removed. New quality through real time analysis & continuous intercompany reconciliation.
- **Simplified Receivables management** - removal of offline backend processes & finance & Sales working on unified record level. DSO reduction of 10%

2013
Move to HANA in 5 month

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Public
Simple Finance 1.0
& S/4HANA Finance
SAP Simple Finance was the first offering under the S/4HANA product family. The decision to go for SAP Simple Finance should be based on the business benefits but is not a mandatory prerequisite for any system conversion.

Start Release
ERP 6.0, EhP 0-7
SAP NetWeaver 7.0x
AnyDB or SAP HANA

The Road to SAP S/4HANA
- SAP Simple Finance was the first offering under the S/4HANA product family
- The decision to go for SAP Simple Finance should be based on the **business benefits** but is **not a mandatory prerequisite** for any system conversion
What is SAP Simple Finance?

**SIMPLE FINANCE IN A NUTSHELL**

SAP Simple Finance is a non-disruptive evolution of SAP’s unrivaled portfolio of global financial solutions based on SAP HANA. It delivers instant insight anywhere for CFOs and Finance departments around the world to help them transform their business in a rapidly changing world.

Transformative business value from real-time analytics enabled by HANA + New consumer-grade user experience for all devices provided by BI and Fiori + Easily consumable as a managed service from the HANA Enterprise Cloud (or continued on-premise)

Flexible on-the-fly reporting enabling interactive analysis and simulation of complex business situations.

Personalized, responsive and simple consumption of analytics, dashboards and reports across devices.

Easy and flexible adoption of innovation based on simple solution architecture with complete choice of deployment.
SAP Runs SAP

Internal HANA adoption roadmap

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- Integration of legal & internal views on line item level
- No more aggregates / indices in FI & CO
- Fiori enabled
S/4HANA Finance

Q2/2014
Simple Finance Foundation
- Leverage Simple Finance to improve performance (no more aggregates)
- Significant reduction of Data memory footprint

Q3/2014
System Optimization
- Data Archiving
- Data Aging
  Application Log / IDoc and FI Document Aging
- Housekeeping
  (Data Purging, Elimination of Concats)
- HANA Enterprise Search
- Concepts and prepare adoption to new Unified Journal Entry (real one logical document)

Q4/2014
FIORI Smart Business & New functionality
- Enjoyable Finance transactions with FIORI transactional Apps
- First scenario on improved transparency based on integrated FI/CO View
- First Dashboard available for easy to access Insights

2015
S/4HANA Finance
- Migration of FI, CO and CO-PA data structures into Unified Journal Entry
- Enjoyable Finance transactions with FIORI transactional Apps
- High value business insights with FIORI smart business
- Selected Reporting Scenarios for Simple Finance leveraging the new Unified Journal Entry
- Data Footprint optimization
- Process Automation

**Q4/2015**
- **Fiori delivery**: Close functional / process gaps, coverage of Process Receivables
- **Roll Out of Optimized HANA Transactions**

**Q1/2016**
- **Single Source of truth (FI/CO)**—complete SAP specifics into Universal Journal for Profit Center Accounting (PCA)
- **Flexible Steering** - Universal Journal – Reporting across relevant attributes for PCA, COPA, Consulting Ledger
- **SAP RealSpend, cloud edition**: first users

**Q2/2016**
- **First simulation scenario**—New business insights with forward looking close
- **Flexible Steering** - Universal Journal – Reporting across relevant attributes for PCA, COPA, Consulting Ledger
- **Single Source of truth (FI/CO)**—complete SAP specifics into Universal Journal for COPA and Consulting Ledger
- **Fiori delivery 1602**: Controlling – Apps for Master Data Maintenance, Reporting and Allocations, Asset Management, Treasury Apps for Analytics

**Q3/2016**
- **Cash Reporting** on all dimensions; AR and AP Data enhanced with all attributes (“Online Split”)
- **P&L on the Fly with Boardroom for everybody**
- **Softclose** – Full Transparency on Projects (Daily insides) Sfin Profitability 2.0 PoC for Projects
- **Seamless Reporting** – New Archiving Concepts allow seamless accessibility of data
- **Flexible Steering** - Universal Journal – Reporting across all attributes

**Q4/2015**
- **Fiori delivery**: Close functional / process gaps, coverage of Process Receivables
- **Roll Out of Optimized HANA Transactions**
## Project Scope

### What will change with S/4HANA Finance OP 1503?

<table>
<thead>
<tr>
<th>Mandatory</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate tables and application index tables have been removed and replaced by equally named HANA views</td>
<td>For a number of t-codes / reports newer versions are to be used (see SAP note #1946054)</td>
</tr>
</tbody>
</table>

**Mandatory**

- **New General Ledger** is mandatory, comes with different IMG, new transactions/ reports and authorization objects
- New Asset Accounting as per EHP7 is mandatory, some code of old AA was deleted (more functionality)
- RE-FX is mandatory, only applications built on top of RE classic may have problems
- Data Aging introduced for the archiving object FI_DOCUMENT, replacing classical archiving
- SAP Cash Management powered by SAP HANA replaces the classic Cash Management
# Technical starting point and go-live configuration of Simple Finance

<table>
<thead>
<tr>
<th>Starting Point</th>
<th>Final Go Live Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ERP</strong></td>
<td></td>
</tr>
<tr>
<td>ECC 6.0 EHP6</td>
<td>ECC 6.0 EHP7</td>
</tr>
<tr>
<td>NW 7.40 SPS 04, kernel 7.40 PL25</td>
<td>NW 7.40 SPS 06, kernel 7.41 PL26, sFIN 1.0</td>
</tr>
<tr>
<td><strong>ABAP / NetWeaver Kernel</strong></td>
<td>Add-ons:</td>
</tr>
<tr>
<td>Rev. 73</td>
<td>- IW_GIL: Generic Interaction Layer</td>
</tr>
<tr>
<td></td>
<td>- SAP_FIN: Financials add-on for SAP Business Suite powered by SAP HANA</td>
</tr>
<tr>
<td></td>
<td>- EA-FIN: Financial Extension needed for Add-On Simple Finance</td>
</tr>
<tr>
<td></td>
<td>- FSCM_CDD: Financial Supply Chain Mgmt business function needed for Add-On Simple Finance</td>
</tr>
<tr>
<td></td>
<td>- SRM_Server: Supplier Relationship Management Server part installation</td>
</tr>
<tr>
<td></td>
<td>- CEE patched to SP22: ECC core country version</td>
</tr>
<tr>
<td><strong>HANA Version</strong></td>
<td>Rev. 73</td>
</tr>
<tr>
<td>Rev. 73</td>
<td></td>
</tr>
</tbody>
</table>
# Implementation and Solution

## Cut-Over Plan @ a glance

### PLAN

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00</td>
<td>Ramp-down, ~6 hrs</td>
</tr>
<tr>
<td>17:00</td>
<td>Upgrade SRM, Ehp7, sFIN, CEE SP22, SPAU 16hrs</td>
</tr>
<tr>
<td>3 hrs Buffer</td>
<td>New GL and Fin. Add-on Data Migration ~21,5 hrs (including preparation, post steps, 4 hrs buffer released)</td>
</tr>
</tbody>
</table>

### ACTUAL

<table>
<thead>
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<th>Time</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00</td>
<td>Ramp-down, ~6 hrs</td>
</tr>
<tr>
<td>17:00</td>
<td>Upgrade SRM, Ehp7, sFIN, CEE SP22, SPAU 12hrs</td>
</tr>
<tr>
<td>5:00</td>
<td>New GL and Fin. Add-on Data Migration 17,5 hrs (including preparation, post steps, 4 hrs buffer released)</td>
</tr>
<tr>
<td>9:30 hrs Buffer</td>
<td>Data Validation ~11,5 hrs</td>
</tr>
<tr>
<td>12:00</td>
<td>Biz Verify 6 hrs</td>
</tr>
<tr>
<td>19:00</td>
<td>IT &quot;Spot&quot;</td>
</tr>
<tr>
<td>22:00</td>
<td>Biz &quot;Spot&quot;</td>
</tr>
</tbody>
</table>

### NEAR ZERO DOWNTIME APPROACH

#### Uptime

- **New System**: Upgrade SRM, Ehp7, sFIN, CEE SP22, SPAU 12hrs
- **New GL and Fin. Add-on Data Migration**: 17,5 hrs (including preparation, post steps, 4 hrs buffer released)
- **Delta Replay of recorded productive data**: 1 day

#### Downtime (technical 4 hours)

- **Ramp-down**: =6 hrs
- **Backup**: 5hrs
- **Delta Replay**: 1h
- **Technical validation**: 1h
- **System switch**: 1h
- **Data Validation**: 5 hrs
- **Biz Verify**: 6 hrs

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Project Scope

Migration from SAP ERP to Simple Finance

Benefits You Can Achieve from Migration

Starting Point

Classic G/L in ERP

Migration at period end

New G/L in ERP

Migration at year end

New G/L in
Simple Finance

1

Target

Migration at period end

Planned functionality

Migration at year end

Planned functionality

Parallel ledgers
Document split
Ledger merge (for B/S)
Ledger merge (for P&L)
Real-time integration CO-FI
Limited extensibility

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* planned

- Logical Document
- Line-item detail
- Faster processes
- Ledger merge (for P&L)
- Real-time integration CO-FI
- Full extensibility *

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- Line-item detail
- Faster processes
- Parallel ledgers
- Document split
- Ledger merge (for B/S)
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* planned
Benefits
Value realized and value anticipated @ a glance

2014
Move to New GL & Simple Finance in 55 days

Main Technical Value

- **Huge simplification of code.** Materialized aggregates all replaced by SQL statements for aggregation on the fly, database indices dropped.

- **Dramatic data footprint reduction.** Final HANA database size targeted ~500 GB. Reduction in FI/CO from 234 to 106 GB (factor 2.2).

- **Performance gains** through Scale out: equal distribution of tables, memory on master: 1,194 TB, on slave: 0,654TB

Main Business Value

- **Business agility** – adopt to new Business realities:
  reflection of organizational changes on the fly (from 1 week to 1 day)

- **Financial Insights** - integration of legal & internal management views on line item level

- **Inherent reconciliation** - reconciliation efforts eliminated by operating against a single set of granular data

- **User Experience**
Summary: SAP’s ERP journey @ a glance – Simple Finance as driver for excellence

2013
Move to HANA in 5 month

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- Simplified Receivables management - removal of offline backend processes & finance & Sales working on unified record level. DSO reduction of 10%
- Risk & compliance - fraud detection monitoring. Real time screening for anomalies.

2014
Move to New GL & Simple Finance in 2 ½ month

Main Technical Value
- Huge simplification of code. materialized aggregates all replaced by SQL statements for aggregation on the fly, database indices dropped
- Dramatic data footprint reduction. Final HANA database size targeted ~500 GB. Reduction in FI/CO from 234 to 106 GB (factor 2.2)
- Performance gains through Scale out: equal distribution of tables, memory on master: 1,194 TB, on slave: 0.654 TB

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- Inherent reconciliation - reconciliation efforts eliminated by operating against a single set of granular data
- User Experience
Implementation and Solution

Key Take-Aways

Preparations

- Integrate all performance testing activities in one work stream
- Conduct technical preparation phase incl. archiving and code management
- Identify business transactions that will be replaced by Simple Finance/New GL transactions
- Upgrade system to latest version of application, NetWeaver and HANA database revisions
- Run inconsistency checks and prepare consistent system environment

Recommendations

- Ensure on-site availability of key subject matter experts and project managers
- Run cutover dry-run in an integrated system
- Involve business stakeholders closely in project
- Set up change management stream to train Business users on new transactions
- Ensure strong expertise in Business and IT for FI/CO
How does SAP’s internal ERP system look today?

From a system landscape that carries legacy from more than 20 years..

- 400+ Company codes
- 78000 Logon Users (5300 concurrent users)
- 75000 Custom Code objects (7 million custom code statement lines)
- 800+ million ACDOCA lines
- 198 Add-Ons
- 550 System connections
- 4K - 17 k modifications (depending on how to count)
Simplified High Level View 2016 (Ariba & Concur)

DMZ – PI – Internal Firewall

Ariba Network
- Usage Data
- Hybris Billing: Convergent Charging (pricing)
  - C4P
  - Java
- Hybris Billing: Pricing Simulation
  - CPS
  - NW7

Concur
- Usage Data
- MetraNet
- Billing Data
- PI Provider Contract
- PI Provider Contract

SAP Template development in parallel to Ariba Implementation

Digital Core
- Convergent Invoicing
- FI-CA
- sFin (GL & CO)
- Revenue Accounting
- FSCM
- Concur Close

Mini Template
- I4P
- S/4HANA 1511

Corporate ERP
- Central Finance
- AIF Correction Frame
- sFIN (G/L | A/R) | A/P | CO
- Line Items
- Revenue Accounting
- FSCM
- Ariba Close
- Consolidation
- ISP
- SFIN 2.0

Shared Service CRM
- Fin. Customer Care
  - SFP
  - CRM 7

MDG-Hub
- Business Partner
  - GIP/MDP
  - HANA

Invoices

Biller Direct
- FICA Dispute
- ISP Dispute
  - JSP
  - NW7
Further Information

- The simplification list for SAP S/4HANA
Invitation to connect

Joachim Mette
Director

joachim.mette@sap.com
Appendix