Data Consistency Management
Overview
Agenda

Motivation

SAP Solution Manager as Tool for Data Consistency Management
- Integration Repository
- Data Consistency and Interface Monitoring (DCMon, IFMon)
- Internal Database Comparison (IDC)
- Cross Database Comparison (CDC)
- Transactional Correctness (TC)
- Guided Self Service Data Consistency Management (GSS DCM)
- Business Process Completeness Check (BPCC)

Additional Information
Motivation
SAP Solution Manager as Central Platform for Business Process Operations

**MUST-HAVE Day-to-Day Operations**

**Business Process Monitoring**
- Proactively ensure reliable business process execution, performance and throughput

**Data Consistency Management**
- Proactively avoid or detect harmful data inconsistencies

**Job Management**
- Automate business process considering dependencies and restrictions

**Business Process Improvement**
- Improve business process efficiency and effectiveness

**Business Process Performance Optimization**
- Proactively identify improvement potential for business process execution

**Drive Business value through optimization**

**SAP Business Process Operations**
- Cross-Database Comparison
- Central Job Overview
- Business Process Analytics
- Alert Inbox
Motivation: Why is Data Consistency Management needed?

Is the data exchanged between the systems as well as the data needed for correct operation of the business process consistent?
Motivation: Why can Data Inconsistencies occur?

**User Level:** Data inconsistencies due to
- Real world operation ≠ system transaction
- Wrong usage of transaction
- Incorrect manual entry of data
- Completely missing entry of data

**Application Level:** Data inconsistencies within one system or between two systems due to
- No clear leading system defined
- Logical inconsistencies in application integration
- Absence of error handling and restartability
- Errors in application programs (transactional correctness)

**Technology Level:** Data inconsistencies due to
- Data Loss due to hardware issues
- One system crashes and is reset to an earlier state
- Initial Loads may have run into problems
- Problems with Delta Loads
Motivation: Domino Effect – Influenced Systems
Motivation: Data Consistency Management - Examples

Examples from SAP’s Backoffice:
– Database Crash at a customer and last backup ~12 months old
– Inconsistencies between MM and FI during goods movements with unknown Root Cause
– A custom made report has accidentally deleted parts of business objects
– Some data has been replicated multiple times between two systems
– Data storage in multiple systems using sRFC/HTTP within one business step
– …
Motivation: Inconsistency Types

- **Object Identical**
  - **Customer Smith**
  - **Address: New York City**

- **Object with Differences**
  - **Customer Smith**
  - **Address: New York City**
  - **Address: Berlin**

- **Object Missing in System**
  - **Customer Smith**
  - **Address: New York City**
Motivation: Temporary Differences

Time $t_1$
(change done in sender)

Customer Smith
Address: New York City
Address: Berlin

Time $t_2$
(message “in transit”)

Customer Smith
Address: Berlin

Customer Smith
Address: New York City

Time $t_3$
(change arrived at target)

Customer Smith
Address: Berlin

Customer Smith
Address: Berlin
## Data Consistency Management: Benefit / Value proposition

<table>
<thead>
<tr>
<th>Goal</th>
<th>Benefit</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td>Global transparency across organizational units &amp; process variants</td>
<td>Increase visibility of current data quality and consistency state.</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Reduced operating costs</td>
<td>Automate data consistency management. Reduce manual process inefficiencies and human errors. Avoid systematic process exceptions.</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Higher customer satisfaction &amp; faster revenue stream</td>
<td>Avoid delayed business documents and financial losses by quick reaction to interface errors affecting data of core business processes.</td>
</tr>
<tr>
<td>Clean-up</td>
<td>More accurate business reporting</td>
<td>Avoid inaccurate reporting data by ensuring consistency between systems and quicker clean up due to earlier detection.</td>
</tr>
<tr>
<td>Internal Audit</td>
<td>Higher reliability of financial reporting &amp; possible detection of fraud</td>
<td>Avoid inconsistencies in FI-AP and FI-AR before PEC. Review consistency between MM &amp; FI and between systems.</td>
</tr>
</tbody>
</table>
Data Consistency Management: Handling Overview

1. Prevent
   - Process Design & Training

2. Detect
   - End-to-End Monitoring

3. Investigate
   - Root Cause Analysis & Business Continuity Concept

4. Correct
   - Reconciliation Strategy & Business Continuity Concept
Data Consistency Management: Deliverables

Prevention
- Review of the Process Design
- Transactional Correctness check
- Setup Monitoring & Exception Handling
- Establish a suitable Change Management
- End User Training of correct system usage
- Provide Best Practices

Correction
- Root-Cause Analysis to determine the origin of the inconsistency
- Correction of the inconsistent data
- Guided Self-Service Data Consistency Management
- Guided Procedures in Cross Database Comparison and Business Process Monitoring

Detection
- End-to-End Consistency Check Reports
- Data Consistency and Integration Monitoring as part of Business Process Monitoring
- Internal Database Comparison (IDC)
- Cross Database Comparison (CDC)
- Business Process Completeness Check (BPCC)

Investigation
- Determination of the Business Impact
- Check the availability of a Fall-Back Scenario
- Guided Self-Service Data Consistency Management
- Guided Procedures in Cross-Database Comparison
SAP Solution Manager as Central Platform for DCM

**Cross-Database Comparison**
Is data consistent between two systems especially if one is a non-SAP system?

**Data Consistency and Interface Monitoring**
Is my business process execution reliable with respect to data consistency?

**Internal Database Comparison**
Are two linked tables consistent or have the correct content?

**Guided Self-Service DCM**
Which report/tool is appropriate for my business?

**Data Consistency Management**

**Business Process Completeness Check**
Are all parts of an interface or synchronous process executed?

**TC Tools**
Are there any issues with transactional correctness in ABAP or Java code?
Data Consistency Management: Business Justification
Example: Without DCM

Example effort estimation (as-is)
– 3 days to determine the right tools and procedures for data inconsistency determination and repair * 1 persons → 3 person days
– 7 days * 3 persons to determine and fix inconsistencies → 21 person days
– Inconsistencies last 10 days * 100 affected users * 0.2 (each user spends 20% of his day for workarounds) → 200 person days

∑ 224 person days

Possible efforts
• Effort to determine the right tools and procedures for data inconsistency determination and repair
• Effort for (constant) data inconsistency determination
• Effort for (constant) data inconsistency repair
• Effort for workarounds to determine correct and consistent data
• Effort for workarounds because business processes are not available in system

The highlighted numbers can be reduced
Data Consistency Management: Business Justification
Example: With DCM

Example effort estimation (to-be)

- 1 days to determine the right tools and procedures for data inconsistency determination and repair * 1 persons → 1 person days
- 4 days * 3 persons to determine and fix inconsistencies → 12 person days
- Inconsistencies last 5 days * 100 affected users * 0.1 (each user spends 10% of his day for workarounds) → 50 person days

∑ 63 person days

Possible efforts

- Effort to determine the right tools and procedures for data inconsistency determination and repair
- Effort for (constant) data inconsistency determination
- Effort for (constant) data inconsistency repair
- Effort for workarounds to determine correct and consistent data
- Effort for workarounds because business processes are not available in system

The highlighted numbers have been improved
In Solution Manager 7.2, Data Consistency Management tools can be directly accessed via the Fiori Launchpad (transaction SM_WORKCENTER).

Each user can adjust his Fiori Launchpad and select from the available catalogue which tiles should be displayed.
Integration Repository

SAP Solution Manager as Tool for Data Consistency Management
Integration Repository: Overview

• In Solution Manager 7.2, Integration Repository is part of Solution Documentation’s Interface Library

• Each interface in Interface Library can have a so-called Interface Details element

• Attributes can be maintained for the current interface which are specific for the interface technology
Integration Repository: Supported Interface Technologies

- IDoc (ALE / EDI)
- BDoc
- Batch Input, Direct Input
- File
- HTTP / Webservice (ABAP, JAVA, REST-based, OData)
- Java Message Service (JMS)
- SAP Cloud Platform Integration (CPI)
- SAP PI / PO (any kinds of SAP supported adapter technologies)
- RFC (sRFC, aRFC, tRFC, qRFC, bgRFC)
- SAP Workflow
- SQL / Remote Database Access (ADBC, JDBC)
- Customer-specific Interface Technologies
Integration Repository: Supporting Tools

- Integration with SAP PI/PO Integration Directory
- Integration with SAP Cloud Platform Integration
- Interface Discovery for
  - IDoc
  - RFC / qRFC
  - Web service
- Interface Search and Mass Maintenance
- S/4HANA Impact using Custom Code Analysis

Technology Coverage

~85% of interfaces are covered by Integration Repository tools
Integration Repository: Roadmap

- Delivery planned with Solution Manager 7.2 SP11
- Integration with SAP Cloud Platform Integration
- Interface Discovery for RFC

- Future plans
  - Addition of technology HTTP to Interface Discovery
  - Automatization of impact analysis using S/4HANA ATC Check (End-to-End)
Data Consistency and Interface Monitoring

SAP Solution Manager as Tool for Data Consistency Management
Data Consistency and Interface Monitoring

Motivation
- Where is data consistency checked?
- When is data consistency checked?
- Who checks data consistency?

Goal
- Detect inconsistencies as early as possible

Deliverable
- Process oriented monitoring objects for the most common data consistency reports and interface technologies
What does Data Consistency Monitoring mean in Practice?

Data Consistency Monitoring means to answer the following questions:

- Who is responsible and checks for background job scheduling and regular monitoring of consistency check programs like LX23?
- Who monitors and checks for update errors (SM13), application log messages (SLG1)?
- Which interfaces are important for the consistency of my business data?
- Who has to be contacted in case of the occurrence of an inconsistency?
- What has to be done if a certain inconsistency arises?
- Who is responsible for transactional correctness testing of developments?
- Where can I find this information?

… and to detect inconsistencies as early as possible.
SAP Solution Manager as Central Tool for Business Process Monitoring

SAP Solution Manager

- Monitoring Application
- Alert Inbox
- Incidents
- Alert Emails
- Business Process Analytics
- OCC Alert Reporting
- Business Process Monitoring (on MAI)
- BPO Dashboards
- Metric Reporting

Managed Systems

- ERP
- SCM
- CRM
- Non-SAP
### Alert Inbox for DCM Related Alerts in SAP Solution Manager

You can switch between Interface and Consistency-related Alerts.
Interface Monitoring vs. Data Consistency Monitoring

- **High-frequency interface monitoring** for short-term error resolution
- **Periodically scheduled data consistency checks** as long-term safety net

[Graph showing interface errors and data consistency over time]
Content for Data Consistency Monitoring: Monitoring Objects related to Data Consistency

Cross-Application Monitoring Objects
- General Application Log (SLG1)
- Short Dumps
- Update Errors (Transaction-/ Program-specific)

Interface Monitoring Objects
- qRFC Alert Monitoring
- BDoc Alert Monitoring (CRM)
- ALE/IDoc Alert Monitoring per IDoc Type
- XI/PI Alert Monitoring
- Batch Input Monitoring
- File Monitoring
- CRM Middleware Monitoring
- tRFC Alert Monitoring
- bgRFC-Monitoring
- RFC-“ping”
- Workflow Monitoring
- WebService-Calls (ABAP)
- …

Customer Specific Monitoring Objects
- Customer Exits in Business Process Monitoring Infrastructure
Content for Data Consistency Monitoring: Monitoring Objects *specific for* Data Consistency

Enterprise Resource Planning Logistics
- Sales & Services
- Warehouse Management
- Inventory Management

Enterprise Resource Planning Financials

Supply Chain Management
- liveCache - Database
- CIF-Interface

Extended Warehouse Management
- Stock Information
- Further Checks

Customer Relationship Management

Generic Check Functions
- Internal Database Comparison
- Cross Database Compare
- Custom Developed Consistency Reports

Industry-Solutions
- Retail
- IS-OIL
- Banking
Internal Database Comparison (IDC)

SAP Solution Manager as Tool for Data Consistency Management
Internal Database Comparison: Motivation

Motivation

▪ How can I check data within one SAP system for consistency?
▪ How can I proceed if I face an inconsistency that cannot be detected by standard consistency check tools, but I do not want to write additional coding for each of the required checks?

Goal

▪ Comparison of two tables to detect missing table entries or inconsistent field contents (any content not corresponding to predefined selection criteria) without the need to write additional coding

Deliverable

▪ A tool that identifies, displays and stores inconsistencies together with detailed field content for later reference
Internal Database Comparison: Application Example

Problem
▪ Sales order cannot be displayed

Root Cause Analysis
▪ Custom report deleted sales order header data

Question
▪ What documents are affected?
Internal Database Comparison: Example

- Possibility to save parameters as variant
- Remote connection to system where data is located
- Tables that should be compared and join conditions between tables
- Additional restrictions for data that should be compared
- Comparison result
- Use case: missing entries in one table or inconsistencies between tables
- Fields that should be displayed in result
Cross-Database Comparison (CDC)

SAP Solution Manager as Tool for Data Consistency Management
Cross-Database Comparison: Motivation

Motivation

- How can I check data between different SAP or Non-SAP systems for consistency?
- How can I proceed if I face an inconsistency that cannot be detected by standard consistency check tools, but I do not want to write additional coding for each of the required checks?

Goal

- Comparison of two sources to detect missing table entries or inconsistent field contents without the need to write additional coding

Deliverable

- An infrastructure that facilitates data modeling and comparison as well as displays and stores comparison results for later reference
Cross-Database Comparison: Motivation

Data in **different systems**, including **non-SAP systems**, needs to be checked for consistency. Typical situations include **interface errors** or **hardware failures** in a distributed system landscape. Not all data inconsistencies can be detected by application-specific consistency check programs (for example involving custom tables or non-ABAP / 3rd-party systems).

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>11</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
</tr>
<tr>
<td>C</td>
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<tr>
<td>D</td>
<td>14</td>
</tr>
<tr>
<td>E</td>
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</table>

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<td>12</td>
</tr>
<tr>
<td>C</td>
<td>20</td>
</tr>
<tr>
<td>D</td>
<td>14</td>
</tr>
</tbody>
</table>

System 1 (SAP)

System 2 (non-SAP)
Cross-Database Comparison: Features

• Delivered with SAP Solution Manager

• Supports multiple source types
  ▫ For SAP ABAP-based systems and non-ABAP / 3rd-party systems
  ▫ For On-premise and Cloud systems
  ▫ Can be enhanced by custom-build source types

• Offers comparison of multiple tables between two source systems
  ▫ Several tables can be joined to build complex application data models
  ▫ Offers easy-to-use graphical UI to enter the data model
  ▫ Offers possibility to re-use a comparison data model for several comparison instances

• Extracts data from source systems and executes comparison in SAP Solution Manager
  ▫ The comparison can be executed ad-hoc as well as periodically in background
  ▫ Allows splitting of the comparison data into multiple blocks of configurable size
  ▫ Offers functionality to save and display comparison results

• Supports integration into Business Process Monitoring
  ▫ Create alerts and notifications based on identified inconsistencies
Cross-Database Comparison: Source System Types

CDC supports multiple Source Types, which can be freely combined with each other

SAP ABAP-based systems using RFC (Remote Function Call)
- „ABDY“ with a generic extractor function module (dynamic SQL execution, no individual generation and transport required)
- „ABAP“ with generated extractor function modules (individual and extensible code in custom namespace)
- „IDC“ with a generic extractor function module to determine inconsistent entries in one system (like “Internal Database Comparison”)
- „BIQY“ / „BWRI“ extract data from a BI system using MDX Queries or Data Manager Read Interface

Non-ABAP systems
- „ADBC“ (ABAP Database Connectivity) for a direct remote database access to all SAP-supported RDBMS including HANA
- „HANA“ for a direct comparison of HANA data with a connected other database using „Smart Data Access“ (running in HANA itself)
- „ODAT“ extracts data using OData Services (Open Data Protocol) HTTP calls
- „ARIB“ / „ARIP“ extract data from Ariba P2P/P2O and Ariba Networks using the Operational Reporting API / Transaction Monitoring API

Files (created by native non-SAP application)
- „FIXS“ for XML-files available on Application Server of SAP Solution Manager
- „FIXL“ for XML-files available for upload from local frontend
- „CSV“ for comma-separated files on Application Server
Cross-Database Comparison: Technical Overview

**Comparison Data Model**
- Source tables and joins
- Mapping between Sources
- Fixed filter values

**Comparison Definition**
- Extraction & Iteration settings
- Connection parameters
- Variable filter values

**Comparison Group**
- Multiple Comparisons logically grouped
- Correlation of results

**Comparison Run**

**Display Comparison Results**

**BPMon Alerts**

**Comparison Results**

**OData Query Call**

**HTTP**

**FTP**

**XML / CSV File**

**Custom-built data extractor**

**Non-SAP System**

**Custom-built data extractor**

**Non-SAP System**

**SAP HANA DB**

**SAP BI System**

**MDX / RSDRI Query**

**SAP ABAP-based System**

**Extractor Function Module** (generated or generic)

**Ariba Networks Ariba P2P/P2O**

**Ariba Networks**

**OData Service in SAP or non-SAP System**

**Generate OData query**

**Generate native SQL query**

**Generate ABAP extractor coding or statements**

**Generate MDX query**

**On-Premise Applications**

**Cloud Applications**
Cross-Database Comparison: Create Comparison

**Basic Attributes**
- Name and Description of the Comparison
- Extraction Strategy, Comparison Block Size, Max Number of Differences

**Source Types** for both Source Systems and their source type specific Parameters

**Iteration Parameters**

**Variable Filter Criteria**
For the same Data Model multiple Comparisons can be created, which use different source systems, e.g. Dev/QA & Prod landscape, or use different filter values

**Embedded Data Model**
Cross-Database Comparison: Create Data Model

Data Model

- Two Data Sources (typically database tables and the selected columns)
  - Join conditions between tables for complex models
  - Fixed filter values
  - Variable filter fields
  - Context Fields
- Mapping connections between the two Source Systems
  - Comparison Keys
  - Data Fields
  - Conversion Rules
- Generate Extractors
Cross-Database Comparison: Scheduling Options

- You **start a new Comparison Run** by selecting a Comparison in the Comparison Overview and pressing “Start”
  - Create job only (will not be released automatically)
  - Create job and start immediately
  - Start Comparison Run immediately in dialogue

Each start creates a new **Run ID** for the Comparison
Cross-Database Comparison: Comparison Run Overview

The **Comparison Overview** gives an overview about the execution of **Comparisons**

The column **“Run Status”** shows the current Comparison Run execution status:
- Grey – not started yet
- Yellow – currently running
- Green – finished successfully
- Green tick – result confirmed by user
- Red – aborted due to a system error

The column **“Inconsistency Status”** shows whether a Comparison Run has detected an inconsistency:
- Grey – no result yet
- Green – no inconsistencies found
- Yellow – still running, but already inconsistencies found
- Red – finished and inconsistencies were found
Cross-Database Comparison: Comparison Run Details

The Comparison Run Detail screen is structured into a layout of four areas:

- **Global Result Parameters**
  - Switch between Run IDs
  - Objects Expected from Source 1 and 2
  - Objects Processed (Progress)

- **Result Overview**
  - Basic Key Figures

- **Result Details** (see next slide)

- **Comparison Runtime Statistics**
Cross-Database Comparison: Result per Inconsistency Type

Result Overview shows the comparison key figures (Types of Inconsistencies)

Result Details shows the list of affected objects per Type of Inconsistency

- For Objects existing in Source System 1 or 2 only, the result of the existence check shows comparison keys only
- For Objects with Differences, the result shows the comparison keys and the detailed data value differences
Transactional Correctness (TC)

SAP Solution Manager as Tool for Data Consistency Management
Transactional Correctness (TC)

Motivation
- Do my programs ensure data consistency?
- What happens in case of errors?

Goal
- Identify and improve programs that can lead to inconsistencies

Deliverable
- A tool that helps identifying parts of programs that can possibly lead to inconsistencies
**Transactional Correctness Tool for ABAP: Example**

**Problem**
Data should be updated together in multiple tables, e.g. header and detail

```
Update header

COMMIT

Update detail
```

**Question**
Is it possible that data is updated only in one table but not in the other one, e.g. in case of errors?
Is it possible that a different user or program updates the same data at the same time with conflicting changes?
The Transactional Correctness (TC) Tool for ABAP helps you to record a trace and evaluate it for Transactional Correctness

The tool offers a guided procedure to

- Record traces in a remote ABAP system
- Select trace records for TC evaluation
  - Load the corresponding trace records from remote systems
  - Select Table names that should be excluded from evaluation
  - Select or deselect individual trace records for evaluation
- View the evaluation result
  - Check rules regarding the commit structure
  - Check rules regarding the enqueue handling
  - etc.
In this example the tool detects a COMMIT (explicit or implicit) between the change of the header and the change of the detail data. In case of errors and the need of a ROLLBACK when changing the detail data, this would lead to inconsistencies.
Guided Self Service for Data Consistency Management (GSS DCM)

SAP Solution Manager as Tool for Data Consistency Management
Guided Self Service Data Consistency Management (GSS DCM)

Motivation

- How can I analyze and resolve detected inconsistencies?
- How can I execute an ad-hoc data consistency check?
- How can I structure and document very complex analysis and resolution procedures and their results?

Goal

- Provide guided procedures to analyze and resolve inconsistencies and to execute an ad-hoc consistency analysis

Deliverable

- A tool with the possibility to determine guided procedures to analyze and resolve inconsistencies and to store and report the results
Guided Self Service Data Consistency Management: Preparation

Select events, products, modules (optional), business objects (optional) and tables (optional)

Purpose
To select the event(s) that you want to investigate.

Select "Analysis for Data Consistency" to check for problems that are related to Data Consistency issues. This includes Technical Analyses to find tasks related to the analyses at a technical level, such as: "What should be done in the event of a database crash?" And "Application Analysis" to find tasks related to the analysis at application level, such as: "Table VBAK is corrupt. What can be done?"

Select "CDC Documentation" to automate the documentation of CDC objects and CDC instances.

Select Events

- CDC Documentation
- Analysis for Data Consistency
The GSS DCM proposes related tasks

- Purpose and procedure of each task are explained
- Direct access to transactions, programs and SAP Notes needed for the task
- The task can be rated and you can enter a user comment
Guided Self Service Data Consistency Management: Report

The results of a GSS DCM session can be documented in a report

DC Toolbox-Data Consistency Management Session

- GSS for Data Consistency Management
- Summary

1 GSS for Data Consistency Management

The purpose of the Guided Self-Service for data consistency management is to provide help regarding data consistency in different scenarios.

Selected Events

<table>
<thead>
<tr>
<th>Select</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>✔</td>
<td>Analysis for Data Consistency</td>
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Selected Systems

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<tr>
<th>Select</th>
<th>SID</th>
<th>Module</th>
<th>System Type</th>
<th>Logical Component</th>
<th>DB Type</th>
<th>DB-Release</th>
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<tbody>
<tr>
<td>✔</td>
<td>SAP ERP</td>
<td>SAP Enterprise Resource Planning</td>
<td>APL_AIA</td>
<td>ERP</td>
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<td></td>
</tr>
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</table>

This table provides a list of "Modules" that have been selected in the questionnaire part of the service.

Selected Modules

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<tr>
<td>✔</td>
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<td>FI</td>
<td>Financial Accounting</td>
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</table>

2 Summary

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<th>Rating</th>
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<th>Task ID</th>
<th>Counter</th>
<th>Description</th>
<th>Recommended task</th>
<th>User Comment</th>
<th>User Comment</th>
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<td>✔</td>
<td>ERP</td>
<td>002021</td>
<td>10</td>
<td>MM / FI Balance Comparison</td>
<td>No further task needed.</td>
<td>User Comment: No problems found.</td>
<td></td>
</tr>
<tr>
<td>✔</td>
<td>ERP</td>
<td>002022</td>
<td>20</td>
<td>Consistency Check FI -&gt; CO</td>
<td>No further task needed.</td>
<td>User Comment: No problems found.</td>
<td></td>
</tr>
</tbody>
</table>
Business Process Completeness Check (BPCC)

SAP Solution Manager as Tool for Data Consistency Management
Business Process Completeness Check (BPCC)

Motivation

▪ Were critical parts of my business processes executed successfully?
▪ Were all steps executed in the correct sequence?
▪ Were all business objects created in the correct status?

Goal

▪ Detect interrupted executions of critical parts of business processes

Deliverable

▪ A tool that helps identifying and restarting interrupted executions of critical parts of business processes
Exception Management

Exception Management
– Concept for handling exceptions from occurrence through resolution until successful restart of the business process instances
– Central tool to determine the occurrence of exceptions and the need for restarting business process instances
– Definition of responsibilities and procedures for exception handling
– Definition of communication paths and escalation procedures

Business process instance
– Concrete execution of a business process, e.g. create sales order 4711 for customer 1234
– Manual restart of interrupted business process instances should be included in an overall Exception Management concept
Relationship between Business Process and Interface Monitoring and Exception Management

Business Process and Interface Monitoring
– Proactive monitoring of all situations critical for business process execution
– Includes general monitoring of the occurrence of exceptions within the business process execution
– Monitoring of statistical values for multiple business process instances, e.g. number of ABAP short dumps for a certain program

Exception Management
– Detection of all business process instances that were interrupted
– Includes instance specific monitoring of the occurrence of exceptions
– Monitoring of individual business process instances, ABAP short dump in a certain program during one execution of a business process

Business Process and Interface Monitoring and Exception Management are tightly integrated. There should be one comprehensive concept to cover both aspects.
The Business Process Completeness Check (BPCC) in SAP Solution Manager collects and evaluates log information that is written during execution of critical parts of a business process.

Business processes have to be instrumented to write necessary logging information.

BPCC is integrated into the Exception Management Cockpit, which offers a central platform for managing all exceptions that occurred for a business process and within the solution landscape.
Process Flow for Business Process Instance

For each logged business process instance you can display the process flow and context details for each step.
SAP Solution Manager as Tool for Data Consistency Management
Data Consistency Management: Main Implementation Scenarios

**Phase 1**
- Identified interfaces (technologies) of concern
- Identified interfaces (technologies) of concern
- SAP Business Process Analysis (cross-application part) performed on SAP backend system

**Phase 2**
- Monitor technical aspects of inconsistencies (interfaces)
- Monitor technical aspects of inconsistencies (interfaces)
- Identify and monitor business related aspects of inconsistencies (standard reports)

**Phase 3**
- Monitor business related impact of interfaces
- Extend consistency and interface monitoring using custom made reports
- Extend consistency checks using generic check reports
Additional Information

Detailed Information about DCM functionalities in SAP Solution Manager:

Additional monitoring related information:

Supporting tools for Integration Repository:
https://wiki.scn.sap.com/wiki/x/xYIOHw
Thank you