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Engineering SAP Central Finance for M&A Success: A Novel Approach to System Validation and Testing

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***Abstract*—A Central Finance system serves as a unified financial source of truth, consolidating heterogeneous financial applications to streamline financial processes, reporting, and consolidations under a single platform. This approach becomes a crucial enabler for organizations in their digital ERP transformation journey. By integrating both SAP and non-SAP systems into one Finance platform, Central Finance plays a key role in Mergers and Acquisitions, facilitating the onboarding of legacy ERP systems into the landscape. This ensures faster migration with minimal disruption to business operations. This whitepaper explores the functional and testing considerations involved, highlighting the use of a novel testing strategy that alleviated the testing burden on the business, accelerated the migration process, and delivered high-quality results.**

***Keywords* – CFIN, SAP S/4 HANA, ECC, M&A, CIM**

I. INTRODUCTION

As SAP's mainstream support for ECC (older version) concludes in December 2027, organizations are actively planning their migration to S/4 HANA. For larger organizations with one or multiple ERP systems, this transition can be a massive undertaking, potentially disrupting business operations. To address this challenge, businesses are seeking a solution that offers the flexibility and agility needed to adapt to evolving business requirements and systems. SAP's response to this is Central Finance, which enables a unified view of financial data across the organization without requiring changes to underlying processes or systems. Central Finance integrates both SAP and non-SAP systems, consolidating financial data into a single platform. It replicates financial postings from these systems into S/4HANA's Universal Journal, which becomes the enterprise's system of record.

II. CENTRAL FINANCE – CATALYST FOR M&A

In the context of mergers and acquisitions, enterprises aim to present a unified front to customers while transitioning to a single ERP platform within a short timeframe. Central Finance (CFIN) plays a crucial role in both the M&A process and post-merger integration, with the Common Information Model (CIM) serving as its foundation. Data is at the core of any CFIN implementation, and CIM represents the standardized data and information definitions used to record, report, and measure performance across the enterprise. CIM focuses on defining a common coding block (Organization elements and Master data) that can be consistently applied across all entities within the organization. This data model not only accelerates the execution of the M&A process but also establishes an integration framework that can be leveraged for the seamless onboarding of future entities into the SAP ERP landscape.

A. CFIN Architecture

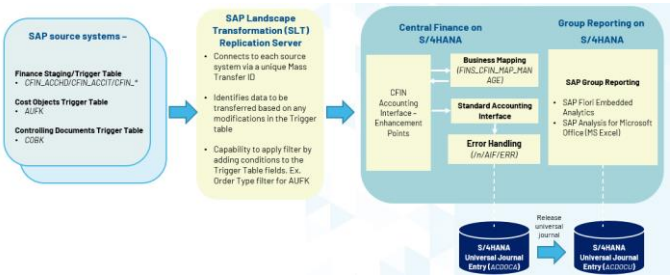
Before diving into the testing strategy, let's first explore how SAP has designed Central Finance (CFIN) to integrate both SAP and non-SAP systems. As a prerequisite for CFIN implementation, it is essential to review, understand and implement the notes listed in Table 1.

Table 1. Key SAP notes in Central Finance

SAP Note	Note Description
2870537	Good to know when starting and working with SAP Central Finance (CFIN)
2323494	Overview of notes relevant for Source System
2184567	Central Finance: Frequently Asked Questions (FAQ)
2154420	SAP LT Replication Server for SAP Central Finance

The SAP Landscape Transformation (SLT) Replication Server is a key component of the CFIN technical architecture, enabling real-time document transfer from source systems to CFIN/S/4 system, as shown in figure 1.

Figure 1. CFIN Architecture



B. CFIN Event Trigger

SLT replicates documents from source to target systems based on specific events. These events are triggered by document postings in Finance, Controlling, and Logistics applications. In addition to updating traditional accounting tables such as BKPF, BSEG, and COEP, source systems also update tables prefixed with CFIN*. Entries in these CFIN* tables serve as the event triggers, prompting SLT to replicate the documents into Central Finance. Table 2 lists the tables from source systems that trigger events in SLT upon updates.

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Table 2. Key CFIN tables in Source ECC system

SAP Table	Table Description
CFIN_ACCCHG	Transfer table for accounting doc. changes
CFIN_ACCCR	Transfer Table
CFIN_ACCFI	Transfer Table for ACCFI
CFIN_ACCHD	ACCHD Transfer table.
CFIN_ACCIT	Transfer Table for ACCIT
CFIN_ACCIT_APP	Transfer Table: Appends to ACCIT
CFIN_ACCIT_CCS	ACCIT_CCS Transfer Table
CFIN_ACCIT_PDS	Transfer Table for ACCIT_PDS
CFIN_ACCIT_WT	CFIN Withholding tax
CFIN_ACCPA_CHAR	Transfer Table for CO-PA
CFIN_ACCTX	CFIN: Transfer table for ACCTX
CFIN_COPA	Transfer Table for CO-PA Extraction in CO

III. TEST STRATEGY

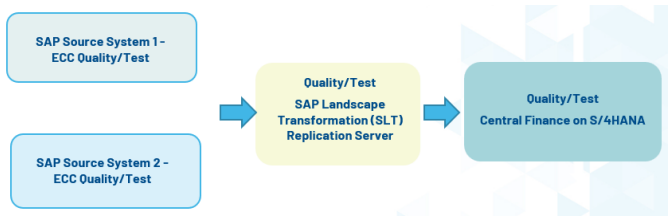
A test strategy will involve:

1) Definition of objective and Scope
a) Establish primary goals of integration testing, such as validating system communications, data flow, and communications between SAP's sub-modules
b) Define what parts of the system are being tested
2) Design test Cases
a) Develop test scenarios that focus on the integration points between systems.
b) Consider different scenarios like data validation, error handling, security, and performance across interfaces.
c) Include boundary cases to test edge conditions.
3) Prepare Test Data
a) Define and create the test data required for each test case
b) Ensure that the data includes a range of valid, invalid, and boundary test data to simulate real-world conditions.
4) Set Up the Testing Environment
a) Ensure that the testing client from Source system replicates the production environment as closely as possible.
b) Configure integration points, databases, and any external systems that the solution depends on.
5) Execute Integration tests
a) Run the test cases to verify that data and control flow between integrated systems behave as expected.
b) Track the results of each test to identify failures, mismatches, or any unexpected behaviors.
6) Error Handling and Debugging
a) In case of test failures, analyze the root cause of issues (e.g., incorrect data flow, interface failures, or system misconfigurations).
b) Debug and fix any errors, then rerun tests to ensure that issues are resolved.
7) Document test Results
a) Capture detailed test results and compare them with expected outcomes.
b) Include information on any issues encountered, their severity, and resolutions.
8) Review and Evaluate
a) Review the integration test results with stakeholders to ensure that integration requirements have been met.
b) Evaluate the test coverage and determine if further testing is necessary for additional integration points.
9) Retesting and Regression Testing
a) If issues were identified and fixed, retest the integration to ensure that the fixes are effective and do not break other parts of the system.
b) Perform regression testing to ensure that existing functionality remains intact
10) Sign-off and Closure
a) Once the tests are successfully completed and all issues have been resolved, prepare a test summary report.
b) Obtain formal sign-off from stakeholders to confirm that the integration is complete.

A.Conventional CFIN Testing Method

A CFIN testing method involves integrating the source system's test client with the CFIN/S/4 HANA test client. Once communication is established, users can post transactions manually or automatically through jobs or scripts. While this is a proven approach, it demands a longer timeframe, which may not be feasible for an M&A project with tighter deadlines. An illustration of these connections is shown in Figure 2.

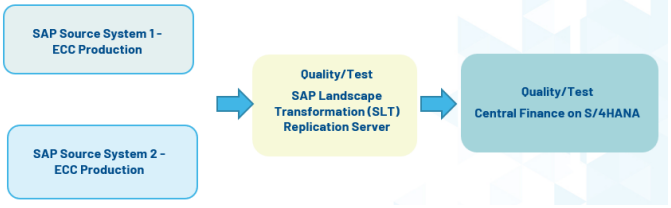
Figure 2. Conventional Set up for CFIN testing



B.Novel testing Method

A new testing method was developed and implemented, where instead of connecting the quality/test clients of the source systems to the CFIN test system, the source system's production clients were connected to CFIN's quality client. As a prerequisite, all initial GL balances and open items were transferred from the source system to the target system, and document replication for ongoing transactions was activated for an entire quarter. At the end of the test cycle, a parallel run was conducted, comparing the financial results between the CFIN quality system and the source production system. An illustration of the connections is shown in figure 3.

Figure 3. Novel Set up for CFIN Testing



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This testing methodology provided the following benefits

1) Simulation of ongoing production data replication from source systems to the CFIN quality system eliminated the need for manual execution of test scenarios.
2) Full coverage of all business scenarios from the source system's production clients over an entire quarter.
3) Parallel run comparison of quarterly results between the source production systems and CFIN quality systems provided the team with the confidence needed to proceed with the go-live.
4) Errors that might have been missed using conventional testing methods were identified and resolved.
5) Early detection of potential production errors during testing resulted in better overall quality post-go-live.

C.Process Steps

This testing approach involves several steps to establish a connection between the production clients of the source systems and the CFIN quality client. Once testing is complete and the system is ready to go live, the connections between the systems are severed, and a new connection must be established between the production clients of the source system and the production client of the target system. Prior to establishing this new connection, all records in the CFIN* tables from the source production clients must be deleted.

Following steps have to be performed to reset connections and delete data in CFIN* tables:

Finance:

1) Reset data transfer status:Execute reports DMC_FM_RESTART_COPY_DELETE/DMC_RESET_FM_RESTART_TABLE for CFIN_ACCHD, AUFK and COBK. These program have to be executed in SLT that will delete any catch up data from Finance and Controlling applications. It is advisable to run these programs in background
2) Stop replication of CFI_ACCHD, AUFK and COBK: This step needs to be executed in SLT through transaction LTRC and stop load and replication of data
3) Deactivation of MTD IDs: Once the replications are stopped, all MTD IDs have to be deactivated for source systems. This step needs to be activated through transaction LTRC.
4) Check Logging tables: Execute transaction IUUC_REMOTE in source system to check if the logging tables are cleared and deleted.
5) Change Customizing for Clients: Execute transaction VCFIN_SOURCE_SET and delete the content of the field “LOAD_FINISHED”
6) Execute RCFIN_DEL_MIG: Execute report in source system to reset the initial load created in the source system and set the flag “ Clear Online Transfer tables”. This will delete the data from ongoing replication in the source system by clearing all CFIN_ACC* tables.
7) Validation of tables: Check if all records in tables listed in table 2 are deleted.

CONTROLLING:

1) Execute RCFIN_DEL_MIG_CO: Execute report in source system to reset the initial loads. This will reset preparation data for initial load of CO postings for selected company codes.This will clear records in tables CFIN_MIG_LOG_CO and CFIN_JOB_LOG_CO.
2) Validation of tables: Check if entries in tables CFIN_COPA and CFIN_CO_ADD are deleted in all source systems.

CONCLUSION

Mergers and acquisitions often operate under tight timelines and require strategies to minimize the time spent on migrating the IT ERP landscape. With Central Finance serving as an integration catalyst, this novel testing strategy enables enterprises to accelerate process orchestration and post-merger integration. While the strategy offers significant benefits, it must be thoroughly evaluated and carefully implemented

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