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Research Article

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S/4HANA Migration Introduction, Strategy, and Planning– Part 2

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Abstract SAP S/4HANA is SAP's next-generation ERP suite designed to provide businesses with enhanced speed, agility, and innovation capabilities. Data migration to S/4HANA is a critical transition component, ensuring that existing data from legacy systems is seamlessly transferred to the new platform. SAP S/4HANA's in-memory computing capabilities enable businesses to access real-time insights into their operations, facilitating expedited decision-making and responsiveness to market changes. Real-time analytics empower organizations to recognize trends, anticipate customer requirements, and optimize processes to achieve superior outcomes. The SAP S/4HANA Migration Cockpit is part of SAP S/4HANA and SAP S/4HANA Cloud and its use is included in these licenses. It is a ready-to-use solution that contains a comprehensive set of preconfigured migration objects such as customer, supplier, material, cost center, and so on. The proven methodology is integrated into the SAP Activate roadmap Transition to SAP S/4HANA. It is part of the SAP Model Company service and represents best practices in data transfer.

Keywords SAP, SAP S/4 HANA, S/4HANA Migration Cockpit

1. Introduction

S/4HANA Migration Cockpit – The S/4HANA Migration Cockpit is a comprehensive tool provided by SAP to facilitate the migration process from legacy SAP ERP systems to SAP S/4HANA. It offers a user-friendly interface and a set of preconfigured templates and tools to simplify and streamline the migration process. The Migration Cockpit comes pre-installed with SAP S/4HANA and does not require additional installation or setup. It contains a comprehensive set of preconfigured migration objects such as customer, vendor, material, and financial data, which can be easily mapped and migrated to the new system. It includes built-in data validation checks and error-handling capabilities to ensure data accuracy and integrity throughout the migration process.

ETL – ETL stands for Extract, Transform, Load, which represents a common process in data warehousing, migration, and analytics. The ETL process plays a critical role in data integration, consolidation, and analysis, enabling organizations to derive insights, make informed decisions, and drive business outcomes based on their data assets. ETL tools and platforms automate and streamline these processes, providing features for data extraction, transformation, loading, scheduling, monitoring, and error handling.

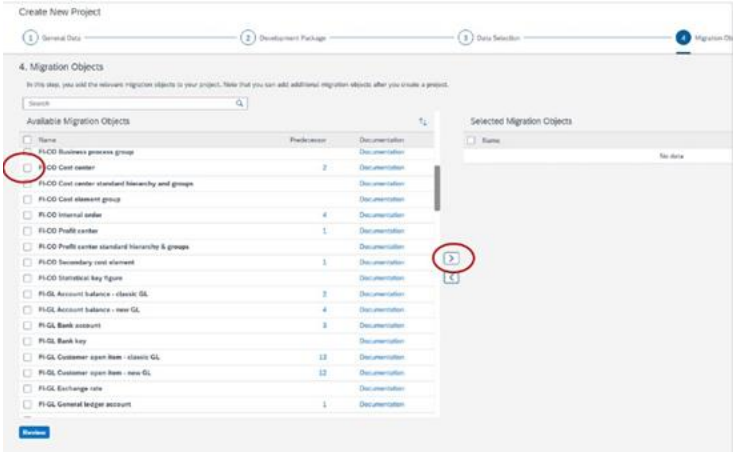
RFC - A Remote Function Call (RFC) is a communication protocol used in SAP systems to enable communication between different systems or between different components within the same system. RFC allows programs written in different languages or running on different platforms to communicate with each other seamlessly.

Pre-requisite: To understand this paper thoroughly prerequisite is– S/4HANA Migration Introduction, Strategy, and Planning– PART 2.

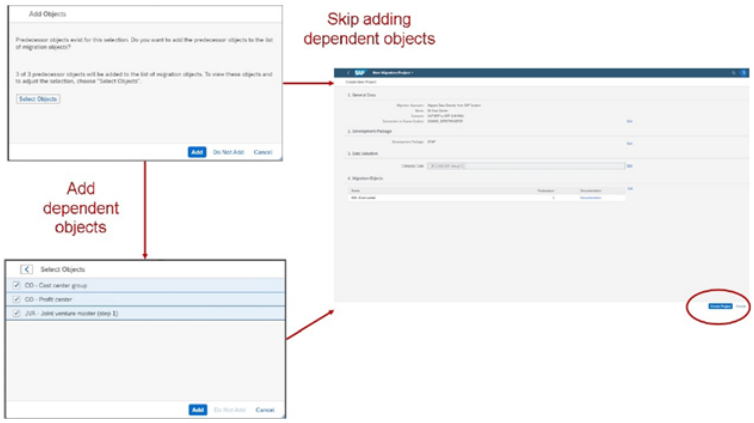
2. Migrating Data Using Direct Transfer

Migrating data directly involves transferring data from the source system to SAP S/4HANA without staging it first. This method is suitable for scenarios where data volumes are manageable, and immediate transfer is feasible without extensive data validation or transformation. The direct transfer method simplifies the migration process by eliminating the need for staging tables and associated validation steps. Instead, data is extracted directly from the source system and loaded into SAP S/4HANA using predefined mapping and transformation rules. However, direct transfer may not be suitable for complex data structures or scenarios requiring extensive data cleansing and transformation. It's essential to assess data quality and compatibility between source and target systems before opting for direct transfer. While direct transfer offers simplicity and speed, it's crucial to ensure data accuracy and integrity throughout the migration process. Thorough testing and validation procedures should be in place to verify the completeness and correctness of migrated data in SAP S/4HANA. Unlike the staging table approach, which supports all SAP and non-SAP source systems, the source system of a direct transfer project must be an SAP ERP,

In the migration process, the Migration Cockpit accesses data from the source system via an RFC (Remote Function Call) connection. When configuring the migration settings, you'll need to choose the correct connection from the dropdown list provided. Unlike projects involving staging tables, where only registered database connections are visible, the Migration Cockpit displays all RFC destinations available in the target system. This broader visibility ensures flexibility in selecting the appropriate connection for data retrieval during the migration process. When you create a project, you also select which data should be migrated. In the case of cost centers, this is based on the company code to which the cost center is assigned. There is a value help available and you can select multiple company codes.



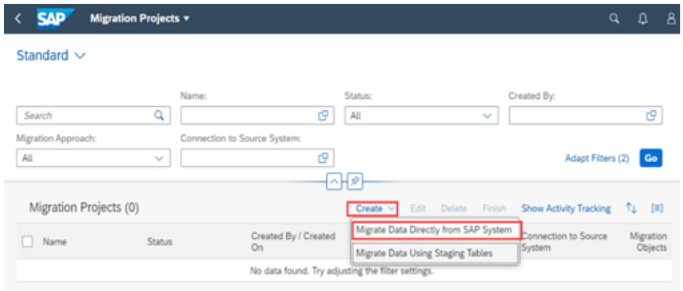
To incorporate migration objects into the project, simply choose the object or objects you wish to include and select "Add." If the migration object features dependent items, the system will prompt you to decide whether you want to include them in the project too. This streamlined process ensures that all relevant objects are seamlessly integrated into your migration project, maintaining consistency and completeness throughout the migration endeavor.



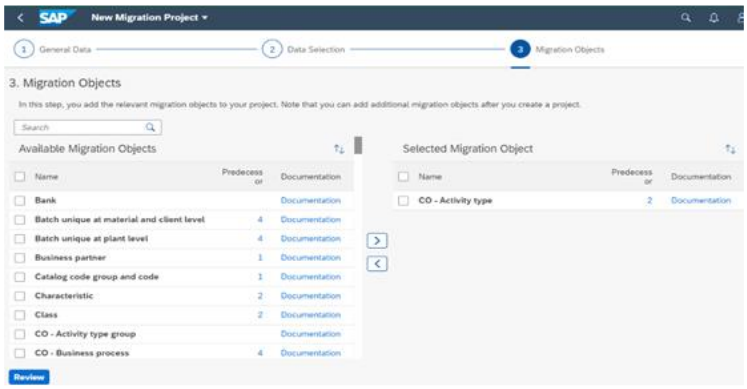
Upon selecting "Review," the system automatically assesses the interdependencies among migration objects. For instance, migrating cost centers might necessitate prior migration of the profit center structure. A dialog box then appears, enabling you to opt for adding these dependent objects. While not obligatory, it's crucial to consider this step, as the absence of prerequisite predecessor objects in the target system could lead to errors during migration. This preemptive approach ensures a smoother and error-free migration process, mitigating potential setbacks down the line.

3. Steps for migrating data to S/4HANA using direct transfer

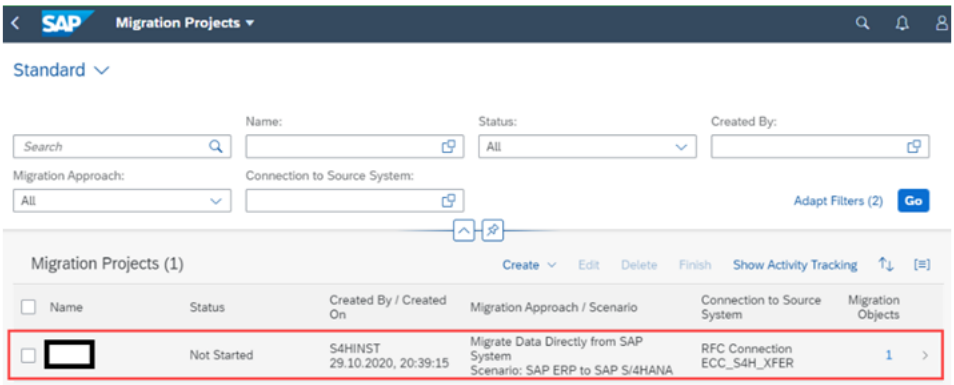
Create Project: The File and Staging transfer were web-based but you will have to install the Fiori application for direct transfer. Logon to SAP S/4HANA using URL. Select Fiori Tile Group - Data Migration and Fiori Tile - Migrate Your Data. On the next screen you will see all projects, click on Create and choose Migrate Data Directly from SAP System.



Enter the details: Project Name, Scenario(ERP to S/4HANA), RFC Connection(RFC between ECC and S4), Development Package, and click on Step 2. Select Company Codes as required, you can select multiple company codes. Select the Migration Objects. You can click on Predecessor to check the dependencies. You can also click on Documentation to get detailed information about the migration object. Add a Migration Object from the list and Click on Review

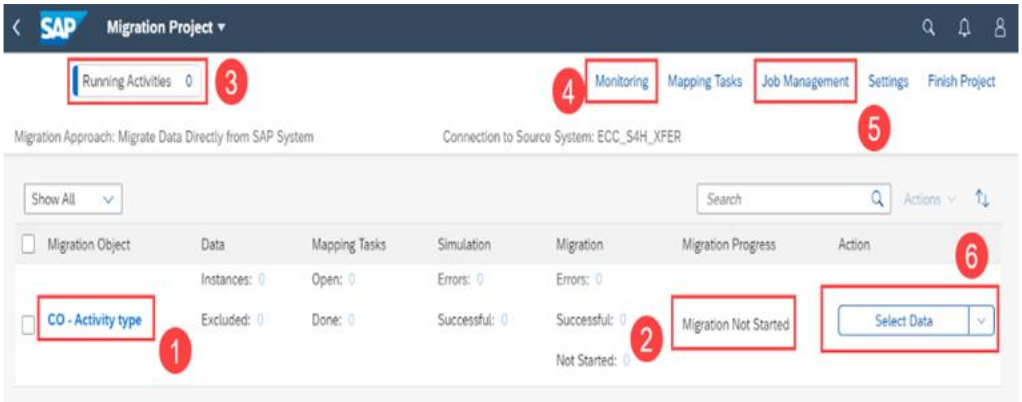


If the chosen migration object includes predecessor objects, the system will prompt you to add them, as illustrated below. Click on "View Details" (1) to review further information. The dialog shows that there ate two predecessor objects and shows the name of the object - CO - Activity type group and CO - Secondary cost element. Click on (1) "Do Not Add". Click on Create Project, Click on the > at the end of the project or you can Double-Click Project name.



After some time, when the Running Activities counter reaches zero, the "Select Data" button becomes available. On the screen below, you'll find the migration object assigned to your project, which is labeled as (1) CO-Activity type. Clicking on the CO-Activity type reveals the Technical Table Names, which include CSLA (master) and CSLT (text). The Migration Status is currently indicated as (2) "Migration Not Started." You can monitor the status by checking the Running Activities, as depicted by (3). For detailed status information, click on (4) "Monitoring." Additionally, you can access the Job Management interface by clicking on (5). Here, you have the option to adjust the number of jobs allocated for the project, either globally or for individual objects, by using the "+" or "-" buttons.

SELECT DATA: Click on (6) Select Data and then click Start Selection. After the Running Activities changes to 1 and then after some time it is down to zero and the Select Data button changes to Mapping Tasks. Now we do see that the number of instances is 3. You can get the details by clicking on number 3. The screen is shown below. You can choose the columns to be displayed and also you can click on Mass processing below to Exclude/Simulate/Migrate based on selection criteria9.



MAPPING TASKS: Click on Mapping Tasks in the previous screen. Click on the Controlling Area and map the Source Controlling Area to the Target Controlling Area. You can (1) select the other 2 records and click on (2) Confirm. Go back and you will find that the Mapping Tasks status is changed from Open = 3 to Done = 3.

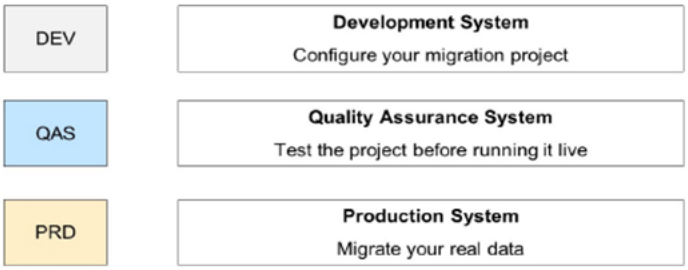
SIMULATE: Click on the Simulate button and select Start Simulation. You have the options to select from among - "Random 10%", "Random 500" or "All Instances". If you have a large number of records you may like to take the other 2 options to get an idea of the errors. The status changes to be low. Here you find that the

simulation of 2 records is Successful and one is in Error. Let us find out and resolve this error. Click on 1 next to Errors.

MIGRATE: Click on Migrate to start the migration. The screen below displays migration 100% completed.

4. Transferring Projects Across Systems

In your data migration setup, different systems serve distinct purposes. A development system is where project configuration takes place. For partial project testing during configuration, a sandbox system is utilized. Full project testing occurs in the quality assurance system before migrating productive data to the production system. The Migration Cockpit differentiates between development and execution environments, limiting certain operations based on the system in use.



Migration projects are created and configured in a development system. Although you can execute migrations in the development system, it's common to transport the project to a sandbox system, especially if it contains correct Customizing settings. Once the project configuration is complete, it's transported to the quality assurance system for final testing. If testing is successful, the project is further transported to the production system for actual data migration. When you transport a project, the migration objects, rules, and coding are included in the transport, but settings such as the number of background jobs, database connections, RFC destinations, or mapping values are not. Upon importing the project, these settings must be configured according to the specifications of the target system.

To transport a project between systems, you need to assign it to a transportable ABAP package during creation. When ready, access transaction LTMOM and navigate to Project → Add to Transport Request. A dialog box prompts you to select a transport request number. If authorized, create your request; if not, request one from your system administrator. To transport the project into other systems, release the transport request using transaction SE09. Under your open transport requests, locate two entries - the request itself and the task. Select the lower entry and choose Release, then repeat for the entry above. This exports the project, enabling import into subsequent systems.

5. Conclusion

In conclusion, the migration to S/4HANA represents a pivotal step for enterprises seeking to modernize their ERP landscape. The process involves intricate steps and considerations, ranging from the selection of migration approaches to the actual transfer of data. Migrating data to S/4HANA using direct transfer offers a streamlined method for organizations to transition their critical information. By leveraging direct transfer capabilities, businesses can minimize complexities associated with staging tables and expedite the migration process. The steps for migrating data to S/4HANA via direct transfer encompass configuring the migration project, selecting relevant objects, and executing the migration process. Furthermore, transferring projects across systems is essential for maintaining consistency and continuity throughout the migration journey. By adhering to proper transport protocols and release procedures, organizations can effectively move their projects from development to production environments.

Declarations

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Consent for publication: All authors have consent to submit this paper to the Journal of Cloud Computing. Also, we confirm that this paper or any part of this paper was not submitted anywhere.

Availability of data and materials: Not Applicable

Competing interests: Not Applicable

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