SAP S/4HANA Migration Cockpit - Migrate Your Data App

Migrate Data Using Staging Tables and Migrate Data Directly from SAP System SAP S/4HANA 2020

Frequently Asked Questions (FAQs)

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CONTENTS

GENERAL QUESTIONS 5

- What is the scope of the SAP S/4HANA migration cockpit? Can I use it for the mass processing of data or as an interface to frequently load data into a system? 5
- What is the licensing model for SAP S/4HANA migration cockpit? 5
- Which data transfer options (data migration approaches) are available? 5
- What is the difference between SAP Data Services and SAP S/4HANA migration cockpit? 5
- What is SAP Rapid Data Migration for SAP S/4HANA? 5
- I am using LSMW. Should I have a look at SAP S/4HANA migration cockpit? What are the advantages and disadvantages of using LSMW? 6
- What is the difference between a data migration using SAP S/4HANA migration cockpit and a selective data transition? 6
- How is the SAP S/4HANA migration cockpit positioned compared to other data migration offerings? 6
- Is the SAP S/4HANA migration cockpit integrated with Solution Manager 7.2, SAP Activate Methodology? 7
- What authorizations are required to use the SAP S/4HANA migration cockpit? 7
- Can we use the SAP S/4HANA migration cockpit to update existing data? For example, if data already exists in the target system, can I update the data using the SAP S/4HANA migration cockpit? 7
- Is there a near zero downtime approach? 8
- Does the SAP S/4HANA migration cockpit migrate Customizing data? 8
- Which additional migration objects are planned? Is there a roadmap for migration objects? 8
- Which migration approach is most suitable for my migration project? 8
- Is it possible to download mapping values? 8
- Is there a central mapping at cross project level? 10
- Can historical data be migrated using SAP S/4HANA migration cockpit? 10
- Where can I find system requirements and prerequisites for using the SAP S/4HANA migration cockpit for on-premise? 10
- How should I setup my migration project? 10
- Is the SAP S/4HANA migration cockpit integrated with SAP Master Data Governance (MDG)? 10
- Are there any guidelines about how and when to use the migration tool suite – SAP S/4HANA migration cockpit, Migration Object Modeler, ABAP, Hybrid, etc.? 10
- Does SAP S/4HANA migration cockpit support model companies? 10
- Does SAP S/4HANA migration cockpit support industries? 10
- Does SAP S/4HANA migration cockpit support best practice deployments? 11
- Where can I find news about the SAP S/4HANA migration cockpit and data migration content (migration objects)? 11
- Is there a hands-on or demo system available for the SAP S/4HANA migration cockpit? 11
- Are there any guidelines for customers about the transition to SAP S/4HANA? 11
- Where can I find general information about the SAP S/4HANA migration cockpit? 11
- How can I improve the performance of the data transfer? 11
- Can I set a retention period while using SAP S/4HANA migration cockpit? 12
- Is it possible to use the SAP S/4HANA migration cockpit to migrate texts/descriptions for migration objects? 12
- We are currently implementing SAP S/4HANA 1909. Is there any way to use the new SAP S/4HANA migration cockpit features delivered with SAP S/4HANA 2020? 12
- When our system is updated from 1909 to 2020, will our projects be lost? 12

MIGRATE DATA USING STAGING TABLES 12

General Questions about Staging Tables 12

- With what release can staging tables be used? 12
- Which database is supported for the migration approach Migrate Data Using Staging Tables? 12
- How are staging tables generated? 13
- What kind of database tables are used for staging tables and what are the limitations? 13
- Is a license required to use the approach Migrate Data Using Staging Tables? 13
- You might check whether SAP HANA, express edition (available for free up to 32GB of RAM) is suitable for your needs. Must I pay attention to something if I fill the data directly in the staging tables? 13
- Can we use multiple data transfer jobs for each migration object? 13
- During the import of file/staging project, is it possible now to change the mass transfer id? 14
- What are the new features for the SAP S/4HANA 2020 version for the approach "Migrate Data Using Staging Tables"? 14

Transferring Data from Template Files to Staging Tables 14

- As the File approach is now embedded in the Staging tables approach, does this mean that LTMC transaction is retired? 14
- Why can't I change the content of an uploaded file in the SAP S/4HANA migration cockpit itself? 14
- What if the XML template is corrupted after inserting or deleting data? 14
- What should I do if the downloaded XML file has no file extension? 15
- What is the maximum size for an uploaded file? 15
- Where can I find information on the corresponding SAP table/technical field name for each field in the XML Template? 15
- Do I need an additional license if I populate the staging tables using files? 15

Transferring Data to Staging Tables Using Your Preferred Tools 15

- What naming convention do the generated staging tables follow? 15
- Which ETL Tools can I use to fill the staging tables? 15
- Are there any restrictions when creating source/sender structure key fields for my own objects? 16
- Is it possible to delete, refresh, select, and transform the data in the staging tables? 16
- How do we feed the information in the staging tables from our SQL DB? Do we need a specific view/stored procedure to be created in our SQL source? 16
- Is the SAP HANA Studio free? 16
- Do we need specific knowledge to use the SAP HANA Studio? 16

MIGRATE DATA DIRECTLY FROM SAP SYSTEM 17

- From which product release is the direct transfer approach available? 17
- What are the main functions and features of the application? 17
- What are the technical preconditions / prerequisites for the approach "Migrate Data Directly from SAP System"? 17
- What are the new features for the SAP S/4HANA 2020 version for the approach "Migrate Data Directly from SAP System"? 17
- What migration scenarios are possible with the approach "Migrate Data Directly from SAP System"? 17
- Where can I find more information about the approach "Migrate Data Directly from SAP System"? 18
- What are the recommendations for transforming data from several source systems in SAP S/4HANA? 18

- How is the data throughput? 18
- Can I view the data that has been selected? 18
- How do we get access to a hands-on or demo system? 18
- Can the approach "Migrate Data Directly from SAP System" migrate historical data? 18
- Can I change the selection criteria for a migration object in transaction LTMOM and then repeat the selection? 18
- How many migration objects are already available? 19
- Is there any documentation for the SAP S/4HANA tables filled by the BAPIs used by the approach "Migrate Data Directly from SAP System"? 19
- Is data profiling possible before the conversion? 19
- Can the SAP S/4HANA migration cockpit delete data that has already been migrated? 19
- How can I confirm all mapping entries when using the approach "Migrate Data Directly from SAP System"? 19
- Are there any limitations regarding mapping, for example a maximum number of records that can be uploaded? 19
- How do I monitor the status of the migration for the migration approach "Migrate Data Directly from SAP System"? 19
- Is it possible to migrate delta records using the approach "Migrate Data Directly from SAP System"? For example, if I have already migrated data from the source for a certain object. 20

MIGRATION OBJECTS 21

- Which migration objects are available for which release? 21
- What are the restrictions and extensibility using the pre-delivered migration objects of the SAP S/4HANA migration cockpit in SAP S/4HANA on-premise? 21
- Is there a collection of SAP Notes related to the SAP S/4HANA migration cockpit content with more detailed information about the migration objects? 21
- What can I do if I have specific requirements that are not covered by the migration objects? 22
- How can I request an enhancement of a migration object or the development of a completely new object? 22
- Who can support with the development of customer-specific objects? 22
- How can I check the correctness of migrated object? 22
- Which version of the SAP S/4HANA migration cockpit supports the creation of custom objects? Do we need any specific permissions? 22
- I cannot find a migration object or field that I want to migrate, what can I do? 22
- What does the suffix "deprecated" mean for migration objects? 22
- What does the suffix "restricted" means for migration objects? 23
- How do I migrate Human Capital Management (HCM) objects? How does a solution for SuccessFactors look like? 23
- Is the migration of G/L accounts possible? 23

SAP S/4HANA MIGRATION OBJECT MODELER 23

- What can be done with the SAP S/4HANA Migration Object Modeler? 23
- Is it possible to add a field in a staging migration object with transaction LTMOM? 23
- If LTMOM is used for adding fields, can the xml template be generated with the additional fields? 23
- Why can't I change the field length in change mode using LTMOM? 24
- What do I need to consider, when I want to create my own function module and assign it to a custom migration object to transfer data to SAP S/4HANA (all approaches)? 24
- How can I add a missing field in transaction LTMOM under "Target structures"? 24
- We have migration objects for transaction LTMC with SAP S/4HANA 1809. If we upgrade to SAP S/4HANA 2020, how do we move our objects to the new Fiori app? 24

GENERAL QUESTIONS

➢ What is the scope of the SAP S/4HANA migration cockpit? Can I use it for the mass processing of data or as an interface to frequently load data into a system?

The SAP S/4HANA migration cockpit is designed for customers who have just installed SAP S/4HANA or are using SAP S/4HANA Cloud and want to move their legacy data from SAP or non-SAP software systems. It allows users to migrate their master data and transactional data to SAP S/4HANA, and it facilitates this process by providing predefined migration content and mapping. The SAP S/4HANA migration cockpit is part of both SAP S/4HANA and SAP S/4HANA Cloud.

The SAP S/4HANA migration cockpit and associated content (migration objects) are neither intended nor recommended to be used as an interface to frequently load data into a system or to mass change existing data. For more details, see SAP Note 2684818 - migration cockpit usage.

➢ What is the licensing model for SAP S/4HANA migration cockpit?

The SAP S/4HANA migration cockpit is delivered with SAP S/4HANA (On Premise) and SAP S/4HANA Cloud. No additional licenses are required.

➢ Which data transfer options (data migration approaches) are available?

From SAP S/4HANA 2020, two migration approaches are possible:

- Migrate Data Using Staging Tables (SAP S/4HANA and SAP S/4HANA Cloud)
- Migrate Data Directly from SAP System (new with SAP S/4HANA 1909, only for On-Premise)

For more information about the SAP S/4HANA migration cockpit, please refer to:

SAP S/4HANA migration cockpit landing pages:

- SAP S/4HANA: http://help.sap.com/S4_OP_DM
- SAP S/4HANA Cloud: http://help.sap.com/S4_CE_DM

SAP Help Portal:

- SAP S/4HANA migration cockpit
- SAP S/4HANA migration cockpit – Cloud

Overview presentation: SAP S/4HANA migration cockpit - Migrate your Data to SAP S/4HANA

➢ What is the difference between SAP Data Services and SAP S/4HANA migration cockpit?

SAP Data Services is an ETL (Extract, Load and Transform) tool which allows you to extract data from a source database, transform that data to meet customer's business requirements and load the data into one or more target locations. This information management software provides functionality for data integration, quality, cleansing, and other ETL purposes.

- For more information about SAP Data Services see: SAP.com (SAP Data Services)

SAP S/4HANA migration cockpit covers the aspects of transform and load data, allowing users to migrate data from a legacy system to SAP S/4HANA. It is included in SAP S/4HANA and SAP S/4HANA Cloud – no additional installation or license is required. For more information about the SAP S/4HANA migration cockpit refer to our landing pages:

- SAP S/4HANA: http://help.sap.com/S4_OP_DM
- SAP S/4HANA Cloud: http://help.sap.com/S4_CE_DM

➢ What is SAP Rapid Data Migration for SAP S/4HANA?

Rapid Data Migration for SAP S/4HANA is free-of-charge content for SAP Data Services (DS/BODS). This is an ETL tool. The basic license of the tool is included in the HANA DB license. You cannot use Rapid Data Migration for S/4HANA Cloud. For more information, refer to SAP Note 2239701 - SAP Rapid Data Migration for SAP S/4HANA, on premise edition and to the following blog:

- Request an SAP Data Integrator Key Code for Rapid Data Migration to SAP S/4HANA

➢ **I am using LSMW. Should I have a look at SAP S/4HANA migration cockpit? What are the advantages and disadvantages of using LSMW?**

The Legacy System Migration Workbench (LSMW) is on the simplification list and is no longer supported in the SAP S/4HANA context. Even if the LSMW could theoretically be used in some areas, it might propose incorrect migration interfaces that can no longer be used in SAP S/4HANA. You should be careful with the batch input and recordings. For more information, see SAP Note 2287723 (LSMW in SAP S/4HANA on-premise).

➢ **What is the difference between a data migration using SAP S/4HANA migration cockpit and a selective data transition?**

The SAP S/4HANA migration cockpit is an *SAP standard function* for loading data into the SAP S/4HANA and SAP S/4HANA Cloud. It is used particularly in the context of new implementations of SAP S/4HANA and loads data by using standard SAP APIs.

A *selective data transition* goes beyond a standard new implementation or system conversion and is realized within customer-individual projects. In these projects, specific expert tools are used to migrate all kinds of data at the table base (direct insert). This gives high flexibility to tailor the set of data to customer-individual needs. Selective data transitions require special expertise and experience, benefits and risks must be evaluated for each case individually.

Looking at the set of data that is available in the SAP S/4HANA target system:

- In a system conversion, the full set of data remains in the system.
- Within a selective data transition, you get the option to transfer fewer data and leave selected data behind. For example, data belonging to obsolete company codes could be left behind. Moreover, in a system conversion, the business processes configured in the system remain basically as they are, except necessary adaptations resulting from data model changes or simplifications. Within a selective data transition, you get the option to select process- or module-wise which processes you want to continue with.

In a new implementation, the SAP S/4HANA migration cockpit offers preconfigured data migration mainly for master data, open items, and balances. Historic data can be migrated using the SAP S/4HANA migration cockpit only if the migration is supported with an SAP standard API. Example: FI - historical balances.

Within a selective data transition, you have the flexibility to migrate additional data. Typically, this includes migrating a certain amount of historical data. For example, you might want to transfer historic data belonging to long-running projects. Customizing differences between source and target can be bridged to a certain but limited extent.

Any selective data transition starts with a customer-individual assessment of the situation and requirements, which needs to be performed by SAP Digital Business Services or specialized SAP Partners with the necessary experience with such an approach.

Compared to that the SAP S/4HANA migration cockpit is an SAP Standard function and can be used out of the box and does not require developer skills. It is easy to use and provides step-by-step guidance through the migration process.

➢ **How is the SAP S/4HANA migration cockpit positioned compared to other data migration offerings?**

The SAP S/4HANA migration cockpit is SAP's recommended tool of choice for the migration of business data to SAP S/4HANA and SAP S/4HANA Cloud.
Please refer to the Mapping your Journey to SAP S/4HANA for an overview of other SAP data migration offerings and their delimitation. If you'd like to receive a more detailed understanding, please have a look at our Open SAP Course.

➢ **Is the SAP S/4HANA migration cockpit integrated with Solution Manager 7.2, SAP Activate Methodology?**

Yes, the SAP S/4HANA migration cockpit is already part of the SAP Activate Methodology.

➢ **What authorizations are required to use the SAP S/4HANA migration cockpit?**

To transfer data using the SAP S/4HANA migration cockpit, certain roles are required:

Prerequisites for Staging Tables approach for On-Premise:

For SAP S/4HANA On-Premise, the following business roles are needed:
- Role SAP_CA_DMC_MC_USER is required.
- Role SAP_BR_CONFIG_EXPERT_DATA_MIG is also required for the front-end server.

To use the SAP S/4HANA Migration Object Modeler (transaction LTMOM), you require:
- SAP_CA_DMC_MC_DEVELOPER

For current information and more details, please see the Help Portal.

Prerequisites for Direct Transfer Approach:
For SAP S/4HANA On-Premise, the following business roles are needed:

- Role SAP_DMIS_OBT_REMOTE for the RFC user in SAP ERP source system
- SAP_CA_DMC_MC_USER
- SAP_BR_CONFIG_EXPERT_DATA_MIG for the front-end server

To use the SAP S/4HANA Migration Object Modeler (transaction LTMOM), you require:
- SAP_CA_DMC_MC_DEVELOPER

For current information and more details, please see the Help Portal.

Note: In addition to the roles mentioned above, the corresponding role for each migration object is also required.

On the SAP Help Portal, you can switch between different releases by using the appropriate drop-down list.

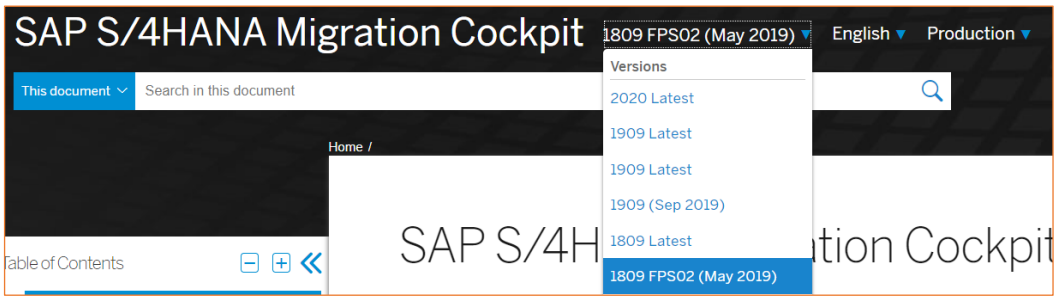

Figure 1: Switching between different SAP S/4HANA releases

➢ **Can we use the SAP S/4HANA migration cockpit to update existing data? For example, if data already exists in the target system, can I update the data using the SAP S/4HANA migration cockpit?**

No, with the SAP S/4HANA migration cockpit an update is not possible. It is only possible to add additional data. This depends on the API that the object uses. For example, for the migration object Customer you can extend existing records by new org levels (by using the object “Customer - extend existing record by Credit Management data”).

➢ Is there a near zero downtime approach?

There is no technique for a near zero downtime approach using the SAP S/4HANA migration cockpit.

➢ Does the SAP S/4HANA migration cockpit migrate Customizing data?

No, the migration of Customizing data is not currently supported.

➢ Which additional migration objects are planned? Is there a roadmap for migration objects?

The roadmap indicates which additional migration scenarios or topic areas are in scope. We currently do not reveal a roadmap for planned migration objects. If you have questions about specific objects, you can contact us at mailto:s4hana_migration_cockpit@sap.com

➢ Which migration approach is most suitable for my migration project?

General recommendations:

Use the approach *Migrate Data Using Staging Tables* if you want to transfer a lot of data to SAP S/4HANA in an automated way. Staging tables are database tables and, therefore, they provide greater flexibility than files regarding managing data (for example sorting data, searching for data, checking for duplicate records, and so on). Staging tables is a more efficient way of transferring large data volumes. You can still use files if you want to import a small amount of data. Since SAP S/4HANA 2020 release, the file templates are embedded in Staging tables, meaning you can download the template files and upload them back to the Staging tables.

Use the approach *Migrate Data Directly from SAP System* if you want to transfer data from ABAP-based SAP source systems. For this approach, data is selected and extracted directly from the SAP system and transferred to SAP S/4HANA.

Note the following considerations when deciding on the most suitable approach for your project:

SAP S/4HANA migration cockpit – comparison of migration approaches in **2020**

	Migrate data using Staging Tables		Migrate data directly from SAP system
Availability	SAP S/4HANA Cloud, SAP S/4HANA		SAP S/4HANA
Source System	Any source system (SAP or non-SAP)		ABAP-based SAP source systems
Data Provisioning	XML template files filled by customers or via ABAP	Staging Tables filled by customers (using e.g. SAP Data Services, SDI, or any 3rd party ETL Tools)	Data selected and extracted directly from SAP system
Data cleansing	Before starting the migration project, or in the XML template files	Before starting the migration project, or in the Staging Tables	Before starting the migration project. Note that you can always adjust the selection of data by using the migration object modeler

Figure 2: SAP S/4HANA migration cockpit – comparison of migration approaches in SAP S/4HANA 2020

➢ Is it possible to download mapping values?

You can download and upload mapping values in the SAP S/4HANA migration cockpit for all approaches. In addition, it is also possible to load examples with empty data in order to fill them in and load them back into the project.

Note that it is not possible to change or delete the mapping values in the SAP S/4HANA migration cockpit. You need to download the values and upload them back to the SAP S/4HANA migration cockpit. This approach allows you to:

- Confirm values automatically
- Replace existing values or modify values/add values

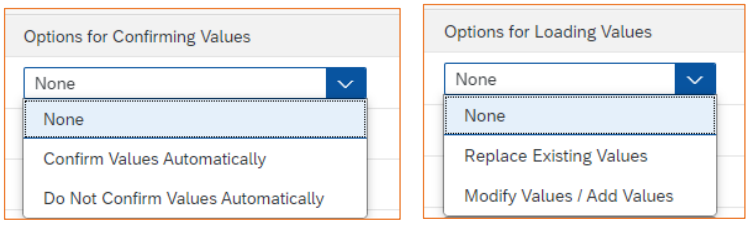

Figure 3: SAP S/4HANA migration cockpit – comparison of migration approaches in 2020

For more details, refer to:
- KBA 3003068 Migrate Your Data – Staging Tables: Inserting and deleting entries for mapping tasks
- Blog "Maintaining the mapping values with download/functionality – SAP S/4HANA migration cockpit."

➢ Is it possible to transfer a project from one system to another?

For the migration approach Migrate Data using Staging Tables:

As of SAP S/4HANA 2020, it is possible to export/import a project from one system to another by using the migration object modeler. Before SAP S/4HANA 2020, you could use "export/import" function in transaction LTMC.

For the migration approach Migrate Data Directly from SAP System:

As of SAP S/4HANA 2020, it is possible to transport projects between systems. You need to specify a development package when creating a new migration project ($tmp is a non-transportable development package, you can use it if you do not plan to transport the project later).

➢ Is it possible to change the maximum number of jobs in SAP S/4HANA migration cockpit?

Yes, with the Job Management feature, you can set up the maximum number of jobs for the project or for the migration object. You can find the Job Management feature on the Migration Project screen.

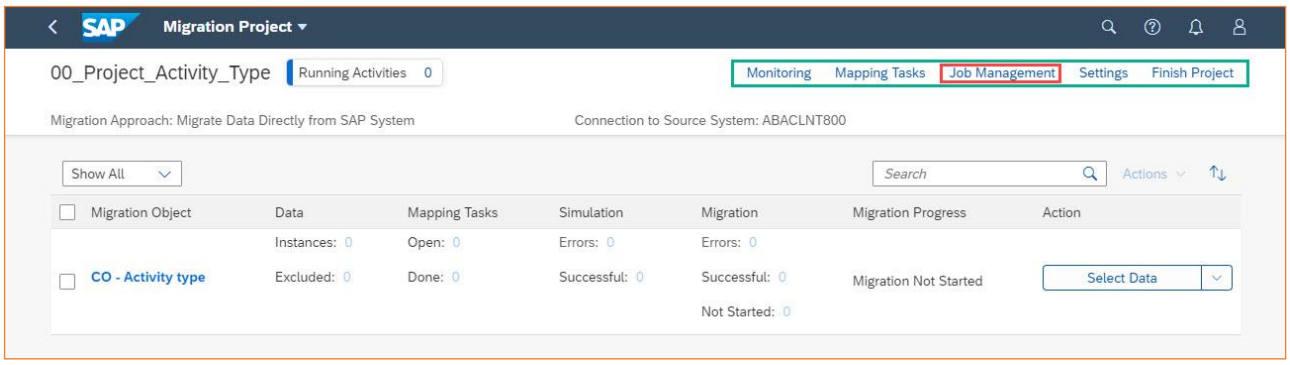

Figure 4: SAP S/4HANA migration cockpit – Job Management functionality

➢ How can I check all the running and completed activities?

To view a log of all activities, choose the Monitoring button. The system displays the Monitoring screen. You can view the active activities (for example, Migration Started) and completed activities (for example, Migration Completed).

➢ Can I filter the migration object instances and perform an action (for example, simulate, migrate) for the filtered instances?

Yes, as of SAP S/4HANA 2020 release, a mass processing feature is available for the approach Migrate Data Directly from SAP System. You can filter a subset of instances and execute an action for those instances, for example exclude, simulate or migrate. For more information about the Mass Processing feature, see the Help Portal.

- **Is there a central mapping at cross project level?**

You can exchange mapping between projects by downloading the mapping from one project to a file and then upload the mapping to another project.

If the projects use different migration approaches “Transferring Data to SAP S/4HANA using Staging Tables” and “Transferring Data Directly from an SAP System”, you need to copy the mapping data between the different file templates.

For more details see: 2976393 - SAP S/4HANA Migration Cockpit: How to exchange mappings between projects

- **Can historical data be migrated using SAP S/4HANA migration cockpit?**

The SAP S/4HANA migration cockpit is used to migrate data within a New Implementation scenario into S/4HANA. For this, only master data and open items/balances are in scope. Historical data is not covered.

For the migration approaches *Migrate Data Using Staging Tables*, it is possible to load historical balances for general ledger accounts into the universal journal. It is only intended for reporting purposes. There is one migration object available that can be used to create **historical balances in FI** (see SAP Note 2587192).

Nevertheless, it is possible to transfer some historical data on a project basis (consulting request) when SAP is leading the project.

For more info: FI-Historical Balance (restricted)

- **Where can I find system requirements and prerequisites for using the SAP S/4HANA migration cockpit for on-premise?**

You can find this information in the Installation Guide for SAP S/4HANA. Please refer to Chapter 7 “Installation Follow-up Activities”. The document also provides information on the necessary authorizations for using the related transaction LTMOM.

- **How should I setup my migration project?**

Each migration project is unique with regards to planning, timing, resources, data volume, and so on. You can find some information about the project methodology to prepare and set up your migration project in our overview presentation: SAP S/4HANA migration cockpit - Migrate your Data to SAP S/4HANA

- **Is the SAP S/4HANA migration cockpit integrated with SAP Master Data Governance (MDG)?**

A complementary usage of SAP MDG on SAP S/4HANA and SAP S/4HANA migration cockpit is possible, but there is currently no integration out of the box. Upload and download of mappings are possible in the SAP S/4HANA migration cockpit. There’s no automatized exchange of key mappings of master data from UKMS (Unified Key Mapping Service).

- **Are there any guidelines about how and when to use the migration tool suite – SAP S/4HANA migration cockpit, Migration Object Modeler, ABAP, Hybrid, etc.?**

We cannot cover the complete scope with the SAP S/4HANA migration cockpit. This needs to be discussed during the project set-up phase.

- **Does SAP S/4HANA migration cockpit support model companies?**

All available migration objects can be used in model company systems.

- **Does SAP S/4HANA migration cockpit support industries?**

The SAP S/4HANA migration cockpit and all available migration objects can be used to migrate data for industries. Refer to the object-related information in the SAP Help Portal to get a list of objects available for the product version that you are interested in. Some industry-specific requirements are already covered, and additional developments are planned.

- **Does SAP S/4HANA migration cockpit support best practice deployments?**

Yes, the SAP S/4HANA migration cockpit can be used in best practice deployments.

- **Where can I find news about the SAP S/4HANA migration cockpit and data migration content (migration objects)?**

Since SAP S/4HANA release 2020, we publish one development newsletter, where you can also find content updates:

- SAP S/4HANA Migration Cockpit – Development Newsletter

- **Is there a hands-on or demo system available for the SAP S/4HANA migration cockpit?**

You can use the Fully-Activated system with the scripts for SAP S/4HANA migration cockpit to get a hands-on experience on the solution. Please find more information about the SAP S/4HANA Fully-Activated Appliance in Blog - SAP S/4HANA Fully-Activated Appliance: Demo Guides.

- **Are there any guidelines for customers about the transition to SAP S/4HANA?**

There is a tool manifesto or document "Mapping Your Journey to SAP S/4HANA" from the MOVE program which address which tools to use.

- **Where can I find general information about the SAP S/4HANA migration cockpit?**

You can find general information on our landing pages and SAP Community webpages:

- SAP S/4HANA: http://help.sap.com/S4_OP_DM
- SAP S/4HANA migration cockpit community

There are also some SAP Notes and KBAs where you can find a collection of the most relevant information for the SAP S/4HANA migration cockpit:

Composite SAP Note for migration cockpit CA-LT-MC

- Composite SAP Notes for SAP S/4HANA migration cockpit 2780378

Collective SAP Note for Direct Transfer CA-LT-MC

- SAP S/4HANA migration cockpit Composite Note for Migrate Data Directly from SAP System 2747566

Collective SAP Notes for Migration Content File/Staging CA-GTF-MIG:

- Collective SAP Note and FAQ for SAP S/4HANA migration cockpit (on-premise) 2537549

To get an introduction to data migration with SAP S/4HANA, you can sign-up to our Open SAP Course.

In addition, you can find various training materials in our landing page: Training Material – SAP S/4HANA Migration Cockpit.

- **How can I improve the performance of the data transfer?**

On the *Job Management* screen, you can adjust the maximum number of background jobs that are used for your project. If required, you can also adjust the number of background jobs for specific migration objects.

For more details about the Job Management function, see the SAP Help Portal:

- SAP S/4HANA migration cockpit – Migrate Data Using Staging Tables – Job Management
- SAP S/4HANA migration cockpit – Migrate Data Directly from SAP System – Job Management
- SAP S/4HANA migration cockpit – Transferring Data to SAP S/4HANA Using Files – Transferring Multiple Files in Parallel

If you are using the migration approach Migrate Data Using Staging Tables and upload your data to the staging tables by using XML template files, you can improve performance by splitting the xml template into multiple files and uploading these files in your project. However, you must ensure there are enough background jobs

available. See SAP Note 2878945 for detailed information about SAP S/4HANA migration cockpit - Parallelization of XML file loads.

- **Can I set a retention period while using SAP S/4HANA migration cockpit?**

Yes, for the migration approaches Migrate Data Using Staging Tables and Migrate Data Directly from SAP System, customers have access to the database, meaning that the customer is responsible for taking care of the data. After your project is finished, you can specify a *Data Retention Period*. For more information, see the section “Finishing a Project” in the following chapters on the SAP Help Portal:

SAP Help Portal (The Migration Project Screen) – Migrate Data Using Staging Tables

SAP Help Portal (The Migration Project Screen) – Migrate Data Directly from SAP System

- **Is it possible to use the SAP S/4HANA migration cockpit to migrate texts/descriptions for migration objects?**

The documentation of the migration object contains the information about the language in which the text is saved. Refer to SAP Note 2671476 for information about when the migration of text/description in multiple languages is not possible.

- **We are currently implementing SAP S/4HANA 1909. Is there any way to use the new SAP S/4HANA migration cockpit features delivered with SAP S/4HANA 2020?**

All new functions, such as improved error handling, monitoring, uploading / downloading mapping values can only be launched by using the new SAP Fiori app. It is not possible to use these functions in an earlier release.

- **When our system is updated from 1909 to 2020, will our projects be lost?**

Transaction LTMC is still accessible, and you can finish your already started projects until 2021 (with 2021 release only display mode is possible in LTMC). You can also copy your used objects to a new Fiori project. In each case you should check for any updated/changed content of your objects in use after a release update. For more information, refer to KBA 2988692 - SAP S/4HANA Migration Cockpit – Information about different versions.

MIGRATE DATA USING STAGING TABLES

General Questions about Staging Tables

- **With what release can staging tables be used?**

Staging tables can be used since SAP S/4HANA 1709 FPS01. With SAP S/4HANA 2020, the old file approach (Transfer Data Using Files) was combined with the staging table approach so that template files could be used to populate the staging tables with data.

Note: To avoid issues with the pre-delivered data migration objects and to have installed all relevant SAP Notes and features, we highly recommend using the latest version of the SAP S/4HANA migration cockpit. For more information, refer to KBA 2733253 - FAQ for SAP S/4HANA migration cockpit. Migration approach: Transfer / Migrate data from staging tables.

- **Which database is supported for the migration approach Migrate Data Using Staging Tables?**

For the approach Migrate Data Using Staging Tables, the following databases are supported:

- SAP S/4HANA (on premise): SAP HANA DB

Note: Other databases are not supported.

- **How are staging tables generated?**

Staging tables are generated in /1LT/DS namespace once a migration object is created in a migration project (using the SAP S/4 HANA migration cockpit or Migrate your Data app) and the runtime object is generated. When you open a migration object, staging tables are automatically created for the migration objects. For each source structure of a migration object a separate staging table is created. For more information, refer to the SAP Help Portal.

- **What kind of database tables are used for staging tables and what are the limitations?**

Staging tables are tables on an SAP HANA database: local or remote.

If you use the option "Local SAP S/4HANA Database Schema", the SAP S/4HANA migration cockpit will generate the staging tables in the local ABAP schema of the SAP S/4HANA system. We recommend using this option if you want to populate the staging tables using the XML template files provided by SAP.

If you use the option "Remote SAP HANA Database Schema", you specify the relevant connection to a remote SAP HANA system and the SAP S/4HANA migration cockpit will generate the staging tables there. We recommend using this option if you want to fill the staging tables with data by using your preferred tools.

For more information refer to KBA 2733253 - FAQ for SAP S/4HANA migration cockpit. Migration approach: Transfer / Migrate data from staging tables.

- **Is a license required to use the approach Migrate Data Using Staging Tables?**

If you run your SAP S/4HANA system using an SAP HANA, enterprise edition, you can create a separate schema for the staging tables there and access the staging tables on DB layer directly by any ETL tools.
If you run your SAP S/4HANA system with a "SAP HANA, runtime edition for applications & SAP BW" (HANA REAB), the staging tables must be in a separate SAP HANA database installation with the respective license. For example, if you run a separate system using an SAP HANA, standard edition for a side-car scenario, you can create the schema there.
If you do not have any system with adequate SAP HANA use rights available in your landscape, you can contact your responsible sales contact for SAP HANA license details.

- **You might check whether SAP HANA, express edition (available for free up to 32GB of RAM) is suitable for your needs. Must I pay attention to something if I fill the data directly in the staging tables?**

Yes. If you fill the data directly in the SAP HANA database, you must take care on the default values and the correctness of the values of some data types. For more details see KBA 2733253 - FAQ for SAP S/4HANA migration cockpit. Migration approach: Transfer / Migrate data from staging tables.

- **Can we use multiple data transfer jobs for each migration object?**

Yes. Using multiple data transfer jobs for each migration object is possible as of release 1809. For more information, see the SAP Help Portal:

Up to SAP S/4HANA 1909:

- SAP S/4HANA migration cockpit - Transferring Data to SAP S/4HANA - Improving the Performance of the Transfer

From SAP S/4HANA 2020:

- Job Management - SAP Help Portal

Note: For releases older than 2020: In order to transfer data to the target SAP S/4HANA system, the system divides the content of the staging tables into portions, which are transferred by the data transfer jobs. For the initial phase of the Validation step, only one data transfer job will be used. Once this initial phase is complete, the system will use the number of jobs specified in the Max. Data Transfer Jobs field for the remainder of the Validation step, and for the remaining steps. Depending on the amount of data, increasing the number of data transfer jobs may not have any effect.

➢ **During the import of file/staging project, is it possible now to change the mass transfer id?**

Still the mass transfer ID is a technical artefact that can´t be changed later. Please make sure, that mass transfer ID is available in all system in your system landscape.

➢ **What are the new features for the SAP S/4HANA 2020 version for the approach "Migrate Data Using Staging Tables"?**

As of SAP S/4HANA 2020, you can:
- Process the multiple objects at once
- Download/upload mapping values
- Check the instance-based status tracking and messages
- Track progress during simulation/migration

For more information on what's new for Staging tables approach with SAP S/4HANA 2020 release, refer to:
- Development Newsletter SAP S/4HANA 2020 Staging Tables
- Development News Staging Tables session

Transferring Data from Template Files to Staging Tables

➢ **As the File approach is now embedded in the Staging tables approach, does this mean that LTMC transaction is retired?**

It is planned, that with SAP S/4HANA 2021 onwards projects cannot be created with transaction LTMC anymore, but you can still have a look at them in read-only mode. For more details refer to KBA 2988692 - SAP S/4HANA Migration Cockpit – Information about different versions.

➢ **Why can't I change the content of an uploaded file in the SAP S/4HANA migration cockpit itself?**

For data protection reasons it is not possible to make changes directly in the SAP S/4HANA migration cockpit - the file or delta file must be downloaded. Any changes should be made in the file, and then the file must be uploaded to the SAP S/4HANA migration cockpit.

➢ **What if the XML template is corrupted after inserting or deleting data?**

The XML structure of the file should never be changed, as this prevents the file upload. However, deleting an "entry" of a field should not corrupt the format, only if the values in the cells are deleted and not the cells itself. When copying data to an XML template, always right-click the relevant cell and choose the paste option 'Values (V)'. Avoid pasting data that includes formatting and formulas into the migration template, as this will corrupt the structure of the XML migration template.

If the XML file gets corrupted (that is, you get error messages while trying to upload the file) and you cannot perform the migration, then the best option would be to download a new template and copy your data to this new template.

To avoid corrupted XML templates SAP recommends the following:

a. Read the introduction and review the field list before starting to fill the xml template
b. Unhide and read the tooltips (line 8)
c. Copy and paste values only using the following options:
   - Paste option then Values (V) within XML file
   - Paste special and then choose Text from somewhere else
   - Paste option then keep text only from notepad/text editor
d. Do not make any changes to the structure of the migration template, specifically:
   - Do not delete, rename or change the order of any sheet in the migration template;
   - Do not change the formatting of any cells;
   - Do not use formulas;
   - Do not hide, remove, or change the order of any of the columns in the migration template.

Note: The information above is valid for all migration objects. For more details refer to KBA 2692715 - migration cockpit: How to correctly fill data into XML template.

- **What should I do if the downloaded XML file has no file extension?**

Depending on your internet browser there is no extension. After “Download”, you must add the extension .xml to the downloaded file manually.

- **What is the maximum size for an uploaded file?**

For SAP S/4HANA (On-premise):

The default size limit for each uploaded XML file is 100MB, however, it depends on parameter *icm/HTTP/max_request_size_KB*, which controls the size of the http request. You can increase the size limit for each uploaded XML file to 160MB by changing the system parameter (*icm/HTTP/max_request_size_KB*), which has default value 102400 kb (100MB). If required, you can zip several files together. The combined size of all the XML files to be added to the zip file must not exceed 160MB. The limit for the zip file is still 160 MB with the adjusted system parameter.

For more details see KBA 2719524 - SAP S/4HANA migration cockpit: XML template size limits.

- **Where can I find information on the corresponding SAP table/technical field name for each field in the XML Template?**

In the Excel template file, there is the possibility to unhide rows 4-6. In addition, in the 8th row, the field names in SAP S/4HANA can be viewed, as well as additional information such as the expected format (for example, the data type and length).

- **Do I need an additional license if I populate the staging tables using files?**

If you are using files to populate the staging tables with data, we recommend using the local SAP S/4HANA database schema when creating the project. You do not need any additional license.

Transferring Data to Staging Tables Using Your Preferred Tools

- **What naming convention do the generated staging tables follow?**

Staging tables follow the naming convention: /1LT/DS<sys-id><consecutive number>. Below is an example of a generated staging table for object Work center (SIF_WORK_CNTR) and structure S_KAZY:

Staging Table Technical Name: */1LT/DSQKX000928*

Table description: Z_<Alias = technical Object name without SIF_>_<Mass transfer ID>:<structure name>

Example of table description: *Z_WORK_CNTR_U02:S_KAZY*

Note: From 1809 FPS0 there is now a mapping table ‘/1LT/DS_MAPPING‘, which is provided in the same schema where the staging tables are generated. This table stores mapping information about the migration object, the source structure and the staging table name. You can use this table to determine the staging table names after you copy a project from a quality system to a production system and then use these names in your scripts or applications that populate the staging tables with data.

- **Which ETL Tools can I use to fill the staging tables?**

To fill the staging tables, you can either use ABAP code or any ETL tools from a third party or from SAP (for example SAP Data Services, SAP HANA smart data integration (SDI)). You can also use SAP HANA Studio to fill the tables with data.

There are several blogs listed below to show different methods to load data into the staging tables:

- Part 1: SAP S/4HANA migration cockpit – Migrating data using staging tables and methods for populating the staging tables
- Part 2: SAP S/4HANA migration cockpit – Using **SAP Data Services** to load data to the staging tables

- Part 3: SAP S/4HANA migration cockpit – Using **SAP HANA Smart Data Integration (SDI)** to load data to the staging tables
- Part 4: SAP S/4HANA migration cockpit – Using **SAP HANA Studio** to load data to the staging tables

For more information refer to KBA 2733253 - FAQ for SAP S/4HANA migration cockpit. Migration approach: Transfer / Migrate data from staging tables.

➢ Are there any restrictions when creating source/sender structure key fields for my own objects?

Yes, the following restriction applies:
Key fields of the header/root structure must not be an SQL reserved word such as END, FROM, ORDER, SET, START, and so on This is because the Migration object modeler generates OPEN SQL statements into ABAP code of the function group that is used to load the data.

For a list of reserved Words in SAP HANA see the SAP HANA SQL Reference → Reserved Words on the SAP Help Portal

➢ Is it possible to delete, refresh, select, and transform the data in the staging tables?

You can use the option **Reset Table Settings** to unlock the staging tables so that you can adjust data again. It is not possible to adjust the data in the staging tables while the preparation step, the migration, or the simulation is in process (during running activity). In some cases, it is not possible to adjust the data in the staging tables even though none of these steps are in process.

Please refer to the information in the SAP Help Portal (The Migration Object Tables Screen).

In addition, some SAP tools/products such as SAP Data Services or Smart Data Integration that can be used to populate the staging tables, provide data transformation and cleansing capabilities. See the following links to these products/tools:

- SAP Help Portal (SAP HANA Smart Data Integration and SAP HANA Smart Data Quality)
- SAP.com (SAP Data Services)

For specific questions or more detailed information about these SAP Tools, contact your sales representative.

➢ How do we feed the information in the staging tables from our SQL DB? Do we need a specific view/stored procedure to be created in our SQL source?

It depends on the license. Technically, it's possible to write directly into staging tables. Since the ID of the staging table will be different in the development and quality systems, we offer a mapping table /1LT/DS_MAPPING as of 1809. In addition, you could use other SAP Tools such as Data Services or SDI to feed the information in the staging tables from other databases such as SQL DB. For more information about SAP tools such as SAP Data Services or SDI, contact your SAP account team representative.

➢ Is the SAP HANA Studio free?

SAP HANA server software and tools can be used for several SAP HANA platform and options scenarios as well as the respective capabilities used in these scenarios. The availability of these tools is based on the available SAP HANA licenses and the SAP HANA landscape, including the type and version of the backend systems the SAP HANA administration and development tools are connected to. Several types of licenses are available for SAP HANA. Depending on your SAP HANA installation license type, some of the features and tools described in the SAP HANA platform documentation may only be available in the SAP HANA options and capabilities, which may be released independently of an SAP HANA Platform Support Package Stack (SPS). If you have additional questions about what your license provides or want to discuss licensing prices and features available in SAP HANA options, please contact your SAP account team representative.

➢ Do we need specific knowledge to use the SAP HANA Studio?

Depending on the use case (for example if you are planning use the SAP HANA Studio Database Development feature), you might need some specific knowledge for such particular use cases.
For more information about the SAP HANA Developer Guide for SAP HANA Studio, see:

- SAP HANA Developer Guide for SAP HANA Studio

MIGRATE DATA DIRECTLY FROM SAP SYSTEM

➢ From which product release is the direct transfer approach available?

The approach "Migrate Data Directly from SAP System" is available with SAP S/4HANA 1909 (released 20.09.2019). It is not available for releases lower than 1909.

➢ What are the main functions and features of the application?

In SAP S/4HANA 2020 release, the approach "Migrate Data Directly from SAP System" has the following functionality:

- Access source system database directly
- Transfer data from SAP source system to target SAP S/4HANA system
- Supports data migration scenarios from other applications, for example from SAP Apparel and Footwear (SAP AFS) to SAP S/4 Fashion and Vertical Business, SAP EWM to Decentralized EWM, from SAP CRM to SAP S/4HANA for Customer Management

Note: Functions, features and migration scenarios for the Direct Transfer might change from release to release, therefore, we strongly recommend seeing the latest information in the following sources:

- Overview presentation: SAP S/4HANA migration cockpit - Migrate your Data to SAP S/4HANA
- SAP Help Portal - Migrate Data Directly from SAP System.

➢ What are the technical preconditions / prerequisites for the approach "Migrate Data Directly from SAP System"?

For information about prerequisites and preconditions, refer to:

- SAP Help Portal: Migrate Data Directly from SAP System
- *Installation Guide for S/4HANA (On-Premise only)* available under:
- https://help.sap.com/viewer/product/SAP_S4HANA_ON-PREMISE/2020/en-US?task=discover_task → <Filter-Version> Product Documentation → Installation Guide → 7. Installation Follow-Up Activities

➢ What are the new features for the SAP S/4HANA 2020 version for the approach "Migrate Data Directly from SAP System"?

As of SAP S/4HANA 2020, you can:

- Access the migration object documentation on help.sap.com
- Transport projects between systems
- Improved options for selecting data, for example add additional instances to already selected data
- Download/upload mapping values
- Use mass processing options for migration object instances
- Monitor all the running and completed activities with possibility to download the messages.

For more information on what's new for Direct Transfer approach with SAP S/4HANA 2020 release, refer to:

- Development Newsletter SAP S/4HANA 2020 Direct Transfer
- Development News Direct Transfer session

Note: New or enhanced features might be available for new releases, therefore, we recommend you check the current information for the Direct Transfer in the SAP Help Portal - Migrate Data Directly from SAP System and SAP Note 2747566.

➢ What migration scenarios are possible with the approach "Migrate Data Directly from SAP System"?

In SAP S/4HANA 2020 release, the following migration scenarios are available:

- Extract data from ERP system to SAP S/4HANA system
- Extract data from SAP Apparel and Footwear (AFS) to S/4HANA Fashion and Vertical Business
- SAP EWM to Decentralized EWM
- SAP CRM to SAP S/4HANA for Customer Management

Note: Consider that new migration scenarios might be available for new releases or feature packs. For the latest information about the available migration scenarios, see the SAP Help Portal - Migrate Data Directly from SAP System.

- **Where can I find more information about the approach "Migrate Data Directly from SAP System"?**

For more information about the migration approach “Migrate Data Directly from SAP System”, see the following resources:

- Help Portal: Migrate Data Directly from SAP System
- Demo: “Direct Transfer Approach”
- Direct Transfer blog: SAP S/4HANA migration cockpit – Transfer Data Directly from SAP System (Direct Transfer)
- SAP Note 2747566: SAP S/4HANA migration cockpit: Composite Note for Transfer Data Directly from SAP System

- **What are the recommendations for transforming data from several source systems in SAP S/4HANA?**

If your requirements involve migrating data from several ERP systems to SAP S/4HANA, you must create one project for each source system as only one RFC connection can be assigned to each project.

The disadvantage is that you might have to download and upload mapping values as mappings values are specific to one project and cannot be shared between projects.

- **How is the data throughput?**

This depends on the complexity and behavior of the API used in the respective migration object. Also, system parameters, such as the number of available batch jobs, have an influence on the throughput.

- **Can I view the data that has been selected?**

Yes. For the migration approach "Migrate Data Directly from SAP System", if you click on the number of selected items, you get to the instances lists.

- **Is it possible to reselect the data for the migration approach “Migrate data directly from SAP system”?**

Yes, when you have selected the data, you can:

- Add new instances to already selected instances (available since SAP S/4HANA 1909)
- Perform completely new selection and delete the former selection (available as of SAP S/4HANA 2020)

- **How do we get access to a hands-on or demo system?**

Yes, there is a hands-on tutorial available for the “Migrate Data Directly from SAP System” for SAP S/4HANA on-premise 2020: link

You can also use the Fully-activated system with the scripts for the Direct Transfer approach. Please see more information in the following Blog - SAP S/4HANA Fully-Activated Appliance: Demo Guides.

- **Can the approach "Migrate Data Directly from SAP System" migrate historical data?**

No, the migration approach "Migrate Data Directly from SAP System" cannot migrate historical data. A new implementation approach only migrates data which is necessary to start from scratch. From a technical point of view, taking over historical data would mean to transfer data on database level. The SAP S/4HANA migration cockpit only works with standard APIs which follow the application logic in order to guarantee consistent data in the target system.

- **Can I change the selection criteria for a migration object in transaction LTMOM and then repeat the selection?**

Since SAP S/4HANA 2020 release, the reselection function is integrated in Fiori. You have 2 options:

- Add new instances from the source system to already selected instances - no update of already selected instances
- Delete former selection and select completely new instances.

➢ **How many migration objects are already available?**

There are 140+ objects available with 2020.

For a list of current available migration objects for the approach "Migrate Data Directly from SAP System" refer to the SAP Help Portal: Migration Objects for SAP S/4HANA Available Migration Objects

➢ **Is there any documentation for the SAP S/4HANA tables filled by the BAPIs used by the approach "Migrate Data Directly from SAP System"?**

We use the standard SAP BAPIs. In the SAP S/4HANA migration cockpit object documentation, the BAPI used is mentioned. Please refer to the standard documentation of the standard BAPI.

➢ **Is data profiling possible before the conversion?**

For the approach "Migrate Data Directly from SAP System", the SAP S/4HANA migration cockpit uses predefined selection criteria - company codes for the ERP and AFS scenarios, and Business Warehouse Numbers for EWM, sales organization for CRM. Data is fetched as it is stored in the backend system. There is no integrated data quality functionality.

➢ **Can the SAP S/4HANA migration cockpit delete data that has already been migrated?**

The SAP S/4HANA migration cockpit does not provide deletion functionality for data that has already been migrated. The migration performed using the SAP S/4HANA migration cockpit creates application data in the target system. If you need to delete the migrated data, the normal application logic applies. For example, you can delete master data with application transactions if there is no dependent data. Transactional data such as open items cannot be deleted; they can only be reversed by application transactions.

➢ **How can I confirm all mapping entries when using the approach "Migrate Data Directly from SAP System"?**

On the Mapping Tasks screen, select all “Mapping Tasks” using the check box. Then click on the button “Confirm”. For more information, see SAP Help Portal - Migrate Data Directly from SAP System - Mapping Tasks.

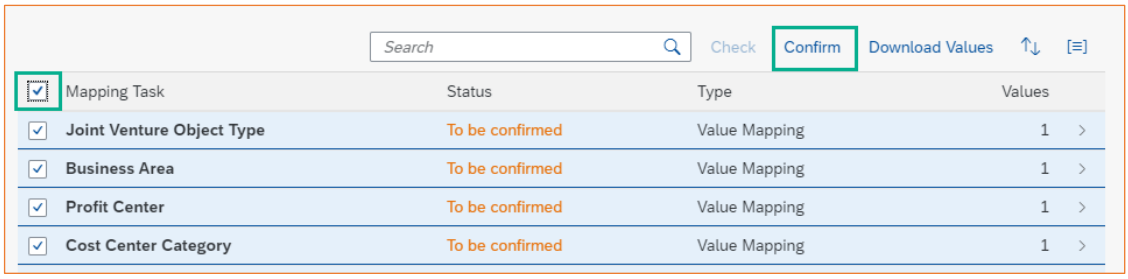

Figure 5: Mapping Tasks confirmation

➢ **Are there any limitations regarding mapping, for example a maximum number of records that can be uploaded?**

There are no limitations.

➢ **How do I monitor the status of the migration for the migration approach "Migrate Data Directly from SAP System"?**

On the *Migration Project* screen, choose the *Monitoring* button. The system displays the *Monitoring* screen, where you can view the active and completed activities, for example *Migration Started* or *Migration*

Completed. You can view the number of migration object instances that have been processed, as well as the number of background jobs that are used for the migration.

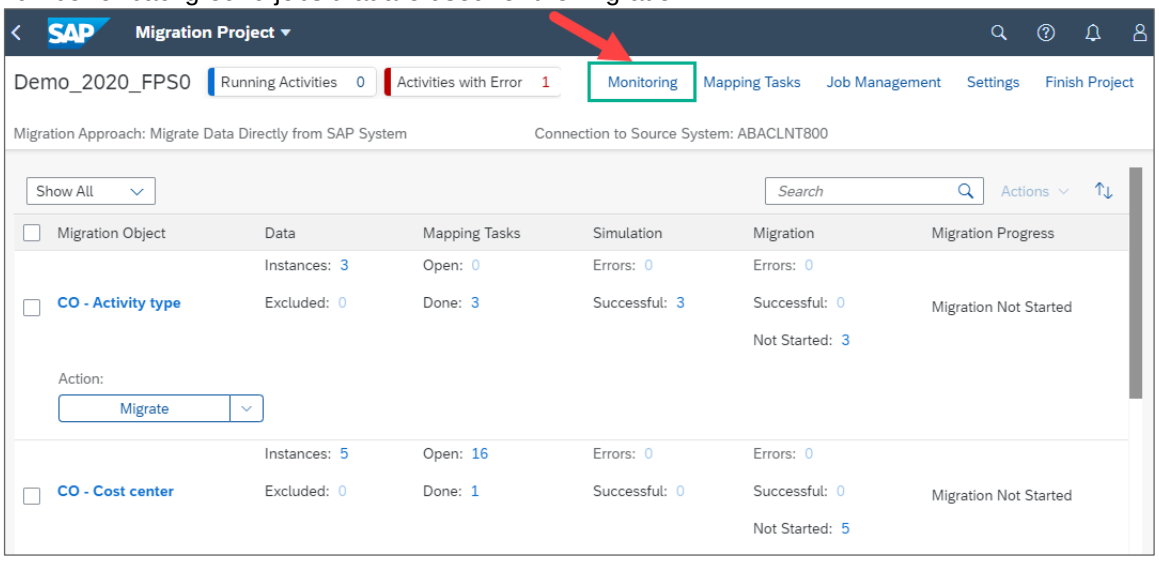

Figure 6: Monitoring function and Running activities

In addition, on the *Migration Project* screen, you can view all running activities and any activities with errors by choosing the buttons *All Running Activities* or *Activities with Errors*.

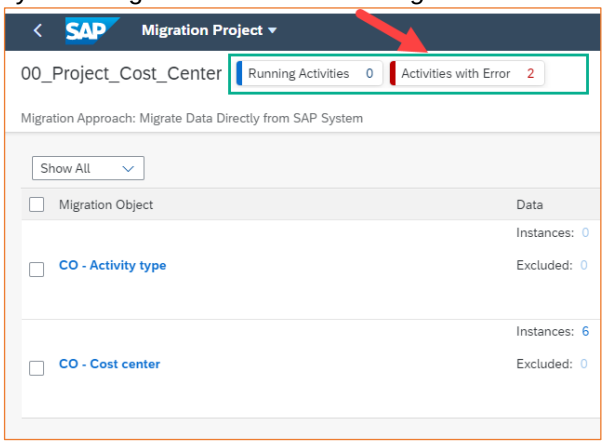

Figure 7: Monitoring function and Running activities

➢ **Is it possible to migrate delta records using the approach "Migrate Data Directly from SAP System"? For example, if I have already migrated data from the source for a certain object.**

This migration approach is designed for a New Implementation, not for a delta migration or perpetual migration. In case of several selections, the system recognizes new records and adds them into the items to be migrated. (**Add additional instances**).

If you have **changed** data in the source, first delete the formerly selected instances and start a completely new selection (New selection button).

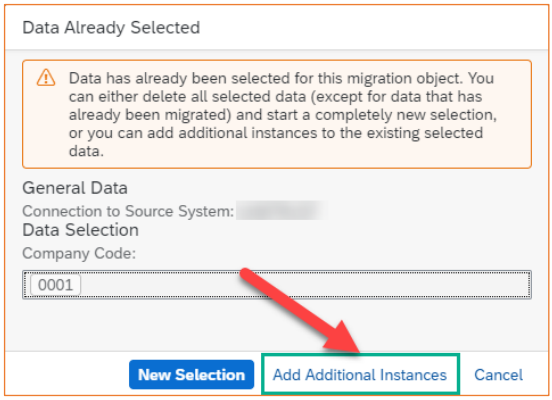

Figure 8: Data Already Selected

MIGRATION OBJECTS

➢ Which migration objects are available for which release?

You can find the most up-to-date list of the migration object on the SAP Help Portal:

Help Portal - Available Migration Objects on-premise

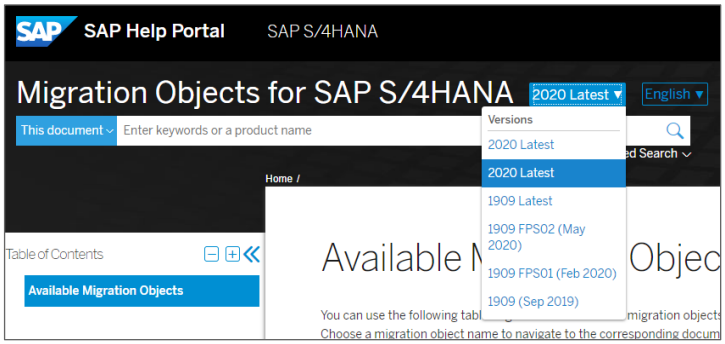

Figure 9: Switching between different SAP S/4HANA releases

Note: On the SAP Help Portal, you can switch between different releases by using the appropriate drop-down list.

Additionally, for a comparison of Migration Object templates you can refer to Release comparison (for Staging Tables only):

Help Portal - SAP S/4HANA – Release Comparison of Migration Object Templates.

➢ What are the restrictions and extensibility using the pre-delivered migration objects of the SAP S/4HANA migration cockpit in SAP S/4HANA on-premise?

For the detailed description, refer to the following SAP Notes.

- 2481235 - SAP S/4HANA migration cockpit (on-premise) - restrictions and extensibility of pre-delivered migration objects
- 2515151 - Cannot find migration objects to use, or fields which you want to migrate cannot be found in any migration objects, by using SAP S/4HANA migration cockpit
- 2608495 - SAP S/4HANA migration cockpit: Errors using staging functionality w/ pre-delivered data migration objects in on-premise release 1709 FPS1

➢ Is there a collection of SAP Notes related to the SAP S/4HANA migration cockpit content with more detailed information about the migration objects?

You can find a collection of SAP Notes/KBAs about SAP S/4HANA migration cockpit content (migration objects) in SAP Note: 2537549 - Collective SAP Note and FAQ for SAP S/4HANA migration cockpit (on-premise).

In addition, you find more detailed information about the migration objects in the documentation for each object. For more information about how to access the documentation for migration objects in the S/4HANA migration cockpit, see SAP Note: 2609932.

- **What can I do if I have specific requirements that are not covered by the migration objects?**

If the available migration objects do not cover your requirements, you can create user-defined migration objects using the SAP S/4HANA migration object modeler (transaction LTMOM). If a function module is available, you can assign standard SAP APIs to these objects. If not available, you can create your own function module to populate the target structure including your custom field enhancements. See SAP Note 2590165 - SAP S/4HANA migration cockpit - creating your own function modules.

Additionally, refer to the following SAP S/4HANA Migration object modeler resources for SAP S/4HANA 2020:

- SAP S/4HANA Migration Object Modeler (Direct Transfer)
- SAP S/4HANA Migration Object Modeler (File/Staging)

- **How can I request an enhancement of a migration object or the development of a completely new object?**

To submit an improvement request for creating/enhancing the migration object for SAP S/4HANA On-premise, please send an e-mail to mailto:SAP S/4HANA migration cockpit

For the SAP S/4HANA Cloud customers we have SAP Customer Influence (Data Migration) platform where it is possible to submit an improvement request https://influence.sap.com/sap/ino/#/campaign/1180

- **Who can support with the development of customer-specific objects?**

Support with the development of customer-specific objects is considered a consulting request. For consulting requests, you can contact the DMLT consulting team. Please address all consulting inquiries to DL DMLT Global Customer Engagement: sap_dmlt_gce@sap.com

Furthermore, you can find more information about SAP S/4HANA Movement at the following link:

- Join the SAP S/4HANA Movement

For more information about "What is Support – What is Consulting: On Premise Solutions" see SAP Note: 83020.

- **How can I check the correctness of migrated object?**

In your migration project, you can see the number of successfully migrated instances. We recommend using standard SAP reports to compare data in the source and target systems.

- **Which version of the SAP S/4HANA migration cockpit supports the creation of custom objects? Do we need any specific permissions?**

The SAP S/4HANA migration object modeler is available from 1610 FPS02. To create new or custom migration objects, you use the Migration Object Modeler (transaction LTMOM).

To use the SAP S/4HANA Migration Object Modeler (transaction LTMOM) you require the role:

- SAP_CA_DMC_MC_DEVELOPER

- **I cannot find a migration object or field that I want to migrate, what can I do?**

If you are facing this issue, please see the following SAP Note:

- 2515151 - SAP S/4HANA migration cockpit: Migration objects or fields which you want to migrate cannot be found

- **What does the suffix "deprecated" mean for migration objects?**

For detailed information, see the following SAP Note:

- 2698032 - SAP S/4HANA migration cockpit: Migration Objects Deprecate

➢ **What does the suffix "restricted" means for migration objects?**

- The suffix "restricted" indicates that the usage of the object is limited.
- You must always read the documentation for the migration object before using such an object.

➢ **How do I migrate Human Capital Management (HCM) objects? How does a solution for SuccessFactors look like?**

Currently, the SAP S/4HANA migration cockpit does not provide HCM migration objects for any migration approach (neither for SAP S/4HANA nor for SAP S/4HANA Cloud). Furthermore, there are no HCM migration objects planned on the actual roadmap for 2020 for the SAP S/4HANA migration cockpit. Based on customer feedback, SAP has now taken the decision to accelerate the timeline for the new “SAP Human Capital Management for SAP S/4HANA, on-premise edition” (HCM 4 S/4) solution, giving customers more time to orchestrate their move to SAP S/4HANA. The new offering will be made available in a first release with SAP S/4HANA 2022. At this point of time, the recommendation is to use a system conversion (for example for HCM standalone systems) or moving the data on table level using the selective data transition (formerly SLO projects with customer-specific solutions). The migration to SuccessFactors is not covered by the SAP S/4HANA migration cockpit.

➢ **Is the migration of G/L accounts possible?**

For SAP S/4HANA, Migration object G/L account master was first delivered with release 1809.

For more information, refer to the following SAP KBAs:

- 2682466 - SAP S/4HANA migration cockpit: Cannot find migration object for GL account data
- 2853964 - SAP S/4HANA migration cockpit: Collective KBA for G/L Open Item or G/L Balance or FI AP Open Item or FI AR Open Item

SAP S/4HANA MIGRATION OBJECT MODELER

➢ **What can be done with the SAP S/4HANA Migration Object Modeler?**

The SAP S/4HANA migration object modeler is part of the SAP S/4HANA migration cockpit and is available since SAP S/4HANA 1610 FPS02.

The SAP S/4HANA migration object modeler is designed to easily integrate custom objects and enhancements. It is available for all migration approaches (staging tables and direct transfer). You can access the SAP S/4HANA migration object modeler by using transaction LTMOM.

Detailed documentation for the SAP S/4HANA migration object modeler can be accessed directly from transaction LTMOM.

Click-through Demo, courses, documents are also available in Training Materials: Migration Object Modeler File/Staging and Migration Object Modeler Direct Transfer tabs.

➢ **Is it possible to add a field in a staging migration object with transaction LTMOM?**

It is possible to adapt the delivered content for migration objects, for example by adding a field to the template file and mapping the field from the source structure to the target structure with transaction LTMOM. A prerequisite is that the used function module also supports the target field.

➢ **If LTMOM is used for adding fields, can the xml template be generated with the additional fields?**

Yes, if you add additional fields with the Migration Object Modeler (transaction LTMOM) the XML template file will be updated automatically.

- **Why can’t I change the field length in change mode using LTMOM?**

If you create a migration object from template, there is still a link to the original template available. You can add additional fields, but you cannot change the delivered fields. From time to time, SAP updates migration objects to ensure that they accurately reflect the current state of the SAP S/4HANA system. If a migration object must be updated, the system will prompt you to do so.

If you copy a migration object the link to the original migration object is not available anymore and no updates to the delivered content will be reflected in the migration object (updating the migration object is not possible). In this case, the migration object is like a custom migration object. You can also change the source fields, which have been delivered by SAP.

- **What do I need to consider, when I want to create my own function module and assign it to a custom migration object to transfer data to SAP S/4HANA (all approaches)?**

The requirements for creating your own function modules are outlined in the attachment to SAP Note 2590165 - SAP S/4HANA migration cockpit - Creating Your own Function Modules.

- **How can I add a missing field in transaction LTMOM under "Target structures"?**

You cannot modify the target structure if you are using a standard migration object. The target structure depends on the underlying API. If you need additional fields in the target structure that are not available in the API, you can build your own function module and use this function module in your own created migration object.

- **We have migration objects for transaction LTMC with SAP S/4HANA 1809. If we upgrade to SAP S/4HANA 2020, how do we move our objects to the new Fiori app?**

We always recommend using the pre-delivered migration objects that come with the release itself to ensure that migration object and release fit (for example some APIs might have changed, or additional fields may have been added). In the migration object modeler, you can copy a migration object from your old project (LTMC) into your new project. This feature is new from SAP S/4HANA 2020 - see page 22 of our Development news for Migrate Data Using Staging Tables (SAP S/4HANA 2020).

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