In this chapter, you’ll walk through the main processes that are part of your SAP S/4HANA deployment, whether on-premise or cloud. From migrating your data to testing your solution, you’ll learn about key approaches and tools and how they fit into the SAP Activate methodology.

“Configuration, Data Migration, Extensibility, Integration, and Testing”

Contents

Index

The Authors

Sven Denecken, Jan Musil, Srivatsan Santhanam

SAP Activate: Project Management for SAP S/4HANA

600 Pages, 2020, $89.95

www.sap-press.com/5027
Chapter 5
Configuration, Data Migration, Extensibility, Integration, and Testing

Now that we’ve established the systems for the solution, we’ll cover the configuration, migration, integration, extensibility, and testing, which are all critical for planning and executing a successful solution implementation.

In this chapter, we’ll walk through several key processes related to planning and executing an SAP S/4HANA or SAP S/4HANA Cloud implementation. For SAP S/4HANA Cloud, essentials edition, and SAP S/4HANA Cloud, extended edition configurations, a fit-to-standard analysis is performed to validate the solution functionality included in the project scope and to confirm that the business requirements can be satisfied. Identified delta requirements and configuration values are added to the backlog for use in the next phase. Industry and solution experts from SAP lead a series of structured show-and-tell and solution design workshops.

For SAP S/4HANA configuration, the results from the SAP S/4HANA value and implementation strategy executed in the discover phase will feed into the fit-gap analysis and delta design workshops (per business priority in scope). Gap validation and a final design review support this activity, which is executed in an agile manner.

Next, we incrementally build and test an integrated business and system environment that is based on the business processes and process requirements identified previously and captured in the backlog. The project team loads customer data into the system, plans adoption activities, and prepares cutover plans and plans for operationally running the solution.

Lastly, the project team uses a series of iterations to incrementally configure, test, confirm, and document the entire end-to-end solution and to load data. The project team actively works with business representatives to ensure a good fit of the built solution.
Let’s dive into these core processes in the following sections, starting with configuration.

5.1 Business-Driven Configuration

In this section, we’ll discuss how the configuration process—from planning and designing to realizing the planned value—is supported by SAP Activate for the various SAP S/4HANA solutions: SAP S/4HANA Cloud, essentials edition; SAP S/4HANA Cloud, extended edition; and SAP S/4HANA.

The configuration process, in all solutions, is supported by the Application Design and Configuration workstream. The purpose of the Application Design and Configuration workstream is to help you plan, prepare, and realize the planned value-add of the SAP solution for your business. This workstream covers the confirmation of scope, fit-to-standard, or fit-gap analysis; identification of delta business process requirements; and functional design of the solution. Topics such as integration, extensibility, and testing, which are covered in more detail in other workstreams and later in this chapter, are supported by the Application Design and Configuration workstream.

The configuration process during an implementation project is often compared to the building of a house. If the correct preparation and planning are done up front, and the correct amount of time is spent performing these activities, the configuring, or building of the house, is more efficient as all major decisions and the risk of rework is mitigated at the beginning. The goal is to ensure that the actual configuration of the system is as efficient as possible in order to help the business realize the planned value-add sooner. Deliberate time spent up front enabling, preparing, and planning helps ensure an effective and efficient project with a lower cost of implementation.

Regardless of the SAP solution, the configuration process can be broken down into three major sections:

- Preparation for planning configuration
- Planning configuration
- Configuration

Up-front enablement, as mentioned, is a key driver and enabler for ensuring a seamless, end-to-end configuration process during an implementation. Therefore, it’s important for the business process experts to start and continue their self-enablement in parallel with the configuration process.

5.1.1 Configuration Approaches

SAP Activate has two planning configuration approaches that are followed during the implementations of SAP solutions, as we discussed in Chapter 2, Section 2.1: fit-to-standard and fit-gap. Depending on the solution being implemented, one of the two approaches will be used during the explore phase when starting to plan the configuration and when gathering requirements and backlog items to build the configuration backlog.

Regardless of which approach is used, the project team must strive to avoid modifications of SAP-delivered code, where possible; in cases where it’s unavoidable, for meeting the business requirement, the project team must ensure that the changes are properly documented.

Additionally, the fit-to-standard approach is further supported by a process called business-driven configuration. This process is based on the Self-Service Configuration User Interfaces (SSCUIs) and aims to help provide insight to the configuration experts early on in the implementation on the SSCUI values needed.

Now, with the understanding of the overall configuration process and the various planning configuration approaches that exist within SAP Activate, we can dive deeper into how the configuration process, or the Application Design and Configuration workstream, works within each SAP product at a high level.

5.1.2 SAP S/4HANA Cloud, Essentials Edition

Within the SAP S/4HANA Cloud, essentials edition, implementation roadmap, the Application Design and Configuration workstream covers the end-to-end configuration process by taking project teams through the preparation for planning configuration (with the business-driven configuration assessment, fit-to-standard preparation, and fit-to-standard system preparation), planning configuration (with fit-to-standard analysis, solution definition, and planning and design workshops), and configuration. We’ll walk through each phase in the following sections.
Preparing for Planning Configuration in SAP S/4HANA Cloud, Essentials Edition

The configuration process starts off in the prepare phase with the business-driven configuration assessment. The purpose of this assessment is to provide the preliminary configuration information and further insight into your process based on the solution scope and your current operation processes. The start of this assessment begins with the configuration expert downloading the project relevant line of business (LoB) business-driven configuration questionnaires and refining each of the questionnaires so that only the relevant scope for the project is shown. Once completed, the refined questionnaires are provided to the company’s business process experts to answer the questions.

Note that, in these questionnaires, there are two levels of questions: Level 2 and Level 3 questions (Level 1 questions have already been asked during the presales and sale discussions in the discover phase). Level 2 questions should be answered during the prepare phase and are geared towards collecting information prior to the execution of the fit-to-standard workshops. The goal is to prevent stop/go execution of the fit-to-standard workshops due to missing information. These questions also help the configuration expert determine the topics that will need to be further discussed and captured during the fit-to-standard workshops. The goal of Level 3 questions is to provide more detailed information on what is needed to make a business decision and to define specific configuration values that will be captured in the backlog. These questions should be discussed and documented in the fit-to-standard workshop during the explore phase.

After the business process experts have responded to the Level 2 questions and provided the filled-out questionnaires to the configuration expert, the preparation for the fit-to-standard workshops can begin.

Self-enablement is a key component for executing an effective and efficient fit-to-standard workshop that fosters rich discussions. Thus, it’s important for all business process owners to start preparing for the fit-to-standard workshops by reviewing key assets such as the SAP Best Practices test scripts, process flows, and other self-enablement accelerators for topics such as analytics, data protection, and chart of accounts. In addition, all the business process experts participating in the fit-to-standard workshops should verify access to the SAP S/4HANA Cloud, essentials edition, starter system. Then, after access to the system is confirmed, business process experts should begin to further self-enable themselves by executing some of the test scripts for scope that is scoped for the project. The purpose of this activity is for the business process expert to gain hands-on experience in the system, as this experience will help drive fit-to-standard discussions with the configuration experts on the business’s processes.

While the business process experts are self-enabling themselves on the solution, the various technical experts begin to create initial requirements lists that will later be used as capturing requirements for specific topics during the fit-to-standard workshops, such as analytics, identity and access management, extensibility, and integration. These initial lists are created from the results of the digital discovery assessment from the discover phase, or from executive decisions from meetings that took place after the contract was signed.

The final step for preparing for the fit-to-standard workshops is to prepare the working system that will be used to demonstrate the functionality of the solution during the fit-to-standard workshops (refer to Chapter 3) with any additional project-specific data needed. Although the starter system does come with pre-delivered SAP Best Practices master data, you can create more project-specific data. During the fit-to-standard workshops, the system will be used as a focal point for facilitating discussion, thus any additional project-specific data that can help aid this discussion is encouraged.

Planning Configuration in SAP S/4HANA Cloud, Essentials Edition

Following the preparation for planning configuration in the prepare phase, the planning of configuration takes place during the explore phase. This phase includes the Application Design and Configuration workstream, the fit-to-standard workshops, the documentation of the requirements and backlog items, and the planning and designing workshops for technical topics.

Each of the fit-to-standard workshops are organized around the functional areas of the solution and follow an iterative approach, as shown in Figure 5.1. The focus of these workshops is on the business and its requirements. They don’t do a deep dive into technical topics; rather, the technical discussions are handled during the planning and design workshops. Let’s explore the fit-to-standard steps in a bit more detail:

1. Review SAP Best Practices process flow

The configuration expert explains the scope item using the SAP Best Practices process flow and responses from the business-driven configuration questionnaires.
Demonstrate scope item and concepts
The configuration expert demonstrates the scope item using the starter system and delivered master data and then highlights the areas that require configuration decisions. The process flow is used as a point of reference when transitioning in the system.

Discuss how the processes fit with the company’s requirements
The team fosters discussion to better understand the company’s business requirements, referencing the business-driven configuration questionnaire, and explains how the solution meets these requirements.

Identify delta requirements
The team identifies and catalogs the delta requirements in the backlog for further analysis and closure. Delta requirements are business requirements that can’t be satisfied with the standard scenarios.

Identify required configuration
The team leverages the business-driven configuration questionnaires to arrive at critical configuration decisions. All configuration values required and any needed in-app extensions are determined and documented in the backlog. The company is responsible for providing value lists (i.e., product group definition).

Enable company execution of standard scenarios
The configuration expert enables the business process expert to execute the process on his or her own in the starter system.

During the fit-to-standard workshops, the configuration expert demonstrates the solution using the starter system and facilitates discussions around some of the key areas that were identified from the answers for the Level 2 questions in the business-driven configuration questionnaires from the prepare phase. In addition, to help continue discussion around the SCCUI configuration, the configuration expert will also ask the workshop participants the Level 3 questions from the business-driven configuration questionnaires.

The goal of these workshops, overall, is to validate the predefined processes of the standard solution with the company requirements and identify any delta requirements that need further refinement by technical experts during the planning and design workshops. Any delta requirements identified (for analytics, integration, output management, identity and access management, etc.) are then captured in the initial lists that were created in the prepare phase by the technical experts. Prior to the handover of all these backlog items and delta requirements for the planning and design workshops, the configuration experts validate that all the configuration values and requirements have been captured, and they document any additional outcomes that were discussed after the fit-to-standard workshops.

After all backlog items and delta requirements have been handed over to the corresponding technical experts, the further refinement of the delta requirements takes place during a set of planning and designing workshops, in which the technical experts take the businesses requirements and map them to the technical feasibility of the solution. The details of the planning and design workshops, while part of the fit-to-standard process, are located in the Roadmap Viewer in the workstreams where the technical experts are focused.

The goal of these planning and design workshops is to further refine the delta requirements brought up by the business during the fit-to-standard workshops into backlog items that can be easily configured during the realize phase. If the fit-to-standard workshops were executed well—with the necessary self-enablement completed prior...
to each of the workshops to help foster rich discussions with the business—and pro-
vided the planning and design workshops with good inputs, the configuration for the
solution, based on the backlog at the end of the explore phase, will be effective and
efficient.

**Configuration in SAP S/4HANA Cloud, Essentials Edition**
As we’ve discussed, the efficiency of configuring the solution is directly correlated to the
quality and time spent by the business process experts for self-enablement; that is, qual-
ity inputs help create quality outputs. With all the planning completed during the
explore phase, the actual configuration of the solution takes place during the realize
phase. Ideally, this portion of the configuration process should be one of the shortest, as
all the heavy work has been completed up front with only the execution step remaining.

For SAP S/4HANA Cloud, essentials edition, the configuration process follows two-
week sprint cycles, or iterations, where the configuration experts configure and then
transport the configuration from the quality assurance system to the production sys-
tem via a business change project. Note, the planning of these sprints is determined at
the end of the explore phase in the Project Management workstream, where the back-
log is consolidated after all the planning and design workshops and is signed off by the
company.

Each of the configuration sprints follows this iterative configuration approach:
1. Configure
2. Execute test
3. Verify with the business

Some required configuration must take place before system use, so the first sprints
should focus on this configuration prior to the configuration of the functional areas.
Some of the required configuration before system use includes tax solution, profit
center, cost center master data, house bank, and customer specific fiscal year variant.
In addition, during the configuration sprints, additional countries may be added, and
quarterly upgrade cycles may occur that must be taken into consideration during the
planning and the execution of the sprints.

After the configuration sprints are completed, the configured solution is demon-
strated to the project team for solution acceptance prior to company testing.

Even after the solution is deployed to the company, the solution and company will
continuously improve their organizational efficiencies through the expanded use of

the system’s functionality in the run phase. Any new solution scope and additional
countries needed for expansion will be executed as the company continues to fur-
ther use the value-add of the solution.

**5.1.3 SAP S/4HANA Cloud, Extended Edition**
Like SAP S/4HANA Cloud, essentials edition, SAP S/4HANA Cloud, extended edition,
follows a fit-to-standard planning configuration approach. For this product, the
preparation for the planning of configuration is covered by a business-driven config-
uration assessment, fit-to-standard preparation, fit-to-standard system preparation,
and transition planning. The planning of configuration follows and is covered by the
fit-to-standard analysis, solution definition, and planning and design workshops.
Finally, the solution is configured before being deployed. We’ll walk through these
steps in the following sections.

**Prepare for Planning Configuration in SAP S/4HANA Cloud, Extended Edition**
The preparation for planning configuration in SAP S/4HANA Cloud, extended edi-
tion, begins with the configuration expert refining the business-driven configuration
assessment questionnaires so they can be given to the business process experts to
review and answer the Level 2 questions. The answers to these Level 2 questions will
be reviewed and analyzed by the configuration expert prior to the fit-to-standard
workshops, as they will help the configuration expert understand which topics need
further clarification or discussion.

To help drive an efficient and effective fit-to-standard workshop, all the business pro-
cess experts should review the necessary SAP Best Practices material (test scripts and
process flows) for the related scope items that will be demonstrated during the fit-to-
standard workshops. This hands-on experience allows the business process experts
to become familiar with the tools that will used during the fit-to-standard workshops
and to help guide and contribute to the configuration discussions more effectively.

Business process experts should also make themselves familiar with the golden rules
for implementing SAP S/4HANA Cloud, extended edition, as shown in Figure 5.2:

1. Foster a cloud mindset by adhering to fit-to-standard and agile deployment
detailed in SAP Activate.
2. Use preconfigured solutions with predefined processes, and leverage the SAP Fiori
    user experience (UX).
5 Configuration, Data Migration, Extensibility, Integration, and Testing

- Ensure use of modern integration technologies. Use public application programming interfaces (APIs), and provide no native access to APIs that aren’t public.
- Ensure use of modern extensibility technologies. Develop company extensions in a side-by-side approach using the SAP Cloud Platform.
- Ensure transparency on deviations. Any deviation has to be clearly documented as part of the SAP S/4HANA Cloud, extended edition, implementation.

These rules help to foster a cloud mindset and are referenced throughout the Application Design and Configuration workstream. We’ll discuss them further in Chapter 7, Section 7.2.

Figure 5.2 Application of the Golden Rules for SAP S/4HANA, Extended Edition, in the Fit-to-Standard Process

In parallel to the self-enablement of the business process experts, the configuration experts prepare the system that will be used to demonstrate the solution during the fit-to-standard workshops. The configuration expert will prepare the system by enhancing it with additional configuration. Because some of the processes might not fully fit the expected business scope, it’s important to have a predefined and system-based solution before you start the fit-to-standard workshops as it will help foster configuration discussions during the workshops.

Additionally, it’s important to verify the data in the exploration system as it helps to demonstrate the business process in a way that is relevant to the project. If the standard predelivered sample and transactional data isn’t enough for demonstration purposes, additional sample data can be created in the system to further enhance the demonstration processes to be demonstrated. Finally, for the last system preparation step, it’s recommended to execute transactions in the system to populate data in the analytical reports because it will allow the reporting functionality to be demonstrated during the fit-to-standard workshops.

Prior to moving into the next phase, and all throughout the prepare phase, the planning and the objectives of the transition should be defined. The planning of this action plan takes place in the Project Management workstream; however, the outcome of this action plan has an impact on the configuration process as the requirements for adaptation of existing custom code and the development of custom code are clarified.

Planning Configuration in SAP S/4HANA Cloud, Extended Edition

When the preparation is complete, the project team will move into the explore phase to start planning the configuration. The planning, designing, and documentation of the configuration for the solution in the explore phase will serve as a reference during the execution of the configuration of the solution in the realize phase.

Keeping in line with the fit-to-standard approach, each of the workshops should be executed in an iterative manner where the solution is demonstrated, how the business process matches the predelivered solution is discussed, and any of the configuration values and delta requirements are documented. The first golden rule, foster a cloud mindset, and the second golden rule, use SAP Best Practices, should act as guidance for fostering discussions during the workshops.

After the business has completed and documented the backlog items and delta requirements from the fit-to-standard workshops, any further refinement of requirements for technical configuration then go through a planning and designing process. For this round of workshops, the requirements documented are refined further by technical experts. Some examples of requirements that go through this secondary refinement process are analytics, output management, extensibility, integration, and UI design. These requirements are refined during the workshops and converted to backlog items that will be planned into sprints during the release planning prior to the end of the explore phase.

Configuration in SAP S/4HANA Cloud, Extended Edition

After determining what will be included in the initial release, as dictated by the release plan created in the explore phase, the execution of the configuration can take place during the realize phase.
For the configuration of SAP S/4HANA Cloud, extended edition, the execution of configuration follows a series of iterations that incrementally build and test the integrated business and system environment. Typically, configuration takes place in sprints that are time boxed into two-week cycles. During each of these sprints, the configuration expert considers the system configuration, documentation, and unit testing based on the backlog that was planned during the explore phase. This configuration activity is executed per LoB or end-to-end solution.

Following the completion of unit testing, a string test is run within the sprint to test initial solution integration with the business priorities or end-to-end solutions in scope. Note, however, this isn’t a fully loaded integration test and doesn’t replace the text execution that takes place in the Testing workstream later in the phase.

### What Is a String Test?

A string test is performed when more than one related unit test, which is a test intended to isolate and test a single piece of functionality, is done one after another to form a string. Rather than test the functionality of a single application, for example, a string test may check the flow of data from one application to another. Further information on testing and different testing types will be discussed later in this chapter (see also Chapter 7, Section 7.3.5).

Documentation of configuration is key for change management and is also in line with the five golden rules; as a result, it should take place in parallel with the configuration of the solution. Any changes to the configuration that take place after the solution walkthrough and during the bug-fixing portion should be amended or added to the original configuration documentation.

After the solution has been fully configured and deployed to the business to realize the planned value, improvements to the solution may be made as the business periodically updates the system and imitates an innovation cycle in the run phase. Additionally, new functionality may be released that might cause the creation of a strategic roadmap for continuous improvement.

### 5.1.4 SAP S/4HANA

Unlike SAP S/4HANA Cloud, essentials edition and extended edition, the implementation of SAP S/4HANA uses a fit-gap configuration approach for planning configuration. For the Application Design and Configuration workstream of this solution, the

preparation for planning begins with prototyping, planning the transition, and preparing for the transition. The planning of the configuration then follows with a series of fit-gap and delta design workshops that allow the company to identify the gaps between the solution and the company’s business process, and to design, verify, and accept any planned custom configuration. Finally, the system is configured similarly to SAP S/4HANA Cloud, extended edition, with iterations that have the main configuration, a unit test, and a string test that a configuration will walk through for the business. Any bugs or additional feedback taken from this walkthrough session will be addressed and the documentation updated.

We’ll walk through the core phases in this section.

### Prepare for Planning Configuration in SAP S/4HANA

SAP S/4HANA has a wider ability to extend the solution with custom code or with the various extensibility options. Therefore, to properly plan and prepare for the transition, it’s key for the business to understand the value of the innovations to be delivered with the new system. The prepare phase, and start of the configuration process, begins with prototyping, which is a small optional project on its own. Prototyping helps to enable the business to evaluate the value addition with real business scenarios and data. It’s one way the business can start to enable itself on the solution prior to the fit-gap workshops.

To help with the transition and the future value that is to come with this new solution, a first version of an action plan, or transition plan, should be created to serve as the basis for the project plan. This transition plan will constantly be refined throughout the project in the Project Management workstream; however, this plan impacts the Application Design and Configuration workstream by helping to clarify the adaptation of custom code or the development of new custom code, if required. Additionally, topics such as UX and UI strategy are discussed and defined earlier on in the implementation to allow for more efficient and effective design workshops later in the explore phase.

Any of the preparation activities discussed during the transition planning that must take place before the transition project starts should be executed prior to the end of the prepare phase so that the planning for configuration can start.

### Planning for Configuration in SAP S/4HANA

For SAP S/4HANA, the preparation of the system for the fit-gap workshops takes place at the start of the explore phase. The activation of this system is essential to the
overall implementation strategy as it’s the foundation for demonstrating the pre-configured solution during the explore phase.

The activation activities for the sandbox system may vary, however, depending on which of the three implementation scenarios is relevant for the implementation (system conversion, new implementation, or selective data transition).

After the sandbox system to be used for demonstration purposes is prepared, the fit-gap workshops with the business process experts can take place. The purpose of the fit-gap workshops is to validate the predefined scenarios and enhancements in scope for the implementation and to identify potential gaps between the predelivered product and the customer’s requirements following a particular structure (see Chapter 8, Section 8.3.2, for new implementations, and see Section 8.4.2 for system conversions).

The fit-gap workshops, once completed, are then followed by a series of delta design/solution design workshops. During these workshops, the solutions for the prioritized gaps identified are documented and detailed. These delta design documents created are documented in a format that is suitable for communication and that allows for a formal sign-off by the company, after being reviewed by an independent instance. The signed-off designs are then added to the configuration backlog for execution in the realize phase.

Additional workshops, for topics such as UX/UI, security, and data volume, will be executed even after the review and sign off on the delta design documents but prior to the end of the explore phase.

Configuration in SAP S/4HANA

After all the design workshops are completed, and the design documents have been confirmed and signed-off by the company, the execution of the designs that were discussed and determined in the explore phase takes place during the realize phase.

Like the configuration of SAP S/4HANA Cloud, extended edition, the execution of configuration for SAP S/4HANA follows a series of iterations, typically executed through sprints, which incrementally build the system environment. Within each of these sprints, the configuration expert configures, documents, and performs a unit test based on the backlog that was planned during the explore phase.

Prior to the completion of each sprint, a string test is run to test an initial solution integration within the business priorities, or end-to-end solutions, in scope. A fully loaded integration will take place in the Testing workstream later in the phase, and thus this string test isn’t a fully loaded integration test.

Documentation is important throughout the configuration process as it’s used as a reference later in the implementation for key user enablement. Therefore, any changes to configuration that take place after the solution walkthrough and for bug fixing should be captured in the original configuration documentation.

Finally, after the solution has been fully configured and deployed to the business to realize the planned value, additional improvements and innovations may take place as the system is being periodically updated during the run phase.

5.2 Data Migration

All SAP ERP systems require customer-specific master data objects to run the business processes configured in the system. To facilitate the entering of potentially very large volumes during the initial implementation, SAP has developed the SAP S/4HANA migration cockpit along with processes to support the tool. This tool supports both SAP S/4HANA and SAP S/4HANA Cloud implementations.

The SAP S/4HANA migration cockpit assists in transferring business data from a source legacy system to a new implementation of SAP S/4HANA or SAP S/4HANA Cloud. Migration objects are used to identify and transfer the relevant data. A migration object describes how to migrate data for a specific business object to SAP S/4HANA Cloud. It contains information about the relevant source and target structures, as well as the relationships between these structures. Object mapping information for the relevant fields is also stored, as well as any rules used to convert values that are migrated from source fields to target fields. SAP provides predefined migration templates that you can use to structure and load your data.

For SAP S/4HANA Cloud, extended edition, and SAP S/4HANA implementations, SAP provides an additional tool, the SAP S/4HANA migration object modeler (Transaction LTMOM), which allows for modeling custom objects. Detailed documentation is available within the tool.

For SAP S/4HANA Cloud, essentials edition, you can access the SAP S/4HANA migration cockpit by choosing the Migrate Your Data app or the Manage Your Solution app. For SAP S/4HANA Cloud, extended edition, and SAP S/4HANA, Transaction LTMC will open the tool.
The process of data migration can be broken down into the planning and execution of data migration. In planning, the following tasks are performed, as shown in Figure 5.3.

- Selecting appropriate relevant objects
- Downloading templates that will be used for the migration
- Defining specifications for data extraction from the legacy system
- Performing data cleansing activities

For execution, the following tasks are performed:

- Populating data into the migration template
- Uploading the data into SAP S/4HANA
- Validating data and performing value mapping
- Simulating the data migration
- Executing the data migration

Figure 5.3 Data Migration Process

The process of preparing and executing data migration is detailed in the following sections.

5.2.1 Data Migration Preparation

Data migration is a process that can take longer than expected. It’s important to begin preparation shortly after the project start and in parallel with the fit-to-standard workshops. The environment for loading data into your SAP S/4HANA system is the same across all variants of SAP S/4HANA. We’ll use the SAP S/4HANA Cloud, essentials edition, as an example in this section to show the key capabilities. Let’s walk through the key tasks.

Selecting Appropriate Migration Objects

The purpose of this task is to determine the migration objects required for the scope of your SAP S/4HANA Cloud, essentials edition, implementation project and to determine the data sources for these objects. A list of the available migration objects for SAP S/4HANA Cloud, essentials edition, is available within the solution or in SAP Help for SAP S/4HANA Cloud under the Migration Objects for SAP S/4HANA Cloud heading.

Start by determining all master and transactional data objects needed to support the processes detailed in the fit-to-standard workshops. After the list of required objects is determined, the data sources can be mapped to them. In many cases, a legacy equivalent won’t be available, and the field data will need to be created or derived.

Migration Objects

Note that the coverage and functionality for data migration objects expands with each quarterly release of the SAP S/4HANA Cloud, essentials edition. A complete list of objects is available via the SAP Help Portal in the SAP S/4HANA Migration Cockpit topic and in the SAP S/4HANA migration cockpit. Templates should always be checked after an upgrade as they may have changed. More than 100 objects are covered by the tool.

Downloading Templates for Data Loads

The purpose of this task is to download the Microsoft Excel templates needed for uploading the source data. The specific templates can be downloaded from the Migrate Your Data app in a Microsoft Excel XML spreadsheet 2003 format (see Figure 5.4). These files contain the metadata (fields, data type, mandatory fields, etc.) and can help with the data mapping. Downloading the files at this early stage helps you understand the available migration objects and fields, prepare the data, and determine how to fill the templates with the data from the legacy system. Open the *.xml downloaded files with Excel.

The downloaded templates contain an introduction with instructions, a field list, and data sheets per structure. The data sheet contains at least one mandatory structure and additional optional structures depending on the complexity of the migration object. Only mandatory sheets need to be filled; however, after an optional sheet is populated, all the mandatory fields for that structure must be filled.
5.2 Data Migration

5.2.2 Data Migration Execution

Data migration execution takes place during the realize phase. Solution configuration usually uses manually created sample data, however, for user acceptance testing (UAT), the final data should be loaded via the processes that will be used during the production cutover. This will allow both process and data to be tested together. Let’s walk through the key tasks.

Populating Data into the Migration Template

In this task, the project team will populate the data extracted from your legacy system into the migration templates. Figure 5.5 shows the structure of the load template, including description of all fields. Always use the latest templates provided by the SAP S/4HANA migration cockpit for your release and version. Note that the default size limit for each upload file is 100 MB (on-premise and SAP S/4HANA Cloud, extended edition, can be increased to 160 MB using system parameter `icm/HTTP/max_request_size_KB`).

Validating Data and Performing Value Mapping

After the data is loaded into the system, the project team needs to validate the data against the SAP S/4HANA system configuration. After uploading the values, you can start the transfer, which will map the values against SAP internal values (e.g., country codes). The project team then performs value mapping according to the translation rules.

Performing Data Cleansing Activities

Prior to converting data from the legacy system to SAP S/4HANA, it’s a good opportunity to remove or update records that are obsolete or don’t meet current standards. By doing this, the data load volume will be less and the user experience better in the new system. This process can be time-consuming so it should be started as soon as possible.

Defining Specifications for Data Extraction from Legacy Systems

Extracting data from the legacy systems to populate into the new system simplifies the manual effort required for starting productive use of a new system. In this task, the specifications for extraction of data from the legacy system are created, and any related legacy system reporting/development is initiated. Because master data and transaction data can change frequently, the process must be created so that it can be efficiently executed during the cutover to production. Data that will be manually entered also requires a specification so that it can also be efficiently executed during the cutover.

Uploading Data into SAP S/4HANA

In the realize phase, iterations of data loads are performed to perfect the data and process. One or more filled-out template files for each migration object are loaded into the Migrate Your Data app. The data is then stored in the staging area of the SAP S/4HANA migration cockpit, where you can review the uploaded files and delete and upload them again if you encounter errors. For every object in the tool, you can also find documentation on how to test and validate the migrated data.
Simulating the Data Migration

We recommend that the project team execute a simulation of the data load using the SAP S/4HANA migration cockpit. This activity will simulate the migration of your data through the relevant application interfaces without committing the data to your actual database tables. The team should resolve any issues resulting from the simulation process, which may require adjusting configuration or business logic.

Executing the Data Migration

After all the steps have been performed, and the project team is confident in the data quality, you can proceed with loading the legacy data into the system. See Figure 5.6 for an example data migration project in the SAP S/4HANA migration cockpit. As you can see, the project header contains name and key information about the project, and the lower section of the screen shows the migration objects included in the project and their migration status.

![Figure 5.6 Data Migration Project](image)

5.2.3 Process Alternatives

In addition to the upload feature, SAP provides two enhanced methods for higher volume migrations:

- **Transfer using staging tables**
  
  For data migrations that contain large data volumes, a staging area can be created in SAP Cloud Platform and can be filled with extract, transform, and load (ETL) tools. To use this option with SAP S/4HANA Cloud, it must be activated by SAP via a ticket on component XX-S4C-OPR-SRV.

  Further Resources
  
  For more information, see SAP Note 2733253 – FAQ for SAP S/4HANA Migration Cockpit – Transfer Option: Transfer Data from Staging Tables.

- **Transfer directly from another SAP system**
  
  This new migration approach that is delivered with SAP S/4HANA 1909 allows you to directly transfer data from SAP source systems to SAP S/4HANA. The migration cockpit selects the migration objects in the source system with the help of predefined selection criteria and directly transfers them to the SAP S/4HANA target system via a remote function call (RFC) connection.
Further Resources
For the most current information on setting up and using the direct transfer functionality, see SAP Note 2747566 – SAP S/4HANA Migration Cockpit: Composite Note for Transfer Data Directly from SAP System.

5.3 Extensibility

Most SAP S/4HANA and SAP S/4HANA Cloud systems have been extended to fulfill companies’ needs. Therefore, extensibility includes changes to software behavior that go beyond the capabilities of business configuration, data model extensions, data exposure and integration, layout changes to UIs or forms and reports, and creation of new UIs and business’s own applications.

The following resources are used for extending the SAP S/4HANA application:

- **SAP Extensibility Explorer**
  This provides you with a comprehensive overview of extension options for SAP S/4HANA Cloud. You can explore a range of extensibility patterns using different sample scenarios.

Further Resources
For more information about SAP Extensibility Explorer, refer to http://s-prs.co/v502719.

- **SAP API Business Hub**
  This is a central, publicly available overview of APIs on SAP Cloud Platform. It includes API design and API documentation for each API or service. You can access it at https://api.sap.com.

Figure 5.7 shows the big picture of SAP S/4HANA extensibility.

As you can see, there are two approaches to extensibility:

- **In-app extensibility**
  This approach is taken directly within the software stack and allows for extensibility directly in the application, for example, field extensibility or application logic extensibility. This allows standard functionalities to be adapted to user requirements without the need for any external tools. Some key features of in-app extensibility are as follows (see Figure 5.8):
  - Adapts standard functionalities to user and business requirements
  - Ranges from small UI adaptions to complex custom business logic
  - Suited for technical and nontechnical users
  - Update-proof changes

- **Side-by-side extensibility on SAP Cloud Platform**
  This broader approach uses all the capabilities of a platform-as-a-service (PaaS) platform. This is used for extensions of application capabilities that can’t be achieved with in-app extensibility or are better to be stored in separate applications for purposes of upgradability. This includes the following and can integrate with both cloud and on-premise versions:
  - Developing dependent extensions
  - Developing your own custom application
  - Consuming existing apps

---

**Figure 5.7 SAP S/4HANA Extensibility: Big Picture**

Legend:
- Business Layer
- Application Layer
- User Interface Layer
- Application Layer, Application Layer, and Database Layer

End-to-End Security/End-to-End Lifecycle Management

**Legend:**
- Security/Security
- Application Layer
- User Interface Layer, Application Layer, and Database Layer
In-App Extensibility

The extensibility tools are designed for the cloud but are also made available in the on-premise solution. Both cloud and on-premise have some differences with respect to transport setup and gateway setup. In the on-premise version, the key user extensibility and classical ABAP development tools can be used in parallel.

The various phases of implementation related to extensibility in cloud and on-premise solutions are shown in Figure 5.9:

1. **Prepare phase**
   During the prepare phase of the implementation, the project team will prepare a list of all the extensions required for smooth running of the company’s business. The result of these discussions will be an Excel file with a consolidated list of extensions.

2. **Explore phase**
   During this phase, the project team should check for available products and review the details for the extensions collected in the prepare phase. After dividing the extensions between in-app extensibility and side-by-side extensibility, the company does a thorough review and sign-off of each extension. The various workshops are conducted by each LoB to identify the list of extensions after reviewing the existing processes in SAP Best Practices flows.

3. **Realize phase**
   During this phase, all the various extensions are developed and tested in the quality landscape. Once passed in the quality landscape, all extensions are transported to the production system and are deployed.
5.4 Integration

An intelligent enterprise is an integrated enterprise. All enterprises are looking to achieve three main scenarios using integration platforms: real-time digital interactions, simplified connected experiences, and process excellence. To do so, the organizations aim to integrate the various systems in their business and IT environment. SAP provides a means to do that in the SAP Cloud Platform Integration, which helps you do the following:

- Integrate anything (people, things, processes, data, and applications), anywhere (on-premise, in cloud, using edge computing) with versatile cloud integration.
- Share real-time data with your supply chain, business networks, and customers with well-managed APIs.
- Orchestrate people, processes, events, and things with process and data integration.
- Automate decision-making with dynamic business rules.
- Enable omnichannel experiences across devices and channels with well-managed APIs.
- Streamline workflows.

The various options of integration for SAP S/4HANA are as follows:

- SAP APIs
  SAP releases APIs to enable companies digitizing their business to securely connect apps to other systems. The published SAP APIs can be found at http://s-prs.co/v502720 (cloud) and http://s-prs.co/v502721 (on-premise).

- Core data service (CDS) views
  SAP releases CDS views to read data from the SAP S/4HANA system as OData services.

- Traditional APIs
  Business Application Programming Interfaces (BAPIs)/IDocs can be used to connect SAP S/4HANA Cloud with SAP on-premise applications.

The SAP Activate methodology implementation roadmaps help by providing a recommendation list of deliverables in each phase and a process description in the form of tasks and accelerators (templates, examples, guides, and web links) in a user-friendly format to a project team. Whatever the SAP S/4HANA solution you’re implementing—SAP S/4HANA, SAP S/4HANA Cloud, essentials edition, or SAP S/4HANA Cloud, extended edition—SAP Activate offers a wide range of accelerators and step-by-step processes for implementing any solution.

Figure 5.10 shows the extensibility-relevant deliverables and tasks in the SAP Activate implementation roadmap for SAP S/4HANA Cloud implementation.

![Figure 5.10 SAP Activate Methodology for SAP S/4HANA Cloud: Integration](image)

The various phases of the SAP Activate methodology for any SAP S/4HANA solution for integration are discussed in the following sections.

5.4.1 Prepare

In the prepare phase, the project team is formed, the scope is refined, and the project gets underway. From the integration standpoint, there are several key decisions and steps that the team needs to do that we’ll explain in this section.
Let’s walk through the key deliverables:

- **SAP supporting implementation tools access**
  To begin, we start with accessing the supporting implementation tools. In this deliverable, the company gets access to various tools available in SAP S/4HANA, such as the following:
  - Request for SAP Cloud Platform Integration access
  - Request for Cloud Integration Automation service

- **Company team self-enablement**
  Next, the company moves on to team self-enablement. The company team will read all the help related to various tools, which will be helpful in the implementation process. Some of these tools are as follows:
  - **Cloud Integration Automation service**
    This is a cloud service that allows users to create their own guided, partially automated procedures for the integration of scenarios. After a procedure is defined and is available, the Cloud Integration Automation service can help companies do the following:
    - **Role based execution**: Tasks are assigned to the right person based on role assignments.
    - **Integrated parameter management**: Data can be entered once and reused throughout the workflow.
    - **System landscape information**: This information is available as a dropdown list from known company SAP systems.
    - **Traceability of activity**: Information is provided on who did which steps in the integration.
  - **Open connectors**
    The various accelerators provided in the roadmaps will help users familiarize themselves with open connectors on SAP Cloud Platform for customer-driven integration and side-by-side extensions.
  - **Business-to-business (B2B) integrations using Electronic Data Interchange (EDI)**
    This provides information about integration between SAP S/4HANA and third-party systems (e.g., suppliers and buyers) leveraging API enabled EDI integration. There are various scope items available under EDI integration.
  - **Project plans, schedule, and budget**
    All the planning activities related to the early stages of a project and its schedule and budget are completed in the next deliverable. All the alignment of project schedules and key milestones as follows are considered:
    - Different system landscape provisioning
    - System landscape configuration start date
    - System landscape configuration completion date
    - Testing in the quality system landscape and the production system landscape
    - System operations related to the software update schedule

- **Business-driven configuration assessment**
  In the business-driven configuration assessment deliverable, various accelerators are provided in the SAP Activate methodology related to questionnaires for each LoB.

- **Fit-to-standard analysis preparation**
  Finally, for fit-to-standard analysis preparation, the company will download the SAP Best Practices content and select the various scope items corresponding to their business needs. A list of initial integrations and APIs is provided as an accelerator for preparing the list of the company’s current integrations.

5.4.2 Explore
In this phase, the project scope is validated, and it’s confirmed that the business requirements can be satisfied by selecting the SAP Best Practices scope items. Any gaps and configuration values are added to the backlog for use in the next phase.

Let’s walk through the key deliverables:

- **Fit-to-standard analysis**
  The various LoB-specific workshops are conducted, and SAP Best Practices flows are reviewed. The various accelerators are provided in each roadmap.

- **Solution definition**
  All the documentation captured in each workshop is complete.

- **Integration planning and design**
  The optimized list of integrations is planned and designed, which will be tested in the realize phase of the implementation. The various integrations listed are delegated to the integration expert team who will plan, map, and draft the step-by-step process for each integration. The various tasks involved in this deliverable are as follows:
5.5 Testing

SAP Activate covers a range of testing processes and activities across the many SAP solutions, including SAP S/4HANA, SAP S/4HANA Cloud, essentials edition, and SAP S/4HANA Cloud, extended edition. This section will give you insight on how the Testing workstream activities are executed and the upgrade testing activities are run.

5.5.1 SAP S/4HANA Cloud, Essentials Edition

The Testing workstream in the SAP S/4HANA Cloud, essentials edition, implementation roadmap guides project teams through the test planning, preparation, execution, and quarterly release activities for a successful testing outcome. The Roadmap Viewer includes the entire SAP Activate workstream suite and can be filtered on workstreams, such as Testing, for a more focused view of the upcoming testing activities and milestones.

The first step in the Testing workstream starts in the explore phase for planning all the testing activities, including enabling the project team in the test automation tool for SAP S/4HANA Cloud, test strategy creation, and scheduling the test plan. Enabling of the test automation tool for SAP S/4HANA Cloud will easily guide the project team as they familiarize themselves with the tool and understanding the many applications built in to the tool itself, along with enabling of the testing accelerators to set the Testing workstream foundation.

In the realize phase, the project team starts the testing preparation activities, which include the prerequisites such as preparing for the quarterly releases that occur during mid-project, identifying the availability of the testers, using a test management system (if used), or ensuring the availability and accessibility of the test automation tool for SAP S/4HANA Cloud (which is built in to the solution).

The project team must understand the changes that have occurred during the mid-implementation point of the project (where a quarterly upgrade has occurred) to ensure the impact of the project has been addressed, understood, and adapted.

The project kick-off meeting occurs, and the team is onboarded with the necessary tool setup, knowledge transfers, and user IDs for the systems needed for the project implementation.

The test automation tool for SAP S/4HANA Cloud is accessible via the Manage Your Solution app. Within the Manage Your Solution app, the Manage Your Test Processes app and Test Your Processes app allow for automated testing via automated test scripts that are delivered by SAP, adapted, or created by the company. Some business processes can’t be automated via the test automation tool for SAP S/4HANA Cloud, such as integration processes, analytics, or output documents. For such processes or process steps, a manual test needs to be considered.

The next activity includes configuring the test automation tool for SAP S/4HANA Cloud. The tool is connected to the SAP S/4HANA Cloud quality assurance system, which is where the business/test users are added and maintained with their respective roles to launch the solution applications. Following the configuring of the test automation tool for SAP S/4HANA Cloud, the team needs to define the details of the test case. SAP Best Practices Explorer has all the predelivered scope items, process
flows, test scripts, and additional documentation needed for the testing team to understand the business processes and how they are connected. The test case is a combination of a test process and test data. A test process can be tested with several test data variants. Where possible, we recommend that the master data within your test data be data sets that are also available in your productive environment (e.g., material master).

Following defining the test case, the project team prepares the automated test scripts in the test automation tool for SAP S/4HANA Cloud, which covers individual business scenarios and test data. With the solution, standard test automations are delivered as mentioned previously with the SAP Best Practices Explorer content and test scripts. SAP S/4HANA Cloud, essentials edition offers an excellent suite for testing deliverables for project teams and companies alike. The built-in testing platform in the Manage Your Solution app gives you the ability to create manual and customized test cases for more unique business processes, along with the option to leverage predelivered test scripts that are more streamlined and are ready immediately for testing activities.

Per industry standards, we strongly recommend project teams use the test automation tool for SAP S/4HANA Cloud within the solution due to its many advantages. In addition, the SAP S/4HANA Cloud, essentials edition testing environment offers the benefit of having the SAP team run the predelivered test scripts—post-upgrade—to ensure the quarterly upgrade updates run smoothly (with the consent of the company/project team allowing SAP to run this in the backend). This adds an extra benefit layer of confirmation to ensure that the test scripts don’t have any bugs, defects, or failures so that the company can have peace of mind letting SAP taking on this action versus the company executing these processes and adding additional time.

The option of adding manual test cases and customized test cases is also available if additional test scripts beyond the predelivered ones are needed. SAP encourages the company/project team to minimize the use of custom and manual test scripts because as each upgrade release occurs, the test scripts need to be evaluated to ensure they are still running smoothly and accurately. This is required because the automated test tool doesn’t test these types of custom scripts, adding additional time and effort to confirm that the steps in these cases were run successfully.

Project teams can edit the action data and change the visibility of the test processes to modify actions in company-specific automated test scripts and to manage the visibility of test cases.

The final set of testing activities in the explore phase is test execution, which includes creating the test plan, changing test data using data variants, executing the test plan, correcting and rerunning the test plan to remove any errors or messages, and then analyzing and reporting the testing outcomes. These tasks are based on the previous planning the project team has done in subsequent phases to ensure the most successful execution of testing activities. To create the test plan in the test automation tool for SAP S/4HANA Cloud, you include standard and/or custom test processes in the sequence that defines the end-to-end business flow. Data should be reviewed and/or modified using data variants.

Next, the test plan is executed. With the test automation tool for SAP S/4HANA Cloud, test scripts can be easily run in the solution and give you status updates during the test execution process, including screenshots, status progress (i.e., Pass, Failed, In Progress), and the ability to run test scripts with execution schedules that can be run in the background (see Figure 5.11). After the test plan has been executed, identified errors must be resolved and rerun to ensure accuracy. After all errors have been resolved, the team generates, views, and analyzes the report of the test results for the Executed Test Processes, Customer Test Plans, and Post Upgrade Test Plans on the Test Result dashboard available in SAP S/4HANA Cloud, essentials edition.
Finally, the run phase occurs, which is where (once again), the quarterly release cycle occurs, and all changes must be addressed, understood, and adapted by the implementation team to ensure testing and solution consistency. They must execute regression testing and ensure that all tests run smoothly.

### 5.5.2 SAP S/4HANA Cloud, Extended Edition

As with other solutions as well, test planning is the first set of testing activities performed in the explore phase to set the stage for the remainder of the Testing workload for the project deployment. Putting extra attention on detail in the beginning stages of the planning will minimize risk for gaps, rework, and additional changes. This is where the test strategy is outlined that covers the testing objectives and assumptions, scope, testing cycles, approach, tools, defect management, and roles and responsibilities. In addition, enablement of the testing processes should be understood and learned by all testing members.

The test scope needs to be determined early for a project, regardless of whether the project is executed independently or as part of a release, to ensure the testing environments and materials are available for execution. With such a variety of testing cycles available (e.g., integration, regression, performance, cutover, and UAT), it’s important to define the cycles that are required to support the planned conversion event.

After the explore phase testing activities have concluded, the realize phase begins. In this phase, test preparation and execution are the main activities the testing team executes. Test preparation includes determining the test scope and reviewing the solution documentation. When new changes are made to the solution, the team must determine and understand the critical business processes impacted by using a change impact analysis. Next, the preparation for testing occurs. This stage includes determining availability of the testers, identifying the test management system, developing test cases, and assigning test packages to the testing team members.

After the test planning, the test execution is performed to execute the testing cycles, which include integration, regression, and UAT. The chosen test suite is utilized (e.g., SAP Solution Manager), and the outcomes of the analysis and reporting are documented.

SAP Solution Manager is a highly recommended test manager that provides project teams with built-in test management, defect coordination, and execution of test scripts. The defects and incidents reported during testing in SAP Solution Manager can be managed using the IT Service Management (ITSM) component. The test case and incident message are linked to each other and can be called directly from status reporting for further analysis. After all activities in the realize phase are executed and completed, the run phase begins.

The run phase testing activity is to ensure the solution is operating smoothly and efficiently for daily operations after the solution is live post-deployment. At this stage, the company support organization is responsible to operate the new solution, and this impacts the IT support services, team, processes, and tools. The company is recommended to seek continuous improvement to maintain the integrity of the new solution and post solution updates; this includes performing system health checks (SAP EarlyWatch Alerts), ensuring business continuity and operability of the solution, and continuously improving IT operations for maximum benefit. Additionally, the company should periodically update the SAP system for maximum efficiency and initiate a new innovation cycle with the latest innovations from SAP.

### 5.5.3 SAP S/4HANA

SAP S/4HANA testing is based on on-premise activities and testing tools that are different from the two cloud solutions. With the Transition to SAP S/4HANA implementation roadmap, there are three scenarios that can occur for a project deployment: new implementation, system conversion, and selective data transition (see Chapter 8). We'll focus on the on-premise guidance in this section and walk you through the Testing workstream in the explore and realize phases.

The Testing workstream begins with the test planning activities that occur in the explore phase. The main activities include the following:

- Familiarizing yourself with the tools in test management
- Setting up test management in SAP Solution Manager
- Determining the test scope
- Performing detailed test planning

It’s strongly encouraged to finalize the planning for testing as early as possible and outline and identify the project scope, testing objectives and assumptions, types of testing, approach, tools, defect management, and roles and responsibilities of the testing team to minimize the number of risks and issues going forward. Having a solid ground for these key elements sets the road for smoother testing activities and milestones for the project deployment.
Teams must understand the test tools in test management and the setup of SAP Solution Manager as these will be used heavily during multiple key events. Multiple resources are available to the project team to fully familiarize themselves with the testing learning journey (see Figure 5.12). If you’re using SAP Model Company, the technical activation of SAP Model Company is explained in a handover workshop that is part of the SAP Model Company package. The procedures differ per SAP Model Company. SAP Value Assurance and SAP Model Company nicely fit with each other.

Figure 5.12  SAP Solution Manager Test Suite Overview

Next, the scope of testing for a project, regardless of whether the project is executed independently or as part of a release, needs to be determined early to ensure the testing environments and materials are available for execution. With such a variety of testing cycles available (e.g., integration, regression, performance, cutover, and UAT), it’s important to define the cycles that are required to support the planned conversion event.

The last activity, which closes out the explore phase, is detailed test planning. This is where the scoping and planning of the test is required for the transition project to determine which testing cycles are required to meet the quality gate conditions for entering the realize phase. This includes evaluating and enabling test management and the test automation tools to support the testing activities across milestones, as well as executing tasks using application lifecycle management (ALM) best practices for test management and tailoring the templates for the test strategy and functional test plan to meet the project team needs. In addition, the detailed testing plan should support the need to mitigate risks that may arise for the end-state solution and during cutover activities.

The last phase in the Testing workstream for the Transition to SAP S/4HANA implementation roadmap encompasses the following:

- Execution plan for the realize phase
- Test preparation
- Test execution

Let’s take a dive into these last three key components of the Testing workstream.

The purpose of the execution plan for the realize phase is to execute the work defined, manage the sprints/testing as defined previously, log all issues, and document them in the system for traceability. Furthermore, the project team manages the integration, security, and UAT.

Next, the test preparation task and objective is to prepare all business-process-related tests according to customer-specific configurations. Preparing the tests is based on determining the evaluation of the existing test materials, which were identified in the explore phase (i.e., testing plan), and other assets for execution of the testing cycles. Any missed test materials and test scripts that are realized must be developed in accordance with the detailed test plan to capture all testing-critical materials and documentation. Testing teams can leverage the fully ready and detailed test scripts, process flows, and other documentation via SAP Best Practices Explorer. SAP Best Practices Explorer provides scope item content and documentation for project teams to leverage and use ready-to-access content and assets easily and quickly with the ease of the tool navigation and the added benefits it provides.

Lastly, test execution occurs by performing integration, regression, and UAT testing activities. The testing team prepares a test environment with the required test data as defined previously in the Testing workstream. After all criteria have been collected and defined, test execution can begin.

Typical testing processes for the realize phase are as follows:

- Software developers perform unit tests in the development systems. Depending on the type and scope of the test cycle, various functional tests are performed.
- Manual testers are provided with the tester handout document and receive details regarding their test package by email.
- Automated tests are scheduled or started directly.
Every test that is executed is logged and documented with test notes, and a test status is set manually or automatically.

If the system responds in an unexpected way during manual testing, for example, if an error message appears, the tester records the incident in the corresponding ITSM system, attaching screenshots, log messages, and so on. Usually, this also must be done manually, even for automated tests.

The incident is sent to the persons responsible for the analysis and categorization of defects, who then correct the defect in the development system.

The correction is transported to the test system according to the existing arrangements and timelines, where it’s then retested.

Further Resources
For additional details, see the test execution deliverable in the realize phase in the Transition to SAP S/4HANA implementation roadmap in the Roadmap Viewer.

The objective of integration testing is to perform the end-to-end process integration between all SAP and non-SAP components of the solution landscape and validate that all application systems are functioning properly as intended. Integration testing in combination with regression testing ensures that all business scenarios have been tested prior to UAT. UAT is then performed by the users who will be using the solution after the project team is finished with the implementation to ensure the solution is working as it should with the company’s various end-to-end business processes. During the test execution in the various testing cycles, defects and bugs should be logged in SAP Solution Manager for defect resolution and tracking. Additionally, all testing details are tracked in SAP Solution Manager as well in a central tool location. After these two phases are executed and completed, the Testing workstream concludes.

5.6 Summary

This chapter introduced the key topic areas of configuration fit-to-standard or fit-gap (depending on the solution), migration, extensibility, and testing across the solutions. It’s important to recall that these and previous activities require added attention to ensure the planning and execution that was performed in previous phases was captured correctly to avoid any unforeseen setbacks during the project implementation.

Then, configuration was performed to meet the business processes, data migration and extensibility were executed, and test cases and plans were tested to ensure that all the previous workstream activities are in alignment and passed successfully to meet the project standards with the solution capabilities.

In the next chapter, we’ll discuss how to apply agile techniques and processes in the content of a SAP S/4HANA project. We’ll describe the agile project team roles, governance, and key agile processes from release planning through execution of sprints that form the foundation for the agile approach.
Contents

Foreword ............................................................................................................................... 17
Preface ..................................................................................................................................................... 19

1 SAP S/4HANA Fundamentals ......................................................................................................... 25

1.1 Transition into an Intelligent Enterprise ........................................................................... 26
  1.1.1 Preparing Businesses for a Fast-Changing Future ..................................... 27
  1.1.2 The Evolving Nature of Data ............................................................................. 28
  1.1.3 Adoption of Intelligent Technology ....................................................... 28

1.2 Key Technologies ................................................................................................................. 29
  1.2.1 SAP S/4HANA ................................................................................................. 29
  1.2.2 SAP HANA ........................................................................................................ 32
  1.2.3 SAP Fiori ............................................................................................................. 35

1.3 Deployment and Operating Models ........................................................................... 38
  1.3.1 Cloud ............................................................................................................. 39
  1.3.2 On-Premise ....................................................................................................... 40
  1.3.3 Hybrid ............................................................................................................. 41
  1.3.4 Deployment Considerations with SAP S/4HANA .................................. 41

1.4 Deployment Approaches .................................................................................................. 42

1.5 Summary ................................................................................................................................. 45

2 Introduction to SAP Activate .................................................................................................. 47

2.1 SAP Activate Key Concepts ............................................................................................. 47

2.2 Components of SAP Activate ........................................................................................... 53
  2.2.1 SAP Best Practices .......................................................................................... 54
  2.2.2 Methodology ..................................................................................................... 56
  2.2.3 Tools for Adoption and Extensibility ....................................................... 58
5 Configuration, Data Migration, Extensibility, Integration, and Testing

5.1 Business-Driven Configuration
5.1.1 Configuration Approaches
5.1.2 SAP S/4HANA Cloud, Essentials Edition
5.1.3 SAP S/4HANA Cloud, Extended Edition
5.1.4 SAP S/4HANA
5.2 Data Migration
5.2.1 Data Migration Preparation
5.2.2 Data Migration Execution
5.2.3 Process Alternatives
5.3 Extensibility
5.4 Integration
5.4.1 Prepare
5.4.2 Explore
5.4.3 Realize
5.5 Testing
5.5.1 SAP S/4HANA Cloud, Essentials Edition
5.5.2 SAP S/4HANA Cloud, Extended Edition
5.5.3 SAP S/4HANA
5.6 Summary

6 Agile Project Delivery

6.1 Roles, Responsibilities, and Governance
6.1.1 Roles
6.1.2 Events
6.1.3 Artifacts
6.2 Creating and Managing the Backlog
6.3 Agile Realization
6.3.1 Defining Release and Sprint
6.3.2 Anatomy of a Sprint

7 Deploying SAP S/4HANA Cloud

7.1 Deployment of SAP S/4HANA Cloud, Essentials Edition
7.1.1 Discover Your Solution
7.1.2 Prepare Your Project
7.1.3 Explore the Solution
7.1.4 Realize Your Requirements
7.1.5 Deploy Your Solution
7.1.6 Run Your Solution
7.2 Golden Rules for Implementing SAP S/4HANA Cloud, Extended Edition
7.2.1 Rules and Benefits
7.2.2 Rule 1: Foster a Cloud Mindset
7.2.3 Rule 2: Use Preconfigured Solutions and Leverage SAP Fiori
7.2.4 Rule 3: Use Modern Integration Technologies
7.2.5 Rule 4: Use Modern Extensibility Technologies
7.2.6 Rule 5: Ensure Transparency on Deviations
7.3 Deployment of SAP S/4HANA Cloud, Extended Edition
7.3.1 Deployment Approach and System Landscape
7.3.2 Discover Your Solution
7.3.3 Prepare Your Project
7.3.4 Explore the Solution
7.3.5 Realize Your Requirements
7.3.6 Deploy and Run Your Solution
7.4 Summary
8 Deploying On-Premise SAP S/4HANA

8.1 Deployment Project Overview ................................................................. 312
8.2 Discovering the Solution and Planning Your Journey ......................... 315
  8.2.1 Strategic Planning ................................................................. 316
  8.2.2 Trial System Provisioning ...................................................... 317
  8.2.3 Application Value and Scoping ............................................. 318
8.3 New Implementation ............................................................................. 323
  8.3.1 Prepare Your Project ................................................................. 325
  8.3.2 Explore the Solution ................................................................. 332
  8.3.3 Realize Your Requirements .................................................... 353
  8.3.4 Deploy Your Solution .............................................................. 375
  8.3.5 Run Your Solution ................................................................. 379
8.4 System Conversion .............................................................................. 383
  8.4.1 Prepare Your Project ................................................................. 385
  8.4.2 Explore the Solution ................................................................. 394
  8.4.3 Realize Your Requirements .................................................... 417
  8.4.4 Deploy Your Solution .............................................................. 431
  8.4.5 Run Your Solution ................................................................. 434
8.5 Selective Data Transition ...................................................................... 437
8.6 Summary .............................................................................................. 444

9 Deploying Hybrid System Landscapes .................................................. 445

9.1 What Is a Hybrid Two-Tier ERP Setup? ............................................... 446
  9.1.1 Headquarters and Subsidiary Setup ........................................... 448
  9.1.2 Corporate Noncorporate/Affiliate Setup ................................... 448
  9.1.3 Central Services Setup ............................................................. 449
  9.1.4 Ecosystem Setup ...................................................................... 450
9.2 Move Options ...................................................................................... 452
9.3 Master Data ......................................................................................... 454
  9.3.1 Data Replication Framework .................................................. 455
  9.3.2 Replication Based on APIs ...................................................... 459

9.4 Finance ............................................................................................... 461
  9.4.1 Financial Planning ..................................................................... 461
  9.4.2 Financial Consolidation ............................................................ 465
  9.4.3 Centralized Customer Payments .............................................. 472
  9.4.4 Treasury Payment Request Integration ..................................... 474
9.5 Sales ..................................................................................................... 476
  9.5.1 Subsidiary as a Local Sales Office ............................................. 477
  9.5.2 Drop Shipping .......................................................................... 479
  9.5.3 Returns Handling ..................................................................... 484
9.6 Procurement .......................................................................................... 486
  9.6.1 Procurement Handled Directly by Subsidiary .............................. 487
  9.6.2 Centralized Procurement at Headquarters ................................ 488
  9.6.3 Centralized Contracting from Headquarters ............................ 490
  9.6.4 Centralized Scheduling Agreements from Headquarters .......... 494
9.7 Manufacturing ..................................................................................... 495
  9.7.1 Production at Subsidiaries .......................................................... 496
  9.7.2 Assembly at Subsidiaries with Components Provided
    by Headquarters ........................................................................... 499
  9.7.3 Integration with Manufacturing Execution Systems ................. 502
  9.7.4 JIT Calls .................................................................................. 504
9.8 Integration ............................................................................................ 506
  9.8.1 Integration Approaches ............................................................. 507
  9.8.2 Monitoring and Extensibility .................................................... 511
9.9 Accelerators ......................................................................................... 512
  9.9.1 Download Accelerators ............................................................. 512
  9.9.2 Master Data Handling with SAP Cloud Platform-Based Workflows
    by Headquarters ........................................................................... 513
  9.9.3 Finance Master Data Replication .............................................. 514
  9.9.4 Purchase Order to Sales Order Automation .............................. 516
  9.9.5 Billing Document to Supplier Invoice Automation ..................... 517
9.10 Analytics and Reporting ..................................................................... 518
  9.10.1 Analytics via SAP Business Warehouse Tools ......................... 519
  9.10.2 Central Analytics on SAP Cloud Platform ............................... 520
  9.10.3 Central Analytics on SAP Analytics Cloud .............................. 521
  9.10.4 Ad Hoc Custom Reporting ..................................................... 522
9.11 Summary ............................................................................................ 523
10 Organizational Change Management 525

10.1 OCM and Digital Transformation ................................................................. 525
10.2 OCM Activities in SAP Activate ................................................................... 526
  10.2.1 Discover .............................................................................................. 528
  10.2.2 Prepare .................................................................................................. 528
  10.2.3 Explore .................................................................................................. 529
  10.2.4 Realize ................................................................................................... 531
  10.2.5 Deploy ................................................................................................... 532
  10.2.6 Run ........................................................................................................ 532
10.3 Transition to the Customer Center of Expertise .......................................... 532
  10.3.1 Organizational Readiness in the Customer Center of Expertise ............ 533
  10.3.2 Capabilities Framework ...................................................................... 533
  10.3.3 Roadmap for Organizational Readiness .............................................. 535
  10.3.4 New Roles with SAP S/4HANA Cloud .............................................. 536
10.4 Team Enablement and Self-Enablement ...................................................... 539
10.5 SAP Enable Now .......................................................................................... 540
10.6 Summary ..................................................................................................... 542

11 SAP Activate for Other SAP Products 545

11.1 SAP Activate for SAP SuccessFactors .......................................................... 545
11.2 SAP Activate for SAP Analytics Cloud ......................................................... 548
11.3 SAP Activate for SAP S/4HANA Upgrade and Integration ......................... 550
11.4 Additional SAP Activate Methodology Roadmaps ....................................... 552
11.5 Summary ..................................................................................................... 553

Appendices 555

A SAP Activate Certification Preparation .......................................................... 555
B The Authors .................................................................................................... 577

Index .................................................................................................................. 583
### Index

<p>| Asset management workshops | 30 | Business user role documents | 339 |
| Business scoping | 109 |
| Assign Form Template app | 261 |
| Cross-functional capabilities | 30 |
| Authorizations | 273, 337, 402 | Cross-System Company Codes app | 457 |
| Automated test scripts | 180 | Custom code | 118, 161, 388 |
| Automobile industry | 499, 504 | adjust | 420 |
| Availability &amp; Dependencies matrix | 99 | clarify adoption | 389 |
| Availability checks | 483 | clean up | 391 |
| Available-to-promise (ATP) | 497 | impact | 406 |
| B | | Central quality | 81 |
| Backlog grooming | 207 | worklist | 394, 416, 430 |
| Backlog items | 192, 195–198 | Custom Code Migration app | 391, 406 |
| demo | 205 | Custom Development Management | 407 |
| flow regions | 206 | Cockpit | 363, 422 |
| gaps and requirements | 401 | Custom developments | 363, 422 |
| requirements and gaps | 336 | Custom objects | 406 |
| Billing documents | 483, 498, 501 | Customer Center of Expertise | 327, 525, 532 |
| accelerator | 517 | activities | 535 |
| Blog posts | 80 | capabilities framework | 533 |
| Blueprint | 196, 236, 337 | discover phase | 535 |
| Bottom-up approach | 461 | new roles | 536 |
| Bug fixing | 362, 419, 420 | organizational readiness | 533 |
| Build sprints | 201 | roadmap | 535 |
| Business Application Programming | | solution orchestration | 534 |
| Interfaces (BAPIs) | 174 | Customer Interaction Center (CIC) | 273 |
| Business case | 523 | Customer portal | 473, 474 |
| Business challenges | 27 | Customer team enablement | 68 |
| Business objectives | 42 | Cutover | 268 |
| Business partners | | define approach | 326 |
| accelerator | 513 | new implementation | 372, 377 |
| replication | 458 | SAP Fiori | 360 |
| Business process experts | 152, 157, 162 | SAP S/4HANA | 360 |
| fit-to-standard workshops | 152 | SAP S/4HANA Cloud, edition | 307 |
| Business process flows | 127 | system conversion | 429 |
| document | 239 | Cutover plans | 265, 268 |
| Business process improvement | 113 | workshop | 265 |
| Business process monitoring | 112 | Cutover schedule | 265 |
| Business process operations | 116 | Daily Scrum | 195 |
| Business process ownership | 198 | Daily team meetings | 204 |
| Business rules | 262 | Cloud archiving | 342, 364, 407 |
| Business scenarios | 320 | Data cleansing | 166, 242 |
| design | 352 | Data collection | 468 |
| design documents | 394, 403 | Data deletion | 342 |
| C | | Data enrichment | 459 |
| available-to-promise (ATP) | 497 | Data extraction | 166, 242, 518 |
| CDS views | 174 | CDC views | 174 |
| Central Finance | 470 | Change Control Management | 117, 382 |
| Centralized purchasing | 488 | change | 157, 159, 301 |
| Centralized scheduling agreements | 494 | Cloud | 39 |
| Certification exam | 83, 555 | Cloud architecture | 397 |
| practice questions | 556 | Cloud application | 397 |
| structure | 555 | Cloud business architects | 537 |
| weightage | 556 | Cloud computing | 397 |
| Change agents | 530, 531 | Cloud development | 397 |
| Change and release management | 353, 417 | Cloud migration | 397 |
| Change Control Management | 117, 382 | Cloud service | 397 |
| Change impact analysis | 182, 350, 407, 415, 523, 530 | Cloud storage | 397 |
| Change management | 374 | Cloud technology | 397 |
| Change projects | 253 | Cloud usage | 397 |
| Chart of accounts | 237 | Cloud warfare | 397 |
| workshop | 234 | Cloud work | 397 |
| Classic extendibility | 304 | Cloud work | 397 |
| Client transfer | 443 | Cloud work | 397 |
| Cloud | 39 | Cloud work | 397 |
| community | 77 | Cloud work | 397 |
| ecosystems | 451 | Cloud work | 397 |
| SAP HANA | 33 | Cloud work | 397 |
| security | 39 | Cloud work | 397 |
| Cloud business architects | 537 | Cloud work | 397 |
| Cloud Integration Automation | 176, 264 | Cloud work | 397 |
| service | 176, 264 | Cloud work | 397 |
| Cloud Mindset Assessment and User Guide | 528 | Cloud work | 397 |
| Cloud ready | 106 | Cloud work | 397 |
| Code inspector | 391 | Code work | 397 |
| Collaboration governance model | 538 | Code work | 397 |
| Community | 74, 273, 540 | Code work | 397 |
| access | 75 | Code work | 397 |
| blog posts | 80 | Code work | 397 |
| main page | 76 | Code work | 397 |</p>
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP S/4HANA (Cont.)</td>
</tr>
<tr>
<td>product enhancements</td>
</tr>
<tr>
<td>product roadmap</td>
</tr>
<tr>
<td>releases</td>
</tr>
<tr>
<td>SAP Best Practices</td>
</tr>
<tr>
<td>SAP Best Practices Explorer</td>
</tr>
<tr>
<td>testing</td>
</tr>
<tr>
<td>tools</td>
</tr>
<tr>
<td>trial system provisioning</td>
</tr>
<tr>
<td>upgrade and integration</td>
</tr>
<tr>
<td>upgrades</td>
</tr>
<tr>
<td>user experience</td>
</tr>
<tr>
<td>value</td>
</tr>
<tr>
<td>SAP S/4HANA Cloud</td>
</tr>
<tr>
<td>accelerators</td>
</tr>
<tr>
<td>access</td>
</tr>
<tr>
<td>assessment</td>
</tr>
<tr>
<td>characteristics</td>
</tr>
<tr>
<td>customer payments</td>
</tr>
<tr>
<td>data replication</td>
</tr>
<tr>
<td>deployment</td>
</tr>
<tr>
<td>discover phase</td>
</tr>
<tr>
<td>financial consolidation</td>
</tr>
<tr>
<td>financial planning</td>
</tr>
<tr>
<td>getting started guides</td>
</tr>
<tr>
<td>guided tours</td>
</tr>
<tr>
<td>hybrid integration</td>
</tr>
<tr>
<td>languages</td>
</tr>
<tr>
<td>learning center</td>
</tr>
<tr>
<td>localizations</td>
</tr>
<tr>
<td>manufacturing</td>
</tr>
<tr>
<td>methodology</td>
</tr>
<tr>
<td>new roles</td>
</tr>
<tr>
<td>practice question answers</td>
</tr>
<tr>
<td>practice questions</td>
</tr>
<tr>
<td>preferences</td>
</tr>
<tr>
<td>quality gates</td>
</tr>
<tr>
<td>releases</td>
</tr>
<tr>
<td>SAP Best Practices</td>
</tr>
<tr>
<td>SAP Best Practices Explorer</td>
</tr>
<tr>
<td>subsidiaries</td>
</tr>
<tr>
<td>tasks</td>
</tr>
<tr>
<td>team/self enablement</td>
</tr>
<tr>
<td>treasury risk management</td>
</tr>
<tr>
<td>trial</td>
</tr>
<tr>
<td>upgrades</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP S/4HANA Cloud (Cont.)</td>
</tr>
<tr>
<td>What's New Viewer</td>
</tr>
<tr>
<td>product enhancements</td>
</tr>
<tr>
<td>product roadmap</td>
</tr>
<tr>
<td>data migration</td>
</tr>
<tr>
<td>deploy phase</td>
</tr>
<tr>
<td>deployment</td>
</tr>
<tr>
<td>explore phase</td>
</tr>
<tr>
<td>extensibility</td>
</tr>
<tr>
<td>integration</td>
</tr>
<tr>
<td>landscape</td>
</tr>
<tr>
<td>migration objects</td>
</tr>
<tr>
<td>planning</td>
</tr>
<tr>
<td>preparation</td>
</tr>
<tr>
<td>prepare phase</td>
</tr>
<tr>
<td>testing</td>
</tr>
<tr>
<td>upgrades</td>
</tr>
<tr>
<td>workshops</td>
</tr>
<tr>
<td>SAP S/4HANA Cloud, extended edition</td>
</tr>
<tr>
<td>configuration</td>
</tr>
<tr>
<td>data migration</td>
</tr>
<tr>
<td>deploy phase</td>
</tr>
<tr>
<td>deployment</td>
</tr>
<tr>
<td>discover phase</td>
</tr>
<tr>
<td>prepare phase</td>
</tr>
<tr>
<td>test suite</td>
</tr>
<tr>
<td>testing</td>
</tr>
<tr>
<td>golden rules</td>
</tr>
<tr>
<td>integration</td>
</tr>
<tr>
<td>planning</td>
</tr>
<tr>
<td>preparation</td>
</tr>
<tr>
<td>custom code</td>
</tr>
<tr>
<td>custom code library</td>
</tr>
<tr>
<td>focalized solutions</td>
</tr>
<tr>
<td>IT Service Management</td>
</tr>
<tr>
<td>Landscape Management</td>
</tr>
<tr>
<td>operations</td>
</tr>
<tr>
<td>prepare</td>
</tr>
<tr>
<td>process management</td>
</tr>
<tr>
<td>Project Management</td>
</tr>
<tr>
<td>realize phase</td>
</tr>
<tr>
<td>requirements capture</td>
</tr>
<tr>
<td>Roadmap Viewer</td>
</tr>
<tr>
<td>run phase</td>
</tr>
<tr>
<td>SAP Best Practices Explorer</td>
</tr>
<tr>
<td>SAP S/4HANA Cloud, extended edition</td>
</tr>
<tr>
<td>search</td>
</tr>
<tr>
<td>scope</td>
</tr>
<tr>
<td>scope presentation accelerator</td>
</tr>
<tr>
<td>scripts</td>
</tr>
<tr>
<td>scrum</td>
</tr>
<tr>
<td>scrum framework</td>
</tr>
<tr>
<td>artifacts</td>
</tr>
<tr>
<td>events</td>
</tr>
<tr>
<td>limits</td>
</tr>
<tr>
<td>roles</td>
</tr>
<tr>
<td>teams</td>
</tr>
<tr>
<td>values</td>
</tr>
<tr>
<td>scrum masters</td>
</tr>
<tr>
<td>scrum of scrums meeting</td>
</tr>
<tr>
<td>security</td>
</tr>
<tr>
<td>define</td>
</tr>
<tr>
<td>design</td>
</tr>
<tr>
<td>revise</td>
</tr>
<tr>
<td>system conversion</td>
</tr>
<tr>
<td>Segregation of duties</td>
</tr>
<tr>
<td>Selective data transition</td>
</tr>
<tr>
<td>data migration</td>
</tr>
<tr>
<td>Scalability</td>
</tr>
<tr>
<td>practice question answers</td>
</tr>
<tr>
<td>Self-enablement</td>
</tr>
<tr>
<td>Self-Service Configuration Uls (SSCUIs)</td>
</tr>
<tr>
<td>Service Center</td>
</tr>
</tbody>
</table>
Index

Treasury payment requests (Cont.)
reversals .............................................................. 475
Treasury risk management (TRM) ......................... 474
Tutorials ............................................................. 98, 127, 227

U
Unique shop floor control (SFC) ..................... 504
Unit tests .......................................................... 257, 356, 361, 418, 419
Up-front enablement ........................................... 150
Upgrades .......................................................... 63, 550
new implementation ........................................ 381, 382
SAP S/4HANA .................................................. 436
SAP S/4HANA Cloud ........................................ 217
SAP S/4HANA Cloud, essentials edition ........ 274
SAP S/4HANA Cloud, extended edition ............. 308
Upload Financial Data app ............................. 464
User acceptance testing (UAT) ....................... 166, 168, 371, 428
User experience (UX) ........................................ 35
activate .......................................................... 397
design ............................................................. 340, 404
developer .......................................................... 537
role-based .......................................................... 35
User stories ....................................................... 199
User support ...................................................... 265
UX/UI strategy .............................................. 325, 385, 389
define ............................................................. 328

V
Value management (VM) framework ........... 212
Value mapping .............................................. 167, 255, 458
Virtual data access ........................................ 518

W
Web assistant .................................................. 38
What’s New Viewer .......................................... 131
Work breakdown structure (WBS) .................. 57, 89
Working system ........................................... 123, 153
Workstreams .................................................. 67, 68, 90
Application Design and Configuration ......... 150
WRICEF
devlop and test .............................................. 363, 422
gaps ................................................................. 338, 402
list ................................................................. 332, 395
requirements ................................................... 404
Z
Z-code approach ............................................. 522
Sven Denecken is the head of product management and co-innovation for SAP S/4HANA at SAP. He is responsible for both on-premise SAP S/4HANA and SAP S/4HANA Cloud.

Jan Musil is the chief product owner of SAP Activate and the owner of the SAP Activate certification exam.

Srivatsan Santhanam leads the two-tier ERP Center of Excellence from the SAP S/4HANA Cloud product management team.

We hope you have enjoyed this reading sample. You may recommend or pass it on to others, but only in its entirety, including all pages. This reading sample and all its parts are protected by copyright law. All usage and exploitation rights are reserved by the author and the publisher.