By 2025, all SAP customers should migrate to SAP S/4HANA. With this book, determine your individual requirements and start your migration project! The authors or this book will help you plan and prepare transition strategies. In this chapter, we’ll explore the three most important migration scenarios.

“Preparing the Migration to SAP S/4HANA”

Contents
Index
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Contents

Preface ........................................................................................................................ 15
Introduction ................................................................................................................... 17

PART I Basic Principles

1 SAP S/4HANA—Requirements and Benefits .............................................................. 25

1.1 Future Business Challenges .............................................................................. 26
  1.1.1 Digitization of Business Processes .......................................................... 27
  1.1.2 Trends of the Digital Transformation ...................................................... 30

1.2 The Pledge of SAP S/4HANA ............................................................................. 37
  1.2.1 Simplification of the Functionality ............................................................ 37
  1.2.2 Simplification of the Data Structure ......................................................... 40
  1.2.3 Simplified User Interfaces ...................................................................... 43
  1.2.4 Simplified Analyses ................................................................................. 45

1.3 Business Functions in SAP S/4HANA ............................................................... 46
  1.3.1 Accounting .......................................................................................... 47
  1.3.2 Logistics ............................................................................................. 52
  1.3.3 Human Resources ............................................................................... 57
  1.3.4 Procurement ....................................................................................... 64
  1.3.5 Marketing .......................................................................................... 68

2 SAP S/4HANA versus the Traditional SAP Business Suite ........................................ 75

2.1 Comparing the Available Solutions: SAP S/4HANA and the Digital Core ............ 75
  2.2 Simplification ............................................................................................... 79
## 2.3 The New Data Model and the SAP HANA Database

### 2.3.1 SAP HANA

### 2.3.2 The Data Model

### 2.3.3 Handling Existing Data

### 2.3.4 Sizing

## 2.4 SAP Fiori User Interfaces

### 2.4.1 Technological Changes

### 2.4.2 Operating Concept

## 2.5 Interfaces

## 2.6 SAP S/4HANA Embedded Analytics

## 3 Cloud, On-Premise, and Hybrid Scenarios

### 3.1 Overview of Operating Models

#### 3.1.1 On-Premise Operating Model

#### 3.1.2 Cloud Operating Model

#### 3.1.3 Hybrid Operating Model

### 3.2 The SAP S/4HANA Product Family

#### 3.2.1 SAP S/4HANA, On-Premise

#### 3.2.2 SAP S/4HANA Cloud

#### 3.2.3 SAP HANA Enterprise Cloud

### 3.3 Comparing the Operating Models

#### 3.3.1 Hardware, Software, Operation, and Maintenance

#### 3.3.2 User Interfaces

#### 3.3.3 Functional Scope and Supported Country Versions

#### 3.3.4 Options for Enhancement

#### 3.3.5 Payment Model and Runtime

#### 3.3.6 Model for Migration to SAP S/4HANA

### 3.4 Extensibility in SAP S/4HANA

#### 3.4.1 Side-by-Side Enhancements

#### 3.4.2 In-App Enhancements

#### 3.4.3 Checking Custom Enhancements When Migrating to SAP S/4HANA

## 4 Preparing the Migration to SAP S/4HANA

### 4.1 Basic Considerations

### 4.2 The Three Migration Scenarios

#### 4.2.1 New Implementation of SAP S/4HANA

#### 4.2.2 System Conversion to SAP S/4HANA

#### 4.2.3 Landscape Transformation with SAP S/4HANA

## 5 SAP Activate

### 5.1 SAP Activate Content

#### 5.1.1 SAP Best Practices

#### 5.1.2 Guided Configuration

#### 5.1.3 SAP Activate Methodology

### 5.2 SAP Activate Phases

## 6 Trial Systems and Model Company

### 6.1 Trial System in the SAP Cloud Appliance Library

### 6.2 SAP S/4HANA Fully-Activated Appliance

### 6.3 Solution Scope of the Model System

### 6.4 Enterprise Structure of the Model Company

## PART II Migrating to SAP S/4HANA in the Cloud

## 7 Migrating to the Public Cloud

### 7.1 Setting Up SAP S/4HANA Cloud

#### 7.1.1 Discover Phase: Configuring the SAP S/4HANA Cloud Trial System

#### 7.1.2 Explore Phase: Configuring the SAP S/4HANA Cloud Starter System

### 6.3 Solution Scope of the Model System

### 6.4 Enterprise Structure of the Model Company

## PART II Migrating to SAP S/4HANA in the Cloud

## 7 Migrating to the Public Cloud

### 7.1 Setting Up SAP S/4HANA Cloud

#### 7.1.1 Discover Phase: Configuring the SAP S/4HANA Cloud Trial System

#### 7.1.2 Explore Phase: Configuring the SAP S/4HANA Cloud Starter System

### 6.4 Enterprise Structure of the Model Company

## PART II Migrating to SAP S/4HANA in the Cloud

## 7 Migrating to the Public Cloud

### 7.1 Setting Up SAP S/4HANA Cloud

#### 7.1.1 Discover Phase: Configuring the SAP S/4HANA Cloud Trial System

#### 7.1.2 Explore Phase: Configuring the SAP S/4HANA Cloud Starter System
PART III Migrating to SAP S/4HANA On-Premise

9 Installing and Configuring SAP S/4HANA On-Premise or in the Private Cloud

10 System Conversion

11 New Implementation of Single Systems
11.4 Testing .................................................................................................... 384
11.5 Data Validation .................................................................................... 384
11.6 Data Cleansing .................................................................................... 386
11.7 Productive Load and Support ................................................................. 386
11.2 Supported Migration Objects ................................................................. 387
11.3 Rapid Data Migration .......................................................................... 390
11.3.1 Tools .................................................................................................... 390
11.3.2 Architecture ....................................................................................... 392
11.3.3 Migration Content ............................................................................. 396
11.3.4 Connecting to Source Systems ......................................................... 405
11.3.5 Data Profiling .................................................................................... 408
11.3.6 Field Mapping .................................................................................. 411
11.3.7 Value Mapping and Conversion Tables .......................................... 419
11.3.8 Data Validation ................................................................................. 426
11.3.9 Importing Data .................................................................................. 430
11.3.10 Monitoring ........................................................................................ 432
11.3.11 Optimizing IDoc Performance ....................................................... 434
11.4 SAP S/4HANA Migration Cockpit .......................................................... 437
11.5 SAP S/4HANA Migration Object Modeler .............................................. 441
11.5.1 Edit Source Structures ..................................................................... 445
11.5.2 Display Target Structures ............................................................... 448
11.5.3 Display Structure Mapping .............................................................. 449
11.5.4 Edit Field Mapping ......................................................................... 450
11.5.5 Technical Functions ........................................................................ 451
11.5.6 Advanced Activities ........................................................................ 452
11.6 Comparison of Migration Tools ............................................................. 453
12 Landscape Transformation ...................................................................... 457
12.1 The Three Transformation Scenarios .................................................... 458
12.2 Carrying Out a Transformation Project .................................................. 459
12.2.1 Preanalysis and Planning ................................................................. 462
12.2.2 Blueprint and Project Team ............................................................... 462
12.2.3 Test Runs .......................................................................................... 464
12.2.4 Production Conversion .................................................................... 466
12.2.5 Support after Go-Live ...................................................................... 467
12.3 System Consolidation .......................................................................... 467
12.4 Company Code Transfer ....................................................................... 476
12.5 Transformation to Central Finance ....................................................... 482
12.5.1 Implementing SAP S/4HANA Central Finance ................................. 483
12.5.2 Global Parameters ........................................................................... 487
12.5.3 Master Data ...................................................................................... 493
12.5.4 Mapping, Error Handling, and Initial Data Load ............................... 498
13 Integrating SAP S/4HANA, On-Premise, into the System Landscape 503
13.1 Integration with SAP Ariba Solutions .................................................... 503
13.1.1 Integrated Business Processes with SAP Ariba Solutions and SAP S/4HANA .............................................................. 503
13.1.2 Technical Integration of SAP S/4HANA with SAP Ariba .......... 506
13.2 Integration with SAP ERP HCM and SAP SuccessFactors .................. 509
13.2.1 ALE Integration with SAP ERP HCM ............................................ 510
13.2.2 Integration of SAP ERP HCM within the SAP S/4HANA Instance ................................................................................. 511
13.2.3 Integration with SAP SuccessFactors Employee Central ....... 513
13.2.4 Synchronizing Employee Data with Business Partners .......... 519
13.3 Integration with Existing SAP Systems .................................................. 521
PART IV Assessing the Transformation Scenarios ..................................... 527
14 Selecting Your Migration Scenario ......................................................... 527
14.1 Overview of Procedures and Input Helps .............................................. 527
14.2 Creating Your Own Roadmap ............................................................... 530
14.2.1 Initial Scenario: Single System ....................................................... 534
Chapter 4
Preparing the Migration to SAP S/4HANA

This chapter introduces the three migration scenarios covered in this book.

Which steps should you consider when planning your migration project to SAP S/4HANA? How does SAP support you? Can the migration be compared to an upgrade within the SAP ERP product family? This chapter answers these questions. Furthermore, we'll introduce three possible migration scenarios: a new implementation, a system conversion, and a landscape transformation. The last chapter of the book, Chapter 14, then looks back at these scenarios and summarizes their advantages and disadvantages under different conditions.

4.1 Basic Considerations

Migrating to SAP S/4HANA offers many benefits, but to ensure a smooth migration, you must be aware of your specific reasons for migrating. Consequently, you should not plan to migrate to SAP S/4HANA as an update or upgrade of an already implemented solution. The functional and business scope of SAP ERP and SAP S/4HANA are similar, but this migration will introduce a new digital core to your enterprise that ensures future competitiveness.

You should (at least) answer the following questions, which will be discussed in more detail later on in this section:

- Which target status do you want to achieve?

What position is SAP S/4HANA supposed to take in your system landscape? Do you want to execute a proof of concept, or do you want to use SAP S/4HANA immediately in production? Can you use the migration as
Preparing the Migration to SAP S/4HANA

an opportunity to optimize how your processes are mapped in the enterprise software?

- **Which operating model suits you?**
  Do you want to run SAP S/4HANA at your own data center or through a hosting service? Or, do you want to use SAP S/4HANA as a software-as-a-service model?

- **What is the initial situation?**
  What is the current product version of your source system? What is the quality of the data in your source system? How strictly do you leverage the SAP Standard, and how many custom enhancements exist? Do you want to use a system as a template?

- **Which users do exist?**
  How many users exist, and how are they distributed? Which user groups are expected to benefit from the implementation of SAP S/4HANA?

- **How is the solution to be used?**
  Which business scenarios and transactions are to be used? How are these requirements distributed across your users?

- **What is your defined time frame?**
  Within what period of time is the project supposed to be completed? Which milestones need to be reached and when?

- **Do you need support?**
  What kind of support do you need? What is your budget? Which services do you expect to purchase and which services can be provided in-house?

The more aware you are of the significance of SAP’s digital core, the more added value SAP S/4HANA can usually generate: The basic concept of SAP S/4HANA is its pledge to prepare enterprises for the challenges of the coming decades. Restricting yourself to a purely technical update of existing systems and landscapes would be an inadequate simplification. You should analyze whether your processes have grown as well as whether your system landscape will be sustainable in the future or whether its structure is obsolete and should thus be adjusted.

Thus, when migrating to SAP S/4HANA, you’ll have to consider at least two parts of the implementation: the purely technical part and the process-oriented part (see Figure 4.1).

- **Technical implementation**
  The technical implementation of a migration mainly includes migrating the database to SAP HANA, replacing the program code, adapting data models to the SAP S/4HANA data model, and implementing the frontend server for SAP Fiori interfaces. Your existing custom code might also have to be technically adapted.
  These activities generally do not depend on the scope of subsequent use in production and can easily be implemented using the relevant tools and can therefore be technically controlled and supported. Thus, SAP provides a comprehensive portfolio of tools for planning and carrying out this technical implementation.
**Process-oriented implementation**

The process-oriented implementation of a migration refers to adapting how existing business processes are mapped in the system and to introducing new applications. These modifications to business processes are only partially carried out in the system itself. In most cases, you can only enter indicators, such as changed configuration information. Regarding planning, however, you’ll have to perform far more comprehensive change management steps. These steps include, for example, designing your new changed business process, configuring necessary measures, training users, assigning roles and authorizations, pilot operation, and converting the production system.

The following tasks can be assigned to these outlined phases:

1. **Preparation (preparatory steps in the source system):**
   - Analysis of existing business process implementation; comparison with SAP S/4HANA innovations
   - Identification of the necessary integration scenarios
   - Prechecks in the source system, for example:
     - Functions used
     - Industry-specific enhancements
     - Custom code
     - Third-party enhancements
   - Implementation of necessary preparatory conversions in the source system

2. **Technical implementation:**
   - Installation of SAP S/4HANA
     - SAP HANA database
     - SAP S/4HANA applications
   - Adaptation of the technical infrastructure
   - Customizing

3. **Process adaptation:**
   - Adaptation of custom programs in SAP S/4HANA
   - Development of new or enhanced business processes to leverage the innovations in SAP S/4HANA

The time and effort required for the process-oriented implementation—depending on the initial situation and target status—can account for either a small or a large part of the overall process. Thus, we recommend dividing the migration project into the three phases we just described because the process-oriented implementation, in particular the implementation of new business processes, does not have to be carried out in parallel to the technical migration.

**Process Migration and Technical Migration as Separate Steps**

In general, you can plan the introduction or migration of your business processes independently from the technical migration.

Figure 4.2 shows one possible approach for introducing SAP S/4HANA to your enterprise: In the project, you prepare and implement new functions in batches, while the users continue to use the existing functions.
Preparing the Migration to SAP S/4HANA

A prerequisite for optimal project planning is knowing the desired target state. While this prerequisite might sound rather trivial at first, SAP S/4HANA migration projects often fail to describe the goal of the migration in detail and rely on vague statements like “implementation of SAP S/4HANA.”

Migrating to SAP S/4HANA has a general trade-off that you should be aware of, in particular if your initial state includes an SAP ERP system or SAP landscape: The more properties of the source system you decide to keep unchanged (e.g., configuration, custom code, or applications), the simpler the (technical part) of the migration project. However, the benefit that can be derived from SAP S/4HANA in this case might also be reduced because the major benefits from SAP S/4HANA are optimized business processes, simplified user interfaces, and greater flexibility for future requirements. Therefore, you should always analyze this trade-off. Possible analysis criteria include the following:

- **Type of usage**
  Is the target system used for production, or do you want to execute a proof of concept first? In the latter case, you should carry out a greenfield implementation with selective data transfers.

- **Total cost of ownership**
  SAP S/4HANA enables you to reduce the total cost of ownership (TCO). Examples include a reduced data footprint, that is, the storage space for application data in the database is reduced (see Section 4.2.2). Another dimension are reduced requirements for your internal IT department because local SAP GUI installations at employee workstations can be avoided. If your explicit goal for the migration is to lower the TCO, you should also analyze where custom enhancements can be omitted or replaced by SAP S/4HANA applications. Furthermore, you should examine the extent to which multiple existing ERP systems can be merged into one SAP S/4HANA system. In addition to the reduced TCO, users benefit from access to real-time data from the systems that were previously separated.

- **Operating model**
  Is SAP S/4HANA to be operated in the cloud or on-premise? The two operating models have different characteristics that need to be analyzed. In simple terms, outsourcing the system administration to the cloud is attractive, especially for standard business processes.

4.2 The Three Migration Scenarios

- **Target landscape**
  How is the entire landscape supposed to change? Are systems to be consolidated? Are systems to be separated (e.g., financial accounting and material requirements planning)? How is the existing architecture to be adjusted?

  Remember that you usually also have to set up and configure the front-end servers for SAP Fiori, which are required for the new SAP S/4HANA functions.

  SAP recommends a methodology with six phases for project planning and implementation: discover, prepare, explore, realize, deploy, and run. This methodology is called SAP Activate, which we’ll describe in detail in Chapter 5.

  When referring to migration activities in this book, we assume that you have already opted for SAP S/4HANA. We’ll assume the discovery phase—during which enterprise priorities are identified, the target architecture is defined, the business case is optimized, and a readiness check is carried out—has already been successfully completed. Our focus is on the technical implementation of the migration and less on process-oriented implementation. We assume that you have selected and defined the characteristics of the business process scope in a separate business implementation project.

**Preparation with Trial Access**

If you have not completed the discovery phase yet, you should test an SAP S/4HANA system. For this purpose, SAP provides trial access to a cloud instance of SAP S/4HANA that is only valid for a limited time. For more information on these trial systems, see Chapter 6.

**SAP implementation methodology**

4.2 The Three Migration Scenarios

SAP has defined several technical scenarios for the introduction of SAP S/4HANA and also provides the corresponding tools. When planning the migration, you should select the scenario that meets your individual requirements best. The following sections introduce the individual scenarios and describe the advantages and disadvantages of each approach.
Part III then discusses the different scenarios in detail. Three basic scenarios for the migration to SAP S/4HANA exist (see Figure 4.3):

- New implementation of SAP S/4HANA
- System conversion to SAP S/4HANA
- Landscape transformation with SAP S/4HANA

The landscape transformation also includes the steps of the first two scenarios and complements them to further benefit from SAP S/4HANA.

4.2.1 New Implementation of SAP S/4HANA

Installing a new system

From the technical perspective, this scenario is based on a completely new installation of SAP S/4HANA. In this scenario, we’ll use the Software Provisioning Manager (SWPM) to download and set up an SAP S/4HANA system from the available SAP installation media, creating a new system with a new System Identification (SID). In addition to this ABAP instance, a front-end server is also installed, which will be the central hub for operating the SAP Fiori user interface.

At first, the new system is delivered with a standard configuration. You’ll then have to adapt the configuration to meet the requirements of the business processes you want to implement.

The new system can be fed data from a source system, using the SAP S/4HANA migration cockpit, a tool that has been developed for SAP S/4HANA. Whether the data is from an SAP system or from a non-SAP system does not matter. When the data has been transferred, you can replace the source system with the SAP S/4HANA system (see Figure 4.4).

SAP provides predefined models for the data transfer, so-called migration objects. These objects regularly get updated or new objects added with new SAP S/4HANA versions. Table 4.1 lists which migration objects are supported at the time of this writing (SAP S/4HANA Cloud 1611 and SAP S/4HANA 1610, on-premise).

For more details on using migration objects, see Chapter 7, Section 7.3.1, (for cloud editions) and Chapter 11, Section 11.2 (for on-premise editions).
Preparing the Migration to SAP S/4HANA

Default data fields, the format, and—if available—relationships or references to other business objects are defined for each of the business objects in migration objects.

Following the simplification concept, only the most important data fields of each object are already activated in this predefined content. If needed, you can optionally display additional fields, if available in the SAP Standard. Custom fields (in custom namespaces) can also be supplemented. For on-premise implementations, you would use the SAP Landscape Transformation (LT) Migration Object Modeler (LTMOM) transaction for this purpose; for cloud solutions, please contact the SAP service team.

### Supported Migration Objects When Using the Migration Cockpit

| Bank Master | Material – Long text | Equipment |
| Customer | Purchasing Info Record | Maintenance Task List |
| Supplier | Purchase Order | Functional Location |
| Accounts Receivable (Customer) Open Item | Pricing Condition | Characteristic |
| Accounts Payable (Vendor) Open Item | Contracts (Purchasing) | Class |
| Fixed Assets incl. Balances | Source List | Commercial Project Management (CPM) |

Table 4.1  Supported Migration Objects for Data Migration Using the SAP S/4HANA Migration Cockpit (Cont.)

Default data fields, the format, and—if available—relationships or references to other business objects are defined for each of the business objects in migration objects.

Following the simplification concept, only the most important data fields of each object are already activated in this predefined content. If needed, you can optionally display additional fields, if available in the SAP Standard. Custom fields (in custom namespaces) can also be supplemented. For on-premise implementations, you would use the SAP Landscape Transformation (LT) Migration Object Modeler (LTMOM) transaction for this purpose; for cloud solutions, please contact the SAP service team.

The selected migration objects are transferred to the project view of the SAP S/4HANA migration cockpit. In the cockpit, at any time during the data transfer, you’ll be able to see what object data still has to be loaded and for which objects the migration has been completed.

The source system data is formatted manually as required. If data needs to be cleansed (for example, if duplicates need to be identified and eliminated), you should address these issues before migrating the data. The cleansed data from the source system is stored in a file in a format defined by SAP. The relevant templates are provided by default.

---

**Analysis**

**Cleansing**

**Extraction**

**Final Reconciliation**

**Validation**

**Load**

Optional Project Support via SAP Rapid Data Migration

### 4.2 The Three Migration Scenarios

In the next step, this file is uploaded. Basic inconsistencies in the data that is planned to be imported to the target system or conflicts in the configuration are determined by tools and can be eliminated. Then, the data transfer from the source system is complete. Figure 4.5 illustrates these steps.

The result is a system that corresponds to the SAP Standard as much as possible and does not contain any obsolete data. Table 4.2 demonstrates how this procedure focuses on master data and only a small amount of transactional data is transferred.

The SAP S/4HANA migration cockpit replaces the Legacy System Migration Workbench (LSMW), which was used in SAP R/3 and SAP ERP systems. SAP S/4HANA no longer supports this tool. LSMW still exists but rarely makes sense to use it and should be used at your own risk.

For the planned new implementation project, which data you want to transfer is decisive: If data objects have requirements that are not part of the content provided, you cannot transfer them with the SAP S/4HANA migration cockpit.

For more specific data transfers, you should use **SAP Data Services**, a tool for extracting and loading data. SAP Data Services is included for all SAP HANA users who have an SAP HANA license. Optionally, SAP offers a license extension for SAP Data Services, which supports modifying and improving data quality and data cleansing. Consisting of a central Data Services server and a local frontend for modeling, SAP Data Services also provides migration content that is more comprehensive than in the SAP S/4HANA migration cockpit (see Table 4.2). However, using SAP Data Services requires more technical effort and key-user know-how than using the SAP S/4HANA migration cockpit.
Recall that the migration procedure we described creates a new system with a new SID that contains (selected) data from the source system. In most cases, this new system or the new multi-tier system landscape (involving development, test, and production systems) needs to be integrated into the overall landscape.

Chapter 8 and Chapter 13 provide further information on integration in SAP S/4HANA. Chapter 7 and Chapter 11 discuss the new implementation scenario and the relevant tools.

**Checklist for New Implementation**

Let’s summarize the individual steps for new implementations:

1. Determining the target status: operating model and distribution of the instances. You can carry out new implementations for on-premise implementations, for SAP HANA Enterprise Cloud (SAP HEC), and in the public cloud.
2. Identifying the desired new functions
3. Verifying the functions currently used via the simplification list (http://help.sap.com/s4hana_op_1610). Take into account the number of users for each function.
4. For existing SAP ERP systems: Preccheck in simulation mode (see SAP Note 2182725)
5. Analyzing custom enhancements using the custom code migration worklist (http://bit.ly/v1448043). You usually have to newly implement existing custom programs in SAP S/4HANA Cloud. For more information on new enhancements for SAP S/4HANA Cloud, see Chapter 3, Section 3.4.
6. For on-premise editions only: Sizing (https://service.sap.com/sizing)
7. Adjusting input planning, verifying the migration scenario
8. If possible, data cleansing and archiving in the source system
9. Setting up the target system
10. Starting the SAP S/4HANA migration cockpit and transferring data
11. Checking the result
12. For on-premise editions only: Setting up the frontend servers for SAP Fiori
13. Delta configuration
14. Final tests
15. Roll-out of new processes for users

---

**Migration Objects When Using SAP Data Services**

<table>
<thead>
<tr>
<th>Activity Prices</th>
<th>Fixed Assets</th>
<th>Profit Centers</th>
</tr>
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<tbody>
<tr>
<td>Activity Types</td>
<td>Functional Location</td>
<td>Purchase Orders*</td>
</tr>
<tr>
<td>Groups</td>
<td>GL Balances*</td>
<td>Purchasing Info Records</td>
</tr>
<tr>
<td>Bank Master</td>
<td>GL Open Items*</td>
<td>Purchasing Requisitions*</td>
</tr>
<tr>
<td>Batch</td>
<td>Inspection Methods</td>
<td>Reference Operation Set</td>
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<tr>
<td>Bill of Materials (BOM)</td>
<td>Inspection Plans</td>
<td>Routings</td>
</tr>
<tr>
<td>Business Partner</td>
<td>Internal Order*</td>
<td>Sales Orders*</td>
</tr>
<tr>
<td>Characteristic Master</td>
<td>Inventory Balance*</td>
<td>Scheduling Agreements*</td>
</tr>
<tr>
<td>Class Master</td>
<td>Master Inspection Characteristics</td>
<td>SD Pricing</td>
</tr>
<tr>
<td>Configuration Profiles for Material</td>
<td>Material External Customer Replenishment</td>
<td>Secondary Cost Elements</td>
</tr>
<tr>
<td>Contracts*</td>
<td>Material Master</td>
<td>Service Master</td>
</tr>
<tr>
<td>Cost Center Group</td>
<td>Material Master Classification</td>
<td>Source List</td>
</tr>
<tr>
<td>Cost Centers</td>
<td>Material QM Inspection Type</td>
<td>Statistical Key Figures</td>
</tr>
<tr>
<td>Credit Memo*</td>
<td>Object Dependency</td>
<td>Supplier Invoice*</td>
</tr>
<tr>
<td>Customer Invoice Billing*</td>
<td>Open Deliveries*</td>
<td>Vendor Open Items (AP)*</td>
</tr>
<tr>
<td>Customer Open Items (AR)*</td>
<td>Order Reservation*</td>
<td>Work Breakdown Structure</td>
</tr>
<tr>
<td>Equipment</td>
<td>Planned Independents Requirements*</td>
<td>Work Centers</td>
</tr>
<tr>
<td>Exchange Rates</td>
<td>Profit Center Groups</td>
<td></td>
</tr>
</tbody>
</table>

The objects marked with * are transactional data; the other objects are master data.

Table 4.2 Supported Migration Objects When Using SAP Data Services
4.2.2 System Conversion to SAP S/4HANA

In this scenario, we’ll take an existing SAP ERP system and convert this system into an SAP S/4HANA system in several steps (see Figure 4.6). The SID, the customization, and the existing data of the source system are kept in this procedure. When selecting this scenario, you should cleanse your data before you convert the system. Note that this scenario is not an upgrade because the existing system belongs to a different product family.

Figure 4.6 System Conversion to SAP S/4HANA

Data Footprint and Archiving

SAP S/4HANA features a considerably reduced data footprint, meaning that the data in the SAP HANA database occupies less storage space than in common SAP ERP systems on traditional databases. SAP HANA’s improved compression algorithms are already considered in SAP’s official sizing recommendations.

However, in the case of system conversions, these sizing rules usually do not apply to the target system because the storage requirements are temporarily higher than in newly implemented systems. More memory is needed because SAP keeps your data to avoid data loss. Consequently, data is temporarily kept redundantly in the target system: in both the new data models of SAP S/4HANA and in the obsolete tables of the SAP ERP system.

Therefore, the target system needs to be sufficiently sized initially. After the conversion, you can delete redundant data manually. First, however, you should check whether the data has been successfully converted.

To effectively size the target system (providing sufficient but not too much memory), you should analyze what data in the source system can be archived. You’ll be able to access these archives from SAP S/4HANA. Another benefit is that the runtime of actual conversion will also be reduced. However, you should not archive active data. Your planning should additionally consider that the archiving routines in the SAP S/4HANA target system still have to be adjusted to the new data models so that the target system can also archive future data.

In addition, you can use the data aging option, which is integrated into SAP HANA. This method moves data that is not actively used from the SAP HANA memory and could be considered a kind of preparatory step for archiving: Hot data is stored in the SAP HANA memory; cold and historical data is stored in the archive.

Before you convert your system, you must analyze the source system in detail. The simplification list provided by SAP contains all relevant changes that affect available SAP ERP functions: omitted functions, significantly modified applications (or application architectures), and nonstrategic functions (see Figure 4.7). The latter refers to functions that are available in SAP S/4HANA but that SAP no longer recommends. Because SAP doesn’t plan to enhance or maintain these functions in the future, you should only use these functions during the transition phase.

For simplification reasons, SAP provides numerous automatic prechecks. These prechecks answer the following questions about your system:

- Are the technical system requirements met?
- Are functions used that are will no longer be available in the target system in the same form?
- Is incompatible software used, such as add-ons that have not been released for SAP S/4HANA (yet)? Incompatible software must be uninstalled from the source system, or you must find a compatible version for SAP S/4HANA. Please contact the add-on’s manufacturer for further information in this case.
- Are your custom enhancements compatible with SAP S/4HANA?
Preparing the Migration to SAP S/4HANA

The results of these checks can considerably impact project scoping. We therefore recommend running these checks at the beginning of the conversion project so you can accurately estimate the overall project scope. To run a simulation, you can select the Simulation Mode in the prechecks (see Figure 4.8).

Results of the checks

- Positive results (green)
- Warnings (yellow)
- Errors that hinder a conversion (red)

Figure 4.7 Functions from SAP ERP Expected Change or Depreciated

The results of these checks can considerably impact project scoping. We therefore recommend running these checks at the beginning of the conversion project so you can accurately estimate the overall project scope. To run a simulation, you can select the Simulation Mode in the prechecks (see Figure 4.8).

Warnings do not prevent the technical implementation of the conversion from continuing. However, because these warnings might lead to data loss under certain conditions, you should also analyze warnings in detail. An example of the results of these prechecks is shown in Figure 4.9.
SAP has made these prechecks available via SAP Notes (see SAP Note 2182725). Prechecks are imported into the source system, where you’ll run the check, meaning you can carry out prechecks independently of the technical conversion project. To be safe, the conversion routine additionally requests that you run the prechecks to avoid converting systems that have not been checked.

**Custom code checks**

Custom code checks deviate from the procedure described above. To check custom code, an SAP NetWeaver system is connected to the source system, and the custom code is then analyzed in this SAP NetWeaver system. In this way, unnecessary workload is diverted away from the source system. The result of these checks is a custom code migration worklist, which lists adaptations to your custom code recommended by SAP.

**Adjusting the source system**

After the checks have been carried out, you should eliminate the abnormalities found in your source system. Otherwise, the conversion might not run smoothly. After implementing all corrections, you can verify the system readiness by checking the system again.

**Carrying out the conversion**

If the prechecks do not indicate any abnormalities, you can initiate the next conversion phase. Call the Maintenance Planner via the SAP Support Portal (<https://apps.support.sap.com/sap/support/mp>). Then, enter the desired target status—the selected version of SAP S/4HANA in our case—in the Maintenance Planner. You then carry out the actual technical system conversion using a version of the Software Update Manager (SUM) that has been optimized for SAP S/4HANA.

You can choose how the technical conversion should be carried out. SAP provides two procedures for this:

- Using default, predefined procedures, SAP will try to balance resource consumption, downtime, and overall runtime.
- A procedure with optimized downtime converts larger data volumes into the SAP S/4HANA data format while the system is in production operation, which reduces the downtime. The price you pay is increased resource consumption and sometimes a longer runtime for the technical conversion.

At present, the conversion with optimized downtime option is only available for source systems that do not run on SAP HANA. You can optimize additional requirements in individual projects. If you strive for a near-zero downtime, SAP recommends involving SAP consultants in the conversion project.

The technical conversion usually involves the following three steps:

1. **Migrating the database to SAP HANA**
   
   Your source system database does not have to be SAP HANA. In this case, the SUM enables you to also convert the database to SAP HANA, which is referred to as the Database Migration Option (DMO).

2. **Implementing new repository objects**
   
   The software is updated to the new SAP S/4HANA versions.

3. **Converting the data**
   
   The data of the source system is transferred to the target system using its new storage options.

After you have successfully implemented the technical conversion, you might have to perform some application-specific tasks.

The system is ready for use again—but only with the functional scope of the legacy system. The new SAP S/4HANA functions are available in the system but usually still have to be configured. To simplify this configuration, SAP provides predefined content in SAP Best Practices.

**From a Single System to a Landscape**

The conversion steps we described must be performed in all systems of the landscape, i.e., at least in the development, test, and production systems. To overcome the resulting downtime, you can generate a temporary copy of the landscape. Please note that, in this case, you probably won’t be able to transport code or configuration changes between systems on the source product version and the new SAP S/4HANA systems. This limitation also applies to SAP corrections. These limitations arise because the code (custom code and SAP code) and configuration tables differ. We recommend adjusting the landscapes manually.

Thus, you should also divide the project into two phases and focus on the technical conversion of the system first. You can then introduce new or changed processes on the converted system in a second step.

The possible target SAP S/4HANA versions depends on the source product version. Usually, you can select between multiple target releases. When...
begin a conversion, SAP HANA doesn’t have to be already implemented in your source system. You also do not need to implement the versions of SAP S/4HANA sequentially when transitioning to a higher version. In general, a source system running on SAP ERP 6.0 or higher is sufficient, as shown in Figure 4.10. Chapter 10 provides more details on conversion paths.

**Figure 4.10 Different Paths to SAP S/4HANA**

### Conversion Checklist

The following list summarizes the individual steps for a system conversion:

1. Determining the target status: operating model and distribution of the instances. The system conversion can only be carried out for on-premise implementations or for SAP HANA Enterprise Cloud (SAP HEC).
2. Identifying the desired new functions
3. Verifying the functions currently used via the simplification list. Take into account the number of users for each function.

**Figure 4.11 Landscape Transformation**

### 4.2.3 Landscape Transformation with SAP S/4HANA

Landscape transformation refers to a migration scenario in which various SAP ERP systems are integrated into a shared SAP S/4HANA system (see Figure 4.11). You might choose a landscape transformation to benefit the most from SAP S/4HANA’s real-time data processing: Only if all data is kept in one database can the system use this data with highest efficiency. Another benefit is that data no longer needs to be replicated. SAP S/4HANA’s efficient compression algorithms and its high speed can handle the volume of data that previously would have been spread out to multiple traditional systems.
Preparing the Migration to SAP S/4HANA

Two subprojects

The landscape transformation process consists of two subprojects. In the first part, the master system is prepared. As described in the previous two sections, the master system is either a new implementation of an SAP S/4HANA system or a system conversion. The latter scenario is implemented if the landscape contains an SAP ERP system that can be used as the basis for the other systems. The configuration and process specifications should be optimized and up-to-date in this system. When planning this first step, take into account the guidance for new implementations and system conversions described in the previous two sections.

Selecting the data extraction method

After you’ve implemented an SAP S/4HANA master system, you still need to transfer the data from your other systems in the landscape to this system. First, determine the required data extraction method. Figure 4.12 illustrates common methods:

- Consolidation of several complete systems
- Transfer of selected company codes
- Transfer of selected business processes

Figure 4.12 Examples of Landscape Transformation Scenarios

Regardless of data extraction method, the data from (several) SAP ERP versions is read and written to the SAP S/4HANA system. In this process, the data will need to be translated into the new SAP S/4HANA data model using SAP Landscape Transformation (SLT). However, you cannot use SLT for continuous data replication, just for one-time data transfers only, as in this scenario. SAP has equipped SLT with the right conversion logic for the new SAP S/4HANA data model.

Landscape transformations are also possible for non-SAP systems if you are willing to accept some constraints. In this case, however, you should consider using SAP Data Services as described in the new implementation scenario. The specific tool you use depends on your individual situation.

The individual realizations in a landscape transformation are highly specialized projects. In addition to the technical support, SAP and other service providers can offer specialized consulting and implementation services for these scenarios. Chapter 12 further describes landscape transformations in detail.
Index

A

ABAP Data Dictionary ............. 126, 472
ABAP Dictionary table ............. 86
ABAP enhancements ............... 131
ABAP Repository .................. 472
AcceleratedSAP .................... 158, 378
Accelerator .......................... 173
Account, Central Finance ........ 494
Accounting ......................... 47–48
   parallel ............................ 48
   simplification .................. 42
Accounts payable .................. 51
Accounts payable data .......... 475
Accounts receivable .............. 51
Accounts receivable data ....... 475
Activate → SAP Activate ....... 82, 84
Add-on ............................... 147
   partner ......................... 345
   SAP .................. 345
   Admin Center ... 515
   Admin guide .............. 319
Advanced Available-to-Promise 542
Aggregate .......................... 82, 84
ALIF ................................... 521
ALE → Application Link Enabling 82
   ALWAYS, OFF ................. 345
   Amazon Web Services ...... 181
   Analysis phase ............. 460
   Analysis, simplification .... 45
   Analytical app .............. 89
   API .................. 126, 284
   API, public .................. 302
   APO ................... 39, 55
   App ............................ 89
      analytical .................. 89
      transactional .......... 374
   App Finder ............ 374
   Appliance .................... 182
   Application data, harmonization 474
   Application Interface Framework 521
   Application Link Enabling 400, 510, 521
   Application management service 114
   Application Programming Interface → API
   Archive, consolidation .......... 476
   Archiving ...................... 146, 540
   Ariba Cloud Integration Adapter 506
   Ariba Collaborative Sourcing → SAP Ariba
   Sourcing ........................
   Ariba Payment and Discount
      Management .................. 508
   Ariba Purchase Order to Invoice 508
   Ariba spot quote .............. 246
   ASAP ........................... 158, 378
   ASE ............................. 395
   Asset accounting .............. 348
   AWS ............................. 181
   Authentication, SAP S/4HANA Cloud 200
   Authorization, harmonization 475
   Automation ........................ 31
   Availability check, global .... 53
   AWS ............................. 181

B

B2B ........................................... 51
   Backend system ................ 90
   Backup ............................ 466
   BAD, Ariba integration ......... 508
   BAIO .................................. 161
   Balance of accounts ........... 494
   Bank master ..................... 400
   BAPI 95, 126, 391, 400, 441
      ALE interface .... 400
      asynchronous ........ 400
   BC sets .......................... 320
   Belize ......................... 370
   Best Practices Explorer ...... 164, 397
   Best practices → SAP Best Practices
Index

BIL Launchpad .............................................. 433
Bing .............................................................. 168
Blueprint ...................................................... 462
Blueprint phase ........................................ 380
BPC .......................................................... 49
Brownfield .............................................. 99, 121, 329
Browser ......................................................... 90
Building block ............................................ 166, 320
Building Block Builder .................................. 319
Business All-in-One .................................. 161
Business Application Programming Interface → RAPI
Business case ........................................ 462
Business configuration sets ........................................ 320
Business function ........................................... 345
FIN_GL_ERR_CORR ...................................... 484
FIN_GL_ERR_CORR_SUSP ...................................... 484
FIN_CFIN ................................................... 484
Business impact note ................................... 343
Business model, change ................................ 29
Business object ............................................ 380
custom ..................................................... 130
Business partner ........................................ 277, 519
Business process ........................................ 547
enhancement ............................................. 125
harmonize ............................................... 531
Business process document ......................... 163
Business suite .............................................. 78
BW .......................................................... 532
C
Campaign execution ........................................ 287
Career Site Builder ....................................... 61
CCIM .......................................................... 350
CDS .......................................................... 126, 351
CDS view .................................................... 519
Central Finance

companies .............................................. 48, 108, 482
data transfer ........................................ 486, 499
global parameters .................................... 487
Implementation Guide ................................ 483
master data ................................................. 493
system connections ..................................... 483
Central hub .................................................. 324
Central Management Console ......................... 393
Change pointer ........................................... 511
Chart of accounts scenario .................................. 489
Check data value ........................................ 385
Check list, SAP S/4HANA Cloud ...................... 210
Check routine, SAP Data Services ................. 427
Check variant .............................................. 351
Client

OOO .......................................................... 187
concept ................................................... 471
copy .......................................................... 318
merge ....................................................... 469
profile ........................................................ 318
SAP Best Practices ........................................ 318
transfer ..................................................... 469
Cloud .......................................................... 99
deployment model ..................................... 102
deployment model edition .................................. 104
operating model ........................................ 101
security ................................................... 36, 101
service models ........................................... 101
Cloud Appliance Library ............................... 180
Cloud computing ......................................... 35
Cloud Connector → SAP HANA Cloud Con
nector

Cloud Identity ............................................. 200
CMC .......................................................... 393
Code Inspector ............................................ 351, 355
Code pushdown .......................................... 86, 351
Co-deployment ........................................... 313, 541
Column-based storage ................................ 83
Comma Separated Value → CSV

Communication agreement ......................................... 281
Communication scenario .................................... 279
Communication system .................................... 280
Communication user ...................................... 280
Company code ............................................ 471, 488
migration ............................................... 477
transfer ................................................... 458, 476
Compatibility matrix ........................................ 507
Compatibility packages .................................... 107
Compound employee API ................................ 518
Configuration

self-service .................................................. 168
rest ........................................................ 169

Configuration application ........................................ 210
Configuration item ........................................ 210
Consolidation .............................................. 42
Consolidation, systems .................................. 458
Contact, SAP Hybris Marketing Cloud .............. 290
Content ................................................... 419
Content activation ....................................... 320
Controlling .................................................. 50
Controlling area .......................................... 477, 491
Conversion ................................................... 419, 474
Conversion path ........................................... 339
Conversion → System conversion ..................... 339
Conversion scenario → Migration scenario ........ 339
Conversion table ......................................... 232, 419
Cookbook .................................................. 318
Core business processes .................................. 76
Core Data Services → CDS ......................... 290
Core process, business .................................. 76
Cost accounting .......................................... 491
Cost center ................................................ 496
attributes .................................................. 496
Cost Element

primary ................................................... 494
secondary ............................................... 495
Cost/benefit analysis ..................................... 462
Counter-deletion ......................................... 477
Country ..................................................... 487
Credit management .................................... 330, 341
Credit Risk Analyzer .................................... 51
Crowdfunding ............................................ 30
Crowdsourcing .......................................... 30
CSV .......................................................... 234, 285, 286
Customer code check .................................... 132, 150
Custom Code Lifecycle Management

toolset ....................................................... 350
Custom code migration worklist ..................... 150, 331, 349, 352
Custom development .................................... 348, 473
Custom development, automatic check ............... 150
Custom developments .................................. 348, 548
Customer field ........................................... 450
Customer master ........................................ 396
Customer Vendor Integration ...................... 396
Customizing ............................................... 123
client-dependent ....................................... 473
client-independent ..................................... 473
data migration ............................................ 395
SAP S/4HANA Cloud .................................... 210
transfer ................................................... 474
Cut-over .............................................. 175, 336, 464, 466
CVI .......................................................... 396
cXML .......................................................... 506
D
Dashboard, marketing manager ......................... 72
Data aging .................................................. 147
Data analysis ............................................. 380
Data cleansing .......................................... 386, 395, 475
Data comparison ........................................ 396
Data conversion ......................................... 87, 366
Data flow .................................................. 403
Data footprint ............................................ 138, 146
Data governance .......................................... 396
Data harmonization ..................................... 468
Data import ............................................... 430
simulation ............................................... 236
Data lineage .............................................. 391
Data management object ................................ 296
Data migration

content ................................................... 393, 396
Convert Values ......................................... 233
field mapping ........................................... 412
fixed values ............................................. 235
implementation phase ................................... 383
monitoring ............................................... 432
performance ........................................... 434
phases .................................................... 378
platform .................................................. 394
Rapid Data Migration .................................. 390
SAP S/4HANA migration cockpit .................... 437
starter system ......................................... 203
template .................................................. 412
validation function ..................................... 428
Data Migration Server .................................. 486
Data model, simplification ................................ 84
Data quality ............................................... 475
Data replication .......................................... 153
Data replication monitoring ........................... 516
Data security ............................................... 101
Data Services Designer ................ 398, 401, 426
Data Services → SAP Data Services ... ................................................ 338
Data storage, architecture .............. 86
Data structure, simplification ........... 40
Data validation ................................. 384, 426
Data volume, development .............. 76
Data, historical ................................ 540
Database
integration ...................................... 405
migration ........................................... 368
migration, custom developments ...... 351
server ................................................. 392
size ..................................................... 362
traditional ......................................... 81
view ................................................... 85
Database Migration Option 151, 364, 368
Database Migration Option, Migration Center Control ......................... 369
DataSift .............................................. 302
Datastore ........................................... 405, 430
Decommissioning Cockpit ............... 350
Deduplication ................................... 391
Delta recognition ....................... 396
Deploy phase ..................................... 175, 208
Deployment option → Operating model Development ......................... 62
Development system
conversion ....................................... 334
system configuration ..................... 319
transformation .................................. 467
Dialog process ................................... 436
Digital core ...................................... 37, 78, 106
Digital farming .................................. 32
Digital native ..................................... 79
Digital platform ................................ 33
Digital transformation ...................... 25
Digitalization .................................... 27
Discount management .................... 246
Discover phase ................................... 139, 194
Disruptive transformation ............... 30
Distribution model ......................... 511
DMO → Database Migration Option Document exchange .................... 244
Download Basket .............................. 313
Downtime .......................................... 335, 366
Downtime-optimized procedure ...... 370
Dual-stack system .............................. 338
E
eCATT .................................................. 320
Electronic Data Interchange ............ 521
Embedded analytics ...................... 96
Emergency patch ............................ 116
Employee data ................................... 277
import .............................................. 205, 275
synchronization ............................... 519
Employee self-services ................... 60
End user, training ............................ 337
End-to-end process ......................... 78
End-user extensibility .................... 126
Enhancement option ....................... 120
Enhancement, side-by-side .............. 124
Enterprise Services ......................... 521
Environment, Health, and Safety (EHS) ............................... 56
EPS ................................................... 286
ERP → SAP ERP ................................. 391
Event Stream Processor ................. 286
EWM .................................................. 53, 342
Execution of Program After Import .... 87
Execution phase ............................... 346
Explore phase ................................... 174, 195, 203, 380
Explore phase ↔ Explore phase
Extensibility
business objects ................................... 130
business processes ......................... 125
calculation logic ............................... 130
custom ............................................ 122
fields ............................................... 129
in-app approach ............................... 124, 126
key user ........................................... 126
side-by-side approach ..................... 124
tables .............................................. 129
traditional ......................................... 131
user interfaces ................................... 125
F
(FI) help ............................................. 172
FaaS ................................................. 325
Facebook ......................................... 286
marketing ......................................... 71
Fact sheet ......................................... 89
Fan page ........................................... 305
FES .................................................. 322
Field mapping ................................. 382, 403, 411, 450
Field, custom ................................. 129
Fieldglass .......................... 64, 67
File interface .................................... 406
Final trial run ................................. 386
Financial closing ......................... 48, 111
Financial planning ....................... 49
Fiori as a Service ....................... 325
Fiori Cloud → SAP Fiori Cloud
Fiori Launchpad → SAP Fiori Launchpad
Fiori → SAP Fiori
Fiscal year variant ......................... 489
Fit gap workshop ....................... 174, 189, 322, 382
Fit standard analysis .................. 189
Fixed value ...................................... 235
Flat file ............................................ 405
Frontend server ............................... 90
add-on deployment ......................... 323
central hub deployment ............... 323
deployment options ....................... 323
installation ................................. 325
SAP Fiori Cloud ............................... 323
Fully-Activated Appliance ............. 182
Function module ......................... 398, 441
Function module, wrapper ............ 441
Google ............................................ 71
Google AdWords ........................... 267
Greenfield .................... 99, 121, 329, 377
Guided buying ......................... 66
Guided configuration .................... 110, 165
Guided process ....................... 231
H
Hard disk ......................................... 83
Hardware ......................................... 83, 116, 468
requirement ...................................... 313
Harmonization ............................... 531
HCM .............................................. 509
HEC .............................................. 113, 311
Help text .......................................... 212
Hotfix .............................................. 116
HR .................................................... 57
HTML5 total ..................................... 125
Human capital ................................ 34
Human Capital Management .......... 509
Human resources ........................... 57
Hybrid cloud ..................................... 103
Hybrid operating model ................. 103
Hybrid scenario .............................. 99
I
IaaS → Infrastructure as a Service
Identity provider ......................... 200
IDoc .............................................. 126, 291, 391, 398
background processing ................. 435
basic type ........................................ 399
control record ................................. 435
enhancement ................................. 399
HCM connection ....................... 511
import ............................................ 430
inbound .......................................... 431
message type ................................... 399
monitoring ................................. 434
parallel processing ....................... 436
performance ............................... 434
status ............................................. 399, 434
transfer ........................................... 430
type .............................................. 399
<table>
<thead>
<tr>
<th>Page</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>IDP</td>
</tr>
<tr>
<td>282</td>
<td>IFlow</td>
</tr>
<tr>
<td>158</td>
<td>Implementation method</td>
</tr>
<tr>
<td>136</td>
<td>technical</td>
</tr>
<tr>
<td>155</td>
<td>Implementation Guide, Central Finance</td>
</tr>
<tr>
<td>25</td>
<td>Industry 4.0</td>
</tr>
<tr>
<td>391</td>
<td>Information Steward</td>
</tr>
<tr>
<td>110</td>
<td>Infrastructure as a Service</td>
</tr>
<tr>
<td>1180</td>
<td>311 Infrastructure service</td>
</tr>
<tr>
<td>527</td>
<td>Initial situation</td>
</tr>
<tr>
<td>83</td>
<td>In-memory database</td>
</tr>
<tr>
<td>126</td>
<td>Innovation Strategy &amp; Roadmap</td>
</tr>
</tbody>
</table>
| 229  | Innovation Strategy & Roadmap service 
| 368  | In-place migration |
| 356  | Inspection run |
| 287  | Instagram |
| 313  | Installation |
| 315  | Installation guide |
| 61.95 | Integration |
| 282.513 | Lifecycle management |
| 519  | Integration, SAP Hybris Marketing Cloud  |
| 290  | Interface |
| 126  | Intermediate Document → IDoc |
| 25, 31, 37 | Internet of Things |
| 52   | Inventory management |
| 41   | simplification 
| 65   | Invoicing processing |
| 423  | IoT → Internet of Things |
| 507  | IS ISO code |
| 402  | job validation |
| 178  | Jam |
| 427  | Maintenance plan |

### M

<table>
<thead>
<tr>
<th>Page</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>Job cycle</td>
</tr>
<tr>
<td>116</td>
<td>Maintenance plan</td>
</tr>
<tr>
<td>222</td>
<td>Middleware</td>
</tr>
<tr>
<td>306</td>
<td>Migration content</td>
</tr>
<tr>
<td>140</td>
<td>Maintenance Planner</td>
</tr>
<tr>
<td>344</td>
<td>landscape transformation</td>
</tr>
<tr>
<td>345</td>
<td>landscape data</td>
</tr>
<tr>
<td>371</td>
<td>SAP Fiori</td>
</tr>
<tr>
<td>113</td>
<td>Managed cloud</td>
</tr>
<tr>
<td>412</td>
<td>Mandatory field</td>
</tr>
<tr>
<td>229</td>
<td>Mandatory structure</td>
</tr>
<tr>
<td>110</td>
<td>Manufacturing cloud</td>
</tr>
<tr>
<td>55</td>
<td>Manufacturing execution system</td>
</tr>
<tr>
<td>413</td>
<td>material number field</td>
</tr>
<tr>
<td>341</td>
<td>Material master</td>
</tr>
<tr>
<td>497</td>
<td>Material group</td>
</tr>
<tr>
<td>139</td>
<td>Marketing Lead Management</td>
</tr>
<tr>
<td>72</td>
<td>Marketing process</td>
</tr>
<tr>
<td>72</td>
<td>Marketing resource management</td>
</tr>
<tr>
<td>221</td>
<td>Mass load ID</td>
</tr>
<tr>
<td>445</td>
<td>Migration template</td>
</tr>
<tr>
<td>419</td>
<td>Migration success factors</td>
</tr>
<tr>
<td>412</td>
<td>Migration success factors</td>
</tr>
<tr>
<td>528</td>
<td>MOOC</td>
</tr>
<tr>
<td>519</td>
<td>SuccessFactors</td>
</tr>
<tr>
<td>529</td>
<td>system group</td>
</tr>
<tr>
<td>466</td>
<td>testing</td>
</tr>
<tr>
<td>245</td>
<td>COF</td>
</tr>
</tbody>
</table>
SAP Ariba Solution Integration for SAP Business Suite ........................................ 273
SAP Ariba Sourcing .............................................. 243, 508
SAP Best Practices .............................................. 160, 179, 393
activation ....................................................... 319
baseline .......................................................... 163
building blocks ................................................. 166
Explorer ......................................................... 46
localization ...................................................... 163
migration content .............................................. 226
Rapid Data Migration ............................... 390
scope items ...................................................... 166
system configuration ....................................... 318
SAP Business All-in-One ......................... 161
SAP Business Planning and Consolidation ...... 49
SAP Business Suite ........................................... 78
SAP Business Suite 4 SAP HANA → SAP S/4HANA ....
SAP Business Warehouse ......................... 532
SAP BusinessObjects BI Platform .......... 391, 432
SAP BusinessObjects Planning and Consolidation ...... 542
SAP BusinessObjects Web Intelligence .... 391, 454
reports ......................................................... 452
SAP BW .......................................................... 532
SAP CAL ............................................................ 180
SAP Cloud Management ......................... 50
SAP Cloud Appliance Library .................. 180
SAP Cloud Identity ............................................. 200
SAP Cloud Platform ........................................... 102, 120, 124, 323, 325, 513
SAP Cloud Platform integration ................. 275, 278, 285, 294, 299, 301, 506, 513
SAP Cloud Platform OData Provisioning .............. 402
SAP Consumer Insight .................................... 43
SAP Credit Management .............................. 38, 40, 51
SAP Data Services ......................................... 143, 386, 390
data flow ....................................................... 402
Designer ....................................................... 398, 401
import ............................................................. 397
jobs ............................................................... 396
license ........................................................... 398
profiler .......................................................... 408
SAP Download Manager .................................. 313
SAP Engineering Control Center ............ 55
SAP Enterprise Architecture Explorer .... 324
SAP ERP ......................................................... 75, 286, 291, 295
SAP ERP 6.0 .................................................... 527
SAP ERP HCM .................................................. 509
SAP ERP HCM, side-by-side operation .... 513
SAP Event Stream Processor ...................... 286
SAP Extended Warehouse Management .......... 53, 342
SAP Fiori ......................................................... 64, 67
Fiori 43, 79, 88, 370
2.0 ............................................................... 370
App Finder ...................................................... 374
app reference library ...................................... 372
Best Practices ................................................. 162
documentation .............................................. 93
enhancements ................................................. 93
frontend server ............................................. 322
help .............................................................. 93
installation ...................................................... 371
library .......................................................... 326
operating concept .......................................... 91
relevance analysis ........................................... 370
role .............................................................. 92
role concept ................................................... 374
technology ..................................................... 90
transition phase ............................................. 373
types of apps .................................................. 89
X-ray ............................................................ 93
SAP Fiori Cloud ................................................. 323, 325
demo ............................................................. 325
deployment options ........................................ 326
SAP Fiori Launchpad ....................................... 91, 322, 374
group ............................................................ 92, 198
navigation ...................................................... 198
provider .......................................................... 323
SAP Gateway ................................................... 126, 322
SAP GUI ........................................................ 88, 322, 373
SAP HANA ........................................................ 83
SAP HANA Cloud Connector ..................... 126, 323, 326
SAP HANA Cloud Platform → SAP Cloud Platform ....
SAP HANA Cloud Platform .............................. 113, 311
SAP HANA Cloud Platform, Central Finance ... 483
SAP HANA, custom developments ................. 351
SAP Hybris Cloud for Customer .................. 70, 285, 306
SAP Hybris Cloud for Customer 2.0 .......... 293
integration with SAP ERP ......................... 293
SAP Hybris Cloud for Service ................. 285
SAP Hybris Commerce ................................... 70, 286
SAP Hybris Data Hub ................................. 286
SAP Hybris Loyalty Management ............... 285
SAP Hybris Marketing ..................................... 68
SAP Hybris Marketing Cloud ................. 68, 112
contacts ....................................................... 290
data model .................................................... 289
File Based Data Load ...................................... 299
integration ...................................................... 284
interactions .................................................... 290
SAP Information Steward ......................... 391
SAP Iam ........................................................... 178
SAP Landscape Transformation ................. 154
delete company code .................................... 477
Migration Object Modeler ....................... 142
Replication Server ........................................... 108, 482
trigger .......................................................... 486
SAP Launch ...................................................... 158
SAP Learning Hub ......................................... 172–173
SAP LT → SAP Landscape Transformation ....
SAP Manufacturing Execution .................. 55
SAP Master Data Governance (MDG) .......... 483, 494
SAP Note ........................................................... 343
business impact ............................................. 343
implementation .......................................... 318
SAP Portfolio and Project Management .... 55
SAP Process Integration ......................... 95, 294, 521
SAP Process Orchestration ...................... 95, 506, 521
SAP Product Lifecycle Management ........ 55
SAP Project System ......................................... 55
SAP Promotion Management for Retail .... 286
SAP Query ....................................................... 386
SAP S/4HANA .................................................... 17, 75, 106
accounting .................................................... 47
admin guide ................................................... 319
architecture ................................................... 90
Asset Management ...................................... 56
business functions ....................................... 46
compatibility packages ......................... 59, 107
components .................................................. 46
configuration ............................................... 165
digital transformation ................................... 37
dependency ..................................................... 122
frontend server ............................................ 322
global system ................................................. 532
guided configuration ..................................... 110
human resources .......................................... 57, 59
implementation ............................................. 158
integration ...................................................... 313
integration with SAP Ariba ....................... 303
logistics .......................................................... 52
migration ....................................................... 18
on-premise ..................................................... 105, 313, 503
operating models ......................................... 100
operation ....................................................... 115
procurement .................................................. 64
product family ............................................... 104
public cloud ................................................... 109
reference ....................................................... 179
regional system ............................................. 532
requirements ................................................ 75
sales and marketing ....................................... 68
sizing ............................................................ 313
trial system ..................................................... 160
SAP S/4HANA Central Finance → Central Finance
SAP S/4HANA Cloud ......................................... 109
configuration ................................................ 203, 210
customizing ............................................... 210
hardware ......................................................... 116
human resources .......................................... 275
implementation checklist ......................... 209
implementation phase ............................... 203
maintenance cycles ...................................... 116
operation ....................................................... 115
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